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(54) 【発明の名称】 ローソニア・イントラセルラリス由来の核酸およびポリペプチド配列ならびに使用方法

(57) 【要約】

本発明は、ローソニア・イントラセルラリス (*L. intracellularis*) に特有の核酸分子を提供する。本発明はまた、本発明のローソニア・イントラセルラリス特異的核酸分子によりコードされるポリペプチド、および該ローソニア・イントラセルラリス特異的核酸分子によりコードされるポリペプチドに対する特異的結合親和性を有する抗体を提供する。本発明は更に、本発明の核酸分子、ポリペプチドおよび抗体を使用する、サンプル中のローソニア・イントラセルラリスの検出方法を提供する。本発明はまた、動物におけるローソニア・イントラセルラリス感染の予防方法を提供する。

【特許請求の範囲】

【請求項1】

配列番号8741に対して又は配列番号8741の相補体に対して少なくとも75%の配列同一性を有する少なくとも10ヌクレオチド長の核酸分子を含んでなる単離された核酸であって、10~29ヌクレオチド長である任意の該分子が、標準的な増幅条件下、ローソニア・イントラセルラリス (*Lawsonia intracellularis*) 核酸からは、適当な第2の核酸分子を使用した場合に増幅産物を生成するが、ホモ・サピエンス (*Homo sapiens*)、ラツス・ノルベギクス (*Rattus norvegicus*)、ムス・ムスクルス (*Mus musculus*)、クロストリジウム・テタニ (*Clostridium tetani*) E88、クロストリジウム・スティックランジイ (*Clostridium sticklandii*)、フソバクテリウム・ヌクレアタム亜種ヌクレアタム (*Fusobacterium nucleatum* subsp. *nucleatum*) ATCC 25586、ストレプトコッカス・ニウモニエ (*Streptococcus pneumoniae*)、オリザ・サチバ (*Oryza sativa*)、ヘニアンツス・サリシフォルリウス・パール・オボパツス (*Haenianthus salicifolius* var. *obovatus*)、ヘニアンツス・インクラッサツス (*Haenianthus incrassatus*)、ダニオ・レリオ (*Danio rerio*)、アラビドプシス・タリアナ (*Arabidopsis thaliana*)、ドロソフィラ・メラノガスター (*Drosophila melanogaster*)、セノルハブディティス・エレガンス (*Caenorhabditis elegans*)、ブドウ蔓葉巻き病関連 (Grapevine leafroll-associated) ウイルス、マイコプラズマ・カプリコルム (*Mycoplasma capricolum*) およびウトリクラリア・ラシニアタ (*Utricularia laciniata*) よりなる群から選ばれる生物のいずれの核酸からも、適当な第3の核酸分子を使用した場合に増幅産物を生成しないことを特徴とする、上記核酸。

【請求項2】

前記核酸分子が、配列番号8741に示す配列を有する、請求項1記載の核酸。

【請求項3】

前記核酸分子が配列番号8741に対して少なくとも75%の配列同一性を有する、請求項1記載の核酸。

【請求項4】

前記核酸分子が配列番号8741に対して少なくとも80%の配列同一性を有する、請求項1記載の核酸。

【請求項5】

前記核酸分子が配列番号8741に対して少なくとも85%の配列同一性を有する、請求項1記載の核酸。

【請求項6】

前記核酸分子が配列番号8741に対して少なくとも90%の配列同一性を有する、請求項1記載の核酸。

【請求項7】

前記核酸分子が配列番号8741に対して少なくとも95%の配列同一性を有する、請求項1記載の核酸。

【請求項8】

前記核酸分子が配列番号8741に対して少なくとも99%の配列同一性を有する、請求項1記載の核酸。

【請求項9】

請求項1記載の核酸を含んでなるベクター。

【請求項10】

請求項9記載のベクターを含んでなる宿主細胞。

【請求項11】

請求項1記載の核酸によりコードされる単離されたポリペプチド。

【請求項12】

前記ポリペプチドが、配列番号8740に示すアミノ酸配列を有する、請求項11記載の単離されたポリペプチド。

【請求項13】

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請求項11記載のポリペプチドを含んでなる製造物品。

【請求項14】

請求項11記載のポリペプチドに対する特異的結合親和性を有する抗体。

【請求項15】

生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の存在または非存在を検出するための方法であって、以下のステップ：

標準的な増幅条件下、配列番号8741に対して少なくとも75%の配列同一性を有する少なくとも10ヌクレオチド長の核酸分子を含む少なくとも1つの核酸と生物学的サンプルとを接触させること、ここで、該生物学的サンプル中にローソニア・イントラセルラリス (*L. intracellularis*) 核酸が存在する場合に増幅産物が生成されること、

該増幅産物の存在または非存在を検出すること、
を含んでなり、その際、該増幅産物の存在が該生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の存在を示し、該増幅産物の非存在が該生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の非存在を示すことを特徴とする、上記方法。

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【請求項16】

生物学的サンプルがブタ、ハムスター、子ウマ、イヌ、シカ、キツネ、ウサギ、ラット、エミュ、ダチョウ、非ヒト霊長類およびヒトに由来する、請求項15記載の方法。

【請求項17】

生物学的サンプルが糞便サンプルおよび血液サンプルである、請求項15記載の方法。

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【請求項18】

生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の存在または非存在を検出するための方法であって、以下のステップ：

ハイブリダイゼーション条件下、配列番号8741に対して少なくとも75%の配列同一性を有する少なくとも10ヌクレオチド長の核酸分子を含む少なくとも1つの核酸と生物学的サンプルとを接触させること、ここで、該生物学的サンプル中にローソニア・イントラセルラリス (*L. intracellularis*) 核酸が存在する場合にハイブリダイゼーション複合体が生成されること、

該ハイブリダイゼーション複合体の存在または非存在を検出すること、
を含んでなり、その際、該ハイブリダイゼーション複合体の存在が該生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の存在を示し、該ハイブリダイゼーション複合体の非存在が該生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の非存在を示すことを特徴とする、上記方法。

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【請求項19】

生物学的サンプル中に存在する核酸を電気泳動により分離する、請求項18記載の方法。

【請求項20】

電気泳動により分離された核酸を固相支持体に結合させる、請求項19記載の方法。

【請求項21】

固相支持体がナイロンメンブランおよびニトロセルロースメンブランである、請求項20記載の方法。

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【請求項22】

1以上の核酸が標識されている、請求項18記載の方法。

【請求項23】

生物学的サンプルが、糞便サンプルおよび血液サンプルよりなる群から選ばれる、請求項18記載の方法。

【請求項24】

生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の存在または非存在を検出するための方法であって、以下のステップ：

生物学的サンプルを請求項11記載のポリペプチドと接触させること、ここで、該ポリペプチドに対する特異的結合親和性を有する抗体が該サンプル中に存在する場合にポリペ

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チド-抗体複合体が生成されること、

該ポリペプチド-抗体複合体の存在または非存在を検出すること、
を含んでなり、その際、該ポリペプチド-抗体複合体の存在が該生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の存在を示し、該ポリペプチド-抗体複合体の非存在が該生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の非存在を示すことを特徴とする、上記方法。

【請求項 25】

前記ポリペプチドが固相支持体に結合されている、請求項24記載の方法。

【請求項 26】

生物学的サンプルが、糞便サンプルおよび血液サンプルよりなる群から選ばれる、請求項24記載の方法。 10

【請求項 27】

生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の存在または非存在を検出するための方法であって、以下のステップ：

生物学的サンプルを請求項14記載の抗体と接触させること、ここで、該抗体が特異的結合親和性を有するポリペプチドが該生物学的サンプル中に存在する場合に抗体-ポリペプチド複合体が生成されること、

該抗体-ポリペプチド複合体の存在または非存在を検出すること、
を含んでなり、その際、該抗体-ポリペプチド複合体の存在が該生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の存在を示し、該抗体-ポリペプチド複合体の非存在が該生物学的サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) の非存在を示すことを特徴とする、上記方法。 20

【請求項 28】

前記抗体が固相支持体に結合されている、請求項27記載の方法。

【請求項 29】

生物学的サンプルが、血液サンプルおよび乳サンプルよりなる群から選ばれる、請求項27記載の方法。

【請求項 30】

動物におけるローソニア・イントラセルラリス (*L. intracellularis*) による感染を予防する方法であって、 30

請求項11記載のポリペプチドを含む化合物を動物に投与すること、
を含んでなり、その際、該化合物がローソニア・イントラセルラリス (*L. intracellularis*) に対して該動物を免疫することを特徴とする、上記方法。

【請求項 31】

動物におけるローソニア・イントラセルラリス (*L. intracellularis*) による感染を予防する方法であって、

配列番号8741に対して少なくとも75%の配列同一性を有する少なくとも10ヌクレオチド長の核酸分子を含む核酸を含む化合物を動物に投与すること、
を含んでなり、その際、該化合物がローソニア・イントラセルラリス (*L. intracellularis*) に対して該動物を免疫することを特徴とする、上記方法。 40

【請求項 32】

第1オリゴヌクレオチドプライマーと第2オリゴヌクレオチドプライマーとを含んでなる組成物であって、第1オリゴヌクレオチドプライマーおよび第2オリゴヌクレオチドプライマーがそれぞれ10~50ヌクレオチド長であり、第1および第2オリゴヌクレオチドプライマーが、ローソニア・イントラセルラリス (*L. intracellularis*) 核酸の存在下では、標準的な増幅条件下で増幅産物を生成するが、ローソニア・イントラセルラリス (*L. intracellularis*) 以外の生物からの核酸の存在下では増幅産物を生成しないことを特徴とする、上記組成物。

【請求項 33】

配列番号8741または配列番号8741の相補体に対して少なくとも75%の配列同一性を有す 50

る10ヌクレオチド長を超える核酸分子を含んでなる単離された核酸であって、該分子が、ローソニア・イントラセルラリス (*L. intracellularis*) 核酸とはストリンジェントな条件下でハイブリダイズするが、同じハイブリダイゼーション条件下でローソニア・イントラセルラリス (*L. intracellularis*) 以外の生物からの核酸とはハイブリダイズしないことを特徴とする、上記核酸。

【請求項34】

請求項32記載の組成物を含んでなる製造物品。

【請求項35】

請求項1記載の単離された核酸を含んでなる製造物品。

【発明の詳細な説明】

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【技術分野】

【0001】

本発明は、細菌の核酸およびポリペプチド配列、より詳しくは、ローソニア・イントラセルラリス (*Lawsonia intracellularis*) 由来の核酸およびポリペプチド配列に関する。

【背景技術】

【0002】

増殖性腸疾患 (PE) は、ブタおよび他の動物における経済的に重要な疾患であり、世界中の養豚施設において報告されている。集約的に飼育されたブタにおいて、PEは体重増加および成長を妨げることにより重大な問題を引き起こしうるが、PEは感染動物の突然死の原因でもある。この疾患は特に回腸における小腸上皮細胞の増殖により特徴づけられ、該増殖は最終的には、剖検時に認められる腸壁の著しい肥厚を現す。

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【0003】

ブタの腸の増殖性状態は1931年に最初に報告された。しかし、該増殖性病変における細菌の存在が記載されるまでには、その後40年以上を要した。しかし、これらの細胞内生物の実体が明らかとなったのは、この病原体に対する特異的アンチセンスおよびDNAプローブの開発により、この生物が新規細菌種に相当するという仮説が強く支持された後である。その後、16SリボソームDNA (rDNA) の解析により、この細胞内細菌は新規生物ローソニア・イントラセルラリスとして同定および命名され、プロテオバクテリア (Proteobacteria) 群のデルタ亜門として分類された。ローソニア (*Lawsonia*) は、偏性嫌気性スルファート還元細菌であるデスルホピブリオ・デスルフリカンス (*Desulfovibrio desulfuricans*) に対しては91%の16S rDNA配列相同性を有し、バイロフィラ・ワーズワーシエ (*Bilophila wadsworthiae*) に対しては92%の相同性を有する。ローソニア・イントラセルラリスの分類に対する更なる洞察がそのgroEオペロンのクローニングおよび配列決定によりもたらされた。データベースからのgroELホモログの推定アミノ酸配列を使用した系統発生的解析は、ローソニア・イントラセルラリスが、公知配列を有する他の細菌から分類学的に孤立していることを示した。これらの方法を用いて、その最も近い類縁体がヘリコバクター・ピロリ (*Helicobacter pylori*) であることが示された。しかし、デスルホピブリオ (*Desulfovibrio*) 種からのgroEL配列はデータベースに当時存在しなかったため、デスルホピブリオ (*Desulfovibrio*) 種とローソニア・イントラセルラリスとの間の直接的な比較を行うことはできなかった。

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【0004】

ローソニア・イントラセルラリスは、細胞培養物内でのみin vitroで培養可能であり、特定の微好気性環境を要する独特な偏性細胞内細菌である。それは、単一極鞭毛を有するグラム陰性生物である。ローソニア (*Lawsonia*) の形態学的構造は、0.3~0.4 × 1.5 × 2.0 μmの典型的なウイロイド形桿菌である。感染細胞内でのローソニア (*Lawsonia*) 種の生活環は、別の偏性細胞内細菌であるリケッチア・ツツガムシ (*Rickettsia tsutsugamushi*) に酷似している。ローソニア (*Lawsonia*) 種は、サイトゾル内でのみ、しばしば細胞ミトコンドリアに接近して、成長し増殖することが観察されている。

【0005】

動物においては、ローソニア・イントラセルラリスは腸細胞の増殖を引き起こして、腸

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疾患または死をも招く。この疾患は世界中の養豚業に重大な経済的損失をもたらす。この生物により引き起こされる増殖性腸病変は、ハムスター、子ウマ、イヌ、シカ、キツネ、ウサギ、ラット、エミュー、ダチョウおよび非ヒト霊長類を含む他の多数の種においても記載されている。ローソニア・イントラセルラリスの広い宿主域、およびそれが霊長類において記載されていることは、それが条件次第ではヒト病原体にもなりうることを示唆している。

【0006】

ローソニア・イントラセルラリスによる疾患が与える高い罹病率、死亡率、および経済的影響にもかかわらず、この生物のビルレンスの遺伝的基礎に関してはほとんど知られていない。さらに、ブタおよび他の種におけるこの生物の感染およびビルレンスに関する分子的メカニズムならびに疫学は依然として明らかにされていない。また、この生物が宿主に定着することを可能にする因子を含むこの生物の天然生理に関してはほとんど知られていない。さらに、感染動物の常套的検出のための高精度かつ高感度な方法も存在しない。これらの理由により、ローソニア・イントラセルラリスに特異的な核酸および/またはポリペプチドを同定することが重要である。

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【発明の開示】

【0007】

発明の概要

本発明は、ローソニア・イントラセルラリスに特有の核酸分子を提供する。本発明はまた、本発明のローソニア・イントラセルラリス特異的核酸分子によりコードされるポリペプチド、および該ローソニア・イントラセルラリス特異的核酸分子によりコードされるポリペプチドに対する特異的結合親和性を有する抗体を提供する。本発明は更に、本発明の核酸分子、ポリペプチドまたは抗体を使用する、サンプル中のローソニア・イントラセルラリスの検出方法を提供する。本発明はまた、動物におけるローソニア・イントラセルラリス感染の予防方法を提供する。

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【0008】

1つの態様においては、本発明は、配列番号8741または該分子の相補体に対して少なくとも75%の配列同一性を有する少なくとも10ヌクレオチド長の核酸分子を含んでなる核酸であって、10~29ヌクレオチド長である任意の該分子が、適当な第2の核酸分子と共に、標準的な増幅条件下、ローソニア・イントラセルラリス核酸からは増幅産物を生成するが、ホモ・サピエンス (*Homo sapiens*)、シュードモナス・エルジノーサ (*Pseudomonas aeruginosa*)、ストレプトマイセス・ビリドクロモゲネス (*Streptomyces viridochromogenes*)、ムス・ムスクルス (*Mus musculus*)、フェリス・カツス (*Felis catus*) およびザントモナス・カンペストリス (*Xanthomonas campestris*) よりなる群から選ばれる生物のいずれの核酸からも増幅産物を生成しないことを特徴とする単離された核酸を提供する。本発明は、本発明のそのような核酸を含有する製造物品を提供する。

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【0009】

本発明の核酸は、配列番号1~62、131~8727、8736~8739、8741または8743のいずれかに対して少なくとも75%、少なくとも80%、少なくとも85%、少なくとも90%、少なくとも95%または少なくとも99%の配列同一性を有しうる。

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【0010】

本発明のもう1つの態様においては、配列番号1~62、131~8727、8736~8739、8741または8743のいずれか或いはそのようないずれかの分子の相補体に対して少なくとも75%の配列同一性を有する少なくとも10ヌクレオチド長の核酸分子を含んでなる単離された核酸であって、10~Nヌクレオチド長である該分子はいずれも、適当な第2の核酸分子と共に、標準的な増幅条件下、ローソニア・イントラセルラリス核酸からは増幅産物を生成するが、それぞれの配列番号について表2、3、4および5に示す生物のいずれの核酸からも増幅産物を生成しないことを特徴とする核酸を提供する。各配列番号のNの値も表2、3、4および5から決定されうる。

【0011】

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もう1つの態様において、本発明は、本発明の核酸を含んでなるベクターを提供する。さらに、本発明は、そのようなベクターを含んでなる宿主細胞を提供する。

【0012】

さらにもう1つの態様において、本発明は、本発明の核酸によりコードされる単離されたポリペプチドを提供する。例えば、配列番号1~62の配列を有する核酸分子は、それぞれ配列番号63~124のアミノ酸配列を有するポリペプチドをコードしうる。あるいは、配列番号8741の配列を有する核酸分子は、配列番号8740のアミノ酸配列を有するポリペプチドをコードしうる。推定オープンリーディングフレームの核酸配列およびコード化アミノ酸配列をそれぞれ表18~21および22~25に示す。

【0013】

もう1つの態様において、本発明は、本発明の1以上のポリペプチドを含む製造物品を提供する。本発明の更にもう1つの態様においては、本発明のポリペプチドに対する特異的結合親和性を有する抗体を提供する。

【0014】

もう1つの態様において、本発明は、生物学的サンプル中のローソニア・イントラセルラリスの存在または非存在を検出するための方法を提供する。そのような方法は、該生物学的サンプル中にローソニア・イントラセルラリス核酸が存在する場合に増幅産物が生成される標準的な増幅条件下、該生物学的サンプルを本発明の核酸（例えば、配列番号1~62および131~8727）の1以上と接触させ、該増幅産物の存在または非存在を検出することを含む。一般には、該増幅産物の存在は該生物学的サンプル中のローソニア・イントラセルラリスの存在を示し、該増幅産物の非存在は該生物学的サンプル中のローソニア・イントラセルラリスの非存在を示す。該生物学的サンプルが由来しうる代表的な動物には、ブタ、ハムスター、子ウマ、イヌ、シカ、キツネ、ウサギ、ラット、エミュー、ダチョウ、非ヒト霊長類およびヒトが含まれる。代表的な生物学的サンプルには、糞便サンプルおよび血液サンプルが含まれる。さらに、前記方法において使用しうる代表的な核酸には、配列番号8728~8735の配列を有する核酸が含まれる。

【0015】

もう1つの態様において、本発明は、生物学的サンプル中のローソニア・イントラセルラリスの存在または非存在を検出するための方法を提供する。そのような方法は、該生物学的サンプル中にローソニア・イントラセルラリス核酸分子が存在する場合にハイブリダイゼーション複合体が生成される標準的なハイブリダイゼーション条件下、該生物学的サンプルを本発明の核酸（例えば、配列番号1~62および131~8727）の1以上と接触させ、該ハイブリダイゼーション複合体の存在または非存在を検出することを含む。一般には、該ハイブリダイゼーション複合体の存在は該生物学的サンプル中のローソニア・イントラセルラリスの存在を示し、該ハイブリダイゼーション複合体の非存在は該生物学的サンプル中のローソニア・イントラセルラリスの非存在を示す。典型的には、該生物学的サンプル中に存在する核酸を電気泳動により分離する。そのような電気泳動により分離された核酸は固相支持体に結合されうる。代表的な固相支持体には、ナイロンメンブラン（ナイロン膜）およびニトロセルロースメンブラン（ニトロセルロース膜）が含まれる。さらに、1以上の核酸を標識することが可能である。代表的な生物学的サンプルには、血液サンプルおよび乳汁サンプルが含まれる。

【0016】

もう1つの態様においては、本発明は、生物学的サンプル中のローソニア・イントラセルラリスの存在または非存在を検出するための方法を提供する。そのような方法は、該ポリペプチドに対する特異的結合親和性を有する抗体が該サンプル中に存在する場合にポリペプチド-抗体複合体が生成されるよう、該生物学的サンプルを本発明のポリペプチド（例えば、配列番号63~124および表22~25に示すもの）の1以上と接触させ、該ポリペプチド-抗体複合体の存在または非存在を検出することを含む。典型的には、該ポリペプチド-抗体複合体の存在は該生物学的サンプル中のローソニア・イントラセルラリスの存在を示し、該ポリペプチド-抗体複合体の非存在は該生物学的サンプル中のローソニア・イント

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ラセルラリスの非存在を示す。前記方法において使用するポリペプチドは固相支持体に結合されうる。さらに、代表的な生物学的サンプルには、糞便サンプルおよび血液サンプルが含まれる。

【0017】

さらにもう1つの態様においては、本発明は、生物学的サンプル中のローソニア・イントラセルラリスの存在または非存在を検出するための方法を提供する。そのような方法は、該生物学的サンプルを本発明の抗体（例えば、配列番号63～124のアミノ酸配列および表22～25に示すアミノ酸配列を有するポリペプチドに対する特異的結合親和性を有する抗体）と接触させ、ここで、該抗体が特異的結合親和性を有するポリペプチドが該サンプル中に存在する場合に抗体-ポリペプチド複合体が生成され、該抗体-ポリペプチド複合体の存在または非存在を検出することを含む。一般には、該抗体-ポリペプチド複合体の存在は該生物学的サンプル中のローソニア・イントラセルラリスの存在を示し、該抗体-ポリペプチド複合体の非存在は該生物学的サンプル中のローソニア・イントラセルラリスの非存在を示す。前記方法において使用する抗体は固相支持体に結合されうる。前記方法において使用しうる代表的な生物学的サンプルには、血液サンプルおよび糞便サンプルが含まれる。

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【0018】

本発明の更にもう1つの態様においては、動物におけるローソニア・イントラセルラリスによる感染の予防方法を提供する。そのような方法は、本発明のポリペプチド（例えば、配列番号63～124および表22～25に示すもの）を含む化合物を該動物に投与することを含む。あるいは、そのような方法は、本発明の核酸（例えば、配列番号1～62および131～8727に対して少なくとも75%の配列同一性を有する核酸分子を含む核酸）を含む化合物を該動物に投与することを含む。典型的には、該化合物はローソニア・イントラセルラリスに対して該動物を免疫する。

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【0019】

もう1つの態様において、本発明は、第1オリゴヌクレオチドプライマーと第2オリゴヌクレオチドプライマーとを含んでなり、第1オリゴヌクレオチドプライマーおよび第2オリゴヌクレオチドプライマーがそれぞれ10～50ヌクレオチド長であり、第1および第2オリゴヌクレオチドプライマーが、ローソニア・イントラセルラリス核酸の存在下では、標準的な増幅条件下で増幅産物を生成するが、ローソニア・イントラセルラリス以外の生物からの核酸の存在下では増幅産物を生成しない、組成物を提供する。本発明は、そのような組成物を含有する製造物品を提供する。

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【0020】

本発明の更にもう1つの態様においては、配列番号8741または配列番号8741の相補体に対して少なくとも75%の配列同一性を有する10ヌクレオチド長を超える核酸分子を含んでなる単離された核酸であって、該分子が、ローソニア・イントラセルラリス核酸とはストリンジентな条件下でハイブリダイズするが、同じハイブリダイゼーション条件下でローソニア・イントラセルラリス以外の生物からの核酸とはハイブリダイズしないことを特徴とする核酸を提供する。

【0021】

特に定義づけしない限り、本明細書中で用いるすべての科学技術用語は、本発明が属する分野の当業者により一般に理解されているものと同じ意味を有する。本発明の実施または試験においては、本明細書に記載のものと類似または同等の方法および材料を使用することが可能であるが、適当な方法および材料を後記に記載する。また、材料、方法および実施例は例示にすぎず、限定を意図するものではない。本明細書中に挙げられているすべての刊行物、特許出願、特許および他の参考文献の全体を、参照により本明細書に組み入れることとする。矛盾する場合には、定義を含め本明細書が優先される。

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【0022】

本発明の実施形態の1以上の詳細は、添付図面および後記の説明において記載されている。本発明の他の構成、目的および効果は、図面および詳細な説明から並びに特許請求の

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範囲から明らかであろう。

【0023】

詳細な説明

増殖性腸疾患の病原体であるローソニア・イントラセルラリス (Lawsonia intracellul aris) は偏性細胞内病原体である。この細菌のビルレンス、病原論または生理学の遺伝的基礎についてはほとんど知られていない。本発明は、ローソニア・イントラセルラリスに特有であり、従って診断および免疫予防に使用されうる核酸分子を提供する。本発明はまた、本発明の核酸分子によりコードされるローソニア・イントラセルラリス特異的ポリペプチド、およびローソニア・イントラセルラリス特異的ポリペプチドに対する特異的結合親和性を有する抗体を提供する。本発明の核酸分子、ポリペプチドおよび抗体は、サンプル中のローソニア・イントラセルラリスを検出するために本発明の方法において使用することが可能である。本発明は更に、動物におけるローソニア・イントラセルラリス感染の予防方法を提供する。

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【0024】

単離されたローソニア・イントラセルラリス特異的核酸分子

本発明は、部分的には、ローソニア・イントラセルラリスに特有な核酸分子の同定に基づく。これらの核酸分子は、本明細書中では、「ローソニア・イントラセルラリス特異的」核酸分子と称される。本発明の特定の核酸分子には、配列番号1~62および131~8727に示す配列が含まれる。本明細書中で用いる「核酸分子」なる語は、DNA分子およびRNA分子、ならびにヌクレオチド類似体を使用したDNAまたはRNA分子の類似体を含みうる。本発明の核酸分子は一本鎖または二本鎖であることが可能であり、鎖数は、その意図する用途に左右される。

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【0025】

本発明は更に、配列番号1~62および131~8727のヌクレオチド配列とは異なる核酸分子を含む。本発明の核酸分子は、少なくとも10ヌクレオチド長であり、配列番号1~62および131~8727のいずれかに対して少なくとも75%の配列同一性（例えば、少なくとも80%、85%、90%、95%または99%の配列同一性）を有する分子を含む。配列番号1~62および131~8727に示す核酸配列とは配列において異なる核酸分子は、部位特異的突然変異誘発またはPCR媒介突然変異誘発のような標準的な技術により製造されうる。また、例えば飽和突然変異誘発により、ローソニア・イントラセルラリス特異的核酸分子の全部または一部に沿ってランダムにヌクレオチドの変化を導入することが可能である。あるいは、ヌクレオチドの変化を有する核酸分子を化学合成することにより、配列内にヌクレオチドの変化を導入することが可能である。

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【0026】

配列同一性（%）の算出においては、2つの配列を整列させ、それらの2つの配列間のヌクレオチドまたはアミノ酸残基の同一マッチの数を求める。同一マッチの数を整列領域の長さ（すなわち、整列ヌクレオチドまたはアミノ酸残基の数）で割り100を掛け、配列同一性値（%）を得る。整列領域の長さは、最短配列の完全長サイズまでの一方または両方の配列の一部でありうると理解される。また、単一の配列を2以上の他の配列と整列させることが可能であり、したがって、該単一配列が各整列領域に対して異なる配列同一性値（%）を有しうると理解される。同一性値（%）は、通常、四捨五入されることに注目すべきである。例えば、78.1%、78.2%、78.3%および78.4%は78%に切り捨てられ、78.5%、78.6%、78.7%、78.7%、78.8%および78.9%は79%に切り上げられる。また、整列領域の長さは常に整数であることに留意すべきである。

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【0027】

配列同一性（%）を求めるための2以上の配列のアライメントは、<http://www.ncbi.nlm.nih.gov>において入手可能なBLAST（ベーシック・ローカル・アライメント・サーチ・ツール）プログラム中に組み込まれたAltschulら（1997, Nucleic Acids Res., 25:3389-3402）により記載されたアルゴリズムを使用して行う。Altschulらのアルゴリズムを使用して整列される本発明のローソニア・イントラセルラリス特異的核酸分子と、任意の他の配

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列またはその一部との間の配列同一性(%)を求めるために、BLAST検索を実行することが可能である。BLASTNは、核酸配列間で整列させ核酸配列間の同一性を比較するために使用するプログラムであり、BLASTPは、アミノ酸配列間で整列させアミノ酸配列間の同一性を比較するために使用するプログラムである。本発明の配列ともう1つの配列との間の同一性(%)を算出するためにBLASTプログラムを利用する場合には、それぞれのプログラムのデフォルトパラメータを使用する。本発明において行ったローソニア・イントラセルラリス特異的核酸配列の配列解析はBLASTバージョン2.2.3(2002年4月24日付けでアップデートされたもの)および2.2.6(2003年4月9日付けでアップデートされたもの)を使用した。

【0028】

配列番号2に対して75%、80%、85%、90%、95%および99%の配列同一性を有する本発明の代表的核酸の配列を図3(それぞれ配列番号125~130)に示す。そのような配列は、コンピューターを使用して又は手動により作製されうる。配列番号125~130に示す核酸配列は、それぞれ、配列番号2の各々100ヌクレオチドのうち25ヌクレオチド、各々10ヌクレオチドのうち2ヌクレオチド、各々100ヌクレオチドのうち15ヌクレオチド、各々10ヌクレオチドのうち1ヌクレオチド、各々100ヌクレオチドのうち5ヌクレオチド、または各々100ヌクレオチドのうち1ヌクレオチドをランダムに変化させることにより、手動により作製した。「変化」は、特定の位置におけるヌクレオチドが、残りの3つのヌクレオチドの1つによりランダムに置換されることを意味する。本発明の範囲内の任意の核酸分子が、本明細書に記載されている同じ方法を用いて(すなわち、配列番号1~62または131~8727の配列内のヌクレオチドを同様に変化させることにより)作製されうる

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【0029】

配列番号1~62に示す配列を有する代表的な新規ローソニア・イントラセルラリス特異的核酸分子の完全長サイズを表1に示す。

【0030】

表 1. ローソニア・イントラセルラリス (*L. intracellularis*) 特異的核酸およびポリペプチドのサイズ

GenBank 登録番号	配列番号	核酸 (bp)	配列番号	ポリペプチド (アミノ酸)
BH795457	1	740	63	192
BH795458	2	729	64	78
BH795459	3	778	65	200
BH795460	4	787	66	169
BH795461	5	734	67	118
BH795462	6	748	68	141
BH795463	7	767	69	115
BH795464	8	799	70	125
BH795465	9	852	71	136
BH795466	10	847	72	121
BH795467	11	754	73	154
BH795468	12	752	74	165
BH795469	13	794	75	142
BH795470	14	762	76	144
BH795471	15	881	77	131
BH795472	16	809	78	98
BH795473	17	844	79	141
BH795474	18	776	80	131
BH795475	19	860	81	126
BH795476	20	797	82	163
BH795477	21	772	83	189
BH795478	22	753	84	72
BH795479	23	762	85	103
BH795480	24	727	86	207
BH795481	25	752	87	157
BH795482	26	711	88	83
BH795483	27	872	89	88
BH795484	28	742	90	181
BH795485	29	780	91	60
BH795486	30	789	92	176
BH795487	31	795	93	169
BH795488	32	754	94	178
BH795489	33	737	95	136
BH795490	34	745	96	161
BH795491	35	741	97	163

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BH795492	36	773	98	129
BH795493	37	803	99	187
BH795494	38	811	100	152
BH795495	39	716	101	148
BH795496	40	785	102	175
BH795497	41	805	103	103
BH795498	42	794	104	91
BH795499	43	741	105	108
BG795500	44	788	106	103
BH795501	45	789	107	131
BH795502	46	772	108	66
BH795503	47	735	109	163
BH795504	48	791	110	208
BH795505	49	713	111	172
BH795506	50	765	112	101
BH795507	51	791	113	196
BH795508	52	756	114	154
BH795509	53	799	115	117
BH795510	54	726	116	164
BH795511	55	766	117	163
BH795512	56	796	118	187
BH795513	57	776	119	138
BH795514	58	776	120	179
BH795515	59	771	121	92
BH795516	60	711	122	141
BH795517	61	777	123	154
BH795518	62	746	124	164

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【 0 0 3 1 】

表2、3、4および5(参照により本明細書に組み入れる添付のコンパクトディスクに含有されている)は、ローソニア・イントラセルラリスの4つの遺伝的エレメント(それぞれプラスミド1、2および3ならびに染色体)からの配列を表し、それぞれの連続的配列番号は、それぞれの遺伝的エレメントからの連続的な200bpの断片に対応する。例えば、配列番号131は、プラスミド1(配列番号8736)のヌクレオチド1~200位に対応し、配列番号132は、プラスミド1(配列番号8736)のヌクレオチド201~400位に対応する、などである。ローソニア・イントラセルラリスの遺伝的エレメントのいずれかからの任意の数の連続的または非連続的断片を互いに連結させて、より長いローソニア・イントラセルラリス特異的核酸を得ることが可能であることは当業者に明らかである。同様に、表2、3、4および5に示す断片連結部の1以上に及ぶ任意の数の断片を、標準的な組換え又は合成核酸法を用いて作製することが可能である。

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【 0 0 3 2 】

表2

Frag_Des	SEQ_ID	N (nt)	Organism
1	131	29	"Influenza B virus (B/Johannesburg/96/01), Homo sapiens, Influenza B virus, Gallus gallus, Arabidopsis thaliana, Caenorhabditis elegans, Spiroplasma citri, Macaca fascicularis, Drosophila melanogaster, Bacillus anthracis str. Ames, Kluyveromyces delphensis, Pantroglodytes, Mus musculus, Oryza s

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- ativa (japonica cultivar-group), *Felis catus*, *Danio rerio*, *Bacillus thuringiensis* serovar finitimus"
- 2 132 21 "Homo sapiens, *Danio rerio*"
- 3 133 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Mus musculus*, *Drosophila melanogaster*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Poncirus trifoliata*, *Methanosarcina acetivorans* C2A, *Oryza sativa*, *Caenorhabditis briggsae*, *Podospora anserina*, *Sus scrofa*, *Psammolestes tertius*, *Drosophila leontia*"
- 4 134 33 "Caenorhabditis elegans, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Danio rerio*, *Hydra littoralis*, *Hydra magnipapillata*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Lemur catta*, *Clostridium tetani* E88, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Lactococcus lactis* subsp. *lactis*, *Tetrahymena pyriformis*, *Caenorhabditis briggsae*, *Mycoplasma penetrans*, *Encephalitozoon cuniculi*, *Helicobacter pylori* J99, *Coffea arabica*, *Medicago truncatula*" 10
- 5 135 27 "Homo sapiens, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Pan troglodytes*, *Glycine max*"
- 6 136 24 "Homo sapiens, *Chlorella vulgaris*, *Rattus norvegicus*, *Bos taurus*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Microtus rossiae meridionalis*, *Nicotiana glauca*, *Mycoplasma hominis*, *Danio rerio*" 20
- 7 137 23 "Homo sapiens, *Ciona intestinalis*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Equus caballus*, *Arabidopsis thaliana*, *Canis familiaris*, *Nicotiana tabacum*, *Gossypium hirsutum*"
- 8 138 26 "Danio rerio, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Clostridium acetobutylicum*, *Mus musculus*, *Nicotiana tabacum*, *Methanosarcina mazei* Goe1, *Ectromelia virus*, *Methanosarcina acetivorans* C2A, *Cowpox virus*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*"
- 9 139 23 "Buchnera aphidicola str. Bp (*Baizongia pistaciae*), *Pyrococcus abyssi*, *Homo sapiens*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Oceanobacillus iheyensis* HTE831, *Helicobacter hepaticus* ATCC 51449" 30
- 10 140 23 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, *Courtesia armata*, *Drosophila ananassae*, *Sulfolobus tokodaii*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Staphylococcus epidermidis*, *Carausus erosus*"
- 11 141 30 "Homo sapiens, *Rickettsia prowazekii*, *Tomato chlorotic mottle virus*, *Mus musculus*, *Ureaplasma urealyticum*, *Plasmodium falciparum* 3D7, *Medicago truncatula*, *Photobacterium luminescens*, *Caenorhabditis elegans*, *Reclinomonas americana*, *Pan troglodytes*, *Saccharomyces exiguus*, *Melipona bicolor*, *Phthorimaea operculella granulovirus*, *Danio rerio*, *Acetabularia acetabulum*, *Eimeria tenella*, *Bacillus anthracis* str. Ames, *Arabidopsis thaliana*, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Porphyromonas gingivalis* W83, *Rattus rattus*, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Ciona intestinalis*" 40
- 12 142 24 "Strawberry vein banding virus, *Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Mus musculus*, *Danio rerio*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Oryza sativa* (japonica cultivar-group), *Porphyromonas gingivalis* W83"
- 13 143 27 "Caenorhabditis elegans, *Homo sapiens*, *Drosophila melano*" 50

- gaster, *Danio rerio*, *Arabidopsis thaliana*, *Pan troglodytes*, *Apis mellifera*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Hordeum patagonicum*, *Oryza sativa* (*japonica* cultivar-group), *Canis familiaris*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Gallus gallus*, *Pseudostylochus intermedium*"
- 14 144 31 "Homo sapiens, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Panteliella bicolor*, *Daucus carota*, *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*"
- 15 145 27 "Homo sapiens, *Rattus norvegicus*, *Mus musculus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*japonica* cultivar-group), *Epiphyas postvittana* nucleopolyhedrovirus, *Danio rerio*, *Caenorhabditis elegans*, *Pan troglodytes*, *Equus caballus*, *Nostoc* sp. PCC 7120" 10
- 16 146 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Escherichia coli*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Clostridium tetani*, *Caenorhabditis elegans*, *Spirodela intermedia*, *Pasteurella multocida*, Human immunodeficiency virus 1, *Oryza sativa* (*japonica* cultivar-group), *Staphylococcus aureus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Haemophilus ducreyi* 35000HP, *Hepatozoon sipedon*, *Schizosaccharomyces pombe*"
- 17 147 36 "Caenorhabditis elegans, *Oryza sativa* (*japonica* cultivar-group), *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Rattus norvegicus*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Ciona intestinalis*, *Pneumocystis carinii*, *Arabis holboellii*, *Felis catus*, *Fenneropenaeus merguensis*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Chyosydia colchica*, *Chaetosphaeridium globosum*, *Rice stripe virus*, *Thermoanaerobacter tengcongensis*, *Guillardia theta*, *Mycoplasma pulmonis*, *Globodera pallida*, *Carabus reitterianus reitterianus*, *Carabus nanwutai nanwutai*, *Carabus kitawakianus kitawakianus*, *Medicago truncatula*, *Aricia agestis*, *Listeria innocua*, *Seseli krylovii*, *Imperatoria ostruthium*, *Medicago sativa*, *Oryctolagus cuniculus*, *Tetrahymena thermophila*" 20
- 18 148 24 "Leptospira interrogans serovar lai str. 56601, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Kaliphora madagascariensis*, *Micrurus fulvius*, *Eudianthe coelii-rosa*" 30
- 19 149 27 "Homo sapiens, *Saccharomyces cerevisiae*, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Canis familiaris*, *Danio rerio*, *Helicobacter hepaticus* ATCC 51449, *Oryza sativa* (*japonica* cultivar-group), *Drosophila melanogaster*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Haemophilus influenzae* Rd KW20"
- 20 150 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Scoliopteryx libatrix*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*" 40
- 21 151 35 "*Mus musculus*, *Plasmodium falciparum* 3D7, *Carex lupulina*, *Drosophila melanogaster*, *Medicago truncatula*, *Carex scirpoidea*, *Carex humboldtiana*, *Carex echinochloe*, *Carex donnell-smithii*, *Carex composita*, *Carex baccans*, *Carex aurea*, *Carex scopulorum* var. *bracteo*"
- 22 152 31 "*Arabidopsis thaliana*, *Homo sapiens*, *Mus musculus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Candida albicans*, *Danio rerio*, *Loligo opalescens*, *Medicago truncatula*, *Xenopus laevis*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Escherichia coli*, *Anopheles gambiae*, *Physarum polycephalum*"

- 23 153 27 "Mus musculus, Plasmodium falciparum 3D7, Rattus norvegicus, Aegilops tauschii, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Equus caballus, Schizosaccharomyces pombe"
- 24 154 27 "Homo sapiens, Mus musculus, Solanum tuberosum, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Anopheles gambiae, Arabidopsis thaliana"
- 25 155 36 "Plasmodium falciparum 3D7, Homo sapiens, Xenopus laevis, Mus musculus, Papio anubis, Caenorhabditis elegans, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Pan troglodytes, Xiphop" 10
- 26 156 33 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Euglena gracilis, Rickettsia prowazekii, Aedes aegypti, Danio rerio, Medicago truncatula, Drosophila melanogaster, Tayloria hornschuchii, Tayloria rudo"
- 27 157 32 "Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Bacillus anthracis str. Ames, Staphylococcus epidermidis ATCC 12228, Pinus koraiensis, Sorghum bicolor, Mus musculus, Staphylococcus epidermidis, Acholeplasma laidlawii, Danio rerio, Graphium antiphates, Rattus norvegicus, Dictyostelium discoideum, Monosiga brevicollis, Caenorhabditis elegans, unidentified entomopoxvirus, Vicia faba, Trypanosoma brucei, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Xenopus laevis, Bacillus cereus ATCC 14579, Drosophila melanogaster, Medicago truncatula, Human immunodeficiency virus 1, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Escherichia coli, Oryza sativa, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Zea mays, Listeria monocytogenes, Schistosoma mansoni, Staphylococcus aureus subsp. aureus Mu50" 20
- 28 158 36 "Sulfolobus tokodaii, Dictyostelium discoideum, Homo sapiens, Yaba-like disease virus, Mus musculus, Theileria parva, Lotus corniculatus var. japonicus, Danio rerio, Melanoplus sanguinipes entomopoxvirus, Oryza sativa (japonica cultivar-group), Rattus norvegicus" 30
- 29 159 31 "Drosophila melanogaster, Arabidopsis thaliana, Buchnera aphidicola str. Bp (Baizongia pistaciae), Homo sapiens, Lepilemur septentrionalis, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Rattus norvegicus, Dacrymyces chrysospermus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Xylella fastidiosa Temecula1, Lactococcus lactis subsp. lactis, Danio rerio, Ureaplasma urealyticum, Mycoplasma hyopneumoniae, Samanea saman, Anolis isolepis, Penicillium melanoconidium, Penicillium viridicatum, Penicillium verrucosum, Penicillium aurantiogriseum, Penicillium clavigerum"
- 30 160 34 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Archaeoglobus fulgidus DSM 4304, Dictyostelium discoideum, Danio rerio, Bartonella bacilliformis, Clostridium perfringens str. 13, Human immunodeficiency virus 1, Staphylococcus epidermidis ATCC 12228, Rickettsia conorii, Necator americanus, Chlamydia muridarum, Staphylococcus epidermidis, Medicago truncatula, Rattus norvegicus, Nostoc sp. PCC 7120" 40
- 31 161 35 "Homo sapiens, Arabidopsis thaliana, Candida albicans, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Helicobacter pylori J99, Bacillus anthracis str. Ames, Enterococcus mundtii, Human immunodeficiency virus 2, Dictyostelium discoideum, Caenorhabditis elegans, Drosophila mela" 50

- nogaster, *Methanosarcina mazei* Goe1, *Solenopsis aurea*, *Solenopsis amblychila*, *An techinus flavipes*, *Sus scrofa*, *Equus caballus*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Canis familiaris*, *Neurospora crassa*, *Medicago truncatula*, *Cordyceps nutans*, *Clostridium perfringens* str. 13"
- 32 162 31 "Homo sapiens, *Clostridium acetobutylicum*, *Pinus koraiensis*, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Macaca fascicularis*, *Rattus norvegicus*, *Pan troglodytes*, *Drosophila melanogaster*, *Shewanella oneidensis* MR-1, *Caenorhabditis elegans*, *Xenopus laevis*, *Mycoplasma penetrans*, *Clostridium perfringens* str. 13"
- 33 163 29 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Sulfolobus solfataricus*, *Mus musculus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Danio rerio*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Staphylococcus arlettae*, *Anopheles gambiae*" 10
- 34 164 40 "Mus musculus, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Danio rerio*, *Equus caballus*, *Schmidtea mediterranea*, *Arthropo-terus* sp. KA0-1997, *Nicotiana tabacum*, *Arabidopsis thaliana*, *Aphis gossypii*, *Pinus sylvestris*, *Cicer montbretii*, *Cicer yamashitae*, *Cicer retic*"
- 35 165 24 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Pan troglodytes*, *Drosophila melanogaster*, *Dictyostelium discoideum*, *Oryza sativa*, *Oryza sativa* (japonica cultivar-group), *Haplomitrium mnioides*, *Saccharomyces cerevisiae*, *Danio rerio*, *Rattus norvegicus*" 20
- 36 166 30 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Xenopus laevis*, *Plasmodium chabaudi*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Schizosaccharomyces japonicus*, *Pan troglodytes*, *Takifugu rubripes*, *Arabidopsis thaliana*, *Vibrio cholerae*, *Caenorhabditis elegans*, *Vibrio cholerae* O139, *Cyanidioschyzon merolae*"
- 37 167 35 "Equus caballus, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Medicago truncatula*, *Leptospira interrogans* serovar *lai* str. 56601, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Danio rerio*, *Oryctolagus cuniculus*, *Apis mellifera*, *Polypterus bichir*, *Drosophila erecta*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Rickettsia prowazekii*, *Pleurotus ostreatus*, *Cryptosporidium parvum*" 30
- 38 168 34 "Plasmodium falciparum 3D7, *Homo sapiens*, *Giardia intestinalis*, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar *Typhi* Ty2, *Salmonella enterica* subsp. *enterica* serovar *Typhi*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Clostridium acetobutylicum*, *Neisseria meningitidis* Z2491, *Nitrosomonas europaea* ATCC 19718, *Caenorhabditis elegans*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Prochlorococcus marinus* subsp. *marinus* str. C CMP1375, *Ciona intestinalis*, *Melanoplus sanguinipes* entomopoxvirus, *Feline immunodeficiency virus*" 40
- 39 169 28 "Dictyostelium discoideum, *Homo sapiens*, *Caenorhabditis briggsae*, *Listeria monocytogenes*, *Listeria innocua*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Mycoplasma gallisepticum* R, *Pan troglodytes*, *Caenorhabditis elegans*, *Escherichia coli* CFT073, *Lepidium myriocarpum*, *Lepidium armoracium*, *Lepidium africanum*, *Zea mays*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Ciona intestinalis*, *Danio rerio*, N 50

ostoc sp. PCC 7120"

40 170 26 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Shigella flexneri 2a str. 2457T, Shigella flexneri 2a str. 301, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Schizolobium parahybum, Neurospora crassa, Danio rerio"

41 171 28 "Clostridium tetani E88, Mus musculus, Drosophila melanogaster, Homo sapiens, Trypanosoma brucei, Danio rerio, Staphylococcus epidermidis ATCC 12228, Dictyostelium discoideum, Swinepox virus, Ochromonas danica, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Lotus corniculatus var. japonicus, Reclinomonas americana"

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42 172 31 "Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, Mus musculus, Pan troglodytes, Rattus norvegicus, Enterococcus faecalis V583, Tigriopus californicus, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Candida albicans, Candida dubliniensis, Enterobacteria phage RB69, Cyanophora paradoxa, Clostridium perfringens str. 13"

43 173 28 "Enterococcus faecalis V583, Dictyostelium discoideum, Homo sapiens, Mus musculus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Danio rerio, Acinetobacter sp. ADP1"

44 174 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, Hemiechinus auritus, Drosophila melanogaster, Mus musculus, Danio rerio, Methanobrevibacterium smithii, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Lactococcus lactis, Odontella sinensis, Plasmodium falciparum 3D7, Carollia perspicillata"

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45 175 28 "Homo sapiens, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oceanobacillus ihayensis HTE831, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Candidatus Blochmannia floridanus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50"

46 176 27 "Drosophila melanogaster, Saccharomyces cerevisiae, Haemophilus parahaemolyticus, Kluyveromyces lactis, Caenorhabditis elegans, Arabidopsis thaliana, Rana catesbeiana, Homo sapiens, Thermoanaerobacter tengcongensis, Mus musculus, Prochlorococcus marinus, Danio rerio, Medicago truncatula, Yarrowia lipolytica, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Plasmodium falciparum 3D7, Anthericum liliago, Haemophilus influenzae biotype aegyptius, Staphylococcus aureus bacteriophage phi 3A, Mycoplasma capricolum subsp. capricolum, Mycoplasma sp. 'bovine group 7', Mycoplasma sp. serogroup L, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Ciona intestinalis"

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47 177 31 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Medicago truncatula, Drosophila melanogaster, Sheeppox virus, Clostridium acetobutylicum, Danio rerio, Brassica napus var. napus, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Ideaea distinctaria, Helicobacter hepaticus ATCC 51449"

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48 178 28 "Homo sapiens, Prochlorococcus marinus, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Macaca fascicularis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mycoplasma gallisepticum R, Medicago truncatula, Caenorhabditis elegans, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Guillardia theta, Danio rerio, Sus scrofa, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Rattus norvegicus, Haemophilus influenzae Rd KW20, Clostridium perfringens str. 13"

49 179 39 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7,

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- Polypterus bichir, *Listeria innocua*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Drosophila melanogaster*, *Takifugu rubripes*, *Danio rerio*, Bacteriophage Rho11s, *Caenorhabditis elegans*, *Bacillus amyloliquefaciens* phage H2, *Clostridium perfringens* str. 13, *Pan troglodytes*, *Yersinia pseudotuberculosis*, *Drosophila simulans*, *Arabidopsis thaliana*, *Rickettsia conorii*, *Sulfolobus solfataricus*, Watermelon silver mottle virus, *Amsacta moorei* entomopoxvirus, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Melanoplus sanguinipes* entomopoxvirus, *Saccharomyces cerevisiae*, *Anopheles gambiae*, *Photobacterium leiognathi*"
- 50 180 27 "Homo sapiens, *Guillardia theta*, *Anabaena* sp. 90, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Planktothrix agardhii*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Mycoplasma* sp. 'bovine group 7', *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Dictyostelium discoideum*, *Ureaplasma urealyticum*, *Schizosaccharomyces pombe*, *Euhadra herklotsi*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola*" 10
- 51 181 29 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Arabidopsis thaliana*, *Centradenia inaequalateralis*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Populus deltoides*, *Chlamydomonas eugametos*, *Cavia porcellus*" 20
- 52 182 28 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Lactococcus lactis* subsp. cremoris, *Lactococcus lactis*, *Mus musculus*, *Danio rerio*, *Lactococcus lactis* subsp. lactis, Plum pox virus, *Caenorhabditis elegans*, *Schmidtea mediterranea*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Pan troglodytes*, *Sulfolobus solfataricus*, *Papio anubis*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Bos taurus*, *Buchnera aphidicola*, *Medicago truncatula*, *Staphylococcus xylosus*, *Arabidopsis thaliana*, *Silene zawadskii*"
- 53 183 28 "*Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Mus musculus*, *Saccharomyces cerevisiae*, *Homo sapiens*, *Caenorhabditis elegans*, Infectious salmon anemia virus, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Desulfovibrio fructosovorans*, *Vibrio vulnificus* CMCP6, *Drosophila melanogaster*, *Muntiacus muntjak*, *Plasmodium falciparum* 3D7, *Muntiacus reevesi*, *Caenorhabditis briggsae*, *Drosophila lummei*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Capra hircus*" 30
- 54 184 32 "*Rattus norvegicus*, *Homo sapiens*, *Phytophthora botryosa*, *Phytophthora citrophthora*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Clostridium baratii*, *Pyrococcus horikoshii*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Lemur catta*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Saccharomyces* sp. IFO 1802, *Saccharomyces* sp. CID1" 40
- 55 185 29 "Homo sapiens, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Tribolium castaneum*, *Phyllostomus hastatus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Clostridium perf*"
- 56 186 27 "Homo sapiens, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mus musculus*, *Borrelia burgdorferi* B31, *Vibrio vulnificus* CMCP6, *Sulfolobus solfataricus*, *Methanosarcina barkeri*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Borrelia burgdorferi*, *Oceanobacillus iheyensis* HTE831, *Danio rerio*, *Campylobacter jejuni*, *Ictalurid herpesvirus 1*, *Cochliobolus heterostrophus*, *Hordeum vulgare*" 50

- 57 187 31 "Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Arabidopsis thaliana, Mus musculus, Sus scrofa, Bacteroides fragilis, Candidatus Blochmannia floridanus, Amsacta moorei and entomopoxvirus, Caenorhabditis elegans, Lot"
- 58 188 35 "Arabidopsis thaliana, Medicago truncatula, Homo sapiens, Mus musculus, Danio rerio, Dictyostelium discoideum, Caenorhabditis elegans, Plasmodium falciparum 3D7, Rickettsia prowazekii, Lotus corniculatus var. japonicus, Buchnera aphidicola, Drosophila melanogaster, Fundulus heteroclitus, Buchnera aphidicola str. Sg (Schizaphis graminum), Canis familiaris, Adoxophyes honmai nucleopolyhedrovirus, Listeria innocua, Oryza sativa (japonica cultivar-group), Spinacia oleracea, Physarum polycephalum, Plasmodium berghei, Rattus norvegicus" 10
- 59 189 27 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Neurospora crassa, Danio rerio, Vibrio vulnificus CMCP6, Habronattus sp. YUCUN, Clostridium tetani E88, Sulfolobus solfataricus, Caenorhabditis elegans, Methanosarcina barkeri, Caenorhabditis briggsae, Thermoplasma volcanium, Sulfolobus tokodaii, Paramecium sp."
- 60 190 28 "Homo sapiens, Danio rerio, Ciona intestinalis, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Chaetosphaeridium globosum, Lactococcus lactis subsp. lactis, Caenorhabditis briggsae, Euraphia eastropacensis, Campylobacter jejuni subsp. jejuni NCTC 11168, Thalictum tuberosum, Chlorohydra viridissima, Mycoplasma hyopneumoniae, Ictalurid herpesvirus 1, Hordeum vulgare" 20
- 61 191 39 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Felis catus, Danio rerio, Schizosaccharomyces pombe, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rickettsia conorii, Rickettsia prowazekii, Plasmodium falciparum 3D7, Aeropyrum pernix, Plasmodium falciparum, Pan troglodytes, Strongylocentrotus purpuratus, Candidatus Carsonella ruddii, Medicago truncatula, Cucumis melo, Alzatea verticillata, Bacillus anthracis str. A2012, Hypocrea jecorina, Lycopersicon esculentum, Steinernema anomali, Mycoplasma pulmonis, Maesa tenera, Dictyostelium discoideum, Bacillus anthracis" 30
- 62 192 28 "Arabidopsis thaliana, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Fusobacterium nucleatum subsp. fusiforme, Mus musculus, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Bacillus subtilis, Desulfurococcus mobilis, Bacillus subtilis subsp. subtilis str. 168, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Papio anubis, Goatpox virus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Danio rerio, Cryptosporidium parvum, Ciona intestinalis, Macaca fascicularis"
- 63 193 27 "Homo sapiens, Caenorhabditis briggsae, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Mus musculus, Danio rerio, Chlamydophila caviae GPIC, Chlamydia muridarum, Drosophila melanogaster, Acacia aneura var. intermedia, Acacia ayersiana, Streptococcus agalactiae 2603V/R, Goatpox virus, Sheepox virus, Citrus x paradisi, Loofah witches'-broom phytoplasma, Streptococcus agalactiae NEM316, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Lumpy skin disease virus, Triticum aestivum" 40
- 64 194 29 "Homo sapiens, Mus musculus, Papio anubis, Caenorhabditis elegans, Ovis aries, Lycopersicon esculentum, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Rickettsia rickettsii, Asplundia sp. MWC-2003, Cyclanthus bipartitus, Plasmodium falciparum, Rattus norve" 50

- gicus, *Equus caballus*, *Boehmeria nivea*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Calicotyle affinis*"
- 65 195 47 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Pa steurella multocida*, *Danio rerio*, *Dictyostelium discoideum*, *Chlamydomonas reinha rdtii*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Chlamydia muridarum*, *Atelerix albiventris*, *Borrelia burgdorferi* B31, *Caenorhabditis elegans*, *Schmidtea mediterranea*, *Bos taurus*, *Carabhydrus ni ger*, *Oryza sativa*, African swine fever virus, *Prunus dulcis*, *Arabidopsis thalian a*, *Borrelia burgdorferi*, *Schistosoma mansoni*, *Fragaria x ananassa*, *Cryptosporidi um parvum*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Gall us gallus*, *Ixodes persulcatus*, *Sus scrofa*, *Anopheles gambiae*, *Bacillus cereus* AT CC 14579, *Discoporella* sp. 3A-MMHD-2002, *Rattus norvegicus*, *Bacillus anthracis* s tr. Ames, *Candidatus Carsonella ruddii*, *Pan troglodytes*" 10
- 66 196 35 "Homo sapiens, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Atelerix albiventris*, *Mus musculus*, *Drosophila melanog aster*, *Pan troglodytes*, *Euglena gracilis*, *Plasmodium falciparum*, *Cryptosporidium parvum*, *Medicago truncatula*, *Clostridium acetobutylicum*, *Argopecten irradians*, *Danio rerio*, *Caenorhabditis elegans*, *Leptospira interrogans* serovar lai str. 566 01, *Bos taurus*"
- 67 197 33 "Homo sapiens, *Mus musculus*, *Bacillus cereus* ATCC 14579, 20 *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Tapeinochilus* sp. Kress 90-2984, *Sarcophrynum brachystachys*, *Costus pulverulentus*, *Canna flaccida*, *Zingibe r wrayii*, *Zingiber sulphureum*, *Zingiber* sp"
- 68 198 32 "Homo sapiens, *Mus musculus*, *Physarum polycephalum*, *Meth anocaldococcus jannaschii*, *Trypanosoma cruzi*, *Drosophila melanogaster*, *Plasmodiu m falciparum* 3D7, *Sulfolobus solfataricus*, *Mycoplasma capricolum*, *Oryza sativa* (japonica cultivar-group), *Aleochara squalithorax*, *Lotus corniculatus* var. japoni cus, *Psychotria caerulea*, *Palicourea hospitalis*, *Mycoplasma penetrans*, *Danio rer io*, *Caenorhabditis elegans*, *Clostridium perfringens* str. 13"
- 69 199 28 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Drosophila mel 30 anogaster*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Tephrosia heckmannia na*, *Bos taurus*, *Courtoisina assimilis*, *Capsella rubella*, *Oryza sativa* (indica cu ltivar-group), *Oryza sativa* (japonica cultivar-group), *Medicago sativa*, *Medicago truncatula*, *Sinningia curtiflora*, *Sinningia sellowii*, *Sinningia tubiflora*, *Sinn ingia warmingii*, *Sinningia brasiliensis*, *Sinningia amambayensis*, *Sinningia aggre gata*, *Cyperus involucratus*, *Lepidium africanum*, *Rattus norvegicus*, *Sirex noctili o*, *Pan troglodytes*, *Xenopus laevis*, *Saccharomyces cerevisiae*, *Escherichia coli* C FT073, *Caenorhabditis elegans*, *Schmidtea mediterranea*, *Oryza sativa*"
- 70 200 34 "Homo sapiens, *Plasmodium falciparum* 3D7, *Arabidopsis th 40 aliana*, *Schizosaccharomyces pombe*, *Danio rerio*, *Pan troglodytes*, *Borrelia burgdo rferi* B31, *Dictyostelium discoideum*, *Mus musculus*, *Oryza sativa* (japonica cultiv ar-group), *Rattus norvegicus*, *Caenorhabditis elegans*, *Vesicular stomatitis India na virus*, *Triticum aestivum* x *Triticum timopheevi*, *Asarum canadense*, *Triticum ti mopheevii*, *Aegilops speltoides* subsp. *speltoides*, *Rattus* sp., *Strongylocentrotus intermedius*, *Drosophila melanogaster*, *Gonioctena olivacea*, *Elaeis guineensis*, *S us scrofa*"
- 71 201 28 "Danio rerio, *Sorghum bicolor*, *Acidodontium ramicola*, Ho 50 mo sapiens, *Oryza sativa* (japonica cultivar-group), Human immunodeficiency virus 1, *Enterococcus faecalis* V583, *Bacteroides thetaiotaomicron* VPI-5482, *Dictyoste lium discoideum*, *Zea mays*, *Yersinia pestis* KIM, *Zea mays* subsp. *mays*, *Cyprinus c*

- arpio, *Yersinia pestis* C092, *Mus musculus*"
- 72 202 28 "Homo sapiens, *Coxiella burnetii* RSA 493, *Leptospira interrogans* serovar lai str. 56601, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Mus musculus*, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Streptococcus mutans*, *Plasmodium falciparum*, *Clostridium septicum*, *Legionella pneumophila*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Pan troglodytes*, *Pisum sativum*, *Streptococcus pneumoniae* R6, *Schistosoma japonicum*, *Danio rerio*, *Eimeria maxima*, *Gallus gallus*"
- 73 203 30 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Danio rerio*, *Ateleryx albiventris*, *Equus caballus*, *Boehmeria nivea*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Plasmodium falciparum*, *Lycopersicon esculentum*, *Trypanosoma brucei*, *Eimeria maxima*" 10
- 74 204 31 "Forficula auricularia, Homo sapiens, Danio rerio, Drosophila melanogaster, Mus musculus, Cowpox virus, Vaccinia virus, Caenorhabditis elegans, Staphylococcus aureus, Camelpox virus CMS, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Monkeypox virus, Variola minor virus, Orthopoxvirus, Variola virus, Vaccinia virus (strain Tian Tan), Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Variola major virus, Camelpox virus M-96" 20
- 75 205 27 "Acrocera sp. SLW-2002a, Mus musculus, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Bacillus cereus ATCC 14579, Medicago truncatula, Plasmodium falciparum 3D7, Danio rerio, Listeria monocytogenes, Bacteriophage A118, Latimeria chalumnae"
- 76 206 31 "Rickettsia conorii, Homo sapiens, Rickettsia sp. Bar29, Rickettsia massiliae, Arabidopsis thaliana, Mus musculus, Sus scrofa domestica, Sminthopsis macroura, Rattus norvegicus, Methanosarcina mazei Goe1, Clostridium tetani E88, Rickettsia prowazekii, Borrelia burgdorferi B31, Dictyostelium discoideum, Polypterus bichir, Caenorhabditis elegans, Plasmodium falciparum 3D7, Staphylococcus epidermidis, Oryza sativa, Borrelia burgdorferi, Caenorhabditis briggsae, Mycoplasma hyopneumoniae, Oryza sativa (indica cultivar-group), Danio rerio, Nostoc sp. PCC 7120" 30
- 77 207 39 "Caenorhabditis elegans, Plasmodium falciparum 3D7, Chlamydia trachomatis, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Methanocaldococcus jannaschii, Medicago truncatula, Aquifex aeolicus VF5, Drosophila melanogaster, Takifugu rubripes, Lycopersicon esculentum, Buchnera aphidicola str. Sg (Schizaphis graminum), Candidatus Blochmannia floridanus, Allium insubricum, Pan troglodytes, Halocynthia roretzi, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Macaca mulatta, Clostridium tetani E88, Arabidopsis thaliana, Chloraea sp. Chase O-551, Stichococcus bacillaris, Guillardia theta, Cyanothecce sp. PCC 8801, Helicoverpa zea, Papio anubis, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Listeria monocytogenes, Macropus eugenii, Gavilea lutea, Chloraea magellanica" 40
- 78 208 35 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Macaca fascicularis, Equus caballus, Danio rerio, Pan troglodytes, Dictyostelium discoideum, Caenorhabditis elegans, Felis catus, Oryza sativa, Mycoplasma penetrans, Marchantia polymorpha, Methanocaldococcus jannaschii, Plasmodium falciparum" 50

m, *Xenopus laevis*, Peanut witches'-broom phytoplasma, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Papio anubis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Clostridium acetobutylicum*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Gossypium arboreum*, *Lycopersicon esculentum*, *Aedes aegypti*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Buchnera aphidicola*, *Allogromiina* sp. 1141"

79 209 27 "Mus musculus, Homo sapiens, Danio rerio, *Drosophila pseudoobscura*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Botryotinia fuckeliana*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Cryptosporidium parvum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Caenorhabditis briggsae*, *Chlamydia trachomatis*, *Oryza sativa*, *Trichomonas vaginalis*, *Rattus norvegicus*, *Melanoplus sanguinipes* entomopoxvirus, *Anopheles gambiae*"

80 210 31 "Plasmodium falciparum 3D7, *Mus musculus*, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Acroceridae* aff. *Terphis* sp. SLW-2002, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Bacillus anthracis* str. Ames, *Sus scrofa*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Neurospora crassa*, *Dictyostelium discoideum*, *Medicago truncatula*, *Lycopersicon esculentum*, *Terrisswalkerius miseriae*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Gallus gallus*, *Lactobacillus delbrueckii* subsp. *lactis*, *Caenorhabditis briggsae*, *Spiroplasma citri*, *Methanocaldococcus jannaschii*, *Rattus norvegicus*, *Macaca fascicularis*"

81 211 32 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Clostridium acetobutylicum*, *Candida albicans*, *Caenorhabditis elegans*, *Lycopersicon esculentum*, *Guillardia theta*, *Arabidopsis thaliana*, *Leptospira interrogans* serovar *lai* str. 56601, *Pan troglodytes*, *Drosophila melanogaster*, *Sulfolobus solfataricus*, *Mycoplasma genitalium*, *Oryza sativa* (*japonica* cultivar-group), *Amsacta moorei* entomopoxvirus, *Mus musculus domesticus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Methanocaldococcus jannaschii*, *Acanthamoeba castellanii*, *Clostridium perfringens* str. 13"

82 212 28 "*Nicotiana tabacum*, *Homo sapiens*, *Bos taurus*, *Enterococcus faecalis* V583, *Neisseria meningitidis* Z2491, *Plasmodium falciparum* 3D7, *Neisseria meningitidis* MC58, *Mus musculus*, *Rattus norvegicus*, *Saccharomyces cerevisiae*, *Bacillus sphaericus*, *Bacillus cereus*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Medicago truncatula*"

83 213 25 "*Arabidopsis thaliana*, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Fragaria x ananassa*, *Plasmodium falciparum*, *Clostridium acetobutylicum*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Haemophilus ducreyi* 35000HP, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*"

84 214 32 "*Streptococcus mutans* UA159, *Nicotiana tabacum*, *Homo sapiens*, *Escherichia coli* O157:H7 EDL933, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Escherichia coli* O157:H7, *Mycoplasma hominis*, *Streptococcus mutans*, *Arabidopsis thaliana*, *Helicobacter hepaticus* ATCC 51449, *Dictyostelium discoideum*, *Medicago truncatula*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Oryctolagus cuniculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Plasmodium berghei*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Sulfolobus tokodaii*, *Human T-lymphotropic virus 1*, *Rattus norvegicus*, *Oryza sativa*, *Botryotinia fuckeliana*"

85 215 45 "*Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Pla*

- smodium falciparum 3D7, Globodera rostochiensis, Wigglesworthia glossinidia endo symbiont of Glossina brevipalpis, Prevotel"
- 86 216 33 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Clostridium botulinum, Drosophila melanogaster, Clostridium difficile, Arabidopsis thaliana, Danio rerio, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group)"
- 87 217 24 "Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Homo sapiens, Rickettsia prowazekii, Papilio glaucus, Arabidopsis thaliana, Salmonella typhimurium LT2, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Salmonella enterica subsp. enterica serovar Typhi Ty2, Plasmodium falciparum 3D7, Pyrococcus furiosus DSM 3638, Salmonella typhimurium, Bacillus subtilis, Ascovirus DpAV4, Bacillus subtilis subsp. subtilis str. 168, Salmonella enterica subsp. enterica serovar Typhi" 10
- 88 218 35 "Drosophila melanogaster, Dictyostelium discoideum, Homo sapiens, Mus musculus, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Caenorhabditis elegans, Pan troglodytes, Papio anubis, Pyrobaculum aerophilum str. IM2, Lycopersicon esculentum, Listeria innocua, Plasmodium knowlesi, Herpetomonas mariadeanei, Danio rerio, Rattus norvegicus, Aquifex aeolicus V F5, Ambystoma tigrinum stebbinsi, Schizosaccharomyces octosporus, Plasmodium falciparum 3D7, Tagetes erecta, Sphyracephala beccarii, Physcomitrella patens, Xenopus laevis, Prochlorococcus marinus, Takifugu rubripes, Neisseria gonorrhoeae, Bartonella grahamii, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Canis familiaris, Limnella quadrata, Mus sp." 20
- 89 219 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Gnaptodon pumilo, Sycoscapter sp. 410, Sycoscapter sp. 411, Dennyus collinsi, Dennyus thompsoni, Dennyus somadikartai, Dennyus distinctus distinctus, Dennyus distinctus timjonesi, Buchnera aphidicola str. Bp (Baizongia pistaciae), Sulfolobus solfataricus, Dennyus adamsae, Caenorhabditis elegans, Pan troglodytes, Xylella fastidiosa Temecula1, Mayetiola destructor, Plasmodium berghei, Danio rerio, Tetrahymena thermophila" 30
- 90 220 28 "Plasmodium falciparum 3D7, Acinetobacter calcoaceticus, Pan troglodytes, Mus musculus, Homo sapiens, Arabidopsis thaliana, Rattus norvegicus, Medicago truncatula, Drosophila melanogaster, Papio anubis, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group), Saccharomyces dairenensis, Arisaema sp. Barabe 150, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Plasmodium berghei, Thermoplasma acidophilum, Candidatus Blochmannia floridanus, Glycine max, Lactobacillus plantarum WCFS1, Herpetomonas megaseliae, Melanoplus sanguinipes entomopoxvirus, Plasmodium reichenowi, Saccharomyces douglasii, Plasmodium falciparum"
- 91 221 25 "Mus musculus, Homo sapiens, Danio rerio, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Gallus gallus, Ureaplasma urealyticum, Bacillus anthracis str. Ames, Medicago truncatula, Drosophila melanogaster, Gossypium hirsutum, Vibrio parahaemolyticus, Pan troglodytes, Lactobacillus plantarum WCFS1" 40
- 92 222 31 "Homo sapiens, Pseudoalteromonas haloplanktis, Oryza sativa (japonica cultivar-group), Mus musculus, Prochlorococcus marinus, Methanocaldococcus jannaschii, Danio rerio, Bacillus halodurans, Drosophila melanogaster, Arabidopsis thaliana, Zea mays, Streptococcus pyogenes M1 GAS, Drosophila elegans, Drosophila lutescens, Drosophila tsacasi, Drosophila serrata, Drosophila auraria, Drosophila malerkotliana" 50

- 93 223 31 "Mus musculus, Homo sapiens, Drosophila melanogaster, Leptospira interrogans serovar lai str. 56601, Bacteroides thetaiotaomicron VPI-5482, Lotus corniculatus var. japonicus, Danio rerio, Oryza sativa (japonica cultivar-group), Pan troglodytes, Papio anubis, Arabidopsis thaliana, Gossypioideis kirikii, Saccharomyces cerevisiae, Microtus arvalis, synthetic construct, Oryzias latipes"
- 94 224 31 "Rattus norvegicus, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Fusarium oxysporum f. sp. lycopersici, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Streptococcus pneumoniae, Trypanosoma brucei, Bacillus cereus ATCC 14579, Drosophila melanogaster, Papio anubis, Methanothermobacter thermoautotrophicus str. Delta H, Downingia bella, Arabidopsis thaliana, Plasmodium vivax, Enterococcus faecalis, Clostridium difficile, Pan troglodytes, Populus kitakamiensis, Haemophilus ducreyi 35000HP" 10
- 95 225 36 "Plasmodium malariae, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Sulfolobus solfataricus, Allogromioid sp. A26, Oryza sativa, Drosophila melanogaster, Plasmodium yoelii, Chlamydomonas reinhardtii, Schizosaccharomyces pombe, Plasmodium falciparum 3D7, Rattus norvegicus, Plasmodium ovale, Macaca fascicularis, Bacillus cereus ATCC 14579, Mycoplasma mycoides subsp. mycoides SC, Welwitschia mirabilis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Plasmodium falciparum, Clostridium acetobutylicum, Danio rerio, Caenorhabditis elegans, Prochlorococcus marinus, Capra hircus, Henicomyia hubbardi, Lotus corniculatus var. japonicus, Saccharomyces sp. IFO 1802, Saccharomyces sp. CID1, Lactobacillus plantarum WCFS1, Melanoplus sanguinipes entomopoxvirus, Burchardia rosea, Plasmodium elongatum, Plasmodium reichenowi, Cryphonectria parasitica" 20
- 96 226 39 "Dictyostelium discoideum, Homo sapiens, Mus musculus, Arabidopsis thaliana, Danio rerio, Medicago truncatula, Trypanosoma cruzi, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Boophilus microplus, Acinetobacter sp. BD413, Schizosaccharomyces pombe, Nostoc sp. PCC 7120, Drosophila melanogaster, Borrelia burgdorferi B31, Pichia ciferrii, Macaca mulatta, Helicobacter pylori, Gymnocarena mexicana, Borrelia burgdorferi, Porella platyphylla, Helicoverpa armigera nuclear polyhedrosis virus, Papio anubis, Helicoverpa armigera single nucleocapsid polyhedrovirus, Pasteurella multocida, Helicoverpa armigera nucleopolyhedrovirus G4, Spinacia oleracea, Spirula spirula, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Sweet potato feathery mottle virus, Pan troglodytes, Helicobacter pylori 26695, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Gallus gallus" 30
- 97 227 39 "Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis elegans, Erwinia amylovora, Felis catus, Medicago truncatula, Pan troglodytes, Sus scrofa, Hydroglyphus balkei, Clostridium difficile, Oceanobacillus iheyensis HTE831, Nitrosomonas europaea ATCC 19718, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Rattus norvegicus, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Clostridium tetani E88, Macaca mulatta, Pseudomonas aeruginosa" 40
- 98 228 28 "Homo sapiens, Mus musculus, Neurospora crassa, Gallus gallus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Guillardia theta, Plasmodium falciparum, Danio rerio, Lotus corniculatus var. japonicus, Rattus norvegicus"
- 99 229 24 "Dictyostelium discoideum, Homo sapiens, Enterococcus faecalis V583, Enterococcus faecalis, Caenorhabditis elegans, Cryptosporidium parv" 50

- um, *Mus musculus*, *Xenopus laevis*, *Oryza sativa* (japonica cultivar-group), *Umbonia crassicornis*, *Bovine rotavirus*"
- 100 230 27 "Homo sapiens, *Caenorhabditis elegans*, *Trypanosoma cruzi*, *Bacillus anthracis* str. Ames, *Coxiella burnetii* RSA 493, *Pan troglodytes*, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Schizosaccharomyces pombe*, *Methanosarcina thermophila*, *Oryza sativa* (japonica cultivar-group), *Atelerix albiventris*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Medicago truncatula*, *Phycomyces blakesleeenanus*, *Hesperagrion heterodoxum*, *Anopheles gambiae*, *Elaeis guineensis*"
- 101 231 35 "Homo sapiens, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Oryza sativa*, *Medicago truncatula*, *Clostridium tetani* E88, *Danio rerio*, *Pan troglodytes*, *Amorphophallus hirsutus*, *Amorphophallus coetaneus*, *Cotesia congregata*, *Arabidopsis thaliana*, *Orpinomyces* sp. P C-2, *Rattus norvegicus*, *Theileria annulata*, *Plasmodium yoelii*, *Neurotoma fasciata*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Papio anubis*, *Zea mays*, *Caenorhabditis elegans*, *Macaca mulatta*, *Methanosarcina acetivorans* C2A, *Kluyveromyces lactis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Mesorhizobium loti*" 10
- 102 232 46 "Haemophilus influenzae, *Haemophilus influenzae* Rd KW20, *Zea mays*, *Caenorhabditis elegans*, *Acinetobacter lwoffii*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Arabidopsis thaliana*, *Streptococcus mutans* UA159, *Escherichia coli*, *Homo sapiens*, *Mus musculus*, *Legionella* sp. A, *Macaca mulatta*, *Papio anubis*, *Legionella* sp. L, *Amoeba proteus* symbiotic bacterium, *Cyanophora paradoxa*, *Xenopus laevis*, *Bacillus anthracis* str. Ames, *Rattus norvegicus*" 20
- 103 233 29 "Homo sapiens, *Anisocarpus scabridus*, *Carlquistia muirii*, *Osmadenia tenella*, *Harmonia nutans*, *Deinandra lobbii*, *Wilkesia gymnoxiphium*, *Dubautia plantaginea*, *Dubautia laxa*, *Dubautia latifolia*, *Dubautia laevigata*, *Argyroxiphium sandwicense*, *Argyroxiphium caliginis*, *Dubautia sherffiana*, *Dubautia rillardiodes*, *Tetraodon nigroviridis*, *Halocynthia roretzi*, *Clostridium perfringens* str. 13, *Gallus gallus*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Drosophila melanogaster*, *Kerala wilt disease phytoplasma*, *Plasmodium falciparum* 3D7, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Danio rerio*, *Medicago truncatula*" 30
- 104 234 33 "Yersinia enterocolitica (type O:8), *Yersinia enterocolitica*, *Homo sapiens*, *Erwinia amylovora*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Guillardia theta*, *Mus musculus*, *Lymantria dispar*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Lactobacillus plantarum* WCFS1, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Plasmodium falciparum*" 40
- 105 235 39 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Diadromus pulchellus* reovirus, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Oceanobacillus ihayensis* HTE831, *Schizosaccharomyces pombe*, *Methanocaldococcus jannaschii*, *Bacillus cereus* ATCC 14579, *Medicago truncatula*, *Drosophila melanogaster*, *Escherichia coli* CFT073, *Solanum demissum*, *Escherichia coli*, *Plasmodium falciparum*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Glomus versiforme*, *Danio rerio*, *Lactococcus lactis*, *Clostridium perfringens* str. 13" 40
- 106 236 37 "Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Xenopus laevis*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, 50

- Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Chrysomya megacephala*, *Danio rerio*, *Dictyostelium discoideum*, *Zea mays*, *Saccharomyces cerevisiae*, *Oryza sativa*, *Staphylococcus epidermidis*, *Cucumis sativus*, *Arabidopsis thaliana*, *Trypanosoma brucei*, *Williopsis saturnus* var. *mrakii*, *Plasmodium vivax*, *Gallus gallus*, *Hyposotomus plecostomus*, *Percus stultus*, *Plasmodium falciparum*, *Saccharomyces douglasii*, *Flaveria pringlei*, *Trypanosoma equiperdum*, *Trypanosoma brucei brucei*, *Medicago truncatula*, *Melipona bicolor*, *Phyllomorpha laciniata*, *Serrasalmus spilopleura*, *Mandarina polita*, *Mandarina aureola*, *Acanthamoeba lenticulata*, *Schizophyllum commune*, *Caenorhabditis elegans*, *Brassica napus* var. *napus*, *Clarkia xantiana*, *Emericella nidulans*, *Monocotonus pseudoplatani*" 10
- 107 237 23 "Mus musculus, Homo sapiens, Drosophila melanogaster, Ovis aries, Anopheles gambiae"
- 108 238 34 "Mus musculus, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Homo sapiens, Glycine max, Pleurotus sapidus, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Pleurotus eryngii, Caenorhabditis elegans, Enterococcus faecalis V583, Hyposoter didymator virus, Streptococcus agalactiae 2603V/R, Lepismium cruciforme, Hylocereus undatus, Guillardia theta, Plasmodium falciparum, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Euglena longa, Listeria innocua, Lactobacillus fermentum, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Coxiella burnetii RSA 493, Drosophila melanogaster, Schmidtea mediterranea, Pyrocoelia rufo, Bos taurus, Mycoplasma virus P1, Pasteurella multocida, Campylobacter jejuni subsp. jejuni NCTC 11168, Brassica napus, Candidatus Blochmannia floridanus, Hololobus australiensis" 20
- 109 239 23 "Plasmodium yoelii yoelii, Plasmodium vivax, Homo sapiens, Arabidopsis thaliana, Takifugu rubripes, Gallus gallus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Candida albicans, Streptococcus pneumoniae, Mus musculus"
- 110 240 29 "Homo sapiens, Liliun catesbaei, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Plasmodium falciparum 3D7, Mus musculus, Listeria innocua, Arabidopsis thaliana, Sphacelaria plumigera, Pan troglodytes, Candida albicans, Caenorhabditis elegans, Picea abies, Oryza sativa, Mycoplasma penetrans, Mantis religiosa" 30
- 111 241 24 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Drosophila melanogaster, Dictyostelium discoideum, Caenorhabditis elegans, Adenoviral vector Ad-SAR1-x/ASX, Saccharomyces cerevisiae, Bombyx mori, Danio rerio, Candida albicans"
- 112 242 32 "Oryza sativa (japonica cultivar-group), Homo sapiens, Caenorhabditis elegans, Phytophthora infestans, Mus musculus, Danio rerio, Campylobacter jejuni, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Plasmodium falciparum, Yaba-like disease virus, Arabidopsis thaliana, Methanocaldococcus jannaschii, Glycine max" 40
- 113 243 32 "Mus musculus, Campylobacter jejuni, Homo sapiens, Mycoplasma gallisepticum R, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Listeria innocua, Drosophila prosaltans, Arabidopsis thaliana, Enterococcus hirae, Thoracochromis brauschi, Copadichromis virginalis, Diplotaxodon limnothrissa, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium tetani E88, Xenopus laevis, Sulfurospirillum barnesii, Pseudocrenilabrus multicolor, Rickettsia prowazekii, Danio rerio, Sulfolobus tokodaii, Caenorhabditis elegans, Enterobacteria phage RB49" 50

- 114 244 32 "Plasmodium falciparum 3D7, Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Lycopersicon esculentum, Clostridium perfringens, Schizosaccharomyces pombe, Oryza glaberrima, Clostridium perfringens str. 13, Nostoc sp. PCC 7120, Danio rerio, "
- 115 245 28 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Arabidopsis thaliana, Schizosaccharomyces pombe, Papio anubis, Plasmodium falciparum 3D7, Danio rerio, Ataenogera abdominalis, Medicago truncatula, Mycoplasma penetrans, Hydra vulgaris"
- 116 246 33 "Danio rerio, Entamoeba histolytica, Bacteroides thetaioetaomicron VPI-5482, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Dictyostelium discoideum, Drosophila erecta, Arabidopsis thaliana, Bacillus anthracis str. Ames, Staphylococcus epidermidis ATC" 10
- 117 247 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Drosophila melanogaster, Aedes aegypti, Bacillus anthracis str. Ames, Sus scrofa, Mus musculus, Equus caballus, Staphylococcus aureus subsp. aureus MW2, Mucor circinelloides, Ciona intestinalis, Pan troglodytes, Mytilus edulis, Danio rerio"
- 118 248 27 "Drosophila melanogaster, Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mus musculus, Staphylococcus aureus subsp. aureus Mu50, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Staphylococcus epidermidis ATCC 12228, Pan troglodytes, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis, Arabidopsis thaliana, Trypanosoma brucei, Lotus corniculatus var. japonicus, Vibrio parahaemolyticus, Fowlpox virus, Pichia anomala, Bacillus subtilis subsp. subtilis str. 168, Dictyostelium discoideum" 20
- 119 249 27 "Homo sapiens, Pan troglodytes, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Human immunodeficiency virus 1, Bacteroides thetaioetaomicron VPI-5482, Drosophila melanogaster, Clostridium tetani E88, Arabidopsis thaliana, Medicago truncatula, Bacteroides fragilis, Caenorhabditis elegans, Xenopus laevis" 30
- 120 250 25 "Rattus norvegicus, Homo sapiens, Oryza sativa (japonica cultivar-group), Aegilops tauschii, Triticum aestivum, Arabidopsis thaliana, Lactobacillus plantarum WCFS1, Nostoc sp. PCC 7120"
- 121 251 27 "Branchiostoma floridae, Homo sapiens, Mus musculus, Arabidopsis thaliana, Equus caballus, Helicobacter hepaticus ATCC 51449"
- 122 252 36 "Homo sapiens, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Buchnera aphidicola str. Sg (Schizaphis graminum), Danio rerio, Mus musculus, Halocynthia roretzi, Monosiga brevicollis, Marchantia polymorpha, Mycoplasma capricolum, Guillardia"
- 123 253 29 "Listeria monocytogenes, Listeria innocua, Danio rerio, Drosophila melanogaster, Mus musculus, Takifugu rubripes, Homo sapiens, Oryctolagus cuniculus, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Rattus norvegicus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe" 40
- 124 254 28 "Drosophila melanogaster, Mus musculus, Homo sapiens, Trypanosoma brucei, Buchnera aphidicola, Oryza sativa (japonica cultivar-group), Danio rerio, Trypanosoma brucei brucei, Caenorhabditis elegans, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Sulfolobus solfataricus, Phoenicurus phoenicurus, Saccharomyces cerevisiae, Staphylococcus epidermidis"
- 125 255 23 "Homo sapiens, Caenorhabditis elegans, Candidatus Blochm 50

- annia floridanus, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Labia minor"
- 126 256 27 "Homo sapiens, Mus musculus, Arceuthobium americanum, Mirabilis jalapa, Pan troglodytes, Rhizophydium sp. 136, Euglena gracilis, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Danio rerio, Rickettsia prowazekii, Drosophila virilis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Medicago truncatula, Schizosaccharomyces pombe"
- 127 257 27 "Danio rerio, Drosophila melanogaster, Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)" 10
- 128 258 28 "Mus musculus, Drosophila melanogaster, Homo sapiens, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Oryza sativa (japonica cultivar-group), Danio rerio, Mycoplasma pulmonis, Plasmodium falciparum 3D7, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Dictyostelium discoideum, Methanosarcina mazei Goe1, Lycopersicon esculentum, Clostridium acetobutylicum, Prochlorococcus marinus, Xenopus laevis, TT virus, Vibrio cholerae, Saccharomyces cerevisiae, Onchocerca volvulus, Botryotinia fuckeliana"
- 129 259 38 "Homo sapiens, Arabidopsis thaliana, Dictyostelium discoideum, Danio rerio, Schmidtea mediterranea, Mus musculus, Plasmodium falciparum 3D7, Spodoptera frugiperda, Xenopus laevis, Drosophila melanogaster, Populus balsamifera subsp. trichocarpa, Branchiostoma floridae, Oryza sativa (japonica cultivar-group), Malus x domestica, Schizosaccharomyces pombe, Amanita muscaria, Anopheles gambiae, Cyprinus carpio, Medicago truncatula, Gallus gallus" 20
- 130 260 43 "Mus musculus, Dictyostelium discoideum, Homo sapiens, Acetabularia acetabulum, Danio rerio, Drosophila melanogaster, Oryza sativa, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Polypterus bichir, Papio anubis, Loligo gahi, Eustenogaster fraterna, Forpus passerinus, Lotus corniculatus var. japonicus, Mimus polyglottos, Rattus norvegicus, Pan troglodytes, Ictalurus punctatus" 30
- 131 261 27 "Leptospira interrogans serovar lai str. 56601, Homo sapiens, Caenorhabditis elegans, Thevetia peruviana, Drosophila melanogaster, Gaylussacia brasiliensis, Gaylussacia pallida, Gaylussacia virgata, Gaylussacia incana, Gaylussacia mosieri, Gaylussacia dumosa"
- 132 262 57 "Oceanobacillus iheyensis HTE831, Vibrio vulnificus CMCP 6, Listeria monocytogenes, Mus musculus, Thermoanaerobacter tengcongensis, Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Vibrio parahaemolyticus, Clostridium perfringens str. 13, Nostoc sp. PCC 7120, Bacillus halodurans, Medicago truncatula, Plasmodium falciparum 3D7, Xylella fastidiosa Temecula1, Arabidopsis thaliana, Acinetobacter sp. ADP1, Rickettsia prowazekii, Marchantia polymorpha, Lotus corniculatus var. japonicus, Danio rerio, Chara vulgaris, Rattus norvegicus" 40
- 133 263 35 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Mus musculus, Pelecinus polyturator, Drosophila melanogaster, Chlamydomonas reinhardtii, Opus kraussi, Mycoplasma pulmonis, Lycopersicon esculentum, Tribolium castaneum, Schizosaccharomyces"
- 134 264 31 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mycoplasma pulmonis, Caenorhabditis elegans, Anthoceros formosae, Medicago truncatula," 50

Cyclograpsus intermedius, Rattus norvegicus, Bacillus anthracis str. Ames, Alocasia odora, Dictyostelium discoideum, Asellus aquaticus, Lacerta dugesii, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Sorghum bicolor, Pristionchus carinatus, Tetrahymena pyriformis, Fowlpox virus, Heliothis armigera entomopoxvirus, Amsacta moorei entomopoxvirus"

135 265 32 "Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, Entamoeba histolytica, Mus musculus, Drosophila melanogaster, Pan troglodytes, Dictyostelium discoideum, Arabidopsis thaliana, Canis familiaris, Pestivirus giraffe-1 H138, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Sorghum bicolor, Bacillus anthracis str. Ames, Rattus norvegicus, Borrelia burgdorferi B31, Plasmodium falciparum, Clostridium tetani E88, Orasturmia vallicola, Bacillus thuringiensis, Goatpox virus, Sheeppox virus, Medicago sativa, Papyrius sp. ACLA, Schizosaccharomyces pombe, Haemophilus influenzae Rd KW20, Junonia coenia densovirus, Pseudoselago subglabra, Pseudoselago ascendens"

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136 266 30 "Mus musculus, Homo sapiens, Mycoplasma capricolum, Caenorhabditis elegans, Drosophila melanogaster, Caenorhabditis briggsae, Danio rerio, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Papio anubis, Pan troglodytes, Steinernema carpocapsae, Bombyx mori"

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表3

Frag_Des	SEQ_ID	N (nt)	Organism
137	267	32	"Homo sapiens, Caenorhabditis elegans, Medicago truncatula, Danio rerio, Bombyx mori, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Mus musculus, Staphylococcus aureus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Saccharomyces paradoxus, Saccharomyces sp. S6U, Staphylococcus aureus subsp. aureus Mu50, Equus caballus, Pan troglodytes, Caenorhabditis briggsae, Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani E88, Naegleria gruberi, Anopheles gambiae, Anopheles arabiensis, Lupinus luteus, Anopheles mattogrossensis"
138	268	28	"Caenorhabditis briggsae, Homo sapiens, Odontella sinensis, Mycoplasma penetrans, Arabidopsis thaliana, Vibrio cholerae, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Mus musculus, Meligethes aeneus, Meligethes gracilis, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Danio rerio, Methanocaldococcus jannaschii"
139	269	30	"Enterococcus faecalis V583, Homo sapiens, Fowlpox virus, Heterodontus francisci, Danio rerio, Mus musculus, Dictyostelium discoideum, Caenorhabditis elegans, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Listeria innocua, Kluyveromyces lactis"
140	270	29	"Mus musculus, Homo sapiens, Oryctolagus cuniculus, Borrelia burgdorferi B31, Borrelia burgdorferi, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Danio rerio, Rattus norvegicus, Enterococcus faecalis V583, Drosophila melanogaster, Caenorhabditis elegans"
141	271	28	"Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis briggsae, Danio rerio, Trypanosoma brucei, Arabidopsis thaliana, Plasmodium falciparum

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- 3D7, *Rivulus marmoratus*, *Mesostigma viride*, *Caenorhabditis elegans*, *Stealth virus 1*, *Candida albicans*, *Oryza sativa* (japonica cultivar-group), *Sphenotoma dracophylloides*, *Papio anubis*"
- 142 272 31 "Danio rerio, *Oryctolagus cuniculus*, *Rickettsia conorii*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Drosophila melanogaster*, *Hordeum vulgare* subsp. *vulgare*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Pan troglodytes*, *Xylella fastidiosa* 9a5c, *Mesostigma viride*, *Cyanidium caldarium*, *Cryptosporidium parvum*, *Lycopersicon esculentum*"
- 143 273 36 "Plasmodium falciparum 3D7, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Dictyostelium discoideum*, *Danio rerio*, *Antirrhinum hispanicum*, *Mus musculus*, *Schizosaccharomyces pombe*, *Spirogyra maxima*, *Arabidopsis thaliana*, *Enterococcus faecalis* V583, *Borr*" 10
- 144 274 29 "Homo sapiens, *Medicago truncatula*, *Mus musculus*, *Mycoplasma fermentans*, *Danio rerio*, *Pan troglodytes*, *Arabidopsis thaliana*, *Leptospira interrogans* serovar *lai* str. 56601, *Zea mays*, *Guillardia theta*, *Caenorhabditis elegans*, *Euglena longa*, *Staphylococcus epid*"
- 145 275 37 "Campylobacter jejuni, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Pyrococcus horikoshii*, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*, *Zea mays*, *Staphylococcus aureus*, *Pyrococcus furiosus* DSM 3 638, *Buchnera aphidicola* str. APS (*Acyrtho*" 20
- 146 276 30 "Homo sapiens, *Magnaporthe grisea*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Sorghum bicolor*, *Caenorhabditis elegans*, *Streptococcus thermophilus*, *Arabidopsis thaliana*, *Oryza sativa*, *Staphylococcus epidermidis*, *Paracentrotus lividus*, *Danio rerio*"
- 147 277 37 "Homo sapiens, *Plasmodium falciparum* 3D7, *Danio rerio*, *Mycoplasma gallisepticum* R, *Mus musculus*, *Orgyia pseudotsugata* multicapsid nucleopolyhedrovirus, *Drosophila melanogaster*, *Delphinia picta*, *Caenorhabditis briggsae*, *Pemphigus bursarius*, *Pemphigus spyrothe*"
- 148 278 24 "Homo sapiens, *Leptospira interrogans* serovar *lai* str. 5 6601, *Mus musculus*, *Arabidopsis thaliana*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Saccharomyces cerevisiae*, *Danio rerio*, *Listeria innocua*, *Xenotilapia flavipinnis*, *Caenorhabditis elegans*" 30
- 149 279 31 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Bos taurus*, *Lactococcus lactis* subsp. *lactis*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. APS (*Acyrthosiphon pisum*), *Nicotiana tabacum*, *Danio rerio*, *Mycoplasma gallisepticum* R, *Drosophila melanogaster*, *Pan troglodytes*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus epidermidis*, *Caenorhabditis elegans*, *Silurana tropicalis*, *Schizosaccharomyces pombe*" 40
- 150 280 29 "Cryptococcus neoformans var. *neoformans*, *Homo sapiens*, *Epifagus virginiana*, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Helicobacter pylori*, *Danio rerio*, *Caenorhabditis elegans*, *Euhadra herklotsi*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Gasterosteus aculeatus*, *Littorina keenae*, *Carabus kurilensis*"
- 151 281 25 "Dictyostelium discoideum, *Mus musculus*, *Glycine soja*, *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Caenorhabditis elegans*, P 50

- ectobacterium carotovorum subsp. carotovorum, Zea mays, Drosophila melanogaster, Danio rerio, Streptococcus agalactiae 2603V/R, Gossypium hirsutum, Candida glabrata, Eustenogaster fraterna, Oryza sativa, Streptococcus agalactiae NEM316, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Medicago truncatula, Streptococcus agalactiae, Neurospora crassa, Candida albicans"
- 152 282 23 "Vibrio vulnificus CMCP6, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13, Leptospira interrogans serovar lai str. 56601, Haematococcus pluvialis"
- 153 283 24 "Mus musculus, Drosophila melanogaster, Homo sapiens, Plasmodium falciparum 3D7, Plasmodium falciparum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Clostridium cellulovorans, Oryza sativa (japonica cultivar-group)" 10
- 154 284 23 "Chlamydomonas reinhardtii, Homo sapiens, Methanosarcina mazei Goel, Mus musculus, Glycine max, Thermotoga maritima, Oryza sativa (japonica cultivar-group), Polychaeta sp., Streptococcus dysgalactiae subsp. equisimilis, Plasmodium vivax, Lotus corniculatus var. japonicus, Danio rerio, Clostridium perfringens str. 13"
- 155 285 28 "Drosophila melanogaster, Homo sapiens, Oceanobacillus israeliensis HTE831, Mus musculus, Thrips imaginis, Streptococcus mutans UA159, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Sterkiella histriomuscorum, Streptococcus mutans" 20
- 156 286 36 "Homo sapiens, Phycomyces blakesleeana, Mus musculus, Mycoplasma penetrans, Dictyostelium discoideum, Schizaphis graminum, Arabidopsis thaliana, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Gossypium hirsutum, Lepidopsocid RS-2001, Drosophila melanogaster"
- 157 287 35 "Drosophila melanogaster, Homo sapiens, secondary endosymbiont of Paracoccus nothofagicola, Arabidopsis thaliana, Buchnera aphidicola strain APS (Acyrtosiphon pisum), Danio rerio, Mus musculus, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Noctilio albiventris, Guillardia theta, Brassica rapa, Neurospora crassa, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Dictyostelium discoideum, Drosophila littoralis, Caenorhabditis elegans, Oryza sativa, Plasmodium berghei, Pinus taeda, Diadema laticauda, Pisum sativum, Plasmodium falciparum, Polistes chinensis antennalis, Sterkiella nova, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Listeria monocytogenes, Acromyrmex volcanus, Gesomyrmex sp. MC-1995, Acromyrmex octospinosus, Prunus dulcis, Helicobacter hepaticus ATCC 51449, Drosophila hydei" 30
- 158 288 32 "Homo sapiens, Streptococcus agalactiae 2603V/R, Phaseolus vulgaris, Streptococcus agalactiae NEM316, Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana, Bacillus anthracis str. Ames, Candidatus Carsonella ruddii, Medicago truncatula, Oryza sativa (japonica cultivar-group), leaf litter ascomycete strain its084, Plasmodium falciparum, Plasmodium falciparum 3D7, Danio rerio, Actinobacillus actinomycetemcomitans, Mycoplasma gallisepticum R, Atelixer albiventris, Dictyostelium discoideum, Drosophila melanogaster, Chagasia bathana, Anopheles darlingi, Anopheles aquasalis, Convolvulus majalis, Blackburnia fraudator, Mycoplasma pulmonis, Brassica oleracea var. botrytis, Brassica oleracea, Ureaplasma urealyticum, Oryza sativa" 40
- 159 289 43 "Thanatephorus cucumeris, Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Homo sapiens, Arabidopsis thaliana, Mus musc 50

- ulus, *Rattus norvegicus*, *Caenorhabditis elegans*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Saccharomyces douglasii*, *Lotus corniculatus* var. *japonicus*, *Plasmodium falciparum*, *Oryza sativa* (*japonica* cultivar-group), *Pan troglodytes*, *Borrelia burgdorferi* B31, *Buxbaumia aphylla*, *Thermoanaerobacter tengcongensis*, *Autographa californica* nucleopolyhedrovirus, *Candidatus Carsonella ruddii*, *Staphylococcus haemolyticus*, *Euglena gracilis*, *Adalia decempunctata*, *Adalia bipunctata*, *Staphylococcus aureus*, *Rachiplusia* ou multiple nucleopolyhedrovirus, *Medicago truncatula*, *Equus caballus*, *Canine herpesvirus*, *Kluyveromyces delphensis*, *Drosophila melanogaster*, *Lupinus albus*, *Marchantia polymorpha*"
- 160 290 32 "Plasmodium falciparum 3D7, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Schmidtea mediterranea*, *Fusobacterium nucleatum*, *Danio rerio*, *Mycoplasma capricolum*, *Arabidopsis thaliana*, *Saccharomyces castellii*, *Prochlorococcus marinus*, *Oryza sativa* (*japonica* cultivar-group), *Staphylococcus aureus* subsp. *aureus* MW2, *Plasmodium berghei*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Bacillus anthracis* str. Ames, *Cucumis melo*, *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Blepharipoda occidentalis*, *Gallus gallus*, *Xenopus laevis*, *Acanthamoeba castellanii*, *Caenorhabditis elegans*, *Saccharomyces uvarum*, *Ureaplasma urealyticum*, *Pongo pygmaeus*, *Lotus corniculatus* var. *japonicus*, *Oryzias latipes*" 10
- 161 291 27 "Mus musculus, *Plasmodium falciparum* 3D7, *Danio rerio*, *Homo sapiens*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Bluetongue virus*, *Caenorhabditis briggsae*, *Plasmodium falciparum*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*, *Sus scrofa*, *Schizosaccharomyces pombe*, *Borrelia japonica*, *Bacillus cereus* ATCC 14579, *Archaeoglobus fulgidus* DSM 4304, *Aspergillus parasiticus*, *Drosophila melanogaster*, *Lycopersicon esculentum*, *Lycopersicon pimpinellifolium*, *Notothenia neglecta*, *Lagenaria siceraria*, *Pinus taeda*, *Neurospora crassa*, *Streptococcus pyogenes* M1 GAS, *Mycoplasma hyopneumoniae*, *Oryza sativa* (*japonica* cultivar-group), *Candida albicans*, *Sinorhizobium* sp. As4, *Streptococcus gordonii*, *Streptococcus oralis*, *Trypanosoma brucei*, *Schistosoma mansoni*, *Sterkiella nova*, *Bombyx mori*, *Botryotinia fuckeliana*" 20
- 162 292 27 "Mus musculus, *Homo sapiens*, *Schizophyllum commune*, *Danio rerio*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum* 3D7, *Oryza sativa*, *Plasmodium falciparum*" 30
- 163 293 24 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Human immunodeficiency virus 1*"
- 164 294 24 "Homo sapiens, *Caenorhabditis elegans*, *Listeria monocytogenes*, *Mus musculus*, *Rattus norvegicus*, *Ureaplasma urealyticum*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Xerula hispida*"
- 165 295 23 "Mus musculus, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila melanogaster*, *Homo sapiens*, *Buellia dijiana*, *Buellia georgei*, *Thermoplasma acidophilum*, *Lotus corniculatus* var. *japonicus*" 40
- 166 296 27 "Homo sapiens, *Human immunodeficiency virus 1*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Danio rerio*, *Pan troglodytes*"
- 167 297 31 "Mus musculus, *Homo sapiens*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis elegans*, *Staphylococcus epidermidis*, *Oryza sativa*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Candida albicans*"
- 168 298 27 "Arabidopsis thaliana, *Homo sapiens*, *Pan troglodytes*, *Oryza sativa* (*japonica* cultivar-group), *Bacillus anthracis* str. Ames, *Mus musculus*" 50

- , *Sulfolobus tokodaii*, *Malus x domestica*"
- 169 299 27 "Mus musculus, Plasmodium falciparum, Aglaothamnion neglectum, Enterococcus faecalis V583, Aquifex aeolicus VF5, Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmid P1, Carabus semiopacus"
- 170 300 21 "Danio rerio, Mus musculus, Homo sapiens"
- 171 301 24 "Xenopus laevis, Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Mus musculus, Enterococcus faecalis, Danio rerio, Neurospora crassa"
- 172 302 29 "Homo sapiens, Mus musculus" 10
- 173 303 27 "Mus musculus, Chlamydomonas reinhardtii, Methanothermobacter thermautotrophicus str. Delta H, Homo sapiens, Danio rerio, Ureaplasma urealyticum, Caenorhabditis elegans, Murine adenovirus 1, Clostridium perfringens str. 13"
- 174 304 23 "Homo sapiens, Mus musculus, Danio rerio, Medicago truncatula, Encephalitozoon cuniculi, Schizosaccharomyces pombe"
- 175 305 27 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Streptococcus pyogenes, Alonsoa meridionalis, Proteus mirabilis, Methanosarcina acetivorans C2A, Danio rerio, Escherichia coli, Bacillus subtilis, Caenorhabditis briggsae, Halocynthia roretzi, Bacillus subtilis subsp. subtilis str. 168, Danio aequipinnatus" 20
- 176 306 36 "Homo sapiens, Mus musculus, Drosophila madeirensis, Streptopogon calymperes, Barbula convoluta, Gallus gallus, Drosophila melanogaster, Plasmodium falciparum 3D7, Tortula marginata, Tortula freibergii, Papio anubis, Ephemerum spinulosum, Arabidopsis thaliana"
- 177 307 47 "Homo sapiens, Clostridium bifermentans, Lotus corniculatus var. japonicus, Danio rerio, Mus musculus, Malus x domestica, Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Plasmodium falciparum 3D7, Scyliorhinus stellaris, Oryza sativa (japonica cultivar-group), Helicobacter hepaticus ATCC 51449, Rattus norvegicus, Bacillus anthracis str. Ames, Sminthopsis macroura, Sulfolobus solfataricus, Pasteurella multocida, Saimiriine herpesvirus 2, Neisseria meningitidis Z2491, Lycopersicon esculentum, Amsacta moorei entomopoxvirus, Nasa triphylla, Laminaria digitata, Neisseria meningitidis MC58, Cryptosporidium parvum, Gonolabis marginalis, Neurospora crassa, Russula rosacea, Methanocaldococcus jannaschii, Anopheles gambiae" 30
- 178 308 33 "Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Bombyx mori, Methanothermobacter thermautotrophicus, Arabidopsis thaliana, Caenorhabditis elegans, Diasemopsis signata, Rattus norvegicus, Lotus corniculatus var. japonicus, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Vibrio vulnificus CMCP6, Monosiga brevicollis, Drosophila melanogaster, Cryptococcus neoformans var. grubii, Plasmodium falciparum 3D7, Guillardia theta, Lactococcus lactis subsp. lactis, Prochlorococcus marinus, Pyrococcus abyssi, Medicago truncatula, Nostoc sp. PCC 7120" 40
- 179 309 27 "Homo sapiens, Sus scrofa, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Oryza sativa (indica cultivar-group), Danio rerio, Arabidopsis thaliana, Plasmodium falciparum 3D7, Chrysomela collaris, Staphylococcus epidermidis, Drosophila funebris, Neurospora crassa, Rattus norvegicus, Bacillus clarkii"
- 180 310 29 "Homo sapiens, Caenorhabditis elegans, Mycoplasma mobile" 50

- , *Saccharomyces cerevisiae*, *Bacillus atticus*, *Dictyostelium discoideum*, *Sus scrofa*, *Bacillus atticus cyprius*, *Danio rerio*, *Arabidopsis thaliana*, *Mus musculus*, *Equus caballus*, *Oryza sativa* (japonica cultivar-group), *Oncidium* cv. 'Gower Ramsey', *Drosophila melanogaster*, *Oryza sativa*, *Plasmodium falciparum* 3D7, *Pennisetum glaucum*, *Rickettsia conorii*, *Osmadenia tenella*, *Rickettsia prowazekii*, *Rickettsia typhi*, *Rickettsia montanensis*, *Rickettsia rickettsii*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Agrocybe aegerita*, *Synechococcus* sp. PCC 7002, *Zea mays*, *Clostridium perfringens* str. 13"
- 181 311 28 "Carteria crucifera, *Chloromonas rosae*, *Chloromonas palmelloides*, *Chloromonas reticulata*, *Chlamydomonas macrostellata*, *Homo sapiens*, *Rickettsia typhi*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Schizosaccharomyces pombe*, *Heterococcus caespitosus*, *Carteria obtusa*" 10
- 182 312 40 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Leptospira interrogans* serovar lai str. 56601, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, *Escherichia coli* O157:H7, *Escherichia coli*, *Plasmodium falciparum* 3D7, *Papio anubis*, *Clostridium perfringens* str. 13"
- 183 313 28 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Mus musculus*, *Arabidopsis thaliana*, *Citrus sinensis*, *Heterodoxus macropus*, *Sambucus nigra*, *Candidatus Blochmannia floridanus*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Plasmodium falciparum*, *Treponema pallidum*, *Listonella anguillarum*" 20
- 184 314 34 "Drosophila melanogaster, *Xenopus laevis*, *Lactococcus lactis* subsp. lactis, *Homo sapiens*, *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*, *Sulfolobus tokodaii*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Fusobacteri*"
- 185 315 24 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Danio rerio*, *Caenorhabditis elegans*, *Pan troglodytes*, *Dictyostelium discoideum*, *Mycobacterium leprae*, *Neisseria meningitidis*, *Phaseolus vulgaris*" 30
- 186 316 36 "Drosophila melanogaster, *Danio rerio*, *Drosophila yakuba*, *Drosophila simulans*, *Drosophila sechellia*, *Drosophila mauritiana*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Drosophila nasuta* F, *Drosophila nasuta* J, *Drosophila nasuta* I, *Drosophila pulaua*, D"
- 187 317 38 "Homo sapiens, *Clostridium perfringens* str. 13, *Danio rerio*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Sarcophaga peregrina*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Arabidopsis thaliana*, *Rickettsia conorii*, *Lotus corniculatus* var. japonicus, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Drosophila pseudoobscura*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Plasmodium falciparum*, Cotton leaf crumple geminivirus, *Yersinia pseudotuberculosis*, *Streptococcus agalactiae* 2603V/R, *Helicobacter pylori*, *Jarrowia phorocantha*, *Clarias gariepinus*, *Bigelowiella natans*, *Escherichia coli* O157:H7 EDL933" 40
- 188 318 28 "Homo sapiens, *Arabidopsis thaliana*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Ciona intestinalis*, *Danio rerio*, *Mycoplasma genitalium*, *Bacillus cereus* ATCC 14579, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani*, *Mus musculus*, *Methanosarcina acetivorans* C2A, *Schizosaccharomyces pombe*"
- 189 319 27 "Mus musculus, *Homo sapiens*, *Cochlearia excelsa*, *Aphanium*" 50

s mento, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Xenopus laevis*, *Arabidopsis thaliana*, *Guillardia theta*, *Clostridium acetobutylicum*, *Rhodothermus marinus*, *Amsacta moorei* entomopoxvirus, *Trypanosoma brucei*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Odobenus rosmarus rosmarus*, *Danio rerio*"

190 320 28 "Pseudomonas putida KT2440, *Caenorhabditis elegans*, *Homo sapiens*, *Danio rerio*, *Mus musculus*, *Pseudomonas aeruginosa* PA01, *Drosophila melanogaster*, *Hordeum vulgare* subsp. vulgare, *Dictyostelium discoideum*, *Lotus corniculatus* var. japonicus, unidentified monkey, *Saccharomyces cerevisiae*, *Arabidopsis thaliana*, *Triticum monococcum*, *Plasmodium falciparum* 3D7, *Zea mays*, *Streptococcus agalactiae* 2603V/R, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Gymnadenia conopsea* subsp. conopsea, *Streptococcus agalactiae* NEM316, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*" 10

191 321 28 "Homo sapiens, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, Barmah Forest virus, *Plasmodium falciparum* 3D7, *Zea mays*, *Danio rerio*, *Rattus norvegicus*, *Leptospira interrogans* serovar lai str. 56601, *Borrelia burgdorferi* B31, *Medicago truncatula*, *Poncirus trifoliata*, *Clostridium tetani* E88, Mumps virus, *Lactococcus lactis* subsp. lactis, *Bacteriophage bIL309*, *Bacteriophage bIL286*, *Rickettsia prowazekii*, *Campylobacter jejuni*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Streptococcus pyogenes*" 20

192 322 24 "Homo sapiens, *Pan troglodytes*, *Caenorhabditis elegans*, *Bovine adenovirus* 10, *Bacillus subtilis*, *Bacillus subtilis* subsp. subtilis str. 168, *Equus caballus*, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Escherichia coli*, *Escherichia coli* K12, *Saccharomyces cerevisiae*, *Mus musculus*"

193 323 25 "Streptococcus mutans UA159, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Catharanthus roseus*, *Medicago truncatula*, *Takifugu rubripes*, *Arabidopsis thaliana*"

194 324 24 "Homo sapiens, *Nostoc* sp. PCC 7120"

195 325 31 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Danio rerio*, *Equus caballus*, *Methanosarcina mazei* Goe1, *Pan troglodytes*, *Drosophila littoralis*, *Drosophila virilis*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Clostridium acetobutylicum*, *Flaveria trinervia*, *Podospora anserina*, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group)" 30

196 326 28 "Homo sapiens, *Dictyostelium discoideum*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Mus musculus*, *Methanocaldococcus jannaschii*, *Pan troglodytes*, *Haemophilus ducreyi* 35000HP, *Caenorhabditis elegans*"

197 327 31 "Homo sapiens, *Rattus norvegicus*, *Mus musculus*, *Caenorhabditis briggsae*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Xenopus laevis*, *Oryza sativa* (japonica cultivar-group)" 40

198 328 27 "Homo sapiens, *Drosophila melanogaster*, *Mesostigma viride*, *Danio rerio*, *Mus musculus*"

199 329 31 "Mus musculus, *Homo sapiens*, *Enterococcus faecalis* V583, *Oceanobacillus iheyensis* HTE831, *Pan troglodytes*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Trypanosoma brucei*, *Danio rerio*, *Sus scrofa*, *Nostoc* sp. PCC 7120"

200 330 32 "Mus musculus, *Plasmodium falciparum* 3D7, *Macaca mulatta*, *Homo sapiens*, *Danio rerio*, *Rattus norvegicus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Plasmodium falciparum*, *Caenorhabditis e* 50

- legans, *Cryptosporidium parvum*, *Spirogyra* "
- 201 331 24 "Homo sapiens, *Danio rerio*, *Arabidopsis thaliana*, *Medicago truncatula*, *Mus musculus*, *Vibrio cholerae*"
- 202 332 39 "Equus caballus, *Mus musculus*, *Homo sapiens*, *Plasmodium falciparum*, *Ceratomyxa trifurcata*, *Danio rerio*, *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Bombyx mori*"
- 203 333 24 "Medicago truncatula, *Homo sapiens*, *Listeria monocytogenes*, *Listeria innocua*, *Triticum turgidum* subsp. durum, *Oryza sativa* (japonica cultivar-group), *Bovine parainfluenza virus 3*, *Bordetella bronchiseptica*, *Bordetella parapertussis*, *Human parainfluenza virus 3*, *Buchnera aphidicola*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Felis catus*, *Methanocaldococcus jannaschii*" 10
- 204 334 31 "Homo sapiens, *Mycobacterium leprae*, *Lotus corniculatus* var. japonicus, *Mus musculus*, *Borrelia burgdorferi* B31, *Rattus norvegicus*, *Caenorhabditis elegans*, *Latimeria chalumnae*, *Borrelia burgdorferi*, *Drosophila melanogaster*, *Medicago truncatula*, *Clostridium cellulolyticum*, *Gallus gallus*, *Xenopus laevis*, *Saccharum officinarum*, *Thermoplasma volcanium*, *Oryza sativa* (japonica cultivar-group), *Serratia marcescens*, *Listeria monocytogenes*, *Bombus pascuorum*, *Bombus muscorum*"
- 205 335 24 "Danio rerio, *Homo sapiens*, *Listeria innocua*, *Mus musculus*, *Arabidopsis thaliana*, *Helicobacter hepaticus* ATCC 51449" 20
- 206 336 24 "Homo sapiens, *Pan troglodytes*, *Moneuplotes crassus*, *Mus musculus*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Shrimp white spot syndrome virus*, *Fowlpox virus*, *Danio rerio*, *Rhizopus oryzae*"
- 207 337 28 "Poncirus trifoliata, *Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*, *Staphylococcus aureus*, *Tribolium castaneum*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. aureus Mu50, *Carex subcernua*, *Carex metallica*, *Carex kiotensis*, *Carex heterolepis*, *Carex dimorpholepis*, *Carex aequalta*, *Carex phacota*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Danio rerio*, *Leptospira interrogans* serovar lai str. 56601, *Dictyostelium discoideum*, *Felis catus*, *Bos taurus*, *Lotus corniculatus* var. japonicus" 30
- 208 338 25 "Staphylococcus aureus, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Homo sapiens*, *Atherurus africanus*, *Pteropus hypomelanus*, *Nyctimene albiventer*, *Tadarida brasiliensis*, *Myotis velifer*, *Alces alces*, *Rousettus amplexicaudatus*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Reclinomonas americana*, *Danio rerio*, *Arabidopsis thaliana*"
- 209 339 32 "Homo sapiens, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Macrophthalmus brevis*, uncultured crenarchaeote, *Medicago truncatula*, *Dictyostelium discoideum*, *Mus musculus*, *Prochlorococcus marinus*, *Porcine parvovirus*, *Moritella marina*" 40
- 210 340 35 "Arabidopsis thaliana, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Trichaptum laricinum*, *Methanosarcina acetivorans* C2A, *Oryza sativa*, *Mucuna pruriens* var. utilis, *Plasmodium falciparum* 3D7"
- 211 341 23 "Homo sapiens, *Mus musculus*, *Melao virus*, *Danio rerio*, *Dryopteris caudipinna*, *Pyrobaculum aerophilum* str. IM2, *Arabidopsis thaliana*, *Botryotinia fuckeliana*"
- 212 342 26 "Homo sapiens, *Mus musculus*, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Rattus norvegicus*, *Medicago truncatula*, *Plasmodium falciparum* 3D 50

- 7, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Neisseria meningitidis* MC58, *Danio rerio*, *Schizosaccharomyces pombe*, *Drosophila virilis*"
- 213 343 30 "Mus musculus, *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Pisum sativum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Pan troglodytes*, *Medicago truncatula*, *Monosiga brevicollis*, *Clostridium tetani* E88, *Papio anubis*, *Camelpox virus* CMS, *Arabidopsis thaliana*, *Saccharomyces exiguus*, *Oedignathus inermis*, *Glyptolithodes cristatipes*, *Plasmodium falciparum*, *Listeria innocua*, *Camelpox virus* M-96, *Clostridium perfringens*, *Clostridium perfringens* str. 13" 10
- 214 344 24 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Sulfolobus solfataricus*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group)"
- 215 345 27 "Homo sapiens, *Danio rerio*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mus musculus*, *Clostridium tetani* E88, *Shewanella oneidensis* MR-1, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Gastrolobium brownii*, *Mycoplasma pulmonis*, *Streptococcus agalactiae* NEM316, *Lotus corniculatus* var. japonicus, *Chlorella vulgaris*"
- 216 346 31 "Homo sapiens, *Allomyces macrogynus*, *Danio rerio*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Theileria parva*, *Rattus norvegicus*, *Mus musculus*, *Rickettsia conorii*, *Streptococcus dysgalactiae* subsp. equisimilis, *Caenorhabditis briggsae*, *Bacillus cereus* ATCC 14579, *Leptospira interrogans* serovar lai str. 56601, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Pseudomonas putida* KT2440, *Pyrococcus furiosus* DSM 3638, *Human immunodeficiency virus* 1, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Clostridium novyi*, *Gasterosteus aculeatus*, *Borrelia burgdorferi*" 20
- 217 347 28 "Mus musculus, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Canis familiaris*, *Encephalitozoon cuniculi*, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*, *Arabidopsis thaliana*" 30
- 218 348 32 "Arabidopsis thaliana, *Homo sapiens*, *Leishmania major*, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis briggsae*, *Oryza sativa*, *Equus caballus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus"
- 219 349 28 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Parus major*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), Cloning vector pDXA-FLAG, Cloning vector pDXA-GFP2, Polyplectron emphanum, Polyplectron inopinatum, Polyplectron germaini, Polyplectron chalcurum, Polyplectron bicalcaratum, Polyplectron malacense, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Medicago truncatula*, synthetic construct, Cloning vector pDXA-GST, Cloning vector pDXA-3FLAG, Cloning vector pDXA-3strep, Cloning vector pDXA-MCS-YFP, Cloning vector pDXA-YFP-NotI, Cloning vector pDXA-YFP-MCS, Cloning vector pDXA-CFP-MCS, Cloning vector pDXA-yFP, Cloning vector pDXA-CFP, Cloning vector pDXA-3hygro, *Bacillus subtilis* subsp. subtilis str. 168" 40
- 220 350 27 "Homo sapiens, *Vibrio vulnificus* CMCP6, *Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Caenorhabditis elegans*, *Papio anubis*, *Thermoanaerobacter tengcongensis*, *Danio rerio*, *Parascaris univalens*, *Peronosclerospora sorghi*, *Pan troglodytes*, *Cordyceps* sp. 97003, *Vigna radiata*" 50

- 221 351 28 "Homo sapiens, Pan troglodytes, Arabidopsis thaliana, Mus musculus, Oceanobacillus iheyensis HTE831, Danio rerio, Oryza sativa (japonica cultivar-group), Abudedefduf notatus"
- 222 352 24 "Homo sapiens, Mus musculus, Dolichorhinotermes sp. 'Manaus', Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio"
- 223 353 27 "Aquifex aeolicus VF5, Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Heliothis zea virus 1, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Rattus norvegicus, Listonella anguillarum"
- 224 354 24 "Flavobacterium psychrophilum, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Pyrococcus furiosus DSM 3638, Danio rerio, Helicobacter pylori J99, Caenorhabditis elegans" 10
- 225 355 28 "Medicago truncatula, Drosophila melanogaster, Dictyostelium discoideum, Homo sapiens, Arabidopsis thaliana, Mus musculus, Schizosaccharomyces pombe, Tetrahymena thermophila, IDIR agent, Ellassoma evergladei"
- 226 356 31 "Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Oceanobacillus iheyensis HTE831"
- 227 357 27 "Clostridium acetobutylicum, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Oceanobacillus iheyensis HTE831, Mus musculus, Pan troglodytes, Tetrahymena thermophila, Zea mays, Arabidopsis thaliana, Canis familiaris, Lotus corniculatus var. japonicus, Danio rerio, Oryza sativa (japonica cultivar-group), Crassostrea rhizophorae, Rhodococcus erythropolis" 20
- 228 358 32 "Danio rerio, Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Canis familiaris, Chlorella vulgaris"
- 229 359 35 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Botryllus schlosseri, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Aphanocalyx djumaensis, Drosophila melanogaster, Danio rerio, Medicago truncatula, Pan troglodytes, Arabidopsis thaliana, Rattus norvegicus, Oryza sativa, Oryza sativa (indica cultivar-group), Ureaplasma urealyticum, Bacteriophage phi1e, Ciona intestinalis, Oryza longistaminata, Papio anubis, Methanocaldococcus jannaschii, Clostridium perfringens str. 13" 30
- 230 360 25 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Streptococcus pyogenes MGAS315, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Danio rerio"
- 231 361 27 "Drosophila melanogaster, Homo sapiens, Mycoplasma penetrans, Mus musculus, Nostoc sp. PCC 7120, Buchnera aphidicola str. Bp (Baizongia pistaciae), Human immunodeficiency virus 1, Rattus norvegicus, Neurospora crassa"
- 232 362 29 "Homo sapiens, Clostridium acetobutylicum, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Vibrio vulnificus, Clostridium tetani, Pseudomonas putida KT2440, Pneumocystis carinii, Bacillus subtilis, Saccharomyces cerevisiae, Enterobacteria phage RB49, Mus musculus, Papio anubis, Candidatus Blochmannia floridanus, Caenorhabditis elegans, Rattus norvegicus, Populus kitakamiensis" 40
- 233 363 35 "Homo sapiens, Mus musculus, Medicago truncatula, Plasmodium falciparum 3D7, Brassica napus, Drosophila erecta, Danio rerio, Cynops pyrrhogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Bombyx mori, S" 50

- accharomyces cerevisiae, Oryza sativa, Candidatus Carsonella ruddii, Chlamydomonas reinhardtii, Gomphiocephalus hodgsoni, Brucella melitensis 16M, Vibrio vulnificus CMCP6, Drosophila melanogaster, Schmidtea mediterranea, Brucella suis 1330, Papio hamadryas, Lymphocystis disease virus 1, Euglena anabaena, Proteus mirabilis, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus"
- 234 364 27 "Caenorhabditis elegans, Drosophila melanogaster, Homo sapiens, Caenorhabditis briggsae, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Pisum sativum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 235 365 29 "Homo sapiens, Dictyostelium discoideum, Clostridium tetani E88, Mus musculus, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Borrelia burgdorferi, Caenorhabditis elegans, Yaba-like disease virus, Mycoplasma penetrans, Danio rerio, Sorghum bicolor, Rattus norvegicus, Bacillus anthracis str. Ames, Chlamydia muridarum, Oryza sativa (japonica cultivar-group), Xenopus laevis, Drosophila pseudoobscura, Ictalurus punctatus, Oryza sativa, Caenorhabditis briggsae, Oceanobacillus iheyensis HTE831, Sus scrofa, Pan troglodytes, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Microsporidium sp. JES2002G, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Candida albicans, Methanocaldococcus jannaschii, Staphylococcus aureus subsp. aureus Mu50, Clostridium perfringens str. 13" 10
- 236 366 28 "Homo sapiens, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Mus musculus, Rattus norvegicus, Pan troglodytes, Dictyostelium discoideum, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group), Shuttle vector pJIR751, Shuttle vector pJIR750, Lactobacillus plantarum WCFS1, Haemophilus ducreyi 35000HP, Glycine max, Shuttle vector pJIR1457, Shuttle vector pJIR1456, Plasmid pIP404, unidentified cloning vector, Clostridium perfringens str. 13" 20
- 237 367 31 "Shewanella oneidensis MR-1, Mus musculus, Lotus corniculatus var. japonicus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Xenopus laevis, Swertia tetraptera, Mycoplasma pulmonis, Pyrococcus horikoshii, Swertia tashiroi, Arabidopsis thaliana, Gentianella peruviana" 30
- 238 368 31 "Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Streptococcus suis, Aeromonas salmonicida, Clostridium perfringens str. 13"
- 239 369 27 "Mus musculus, Danio rerio, Homo sapiens, Brassica juncea, Drosophila melanogaster, Dictyostelium discoideum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 240 370 31 "Plasmodium falciparum 3D7, Homo sapiens, Danio rerio, Mus musculus, Medicago truncatula, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Neurospora crassa, Catostomus commersoni, Clostridium perfringens str. 13" 40
- 241 371 31 "Equus caballus, Homo sapiens, Papio anubis, Danio rerio, Mus musculus, Methanosarcina acetivorans C2A, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7"
- 242 372 28 "Homo sapiens, Arabidopsis thaliana, Pagrus major, Mus musculus, Saccharomyces cerevisiae, Danio rerio, Oryctolagus cuniculus, Cryptosporidium parvum, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis 50

- s elegans, Salganea taylori, Hospitalitermes medioflavus, Clostridium perfringens str. 13"
- 243 373 27 "Mus musculus, Rattus norvegicus, Homo sapiens, Caenorhabditis elegans, Mycoplasma pulmonis, Schizosaccharomyces pombe, Escherichia coli, Drosophila melanogaster, Pan troglodytes, Strongylocentrotus purpuratus, Antarctic yeast CBS 8913, Takifugu rubripes, Neurospora intermedia, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Danio rerio, Saccharomyces cerevisiae, Simian immunodeficiency virus"
- 244 374 29 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Staphylococcus epidermidis ATCC 12228, Oceanobacillus iheyensis HTE831, Pan troglodytes, Danio rerio, Staphylococcus aureus subsp. aureus Mu50, Drosophila melanogaster, Plasmodium falciparum, Rattus norvegicus, Arabidopsis thaliana, Enterococcus faecalis V583" 10
- 245 375 31 "Ureaplasma urealyticum, Homo sapiens, Arabidopsis thaliana, Mycoplasma conjunctivae, Oryza sativa (japonica cultivar-group), Mus musculus, Candida albicans, Caenorhabditis elegans, Danio rerio, Aspergillus fumigatus, Synechocystis sp. PCC 6803"
- 246 376 27 "Danio rerio, Caenorhabditis elegans, Homo sapiens, Saccharomyces cerevisiae, Mus musculus, Vibrio vulnificus CMCP6, Chaetosphaeridium globosum, Arabidopsis thaliana" 20
- 247 377 24 "Mus musculus, Homo sapiens, Sus scrofa, Arabidopsis thaliana, Ornithorhynchus anatinus, Danio rerio, Rattus norvegicus, Drosophila melanogaster, Staphylococcus sp., Caenorhabditis elegans, Bombyx mori, Inkoo virus, Staphylococcus aureus, Clamator glandarius"
- 248 378 23 "Homo sapiens, Arabidopsis thaliana, Polypterus bichir, Mus musculus, Danio rerio, Pichia jadinii, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group)"
- 249 379 27 "Homo sapiens, Pan troglodytes, Drosophila melanogaster, Capra caucasica, Mus musculus, Rattus norvegicus, Caenorhabditis elegans, Danio rerio, Schizosaccharomyces pombe, Nicotiana tabacum, Anopheles gambiae, Oryza sativa (japonica cultivar-group), Macaca fascicularis" 30
- 250 380 31 "Schizosaccharomyces pombe, Homo sapiens, Mus musculus, Caenorhabditis briggsae, Influenza B virus (B/Aichi/5/88), Caenorhabditis elegans, Listeria innocua, Pan troglodytes, Drosophila melanogaster, Yersinia pestis KIM, Arabidopsis thaliana, Tupaia minor, Erinaceus concolor, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Urogale everetti, Bacillus subtilis subsp. subtilis str. 168, Danio rerio"
- 251 381 27 "Thermoanaerobacter tengcongensis, Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Dictyostelium discoideum, Elenchus japonicus, Lactococcus lactis subsp. lactis, Pan troglodytes, Mus musculus, Plasmodium falciparum 3D7, Yersinia pestis KIM, Arabidopsis thaliana, Danio rerio, Prochlorococcus marinus, Campylobacter jejuni subsp. jejuni NCTC 11168, Antirrhinum hispanicum, Plasmodium falciparum, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Yersinia pestis C092" 40
- 252 382 27 "Medicago truncatula, Homo sapiens, Tribolium castaneum, Prochlorococcus marinus, Cryptosporidium parvum, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Emydoidea blandingii, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. Bp (Baizongia pistaciae), Arabidopsis thaliana, Rhizophydium sp. 136, Oryza sativa, Parnassius phoebus, Macrosoma sp. MC 50

- 2000, *Danio rerio*, *Schizosaccharomyces pombe*, *Pan troglodytes*"
- 253 383 34 "Homo sapiens, *Banksia aemula*, *Banksia serrata*, *Mus musculus*, *Banksia aculeata*, *Banksia caleyi*, *Banksia lemmaniana*, *Caenorhabditis elegans*, *Bombyx mori*, *Tetrahymena thermophila*, *Monosiga brevicollis*, *Arabidopsis thaliana*, *Obuda pepper virus*, *Pan troglodytes*,"
- 254 384 31 "*Caenorhabditis elegans*, *Homo sapiens*, *Canis familiaris*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Mus musculus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Penaeus monodon*, *Neochlamisus bimaculatus*, *Neochlamisus eubati*, *Neochlamisus cribripennis*, *Neochlamisus bebbiana*, *Danio rerio*, *Arabidopsis thaliana*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Grus americana*, *Schizophyllum commune*, *Lactococcus lactis* subsp. *lactis*, *Chlorella vulgaris*, *Nostoc* sp. PCC 7120"
- 255 385 24 "*Mus musculus*, *Homo sapiens*, *Oenothera elata* subsp. *hookeri*, *Schizosaccharomyces pombe*, *Sulfolobus islandicus* rod-shaped virus 1, *Sulfolobus islandicus* rod-shaped virus 2, *Schistosoma mansoni*, *Pan troglodytes*, *Mycoplasma penetrans*, *Peptoniphilus asaccharolyticus*"
- 256 386 32 "*Homo sapiens*, *Gallus gallus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Mus musculus*, *Caenorhabditis elegans*, *Myrmica sabuleti*, *Myrmica hirsuta*, *Myrmica hellenica*, *Arabidopsis thaliana*, *Paracentrotus lividus*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Clostridium perfringens* str. 13" 20
- 257 387 27 "*Schizosaccharomyces pombe*, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Oryza sativa*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Plasmodium falciparum*"
- 258 388 27 "*Homo sapiens*, *Mus musculus*, *Human respiratory syncytial virus*, *Danio rerio*, *Parasitella parasitica*"
- 259 389 31 "*Homo sapiens*, *Arabidopsis thaliana*, *Pan troglodytes*, *Mus musculus*, *Dictyostelium discoideum*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Danio rerio*, *Acipenser transmontanus*, *Ipomoea nil*"
- 260 390 30 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Trypanosoma brucei*, *Oryza sativa* (*japonica* cultivar-group), *Trypanosoma brucei brucei*, *Clostridium perfringens* str. 13, *Cowpox virus*, *Vaccinia virus*, *Bacteroides thetaiotaomicron* VPI-5482, *Caenorhabditis elegans*, *Ectromelia virus*, *Camelpox virus* CMS, *Monkeypox virus*, *Prochlorococcus marinus*, *Variola minor virus*, *Variola virus*, *Candidatus Blochmannia floridanus*, *Variola major virus*, *Entodinium caudatum*, *Vaccinia virus* (strain Tian Tan), *Equus caballus*, *Toxoplasma gondii*, *Ciona intestinalis*, *Danio rerio*, *Camelpox virus* M-96"
- 261 391 35 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Plasmodium falciparum*, *Lotus corniculatus* var. *japonicus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Bactrocera dorsalis*, *Danio rerio*, *Medicago truncatula*, *Pan troglodytes*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Desmognathus brimleyorum*, *Culex nigripalpus* baculovirus, *Sulfolobus solfataricus*, *Oryza sativa*, *Betula pendula*, *Anthoceros formosae*, *Lepidium africanum*, *Howardula neocosmis*, *Papio anubis*" 40
- 262 392 27 "*Pisum sativum*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Homo sapiens*, *Oryza sativa* (*indica* cultivar-group), *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Clostridium tetani* E88, *Prochlorococcus mari* 50

nus, *Pseudomonas putida*, *Danio rerio*"

263 393 24 "Homo sapiens, *Danio rerio*, *Pandanus utilis*, *Cyclanthus bipartitus*, *Caenorhabditis elegans*, *Mus musculus*, *Malawimonas jakobiformis*, *Roystonea oleracea*, *Oryza sativa* (japonica cultivar-group), *Helicoverpa armigera* nuclear polyhedrosis virus, *Arabidopsis thaliana*"

264 394 28 "*Pisum sativum*, *Homo sapiens*, *Methanosarcina mazei* Goe1, *Plasmodium falciparum* 3D7, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Branchiostoma belcheri*, *Oryza sativa* (japonica cultivar-group), *Campylobacter jejuni*, *Sulfolobus shibatae*, *Caenorhabditis elegans*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Clostridium tetani* E88, *Macaca mulatta*, *Papio anubis*, *Oryza sativa* (indica cultivar-group), *Danio rerio*, *Enterobacteria* phage RB69"

265 395 31 "*Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Thermoanaerobacter tengcongensis*, *Medicago truncatula*, *Arabidopsis thaliana*, *Lactococcus lactis* subsp. *lactis*, *Ectocarpus siliculosus* virus, *Caenorhabditis elegans*, *Candida albicans*, *Danio rerio*, *Gallus gallus*"

266 396 36 "*Mus musculus*, *Caenorhabditis elegans*, *Homo sapiens*, *Celleporella hyalina*, *Melanoplus sanguinipes* entomopoxvirus, *Onslowia endophytica*, *Synechocystis* sp. PCC 6803, *Pan troglodytes*, *Dictyostelium discoideum*, *Lotus corniculatus* var. *japonicus*, *Methanococcus voltae*, *Danio rerio*, *Glycine max*, *Rattus norvegicus*, *Borrelia burgdorferi* B31, *Arabidopsis thaliana*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Euglena longa*, *Oryza sativa* (japonica cultivar-group), *Streptococcus pyogenes* SSI-1, *Ciona intestinalis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Clostridium perfringens* str. 13"

267 397 31 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Eimeria tenella*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Rhizophyidum* sp. 136, *Mus musculus*, *Oryza sativa*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Ehrlichia* sp. Anan, *Papio anubis*, *Streptococcus mutans* UA159, *Ribes punctatum*, *Hypoestes phyllostachya*, *Poikilacanthus macranthus*, *Justicia caudata*, *Pseuderanthemum alatum*, *Peristrophe hyssopifolia*, *Odontonema tubiforme*, *Spathacanthus parviflorus*, *Ruttya fruticosa*, *Ruspolia seticalyx*, *Justicieae* indet. Daniel 6737, *Oplonia microphylla*, *Chilanthum pyramidatum*, *Mackaya bella*, *Isoglossa grandiflora*, *Duvernoia aconitiflora*, *Justicia adhatoda*, *Anisotes madagascariensis*, *Dicliptera extenta*, *Dicliptera* sp. Daniel 9194, *Dicliptera suberecta*, *Caenorhabditis briggsae*, *Dictyostelium discoideum*, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*"

268 398 34 "*Mus musculus*, *Globba paniculata*, *Globba platystachya*, *Burbidgea schizocheila*, *Plasmodium falciparum* 3D7, *Escherichia coli*, *Homo sapiens*, *Arabidopsis thaliana*, *Globba* sp. Takano cult.17(KY0), *Globba campophylla*, *Zea mays*, *Clostridium tetani* E88, *Siphonochilus aethiopicus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"

269 399 36 "*Homo sapiens*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Papio anubis*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Arabidopsis thaliana*, *Drosophila virilis*, *Zymomonas mobilis*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus ihayensis* HTE831, *Neurospora crassa*, *Ciona intestinalis*, *Rattus norvegicus*, *Didelphis virginiana*, *Bacillus anthracis* str. Ames, *Porcine lymphotropic herpesvirus 2*, *Pan troglodytes*, *Medicago truncatula*, *Dictyostelium discoideum*,

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- Toxoplasma gondii, Poncirus trifoliata, Xenopus laevis, Acipenser oxyrhynchus oxyrhynchus"
- 270 400 22 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Medicago truncatula"
- 271 401 36 "Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Ipomoea nil, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Papio anubis, Sus scrofa, Oryza sativa, Danio rerio, Plasmodium falciparum 3D7, Buchnera aphidicola, Mycoplasma genitalium, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Methanocaldococcus jannaschii"
- 272 402 27 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Haemophilus influenzae Rd KW20, Danio rerio, Taenia solium, Rattus norvegicus, Arabidopsis thaliana, Mycoplasma pulmonis, Rattus rattus"
- 273 403 39 "Bacillus anthracis str. Ames, Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Drosophila melanogaster, Danio rerio, Oryza sativa (japonica cultivar-group), Medicago truncatula, Pauesia unilachni, Clostridium acetobutylicum, Caenorhabditis elegans, Ar"
- 274 404 31 "Homo sapiens, Felis catus, Mus musculus, Drosophila melanogaster, Danio rerio, Mycoplasma capricolum, Lotus corniculatus var. japonicus, Medicago truncatula, Cryptosporidium parvum, Rattus norvegicus, Human immunodeficiency virus 1, Pan troglodytes, Buchnera aphidicola str. Bp (Baizongia pistaciae), Plasmodium falciparum 3D7, Arabidopsis thaliana, Rickettsia conorii, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Schizosaccharomyces pombe, Ciona intestinalis, Leishmania mexicana, Clostridium perfringens str. 13"
- 275 405 70 "Rickettsia conorii, Mus musculus, Homo sapiens, Pan troglodytes, Dictyostelium discoideum, Lactococcus lactis subsp. lactis, Tutelina hartii, Poultonella alboimmaculata, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Strongylocentrotus purpuratus, Caenorhabditis elegans, Arabidopsis thaliana, Hippoglossus hippoglossus, Plasmodium falciparum, Shrimp white spot syndrome virus, Ictalurus punctatus, Boophilus microplus, Neomonaxia nelli, Trypanosoma brucei, Lotus corniculatus var. japonicus, Papio anubis, Tetrahymena thermophila, Rana catesbeiana, Schizosaccharomyces pombe"
- 276 406 57 "Rickettsia conorii, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Pan troglodytes, Schizosaccharomyces pombe"
- 277 407 31 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Danio rerio, Drosophila melanogaster, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Plasmodium falciparum, Microsporidium 57864, Bacillus cereus ATCC 14579, Human immunodeficiency virus 1, Escherichia coli CFT073, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Trypanosoma brucei, Clostridium acetobutylicum, Candidatus Carsonella ruddii, Caenorhabditis briggsae, Ochromonas danica, Oryza sativa (japonica cultivar-group), Rice dwarf virus, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Rattus norvegicus, Helicobacter hepaticus ATCC 51449, Clostridium perfringens str. 13"
- 278 408 37 "Pauesia sp., Brassica napus, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Danio rerio, Plasmodium falciparum, Clostridium perfringens str. 13, Rattus norvegicus, Salmonella typhimurium LT2, Salmone"

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- 279 409 34 "Homo sapiens, Drosophila melanogaster, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Rhizophyidium sp. 136, Clostridium acetobutylicum, Euglena gracilis, Darevskia brauneri, Darevskia lindholmi, Darevskia daghestanica, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Sus scrofa, Bacillus anthracis str. Ames, Clostridium tetani E88, Saccharomyces cerevisiae, Plasmodium falciparum, Guillardia theta, Cunninghamella elegans, Dictyostelium discoideum, Saccharomyces douglasii"
- 280 410 32 "Homo sapiens, Sulfolobus solfataricus, Plasmodium falciparum 3D7, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mycoplasma pulmonis, Mus musculus, Bos taurus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Medicago truncatula, Arabidopsis thaliana, Drosophila melanogaster, Flaveria trinervia, Ureaplasma urealyticum, Oceanobacillus iheyensis HTE831, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Clostridium perfringens str. 13"
- 281 411 29 "Caenorhabditis elegans, Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Papio anubis, Schistostega pennata, Danio rerio, Schizosaccharomyces pombe, Clostridium perfringens str. 13, Dictyostelium discoideum, Mus musculus, Sus scrofa, Oryza sativa (japonica cultivar-group), Sinningia reitzii, Sinningia lindleyi, Bacillus cereus ATCC 14579, uncultured eukaryote, Oryza sativa (indica cultivar-group), Clostridium tetani E88, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Acinetobacter Iwoffii, Prochlorococcus marinus subsp. marinus str. CCMP1375, Bacillus subtilis subsp. subtilis str. 168, Clostridium intestinale, Thermoanaerobacterium thermosaccharolyticum, Macaca fascicularis, Geobacillus stearothermophilus, Bacillus subtilis, Clostridium sp., Oryzias javanicus"
- 282 412 29 "Danio rerio, Homo sapiens, Rickettsia conorii, Bacillus whitei, Bacillus grandii grandii, Bacillus lynceorum, Medicago truncatula, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Bacillus rossius redtenbacheri, Plasmodium falciparum, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Clostridium tetani E88, Caenorhabditis elegans, Lymphocystis disease virus 1, Prochlorococcus marinus, Pyrococcus abyssi, Arabidopsis thaliana, Antithamnion sp., Paracentrotus lividus, Neurospora crassa, Nostoc sp. PCC 7120"
- 283 413 41 "Cyanophora paradoxa, Homo sapiens, Methanosarcina acetivorans C2A, Candidatus Carsonella ruddii, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Mus musculus, Xenopus laevis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Melanoplus sanguinipes entomopoxvirus, Tetrahymena capricornis, Medicago truncatula, Dictyostelium discoideum, Plasmodium falciparum 3D7, Vigna unguiculata, Mauritia maculifera, Oryza sativa (japonica cultivar-group), Atelixerix albiventris, Pan troglodytes, Musculium lacustre, Sphaerium striatinum, Papilio rutulus, Biomphalaria sudanica, Biomphalaria alexandrina, Bacillus cereus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Biomphalaria smithi, Pagurus hirsutiusculus, Pagurus bernhardus, Labidochirus splendescens, Guillardia theta, Canis familiaris, Mesostigma viride"
- 284 414 37 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Eimeria tenella, Drosophila melanogaster, Western X phytoplasma, Saccharomyces cerevisiae, Pneumocystis carinii, Korotnevelia stella, Pan troglodytes, Tetrahymena thermophila, Arabidopsis thaliana, Pyrococcus furiosus DSM 3638,

- Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*, *Medicago truncatula*, *Bombyx mori*"
- 285 415 35 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Polyporus bichir*, *Ehrlichia ruminantium*, Iris yellow spot virus, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Poncirus trifoliata*, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Tetrahymena thermophila*, *Entamoeba histolytica*, *Nicotiana tabacum*, *Drosophila teissieri*, *Isophysis tasmanica*, *Lotus corniculatus* var. *japonicus*, *Bacillus halodurans*, *Carollia perspicillata*, *Toxoplasma gondii*, *Melanoplus sanguinipes* entomopoxvirus, *Methanocaldococcus jannaschii*, *Photobacterium luminescens*, *Diplarrhena latifolia*, *Bos taurus*" 10
- 286 416 27 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Sus scrofa*, *Danio rerio*"
- 287 417 32 "Homo sapiens, *Autographa californica* nucleopolyhedrovirus, *Mus musculus*, *Rachiplusia ou* multiple nucleopolyhedrovirus, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Clostridium perfringens* str. 13, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Enterococcus faecalis*, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Pneumocystis carinii* f. sp. *macaca*, *Spiroplasma citri*, *Pneumocystis carinii*, *Danio rerio*, *Saccharomyces cerevisiae*, *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*, *Methanocaldococcus jannaschii*, *Polycaena formosa*, *Felis catus*, *Tetrahymena thermophila*" 20
- 288 418 28 "*Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Chlamydomonas reinhardtii* GPIC, *Clostridium acetobutylicum*, *Streptococcus agalactiae*, *Ureaplasma urealyticum*, *Leishmania major*, *Caenorhabditis elegans*, *Danio rerio*"
- 289 419 31 "*Mus musculus*, *Homo sapiens*, *Escherichia coli* CFT073, *Arabidopsis thaliana*, *Streptococcus gordonii*, *Vibrio cholerae*, *Caenorhabditis elegans*, synthetic construct, *Drosophila melanogaster*, *Bacteroides thetaiotaomicron* VPI-5482, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Sulfolobus islandicus* rod-shaped virus 2, *Oryza sativa* (japonica cultivar-group), *Ornithorhynchus anatinus*, *Macaca fascicularis*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Sus scrofa*, *Staphylococcus aureus* subsp. *aureus* Mu50" 30
- 290 420 31 "*Mus musculus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Clostridium tetani* E88, *Bos taurus*, *Amsacta moorei* entomopoxvirus, *Buchnera aphidicola* str. " 40
- 291 421 36 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Medicago truncatula*, *Coxiella burnetii* RSA 493, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Takifugu rubripes*, *Plasmodium falciparum*, *Ureaplasma urealyticum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Drosophila erecta*, *Shewanella oneidensis* MR-1, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Plasmodium knowlesi*, *Suillus sinuspauiianus*, *Oceanobacillus ihewiensis* HTE831, *Ciona intestinalis*, *Anopheles gambiae*, *Plasmodium fragile*"
- 292 422 35 "Homo sapiens, *Caenorhabditis elegans*, *Nostoc* sp. PCC 7120, *Danio rerio*, *Mus musculus*, *Staphylococcus epidermidis* ATCC 12228, *Streptococcus* 50

- cus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group)"
- 293 423 28 "Mus musculus, Ciona intestinalis, Homo sapiens, Simian foamy virus-orangutan, Drosophila melanogaster, Cicindela schauppi, Cicindela cazieri, Methanosarcina acetivorans C2A"
- 294 424 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Mus musculus, Staphylococcus epidermidis ATCC 12228, Macaca mulatta, Sus scrofa, Papio anubis, Staphylococcus epidermidis"
- 295 425 29 "Lactobacillus helveticus, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Encephalitozoon cuniculi, Danio rerio, Aquifex aeolicus VF5, Actinobacillus actinomycetemcomitans, Clostridium acetobutylicum, Candida albicans, Dictyostelium discoideum" 10
- 296 426 31 "Caenorhabditis elegans, Homo sapiens, Listeria ivanovii, Caenorhabditis briggsae, Mus musculus, Chlamydomonas reinhardtii, Prochlorococcus marinus, Arabidopsis thaliana, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Campylobacter jejuni, Rattus norvegicus, Dictyostelium discoideum, Borrelia burgdorferi B31, Drosophila melanogaster, Zea mays, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Bos taurus, Sus scrofa, Mycoplasma pulmonis, Plasmodium falciparum, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Melanoplus sanguinipes entomopoxvirus" 20
- 297 427 40 "Wolbachia endosymbiont of Brugia malayi, Danio rerio, Homo sapiens, Caenorhabditis elegans, Mus musculus, Dictyostelium discoideum, Bombyx mori, Plasmodium falciparum 3D7, Arabidopsis thaliana, Clostridium acetobutylicum, Lycaeides melissa, Lycaeides idas, "
- 298 428 31 "Oryza sativa (japonica cultivar-group), Homo sapiens, Macaca mulatta, Papio anubis, Dictyostelium discoideum, Mus musculus, Danio rerio, Methanosarcina acetivorans C2A, Grus japonensis, Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Sus scrofa" 30
- 299 429 31 "Danio rerio, Homo sapiens, Helicobacter pylori 26695, Mus musculus, Mycoplasma hominis, Escherichia coli, Enterococcus faecalis V583, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Ophiostoma floccosum, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group), Bacillus halodurans"
- 300 430 20 "Rattus norvegicus, Homo sapiens, Gallus gallus, Danio rerio"
- 301 431 39 "Arabidopsis thaliana, Homo sapiens, Tadarida brasiliensis cynocephala, Tadarida brasiliensis mexicana, Mus musculus, Plasmodium falciparum 3D7, Bacillus lynceorum, Bacillus cereus ATCC 14579, Drosophila melanogaster, Danio rerio, Bos taurus, Medicago truncatula, Pan troglodytes, Bacillus subtilis subsp. subtilis str. 168, Stylophora pistillata, Dictyostelium, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Bacillus anthracis str. Ames, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Tetrahymena thermophila, Gossypium barbadense, Sus scrofa, Caenorhabditis elegans, Papio anubis, Helobdella fusca, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes" 40
- 302 432 34 "Dictyostelium discoideum, Homo sapiens, Tritelasma ixiooides, Drosophila melanogaster, Caenorhabditis elegans, Shewanella oneidensis MR-1" 50

- , *Medicago truncatula*, *Danio rerio*, *Spinacia oleracea*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Nicotiana tabacum*, *Fundulus heteroclitus*, *Methanocaldococcus jannaschii*, *Emericella nidulans*, *Cicuta virosa*, *Arabidopsis thaliana*, *Bos taurus*, *Clostridium tetani* E88, *Mus musculus*, *Schmidtea mediterranea*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Tetradontophora bielensis*, *Lactococcus lactis* subsp. *lactis*, *Euglena gracilis*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Beta vulgaris* subsp. *vulgaris*, *Listeria monocytogenes*, *Lactococcus lactis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Glomus claroideum*, *Medicago sativa*, Human rotavirus A"
- 303 433 36 "Medicago truncatula, *Rickettsia prowazekii*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Zea mays*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Papio anubis*, *Abax parallelepipedus lombardus*, *Clostridium*" 10
- 304 434 36 "Oryza sativa (japonica cultivar-group), *Empyreauma pugi* one, *Empyreauma affinis*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*, *Bacillus anthracis* str. Ames, *Enterococcus faecalis* V583, *Pan troglodytes*, *Drosophila melanogaster*, *Mus musculus*, *Lactococcus lactis*, *Methanoscarcina acetivorans* C2A, *Hepialus yunnanensis*, *Brachyspira hyodysenteriae*, *Engraulis japonicus*, *Sus scrofa domestica*, *Atelerix albiventris*, Bacteriophage L-413C, *Clostridium tetani* E88, *Sorghum bicolor*, *Camelpox virus* CMS, *Lycopersicon esculentum*, *Batrachoseps attenuatus*, *Lactococcus lactis* subsp. *lactis*, *Catharanthus roseus*, *Amsacta moorei* entomopoxvirus, *Vibrio cholerae*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Cryptosporidium parvum*, *Medicago truncatula*, *Camelpox virus* M-96" 20
- 305 435 51 "Drosophila melanogaster, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Mus musculus*, *Oryzias latipes*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Rattus norvegicus*, *Drosophila littoralis*, *Caenorhabditis elegans*, *Artogeia napi*, *Didelphis virginiana*, *Pan troglodytes*"
- 306 436 28 "Arabidopsis thaliana, *Caenorhabditis elegans*, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Pisum sativum*, *Caenorhabditis briggsae*, *Pan troglodytes*, *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Medicago truncatula*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC C 25586, *Duroia micrantha*, *Duroia eriopila*, *Duroia aquatica*, *Rattus norvegicus*, *Lactococcus lactis* subsp. *lactis*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Danio rerio*, *Mycoplasma penetrans*, *Lactobacillus acidophilus*, Peanut clump virus" 30
- 307 437 29 "Mus musculus, *Arabidopsis thaliana*, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Hypocrea jecorina*, *Oryza sativa* (japonica cultivar-group), *Crepidula maculosa*, *Crepidula coquimbensis*, *Medicago truncatula*, *Drosophila melanogaster*, *Sus scrofa*, *Plasmodium falciparum* 3D7, *Gallus gallus*, *Trypanosoma cruzi*, *Xenopus laevis*, *Yarrowia lipolytica*, *Danio rerio*, *Arabis gemmifera*, *Aotus azarai*, *Saccharomyces pastorianus*, *Leptospira interrogans* serovar lai str. 56601, *Pan troglodytes*, *Caenorhabditis elegans*, *Nicotiana tabacum*, *Archaeoglobus fulgidus* DSM 4304, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Carassius auratus*" 40
- 308 438 31 "Homo sapiens, *Danio rerio*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Mus musculus*, *Pan troglodytes*, *Chironomus* sp. LRC-2002, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR 4, *Lotus corniculatus* var. *japonicus*, Sacc" 50

- 309 439 35 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio, Buchnera aphidicola, Bacteriophage A118, Oryctolagus cuniculus, Medicago truncatula, Drosophila melanogaster, Marchantia polymorpha, Arabidopsis thaliana, Clostridium acetobutylicum, Mycoplasma pulmonis, Bacillus megaterium, Carpobrotus chilensis, Antirrhinum majus, Spinacia oleracea, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Anopheles gambiae, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pichia angusta, Methanocaldococcus jannaschii, Mytilus galloprovincialis, Sminthopsis macroura"
- 310 440 29 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Rattus norvegicus, Ehrlichia chaffeensis, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Leptospira interrogans serovar lai str. 56601, Enterococcus faecalis V583, Brucella melitensis 16M, Medicago truncatula, Drosophila melanogaster, Brucella suis 1330, Globodera rostochiensis, Murid herpesvirus 4, Apis mellifera, Danio rerio, Candidatus Carsonella ruddii, Plasmodium falciparum 3D7, Bos taurus" 10
- 311 441 61 "Mus musculus, Dictyostelium discoideum, Homo sapiens, Papio anubis, Sus scrofa, Arabidopsis thaliana, Plasmodium falciparum 3D7, Gallus gallus, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Pan troglodytes, Gossypium barbadense" 20
- 312 442 24 "Homo sapiens, Mus musculus, Pan troglodytes, Drosophila melanogaster, Arabidopsis thaliana, Myxoma virus, Canis familiaris, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Rabbit fibroma virus, Sorghum bicolor, Methanocaldococcus jannaschii"
- 313 443 24 "Homo sapiens, Danio rerio, Mus musculus, Echium vulgare, Arabidopsis thaliana, Leptospira interrogans serovar lai str. 56601, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sulfolobus solfataricus, Human herpesvirus 6, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50"
- 314 444 39 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Danio rerio, Helicobacter hepaticus ATCC 51449, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Aquifex aeolicus VF5, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium tetani E88, Simian immunodeficiency virus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Saccharomyces cerevisiae, Lumpy skin disease virus" 30
- 315 445 27 "Homo sapiens, Plasmodium falciparum 3D7, Disa bracteata, Ophrys apifera, Disa glandulosa, Corycium carnosum, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Peristylus ngoyensis, Holothrix sp. 675MW C, Mus musculus, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Mycoplasma gallisepticum R, Dictyostelium discoideum, Clostridium tetani E88, Drosophila pseudoobscura, Buchnera aphidicola str. Sg (Schizaphis graminum), Streptococcus pyogenes MGAS8232, TTV-like mini virus, Lactococcus lactis subsp. lactis, Listeria monocytogenes, Listeria innocua, Listeria welshimeri, Bos taurus, Drosophila sechellia, Lotus corniculatus var. japonicus, Drosophila virilis, Satyrium nepalense, Human immunodeficiency virus 1" 40
- 316 446 27 "Mus musculus, Methanosarcina mazei Goe1, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Phthorimaea operculella granulovirus, Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Danio rerio, Legionella pneumophila serogroup 6, Legionella pneumophila, Mycoplasma penetrans, Caenorhabditis elegans, Schizosa" 50

ccharomyces pombe"

- 317 447 27 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Pan troglodytes, Mycoplasma opalescens, Periboea paucifolia, Mycoplasma hyopharyngis, Triticum aestivum"
- 318 448 36 "Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Mus musculus, Arabidopsis thaliana, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Entamoeba histolytica, Mycoplasma penetrans, Medicago truncatula, Borrelia burgdorferi B31, Campylobacter jejuni, Tigriopus californicus, Oryza sativa (indica cultivar-group), Pelomyxa palustris, Sulfolobus solfataricus, Caenorhabditis elegans, Bacillus subtilis, Caenorhabditis briggsae, Cicer reticulatum, Cicer echinospermum, Cicer arietinum, Myxine glutinosa, Musca domestica, Beta vulgaris subsp. vulgaris, Bacillus subtilis subsp. subtilis str. 168, Mesochaete undulata" 10
- 319 449 39 "Plasmodium falciparum 3D7, Danio rerio, Homo sapiens, Mus musculus, Epirrita autumnata, Dictyostelium discoideum, Saccharomyces cerevisiae, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Lotus corniculatus var. japonicus, Tetrapisispora phaffii, Glycine max, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Ceratovacuna nekoashi, Aglais urticae, Drosophila melanogaster, Medicago truncatula, Caenorhabditis elegans, Pan troglodytes, Latimeria menadoensis" 20
- 320 450 36 "Homo sapiens, Clostridium cochlearium, Danio rerio, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Bacillus anthracis str. Ames, Carabus yaconinus yamaokai, Carabus japonicus japonicus, Campylobacter jejuni subsp. jejuni NCTC 11168, Carabus yaconinus, Drosophila melanogaster, Trypanosoma cruzi, Carabus sacarum, Carabus lindemanni, Carabus kadyrbekovi, Oryza sativa (japonica cultivar-group), Pyrus pyrifolia, Rattus norvegicus, Drosophila littoralis, Papio anubis, Caenorhabditis elegans, Arabidopsis thaliana"
- 321 451 28 "Caenorhabditis elegans, Homo sapiens, Plasmodium falciparum 3D7, Shewanella oneidensis MR-1, Drosophila melanogaster, Danio rerio, Sulfolobus acidocaldarius, Oryza sativa (japonica cultivar-group), Mus musculus, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Medicago truncatula, Anabaena variabilis, Hevea brasiliensis, Arabidopsis thaliana, Nostoc sp. PCC 7120" 30
- 322 452 42 "Homo sapiens, Danio rerio, Mus musculus, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Oryza sativa (japonica cultivar-group), Mycoplasma capricolum, Dictyostelium discoideum, Drosophila melanogaster, Papio anubis, Plasmodium falciparum 3D7"
- 323 453 27 "Rattus norvegicus, Arabidopsis thaliana, Dictyostelium discoideum, Clostridium tetani E88, Pan troglodytes, Bacteroides thetaiotaomicron VPI-5482, Equus caballus, Homo sapiens, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Euglena gracilis, Oceanobacillus iheyensis HTE831, Danio rerio, Ceratitis capitata, Bacillus halodurans" 40
- 324 454 28 "Cletocamptus deitersi, Homo sapiens, Caenorhabditis elegans, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Danio rerio, Arabidopsis thaliana, Picea sitchensis, Picea engelmannii, Spiroplasma citri, Plasmodium falciparum 3D7, Sulfolobus tokodaii, Candida albicans, Clostridium perfringens str. 13, Gallus gallus"
- 325 455 28 "Homo sapiens, Medicago truncatula, Mus musculus, Asperg 50

illus parasiticus, Danio rerio, Bacillus anthracis str. Ames, Borrelia burgdorferi B31, Shewanella oneidensis MR-1, Streptococcus agalactiae 2603V/R, Arabidopsis thaliana, Brassica rapa, Streptococcus agalactiae NEM316, Caenorhabditis briggsae, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"

326 456 28 "Homo sapiens, Mus musculus, Streptococcus mutans UA159, Enterococcus faecalis V583, Pan troglodytes, Smynthopsis macroura, Drosophila melanogaster, Plasmodium chabaudi, Plasmodium falciparum 3D7, Oryza sativa, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Aparallactus guentheri, Medicago truncatula"

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327 457 39 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Mycoplasma penetrans, Danio rerio, Clostridium perfringens str. 13, Oryza sativa (japonica cultivar-group), Oryzias latipes, Pan troglodytes, Caenorhabditis elegans, Clostridium tetani E88, Clostridium acetobutylicum, Bos taurus, Capra hircus, Microcystis aeruginosa, Microcystis viridis, uncultured cyanobacterium, Arabidopsis thaliana, Pteraster tessellatus, Plasmodium falciparum, Ovis aries, Tahyna virus, Pisum sativum, Neurospora crassa, Buchnera aphidicola, Anopheles gambiae"

328 458 36 "Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Homo sapiens, Arabidopsis thaliana, Danio rerio, Medicago truncatula, Mus musculus, Candidatus Carsonella ruddii, Drosophila melanogaster, Cynolebias affinis, Cynolebias cf. cyaneus, Cynolebias n. sp. duraznensis, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Drosophila erecta, Uroleucon rapunculoidis, Cryptophlebia leucotreta granulovirus, Melanoplus sanguinipes entomopoxvirus, Leptonycteris nivalis, Helicobacter hepaticus ATCC 51449, Tetrahymena thermophila, Equus caballus, Bacillus anthracis str. Ames, Dictyostelium discoideum, Gonioctena olivacea, Brachymerium preissianum, Bryum ruderales, Bryum gemmiparum, Bryum funkii, Brachymerium angolense, Brachymerium acuminatum, Bryum argenteum, Rhizofabronia perpilosa, Stagnicola elodes"

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329 459 54 "Mus musculus, Homo sapiens, Kluyveromyces lactis, Plasmodium falciparum 3D7, Plasmodium falciparum, Danio rerio, Pan troglodytes, Drosophila melanogaster, Saccharomyces uvarum, Rattus norvegicus, Entamoeba dispar, Tetrahymena pyriformis, Anas platyrhynchos, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)"

30

330 460 32 "Oceanobacillus iheyensis HTE831, Plasmodium falciparum 3D7, Homo sapiens, Leptospira interrogans, Bacillus anthracis str. Ames, Mus musculus, Arabidopsis thaliana, Danio rerio, Melanoplus sanguinipes entomopoxvirus, Drosophila melanogaster, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Sinningia harleyi, Bacillus halodurans, Shewanella oneidensis MR-1, Takifugu rubripes, Cloning vector pHLH/int(+), Cloning vector pVLH/int(+), Gallus gallus, Methanobacterium ivanovii, Clostridium pasteurianum, Caenorhabditis briggsae, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Clostridium perfringens str. 13, Plasmodium falciparum"

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331 461 32 "Homo sapiens, Mus musculus, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum, Haemophilus influenzae Rd KW20, Lycopersicon esculentum"

332 462 24 "Homo sapiens, synthetic construct, Mus musculus, Oryza sativa (japonica cultivar-group), Eimeria tenella, Buchnera aphidicola str. Bp (Baizongia pistaciae), Arabidopsis thaliana, Pseudomonas phage phiKZ, Oryza sativ

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a, *Achlya dubia*, *Bos taurus*, *Sulfolobus tokodaii*, *Caenorhabditis elegans*"

333 463 24 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Pan troglodytes*, *Danio rerio*, *Arabidopsis thaliana*, *Macaca fascicularis*, *Citrus unshiu*"

334 464 39 "Mus musculus, *Homo sapiens*, *Oryza sativa* (indica cultivar-group), *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Leptospira interrogans* serovar lai str. 56601, *Prochlorococcus marinus*, *Tetraodon nigroviridis*, *Pan troglodytes*, *Drosophila melanogaster*, *Gerrhosaurus major bottegi*, *Clostridium tetani* E88, *Shewanella oneidensis* MR-1, *Clostridium acetobutylicum*, *Pleurotus ostreatus*, *Takifugu rubripes*, *Pseudomonas syringae* pv. phaseolicola, *Pisum sativum*, *Fowlpox virus*, *Danio rerio*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Pseudacris regilla*, *Helicobacter hepaticus* ATCC 51449, *Arabidopsis thaliana*, *Clostridium perfringens* str. 13"

335 465 39 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Pan troglodytes*, *Danio rerio*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Xenopus laevis*, *Drosophila melanogaster*, *Warrea warreana*, *Leptospira biflexa* temperate bacteriophage LE1, *Lotus corniculatus* var. japonicus, *Candidatus Carsonella ruddii*, *Candida albicans*, *Bos taurus*, *Schizosaccharomyces pombe*, *Apis mellifera*, *Columba livia*, *Plasmodium chabaudi chabaudi*, *Atelerix albiventris*, *Medicago truncatula*, *Borrelia burgdorferi* B31"

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表4

Frag_Des	SEQ_ID	N (nt)	Organism
336	466	32	"Homo sapiens, <i>Danio rerio</i> , <i>Plasmodium falciparum</i> 3D7, <i>Mus musculus</i> , <i>Pan troglodytes</i> , <i>Oryza sativa</i> (japonica cultivar-group), <i>Medicago truncatula</i> , <i>Xenocatantops humilis</i> , <i>Papio anubis</i> , <i>Oryza sativa</i> , <i>Swinepox virus</i> , <i>Zygosaccharomyces florentinus</i> , <i>Bacillus cereus</i> ATCC 14579, <i>Bacillus anthracis</i> str. Ames, <i>Drosophila melanogaster</i> , <i>Lemur catta</i> , <i>Arabidopsis thaliana</i> , <i>Helianthus annuus</i> , <i>Caenorhabditis elegans</i> "
337	467	28	"Homo sapiens, <i>Danio rerio</i> , <i>Mus musculus</i> , <i>Oryza sativa</i> (japonica cultivar-group), <i>Sulfolobus tokodaii</i> , <i>Medicago truncatula</i> , <i>Rattus norvegicus</i> , <i>Arabidopsis thaliana</i> , <i>Oryctolagus cuniculus</i> , <i>Drosophila melanogaster</i> , <i>Papio anubis</i> , <i>Caenorhabditis elegans</i> , <i>Zea mays</i> , <i>Plasmodium falciparum</i> 3D7, <i>Clostridium acetobutylicum</i> , <i>Bos taurus</i> , <i>Caenorhabditis briggsae</i> , <i>Chrysolina americana</i> , <i>Schizosaccharomyces pombe</i> "
338	468	31	"Homo sapiens, <i>Mus musculus</i> , <i>Oryza sativa</i> (japonica cultivar-group), <i>Listeria innocua</i> , <i>Caenorhabditis elegans</i> , <i>Drosophila melanogaster</i> , <i>Sus scrofa</i> , <i>Mycobacterium leprae</i> , <i>Rickettsia conorii</i> , <i>Rattus norvegicus</i> , <i>Danio rerio</i> , <i>Streptococcus thermophilus</i> , <i>Solanum tuberosum</i> , <i>Lotus corniculatus</i> var. japonicus, <i>Buchnera aphidicola</i> str. APS (<i>Acyrtosiphon pisum</i>), <i>Medicago truncatula</i> , <i>Human immunodeficiency virus 1</i> "
339	469	29	"Homo sapiens, <i>Danio rerio</i> , <i>Mus musculus</i> , <i>Plasmodium falciparum</i> 3D7, <i>Medicago truncatula</i> , <i>Clostridium tetani</i> E88, <i>Fusobacterium nucleatum</i> subsp. nucleatum ATCC 25586, <i>Lactococcus lactis</i> subsp. lactis, <i>Arabidopsis thaliana</i> "
340	470	30	" <i>Canis familiaris</i> , <i>Homo sapiens</i> , <i>Equus caballus</i> , <i>Mus musculus</i> , <i>Caenorhabditis elegans</i> , <i>Canine herpesvirus</i> , <i>Ateline herpesvirus 3</i> , <i>Oryza</i>

- sativa (japonica cultivar-group), *Helicoidaris erythrogramma*"
- 341 471 27 "Homo sapiens, *Bacillus halodurans*, *Mus musculus*, *Anolis roquet*"
- 342 472 24 "*Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Lemur catta*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Magnolia hypoleuca*, *Vibrio parahaemolyticus*, *Michelia formosana*"
- 343 473 23 "*Mus musculus*, *Xestia c-nigrum granulovirus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*"
- 344 474 31 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Sulfolobus tokodaii*, *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Saccharomyces cerevisiae*, *Ostrinia nubilalis*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Papio anubis*, *Dictyostelium discoideum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Ostrinia furnacalis*, *Plasmodium falciparum*, *Drosophila hydei*, *Lotus corniculatus* var. *japonicus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Caenorhabditis elegans*, *Nostoc* sp. PCC 7120"
- 345 475 29 "*Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Drosophila melanogaster*, *Lemur catta*, *Brugia malayi*, *Colletotrichum lindemuthianum*, *Bombyx mori*, *Arabidopsis thaliana*, *Danio rerio*, *Cynanchum rungwense*, *Cynanchum polyanthum*, *Cynanchum ovalifolium*, *Cynanchum floribundum*"
- 346 476 35 "*Homo sapiens*, *Cyparium concolor*, *Oryza sativa* (japonica cultivar-group), *Methanosarcina acetivorans* C2A, *Danio rerio*, *Medicago truncatula*, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Naegleria gruberi*, *Equus caballus*, *Pan troglodytes*, *Dictyostelium discoideum*, *Drosophila vulcana*, *Clostridium tetani* E88, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Trypanosoma cruzi*, *Xenopus laevis*, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Plasmodium berghei*, *Beta vulgaris*"
- 347 477 28 "*Homo sapiens*, *Methanosarcina mazei* Goe1, *Mus musculus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Agrobacterium tumefaciens*, *Neacomys spinosus*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Lycopersicon esculentum*, *Felis catus*, *Edwardsiella ictaluri*, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Papio anubis*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Danio rerio*, *Caenorhabditis briggsae*, *Haemophilus influenzae* Rd KW20, *Saccharomyces cerevisiae*, *Helicobacter hepaticus* ATCC 51449"
- 348 478 30 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Lycopersicon esculentum*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Lotus corniculatus* var. *japonicus*, *Trypanosoma cruzi*, *Drosophila virilis*, *Saccharomyces cerevisiae*, *Rattus norvegicus*, *Medicago truncatula*, *Takifugu rubripes*, *Staphylococcus epidermidis* ATCC 12228, *Cyathea contaminans*, *Sphaeropteris hainanensis*, *Sphaeropteris brunoniana*, *Staphylococcus epidermidis*"
- 349 479 27 "*Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*"
- 350 480 25 "*Thermoanaerobacter tengcongensis*, *Papio anubis*, *Homo sapiens*, *Human herpesvirus 5*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*"

- 351 481 24 "Homo sapiens, Campylobacter fetus, Oryza sativa (japonica cultivar-group), Mus musculus, Schmidtea mediterranea, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Sorghum bicolor, Chironomus thummi, Danio rerio, Brassica oleracea var. ramosa"
- 352 482 24 "Homo sapiens, Arabidopsis thaliana, Rattus norvegicus, Drosophila melanogaster, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Mus musculus, Dictyostelium discoideum, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Caenorhabditis briggsae"
- 353 483 27 "Borrelia burgdorferi B31, Homo sapiens, Borrelia burgdorferi, Mus musculus, Pan troglodytes, Chryseobacterium meningosepticum, Drosophila melanogaster, Macaca mulatta, Synechococcus sp. PCC 7942, Medicago truncatula, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum" 10
- 354 484 32 "Medicago truncatula, Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Plasmodium falciparum, Dictyostelium discoideum, Sulfolobus shibatae, Candidatus Blochmannia floridanus, Lotus corniculatus var. japonicus, Hipparchia neomiris, Mungos mungo, Tetrapus ecuadoranus, Pegoscapus lopesi, Pegoscapus gemellus, Pegoscapus herrei, Pegoscapus hoffmeyerii, Pan troglodytes, Tetrapus costaricanus, Arabidopsis thaliana, Wiebesia punctatae, Lycopersicon esculentum, Clostridium acetobutylicum, Cyanidium caldarium, Erebia triaria, Caenorhabditis elegans, Saccharomyces servazzii, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Macaranga tanarius, Botryotinia fuckeliana, Nostoc sp. PCC 7120, Clostridium perfringens str. 13" 20
- 355 485 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Borrelia burgdorferi B31, Arabidopsis thaliana, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Schistosoma japonicum, Human herpesvirus 6, Danio rerio, Prochlorococcus marinus subsp. marinus str. CCMP1375, Human herpesvirus 6B, Seriola quinqueradiata, Caenorhabditis elegans, Nostoc sp. PCC 7120" 30
- 356 486 28 "Homo sapiens, Arabidopsis thaliana, Danio rerio, Rattus norvegicus, Pseudomonas syringae pv. tomato str. DC3000, Drosophila melanogaster, Mus musculus"
- 357 487 29 "Vibrio vulnificus CMCP6, Homo sapiens, Plasmodium falciparum 3D7, Canis familiaris, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Mus musculus, Xenopus laevis, Papio anubis, Nicotiana tabacum, Caenorhabditis elegans, Lycopersicon esculentum, Mus musculus molossinus, Leptospira interrogans serovar lai str. 56601, Clostridium acetobutylicum, Dictyostelium discoideum, Malus x domestica, Caenorhabditis briggsae"
- 358 488 27 "Homo sapiens, Danio rerio, Mus musculus, Blumeria graminis, Bacillus thuringiensis, Campylobacter jejuni subsp. jejuni NCTC 11168, Escherichia coli" 40
- 359 489 29 "Homo sapiens, Rattus norvegicus, Mus musculus, Pseudomonas phage phiKZ"
- 360 490 32 "Homo sapiens, Triticum monococcum, Mus musculus, Leptospira interrogans serovar lai str. 56601, Clostridium tetani E88, Merendera montana, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Medicago truncatula, Danio rerio, Lycopersicon esculentum, Caenorhabditis elegans, Dictyostelium discoideum, Bos taurus, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Prochlorococcus marinus, Trypanosoma brucei, Lotus corniculatus var. japonicus, 50

- Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW 2, Wuchereria bancrofti, Staphylococcus aureus subsp. aureus Mu50"
- 361 491 27 "Oryza sativa (japonica cultivar-group), Danio rerio, Chlamydia muridarum, Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE8 31, Dictyostelium discoideum, Pyrobaculum aerophilum str. IM2, Caenorhabditis elegans, Hordeum vulgare subsp. vulgare, Crocus vernus, Leishmania enriettii"
- 362 492 33 "Salmonella enterica, Homo sapiens, Danio rerio, Thermoplasma volcanium, Caenorhabditis elegans, Mus musculus"
- 363 493 33 "Vibrio cholerae, Mus musculus, Homo sapiens, Methanosarcina acetivorans C2A, Lactobacillus gasseri, Arabidopsis thaliana, Danio rerio" 10
- 364 494 27 "Mycoplasma pulmonis, Homo sapiens, Sulfolobus solfataricus, Macaca fascicularis, Mus musculus, Arabidopsis thaliana, Tarebia granifera, Pyrococcus furiosus DSM 3638, Danio rerio, Mycobacterium leprae, Pyrococcus woesei, Oryza sativa (japonica cultivar-group), Gonium multicoccum"
- 365 495 24 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Danio rerio, Schizosaccharomyces pombe, Drosophila melanogaster, Thermoaerobacter tengcongensis, Dictyostelium discoideum, Porcine respiratory coronavirus, Plasmodium falciparum 3D7, Helicobacter hepaticus ATCC 51449" 20
- 366 496 31 "Mus musculus, Homo sapiens, Clostridium acetobutylicum"
- 367 497 35 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Dictyostelium discoideum, Anthophora acervorum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Danio rerio, Shewanella sp. SCRC-2738, Alternaria destruens, Alternaria longipes, Alternaria arborescens, Alternaria tenuissima, Alternaria alternata, Drosophila melanogaster, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Lemur catta, Leptospira interrogans, Phaseolus vulgaris, Lactococcus lactis subsp. lactis, Planicephalus flavicosta, Rickettsia prowazekii, Medicago truncatula, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Oncorhynchus mykiss, Encephalomyocarditis virus, Staphylococcus aureus subsp. aureus Mu50" 30
- 368 498 26 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Sus scrofa, Bos taurus, Takifugu rubripes, Sorghum bicolor, Danio rerio"
- 369 499 29 "Mus musculus, Homo sapiens, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Papio anubis, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mycoplasma gallisepticum"
- 370 500 31 "Cucumis sativus, Homo sapiens, Arabidopsis thaliana, Mus musculus, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Hypocrea jecorina, Oryza sativa (japonica cultivar-group)" 40
- 371 501 23 "Homo sapiens, Rattus norvegicus, Mus musculus, Yersinia pestis KIM, Arabidopsis thaliana, Hemibagrus nemurus, Yersinia pestis C092, Acanetobacter sp. ADP1, Danio rerio"
- 372 502 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pan troglodytes, Danio rerio, synthetic construct, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Drosophila melanogaster, Caenorhabditis elegans, Escherichia coli, Tupaia herpesvirus, Arabidopsis thaliana, Mycoplasma penetrans, Streptococcus thermophilus temperate bacteriophage 01205, Phage phi 4795"
- 373 503 27 "Homo sapiens, Mus musculus, Danio rerio, Bacillus cereu" 50

- s ATCC 14579, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Pasteurella multocida*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*
"
- 374 504 35 "Lotus corniculatus var. japonicus, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Calopteryx splendens balcanica*, *Candidatus Carsonella ruddii*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Planotortrix octo*, *Lycopersicon esculentum*, *Calopteryx splendens*, *Haemophilus ducreyi* 35000HP, *Listeria innocua*, *Staphylococcus epidermidis* ATCC 12228, *Pan troglodytes*, *Equus caballus*, *Xenopus laevis*, *Papio anubis anubis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Staphylococcus epidermidis*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Borrelia coriaceae*, *Caenorhabditis elegans*, *Methanocaldococcus jannaschii*" 10
- 375 505 37 "Clostridium perfringens str. 13, *Plasmodium falciparum* 3D7, *Danio rerio*, *Homo sapiens*, *Silene vulgaris*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Caenorhabditis elegans*, *Pan troglodytes*, *Mus musculus*, *Dictyostelium discoideum*, *Urostyl*"
- 376 506 45 "Bacillus cereus ATCC 14579, *Streptococcus thermophilus*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Arabidopsis thaliana*, *Liolaemus irregularis*, *Liolaemus albiceps*, *Medicago truncatula*, *Danio rerio*, *Clostridium perfringens* str. 13" 20
- 377 507 27 "Homo sapiens, *Rattus norvegicus*, *Danio rerio*, *Arabidopsis thaliana*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Pasteurella multocida*, *Bacillus subtilis*, *Mus musculus*, *Bacillus subtilis* subsp. *subtilis* str. 168"
- 378 508 27 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Gallus gallus*, *Agrobacterium tumefaciens*, *Glycine max*, *Lotus corniculatus* var. *japonicus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375"
- 379 509 23 "Arabidopsis thaliana, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Mermis nigrescens*, *Mesorhizobium loti*" 30
- 380 510 35 "Streptococcus thermophilus, *Bacillus anthracis* str. Ames, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, *Homo sapiens*, *Nitrosomonas europaea* ATCC 19718, *Human immunodeficiency virus 1*, *Caenorhabditis elegans*, *Bacteroides thetaiotaomicron* VPI-5482, *Plasmodium falciparum* 3D7, *Rana pipiens*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Candidatus Blochmannia floridanus*, *Arabis gemmifera*, *Streptococcus pneumoniae*, *Methanocaldococcus jannaschii*"
- 381 511 27 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*, *Macrurus magellanicus*, *Caenorhabditis elegans*, *Staphylococcus saprophyticus*, *Candidatus Blochmannia floridanus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacteriophage SPBc2*" 40
- 382 512 23 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Gallus gallus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Utricularia pubescens*, *Rattus norvegicus*, *Anopheles gambiae*"
- 383 513 27 "Drosophila melanogaster, *Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*, *Methanosarcina acetivorans* C2A, *Danio rerio*, *Oceanobacillus iheyensis* HTE831, *Pristionchus pacificus*, *Anopheles gambiae*"
- 384 514 27 "Homo sapiens, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Caenorhabditis elegans*, *Starmarella* aff. *bombicola* JJ-14.1, *Candida bombi*, *Aspius aspius*, *Leuciscus waleckii*, *Erimystax* x 50

- punctatus, *Etheostoma rufilineatum*, *Caenorhabditis briggsae*, *Telestes souffia*, *Plasmodium falciparum* 3D7, *Medicago truncatula*, *Cottus asper*, *Cynomys mexicanus*, *Lophius americanus*, *Paracottus knerii*, *Batrachocottus multiradiatus*, *Comephorus dybowskii*, *Comephorus baicalensis*, *Limnocottus pallidus*, *Limnocottus griseus*, *Limnocottus godlewskii*, *Limnocottus bergianus*, *Cyphocottus eurystomus*, *Asprocottus pulcher*, *Asprocottus platycephalus*, *Asprocottus herzensteini*, *Asprocottus korjakovi*, *Abyssocottus gibbosus*, *Arabidopsis thaliana*, *Rutilus arcasii*"
- 385 515 32 "Homo sapiens, *Mus musculus*, *Leptospira interrogans* serovar lai str. 56601, *Sus scrofa*, *Mycoplasma penetrans*, *Rattus norvegicus*, *Arabidopsis arenosa*, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Bos taurus*, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Listeria monocytogenes*, *Listeria innocua*, *Danio rerio*, *Pan troglodytes*" 10
- 386 516 31 "*Borrelia burgdorferi* B31, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Xenopus laevis*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Pan troglodytes*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Yersinia pseudotuberculosis*, *Meloidogyne chitwoodi*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus ihayensis* HTE831, *Mycoplasma penetrans*, *Listeria monocytogenes*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*"
- 387 517 36 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Escherichia coli* CFT073, *Plasmodium falciparum* 3D7, *Candidatus Blochmannia floridanus*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Oryza sativa*, *Danio rerio*, *Pan paniscus*, *Pan troglodytes schweinfurthii*, *Pan troglodytes troglodytes*, *Pan troglodytes verus*, *Pan troglodytes*, *Ciona intestinalis*" 20
- 388 518 32 "Homo sapiens, *Danio rerio*, *Corvus corax*, *Rattus norvegicus*, *Shigella flexneri* 2a str. 2457T, *Medicago truncatula*, *Shigella flexneri* 2a str. 301, *Arabidopsis thaliana*, *Canis familiaris*, *Phylloscopus trochilus*, *Sulfolobus solfataricus*, *Mus musculus*, *Escherichia coli*, *Ricania simulans*, *Mesembryanthemum crystallinum*, *Escherichia coli* K12, *Caenorhabditis briggsae*, *Anopheles gambiae*, *Oryza sativa* (japonica cultivar-group)" 30
- 389 519 25 "*Caenorhabditis elegans*, *Mus musculus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Arabidopsis thaliana*, *Hordeum vulgare*, *Amsacta moorei* entomopoxvirus, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus*, *Oryza sativa* (japonica cultivar-group), *Treponema pallidum*, *Thermosynechococcus elongatus* BP-1, *Saccharomyces cerevisiae*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 390 520 24 "*Pan troglodytes*, *Euphorbia esula*, *Homo sapiens*, *Macaca mulatta*, *Papio anubis*, *Caenorhabditis elegans*, *Mus musculus*, *Rattus norvegicus*, *Zea mays*, *Felis catus*" 40
- 391 521 28 "Homo sapiens, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Dictyocaulus viviparus*, *Caenorhabditis elegans*, *Mus musculus*, *Methanosarcina mazei* Goe1, *Papio anubis*, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pan troglodytes*, *Sulfolobus solfataricus*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*, *Danio rerio*"
- 392 522 28 "Homo sapiens, *Medicago truncatula*, *Caenorhabditis elegans*, *Pan troglodytes*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Clostridium acetobutylicum*, *Plasmodium falciparum*, *Human papillomavirus type 80*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*" 50

- 393 523 31 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Cyanophora paradoxa"
- 394 524 31 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Lactococcus lactis, Lactococcus lactis subsp. lactis, Oceanobacillus iheyensis HTE831, Medicago truncatula, Arabidopsis thaliana, Danio rerio, Helicobacter pylori 26695, Schizosaccharomyces pombe, Ciona intestinalis"
- 395 525 24 "Homo sapiens, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Saccharomyces cerevisiae, Xiphias gladius, Plasmodium falciparum 3D7, Listeria monocytogenes, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Cordyceps militaris, Solanum demissum, Danio rerio, Neurospora crassa" 10
- 396 526 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Streptococcus pneumoniae R6, Danio rerio"
- 397 527 31 "Clostridium acetobutylicum, Bacillus cereus ATCC 14579, Homo sapiens, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mus musculus, Dictyostelium discoideum, Staphylococcus aureus subsp. aureus Mu50, Drosophila melanogaster, Caenorhabditis elegans, Atelerix albiventris, Methanosarcina mazei Goe1, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Aeromonas salmonicida subsp. salmonicida, Arabidopsis thaliana, Nicotiana tabacum, Calycanthus floridus var. glaucus, Danio rerio" 20
- 398 528 27 "Homo sapiens, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Physarum polycephalum, Caenorhabditis elegans"
- 399 529 31 "Homo sapiens, Mus musculus, Methanocaldococcus jannaschii, Oryza sativa (japonica cultivar-group)"
- 400 530 24 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Takifugu rubripes" 30
- 401 531 32 "Homo sapiens, Ureaplasma urealyticum, Mus musculus, Arabidopsis thaliana, Gryllus texensis, Plasmodium falciparum 3D7, Medicago truncatula, Schizosaccharomyces pombe, Clostridium perfringens str. 13, Macaca fascicularis"
- 402 532 23 "Arabidopsis thaliana, Homo sapiens, Staphylococcus aureus phage phi 11, Mus musculus, Danio rerio, Lactococcus lactis subsp. lactis, Oryza sativa (japonica cultivar-group)"
- 403 533 19 "Bacillus anthracis str. Ames, Homo sapiens, Mus musculus" 40
- 404 534 27 "Rattus norvegicus, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Listeria seeligeri, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Chaetodipus nelsoni, Ureaplasma urealyticum, Lotus corniculatus var. japonicus, Clostridium perfringens str. 13"
- 405 535 28 "Homo sapiens, Taenia crassiceps, Hordeum vulgare subsp. vulgare, Zea mays, Mus musculus, Ureaplasma urealyticum, Oryzias latipes, Danio rerio, Drosophila melanogaster, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Takifugu rubripes"
- 406 536 31 "Oryza sativa (japonica cultivar-group), Homo sapiens, C 50

- aenorhabditis elegans, Mus musculus, Dictyostelium discoideum, Aplysia californica, Arabidopsis thaliana"
- 407 537 29 "Caenorhabditis elegans, Homo sapiens, Clostridium tetani E88, Mus musculus, Medicago truncatula, Plasmodium falciparum 3D7, Carex pilulifera, Oryza sativa (japonica cultivar-group), Human immunodeficiency virus 1, Danio rerio, Canis familiaris, Candida glabrata, Rattus norvegicus, Drosophila melanogaster, Bacillus anthracis str. Ames, Buchnera aphidicola str. Bp (Baizongia pistaciae), Borrelia burgdorferi B31, Pseudomonas aurantiaca, Plasmodium vivax, Mansonella ozzardi, Helicoverpa armigera, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Vibrio parahaemolyticus, Helicoverpa zea, Melanoplus sanguinipes entomopoxvirus, Hyalophora cecropia" 10
- 408 538 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Enterococcus faecalis V583, Plasmodium falciparum 3D7, Drosophila melanogaster, Oreochromis aureus, Oreochromis niloticus, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum, Pasteurella multocida, Danio rerio, Tribolium castaneum, Sus scrofa"
- 409 539 24 "Mus musculus, Staphylococcus epidermidis ATCC 12228, Homo sapiens, Staphylococcus epidermidis, Human immunodeficiency virus 1, Danio rerio, Xenopus laevis, Pan troglodytes, Parartemia zietziana, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Rattus norvegicus" 20
- 410 540 30 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Cryptosporidium parvum, Oryza sativa (japonica cultivar-group), Mus musculus, Pyrococcus furiosus DSM 3638, Arabidopsis thaliana, Pelodiscus sinensis, Encephalitozoon cuniculi, Daucus carota"
- 411 541 32 "Prunus persica, Homo sapiens, Lycopersicon esculentum, Mus musculus, Plasmodium falciparum 3D7, Primula clusiana, Danio rerio, Chironomus luridus, Dictyostelium discoideum, Pneumocystis carinii, Oryza sativa (japonica cultivar-group), Acropora millepora, Caenorhabditis elegans, Rhodella reticulata, Oryctolagus cuniculus, Felis catus, Didelphis virginiana, Drosophila melanogaster, Candidatus Carsonella ruddii, Pichia anomala, Papio anubis, Omophron limbatum, Chironomus sp. LRC-2002, Rhizophora racemosa, Rhizophora mangle, Rhizophora mucronata, Rhizophora stylosa, Rhizophora apiculata, Fusobacterium periodonticum, Oryza sativa (indica cultivar-group), Drosophila erecta, Medicago truncatula, synthetic construct, Schizosaccharomyces pombe, Biomphalaria glabrata" 30
- 412 542 27 "Homo sapiens, Enterococcus faecalis V583, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus, Podospora anserina, Arabidopsis thaliana"
- 413 543 35 "Homo sapiens, Mus musculus, Drosophila melanogaster, Danio rerio, Caenorhabditis elegans, Lactobacillus plantarum WCFS1, Rattus norvegicus, Pseudotsuga menziesii, Loligo pealei" 40
- 414 544 23 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Vibrio parahaemolyticus, Danio rerio, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 415 545 24 "Saccharomyces cerevisiae, Homo sapiens, Mus musculus, Drosophila melanogaster, Solanum demissum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)"
- 416 546 25 "Drosophila melanogaster, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana"
- 417 547 24 "Prochlorococcus marinus, Mus musculus, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Homo sapiens, Cercopithecine h 50

- herpesvirus 7, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Methanocaldococcus jannaschii*, *Sus scrofa*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Danio rerio*"
- 418 548 35 "Plasmodium falciparum 3D7, *Mus musculus*, *Homo sapiens*, *Danio rerio*, Swinepox virus, *Rattus norvegicus*, *Drosophila melanogaster*, *Oceanobacillus iheyensis* HTE831, *Mycoplasma gallisepticum* R, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Paramecium bursaria* *Chlorella virus* 1, *Oryza sativa* (*japonica* cultivar-group), *Amsacta moorei* entomopoxvirus, *Lotus corniculatus* var. *japonicus*, *Listeria innocua*, *Lucilia cuprina*"
- 419 549 23 "*Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*, *Arabidopsis thaliana*, *Solanum demissum*" 10
- 420 550 28 "*Homo sapiens*, *Clostridium tetani* E88, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Danio rerio*, *Drosophila melanogaster*, *Caenorhabditis briggsae*, *Mus musculus*, *Oryza sativa*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Alonsoa meridionalis*"
- 421 551 20 "*Streptococcus agalactiae* 2603V/R, *Homo sapiens*, *Streptococcus agalactiae* NEM316, *Mus musculus*"
- 422 552 23 "*Clostridium acetobutylicum*, *Streptococcus pyogenes* MGAS 315, *Streptococcus pyogenes* SSI-1, *Mus musculus*, *Clostridium tetani* E88, *Homo sapiens*, *Listeria innocua*" 20
- 423 553 24 "*Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*"
- 424 554 28 "*Mus musculus*, *Arabidopsis thaliana*, *Staphylococcus epidermidis* ATCC 12228, *Homo sapiens*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mycoplasma pulmonis*, *Helicobacter hepaticus* ATCC 51449"
- 425 555 20 *Homo sapiens*
- 426 556 27 "*Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Mycoplasma penetrans*, *Listeria monocytogenes*" 30
- 427 557 27 "*Homo sapiens*, *Mus musculus*"
- 428 558 27 "*Plasmodium falciparum* 3D7, *Candidatus Blochmannia floridanus*, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Arabidopsis thaliana*"
- 429 559 28 "*Homo sapiens*, *Pan troglodytes*, *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group)"
- 430 560 27 "*Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Rickettsia prowazekii*, *Mus musculus*, *Danio rerio*, *Rattus norvegicus*" 40
- 431 561 33 "*Homo sapiens*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Clostridium acetobutylicum*, *Mus musculus*, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Pan troglodytes*, *Papio hamadryas*, *Enterococcus faecalis*, *Rattus norvegicus*, *Danio rerio*, *Medicago truncatula*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Prochlorococcus marinus*, *Mycoplasma pulmonis*, *Lotus corniculatus* var. *japonicus*, *Mycoplasma penetrans*, *Lactobacillus plantarum* WCFS1"
- 432 562 28 "*Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *D*" 50

- anio rerio, *Helicobacter hepaticus* ATCC 51449, *Mus musculus*, *Caenorhabditis elegans*"
- 433 563 28 "Homo sapiens, *Mus musculus*, *Staphylococcus aureus* phage phi 11"
- 434 564 24 "*Lactococcus lactis* subsp. *lactis*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Homo sapiens*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Danio rerio*, *Mus musculus*"
- 435 565 26 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Pan troglodytes*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Lemur catta*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oryza sativa* (japonica cultivar-group), *Listeria innocua*, *Bacillus thuringiensis*, *Cricetus griseus*, *Bacillus cereus*" 10
- 436 566 32 "*Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*, *Mus musculus*, *Ureaplasma urealyticum*, *Thermosynechococcus elongatus* BP-1, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Nostoc* sp. PCC 7120, *Hyalophora cecropia*, *Candida maltosa*"
- 437 567 32 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*" 20
- 438 568 24 "*Mus musculus*, *Homo sapiens*, *Methanococcus vanniellii*, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Danio rerio*, *Arabidopsis thaliana*"
- 439 569 28 "*Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Myrmica karavajevi*, *Medicago truncatula*, *Caenorhabditis elegans*, *Metzgeria conjugata*, *Lactobacillus plantarum*, *Sulfolobus tokodaii*, *Danio rerio*, *Listeria monocytogenes*, *Lactobacillus plantarum* WCFS1, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Chaetosphaeridium globosum*, *Oryza sativa* (japonica cultivar-group), *Meleagris gallopavo*"
- 440 570 27 "*Mus musculus*, *Homo sapiens*, *Sulfolobus solfataricus*, *Danio rerio*, *Hyphantria cunea nucleopolyhedrovirus*, *Caenorhabditis elegans*" 30
- 441 571 23 "*Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Arabidopsis thaliana*, *Medicago truncatula*, *Saccharomyces cerevisiae*"
- 442 572 29 "*Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Streptococcus pyogenes* MGAS8232, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Vitis vinifera*, *Arabidopsis thaliana*, *Medicago truncatula*, *Lupinus luteus*, *Euglena longa*, *Chondrus crispus*, *Danio rerio*, *Chloromonas rosae*, *Chloromonas palmelloides*, *Chloromonas reticulata*" 40
- 443 573 28 "*Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Bos taurus*"
- 444 574 28 "*Homo sapiens*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Danio rerio*, *Mus musculus*, *Oryza sativa*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Drosophila niveifrons*, *Rattus norvegicus*"
- 445 575 27 "*Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Oryza sativa*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Lycopersicon esculentum*, *Arabidopsis thaliana*, *Gossypium hirsutum*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Petunia vein clearing virus*, *Mycoplasma*" 50

asma penetrans"

- 446 576 28 "Homo sapiens, Methanosarcina mazei Goe1, Sus scrofa, Mus musculus, Pyrococcus horikoshii, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Triticum aestivum, Neisseria meningitidis Z2491, Treponema denticola, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Vibrio parahaemolyticus, Papio anubis"
- 447 577 24 "Homo sapiens, Bacillus subtilis subsp. subtilis str. 168, Cryptosporidium parvum, Mus musculus, Plasmodium berghei, Influenza A virus (A/gull/Italy/692-2/93(H7N2)), Influenza A virus (A/psittacine/Italy/1/91(H7N2)), Influenza A virus" 10
- 448 578 26 "Homo sapiens, Mus musculus, Chlamydomonas reinhardtii, Salmo salar, Chlamydomonas reinhardtii, Saimiriine herpesvirus 2, Eimeria tenella, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Buchnera aphidicola (Mecynotarsus rosae), Arabidopsis thaliana, Prolaupala kukui, Listeria monocytogenes, Listeria innocua, Danio rerio"
- 449 579 24 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Crossoptilon drouyni, Crossoptilon mantchuricum, Crossoptilon auritum, Lophura bulweri, Bordetella bronchiseptica, Alectoris magna, Alectoris graeca, Crossoptilon harmani, Crossoptilon crossoptilon, Stenotor coeruleus, Francolinus erckelii, Pavo cristatus" 20
- 450 580 28 "Basalys sp. M67, Blastophaga intermedia, Poecilognathus costalis, Perineus nigrolimbatus, Drosophila melanogaster, Gasteruption sp. M113, Saccharomyces cerevisiae, Scolia sp. JC19, Homo sapiens, Gasteruption sp., Mus musculus, Columbicola gymnopelidae, Penen"
- 451 581 27 "Homo sapiens, Danio rerio, Medicago truncatula, Rana pipiens, Caenorhabditis briggsae, Mus musculus, Papio anubis, Plasmodium falciparum 3D7, Heterodoxus macropus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Rattus norvegicus, Saccharomyces cerevisiae, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Ovis aries" 30
- 452 582 27 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Medicago truncatula, Bos taurus, Plasmodium falciparum 3D7, Pan troglodytes, Gallus gallus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Staphylococcus aureus, Danio rerio, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Listeria monocytogenes, Rattus norvegicus, Xenopus laevis, Staphylococcus aureus subsp. aureus Mu50"
- 453 583 25 "Mus musculus, Homo sapiens, Danio rerio, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus N315, Saccharomyces cerevisiae, Methanocaldococcus jannaschii, Staphylococcus aureus subsp. aureus Mu50, Caenorhabditis elegans, Streptococcus mutans UA159, Bos taurus, Dictyostelium discoideum, Lotus corniculatus var. japonicus, Schistosoma sp. Uganda-JATM-2003" 40
- 454 584 28 "Homo sapiens, Rickettsia conorii, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Mus musculus, Malus x domestica, Pan troglodytes, Geomys bursarius, Clostridium tetani E88, Nicotiana glutinosa, Oryza sativa (japonica cultivar-group), Danio rerio, Listeria innocua, Rattus norvegicus"
- 455 585 26 "Rattus norvegicus, Homo sapiens, Mus musculus, Millettia dura, Oryza sativa (japonica cultivar-group)"
- 456 586 28 "Homo sapiens, Drosophila melanogaster, Mus musculus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group)" 40

- r-group), *Danio rerio*, *Schizosaccharomyces pombe*, Bean yellow mosaic virus"
- 457 587 27 "Homo sapiens, *Mus musculus*, *Pan troglodytes*, *Arabidopsis thaliana*, *Campodea tillyardi*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*, *Schistosoma mansoni*, *Danio rerio*, *Ciona intestinalis*"
- 458 588 27 "Medicago truncatula, *Plasmodium falciparum* 3D7, Homo sapiens, *Mus musculus*, *Lactococcus lactis* subsp. *lactis*, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Rickettsia conorii*, *Danio rerio*, *Rickettsia prowazekii*, *Mycoplasma penetrans*, *Phaeosphaeria* sp. CC52/6a-1, *Salmonella enterica* subsp. *enterica* serovar Typhi" 10
- 459 589 23 "Mus musculus, Homo sapiens, *Vibrio vulnificus* CMCP6, *Drosophila melanogaster*, *Methanothermobacter thermautotrophicus* str. Delta H, *Clostridium acetobutylicum*, *Pasteurella multocida*, *Mycoplasma penetrans*, *Danio rerio*, *Medicago truncatula*"
- 460 590 28 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Guillardia theta*, *Bos taurus*, Human papillomavirus, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Clostridium perfringens* str. 13"
- 461 591 29 "Homo sapiens, *Mus musculus*, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Drosophila willistoni*, *Plasmodium falciparum* 3D7" 20
- 462 592 24 "Homo sapiens, *Medicago truncatula*, *Arabidopsis thaliana*, *Vibrio parahaemolyticus*, *Mus musculus*, *Drosophila ananassae*"
- 463 593 32 "Mus musculus, *Caenorhabditis elegans*, Homo sapiens, *Medicago truncatula*, Human immunodeficiency virus 1, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Bacillus cereus* ATCC 14579, *Papio anubis*, *Myosotis sylvatica*, *Myosotis arvensis*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Bacillus cereus*, *Danio rerio*, *Acinetobacter calcoaceticus*, *Plasmodium falciparum*, *Haemophilus influenzae* Rd KW20, *Drosophila melanogaster*, *Pan troglodytes*, *Bos taurus*, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Thermoanaerobacter tengcongensis*, *Aeromonas punctata*, *Neurospora crassa*, *Oryza sativa* (japonica cultivar-group), *Plasmodium berghei*" 30
- 464 594 27 "Candidatus *Carsonella ruddii*, Homo sapiens, *Medicago truncatula*, *Mus musculus*, *Equus caballus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, Eggplant mosaic virus, *Glycine max*"
- 465 595 26 "Homo sapiens, *Felis catus*, *Rattus norvegicus*, *Linyphia triangularis*, *Bacillus cereus* ATCC 14579, *Caenorhabditis elegans*, *Pan troglodytes*, *Plasmodium relictum*, *Danio rerio*, *Mus musculus*, *Actinobacillus pleuropneumoniae*, *Drosophila melanogaster*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Pseudoalteromonas piscicida*, *Streptococcus agalactiae* NEM316, *Pseudoalteromonas peptidolytica*, *Pseudoalteromonas citrea*, *Pseudoalteromonas aurantia*, *Schizosaccharomyces pombe*" 40
- 466 596 39 "Mus musculus, *Drosophila melanogaster*, Homo sapiens, *Plasmodium falciparum* 3D7, *Stegana flavimana*, *Arabidopsis thaliana*, *Danio rerio*, *Candida albicans*, *Oryza sativa* (japonica cultivar-group), *Atelerix albiventris*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Medicago truncatula*, *Plasmodium falciparum*, *Plasmodium vivax*, *Sulfolobus solfataricus*, *Mycoplasma pulmonis*, Lot 50

- us corniculatus var. japonicus, Caenorhabditis elegans, Listeria innocua, Helicobacter pylori J99, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 467 597 29 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Bacillus anthracis str. Ames, Staphylococcus epidermidis ATCC 12228, Chlorobium tepidum TLS"
- 468 598 30 "Homo sapiens, Plasmodium falciparum 3D7, Drosophila melanogaster, Mus musculus, Physarum polycephalum, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Dictyostelium discoideum, Arabidopsis thaliana, Clostridium acetobutylicum, Danio rerio, 'Chlorella' ellipsoidea, Pisum sativum, Haemophilus ducreyi 35000HP, Pan troglodytes, Chlorella vulgaris" 10
- 469 599 27 "Homo sapiens, Lotus corniculatus var. japonicus, Pan troglodytes, Mus musculus, Atelerix albiventris, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Thermoanaerobacter tengcongensis, Danio rerio, Oreochromis mossambicus, Schizosaccharomyces pombe"
- 470 600 24 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Drosophila melanogaster, Homo sapiens, Mus musculus, Clostridium acetobutylicum, Onchocerca volvulus"
- 471 601 28 "Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, Mus musculus, Rattus norvegicus, Dictyostelium discoideum, Sulfolobus solfataricus, Plasmodium falciparum 3D7, Fagopyrum homotropicum, Fagopyrum tataricum subsp. potanini, Fagopyrum cymosum, Danio rerio" 20
- 472 602 25 "Mus musculus, Thermoanaerobacter tengcongensis, Homo sapiens, Danio rerio, Drosophila melanogaster, Gallus gallus, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum, Arabidopsis thaliana, Human immunodeficiency virus 1"
- 473 603 28 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Saccharomyces uvarum, Dictyostelium discoideum, Danio rerio, Melanoplus sanguinipes entomopoxvirus, Medicago truncatula, Oncorhynchus mykiss, Rattus norvegicus, Caenorhabditis elegans, Clostridium perfringens str. 13" 30
- 474 604 27 "Homo sapiens, Plasmodium falciparum 3D7, Caenorhabditis elegans, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Calycanthus floridus var. glaucus, Caenorhabditis briggsae, Aletris laxiflora, Sulfolobus tokodaii, Campylobacter jejuni"
- 475 605 28 "Rattus norvegicus, Mus musculus, Plasmodium falciparum 3D7, Lymphocystis disease virus 1, Homo sapiens, Danio rerio, Arabidopsis thaliana, Caenorhabditis elegans, Mycoplasma genitalium, Brassica napus, Drosophila melanogaster"
- 476 606 27 "Clostridium acetobutylicum, Mus musculus, Caenorhabditis elegans, Homo sapiens, primary endosymbiont of Paratrioza cockerelli, Candidatus Carsonella ruddii, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Danio rerio, Staphylococcus epidermidis ATCC 12228, Methanosarcina acetivorans C2A, Tetraptyrys discolor, Arabidopsis thaliana, Caenorhabditis briggsae, Girardia tigrina, Methanocaldococcus jannaschii" 40
- 477 607 27 "Homo sapiens, Danio rerio, Mus musculus, Borrelia burgdorferi B31, Oryza sativa (japonica cultivar-group), Pan troglodytes, Papio anubis, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Rhizobium sp. NGR234, Arabidopsis thaliana, Clostridium perfringens str. 13"
- 478 608 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Ca 50

- nis familiaris, Arabidopsis thaliana, Caenorhabditis briggsae, Danio rerio, Cordyceps sobolifera"
- 479 609 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Medicago sativa, Plasmodium falciparum 3D7, Danio rerio"
- 480 610 31 "Homo sapiens, Methanocaldococcus jannaschii, Mus musculus, Drosophila melanogaster, Nostoc sp. PCC 7120, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Oryza sativa, Danio rerio, Lotus corniculatus var. japonicus, Gallus gallus, Rattus norvegicus"
- 481 611 27 "Homo sapiens, Mus musculus, Mycoplasma gallisepticum R, Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Medicago truncatula, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mycoplasma penetrans, Plasmodium falciparum, Haemophilus influenzae Rd KW20, Salmonella trutta, Escherichia coli" 10
- 482 612 29 "Homo sapiens, Crepis aurea, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Danio rerio, Medicago truncatula, Drosophila melanogaster, Euhadra quaesita, Oryza sativa (japonica cultivar-group), Wuchereria bancrofti, Plasmodium falciparum, Atelerix albiventris, Bacteroides thetaiotaomicron VPI-5482, Bactrocera arecae, Drosophila littoralis, Leishmania major, Trypanosoma caboti, Oryza sativa, Human papillomavirus type 14D, Myocastor coypus, Crepis crocea, Caenorhabditis elegans, Bombyx mori, Haemophilus influenzae" 20
- 483 613 25 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Danio rerio, Caenorhabditis briggsae, Caenorhabditis elegans, Tribolium castaneum"
- 484 614 28 "Oceanobacillus iheyensis HTE831, Candidatus Carsonella ruddii, Homo sapiens, Plasmodium falciparum 3D7, Macaca mulatta rhadinovirus 17577, Macaca mulatta rhadinovirus 26-95, Mus musculus, Danio rerio, Lemur catta, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13, Dictyostelium discoideum, Vibrio vulnificus CMCP6, Arabidopsis thaliana, Caenorhabditis elegans, Melipona bicolor, Felis catus, Heliothis zea virus 1, Chlorobium tepidum TLS, Methanosarcina acetivorans C2A, Ondina perezii, Ondina diaphana, Gluconacetobacter xylinus" 30
- 485 615 36 "Homo sapiens, Oryza sativa (japonica cultivar-group), Medicago truncatula, Plasmodium falciparum 3D7, Mus musculus, Sus scrofa, Arabidopsis thaliana, Plasmodium falciparum, Danio rerio, Caenorhabditis elegans, Anopheles benarrochi, Gallus gallus, Clostridium perfringens str. 13, Leptospira interrogans serovar lai str. 56601, Arabis holboellii, Campylobacter fetus, Dictyostelium discoideum, Drosophila melanogaster, Pisidium dubium, Pseudomonas phage phiKZ, Pycreus nuerensis, Lumpy skin disease virus, Mesostigma viride, Buchnera aphidicola, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Phytoplasma sp., Pycreus flavescens" 40
- 486 616 32 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Clostridium acetobutylicum, Vibrio cholerae, Saccharomyces cerevisiae, Danio rerio, Crocodylus porosus, Hyporhamphus regularis, Bos taurus, Polypterus bichir, Woodchuck hepatitis B virus, Caenorhabditis briggsae, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Physcomitrella patens, Trypanosoma cruzi, Marmota monax, Bacillus cereus ATCC 14579, Crocodylus intermedius, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Trypanosoma brucei rhodesiense, Dictyostelium discoideum, Drosophila melanogaster, Papio anubis, Crocodylus johnsoni, Lemur catta, Sus scrofa, Plas 40

modium falciparum 3D7, Vicia faba"

- 487 617 27 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (indica cultivar-group), Danio rerio, Oryza sativa (japonica cultivar-group), Nostoc s p. PCC 7120, Mus musculus, Borrelia burgdorferi B31"
- 488 618 36 "Mycoplasma penetrans, Dictyostelium discoideum, Arabidopsis thaliana, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Lactococcus lactis subsp. lactis, Junin virus, Mus musculus"
- 489 619 24 "Homo sapiens, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group)" 10
- 490 620 23 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Thermoplasma volcanium, Danio rerio, Caldicellulosiruptor sp. Rt8B.4"
- 491 621 24 "Pasteurella multocida, Danio rerio, Caenorhabditis elegans, Sus scrofa, Mus musculus, Homo sapiens, Zea mays, Bacteroides fragilis"
- 492 622 27 "Homo sapiens, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Zea mays, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio"
- 493 623 35 "Homo sapiens, Mus musculus, Drosophila melanogaster, Pneumocystis carinii, Arabidopsis thaliana, Xenopus laevis, Pachycheles haigae, Plasmodium falciparum 3D7, Sulfolobus solfataricus, Pachycheles grossimanus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Climacocystis borealis" 20
- 494 624 24 "Drosophila melanogaster, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Staphylococcus epidermidis ATCC 12228, Mus musculus, Olea europaea, Escherichia coli O157:H7 EDL933, Pyrococcus abyssi, Escherichia coli K12, Staphylococcus epidermidis, Escherichia coli, Escherichia coli O157:H7"
- 495 625 31 "Mus musculus, Escherichia coli, Escherichia coli K12, Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Anopheles gambiae, Danio rerio, Oryza sativa (japonica cultivar-group), Gallus gallus, Caenorhabditis elegans, Distichochlamys sp. Kress 01-6848, Streptococcus pneumoniae R6, Thraustochytrium aureum, Oryza sativa, Caenorhabditis briggsae, Listeria monocytogenes, Melanoplus sanguinipes entomopoxvirus, Clostridium perfringens str. 13" 30
- 496 626 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Danio rerio, Ciona intestinalis, Drosophila melanogaster, Amphitrite ornata, Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Cercopithecine herpesvirus 7, Peach latent mosaic viroid, Antithamnion sp., Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Fowlpox virus, Physarum polycephalum" 40
- 497 627 31 "Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Mus musculus, Apis mellifera, Mesostigma viride, Equus caballus, Pantroglodytes, Poncirus trifoliata, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Cupressus macnabiana, Danio rerio, Ectocarpus siliculosus, Rattus norvegicus, Methanocaldococcus jannaschii, Leptospira interrogans serovar lai str. 56601, Enterococcus faecalis V583, Oryza sativa (japonica cultivar-group), Candida albicans, Dictyopteris undulata, Sulfolobus solfataricus, Tetrahymena pyriformis, Drosophila ananassae, Candidatus Blochmannia floridanus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mycoplasma penetrans," 50

- Encephalitozoon cuniculi, Paramecium primaurelia, Staphylococcus aureus subsp. aureus Mu50"
- 498 628 28 "Homo sapiens, Schistocerca gregaria, Clostridium perfringens, Bacillus cereus ATCC 14579, Equus caballus, Bacillus anthracis str. Ames, Coxiella burnetii RSA 493, Pan troglodytes, Sorghum bicolor, Staphylococcus aureus, Sus scrofa, Schizosaccharomyces pombe, Human papillomavirus type 6b, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mus musculus, Human papillomavirus type 6, Ciona intestinalis, Danio rerio, Staphylococcus aureus subsp. aureus Mu50"
- 499 629 25 "Human immunodeficiency virus 1, Homo sapiens, Rattus norvegicus, Mus musculus, Caenorhabditis elegans" 10
- 500 630 21 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Porphyromonas gingivalis W83, Porphyromonas gingivalis, Petunia integrifolia subsp. inflata, Feline coronavirus, Petunia x hybrida, Mus musculus, Vibrio cholerae, Homo sapiens, Danio rerio, Ciona intestinalis"
- 501 631 28 "Caenorhabditis elegans, Ectocarpus siliculosus virus, Homo sapiens, Mus musculus, Danio rerio, Streptococcus mutans UA159, Caenorhabditis briggsae, Exophiala jeanselmei, Plasmodium falciparum 3D7, Pyrococcus furiosus DSM 3638, Plasmodium falciparum, Oceanobacillus iheyensis HTE831, Enterobacteriaceae phage SP6" 20
- 502 632 30 "Homo sapiens, Danio rerio, Mus musculus, Rattus norvegicus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Strongylocentrotus purpuratus, Borrelia burgdorferi B31, Dictyostelium discoideum, Glycine max, Betula pendula, Cryptosporidium parvum, Chironomus aprilineus, Gasterosteus aculeatus, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Drosophila melanogaster, Bacteriophage phi3626, Prochlorococcus marinus, Caenorhabditis elegans, Salmonella typhimurium, Brassica oleracea, Loligo opalescens, Oryza sativa (indica cultivar-group), Medicago truncatula, Prochlorococcus marinus subsp. marinus str. CCMP1375, Salmonella enterica subsp. enterica serovar Typhi, Cooperia oncophora" 30
- 503 633 28 "Homo sapiens, Dictyostelium discoideum, Caenorhabditis elegans, Arabidopsis thaliana, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, African swine fever virus, Oryzias latipes, lepidopsocid RS-2001, Drosophila melanogaster, Candidatus Carsonella ruddii, Sisymbrium altissimum, Fusobacterium nucleatum, Yersinia pestis KIM, Methanothermobacter thermoautotrophicus str. Delta H, Campylobacter jejuni subsp. jejuni NCTC 11168, Sulfolobus tokodaii, Haemophilus ducreyi 35000HP, Yersinia pestis C092, Danio rerio, uncultured Prochlorococcus sp., Medicago truncatula, Fusobacterium ulcerans" 40
- 504 634 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Ovis aries, Arabidopsis thaliana, Methanococcus vannielii, Candidatus Blochmannia floridanus, Mus musculus"
- 505 635 19 "Homo sapiens, Danio rerio"
- 506 636 35 "Mycoplasma penetrans, Homo sapiens, Pyrobaculum aerophilum str. IM2, Mus musculus, Drosophila melanogaster, Bacillus anthracis str. A2012, Bacillus anthracis, Danio rerio, Oryza sativa (japonica cultivar-group), Zymomonas mobilis, Arabidopsis thaliana"
- 507 637 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Shigella flexneri 2a str. 2457T, Clostridium tetani E88, Shigella f 50

- lexneri 2a str. 301, Sulfolobus solfataricus, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Human papillomavirus, Nicotiana tabacum, Caenorhabditis elegans, Pichia etchellsii"
- 508 638 27 "Mycoplasma penetrans, Homo sapiens, Caenorhabditis elegans, Mus musculus, Plasmodium falciparum 3D7, Haemophilus ducreyi 35000HP, Oryza sativa (japonica cultivar-group), Danio rerio"
- 509 639 24 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Synecocystis sp. PCC 6803, Danio rerio, Vicia melanops, Listeria monocytogenes, Eucetes murinus, Oryza sativa (japonica cultivar-group)"
- 510 640 28 "Homo sapiens, Drosophila melanogaster, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Drosophila pseudoobscura, Thermoplasma acidophilum, Mus musculus, Sulfolobus tokodaii, Caenorhabditis elegans, Danio rerio" 10
- 511 641 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Sulfolobus islandicus filamentous virus, Plasmodium falciparum 3D7, Drosophila teissieri, Drosophila yakuba, Drosophila orena, Drosophila erecta, Pan troglodytes, Caenorhabditis elegans, Danio rerio"
- 512 642 29 "Homo sapiens, Mycoplasma penetrans, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Mus musculus, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, synthetic construct, Drosophila melanogaster, Streptococcus mutans UA159, Plasmodium falciparum 3D7, Glycine max, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis" 20
- 513 643 34 "Homo sapiens, Oryza sativa, Populus balsamifera subsp. trichocarpa, Arabidopsis thaliana, Flaveria trinervia, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Pneumocystis carinii, Medicago truncatula, Wolbachia pipientis, Pan troglodytes, Glycine max, Lycopersicon esculentum, Pichia norvegensis, Saccharomyces cerevisiae, Odontella sinensis, Ajellomyces capsulatus var. farciminosus, Ajellomyces capsulatus, Plasmodium falciparum, Rattus norvegicus, Papio anubis" 30
- 514 644 30 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Rattus norvegicus, Helicobacter pylori, Streptococcus pneumoniae TIGR4, Oryza sativa (japonica cultivar-group), Danio rerio, Dictyostelium discoideum"
- 515 645 25 "Mus musculus, Danio rerio, Homo sapiens, Drosophila melanogaster, Papio hamadryas, Porcine epidemic diarrhea virus, Caenorhabditis elegans, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Oryza sativa (japonica cultivar-group), Chlamydophila pneumoniae TW-183"
- 516 646 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Vibrio fischeri, Ureaplasma urealyticum, Caenorhabditis elegans, Pan troglodytes, Ipomoea trifida, Plasmodium chabaudi chabaudi" 40
- 517 647 28 "Methanocaldococcus jannaschii, Mus musculus, Streptococcus pyogenes MGAS315, Homo sapiens, Streptococcus pyogenes SSI-1, Schizosaccharomyces pombe, Danio rerio, Bacteroides thetaiotaomicron VPI-5482, Thermoplasma volcanium, Oryza sativa (japonica cultivar-group), Nicotiana tabacum"
- 518 648 31 "Caenorhabditis elegans, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Danio rerio, Mus musculus, Mycoplasma penetrans" 50

lasma pulmonis, Vibrio cholerae, Bacillus cereus ATCC 14579, Leptospira interrogans serovar lai str. 56601, Buchnera aphidicola str. Bp (Baizongia pistaciae), Arabidopsis thaliana, Medicago truncatula, Gallus gallus, Lotus corniculatus var. japonicus, Fowlpox virus"

519 649 34 "Arabidopsis thaliana, Danio rerio, Sminthopsis macroura, Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Medicago truncatula, Stylonychia lemnae, Salmonella typhimurium LT2, Cucumis melo, Salmonella enterica subsp. enterica serovar Typhi Ty2, Dictyostelium discoideum, Monosiga brevicollis, Drosophila melanogaster, Clostridium tetani, Pantroglodytes, Papio anubis, Thermoanaerobacter tengcongensis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis briggsae, Salmonella enterica subsp. enterica serovar Typhi, Haemophilus influenzae Rd KW20, Chlorella vulgaris"

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520 650 31 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Clostridium tetani E88, Danio rerio, Mycoplasma penetrans, Leptospira interrogans serovar lai str. 56601, Vesputia germanica, Borrelia burgdorferi B31, Dictyostelium discoideum, Drosophila melanogaster, Entamoeba invadens, Lactococcus lactis subsp. lactis, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Bombyx mori, Borrelia burgdorferi"

20

521 651 24 "Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Homo sapiens, Danio rerio, Triticum turgidum subsp. durum, Chlamydomonas reinhardtii GPIC, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sus scrofa, Paramecium primaurelia, Macaca fascicularis"

522 652 28 "Drosophila melanogaster, Mus musculus, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Danio rerio, Oryza sativa, Nicotiana glauca, Oryza sativa (japonica cultivar-group), Xenopus laevis, Plasmodium falciparum, Caenorhabditis elegans, Chelonis chelonis bracovirus, Sesamum indicum, Bos taurus, Lotus corniculatus var. japonicus, Plasmodium chabaudi, Rattus norvegicus, Pantroglodytes, Dictyostelium discoideum, Venturia canescens, Sus scrofa, Drosophila littoralis, Schmidtea mediterranea, Syrrhopodon mahensis, Saccharomyces cerevisiae"

30

523 653 28 "Homo sapiens, Mus musculus, Mesocricetus auratus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Pea seed-borne mosaic virus, Danio rerio, Medicago truncatula, Schizosaccharomyces pombe, Caenorhabditis elegans, Arabidopsis thaliana, Gasterosteus aculeatus, Vitis vinifera, Rattus norvegicus, Western X phytoplasma, Chalcosyrphus nemorum, Schistosoma japonicum, Thrips imaginis, Dictyostelium discoideum, Methanosarcina mazei Goe1, Pantroglodytes, Staphylococcus simulans, Escherichia coli 0157:H7 EDL933, Scabiosa columbaria, Anopheles gambiae"

40

524 654 38 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Danio rerio, Scenedesmus obliquus, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Rattus norvegicus, Bacillus cereus ATCC 14579, Bacillus subtilis"

525 655 24 "Sus scrofa, Danio rerio, Mus musculus, Ommastrephes sloani, Homo sapiens, Pyrobaculum aerophilum str. IM2, Plasmodium falciparum 3D7, Rattus norvegicus, Buchnera aphidicola, Tricholoma portentosum, Tricholoma album, Arabidopsis thaliana, Lumpy skin disease virus, Escherichia coli"

526 656 24 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Shewanella oneidensis MR-1, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group)

50

- p), *Dictyostelium discoideum*, *Danio rerio*"
- 527 657 31 "Drosophila melanogaster, Homo sapiens, Mus musculus, *Danio rerio*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Rickettsia prowazekii*, *Buchnera aphidicola*"
- 528 658 23 "Homo sapiens, *Lactococcus lactis* subsp. *lactis*, *Rattus norvegicus*, *Danio rerio*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Streptococcus pneumoniae* TIGR4, *Oryza sativa* (japonica cultivar-group), *Ciona intestinalis*"
- 529 659 26 "Drosophila melanogaster, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, Homo sapiens, *Mus musculus*, *Drosophila ornata* ifrons, *Enterococcus faecalis* V583, *Trichomonas vaginalis*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Medicago truncatula*, *Haemophilus influenzae*, *Picea abies*, *Haemophilus influenzae* Rd KW20" 10
- 530 660 26 "Danio rerio, Homo sapiens, *Shigella flexneri* 2a str. 2457T, *Drosophila melanogaster*, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Escherichia coli*, *Candida glabrata*, *Escherichia coli* O157:H7 EDL933, *Escherichia coli* K12, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Enterobacter gergoviae*, *Escherichia coli* O157:H7, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Pan troglodytes*"
- 531 661 27 "Homo sapiens, *Papio anubis*, *Mus musculus*, *Danio rerio*, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Caenorhabditis elegans*, *Trypanosoma brucei*, *Thermoplasma volcanium*, *Prevotella intermedia*, *Streptococcus pneumoniae*, *Methanocaldococcus jannaschii*" 20
- 532 662 27 "Homo sapiens, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Mus musculus*, *Caenorhabditis elegans*, *Branchiostoma floridae*, *Methanocaldococcus jannaschii*, *Danio rerio*"
- 533 663 31 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Arabidopsis thaliana*, synthetic construct, *Danio rerio*, *Pseudomonas syringae* pv. *tomato* str. DC3000, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Vibrio parahaemolyticus*" 30
- 534 664 29 "Clostridium tetani E88, Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Lycopersicon esculentum*, *Mycoplasma penetrans*, *Caenorhabditis elegans*, *Arabidopsis thaliana*"
- 535 665 29 "Plasmodium falciparum 3D7, *Saccharomyces cerevisiae*, Homo sapiens, *Mus musculus*, *Buchnera aphidicola*, *Arabidopsis thaliana*, *Drosophila melanogaster*, Acute bee paralysis virus, *Hordeum vulgare* subsp. *vulgare*, *Equus caballus*, *Dianthus caryophyllus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Caenorhabditis elegans*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99"
- 536 666 27 "Arabidopsis thaliana, Homo sapiens, *Danio rerio*, *Rattus norvegicus*, *Mus musculus*" 40
- 537 667 45 "Helicobacter pylori 26695, *Clostridium tetani* E88, *Borrelia burgdorferi* B31, *Mus musculus*, *Caenorhabditis briggsae*, *Sulfolobus tokodaii*, Homo sapiens, *Pan troglodytes*, *Sigmodon hispidus hirsutus*, *Sigmodon hispidus chiriquensis*, *Campylobacter jejuni*, *Sulfolobus solfataricus*, *Danio rerio*, *Sigmodon allenii*, *Sigmodon hispidus griseus*, *Sigmodon hispidus*, *Microrhizomys minutus*, *Rhipidomys macconnelli*, *Neacomys spinosus*, *Helicobacter hepaticus* ATCC 51449"
- 538 668 56 "Leptospira interrogans serovar lai str. 56601, *Listeria innocua*, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Rattus norvegicus*, *Enterococcus faecalis* V583, *Staphylococcus aureus*, *Prochlorococcus*" 50

- cus marinus, *Mycoplasma pulmonis*, *Listeria monocytogenes*, *Arabidopsis thaliana*, *Prochlorococcus marinus* subsp. *pastoris* str. CCMP1986, *Staphylococcus aureus* sub sp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 539 669 29 "Mus musculus, Homo sapiens, *Tetraodon nigroviridis*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Zea mays*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*"
- 540 670 32 "Homo sapiens, *Mus musculus*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Gilliamia theta*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Danio rerio*, *Bacteroides thetaiotaomicron* VPI-5482, Simian picornavirus 18, *Pyrobaculum aerophilum* str. IM2, *Clematis potaninii*, *Clematis alternata*, *Equus caballus*, *Bacillus halodurans*, *Heterodontus francisci*, *Gallus gallus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Sus scrofa*, *Medicago truncatula*" 10
- 541 671 35 "Bacillus anthracis str. Ames, Homo sapiens, *Danio rerio*, *Plasmodium berghei*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Plasmodium chabaudi chabaudi*, *Mus musculus*, *Chironomus tentans*, *Malawimonas jakobiformis*, *Sulfolobus solfataricus*, *Candidatus Carsonella ruddii*, *Oryza sativa* (japonica cultivar-group), *Erigenia bulbosa*, mycetocyte endosymbiont of *Diaphorina citri*, *Leptospira interrogans* serovar lai str. 56601, *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Schmidtea mediterranea*, *Chaetosphaeridium globosum*, *Methanosarcina acetivorans* C2A, *Ochle rotatus epactius*, *Lupinus luteus*, *Arabidopsis thaliana*, *Oryza sativa*, *Medicago truncatula*, *Schistosoma mansoni*, *Cimicifuga yesoensis*, *Cimicifuga frigida*, *Phlebotomus papatasi*, *Clostridium perfringens* str. 13" 20
- 542 672 27 "Homo sapiens, *Lotus corniculatus* var. japonicus, *Mus musculus*, *Arabidopsis thaliana*, *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Danio rerio*, *Medicago truncatula*, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Chaetosphaeridium globosum*, *Bacillus thuringiensis* serovar kyushuensis, *Dictyostelium discoideum*, *Clostridium acetobutylicum*, *Lycopersicon esculentum*, *Staphylococcus epidermidis*, *Nicotiana tabacum*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Lactobacillus plantarum* WCFS1" 30
- 543 673 25 "Homo sapiens, *Mus musculus*, *Cryptosporidium parvum*, *Drosophila melanogaster*, *Rickettsia conorii*, *Streptococcus pneumoniae* R6, *Arabidopsis thaliana*, *Mycobacterium tuberculosis* CDC1551, *Caenorhabditis elegans*, *Bos taurus*, *Mycobacterium tuberculosis* H37Rv, *Thermococcus fumicolans*, *Zea mays*, *Sterkiella nova*, *Mycobacterium bovis* subsp. *bovis* AF2122/97, *Danio rerio*, *Mycobacterium tuberculosis*" 40
- 544 674 23 "Oryza sativa (japonica cultivar-group), Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Danio rerio*, *Romanomermis culicivorax*, *Jeffersonia diphylla*, *Bacillus licheniformis*, *Rattus norvegicus*"
- 545 675 48 "Neisseria meningitidis Z2491, *Neisseria meningitidis* MC58, *Haemophilus ducreyi* 35000HP, Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Prochlorococcus marinus*, *Mycoplasma penetrans*, *Nostoc* sp. PCC 7120"
- 546 676 25 "Caenorhabditis elegans, *Drosophila melanogaster*, Homo s 50

- apiens, *Medicago truncatula*, *Mus musculus*, *Danio rerio*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group)"
- 547 677 23 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Pseudomonas syringae* pv. tomato str. DC3 000, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group)"
- 548 678 27 "Homo sapiens, *Mus musculus*, *Saccolpteryx bilineata*, *Shewanella oneidensis* MR-1, *Rattus norvegicus*"
- 549 679 28 "Mus musculus, Homo sapiens, *Odontella sinensis*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Loligo pealei*, *Mesostigma viride*, *Danio rerio*, *Brachyspira hyodysenteriae*, *Datura stramonium*, *Oryza sativa* (japonica cultivar-group)" 10
- 550 680 27 "Homo sapiens, *Caenorhabditis elegans*, *Pan troglodytes*, *Mus musculus*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Zea mays*, *Rickettsia prowazekii*, *Danio rerio*"
- 551 681 27 "Arabidopsis thaliana, Homo sapiens, *Mus musculus*, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Sus scrofa*, *Zea mays*, *Staphylococcus aureus*, *Lasaea* sp., *Acaulospora* sp. 1v5.4-1, *Danio rerio*, *Caenorhabditis elegans*"
- 552 682 27 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Oryctolagus cuniculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*" 20
- 553 683 25 "Homo sapiens, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Guillardia theta*, *Clostridium acetobutylicum*, *Candidatus Blochmannia floridanus*, *Mycoplasma gallisepticum* R, *Macaca mulatta*, *Caenorhabditis elegans*, *Candida albicans*, *Saccharomyces cerevisiae*, *Danio rerio*, *Arabidopsis thaliana*, Peanut witches'-broom phytoplasma, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Dictyostelium discoideum*, *Carollia perspicillata*, *Xenopus laevis*"
- 554 684 24 "Homo sapiens, *Mus musculus*, *Methanocaldococcus jannaschii*, *Macaca fascicularis*, *Caenorhabditis elegans*, *Clostridium longisporum*, *Oryza sativa* (japonica cultivar-group), *Leishmania mexicana mexicana*" 30
- 555 685 23 "Danio rerio, Homo sapiens, *Mus musculus*, *Schistosoma japonicum*, *Streptococcus thermophilus* bacteriophage DT1, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Bacillus* sp."
- 556 686 24 "Homo sapiens, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Lactococcus lactis* subsp. *lactis*, *Bartonella henselae*, *Danio rerio*, *Ciona intestinalis*, *Macaca fascicularis*, *Nostoc* sp. PCC 7120"
- 557 687 32 "Homo sapiens, *Sorghum bicolor*, *Ovobathysciola majori*, *Clostridium acetobutylicum*, *Macaca fascicularis*, *Shigella flexneri* 2a str. 2457T, *Pan troglodytes*, *Drosophila melanogaster*, *Shigella flexneri* 2a str. 301, *Arabidopsis thaliana*, *Tetraopes mandibularis*, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, *Tolypella prolifera*, *Lemur catta*, *Caenorhabditis elegans*, *Borrelia burgdorferi* B31, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Manicaria saccifera*, *Gallus gallus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Katharina tunicata*, *Methanocaldococcus jannaschii*" 40
- 558 688 27 "Drosophila melanogaster, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, Homo sapiens, *Clostridium tetani* E88, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Clostridium botulinum*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Mus musculus*, *Porphyra purpurea*, *Medicago* 50

- o *truncatula*, *Cicindela balzani*, *Streptococcus mutans* UA159, *Arabidopsis thaliana*, *Danio rerio*, *Xestia c-nigrum* *granulovirus*, *Autographa californica* *nucleopolyhedrovirus*"
- 559 689 31 "Homo sapiens, *Danio rerio*, *Clostridium acetobutylicum*, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Lycopersicon esculentum*, *Plasmodium falciparum* 3D7, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*"
- 560 690 27 "*Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*"
- 561 691 24 "*Mytilus galloprovincialis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Listeria innocua*, *Pichia acaciae*, *Medicago truncatula*, *Leptospira interrogans* serovar lai str. 56601, *Arabidopsis thaliana*, *Danio rerio*, *Tursiops truncatus*, *Stenella coerulescens*" 10
- 562 692 28 "*Homo sapiens*, *Papio anubis*, *Clostridium acetobutylicum*, *Felis catus*, *Mus musculus*"
- 563 693 25 "*Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*"
- 564 694 28 "*Rattus norvegicus*, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Xenopus laevis*, *Drosophila melanogaster*, *Canis familiaris*, *Saccharomyces cerevisiae*, *Nitrosomonas europaea* ATCC 19718" 20
- 565 695 28 "*Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Drosophila subobscura*, *Fusobacterium nucleatum*, *Bacillus halodurans*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Lycopersicon esculentum*, *Clostridium acetobutylicum*, *Oceanobacillus ihayensis* HTE831, *Schizosaccharomyces pombe*, *Pan troglodytes*, *Methanocaldococcus jannaschii*, *Gallus gallus*"
- 566 696 32 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Mus musculus*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Bacillus anthracis* str. A2012, *Pavlova lutheri*, *Bacillus anthracis*, *Schizosaccharomyces pombe*, *Caenorhabditis elegans*"
- 567 697 31 "*Porphyra purpurea*, *Mus musculus*, *Clostridium butyricum*, *Clostridium botulinum*, *Pediculus humanus capitis*, *Pediculus humanus*, *Homo sapiens*, *Papio anubis*, *Arabidopsis thaliana*, *Pediculus humanus humanus*, *Lotus corniculatus* var. japonicus, *Medicago truncatula*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Amblyomma americanum*, *Rickettsia prowazekii*, *Heliothis virescens*, *Danio rerio*" 30
- 568 698 39 "*Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Ictalurus punctatus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Drosophila simulans*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Campylobacter jejuni*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Moniliopsis anomala*, *Sulfolobus solfataricus*, *Sulfolobus tokodaii*, *Flaveria pringlei*, *Lepeophtheirus salmonis*" 40
- 569 699 49 "*Bombus dahlbomii*, *Archaeoglobus fulgidus* DSM 4304, *Mus musculus*, *Homo sapiens*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Medicago truncatula*"
- 570 700 35 "*Danio rerio*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Cyanophora paradoxa*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Bychovskia squatarolae*, *Plasmodium falciparum*, *Melanoplus sanguinipes* *entomopoxvirus*, *Dictyostelium discoideum*, *Chimpanzee cyt*"
- 571 701 25 "*Homo sapiens*, *Danio rerio*, *Drosophila melanogaster*, *Mus*" 50

- musculus, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Cryptosporidium parvum*, *Nicotiana glauca*, *Leptospira interrogans* serovar lai str. 56601, *Medicago truncatula*, *Daucus carota*, *Malonomonas rubra*, *Saccharomyces cerevisiae*, *Methanocaldococcus jannaschii*, *Caenorhabditis elegans*"
- 572 702 30 "Homo sapiens, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Mus musculus*, *Legionella pneumophila*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Sorghum bicolor*, *Aureobasidium pullulans*, *Oryza sativa*, *Plasmodium falciparum*, *Lotus corniculatus* var. japonicus, Human immunodeficiency virus 1, *Equus caballus*, *Bacillus anthracis* str. Ames, *Enterococcus faecalis* V583, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Leptonematella fasciculata*, *Papio anubis*, *Zea mays*, *Felis catus*, *Canis familiaris*, *Tribolium castaneum*, *Bos taurus*, *Ciona intestinalis*, *Neurospora crassa*, *Schizosaccharomyces pombe*, *Ricinus communis*, *Clostridium perfringens* str. 13" 10
- 573 703 34 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Mus musculus*, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Danio rerio*, *Thelymitra ixioideis*, *Thelymitra carnea*, *Equus caballus*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Pan troglodytes*, *Staphylococcus epidermidis* ATCC 12228, *Rattus norvegicus*, *Nicotiana tabacum*, *Lactococcus lactis* subsp. lactis, *Prochlorococcus marinus*, *Oryza sativa*, *Staphylococcus epidermidis*, *Moniliformis moniliformis*, *Bombyx mori*, *Neurospora crassa*, *Listeria monocytogenes*, *Thermotoga maritima*, *Helicobacter pylori* J99, *Corynebacterium heterothallicus*, *Clostridium perfringens* str. 13, *Plasmodium falciparum*, *Bacillus cereus* ATCC 14579, *Leptospira interrogans* serovar lai str. 56601, *Bos taurus*, *Atelerix albiventris*, *Glycine max*" 20
- 574 704 31 "*Danio rerio**Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Mus musculus*, *Oryza sativa*, *Corynebacterium glutamicum*, *Arabidopsis thaliana*, *Oikopleura dioica*, *Corynebacterium glutamicum* ATCC 13032, *Hordeum vulgare* subsp. vulgare"
- 575 705 24 "*Homo sapiens**Mus musculus*, *Lotus corniculatus* var. japonicus, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Leptospira interrogans*" 30
- 576 706 67 "*Mus musculus*, *Homo sapiens*, *Dictyostelium discoideum*, *Coccotrypes dactyliperda*, *Aspergillus niger*, *Arabidopsis thaliana*, *Oryza sativa*, *Trypanosoma brucei*, *Cryptosporidium parvum*, *Rattus norvegicus*, *Drosophila melanogaster*, *Hevea brasiliensis*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Danio rerio*, *Drosophila silvestris*, *Schistosoma japonicum*, *Pinus taeda*, *Caenorhabditis elegans*, *Triticum monococcum*, *Medicago truncatula*, *Helobelula robusta*, *Trifolium repens*"
- 577 707 29 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Mesostigma viride*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Listeria monocytogenes*, *Listeria innocua*, *Oryza sativa* (japonica cultivar-group), *Bacillus subtilis* subsp. subtilis str. 168, *Rattus norvegicus*, *Bacillus subtilis*, *Borrelia garinii*, *Bactrocera dorsalis*" 40
- 578 708 27 "*Plasmodium falciparum* 3D7, *Danio rerio*, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Cryptosporidium parvum*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group)"
- 579 709 27 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Mus musculus*, *Synechococcus* sp. W 50

- H 8102, *Danio rerio*, *Xenopus laevis*"
- 580 710 38 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Chironomus thummi, Drosophila melanogaster, Atelerix albiventris, Hordeum capense, Gallus gallus, Plasmodium falciparum 3D7, Hordeum intercedens, Clostridium acetobutylicum, Caenorhabditis briggsae, Chlamydia trachomatis, Lotus corniculatus var. japonicus, Echium lusitanicum, Lactobacillus casei, Pan troglodytes, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Danio rerio"
- 581 711 28 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio" 10
- 582 712 31 "Dictyostelium discoideum, Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus, Pan troglodytes, Triticum turgidum subsp. durum, Plasmodium falciparum 3D7, Papio anubis, Danio rerio, Sulfolobus tokodaii, Macaca fascicularis"
- 583 713 27 "Dictyostelium discoideum, Homo sapiens, Mus musculus, Pan troglodytes, Lotus corniculatus var. japonicus, Danio rerio, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Neurospora crassa, Balanoglossus carnosus, Morganella morganii"
- 584 714 28 "Drosophila melanogaster, Mus musculus, Homo sapiens, Arabidopsis thaliana, Tagetes erecta" 20
- 585 715 27 "Mus musculus, Homo sapiens, Pan troglodytes, Oryza sativa (japonica cultivar-group), Danio rerio, Paraclisis hyalina, Canis familiaris, Lotus corniculatus var. japonicus"
- 586 716 27 "Homo sapiens, Caenorhabditis elegans, Mus musculus"
- 587 717 27 "Homo sapiens, Candida albicans, Danio rerio, Caenorhabditis elegans, Bordetella pertussis, Oryza sativa (japonica cultivar-group), Pleurotus ostreatus, Plasmodium yoelii"
- 588 718 27 "Arabidopsis thaliana, Mus musculus, Homo sapiens, Human immunodeficiency virus 1"
- 589 719 20 "Homo sapiens, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus Mu50" 30
- 590 720 23 "Homo sapiens, Mus musculus, Pan troglodytes, Arabidopsis thaliana, Saccharomyces cerevisiae"
- 591 721 27 "Caenorhabditis elegans, Homo sapiens, Lactobacillus plantarum WCFS1, Mus musculus, Pan troglodytes, Staphylococcus aureus, Danio rerio, Mesembryanthemum crystallinum"
- 592 722 29 "Mus musculus, Schizosaccharomyces pombe, Anthocleista vogelii, Anthocleista schweinfurthii, Anthocleista amplexicaulis, Homo sapiens, Oryza sativa (japonica cultivar-group), Helicobacter pylori" 40
- 593 723 28 "Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Yaba-like disease virus, Borrelia burgdorferi B31, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Zea mays, Candida albicans, Mus musculus, Oceanobacillus ihayensis HTE831, Borrelia burgdorferi, Rattus norvegicus"
- 594 724 29 "Plasmodium falciparum 3D7, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Podospora anserina, Staphylococcus aureus subsp. aureus N315, Danio rerio, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus Mu50, Dictyostelium discoideum, Clostridium tetani E88, Caenorhabditis 50

- s elegans, Virgibacillus marismortui, Bacillus infernus, Bacillus sp. 2-9-3, Methanosarcina acetivorans C2A, Pyrococcus furiosus DSM 3638, Campylobacter jejuni subsp. jejuni NCTC 11168, Mycoplasma penetrans, Saccharomyces cerevisiae, Ipomoea nil, Pupa strigosa"
- 595 725 23 "Homo sapiens, Dictyostelium discoideum, Lepidozamia peroffskyana, Lepidozamia hopei, Oryza sativa (japonica cultivar-group), Danio rerio, Arabidopsis thaliana, Mus musculus"
- 596 726 28 "Homo sapiens, Mus musculus, Serratia marcescens, Oryza sativa (japonica cultivar-group), Oryza sativa, Danio rerio, Pan troglodytes, Arabidopsis thaliana" 10
- 597 727 25 "Homo sapiens, Mus musculus, Vibrio cholerae, Oceanobacillus iheyensis HTE831, Danio rerio, Arabidopsis thaliana, Flavobacterium johnsoniae"
- 598 728 25 "Caenorhabditis elegans, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Lotus corniculatus var. japonicus"
- 599 729 25 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Lactococcus lactis subsp. lactis, Danio rerio, Caenorhabditis elegans"
- 600 730 27 "Caenorhabditis elegans, Arabidopsis thaliana, Homo sapiens, Medicago truncatula, Mus musculus, Lactococcus lactis subsp. lactis" 20
- 601 731 28 "Homo sapiens, Mus musculus, Brucella melitensis 16M, Brucella suis 1330, Cloning vector pZR80, Acinetobacter calcoaceticus, Oryza sativa (japonica cultivar-group), Helicobacter hepaticus ATCC 51449"
- 602 732 28 "Homo sapiens, Callicebus torquatus, Pithecia irrorata, Danio rerio, Cacajao calvus, Ateles belzebuth, Mus musculus, Rattus norvegicus, Caenorhabditis elegans"
- 603 733 30 "Pan troglodytes, Homo sapiens, Shewanella oneidensis MR-1, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Entamoeba histolytica, Arabidopsis thaliana, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Medicago truncatula, Listeria innocua, Bacteriophage PSA, Oryzias latipes" 30
- 604 734 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Danio rerio, Sorghum bicolor"
- 605 735 27 "Bacillus cereus ATCC 14579, Homo sapiens, Caenorhabditis elegans, Mus musculus, Drosophila melanogaster"
- 606 736 25 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Schizosaccharomyces pombe, Drosophila melanogaster, Rattus norvegicus, Dictyostelium discoideum, Danio rerio, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Bacillus halodurans" 40
- 607 737 27 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 608 738 27 "Homo sapiens, Mus musculus, Medicago truncatula, Lemur catta, Caenorhabditis elegans, Arabidopsis thaliana"
- 609 739 27 "Homo sapiens, Oryza sativa, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Rattus norvegicus, Caenorhabditis elegans, Mus musculus, Enterococcus faecalis V583, Dunaliella salina, Mycoplasma capricolum"
- 610 740 25 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Cry 50

- ptosporidium parvum, Coxiella burnetii RSA 493, Dictyostelium discoideum, Arabidopsis thaliana, Mycoplasma penetrans, Danio rerio, Pan troglodytes, Nostoc sp. PCC 7120"
- 611 741 24 "Homo sapiens, Mus musculus, Drosophila melanogaster, Pan troglodytes, Oryza sativa (japonica cultivar-group)"
- 612 742 23 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Homo sapiens, Mus musculus, Drosophila melanogaster, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Arabidopsis thaliana, Gallus gallus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group)" 10
- 613 743 36 "Plasmodium falciparum 3D7, Dictyostelium discoideum, Phaeolus vulgaris, Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii, Drosophila melanogaster, Caenorhabditis elegans, Gallus gallus, Oryza sativa, Lotus corniculatus var. japonicus, Equus caballus, Saccharomyces cerevisiae, Rattus norvegicus, Medicago truncatula, Lemur catta, Clostridium tetani E88, Pancreaticum canariense, Leucojum vernum subsp. carpaticum, Acis tingitana, Acis rosea, Streptococcus mutans UA159, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rickettsia conorii, Pneumocystis carinii f. sp. macaca, Dysdera gollumi, Candidatus Blochmannia floridanus, Penaeus monodon, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Raccoonpox virus, Drosophila funebris" 20
- 614 744 28 "Bryopsis sp. B, Anastrepha hamata, Amblystegium fluviatile, Homo sapiens, Plasmodium falciparum 3D7, Pan troglodytes, Pycreus mundtii, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Mus musculus, Scirpoide"
- 615 745 38 "Homo sapiens, Rattus norvegicus, Danio rerio, Clostridium botulinum, Oryza sativa (japonica cultivar-group), Prochlorococcus marinus, Plasmodium falciparum 3D7, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Falco tinnunculus, Mus musculus"
- 616 746 30 "Mus musculus, Homo sapiens, Rattus norvegicus, Smintopsis macroura, Rabbit rotavirus, Drosophila melanogaster, Lactococcus lactis subsp. lactis, Danio rerio, Haemophilus influenzae Rd KW20, Lapine rotavirus" 30
- 617 747 25 "Mus musculus, Homo sapiens, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Clostridium acetobutylicum, Danio rerio, Borrelia burgdorferi B31, Drosophila melanogaster, Plasmodium falciparum 3D7, Williopsis saturnus var. suaveolens, Caenorhabditis elegans, Borrelia burgdorferi, Rattus norvegicus"
- 618 748 27 "Homo sapiens, Lycopersicon esculentum, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Mus musculus, Sorghum bicolor, Branchiostoma floridae, Lactococcus lactis subsp. lactis, Bacteriophage bIL285, Chlamydomonas reinhardtii, Entamoeba histolytica, Equus caballus, Canis familiaris, Mycoplasma penetrans, Helicobacter pylori J99, Nostoc sp. PCC 7120" 40
- 619 749 28 "Homo sapiens, Mus musculus, Solanum tuberosum, Plasmodium falciparum 3D7, Danio rerio, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Teloglabrus milleri, Teloglabrus entabensis, Oryza sativa, Vibrio fischeri, Clostridium tetani E88, Papio anubis, Gallus gallus, Plasmodium falciparum, Lycopersicon esculentum, Arabidopsis thaliana, Saccharomyces cerevisiae, Diplonevra mortimeri, Diplonevra nitidula, Agrocybe aegerita, Candida albicans" 50

- 620 750 28 "Homo sapiens, Streptococcus pyogenes MGAS315, Caenorhabditis elegans, Streptococcus pyogenes SSI-1, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Streptococcus mutans UA159, Borrelia burgdorferi, Sulfolobus tokodaii, Pichia pastoris, Schizosaccharomyces pombe, Danio rerio, Clostridium perfringens str. 13, Drosophila melanogaster, Arabidopsis thaliana, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Agrocybe aegerita, Escherichia coli 0157:H7 EDL933, Prochlorococcus marinus, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Chlorella vulgaris, Escherichia coli 0157:H7, Metasequoia glyptostroboides"
- 621 751 31 "Homo sapiens, Brucella melitensis 16M, Brucella suis 1330, Mus musculus, Antithamnion sp., Monodelphis domestica, Caenorhabditis elegans, Pan troglodytes, Drosophila melanogaster, Gallus gallus, Zea mays, synthetic construct, Oryza sativa (japonica cultivar-group), Danio rerio, Mucor javanicus"
- 622 752 24 "Saccharomyces cerevisiae, Homo sapiens, Mus musculus, Dictyostelium discoideum, Plasmodium chabaudi chabaudi, Medicago truncatula, Clostridium tetani E88, Streptococcus mutans UA159, Streptococcus mutans, Danio rerio"
- 623 753 32 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Medicago truncatula, Plasmodium falciparum 3D7, Danio rerio, Daphnia galeata x Daphnia cucullata, Daphnia cucullata, Daphnia hyalina, Daphnia galeata x Daphnia hyalina, Daphnia galeata, Arabidopsis thaliana, Drosophila melanogaster, Saccharomyces cerevisiae, Vibrio sp. CH-291, Amsacta moorei entomopoxvirus, Euhadra herklotzi, Ciona intestinalis, Pan troglodytes, Clostridium perfringens str. 13, Rattus norvegicus, Zerene eurydice, Lyophyllum ambustum, Staphylococcus aureus, The romyzon trizonare, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Methanohalobium acetivorans C2A"
- 624 754 40 "Homo sapiens, Mus musculus, Equus caballus, Bacillus cereus ATCC 14579, Tetrahymena thermophila, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Arabidopsis thaliana, Clostridium tetani E88, Plasmodium falciparum, Danio rerio, Caenorhabditis elegans, Medicago truncatula, Dictyostelium discoideum, Ctenocephalides felis, Dialysis elongata, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Betula pendula, Bromus tectorum, Amsacta moorei entomopoxvirus, Marchantia polymorpha, Euglena longa, Saccharomyces cerevisiae, Lotus corniculatus var. japonicus, Paracoccidioides brasiliensis, Epifagus virginiana, Mycoplasma penetrans, Gadus morhua, Schizosaccharomyces pombe, Rattus norvegicus, Bos taurus, Gossypium barbadense, Drosophila melanogaster, Euodynerus foraminatus"
- 625 755 43 "Homo sapiens, Mus musculus, Enterococcus faecalis V583, Plasmodium falciparum 3D7, Caenorhabditis elegans, Plasmid pCF10, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Toxoplasma gondii, Cryptosporidium parvum, Medicago truncatula, Drosophila simulans, Dictyostelium discoideum, Vibrio vulnificus CMCP6, Buchnera aphidicola str. Sg (Schizaphis graminum), Pyrocoelia rufa, Salmo salar, Lactococcus lactis subsp. lactis, Staphylococcus epidermidis, Caenorhabditis briggsae, Sulfolobus tokodaii, Drosophila mauritiana, Danio rerio, Neurospora crassa"
- 626 756 35 "Homo sapiens, Amsacta moorei entomopoxvirus, Danio rerio, Drosophila melanogaster, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Rickettsia prowazekii, Arabidopsis thaliana, Streptococcus phage Cp"
- 627 757 28 "Campylobacter jejuni, Homo sapiens, Arabidopsis thaliana"

- a, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Drosophila melanogaster*, *Xenopus laevis*, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Ciona intestinalis*, *Streptococcus mutans*"
- 628 758 28 "Mus musculus, Homo sapiens, Macaca fascicularis, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Sus scrofa, Rattus leucopus, Petrolisthes armatus, Dictyostelium discoideum, Arabidopsis thaliana, Human immunodeficiency virus 1, Macaca mulatta, Tribolium castaneum, Pasteurella multocida, Campylobacter jejuni subsp. jejuni NCTC 11168, Plasmodium falciparum 3D7, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Leptoxis melanooides, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Clostridium perfringens str. 13" 10
- 629 759 30 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Oxypoda longipes, Oryza sativa (japonica cultivar-group), Danio rerio, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Caenorhabditis briggsae, Staphylococcus epidermidis, Oceanobacillus iheyensis HTE831, Paramecium tetraurelia, Phytomonas serpens, Arabidopsis thaliana, Macaca fascicularis, Clostridium perfringens str. 13"
- 630 760 28 "Homo sapiens, Felis catus, Arabidopsis thaliana, Papio anubis, Mus musculus, Xenopus laevis, Borrelia burgdorferi B31, Drosophila melanogaster, Rattus norvegicus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Pisum sativum, Lotus corniculatus var. japonicus, Clematis serratifolia, Listeria monocytogenes, Danio rerio, Legionella pneumophila" 20
- 631 761 28 "Homo sapiens, Danio rerio, Arabidopsis thaliana, Mus musculus, Mus caroli, Human calicivirus SLV/Arg39, Aquifex aeolicus VF5, Drosophila melanogaster, Clostridium acetobutylicum, Lotus corniculatus var. japonicus, Brachyspira hyodysenteriae, synthetic construct"
- 632 762 27 "Homo sapiens, Bacillus cereus ATCC 14579, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Human immunodeficiency virus 1, Mycoplasma gallisepticum R, Mus musculus, Bacillus anthracis str. Ames, Clostridium tetani E88, Dracula chimaera, Sievekingia herrenhusana, Systelloglossum acuminatum, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Medicago truncatula, Danio rerio, Chlamydophila pneumoniae TW-183, Lactobacillus plantarum WCFS1, Arabidopsis thaliana, Chlamydophila pneumoniae J138" 30
- 633 763 29 "Homo sapiens, Danio rerio, Bacillus cereus ATCC 14579, Mus musculus, Trypanosoma cruzi, Listeria innocua, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Pan troglodytes, Gallus gallus, Methanosarcina mazei Goe1, Arabidopsis thaliana, Rattus norvegicus, Enterococcus faecalis V583, Drosophila melanogaster, Caenorhabditis elegans, Herpestes javanicus, Opisthiolepis heterophylla, Plasmodium falciparum 3D7, Mycoplasma pulmonis, Brassica napus var. napus, Marchantia polymorpha, Trypanosoma brucei, Saccharomyces cerevisiae, Human herpesvirus 6B, Cryptosporidium parvum, Helicobacter pylori J99, Lupinus luteus, Anopheles gambiae, Felis catus, Clostridium difficile" 40
- 634 764 29 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Listeria innocua, Candida boidinii, Medicago truncatula, Danio rerio, Mycoplasma gallisepticum R, Drosophila melanogaster, Chlamydomonas reinhardtii, Sus scrofa, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Raja erinacea, Rattus norvegicus, Schizosaccharomyces pombe, Ciona intestinalis, Vigna mungo"
- 635 765 27 "Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis 50

elegans, *Leptospira interrogans* serovar lai str. 56601, *Zea mays*, *Sulfolobus to kodaii*, *Oryza sativa* (japonica cultivar-group), *Pyrococcus horikoshii*, *Arabidopsis thaliana*"

636 766 39 "Homo sapiens, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*, *Leptospira interrogans* serovar lai str. 56601, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Rattus norvegicus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Schistosoma japonicum*, *Dictyostelium discoideum*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Sulfolobus solfataricus*, *Oryza sativa* (indica cultivar-group), *Oryza sativa* (japonica cultivar-group), *Nicotiana glauca*, *Lotus corniculatus* var. *japonicus*, *Mycoplasma penetrans*, *Carollia perspicillata*, *Liquidambar styraciflua*, Human immunodeficiency virus 1, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Pyrococcus horikoshii*, *Hottentotta judaica*"

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637 767 34 "Orpinomyces sp. PC-2, *Homo sapiens*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Coxiella burnetii* RSA 493, *Mus musculus*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Plasmodium falciparum*, Classical swine fever virus, *Danio rerio*, *Mycoplasma pulmonis*, *Streptococcus agalactiae* NEM316, *Cercopithecus aethiops*, *Plasmodium reichenowi*, *Lotus corniculatus* var. *japonicus*, *Thermoplasma volcanium*, Hog cholera virus strain 'Switz. IV/93', Hog cholera virus strain Alfort/M, Hog cholera virus strain Osaka, *Helicobacter hepaticus* ATCC 51449, Bovine viral diarrhea virus genotype 2"

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638 768 27 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Oryza sativa*, *Arabidopsis thaliana*, *Hordeum vulgare* subsp. *vulgare*, *Zea mays*, Plastid transformation vector pMSK49, *Danio rerio*, *Porphyra purpurea*, *Triticum aestivum*, *Potamogeton natans*, *Potamogeton berchtoldii*, *Potamogeton acutifolius*, *Potamogeton lucens*"

639 769 27 "*Rana temporaria*, *Mus musculus*, *Homo sapiens*, *Claviceps purpurea*, uncultured phototrophic eukaryote, *Danio rerio*"

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640 770 23 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, Shrimp white spot syndrome virus, *Caenorhabditis elegans*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"

641 771 27 "Homo sapiens, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Papio anubis*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group)"

642 772 26 "*Mus musculus*, *Homo sapiens*, *Thermotoga maritima*, *Chlamydia muridarum*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Canis familiaris*, *Caenorhabditis elegans*, *Globodera pallida*, *Listeria innocua*, *Danio rerio*, *Gracilaria lemaneiformis*"

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643 773 23 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, *Dictyostelium discoideum*"

644 774 24 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Cicindela scutellaris*, *Thermoanaerobacter tengcongensis*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*"

645 775 32 "Homo sapiens, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Plasmodium vivax*, *Zea mays*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Neurospora crassa*, *Anopheles gambiae*, Hepatitis C virus, *Papio*

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anubis, Shrimp white spot syndrome virus, Streptococcus pyogenes MGAS315, Aphidius ervi, Canis familiaris, Oncorhynchus mykiss, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Simian immunodeficiency virus, Streptococcus pyogenes SSI-1, Listeria innocua, Schizosaccharomyces pombe, Ciona intestinalis"

646 776 24 "Homo sapiens, Mus musculus, Rickettsia conorii, Caenorhabditis briggsae, Papio anubis, Drosophila melanogaster, Sus scrofa, Thermobacter tengcongensis, Lymantria dispar cyovirus 1, Chlamydia trachomatis, Drosophila sp., Lactobacillus helveticus, Mycoplasma hominis, Oceanobacillus iheyensis HTE831, Macroscelides proboscideus, Danio rerio, Dendrolimus punctatus cyovirus 1"

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647 777 36 "Anas platyrhynchos, Cucumis sativus, Homo sapiens, Caenorhabditis elegans, Helicobacter pylori J99, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Staphylococcus aureus, Bacillus cereus ATCC 14579, Clostridium tetani E88, Zea mays, Plasmid pI258, Oryza sativa, Lactococcus lactis subsp. lactis, Pimelia fernandezlopezi, Plasmodium falciparum 3D7, Pimelia granulicollis, Medicago truncatula, Staphylococcus aureus subsp. aureus N315, Human immunodeficiency virus 1, Felis catus, Neurospora crassa, Danio rerio, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Nerieene variabilis, Rattus norvegicus"

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648 778 27 "Homo sapiens, Mus musculus, Giardia intestinalis, Bovine herpesvirus 4, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Bartonella quintana, Campylobacter jejuni subsp. jejuni NCTC 11168, Rattus norvegicus, Rattus rattus, Danio rerio, Entamoeba histolytica, Clostridium perfringens str. 13"

649 779 33 "Homo sapiens, Danio rerio, Pisolithus arhizus, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli, Escherichia coli K12, Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Bombyx mori, Scleroderma hypogaeum, Clostridium perfringens str. 13, Drosophila melanogaster, Leptospira interrogans serovar lai str. 56601, Papio anubis anubis, Plasmodium falciparum 3D7, Lycopersicon esculentum, Caenorhabditis briggsae, Medicago truncatula, Leptospira interrogans"

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650 780 36 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Medicago truncatula, Arabidopsis thaliana, Clostridium tetani E88, Lactococcus lactis subsp. lactis, Mus musculus, Caenorhabditis elegans, Danio rerio, Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Guillardia theta, Clostridium acetobutylicum, Clostridium perfringens str. 13, Monosiga brevicollis, Peltoperla arcuata, Oryza sativa (japonica cultivar-group), Pan troglodytes, Toxoplasma gondii, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Tinaminyssus melloi melloi, Punica granatum, Rhagoletis pomonella, Mycoplasma gallisepticum R, Rattus norvegicus, Aglais urticae, Leptospira interrogans serovar lai str. 56601, Crioceris duodecimpunctata, uncultured bacterium, Gallus gallus, Prevotella sp. oral clone D0039, Schmidtea mediterranea"

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651 781 35 "Hevea brasiliensis, Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Oceanobacillus iheyensis HTE831, Arconaiia lanceolata, Lanceolaria grayana, Mus musculus, Oryza sativa (japonica cultivar-group), Anodonta woodiana woodiana, Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Bacillus subtilis, Plasmodium falciparum 3D7, Lactococcus lactis, Arabidopsis thaliana, Luciola lateralis, Caenorhabditis elegans, Cyanophora paradoxa, Pan tr

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- oglydites, Buchnera aphidicola str. Sg (Schizaphis graminum), Caenorhabditis briggsae, Guillardia theta, Brassica rapa, Endomyces magnusii, Listeria monocytogenes, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Hordeum vulgare, Macrophthalmus convexus"
- 652 782 27 "Schizophyllum commune, Homo sapiens, Danio rerio, Mus musculus, Caenorhabditis elegans, Rhynchostoma proteae, Brugia pahangi, Proteus vulgaris, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Drosophila melanogaster, Clostridium tetani E88, Xenopus laevis, Plasmodium falciparum 3D7, Chlorobium tepidum TLS, Spizellomyces punctatus, Arabidopsis thaliana, Guillardia theta, Clostridium perfringens str. 13" 10
- 653 783 27 "Bos taurus, Sorghum bicolor, Mus musculus, Homo sapiens, Arabidopsis thaliana, Xenopus laevis"
- 654 784 31 "Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Danio rerio, Sus scrofa, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Zea mays, Caenorhabditis elegans, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Oryza sativa, Streptococcus pyogenes M1 GAS, Drosophila melanogaster, Streptococcus pyogenes SSI-1, Ciona intestinalis, Tomato big bud phytoplasma"
- 655 785 23 "Caenorhabditis elegans, Homo sapiens, Drosophila melanogaster, Methanosarcina acetivorans C2A, Danio rerio, Mus musculus, Heliothis zea virus 1, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Equus caballus" 20
- 656 786 24 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Takifugu rubripes, Arabidopsis thaliana, Oryza sativa, Castanea sativa, Caenorhabditis elegans"
- 657 787 28 "Danio rerio, Mus musculus, Homo sapiens, Nicotiana tabacum, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus"
- 658 788 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Aspergillus kawachii, Leishmania major, Pseudomonas syringae pv. syringae, Mus musculus, Saccharomyces castellii, Cryptosporidium parvum, Plasmodium falciparum 3D7, Sus scrofa, Caenorhabditis elegans, Danio rerio" 30
- 659 789 28 "Homo sapiens, Asteridea athrixioides, Asteridea asteroides, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Mus musculus"
- 660 790 31 "Drosophila melanogaster, Homo sapiens, Mycoplasma hominis, Mus musculus, Clostridium perfringens str. 13, Stylapterus micranthus, Poncirus trifoliata, Caenorhabditis elegans, Arabidopsis thaliana, Rumex patientia, Daucus carota, Equus caballus, Oryza sativa (japonica cultivar-group), Danio rerio, Paramecium primaurelia, Nostoc sp. PCC 7120, Rattus norvegicus, Pan troglodytes, Dictyostelium discoideum, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Shigella flexneri 2a, Clostridium acetobutylicum, Xenopus laevis, Streptococcus agalactiae NEM316, Campylobacter jejuni subsp. jejuni NCTC 11168, Cicer bijugum, Anemone flaccida, Lotus corniculatus var. japonicus, Pharus lappulaceus, Sorghum bicolor, Cryptosporidium parvum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pinus radiata, Carabus concolor" 40
- 661 791 46 "Homo sapiens, Dictyostelium discoideum, Aspergillus oryzae, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Pan troglodytes, Oryza sativa (japonica cultivar-group), Phratora laticollis, Danio rerio, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Ca 50

- enorhabditis elegans, Lemur catta, Oryza sativa, Xenopus laevis, Schizosaccharomyces pombe, Ciona intestinalis, Sesarma aequatoriale, Sesarma sulcatum, Clostridium perfringens, Atelerix albiventris, Medicago truncatula, Mamestra configurata, Leptospira interrogans serovar lai str. 56601, Buchnera aphidicola str. Bp (Bazongia pistaciae), Gallus gallus, Calliergus giganteum, Hygrohypnum luridum, Ptilium crista-castrensis, Hypnum lindbergii, Hypnum pallescens, Calliergusella cuspidata, Drosophila prosaltans, Papio hamadryas, Fusobacterium nucleatum subsp. nucleatum ATCC 25586"
- 662 792 27 "Danio rerio, Streptococcus pneumoniae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Homo sapiens, Enterococcus faecalis V583, Methanosarcina mazei Goe1, Caenorhabditis elegans, Yersinia pestis KIM, Yersinia pestis C092, Mus musculus, Bos taurus, Ovis aries, Oryza sativa (japonica cultivar-group), Carollia perspicillata, Macaca fascicularis" 10
- 663 793 23 "Plasmodium falciparum, Atelerix albiventris, Dictyostelium discoideum, Homo sapiens, Clostridium acetobutylicum, Caenorhabditis elegans, Drosophila melanogaster, Mus musculus, Lemur catta, Papio hamadryas, Lotus corniculatus var. japonicus, Danio rerio, Helicobacter hepaticus ATCC 51449, Bombyx mori"
- 664 794 28 "Homo sapiens, Danio rerio, Mycoplasma pneumoniae, Mus musculus, Helicobacter hepaticus ATCC 51449, Xenopus laevis, Oryza sativa (japonica cultivar-group)" 20
- 665 795 29 "Homo sapiens, Mus musculus, Empis livida, Plasmodium falciparum 3D7, Toxoplasma gondii, Arabidopsis thaliana, Caenorhabditis elegans, Clostridium perfringens str. 13, Rattus norvegicus, Bacillus cereus ATCC 14579, Clostridium tetani E88, Thermoanaerobacter tengcongensis, Methanosarcina acetivorans C2A, Gossypium hirsutum, Danio rerio, Takifugu rubripes, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Artemia franciscana"
- 666 796 29 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Medicago truncatula, Papio anubis, Sus scrofa, Drosophila melanogaster, Oryza sativa, Bos taurus, Danio rerio, Arabidopsis thaliana, Rattus norvegicus, Pinus koraiensis, Saccharomyces castellii, Xenopus laevis, Pyrobaculum aerophilum str. IM2, Takifugu rubripes, Lactococcus lactis subsp. lactis, Streptococcus pneumoniae, Streptococcus mitis, Caenorhabditis briggsae" 30
- 667 797 24 "Homo sapiens, Arabidopsis thaliana, Vibrio parahaemolyticus, Leptospira interrogans serovar lai str. 56601, Didelphis virginiana, Mus musculus, Caenorhabditis elegans, Methanosarcina mazei Goe1, Oryza sativa (japonica cultivar-group)"
- 668 798 23 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Caenorhabditis elegans, Branchiostoma floridae, Danio rerio, Treponema pallidum, Mus sp., Didelphis virginiana" 40
- 669 799 35 "Mus musculus, Homo sapiens, Cryptosporidium parvum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Trisopterus minutus, Nostoc sp. PCC 7120, Pan troglodytes, leaf litter ascomycete strain its050, leaf litter ascomycete strain its042, Polygona"
- 670 800 27 "Homo sapiens, Galdieria sulphuraria, Mus musculus, Medicago truncatula, Danio rerio, Rattus norvegicus, Didelphis virginiana, Drosophila melanogaster, Xenopus laevis, Methanosarcina mazei Goe1, Arabidopsis thaliana, 50

- Lycopersicon esculentum*, *Sulfolobus tokodaii*, *Canis familiaris*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*"
- 671 801 37 "Chaetosphaeridium globosum, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Lycopersicon esculentum, Danio rerio, Monosiga brevicollis, Drosophila melanogaster, Pneumocystis carinii f. s. p. macaca, Clostridium acetobutylicum, Ictalurus punctatus, Bombus pullatus, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Medicago truncatula, Pan troglodytes, Antheraea pernyi, Dictyostelium discoideum, Methanosarcina mazei Goe1, Anthocharis sara, Papio anubis, Drosophila pseudoobscura, Peromyscus maniculatus, Rattus norvegicus, Lestrimelitta limao, Oryza sativa, Swinepox virus, Mischocephalus sp. KAO-2001, Bos taurus" 10
- 672 802 36 "Plasmodium falciparum 3D7, Homo sapiens, Arabidopsis thaliana, Mus musculus, Bacillus subtilis subsp. subtilis str. 168, Dictyostelium discoideum, Danio rerio, Caenorhabditis elegans, Pan troglodytes, Drosophila melanogaster, Clostridium tetani E88, Escheri" 10
- 673 803 35 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Plasmodium falciparum, Medicago truncatula, Caenorhabditis elegans, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Eimeria albigulae, Oryza sativa, Arabidopsis thaliana, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Listeria innocua, Cryptosporidium parvum" 20
- 674 804 23 "Homo sapiens, Shewanella oneidensis MR-1, Candida albicans, Mus musculus, Caenorhabditis elegans, Danio rerio"
- 675 805 23 "Homo sapiens, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7"
- 676 806 27 "Homo sapiens, Pan troglodytes, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Leishmania major, Prochlorococcus marinus, Rattus norvegicus, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Borrelia burgdorferi B31, Drosophila melanogaster, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Sorghum bicolor, Streptococcus agalactiae 2603V/R, Zea mays, Methanosarcina acetivorans C2A, uncultured bacterium rcr_15, Streptococcus agalactiae NEM316, Equus asinus, Felis libyca, Felis silvestris, Felis catus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Goniolimon speciosum, Clostridium perfringens str. 13" 30
- 677 807 27 "Homo sapiens, Mus musculus, Varroa destructor, Drosophila melanogaster, Bacteroides thetaiotaomicron VPI-5482, Clostridium tetani, Danio rerio, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Pan troglodytes, Chlamydophila pneumoniae J138, Caenorhabditis elegans, uncultured bacterium, Oryza sativa (japonica cultivar-group), Chlamydophila pneumoniae TW-183, Iris yellow spot virus" 40
- 678 808 28 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Strongylocentrotus purpuratus, Neurospora crassa, Yarrowia lipolytica, Vibrio vulnificus CMCP6, Drosophila melanogaster, Brassica nigra, Canis familiaris, Danio rerio, Caenorhabditis elegans, Arabidopsis thaliana, Leishmania major, Schizosaccharomyces pombe"
- 679 809 27 "Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Mus musculus, Bos taurus, Oryza sativa (japonica cultivar-group), Hepatitis G virus, Nicotiana tabacum"
- 680 810 27 "Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group)" 50

- 681 811 32 "Homo sapiens, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum, Mus musculus, Cryphonectria hypovirus 1, Takifugu rubripes, Arabidopsis thaliana, Mycoplasma pneumoniae, Plasmodium falciparum 3D7, Ralstonia solanacearum, Gallus gallus, Plasmodium falciparum"
- 682 812 31 "Methanocaldococcus jannaschii, Homo sapiens, Mus musculus, Caenorhabditis elegans, Chlamydomonas reinhardtii, Clostridium acetobutylicum, Danio rerio, Chlamydomonas reinhardtii, Cordyceps sobolifera, Pan troglodytes, Drosophila melanogaster, Buchnera aphidicola str. Bp (Baizongia pistaciae), Aquifex aeolicus VF5, Gonioctena olivacea, Plasmodium falciparum 3D7, Lycopersicon esculentum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Eimeria tenella, Dictyostelium discoideum, Staphylococcus epidermidis ATCC 12228, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa, Staphylococcus epidermidis, Schistosoma mekongi, Lotus corniculatus var. japonicus, Phialophora alba, Eupenicillium anaticum, Eupenicillium zonatum, Eupenicillium abidjanum, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Hemicarpaceles paradoxus, Lymantria dispar nucleopolyhedrovirus, Helicobacter pylori J99"
- 683 813 44 "Dictyostelium discoideum, Homo sapiens, Candidatus Blochmannia floridanus, Danio rerio, Caenorhabditis elegans, Plasmodium falciparum 3D7, Cyprinus carpio, Mus musculus, Oryza sativa (japonica cultivar-group), Epifaigus virginiana, Papio anubis, Drosophila melanogaster, Gymnocladus dioica, Arabidopsis thaliana, Caenorhabditis briggsae, Plasmodium berghei, Erebia euryale, Apantopus hyperantus, Medicago truncatula, Rattus norvegicus, Liagore rubromaculata, Biomphalaria glabrata, Prunus persica, Paramecium tetraurelia, Buchnera aphidicola str. Sg (Schizaphis graminum)"
- 684 814 62 "Aphanocalyx heitzii, Apis mellifera ligustica, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Saccharomyces cerevisiae, Plasmodium falciparum, Arabidopsis thaliana, Schmidtea polychroa, Litopenaeus schmitti, Saccharomyces douglasii, Saccharomyces servazzii, Hypostomus sp. BR 98-678, Saccharomyces kunashirensis, Caenorhabditis elegans, Williopsis saturnus var. mrakii, Apis mellifera, Oryza sativa (japonica cultivar-group), Kluyveromyces dobzhanskii, Atelerix albiventris"
- 685 815 49 "Danio rerio, Medicago truncatula, Mus musculus, Homo sapiens, Mycoplasma pulmonis, Plasmodium falciparum 3D7, Caenorhabditis elegans, Saccharomyces cerevisiae, Melanoplus sanguinipes entomopoxvirus, Pan troglodytes, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Polemochartus liparae, Schizosaccharomyces pombe, Exotela sp., Dacus sibirica, Chorebus sp., Alysia soror, Biosteres haemorrhoeus, Biosteres carbonarius, Leptospira interrogans serovar lai str. 56601, Anopheles gambiae, Sorghum bicolor, Arabidopsis thaliana, Cloning vector pVLH/hsp, Cloning vector pHLH/int(+), Cloning vector pVLH/int(+), Clostridium acetobutylicum"
- 686 816 34 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Caenorhabditis briggsae, Caenorhabditis elegans, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Vicia faba, Medicago truncatula, Gossypium barbadense, Escherichia coli, Bacillus cereus ATCC 14579, Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Clostridium tetani E88, Escherichia coli CFT073, Lycopersicon esculentum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Lactococcus lactis ATCC 30561"

- cus lactis subsp. lactis, Candidatus Blochmannia floridanus, Plasmodium yoelii y oelii, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Clostridium difficile, Neurospora crassa, Pyrococcus horikoshii"
- 687 817 32 "Homo sapiens, Mus musculus, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Plasmodium falciparum 3D 7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Zea mays, S almonella enterica subsp. enterica serovar Typhi, Wigglesworthia glossinidia end osymbiont of Glossina brevipalpis, Arabidopsis thaliana, Nostoc sp. PCC 7120, Or yza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila melan ogaster, Clostridium tetani E88, Schizosaccharomyces japonicus, Streptococcus mu tans UA159, Streptococcus agalactiae 2603V/R, Gecarcinus lateralis, Trichocentru m pfavii, Rattus norvegicus, Tetrahymena thermophila, Streptococcus agalactiae N EM316, Plasmodium falciparum, Cyanidium caldarium, Fowlpox virus, Ciona intestin alis, Microtus rossiaemeridionalis, Streptococcus mutans"
- 688 818 25 "Mus musculus, Homo sapiens, Drosophila melanogaster, Sc hizosaccharomyces pombe, Shewanella oneidensis MR-1, Danio rerio"
- 689 819 29 "Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Arabidopsis thaliana, Salmonella typhimurium, Salmon ella enterica subsp. enterica serovar Typhi, Salmonella enterica subsp. enterica serovar Senftenberg, Salmonella enterica "
- 690 820 35 "Homo sapiens, Arabidopsis thaliana, Sphaerechinus granu laris, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis eleg ans, Danio rerio, Yarrowia lipolytica, Hylobates syndactylus"
- 691 821 31 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Mor aea cedarmonticola, Danio rerio, Dictyostelium discoideum, Gallus gallus, Papio anubis, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Streptococc us pneumoniae, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Ory zias latipes"
- 692 822 28 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Dan io rerio, Atelerix albiventris, Plasmodium falciparum 3D7, Cerataphis pothophila , Drosophila melanogaster, Dictyostelium discoideum, Bombyx mori, Arabidopsis th aliana, Entamoeba histolytica, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Tetrahymena thermophila, Boophilus kohlsi, Amblyomma h ebraeum, Bombyx mandarina, Nostoc sp. PCC 7120"
- 693 823 23 "Mus musculus, Danio rerio, Rattus norvegicus, Arabidops is thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Rattus rattus "
- 694 824 25 "Homo sapiens, Rattus norvegicus, Mus musculus, Prochlor ococcus marinus subsp. marinus str. CCMP1375, Macaca fascicularis"
- 695 825 31 "Homo sapiens, Rattus norvegicus, Mus musculus, Pichia a nomala, Oryza sativa (japonica cultivar-group), Bacillus thuringiensis, Arabidop sis thaliana, Escherichia coli O157:H7 EDL933, Danio rerio, Gallus gallus, Oryza sativa, Lotus corniculatus var. japonicus, Chromobacterium violaceum, Caenorhab ditis elegans, Escherichia coli O157:H7"
- 696 826 27 "Homo sapiens, Mus musculus, Medicago truncatula, Danio rerio, Lotus corniculatus var. japonicus, Sepia apama, Rattus norvegicus, Pan tr oglodytes, Arabidopsis thaliana, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Carabus tamsi dashtensis, Carabus tamsi tamsi, Carabus cavernos us variolatus, Carabus jacobsoni, Carabus akinini elisabethae, Carabus starckian us theseus, Carabus boeberi tschitscherini, Carabus bohemani, Carabus glabratus,

Enterococcus faecalis V583, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Lemur catta*, *Caenorhabditis elegans*, *Percus lineatus*, *Rickettsia conorii*, *Rickettsia prowazekii*, *Buchnera aphidicola*, *Phaseolus vulgaris*, *Caenorhabditis briggsae*, *Saccharomyces cerevisiae*, *Galago senegalensis*, *Cryptosporidium parvum*, *Carabus balassogloi*, *Piromyces equi*, *Macaca fascicularis*"

697 827 23 "Homo sapiens, Prunus persica, Mus musculus, Clostridium perfringens str. 13"

698 828 31 "Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, Arabidopsis thaliana, Buchnera aphidicola, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Xenopus laevis, Caenorhabditis elegans, Schizosaccharomyces pombe, Rattus norvegicus, Clostridium perfringens str. 13"

699 829 41 "Mus musculus, Plasmodium falciparum 3D7, Drosophila melanogaster, Homo sapiens, Danio rerio, unidentified entomopoxvirus, Rickettsia prowazekii, Daucus carota, Pan troglodytes, Dictyostelium discoideum, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Oryza sativa, Atelixer albiventris, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mycoplasma capricolum, Trypanosoma cruzi cruzi, Canis familiaris, Lefua echigonia, Parabramis pekinensis, Megalobrama terminalis, Saccharomyces cerevisiae, Melanoplus sanguinipes entomopoxvirus, Carassius auratus, Ijimaia dofleini, Conger myriaster, Clostridium perfringens str. 13, Trypanosoma cruzi, Bacillus cereus ATCC 14579, Prunus persica, Medicago truncatula, Borrelia burgdorferi B31, Psychotria ipecacuanha"

700 830 53 "Plasmodium falciparum 3D7, Homo sapiens, Polistes dorsalis, Drosophila melanogaster, Clostridium tetani E88, Mus musculus, Halictus farinosus, Danio rerio, Plasmodium falciparum, Nycteribiidae sp. LRC-2002, Cloning vector pHLH/int(+), Solanum tuberosum, Arabidopsis thaliana, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Rickettsia conorii, Lotus corniculatus var. japonicus, Drosophila nasuta F, Drosophila pulaua, Drosophila sulfurigaster sulfurigaster, Drosophila sulfurigaster albostrigata, Drosophila albomicans, Melanoplus sanguinipes entomopoxvirus, Xenopus laevis, Polistes exclamans, Botryotinia fuckeliana, Dictyostelium discoideum, Monosiga brevicollis, Zerene eurydice, Zerene cesonia, Varroa destructor, Pheidole pallidula, Neochanna burrowsius, Wolffia elongata, Diplomitoporus crustulinus, Oryza sativa, Clostridium acetobutylicum"

701 831 37 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Arabidopsis thaliana, Danio rerio, Helicobacter pylori J99, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Lycopersicon esculentum, Bacillus anthracis str. Ames, Medicago truncatula, Plasmodium falciparum 3D7, Aedes aegypti, Sorghum bicolor, Gossypium barbadense, Rickettsia prowazekii, Rana ribunda, Plasmodium chabaudi chabaudi, Nostoc sp. PCC 7120"

702 832 36 "Mus musculus, Danio rerio, Homo sapiens, Takifugu rubripes, Lycopersicon esculentum, Arabidopsis thaliana, Plasmodium falciparum 3D7, Rattus norvegicus, Schizophyllum commune, Caenorhabditis elegans, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Drosophila melanogaster, Medicago truncatula, Dictyostelium discoideum, Malawimonas jakobiformis, Oryza sativa (indica cultivar-group), Saccharomyces cerevisiae, Rickettsia conorii, Clostridium acetobutylicum, Lycaeides melissa melissa, Campylobacter jejuni subsp. jejuni NCTC 11168, Amsacta moorei entomopoxvirus, Torulaspora delbrueckii, Mycoplasma pene

- trans, *Schizosaccharomyces pombe*, *Ajellomyces dermatitidis*, *Borrelia garinii*, *Thermoanaerobacter brockii*"
- 703 833 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Streptococcus pneumoniae* R6, *Vauquelinia californica*, *Arabidopsis thaliana*, *Caenorhabditis elegans*"
- 704 834 27 "Pan troglodytes, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Colwellia maris*, *Mus musculus*, *Caenorhabditis elegans*"
- 705 835 24 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*" 10
- 706 836 27 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Arabidopsis thaliana*, *Borrelia burgdorferi* B31, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis*, *Oryctolagus cuniculus*"
- 707 837 32 "Mus musculus, *Homo sapiens*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Caenorhabditis elegans*"
- 708 838 23 "Mus musculus, *Schizosaccharomyces pombe*, *Homo sapiens*, *Caenorhabditis elegans*, *Shigella dysenteriae*, *Shigella boydii*, *Shigella flexneri*, *Shigella sonnei*, *Shigella flexneri* 2a str. 2457T, *Shigella flexneri* 2a str. 301, *Oryza sativa* (japonica cultivar-group), *Drosophila virilis*, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli*, *Escherichia coli* K12, *Agrobacterium tumefaciens*, *Escherichia coli* 0157:H7" 20
- 709 839 27 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Danio rerio*, *Gallus gallus*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Corvus frugilegus*, *Leishmania major*"
- 710 840 24 "Homo sapiens, *Leptospira interrogans* serovar *lai* str. 56601, *Leptospira interrogans* serovar *pomona*, *Mus musculus*, *Arabidopsis thaliana*, *Leptospira kirschneri* serovar *grippotyphosa*"
- 711 841 27 "Homo sapiens, *Sus scrofa*, *Mus musculus*, *Rickettsia conorii*, *Aeropyrum pernix*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Medicago truncatula*, *Saccharomyces cerevisiae*, *Staphylococcus aureus* subsp. *aureus* Mu50" 30
- 712 842 31 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Danio rerio*, *Pan troglodytes*, *Clostridium perfringens* str. 13, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Enterococcus faecalis*, *Gossypium hirsutum*"
- 713 843 50 "Clostridium tetani E88, *Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Archaeoglobus fulgidus* DSM 4304, *Caenorhabditis elegans*, *Oryza sativa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group) 40
- , *Oceanobacillus iheyensis* HTE831, *Salix gilgiana*, *Pasteurella multocida*, *Schizosaccharomyces pombe*, *Ornithorhynchus anatinus*, *Bos taurus*, *Staphylococcus aureus*, *Drosophila melanogaster*, *Zea mays*, *Cyrtoschilum aurantiacum*, *Telipogon parvulus*, *Pea seed-borne mosaic virus*, *Neomorea wallisii*, *Ovis aries*, *Bubalus bubalis*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Staphylococcus aureus* subsp. *aureus* MW2, *Pan troglodytes*, *Hippopotamus amphibius*"
- 714 844 31 "Mus musculus, *Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*, *Neurospora crassa*, *Arabidopsis thaliana*, *Linaria vulgaris*, *Dictyostelium discoideum*, *Rattus norvegicus*, *Oryza sativa*, *Thermoplasma acidophilum*, *Stenella coeruleoalba*, *Triatoma virus*, *Carollia perspicillata*, 50

- Danio rerio"
- 715 845 40 "Danio rerio, Rattus norvegicus, Homo sapiens, Mus musculus, Arabidopsis thaliana, Mycoplasma pulmonis, Plasmodium falciparum 3D7, Caenorhabditis elegans, Drosophila melanogaster, Xenopus laevis, Amsacta moorei entomopoxvirus, Saccharomyces cerevisiae, Solanum bulbocastanum, Felis catus, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Myrmecophaga tridactyla, Dictyostelium discoideum, Glycine max, Goatpox virus, Sheeppox virus, Saccharomyces castellii, Plasmodium falciparum, Lumpy skin disease virus, Clostridium acetobutylicum, Papio anubis, Saccharomyces dairenensis" 10
- 716 846 48 "Danio rerio, Plasmodium falciparum 3D7, Homo sapiens, Arabidopsis thaliana, Dictyostelium discoideum, Myzus persicae, Oryza sativa (japonica cultivar-group), Mus musculus, Clostridium tetani, Plasmodium falciparum, Caenorhabditis elegans, Paramecium sp., Ka"
- 717 847 28 "Homo sapiens, Mus musculus, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Schizosaccharomyces pombe, Danio rerio, Rattus norvegicus, Dictyostelium discoideum, Mycoplasma sp. 'bovine group 7', Plasmodium falciparum 3D7, Sus scrofa, Clostridium acetobutylicum, Mycoplasma capricolum, Oryza sativa (japonica cultivar-group), Pan troglodytes, Lactobacillus plantarum WCFS1, Plasmid pADB2 01" 20
- 718 848 27 "Danio rerio, Arabidopsis thaliana, Homo sapiens, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Schizosaccharomyces pombe, Filobasidiella neoformans, Rattus norvegicus"
- 719 849 24 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Arabidopsis thaliana"
- 720 850 36 "Homo sapiens, Mus musculus, Clostridium tetani E88, Arabidopsis thaliana, Rattus norvegicus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Chaetosphaeridium globosum, Lotus corniculatus var. japonicus, Danio rerio, Medicago truncatula, Enterococcus faecalis V583, Dictyostelium discoideum, Cryptosporidium parvum, Drosophila melanogaster, Bemisia tabaci, Bos taurus, Mesostigma viride, Cucumber fruit mottle mosaic virus, Oryzias latipes, Oryza sativa (japonica cultivar-group), Pan troglodytes" 30
- 721 851 27 "Mus musculus, Homo sapiens, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Danio rerio, Arabidopsis thaliana, Oryzias latipes, Dictyostelium discoideum, Caenorhabditis elegans, Drosophila melanogaster, Schmidtea mediterranea, Tetrahymena thermophila, Yersinia pestis, Haemophilus ducreyi 35000HP, Listeria innocua, Methanocaldococcus jannaschii, Yersinia pestis KIM"
- 722 852 26 "Ochlerotatus atropalpus, Danio rerio, Homo sapiens, Mus musculus, Coleochaete orbicularis, Zea mays, Humulus lupulus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Thermoplasma volcanium, Rattus norvegicus" 40
- 723 853 35 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Drosophila melanogaster, Plasmodium falciparum 3D7, Lupinus angustifolius, Oryza sativa, Trypanosoma congolense, Borrelia burgdorferi B31, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Danio rerio, Rattus norvegicus, Caenorhabditis elegans, Dictyostelium discoideum, Thermoanaerobacter tengcongensis, Methanosarcina acetivorans C2A, Cryptosporidium parvum, Potato virus Y, Bombyx mori, Nicotiana tabacum, Clostridium intestinalis" 50

- 724 854 31 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Can didatus Carsonella ruddii, Lindenbergia sp. Thulin 8079, Trichoplax adhaerens, D anio rerio, Saccharomyces cerevisiae, Loligo bleekeri, Maize dwarf mosaic virus, Zea mays, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falcipa rum 3D7, Sugarcane mosaic virus, Pyrobaculum aerophilum str. IM2, Lepidosiren pa radoxa, Rickettsia conorii, Oryza sativa (japonica cultivar-group), Staphylococc us aureus, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, S taphylococcus aureus subsp. aureus MW2, Schizosaccharomyces pombe, Wigglesworthi a glossinidia endosymbiont of Glossina brevipalpis, Allium cepa, Russula exalbic ans, Staphylococcus aureus temperate phage phiSLT, Staphylococcus aureus bacteri ophage PVL" 10
- 725 855 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, R ickettsia conorii, Oryza sativa, Rickettsia prowazekii, Rickettsia helvetica, Ri ckettsia rhipicephali, Rickettsia montanensis, Rickettsia sibirica, Rickettsia r ickettsii, Rickettsia typhi, Mus musculus, Enterococcus faecalis V583, Saccharom yces cerevisiae"
- 726 856 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), M edicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Rattus norvegicus, Mu s musculus"
- 727 857 21 "Homo sapiens, Mus musculus, Oryza sativa (japonica cult ivar-group), Medicago truncatula, Arabidopsis thaliana, Danio rerio" 20
- 728 858 23 "Homo sapiens, Chlamydia trachomatis, Danio rerio, Mus m usculus, Drosophila melanogaster, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Anopheles gambiae"
- 729 859 25 "Homo sapiens, Mastigoproctus giganteus, Bacillus cereus ATCC 14579, Mus musculus, Oryza sativa (japonica cultivar-group), Staphylococcu s epidermidis ATCC 12228, Brugia malayi, Arabidopsis thaliana, Staphylococcus ep idermidis, Synechocystis sp. PCC 6803, Danio rerio"
- 730 860 24 "Oryctolagus cuniculus, Homo sapiens, Sciadopitys vertic illata, Mus musculus, Medicago truncatula" 30
- 731 861 43 "Oryza sativa (japonica cultivar-group), Dictyostelium d iscoideum, Mus musculus, Drosophila virilis, Onchocerca volvulus, Rattus norvegi cus, Homo sapiens, Triticum aestivum subsp. tibeticum, Arabidopsis thaliana, Tri ticum aestivum, Neurospora crassa, Drosophila melanogaster, Trichogramma exiguum , Trichogramma chilonis, Trichogramma ostrinae, Magnaporthe grisea, Pinus taeda , Littorina saxatilis, Elephas maximus, Danio rerio, Oryza sativa, Littorina sub rotundata, Triticum turgidum subsp. durum, Brassica nigra, Saccharomyces cerevis iae"
- 732 862 27 "Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Homo sapiens, Ar abidopsis thaliana, Pan troglodytes, Chimpanzee cytomegalovirus, Drosophila litt oralis, Lycopersicon esculentum, Mus musculus, Schizosaccharomyces pombe, Hetero dontus francisci" 40
- 733 863 29 "Rattus norvegicus, Mus musculus, Homo sapiens, Arabidop sis thaliana, Buchnera aphidicola str. Bp (Baizongia pistaciae), Borrelia burgdo rferi B31, Plasmodium falciparum 3D7, Rickettsia conorii, Borrelia burgdorferi"
- 734 864 24 "Homo sapiens, Caenorhabditis elegans, Felis catus, Oryz a sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Simian i mmunodeficiency virus, Drosophila melanogaster, Buchnera aphidicola, Neocallimas tix frontalis, Danio rerio" 50

- 735 865 27 "Mus musculus, Platythyrea punctata, Trypanosoma brucei, Caenorhabditis elegans, Diploptera punctata, Homo sapiens, Drosophila melanogaster, Pyrococcus furiosus DSM 3638, Streptococcus agalactiae NEM316, Caenorhabditis briggsae, Danio rerio, Puccinia graminis, Encephalitozoon cuniculi"
- 736 866 32 "Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Methanosarcina acetivorans C2A, Medicago truncatula, Arabidopsis thaliana, Clostridium perfringens str. 13, Atelerix albiventris, Chaenogobius annularis, Caenorhabditis elegans, Papio anubis, Capra hircus, Leishmania major, Sulfolobus solfataricus, Danio rerio, Bos taurus, Saimiriine herpesvirus 2, Helicobacter hepaticus ATCC 51449" 10
- 737 867 36 "Clostridium tetani E88P, an troglodytes, Homo sapiens, Mus musculus, Nogra grahamii, Methanosarcina mazei Goe1, Lycopersicon esculentum, Papio anubis, Arabidopsis thaliana, Mycoplasma pneumoniae, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Caenorhabditis elegans, Streptococcus suis"
- 738 868 28 "Yersinia pestis KIMHomo sapiens, Yersinia pestis C092, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Danio rerio, Gasterosteus aculeatus, Rattus norvegicus, Zantedeschia aethiopica, Plasmodium falciparum 3D7, Galdieria sulphuraria, Pan troglodytes, Schizosaccharomyces pombe, Plasmodium yoelii" 20
- 739 869 32 "Danio rerio, Lycopersicon esculentum, Plasmodium falciparum, Homo sapiens, Dictyostelium discoideum, Mus musculus, Lemur catta, Pan troglodytes, Papio anubis, Bemisia tabaci, Mindura subfasciata kotoshonis, Ureaplasma urealyticum, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Monoclea gottschei subsp. elongata, Neocalimastix patriciarum, Arabidopsis thaliana, Drosophila melanogaster, Gasteruption sp. M19, Clostridium tetani E88, Caenorhabditis elegans, Anopheles acanthotorynus, Hylurgops sp. HLH04, Araucarius minor, Lactococcus lactis subsp. lactis, Rickettsia prowazekii, Euglena longa, Chaoborus americanus, Chaoborus obscuripes"
- 740 870 36 "Dictyostelium discoideum, Homo sapiens, Arabidopsis thaliana, Mus musculus, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Piscirickettsia salmonis, Hydractinia echinata, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Schizosaccharomyces japonicus, Sinibrama macrops, Saccharomyces cerevisiae, Suillus luteus, Plasmodium chabaudi chabaudi, Populus balsamifera subsp. trichocarpa, Caenorhabditis briggsae, Medicago truncatula, Plasmodium chabaudi adami, Schizosaccharomyces pombe, Ophraella cribrata, Papio anubis, Culter dabryi, Aegla laevis laevis, Streptococcus agalactiae 2603V/R, Anoecia cornicola, Canavalia lineata, Boloria epithore, Vigna radiata, Streptococcus agalactiae, Bombyx mori, Sulfolobus tokodaii, Vitis vinifera, Listeria monocytogenes, Caenorhabditis elegans, Brugia malayi" 40
- 741 871 38 "Phytoplasma sp.Homo sapiens, Dictyostelium discoideum, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Pterula sp. aff. epiphylloides, Plasmodium falciparum "
- 742 872 28 "Homo sapiens, Danio rerio, Caenorhabditis elegans, Plasmodium falciparum 3D7, Ureaplasma urealyticum, Mus musculus, Lotus corniculatus var. japonicus, Drosophila melanogaster, Medicago truncatula, Clostridium tetani E88, Arabidopsis thaliana, Plasmodium fal"
- 743 873 54 "Leishmania major, Mus musculus, Homo sapiens, Tetraodon" 50

- nigroviridis, *Bos taurus*, *Carcharhinus limbatus*, *Rattus norvegicus*, *Bufo bufo*, *Salmo salar*, *Oreochromis mossambicus*, *Danio rerio*, *Hippoglossus hippoglossus*, *Trichuris trichiura*, *Mycteroperca microlepis*, *Felis catus*, *Crocidura russula*, *Eriocheir sinensis*, *Sus scrofa*, *Nannospalax ehrenbergi*, *Ctenomys sociabilis*, *Cyphomyrmex longiscapus*, *Pan troglodytes*"
- 744 874 27 "Danio rerio, *Saccharomyces cerevisiae*, *Homo sapiens*, *Vibrio vulnificus* CMCP6, *Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Helicobacter hepaticus* ATCC 51449"
- 745 875 28 "Homo sapiens, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Oryctolagus cuniculus*, *Penicillium simplicissimum*, *Mus musculus*, *Plasmodium falciparum*, *Rattus norvegicus*, *Drosophila melanogaster*, *Danio rerio*" 10
- 746 876 27 "*Casphalia extranea densovirus*, *Homo sapiens*, *Medicago truncatula*, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Neurospora crassa*, *Danio rerio*"
- 747 877 31 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Danio rerio*, *Rattus norvegicus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Dictyostelium discoideum*, *Oryza sativa*, *Pediococcus pentosaceus*, *Oryza sativa* (japonica cultivar-group), *Glossina austeni*, *Plasmodium chabaudi chabaudi*, *Arabidopsis thaliana*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Medicago truncatula*, *Pan troglodytes*, *Gallus gallus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Streptococcus pyogenes* MGAS315, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Thermoanaerobacter tengcongensis*, *Streptococcus pyogenes* MGAS8232, *Loligo pealei*, *Streptococcus pyogenes* M1 GAS, *Caenorhabditis briggsae*, *Streptococcus pyogenes* SSI-1, *Mycoplasma penetrans*, *Schizosaccharomyces pombe*" 20
- 748 878 24 "*Mus musculus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Danio rerio*, *Homo sapiens*, *Medicago truncatula*, *Xenopus laevis*"
- 749 879 32 "*Clostridium tetani* E88, *Homo sapiens*, *Mus musculus*, *Yersinia pestis* KIM, *Yersinia pestis* C092" 30
- 750 880 52 "*Danio rerio*, *Trypanosoma cruzi*, *Mus musculus*, *Dictyostelium discoideum*, *Fenneropenaeus chinensis*, *Homo sapiens*, *Bos taurus*, *Penaeus monodon*, *Haliotis kamtschatkana*, *Shrimp white spot syndrome virus*, *Arabidopsis thaliana*, *Coptotermes formosanus*, *Oryza sativa* (japonica cultivar-group), *Todaropsis eblanae*, *Mycoplasma genitalium*, *Lytechinus variegatus*, *Ropalidia revolutionalis*, *Pan troglodytes*, *Human adenovirus type 11*, *Drosophila melanogaster*, *Branchiostoma floridae*, *Drosophila willistoni*, *Lampsilis abrupta*, *Aphelocoma coerulescens*, *Caenorhabditis elegans*, *Dirofilaria immitis*, *Pfiesteria piscicida*, *Coccotrypes carpophagus*, *Plasmodium falciparum* 3D7, *Gibberella zeae*, *Canis familiaris*, *Anopheles funestus*, *Neurospora crassa*, *Ictalurus punctatus*, *Cucumis sativus*, *Takifugu rubripes*, *Bigelowiella natans*, *Spodoptera litura nucleopolyhedrovirus*, *Pyrrhalaria viburni*" 40
- 751 881 51 "*Zea mays*, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Cepaea nemoralis*, *Strongylocentrotus purpuratus*, *Schistosoma japonicum*, *Pfiesteria piscicida*, *Ictalurus punctatus*, *Takifugu rubripes*, *Polistes dominulus*, *Todaropsis eblanae*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Drosophila virilis*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Cryptosporidium parvum*, *Saccharomyces cerevisiae*, *Gossypium hirsutum*, *Brugia pahangi*, *Xenopus laevis*, *Oryza sativa*, *Caenorhabditis elegans*, *Ropalidia revolutionalis*, *Echinocardium cordatum*, *Drosophila melanogaster*, *Medicago truncatula*, *Penaeus monodon*, *Canis* 50

- familiaris, *Phytophthora cinnamomi*"
- 752 882 25 "Homo sapiens, *Bordetella bronchiseptica*, *Bordetella paraptussis*, *Dictyostelium* sp., *Mus musculus*, *Vibrio vulnificus* CMCP6, *Mycobacterium tuberculosis* CDC1551, *Sulculus diversicolor*, *Mycobacterium tuberculosis* H37Rv, *Oryza sativa* (japonica cultivar-group), *Neurospora crassa*, *Acanthamoeba castellanii*, *Mycobacterium bovis* subsp. *bovis* AF2122/97, *Danio rerio*"
- 753 883 28 "Mus musculus, *Danio rerio*, *Methanothermobacter thermoautotrophicus*, *Homo sapiens*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Caenorhabditis elegans*"
- 754 884 31 "Plasmodium falciparum 3D7, *Mycoplasma penetrans*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Caenorhabditis elegans*, *Mus musculus*, *Danio rerio*, *Listeria monocytogenes*, *Rattus norvegicus*, *Pan troglodytes*, *Papio anub*" 10
- 755 885 31 "Homo sapiens, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Mus musculus*, *Rickettsia conorii*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Didelphis virginiana*, *Leptospira interrogans* serovar *Lai* str. 56601, *Streptococcus mutans* UA159, *Sus scrofa*, *Magnaporthe grisea*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Lotus corniculatus* var. *japonicus*, *Sulfolobus tokodaii*, *Rattus norvegicus*, *Synechocystis* sp. PCC 6803, *Clostridium perfringens* str. 13" 20
- 756 886 28 "Staphylococcus epidermidis ATCC 12228, *Staphylococcus epidermidis*, *Homo sapiens*, *Pepper ring spot virus*, *Mus musculus*, *Haemophilus ducreyi* 35000HP, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Gallus gallus*, *Drosophila melanogaster*, *Bos taurus*, *Nicotiana tabacum*, *Trypanosoma brucei*, *Human herpesvirus 7*, *Danio rerio*"
- 757 887 31 "Homo sapiens, *Pan troglodytes*, *Arabidopsis thaliana*, *Mus musculus*, *Daphniopsis truncata*, *Sus scrofa*, *Staphylococcus aureus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Gracilariopsis* "
- 758 888 24 "Drosophila melanogaster, *Arabidopsis thaliana*, *Homo sapiens*, *Mus musculus*, *Escherichia coli*, *Danio rerio*" 30
- 759 889 21 "Lactobacillus bacteriophage phi adh, *Mus musculus*, *Nitrosomonas europaea* ATCC 19718, *Chlamydia trachomatis*, *Homo sapiens*, *Pan troglodytes*, *Saccharomyces cerevisiae*"
- 760 890 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)"
- 761 891 20 "Lactococcus lactis subsp. *lactis*, *Arabidopsis thaliana*, *Mus musculus*, *Bradyrhizobium japonicum* USDA 110"
- 762 892 23 "Arabidopsis thaliana, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Streptococcus mutans* UA159, *Mus musculus*, *Danio rerio*" 40
- 763 893 26 "Homo sapiens, *Glomus arbuscular* mycorrhizal symbiont 109-2, *Glomus arbuscular* mycorrhizal symbiont of *Voyria rosea*, *Glomus arbuscular* mycorrhizal symbiont of *Voyria caerulea*, *Glomus arbuscular* mycorrhizal symbiont of *Voyria tenuiflora*, *Glomus arbuscular* mycorrhizal symbiont of *Voyria aurantiaca*, *Glomus arbuscular* mycorrhizal symbiont of *Voyria corymbosa*, *Glomus arbuscular* mycorrhizal symbiont of *Gymnosiphon minutus*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Aquifex aeolicus* VF5, *Pan troglodytes*, *Caenorhabditis elegans*, *Mus musculus*, *Schizosaccharomyces pombe*, *Rattus norvegicus*, *Neurospora crassa*"
- 764 894 27 "Homo sapiens, *Helicobacter pylori* 26695, *Medicago trunc*" 50

- atula, *Bacillus anthracis* str. Ames, *Oryza sativa* (japonica cultivar-group), *Trypanosoma brucei*, *Mycoplasma genitalium*, *Mus musculus*, *Enterococcus faecalis* V583, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Solanum demissum*, *Enterococcus faecalis*, *Clostridium acetobutylicum*, *Streptococcus agalactiae*, *Streptococcus agalactiae* NEM316, *Danio rerio*"
- 765 895 27 "Rattus norvegicus, *Drosophila melanogaster*, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Candidatus Blochmannia floridanus*, *Bacillus halodurans*, *Danio rerio*"
- 766 896 29 "*Homo sapiens*, *Danio rerio*, *Gallus gallus*, *Drosophila melanogaster*, *Mus musculus*, *Triticum aestivum*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Bos taurus*, *Oryza sativa* (japonica cultivar-group), *Aspergillus oryzae*, *Methanosarcina mazei* Goe1, *Arabidopsis thaliana*, *Streptococcus mutans* UA159, *Lotus corniculatus* var. *japonicus*" 10
- 767 897 49 "*Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Drosophila melanogaster*, *Oryza sativa* (indica cultivar-group), *Amsacta moorei* entomopoxvirus, *Danio rerio*, *Caenorhabditis elegans*, *Mus musculus*, *Clostr*"
- 768 898 44 "*Danio rerio*, *Dictyostelium discoideum*, *Homo sapiens*, *Schmidtea mediterranea*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Plasmodium vivax*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Drosophila melanogaster*, *Pan troglodytes*, *Lycopersicon esculentum*, *Strongyloides stercoralis*, *Culex pipiens*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Marchantia polymorpha*, *Nephroma cellulorum*, *Nephroma arcticum*, *Tamalia coweni*, *Euglena gracilis*, *Mycoplasma pulmonis*, *Caenorhabditis briggsae*, *Leucophaea maderae*, *Hordeum vulgare*, *Pisum sativum*, *Oryza sativa* (japonica cultivar-group), *Anastrepha leptozona*, *Silurana tropicalis*, *Haemophilus influenzae* Rd KW20, *Puumala virus*, *Medicago truncatula*, *Charadrius morinellus*, *Bacillus cereus* ATCC 14579, *Lemur catta*" 20
- 769 899 28 "*Mus musculus*, *Arabidopsis thaliana*, *Homo sapiens*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Hepatitis E virus*, *Methanosarcina mazei* Goe1, *Xylella fastidiosa* Temecula1, *Pan troglodytes*, *Papio anubis*, *Methanosarcina acetivorans* C2A, *Medicago truncatula*" 30
- 770 900 24 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Cavia porcellus*, *Danio rerio*, *Dobrava virus*, *Arabidopsis thaliana*"
- 771 901 28 "*Spalacopus cyanus*, *Aconaemys fuscus*, *Aconaemys sagei*, *Gallus gallus*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Pediococcus acidilactici*, *Lactobacillus plantarum*, *Streptococcus pyogenes* MGAS8232, *Arabidopsis thaliana*, *Streptococcus pyogenes* M1 GAS, *Glycine max*, *Danio rerio*, *Bacillus coagulans*, *Pediococcus pentosaceus*, *Pediococcus parvulus*" 40
- 772 902 27 "*Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Iris tigris*, *Iris ivanovae*, *Goatpox virus*, *Clostridium acetobutylicum*, *Aristea coerulescens*, *Danio rerio*, *Moraea villosa*, *Moraea vigilans*, *Moraea verdickii*, *Moraea ventricosa*, *Moraea vegeta*, *Moraea tulbaghensis*, *Moraea tripetala*, *Moraea trifida*, *Moraea spathulata*, *Moraea sisyrinchium*, *Moraea rivulicola*, *Moraea regalis*, *Moraea pritzeliana*, *Moraea polystachya*, *Moraea papilionacea*, *Moraea incurva*, *Moraea huttonii*, *Moraea dracomontana*, *Moraea brittenniae*, *Moraea brevistyla*, *Moraea bella*, M 50

- oraea alticola, Moraea albicuspa, Gynandriris sisyrrinchium, Ennealophus euryandr
us, Tigridia pavonia, Alophia veracruzana, Eleutherine latifolia, Eria bulbophyl
loides"
- 773 903 32 "Homo sapiens, Drosophila melanogaster, Caenorhabditis e
legans, Mus musculus, Desmognathus ochrophaeus, Neurergus kaiseri, Neurergus mic
rospilotus, Neurergus crocatus, Mertensiella luschani, Triturus vulgaris, Pleuro
deles waltl, Enterococcus faecalis V583, Triturus vulgaris meridionalis, Arnoglo
ssus imperialis, Escherichia coli CFT073, Streptococcus pyogenes MGAS315, Strept
ococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Vibrio cholerae, Oryza
sativa, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes SSI-1, S 10
chizosaccharomyces pombe, Medicago truncatula"
- 774 904 25 "Mus musculus, Homo sapiens, Methanosarcina acetivorans
C2A, Oryza sativa (japonica cultivar-group)"
- 775 905 23 "Homo sapiens, Bacillus anthracis str. Ames, Pan troglod
ytes, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 776 906 24 "Homo sapiens, Mus musculus, Pan troglodytes, Drosophila
melanogaster, Shigella sonnei, Arabidopsis thaliana, Bacillus cereus ATCC 14579
, Papio anubis, Xanthomonas campestris pv. campestris str. ATCC 33913, Danio rer
io"
- 777 907 27 "Homo sapiens, Mus musculus, Rattus norvegicus, Plasmodi 20
um falciparum 3D7, Thermoanaerobacter tengcongensis, Pyrococcus abyssi, Caenorha
bditis elegans, Coturnix coturnix"
- 778 908 28 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus,
Streptococcus pyogenes MGAS315, Streptococcus pyogenes M1 GAS, Plasmodium falcip
arum, Streptococcus pyogenes SSI-1, Danio rerio, Dictyostelium discoideum, Droso
phila melanogaster, Vaucheria schleicheri, Arabidopsis thaliana, Sceloporus undu
latus hyacinthinus, Acanthophoenix rubra, Oryza sativa, Oryza sativa (japonica c
ultivar-group), Acinetobacter sp. SE19, Acinetobacter sp. NCIMB9871, Schizosacch
aromyces pombe, Saccharomyces kunashirensis, Bacillus cereus ATCC 14579, Candida
tropicalis, Caenorhabditis elegans, Lycopersicon cheesmanii" 30
- 779 909 33 "Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, T
etrahymena thermophila, Helianthus annuus, Candidatus Blochmannia floridanus, Ph
ytomonas serpens, Oryza sativa (japonica cultivar-group), Mus musculus, Helicoba
cter hepaticus ATCC 51449, Leptospira interrogans serovar lai str. 56601, Dictyo
stelium discoideum, Caenorhabditis elegans, Phallocephale tallagandensis, Cuscut
a cuspidata, Amsacta moorei entomopoxvirus, Paramecium tetraurelia, Wigglesworth
ia glossinidia endosymbiont of Glossina brevipalpis, Heliothis virescens, Clostr
idium perfringens str. 13, Drosophila melanogaster, Monosiga brevicollis, Clostr
idium tetani E88, Schizosaccharomyces japonicus, Zymomonas mobilis, Daphnia ambi
gua, Methanosarcina acetivorans C2A, Paradrymonia binata, Streptococcus pneumoni 40
ae R6, Oryza sativa, Arabidopsis thaliana, Glycine max, Saccharomyces cerevisiae
, Vibrio cholerae"
- 780 910 47 "Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (
japonica cultivar-group), Drosophila melanogaster, Oryza sativa, Drosophila lumm
ei, Canavalia lineata, Phaseolus vulgaris, Arabidopsis thaliana, Amsacta moorei
entomopoxvirus, Callosciurus finlaysonii, Pisum sativum, Diplonevra mortimeri, S
chizosaccharomyces pombe, Caenorhabditis elegans, Panonychus osmanthi, Panonychu
s citri, Dictyostelium discoideum, Plasmodium falciparum 3D7, Methanosarcina maz
ei Goe1, Heliconius charithonia, Epifagus virginiana, Lotus corniculatus var. ja
ponicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. 50

- aureus MW2, *Callosciurus erythraeus*, *Plasmodium falciparum*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 781 911 35 "Homo sapiens, *Drosophila melanogaster*, *Williopsis saturnus* var. *mrakii*, *Canavalia lineata*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Ciona intestinalis*, *Danio rerio*, *Plasmodium falciparum*, *Phalaenopsis pallens*, *Phalaenopsis hieroglyphica*, *Phalaenopsis fasciata*, *Phalaenopsis bastianii*, *Oryza sativa* (japonica cultivar-group), *Anastrepha serpentina*, *Bacillus thuringiensis*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Pinus taeda*, *Mycoplasma hominis*, *Caenorhabditis briggsae*, *Sus scrofa*, *Entodinium caudatum*, *Contracecum osculatum*" 10
- 782 912 20 "*Mus musculus*, *Homo sapiens*, *Methanosarcina mazei* Goe1, *Methanosarcina acetivorans* C2A, *Pan troglodytes*"
- 783 913 25 "*Spalacopus cyanus*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Aconaemys fuscus*, *Aconaemys sagei*, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Glycine max*"
- 784 914 25 "*Danio rerio*, *Gallus gallus*, *Bacillus cereus* ATCC 14579, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Xenopus laevis*, *Saccharomyces cerevisiae*, *Pan troglodytes*, *Dictyostelium discoideum*, *Papio anubis*, *Streptococcus pyogenes* MGAS8232, *Arabidopsis thaliana*, *Streptococcus pyogenes* M1 GAS, *Entamoeba histolytica*" 20
- 785 915 24 "*Arabidopsis thaliana*, *Homo sapiens*, *Mus musculus*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 786 916 23 "*Bacillus licheniformis*, *Chlamydia muridarum*, *Homo sapiens*, *Mus musculus*, *Danio rerio*"
- 787 917 36 "*Homo sapiens*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Drosophila melanogaster*, *Neurospora crassa*, *Bos taurus*, *Mycobacterium tuberculosis* CDC1551, *Mycobacterium tuberculosis* H37Rv, *Zea mays*, *Tritrichomonas suis*, *Oryza sativa* (japonica cultivar-group)" 30
- 788 918 27 "*Homo sapiens*, *Tetrahymena thermophila*, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, *Streptococcus agalactiae* 2603V/R, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*"
- 789 919 31 "*Anopheles gambiae*, *Homo sapiens*, *Danio rerio*, *Oryctolagus cuniculus*, *Oryza sativa* (japonica cultivar-group), *Candida albicans*, *Branchiostoma floridae*, *Halocynthia roretzi*, *Mus musculus*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Penaeus monodon*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Papio anubis*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Strongylocentrotus purpuratus*, *Pinus taeda*, *Takifugu rubripes*, *Clostridium acetobutylicum*, *Aedes aegypti*, *Helicobacter pylori*, *Apis mellifera carnica*, *Orpinomyces* sp. PC-2, *Schistosoma mansoni*, *Polybioides tabidus*, *Anthoceros formosae*, *Orpinomyces jayonii*, *Hordeum vulgare* subsp. *spontaneum*, *Sminthopsis macroura*, *Schizosaccharomyces japonicus*, *Caenorhabditis elegans*, *Human immunodeficiency virus 1*, *Cryptosporidium parvum*, *Zea mays*" 40
- 790 920 26 "*Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*, *Bostryotinia fuckeliana*"
- 791 921 40 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*indica* cultivar-group), *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Danio rerio*, *Rhopalosiphum padi*, *Crassostrea gigas*, *Goatpox virus*, *Sheeppox virus*, *Arabidopsis thaliana*, *Lumpy skin disease virus*, *Lotus corniculatus* var. *japonicus*" 50

- us, *Trichophthalma* sp. SLW-2002, *Ciona intestinalis*, *Rattus norvegicus*, *Gallus gallus*, *Caenorhabditis elegans*, *Chlorella vulgaris*, *Drosophila melanogaster*, *Dictyostelium discoideum*, *Medicago truncatula*, *Glycine max*, *Takifugu rubripes*, *Oryza sativa*, *Vigna unguiculata*, *Ureaplasma urealyticum*, *Charissa italohelveticus*, *Oceanobacillus iheyensis* HTE831, *Candida maltosa*"
- 792 922 35 "Oryza sativa (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Vigna trinervia*, *Vigna reflexopilosa* var. *reflexopilosa*, *Vigna grandiflora*, *Vigna aconitifolia*, *Medicago truncatula*, *Drosophila melanogaster*, *Danio rerio*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Fowlpox virus*, *Bacillus anthracis* str. Ames, *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Dictyostelium discoideum*, *Papio anubis*, *Shigella dysenteriae*, *Caenorhabditis briggsae*, *Brassica rapa*, *Neurospora crassa*, *Hypocrea jecorina*, *Melanoplus sanguinipes entomopoxvirus*" 10
- 793 923 31 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Lotus corniculatus* var. *japonicus*, *Lepilemur septentrionalis*, *Rattus norvegicus*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Sorghum bicolor*, *Mytilus edulis*, *Arabidopsis thaliana*, *Danio rerio*, *Helicobacter pylori* 26695, *Plasmodium falciparum*, *Eimeria bovis*"
- 794 924 35 "*Caenorhabditis elegans*, *Homo sapiens*, *Danio rerio*, *Drosophila melanogaster*, *Staphylococcus simulans*, *Caenorhabditis briggsae*, *Leptospira interrogans* serovar lai str. 56601, *Mus musculus*, *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Schizosaccharomyces pombe*, *Rattus norvegicus*, *Nicotiana glauca*, *Felis catus*, *Arabidopsis thaliana*" 20
- 795 925 27 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Xenopus laevis*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Macaca fascicularis*"
- 796 926 25 "*Acrocephalus sechellensis*, *Homo sapiens*, *Pan troglodytes*, *Danio rerio*, *Mus musculus*"
- 797 927 28 "*Tricholoma flavovirens*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Homo sapiens*, *Haemophilus influenzae* Rd KW20, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Glycine max*, *Danio rerio*" 30
- 798 928 31 "*Danio rerio*, *Mus musculus*, *Homo sapiens*, *Methanocaldococcus jannaschii*, *Methanosarcina acetivorans* C2A, *Drosophila melanogaster*, *Mycoplasma penetrans*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Leptospira interrogans* serovar lai str. 56601, *Sminthopsis macroura*, *Staphylococcus epidermidis* ATCC 12228, *Streptococcus agalactiae* 2603V/R, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Streptococcus agalactiae* NEM316, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*"
- 799 929 23 "*Mus musculus*, *Homo sapiens*, *Tamias amoenus*, *Oryza sativa* (japonica cultivar-group)" 40
- 800 930 27 "*Homo sapiens*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Mus musculus*, *Rattus norvegicus*, *Drosophila melanogaster*, *Muilla clevelandii*, *Dictyostelium discoideum*, *Danio rerio*, *Arabidopsis thaliana*, *Bacillus halodurans*, *Medicago truncatula*"
- 801 931 35 "*Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Bos taurus*, *Bacillus cereus* ATCC 14579, *Medicago truncatula*, *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Pan troglodytes*, *Lemur catta*, *Sus scrofa*, *Danio rerio*, *Anas platyrhynchos*, *Pyrococcus abyssi*, *Listeria innocua*, *Legionella pneumophila*, *Pennisetum glaucum*" 50

- 802 932 28 "Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Arabidopsis thaliana, Dirofilaria immitis, Yaba monkey tumor virus, Caen"
- 803 933 38 "Homo sapiens, Mus musculus, Pan troglodytes, Papio anubis, Plasmodium falciparum 3D7, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Campylobacter jejuni, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)"
- 804 934 36 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Melipona bicolor, Plasmodium falciparum 3D7, Borrelia burgdorferi B31, Ichthyophthirius multifiliis, Lycopersicon esculentum, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Candidatus Carsonella ruddi" 10
- 805 935 36 "Homo sapiens, Macaca fascicularis, Clostridium tetani E88, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Drosophila novamexicana, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Guillardia theta, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Lemur catta, Medicago truncatula, Pyrrhobryum vallis-gratiae, Manihot esculenta, Buchnera aphidicola, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Neurospora crassa, Listeria innocua, Rhodobryum giganteum, Rattus norvegicus, Anopheles gambiae, Dicnemon calycinum, Felis catus, Staphylococcus aureus subsp. aureus Mu50, Mycoplasma gallisepticum R, Bacillus cereus ATCC 14579, Pan troglodytes, Sminthopsis macroura" 20
- 806 936 32 "Homo sapiens, Danio rerio, Thrips imaginis, Mus musculus, Caenorhabditis elegans, Ciona intestinalis, Rhipicephalus sanguineus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Drosophila melanogaster, Shewanella oneidensis MR-1, Arabidopsis thaliana"
- 807 937 31 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Trichosurus vulpecula, Bacillus anthracis str. Ames, Dictyostelium discoideum, Arabidopsis thaliana, Caenorhabditis elegans" 30
- 808 938 23 "Homo sapiens, Mus musculus, Rattus norvegicus"
- 809 939 25 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae"
- 810 940 27 "Danio rerio, Borrelia burgdorferi, Homo sapiens, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Mus musculus, Borrelia burgdorferi B31"
- 811 941 23 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Drosophila melanogaster, Mus musculus, Vibrio cholerae"
- 812 942 24 "Dictyostelium discoideum, Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Pan troglodytes, Arabidopsis thaliana, Trypanosoma brucei" 40
- 813 943 23 "Arabidopsis thaliana, Salmonella typhimurium LT2, Mus musculus, Homo sapiens, uncultured bacterium"
- 814 944 32 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Lymnaea stagnalis, Pan troglodytes, Enterococcus faecium, Sus scrofa, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Cryptosporidium parvum, Lactobacillus salivarius"
- 815 945 35 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, 50

Methanosarcina acetivorans C2A, Clostridium perfringens, Drosophila melanogaster, Caenorhabditis elegans, Rattus norvegicus, Bacillus anthracis str. Ames, Dictyostelium discoideum, Clostridium tetani E88, Arabidopsis thaliana, Danio rerio, Oryza sativa (japonica cultivar-group), Neurospora crassa, Lactococcus lactis subsp. cremoris, Medicago truncatula, Clostridium perfringens str. 13, Myrmica sabuleti, Myrmica hirsuta, Mycoplasma gallisepticum R, Western X phytoplasma, Beet mild curly top virus, Macaca mulatta, Buchnera aphidicola str. Bp (Baizongia pistaciae), Papio anubis, Lemur catta, Sorghum bicolor, Borrelia burgdorferi, Zosteranoltii, Goatpox virus, Toxicoscordion exaltatum, Oryza sativa, Sus scrofa, Lactococcus lactis subsp. lactis"

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816 946 23 "Homo sapiens, Dictyostelium discoideum, Ictalurus punctatus, Mus musculus, Rickettsia conorii, Gallus gallus, Danio rerio, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Rattus sp., Listeria innocua, Poecilia latipinna, Paralichthys olivaceus"

817 947 23 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Vibrio vulnificus CMCP6, Helicobacter pylori 26695, Clostridium perfringens str. 13"

818 948 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Staphylococcus epidermidis ATCC 12228, Clostridium acetobutylicum, Gallus gallus, Arabidopsis thaliana, Staphylococcus epidermidis, Plasmodium falciparum 3D7, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus N315, Buchnera aphidicola, Rattus norvegicus, Staphylococcus aureus subsp. aureus Mu50"

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819 949 25 "Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Methanosarcina mazei Goe1, Saimiri boliviensis, Danio rerio"

820 950 23 "Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Homo sapiens"

821 951 27 "Homo sapiens, Mus musculus, Mycoplasma penetrans, Xenopus laevis, Danio rerio"

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822 952 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Xenopus laevis"

823 953 27 "Homo sapiens, Mus musculus, Aucuba himalaica, Aucuba japonica, Drosophila melanogaster, Xanthomonas axonopodis pv. citri str. 306, African swine fever virus, Japanese yam mosaic virus, Rattus norvegicus, Bacillus anthracis str. Ames, Arabidopsis thaliana, Prochlorococcus marinus, Danio rerio, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Haplosporidium costale"

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824 954 24 "Drosophila melanogaster, Homo sapiens, Plasmodium falciparum 3D7, Leptospira interrogans serovar lai str. 56601, Mus musculus, Helicobacter hepaticus ATCC 51449, Felis catus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Campylobacter richardii, Psylliostachys suworowii, Limonium sinuatum, Limoniastrum monopetalum, Limoniastrum guyonianum, Dictyolimon macrorrhizos, Armeria splendens, Armeria bottendorffensis, Asclepias curassavica"

825 955 48 "Homo sapiens, Oryza sativa, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Drosophila melanogaster, Mus musculus, Sus scrofa, Danio rerio, Arabidopsis thaliana, Rattus norvegicus, Plasmodium falc

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- iparum, *Saccharomyces cerevisiae*, *Toxoplasma gondii*, *Penicillium marneffeii*, *Saccharomyces douglasii*, *Xenopus laevis*, *Oryctolagus cuniculus*, *Medicago truncatula*, *Ambystoma maculatum*"
- 826 956 52 "Homo sapiens, *Danio rerio*, *Pleistodontes blandus*, *Ostrinia furnacalis*, *Ostrinia nubilalis*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Dictyostelium discoideum*, *Lotus corniculatus* var. japonicus, *Panaeolus monodon*, *Pan troglodytes*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Mimosa tenuiflora*, *Arabidopsis thaliana*, *Eimeria tenella*, *Leptospira interrogans* serovar lai str. 56601, *Sorghum bicolor*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Leptospira interrogans*, *Blackburnia viridis*, *Blackburnia frigida*, *Caenorhabditis elegans*, *Plasmodium falciparum*, *Torilis japonica*, *Saccharomyces cerevisiae*, *Xenopus laevis*, *Melanoplus sanguinipes* entomopoxvirus, *Glomus etunicatum*, *Lactococcus lactis* subsp. cremoris" 10
- 827 957 34 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Opisthoteuthis hardyi*, *Oryza sativa* (japonica cultivar-group), *Eimeria tenella*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Tetrahymena thermophila*, synthetic construct, *Saccharomyces cerevisiae*, Lumpy skin disease v"
- 828 958 36 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Hyaloklossia lieberkuehni*, *Drosophila willistoni*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Staphylococcus epidermidis* ATCC 12228, *Asterella lindenbergiana*, *Caenorhabditis elegans*, *Medicago truncatula*, *Staphylococcus epidermidis*, *Oceanobacillus iheyensis* HTE831, *Rattus norvegicus*, *Dictyostelium*, *Atelerix albiventris*, *Pan troglodytes*, *Todarodes sagittatus*" 20
- 829 959 28 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Caenorhabditis elegans*, *Moraxella bovis*, *Neurospora crassa*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Danio rerio*, *Mycoplasma penetrans*, *Didelphis virginiana*, *Schizosaccharomyces pombe*, *Anopheles gambiae*, *Macaca fascicularis*" 30
- 830 960 28 "Homo sapiens, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Dictyostelium discoideum*, *Borrelia burgdorferi* B31, *Rattus norvegicus*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Euperipatoides rowelli*, *Bacillus anthracis* str. A2012, *Arabidopsis thaliana*, *Pasteurella multocida*, *Danio rerio*, *Bacillus anthracis*, *Prototheca wickerhamii*, *Medicago truncatula*, *Neurospora crassa*"
- 831 961 35 "*Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Yersinia pestis* C092, *Flavobacterium psychrophilum*, *Caenorhabditis elegans*, *Rickettsia prowazekii*, *Daphnia galeata*, *Danio rerio*, *Cavia porcellus*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Lactococcus lactis* subsp. cremoris, *Schizosaccharomyces pombe*, *Daphnia laevis*" 40
- 832 962 32 "*Yersinia pestis* KIM, *Yersinia pestis* C092, *Homo sapiens*, *Danio rerio*, *Caenorhabditis elegans*, *Thermoanaerobacter tengcongensis*, *Mus musculus*, *Oryza sativa* (indica cultivar-group), *Medicago truncatula*, *Staphylococcus epidermidis* ATCC 12228, *Schmidtea mediterranea*, *Plasmodium falciparum* 3D7, *Ipomoea purpurea*, *Staphylococcus epidermidis*, *Arabidopsis thaliana*, *Yersinia enterocolitica*"
- 833 963 39 "*Homo sapiens*, *Brassica napus* var. napus, *Arabidopsis thaliana*, *Plasmodium chabaudi* adami, *Plasmodium berghei*, *Mus musculus*, *Caenorhabdi* 50

- tis elegans, Eimeria tenella, Dictyostelium discoideum, Monosiga brevicollis, Plasmodium falciparum 3D7, Drosophila melano"
- 834 964 23 "Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus, Rattus norvegicus, Dictyostelium discoideum, Monodelphis domestica, Danio rerio"
- 835 965 27 "Danio rerio, Oryza sativa (japonica cultivar-group), Homo sapiens, Polypterus bichir, Mus musculus, Staphylococcus epidermidis"
- 836 966 27 "Streptococcus agalactiae NEM316, Mus musculus, Homo sapiens, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Dictyostelium discoideum, Clostridium tetani E88, Arabidopsis thaliana, Bartonella henselae, Danio rerio, Methanocaldococcus jannaschii" 10
- 837 967 27 "Drosophila melanogaster, Homo sapiens, Oryza sativa (indica cultivar-group), Danio rerio, Mus musculus, Porphyromonas gingivalis W83, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Equus caballus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Methanosarcina acetivorans C2A, Clostridium acetobutylicum, Takifugu rubripes, Drosophila montana, Candidatus Liberibacter asiaticus, Ixodes gibbosus, Loligo pealei"
- 838 968 23 "Homo sapiens, Xenopus laevis, Equus caballus, Mus musculus, Arabidopsis thaliana, Zea mays, Oryza sativa (japonica cultivar-group)"
- 839 969 24 "Homo sapiens, Mus musculus, Drosophila melanogaster, Methanosarcina acetivorans C2A, Oryza sativa (japonica cultivar-group), Caenorhabditis briggsae, Rattus norvegicus" 20
- 840 970 31 "Homo sapiens, Chlamydophila caviae GPIC, Rattus norvegicus, Chilo iridescent virus, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Dictyostelium discoideum, Danio rerio, Brachyspira hyodysenteriae, Oryza sativa (japonica cultivar-group), Pan troglodytes, Drosophila willistoni, Plasmodium falciparum 3D7, Populus balsamifera subsp. trichocarpa, Lotus corniculatus var. japonicus, Gallus gallus, Medicago truncatula, Neurospora crassa, Ciona intestinalis, Human respiratory syncytial virus"
- 841 971 32 "Medicago truncatula, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Oryza sativa, Gallus gallus, Danio rerio, Mus musculus, Caenorhabditis elegans, Cryptosporidium parvum, Gymnopus indocoides, Rattus norvegicus, Drosophila melanogaster, Methanosarcina mazei Goe1, Sus scrofa, Megaselia scalaris, Escherichia coli, Mycoplasma arthritidis bacteriophage MAV1, Carassius auratus, Clostridium perfringens str. 13" 30
- 842 972 29 "Homo sapiens, Plasmodium falciparum, Plasmodium falciparum 3D7, Guillardia theta, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Bacillus anthracis str. Ames, Borrelia burgdorferi B31, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa, Sulfolobus solfataricus, Ateline herpesvirus 3, Schizosaccharomyces pombe, Equus caballus, Glyptostrobos lineatus" 40
- 843 973 30 "Arabidopsis thaliana, Caenorhabditis elegans, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio, Fundulus heteroclitus, Medicago truncatula, Rattus norvegicus, Staphylococcus aureus, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa, Triticum aestivum, Watermelon bud necrosis virus, Caenorhabditis briggsae, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Artibeus jamaicensis, Pristionchus pacificus, Trypanosoma brucei, Schizosaccharomyces pombe, Anopheles gambiae, Dictyostelium discoideum, Staphylococcus aureus subsp. aureus Mu50" 50

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- 844 974 62 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Dictyostelium discoideum, Arabidopsis thaliana, Mus musculus, Cyprinus carpio, Anopheles culicifacies, Meleagris gallopavo, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Eimeria tenella, Blackburnia viridis, Blackburnia frigida, Sus scrofa, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Drosophila virilis, Candida glabrata, Pichia jadinii, Eremothecium cymbalariae, Zygosaccharomyces microellipsoides, Rattus norvegicus, Sminthopsis macroura"
- 845 975 37 "Mus musculus, Suncus murinus, Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Arabidopsis thaliana, Solanum tuberosum, Drosophila melanogaster, Daniellia klainei, Daniellia ogea, Daniellia soyauxii, Dictyostelium discoideum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Equus caballus, Lotus corniculatus var. japonicus, Hypocrea jecorina, Schizosaccharomyces pombe, Goniocotena olivacea, Papio anubis, Candida albicans, Pan troglodytes, Strongyloides stercoralis, Hordeum vulgare subsp. vulgare, Oryza sativa, Saccharomyces cerevisiae, Cenocoelius analis" 10
- 846 976 29 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Dictyostelium discoideum, Chelonus inanitus bracovirus, Pseudomonas putida, Pisum sativum, Loligo pealei" 20
- 847 977 31 "Homo sapiens, Pan troglodytes, Danio rerio, Mus musculus, Clostridium perfringens str. 13, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans"
- 848 978 27 "Homo sapiens, Medicago truncatula, Caenorhabditis elegans, Mus musculus, Sulfolobus tokodaii"
- 849 979 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Pseudomonas syringae pv. syringae, Lycopersicon esculentum, Lotus corniculatus var. japonicus, Danio rerio, Medicago truncatula"
- 850 980 23 "Equus caballus, Streptococcus pyogenes MGAS315, Homo sapiens, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Mus musculus, Arabidopsis thaliana, Treponema denticola, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio" 30
- 851 981 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Nicotiana tabacum, Nicotiana glutinosa, Pan troglodytes, Scophthalmus maximus, Jodis putata, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio"
- 852 982 23 "Homo sapiens, Medicago truncatula, Petunia x hybrida, Mus musculus, Oryza sativa (japonica cultivar-group), Listeria monocytogenes, Listeria innocua" 40
- 853 983 25 "Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Danio rerio, Homo sapiens, Coussapoa ovalifolia, Cecropia palmata, Ficus pumila, Ficus benjamina, Castilla elastica, Artocarpus altilis, Humulus lupulus, Cannabis sativa, Parasponia parviflora, Lozanella enantiophylla, Ulmus americana, Ampelocera hottleyi, Plasmodium falciparum 3D7, Gonatopus angustus, Ulmus glabra, Ficus pretoriae, Zantedeschia aethiopica, Rattus norvegicus, Ciona intestinalis, Ulmus procera"
- 854 984 23 "Oryza sativa (japonica cultivar-group), Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Mus musculus, Homo sapiens"
- 855 985 23 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group)" 50

- ivar-group), *Gallus gallus*, *Danio rerio*, *Drosophila melanogaster*, *Wolinella succinogenes*, *Acidianus brierleyi*, *Pisum sativum*"
- 856 986 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Gallus gallus*, *Daboecia cantabrica*, *Danio rerio*, *Drosophila melanogaster*, *Xeranthemum cylindraceum*, *Pseudosciadium balansae*, *Myodocarpus simplicifolius*, *Myodocarpus gracilis*, *Myodocarpus crassifolius*, *Myodocarpus lanceolatus*, *Myodocarpus fraxinifolius*, *Delarbrea montana*, *Delarbrea collina*, *Delarbrea paradoxa*, *Wolinella succinogenes*, *Acidianus brierleyi*, *Delarbrea michieana*, *Pisum sativum*"
- 857 987 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Gallus gallus*, *Danio rerio*, *Drosophila melanogaster*, *Wolinella succinogenes*, *Acidianus brierleyi*, *Pisum sativum*" 10
- 858 988 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Gallus gallus*, *Daboecia cantabrica*, *Danio rerio*, *Drosophila melanogaster*, *Xeranthemum cylindraceum*, *Pseudosciadium balansae*, *Myodocarpus simplicifolius*, *Myodocarpus gracilis*, *Myodocarpus crassifolius*, *Myodocarpus lanceolatus*, *Myodocarpus fraxinifolius*, *Delarbrea montana*, *Delarbrea collina*, *Delarbrea paradoxa*, *Wolinella succinogenes*, *Acidianus brierleyi*, *Delarbrea michieana*, *Pisum sativum*"
- 859 989 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Gallus gallus*, *Danio rerio*, *Drosophila melanogaster*, *Wolinella succinogenes*, *Acidianus brierleyi*, *Pisum sativum*" 20
- 860 990 27 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Acidianus brierleyi*, *Neurospora crassa*, *Pisum sativum*"
- 861 991 40 "*Methanosarcina acetivorans* C2A, *Danio rerio*, *Homo sapiens*, *Hylobates agilis*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Zea mays*, *Mus musculus*, *Arabidopsis thaliana*, *Listeria monocytogenes*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Ciona intestinalis*, *Pneumocystis carinii*, *Atelerix albiventris*, *Ehrlichia canis*, *Borrelia burgdorferi* B31, *Bikinia pellegrinii*, *Gallus gallus*, *Pritzelago alpina*, *Hornungia petraea*, *Gossypium hirsutum*, *Clostridium acetobutylicum*, *Anguilla anguilla*, *Xenopus laevis*" 30
- 862 992 44 "Homo sapiens, *Drosophila melanogaster*, *Thermoanaerobacter tengcongensis*, *Danio rerio*, *Mus musculus*, *Oryza sativa*, *Plasmodium falciparum*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Halocynthia roretzi*, *Wigglesworthia glossinidia* endosymbiont of *Glossina*"
- 863 993 53 "*Mus musculus*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Danio rerio*, *Schmidtea mediterranea*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum*, *Oryza sativa*, *Cyprinus carpio*, *Oreochromis niloticus*, *Trypanosoma brucei*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Takifugu rubripes*, *Cyphorhinus phaeocephalus*, *Anopheles gambiae*, *Biomphalaria glabrata*, *Sparus aurata*, *Equine infectious anemia virus*, *Lagopus lagopus*, *Apis mellifera carnica*" 40
- 864 994 31 "*Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Danio rerio*, *Papio anubis*, *Plasmodium falciparum* 3D7, *Gallus gallus*, *Plasmodium gallinaceum*, *Pan troglodytes*, *Sus scrofa*, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Mycoplasma pulmonis*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Vibrio parahaemolyticus*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*" 50

- 865 995 23 "Oryza sativa (japonica cultivar-group), Oryza sativa, Homo sapiens, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Clostridium perfringens str. 13"
- 866 996 23 "Mus musculus, Homo sapiens, Thermoplasma volcanium, Listeria monocytogenes"
- 867 997 27 "Homo sapiens, Pestivirus type 1, Mus musculus, Arabidopsis thaliana, Rickettsia conorii, Bovine viral diarrhea virus strain 638/87, Bovine viral diarrhea virus genotype 2, Danio rerio"
- 868 998 30 "Medicago truncatula, Methanosarcina acetivorans C2A, Nostoc sp. PCC 7120, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Shewanella oneidensis MR-1, Thoracoplites sp. RDB-2000, Histeromerus mystacinus, Mus musculus" 10
- 869 999 31 "Mus musculus, Homo sapiens, Candida albicans, Sulfolobus solfataricus, Campylobacter jejuni subsp. jejuni NCTC 11168, Pan troglodytes, Drosophila melanogaster, Circulifer tenellus, Danio rerio, Arabidopsis thaliana"
- 870 1000 31 "Homo sapiens, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Mus musculus, Guillardia theta, Caenorhabditis elegans, Bacillus anthracis str. Ames, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Schizosaccharomyces pombe, Gallus gallus, Clostridium perfringens str. 13" 20
- 871 1001 27 "Bombyx mori, Homo sapiens, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Danio rerio, Caenorhabditis elegans, Pan troglodytes, Streptococcus infantis, Caenorhabditis briggsae, Oryza sativa (indica cultivar-group), Bemisia tabaci, Bemisia leakii, Pyrococcus horikoshii"
- 872 1002 33 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Vicia faba, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Drosophila willistoni, Streptococcus mutans UA159, Glycine max, Lupinus luteus, Rickettsia prowazekii, Photorhabdus luminescens, Thermoplasma volcanium, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Saccharomyces cerevisiae, Botryotinia fuckeliana, Schizosaccharomyces pombe, Medicago truncatula, Felis catus, Bacillus halodurans" 30
- 873 1003 36 "ItaloPodisma sp. 'Gran Sasso', Homo sapiens, Papio anubis, Danio rerio, Plasmodium vivax, Plasmodium falciparum 3D7, Glycine max, Clostridium difficile, Arabidopsis arenosa, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana"
- 874 1004 45 "Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Schoenocaulon dubium, Clostridium acetobutylicum, Mycoplasma hyorhinis, Danio rerio, Schistosoma mansoni, Tolpis farinulosa, Monosiga brevicollis, Meloidogyne chitwoodi, Arabid" 40
- 875 1005 40 "Drosophila melanogaster, Mus musculus, Homo sapiens, Isoplepis proliferata, Pan troglodytes, Dictyostelium discoideum, Schizophyllum commune, Anastrepha serpentina, Plasmodium falciparum 3D7, Anastrepha cf. anomala, Oryza sativa (japonica cultivar-group), Melanoplus sanguinipes entomopoxvirus, Arabidopsis thaliana, Plasmodium falciparum, Bacillus subtilis subsp. subtilis str. 168, Entamoeba histolytica, Danio rerio, Bacillus subtilis, Caenorhabditis elegans, Clostridium butyricum, Rattus norvegicus, Monosiga brevicollis, Drosophila pseudoobscura, Clostridium perfringens, Rhizophyidum sp. 136"
- 876 1006 28 "Homo sapiens, Clostridium tetani E88, Sulfolobus solfat" 50

- aricus, *Mus musculus*, *Danio rerio*, *Lycopersicon esculentum*, *Caenorhabditis elegans*"
- 877 1007 27 "Homo sapiens, *Methanocaldococcus jannaschii*, *Mus musculus*, *Lactobacillus plantarum*, *Lactobacillus plantarum* WCFS1, *Yersinia pestis* KIM, *Danio rerio*, *Mycoplasma penetrans*, *Yersinia pestis* C092, *Caenorhabditis elegans*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Methanothermobacter thermoautotrophicus* str. Delta H, *Caenorhabditis briggsae*"
- 878 1008 30 "Homo sapiens, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Zea mays*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Medicago truncatula*, *Pan troglodytes*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Goatpox virus*, *Guillardia theta*, *Danio rerio*, *Candidatus Blochmannia floridanus*, *Lipolixis gracilis*, *Oryza sativa* (japonica cultivar-group), *Anthoceros formosae*, *Saccharomyces cerevisiae*" 10
- 879 1009 36 "Caenorhabditis briggsae, *Mus musculus*, *Arabidopsis thaliana*, *Homo sapiens*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oryza sativa* (japonica cultivar-group), *Cryptosporidium parvum*, *Didelphis virginiana*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Ceratolenia vissali*, *Aphanizomenon baltica*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Toxoplasma gondii*, *Melanoplus sanguinipes* entomopoxvirus, *Danio rerio*, *Staphylococcus aureus* subsp. aureus Mu50" 20
- 880 1010 32 "Dictyostelium discoideum, *Homo sapiens*, *Mus musculus*, *Plasmodium vivax*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Candidatus Carsonella ruddii*, *Rattus norvegicus*, *Sus scrofa*, *Pyrococcus furiosus* DSM 3638, *Arabidopsis thaliana*, *Oryzias latipes*, *Danio rerio*, *Medicago truncatula*, *Pan troglodytes*, *Chlamydia muridarum*, *Borrelia burgdorferi* B31, *Streptococcus thermophilus*, *Papio anubis*, *Thermoanaerobacter tengcongensis*, *Cicindela praecisa*, *Streptococcus salivarius*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Plasmodium falciparum*, *Mastigocladus laminosus*, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Porphyra purpurea*" 30
- 881 1011 24 "Oryza sativa (japonica cultivar-group), *Oryza sativa*, *Caenorhabditis elegans*, *Mus musculus*, *Homo sapiens*, *Ephydatia muelleri*"
- 882 1012 27 "Mus musculus, *Homo sapiens*, *Pan troglodytes*, *Archaeoglobus fulgidus* DSM 4304, *Dictyostelium discoideum*, *Drosophila littoralis*, *Drosophila virilis*, *Gallus gallus*, *Lotus corniculatus* var. japonicus, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus Mu50"
- 883 1013 31 "Homo sapiens, *Sus scrofa*, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*, *Phytophthora infestans*, *Takifugu rubripes*, *Oryza sativa* (japonica cultivar-group), *Trypanosoma brucei*, *Ciona intestinalis*, *Anopheles gambiae*" 40
- 884 1014 39 "Homo sapiens, *Drosophila melanogaster*, *Clostridium baratii*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Bos taurus*, *Bacillus subtilis*, *Bacillus subtilis* subsp. subtilis str. 168, *Danio rerio*, *Clostridium perfringens* str. 13, *Medicago truncatula*, *Pan troglodytes*, *Actinobacillus actinomycetemcomitans*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Saccharomyces cerevisiae*, *Daucus carota*"
- 885 1015 36 "Homo sapiens, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Drosophila melanogaster*, *Ara*" 50

bidopsis thaliana, *Samia cynthia ricini*, *Saccharomyces cerevisiae*, *Plasmodium falciparum*, *Mus musculus*, *Orontium aquaticum*, *Danio rerio*, *Saccharomyces douglasii*, *Medicago truncatula*, *Oryza sativa*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Campylobacter jejuni*, *Drosophila hydei*, *Helicobacter pylori* 26695, *Marginopora vertebralis*, *Kluyveromyces marxianus*, *Atelerix albiventris*, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Staphylococcus epidermidis* ATCC 12228, *Drosophila littoralis*"

886 1016 54 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Potamogeton ratzii*, *Cryptosporidium parvum*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Plasmodium falciparum*, *Plasmodium berghei*, *Apis mellifera*, *Medicago truncatula*, *Drosophila melanogaster*, *Sus scrofa*, *Zea mays*, *Cydia pomonella granulovirus*, *Oryza sativa*, *Epifagus virginiana*, *Petunia x hybrida*, *Rattus norvegicus*, *Candidatus Carsonella ruddii*, *Cucumis melo*, *Pan troglodytes*, *Macaca mulatta*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Monosiga brevicollis*, *Escherichia coli*, *Takifugu rubripes*"

887 1017 49 "Homo sapiens, *Plasmodium falciparum* 3D7, *Diachasmimorpha* sp. M131, *Amsacta moorei* entomopoxvirus, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Solanum demissum*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Buchnera aphidicola* str. Sg "

888 1018 57 "Plasmodium falciparum 3D7, *Homo sapiens*, *Danio rerio*, *Saccharomyces kunashirensis*, *Rattus norvegicus*, *Mus musculus*, *Hypostomus squalinus*, *Drosophila melanogaster*, *Saccharomyces castellii*, *Marchantia polymorpha*, *Saccharomyces cerevisiae*, *Equus caballus*, *Dischisma ciliatum*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces servazzii*, *Octopus* sp. HBH-B, *Plasmodium falciparum*, *Zygosaccharomyces rouxii*, *Trypanosoma cruzi*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*"

889 1019 31 "Lotus corniculatus var. *japonicus*, *Mus musculus*, *Caenorhabditis elegans*, *Homo sapiens*, *Danio rerio*, *Schizosaccharomyces pombe*, *Pan troglodytes*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Glossina palpalis palpalis*, *Bombyx mori*, *Oryza sativa* (japonica cultivar-group), *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Drosophila melanogaster*, *Rattus norvegicus*, *Phthorimaea operculella granulovirus*, *Sulfolobus solfataricus*, *Arabidopsis thaliana*, *Drosophila hydei*, *Schistocerca americana*"

890 1020 36 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Borrelia burgdorferi*, *Borrelia afzelii*, *Borrelia garinii*, *Borrelia burgdorferi* B31, *Borrelia lusitaniae*, *Clostridium tetani* E88, *Borrelia* sp. I-77, *Borrelia valaisiana*, *Borrelia* sp. CA1176, *Borrelia* sp. CA11"

891 1021 24 "Helicobacter hepaticus ATCC 51449, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Coelopella popeae*, *Mycoplasma pulmonis*, *Caenorhabditis elegans*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Scopimera globosa*"

892 1022 51 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Rattus norvegicus*, *Sus scrofa*, *Takifugu rubripes*, *Crocota crocota*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Mus musculus domesticus*, *Triturus cristatus*, *Gracilariopsis longissima*"

893 1023 24 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Caenorhabditis elegans*, *Medicago truncatula*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Plasmodium falciparum*, *Marchantia polymorpha*, *Oryza sativa* (japonica cultivar

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- group), *Danio rerio*, *Rattus norvegicus*, *Staphylococcus aureus*, *Drosophila melanogaster*, *Caenorhabditis briggsae*, *Lucilia cuprina*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oceanobacillus ihayensis* HTE831, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Listeria monocytogenes*, *Schizosaccharomyces pombe*, *Papio anubis*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 894 1024 34 "Drosophila melanogaster, Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Tetrahymena thermophila, Caenorhabditis elegans, Danio rerio, Kluyveromyces fragilis, Medicago truncatula, Pan troglodytes, Lampetra fluviatilis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pyrobaculum aerophilum str. IM2, Mesostigma viride, Ceratitis capitata, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Mycoplasma penetrans, Schizosaccharomyces pombe, Clostridium botulinum, Glycine max, Clostridium botulinum D" 10
- 895 1025 32 "Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Gasterosteus aculeatus, Drosophila melanogaster, Mus musculus, Oryza sativa, Methanosarcina barkeri, Schistosoma gregaria, Oryza sativa (japonica cultivar-group), Medicago truncatula, Danio rerio, Gryllus texensis, Gryllus rubens, Salamandra atra, Plasmodium falciparum 3D7, Euproctus montanus, Batrachuperus tibetanus, Human herpesvirus 6, Mycoplasma pulmonis, Gluconacetobacter xylinus, Gryllus lineaticeps, Gryllus fultoni, Pichia etchellsii" 20
- 896 1026 40 "Danio rerio, Homo sapiens, Pan troglodytes, Clostridium tetani E88, Mus musculus, Arabidopsis thaliana, Clostridium perfringens str. 13, Enterococcus faecalis V583, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group)"
- 897 1027 39 "Homo sapiens, Buchnera aphidicola str. Sg (*Schizaphis graminum*), Buchnera aphidicola, Plasmodium falciparum 3D7, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio, Dictyostelium discoideum, Caenorhabditis elegans, Arabidopsis thaliana, Bactrocera tryoni, Bactrocera neohumeralis, Oryzias latipes, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Campylobacter fetus, Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Mus musculus, Schistosoma japonicum, Mycoplasma synoviae, Euglena gracilis, Prochlorococcus marinus, Caenorhabditis briggsae, Plasmodium berghei, Uca lactea, Enterococcus faecium, Baryconus sp. M195, Emerita analoga, Gallus gallus, Sus scrofa, Turnip mosaic virus, Simulium japonicum, Simulium nigrogilvum" 30
- 898 1028 30 "Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Lacordairia sp. KAO-2001, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Monosiga brevic" 40
- 899 1029 32 "Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Medicago truncatula, Acidodontium ramicola, Candidatus Carsonella ruddii, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Euclyptus" 40
- 900 1030 28 "Rattus norvegicus, Homo sapiens, Arabidopsis thaliana, Mus musculus, Pan troglodytes, Zea mays, Prochlorococcus marinus"
- 901 1031 22 "Homo sapiens, Mus musculus, Equus caballus"
- 902 1032 24 "Streptococcus pneumoniae, Lotus corniculatus var. japonicus, Homo sapiens, Danio rerio, Osmia taurus, Osmia jacoti, Osmia opima, Osmia pedicornis, Osmia cornifrons, Mus musculus, Bacillus halodurans"
- 903 1033 27 "Homo sapiens, Arabidopsis thaliana, Streptococcus pneum" 50

- oniae R6, Streptococcus pneumoniae TIGR4, Human papillomavirus type 16, Mus musculus, Oryza sativa (japonica cultivar-group), Streptococcus pneumoniae, Danio rerio"
- 904 1034 28 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Lens culinaris, Moraea villosa, Ferraria uncinata, Caenorhabditis elegans, Felis catus, Ciona intestinalis, Arabidopsis thaliana"
- 905 1035 23 "Diretmus argenteus, Danio rerio, Botryotinia fuckeliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Ateles sp. haplotype Afr21"
- 906 1036 23 "Mus musculus, Homo sapiens, Drosophila melanogaster, Collocalia linchi linchi, Collocalia esculenta cyanoptila, Lotus corniculatus var. japonicus, Gavia immer" 10
- 907 1037 32 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Aquifex aeolicus VF5, Umbrina cirrosa, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis elegans, Danio rerio, Anopheles gambiae"
- 908 1038 29 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Drosophila melanogaster, Rattus norvegicus, Microberlinia brazzavillensis, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Rickettsia conorii, Danio rerio, Rickettsia prowazekii, Ursus maritimus, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Ciona intestinalis, Plasmodium falciparum, Vicugna vicugna, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Canis familiaris, Mandarina anijimana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Saccharomyces cerevisiae, Caenorhabditis elegans" 20
- 909 1039 38 "Vibrio vulnificus CMCP6, Mus musculus, Homo sapiens, Tropheryma whipplei TW08/27, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Caenorhabditis elegans, Clostridium acetobutylicum, Ureaplasma urealyticum, Rattus norvegicus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Malus baccata, Bacteroides thetaiotaomicron VPI-5482, Enterococcus faecalis V583, Shewanella oneidensis MR-1, Simian immunodeficiency virus, Lactococcus lactis subsp. lactis, Bacillus anthracis, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Listeria innocua, Lactococcus lactis, Danio rerio, Schistosoma haematobium" 30
- 910 1040 28 "Enterococcus faecalis V583, Mus musculus, Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Methanosarcina acetivorans C2A, Oryza sativa (indica cultivar-group), Sus scrofa, Oryza sativa (japonica cultivar-group)"
- 911 1041 27 "Caenorhabditis elegans, Homo sapiens, Papio anubis, Bacillus megaterium, Mus musculus, Nostoc sp. PCC 7120"
- 912 1042 27 "Arabidopsis thaliana, Drosophila melanogaster, Homo sapiens" 40
- 913 1043 27 "Homo sapiens, Mus musculus, Ciona intestinalis, Xenopus laevis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Neisseria meningitidis MC58"
- 914 1044 25 "Staphylococcus aureus, Mus musculus, Streptococcus agalactiae 2603V/R, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Homo sapiens, Staphylococcus aureus subsp. aureus Mu50, Rickettsia conorii, Vicia faba, Danio rerio, Rana nigromaculata, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Chlamydia muridarum, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586," 50

- Mycoplasma pneumoniae*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Medicago truncatula*"
- 915 1045 28 "Homo sapiens, *Zea mays*, *Chlamydia trachomatis*, *Mus musculus*, *Schmidtea mediterranea*, *Lotus corniculatus* var. japonicus, *Danio rerio*"
- 916 1046 23 "Bacillus cereus ATCC 14579, Homo sapiens, *Mus musculus*, Human immunodeficiency virus 1, *Pasteurella multocida*, *Oryza sativa* (japonica cultivar-group)"
- 917 1047 31 "Homo sapiens, *Saccharomyces cerevisiae*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Brachyspira hyodysenteriae*, *Methanosarcina acetivorans* C2A, *Arabidopsis thaliana*, *Danio rerio*" 10
- 918 1048 24 "Arabidopsis thaliana, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Pan troglodytes*, *Mus musculus*"
- 919 1049 23 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Cavia porcellus*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*"
- 920 1050 30 "Oryctolagus cuniculus, Homo sapiens, *Mus musculus*, *Zea mays*, *Vibrio parahaemolyticus*, *Danio rerio*, *Vibrio vulnificus* CMCP6, *Cryptosporidium parvum*, *Medicago truncatula*, *Mycoplasma capricolum*, *Oryza sativa* (japonica cultivar-group)" 20
- 921 1051 39 "Enterococcus faecalis V583, Homo sapiens, *Mus musculus*, Sheeppox virus, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Papio anubis*, *Castanea sativa*, *Drosophila melanogaster*, *Sus scrofa*, *Oryza sativa* (japonica cultivar-group), *Trypanosoma brucei*, *Arabidopsis thaliana*, *Atelerix albiventris*, *Gallus gallus*"
- 922 1052 24 "Medicago truncatula, Homo sapiens, *Danio rerio*, *Bacillus anthracis* str. Ames, *Escherichia coli* CFT073, *Mus musculus*, *Escherichia coli* O157:H7 EDL933, *Escherichia coli* K12, *Ureaplasma urealyticum*, *Caenorhabditis elegans*, Human immunodeficiency virus 1, *Escherichia coli*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Escherichia coli* O157:H7" 30
- 923 1053 28 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Aspergillus flavus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Vibrio parahaemolyticus*, *Oryzias latipes*"
- 924 1054 27 "Arabidopsis thaliana, Homo sapiens, *Streptococcus mutans* UA159, *Danio rerio*, *Mus musculus*, *Gaertnera* sp. Malcomber 999, *Eimeria maxima*"
- 925 1055 24 "Drosophila melanogaster, *Mus musculus*, Homo sapiens, *Oryctolagus cuniculus*, *Saccharomyces cerevisiae*, *Chlorella virus*" 40
- 926 1056 27 "Mus musculus, Homo sapiens, *Arabidopsis thaliana*, *Rattus norvegicus*"
- 927 1057 27 "Homo sapiens, *Arabidopsis thaliana*, *Coxiella burnetii* RSA 493, *Bacillus cereus* ATCC 14579, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus*, *Ciona intestinalis*, *Staphylococcus aureus* subsp. aureus Mu50"
- 928 1058 27 "Drosophila melanogaster, *Mus musculus*, Homo sapiens, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Schizosacc* 50

haromyces pombe"

- 929 1059 44 "Homo sapiens, Nicotiana tabacum, Mus musculus, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli 0157:H7 EDL933, Danio rerio, Escherichia coli, Escherichia coli K12, Rattus norvegicus, Yersinia pestis C092, Lactuca sativa, Rattus rattus, Escherichia coli 0157:H7, Medicago truncatula, Drosophila melanogaster, Plasmodium falciparum 3D7, Cuphea lanceolata, Stylonychia lemnae, Schizosaccharomyces pombe, Clostridium tetani E88, Streptococcus pyogenes MGAS315, Papio anubis, Streptococcus pyogenes MGAS8232, Bos taurus, Streptococcus pyogenes M1 GAS, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Nicotiana plumbaginifolia, Oryza sativa (japonica cultivar-group), Pyrococcus horikoshii, Drosophila pseudoobscura" 10
- 930 1060 38 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Danio rerio, Arabidopsis thaliana, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Simian virus 40, Sus scrofa, Cowpox virus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Heterodontus francisci, Drosophila melanogaster, Litopenaeus vannamei, Sinorhizobium meliloti, Prochlorococcus marinus, Lotus corniculatus var. japonicus, Lactobacillus plantarum WCFS1, Volvox carteri, Plasmodium yoelii, Coxiella burnetii RSA 493"
- 931 1061 32 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Leishmania infantum, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Nephroselmis olivacea, Cuphea wrightii" 20
- 932 1062 27 "Neoelecta vitellina, Drosophila melanogaster, Dictyostelium discoideum, Homo sapiens, Drosophila virilis, Mus musculus, Danio rerio, Saccharomyces cerevisiae, Bacillus cereus ATCC 14579, Amicia glandulosa, Trypanosoma cruzi, Caenorhabditis elegans, Mesostigma viride, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Oceanobacillus ihayensis HTE831, Lentinula boryana, Glomus mosseae, Cryptosporidium parvum, Nicotiana tabacum, Arabidopsis thaliana"
- 933 1063 24 "Drosophila melanogaster, Homo sapiens, Ralstonia solanacearum, Mus musculus, Methanosarcina acetivorans C2A, Danio rerio, Saccharomyces cerevisiae, Caenorhabditis elegans" 30
- 934 1064 24 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Liolaemus sp. nov. MM-3, Methanosarcina acetivorans C2A, Pyrococcus furiosus DSM 3638, Polybioides tabidus, Forficula scudderii, Human immunodeficiency virus 1, Pyrococcus furiosus"
- 935 1065 27 "Homo sapiens, Arabidopsis thaliana, Caenorhabditis briggsae, Neurospora crassa, Mus musculus"
- 936 1066 28 "Oceanobacillus ihayensis HTE831, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Zea mays, Mus musculus, Homo sapiens, Metarhizium anisopliae" 40
- 937 1067 25 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio"
- 938 1068 29 "Homo sapiens, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Mus musculus, Streptococcus pyogenes SSI-1"
- 939 1069 31 "Homo sapiens, Caenorhabditis elegans, Plasmodium falciparum 3D7, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Enterococcus faecalis V583, Sulfolobus solfataricus, Enterococcus faecalis, Oplodianax horridus" 50

- 940 1070 33 "Arabidopsis thaliana, Homo sapiens, Plasmodium falciparum 3D7, Bactrocera jarvisi, Mus musculus, Chlamydomonas reinhardtii, Medicago truncatula, Drosophila melanogaster, Clostridium tetani E88, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Bacillus anthracis str. A2012, Bartonella henselae, Swinepox virus, Pan troglodytes, Papio anubis, Escherichia coli 0157:H7 EDL933, Danio rerio, Oryza sativa (japonica cultivar-group), Ceratitidis capitata, Clostridium perfringens, Escherichia coli 0157:H7, Bacillus anthracis, Cryptosporidium parvum, Rattus norvegicus, Methanocaldococcus jannaschii"
- 941 1071 29 "Drosophila melanogaster, Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Danio rerio, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Staphylococcus aureus, Cryptosporidium parvum, Gallus gallus, Arabidopsis thaliana, Caenorhabditis elegans, Fowlpox virus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50" 10
- 942 1072 28 "Macaca fascicularis, Oryza sativa (japonica cultivar-group), Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Thermoanaerobacter tengcongensis, Danio rerio, Glycine max, Drosophila melanogaster, Papio anubis, Felis catus, Caenorhabditis elegans, Candidatus Liberibacter asiaticus, Borrelia afzelii, Clostridium perfringens str. 13" 20
- 943 1073 51 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mus musculus, Oryza sativa, Candidatus Blochmannia floridanus, Mazamastrongylus odocoilei, Myricaria alopecuroides, Rattus norvegicus, Danio rerio, Dictyostelium discoideum, Arabidopsis thaliana, Medicago truncatula, Caenorhabditis elegans, Pan troglodytes, Poncirus trifoliata, Drosophila melanogaster, Clostridium tetani E88, Tricholoma portentosum, Scotophilus heathi, Vigna angularis, Campylobacter jejuni, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Plasmodium falciparum, Heterodoxus macropus, Rickettsia prowazekii, Mycoplasma pulmonis, Clostridium botulinum, Saccharomyces dairenensis, Oceanobacillus iheyensis HTE831, Lactobacillus plantarum WCFS1, Clostridium botulinum phage 1C, Locusta migratoria, Scotophilus kuhlii" 30
- 944 1074 44 "Danio rerio, Mus musculus, Plasmodium falciparum 3D7, Bos taurus, Homo sapiens, Dictyostelium discoideum, Gallus gallus, Oryza sativa (japonica cultivar-group), Pyrobaculum aerophilum str. IM2, Tetrahymena thermophila, Paracentrotus lividus, Caenorhabditis elegans, Synechocystis sp. PCC 6803, Drosophila melanogaster, Arabidopsis thaliana, Trypanosoma brucei, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Meloidogyne incognita, Trypanosoma brucei brucei, Bacillus cereus ATCC 14579, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Chlamydia muridarum, Aquifex aeolicus VF5, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Calycanthus floridus var. glaucus, Caenorhabditis briggsae, Laminaria digitata, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Picea abies, Saccharomyces cerevisiae, Cryptophlebia leucotreta granulovirus" 40
- 945 1075 27 "Arabidopsis thaliana, Homo sapiens, Drosera aliciae, Drosera capensis, Mus musculus, Lactococcus lactis subsp. cremoris, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Danio rerio, Bacillus cereus ATCC 14579, Clostridium tetani E88, Drosophila simulans, C 50

- lostridium acetobutylicum*, *Capsella rubella*, *Brassica napus* var. *napus*, *Caenorhabditis elegans*, *Mycoplasma penetrans*, *Caenorhabditis vulgaris*"
- 946 1076 19 "Mus musculus, Homo sapiens"
- 947 1077 25 "Rattus norvegicus, Homo sapiens, Drosophila melanogaster, Danio rerio, Mus musculus, Bacillus anthracis str. Ames, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Saccharomyces cerevisiae"
- 948 1078 26 "Mus musculus, Homo sapiens, Paramecium bursaria Chlorella virus 1, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Papio anubis, Arabidopsis thaliana" 10
- 949 1079 28 "Williopsis saturnus var. mrakii, Pichia jadinii, Borrelia burgdorferi B31, Caenorhabditis elegans, Homo sapiens, Ehrlichia canis, Petunia integrifolia subsp. inflata, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Candida albicans, Medicago truncatula, Oryza sativa (japonica cultivar-group), Porphyra purpurea"
- 950 1080 22 "Homo sapiens, Oryza sativa (japonica cultivar-group)"
- 951 1081 20 "Coxiella burnetii RSA 493, Drosophila melanogaster, Homo sapiens, Mus musculus, Gallus gallus, Autographa californica nucleopolyhedrovirus, Danio rerio, Bifidobacterium longum NCC2705"
- 952 1082 23 "Homo sapiens, Coxiella burnetii RSA 493, Mus musculus, Oryza sativa (japonica cultivar-group)" 20
- 953 1083 26 "Drosophila melanogaster, Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Platycichla leucops, Streptococcus oralis, Streptococcus mitis, Danio rerio, Bifidobacterium longum NCC2705, Oryctolagus cuniculus"
- 954 1084 28 "Mus musculus, Homo sapiens, Pan troglodytes, Drosophila melanogaster, Neurospora crassa, Danio rerio, Simian immunodeficiency virus, Dictyostelium discoideum, Helobdella robusta, Loligo pealei, Arabidopsis thaliana, Drosophila persimilis, Methanosarcina acetivorans C2A, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Takifugu rubripes, Candida albicans, Coccotrypes dactyliperda, Gasterosteus aculeatus, Medicago truncatula, Caenorhabditis elegans, Schistosoma japonicum" 30
- 955 1085 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, Myxococcus xanthus, Acipenser baerii, Mus musculus, Blarina brevicauda, Arabidopsis thaliana"
- 956 1086 24 "Homo sapiens, Spiroplasma kunkelii, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 957 1087 23 "Mus musculus, Homo sapiens, Danio rerio, Lotus corniculatus var. japonicus"
- 958 1088 27 "Mus musculus, Rickettsia conorii, Homo sapiens, Caenorhabditis briggsae" 40
- 959 1089 23 "Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, Mus musculus"
- 960 1090 24 "Bos taurus, Emericella nidulans, Mus musculus, Fasciola hepatica, Homo sapiens, Rattus norvegicus"
- 961 1091 27 "Mus musculus, Lotus corniculatus var. japonicus, Homo sapiens, Pan troglodytes, Danio rerio, Paramecium tetraurelia, Cacao swollen shoot virus"
- 962 1092 24 "Clostridium tetani E88, Mus musculus, Homo sapiens, Caenorhabditis elegans, Schizosaccharomyces pombe"
- 963 1093 20 "Homo sapiens, Mus musculus, Takifugu rubripes, Arabidop 50

- sis thaliana"
- 964 1094 20 "Mus musculus, Danio rerio, Vibrio vulnificus CMCP6, Homo sapiens, Entamoeba histolytica"
- 965 1095 21 "Homo sapiens, Mus musculus, Bacillus halodurans, Parafibrella hogueae, Methanosarcina mazei Goe1, Rhizamoeba saxonica, Danio rerio, Rhizamoeba sp. ATCC50743, Oryza sativa (japonica cultivar-group)"
- 966 1096 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Chlamydia trachomatis"
- 967 1097 23 "Homo sapiens, Mus musculus, Pan troglodytes, Leishmania infantum, Lycopersicon esculentum" 10
- 968 1098 27 "Mycoplasma gallisepticum R, Grapevine leafroll virus-associated RNA6, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mus musculus"
- 969 1099 24 "Homo sapiens, Lotus corniculatus var. japonicus, Equus caballus, Vibrio fischeri, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)"
- 970 1100 31 "Mus musculus, Homo sapiens, Pan troglodytes, Takifugu rubripes, Thermoanaerobacter tengcongensis, Oryza sativa (japonica cultivar-group), Medicago truncatula, Plasmodium falciparum 3D7, Polytaenia texana, Musineon divaricatum var. divaricatum, Prochlorococcus marinus, Arabidopsis thaliana, Malva baltica secacul, Plasmid R64, Staphylococcus aureus subsp. aureus N315, Danio rerio, Chlamydomonas reinhardtii, Plasmodium falciparum, Staphylococcus aureus subsp. aureus Mu50, Plasmid Col1b-P9, Salmonella typhimurium" 20
- 971 1101 23 "Homo sapiens, Corynebacterium urealyticum, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Oceanobacillus ihayensis HTE831, Listeria innocua"
- 972 1102 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Pseudomonas alginovora, Lycopersicon esculentum, Lotus corniculatus var. japonicus" 30
- 973 1103 27 "Chlamydomonas reinhardtii, Sulfolobus tokodaii, Saccharomyces cerevisiae, Homo sapiens, Borrelia burgdorferi B31, Dictyostelium discoideum, Dermatophilus congolensis, Mus musculus, Clostridium perfringens str. 13"
- 974 1104 23 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group)"
- 975 1105 29 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Macaca mulatta, Arabidopsis thaliana, Streptococcus pneumoniae R6, Pan troglodytes, Drosophila melanogaster, Shewanella oneidensis MR-1, Medicago truncatula, Mycoplasma penetrans, Caenorhabditis elegans" 40
- 976 1106 28 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Sulfolobus tokodaii, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Listeria innocua"
- 977 1107 27 "Homo sapiens, Drosophila melanogaster, Mus musculus, Caenorhabditis briggsae, Clostridium perfringens str. 13, Medicago truncatula, Danio rerio, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Pan troglodytes, Treponema pallidum, Ipomoea batatas"
- 978 1108 31 "Homo sapiens, Drosophila melanogaster, Dictyostelium di 50

- 995 1125 31 "Homo sapiens, Schizosaccharomyces pombe, Haemophilus influenzae Rd KW20, Methanocaldococcus jannaschii, Caenorhabditis elegans, Leptospira interrogans serovar lai str. 56601, Mus musculus, Solanum tuberosum, Medicago truncatula, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Lotus corniculatus var. japonicus, Danio rerio"
- 996 1126 24 "Adiantum capillus-veneris, Homo sapiens, Leontopithecus rosalia, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 997 1127 25 "Homo sapiens, Danio rerio, Lotus corniculatus var. japonicus, Drosophila melanogaster, Mus musculus, Sus scrofa, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Borrelia garinii, Bacillus anthracis str. Ames, Oryctolagus cuniculus, Clostridium tetani E88, Lemur catta, Plasmodium falciparum 3D7, Gossypium robinsonii, Arabidopsis thaliana, Staphylococcus aureus, Clostridium acetobutylicum, Staphylococcus aureus subsp. aureus N315, Sulfolobus tokodaii, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Staphylococcus aureus subsp. aureus Mu50, Acer caudatifolium" 10
- 998 1128 23 "Danio rerio, Anaplasma phagocytophilum, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Yersinia pestis KIM, Methanosarcina acetivorans C2A, Tetranychus pellucida, Andreaea nivalis, Sphagnum fallax, Yersinia pestis C092"
- 999 1129 28 "Neisseria meningitidis Z2491, Neisseria meningitidis MC 58, Thermoplasma volcanium, Mus musculus, Homo sapiens, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Poecilia reticulata, Plasmodium falciparum 3D7, Saccharomyces cerevisiae" 20
- 1000 1130 41 "Rickettsia conorii, Homo sapiens, Daucus carota, Pasteurella multocida, Lotus corniculatus var. japonicus, Mus musculus, Galleria mellonella"
- 1001 1131 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Mesocricetus auratus, Prochlorococcus marinus, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Microtus rossiaemeridionalis, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Clostridium tetani E88, Rattus norvegicus, Incisalia iroides, Mitoura muiri, Mitoura siva, Mitoura nelsoni, Pseudomonas phage phiKZ, Clostridium acetobutylicum, Gallus gallus, Mitoura grynea, Mycoplasma fermentans, Methanococcus voltae, Nostoc sp. PCC 7120" 30
- 1002 1132 34 "Schmidtea mediterranea, Homo sapiens, Drosophila melanogaster, Mus musculus, Lotus corniculatus var. japonicus, Vibrio parahaemolyticus, Oryza sativa (japonica cultivar-group), Danio rerio, Mikrocytos roughleyi, Arabidopsis thaliana, Plasmodium falciparum 3D7, Bonamia sp., Bonamia ostreae, Caenorhabditis briggsae, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831"
- 1003 1133 27 "Hypocrea virens, Homo sapiens, Antechinus swainsonii, Caenorhabditis elegans, Rattus norvegicus, Mus musculus" 40
- 1004 1134 27 "Homo sapiens, Mus musculus, Bacillus anthracis str. Ames, Fusobacterium nucleatum subsp. fusiforme, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans"
- 1005 1135 32 "Oryza sativa, Homo sapiens, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Pantroglodytes, Danio rerio, Nicotiana tabacum, Streptococcus mutans UA159, Plasmodium falciparum 3D7, Felis catus, Plasmodium falciparum, Oceanobacillus iheyensis HTE831, Schizosaccharomyces pombe, Xenopus laevis"
- 1006 1136 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Po 50

- lytomella parva, Paucimonas lemoignei, Melanoplus sanguinipes entomopoxvirus, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Plasmodium falciparum 3D7, Vidua chalybeata, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Bacillus subtilis subsp. subtilis str. 168, Schizosaccharomyces pombe, Bacillus subtilis, Begonia grandis subsp. evansiana"
- 1007 1137 27 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mycoplasma hominis, Mucor hiemalis f. luteus, Fasciola hepatica, Ureaplasma urealyticum, Treponema pallidum subsp. pallidum, Vibrio parahaemolyticus, Listeria innocua" 10
- 1008 1138 27 "Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Ardea herodias, Arabidopsis thaliana, Rattus norvegicus"
- 1009 1139 24 "Homo sapiens, Helicobacter pylori 26695, Mus musculus, Lotus corniculatus var. japonicus, Helicobacter pylori J99, Serranus tortugarum"
- 1010 1140 37 "Mus musculus, Homo sapiens, Sulfolobus solfataricus, Vibrio parahaemolyticus, Drosophila melanogaster, Clostridium tetani E88, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Arabidopsis thaliana, Caenorhabditis elegans" 20
- 1011 1141 33 "Mus musculus, Takifugu rubripes, Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Medicago truncatula, Papio anubis, Didelphis virginiana, Schmidtea mediterranea, Costus amazonicus, Danio rerio, Candida albicans, Gallus gallus, Rattus sp., Dictyostelium discoideum, Borrelia burgdorferi B31, Xenopus laevis, Caenorhabditis elegans, Phytophthora infestans, Canis familiaris"
- 1012 1142 23 "Homo sapiens, Phaseolus vulgaris, Mus musculus"
- 1013 1143 25 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Oceanobacillus ihyens HTE831, Oryza sativa (japonica cultivar-group)" 30
- 1014 1144 32 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Ovis aries, Danio rerio, Arabidopsis thaliana, Caenorhabditis elegans, Strongyloides stercoralis, Helicobacter pylori, Pan troglodytes, Lemur catta, Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mesorhizobium loti, Campylobacter jejuni subsp. jejuni NCTC 11168, Candidatus Blochmannia floridanus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (japonica cultivar-group), Wiggleworthia glossinidia endosymbiont of Glossina brevipalpis, Methanocaldococcus jannaschii, Rattus norvegicus, Helicobacter hepaticus ATCC 51449, Staphylococcus aureus subsp. aureus Mu50" 40
- 1015 1145 25 "Homo sapiens, Caenorhabditis elegans, Lactococcus lactis subsp. lactis, Danio rerio, Escherichia coli"
- 1016 1146 29 "Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Oryctolagus cuniculus, Candidatus Carsonella ruddii, Borrelia burgdorferi B31, Arabidopsis thaliana, Sulfolobus tokodaii, Caenorhabditis elegans, Oryzias latipes, Haemophilus influenzae Rd KW20, Rattus norvegicus, Lycopersicon esculentum"
- 1017 1147 27 "Mus musculus, Oryza sativa (japonica cultivar-group), H 50

- omo sapiens, Schizosaccharomyces pombe, Pan troglodytes, Chilo iridescent virus, Danio rerio, Rickettsia prowazekii, Mycoplasma pulmonis, Solanum tuberosum"
- 1018 1148 73 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pasteurella multocida, Vibrio cholerae, Homo sapiens, Coxiella burnetii RSA 493, Clostridium tetani E88, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Plasmodium falciparum 3D7, Cryptosporidium parvum, Triticum monococcum, Shigella flexneri 2a str. 2457T, Mus musculus, Escherichia coli CFT 073, Shigella flexneri 2a str. 301, Microscilla sp. PRE1, Candidatus Carsonella ruddii, Escherichia coli O157:H7 EDL933, Escherichia coli K12, Lotus corniculatus var. japonicus, Danio rerio, Escherichia coli, Escherichia coli O157:H7" 10
- 1019 1149 41 "Rickettsia conorii, Rickettsia prowazekii, Haemophilus ducreyi 35000HP, Mus musculus, Arabidopsis thaliana, Homo sapiens, Chlamydomonas reinhardtii, Nostoc sp. PCC 7120"
- 1020 1150 23 "Homo sapiens, Papio anubis"
- 1021 1151 51 "Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Drosophila melanogaster, Drosophila erecta, Mus musculus, Pasteurella multocida, Danio rerio, Caenorhabditis elegans, Thermoplasma volcanium"
- 1022 1152 20 "Homo sapiens, Mus musculus"
- 1023 1153 27 "Homo sapiens, Silurana tropicalis, Mus musculus, Pseudomonas syringae pv. tomato str. DC3000, Chlamydia trachomatis, Caenorhabditis elegans, Danio rerio" 20
- 1024 1154 31 "Homo sapiens, Clostridium tetani E88, Danio rerio, Solanum tuberosum, Emericella nidulans, Plasmodium falciparum 3D7, Mus musculus, Clostridium perfringens str. 13"
- 1025 1155 37 "Schizosaccharomyces pombe, Homo sapiens, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Medicago truncatula, Drosophila melanogaster, Enterococcus faecalis V583, Aquifex aeolicus VF5, Drosophila immigrans, Clostridium acetobutylicum, Podospira anserina, Arabidopsis thaliana, Danio rerio" 30
- 1026 1156 29 "Gracilaria gracilis, Medicago truncatula, Homo sapiens, Neurospora crassa, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Danio rerio, Targionia hypophylla, Physarum polycephalum, Gammatricula fujianensis, Trichula MG96.04, Arabidopsis thaliana, Plasmodium falciparum 3D7, Thermoplasma volcanium, Mus musculus, Spodoptera frugiperda, Dictyostelium discoideum, Borrelia burgdorferi B31, Oryctolagus cuniculus, Rhodobryum keniae, Bryum cyclophyllum, Bryum clavatum, Xenopus laevis, Lotus corniculatus var. japonicus, Glycine max, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Agroclype aegerita, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Borrelia burgdorferi" 40
- 1027 1157 25 "Homo sapiens, Medicago truncatula, Danio rerio, Caenorhabditis elegans, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Aedes aegypti, Methanocaldococcus jannaschii, Mus musculus, Arabidopsis thaliana, Aquifex aeolicus VF5, Aquifex aeolicus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Oceanobacillus ihayensis HTE831, Helicobacter pylori 26695, Helicobacter pylori J99, Helicobacter pylori"
- 1028 1158 32 "Drosophila melanogaster, Homo sapiens, Xenopus laevis, Leptospira interrogans serovar lai str. 56601, Mus musculus, Plasmodium falciparum 3D7, Medicago truncatula, Dictyostelium discoideum, Arabidopsis thaliana, Lot 50

- us corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Danio rerio, Bovine rotavirus, Porcine rotavirus"
- 1029 1159 93 "Escherichia coli, Salmonella enterica, Methanothermobacter thermautotrophicus str. Delta H, Yersinia enterocolitica (type O:8), Erwinia chrysanthemi, Escherichia coli O157:H7 EDL933, Escherichia coli O157:H7, Homo sapiens, Sinorhizobium fredii, Rhizobium sp. NGR234, Mus musculus, Yersinia pestis KIM, Arabidopsis thaliana, Yersinia pestis, Yersinia pseudotuberculosis (type O:1b), Danio rerio, Yersinia pestis C092, Mycoplasma genitalium"
- 1030 1160 71 "Escherichia coli O157:H7 EDL933, Escherichia coli, Escherichia coli O157:H7, Helicobacter pylori 26695, Aeromonas hydrophila, Helicobacter pylori J99, Lotus corniculatus var. japonicus, Homo sapiens, Mus musculus, Oryctolagus cuniculus, Leptospira interrogans serovar lai str. 56601, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus MW2, Schizosaccharomyces pombe, Caenorhabditis elegans" 10
- 1031 1161 164 "Yersinia pseudotuberculosis (type O:1b), Yersinia pestis KIM, Yersinia pestis, Yersinia pestis C092, Escherichia coli O157:H7 EDL933, Escherichia coli, Escherichia coli O157:H7, Prochlorococcus marinus subsp. marinus str. CCMP1375, Vibrio cholerae, Prochlorococcus marinus, Salmonella enterica, Mesorhizobium loti, Mus musculus, Helicobacter hepaticus ATCC 51449, Clostridium acetobutylicum, Actinobacillus actinomycetemcomitans, Schistosoma japonicum, Brucella melitensis 16M, Brucella melitensis, Homo sapiens, Anabaena sp. CA, Caenorhabditis elegans, Drosophila melanogaster, Pan troglodytes" 20
- 1032 1162 51 "Methanosarcina acetivorans C2A, Yersinia pseudotuberculosis (type O:1b), Erwinia chrysanthemi, Homo sapiens, Yersinia pestis KIM, Yersinia pestis, Yersinia pestis C092, Gasterosteus aculeatus, Mus musculus, Streptococcus pneumoniae R6, Thermoplasma volcanium, Danio rerio"
- 1033 1163 21 "Mus musculus, Homo sapiens, Gallus gallus, Thermoanaerobacter tengcongensis, Hebestigma cubense, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)"
- 1034 1164 28 "Homo sapiens, Danio rerio, Methanosarcina acetivorans C2A, uncultured alpha proteobacterium, Luciola lateralis, Dictyostelium discoideum, Rattus norvegicus, Mus musculus, Caenorhabditis elegans, Synechocystis sp. PC C 6803" 30
- 1035 1165 40 "Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Melanoplus sanguinipes entomopoxvirus, Danio rerio, Caenorhabditis elegans, Bacillus halodurans, Plasmodium falciparum 3D7, Oryza sativa, Sulfolobus solfataricus, Uromyces viciae-fabae, Androcymbium ciliolatum, Bacillus cereus ATCC 14579, Pan troglodytes, Bacillus anthracis str. Ames, Medicago truncatula, Macaca mulatta, Dictyostelium discoideum, Clostridium tetani E88, Papio anubis, Branchiostoma floridae, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Heterorhabditis sp., Heterorhabditis bacteriophora, Heterorhabditis megidis, Clostridium acetobutylicum, Rattus norvegicus, Meloidogyne incognita, Scenedesmus obliquus" 40
- 1036 1166 28 "Homo sapiens, Neurospora crassa, Mus musculus, Paracentrotus lividus, Danio rerio, Cryptomys hottentotus pretoriae, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Drosophila melanogaster, Atropa belladonna, Oryza sativa (japonica cultivar-group), Nicotiana tabacum, Mytilus edulis, Melanoplus sanguinipes entomopoxvirus, Pseudomys nanus, Apodemus peninsulae, Caenorhabditis elegans, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg 50

- (*Schizaphis graminum*), *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Stellilabium pogonostalix*, *Rickettsia prowazekii*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Paramecium caudatum*, *Nostoc* sp. PCC 7120, *Clostridium perfringens* str. 13"
- 1037 1167 27 "Homo sapiens, *Mus musculus*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Pan troglodytes*, *Xenopus laevis*"
- 1038 1168 33 "Utricularia triloba, *Medicago truncatula*, *Candidatus Carsonella ruddii*, *Utricularia subulata*, *Homo sapiens*, *Stylidium emarginatum*, *Eucalyptus grandis*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Mus musculus*, *Plasmodium falciparum*" 10
- 1039 1169 29 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Schizosaccharomyces pombe*, *Caenorhabditis elegans*, *Atelerix albiventris*, *Drosophila melanogaster*, *Pan troglodytes*, *Seymeria pectinata*, *Dictyostelium discoideum*, Human papillomavirus type 39, *Arabidopsis thaliana*, *Paramecium bursaria* *Chlorella virus 1*, Human papillomavirus, *Neurospora crassa*, *Carassius auratus*, Human papillomavirus type 70, *Clostridium perfringens* str. 13"
- 1040 1170 23 "Danio rerio, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Sus scrofa*, *Oryza sativa* (*japonica* cultivar-group), *Clostridium tetani* E88, *Yersinia pestis* KIM, *Mus musculus*, *Caenorhabditis briggsae*, *Yersinia pestis* C092" 20
- 1041 1171 30 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Trypanosoma brucei*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Mutinus edulis*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group)"
- 1042 1172 31 "Homo sapiens, *Caenorhabditis briggsae*, *Schizosaccharomyces pombe*, *Saimiri boliviensis*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Porphyromonas gingivalis* W83, *Branchiostoma floridae*"
- 1043 1173 31 "East African cassava mosaic virus-Uganda2 (Uganda variant), *Homo sapiens*, *Plasmodium berghei*, East African cassava mosaic virus-Uganda2 Severe, *Mus musculus*, *Drosophila melanogaster*, Yaba-like disease virus, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*, *Medicago truncatula*" 30
- 1044 1174 41 "Shigella boydii, *Homo sapiens*, *Nostoc* sp. PCC 7120, *Drosophila melanogaster*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Xenopus laevis*, *Rattus norvegicus*, *Mus musculus*, *Helicobacter hepaticus* ATCC 51449"
- 1045 1175 43 "Enterococcus faecalis V583, *Streptococcus pyogenes* MGAS 315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Yersinia enterocolitica* (type 0:8), *Yersinia enterocolitica*, *Streptococcus agalactiae* 2603V/R, *Homo sapiens*, *Streptococcus agalactiae*, *Streptococcus agalactiae* NEM316, *Mus musculus*, *Lycopersicon esculentum*, *Pseudomonas syringae* pv. *tomato* str. DC3000, *Saccharomyces cerevisiae*" 40
- 1046 1176 25 "Streptococcus pneumoniae R6, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Enterococcus faecalis* V583, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, Murine pneumotropic virus, *Salmonella typhimurium*, *Lotus corniculatus* var. *japonicus*, *Caenorhabditis elegans*"
- 1047 1177 32 "Caenorhabditis elegans, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Vibrio natriegens*, *Listonella pelagia*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Dictyostelium discoideum*, *Candidatus Carsonella* 50

- ruddii, *Mus musculus*, *Borrelia burgdorferi* B31, *Methanosarcina acetivorans* C2A, Rice black streaked dwarf virus, Saimiriine herpesvirus 2, *Mycoplasma hominis*, *Oryza sativa*, *Arabidopsis thaliana*"
- 1048 1178 30 "Clostridium acetobutylicum, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Ciona intestinalis*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Sigmodon hispidus*, *Danio rerio*"
- 1049 1179 27 "*Homo sapiens*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Clostridium tetani* E 88, *Phthorimaea operculella* granulovirus, *Sus scrofa*, *Danio rerio*, *Arabidopsis thaliana*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Oryzias latipes*, *Clostridium perfringens* str. 13" 10
- 1050 1180 40 "*Mus musculus*, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Bactrocera correcta*, *Bactrocera murrayi*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Lucilia illustris*, *Caenorhabditis elegans*, *Danio rerio*"
- 1051 1181 28 "*Bos taurus*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Homo sapiens*, *Babesia bovis*, *Pan troglodytes*, *Danio rerio*"
- 1052 1182 36 "*Danio rerio*, *Homo sapiens*, *Mus musculus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Campylobacter jejuni* subsp. *jejuni* NCTC 1168, *Malawimonas jakobiformis*, *Haemophilus influenzae* Rd KW20, *Drosophila melanogaster*, Avian infectious bronchitis virus, *Canis familiaris*, *Candidatus Carsonella ruddii*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Sericomyrmex amabilis*, *Rhipicephalus sanguineus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Pleurotus ostreatus*, *Atelerox albiventris*, *Lucilia ampullacea*, *Pan troglodytes*, *Pasteurella multocida*, *Plasmodium falciparum*" 20
- 1053 1183 23 "*Deinococcus radiodurans*, *Homo sapiens*, *Mus musculus*"
- 1054 1184 31 "*Bacteroides thetaiotaomicron* VPI-5482, *Candidatus Blochmannia floridanus*, *Homo sapiens*, *Mus musculus*, *Xenopus laevis*, *Arabidopsis thaliana*, *Danio rerio*" 30
- 1055 1185 24 "*Arabidopsis thaliana*, *Mus musculus*, *Schizosaccharomyces pombe*, *Homo sapiens*, *Caenorhabditis elegans*, *Leptospira interrogans* serovar *lai* str. 56601"
- 1056 1186 24 "*Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*"
- 1057 1187 27 "*Mus musculus*, *Gallus gallus*, *Homo sapiens*, *Zea mays*, *Caenorhabditis elegans*, *Listeria innocua*"
- 1058 1188 25 "*Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Lemur catta*, *Papio anubis*, *Eurydera unicolor*, *Cyathostomum labratum*, *Danio rerio*"
- 1059 1189 29 "*Homo sapiens*, *Chlamydomonas reinhardtii*, *Schizosaccharomyces pombe*, *Mus musculus*, *Gallus gallus*, synthetic construct, *Rhizobium leguminosarum*, *Caenorhabditis elegans*" 40
- 1060 1190 24 "*Atelerox albiventris*, *Homo sapiens*, *Pan troglodytes*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Caenorhabditis briggsae*, *Lupinus luteus*"
- 1061 1191 28 "*Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Borrelia burgdorferi* B31, *Homo sapiens*, *Danio rerio*, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Mus musculus*, lepidopsocid RS-2001, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Melipona bico*"
- 1062 1192 24 "*Homo sapiens*, *Danio rerio*, *Arabidopsis thaliana*, *Mus mu* 50

- sculus, *Macaca fascicularis*, *Mycoplasma mycoides* subsp. *mycoides* SC, *Dictyostelium discoideum*, *Staphylococcus simulans*, *Prochlorococcus marinus*"
- 1063 1193 51 "Mus musculus, *Arabidopsis thaliana*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Dictyostelium discoideum*, *Schmidtea mediterranea*, *Schmidtea polychroa*, *Trypanosoma brucei*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*, *Plasmodium falciparum*, *Oryza sativa* (*japonica* cultivar-group), *Oryza sativa*, *Crax globulosa*, *Oryzomys palustris*"
- 1064 1194 24 "Homo sapiens, *Saccharomyces cerevisiae*, *Mus musculus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Bos taurus*, *Xylella fastidiosa* 9a5c, *Campylobacter lari*, *Danio rerio*, *Vibrio* sp. 41" 10
- 1065 1195 27 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Papio hamadryas*, *Oryza sativa* (*japonica* cultivar-group), *Acræa encedana*, *Acræa encendon*, *Plasmodium falciparum* 3D7"
- 1066 1196 32 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Trypanosoma brucei*, *Arabidopsis thaliana*, *Trypanosoma brucei brucei*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila melanogaster*, *Caenorhabditis elegans*, *Oryza sativa*, *Lycoreis albiflora*, *Cyprinus carpio*, *Rattus n*"
- 1067 1197 37 "*Medicago sativa* subsp. *sativa*, *Homo sapiens*, *Pan troglodytes*, *Mus musculus*, *Danio rerio*, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Fragaria x ananassa*, *Drosophila melanogaster*, *Marc hantia polymorpha*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Campylopod iella flagellacea*, *Brothera leana*, *Oryza sativa* (*japonica* cultivar-group), *Atractylocarpus alticaulis*, *Dicranodontium denudatum*, *Felis catus*, *Medicago truncatula*, *Papio anubis*, *Streptococcus agalactiae*, *Streptococcus pneumoniae*, *Sinorhizobium meliloti*, *Cucumis sativus*, *Saccharomyces cerevisiae*" 20
- 1068 1198 24 "Homo sapiens, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila willistoni*, *Liporrhopalum tentacularis*, *Canis familiaris*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Kradibia ohuensis*, *Aloeides pierus*, *Caenorhabditis elegans*, *Danio rerio*, *Methanocaldococcus jannaschii*"
- 1069 1199 24 "Homo sapiens, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bombyx mandarina*, *Bombyx mori*, *Methanococcus vannielii*, *Caenorhabditis elegans*, *Listeria innocua*, *Mus musculus*" 30
- 1070 1200 30 "Homo sapiens, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Tylecodon ventricosus*, *Cotyledon velutina*, *Cotyledon tomentosa*, *Cotyledon orbiculata*, *Tylecodon wallichii*, *Oceanobacillus iheyensis* HTE831, *Listeria monocytogenes*, *Pirellula* sp., *Danio rerio*"
- 1071 1201 27 "Mus musculus, *Homo sapiens*, *Caenorhabditis briggsae*, *Medicago truncatula*, *Geobacillus stearothermophilus*" 40
- 1072 1202 25 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Danio rerio*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Mycoplasma penetrans*, *Eikenella corrodens*"
- 1073 1203 27 "*Platycheirus peltatus*, *Temnoplectron aeneopiceum*, *Halictus parallelus*, *Formica pratensis*, *Aleochara lustrica*, *Thysanoteuthis rhombus*, *Meligethes coracinus*, *Malgasia merina*, *Potamonautes parvicorpus*, *Coenonympha tullia*, *Homarus americanus*, *Synchaeta* sp. AMD-"
- 1074 1204 29 "Equine herpesvirus 2, *Homo sapiens*, *Salmonella typhimurium* LT2, *Medicago truncatula*, *Mus musculus*, *Papio anubis*, *Crithidia fasciculata*, *Caenorhabditis elegans*, *Clostridium perfringens* str. 13, *Bacillus cereus* ATCC 1 50

- 4579, *Enterococcus faecalis* V583, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Oryza sativa* (japonica cultivar-group), *Gavialis gangeticus*, *Alligator mississippiensis*, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Schizosaccharomyces pombe*, *Arabidopsis thaliana*, *Danio rerio*, *Tomistoma schlegelii*, *Osteolaemus tetraspis*, *Crocodylus cataphractus*, *Crocodylus intermedius*, *Crocodylus rhombifer*, *Alligator sinensis*, *Paleosuchus trigonatus*, *Paleosuchus palpebrosus*, *Melanosuchus niger*, *Caiman latirostris*, *Caiman crocodilus*, *Acinetobacter* sp., *Acinetobacter lwoffii*"
- 1075 1205 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Danio rerio*, *Mus musculus*, *Clostridium tetani* E88, *Medicago truncatula*, *Dictyostelium discoideum*" 10
- 1076 1206 34 "Mus musculus, *Dictyostelium discoideum*, *Danio rerio*, *Homo sapiens*, *Culiseta impatiens*, *Chilo iridescent virus*, *Glycine max*, *Piscicola goemetra*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Calliphora vicina*, *Lotus corniculatus* var. *japonicus*, *Buchnera*"
- 1077 1207 51 "Plasmodium falciparum 3D7, *Homo sapiens*, *Danio rerio*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Plasmodium falciparum*, *Dama* sp., *Clusia torresii*, *Mus musculus*, *Drosophila melanogaster*, *Papio anubis*, *Caenorhabditis elegans*, *Sus scrofa*, *Fenneropenaeus chinensis*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Trypanosoma varani*, *Macaca fascicularis*, *Trypanosoma equiperdum*, *Clusia flava*, *Ictalurus punctatus*" 20
- 1078 1208 32 "Homo sapiens, *Rattus norvegicus*, *Arabidopsis thaliana*, *Nostoc* sp. PCC 7120, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Geobacillus stearothermophilus*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Guillardia theta*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Euglena longa*, *Saccharomyces cerevisiae*, *Haemophilus ducreyi*, *Haemophilus ducreyi* 35000HP, *Mazamastrongylus odocoilei*, *Bos taurus*"
- 1079 1209 38 "Homo sapiens, *Mus musculus*, *Litopenaeus setiferus*, *Didelphis virginiana*, *Rattus norvegicus*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Pan troglodytes*" 30
- 1080 1210 29 "Mus musculus, *Lotus corniculatus* var. *japonicus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Homo sapiens*, *Neocallimastix patriciarum*, *Medicago truncatula*, *Lycopersicon esculentum*, *Amsacta moorei* entomopoxvirus, *Danio rerio*, *Archaeoglobus fulgidus* DSM 4304, *Macaca mulatta*, *Caenorhabditis elegans*, *Papio anubis*, *Branchiostoma floridae*, *Bos taurus*, *Pan troglodytes*, *Candidatus Carsonella ruddii*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Tetrahymena thermophila*, *Rattus norvegicus*"
- 1081 1211 39 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum*, *Arabidopsis thaliana*, *Danio rerio*, *Canis familiaris*, *Tetrahymena thermophila*, *Dicentrarchus labrax*, *Equus caballus*, *Dictyostelium discoideum*, *Papio anubis*, *Gallus gallus*, *Sus scrofa*, *Schmidtea mediterranea*, *Zea mays*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*, *Rice hoja blanca virus*, *Macaca fascicularis*, *Bacillus cereus* ATCC 14579" 40
- 1082 1212 31 "Primula reidii, *Homo sapiens*, *Clostridium acetobutylicum*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Equine herpesvirus 2*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Schmidtea mediterranea*, *Streptococcus agalactiae* 2603V/R, *Primula minutissima*, *Papio anubis*, *Lactococcus lactis* subsp. *lactis*, *Streptococcus agalactiae* NEM316, *Bartonella tribocorum*, *Valdivia gayana*, *Forgesia racemosa*, *Plasmodium falciparum*" 50

um, *Mus musculus domesticus*, *Danio rerio*, *Neurospora crassa*, *Porphyra purpurea*, *Rattus norvegicus*, *Shigella flexneri* 2a str. 2457T, *Pan troglodytes*, *Drosophila melanogaster*, *Xenopus laevis*, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Primula nutans*, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli*, *Anabaena variabilis*"

1083 1213 24 "Mycoplasma genitalium, Homo sapiens, Mus musculus, Danio rerio, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Physalis severe mottle virus, Arabidopsis thaliana, Canis familiaris, Drosophila virilis, Onchocerca volvulus, Pan troglodytes, Mus sp."

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1084 1214 27 "Homo sapiens, Mus musculus, Ciona intestinalis, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Pisum sativum, Caenorhabditis elegans, Ateline herpesvirus 3, Encephalitozoon cuniculi, Ixodes hexagonus, Ovis aries"

1085 1215 27 "Homo sapiens, Arabidopsis thaliana, Locusta migratoria, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Listeria innocua, Mus musculus, Helicobacter pylori J99, Listeria monocytogenes"

1086 1216 32 "Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Drosophila melanogaster, Chlorobium tepidum TLS, Thermosynechococcus elongatus BP-1, Medicago truncatula"

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1087 1217 24 "Homo sapiens, Drosophila melanogaster, Mus musculus"

1088 1218 27 "Homo sapiens, Mus musculus, Mumps virus, Methanosarcina mazei Goe1, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Forficula scudderii, Prochlorococcus marinus subsp. marinus str. CCMP1375"

1089 1219 27 "Homo sapiens, Medicago truncatula, Plasmodium falciparum 3D7, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Neurospora crassa, Ciona intestinalis, Pan troglodytes"

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1090 1220 27 "Saccharomyces cerevisiae, Mus musculus, Homo sapiens, Caenorhabditis elegans, Clostridium tetani E88, Arabidopsis thaliana, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Drosophila melanogaster, Enterococcus faecalis, Danio rerio, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Vibrio parahaemolyticus, Mycoplasma penetrans, Brassica rapa, Methanocaldococcus jannaschii"

1091 1221 49 "Plasmodium falciparum, Aquifex aeolicus VF5, Plasmodium falciparum 3D7, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Bacillus anthracis str. A2012, Rattus norvegicus, Bacillus anthracis, Pan troglodytes, Dictyostelium discoideum, Macaca mulatta, Caenorhabditis elegans, Papaya ringspot virus, Papio anubis, Coccidioides immitis, Medicago truncatula, Thorea violacea"

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1092 1222 31 "Homo sapiens, Pan troglodytes, Arabidopsis thaliana, Oenothera elata subsp. hookeri, Takifugu rubripes, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Mus musculus, Listeria monocytogenes, Listeria innocua, Rattus norvegicus, Dictyostelium discoideum, Papio anubis"

1093 1223 20 "Methanosarcina mazei Goe1, Homo sapiens, Pasteurella multocida, Listeria innocua, Rattus norvegicus, Mus musculus, Equus caballus"

1094 1224 27 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Nicotiana tabacum, Zea mays, Shrimp white spot syndrome virus, Thamnophis sirtali"

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- s, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Cryptophlebia leucotreta* granulovirus, *Danio rerio*, *Rattus norvegicus*, *Cyprinus carpio*, *Pan troglodytes*, *Drosophila melanogaster*, *Conocephalum conicum*, *Arabidopsis thaliana*, *Papio anubis*, Simian immunodeficiency virus, *Atropa belladonna*, *Spinacia oleracea*, *Plasmodium falciparum* 3D7, Tobacco etch virus, *Triticum aestivum*"
- 1095 1225 21 "Homo sapiens, *Dictyostelium discoideum*, *Oryza sativa* (*japonica* cultivar-group), *Helicobacter pylori* 26695, *Drosophila melanogaster*, *Mus musculus*, *Methanosarcina acetivorans* C2A, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* TW-183, *Chlamydophila pneumoniae* J138, *Chlamydophila pneumoniae*" 10
- 1096 1226 33 "Homo sapiens, *Beta vulgaris* subsp. *vulgaris*, *Mus musculus*, *Rattus norvegicus*, *Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Anabaena* sp., *Drosophila melanogaster*, *Oryza sativa*, *Danio rerio*, *Anopheles gambiae*"
- 1097 1227 24 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*, *Mus musculus*, *Schmidtea mediterranea*, *Ips nobilis*, *Orthotomus erosus*, *Laminaria digitata*, *Caenorhabditis elegans*, *Danio rerio*"
- 1098 1228 24 "Mus musculus, Homo sapiens, *Caenorhabditis elegans*, *Rattus norvegicus*, *Drosophila melanogaster*, *Aeromonas hydrophila*, *Debaryomyces occidentalis*" 20
- 1099 1229 27 "Homo sapiens, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Leptospira interrogans* serovar *lai* str. 56601, *Mus musculus*, *Oryza sativa*, *Caenorhabditis elegans*, *Gossypium hirsutum*, *Gallus gallus*"
- 1100 1230 32 "Homo sapiens, *Mus musculus*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Arabidopsis thaliana*, *Agrocybe aegerita*, *Schizosaccharomyces pombe*, *Plasmodium falciparum*, Human immunodeficiency virus 1, *Dictyostelium discoideum*, *Prochlorococcus marinus*, *Bacillus thuringiensis* serovar *israelensis*, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum* 3D7, *Helicobacter pylori* J99, *Pyrococcus horikoshii*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Helicobacter hepaticus* ATCC 51449" 30
- 1101 1231 25 "Linum usitatissimum, *Cucumis sativus*, Homo sapiens, *Streptococcus pyogenes* M1 GAS, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Streptococcus pyogenes*, *Onchocerca volvulus*, *Streptococcus pyogenes* SSI-1, *Oryza sativa* (*japonica* cultivar-group), *Botryotinia fuckeliana*, *Nycticebus coucang*"
- 1102 1232 25 "Mus musculus, Homo sapiens, *Gallus gallus*, *Oryza sativa* (*japonica* cultivar-group), *Ctenocephalides felis*, *Medicago truncatula*, *Drosophila melanogaster*, *Papio anubis*, *Danio rerio*, *Schizosaccharomyces pombe*" 40
- 1103 1233 27 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Danio rerio*, *Helicobacter pylori*"
- 1104 1234 23 "Mus musculus, Homo sapiens, *Pyrobaculum aerophilum* str. IM2, *Pan troglodytes*, *Oryza sativa* (*japonica* cultivar-group), *Salmonella enterica* subsp. *enterica* serovar *Typhi* Ty2, *Arabidopsis thaliana*, *Salmonella enterica* subsp. *enterica* serovar *Typhi*, *Danio rerio*, *Takifugu rubripes*, *Daucus carota*"
- 1105 1235 29 "Mus musculus, Homo sapiens, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Rattus norvegicus*, *Clostridium tetani* E88, *Medicago truncatula*, *Arabidops* 50

- is thaliana, *Agrobacterium tumefaciens*, *Macaca fascicularis*"
- 1106 1236 31 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Arabidopsis thaliana*, *Brassica oleracea*, *Plasmodium falciparum* 3D7, *Schizosaccharomyces pombe*, *Penicillium citrinum*"
- 1107 1237 48 "Mus musculus, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Papio hamadryas*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Rattus norvegicus*, *Pan troglodytes*, *Danio rerio*, *Arachis hypogaea*, *Tetrahymena thermophila*, *Gallus gallus*, *Plasmodium falciparum*, *Trypanosoma brucei*, *Papio anubis*" 10
- 1108 1238 35 "Homo sapiens, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Mus musculus*, *Leptospira interrogans* serovar *lai* str. 56601, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Clostridium perfringens* str. 13"
- 1109 1239 29 "Homo sapiens, *Drosophila melanogaster*, *Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Lotus corniculatus* var. *japonicus*, *Ciona intestinalis*"
- 1110 1240 33 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Danio rerio*, *Treponema denticola*, *Leptospira interrogans* serovar *lai* str. 56601, *Papaya ringspot virus*, *Oryza sativa* (japonica cultivar-group), *Trypanosoma brucei*, *Pan troglodytes*, *Bos taurus*, *Enterococcus faecalis* V583, *Ehrlichia canis*, *Drosophila melanogaster*, *Papio anubis*, *Oryza sativa*, *Papio anubis*, *Nicotiana glauca*, *Mamestra configurata* nucleopolyhedrovirus B" 20
- 1111 1241 28 "Arabidopsis thaliana, *Medicago truncatula*, *Mus musculus*, *Homo sapiens*, *Dictyostelium discoideum*, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Shewanella oneidensis* MR-1, *Sus scrofa*, *Litopenaeus vannamei*, *Brassica napus* var. *napus*, *Caenorhabditis briggsae*, *Drosophila hydei*, *Oceanobacillus iheyensis* HTE831, *Proteus vulgaris*, *Caenorhabditis elegans*, *Danio rerio*, *Saturnia japonica*" 30
- 1112 1242 27 "Streptococcus agalactiae NEM316, *Homo sapiens*, *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Rattus norvegicus*, *Mus musculus*, *Danio rerio*"
- 1113 1243 51 "Homo sapiens, *Reticulitermes flavipes*, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Archaeoglobus fulgidus* DSM 4304, *Sus scrofa*, *Mus musculus*, *Clostridium acetobutylicum*, *Rickettsia rickettsii*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Drosophila melanogaster*, *Medicago truncatula*, *Rattus norvegicus*, *Methanosarcina mazei* Goe1, *Saccharomyces cerevisiae*, *Arabidopsis thaliana*, *Antheraea pernyi*, *Paramecium caudatum*, *Emberiza citrinella*, *Danio rerio*, *Morone saxatilis*" 40
- 1114 1244 48 "Homo sapiens, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Danio rerio*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Ectocarpus siliculosus* virus, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Hypocrea jecorina*, *Trypanosoma cruzi*, *Methanosarcina acetivorans* C2A, *Human immunodeficiency virus 1*, *Plasmodium falciparum*, *Ajellomyces capsulatus*, *Cricetulus* sp., *Pan troglodytes*, *Sulfolobus solfataricus*, *Arabidopsis thaliana*, *Medicago truncatula*, *Papio anubis*"
- 1115 1245 30 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*, *Listeria innocua*, *Nostoc*" 50

sp. PCC 7120"

1116 1246 24 "Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Mus musculus, Mycobacterium leprae, Candida albicans, Zea mays, Sulfolobus solfataricus, Neisseria meningitidis Z2491, Neisseria meningitidis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Saccharomyces cerevisiae, Danio rerio, Nicotiana glauca, Streptococcus ferus"

1117 1247 27 "Danio rerio, Homo sapiens, Medicago truncatula, Physoderma fairmairei, Odontochela cayennensis, Ctenophora consobrina, Cucumis sativus, Mus musculus, Vibrio parahaemolyticus, Saccharomyces cerevisiae, Methanocaldococcus jannaschii"

1118 1248 28 "Medicago truncatula, Mus musculus, Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Danio rerio, Sulfolobus tokodaii, Nostoc sp. PCC 7120"

1119 1249 29 "Homo sapiens, Polypterus bichir, Danio rerio, Plasmodium falciparum 3D7, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Medicago truncatula"

1120 1250 36 "Campylobacter jejuni subsp. jejuni NCTC 11168, Bacillus anthracis str. Ames, Streptococcus pyogenes SSI-1, Homo sapiens, Dictyostelium discoideum, Medicago truncatula, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mus musculus, Enterococcus faecalis V583, Drosophila melanogaster, Arabidopsis thaliana, Danio rerio, Physarum polycephalum"

1121 1251 27 "Homo sapiens, Plasmodium falciparum 3D7, Clostridium perfringens str. 13, Danio rerio, Nephroselmis olivacea, Bacillus cereus ATCC 14579, Mus musculus, Aquifex aeolicus VF5, Caenorhabditis elegans, Mycoplasma penetrans, Medicago truncatula"

1122 1252 31 "Homo sapiens, Felis catus, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Arabidopsis thaliana, Caenorhabditis elegans, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Pseudomonas putida, Caenorhabditis briggsae, Bacillus subtilis subsp. subtilis str. 168"

1123 1253 31 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Oryza sativa, Pyrococcus horikoshii, Danio rerio, Schizosaccharomyces pombe"

1124 1254 27 "Dictyostelium discoideum, Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Cryptococcus neoformans var. grubii, Lasioglossum noctivagum, Arabidopsis thaliana, Plasmodium falciparum 3D7, Encephalitozoon cuniculi, Cryptosporidium parvum, Apis mellifera ligustica"

1125 1255 23 "Homo sapiens, Vibrio vulnificus CMCP6, Arabidopsis thaliana, Mus musculus, Trypanosoma brucei, Bacillus subtilis subsp. subtilis str. 168"

1126 1256 25 "Danio rerio, Macaca mulatta, Homo sapiens, Mus musculus, Mycoplasma pulmonis, Canis familiaris, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)"

1127 1257 24 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Dictyostelium discoideum, Streptococcus pyogenes MGAS315, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Streptococcus pyogenes SSI-1, Bacillus cereus ATCC 145

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- 79, Western X phytoplasma, Bacillus anthracis str. Ames, Thrips imaginis, Pan troglodytes, Plasmodium vivax, Plasmodium falciparum 3D7, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Danio rerio, Bacteriophage SPBc2"
- 1128 1258 31 "Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames"
- 1129 1259 34 "Homo sapiens, Rattus norvegicus, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Pan troglodytes, Arabidopsis thaliana, Gallus gallus, Equus caballus, Medicago truncatula, Dictyostelium discoideum, Papio anubis, Canis familiaris, Danio rerio, Caenorhabditis briggsae, Neurospora crassa, Plasmodium falciparum, Trypanosoma cruzi, Drosophila melanogaster, Papio anubis anubis" 10
- 1130 1260 27 "Homo sapiens, Mus musculus, Rattus norvegicus, Danio rerio, Drosophila melanogaster, Streptococcus pneumoniae, Pan troglodytes, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Tetrahymena thermophila"
- 1131 1261 29 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Shrimp white spot syndrome virus, Danio rerio, Pan troglodytes, Drosophila melanogaster, Sus scrofa, Caenorhabditis elegans, Plasmodium falciparum 3D7" 20
- 1132 1262 32 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Listeria innocua, Danio rerio"
- 1133 1263 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Sus scrofa, Rattus norvegicus, Dictyostelium discoideum, Danio rerio, Leishmania major, Arabidopsis thaliana, Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Papio anubis, Caenorhabditis elegans, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus"
- 1134 1264 48 "Homo sapiens, Mus musculus, Pan troglodytes, Rattus norvegicus"
- 1135 1265 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Rattus norvegicus, Caenorhabditis elegans, Hordeum vulgare subsp. vulgare, Arabidopsis thaliana, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Drosophila melanogaster, Papio anubis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Lotus corniculatus var. japonicus" 30
- 1136 1266 33 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Plasmodium falciparum 3D7, Papio anubis, Danio rerio, Lactobacillus plantarum WCFS1"
- 1137 1267 34 "Homo sapiens, Xenopus laevis, Mus musculus, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Pfiesteria piscicida, Strongylocentrotus purpuratus, Haliotis kamtschatkana, Zea mays, Brugia pahangi, Danio rerio, Takifugu rubripes, Oryza sativa, Rattus norvegicus, Drosophila virilis, Tadaropsis eblanae, Ropalidia revolutionalis, Drosophila melanogaster, Loligo gahi, Coptotermes formosanus, Lytechinus variegatus, Echinocardium cordatum, Apelocoma coerulescens, Canis familiaris, Phytophthora cinnamomi, Anopheles funestus, Bigelowiella natans" 40
- 1138 1268 31 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Schizosaccharomyces pombe"
- 1139 1269 31 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Drosophila melanogaster, Pan troglodytes, Oryza sativa (japonica cultivar-group)" 50

- , *Oceanobacillus iheyensis* HTE831, *Danio rerio*, *Caenorhabditis elegans*, *Bos taurus*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Bombyx mori*, *Rattus norvegicus*, *Medicago truncatula*, *Bacillus halodurans*"
- 1140 1270 34 "Plasmodium falciparum 3D7, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Danio rerio*, *Chlorella vulgaris*, *Bacillus halodurans*, *Bacteroides thetaiotaomicron* VPI-5482, *Oryctolagus cuniculus*, *Clostridium tetani* E88, Human immunodeficiency virus 1, *Sorghum bicolor*"
- 1141 1271 43 "Staphylococcus aureus, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Pan troglodytes*, *Rattus norvegicus*, *Atelerix albiventris*" 10
- 1142 1272 24 "Arabidopsis thaliana, *Mycoplasma gallisepticum* R, *Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Helicobacter hepaticus* ATCC 51449, *Danio rerio*, *Listeria monocytogenes*, *Schizosaccharomyces pombe*, *Oryza sativa* (*japonica* cultivar-group)"
- 1143 1273 57 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Papio anubis*, *Drosophila melanogaster*, *Papaya ringspot virus*, *Sus scrofa*, *Chilo iridescent virus*, *Prochlorococcus marinus*, *Trypanosoma brucei*, *Lotus corniculatus* var. *japonicus*, *Oceanobacillus iheyensis* HTE831, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Bacillus cereus* ATCC 14579, *Rattus norvegicus*, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Plasmodium falciparum* 3D7" 20
- 1144 1274 32 "Mus musculus, *Danio rerio*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Phthorimaea operculella* granulovirus, *Clostridium tetani* E88, *Lotus corniculatus* var. *japonicus*, *Oceanobacillus iheyensis* HTE831, *Buchnera aphidicola*, *Caenorhabditis elegans*"
- 1145 1275 27 "Mus musculus, *Homo sapiens*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Thermoplasma volcanium*, *Oryza sativa* (*japonica* cultivar-group)" 30
- 1146 1276 24 "Homo sapiens, *Mus musculus*, *Staphylococcus aureus* subsp. *aureus* N315, *Schizosaccharomyces pombe*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Medicago truncatula*, *Staphylococcus epidermidis* ATCC 12228, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*"
- 1147 1277 32 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Atelerix albiventris*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Epifagus virginiana*, *Oryza sativa*, *Pan troglodytes*, *Trypanosoma brucei*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Plasmodium falciparum*, *Dictyostelium discoideum*, *Sus scrofa*, *Arabidopsis thaliana*"
- 1148 1278 35 "Arabidopsis thaliana, *Homo sapiens*, *Sulfolobus tokodaii* 40
, *Mus musculus*, *Macaca mulatta*, *Papio anubis*, *Prototheca wickerhamii*, *Borrelia burgdorferi* B31, *Oryza sativa* (*japonica* cultivar-group), *Guillardia theta*, *Pan troglodytes*, *Methanocaldococcus jannaschii*, *Bacillus anthracis* str. Ames, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Mycoplasma pulmonis*, *Caenorhabditis elegans*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Agroclybe aegerita*, *Danio rerio*, *Plasmodium falciparum*, *Porphyra purpurea*"
- 1149 1279 60 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), Human papillomavirus type 16, *Papio anubis*, *Plasmodium* 50

- falciparum 3D7, *Oryza sativa*, *Plasmodium falciparum*, *Rattus norvegicus*, *Pan troglodytes*, *Arabidopsis thaliana*"
- 1150 1280 28 "Clostridium perfringens str. 13, *Homo sapiens*, *Macaca mulatta*, *Papio anubis*, *Danio rerio*, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Streptococcus agalactiae* NEM316, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Mycoplasma penetrans*"
- 1151 1281 27 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*"
- 1152 1282 23 "Homo sapiens, *Sulfolobus tokodaii*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*" 10
- 1153 1283 37 "Dictyostelium discoideum, *Mus musculus*, *Drosophila melanogaster*, *Pfiesteria piscicida*, *Haliotis kamtschatkana*, *Danio rerio*, *Homo sapiens*, *Ropalidia revolutionalis*, *Oryza sativa* (*japonica* cultivar-group), *Aphelocoma coerulescens*, Shrimp white spot syndrome virus, *Anopheles funestus*, *Xenopus laevis*, *Neurospora crassa*, *Cryptosporidium parvum*, *Pan troglodytes*, *Trypanosoma cruzi*, *Gibberella zeae*, *Bigelowiella natans*, *Todaropsis eblanae*, *Echinocardium cordatum*, *Branchiostoma floridae*, *Strongylocentrotus purpuratus*, *Canis familiaris*, *Zea mays*, *Arabidopsis thaliana*, *Coptotermes formosanus*" 20
- 1154 1284 34 "Homo sapiens, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Epifagus virginiana*, *Trypanosoma brucei*, *Rattus norvegicus*, *Drosophila melanogaster*, *Atelerix albiventris*, *Oryza sativa*, *Pan troglodytes*, *Plasmodium falciparum*, *Lotus corniculatus* var. *japonicus*"
- 1155 1285 35 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, *Papio anubis*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*, *Oryza sativa*, *Sulfolobus tokodaii*, *Neurospora crassa*, *Danio rerio*"
- 1156 1286 29 "Homo sapiens, *Mus musculus*, *Papio anubis*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Oryza sativa* (*japonica* cultivar-group), *Clostridium perfringens* str. 13, *Bos taurus*, *Caenorhabditis briggsae*" 30
- 1157 1287 35 "Homo sapiens, *Dictyostelium discoideum*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*"
- 1158 1288 27 "Homo sapiens, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, *Mus musculus*"
- 1159 1289 27 "Homo sapiens, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*"
- 1160 1290 37 "Arabidopsis thaliana, *Homo sapiens*, *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Staphylococcus aureus* subsp. *aureus* MW2, *Plasmodium falciparum*" 40
- 1161 1291 25 "Mus musculus, *Rattus norvegicus*, *Homo sapiens*, *Arabidopsis thaliana*, *Candida albicans*, *Danio rerio*, *Buchnera aphidicola* str. Bp (*Baizonia pistaciae*), *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Gasterosteus aculeatus*, *Pan troglodytes*"
- 1162 1292 36 "Drosophila melanogaster, *Homo sapiens*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pan troglodytes*, *Bacillus cereus* ATCC 14579, *Medicago truncatula*, *Danio rerio*"
- 1163 1293 31 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Pan troglodytes*, *Drosophila melanogaster*, *Lycopersicon esculentum*, *Clostridium acetob* 50

utylicum, *Lotus corniculatus* var. japonicus"

- 1164 1294 40 "Caenorhabditis briggsae, Homo sapiens, Schizosaccharomyces pombe, Danio rerio, Mus musculus, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Coxiella burnetii RSA 493, Medicago truncatula, Dictyostelium discoideum, Clostridium tetani E88, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Fowlpox virus, Rattus norvegicus, Bacillus cereus ATCC 14579, Atelerix albiventris, Staphylococcus epidermidis ATCC 12228, Papio anubis"
- 1165 1295 52 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Pan troglodytes, Macaca mulatta, Papio anubis" 10
- 1166 1296 24 "Homo sapiens, Drosophila melanogaster, Mus musculus, Medicago truncatula, Pan troglodytes, Gallus gallus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Aleochara clavicornis"
- 1167 1297 27 "Homo sapiens, Mus musculus, Danio rerio, Clostridium perfringens str. 13, Trypanosoma cruzi, Arabidopsis thaliana, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group)"
- 1168 1298 25 "Homo sapiens, Mus musculus, Mycoplasma gallisepticum R, Dictyostelium discoideum, Drosophila melanogaster, Oryza sativa, Oryza sativa (japonica cultivar-group), Danio rerio"
- 1169 1299 28 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lotus corniculatus var. japonicus, Rattus norvegicus, Plasmodium falciparum 3D7" 20
- 1170 1300 29 "Homo sapiens, Danio rerio, Mus musculus, Staphylococcus epidermidis ATCC 12228, Caenorhabditis briggsae, Bacillus anthracis str. Ames, Drosophila melanogaster, Bovine herpesvirus 4, Mycoplasma pulmonis, Arabidopsis thaliana, Trypanosoma brucei, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Saimiriine herpesvirus 2, Rattus norvegicus" 30
- 1171 1301 32 "Homo sapiens, Oryza sativa (japonica cultivar-group), Pan troglodytes, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Danio rerio, Cryptosporidium parvum"
- 1172 1302 24 "Ureaplasma urealyticum, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Sulfolobus tokodaii"
- 1173 1303 25 "Lotus corniculatus var. japonicus, Didelphis virginiana, Mus musculus, Homo sapiens, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae J138, Danio rerio, Chlamydophila pneumoniae TW-183, Cryptosporidium parvum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Arabidopsis thaliana, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis briggsae, Mycoplasma penetrans, Equus caballus, Dictyostelium discoideum, Pan troglodytes, Drosophila melanogaster, Sus scrofa, Oryza sativa (japonica cultivar-group), Porphyromonas gingivalis W83, Listeria monocytogenes, Listeria innocua, Prochlorococcus marinus subsp. marinus str. CCMP1375, Takifugu rubripes, Rattus norvegicus, Clostridium perfringens str. 13" 40
- 1174 1304 24 "Homo sapiens, Plasmodium falciparum 3D7, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Mus musculus, Danio rerio, Nostoc sp. PCC 7120"
- 1175 1305 25 "Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogast 50

- er, Plasmodium falciparum 3D7, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, Danio rerio"
- 1176 1306 31 "Homo sapiens, Mus musculus, Mycoplasma gallisepticum R, Drosophila melanogaster, Tetrahymena pyriformis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Pan troglodytes, Dictyostelium discoideum, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Pyrococcus horikoshii, Synechocystis sp. PCC 6803, Staphylococcus aureus subsp. aureus N315, Saccharomyces cerevisiae, Haemophilus ducreyi 35000HP, Helicobacter hepaticus ATCC 51449, Staphylococcus aureus subsp. aureus Mu50"
- 1177 1307 31 "Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Sus scrofa, Rattus norvegicus, Arabidopsis thaliana, Bacillus anthracis str. Ames, Borrelia burgdorferi B31, Dictyostelium discoideum, Oryza sativa (indica cultivar-group), Solanum demissum, Neurospora crassa, Danio rerio, Pan troglodytes, Drosophila melanogaster, Papio anubis, Borrelia burgdorferi" 10
- 1178 1308 27 "Mus musculus, Drosophila melanogaster, Homo sapiens, Sulfolobus tokodaii, Danio rerio"
- 1179 1309 35 "Mus musculus, Homo sapiens, Enterococcus faecalis V583, Equus caballus, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Buchnera aphidicola" 20
- 1180 1310 31 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Oryza sativa, Borrelia burgdorferi, Brassica oleracea var. botrytis, Brassica oleracea, Arabidopsis thaliana, Caenorhabditis briggsae, Danio rerio, Pan troglodytes, Dictyostelium discoideum, Bos taurus, Drosophila melanogaster, Lycopersicon esculentum, Streptococcus pyogenes MGAS315, Caenorhabditis elegans, Streptococcus pyogenes SSI-1, Prochlorococcus marinus subsp. marinus str. CCMP 1375"
- 1181 1311 24 "Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Mus musculus"
- 1182 1312 23 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Rattus norvegicus" 30
- 1183 1313 35 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Danio rerio, Oceanobacillus iheyensis HTE831, Caenorhabditis elegans, Pan troglodytes, Nostoc sp. PCC 7120, Triticum monococcum, Sphaeroides nephelus, Caenorhabditis briggsae, Mus musculus domesticus, Plasmodium falciparum 3D7"
- 1184 1314 31 "Mus musculus, Sus scrofa, Homo sapiens, Caenorhabditis elegans, Danio rerio, Rattus norvegicus, Borrelia burgdorferi B31, Drosophila melanogaster, Arabidopsis thaliana, Staphylococcus aureus, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50" 40
- 1185 1315 27 "Mus musculus, Mycoplasma penetrans, Medicago truncatula, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Prochlorococcus marinus, Clostridium perfringens str. 13, Pan troglodytes, Clostridium tetani E88, Caenorhabditis elegans, Arabidopsis thaliana, Caenorhabditis briggsae, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Ornithorhynchus anatinus"
- 1186 1316 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Danio rerio, Mus musculus"
- 1187 1317 29 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, 50

- Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Listeria innocua*, *Caenorhabditis elegans*, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC C 25586, *Sorghum bicolor*"
- 1188 1318 36 "Homo sapiens, *Mus musculus*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Lotus corniculatus* var. *japonicus*, *Papio anubis*, *Clostridium perfringens* str. 13, *Didelphis virginiana*"
- 1189 1319 31 "Homo sapiens, *Mus musculus*, *Pan troglodytes*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Caenorhabditis briggsae*, *Listeria innocua*" 10
- 1190 1320 28 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Rattus norvegicus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Danio rerio*, *Oceano bacillus iheyensis* HTE831"
- 1191 1321 27 "Homo sapiens, *Clostridium perfringens* str. 13, *Oryza sativa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Listeria monocytogenes*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Drosophila melanogaster*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mycoplasma pulmonis*, *Arabidopsis thaliana*"
- 1192 1322 25 "Homo sapiens, *Chlorella vulgaris*, *Caenorhabditis briggsae*, *Mus musculus*, *Danio rerio*" 20
- 1193 1323 32 "*Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Sorghum bicolor*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Drosophila melanogaster*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*"
- 1194 1324 32 "*Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*, *Staphylococcus epidermidis* ATCC 12228, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Drosophila melanogaster*, *Ureaplasma urealyticum*, *Carollia perspicillata*, *Pan troglodytes*"
- 1195 1325 27 "*Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Vibrio parahaemolyticus*, *Pan troglodytes*, *Ureaplasma urealyticum*, *Bos taurus*, *Danio rerio*" 30
- 1196 1326 20 "*Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Homo sapiens*, *Drosophila melanogaster*, *Pan troglodytes*"
- 1197 1327 45 "*Mus musculus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Heliothis zea* virus 1, *Lotus corniculatus* var. *japonicus*"
- 1198 1328 32 "*Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Homo sapiens*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Lycopersicon esculentum*, *Plasmodium falciparum*, *Arabidopsis thaliana*, *Trypanosoma brucei*, *Saccharomyces cerevisiae*, *Rice hoja blanca virus*" 40
- 1199 1329 27 "*Homo sapiens*, *Drosophila melanogaster*, *Bacillus cereus* ATCC 14579, *Drosophila littoralis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Danio rerio*, *Sulfolobus tokodaii*, *Caenorhabditis elegans*"
- 1200 1330 29 "*Mus musculus*, *Homo sapiens*, *Medicago truncatula*, *Sulfolobus tokodaii*, *Staphylococcus aureus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* MW2, *Nostoc* sp. PCC 7120"
- 1201 1331 23 "*Mus musculus*, *Homo sapiens*, *Bacillus anthracis* str. *Ame*" 50

- s, *Lotus corniculatus* var. *japonicus*"
- 1202 1332 27 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum* 3D7, *Mus musculus*, *Oryza sativa*, *Pan troglodytes*, *Arabidopsis thaliana*, *Danio rerio*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Zea mays*"
- 1203 1333 20 "Mus musculus, Homo sapiens"
- 1204 1334 23 "Homo sapiens, Danio rerio, Mus musculus"
- 1205 1335 24 "Homo sapiens, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Prochlorococcus marinus*, *Oryza sativa*" 10
- 1206 1336 23 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*"
- 1207 1337 27 "*Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Danio rerio*, *Rattus norvegicus*"
- 1208 1338 24 "*Thermoplasma volcanium*, Homo sapiens, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Oryza sativa*, *Arabidopsis thaliana*, *Candidatus Carsonella ruddii*, *Dictyostelium discoideum*, *Danio rerio*"
- 1209 1339 36 "Homo sapiens, *Danio rerio*, *Drosophila melanogaster*, *Rattus norvegicus*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Pan troglodytes*, *Dictyostelium discoideum*, *Strongyloides stercoralis*, *Trypanosoma brucei*, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*" 20
- 1210 1340 34 "*Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Heliothis zea virus 1*, *Danio rerio*, Homo sapiens, *Drosophila melanogaster*, *Saccharomyces cerevisiae*, *Medicago truncatula*, *Poncirus trifoliata*, *Schizosaccharomyces octosporus*, *Naegleria gruberi*, *Amsacta moorei entomopoxvirus*, *Mus musculus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Clostridium tetani* E88, *Bos taurus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Guillardia theta*, *Plasmodium falciparum*, *Sterkiella histriomuscorum*, *Oryza sativa* (*japonica* cultivar-group)"
- 1211 1341 31 "*Enterococcus faecalis* V583, *Plasmodium falciparum* 3D7, Homo sapiens, *Mus musculus*, *Atelerix albiventris*, *Medicago truncatula*, *Toxoplasma gondii*, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Muntiacus muntjak*, *Caenorhabditis elegans*, *Danio rerio*, *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Candidatus Blochmannia floridanus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oceanobacillus iheyensis* HTE831, *Sulfolobus tokodaii*, *Saccharomyces cerevisiae*, *Nostoc* sp. PCC 7120" 30
- 1212 1342 27 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Caenorhabditis briggsae*, *Nostoc* sp. PCC 7120"
- 1213 1343 23 "Homo sapiens, *Mus musculus*" 40
- 1214 1344 31 "*Drosophila melanogaster*, Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Plasmodium falciparum* 3D7, *Shrimp white spot syndrome virus*, *Oceanobacillus iheyensis* HTE831, *Campylobacter jejuni*"
- 1215 1345 25 "*Drosophila melanogaster*, Homo sapiens, *Arabidopsis thaliana*, *Borrelia burgdorferi* B31, *Mus musculus*, *Borrelia burgdorferi*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Listeria monocytogenes*, *Danio rerio*"
- 1216 1346 25 "Homo sapiens, *Mus musculus*, *Helicobacter hepaticus* ATCC 51449"
- 1217 1347 23 "*Oryza sativa* (*japonica* cultivar-group), *Drosophila mela* 50

nogaster, <i>Mus musculus</i> , <i>Homo sapiens</i> , <i>Guillardia theta</i> "			
1218	1348	23	" <i>Sulfolobus solfataricus</i> , <i>Danio rerio</i> , <i>Buchnera aphidicola</i> str. Bp (<i>Baizongia pistaciae</i>), <i>Mus musculus</i> , <i>Homo sapiens</i> , <i>Bombyx mori</i> "
1219	1349	27	" <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Danio rerio</i> "
1220	1350	24	" <i>Homo sapiens</i> , <i>Danio rerio</i> , <i>Drosophila melanogaster</i> , <i>Mus musculus</i> , <i>Lotus corniculatus</i> var. <i>japonicus</i> , <i>Mycoplasma penetrans</i> , <i>Bacteroides thetaiotaomicron</i> VPI-5482, <i>Pan troglodytes</i> , <i>Oryza sativa</i> (<i>japonica</i> cultivar-group)"
1221	1351	24	" <i>Danio rerio</i> , <i>Mus musculus</i> , <i>Homo sapiens</i> , <i>Pan troglodytes</i> , <i>Arabidopsis thaliana</i> , <i>Plasmodium falciparum</i> 3D7, <i>Helicobacter hepaticus</i> ATCC 51449" 10
1222	1352	102	" <i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Typhi</i> Ty2, <i>Staphylococcus aureus</i> , <i>Mus musculus</i> , <i>Listeria monocytogenes</i> , <i>Helicobacter hepaticus</i> ATCC 51449, <i>Coxiella burnetii</i> RSA 493, <i>Drosophila melanogaster</i> , <i>Plasmodium falciparum</i> 3D7, <i>Homo sapiens</i> , <i>Triticum aestivum</i> , <i>Caenorhabditis briggsae</i> , <i>Arabidopsis thaliana</i> , <i>Zea mays</i> "
1223	1353	27	" <i>Oceanobacillus iheyensis</i> HTE831, <i>Drosophila melanogaster</i> , <i>Homo sapiens</i> , <i>Lycopersicon esculentum</i> , <i>Bos taurus</i> , <i>Mus musculus</i> , <i>Danio rerio</i> , <i>Lactococcus lactis</i> , <i>Pan troglodytes</i> , <i>Caenorhabditis elegans</i> , <i>Lotus corniculatus</i> var. <i>japonicus</i> , <i>Chlamydophila pneumoniae</i> J138, <i>Chlamydophila pneumoniae</i> TW-183" 20
1224	1354	54	" <i>Oceanobacillus iheyensis</i> HTE831, <i>Sus scrofa</i> , <i>Mus musculus</i> , <i>Homo sapiens</i> , <i>Drosophila melanogaster</i> , <i>Arabidopsis thaliana</i> "
1225	1355	24	" <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Lotus corniculatus</i> var. <i>japonicus</i> , <i>Oryza sativa</i> (<i>japonica</i> cultivar-group), <i>Pan troglodytes</i> , <i>Arabidopsis thaliana</i> "
1226	1356	25	" <i>Chlamydophila caviae</i> GPIC, <i>Bacillus cereus</i> ATCC 14579, <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Danio rerio</i> , <i>Dictyostelium discoideum</i> , <i>Arabidopsis thaliana</i> "
1227	1357	27	" <i>Danio rerio</i> , <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Dictyostelium discoideum</i> , <i>Mycoplasma gallisepticum</i> R, <i>Rattus norvegicus</i> , <i>Pan troglodytes</i> , <i>Drosophila melanogaster</i> , <i>Caenorhabditis elegans</i> , <i>Lotus corniculatus</i> var. <i>japonicus</i> , <i>Oryza sativa</i> (<i>japonica</i> cultivar-group)" 30
1228	1358	24	" <i>Homo sapiens</i> , <i>Oryza sativa</i> (<i>japonica</i> cultivar-group), <i>Danio rerio</i> "
1229	1359	37	" <i>Mus musculus</i> , <i>Homo sapiens</i> , <i>Mycoplasma penetrans</i> , <i>Arabidopsis thaliana</i> , <i>Haemophilus ducreyi</i> 35000HP, <i>Danio rerio</i> "
1230	1360	25	" <i>Arabidopsis thaliana</i> , <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Bovine herpesvirus 4</i> , <i>Drosophila melanogaster</i> , <i>Danio rerio</i> "
1231	1361	28	" <i>Mus musculus</i> , <i>Homo sapiens</i> , <i>Caenorhabditis elegans</i> , <i>Bacillus cereus</i> ATCC 14579, <i>Medicago truncatula</i> , <i>Danio rerio</i> " 40
1232	1362	23	" <i>Danio rerio</i> , <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Sulfolobus tokodaii</i> "
1233	1363	23	" <i>Mus musculus</i> , <i>Homo sapiens</i> , <i>Mycoplasma gallisepticum</i> R, <i>Porcine parvovirus</i> , <i>Drosophila melanogaster</i> , <i>Chimpanzee cytomegalovirus</i> , <i>Plasmodium falciparum</i> 3D7"
1234	1364	19	<i>Homo sapiens</i>
1235	1365	26	" <i>Thermoanaerobacter tengcongensis</i> , <i>Cyanophora paradoxa</i> , <i>Medicago truncatula</i> , <i>Homo sapiens</i> , <i>Campylobacter jejuni</i> subsp. <i>jejuni</i> NCTC 11168, <i>Mus musculus</i> , <i>Danio rerio</i> , <i>Arabidopsis thaliana</i> "
1236	1366	27	" <i>Mus musculus</i> , <i>Homo sapiens</i> , <i>Atelerix albiventris</i> , <i>Arabi</i> 50

- dopsis thaliana"
- 1237 1367 26 "Dictyostelium discoideum, Caenorhabditis elegans, Homo sapiens, Danio rerio, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Trypanosoma brucei, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis briggsae, Oceanobacillus iheyensis HTE831, Medicago truncatula"
- 1238 1368 31 "Trypanosoma brucei, Drosophila melanogaster, Homo sapiens, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Beta vulgaris subsp. vulgaris"
- 1239 1369 33 "Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Homo sapiens, Caenorhabditis elegans, Danio rerio, Trypanosoma brucei, Plasmodium falciparum 3D7, Medicago truncatula" 10
- 1240 1370 24 "Medicago truncatula, Mus musculus, Chlamydomonas reinhardtii, Homo sapiens, Rattus norvegicus, Plasmodium falciparum 3D7, Arabidopsis thaliana"
- 1241 1371 21 "Homo sapiens, Listeria monocytogenes, Danio rerio"
- 1242 1372 24 "Homo sapiens, Rickettsia conorii, Drosophila melanogaster, Mus musculus, Rattus norvegicus"
- 1243 1373 27 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Schizosaccharomyces pombe" 20
- 1244 1374 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Medicago truncatula, Enterococcus faecalis V583, Drosophila littoralis, Danio rerio"
- 1245 1375 58 "Homo sapiens, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Danio rerio, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Saccharomyces cerevisiae, Caenorhabditis elegans, Eimeria tenella, Tetrahymena thermophila, Oryza sativa (japonica cultivar-group), Saccharomyces uvarum, Arabidopsis thaliana, Plasmodium falciparum, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Medicago truncatula, Saccharomyces paradoxus, Clostridium perfringens str. 13, Rattus norvegicus, Dictyostelium discoideum, Sorghum bicolor, Goatpox virus, Sheeppox virus" 30
- 1246 1376 30 "Homo sapiens, Torribiella confragosa, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Mus musculus, Rattus norvegicus, Medicago truncatula, Oceanobacillus iheyensis HTE831, Danio rerio"
- 1247 1377 24 "Mus musculus, Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Bos taurus, Caenorhabditis elegans"
- 1248 1378 34 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Pantoglydites, Medicago truncatula, Caenorhabditis elegans, Phthorimaea operculella granulovirus, Oryza sativa (japonica cultivar-group), Danio rerio, Sulfolobus tokodaii, Bacillus cereus ATCC 14579, Oryctolagus cuniculus, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Staphylococcus epidermidis, Mycoplasma pulmonis, Plasmodium falciparum 3D7, Listeria monocytogenes, Rattus norvegicus" 40
- 1249 1379 31 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Drosophila melanogaster"
- 1250 1380 25 "Oryza sativa, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio" 50

- 1251 1381 27 "Homo sapiens, Danio rerio, Mus musculus, Bacillus anthracis str. Ames, Arabidopsis thaliana, Oceanobacillus iheyensis HTE831, Medicago truncatula, Drosophila melanogaster, Plasmodium falciparum 3D7, Heliothis zea virus 1, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group)"
- 1252 1382 27 "Homo sapiens, Danio rerio, Lotus corniculatus var. japonicus, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 1253 1383 33 "Orgyia pseudotsugata multicapsid nucleopolyhedrovirus, Drosophila melanogaster, Homo sapiens, Orgyia pseudotsugata single capsid nucleopolyhedrovirus, Mus musculus, Sus scrofa, Plasmodium falciparum 3D7, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Pan troglodytes, Zea mays, Saccharomyces cerevisiae" 10
- 1254 1384 40 "Homo sapiens, Pan troglodytes, Plasmodium falciparum 3D7, Methanocaldococcus jannaschii, Medicago truncatula, Caenorhabditis elegans, Mus musculus, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Dictyostelium discoideum, Poncirus trifoliata, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Lemur catta, Campylobacter jejuni, Rattus norvegicus, Saccharomyces castellii, Lymphocystis disease virus 1, Vigna radiata, Streptococcus agalactiae NEM316, Campylobacter jejuni subsp. jejuni NCTC 11168, Staphylococcus epidermidis, Plasmodium falciparum" 20
- 1255 1385 34 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Drosophila melanogaster, Cyprinus carpio, Saccharomyces cerevisiae, Empis livida, Mesorhizobium loti, Oryza sativa (japonica cultivar-group), Equus caballus, Caenorhabditis elegans, Dictyostelium discoideum, Papio anubis, Rattus norvegicus, Pan troglodytes, Euhadra quaesita, Zea mays"
- 1256 1386 27 "Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Caenorhabditis elegans, Arabidopsis thaliana, Schizosaccharomyces pombe"
- 1257 1387 33 "Mus musculus, Homo sapiens, Phytophthora infestans, Danio rerio, Dictyostelium discoideum, Caenorhabditis elegans, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Clostridium perfringens str. 13, Atelerix albiventris, Gasterosteus aculeatus, Bacillus anthracis str. Ames, Pan troglodytes, Plasmodium falciparum 3D7, Macaca mulatta, Papio anubis, Mycoplasma pulmonis, Mycoplasma penetrans" 30
- 1258 1388 24 "Papio anubis, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana"
- 1259 1389 28 "Homo sapiens, Bacillus anthracis str. Ames, Didelphis virginiana, Mus musculus, Arabidopsis thaliana, Danio rerio, Medicago truncatula"
- 1260 1390 31 "Homo sapiens, Caenorhabditis briggsae, Drosophila melanogaster, Candidatus Carsonella ruddii, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Caenorhabditis elegans, Mycoplasma penetrans, Saccharomyces cerevisiae, Schizosaccharomyces pombe" 40
- 1261 1391 27 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa, Plasmodium falciparum, Canis familiaris, Oryza sativa (japonica cultivar-group)"
- 1262 1392 27 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis briggsae, Caenorhabditis elegans, Schistocerca americana" 50

- 1263 1393 31 "Homo sapiens, Mus musculus, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Medicago truncatula, Borrelia burgdorferi B31, Drosophila melanogaster, Arabidopsis thaliana, Plasmodium falciparum 3D7, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Clostridium perfringens str. 13"
- 1264 1394 28 "Homo sapiens, Medicago truncatula, Mus musculus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Coxiella burnetii RSA 493, Buchnera aphidicola str. Bp (Baizongia pistaciae), Plasmodium falciparum 3D7, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Drosophila melanogaster, Chilo iridescent virus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Cryptosporidium parvum, Rattus norvegicus" 10
- 1265 1395 31 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Drosophila melanogaster, Plasmodium falciparum 3D7, Rickettsia conorii, Danio rerio, Oryza sativa (japonica cultivar-group), Pan troglodytes, Acute bee paralysis virus"
- 1266 1396 32 "Danio rerio, Homo sapiens, Stylonychia lemnae, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Plasmodium falciparum 3D7, Mycoplasma gallisepticum R, Mycoplasma fermentans, Rickettsia conorii, Dictyostelium discoideum, Rickettsia prowazekii, Anopheles gambiae, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group)" 20
- 1267 1397 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Danio rerio, Mycoplasma penetrans, Drosophila melanogaster, Malawimonas jakobiformis, Pasteurella multocida, Marchantia polymorpha, Pan troglodytes, Arabidopsis thaliana"
- 1268 1398 47 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Dictyostelium discoideum, Papio anubis, Danio rerio, Caenorhabditis elegans, Medicago truncatula, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pan troglodytes, Plasmodium falciparum 3D7, Guillardia theta, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Drosophila mauritiana, Rattus norvegicus, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Globodera pallida, Lotus corniculatus var. japonicus, Mycoplasma penetrans" 30
- 1269 1399 23 "Homo sapiens, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Enterococcus faecalis V583, Amsacta moorei entomopoxvirus, Oryza sativa (japonica cultivar-group)"
- 1270 1400 23 "Danio rerio, Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Yersinia pestis C092, Oryzias latipes"
- 1271 1401 25 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Atelerix albiventris, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Helicobacter hepaticus ATCC 51449" 40
- 1272 1402 27 "Gallus gallus, Homo sapiens, Mus musculus, Drosophila melanogaster, Danio rerio"
- 1273 1403 29 "Homo sapiens, Caenorhabditis elegans, Medicago truncatula, Mus musculus, Danio rerio, Dictyostelium discoideum, Lumpy skin disease virus, Arabidopsis thaliana, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Rattus norvegicus"
- 1274 1404 63 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Danio rerio, Atelerix albiventris, Pan troglodytes, Sus scrofa" 50

- 1275 1405 31 "Homo sapiens, Mycoplasma pulmonis, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Danio rerio, Medicago truncatula, Arabidopsis thaliana, Vibrio parahaemolyticus, Bacillus subtilis subsp. subtilis str. 168, Lactobacillus plantarum WCFS1, Didelphis virginiana, Dictyostelium discoideum, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (indica cultivar-group), Lotus corniculatus var. japonicus, Pneumocystis carinii"
- 1276 1406 28 "Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Homo sapiens, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Autographa californica nucleopolyhedrovirus, Caenorhabditis elegans, Medicago truncatula, Drosophila melanogaster, Plasmodium falciparum 3D7, Malawimonas jakobiformis, Danio rerio, Cryptosporidium parvum, Melanoplus sanguinipes entomopoxvirus" 10
- 1277 1407 28 "Dictyostelium discoideum, Homo sapiens, Plasmodium falciparum, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Danio rerio, Melanoplus sanguinipes entomopoxvirus, Rattus norvegicus, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Methanosarcina barkeri, Mycoplasma pulmonis, Medicago truncatula, Papio anubis, Enterococcus faecium, Drosophila melanogaster, Caenorhabditis elegans, Marchantia polymorpha, Sheeppox virus, Lumpy skin disease virus" 20
- 1278 1408 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)"
- 1279 1409 27 "Clostridium tetani E88, Homo sapiens, Mus musculus, Pan troglodytes, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans"
- 1280 1410 26 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Campylobacter jejuni subsp. jejuni NCTC 11168"
- 1281 1411 25 "Mus musculus, Homo sapiens, Rattus norvegicus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Danio rerio" 30
- 1282 1412 24 "Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Listeria monocytogenes, Listeria innocua"
- 1283 1413 21 "Mus musculus, Homo sapiens"
- 1284 1414 24 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7"
- 1285 1415 27 "Mus musculus, Danio rerio, Dictyostelium discoideum, Homo sapiens, Oryza sativa (japonica cultivar-group), Pan troglodytes, Drosophila melanogaster, Arabidopsis thaliana, Euglena longa"
- 1286 1416 23 "Homo sapiens, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana" 40
- 1287 1417 31 "Homo sapiens, Bacillus halodurans, Caenorhabditis elegans, Dictyostelium discoideum, Mus musculus, Sus scrofa"
- 1288 1418 24 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 1289 1419 86 "Campylobacter jejuni subsp. jejuni NCTC 11168, Vibrio vulnificus CMCP6, Vibrio parahaemolyticus, Oceanobacillus iheyensis HTE831, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Clostridium acetobutylicum, Bacillus subtilis subsp. subtilis str. 168, Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Clostridium tetani E88, Homo sapiens, Borrelia" 50

- burgdorferi B31, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (indica cultivar-group), *Pyrococcus horikoshii*"
- 1290 1420 24 "Mus musculus, Homo sapiens, Streptococcus oralis, Caenorhabditis elegans"
- 1291 1421 23 "Equus caballus, Chlamydophila caviae GPIC, Homo sapiens, Drosophila melanogaster, Pseudomonas phage phiKZ, Arabidopsis thaliana"
- 1292 1422 28 "Dictyostelium discoideum, Drosophila melanogaster, Homo sapiens, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Bacteroides thetaiotaomicron VPI-5482, Lemur catta, Oryza sativa"
- 1293 1423 23 "Pan troglodytes, Homo sapiens, Prunus dulcis, Mus musculus, Drosophila melanogaster, Saccharomyces cerevisiae, Danio rerio, Caenorhabditis elegans, Schizosaccharomyces pombe" 10
- 1294 1424 23 "Oryza sativa (japonica cultivar-group), Campylobacter jejuni subsp. jejuni NCTC 11168, Homo sapiens, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus"
- 1295 1425 27 "Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Mus musculus, Mycoplasma pulmonis, Haemophilus ducreyi 35000HP"
- 1296 1426 28 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Staphylococcus epidermidis ATCC 12228, Danio rerio, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Methanocaldococcus jannaschii, Staphylococcus aureus subsp. aureus Mu50" 20
- 1297 1427 21 "Staphylococcus aureus phage phi 12, Homo sapiens, Staphylococcus aureus subsp. aureus MW2, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus temperate phage phiSLT"
- 1298 1428 38 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Dictyostelium discoideum, Monosiga brevicollis, Pan troglodytes, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Medicago truncatula, Borrelia burgdorferi B31, Speyeria mormonia, Guillardia theta, Ureaplasma urealyticum, Plasmodium vivax, Mycoplasma penetrans, Saccharomyces exiguus, Clostridium perfringens str. 13, Brachyspira hodydysenteriae, Clostridium tetani E88" 30
- 1299 1429 37 "Homo sapiens, Mus musculus, Didelphis virginiana, Plasmodium falciparum 3D7, Macaca mulatta, Canis familiaris, Papio anubis, Danio rerio, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Staphylococcus aureus subsp. aureus Mu50, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Bos taurus, Malawimonas jakobiformis, Canavalia lineata, Caenorhabditis elegans, Clostridium baratii, Oryza sativa (indica cultivar-group), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Clostridium perfringens str. 13, Beet mild curly top virus" 40
- 1300 1430 23 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Medicago truncatula"
- 1301 1431 27 "Drosophila melanogaster, Danio rerio, Homo sapiens, Mus musculus, Arabidopsis thaliana, Listeria monocytogenes, Listeria innocua, Schizosaccharomyces pombe"
- 1302 1432 23 "Homo sapiens, Mus musculus" 50

- 1303 1433 28 "Drosophila melanogaster, Homo sapiens, Equus caballus, Danio rerio, Mus musculus, Caenorhabditis elegans, Papio anubis, Arabidopsis thaliana, Plasmodium falciparum 3D7, Plasmodium vivax"
- 1304 1434 31 "Homo sapiens, Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Medicago truncatula, Bacillus anthracis str. Ames, Drosophila melanogaster, Mus musculus, Plasmodium chabaudi chabaudi, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Pan troglodytes, Buchnera aphidicola str. Bp (Baizongia pistaciae), Lycopersicon esculentum, Mycoplasma pulmonis, Toxoplasma gondii, Clostridium perfringens str. 13, Gallus gallus, Mycoplasma gallisepticum R, Eimeria tenella, Rattus norvegicus" 10
- 1305 1435 28 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Equus caballus, Rattus norvegicus, Takifugu rubripes, Pan troglodytes, Pennisetum glaucum, Vibrio cholerae, Trypanosoma brucei, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Caenorhabditis elegans, Cryptosporidium parvum"
- 1306 1436 29 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Streptococcus agalactiae NEM316, Enterococcus faecalis V583, Dictyostelium discoideum, Branchiostoma floridae, Plasmodium falciparum 3D7, Guillardia theta, Clostridium acetobutylicum, Pan troglodytes, Lactococcus lactis subsp. lactis, Danio rerio, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Arabidopsis thaliana, Clostridium perfringens str. 13" 20
- 1307 1437 29 "Caenorhabditis elegans, Homo sapiens, Danio rerio, Mus musculus, Lotus corniculatus var. japonicus, Rattus norvegicus, Arabidopsis thaliana, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 1308 1438 24 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Sus scrofa"

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表5

- | Frag_Des | SEQ_ID | N (nt) | Organism |
|----------|--------|--------|--|
| 1309 | 1439 | 29 | "Cyanidioschyzon merolae, Mus musculus, Homo sapiens, Sulfobolus islandicus rod-shaped virus 2, Marchantia polymorpha, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Pseudoeurycea werleri, Plasmodium falciparum 3D7, Danio rerio, Schizosaccharomyces pombe, Nicotiana paniculata, Pan troglodytes, Drosophila melanogaster, Arabidopsis thaliana, Andes virus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Ophiogomphus severus, Clostridium acetobutylicum, Xylella fastidiosa 9a5c, Mesostigma viride, Clostridium butyricum, Chlamydomonas pneumoniae CWL029, Lotus corniculatus var. japonicus, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Mycoplasma penetrans, Medicago truncatula, Thermotoga maritima, Chlamydomonas pneumoniae TW-183, Astegopteryx sp., Clostridium perfringens" 40 |
| 1310 | 1440 | 25 | "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Oncorhynchus tshawytscha, Drosophila melanogaster, Danio rerio, Herdmania momus, Oryza sativa (japonica cultivar-group), Rattus norvegicus" |
| 1311 | 1441 | 23 | "Danio rerio, Prochlorococcus marinus subsp. marinus str. CCMP1375, Homo sapiens, Archaeoglobus fulgidus DSM 4304, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Mycoplasma genitalium" 50 |

- 1312 1442 30 "Listeria monocytogenes, Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Danio rerio, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Ciona intestinalis"
- 1313 1443 24 "Enterococcus faecalis V583, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio"
- 1314 1444 27 "Homo sapiens, Mus musculus, Clostridium tetani E88, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio, Arabidopsis thaliana, Plasmodium falciparum, Drosophila melanogaster, Plasmodium falciparum 3D7" 10
- 1315 1445 28 "Thermoanaerobacter tengcongensis, Homo sapiens, Rickettsia conorii, Oryza sativa (japonica cultivar-group), Mus musculus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Arabidopsis thaliana"
- 1316 1446 24 "Homo sapiens, Danio rerio, Listeria innocua, Drosophila melanogaster, Mus musculus, Thermoanaerobacter tengcongensis, Arabidopsis thaliana, Caenorhabditis elegans"
- 1317 1447 24 "Danio rerio, Homo sapiens, Sulfolobus acidocaldarius, Caenorhabditis elegans, Mus musculus, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum" 20
- 1318 1448 50 "Haemophilus influenzae Rd KW20, Salmonella typhimurium LT2, Chlamydomonas reinhardtii, Salmonella enterica subsp. enterica serovar Typhi Ty2, Vibrio vulnificus CMCP6, Arabidopsis thaliana, Homo sapiens, Salmonella enterica subsp. enterica serovar Typhi, Mus musculus, Salmonella typhimurium, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Plasmodium vivax, Prochlorococcus marinus, Danio rerio, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Cicer arietinum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 1319 1449 91 "Helicobacter hepaticus ATCC 51449, Buchnera aphidicola str. Sg (Schizaphis graminum), Haemophilus ducreyi 35000HP, Rickettsia prowazekii, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus " 30
- 1320 1450 77 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Staphylococcus epidermidis ATCC 12228, Rickettsia prowazekii, Oceanobacillus ihayensis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Buchnera aphidicola str. Sg (Schizaphis graminum), Wolbachia endosymbiont of Brugia malayi, Xylella fastidiosa 9a5c, Mus musculus, Homo sapiens, Buchnera aphidicola str. Bp (Bai zongia pistaciae), Danio rerio, uncultured bacterium, Pirellula sp., Bacillus halodurans" 40
- 1321 1451 40 "Wolbachia endosymbiont of Brugia malayi, Clostridium perfringens str. 13, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Cucumis sativus, Homo sapiens, Actinidia chinensis, Mus musculus, Danio rerio, Mycoplasma capricolum, Buchnera aphidicola, Beta vulgaris subsp. vulgaris, Medicago truncatula, Capra hircus, Actinidia deliciosa, Musa acuminata, Citrus unshiu"
- 1322 1452 29 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Oryza sativa (indica cultivar-group), Mus musculus, Drosophila melanogaster, Rattus norvegicus, Rickettsia conorii, Enterococcus faecalis V583, Borrelia burgdorferi B31, Buchnera aphidicola str. Sg (Schizaphis graminum), Cyanidium caldarium, Flaveria pring 50

- lei, Plasmodium falciparum 3D7, Oceanobacillus iheyensis HTE831, Caenorhabditis elegans, Schizosaccharomyces pombe, Mycoplasma mobile, Mus cookii"
- 1323 1453 28 "Mus musculus, Homo sapiens, Danio rerio, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Bacillus anthracis str. Ames, Hypsiglena torquata, Candidatus Blochmannia floridanus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Pan troglodytes, Caenorhabditis elegans, Tribolium freemani, Trypanosoma brucei, Medicago truncatula, Schizosaccharomyces pombe"
- 1324 1454 28 "Drosophila melanogaster, Homo sapiens, Mus musculus, Rattus norvegicus, Halocynthia roretzi, Staphylococcus epidermidis ATCC 12228, Pan troglodytes, Danio rerio, Duck adenovirus 1, Arabidopsis thaliana, Guirara guira, Trypanosoma brucei" 10
- 1325 1455 27 "Homo sapiens, Mus musculus, Streptococcus mutans UA159, Sorghum bicolor, Bos taurus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Plasmodium falciparum 3D7, Lactococcus lactis subsp. lactis, Arabidopsis thaliana, Listeria monocytogenes, Thermotoga maritima, Danio rerio, Podospora anserina"
- 1326 1456 33 "Plasmodium falciparum 3D7, Homo sapiens, Danio rerio, Mus musculus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Yaba monkey tumor virus, Tetrahymena thermophila, Fusobacterium nucleatum, Wigglesworthia gl" 20
- 1327 1457 27 "Clostridium acetobutylicum, Homo sapiens, Xenopus laevis, Caenorhabditis elegans, Mus musculus, Danio rerio, Arabidopsis thaliana, Staphylococcus aureus, Staphylococcus haemolyticus, Staphylococcus aureus subsp. aureus N315, Sulfolobus tokodaii, Staphylococcus aureus subsp. aureus MW2, Rattus norvegicus, Staphylococcus aureus subsp. aureus Mu50"
- 1328 1458 31 "Homo sapiens, Clostridium acetobutylicum, Marchantia polymorpha, Entamoeba histolytica, Ciona intestinalis, Dictyostelium discoideum, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Mus musculus, Schizosaccharomyces pombe, Giardia intestinalis, Staphylococcus carnosus, Rattus norvegicus, Lepraria rigidula, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 30
- 1329 1459 29 "Homo sapiens, Cryptosporidium parvum, Danio rerio, Melanoplus sanguinipes entomopoxvirus, Mycoplasma capricolum, Schizosaccharomyces pombe, Mus musculus, Bacillus cereus ATCC 14579, Drosophila melanogaster, Caenorhabditis elegans, Sacculina carcini, Lotus corniculatus var. japonicus, Cortinarius rotundisporus, Candida glabrata, Medicago truncatula, Arabidopsis thaliana"
- 1330 1460 32 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Plasmodium falciparum, synthetic construct, Gallus gallus, Human immunodeficiency virus 1, Xenopus laevis, Ilyanassa obsoleta, Streptococcus mutans UA159, Arabidopsis thaliana, Rickettsia conorii, Caenorhabditis briggsae, African swine fever virus, Guringalia dimorpha, Melanoplus sanguinipes entomopoxvirus, Apis mellifera ligustica, Synechocystis sp. PCC 6803" 40
- 1331 1461 27 "Photobacterium leiognathi, Danio rerio, Mus musculus, Lotus corniculatus var. japonicus, Ectocarpus siliculosus virus, Homo sapiens, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Arabidopsis thaliana, Yersinia pestis KIM, Sceloporus magister, Oryza sativa (japonica cultivar-group), Yersinia pestis C092" 50

- 1332 1462 37 "Oceanobacillus iheyensis HTE831, Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Xanthomonas campestris pv. campestris str. ATCC 33913, Oryzias latipes, Caenorhabditis elegans"
- 1333 1463 32 "Mus musculus, Homo sapiens, Rattus norvegicus, Arabidopsis thaliana, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila melanogaster, Methanosarcina mazei Goe1, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Botryotinia fuckeliana, Staphylococcus aureus subsp. aureus Mu50" 10
- 1334 1464 29 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Danio rerio, Oryza sativa (japonica cultivar-group), Chamaemelum nobile, Fowlpox virus, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum, Oceanobacillus iheyensis HTE831, Cyrtolobus vanduzeei, Saccharomyces douglasii, Medicago truncatula, Oreochromis niloticus"
- 1335 1465 31 "Homo sapiens, Drosophila melanogaster, Lactococcus lactis subsp. lactis, Bacteriophage bIL311, Danio rerio, Lactobacillus delbrueckii, Caenorhabditis briggsae, Mus musculus, Mycoplasma mycoides subsp. capri, Oryza sativa (japonica cultivar-group), Pseudoreg" 20
- 1336 1466 27 "Homo sapiens, Mus musculus, Medicago truncatula, Drosophila melanogaster, Avicennia marina, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Methanosarcina mazei Goe1, Pseudomonas putida KT2440, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Listeria monocytogenes, Squalus acanthias, Rattus norvegicus"
- 1337 1467 27 "Rickettsia prowazekii, Rickettsia typhi, Caenorhabditis elegans, Drosophila melanogaster, Homo sapiens, Drosophila sp., Mus musculus, Brassica oleracea, Rickettsia conorii, Rickettsia rickettsii, Rickettsia montanensis, Danio rerio, Methanosarcina mazei Goe1, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)" 30
- 1338 1468 29 "Lotus corniculatus var. japonicus, Mus musculus, Arabidopsis thaliana, Danio rerio, Clostridium acetobutylicum, Candidatus Carsonella ruddii, Drosophila melanogaster, Homo sapiens, Pan troglodytes, Echinostoma sp. P Cerc-2, Paragonimus westermani, Steringophorus margolisi, Balaenoptera physalus, Staphylococcus aureus, Oryza sativa (japonica cultivar-group), Parazen pacificus, Caenorhabditis elegans, Staphylococcus lugdunensis"
- 1339 1469 56 "Caedibacter caryophilus, Mus musculus, Rickettsia prowazekii, Homo sapiens, Chlamydia muridarum, Chlamydophila caviae GPIC, Dictyostelium discoideum, Streptococcus pneumoniae R6, Rickettsia typhi, Chlamydia trachomatis, Chlamydophila pneumoniae CWL029, Oryza sativa (japonica cultivar-group), Chlamydophila pneumoniae AR39, Oceanobacillus iheyensis HTE831, Danio rerio, Chlamydophila pneumoniae TW-183, Chlamydophila pneumoniae J138, Drosophila melanogaster, Rattus norvegicus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Rickettsia conorii, Rickettsia montanensis, Rickettsia rickettsii, Sulfolobus tokodaii, Human herpesvirus 7, Dendrolimus punctatus cypovirus 1" 40
- 1340 1470 45 "Rickettsia prowazekii, Rickettsia typhi, Homo sapiens, Rickettsia rickettsii, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Clostridium tetani E88, Rickettsia conorii, Rickettsia montanensis, Lotus corniculatus va" 50

- r. japonicus, Mycoplasma penetrans, Danio rerio, Schizosaccharomyces pombe, Herpetomonas mariadeanei, Porphyra purpurea, Meloidogyne chitwoodi"
- 1341 1471 27 "Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Homo sapiens, Rattus norvegicus, Trypanosoma brucei, Plasmodium falciparum 3D7, Danio rerio, Lotus corniculatus var. japonicus, Anthoceros formosae"
- 1342 1472 24 "Homo sapiens, Candida albicans, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mycoplasma penetrans, Danio rerio"
- 1343 1473 53 "Holospora obtusa, Rickettsia conorii, Rickettsia rickettsii, Rickettsia montanensis, Homo sapiens, Rickettsia prowazekii, Rickettsia typhi, Drosophila melanogaster, Rattus norvegicus, Medicago truncatula, Mus musculus, Streptococcus pyogenes MGAS315, Xenopus laevis, Streptococcus pyogenes SSI-1, Danio rerio" 10
- 1344 1474 27 "Ciona intestinalis, Homo sapiens, Mus musculus, Enterococcus faecalis V583, Medicago truncatula, Zea mays, Listeria monocytogenes, Danio rerio, Arabidopsis thaliana, Enterococcus faecalis, Oceanobacillus iheyensis HTE831, Listeria innocua, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii, Bacillus cereus ATCC 14579, Cucumis melo, Borrelia burgdorferi B31, Clostridium tetani E88, Caenorhabditis elegans, Pasteurella multocida, Trichomonas vaginalis, Clostridium perfringens str. 13" 20
- 1345 1475 39 "Homo sapiens, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Mycoplasma penetrans, Danio rerio, Mus musculus, Arabidopsis thaliana, Enterococcus faecalis, Cromidion decumbens, Eimeria tenella, Drosophila melanogaster, Glycine max, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Tribolium castaneum, Thermoplasma acidophilum, Bacillus subtilis, Phaseolus vulgaris, Pedinomonas minor, Bacillus subtilis subsp. subtilis str. 168, Zea mays, Paramecium tetraurelia"
- 1346 1476 31 "Homo sapiens, Danio rerio, Gasterosteus aculeatus, Pantroglodytes, Dictyostelium discoideum, Mus musculus, Acanthamoeba castellanii, Plasmodium falciparum 3D7, Betula pendula, Pylaiella littoralis, Kluyveromyces lactis, Arabidopsis thaliana, Clostridium perfringens str. 13, Oryza sativa (japonica cultivar-group), Shuttle vector pJK210, Limonium dufourii, Shigella flexneri 2a, Rattus norvegicus, Cloning vector pDblet, Sus scrofa, Phocine herpesvirus type 1, Shigella flexneri, Mycoplasma pulmonis, Lactococcus lactis, Shigella dysenteriae, Candidatus Blochmannia floridanus, Skeletonema costatum, Plasmodium falciparum, Latrodectus tredecimguttatus, Mus sp., Schizosaccharomyces pombe, Cloning vector pSMUG+degron, Integration vector pSMUG2+, Integration vector pSMUG+, Gallus gallus, Ciona intestinalis, Neurospora crassa, Shigella sonnei, Plasmodium berghei" 40
- 1347 1477 31 "Homo sapiens, Plasmodium falciparum, Plasmodium falciparum 3D7, Aquifex aeolicus VF5, Mus musculus, Albinaria caerulea, Danio rerio, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Tuberculolachnus salignus, Sus scrofa domestica, Dictyostelium discoideum, Medicago truncatula, Ctenodactyla sp. nr. batesii KAO-2001, Pneumocystis carinii, Galactomyces geotrichum, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Neocallimastix frontalis, Glomus sp. 027, Glomus sp. 025, Archaeospora sp. 0213, Archaeospora sp. 0211, Zygosaccharomyces florentinus, Mycoplasma gallisepticum R, Eimeria tenella, Atelerix albiventris, Bacteroides thetaiotaomicron VPI-5482, Fenneropenaeus merguensis, Clostridium tetani E88, Drosophila littoralis, Papio anubis, Cani 50

s familiaris, Rattus norvegicus, Pan troglodytes"

1348 1478 27 "Homo sapiens, Clostridium tetani, Human adenovirus type 19p, Human adenovirus type 9, Human adenovirus type 8, Bacillus subtilis subsp. subtilis str. 168, Mus musculus, Arabidopsis thaliana, Bacillus subtilis, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Streptococcus salivarius, Mycoplasma pulmonis, Phaseolus vulgaris, Candidatus Blochmannia floridanus, Plasmodium falciparum 3D7, Thermoplasma volcanium, Medicago truncatula, Rattus norvegicus"

1349 1479 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Papio anubis, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Methanocaldococcus jannaschii, Plasmodium chabaudi chabaudi, Bradysia coprophila, Plasmodium falciparum 3D7, Arabidopsis thaliana, Takifugu rubripes, Danio rerio, Orientia tsutsugamushi, Clostridium perfringens str. 13, Bacillus cereus ATCC 14579, Rattus norvegicus, Dictyostelium discoideum, Drosophila melanogaster, Entamoeba histolytica, Caenorhabditis elegans, Candida albicans, Pan troglodytes, Bacillus anthracis str. Ames, Borrelia burgdorferi B31, Oxypappus scaber, Helicoverpa zea, Buchnera aphidicola str. Sg (Schizaphis graminum), Thermoanaerobacter tengcongensis, Oryza sativa, Lotus corniculatus var. japonicus, Choriptes sp. ELL-2003, Helicobacter pylori J99, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"

1350 1480 30 "Homo sapiens, Danio rerio, Caenorhabditis elegans, Drosophila melanogaster, Mus musculus, Lotus corniculatus var. japonicus, Tribolium castaneum, Oryza sativa (japonica cultivar-group), Aquifex aeolicus VF5, Plasmodium falciparum 3D7, Berne virus, Arabidopsis thaliana, Mycoplasma genitalium, Eretmodus cyanostictus, Blumeria graminis, Clostridium perfringens str. 13"

1351 1481 27 "Homo sapiens, Enterobacteria phage T4, Mus musculus, Lycopersicon esculentum, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Bacteriophage Pol, Bacteriophage RB70, Bacteriophage KC69, Bacteriophage RB33, Bacteriophage RB32, Bacteriophage RB15, Bacteriophage RB2, Bacteriophage Tulb, Bacteriophage Ox2, Bacteriophage K3, Bacteriophage M1, Enterobacteria phage T6, Enterobacteria phage T2, Leptospira interrogans serovar lai str. 56601, Enterococcus faecalis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, TnphoZ mutagenesis vector pMHL120, Staphylococcus aureus, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Berberis stolonifera, Tn917 delivery vector pAJ005, Oryctolagus cuniculus, Thermococcus sp. B1001"

1352 1482 29 "Homo sapiens, Lactococcus lactis subsp. lactis, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Brugia malayi, Bacillus subtilis, Rattus norvegicus, Drosophila melanogaster, Medicago truncatula, Schmidtea mediterranea, Schizosaccharomyces pombe, Haemophilus influenzae Rd KW20, Clostridium perfringens str. 13"

1353 1483 32 "Homo sapiens, Mus musculus, Orobanche uniflora, Plasmodium falciparum 3D7, Catenella caespitosa, Cucumis sativus, Danio rerio, Arabidopsis thaliana"

1354 1484 37 "Homo sapiens, Caenorhabditis elegans, Plasmodium falciparum 3D7, Bos taurus, Saccharomyces cerevisiae, Drosophila melanogaster, Zea mays, Pelecinus polyturator, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Methanosarcina mazei Goe1, Xenopus laevis, Mus musculus, Human rotavirus C, Arabidopsis thaliana, Chlorella virus, Trypanosoma cruzi, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Clostridium tetani E88, Saccharomyces castellii, Danio rerio, Amsacta moorei entomopoxvirus, Lept

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osphaeria maculans, Rhopalosiphum padi"

1355 1485 35 "Mycoplasma penetrans, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Rhizobium leguminosarum, Mesorhizobium loti, Chlamydia muridarum, Homo sapiens, Chlamydia pneumoniae CWL029, Chlamydia trachomatis, Ch"

1356 1486 33 "Thermoanaerobacter tengcongensis, Synechococcus sp. PCC 7942, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Helicobacter pylori 26695, Helicobacter pylori J99, Plasmodium falciparum 3D7, Oceanobacillus iheyensis HTE831, Mus musculus, Bacteroides thetaiotaomicron"

1357 1487 28 "Homo sapiens, Drosophila melanogaster, Mus musculus, Streptococcus mutans UA159, Clostridium perfringens, Leptospira interrogans serovar lai str. 56601, Drosophila pseudoobscura, Caenorhabditis elegans, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Caenorhabditis briggsae, Arabidopsis thaliana, Streptococcus pyogenes M1 GAS, Ureaplasma urealyticum, Streptococcus pyogenes SSI-1, Schizosaccharomyces pombe, Pan troglodytes, Danio rerio"

1358 1488 27 "Pan troglodytes, Homo sapiens, Clostridium perfringens, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Schizosaccharomyces pombe, Danio rerio, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Solanum tuberosum, Helicobacter pylori, Oryza sativa (japonica cultivar-group), Helicobacter pylori J99"

1359 1489 29 "Drosophila melanogaster, Homo sapiens, Arabidopsis thaliana, Mus musculus, Bos taurus, Chamaepetes goudotii, Caenorhabditis elegans, Plasmodium falciparum 3D7, Chrysolophus pictus obscurus, Chrysolophus pictus infuscatus, Lactobacillus rhamnosus, Danio rerio, Chrysolophus pictus"

1360 1490 27 "Mus musculus, Pyrococcus horikoshii, Pan troglodytes, Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Helianthus annuus, Guillardia theta, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Rattus rattus"

1361 1491 24 "Homo sapiens, Breda virus, Proteus mirabilis, Mus musculus, Danio rerio, Atelerix albiventris, Drosophila melanogaster, Clostridium tetani E88, Streptococcus mutans UA159, Macaca mulatta rhadinovirus 17577, Neurospora crassa, Oryza sativa (japonica cultivar-group)"

1362 1492 24 "Homo sapiens, Entamoeba histolytica, Dicentrarchus labrax, Mus musculus, Canis familiaris, Shigella dysenteriae, Escherichia coli O157:H7 EDL933, Fejervarya limnocharis, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Escherichia coli, Escherichia coli O157:H7"

1363 1493 27 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Lotus corniculatus var. japonicus, Danio rerio, Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Macaca mulatta, Campylobacter jejuni, Plasmodium falciparum 3D7, Cochlearia danica, Cochlearia pyrenaica, Arabis procurrens, Papio anubis, Lycopersicon esculentum, Caenorhabditis briggsae, Trypanosoma brucei, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Solanum tuberosum"

1364 1494 34 "Rickettsia prowazekii, Mus musculus, Homo sapiens, Danio rerio, Pan troglodytes, Arabidopsis thaliana, Medicago truncatula, Bacillus anthracis str. Ames, Caenorhabditis elegans, Drosophila erecta, Methanocaldococcus jannaschii"

1365 1495 24 "Homo sapiens, Drosophila melanogaster, Caenorhabditis briggsae"

- riggsae, *Mus musculus*, *Polypterus bichir*, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Danio rerio*, *Dichelobacter nodosus*"
- 1366 1496 24 "Homo sapiens, *Mus musculus*, *Archaeoglobus fulgidus* DSM 4304, *Medicago truncatula*, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Glycine max*"
- 1367 1497 31 "*Mus musculus*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Homo sapiens*, *Drosophila erecta*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Ipomoea purpurea*, *Danio rerio*, *Hemicentrotus pulcherrimus*, *Schiedeella faucisanguinea*, *Anopheles gambiae*, *Taenia asiatica*, *Atelerix albiventris*, *Rattus norvegicus*, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Drosophila pseudoobscura*, *Pan troglodytes*, *Schmidtea mediterranea*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Rickettsia conorii*, *Bactrocera cucurbitae*, *Sus scrofa*, *Saccharomyces cerevisiae*" 10
- 1368 1498 25 "*Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Streptococcus mutans* UA159, *Danio rerio*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Medicago truncatula*" 20
- 1369 1499 35 "*Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Human echovirus 11*, *Mus musculus*, *Caenorhabditis elegans*, *Brassica oleracea* var. *acephala*, *Methanocaldococcus jannaschii*"
- 1370 1500 27 "*Mus musculus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Medicago truncatula*, *Drosophila melanogaster*"
- 1371 1501 27 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Xylella fastidiosa* Temecula1, *Panorpa bicornuta*, *Xylella fastidiosa* 9a5c, *Medicago truncatula*, *Pan troglodytes*, *Drosophila melanogaster*, *Papio anubis*, *Thermoanaerobacter tengcongensis*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Caenorhabditis elegans*, *Mycoplasma genitalium*, *Escherichia coli*" 30
- 1372 1502 33 "*Amsacta moorei* entomopoxvirus, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Sus scrofa*, *Mus musculus*, *Drosophila melanogaster*, *Euhadra quaesita*, *Mycoplasma penetrans*, *Danio rerio*"
- 1373 1503 27 "*Mus musculus*, *Rattus norvegicus*, *Homo sapiens*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Leptospira interrogans* serovar lai str. 56601" 40
- 1374 1504 29 "*Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Listeria monocytogenes*, *Oryza sativa* (indica cultivar-group), *Drosophila melanogaster*, *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Candida albicans*"
- 1375 1505 23 "*Mus musculus*, *Staphylococcus epidermidis* ATCC 12228, *Homo sapiens*, *Dictyostelium discoideum*, *Staphylococcus epidermidis*, *Oryza sativa* (japonica cultivar-group), *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Anabaena cylindrica*, *Borrelia duttonii*"
- 1376 1506 31 "*Vicia faba*, *Homo sapiens*, *Campylobacter jejuni* subsp. j 50

- ejuni NCTC 11168, Pan troglodytes, Drosophila melanogaster, Mus musculus, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Streptococcus pneumoniae, Danio rerio"
- 1377 1507 33 "Homo sapiens, Clostridium acetobutylicum, Methanococcus voltae, Plasmodium falciparum 3D7, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Medicago truncatula, Aquifex aeolicus VF5, Drosophila melanogaster, Schmidtea mediterranea, Omphra sp. KAO-2001, B"
- 1378 1508 32 "Homo sapiens, Carabus ladygini ladygini, Carabus cancellatus carinatus, Carabus cancellatus emarginatus, Carabus cancellatus tuberculatus, Carabus cancellatus graniger, Carabus cancellatus, Carabus glabratus, Mus musculus, Carabus auratus, Plasmodium falcip" 10
- 1379 1509 33 "Homo sapiens, Mus musculus, Spawner-isolated mortality virus, Drosophila melanogaster, Equus caballus, Caenorhabditis elegans, Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Ehrlichia ruminantium, Pan troglodytes, Antirrhinum hispanicum, Gallid herpesvirus 2, Oryza sativa (japonica cultivar-group), Gallid herpesvirus 1, Buchnera aphidicola str. Bp (Baizongia pistaciae), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa, Glycine max, Prochlorococcus marinus, Neurospora crassa, Nicotiana tabacum, Plasmodium berghei, Schizosaccharomyces pombe, Rattus norvegicus, Lycopersicon esculentum, Cryptosporidium parvum, Buchnera aphidicola" 20
- 1380 1510 40 "Anabaena variabilis, Anabaena sp., Nostoc sp. PCC 7120, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Chlorogloeopsis sp., Medicago truncatula, Tupaiaglis, Medicago sativa, Rattus norvegicus, Caenorhabditis elegans, Mus musculus"
- 1381 1511 24 "Homo sapiens, Danio rerio, Streptomyces coelicolor A3(2), Clostridium perfringens str. 13, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Xenopus laevis, Entamoeba histolytica, Rhinoderma darwinii, Arabidopsis thaliana"
- 1382 1512 28 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Borrelia garinii, Caenorhabditis elegans, Danio rerio, Enterococcus faecalis V583, Plasmodium falciparum 3D7, Onychotrips tepperi, Oryza sativa (japonica cultivar-group), Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Exophiala spinifera, Limnadia lenticularis, Buchnera aphidicola str. Sg (Schizaphis graminum), Mamestra configurata nucleopolyhedrovirus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Campylobacter jejuni subsp. jejuni NCTC 11168, Plasmodium berghei, Lotus corniculatus var. japonicus, Triops cancriformis, Artibeus jamaicensis, Fusobacterium nucleatum, Clostridium thermocellum" 30
- 1383 1513 27 "Mus musculus, Caenorhabditis elegans, Medicago truncatula, Homo sapiens, Arabidopsis thaliana, Diadasia enavata, Lotus corniculatus var. japonicus, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Maoricicada alticola, Borrelia burgdorferi, Corynebacterium efficiens YS-314, Porphyromonas gingivalis W83, Sulfolobus tokodaii, Danio rerio, Schizosaccharomyces pombe, Helicobacter pylori J99, Catharanthus roseus, Bactrocera xanthodes, Xenopus laevis, Anopheles gambiae" 40
- 1384 1514 25 "Caenorhabditis elegans, Eulemur fulvus albocollaris, Eulemur fulvus fulvus, Mus musculus, Chlamydomonas reinhardtii, Clostridium tetani E88, Homo sapiens, Didelphis virginiana, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana"
- 1385 1515 26 "Plasmodium falciparum 3D7, Homo sapiens, Caenorhabditis 50

- elegans, *Danio rerio*, *Mus musculus*, *Bos taurus*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Bacillus anthracis* str. Ames, *Clostridium tetani* E88, *Periclistus brandti*, *Thyestilla gebleri*, *Arabidopsis thaliana*"
- 1386 1516 31 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Methanosarcina mazei* Goe1, *Mus musculus*, *Caenorhabditis elegans*, *Brugia malayi*, *Pan troglodytes*, *Clostridium tetani* E88, *Lemur catta*, *Neozygites parvispora*, *Arabidopsis thaliana*, *Solanum tuberosum*, *Danio rerio*, *Helicobacter hepaticus* ATCC 51449"
- 1387 1517 26 "Homo sapiens, *Danio rerio*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mus musculus*, *Xenopus laevis*, *Pyrus pyrifolia*" 10
- 1388 1518 32 "Homo sapiens, *Mus musculus*, *Canis familiaris*"
- 1389 1519 45 "Homo sapiens, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mycoplasma penetrans*, *Danio rerio*, *Medicago truncatula*, *Caenorhabditis elegans*, Cloning vector pBC214, *Tenebrio molitor*, *Plasmodium vivax*, *Candida glabrata*, *Gallus gallus*"
- 1390 1520 27 "Clostridium acetobutylicum, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Heterodontus francisci*, *Danio rerio*, *Lycopersicon esculentum*, *Legionella pneumophila*, *Poa pratensis*, *Mycoplasma agalactiae*, *Mycoplasma pulmonis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Tetrahymena thermophila*, *Bacteriophage phi ETA*" 20
- 1391 1521 28 "Homo sapiens, *Feline immunodeficiency virus*, *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*, *Yersinia pestis* KIM, *Enterococcus faecium*, *Caenorhabditis briggsae*, *Enterococcus hirae*, *Vibrio parahaemolyticus*, *Yersinia pestis* C092"
- 1392 1522 32 "Xenopus laevis, *Sulfolobus tokodaii*, *Arabidopsis thaliana*, *Nostoc* sp. PCC 7120, *Dictyostelium discoideum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Vibrio vulnificus* CMCP6, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Borrelia lonestari*, *Medicago truncatula*, *Papio anubis*, *Lycopersicon esculentum*, *Rattus norvegicus*, *Lactobacillus acidophilus*" 30
- 1393 1523 28 "Medicago truncatula, *Homo sapiens*, *Prochlorococcus marinus*, *Mus musculus*, *Litopenaeus stylirostris*, *Mycoplasma gallisepticum* R, *Leptospira interrogans* serovar *lai* str. 56601, *Litopenaeus setiferus*, *Saccharomyces exiguus*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Neurospora crassa*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*"
- 1394 1524 20 "Homo sapiens, *Mus musculus*, *Chelonis inanimatus* *bracovirus*" 40
- 1395 1525 28 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Mus musculus*, *Cephalotheca sulfurea*, *Dictyostelium discoideum*, *Pyrococcus horikoshii*, *Danio rerio*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Bacillus circulans*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Staphylococcus epidermidis* ATCC 12228, *Arabidopsis thaliana*, *Dendroctonus micans*, *Meriones unguiculatus*, *Cricetulus griseus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Capsicum annuum*, *Caenorhabditis briggsae*, *Aleochara lanuginosa*, *Staphylococcus epidermidis*, *Xenopus laevis*, *Varroa* sp. 'Luzon 1', *Oryza sativa*, *Bacillus halodurans*"
- 1396 1526 28 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Dictyo* 50

stelium discoideum, Plasmodium falciparum 3D7, Pan troglodytes, Danio rerio, Anopheles gambiae, Bacillus anthracis str. Ames, Drosophila melanogaster, Goatpox virus, Sheeppox virus, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR 4, Lumpy skin disease virus, Methanococcus voltae, Oryza sativa (japonica cultivar-group)"

1397 1527 26 "Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Homo sapiens, Borrelia burgdorferi B31, Yersinia pestis KIM, Lycopersicon esculentum, Borrelia burgdorferi, Danio rerio, Yersinia pestis C092, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Clostridium tetani E88, Campylobacter jejuni subsp. jejuni NCTC 11168, Ureaplasma urealyticum, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Sulfolobus tokodaii, Drosophila pulaua, Allium giganteum, Pleurotus ostreatus, Equine herpesvirus 4, Plasmodium chabaudi chabaudi, Arabidopsis thaliana"

10

1398 1528 24 "Homo sapiens, Clostridium perfringens str. 13, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Atelerix albiventris, Arabidopsis thaliana, Dictyostelium discoideum, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Mycoplasma pulmonis"

1399 1529 24 "Homo sapiens, Branchiostoma floridae, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Drosophila melanogaster, Sorghum bicolor, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Danio rerio, Agrobacterium tumefaciens, Macroscelides proboscideus, Plasmid Ti, Hamiltonaphis styraci yeast-like symbiont, Wolbachia sp. wKue"

20

1400 1530 27 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Clostridium sordellii, Danio rerio"

1401 1531 24 "Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus, Drosophila melanogaster, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Entamoeba histolytica, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Pan troglodytes, Helicobacter hepaticus ATCC 51449"

30

1402 1532 24 "Mus musculus, Homo sapiens, Salmonella typhimurium LT2, Pan troglodytes, Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella enterica subsp. enterica serovar Typhi"

1403 1533 24 "Lemur catta, Arabidopsis thaliana, Caenorhabditis elegans, Homo sapiens, Fundulus zebrinus, Zea mays, Oryza sativa (japonica cultivar-group), Mus musculus"

1404 1534 32 "Homo sapiens, Dictyostelium discoideum, Arabidopsis thaliana, Caenorhabditis elegans, Human papillomavirus type 82, Danio rerio, Mus musculus, Plasmodium falciparum 3D7, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Lactobacillus plantarum WCFS1, Staphylococcus aureus subsp. aureus Mu50, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Streptococcus pneumoniae TIGR4, Sus scrofa, Florometra serratissima, Staphylococcus epidermidis, Oryza sativa, Manduca sexta, Brassica napus, Oryza sativa (japonica cultivar-group)"

40

1405 1535 24 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group)"

1406 1536 29 "Spinacia oleracea, Mus musculus, Tetraodon nigroviridis, Homo sapiens, Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120"

1407 1537 24 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Cavia porcellus, Oryza sativa, Toxoneuron nigriceps, Danio rerio, N

50

- ostoc sp. PCC 7120"
- 1408 1538 24 "Homo sapiens, Mus musculus, Caenorhabditis briggsae, Ci
ona intestinalis"
- 1409 1539 28 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Alexa
ndrium affine, Clostridium perfringens str. 13, Vibrio vulnificus CMCP6, Drosoph
ila melanogaster, Sus scrofa, Oryza sativa (japonica cultivar-group)"
- 1410 1540 35 "Homo sapiens, Prochlorococcus marinus subsp. marinus st
r. CCMP1375, Drosophila melanogaster, Caenorhabditis elegans, Sus scrofa, Mus mu
sculus, Dictyostelium discoideum, Streptococcus mutans UA159, Puumala virus, Ory
za sativa (japonica cultivar-group), Clostridium cellulolyticum, Arabidopsis tha
liana, Carpias nereus" 10
- 1411 1541 24 "Mus musculus, Homo sapiens, Thermoplasma acidophilum, R
hizoctonia sp. TBR, Arabidopsis thaliana, Cryptosporidium parvum"
- 1412 1542 26 "Homo sapiens, Pan troglodytes, Drosophila melanogaster,
Mus musculus, Clostridium acetobutylicum, Agouti taczanowskii, Lotus corniculat
us var. japonicus, Oryza sativa (japonica cultivar-group), Medicago truncatula,
Katharina tunicata, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum
3D7, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Staphylococcus epide
rmidis, Danio rerio, Paramecium tetraurelia, Trypanoplasma borreli, Nostoc sp. P
CC 7120, Glycine max" 20
- 1413 1543 29 "Bacillus atticus, Homo sapiens, Drosophila melanogaster
, Danio rerio, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group)
, Mus musculus, Papio hamadryas, Rhizophyidium sp. 136, Rhodopsalta leptomera, Rh
odopsalta cruentata, Saimiriine herpesviru"
- 1414 1544 24 "Clostridium perfringens str. 13, Mus musculus, Homo sap
iens, Closterium acerosum, Equus caballus, Methanosarcina mazei Goe1, Danio reri
o, Vibrio parahaemolyticus"
- 1415 1545 27 "Xenopus laevis, Homo sapiens, Mus musculus, Arabidopsis
thaliana, Drosophila melanogaster, Caenorhabditis elegans"
- 1416 1546 23 "Homo sapiens, Mus musculus, Aquifex aeolicus VF5, Droso
phila melanogaster, Clostridium sticklandii, Lotus corniculatus var. japonicus,
Schizosaccharomyces pombe" 30
- 1417 1547 28 "Danio rerio, Bacillus anthracis str. Ames, Homo sapiens
, Mus musculus"
- 1418 1548 43 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Euplo
tes octocarinatus, Synechocystis sp. PCC 6803, Bacillus anthracis str. Ames, Dic
tyostelium discoideum, Caenorhabditis elegans, Danio rerio, Methanocaldococcus j
annaschii"
- 1419 1549 32 "Danio rerio, Aquifex aeolicus VF5, Mus musculus, Schizo
saccharomyces pombe, Arabidopsis thaliana, Prochlorococcus marinus, Homo sapiens 40
, Vibrio parahaemolyticus, Oryza sativa (japonica cultivar-group), Pan troglodyt
es, Yersinia enterocolitica, Staphylococcus aureus, Pseudomonas aeruginosa, Vign
a radiata var. radiata, Caenorhabditis elegans, Staphylococcus aureus subsp. aur
eus N315, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (indica cultivar
-group), Staphylococcus aureus subsp. aureus Mu50"
- 1420 1550 27 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Oryza
sativa (japonica cultivar-group), Xylella fastidiosa Temecula1, Bos taurus, Xyl
ella fastidiosa 9a5c, Caenorhabditis elegans"
- 1421 1551 23 "Homo sapiens, Plasmodium falciparum, Mus musculus, Buch
nera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Takifugu 50

- rubripes, Plasmodium falciparum 3D7"
- 1422 1552 29 "Homo sapiens, Streptococcus mutans UA159, Bacteroides t
hetaiotaomicron VPI-5482, Pyrococcus furiosus DSM 3638, Thermococcus litoralis,
Pyrococcus furiosus, Mus musculus, Tocoyena longiflora, Arabidopsis thaliana, Da
nio rerio, Candida albicans, Pan troglodytes"
- 1423 1553 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), M
us musculus, Listeria monocytogenes, Danio rerio, Candida albicans"
- 1424 1554 27 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Dro
sophila melanogaster, Arabidopsis thaliana, Danio rerio, Mycoplasma capricolum,
Oryza sativa (japonica cultivar-group), Macaca fascicularis, Streptococcus gordo
nii str. Challis" 10
- 1425 1555 25 "Drosophila melanogaster, Arabidopsis thaliana, Shewanell
a oneidensis MR-1, Homo sapiens, Medicago truncatula, Mus musculus, Enterococcu
s faecalis V583"
- 1426 1556 29 "Homo sapiens, Borrelia burgdorferi B31, Mus musculus, O
ryza sativa (japonica cultivar-group), Daucus carota, Rattus norvegicus, Ciona i
ntestinalis, Melanoplus sanguinipes entomopoxvirus, Dictyostelium discoideum, Dr
osophila melanogaster, Plasmodium falciparum 3D7, Enterococcus faecalis, Methano
sarcina acetivorans C2A, Swinepox virus, Staphylococcus carnosus, Pyrococcus aby
ssi, Nicotiana tabacum, Euglena longa, Caenorhabditis elegans, Lotus corniculatu
s var. japonicus, Danio rerio, Sus scrofa, Oryctolagus sp." 20
- 1427 1557 38 "Helicobacter hepaticus ATCC 51449, Aquifex aeolicus VF5
, Homo sapiens, Oryza sativa (japonica cultivar-group), Pseudomonas putida KT244
0, Zea mays, Plasmodium falciparum 3D7, Helicobacter pylori J99, Haemophilus inf
luenzae Rd KW20"
- 1428 1558 33 "Homo sapiens, Clostridium acetobutylicum, Oryza sativa
(japonica cultivar-group), Xylella fastidiosa Temecula1, Pasteurella multocida,
Mus musculus, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Streptoc
occus agalactiae NEM316, Bacillus halodurans"
- 1429 1559 39 "Caenorhabditis elegans, Medicago truncatula, Human immu
nodeficiency virus 1, Homo sapiens, Cloning vector pTX-FLAG, Cloning vector pTX-
GFP, Cloning vector pBIG, Cloning vector pLITTLE, Cloning vector pTIKL, Lotus co
rniculatus var. japonicus, Dictyostelium discoideum, Branchiostoma floridae, Mus
musculus, Guillardia theta, Arabidopsis thaliana, Canine herpesvirus, Felis cat
us, Pan troglodytes, Streptococcus pyogenes MGAS315, Peromyscus maniculatus, The
rmoanaerobacter tengcongensis, Streptococcus pyogenes MGAS8232, Clostridium acet
obutylicum, Streptococcus pyogenes M1 GAS, Debaryomyces hansenii, Caenorhabditis
briggsae, Campylobacter jejuni subsp. jejuni NCTC 11168, Streptococcus pyogenes
SSI-1, uncultured marine gamma proteobacterium EBAC31A08, Danio rerio, Helicoba
cter pylori" 30
- 1430 1560 23 "Sebacina sp. F6, Dictyostelium discoideum, Homo sapiens
, Mus musculus, Caenorhabditis briggsae, Sus scrofa, Caenorhabditis elegans, Dan
io rerio, Oryza sativa"
- 1431 1561 24 "Homo sapiens, Danio rerio, Mus musculus, Arabidopsis th
aliana, Enterobacteria phage T4, Chilo iridescent virus, Lactococcus lactis subs
p. lactis, Euglena spirogyra"
- 1432 1562 29 "Homo sapiens, Human papillomavirus type 55, Mus musculu
s, Danio rerio, Amsacta moorei entomopoxvirus, Kogia breviceps, Maize dwarf mosa
ic virus" 40
- 1433 1563 28 "Cucumis melo, Caenorhabditis elegans, Mus musculus, Hom 50

- o sapiens, Wolffia globosa, Wolffia cylindracea, Wolffia arrhiza, Wolffia angust
a, Wolffia neglecta, Wolffia borealis, Guillardia theta, Hydra vulgaris, Hippola
is polyglotta, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Oryz
a sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168,
Danio rerio, Bacillus subtilis, Actinobacillus actinomycetemcomitans"
- 1434 1564 27 "Homo sapiens, Danio rerio, Oryza sativa (japonica culti
var-group), Sulfolobus solfataricus, Mus musculus, Atelerix albiventris, Little
cherry virus 2, Rickettsia prowazekii"
- 1435 1565 69 "Thermoanaerobacter tengcongensis, Chlamydomonada caviae
GPIC, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Thermotoga maritima, 10
Clostridium perfringens str. 13, Mycoplasma penetrans, Homo sapiens, Danio rerio
, Eruca sativa, Rattus norvegicus, Enterococcus faecalis V583, Mus musculus, Ory
za sativa (japonica cultivar-group), Caenorhabditis elegans, Haemophilus ducreyi
35000HP, Acinetobacter lwoffii, Raja erinacea, Nostoc sp. PCC 7120"
- 1436 1566 27 "Drosophila melanogaster, Ceanothus verrocosus, Ceanothu
s sonomensis, Ceanothus purpureus, Ceanothus pumilus, Ceanothus pinetorum, Ceano
thus megacarpus var. megacarpus, Ceanothus masonii, Ceanothus maritimus, Ceanoth
us greggii var. vestitus, Ceanothus glorio"
- 1437 1567 63 "Clostridium acetobutylicum, Oryza sativa (japonica cult
ivar-group), Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, 20
Candidatus Carsonella ruddii, Lotus corniculatus var. japonicus, Bacillus cereus
ATCC 14579, Plasmodium falciparum 3D7, Prochlorococcus marinus, Mus musculus, R
attus norvegicus, Dictyostelium discoideum, Drosophila melanogaster, Streptococc
us pyogenes MGAS315, Methanothermobacter thermautotrophicus str. Delta H, Strept
ococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Campylobacter jejuni,
Campylobacter jejuni subsp. jejuni NCTC 11168, Amsacta moorei entomopoxvirus, Ce
ratitis capitata, Streptococcus pyogenes SSI-1, Buchnera aphidicola str. APS (Ac
yrthosiphon pisum), Caenorhabditis elegans, Danio rerio, Synechocystis sp. PCC 6
803, Nostoc sp. PCC 7120"
- 1438 1568 54 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ame 30
s, Clostridium perfringens str. 13, Oryza sativa, Oryza sativa (japonica cultiva
r-group), Listeria monocytogenes, Vibrio vulnificus CMCP6, Pasteurella multocida
, Homo sapiens, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, A
rabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oceanob
acillus iheyensis HTE831, Haemophilus ducreyi 35000HP"
- 1439 1569 24 "Mus musculus, Clostridium tetani E88, Homo sapiens, Ory
za sativa (japonica cultivar-group), Caenorhabditis elegans, Streptococcus agala
ctiae 2603V/R, Streptococcus agalactiae NEM316, Bifidobacterium longum NCC2705"
- 1440 1570 27 "Oryza sativa (japonica cultivar-group), Plasmodium falc
iparum 3D7, Homo sapiens, Bacillus cereus ATCC 14579, Staphylococcus aureus subs 40
p. aureus N315, Mus musculus, Bacillus thuringiensis, Staphylococcus aureus subs
p. aureus Mu50, Bacillus anthracis str. Ames, Methanosarcina mazei Goe1, Arabido
psis thaliana, Haemophilus ducreyi 35000HP"
- 1441 1571 27 "Clostridium tetani E88, Drosophila melanogaster, Homo s
apiens, Saccharomyces cerevisiae, Danio rerio, Medicago truncatula, Fusobacteriu
m nucleatum subsp. nucleatum ATCC 25586, Dictyostelium discoideum, Mus musculus,
Macaca fascicularis"
- 1442 1572 31 "Mus musculus, Danio rerio, Macaca fascicularis, Ateleri
x albiventris, Homo sapiens, Drosophila melanogaster, Gallus gallus, Arabidopsis
thaliana, Buchnera aphidicola str. Bp (Baizongia pistaciae), Medicago truncatul 50

- a, *Streptococcus agalactiae* 2603V/R, *Stylochus zebra*, *Hevea brasiliensis*, *Brugia malayi*, *Streptococcus agalactiae* NEM316, *Lotus corniculatus* var. *japonicus*, *Nitrosomonas europaea* ATCC 19718, *Methanocaldococcus jannaschii*, *Botryotinia fuckeliana*"
- 1443 1573 29 "Homo sapiens, *Synechocystis* sp. PCC 6803, *Glycine max*, *Mus musculus*, *Methanocaldococcus jannaschii*, *Arabidopsis thaliana*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* M1 GAS, *Plasmodium falciparum* 3D7, *Streptococcus pyogenes* SSI-1, *Candida albicans*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Oryctolagus cuniculus*"
- 1444 1574 27 "Homo sapiens, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila melanogaster*, *Arabidopsis thaliana*, *Musca domestica*, *Mycoplasma mobile*, *Danio rerio*" 10
- 1445 1575 24 "Homo sapiens, Bovine herpesvirus 4, *Mus musculus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*, *Mycoplasma pulmonis*, *Neophila inaurata madagascariensis*"
- 1446 1576 35 "Homo sapiens, *Dictyostelium discoideum*, *Mycoplasma penetrans*, *Mus musculus*, *Felis catus*, *Mycoplasma capricolum*, *Eremothecium ashbyi*, *Atherix albiventris*, *Ureaplasma urealyticum*, *Laminaria digitata*, *Plasmodium falciparum* 3D7, *Methanocaldococcus jannaschii*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Medicago truncatula*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Aquifex aeolicus* VF5, *Rhycopyga flavicollis*, *Caenorhabditis elegans*, *Malawimonas jakobiformis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Citrus x paradisi*, *Lactococcus lactis* subsp. *lactis*, *Danio rerio*, *Arabidopsis thaliana*, *Ephedrus validus*, *Ephedrus californicus*, *Ephedrus plagiator*, *Vibrio cholerae*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Saccharomyces cerevisiae*, *Rattus norvegicus*, *Macaca fascicularis*, *Clostridium perfringens* str. 13" 20
- 1447 1577 28 "Haemophilus influenzae Rd KW20, *Rattus norvegicus*, *Homo sapiens*, *Mus musculus*, *Clostridium acetobutylicum*, *Caenorhabditis briggsae*, *Oryza sativa* (*japonica* cultivar-group)" 30
- 1448 1578 31 "Homo sapiens, *Saccharomyces cerevisiae*, *Borrelia burgdorferi* B31, *Caenorhabditis elegans*, *Solanum tuberosum*, *Poncirus trifoliata*, *Papio anubis*, *Oryza sativa* (*japonica* cultivar-group), *Lactococcus lactis* subsp. *lactis*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Cryptosporidium parvum*, *Bos taurus*, *Arabidopsis thaliana*"
- 1449 1579 24 "Staphylococcus epidermidis ATCC 12228, *Staphylococcus epidermidis*, *Homo sapiens*, *Gallus gallus*, *Mus musculus*, *Pan troglodytes*, *Danio rerio*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Candida tropicalis*"
- 1450 1580 25 "Lactobacillus sakei, *Mus musculus*, *Homo sapiens*, *Haemophilus ducreyi* 35000HP, *Mycoplasma pulmonis*, *Vibrio parahaemolyticus*, *Schizosaccharomyces pombe*" 40
- 1451 1581 27 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Mus musculus*, *Synechococcus* sp. WH 8102, *Thermosynechococcus elongatus* BP-1"
- 1452 1582 29 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Arabidopsis thaliana*, *Capsella rubella*, *Leishmania major*, *Lotus corniculatus* var. *japonicus*, *Cavia cutleri*"
- 1453 1583 31 "*Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Homo sapiens*, *Caenorhabditis elegans*, *Danio rerio*, *Clostridium acetobutyli*" 50

cum, *Oryza sativa* (japonica cultivar-group)"

1454 1584 23 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Nostoc* sp. PCC 7120, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Mus musculus*, *Danio rerio*"

1455 1585 29 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Oryctolagus cuniculus*, *Lotus corniculatus* var. japonicus, *Oceanobacillus iheyensis* HTE831, *Synechocystis* sp., *Synechocystis* sp. PCC 6803, *Clostridium perfringens* str. 13"

1456 1586 28 "*Oryza sativa* (japonica cultivar-group), *Clostridium perfringens* str. 13, *Pan troglodytes*, *Homo sapiens*, *Danio rerio*, *Mus musculus*, *Dictyostelium discoideum*, *Staphylococcus epidermidis* ATCC 12228, *Dicentra eximia*, *Entamoeba histolytica*, *Caenorhabditis elegans*, *Pelexia adnata*, *Odontorrhynchus variabilis*" 10

1457 1587 27 "*Mus musculus*, *Homo sapiens*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Mycoplasma pulmonis*, *Neurospora crassa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Clostridium difficile*, *Aegiceras corniculatum*, *Arabidopsis thaliana*, *Teladorsagia boreoarcticus*, *Saccharomyces cerevisiae*, *Ciona intestinalis*"

1458 1588 31 "*Homo sapiens*, *Bacillus cereus* ATCC 14579, *Plasmodium falciparum* 3D7, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Clostridium perfringens* str. 13, *Chlamydomonas reinhardtii* GPIC, *Methanosarcina mazei* Goe1, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. japonicus, *Batrachospermum turfosum*, *Sphenomorpha indica*, *Entamoeba histolytica*" 20

1459 1589 32 "*Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Dictyostelium discoideum*, *Papio anubis*, Peanut witches'-broom phytoplasma, *Rickettsia prowazekii*, *Arabidopsis thaliana*, *Onchocerca mykiss*, *Oenothera elata* subsp. hookeri, *Ciona intestinalis*, *Pan troglodytes*, *Anopheles gambiae*, *Oryzias latipes*, *Mus spicilegus*, *Eimeria tenella*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Buchnera aphidicola*, *Schmidtea mediterranea*, *Solanum tuberosum*" 30

1460 1590 29 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Mus musculus*, *Medicago truncatula*, *Arabidopsis thaliana*, *Candida albicans*, Human immunodeficiency virus 1, *Oryza sativa*, *Plasmodium falciparum* 3D7, *Ciona intestinalis*, *Escherichia coli*" 40

1461 1591 28 "*Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Bos taurus*, *Takifugu rubripes rubripes*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Medicago truncatula*, *Saccharomyces cerevisiae*, *Haemophilus influenzae* Rd KW20, *Anopheles gambiae*"

1462 1592 35 "*Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*, *Bacillus subtilis*, *Lotus corniculatus* var. japonicus, *Rivulus marmoratus*, *Bacillus subtilis* subsp. subtilis str. 168, *Staphylococcus epidermidis* ATCC 12228, *Oryza sativa* (indica cultivar-group), *Staphylococcus epidermidis*, *Oryza sativa* (japonica 40

- cultivar-group), *Danio rerio*, *Halocynthia roretzi*, *Bacillus halodurans*"
- 1463 1593 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Salmo salar*, *Arabidopsis thaliana*, *Danio rerio*, *Mus musculus*, *Eubalaena glacialis*, *Erwinia pyrifoliae*, *Camelpox virus CMS*, *Balaenoptera acutorostrata*, *Megaptera novaeangliae*, *Balaenoptera physalus*, *Balaenoptera musculus*, *Weinmannia dichotoma*, *Variola minor virus*, *Variola virus*, *Caenorhabditis briggsae*, *Sulfolobus tokodaii*, *Human herpesvirus 7*, *Balaenoptera musculus* x *Balaenoptera physalus*, *Variola major virus*, *Camelpox virus M-96*, *Bacillus halodurans*"
- 1464 1594 25 "Homo sapiens, *Entamoeba histolytica*, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Ophrestia radicata*, *Glycine max*, *Psoralea cinerea*, *Danio rerio*" 10
- 1465 1595 32 "*Solanum bulbocastanum*, *Homo sapiens*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar *la i str.* 56601, *Oceanobacillus iheyensis* HTE831, *Danio rerio*, *Mus musculus*, *Lycopersicon esculentum*, *Clostridium tetani* E88, *Streptococcus pyogenes* MGAS315, *Gallus gallus*, *Streptococcus pyogenes* MGAS8232, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Dictyostelium discoideum*, *Guillardia theta*, *Streptococcus pyogenes* M1 GAS, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Streptococcus pyogenes* SSI-1, *Caenorhabditis elegans*"
- 1466 1596 25 "*Homo sapiens*, *Chlamydia muridarum*, *Xylella fastidiosa* T emecula1, *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*, *Medicago truncatula*, *Shrimp white spot syndrome virus*, *Picea abies*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 1467 1597 24 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Shewanella oneidensis* MR-1, *Lactococcus lactis* subsp. *lactis*, *Synechococcus* sp., *Arabidopsis thaliana*, *Anolis trinitatis*, *Clostridium acetobutylicum*, *Danio rerio*, *Mus musculus*"
- 1468 1598 27 "*Homo sapiens*, *Papio anubis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus islandicus filamentous virus*, *Lactococcus lactis* subsp. *lactis*, *Betula pendula*, *Arabidopsis thaliana*, *Thermoplasma volcanium*, *Schizosaccharomyces pombe*" 30
- 1469 1599 25 "*Enterococcus faecalis* V583, *Mus musculus*, *Homo sapiens*, *Brassica napus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Solenopsis invicta*, *Solenopsis richteri*, *Solenopsis quinquecuspis*, *Solenopsis macdonaghi*, *Solenopsis saevissima*, *Solenopsis interrupta*, *Solenopsis aurea*, *Solenopsis amblychila*, *Clostridium acetobutylicum*, *Suid herpesvirus 1*, *Mycoplasma pulmonis*, *Streptococcus agalactiae* NEM316, *Amsacta moorei entomopoxvirus*, *Caenorhabditis elegans*"
- 1470 1600 28 "*Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Nostoc* sp. PCC 7120, *Mus musculus*, *Pan troglodytes*, *Saccharomyces cerevisiae*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Oryza sativa*, *Arabidopsis thaliana*, *Brassica napus*, *Rattus norvegicus*, *Medicago truncatula*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Oryctolagus cuniculus*, *Pyrobaculum aerophilum* str. IM2, *Triticum monococcum*, *Ipomoea purpurea*, *Euglena gracilis*, *Vibrio cholerae*, *Danio rerio*, *Helicobacter pylori* J99"
- 1471 1601 23 "*Medicago truncatula*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Drosophila melanogaster*, *Mus musculus*, *Caenorhabditis elegans*, *Haemophilus influenzae*"
- 1472 1602 27 "*Homo sapiens*, *Aloysia gratissima*, *Bacteriophage sk1*, *Mu*" 50

s musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mycoplasma pulmonis, Caenorhabditis elegans, Danio rerio, Pan troglodytes, Felis catus "

- 1473 1603 31 "Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Dictyostelium discoideum, Plasmodium falciparum 3D7, Arabidopsis thaliana, Sulfolobus solfataricus, Caenorhabditis elegans, Hydra vulgaris, Mus musculus, Oryza sativa (japonica cultivar-group), Cyprinus carpio, Belonogaster somereni, Medicago truncatula, Monosiga brevicollis, Gallus gallus, Streptococcus pneumoniae, Solanum tuberosum, Ureaplasma urealyticum, Lotus corniculatus var. japonicus, Vibrio parahaemolyticus, Danio rerio, Helicobacter pylori J99, Cucurbita pepo, Bos taurus, Sus scrofa, Drosophila melanogaster, Canis familiaris, Enterococcus faecalis V583, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Macaca mulatta, Campylobacter jejuni, Cymatoceps nasutus, Ceratosolen emarginatus, Ceratosolen appendiculatus" 10
- 1474 1604 23 "Caenorhabditis elegans, Arabidopsis thaliana, Homo sapiens, Lactobacillus plantarum WCFS1, Clostridium perfringens str. 13, Mus musculus, Drosophila melanogaster, Danio rerio, Mycoplasma penetrans, Oryza sativa (japonica cultivar-group)"
- 1475 1605 24 "Homo sapiens, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Papio anubis, Saimiriine herpesvirus 2, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Danio rerio, Anopheles gambiae" 20
- 1476 1606 25 "Rattus norvegicus, Homo sapiens, Saccharomyces cerevisiae, Mus musculus, Arabidopsis thaliana, Triticum monococcum, Drosophila melanogaster, Lactococcus lactis subsp. lactis, Lactococcus lactis subsp. cremoris, Medicago truncatula, Caenorhabditis elegans, Lactococcus lactis"
- 1477 1607 31 "Homo sapiens, Clostridium acetobutylicum, Saccharomyces castellii, Drosophila melanogaster, Plasmodium falciparum 3D7, Macaca mulatta, Mus musculus, Papio anubis, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Borrelia burgdorferi B31, Clostridium tetani E88, Felis catus, Human papillomavirus type 35, Bos taurus, Caenorhabditis elegans, Danio rerio, Human papillomavirus type 35H, Borrelia burgdorferi, Schizosaccharomyces pombe, Dictyostelium discoideum, Methanocaldococcus jannaschii, Cavia porcellus" 30
- 1478 1608 27 "Drosophila melanogaster, Lemur catta, Homo sapiens, Listeria monocytogenes, Mus musculus, Australian bat lyssavirus, Caenorhabditis elegans, Danio rerio"
- 1479 1609 28 "Oceanobacillus iheyensis HTE831, Homo sapiens, Mus musculus, Methanosarcina acetivorans C2A, Mouse cytomegalovirus 1, Drosophila melanogaster, Cochliobolus lunatus, Candida albicans, Danio rerio, Enterococcus faecalis V583, Oryza sativa (japonica cultivar-group), Eledone aldrovandi, Arabidopsis thaliana, Ommastrephes sloani" 40
- 1480 1610 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mus musculus, Caenorhabditis briggsae, Xenopus laevis, Citrobacter freundii, Pyrococcus sp."
- 1481 1611 23 "Homo sapiens, Danio rerio, Mus musculus, Medicago truncatula, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Pan troglodytes"
- 1482 1612 26 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Pan troglodytes, Papio anubis, Gallus gallus, Buchnera aphidicola str. S 50

- g (*Schizaphis graminum*), *Oryza sativa* (japonica cultivar-group), *Xenopus laevis*"
 1483 1613 29 "Homo sapiens, Ectocarpus siliculosus virus, Gallus gallus, Mus musculus, Borrelia burgdorferi B31, Drosophila melanogaster, Caenorhabditis elegans, Taenia crassiceps, Human papillomavirus, Danio rerio"
 1484 1614 26 "Candida albicans, Homo sapiens, Bacillus anthracis str. Ames, Pan troglodytes, Dictyostelium discoideum, Mus musculus, Arabidopsis thaliana, Staphylococcus piscifermentans"
 1485 1615 27 "Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Gallus gallus, Plasmodium falciparum 3D7, Mus musculus, Danio rerio" 10
 1486 1616 27 "Homo sapiens, Mus musculus, Ralstonia solanacearum, Caenorhabditis elegans, Aplysia californica"
 1487 1617 23 "Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Toxoplasma gondii, Homo sapiens, Danio rerio"
 1488 1618 29 "Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Homo sapiens, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Mycoplasma gallisepticum R, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Rattus norvegicus, Saccharomyces cerevisiae, Bacillus cereus, Plasmodium falciparum 3D7, Saccharomyces uvarum, Sulfolobus tokodaii, Danio rerio, Salmonella enterica subsp. enterica serovar Typhi" 20
 1489 1619 27 "Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Caenorhabditis elegans, Danio rerio, Saccharomyces cerevisiae"
 1490 1620 28 "Oryza sativa (japonica cultivar-group), Pseudomonas syringae pv. tomato str. DC3000, Homo sapiens, Rattus norvegicus, Mus musculus, Dictyostelium discoideum, Caenorhabditis briggsae, Lactobacillus bacteriophage phi adh, Danio rerio, Bacteriophage phi3626, Oryza sativa, Lactococcus lactis subsp. lactis, Lactococcus lactis, Nostoc sp. PCC 7120" 30
 1491 1621 25 "Homo sapiens, Mus musculus, Sulfolobus tokodaii, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Plasmodium falciparum 3D7, Caenorhabditis elegans, Danio rerio, Schizosaccharomyces pombe, Ciona intestinalis"
 1492 1622 28 "Homo sapiens, Cucurbit yellow stunting disorder virus, Mus musculus, Antheraea pernyi, Plasmodium falciparum 3D7, Rattus norvegicus, Methanosarcina acetivorans C2A, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Caenorhabditis elegans, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Danio rerio, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 40
 1493 1623 28 "Mus musculus, Danio rerio, Homo sapiens, Plasmodium falciparum 3D7, Pan troglodytes, Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Yersinia pestis KIM, Litopenaeus vannamei, Sus scrofa, Meleagrid herpesvirus 1, Plasmodium falciparum, Trypanosoma brucei, Yersinia pestis C092, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum, Archegozetes longisetosus, Methanocaldococcus jannaschii, Ornithorhynchus anatinus"
 1494 1624 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Chlorella pyrenoidosa, Listeria monocytogenes, Sandfly fever sicilian virus" 50

- 1495 1625 27 "Homo sapiens, Zea mays, Mus musculus, Prochlorococcus marinus, Rattus norvegicus, Bacillus halodurans"
- 1496 1626 24 "Homo sapiens, Clostridium tetani E88, Mus musculus, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Vibrio vulnificus CMCP6, Vibrio parahaemolyticus, Danio rerio"
- 1497 1627 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Bacillus phage PZA"
- 1498 1628 36 "Homo sapiens, Musa acuminata, Virilastacus araucanus, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Chlamydia caviae GPIC, Enterococcus faecalis V583, Drosophila melanogaster, Clostridium tetani E88, Danio rerio, Arabidopsis thaliana, Saccharomyces cerevisiae, Sus scrofa, Caenorhabditis elegans" 10
- 1499 1629 31 "Plasmodium falciparum 3D7, Xenopus laevis, Danio rerio, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Scelolyperus meracus, Bacillus thuringiensis, Dictyostelium discoideum, Asphaera deleta, Orthalica copalina, Monolepta nigrotibialis"
- 1500 1630 40 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Medicago truncatula, Oryza sativa, Rattus norvegicus, Drosophila melanogaster, Clostridium acetobutylicum, Candidatus Blochmannia floridanus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Takifugu rubripes, Ciona intestinalis, Tetrapisispora nanseiensis, Tetrapisispora phaffii, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Clostridium tetani E88, Oncorhynchus tshawytscha, Thermoplasma acidophilum, Plasmodium falciparum, Plasmodium vivax, Pisum sativum, Neurospora crassa" 20
- 1501 1631 28 "Prochlorococcus marinus, Homo sapiens, Entamoeba dispar, Mus musculus, Oryctolagus cuniculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Synechocystis sp., Synechocystis sp. PCC 6803, Clostridium perfringens str. 13"
- 1502 1632 33 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Rumex palustris, Danio rerio, Bacillus cereus ATCC 14579, Medicago truncatula, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans" 30
- 1503 1633 27 "Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Oryza sativa (indica cultivar-group), Plasmodium falciparum 3D7, Xenopus laevis, Listeria monocytogenes, Listeria innocua"
- 1504 1634 30 "Homo sapiens, Caenorhabditis briggsae, Mus musculus, Methanosarcina acetivorans C2A, Neurospora crassa, Haemophilus influenzae Rd KW20"
- 1505 1635 27 "Homo sapiens, Mus musculus, Clostridium acetobutylicum, Danio rerio" 40
- 1506 1636 30 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio"
- 1507 1637 28 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Drosophila melanogaster, Pyrobaculum aerophilum str. IM2, Helicobacter hepaticus, Arabidopsis thaliana, Helicobacter hepaticus ATCC 51449, Brugia malayi"
- 1508 1638 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Solanum tuberosum, Canis familiaris, Arabidopsis thaliana"
- 1509 1639 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum, Danio rerio, Saccharomyces cerevisiae, Mus musculus, Rattus norvegicus, Pan troglodytes, Mycoplasma pulmonis, Mycoplasma genitalium" 50

- 1510 1640 27 "Homo sapiens, Mus musculus, Pan troglodytes, Caenorhabditis briggsae, Caenorhabditis elegans, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Oceanobacillus iheyensis HTE831, Danio rerio"
- 1511 1641 27 "Nostoc sp. PCC 7120, Homo sapiens, Caenorhabditis briggsae, Mus musculus, Macaca fascicularis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Danio rerio, Pan troglodytes, Listeria monocytogenes, Tripedalia cystophora, Oryza sativa (japonica cultivar-group)"
- 1512 1642 24 "Mus musculus, Danio rerio, Homo sapiens, Rattus norvegicus, Arabidopsis thaliana, Caenorhabditis briggsae, Ascaris suum, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Haemophilus ducreyi 35000HP, Manduca sexta, Nostoc sp. PCC 7120" 10
- 1513 1643 27 "Homo sapiens, Danio rerio, Mandarina exoptata, Neurospora crassa, Bacillus anthracis str. Ames, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae, Oryza sativa (japonica cultivar-group), Streptococcus agalactiae NEM316, Mus musculus, Staphylococcus aureus subsp. aureus MW2"
- 1514 1644 23 "Equus caballus, Homo sapiens, Sus scrofa, Bos taurus, Canis familiaris, Mus musculus"
- 1515 1645 24 "Allomyces macrogynus, Allomyces arbuscula, Mus musculus, Homo sapiens, Prochlorococcus marinus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Dictyostelium discoideum, Drosophila virilis" 20
- 1516 1646 24 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Oryza sativa, Trypanosoma cruzi, Dictyostelium discoideum, Plasmodium falciparum 3D7, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Cicer arietinum, Cephaloboides sp. SB227, Streptococcus pyogenes SSI-1, Russula rosacea, Danio rerio, Monetaria caputserpentis caputophidii, Monetaria caputserpentis caputserpentis, Clostridium perfringens, Clostridium perfringens str. 13" 30
- 1517 1647 23 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Homo sapiens, Mus musculus, Drosophila melanogaster, Pinus koraiensis, Pinus thunbergii, Pinus pinaster"
- 1518 1648 28 "Mus musculus, Lassa virus, Homo sapiens, Haemophilus influenzae Rd KW20, Haemophilus influenzae, Drosophila melanogaster, Coprosma quadrifida, Arabidopsis thaliana, Vibrio cholerae, Dictyostelium discoideum, Sherardia arvensis, Paederia foetida"
- 1519 1649 31 "Drosophila melanogaster, Homo sapiens, Tetraodon fluviatilis, Arabidopsis thaliana, Mus musculus, Prochlorococcus marinus, Plasmodium falciparum, Danio rerio" 40
- 1520 1650 28 "Rattus norvegicus, Mus musculus, Lotus corniculatus var. japonicus, Homo sapiens, Equus caballus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Saccharomyces cerevisiae, Haemophilus influenzae Rd KW20, Arabidopsis thaliana, Ciona intestinalis, Callinectes sapidus"
- 1521 1651 20 "Bacteroides thetaiotaomicron VPI-5482, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Mus musculus, Drosophila melanogaster, Homo sapiens, Chlamydia trachomatis, Listeria monocytogenes, Pan troglodytes, Latimeria chalumnae"
- 1522 1652 29 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Ara 50

- bidopsis thaliana, Danio rerio, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Euglena myxocylindracea, Vaucheria bursata, Helorus sp. M93, Euglena geniculata, Primula sieboldii, Rattus norvegicus, Medicago truncatula, Helorus sp., Pseudoregma sp. south group"
- 1523 1653 28 "Homo sapiens, Mus musculus, Pan troglodytes, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum"
- 1524 1654 27 "Drosophila melanogaster, Mus musculus, Homo sapiens, Human immunodeficiency virus 1, Danio rerio"
- 1525 1655 26 "Homo sapiens, Mus musculus, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Plasmodium falciparum 3D7, Human adenovirus type 12, Escherichia coli K12, Medicago truncatula, Sorghum bicolor, Saccharomyces cerevisiae, Danio rerio, Escherichia coli" 10
- 1526 1656 28 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Plasmodium falciparum 3D7, Petunia x hybrida, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Mus musculus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Coxiella burnetii RSA 493, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Clostridium tetani E88, Shewanella oneidensis MR-1, Streptococcus pneumoniae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Clostridium acetobutylicum, Candidatus Blochmannia floridanus, Didelphis virginiana, Gasterosteus aculeatus, Schizosaccharomyces pombe, Clostridium perfringens str. 13" 20
- 1527 1657 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Danio rerio"
- 1528 1658 27 "Homo sapiens, Danio rerio, Drosophila melanogaster, Arabidopsis thaliana, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Rickettsia prowazekii, Ureaplasma urealyticum, Mus musculus"
- 1529 1659 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis briggsae, Arabidopsis thaliana, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Caenorhabditis elegans, Sus scrofa, Plasmodium falciparum 3D7, Salmonella typhimurium, Salmonella enterica subsp. enterica serovar Typhi, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Mus musculus, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Tribolium castaneum, Guillardia theta, Danio rerio, Mycoplasma pulmonis, Staphylococcus epidermidis, Plasmodium falciparum, Lotus corniculatus var. japonicus, Solanum demissum, Cryptophlebia leucotreta granulovirus, Pan troglodytes" 30
- 1530 1660 35 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Candidatus Blochmannia floridanus, Caenorhabditis brig" 40
- 1531 1661 24 "Mus musculus, Medicago truncatula, Homo sapiens, Arabidopsis thaliana, Nicotiana excelsior, Enterococcus faecalis V583, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Clostridium tetani E88, Caenorhabditis elegans, Plasmodium falciparum 3D7, Entamoeba histolytica, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Danio rerio, Haemophilus influenzae Rd KW20, Saccharomyces cerevisiae, Xenopus laevis/gilli, Bacillus halodurans, Clostridium perfringens str. 13"
- 1532 1662 27 "Homo sapiens, Arabidopsis thaliana, Schizosaccharomyces pombe, Drosophila melanogaster, Mus musculus, Massoutiera mzabi, Saccharomyces cerevisiae" 50

- 1533 1663 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Oryctolagus cuniculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe"
- 1534 1664 28 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Danio rerio, Oryza sativa, Trachyusa sp., Candidatus Carsonella ruddii"
- 1535 1665 28 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Plasmodium falciparum, Rattus norvegicus, Arabidopsis thaliana, Pasteurella multocida, Danio rerio, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Medicago truncatula" 10
- 1536 1666 31 "Drosophila melanogaster, Homo sapiens, Mus musculus, Cochliobolus carbonum, Oryza sativa (japonica cultivar-group), Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Mycobacterium tuberculosis CDC1551, Mycobacterium tuberculosis H37Rv, Pan troglodytes, Eimeria acervulina, Oceanobacillus ihayensis HTE831, Danio rerio, Salmonella enterica subsp. enterica serovar Typhi, Mycobacterium bovis subsp. bovis AF2122/97, Drosophila virilis, Arabidopsis thaliana"
- 1537 1667 27 "Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Atelerix albiventris, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mus musculus, Danio rerio, Pan troglodytes, Streptococcus pyogenes MGAS315, Thermoanaerobacter tengcongensis, Lactococcus lactis subsp. lactis, Streptococcus pyogenes SSI-1, Staphylococcus aureus subsp. aureus MW2, Lactococcus lactis, Atropa belladonna" 20
- 1538 1668 29 "Mus musculus, Rattus norvegicus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Clostridium perfringens str. 13, Arabidopsis thaliana, Bacillus thuringiensis, Zea mays, Mycoplasma penetrans, Macaca fascicularis, Pan troglodytes, Caenorhabditis elegans, Plasmodium falciparum 3D7, Lycopersicon esculentum, Dictyostelium discoideum, Yaba-like disease virus, Ureaplasma urealyticum, Arbacia lixula, Therea petiveriana" 30
- 1539 1669 24 "Homo sapiens, Mus musculus, Pan troglodytes, Drosophila erecta, Danio rerio, Clostridium perfringens str. 13, Rattus norvegicus, Clostridium perfringens"
- 1540 1670 27 "Homo sapiens, Marchantia polymorpha, Halocynthia roretzi, Mus musculus, Human papillomavirus type 30, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio"
- 1541 1671 27 "Homo sapiens, Mus musculus, Oryctolagus cuniculus, Caenorhabditis elegans, Thermoanaerobacter tengcongensis, Candidatus Blochmannia floridanus, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 1542 1672 24 "Arabidopsis thaliana, Pan troglodytes, Homo sapiens, Sulfolobus solfataricus, Caecilius quercus, Vibrio vulnificus CMCP6, Rattus norvegicus, Mus musculus, Orientia tsutsugamushi, Didelphis virginiana, Triticum aestivum, Bos taurus" 40
- 1543 1673 23 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Xenopus laevis, Danio rerio, Anolis gundlachi, Meleagris gallopavo, Bacillus cereus"
- 1544 1674 19 "Mycoplasma gallisepticum R, Homo sapiens, Mus musculus, Helicobacter pylori 26695, Helicobacter pylori, Danio rerio"
- 1545 1675 25 "Homo sapiens, Mus musculus, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Arabidopsis thaliana, Staphylococcus" 50

- us aureus, Oceanobacillus iheyensis HTE831, Lactobacillus plantarum WCFS1, Schizosaccharomyces pombe"
- 1546 1676 31 "Leptospira interrogans serovar lai str. 56601, Mus musculus, Homo sapiens, Danio rerio, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Tolypella prolifera, Oryza sativa, Xenopus laevis, Amsacta moorei entomopoxvirus, Pan troglodytes, Arabidopsis thaliana"
- 1547 1677 39 "Classical swine fever virus, Dictyostelium discoideum, Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Stefaniola n. sp. ND-2002-1, Stefaniola n. sp. ND-2002-2, Arabidopsis thaliana, Caenorhabditis elegans, Trypanosoma brucei, Schizosaccharomyces pombe, Danio rerio, Drosophila melanogaster, Antheraea pernyi, Boea crassifolia, Oryza sativa (japonica cultivar-group), Monosiga brevicollis, Plasmodium falciparum 3D7, Cyrtodiopsis dalmanni, Saccharomyces cerevisiae, Canis familiaris, Candidatus Carsonella ruddii, Plasmodium falciparum, Mus musculus domesticus, Laevipeneroplis bradyi, Pelargonium x hortorum, Spodoptera frugiperda, lepidopsocid RS-2001, Bacillus cereus ATCC 14579, Pan troglodytes, Gallus gallus, Aegilops tauschii, Rickettsia montanensis" 10
- 1548 1678 31 "Caenorhabditis elegans, Homo sapiens, Influenza B virus (B/Taiwan/2195/99), Influenza B virus (B/Taiwan/1243/99), Influenza B virus (B/Saga/S172/99), Medicago truncatula, Dictyostelium discoideum, Porphyromonas gingivalis W83, Enterobacteria phage RB49, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Xenopus laevis, Oryza sativa (japonica cultivar-group), Drosophila simulans, Oceanobacillus iheyensis HTE831, Spinturnix myoti, Synechocystis sp., Synechocystis sp. PCC 6803" 20
- 1549 1679 29 "Homo sapiens, Drosophila melanogaster, Anopheles stephensi, Mus musculus, Streptococcus parasanguinis, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Human herpesvirus 4, Streptococcus agalactiae NEM316, Anopheles gambiae"
- 1550 1680 24 "Arabidopsis thaliana, Mus musculus, Danio rerio, Drosophila melanogaster, Homo sapiens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Pseudomonas aeruginosa PA01, Papio anubis, Streptococcus agalactiae 2603V/R, Pseudomonas aeruginosa" 30
- 1551 1681 27 "Homo sapiens, Caenorhabditis elegans, Listeria innocua, Mus musculus, Danio rerio, Silurana tropicalis"
- 1552 1682 24 "Arabidopsis thaliana, Homo sapiens, Kluyveromyces lactis, Drosophila melanogaster, Lycopersicon pimpinellifolium, Mus musculus"
- 1553 1683 24 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Danio rerio, Caenorhabditis briggsae"
- 1554 1684 24 "Homo sapiens, Shewanella oneidensis MR-1, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Shewanella putrefaciens, Caenorhabditis elegans, Mus musculus, Danio rerio" 40
- 1555 1685 32 "Homo sapiens, Felis catus, Mus musculus, Strongyloides stercoralis, Wolbachia pipientis, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Wolbachia sp. wPrn, Streptococcus pyogenes M1 GAS, Wolbachia endosymbiont of Tribolium madens, Campylobacter jejuni subsp. jejuni NCTC 11168, Chlamydomonas pneumoniae CWL029, Wolbachia endosymbiont of Cletus punctiger, Wolbachia endosymbiont of Cletus trigonus, Wolbachia endosymbiont of Cletus rusticus, Lotus corniculatus var. japonicus, Wolbachia sp. wCon, Chlamydomonas pneumoniae AR39, Streptococcus pyogenes SSI-1, Chlamydomonas pneumoniae J138, Danio rerio, Chlamydomonas pneumoniae TW-183, Clostridium perfringens str. 13" 50

- 1556 1686 27 "Leuconostoc mesenteroides, Medicago truncatula, Lotus corniculatus var. japonicus, Pan troglodytes, Staphylococcus epidermidis ATCC 12228, Homo sapiens, Staphylococcus epidermidis, Caenorhabditis elegans, Danio rerio, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Clostridium tetani E88, Plasmodium falciparum 3D7, Staphylococcus aureus, Thermoanaerobacter tengcongensis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Periplaneta australasiae"
- 1557 1687 32 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Danio rerio, Pan troglodytes, Plasmodium falciparum, Artibeus jamaicensis, Oryza sativa (japonica cultivar-group), Rickettsia prowazekii, Zea mays subsp. parviglumis, Lotus corniculatus var. japonicus, Hypostomus uruguayensis, Zapoteca tetragona" 10
- 1558 1688 31 "Mus musculus, Homo sapiens, Zea mays subsp. mays, Papio anubis, Arabidopsis thaliana, Mycoplasma pulmonis, Danio rerio"
- 1559 1689 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Streptococcus agalactiae 2603V/R, Phaseolus vulgaris, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Sulfolobus tokodaii, Oryza sativa, Equus caballus, Clostridium perfringens str. 13, Oryza sativa (indica cultivar-group)"
- 1560 1690 24 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Haematoloechus complexus, Arabidopsis thaliana, Haematoloechus sp., Danio rerio, Nostoc sp. PCC 7120" 20
- 1561 1691 23 "Synechocystis sp. PCC 6803, Homo sapiens, Human rhinovirus 17, Mus musculus, Mycoplasma pneumoniae, Acipenser transmontanus, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus MW2, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 1562 1692 23 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group)"
- 1563 1693 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Proteus mirabilis, Danio rerio, Rhizophyidum sp. 136, Mus musculus, Nostoc sp. PCC 7120" 30
- 1564 1694 27 "Vibrio vulnificus CMCP6, Homo sapiens, Mus musculus, Borrelia burgdorferi B31, Sus scrofa, Pisum sativum, Streptomyces coelicolor A3(2), Catharanthus roseus, Pirellula sp., Methanocaldococcus jannaschii"
- 1565 1695 25 "Arabidopsis thaliana, Mus musculus, Homo sapiens, Bacillus anthracis str. A2012, Bacillus anthracis, Bacillus halodurans"
- 1566 1696 41 "Drosophila melanogaster, Mus musculus, Homo sapiens, Rattus rattus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Cionia intestinalis, Rattus norvegicus, Pan troglodytes, Aeropyrum pernix, Triticum aestivum, Anopheles gambiae, Caenorhabditis briggsae, Penicillium griseofulvum, Oryctolagus cuniculus" 40
- 1567 1697 29 "Xenopus laevis, Homo sapiens, Mus musculus, Schizosaccharomyces pombe, Triticum aestivum, Candidatus Blochmannia floridanus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Deinococcus radiodurans, Danio rerio, Rattus norvegicus, Oryctolagus cuniculus"
- 1568 1698 74 "Mus musculus, Homo sapiens, Rattus norvegicus, Encephalitozoon cuniculi, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Thermus aquaticus, Arabidopsis thaliana, Danio rerio, Gallus gallus"
- 1569 1699 28 "Homo sapiens, Rickettsia prowazekii, Vibrio parahaemolyticus" 50

- ticus, *Mus musculus*, *Pan troglodytes*, *Drosophila melanogaster*, *Tamias striatus*, *Psophocarpus tetragonolobus*, *Saccharomyces cerevisiae*, *Danio rerio*, *Rattus norvegicus*"
- 1570 1700 24 "Plasmodium falciparum 3D7, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), Bacteriophage phi-105, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Caenorhabditis elegans*, *Arabidopsis thaliana*"
- 1571 1701 27 "*Mus musculus*, *Homo sapiens*, *Pyrococcus horikoshii*"
- 1572 1702 26 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mus musculus*, *Rattus norvegicus*, *Danio rerio*, *Trypanosoma cruzi*, *Azotobacter vinelandii*" 10
- 1573 1703 27 "*Mus musculus*, *Homo sapiens*"
- 1574 1704 27 "*Homo sapiens*, *Mus musculus*, *Platydictya jungermannioidea*, *Rickettsia prowazekii*, *Myurella sibirica*, *Helodium blandowii*, *Plagiothecium eryphyllum*, *Plagiothecium niitakayamae*, *Oryza sativa* (japonica cultivar-group), *Sminthopsis macroura*, *Medicago truncatula*, *Gallus gallus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Rattus norvegicus*"
- 1575 1705 31 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Pyrococcus abyssi*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Pan troglodytes*, *Sus scrofa*, *Cryptococcus neoformans* var. *grubii*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Lotus corniculatus* var. *japonicus*, *Arrhynchus penai*, *Sulfolobus tokodaii*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Schizosaccharomyces pombe*, *Leptosphaeria maculans*, *Pyramimonas disomata*, *Bacillus subtilis*" 20
- 1576 1706 25 "*Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Sus scrofa*, *Caenorhabditis elegans*"
- 1577 1707 27 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Medicago truncatula*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Enterococcus faecalis*, *Oryza sativa* (indica cultivar-group), *Oryza sativa* (japonica cultivar-group), *Bacillus licheniformis*" 30
- 1578 1708 23 "*Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Homo sapiens*, *Mus musculus*, *Bos taurus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Arabidopsis thaliana*"
- 1579 1709 24 "*Homo sapiens*, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Mus musculus*, *Methanosarcina mazei* Goe1, *Plasmodium falciparum* 3D7, Sweet potato chlorotic stunt virus, *Beta vulgaris* subsp. *vulgaris*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Bacillus halodurans*" 40
- 1580 1710 27 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Ateles paniscus*, *Rattus norvegicus*"
- 1581 1711 28 "*Ciona intestinalis*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Homo sapiens*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mus musculus*, Gill-associated virus, *Candida albicans*, *Haemophilus ducreyi* 35000HP, *Streptococcus agalactiae* 2603V/R, *Thermoanaerobacter tengcongensis*, *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*"
- 1582 1712 23 "*Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*, *Toxoplasma gondii*, *Drosophila melanogaster*, *Mus musculus*, *Danio*" 50

- rerio"
- 1583 1713 29 "Homo sapiens, Mus musculus, Xenopus laevis, Arabidopsis thaliana, Caenorhabditis elegans, uncultured crenarchaeote 74A4, Campylobacter jejuni subsp. jejuni NCTC 11168, Ciona intestinalis, Danio rerio"
- 1584 1714 28 "Arabidopsis thaliana, Danio rerio, Homo sapiens, Mus musculus, Listeria innocua, Pan troglodytes, Macaca mulatta, Gallus gallus, Meleagris gallopavo, Medicago truncatula, Papio anubis"
- 1585 1715 24 "Mus musculus, Schizosaccharomyces pombe, Homo sapiens, Bacillus halodurans"
- 1586 1716 29 "Homo sapiens, Schizosaccharomyces pombe, Danio rerio, Wolbachia sp. wRi, Caenorhabditis elegans, Mus musculus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Enterococcus faecalis V583, Dictyostelium discoideum, Drosophila melanogaster, Papio anubis, Pan troglodytes, Plasmodium falciparum 3D7, Arabidopsis thaliana, Spodoptera exigua nucleopolyhedrovirus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Cryptocarya sclerophylla, Haemophilus ducreyi 35000HP, Oryza sativa (japonica cultivar-group), Medicago truncatula, Pisum sativum" 10
- 1587 1717 27 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Schmidtea mediterranea, Amphiporus formidabilis, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Oryctolagus cuniculus, Piromyces sp. E2, Methanosarcina acetivorans C2A, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Escherichia coli O157:H7 EDL933, Sarcophyton glaucum, Macaca mulatta, Escherichia coli, Brassica napus, Danio rerio, Phytophthora parasitica, Escherichia coli O157:H7" 20
- 1588 1718 40 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Plasmodium falciparum 3D7, Buchnera aphidicola str. Bp (Baizongia pistaciae), Crioceris duodecimpunctata, Pan troglodytes, Arabidopsis thaliana, Pongo pygmaeus, Rickettsia prowazekii, Oryza sativa (japonica)"
- 1589 1719 34 "Homo sapiens, Rattus norvegicus, Mus musculus, Arabidopsis thaliana, Zea mays, Dictyostelium discoideum, Sulfolobus tokodaii, Melanoplus sanguinipes entomopoxvirus, Sciaenops ocellatus, Drosophila melanogaster, Urea plasma urealyticum, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Danio rerio, Vigna aconitifolia, Bacillus anthracis str. Ames, Clostridium tetani E88, Macaca mulatta, Buchnera aphidicola str. Sg (Schizaphis graminum), Methanosarcina acetivorans C2A, Ostrinia nubilalis, Sus scrofa, Papio anubis, Guillardia theta, Candidatus Blochmannia floridanus, Aedes aegypti, Plasmodium falciparum 3D7, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Mycoplasma genitalium, Mannheimia haemolytica, Methanococcus voltae" 30
- 1590 1720 32 "Plasmodium falciparum 3D7, Plasmodium falciparum, Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group), Medicago truncatula, Drosophila melanogaster, Chaetosphaeridium globosum, Periphyllus lyropictus, Lactococcus lactis subsp. lactis, Mycoplasma" 40
- 1591 1721 37 "Plasmodium falciparum 3D7, Clostridium acetobutylicum, Prototheca wickerhamii, Danio rerio, Dictyostelium discoideum, Homo sapiens, Prochlorococcus marinus, Mus musculus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Amsacta moorei entomopoxvirus"
- 1592 1722 39 "Oryza sativa (japonica cultivar-group), Macrosteles fascifrons, Drosophila melanogaster, Bacillus megaterium, Danio rerio, Homo sapiens, Bacillus cereus ATCC 14579, Mus musculus, Plasmodium falciparum 3D7, Sus scrofa, Caenorhabditis elegans, Equus caballus, Pan troglodytes, Apis mellifera ligus" 50

- tica, *Plasmodium falciparum*, *Arabidopsis thaliana*, *Clostridium perfringens* str. 13, *Medicago truncatula*, *Leptospira interrogans* serovar lai str. 56601, *Dictyostelium discoideum*, *Schmidtea mediterranea*, *Tetrahymena thermophila*, *Clostridium perfringens*, *Procambarus clarkii*, *Bacillus thuringiensis* serovar israelensis, *Ureaplasma urealyticum*, *Amsacta moorei* entomopoxvirus, *Prototheca wickerhamii*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Pichia etchellsii*, *Listeria monocytogenes*, *Listeria innocua*, *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Aphytis melinus*"
- 1593 1723 24 "Medicago truncatula, *Schmidtea mediterranea*, *Homo sapiens*, *Mus musculus*, *Escherichia coli*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma mycoides* subsp. *mycoides* SC, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Danio rerio*, *Haemophilus influenzae* Rd KW20, *Haemophilus influenzae*, *Arabidopsis thaliana*" 10
- 1594 1724 23 "Homo sapiens, *Mus musculus*, *Physcomitrella patens*, *Zea mays*, *Aedes aegypti*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*"
- 1595 1725 28 "Mus musculus, *Homo sapiens*, *Candida albicans*, *Dictyostelium discoideum*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Macaca fascicularis*"
- 1596 1726 28 "Homo sapiens, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Mus musculus*, *Lactococcus lactis* subsp. *lactis*" 20
- 1597 1727 28 "Enterococcus faecalis V583, *Homo sapiens*, *Desulfitobacterium hafniense*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Ciona intestinalis*, *Danio rerio*, *Medicago truncatula*, *Chlorobium tepidum* TLS, *Methanosarcina acetivorans* C2A, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Zea mays*, *Franklandia fucifolia*, *Polysphondylium pallidum*"
- 1598 1728 28 "Mazamastrongylus odocoilei, *Wolbachia pipientis*, *Bacillus anthracis* str. Ames, *Bacillus atticus*, *Dictyostelium discoideum*, *Wolbachia sp. pJM36*, *Wolbachia sp. pJM35*, *Wolbachia sp. pJM28*, *Wolbachia sp. wCer2*, *Wolbachia sp. wDveM*, *Wolbachia sp. wSipM*, *Wolbachia*" 30
- 1599 1729 23 "Homo sapiens, *Mus musculus*, *Lactobacillus plantarum* WCF S1, Human immunodeficiency virus 1"
- 1600 1730 23 "Mus musculus, *Homo sapiens*, *Prochlorococcus sp.*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Tetrahymena pyriformis*"
- 1601 1731 24 "Arabidopsis thaliana, *Enterococcus faecium*, *Mus musculus*, *Rattus norvegicus*, *Homo sapiens*, *Pupa strigosa*, *Medicago truncatula*, *Vesicomys sp. CVD-2002*, *Danio rerio*"
- 1602 1732 31 "Homo sapiens, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Zea mays*, *Mus musculus*, *Pan troglodytes*, *Schizosaccharomyces pombe*, *Danio rerio*, *Xylella fastidiosa* 9a5c, African swine fever virus, *Glycine max*, *Saccharomyces bayanus*, *Mycoplasma genitalium*" 40
- 1603 1733 28 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Bos taurus*, *Rattus norvegicus*, *Ceratium horridum*, *Cricetulus griseus*, *Caenorhabditis elegans*, *Gallus gallus*, Avian infectious bronchitis virus, *Arabidopsis thaliana*, *Mesocricetus auratus*, *Clostridium perfringens* str. 13"
- 1604 1734 31 "Mus musculus, *Homo sapiens*, *Gossypium hirsutum*, *Sacchar*" 50

- omyces cerevisiae, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Pan troglodytes, Dictyostelium discoideum, Schmidtea mediterranea, Campylobacter jejuni, Neurospora crassa, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Macaca arctoides, Arabidopsis thaliana, Plasmodium falciparum 3D7, Helicobacter pylori 26695, Helicobacter pylori J99, Plasmodium falciparum, Rattus norvegicus"
- 1605 1735 31 "Homo sapiens, Rickettsia prowazekii, Rattus norvegicus, Mus musculus, Poncirus trifoliata, Staphylococcus epidermidis ATCC 12228, Danio rerio, Arabidopsis thaliana, Plasmodium yoelii yoelii, TTV-like mini virus, Medicago truncatula, Dictyostelium discoideum" 10
- 1606 1736 31 "Buchnera aphidicola, Homo sapiens, Tetrahymena thermophila, Prochlorococcus marinus, Caenorhabditis elegans, Shigella flexneri 2a, Plasmodium falciparum 3D7, Plasmodium berghei, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Mus musculus, "
- 1607 1737 39 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Schistosoma japonicum, Mus musculus, Buchnera aphidicola str. Bp (Bai zongia pistaciae), Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Rattus norvegicus, Agaricus bisporus, Papio anubis, Lyngbya majuscula, Arabidopsis thaliana, Danio rerio, Euglena longa, Caenorhabditis elegans, Hyalophora cecropia" 20
- 1608 1738 31 "Arabidopsis thaliana, Homo sapiens, Leishmania major, Vibrio parahaemolyticus, Artibeus jamaicensis, Mus musculus, Drosophila melanogaster, Danio rerio, Plasmodium falciparum 3D7, Dictyostelium discoideum, Zea mays, Oryctolagus cuniculus, Chimaera phantasma, Caenorhabditis elegans, Schizosaccharomyces pombe, Feline immunodeficiency virus"
- 1609 1739 28 "Ascaris suum, Homo sapiens, Bos taurus, Mus musculus, Plasmodium falciparum, Danio rerio, Anabaena sp., Nostoc sp. PCC 7120"
- 1610 1740 24 "Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Homo sapiens, Porphyromonas gingivalis W83, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Porphyromonas gingivalis, Staphylococcus aureus subsp. aureus Mu50, Porcine reproductive and respiratory syndrome virus, Methanosarcina acetivorans C2A, Danio rerio, Sus scrofa, Clostridium intestinalis, Xenopus laevis, Klebsiella pneumoniae" 30
- 1611 1741 27 "Homo sapiens, Yersinia pestis KIM, Neurospora crassa, Yersinia pestis C092, Danio rerio, Mus musculus, Coxiella burnetii RSA 493, Lotus corniculatus, Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, Epiphyas postvittana nucleopolyhedrovirus, Oryza sativa, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Anopheles gambiae, Staphylococcus aureus subsp. aureus Mu50" 40
- 1612 1742 24 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Smintropsis macroura, Bacillus whitei, Bacillus linceorum, Salmonella enterica subsp. enterica serovar Typhi Ty2, Lycopersicon esculentum, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Salmonella enterica subsp. enterica serovar Typhi"
- 1613 1743 33 "Homo sapiens, Pan troglodytes, Bacillus anthracis str. Ames, Dictyostelium discoideum, Arabidopsis thaliana, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Drosophila melanogaster, Rickettsia conorii, Rattus 50

- norvegicus, *Flaveria anomala*, *Candidatus Blochmannia floridanus*, *Brassica napus*, *Caenorhabditis elegans*, *Gloydus halys*, *Musca domestica*, *Methanocaldococcus jannaschii*, *Actinobacillus actinomycetemcomitans*"
- 1614 1744 29 "Mus musculus, Homo sapiens, Glomus sp. 1v17.1, Pan troglodytes, Salmonella enterica subsp. enterica serovar Typhi Ty2, Caenorhabditis briggsae, Salmonella enterica subsp. enterica serovar Typhi, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpi"
- 1615 1745 85 "Bordetella bronchiseptica, Bordetella pertussis, Bordetella parapertussis, Ralstonia solanacearum, Escherichia coli CFT073, Nitrosomonas europaea ATCC 19718, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Neisseria meningitidis Z2491, Neisseria m" 10
- 1616 1746 35 "Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Bugia malayi, Papio hamadryas, Danio rerio, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii, Drosophila melanogaster, Caenorhabditis elegans, Phillyrea angustifolia, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Clostridium perfringens str. 13, Bacillus cereus ATCC 14579, Daucus carota, Rattus norvegicus, Stauroteuthis gilchristi, Bacteroides thetaiotaomicron VPI-5482, Borrelia burgdorferi B31"
- 1617 1747 30 "Arabidopsis thaliana, Homo sapiens, Dictyostelium discoideum, Schizosaccharomyces pombe, Danio rerio, Felis catus, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Mus musculus, Pan troglodytes, Caenorhabditis elegans, Haemophilus influenzae Rd KW20, Citrus unshiu" 20
- 1618 1748 37 "Clostridium perfringens str. 13, Campylobacter jejuni subsp. jejuni NCTC 11168, Homo sapiens, Mus musculus, Medicago truncatula, Caenorhabditis elegans, Arabidopsis thaliana, Sulfolobus solfataricus, Bos taurus, Takifugu rubripes, Meloidogyne artiellia, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Lycopersicon esculentum, Danio rerio, Clostridium thermocellum, Botryotinia fuckeliana"
- 1619 1749 27 "Mus musculus, Homo sapiens, Rattus norvegicus, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Neurospora crassa" 30
- 1620 1750 28 "Mus musculus, Danio rerio, Clostridium tetani E88, Homo sapiens, Melanoplus sanguinipes entomopoxvirus, Clostridium perfringens str. 13, Longidorus bififormis, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Oryza sativa"
- 1621 1751 22 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Xenopus laevis, Pan troglodytes, Streptococcus agalactiae 2603V/R, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Streptococcus agalactiae NEM316, Arabidopsis thaliana" 40
- 1622 1752 28 "Homo sapiens, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mycoplasma gallisepticum R, Dictyostelium discoideum, Felis catus, Amsacta moorei entomopoxvirus, Bombyx mori, Piromyces sp. E2, Pseudomonas syringae pv. tomato str. DC3000, Gallus gallus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Trichosalpinx blaisdellii, Trichosalpinx orbicularis, Mycoplasma capricolum subsp. capricolum, Human immunodeficiency virus 1, Staphylococcus aureus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Ciona intestinalis, Methanocaldococcus jannaschii, Helianthus annuus, Paramecium sp., Clostridium perfringens, Staphylococcus aureus su 40

bsp. aureus Mu50, Bacillus halodurans"

- 1623 1753 33 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Clostridium tetani E88, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Mus musculus, Danio rerio, Vibrio parahaemolyticus, Bacillus halodurans, Oryza sativa (japonica cultivar-group), Influenza A virus (A/Shorebird/Delaware/39/95(H7N1)), Influenza A virus"
- 1624 1754 24 "Mus musculus, Schmidtea mediterranea, Homo sapiens, Medicago truncatula, Oryza sativa (japonica cultivar-group), Litoria nudidigitus, Danio rerio, Clostridium perfringens str. 13"
- 1625 1755 24 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Thermotoga maritima, Oryza sativa, Schizosaccharomyces pombe, Bacteriophage WO" 10
- 1626 1756 27 "Homo sapiens, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Bacteroides thetaiotaomicron VPI-5482, Medicago truncatula, Zea mays, Pylaiella littoralis, Lotus corniculatus var. japonicus, Danio rerio"
- 1627 1757 24 "Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Homo sapiens, Danio rerio, Medicago truncatula"
- 1628 1758 29 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Prochlorococcus marinus, Plasmodium falciparum 3D7, Danio rerio, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Arabidopsis thaliana, Cryptosporidium parvum, Tetraodon nigroviridis, Nicotiana tabacum" 20
- 1629 1759 24 "Homo sapiens, Mus musculus, Danio rerio, Ureaplasma urealyticum, Caenorhabditis elegans, Medicago truncatula, Streptococcus pneumoniae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Lactococcus lactis subsp. lactis, Lactococcus lactis, Arabidopsis thaliana, Ovis aries, Ciona intestinalis, Oryza sativa (japonica cultivar-group)"
- 1630 1760 29 "Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Staphylococcus epidermidis ATCC 12228, Oryza sativa (indica cultivar-group), Drosophila melanogaster, Mus musculus, Lemur catta, Rickettsia conorii, Oryza sativa, Anaplasma phagocytophilum, Rickettsia montanensis, Rickettsia rickettsii, Clostridium perfringens str. 13" 30
- 1631 1761 23 "Gossypium hirsutum, Homo sapiens, Danio rerio, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Medicago truncatula, Pan troglodytes, Mus musculus, Vibrio cholerae, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Mycoplasma penetrans, Rattus norvegicus, Haemophilus influenzae Rd KW20, Haemophilus influenzae"
- 1632 1762 59 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Rattus norvegicus, Thermoanaerobacter tengcongensis, Trichophyton rubrum, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Mycoplasma penetrans, Candidatus Carsonella ruddii, Vibrio vulnificus CMCP6, Plasmodium falciparum 3D7, Streptococcus pyogenes MGAS315, Methanosarcina acetivorans C2A, Streptococcus pyogenes MGAS8232, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Streptococcus pyogenes M1 GAS, Danio rerio, Prochlorococcus marinus, Lactobacillus plantarum, Ciona intestinalis, Streptococcus pyogenes SSI-1, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Lactobacillus plantarum WCFS1, Plasmodium falciparum, Trypanosoma brucei, Bacillus halodurans" 40
- 1633 1763 39 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Dictyostelium discoideum, Danio rerio, Caenorhabditis elegans, Tama 50

- rix ramosissima, *Oceanobacillus iheyensis* HTE831, *Ciona intestinalis*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Solanum tuberosum*, *Galerucella nymphaeae*, *Passateurella multocida*, *Lycopersicon hirsutum*, *Sarsia* sp. 'Long Island Sound', *Necator americanus*, *Eranthis hyemalis*, *Plasmodium falciparum*, *Triticum aestivum*"
- 1634 1764 32 "Homo sapiens, *Drosophila persimilis*, *Mus musculus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Caenorhabditis elegans*, *Avena sativa*, *Drosophila melanogaster*, *Plasmodium falciparum*, *Mesostigma viride*, *Prochlorococcus marinus*, *Cyanidium caldarium*, *Macaca fascicularis*, *Glycine max*, *Medicago truncatula*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Drosophila pseudoobscura*, *Shewanella oneidensis* MR-1, *Schmidtea mediterranea*, *Canis familiaris*, *Felis catus*, *Bacillus thuringiensis*, *Bacillus thuringiensis* serovar *israelensis*, *Chrysodidymus synuroideus*, *Ureaplasma urealyticum*, *Ehrlichia muris*, *Ehrlichia ewingii*, *Oryza sativa* (*japonica* cultivar-group), *Mycoplasma penetrans*, *Euastacus balanensis*, *Porphyra purpurea*, *Ehrlichia canis*, *Equus caballus*, *Anisolabis maritima*, *Ehrlichia* sp. *Anan*" 10
- 1635 1765 35 "Plasmodium falciparum 3D7, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Caenorhabditis elegans*, *Agricybe aegerita*, *Dictyostelium discoideum*, *Mus* sp., *Plasmodium yoelii*, *Nostoc* sp. PCC 7120, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Methanosarcina acetivorans* C2A, *Clostridium acetobutylicum*, *Oryza sativa*, *Bos taurus*, *Borrelia burgdorferi*" 20
- 1636 1766 24 "Homo sapiens, *Campylobacter jejuni*, *Mus musculus*, *Oncotrichopsis torus*, *Hymenophyllum dilatatum*, *Drosophila melanogaster*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Scaphinotus ridingsi*, *Arabidopsis thaliana*, *Danio rerio*"
- 1637 1767 25 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Cyprinus carpio*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Leishmania tarentolae*, *Oryza sativa* (*japonica* cultivar-group), *Rattus norvegicus*, *Pan troglodytes*, *Lycopersicon esculentum*" 30
- 1638 1768 27 "Homo sapiens, *Danio rerio*, *Pyrococcus abyssi*, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Ictalurus punctatus*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375"
- 1639 1769 27 "Homo sapiens, *Dictyostelium discoideum*, *Apis mellifera ligustica*, *Oryza sativa* (*japonica* cultivar-group), *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Mus musculus*, *Rickettsia prowazekii*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Shigella flexneri* 2a str. 2457T, *Borrelia burgdorferi* B31, *Papio anubis*, *Shigella flexneri* 2a str. 301, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mesostigma viride*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*, *Danio rerio*, *Anoecia* sp. L5, *Aa palacea*" 40
- 1640 1770 24 "Enterococcus faecalis V583, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Leptospira interrogans* serovar *lai* str. 56601, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Papio anubis*, *Oryza sativa* (*japonica* cultivar-group), *Schmidtea mediterranea*, *Staphylococcus aureus*"
- 1641 1771 25 "Mus musculus, *Homo sapiens*, *Lotus corniculatus* var. *jap*" 50

- onicus, *Lactococcus lactis* subsp. *cremoris*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Drosophila melanogaster*, *Bacillus subtilis* subsp. *subtilis* str. 168"
- 1642 1772 28 "Mus musculus, Homo sapiens, *Drosophila hydei*, *Equus caballus*, *Leptospira interrogans* serovar *lai* str. 56601, *Oryza sativa* (japonica cultivar-group), *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Plasmodium falciparum*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Streptococcus pyogenes* SSI-1, synthetic construct, *Nostoc commune*"
- 1643 1773 26 "Homo sapiens, *Melanoplus sanguinipes* entomopoxvirus, *Staphylococcus epidermidis* ATCC 12228, *Mycoplasma pulmonis*, *Mus musculus*, *Bacteroides thetaiotaomicron* VPI-5482, *Arabidopsis thaliana*, *Ciona intestinalis*, *Lotus corniculatus* var. *japonicus*" 10
- 1644 1774 27 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Enterobacteria phage T7*, *Caenorhabditis elegans*"
- 1645 1775 27 "Homo sapiens, *Mus musculus*, *Nostoc* sp. PCC 7120, *Asparagus officinalis*, *Schizosaccharomyces pombe*"
- 1646 1776 28 "Mus musculus, Homo sapiens, *Arabidopsis thaliana*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Danio rerio*" 20
- 1647 1777 42 "Danio rerio, Homo sapiens, *Oryza sativa*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Papio anubis*, *Pan troglodytes*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Rana sylvatica*, *Gallus gallus*, *Reticulitermes flavipes*, *Schmidtea polychroa*, *Lotus corniculatus* var. *japonicus*, *Plasmodium falciparum*, *Drosophila melanogaster*, *Linepithema humile*, *Anopheles gambiae*"
- 1648 1778 28 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Danio rerio*, *Caenorhabditis elegans*, *Pneumocystis carinii* f. sp. *macaca*, *Sulfolobus solfataricus*, *Arabidopsis thaliana*, *Mus musculus*"
- 1649 1779 28 "Triticum monococcum, *Aegilops tauschii*, *Mus musculus*, Homo sapiens, *Medicago truncatula*, *Danio rerio*, *Arabidopsis thaliana*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Zea mays*, *Metschnikowia lachancei*, *Metschnikowia* cf. *gruessii* UWO(PS)S99-220.4, *Lotus corniculatus* var. *japonicus*, *Podospira anserina*, *Oceanobacillus iheyensis* HTE831, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*" 30
- 1650 1780 27 "Homo sapiens, *Listeria monocytogenes*, *Mus musculus*, *Drosophila melanogaster*, *Neisseria gonorrhoeae*, *Danio rerio*, *Bacillus thuringiensis*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Streptococcus pyogenes* phage T12, *Sus scrofa*"
- 1651 1781 27 "Homo sapiens, *Mus musculus*, *Listeria monocytogenes*, *Listeria innocua*, *Kluyveromyces lactis*, *Caenorhabditis elegans*, *Gallus gallus*, *Human papillomavirus* type 9, *Neisseria meningitidis* Z2491, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma hyopneumoniae*" 40
- 1652 1782 28 "*Drosophila melanogaster*, Homo sapiens, *Lycopersicon esculentum*, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Anopheles gambiae*, *Pan troglodytes*, *Clostridium tetani* E88, *Tribolium castaneum*, *Oenothera elata* subsp. *hookeri*, *Euglena gracilis*, *Drosophila virilis*, *Lotus corniculatus* var. *japonicus*, *Oncorhynchus mykiss*, *Fowlpox virus*, *Medicago truncatula*, *Ciona intestinalis*, *Onchocerca volvulus*, *Plasmodium falciparum*" 50

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- 1653 1783 28 "Homo sapiens, Mus musculus, Avian infectious bronchitis virus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Arabidopsis thaliana, Bacillus anthracis str. Ames, Dictyostelium discoideum, Hordeum vulgare subsp. vulgare, Staphylococcus epidermidis ATCC 12228, Medicago truncatula, Danio rerio, Staphylococcus epidermidis, Plasmodium falciparum 3D7, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Listeria innocua, Prochlorococcus marinus subsp. marinus str. CCMP1375, Pirellula sp., Rattus norvegicus, Staphylococcus aureus subsp. aureus Mu50" 10
- 1654 1784 31 "Homo sapiens, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mirza coquereli, Arabidopsis thaliana, Saccharomyces cerevisiae, Danio rerio, Candidatus Blochmannia floridanus, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831"
- 1655 1785 28 "Plasmodium reichenowi, Caenorhabditis elegans, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Plasmodium falciparum 3D7, Human herpesvirus 6, Arabidopsis thaliana, Pasteurella multocida, Simian rotavirus, Cyanidium caldarium, Human herpesvirus 6B, Mimosa tenuiflora, Melanoplus sanguinipes entomopoxvirus, Danio rerio"
- 1656 1786 29 "Dictyostelium discoideum, Caenorhabditis elegans, Mus musculus, Homo sapiens, Rickettsia prowazekii, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Chlamydomonas reinhardtii, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, Clostridium acetobutylicum, Neotoma magister, Arabidopsis thaliana, Coris julis, Danio rerio, Rattus norvegicus" 20
- 1657 1787 31 "Mus musculus, Homo sapiens, Lycopersicon esculentum, Mesembryanthemum crystallinum, Macaca fascicularis, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Ljungan virus strain 145SL, Danio rerio, Bacillus thuringiensis, Oryza sativa (japonica cultivar-group), Triticum aestivum, Nephroselmis olivacea, Cryptosporidium parvum, Arabidopsis thaliana"
- 1658 1788 31 "Mus musculus, Homo sapiens, Schistosoma malayensis, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Oryza sativa, Danio rerio, Arabidopsis thaliana, Neurospora intermedia, Bombus variegatus" 30
- 1659 1789 23 "Haemophilus influenzae Rd KW20, Oryza sativa (japonica cultivar-group), Homo sapiens, Thermoplasma volcanium, Bacillus subtilis subsp. subtilis str. 168, Pan troglodytes, Dictyostelium discoideum, Caenorhabditis elegans, Mus musculus, Sequoia sempervirens"
- 1660 1790 24 "Homo sapiens, Pan troglodytes, Schistosoma mansoni, Mus musculus, Pyrococcus furiosus DSM 3638, Lotus corniculatus var. japonicus" 40
- 1661 1791 28 "Arabidopsis thaliana, Sulfolobus solfataricus, Homo sapiens, Mus musculus, Spinacia oleracea, Entamoeba histolytica"
- 1662 1792 24 "Drosophila melanogaster, Homo sapiens, Mus musculus, Tetrahymena thermophila, Clostridium tetani E88, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Drosophila willistoni, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Debaryomyces occidentalis, Cryptosporidium parvum, Eriophorum vaginatum, Paramecium caudatum"
- 1663 1793 31 "Homo sapiens, Clostridium perfringens str. 13, Bacillus cereus ATCC 14579, Mus musculus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Mycoplasma penetrans, Danio rerio, Bacillus anthracis str. Ames, Dictyostelium" 50

m discoideum, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Sulfolobus solfataricus*, *Rickettsia prowazekii*, *Oryza sativa* (japonica cultivar-group), *Trichosurus vulpecula*"

1664 1794 27 "Campylobacter jejuni subsp. jejuni NCTC 11168U, reappara urealyticum, *Chlamydia muridarum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Chlamydophila pneumoniae* TW-183, *Danio rerio*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Haemophilus ducreyi* 35000HP, *Mus musculus*, *Leptospira interrogans* serovar *lai* str. 56601, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Clostridium tetani* E88, *Shewanella oneidensis* MR-1, *Methanosarcina acetivorans* C2A, *Schizosaccharomyces pombe*, *Mycoplasma genitalium*, *Medicago truncatula*, *Pisum sativum*, *Mesorhizobium loti*"

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1665 1795 26 "Homo sapiens, *Sulfolobus solfataricus*, *Lotus corniculatus* var. *japonicus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Mus musculus*, *Pan troglodytes*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis briggsae*, *Candidatus Blochmannia floridanus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"

1666 1796 24 "Euglena gracilis, *Bacillus anthracis* str. Ames, *Oryza sativa*, *Enterococcus faecalis* V583, *Rattus norvegicus*, *Caenorhabditis elegans*, *Homo sapiens*, *Ciona intestinalis*, *Leptospira interrogans* serovar *lai* str. 56601, *Mus musculus*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Arabidopsis thaliana*, *Ureaplasma urealyticum*, *Oryza sativa* (japonica cultivar-group), *Enterobacter* phage RB49, *Danio rerio*"

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1667 1797 30 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Oryza sativa*, *Arabidopsis thaliana*, *Pan troglodytes*, *Caenorhabditis elegans*, *Mus musculus*, *Coxiella burnetii* RSA 493, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Potato virus V*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Ciona intestinalis*, *Helicobacter pylori* J99, *Buffo cognatus*, *Saccharomyces cerevisiae*"

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1668 1798 29 "Medicago truncatula, *Mus musculus*, *Homo sapiens*, *Pan troglodytes*, *Human herpesvirus 5*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168"

1669 1799 35 "Homo sapiens, *Streptococcus mutans* UA159, *Schizosaccharomyces pombe*, *Mus musculus*, *Pisolithus* sp. MH155, *Pisolithus microcarpus*, *Drosophila melanogaster*, *Sus scrofa*, *Neisseria meningitidis* Z2491, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Patella vulgata*, *Neisseria meningitidis* MC58, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Corynebacterium glutamicum* ATCC 13032"

1670 1800 24 "Homo sapiens, *Prochlorococcus marinus*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7"

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1671 1801 21 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Escherichia coli*, *Plasmodium falciparum* 3D7, *Candida albicans*"

1672 1802 29 "Clostridium tetani E88, *Leptospira interrogans* serovar *lai* str. 56601, *Pan troglodytes*, *Homo sapiens*, *Rhizophyidum* sp. 136, *Mus musculus*, *Zea mays*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Synechocystis* sp. PCC 6803, *Escherichia coli*, *Chlamydia muridarum*, *Borrelia burgdorferi* B31, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Lactococcus lactis* subsp. *lactis*, *Lotus corniculatus* var. *japonicus*, *Grallaria ruficapilla*, *Bacteriophage* PSA"

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- 1673 1803 35 "Rickettsia prowazekii, *Mus musculus*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Homo sapiens*, *Danio rerio*, *Caenorhabditis briggsae*, *Vibrio parahaemolyticus*, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar lai str. 56601, *Chlamydia muridarum*, *Borrelia burgdorferi* B31, *Zea mays*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Lactococcus lactis* subsp. *lactis*, *Gallus gallus*, *Caenorhabditis elegans*, *Butyrivibrio fibrisolvens*, *Triticum aestivum*, *Nostoc* sp. PCC 7120"
- 1674 1804 32 "*Mus musculus*, *Trypanoplasma borreli*, *Dictyostelium discoideum*, *Homo sapiens*, *Entamoeba histolytica*, *Nothofagus cunninghamii*, *Caenorhabditis elegans*, *Human immunodeficiency virus 1*, *Escherichia coli*, *Pan troglodytes*, *Escherichia coli* CFT073, *Yersinia pestis* KIM, *Escherichia coli* O157:H7 EDL933, *Arabidopsis thaliana*, *Escherichia coli* K12, *Chosenia arbutifolia*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Yersinia pestis* C092, *Sus scrofa*, *Petunia axillaris* subsp. *parodii*, *Trypanosoma brucei*, *Escherichia coli* O157:H7"
- 1675 1805 35 "*Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Oryza sativa*, *Swinepox virus*, *Lotus corniculatus* var. *japonicus*, *Drosophila virilis*, *Saccharomyces cerevisiae*, *Danio rerio*, *Treponema pallidum*"
- 1676 1806 24 "*Homo sapiens*, *Hordeum vulgare* subsp. *vulgare*, *Neurospora crassa*, *Danio rerio*, *Mus musculus*, *Dictyostelium discoideum*, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Cicer arietinum*"
- 1677 1807 29 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Oryza sativa*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Plasmodium falciparum*, *Clostridium limosum*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Helianthus annuus*"
- 1678 1808 28 "*Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mycoplasma gallisepticum* R, *Mus musculus*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Drosophila melanogaster*, *Papio anubis*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), uncultured bacterium, *Gnamptodon pumilio*, *Pasteurella multocida*, *Danio rerio*, *Toxoplasma gondii*, *Medicago truncatula*, *Clostridium perfringens* str. 13"
- 1679 1809 33 "*Arabidopsis thaliana*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Mus musculus*, *Clostridium butyricum*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Dictyostelium discoideum*, *Nucella canaliculata*, *Nucella lamellosa*, *Nucella lapillus*, *Emericella nidulans*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lactococcus lactis* subsp. *lactis*, *Caenorhabditis elegans*, *Pyrococcus horikoshii*, *Rattus norvegicus*, *Medicago truncatula*, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Clostridium beijerinckii*, *Methanothermobacter thermoautotrophicus* str. Delta H, *Fowlpox virus*, *Lotus corniculatus* var. *japonicus*, *Ciona intestinalis*, *Myrmecia pilosula*, *Myrmecia imaii*"
- 1680 1810 34 "*Danio rerio*, *Medicago truncatula*, *Homo sapiens*, *Mus musculus*, *Xylella fastidiosa* 9a5c, *Rattus norvegicus*, *Staphylococcus epidermidis* ATCC 12228, *Gallus gallus*, *Schmidtea mediterranea*, *Arabidopsis thaliana*, *Staphylococcus epidermidis*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Mycoplasma gallisepticum* R, *Drosophila melanogaster*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Human immunodeficiency virus 1*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Schistosom*

- a malayensis, Aeschynomene indica, Aeschynomene rudis, Aeschynomene virginica, Mycoplasma pulmonis"
- 1681 1811 28 "Mus musculus, Homo sapiens, Papilio xuthus, Pasteurella multocida, Staphylococcus intermedius, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Pan troglodytes, Drosophila melanogaster, Schmidtea mediterranea, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Guillardia theta, Ophiostoma novo-ulmi, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group)"
- 1682 1812 28 "Mus musculus, Drosophila melanogaster, Bacillus anthracis str. Ames, Homo sapiens, Platanus occidentalis, Danio rerio, Clostridium perfringens str. 13, Dictyostelium discoideum, Clostridium tetani E88, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Bombyx mandarina, Arabidopsis thaliana, Solanum bulbocastanum, Caenorhabditis elegans" 10
- 1683 1813 25 "Homo sapiens, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Medicago truncatula, Danio rerio, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Monosiga brevicollis, Leptoxis crassa anthonyi, Mus musculus, Bicatillus extintorum, Androctonus a"
- 1684 1814 28 "Drosophila melanogaster, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Rickettsia conorii, Oryza sativa (japonica cultivar-group), Pedinomonas minor, Sus scrofa, Campylobacter jejuni, Danio rerio, Caenorhabditis elegans" 20
- 1685 1815 35 "Homo sapiens, Dictyostelium discoideum, Mycoplasma gallisepticum R, Caenorhabditis elegans, Danio rerio, Mus musculus"
- 1686 1816 27 "Arabidopsis thaliana, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Mus musculus, Oryza sativa (japonica cultivar-group), Cicer arietinum, Lotus corniculatus var. japonicus"
- 1687 1817 36 "Homo sapiens, Vanhornia eunemidarum, Mus musculus, Dictyostelium discoideum, Candidatus Blochmannia floridanus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Drosophila melanogaster, Felis catus, Trypanosoma cruzi, Danio rerio, Papio anubis, Medicago truncatula, Botryotinia fuckeliana, Pyrococcus furiosus DSM 3638, Caenorhabditis elegans, Oryza sativa, Sulfolobus tokodaii, Plasmodium falciparum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Yaba monkey tumor virus, Pyrococcus woesei, Clostridium perfringens str. 13, Pan troglodytes, Andricus conificus, Andricus quercustozae, Anthoceros punctatus, Psychotria ipecacuanha, Pucrasia macrolopha, Canis familiaris, Vibrio cholerae, Rickettsia prowazekii, Thermotoga thermarum, Silene cryptoneura, Manihot esculenta, Ascaris suum, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Rattus norvegicus" 30
- 1688 1818 28 "Mus musculus, Guillardia theta, Nostoc sp. PCC 7120, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Leptospira interrogans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Medicago truncatula" 40
- 1689 1819 23 "Sulfolobus solfataricus, Homo sapiens, Mus musculus, Proteus vulgaris, Plasmodium falciparum, Caenorhabditis elegans, Arabidopsis thaliana, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Tacca chantieri, Danio rerio, Eudorina minodii"
- 1690 1820 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Sinapis alba, Arabidopsis thaliana, Dictyostelium discoide" 50

um, *Bos taurus*, *Mycoplasma capricolum*, *Danio rerio*, *Medicago truncatula*, *Saccharomyces cerevisiae*, *Nostoc* sp. PCC 7120"

1691 1821 23 "Homo sapiens, *Mus musculus*, *Shewanella oneidensis* MR-1, *Streptococcus pneumoniae* R6, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"

1692 1822 25 "Bacillus cereus ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Caenorhabditis elegans*, *Homo sapiens*, *Planktothrix agardhii*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Xylella fastidiosa* Temecula1, *Plasmodium falciparum* 3D7, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR 4, *Picea glauca*, *Pinus strobus*, *Danio rerio*"

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1693 1823 31 "Sulfolobus tokodaii, *Danio rerio*, *Homo sapiens*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mus musculus*, *Haemophilus ducreyi* 35000HP, *Ciona intestinalis*"

1694 1824 28 "Arabidopsis thaliana, *Mus musculus*, *Homo sapiens*, *Allium cepa*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Clostridium acetobutylicum*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Vibrio parahaemolyticus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"

1695 1825 25 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mycoplasma hyopneumoniae*, *Lactococcus lactis* subsp. *lactis*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Lymnaea stagnalis*"

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1696 1826 23 "Mus musculus, *Homo sapiens*, *Felis catus*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Schizosaccharomyces pombe*, *Staphylococcus aureus* subsp. *aureus* Mu 50"

1697 1827 25 "Rickettsia prowazekii, *Mus musculus*, *Plasmodium falciparum* 3D7, *Sinonipponaphis monzeni*, *Clostridium acetobutylicum*, *Penicillium chrysogenum*, *Homo sapiens*, *Drosophila melanogaster*, *Papio anubis*, *Thermoanaerobacter tengcongensis*, *Plasmodium falciparum*, *Danio rerio*, *Caenorhabditis elegans*, *Saccharomyces kluyveri*"

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1698 1828 27 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*, *Danio rerio*, *Caenorhabditis elegans*, *Arabidopsis thaliana*"

1699 1829 28 "Homo sapiens, *Caenorhabditis elegans*, *Clostridium tetani* E88, *Lycopersicon esculentum*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Pan troglodytes*, *Mus musculus*, *Mycoplasma pulmonis*, *Staphylococcus hominis*, *Danio rerio*, *Arabidopsis thaliana*"

1700 1830 31 "Homo sapiens, *Rous sarcoma virus*, *Avian sarcoma virus*, *Mus musculus*, *Gymnogongrus* sp. HugheyJ_6.vii.96, *Gymnogongrus martinensis*, *Danio rerio*, *Arabidopsis thaliana*, *Oryza sativa*, *Yersinia intermedia*, *Oryza sativa* (japonica cultivar-group), *Desfontainia spinosa*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Pneumocystis carinii*"

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1701 1831 31 "Drosophila melanogaster, *Homo sapiens*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Bacillus anthracis* str. Ames, *Clostridium tetani* E88, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Danio rerio*, *Medicago truncatula*"

1702 1832 46 "Clostridium acetobutylicum, *Lactobacillus plantarum* WCF S1, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma genitalium*, *Borrelia burgdorferi*, *Mus musculus*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Lac*

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tococcus lactis subsp. *lactis*, *Caenorhabditis elegans*, *Oryzias latipes*, *Streptococcus pyogenes* SSI-1, *Gallus gallus*, *Saccharomyces cerevisiae*, *Pyrococcus horikoshii*, *Danio rerio*, *Entamoeba histolytica*, *Staphylococcus aureus* subsp. *aureus* Mu 50, *Staphylococcus aureus* prophage phiPV83, *Clostridium perfringens* str. 13"

1703 1833 29 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Streptococcus pyogenes, Takifugu rubripes, Thermoanaerobacter tengcongensis, Prochlorococcus marinus, Plasmodium falciparum 3D7, Cryptosporidium parvum, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Xenopus laevis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Helicobacter pylori 26695, Schistosoma mansoni"

1704 1834 35 "Arabidopsis thaliana, Mus musculus, Homo sapiens, Danio rerio, Bacillus halodurans, Clostridium perfringens str. 13, Plasmodium falciparum 3D7, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Chlamydomonas reinhardtii, Pan troglodytes, Medicago truncatula, Drosophila melanogaster, Rheum compactum, Rheum wittrockii, Rheum hotaoense, Rheum undulatum, Rheum tangeticum, Rheum palmatum, Rheum officinale, Magnolia salicifolia, Equus caballus, Pichia canadensis, Clusia tocuchensis, Clusia stenophylla, Clusia nemorosa, Clusia multiflora, Clusia ducu, Dictyostelium discoideum, Monosiga brevicollis, Palaeomonetes australis, Staphylococcus epidermidis ATCC 12228, Clostridium acetobutylicum, Chaetocalyx nigricans, Candidatus Carsonella ruddii, Eresia burchellii, Pasteurella multocida, Mycoplasma pulmonis, Glycine max, Crithidia oncopelti, Lotus corniculatus var. japonicus, Gallus gallus"

1705 1835 24 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Saccharomyces cerevisiae, Arabidopsis thaliana, Clostridium acetobutylicum, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Bacillus subtilis subsp. subtilis s"

1706 1836 25 "Drosophila melanogaster, Mus musculus, Homo sapiens, Bacillus anthracis str. Ames, Zea mays, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Enterobacteria phage T2, Schizosaccharomyces pombe, Oryza sativa (japonica cultivar-group)"

1707 1837 27 "Homo sapiens, Plasmodium falciparum 3D7, Rickettsia conorii, Rickettsia prowazekii, Caenorhabditis elegans, Mus musculus, Schizosaccharomyces pombe, Deer papillomavirus, Arabidopsis thaliana"

1708 1838 23 "Homo sapiens, Mus musculus, Danio rerio, Prochlorococcus marinus, Arabidopsis thaliana"

1709 1839 35 "Mus musculus, Homo sapiens, Acidithiobacillus sp. HYH-2, Acidithiobacillus sp. HYH-1, Acidia cognata, Trypeta immaculata, Euphranta canadensis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mollitrichosiphum nigrofasciatum, Plasmodium falciparum, Plasmodium"

1710 1840 29 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Schizosaccharomyces pombe, Dictyostelium discoideum, Drosophila melanogaster, Papio anubis, Mesostigma viride, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Mycoplasma penetrans, Artibeus jamaicensis, Cryptosporidium parvum, Saccharomyces douglasii, Scaptoomyza pallida, Arabidopsis thaliana, Rattus norvegicus, Equus caballus, Salmonella enterica subsp. enterica serovar Typhi Ty2, Lycopersicon esculentum, Sorghum bicolor, Mamestra configurata nucleopolyhedrovirus B, Buchnera aphidicola str. Sg (Schizaphis graminum), Saccharomyces cerevisiae, Human immunodeficiency virus

- 1, *Buchnera aphidicola*, *Euglena gracilis*, *Drosophila simulans*, *Drosophila sechellia*, *Listeria monocytogenes*, *Listeria innocua*, *Salmonella enterica* subsp. *enterica* serovar *Typhi*, *Enterococcus faecium*"
- 1711 1841 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Schistosoma japonicum, Drosophila melanogaster, Xylella fastidiosa Temecula1, Rickettsia conorii, Clostridium acetobutylicum, Xylella fastidiosa 9a5c, Rhizobium galegae, Listeria innocua, Campylobacter coli, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Staphylococcus carnosus, Danio rerio"
- 1712 1842 28 "Homo sapiens, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Pan troglodytes, Ciona intestinalis, Mus musculus, Conger myriaster, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Odontoglossum ringspot virus, Caenorhabditis briggsae, Caenorhabditis elegans, Danio rerio, Trichomonas vaginalis" 10
- 1713 1843 27 "Danio rerio, Homo sapiens, Mus musculus, Blepharipoda occidentalis, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Lemur catta, Oryza sativa, Human immunodeficiency virus 1, Tetrahymena pyriformis, Lotus corniculatus var. japonicus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Drosophila melanogaster, Xylella fastidiosa Temecula1, Papio anubis, Caenorhabditis elegans, Sorghum bicolor, Lactococcus lactis subsp. lactis, Gallus gallus, Campylobacter jejuni subsp. jejuni NCTC 11168, Paramecium tetraurelia, Bombyx mori, Prototheca wickerhamii, Greya solenobiella, Haemophilus ducreyi 35000HP, Pimelia canariensis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Candida glabrata, Greya obscura, Greya powelli, Greya suffusca, Pichia jadinii" 20
- 1714 1844 31 "Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mus musculus, Dictyostelium discoideum, Saccharomyces cerevisiae, Caenorhabditis briggsae, Brassica napus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Ciona intestinalis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Agrocybe aegerita, Pyrus communis, Gossypium barbadense, Bacillus anthracis str. Ames, Brachyspira hyodysenteriae, Medicago truncatula, Rattus norvegicus, Borrelia burgdorferi B31, Saccharomyces servazzii, Drosophila melanogaster, Clostridium tetani, Zea mays, Borrelia burgdorferi, Tetrahymena thermophila, synthetic construct, Oryctolagus cuniculus, Opus sp., Clostridium acetobutylicum, Prochlorococcus marinus, Mycoplasma pulmonis, Schizocosa avida, Pardosa milvina" 30
- 1715 1845 52 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Bacillus thuringiensis serovar israelensis, Homo sapiens, Candidatus Carsonella ruddii, Danio rerio, Lotus corniculatus var. japonicus, Drosophila melanogaster, Lycopersicon esculentum, Dictyostelium discoi" 40
- 1716 1846 42 "Homo sapiens, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium tetani E88, Clostridium acetobutylicum, Arabidopsis thaliana, Ciona intestinalis, Danio rerio, Gasterosteus aculeatus, Borrelia burgdorferi B31, Lactococcus lactis subsp. cremoris, Oryza sativa (japonica cultivar-group), Pan troglodytes, Pyrus pyrifolia" 40
- 1717 1847 28 "Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, Mus musculus, Clostridium tetani E88, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)"
- 1718 1848 25 "Cyanidium caldarium, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Burkholderia cepacia phage Bcep22, Lactobacillus plantarum WCFS1, Xenopus laevis, Danio rerio, Caenorhabditis elegans" 50

- 1719 1849 28 "Homo sapiens, Arabidopsis thaliana, Vanneaugobius pruvoti, Elacatinus xanthriprora, Elacatinus prochilos, Elacatinus genie, Elacatinus evelynae, Mus musculus, Elacatinus sp. G0205, Elacatinus louisae, Gobiosoma chan-
cei"
- 1720 1850 29 "Homo sapiens, Mus musculus, Danaus melanippus hegesippus, Campylobacter jejuni subsp. jejuni NCTC 11168, Oenothera elata subsp. hookeri, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Human echovirus 5, Nostoc sp. PCC 7120"
- 1721 1851 28 "Homo sapiens, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mus musculus, Staphylococcus aureus subsp. aureus Mu50, Caenorhabditis elegans, Danio rerio, Medicago truncatula, Drosophila melanogaster, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Enterococcus hirae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Clostridium acetobutylicum, Beta vulgaris subsp. vulgaris, Rattus norvegicus, Tetrahymena thermophila, Aethia pygmaea, Rachiplusia ou-
multiple nucleopolyhedrovirus, Arabidopsis thaliana"
- 1722 1852 31 "Drosophila melanogaster, Homo sapiens, Variola virus, Variola minor virus, Variola major virus, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Caenorhabditis elegans, Plasmodium falciparum 3D7, Oryza sativa, Chthamalus fissus, Yaba-like disease virus, Thermotoga maritima, Caenorhabditis briggsae, Trypanosoma brucei rhodesiense, Vibrio parahaemolyticus, Xironogiton victoriensis, Papilio multicaudatus, Schizosaccharomyces pombe, Mycoplasma genitalium, Nectria haematococca mpVI"
- 1723 1853 31 "Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio, Saccharomyces castellii, Rickettsia prowazekii, Caenorhabditis elegans, Listeria monocytogenes, Listeria innocua, Laevipeneroplis sp. 2264, Psophocarpus tetragonolobus, Equus caballus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Lemur catta, Saccharomyces cerevisiae, Swinepox virus, Pasteurella multocida, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Chlamydia trachomatis, Ureaplasma urealyticum, Saccharomyces sp. CID1, Plasmodium vivax, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Anopheles gambiae, Cavia porcellus, Clostridium perfringens str. 13"
- 1724 1854 43 "Caenorhabditis elegans, Plasmodium falciparum 3D7, Trypeta sigma, Mus musculus, Homo sapiens, Biosteres vandenboschi, Rachycentron canadum, Dictyostelium discoideum, Danio rerio, Drosophila simulans, Drosophila sechellia, Drosophila mauritiana, Arabidopsis "
- 1725 1855 40 "Homo sapiens, Mus musculus, Drosophila melanogaster, Schizosaccharomyces japonicus, Oceanobacillus iheyensis HTE831, Saccharomyces kluyveri, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Buchn"
- 1726 1856 30 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Mus musculus, Ciona intestinalis, Candidatus Carsonella ruddii, Canis familiaris, Saccharomyces cerevisiae, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani E88, Sus scrofa, Ostrinia furnacalis, Ostrinia nubilalis, Caenorhabditis briggsae, Arabidopsis thaliana, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Danio rerio, Methanocaldococcus jannaschii, Rattus norvegicus, Clostridium perfringens str. 13"

- 1727 1857 27 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Danio rerio, Dictyostelium discoideum, Arabidopsis thaliana, Mycoplasma gallisepticum R, Rattus norvegicus, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Rickettsia typhi, Oryza sativa (japonica cultivar-group)"
- 1728 1858 23 "Caenorhabditis elegans, Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mycoplasma mobile, Arabidopsis thaliana, Mus musculus, Lycopersicon esculentum, Raphia farinifera, Danio rerio, Medicago truncatula"
- 1729 1859 39 "Plasmodium falciparum 3D7, Homo sapiens, Arabidopsis thaliana, Mus musculus, uncultured Nitrosomonas Al-7K, uncultured bacterium, Nitrosomonas sp. IWT514, Mycoplasma hominis, uncultured Nitrosomonas Al-9K3, uncultured Nitrosomonas Al-8H, uncultured Nitrosom" 10
- 1730 1860 34 "Plasmodium falciparum 3D7, Homo sapiens, Saimiriine herpesvirus 2, Mus musculus, Vaccinia virus, Ectromelia virus, Camelpox virus CP1, Camelpox virus CP5, Camelpox virus CMS, Monkeypox virus, Cowpox virus, Mycoplasma pulmonis, Expression vector AF286077, Or"
- 1731 1861 35 "Mus musculus, Homo sapiens, Drosophila melanogaster, Tricholoma focale, Rickettsia conorii, Danio rerio, Oryza sativa (japonica cultivar-group), Coxiella burnetii RSA 493, Dictyostelium discoideum, Plasmodium falciparum 3D7, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Zymomonas mobilis, Oryza sativa (indica cultivar-group), Pan troglodytes, Rhodnius prolixus, Lotus corniculatus var. japonicus, Mogera wogura, Saccharomyces cerevisiae, Ciona intestinalis, Helicobacter hepaticus ATCC 51449" 20
- 1732 1862 32 "Homo sapiens, Mus musculus, Neurospora crassa, Drosophila melanogaster, Clostridium tetani E88, Streptococcus pyogenes MGAS8232, Caenorhabditis elegans, Arabidopsis thaliana, Adiantum capillus-veneris, Pan troglodytes, Malgasia mahafaly, Streptococcus pyogenes MGAS315, Solanum bulbocastanum, Streptococcus pyogenes M1 GAS, Danio rerio, Caenorhabditis briggsae, Paramecium aurelia, Streptococcus pyogenes SSI-1, Oryza sativa (japonica cultivar-group), Lycopersicon peruvianum" 30
- 1733 1863 27 "Mus musculus, Homo sapiens, Danio rerio, Leptospira interrogans serovar Iai str. 56601, Caenorhabditis elegans, Borrelia burgdorferi B31, Streptococcus mitis, Helicobacter pylori, Arabidopsis thaliana"
- 1734 1864 28 "Macaca mulatta, Pongo pygmaeus, Gorilla gorilla, Pan troglodytes, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Helicobacter hepaticus ATCC 51449, Sorghum bicolor, Sus scrofa, Buchnera aphidicola str. Sg (Schizaphis graminum), Shrimp white spot syndrome virus, Danio rerio, Plasmodium falciparum, Oryza sativa"
- 1735 1865 36 "Homo sapiens, Psychotria turbinata, Buchnera aphidicola str. Sg (Schizaphis graminum), Plasmodium berghei, Brachyderes rugatus rugatus, Brachyderes rugatus sculpturatus, Danio rerio, Mus musculus, Staphylococcus epidermidis ATCC 12228, Dictyostelium discoid" 40
- 1736 1866 33 "Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Homo sapiens, Dictyostelium discoideum, Mus musculus, Danio rerio, Pan troglodytes, Drosophila melanogaster, Ruta graveolens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Lycopersicon esculentum, Papio anubis, Carassius auratus"
- 1737 1867 33 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Simulium sanctipauli, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (indica cultivar-group), Pan 50

troglodytes, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Drosophila melanogaster*, *Schizosaccharomyces japonicus*, *Schizosaccharomyces octosporus*, *Streptococcus agalactiae* 2603V/R, *Bacillus anthracis* str. A2012, *Lactococcus lactis* s ubsp. *lactis*, *Streptococcus agalactiae* NEM316, *Lycopersicon esculentum*, *Lactococcus lactis*, *Oryzias latipes*, *Fagopyrum urophyllum*, *Columbicola* sp. KY-2002, *Lactococcus lactis* subsp. *cremoris*, *Bacillus anthracis*, *Cryptosporidium parvum*, *Plagiopus oederianus*"

1738 1868 27 "Ureaplasma urealyticum, *Homo sapiens*, *Rattus norvegicus*, *Bacillus anthracis* str. Ames, *Danio rerio*, *Lactobacillus johnsonii*, *Mus musculus*, *Campylobacter fetus*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Acropora millepora*, *Caenorhabditis elegans*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, uncultured marine gamma proteobacterium EBAC31A08, *Oryza sativa* (japonica cultivar-group), *Lethenteron japonicum*, *Macaca fascicularis*, *Arabidopsis thaliana*" 10

1739 1869 25 "Lactococcus lactis bacteriophage u136, *Homo sapiens*, *Lactococcus lactis* bacteriophage TP901-1, Bacteriophage Tuc2009, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* Mu50, *Pylaiella littoralis*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Alonzoa unilabiata*, *Mus musculus*, *Anarrhinum corsicum*"

1740 1870 37 "Mus musculus, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Drosophila melanogaster*, *Homo sapiens*, *Lactobacillus sakei*, *Marchantia polymorpha*, *Oryza sativa* (japonica cultivar-group), *Stealth virus 1*, *Wigglesworthia glossinidia endosymbiont of Glossin*" 20

1741 1871 32 "Homo sapiens, *Mus musculus*, *Dictyostelium discoideum*, *Methanosarcina mazei* Goe1, *Plasmodium falciparum* 3D7, *Neurospora crassa*, *Sus scrofa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Schistosoma japonicum*, *Streptococcus mutans* UA159, Human immunodeficiency virus 1, *Lactococcus lactis* subsp. *lactis*, *Guillardia theta*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*, *Arabidopsis thaliana*, *Lactococcus lactis*, *Clostridium perfringens* str. 13" 30

1742 1872 33 "Dictyostelium discoideum, *Homo sapiens*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, *Oryza sativa*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Cyprinus carpio*, *Rattus norvegicus*, *Atelerix albiventris*, *Arabidopsis thaliana*, *Cucumis sativus*, *Polistes dominulus*, *Lotus corniculatus* var. *japonicus*"

1743 1873 25 "Medicago truncatula, *Atelerix albiventris*, *Caenorhabditis elegans*, *Homo sapiens*, *Aplysia californica*, *Prochlorococcus marinus*, *Mus musculus*, *Rattus norvegicus*, *Oceanobacillus iheyensis* HTE831, *Schizosaccharomyces pombe*" 40

1744 1874 36 "Eimeria tenella, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Melanoplus sanguinipes* entomopoxvirus, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Caenorhabditis elegans*, *Ictalurus punctatus*, *Pan troglodytes*, *Dictyostelium discoideum*, *Solanum tuberosum*, *Moringa rivae*, *Moringa borziana*, *Moringa arborea*, *Lactococcus lactis* subsp. *lactis*, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Danio rerio*, *Atelerix albiventris*, *Saccharomyces cerevisiae*, *Medicago truncatula*, *Poncirus trifoliata*, *Moringa longituba*, *Moringa ruspoliana*, *Sus scrofa*, *Lupinus albus*, *Clostridium botulinum*, *Pisacha naga*, *Mycoplasma penetrans*, *Coleochaete orbicularis*, *Tribolium castaneum*, *Saccharomyces pastorianus*" 50

- 1745 1875 25 "Homo sapiens, Mycoplasma penetrans, Mus musculus, Rattus norvegicus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Kluyveromyces lactis, Danio rerio, Helicobacter hepaticus ATCC 51449"
- 1746 1876 26 "Mus musculus, Citrobacter rodentium, Homo sapiens, Loofah witches'-broom phytoplasma, Methanosarcina mazei Goe1, Arabidopsis thaliana, Sus scrofa, Caenorhabditis elegans, Tetraodon nigroviridis"
- 1747 1877 29 "Chlamydomonas caviae GPIC, Bacillus anthracis str. Ames, Drosophila melanogaster, Homo sapiens, Bacillus anthracis str. A2012, Bacillus anthracis, Mus musculus, Rattus norvegicus, Lactobacillus gasseri" 10
- 1748 1878 30 "Mycoplasma penetrans, Danio rerio, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13, Mus musculus, Homo sapiens, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Tetrahymena thermophila, Plasmodium falciparum 3D7, Yersinia pestis KIM, Clostridium acetobutylicum, Neisseria meningitidis Z2491, Caenorhabditis briggsae, Musca domestica, Lotus corniculatus var. japonicus, Haplodontium reticulatum, Yersinia pestis C092, Helicobacter hepaticus ATCC 51449, Caenorhabditis elegans"
- 1749 1879 19 "Mus musculus, Homo sapiens, Lactococcus lactis subsp. lactis, Lotus corniculatus var. japonicus, Rattus norvegicus"
- 1750 1880 27 "Mus musculus, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Human rotavirus A, Porcine rotavirus strain Gottfried, Nostoc sp. PCC 7120" 20
- 1751 1881 28 "Homo sapiens, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Caenorhabditis elegans, Chlamydomonas pneumoniae TW-183, Mus musculus, Trypanosoma brucei, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Streptococcus pyogenes M1 GAS, Oenothera elata subsp. hookeri, Pan troglodytes, Streptococcus pyogenes SSI-1, Danio rerio, Helicobacter pylori 26695, Schizosaccharomyces pombe, Cryptosporidium meleagridis" 30
- 1752 1882 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Lemur catta, Caenorhabditis elegans, Danio rerio"
- 1753 1883 24 "Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Clostridium tetani E88, Homo sapiens, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Ureaplasma urealyticum, Rattus norvegicus, Ciona intestinalis, Medicago truncatula, Methanocaldococcus jannaschii"
- 1754 1884 33 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Danio rerio, Pan troglodytes, Human immunodeficiency virus 1, Buchnera aphidicola str. Sg (Schizaphis graminum), Thermoanaerobacter tengcongensis, Rickettsia conorii, Sulfolobus solfataricus, Prochlorococcus marinus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Calycadenia truncata subsp. scabrella, Botryotinia fuckeliana" 40
- 1755 1885 37 "Homo sapiens, Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Solanum tuberosum, Haemophilus ducreyi 35000HP, Haemophilus ducreyi, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Leptospir"
- 1756 1886 34 "Homo sapiens, Mus musculus, Danio rerio, Borrelia burgdorferi B31, Caenorhabditis briggsae, Caenorhabditis elegans, Lotus corniculatus" 50

- var. japonicus, *Bacillus cereus* ATCC 14579, *Arabidopsis thaliana*, *Callitriche heterophylla*"
- 1757 1887 25 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Danio rerio*, *Bigeloviella natans*, *Streptococcus mutans* UA159, *Lactococcus lactis* subsp. *lactis*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* Mu50"
- 1758 1888 31 "Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Pan troglodytes*, *Hypoxylon mediterraneum*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*" 10
- 1759 1889 39 "Homo sapiens, *Buchnera aphidicola* (*Myzus persicae*), *Mus musculus*, *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*"
- 1760 1890 25 "Homo sapiens, *Chilo iridescent virus*, *Limnoporus genitalis*, *Gerris insularis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*"
- 1761 1891 29 "Mus musculus, *Arabidopsis thaliana*, *Homo sapiens*, *Enterococcus faecalis* V583, *Enterococcus faecalis*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Medicago truncatula*, *Pan troglodytes*, *Drosophila melanogaster*, *Papio anubis*, *Sus scrofa*, *Felis catus*, *Phyllogomphoides albrighti*, *Danio rerio*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Caenorhabditis briggsae*, *Amsacta moorei* entomopoxvirus, *Vibrio cholerae*, *Rattus norvegicus*" 20
- 1762 1892 34 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*, *Catharanthus roseus*, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Rattus norvegicus*, *Sus scrofa*, *Arthropterus* sp. KA0-1997, *Caenorhabditis elegans*, *Pinus sylvestris*, *Lotus corniculatus* var. japonicus, *Staphylococcus hominis*, *Papio anubis*, *Kluyveromyces lactis*, *Plasmodium falciparum*, *Oryctolagus cuniculus*, *Didelphis virginiana*, *Felis catus*, *Hydrangea macrophylla*"
- 1763 1893 32 "Methanosarcina mazei Goe1, *Dictyostelium discoideum*, *Candida albicans*, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Pan paniscus*, *Pan troglodytes*, *Drosophila simulans*, *Drosophila sechellia*, *Drosophila mauritiana*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Leishmania major*, *Bacillus cereus* ATCC 14579, *Clostridium acetobutylicum*, *Caenorhabditis elegans*, *Bacillus thuringiensis*, *Arabidopsis thaliana*, *Cobitis striata*, *Lucilia cuprina*, *Helicobacter hepaticus* ATCC 51449" 30
- 1764 1894 29 "Clostridium tetani E88, *Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Mycoplasma penetrans*, *Eulemur rubriventer*, *Clostridium perfringens* str. 13" 40
- 1765 1895 27 "Mus musculus, *Homo sapiens*, *Caenorhabditis elegans*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Proteus vulgaris*, *Triticum aestivum*, *Glycine max*, *Arabidopsis thaliana*, *Sus scrofa*, *Danio rerio*"
- 1766 1896 37 "Drosophila melanogaster, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Clostridium perfringens*, *Rattus norvegicus*, *Mamestra configurata* nucleopolyhedrovirus B, *Mus musculus*, *Saccharomyces castellii*, *Caenorhabditis elegans*, *Poncirus trifoliata*, *Plasmodium falciparum*, *Danio rerio*, *Mycoplasma gallisepticum* R, *Oryza sativa* (japonica cultivar-group), *Crioceris duodecimpunctata*, *Brachyspira hyodysenteriae*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Methanothermobacter thermoautotrophicus* str. Delta H, *Edaphus* sp., *Oryza sativa*, *Angel*" 50

ogelasinus amuricola, Trypeta immaculata, Clostridium acetobutylicum, Prochlorococcus marinus, Arabidopsis thaliana, Cyanidium caldarium, Anthoceros formosae, Lasia sp. SLW-2002d, Lasia sp. SLW-2002a, Lasia carbonanicus, Schizosaccharomyces pombe, Clostridium perfringens str. 13, Saccharomyces mikatae, Saccharomyces cerevisiae, Medicago truncatula"

1767 1897 31 "Homo sapiens, Sulfolobus tokodaii, Mus musculus, Kluyveromyces lactis, Plasmodium falciparum 3D7, Takydromus sexlineatus, Oryza sativa (japonica cultivar-group), Didelphis virginiana"

1768 1898 28 "Oryza sativa (japonica cultivar-group), Oryza sativa, Mus musculus, Pan troglodytes, Homo sapiens, Caenorhabditis elegans, Danio rerio, Drosophila melanogaster, Arabidopsis thaliana, Schizosaccharomyces pombe, Prochlorococcus marinus, Bunyamwera virus, Plasmodium falciparum 3D7" 10

1769 1899 28 "Mus musculus, Homo sapiens, Clostridium acetobutylicum, Caenorhabditis elegans, Mycoplasma fermentans, Oryza sativa (japonica cultivar-group), Danio rerio, Medicago truncatula, Plasmodium falciparum 3D7, Rickettsia prowazekii, Oryctolagus cuniculus"

1770 1900 35 "Xylella fastidiosa 9a5c, Homo sapiens, Tetrahymena pyriformis, Mus musculus, Medicago truncatula, Dictyostelium discoideum, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Drosophila melanogaster, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Streptococcus pneumoniae R6, Spodoptera frugiperda, Clostridium acetobutylicum, Oryza sativa, Taenia crassiceps, Vicia faba, Mytilus galloprovincialis, Chara fibrosa, Theragra chalcogramma, Saccharomyces cerevisiae, Trichoderma viride, Archiaphyosemion guineense, Callopanchax sp. strain Guinea, Callopanchax occidentalis, Galega orientalis, Schizosaccharomyces pombe, Luxilus cornutus" 20

1771 1901 33 "Chrysomela vigintipunctata, Buchnera aphidicola str. Bp (Baizongia pistaciae), Homo sapiens, Mycoplasma pulmonis, Mus musculus, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Tetrahymena thermophila, Salmonella typhimurium LT2, Oryza sativa (japonica cultivar-group), Synechococcus sp. PCC 7942, Plasmodium falciparum 3D7, Danio rerio, Sphoeroides nephelus, Lotus corniculatus var. japonicus, Gasterosteus aculeatus, Schizosaccharomyces pombe, Solanum tuberosum, Drosophila immigrans, Drosophila melanica, Saccharomyces bayanus" 30

1772 1902 23 "Mus musculus, Homo sapiens, Wollemia nobilis, Araucaria hunsteinii, Araucaria heterophylla, Araucaria araucana, Plasmodium falciparum 3D7, Phyllocladus alpinus, Dacrydium cupressinum, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Bombyx mori"

1773 1903 33 "Homo sapiens, Mus musculus, Pan troglodytes, Plasmodium falciparum 3D7, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Japetella diaphana, Drosophila melanogaster, Rattus norvegicus, Medicago truncatula, Kluyveromyces delphensis, Aphanocalyx heitzii, Dictyostelium discoideum, Schmidtea mediterranea, Cryptosporidium parvum" 40

1774 1904 25 "Homo sapiens, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Cricetulus griseus, Clostridium acetobutylicum, Plasmodium falciparum 3D7, Danio rerio, Schizosaccharomyces pombe"

1775 1905 25 "Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Pan troglodytes, Listeria innocua, Arabidopsis thaliana, Caenorhabditis elegans" 50

- 1776 1906 23 "Homo sapiens, Ovibos moschatus, Ovis aries, Mus musculus, Rattus norvegicus, Caenorhabditis elegans"
- 1777 1907 31 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Homo sapiens, Caenorhabditis elegans, Bacillus pseudofirmus, Cryptosporidium parvum, Melanoplus sanguinipes entomopoxvirus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Macaca mulatta, Xenopus laevis, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Papio anubis, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Chlamydophila pneumoniae TW-18 10
3, Clostridium perfringens str. 13"
- 1778 1908 27 "Danio rerio, Mus musculus, Ciona intestinalis, Homo sapiens, Pisum sativum, Schizosaccharomyces pombe, Olea europaea, Tribolodon hakonenis, Glycine max, Clostridium perfringens str. 13"
- 1779 1909 27 "Caenorhabditis elegans, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Homo sapiens, Arabidopsis thaliana, Gobio gobio, Vibrio parahaemolyticus, Spiroplasma yamatoense, Mycoplasma genitalium, Xenopus laevis"
- 1780 1910 24 "Mus musculus, Homo sapiens, Danio rerio, Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Drosophila melanogaster, Oryza sativa, Caenorhabditis elegans, Plasmodium falciparum 3D7, Anabaena sp., Sclerotium cepivorum, Plasmodium falciparum, Nostoc sp. PCC 7120" 20
- 1781 1911 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Shewanella oneidensis MR-1, Mus musculus, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27"
- 1782 1912 25 "Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Bos taurus, Pan troglodytes, Plasmodium falciparum 3D7, Caenorhabditis elegans, Crotalus willardi, Gallus gallus, Human immunodeficiency virus 1, Orobanche hederaceae, Orobanche caryophyllacea, Oryza sativa (japonica cultivar-group) 30
, Sulfolobus tokodaii, Orobanche ramosa"
- 1783 1913 29 "Homo sapiens, Mus musculus, Rainieria antennaepe, Hemisus cubanus, Synechococcus sp. WH 8102, Pongo pygmaeus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Tetrahymena thermophila, Aedes albopictus, Pseudocarcinus gigas, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Staphylococcus epidermidis, Schizosaccharomyces pombe, Danio rerio, Enterococcus faecalis V583, Buchnera aphidicola str. Bp (Baizongia pistaciae), Medicago truncatula, Campylobacter jejuni, Buchnera aphidicola str. Sg (Schizaphis graminum), Canis familiaris, Ureaplasma urealyticum, Buchnera aphidicola str. APS (Acyrtosiphon pisum) 40
, Prochlorococcus marinus subsp. marinus str. CCMP1375, Staphylococcus chromogenes, Ciona intestinalis, Tomato big bud phytoplasma, Rattus norvegicus"
- 1784 1914 20 "Drosophila melanogaster, rHomo sapiens, Mus musculus, Bos taurus, Globicephala melas, Megaptera novaeangliae, Tursiops truncatus, Zea mays, Sus scrofa, Clostridium josui"
- 1785 1915 23 "Escherichia coli O157:H7 EDL933, Escherichia coli O157:H7, Drosophila melanogaster, Clostridium bifementans, Homo sapiens, Mus musculus, Cyprinus carpio, Rana catesbeiana, Bacteroides thetaiotaomicron VPI-5482, Oryza sativa (japonica cultivar-group), Heterodontus francisci"
- 1786 1916 31 "Borrelia burgdorferi B31, Homo sapiens, Danio rerio, Mu 50

- s musculus, Equus caballus, Pan troglodytes, Drosophila melanogaster, Tetrahymena thermophila, Campeloma limum, Plasmodium falciparum 3D7, Drosophila simulans, Drosophila sechellia, Drosophila mauritiana"
- 1787 1917 23 "Mus musculus, Arabidopsis thaliana, Bacteroides thetaio taomicron VPI-5482, Homo sapiens, Escherichia coli CFT073, Takifugu rubripes"
- 1788 1918 31 "Danio rerio, Mus musculus, Homo sapiens, Escherichia coli, Pan troglodytes, Rattus norvegicus, Plasmodium falciparum 3D7, Klebsiella pneumoniae"
- 1789 1919 24 "Homo sapiens, Lotus corniculatus var. japonicus, Haplogonaria syltensis, Atriofonta polyvacuola, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Barley mild mosaic virus, Dictyostelium discoideum" 10
- 1790 1920 31 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Lycopersicon esculentum, Petunia x hybrida, Abracris flavolineata, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (japonica cultivar-group)"
- 1791 1921 29 "Salmo salar, Homo sapiens, Oryza sativa, Oryza sativa (japonica cultivar-group), Mus musculus, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Brachymerium preissianum, Anomobryum prostratum, Anomobryum humillimum, Litopenaeus vannamei, Pyrococcus abyssi, Arabidopsis thaliana, Pyrococcus horikoshii, Haplodontium reticulatum, Haplodontium megalocarpum, Bryum wrightii, Bryum uliginosum, Bryum pallens, Bryum cyclophyllum, Anomobryum conicum, Acidodontium subrotundum, Acidodontium seminerve, Acidodontium ramicola, Acidodontium megalocarpum, Acidodontium heteroneuron, Medicago truncatula, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Solanum tuberosum, Plasmodium falciparum 3D7, Modiolastrum lateritium, Sus scrofa, Plasmodium falciparum" 20
- 1792 1922 44 "Danio rerio, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Human immunodeficiency virus 1, Medicago truncatula, Pan troglodytes, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Canis familiaris, Tylomelania sarasinorum, Oryza sativa (japonica cultivar-group), Peanut witches' broom phytoplasma, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Borrelia burgdorferi B31, Gallus gallus, Plasmodium falciparum, Clostridium tetani E88, Caenorhabditis elegans, Gadus morhua, Enterococcus faecalis subsp. liquefaciens, Enterococcus faecalis, Oenothera elata subsp. hookeri, Glycyrrhiza echinata, Solanum demissum" 30
- 1793 1923 28 "Cryptococcus neoformans var. neoformans, Homo sapiens, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Candida albicans, Methanosarcina thermophila, Triticum monococcum, Medicago truncatula, Enterococcus faecalis V583, Prochlorococcus marinus, Caenorhabditis elegans, Lycopersicon esculentum, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Sulfolobus tokodaii, Arabidopsis thaliana" 40
- 1794 1924 27 "Danio rerio, Homo sapiens, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Rickettsia conorii, Oryza sativa (japonica cultivar-group), Helicobacter hepaticus ATCC 51449"
- 1795 1925 32 "Mus musculus, Plasmodium falciparum 3D7, Plasmodium falciparum, Dictyostelium discoideum, Ectromelia virus, Homo sapiens, Ceratosolen fusciceps, Danio rerio, Xenopus laevis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Drosophila melanogaster, Viburnum acerifolium, Hemilea infusata, Cat 50

- haranthus roseus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Rattus norvegicus, Caenorhabditis elegans, Bacillus anthracis str. Ames, Borrelia burgdorferi B31, Ceramium sp. cerDon_#286, Silene vulgaris, Buchnera aphidicola str. Sg (Schizaphis graminum), Methanosarcina acetivorans C2A, Human immunodeficiency virus 1, Grammatophyllum speciosum, Rickettsia prowazekii, Campylobacter jejuni subsp. jejuni NCTC 11168, Vicia faba, Nicotiana tabacum, Oryza sativa, Bos taurus, Mycoplasma penetrans, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum, Frasera speciosa"
- 1796 1926 31 "Homo sapiens, Candidatus Blochmannia floridanus, Danio rerio, Mus musculus, Trichomonas vaginalis, Arabidopsis thaliana, Clostridium perfringens str. 13, Drosophila melanogaster, Medicago truncatula, Gossypium hirsutum, Guillardia theta, Oryza sativa (japonica cultivar-group), Bombyx mori, Bombus avinoviellus, Basidioradulum radula, Dolichogenidea lacteicolor, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, lepidopsocid RS-2001, Cowpox virus, Vaccinia virus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Eureka lisa, Caenorhabditis elegans, Ectromelia virus, Camel pox virus CMS, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Monkeypox virus, Masoreus wetterhalli, Sulfolobus solfataricus, Solanum demissum" 10
- 1797 1927 26 "Homo sapiens, Mus musculus, Clostridium perfringens str. 13, Arabidopsis thaliana, Archaeoglobus fulgidus DSM 4304, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7" 20
- 1798 1928 30 "Arabidopsis thaliana, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Oryza sativa (japonica cultivar-group), Mesocricetus auratus, Phytophthora infestans, Mycoplasma gallisepticum R, Enterococcus faecalis V583, Dictyostelium discoideum, Yersinia enterocolitica (type 0:8), Danio rerio, Yersinia enterocolitica, Pan troglodytes"
- 1799 1929 44 "Dictyostelium discoideum, Homo sapiens, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Drosophila melanogaster, Plasmodium falciparum, Candida glabrata, Clostridium acetobutylicum, Brassica napus, Acinetobacter sp. SE19, Ac" 30
- 1800 1930 27 "Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Pan troglodytes, Buchnera aphidicola str. Bp (Baizongia pistaciae), Plasmodium falciparum 3D7, Nicotiana glauca, Oryza sativa (japonica cultivar-group), Pseudaletia separata entomopoxvirus, Arabidopsis thaliana"
- 1801 1931 27 "Mus musculus, Homo sapiens, Rattus norvegicus, Methanosarcina mazei Goe1, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, cf. Alaysia sp. A3, Vibrio parahaemolyticus, Beta vulgaris, Danio rerio"
- 1802 1932 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Schmidtea mediterranea, Plasmodium falciparum 3D7, Oryza sativa, Mus musculus, Danio rerio, Dictyostelium discoideum, Pseudomonas putida KT2440, Shewanella oneidensis MR-1, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Anas platyrhynchos, Pasteurella multocida, Caenorhabditis elegans, Mus musculus domesticus, Caenorhabditis briggsae, Moraea lugubris, SEN virus, Botryotinia fuckeliana" 40
- 1803 1933 25 "Homo sapiens, Takifugu rubripes, Mus musculus, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Staphylococcus aureus, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. 50

- aureus MW2, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 1804 1934 55 "Tetrahymena thermophila, *Clostridium tetani* E88, *Bacillus anthracis* str. Ames, *Mus musculus*, *Homo sapiens*, *Sulfolobus solfataricus*, *Pasteurella multocida*, *Guillardia theta*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Lemur catta*, *Streptococcus mutans* UA159, *Plasmodium falciparum*, *Clostridium acetobutylicum*, *Lactococcus lactis* subsp. *lactis*, *Prochlorococcus marinus*, *Thermoanaerobacter ethanolicus*, *Mycoplasma pneumoniae*, *Oceanobacillus iheyensis* HTE831, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Lactobacillus plantarum* WCFS1"
- 1805 1935 27 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Prochlorococcus marinus*, *Caenorhabditis elegans*, *Mus musculus*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Danio rerio*, *Medicago truncatula*, *Schizosaccharomyces pombe*, *Paenibacillus polymyxa*" 10
- 1806 1936 42 "Staphylococcus epidermidis ATCC 12228, *Lactococcus lactis*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Haemophilus ducreyi* 35000HP, *Staphylococcus aureus* subsp. *aureus* Mu50, *Bacillus cereus* ATCC "
- 1807 1937 31 "Homo sapiens, *Bacillus thuringiensis*, *Mus musculus*, *Lactococcus lactis* subsp. *lactis*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Rattus norvegicus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Brassica juncea*, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Arabidopsis thaliana*, *Danio rerio*, *Pissodes strobi*" 20
- 1808 1938 31 "Homo sapiens, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Pan troglodytes*, *Leptodora kindtii*, *Medicago truncatula*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Triatoma rubrofasciata*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa*, *Simocephalus vetulus*, *Ureaplasma urealyticum*, *Danio rerio*, *Rattus norvegicus*, *Arabidopsis thaliana*" 30
- 1809 1939 31 "Homo sapiens, *Cirsium acaule*, *Mus musculus*, *Danio rerio*, *Brachyspira hyodysenteriae*, *Drosophila melanogaster*, *Papio anubis*, *Sus scrofa*, *Plasmodium falciparum* 3D7, *Macaca mulatta*, *Pediococcus pentosaceus*, *Oryza sativa*, *Sapromyces elongatus*, *Oryza sativa* (japonica cultivar-group), *Narcissus hybrid cultivar 2*, *Schizosaccharomyces pombe*, *Vibrio ordalii*"
- 1810 1940 27 "Mus musculus, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Clostridium acetobutylicum*, *Drosophila melanogaster*, *Hordeum vulgare* subsp. *vulgare*, *Danio rerio*, *Rattus norvegicus*, *Globobulimina pseudospinescens*, *Globobulimina affinis*, *Medicago truncatula*, *Arabidopsis thaliana*, *Sulfolobus islandicus* rod-shaped virus 1, *Oryza sativa* (japonica cultivar-group)" 40
- 1811 1941 29 "Homo sapiens, *Xenopus laevis*, *Schizosaccharomyces pombe*, *Pseudomonas putida* KT2440, *Mus musculus*, *Adelophis foxi*, *Thamnophis proximus*, *Rhabdophis nuchalis*, *Clostridium acetobutylicum*, *Echinosorex gymnura*, *Oryza sativa* (japonica cultivar-group), *Bombyx mandarina*, *Lestoros inca*, *Clostridium perfringens* str. 13, *Bacillus anthracis* str. Ames, *Antheraea pernyi*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Thamnophis eques*, *Nerodia harteri*, *Storeria dekayi*, *Storeria occipitomaculata*, *Nerodia sipedon*, *Nerodia fasciata*, *Homoroselaps lacteus*, *Danio rerio*, *Ureaplasma urealyticum*, *Amsacta moorei* entomopoxvirus, *Branchiostoma floridae*, *Lotus cornicula*" 50

tus var. japonicus, Anopheles quadrimaculatus A, Candida albicans, Anopheles gambiae, Anopheles trinkae, Anopheles rangeli, Anopheles aquasalis"

1812 1942 27 "Mus musculus, Homo sapiens, Clostridium tetani E88, Mycoplasma virus P1, Proteus vulgaris, Clostridium perfringens str. 13"

1813 1943 25 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Encyphalitozoon cuniculi, Arabidopsis thaliana, Plasmodium falciparum 3D7, Drosophila melanogaster, Drosophila littoralis, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Synechocystis sp. PCC 6803"

1814 1944 27 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Clostridium perfringens str. 13, Drosophila melanogaster, Entyloma browalliae, Dictyostelium discoideum, Bacillus thuringiensis, Oryza sativa (japonica cultivar-group), synthetic construct"

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1815 1945 28 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum, Lycopersicon pimpinellifolium, Mus musculus, Danio rerio, Clostridium perfringens str. 13"

1816 1946 28 "Homo sapiens, Arabidopsis thaliana, uncultured crenarchaeote 4B7, Lactoris fernandeziana, Mus musculus, Danio rerio, Mycoplasma gallisepticum R, Plasmodium falciparum 3D7, Mycoplasma gallisepticum, Oryza sativa (japonica cultivar-group)"

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1817 1947 31 "Reticulitermes lucifugus, Homo sapiens, Plasmodium falciparum 3D7, Mycoplasma penetrans, Arabidopsis thaliana, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Alipumilio avispa, Medicago truncatula, Drosophila melanogaster, Papio anubis, Caenorhabditis elegans, Dictyostelium discoideum, Philenoptera laxiflora, Dalbergiella nyasae, Abrus precatorius, Aeschynomene fascicularis, Adesmia volckmannii, Pyrobaculum aerophilum str. IM2, Clostridium acetobutylicum, Aeschynomene indica, Aeschynomene purpusii, Aeschynomene rudis, Nissolia hirsuta, Nissolia schottii, Chaetocalyx scandens, Adesmia lanata, Diphysa ormocarpoides, Ormocarpum keniense, Aeschynomene virginica, Chaetocalyx nigricans, Diphysa floribunda, Ormocarpum yemenense, Ormocarpum coeruleum, Ormocarpum kirkii, Ormocarpum bernierianum, Ormocarpum muricatum, Oceanobacillus iheyensis HTE831, Bactrocera xanthodes, Oryza sativa"

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1818 1948 23 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Mus musculus, Rattus norvegicus"

1819 1949 27 "Homo sapiens, Lotus corniculatus var. japonicus, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Dictyostelium discoideum, Danio rerio, Arabidopsis thaliana, Medicago truncatula, Shuttle vector pJK148, Borrelia burgdorferi B31, Archaeoglobus fulgidus DSM 4304, Plasmodium falciparum 3D7, Methanosarcina acetivorans C2A, Synergus gallaepomiformis, uncultured crenarchaeote 4B7, Campylobacter jejuni ssp. jejuni NCTC 11168, Schizosaccharomyces pombe"

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1820 1950 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13, Rattus norvegicus, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Melanoplus sanguinipes entomopoxvirus, Medicago truncatula, Dictyostelium discoideum, Drosophila melanogaster, Tetrahymena thermophila, Streptococcus agalactiae 2603V/R, Wolbachia endosymbiont of Brugia malayi, Caenorhabditis elegans, Diaeretus leucopterus, Pan troglodytes, Arabidopsis thaliana, Mycoplasma capricolum"

1821 1951 29 "Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Euschmidia cruciformis, Caenorhabditis elegans, Mus musculus, Plasmodium falcipar"

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- um 3D7, *Arabidopsis thaliana*, *Sulfolobus solfataricus*, *Escherichia coli*, *Bombyx mori*, *Oryza sativa* (japonica cultivar-group), *Pandorina morum*, *Volvulina steinii*, *Yamagishiella unicocca*"
- 1822 1952 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Methanosarcina barkeri*, *Arabidopsis thaliana*, *Danio rerio*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Cydia pomonella* granulovirus, *Streptococcus salivarius*, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1"
- 1823 1953 27 "*Saccharomyces cerevisiae*, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Mus musculus*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Sulfolobus tokodaii*, *Bacillus anthracis* str. Ames, *Staphylococcus aureus*, *Caenorhabditis elegans*, *Chlorobium tepidum* TLS, *Daucus carota*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Arabidopsis thaliana*, *Vigna radiata*, *Staphylococcus aureus* subsp. aureus Mu50"
- 1824 1954 27 "*Mus musculus*, *Homo sapiens*, *Archaeoglobus fulgidus* DSM 4304, *Danio rerio*, *Arabidopsis thaliana*"
- 1825 1955 35 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Mus musculus*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Plasmodium chabaudi adami*, *Plasmodium berghei*, *Lotus corniculatus* var. japonicus, *Arabidopsis thaliana*, *Streptanthus glandulosus* subsp. pulchellus, *Pan troglodytes*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Schizosaccharomyces japonicus*, *Saccharomyces castellii*, *Papio hamadryas*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Apis mellifera*, *Rattus norvegicus*, *Didelphis virginiana*, *Medicago truncatula*, *Saccharomyces cerevisiae*, *Rhizophyidium* sp. 136"
- 1826 1956 25 "*Homo sapiens*, *Bos taurus*, *Mus musculus*, *Crassostrea gigas*, *Drosophila melanogaster*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Danio rerio*, *Plasmodium falciparum*, *Saccorhiza polyschides*"
- 1827 1957 28 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Drosophila melanogaster*, *Danio rerio*, *Phytophthora infestans*, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Zea mays*, *Saccharomyces cerevisiae*, *Oryza sativa*, *Arabidopsis thaliana*, *Pisum sativum*, *Pirellula* sp., *Pan troglodytes*, *Cordyceps* sp. 97003, *Cordyceps sobolifera*, *Equus caballus*"
- 1828 1958 30 "*Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Bos taurus*, *Rattus norvegicus*, *Papio anubis*, *Plasmodium falciparum* 3D7, *Vicia sativa*, *Arabidopsis thaliana*, *Zea mays*"
- 1829 1959 33 "*Drosophila melanogaster*, *Homo sapiens*, *Arabidopsis thaliana*, *Medicago truncatula*, *Danio rerio*, *Mus musculus*, *Caenorhabditis elegans*, *Pyrococcus furiosus* DSM 3638, *Cryptosporidium parvum*"
- 1830 1960 28 "*Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Lymantia dispar*, *Wolbachia* endosymbiont of *Brugia malayi*, *Arabidopsis thaliana*, *Mus musculus*, *Ciona intestinalis*"
- 1831 1961 31 "*Homo sapiens*, *Bombyx mori*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Rattus norvegicus*, *Staphylococcus aureus*, *Gallus gallus*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Wigglesworthia glossinidia* endosymbiont of *GI*

- ossina brevipalpis, Clostridium perfringens str. 13, Staphylococcus aureus subsp . aureus Mu50"
- 1832 1962 24 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Medicago truncatula, Archaeoglobus fulgidus DSM 4304, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Danio rerio, Lama pacos"
- 1833 1963 32 "Homo sapiens, Clostridium tetani E88, Danio rerio, Drosophila melanogaster, Agaricus bisporus, Mus musculus, Struthio camelus, Medicago truncatula, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Methanosarcina mazei Goe1, Caenorhabditis elegans, Buchnera aphidicola str. APS (Acyrtosiphon pisum)" 10
- 1834 1964 60 "Clostridium acetobutylicum, Plasmodium falciparum 3D7, Erinaceus europaeus, Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Mus musculus, Saccharomyces sp. URFJ 50791, Saccharomyces sp. IFO 1815, Medicago truncatula, Papio anubis, Brachym"
- 1835 1965 24 "Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Hippocampus trimaculatus, Schizosaccharomyces pombe, Medicago truncatula" 20
- 1836 1966 35 "Bacillus anthracis str. Ames, Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Cowpox virus, Bacillus cereus ATCC 14579, Vaccinia virus, Sus scrofa, Ectromelia virus, Monkeypox virus, Clostridium acetobutylicum, Variola minor virus, Variola virus, Vaccinia virus (strain Tian Tan), Variola major virus"
- 1837 1967 28 "Homo sapiens, Pan troglodytes, Dictyostelium discoideum, Streptococcus mutans UA159, Escherichia coli O157:H7 EDL933, Escherichia coli K12, Escherichia coli, Escherichia coli O157:H7, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 1838 1968 28 "Papio hamadryas, Homo sapiens, Mus musculus, Rattus norvegicus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Anopheles gambiae, Danio rerio, Bacillus cereus ATCC 14579, Medicago truncatula, Dictyostelium discoideum, Methanothermobacter thermoautotrophicus str. Delta H, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rattus sp." 30
- 1839 1969 28 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Danio rerio"
- 1840 1970 23 "Homo sapiens, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Mus musculus, Salmonella enterica subsp. enterica serovar Typhi, Medicago truncatula, Archaeoglobus fulgidus DSM 4304, Mycobacterium tuberculosis CDC1551, Mycobacterium tuberculosis H37Rv, Caenorhabditis elegans, Aeropyrum pernix, Oryza sativa (japonica cultivar-group), Mycobacterium bovis subsp. bovis AF2122/97, Mycobacterium tuberculosis, Clostridium difficile" 40
- 1841 1971 27 "Homo sapiens, Mus musculus, Aquifex aeolicus VF5, Staphylococcus epidermidis ATCC 12228, Brugia malayi, Thermoanaerobacter tengcongensis, Staphylococcus epidermidis, Danio rerio, Arabidopsis thaliana, Macaca fascicularis, Rattus norvegicus, Drosophila melanogaster, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Canis familiaris, Pyrobaculum aerophilum str. IM2, Clostridium acetobutylicum, Tetrahymena thermophila, Mycoplasma pulmonis, Euglena gracilis, Lotus corniculatus var. japonicus, Cryptospori 50

dium parvum, Rattus sp."

1842 1972 28 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group), Danio rerio"

1843 1973 31 "Homo sapiens, Lotus corniculatus var. japonicus, Danio rerio, Mus musculus, Dictyostelium discoideum, Caenorhabditis briggsae, Staphylococcus aureus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Helicobacter hepaticus ATCC 51449, Caenorhabditis elegans"

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1844 1974 23 "Mus musculus, Drosophila melanogaster, Homo sapiens, Cryptococcus neoformans var. neoformans, Cryptococcus neoformans var. grubii, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Arabidopsis thaliana"

1845 1975 21 "Mus musculus, Aquifex aeolicus VF5, Homo sapiens, Oryza sativa (japonica cultivar-group)"

1846 1976 33 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Sus scrofa, Danio rerio, Staphylococcus aureus, Salmonella enterica subsp. enterica serovar Typhi Ty2, Drosophila melanogaster, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Rickettsia prowazekii, Rickettsia typhi, Ames, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Gallus gallus"

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1847 1977 29 "Borrelia burgdorferi, Arabidopsis thaliana, Leptospira interrogans serovar lai str. 56601, Danio rerio, Homo sapiens, Mus musculus, Drosophila melanogaster, Clostridium acetobutylicum, Schizosaccharomyces pombe"

1848 1978 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Oncomelania hupensis, Yersinia enterocolitica, Dictyostelium discoideum"

1849 1979 25 "Synechocystis sp. PCC 6803, Homo sapiens, Human papillomavirus type 25, Mus musculus, Plasmodium falciparum 3D7, Podarcis muralis, Pestivirus lehmanni, Chondrorhyncha reichenbachiana, Human papillomavirus type 14D, Atheta vestita, Caenorhabditis elegans, Oceanobacillus ihayensis HTE831, Takifugu rubripes"

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1850 1980 25 "Homo sapiens, Schizosaccharomyces pombe, Schiedeella faucisanguinea, Mus musculus, Plasmodium falciparum 3D7, Felis catus, Danio rerio, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis ATCC 12228, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Pyrococcus furiosus DSM 3638, Candidatus Blochmannia floridanus, Bacillus halodurans, Clostridium perfringens str. 13"

1851 1981 27 "Homo sapiens, Mycoplasma capricolum, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Epiphyas postvittana nucleopolyhedrovirus, Clostridium acetobutylicum, Drosophila melanogaster, Drosophila yakuba, Drosophila serrata, Drosophila simulans, Drosophila sechellia, Drosophila mauritiana, Danio rerio, Caenorhabditis elegans, Atelerix albiventris, Bacillus anthracis str. Ames, Coxiella burnetii RSA 493, Medicago truncatula, Mus musculus, Dictyostelium discoideum, Vibrio vulnificus CMCP6, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Thermoanaerobacter tengcongensis, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Triticum sp., Tillandsia recurvifolia var. subsecundifolia, Streptococcus pyogenes SSI-1, Pan troglodytes, Clostridium perfringens str. 13"

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1852 1982 31 "Caenorhabditis elegans, Danio rerio, Mus musculus, Homo

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- sapiens, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Papio hamadryas*, *Sulfolobus solfataricus*, *Candidatus Carsonella ruddii*, *Arabidopsis thaliana*, *Sulfolobus tokodaii*, *Spodoptera exigua* nucleopolyhedrovirus, *Methanosarcina acetivorans* C2A, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Guillardia theta*, *Brachyspira hyodysenteriae*, *Prochlorococcus marinus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Oryza sativa* (japonica cultivar-group), *Leptosphaeria maculans*"
- 1853 1983 23 "Homo sapiens, *Mus musculus*, *Limulus polyphemus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 1854 1984 27 "*Mus musculus*, *Dictyostelium discoideum*, *Homo sapiens*, *Tetrahyena thermophila*, *Saccharomyces cerevisiae*, *Dacus pedunculatus*, *Halictus rubicundus*, *Lasioglossum figueresi*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Bacteroides fragilis*, *Drosophila schildi*, *Caenorhabditis elegans*, *Neocalimastix frontalis*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Streptococcus mutans* UA159, *Lasioglossum noctivagum*, *Lasioglossum zonulum*, *Lasioglossum sisymbrii*, *Lasioglossum majus*, *Lasioglossum callizonium*, *Lasioglossum villosulum*, *Lasioglossum quebecense*, *Lasioglossum pauxillum*, *Lasioglossum comagenense*, *Lasioglossum boreale*, *Lasioglossum apristum*, *Lasioglossum* sp. NDA(1)-A, *Lasioglossum florale*, *Hydractinia echinata*, *Trypanosoma brucei*, *Thermoplasma acidophilum*, *Arabidopsis thaliana*, *Amsacta moorei* entomopoxvirus, *Chaoborus americanus*, *Lycopersicon esculentum*, *Lotus corniculatus* var. *japonicus*"
- 1855 1985 38 "*Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Thermoanaerobacter brockii*, *Pan troglodytes*, *Drosophila melanogaster*, *Rattus norvegicus*, *Human immunodeficiency virus 1*, *Helicobacter pylori* J99, *Takifugu rubripes*"
- 1856 1986 27 "*Mycoplasma pulmonis*, *Homo sapiens*, *Scaphirhynchus platyrhynchus*, *Mus musculus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Millettia thonningii*"
- 1857 1987 27 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mus musculus*, *Rattus norvegicus*, *Ehrlichia chaffeensis*, *Caenorhabditis elegans*, *Prochlorococcus marinus*, *Plasmodium berghei*, *Chlamydophila pneumoniae* CWL029, *Ureaplasma urealyticum*, *Chlamydophila pneumoniae* AR39, *Bacteriophage T3*, *Danio rerio*, *Chlamydophila pneumoniae* TW-183, *Mizuhopecten yessoensis*, *Chlamydophila pneumoniae* J138, *Nostoc* sp. PCC 7120, *Clostridium perfringens* str. 13"
- 1858 1988 33 "*Mus musculus*, *Oryctolagus cuniculus*, *Homo sapiens*, *Danio rerio*, *Echinocardium cordatum*, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Gossypium hirsutum*, *Dictyostelium discoideum*, *Solidago sempervirens*, *Mycoplasma pneumoniae*, *Oryza sativa*, *Cepaea nemoralis*, *Anopheles gambiae*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Ropalidia revolutionalis*, *Botryotinia fuckeliana*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Medicago truncatula*, *Panaeus monodon*, *Pfiesteria piscicida*, *Plasmodium falciparum* 3D7, *Leptosphaeria maculans*, *Strongylocentrotus purpuratus*, *Pinus taeda*, *Canis familiaris*, *Glossina palpalis palpalis*, *Plasmodium falciparum*, *Polistes dominulus*, *Laminaria digitata*, *Mus musculus domesticus*, *Polybioides tabidus*, *Neurospora crassa*"
- 1859 1989 25 "*Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Danio rerio*, *Vibrio vulnificus* CMCP6, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group)"
- 1860 1990 97 "*Yersinia pestis* KIM, *Yersinia pestis* C092, *Haemophilus ducreyi* 35000HP, *Vibrio cholerae*, *Vibrio vulnificus* CMCP6, *Vibrio parahaemolyticus*, *Sinorhizobium meliloti*, *Brucella melitensis* 16M, *Brucella suis* 1330, *Brucella*

- a melitensis biovar Abortus, Haemophilus i"
- 1861 1991 40 "Danio rerio, Homo sapiens, Mus musculus, Drosophila melanogaster, Podospora anserina, Plasmodium vivax, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Cyathostomum catinatum, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Buchnera aphidicola str. AP S (Acyrtosiphon pisum), Medicago truncatula, Atelerix albiventris, Arabidopsis thaliana, Caenorhabditis elegans, Sus scrofa, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Grateloupia sp., Thermoanaerobacter tengcongensis, Clostridium acetobutylicum, Streptococcus agalactiae NEM316, Limulus polyphemus, Dictyostelium discoideum" 10
- 1862 1992 33 "Fagopyrum esculentum, Danio rerio, Plasmodium falciparum 3D7, Mus musculus, Schizosaccharomyces pombe, Leptospira interrogans serovar Lai str. 56601, Borrelia burgdorferi B31, Homo sapiens, Candidatus Carsonella rudii, Caenorhabditis elegans, Arabidopsis thaliana, Medicago truncatula, Gallus gallus, Dictyostelium discoideum, Xenopus laevis, Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Tetraodon nigroviridis, Amsacta moorei entomopox virus, Rattus norvegicus, Synechocystis sp. PCC 6803, Drosophila melanogaster, Thermoanaerobacter tengcongensis, Bos taurus, Betula pendula, Chilo iridescent virus, Manihot esculenta, Hordeum vulgare subsp. vulgare, Mycoplasma pulmonis, Solanum tuberosum, Lotus corniculatus var. japonicus, Staphylococcus hominis, Staphylococcus aureus, Saccharomyces cerevisiae, Loofah witches'-broom phytoplasma, Oryza sativa (japonica cultivar-group)" 20
- 1863 1993 27 "Beta vulgaris, Danio rerio, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Enterococcus faecalis"
- 1864 1994 27 "Caenorhabditis elegans, Danio rerio, Homo sapiens, Mus musculus, Bacillus halodurans, Plasmodium falciparum 3D7, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Oryza sativa, Dictyostelium discoideum, Lotus corniculatus var. japonicus, Methanocaldococcus jannaschii, Nicotiana tomentosiformis, Pan troglodytes, Chrysanthemum x morifolium, Vesicular stomatitis virus, Nostoc sp. PCC 7120" 30
- 1865 1995 38 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium falciparum 3D7, Ehrlichia chaffeensis, Dictyostelium discoideum, Arabidopsis thaliana, Danio rerio, Bos taurus, Drosophila melanogaster, Methanosarcina mazei Goe1, Lactococcus la"
- 1866 1996 32 "Homo sapiens, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Heterodoxus macropus, Euglena gracilis, Antechinus swainsonii, Sminthopsis macroura, Danio rerio, Caenorhabditis elegans, Subsalsusaphis wanica, Tamalia coweni, Plasmodium falciparum 3D7, Sulfolobus tokodaii, Ceratovacuna nekoashi, Ceratovacuna longifila, Ceratovacuna lanigera, Bombyx mori, Physcomitrella patens, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Schmidtea mediterranea, Arabidopsis thaliana, Kokia drynarioides, Sus scrofa, Caenorhabditis briggsae, Plasmodium falciparum, Medicago truncatula, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Gossypium darwinii, Gossypium mustelinum, Gossypium tomentosum, Gossypium barbadense, Gossypium hirsutum, Gossypium arboreum" 40
- 1867 1997 24 "Yersinia enterocolitica, Homo sapiens, Oryza sativa (japonica cultivar-group), Thaumanura ruffoi, Triticum urartu, Schistosoma japonicum, Mus musculus, Macaca mulatta, Arabidopsis thaliana, Papio anubis, Chromobacte 50

rium violaceum"

1868 1998 23 "Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Homo sapiens, Bacillus anthracis str. A2012, Bacillus cereus, Caenorhabditis elegans, Bacillus anthracis, Pirellula sp., Melanoplus sanguinipes entomopoxvirus"

1869 1999 37 "Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Pan troglodytes, Homo sapiens, Rickettsia prowazekii, Pedinomonas minor, Sulfolobus tokodaii, Mus musculus, Calametta filiformis, Drosophila melanogaster, Cl"

1870 2000 24 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Cavia porcellus, Drosophila melanogaster, Drosophila erecta, Mandarinasuenoae, Plasmodium falciparum, Oryza sativa, Plasmodium falciparum 3D7, Medicago truncatula, Mycoplasma fermentans, Schizosaccharomyces pombe" 10

1871 2001 37 "Braunsapis vitrea, Braunsapis otavica, Braunsapis albipennis, Allodape mucronata, Oryza sativa (japonica cultivar-group), Oryza sativa, Medicago truncatula, Caenorhabditis elegans, Ciona intestinalis, Homo sapiens, Dictyostelium discoideum, Buchnera aphidicola"

1872 2002 29 "Homo sapiens, Mus musculus, Pan troglodytes, Arabidopsis thaliana, Drosophila melanogaster, Clostridium tetani E88, Lactococcus lactis subsp. lactis, Odontella sinensis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Danio rerio, Oryza sativa (japonica cultivar-group), Hantaan virus, Leptospira interrogans serovar lai str. 56601, Buchnera aphidicola str. Bp (Bazongia pistaciae), Buchnera aphidicola str. Sg (Schizaphis graminum), Hantavirus Liu, Sulfolobus solfataricus, Hantaan virus 84FLi, Hantavirus LR1, Zea mays, Borrelia hermsii, Hantaan virus A9, Hantaan virus Lee, HoJo virus" 20

1873 2003 24 "Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Danio rerio, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rondeletia odorata, Chiococca racemosa, Mus sp., Clostridium perfringens str. 13, Carassius auratus" 30

1874 2004 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Medicago truncatula, Lemur catta, Clostridium acetobutylicum, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Acanthamoeba castellanii"

1875 2005 24 "Pinus halepensis, Homo sapiens, Feline foamy virus, Mus musculus, Bacillus anthracis str. Ames, Pseudomonas syringae pv. tomato str. DC 3000, Pseudomonas aeruginosa PA01, Gymnocarena mexicana, Caulobacter crescentus CB15, Dacus pedunculatus, Bactrocera cilifera, Bactrocera kandiensis, Bactrocera caryae, Bactrocera decurtans, Bactrocera bancroftii, Xanthomonas axonopodis pv. citri str. 306, Cochliomyia hominivorax, Mycobacterium tuberculosis CDC1551, Micrococcus luteus, Mycobacterium tuberculosis H37Rv, Streptomyces coelicolor A3(2), Corynebacterium efficiens YS-314, Streptomyces avermitilis MA-4680, Chromobacterium violaceum, Pseudomonas aeruginosa, Ralstonia solanacearum, Mycobacterium bovis subsp. bovis AF2122/97, Danio rerio, Bifidobacterium longum NCC2705, Thermus thermophilus" 40

1876 2006 27 "Mus musculus, Pisolithus tinctorius, Drosophila melanogaster, Homo sapiens, Cochliobolus heterostrophus, Arabidopsis thaliana"

1877 2007 24 "Mus musculus, Bacillus halodurans, Homo sapiens, Dictyostelium discoideum, Anopheles gambiae"

1878 2008 24 "Lotus corniculatus var. japonicus, Homo sapiens, Caenorhabditis elegans, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25 50

- 586, *Albatrellus cristatus*"
- 1879 2009 33 "Homo sapiens, *Danio rerio*, *Helicobacter hepaticus* ATCC 51449, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Bacillus cereus* ATCC 14579, *Caenorhabditis elegans*, *Leptospira interrogans* serovar la i str. 56601, *Takifugu rubripes*, *Streptococcus agalactiae* NEM316, *Mycoplasma genitalium*"
- 1880 2010 27 "Acromyrmex heyeri, *Acromyrmex lundii*, *Mus musculus*, *Homo sapiens*, *Myrmica scabrinodis*, *Myrmica sabuleti*, *Myrmica rugulosa*, *Myrmica hirsuta*, *Manica rubida*, *Lasius* sp. HL-1992, *Plasmodium falciparum* 3D7, *Cyphomyrmex cf. rimosus* TS-1997a, *Paratrechina* sp. ACDN, *Papyrius* sp. ACLA, *Leptomyrmex unicolor*, *Iridomyrmex lividus*, *Forelius chalybaeus*, *Dorymyrmex insanus*, *Myrmecia pyriformis*, *Myrmecia gulosa*, *Petalomyrmex phylax*, *Acromyrmex balzani*, *Oecophylla smaragdina*, *Chironomus tentans*, *Danio rerio*, *Atelerix albiventris*, *Caenorhabditis elegans*, *Harpagoxenus sublaevis*, *Polyrhachis dives*, *Azteca* sp. near *longiceps*, *Apterostigma collare*, *Cladomyrma cryptata*, *Gesomyrmex* sp. MC-1995, *Acromyrmex crassispinus*" 10
- 1881 2011 23 "Danio rerio, *Homo sapiens*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Oryctolagus cuniculus*"
- 1882 2012 28 "Homo sapiens, *Andes virus*, *Oryza sativa* (japonica cultivar-group), *Meloidogyne hapla*, *Schmidtea mediterranea*, *Mus musculus*, *Meloidogyne javanica*, *Caenorhabditis elegans*, *Danio rerio*, *Sus scrofa*, *Cryptosporidium parvum*" 20
- 1883 2013 28 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Trypanosoma cruzi*, *Arabidopsis thaliana*, *Pan troglodytes*, *Pasteurella multocida*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Pisum sativum*"
- 1884 2014 27 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Sulfolobus tokodaii*, *Haemophilus phage HP1*, *Oryza sativa* (japonica cultivar-group), *Lyngbya majuscula*, *Oryctolagus cuniculus*, *Pseudomonas phage phiKZ*, *Amanita flavoconia*, *Bos taurus*, *Human immunodeficiency virus 1*" 30
- 1885 2015 54 "Mus musculus, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mycobacterium tuberculosis* CDC1551, *Mycobacterium tuberculosis* H37Rv, *Mycobacterium bovis* subsp. *bovis* AF2122/97, *Homo sapiens*, *Brassica napus*, *Coptodisca kalmiella*, *Xenopus laevis*, *Caenorhabditis elegans*, *Salmonella enterica*, uncultured deep-sea autotrophic bacterium SB11-3, *Sus scrofa*"
- 1886 2016 31 "Homo sapiens, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Methanocaldococcus jannaschii*, *Dictyostelium discoideum*, *Drosophila erecta*, *Plasmodium falciparum* 3D7, *Thermoanaerobacter tengcongensis*, *Cylicomorpha parviflora*, *Phaseolus vulgaris*, *Chlamydophila pneumoniae* CWL029, *Lotus corniculatus* var. *japonicus*, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Chlamydophila pneumoniae* TW-183, *Hordeum vulgare*" 40
- 1887 2017 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces mikatae*"
- 1888 2018 23 "Homo sapiens, *Mus musculus*, *Saccharomyces cerevisiae*, *Arabidopsis thaliana*, *Danio rerio*"
- 1889 2019 27 "Homo sapiens, *Pisum sativum*, *Mus musculus*, *Oncorhynchus*" 50

- mykiss"
- 1890 2020 31 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Danio rerio, Medicago truncatula, Clostridium tetani E88, Malawimonas jakobiformis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Campylobacter jejuni subsp. jejuni NCTC 11168, Obuda pepper virus, Oceanobacillus iheyensis HTE831, Neurospora crassa, Sus scrofa, Tobacco mosaic virus"
- 1891 2021 38 "Samoaia leonensis, Cryptosporidium parvum, Ostrinia furnacalis, Ostrinia nubilalis, Dictyostelium discoideum, Homo sapiens, Caenorhabditis elegans, Millettia grandis, Mus musculus, Sus scrofa, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D" 10
- 1892 2022 52 "Gallus gallus, Anas platyrhynchos, Entamoeba histolytica, Vibrio vulnificus CMCP6, Clostridium tetani E88, Colpidium aqueous, Vibrio parahaemolyticus, Homo sapiens, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Trichinella spiralis, Pan troglodytes, Lactobacillus delbrueckii subsp. lactis, Cunninghamella elegans, Methanocaldococcus jannaschii, Mus musculus, Methanosarcina acetivorans C2A, Clostridium acetobutylicum, Saccharomyces cerevisiae, Amycolatopsis mediterranei, Haemophilus influenzae Rd KW20"
- 1893 2023 74 "Pneumocystis carinii f. sp. ratti, Cerebratulus cf. lacteus, Loligo pealei, Mycoplasma pulmonis, Entamoeba histolytica, Branchiostoma lanceolatum, Hylodretonus araucariae, Dendroctonus mexicanus, Oryza sativa (japonica cultivar-group), Echinochloa phyllopogon, Dendroctonus ponderosae, Dendroctonus jeffreyi, Pyrococcus horikoshii, Methanosarcina mazei Goe1, Homo sapiens, Dendroctonus frontalis, Prochlorococcus marinus, Streptococcus mutans UA159, Rattus norvegicus, Mus musculus, Prionitis lanceolata, Streptococcus pyogenes M1 GAS, Latimeria chalumnae, Bacillus halodurans" 20
- 1894 2024 82 "Ureaplasma urealyticum, Prochlorococcus marinus subsp. marinus str. CCMP1375, Oceanobacillus iheyensis HTE831, Coxiella burnetii RSA 493, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Thermoanaerobacter tengcongensis, Bartonella henselae, Prochlorococcus marinus, Candidatus Blochmannia floridanus, Entamoeba histolytica, Enterococcus faecalis V583, Enterococcus faecalis, Cunninghamella elegans, Haemophilus ducreyi 35000HP, Bacillus halodurans, Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Paramecium multimicronucleatum, Arabidopsis thaliana, Nicotiana tabacum, Caenorhabditis elegans, Dictyostelium discoideum, Clostridium tetani E88, Lycopersicon esculentum, Danio rerio, Clostridium perfringens str. 13, Mus musculus, Campylobacter jejuni subsp. jejuni NCTC 11168, Alnus glutinosa, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Streptococcus sobrinus" 30
- 1895 2025 30 "Cyanophora paradoxa, Leptospira interrogans serovar lai str. 56601, Encephalitozoon cuniculi, Methanocaldococcus jannaschii, Homo sapiens, Ureaplasma urealyticum, synthetic construct, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Medicago truncatula, Mus musculus, uncultured epsilon proteobacterium, Bostrychia calliptera, Taphrorychus bicolor, Methylobacillus sp. SK1, Caenorhabditis elegans, Human rotavirus (group C / strain Bristol), uncultured Bacteroidetes bacterium, Bacteroides fragilis, Hepatitis A virus, uncultured bacterium BHD15, Clostridium perfringens str. 13" 40
- 1896 2026 41 "Prochlorococcus marinus, Candidatus Blochmannia floridanus, Streptococcus iniae, Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Xenopus laevis, Oryza sativa (japonica cultivar-group), Arabidopsis t 50

- haliana, *Lactococcus lactis* subsp. *lactis*, *Mus musculus*, *Streptococcus thermophilus*"
- 1897 2027 96 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Streptococcus thermophilus, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae, Streptococcus agalactiae NEM316, Streptococcus iniae, Streptococcus pyogenes MGAS315, Streptococcus py"
- 1898 2028 35 "Homo sapiens, Arabidopsis thaliana, Sulfolobus solfataricus, Mus musculus, Oxytricha granulifera, Streptococcus pyogenes MGAS8232, Danio rerio, Caenorhabditis elegans"
- 1899 2029 24 "Caenorhabditis briggsae, Oceanobacillus iheyensis HTE831, Drosophila melanogaster, Homo sapiens, Yersinia pestis KIM, Pyrobaculum aerophilum str. IM2, Danio rerio, Bos taurus, Canis familiaris, Pan troglodytes, Yersinia pestis C092, Puumala virus" 10
- 1900 2030 27 "Mus musculus, Plasmodium falciparum 3D7, Plasmodium falciparum, Methanococcus voltae, Danio rerio, Homo sapiens, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Lactococcus lactis subsp. cremoris, Oryza sativa, Caenorhabditis briggsae, Branchiostoma lanceolatum, Staphylococcus epidermidis, Saccharomyces cerevisiae, Rattus norvegicus, Shuttle vector pCS4-14, Gelidiella acerosa, Marmota monax, Lactobacillus paracasei, Lactococcus lactis" 20
- 1901 2031 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Shewanella oneidensis MR-1, Chlorella virus, Drosophila melanogaster, Caenorhabditis elegans, Danio rerio, Oryza sativa (indica cultivar-group), Nostoc sp. PCC 7120"
- 1902 2032 27 "Homo sapiens, Danio rerio, Arabidopsis thaliana, Mus musculus, Hordeum vulgare subsp. vulgare, Bombyx mori, Ursus thibetanus, Rhesus cytomegalovirus strain 68-1, Salmonella typhimurium LT2, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Anthoceros formosae, Sulfolobus tokodaii, Mycoplasma penetrans, Oryza sativa (japonica cultivar-group)" 30
- 1903 2033 35 "Homo sapiens, Mus musculus, Clostridium perfringens str. 13, Prochlorococcus marinus, Panellus serotinus, Drosophila melanogaster, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Candidatus Carsonella ruddii, Medicago truncatula, Mus musculus domesticus, Caenorhabditis elegans, Danio rerio"
- 1904 2034 29 "Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Drosophila melanogaster, Plasmodium falciparum 3D7, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio, Lycopersicon esculentum, Streptococcus pyogenes, Mus musculus, Oryza sativa (japonica cultivar-group), Gollania ruginosa, Macrothamnium leptohymenioides, Macrothamnium macrocarpum, Orontobryum hookeri, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Methanosarcina mazei Goe1, Methanosarcina acetivorans C2A, Strongyloides stercoralis, Bombyx mori, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Staphylococcus aureus, Melanoplus sanguinipes entomopoxvirus, Spiroplasma citri" 40
- 1905 2035 43 "Homo sapiens, Mus musculus, Danio rerio, Dictyostelium discoideum, Oryza sativa, Misgurnus mizolepis, Oryza sativa (japonica cultivar-group), Polybioides tabidus, Kluyveromyces wickerhamii, Drosophila melanogaster, Chlamydomonas reinhardtii, Plasmodium falciparum 3D7, Vitis vinifera, Lotus corniculatus var. japonicus, Curculio pyrrhoceras, Saccharomyces douglasii, Coregonus lavaretus, Polistes annularis, Saccharomyces cerevisiae, Rattus norvegicus, Me" 50

- dicago truncatula, Papio hamadryas, Mamestra brassicae, Plasmodium falciparum, Schmidtea mediterranea, Fenneropenaeus chinensis, Arabidopsis thaliana"
- 1906 2036 29 "Drosophila melanogaster, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Oryza sativa (japonica cultivar-group), Candidatus Carsonella ruddii, Arabidopsis thaliana, Rattus norvegicus, Tarasa thyrsoidea, Tarasa geranioides, Tarasa antofagastana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lotus corniculatus var. japonicus, Danio rerio"
- 1907 2037 27 "Shewanella oneidensis MR-1, Danio rerio, Drosophila melanogaster, Homo sapiens, Cyanidioschyzon merolae, Glycine max, Mus musculus, Babesia canis, Pan troglodytes, Symbiodinium sp., Babesia canis vogeli, Babesia sp. GA2, Babesia sp. GA1, Babesia gibsoni, Babesia sp., Babesia sp. 'Oklahoma dog', Gonyaulax polyedra, Babesia sp. 'Okinawa dog', Babesia sp. 'North Carolina dog', Theileria sp. 'strain MSD', Theileria mutans, Proteomonas sulcata, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Babesia sp. Xinjiang 1648, Pteridomonas danica, Melanoplus sanguinipes entomopoxvirus, Rattus norvegicus"
- 1908 2038 23 "Haloarcula hispanica, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Lotus corniculatus var. japonicus, Arabidopsis thaliana"
- 1909 2039 27 "Listeria monocytogenes, Homo sapiens, Pyrococcus abyssi, Danio rerio, Oryza sativa (japonica cultivar-group), Mus musculus"
- 1910 2040 31 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Plasmodium falciparum 3D7, Bemisia tabaci, Anopheles gambiae, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Methanosarcina mazei Goe1, Danio rerio, Escherichia coli, Catharanthus roseus, Lotus corniculatus var. japonicus, Ipomoea trifida, Triticum aestivum, Rattus norvegicus"
- 1911 2041 27 "Homo sapiens, Danio rerio, Borrelia burgdorferi B31, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Oryctolagus cuniculus, Medicago truncatula, Borrelia burgdorferi, Lolium multiflorum"
- 1912 2042 31 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Archaeoglobus fulgidus DSM 4304, Papio anubis, Pan troglodytes, Caenorhabditis elegans, Capra hircus, Papio hamadryas, Human immunodeficiency virus 1, Neisseria meningitidis Z2491, Arabidopsis thaliana, Ureaplasma urealyticum, Haemophilus ducreyi 35000HP, Danio rerio"
- 1913 2043 24 "Homo sapiens, Rattus norvegicus, Bacillus anthracis str. Ames, Caenorhabditis elegans, Mus musculus, Xenopus laevis, Danio rerio, Schizosaccharomyces pombe"
- 1914 2044 35 "Homo sapiens, Mus musculus, Clostridium tetani E88, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis briggsae, Danio rerio"
- 1915 2045 31 "Palmaria palmata, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Clostridium tetani E88, Caenorhabditis elegans, Allopsephomyces punctatus, Plasmodium falciparum 3D7, Vibrio alginolyticus, Drosophila melanogaster, Papio anubis"
- 1916 2046 37 "Homo sapiens, Human papillomavirus type 1a, Plasmodium falciparum 3D7, Prochlorococcus marinus, Mus musculus, Papio anubis, Diadasma ochracea, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Danio rerio, Saccharomyces douglasii, Caenorhabditis elegans, Drosophila melanogaster, Arabidopsis thaliana, Rattus norvegicus, Drosophila crassifemur"

- 1917 2047 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Clostridium acetobutylicum, Caenorhabditis elegans, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Anguilla japonica, Equus caballus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus, Caenorhabditis briggsae, Streptococcus agalactiae, Ovis aries, Bos taurus, Saccharomyces cerevisiae, Pan troglodytes, Capra hircus"
- 1918 2048 32 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Sus scrofa, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Pan troglodytes, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Plasmodium falciparum, Macaca mulatta, Guillardia theta, Sulfolobus solfataricus, Rickettsia prowazekii, Streptococcus pneumoniae, Campylobacter jejuni subsp. jejuni NCTC 11168, Trichophyton rubrum, Mycoplasma penetrans, Pisum sativum, Candida albicans, Chlamydomonas reinhardtii, Listeria innocua, Solanum tuberosum, Physarum polycephalum" 10
- 1919 2049 23 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Oryza sativa (japonica cultivar-group), Oceanobacillus ihayensis HTE831"
- 1920 2050 24 "Homo sapiens, Chlamydomonas reinhardtii, Danio rerio, Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana, Lemur catta, Sorghum bicolor, Medicago truncatula, Schizosaccharomyces pombe, Staphylococcus aureus" 20
- 1921 2051 32 "Homo sapiens, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Lactobacillus plantarum WCFS1, Danio rerio, Caenorhabditis elegans, Salmonella enterica subsp. enterica serovar Typhi Ty2, Dictyostelium discoideum, Sus scrofa, Oryza sativa (japonica cultivar-group), Pan troglodytes, Salmonella enterica subsp. enterica serovar Typhi, Pseudopleuronectes americanus"
- 1922 2052 27 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Drosophila melanogaster, Chlamydomonas reinhardtii, Rattus norvegicus, Monosiga brevicollis, Methanosarcina acetivorans C2A, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Enterobacteria phage RB69, Streptococcus mutans, Wolbachia sp." 30
- 1923 2053 23 "Homo sapiens, Mus musculus, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Sphacelaria arctica"
- 1924 2054 33 "Danio rerio, Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Enterococcus faecalis V583, Dictyostelium discoideum, Oryza sativa, Oryza rufipogon, Oryza nivara, Oryza glaberrima, Buchnera aphidicola str. Sg (Schizaphis graminum), Galleria mellonella"
- 1925 2055 28 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Plasmodium falciparum 3D7, Methanothermobacter thermoautotrophicus str. Delta H, Arabidopsis thaliana, Lycopersicon esculentum, Pyrococcus horikoshii, Danio rerio, Nostoc sp. PCC 7120" 40
- 1926 2056 46 "Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Homo sapiens, Methanosarcina mazei Goe1, Xenopus borealis, Xenopus laevis, Mus musculus, Medicago truncatula, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Felis catus, Oryza sativa, Caenorhabditis elegans, Oryzias latipes, Clostridium perfringens, Clostridium perfringens str. 13, Sus scrofa domestica, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Borrelia burgdorferi B31, Gallus gallus, Plasmodium falciparum 3D7, Danio rerio, Staphylococcus xylosum, Manduca sexta, Borrelia burgdorferi, Caenorhabditis 50

- s briggsae, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Trypanosoma brucei, Schizosaccharomyces pombe"
- 1927 2057 29 "Mus musculus, Yersinia pestis KIM, Homo sapiens, Yersinia pestis C092, Plasmodium falciparum 3D7, Autographa californica nucleopolyhedrovirus, Danio rerio, Rachiplusia ou multiple nucleopolyhedrovirus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Gallus gallus, Caenorhabditis elegans, Gallid herpesvirus 1, Rickettsia prowazekii, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mycoplasma genitalium, Trypanosoma cruzi, Staphylococcus aureus subsp. aureus Mu50"
- 1928 2058 48 "Homo sapiens, Danio rerio, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Cunninghamella elegans, Caenorhabditis elegans, Dimorphandra mollis, Streptococcus salivarius, Gracilariopsis lemaneiformis, uncultured crenarchaeote, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Dictyostelium discoideum, Pan troglodytes, Clostridium tetani E88, Arabidopsis thaliana, Chilo iridescent virus, Neochanna diversus, Beta vulgaris subsp. vulgaris, Tetrahymena pyriformis, Lotus corniculatus var. japonicus, Human endogenous retrovirus HERV-K(1)" 10
- 1929 2059 35 "Mus musculus, Homo sapiens, Banksia prionotes, Banksia hookeriana, Plasmodium falciparum 3D7, Danio rerio, Rattus norvegicus, Medicago truncatula, Drosophila melanogaster, Zea mays, Arabidopsis thaliana, Magnaporthe grisea, Candida glabrata, Pichia jadinii, Aralia franchetii, Panax trifolius, Dictyostelium discoideum, Tetrahymena thermophila, Clostridium acetobutylicum, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Sorghum bicolor, Pan troglodytes, Trypanosoma cruzi" 20
- 1930 2060 44 "Homo sapiens, Mus musculus, Clostridium acetobutylicum, Danio rerio, Clostridium tetani E88, Arabidopsis thaliana, Chrysomela vigintipunctata, Linnaea aenea, Chrysomela salicivora, Chrysomela collaris, Caenorhabditis elegans, Sulfolobus islandicus rod-sh"
- 1931 2061 36 "Homo sapiens, Mus musculus, Enterococcus faecalis V583, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Danio rerio, Sus scrofa, Caenorhabditis elegans, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Plasmodium falciparum 3D7, Vibrio parahaemolyticus" 30
- 1932 2062 29 "Homo sapiens, Brassica juncea, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Kluyveromyces lactis, Pan troglodytes, Vibrio cholerae, Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Bacillus subtilis"
- 1933 2063 29 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Urano taenia lowii, Danio rerio, Plasmodium falciparum 3D7, Caenorhabditis elegans, Medicago truncatula, Oryza sativa (japonica cultivar-group)" 40
- 1934 2064 29 "Homo sapiens, Mus musculus, Clostridium acetobutylicum, Rattus norvegicus, Plasmodium falciparum 3D7, Bacillus anthracis str. Ames, Aeropyrum pernix, Danio rerio"
- 1935 2065 33 "Drosophila littoralis, Homo sapiens, Plasmodium falciparum, Plasmodium falciparum 3D7, Mus musculus, Dictyostelium discoideum, Miropotes sp. 'A.D. Austin', Miropotes sp. M252, Caenorhabditis elegans, Xenopus laevis, Pan troglodytes, Schmidtea mediterranea, "
- 1936 2066 38 "Plasmodium falciparum 3D7, Cryptomys damarensis, Homo sapiens, Mus musculus, Saccharomyces douglasii, Oryza sativa (japonica cultivar-g 50

- roup), *Saccharomyces cerevisiae*, *Plasmodium berghei*, *Arabidopsis thaliana*, *Ureaplasma urealyticum*, *Amsacta moorei* entomopo"
- 1937 2067 24 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Schizosaccharomyces pombe*, *Entamoeba histolytica*, *Drosophila melanogaster*, *Mycoplasma penetrans*, *Mus musculus*, *Caenorhabditis elegans*, *Spodoptera litura* nucleopolyhedrovirus, *Vibrio cholerae*, *Candidatus Blochmannia floridanus*, *Caenorhabditis briggsae*, *Streptococcus pneumoniae*, *Danio rerio*"
- 1938 2068 28 "Caenorhabditis elegans, *Homo sapiens*, *Mus musculus*, *Medicago truncatula*, *Arabidopsis thaliana*, *Coturnix coturnix*, *Nipponia nippon*" 10
- 1939 2069 23 "Vibrio cholerae, *Homo sapiens*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, Wound tumor virus, *Caenorhabditis elegans*, *Branchiostoma floridae*, *Schistosoma japonicum*, *Mus musculus*, *Danio rerio*"
- 1940 2070 23 "Homo sapiens, *Mus musculus*, *Shigella flexneri* 2a str. 2457T, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Escherichia coli* O157:H7 EDL933, *Arabidopsis thaliana*, *Escherichia coli* K12, *Escherichia coli*, *Danio rerio*, *Escherichia coli* O157:H7"
- 1941 2071 30 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Homo sapiens*, *Arabidopsis thaliana*, *Mycoplasma penetrans*, *Saccharomyces cerevisiae*, *Rattus norvegicus*, *Drosophila melanogaster*, *Mus musculus*, *Streptococcus agalactiae* 2603V/R, *Sus scrofa*, *Escherichia coli* O157:H7 EDL933, *Escherichia coli* K12, *Leishmania major*, *Caenorhabditis elegans*, *Cladosporium fulvum*, *Escherichia coli*, *Escherichia coli* O157:H7" 20
- 1942 2072 27 "Lotus corniculatus var. japonicus, *Drosophila melanogaster*, *Homo sapiens*, *Clostridium acetobutylicum*, *Plethodon richmondi*, *Caenorhabditis elegans*, *Mus musculus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"
- 1943 2073 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Lasionycteris noctivagans*, *Ovine respiratory syncytial virus*, *Xylella fastidiosa* 9a5c, *Danio rerio*, *Escherichia coli*, *Ciona intestinalis*"
- 1944 2074 27 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Clostridium perfringens*, *Drosophila melanogaster*, *Methanosarcina acetivorans* C2A, *Glycine max*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Caenorhabditis elegans*" 30
- 1945 2075 24 "Arabidopsis thaliana, *Mus musculus*, *Caenorhabditis elegans*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Tetraodon nigroviridis*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Xenopus laevis*, *Zea mays*, *Yersinia pestis* KIM, *Mycoplasma penetrans*, *Yersinia pestis* C092, *Schizosaccharomyces pombe*, *Danio rerio*"
- 1946 2076 28 "Homo sapiens, *Danio rerio*, *Donrichardsia macroneuron*, *Macaca mulatta*, *Rhynchostegiella pumila*, *Mus musculus*, *Buchnera aphidicola* str. Sg (Schizaphis graminum), *Papio anubis*, *Forsstroemia trichomitria*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Campylopus umbellatus*, *Bacillus anthracis* str. Ames, *Rattus norvegicus*, *Pan troglodytes*, *Vibrio vulnificus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Clostridium perfringens* str. 13" 40
- 1947 2077 30 "Homo sapiens, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Heterodontus francisci*, *Danio rerio*, *Mus musculus*, *Prestonia quinquangularis*, *Oryza sativa* (japonica cultivar-group), *Cryptocephalus coryli*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Acute bee paralysis virus*, *Nicotiana tabacum*" 50

- 1948 2078 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Schistosoma japonicum, Gossypium hirsutum, Drosophila melanogaster, Mus musculus, Didelphis virginiana, Clostridium acetobutylicum, Danio rerio, Torpedo californica, Medicago truncatula, Plasmodium falciparum 3D7"
- 1949 2079 29 "Danio rerio, Zucchini yellow mosaic virus, Mus musculus, Homo sapiens, Mycoplasma gallisepticum R, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Chytriumyces annulatus, Nowakowskiella hemisphaerospora, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Onchocerca volvulus"
- 1950 2080 23 "Homo sapiens, Mus musculus, Papio anubis, uncultured bacterium, Prevotella brevis, uncultured eubacterium C2a-3, Oryza sativa (japonica cultivar-group), uncultured gamma proteobacterium SUR-ATT-7" 10
- 1951 2081 39 "Oceanobacillus ihayensis HTE831, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Homo sapiens, Mus musculus, Salmonella enterica subsp. enterica serovar Typhi Ty2, Plasmodium falciparum 3D7, Rattus norvegicus, Arabidopsis thaliana, Encephalitozoon cuniculi, Saccharomyces cerevisiae, Salmonella enterica subsp. enterica serovar Typhi, Danio rerio, Caenorhabditis elegans, Salmonella enterica"
- 1952 2082 34 "Mus musculus, Bacillus cereus ATCC 14579, Homo sapiens, Autographa californica nucleopolyhedrovirus, Bombyx mori nuclear polyhedrosis virus, Danio rerio, Rachiplusia ou multiple nucleopolyhedrovirus, Leptospira interrogans serovar Iai str. 56601, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Oryctolagus cuniculus, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Methanosarcina acetivorans C2A, Helicobacter hepaticus ATCC 51449" 20
- 1953 2083 23 "Mus musculus, Homo sapiens, Microdesmus longipinnis, Foxpox virus"
- 1954 2084 23 "Homo sapiens, Sus scrofa, Danio rerio, Halocynthia roretzi"
- 1955 2085 29 "Solanum bulbocastanum, Homo sapiens, Mus musculus, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Medicago truncatula, Caenorhabditis elegans, Plasmodium falciparum 3D7, Lutzomyia intermedia, Rickettsia prowazekii, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Ciona intestinalis, Kluyveromyces lactis, Clostridium perfringens str. 13" 30
- 1956 2086 24 "Mus musculus, Staphylococcus aureus, Arabidopsis thaliana, Homo sapiens, Caenorhabditis briggsae, Caenorhabditis elegans, Sus scrofa, Brassica rapa"
- 1957 2087 24 "Homo sapiens, Mus musculus, Neurospora crassa, Human immunodeficiency virus 1, Bacteroides thetaiotaomicron VPI-5482, Danio rerio, Entamoeba histolytica, Nostoc sp. PCC 7120" 40
- 1958 2088 25 "Arabidopsis thaliana, Lactococcus lactis, Homo sapiens, Mus musculus, Danio rerio, Pirellula sp., Drosophila melanogaster, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Chlamydomonas reinhardtii GPIC"
- 1959 2089 24 "Nilaparvata lugens, Mus musculus, Homo sapiens, Hypocrya jecorina, Caenorhabditis elegans, Chlamydia muridarum, Clostridium tetani E88, Macaca mulatta, Pan troglodytes, Sulfolobus solfataricus, Papio anubis, Trypanosoma cruzi, Xanthobacter flavus, Enterobacteria phage RB69, Klebsiella pneumoniae, Medicago truncatula, Clostridium perfringens str. 13"
- 1960 2090 27 "Homo sapiens, Mus musculus, Sulfolobus tokodaii, Danio 50

- erio, *Bacillus cereus* ATCC 14579, *Zea mays*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Vibrio parahaemolyticus*, *Photobacterium profundum*, *Brugia pahangi*, *Listeria innocua*, *Arabidopsis thaliana*"
- 1961 2091 24 "Mus musculus, Aster yellows phytoplasma, Homo sapiens, *Danio rerio*, *Mesocricetus auratus*"
- 1962 2092 27 "Caenorhabditis elegans, Tomato mottle virus-[Florida], Tomato mottle virus, Homo sapiens, Mus musculus, *Mycoplasma gallisepticum* R, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Mycoplasma gallisepticum*, *Litopenaeus setiferus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Methanosarcina barkeri*, *Prochlorococcus marinus*" 10
- 1963 2093 28 "Homo sapiens, *Danio rerio*, Mus musculus, *Caenorhabditis elegans*, *Bacteroides thetaiotaomicron* VPI-5482, *Arabidopsis thaliana*, *Gasterosteus aculeatus*, *Xenopus laevis*, Yellow fever virus"
- 1964 2094 33 "Homo sapiens, *Spodoptera exigua* nucleopolyhedrovirus, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Arabidopsis thaliana*, Mus musculus, *Caenorhabditis elegans*, *Daltonia* sp., *Mycoplasma penetrans*, *Danio rerio*, *Drosophila virilis*, *Nostoc* sp. PCC 7120, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Chilo iridescent virus*, *Perga condei*, *Paramecium tetraurelia*, *Pan troglodytes*, *Tetrahymena thermophila*, *Gallus gallus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Bos taurus*, *Rickettsia conorii*, *Clostridium acetobutylicum*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Candidatus Blochmannia floridanus*, *Lotus corniculatus* var. *japonicus*, *Uroleucon astronomus*, *Uroleucon ambrosiae*, *Akodon andinus*, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Melanoplus sanquinipes* entomopoxvirus" 20
- 1965 2095 32 "Cucurbit yellow stunting disorder virus, *Oryza sativa* (*japonica* cultivar-group), Homo sapiens, *Plasmodium falciparum* 3D7, Human papillomavirus type 53, *Oryza sativa*, Mus musculus, *Danio rerio*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Medicago truncatula*, *Saccharomyces cerevisiae*, *Swertia macrosperma*, *Coxiella burnetii* RSA 493, *Sceliphron* sp. MD1, *Drosophila melanogaster*, *Acinetobacter calcoaceticus*, *Tectocoris diophthalmus*, *Oryza sativa* (*indica* cultivar-group), *Mycoplasma penetrans*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacteriophage* SPBc2, *Bacteriophage* phi-3T, *Bacteriophage* SP-beta, *Bergeyella zoohelcum*, *Xenopus laevis*" 30
- 1966 2096 32 "Mus musculus, Homo sapiens, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Mesostigma viride*, *Lotus corniculatus* var. *japonicus*, *Vibrio parahaemolyticus*, *Schizosaccharomyces pombe*, *Danio rerio*, Orf virus"
- 1967 2097 27 "*Listeria innocua*, Homo sapiens, *Plasmodium falciparum* 3D7, *Thermoanaerobacter tengcongensis*, *Geum vernum*, Mus musculus, *Shigella flexneri* 2a str. 2457T, *Drosophila melanogaster*, *Clostridium tetani* E88, *Shigella flexneri* 2a str. 301, *Escherichia coli*, *Escherichia coli* 0157:H7 EDL933, *Arabidopsis thaliana*, *Escherichia coli* K12, *Listeria monocytogenes*, *Trypanosoma brucei*, *Oncocerca volvulus*, *Escherichia coli* 0157:H7" 40
- 1968 2098 24 "Homo sapiens, Mus musculus, *Chilo iridescent virus*, *Lotus corniculatus* var. *japonicus*"
- 1969 2099 28 "Homo sapiens, *Medicago truncatula*, *Drosophila melanogaster*, Mus musculus, *Rattus norvegicus*, *Danio rerio*"
- 1970 2100 24 "*Rickettsia conorii*, Homo sapiens, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, Mus musculus, *Danio rerio*, *Xenopus laevis*, *Choristoneura fumiferana* MNPV, *Pan troglodytes*, *Caenorhabditis elegans*, *Rickettsia* 50

- ia rickettsii, Arabidopsis thaliana, Haemophilus ducreyi 35000HP"
- 1971 2101 24 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Methanothermobacter thermotrophicus str. Delta H, Sulfolobus solfataricus, Pasteurella multocida, Hypochilus bernardino, Limax marginatus, Drosophila melanogaster, Aquifex aeolicus VF5, Human immunodeficiency virus 1, Homarus americanus, Plasmodium falciparum 3D7, Danio rerio, Oryza sativa (japonica cultivar-group), Medicago truncatula, Canadian peach X phytoplasma, Western X phytoplasma, Clover yellow edge phytoplasma"
- 1972 2102 35 "Homo sapiens, Drosophila melanogaster, Arabidopsis thaliana, Allium oschaninii, Caenorhabditis elegans, Didelphis virginiana, Saccharomyces cerevisiae, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio, Rattus norv" 10
- 1973 2103 30 "Mus musculus, Homo sapiens, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Melanoplus sanguinipes entomopoxvirus, Danio rerio, Equus caballus, Drosophila melanogaster, Methanosarcina mazei Goe1, Plasmodium falciparum, Streptococcus agalactiae 2603V/R, Feline herpesvirus 1, Porcine lymphotropic herpesvirus 1, Streptococcus agalactiae NEM316, Mycoplasma capricolum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Oceanobacillus ihayensis HTE831, Aphyosemion punctatum, Respiratory syncytial virus, Human respiratory syncytial virus, Rattus norvegicus" 20
- 1974 2104 29 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Drosophila melanogaster, Waddlia sp. RLUH-1, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio, Papio anubis, Leptospira interrogans serovar lai str. 56601, Rattus norvegicus, Waddlia chondrophila, Oryza sativa, Plasmodium chabaudi chabaudi, Pennisetum ciliare, Plasmodium chabaudi adami, Saccharomyces cerevisiae, Schizosaccharomyces pombe, Sericinus montela, Arabidopsis thaliana"
- 1975 2105 34 "Homo sapiens, Trypanosoma cruzi, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7, Bacillus anthracis str. Ames, Methanosarcina mazei Goe1, Sus scrofa, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus agalactiae NEM316, Buchnera aphidicola, Danio rerio, Lotus corniculatus var. japonicus, Streptococcus pyogenes SSI-1, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Listeria monocytogenes, Listeria innocua, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Dictyostelium discoideum" 30
- 1976 2106 27 "Nostoc sp. PCC 7120, Danio rerio, Listeria monocytogenes, Homo sapiens, Helicobacter hepaticus ATCC 51449, Mus musculus, Medicago truncatula, Arabidopsis thaliana, Pan troglodytes, Puumala virus, Rattus norvegicus" 40
- 1977 2107 35 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Caenorhabditis elegans, Zea mays, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Equus caballus, Medicago truncatula, Streptococcus mutans UA159, Lytechinus variegatus, Botryotinia fuckeliana, Rattus norvegicus, Lupinus luteus, Atelerix albiventris, Borrelia burgdorferi B31, Staphylococcus epidermidis ATCC 12228, Papio anubis, Solanum demissum, Chaetopterus variopedatus, Mycoplasma hyopneumoniae, Caenorhabditis briggsae, Rice grassy stunt virus, Hordeum vulgare, Staphylococcus epidermidis, Oryctolagus cuniculus, Lotus corniculatus var. japonicus"
- 1978 2108 32 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, 50

Clarkia breweri, *Medicago truncatula*, *Drosophila melanogaster*, *Methanothermobacter thermautotrophicus* str. Delta H, *Lactobacillus delbrueckii* subsp. *lactis*, *Mycoplasma pulmonis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Schistosoma mansoni*, *Danio rerio*"

- 1979 2109 30 "Mus musculus, Homo sapiens, Danio rerio, Arabidopsis thaliana, Oryza sativa (*japonica* cultivar-group), Pan troglodytes, Drosophila melanogaster, Mandarina mandarina, Mandarina chichijimana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Gasterosteus aculeatus, Haemophilus influenzae Rd KW 20, Dictyostelium discoideum, Plasmodium falciparum 3D7, Tripneustes gratilla, Caenorhabditis elegans" 10
- 1980 2110 33 "Homo sapiens, Vaccinium padifolium, Vaccinium cylindraceum, Danio rerio, Phalaenopsis borneensis, Arbutus canariensis, Dictyostelium discoideum, Pan troglodytes, Drosophila melanogaster, Ocimum basilicum, Osbornia octodonta, Leptospermum trinervium, Lineus "
- 1981 2111 27 "Drosophila picticornis, Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Piromyces sp. E2, Arabidopsis thaliana"
- 1982 2112 51 "Anabaena cylindrica, Nostoc sp. PCC 7120, Mus musculus, Homo sapiens, Mycoplasma penetrans, Caenorhabditis briggsae, Sus scrofa, Allium glandulosum, Danio rerio" 20
- 1983 2113 24 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (*japonica* cultivar-group), Pyrococcus abyssi, Danio rerio, Methanocaldococcus jannaschii"
- 1984 2114 28 "Homo sapiens, Mus musculus, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Oryza sativa (*japonica* cultivar-group), Danio rerio, Hypoatherina tsurugae, Dirofilaria repens, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Schizosaccharomyces pombe, Ateleopus japonicus"
- 1985 2115 24 "Homo sapiens, Pyrococcus abyssi, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Lactobacillus plantarum WCFS1" 30
- 1986 2116 27 "Bacillus anthracis str. A2012, Homo sapiens, Bacillus anthracis, Tricholoma portentosum, Oryza sativa (*japonica* cultivar-group), Mus musculus, Erwinia rhapontici, Prochlorococcus marinus subsp. marinus str. CCMP1375, Clostridium perfringens str. 13"
- 1987 2117 19 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Synecocystis sp. PCC 6803"
- 1988 2118 41 "Homo sapiens, Cyanidium caldarium, Methanosarcina acetivorans C2A, Oryza sativa (*japonica* cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Peptoniphilus asaccharolyticus, Lasioglossum leucozonium, Gallus gallus, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Pasteurella multocida, Danio rerio, Streptococcus pneumoniae, Medicago truncatula, Clostridium perfringens str. 13" 40
- 1989 2119 23 "Homo sapiens, Mus musculus, Clostridium acetobutylicum, Chenopodium bonus-henricus, Aegilops tauschii, Arabidopsis thaliana, Equine arteritis virus, Danio rerio, Rachiplusia ou multiple nucleopolyhedrovirus"
- 1990 2120 35 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Homo sapiens, Streptococcus pyogenes MGAS8232, Caenorhabditis elegans, Drosop 50

- hila melanogaster, *Campylobacter jejuni*, *Danio rerio*, *Clostridium novyi*, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum* 3D7"
- 1991 2121 31 "Homo sapiens, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Pedinomonas minor*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Rattus norvegicus*, *Bacillus cereus* ATCC 14579, *Leptospira interrogans* serovar lai str. 56601, *Medicago truncatula*, *Prochlorococcus marinus*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*"
- 1992 2122 24 "Homo sapiens, *Caenorhabditis elegans*, *Danio rerio*, *Medicago truncatula*, *Mus musculus*, *Bothrops atrox*, *Oryza sativa* (japonica cultivar-group), *Thermoanaerobacter ethanolicus*, *Klebsiella pneumoniae*" 10
- 1993 2123 27 "Mus musculus, Homo sapiens, *Prunus avium*, *Danio rerio*, *Rattus norvegicus*"
- 1994 2124 43 "Homo sapiens, *Myzus persicae*, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Mus musculus*, *Drosophila virilis*, *Sus scrofa*, *Papio anubis*, *Botryosphaeria ribis*, *Botryosphaeria parva*, *Danio rerio*, *Canis familiaris*, *Heterodontus francisci*, *Botryosphaeria stevensii*, *Botryosphaeria* sp. 96-120, *Botryosphaeria dothidea*, *Hypostomus* sp. BR 98-678, *Arabidopsis thaliana*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Oryza sativa*"
- 1995 2125 31 "Shewanella oneidensis MR-1, Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Drosophila melanogaster*, *Mycoplasma arginini*, *Staphylococcus aureus*, *Danio rerio*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus*" 20
- 1996 2126 29 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Phthorimaea operculella granulovirus*, *Lymphocystis disease virus 1*, *Arabidopsis thaliana*, *Craterostigma plantagineum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Medicago truncatula*, *Tauraco fischeri*, *Cercospora zeae-maydis*, *Caenorhabditis elegans*, *Borrelia garinii*"
- 1997 2127 28 "Mus musculus, Homo sapiens, *Porphyromonas gingivalis* W83, *Plasmodium falciparum* 3D7, *Sus scrofa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)" 30
- 1998 2128 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Mus musculus*, *Streptococcus agalactiae*, *Arabidopsis thaliana*, *Listeria monocytogenes*, *Danio rerio*, *Escherichia coli*"
- 1999 2129 28 "Oryza sativa (japonica cultivar-group), Homo sapiens, *Plasmodium falciparum* 3D7, *Schizosaccharomyces pombe*, *Pan troglodytes*, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Rattus norvegicus*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Escherichia coli* CFT073, *Myricaria squamosa*, *Trichobranchus* sp. AMW24401, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Sulfolobus solfataricus*, *Clostridium pasteurianum*, *Pisum sativum*, *Staphylococcus epidermidis*, *Bo do saltans*, *Saccharomyces cerevisiae*" 40
- 2000 2130 43 "Caucalis platycarpus, Homo sapiens, *Phthorimaea operculella granulovirus*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Szovitsia calliarpa*, *Drosophila melanogaster*, *Dictyostelium discoideum*, *Danio rerio*, *Caenorhabditis elegans*, *Zymomonas mobilis*, *Acrem*"
- 2001 2131 42 "Thermotoga maritima, *Thermus thermophilus*, *Lotus corniculatus* var. japonicus, *Solanum tuberosum*, *Caenorhabditis elegans*, *Schistosoma haematobium*, *Mus musculus*, *Dictyostelium discoideum*, *Xanthomonas axonopodis* pv. glycines, Homo sapiens, *Drosophila melanogaster*, *Clostridium tetani* E88, *Arabidops* 50

is thaliana, *Vaucheria compacta*, *Thermoanaerobacter tengcongensis*, *Solanum berthaultii*, *Oryza sativa*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Takifugu rubripes*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Fejervarya limnocharis*, *Chaunax abei*, *Myctophum affine*, *Sardinops melanostictus*, *Pagrus major*"

2002 2132 29 "Clostridium acetobutylicum, *Enterococcus faecalis* V583, *Brucella melitensis* 16M, *Brucella suis* 1330, Stealth virus 1, *Mesorhizobium lotii*, *Chlamydomonas reinhardtii* GPIC, *Aquifex aeolicus* VF5, *Thermoanaerobacter tengcongensis*, *Homo sapiens*, *Mycoplasma mycoides*, M"

2003 2133 26 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Papio anubis*, *Thermoanaerobacter tengcongensis*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Aedes aegypti*, *Danio rerio*, *Methanocaldococcus jannaschii*, Human immunodeficiency virus 1, *Euglena gracilis*, *Caenorhabditis elegans*, *Klebsiella pneumoniae*" 10

2004 2134 32 "Homo sapiens, Human immunodeficiency virus 1, *Danio rerio*, *Mus musculus*, Porcine lymphotropic herpesvirus 3, *Bacteroides thetaiotaomicron* VPI-5482, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Anemone nemorosa*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Didelphis virginiana*, *Rattus norvegicus*, *Schmidtea mediterranea*, HIV-1 vector pNL4-3, *Takifugu rubripes*, *Trypanosoma brucei*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*, *Labeo rohita*, *Medicago truncatula*, *Procordulia* sp. BM-2003, *Pan troglodytes*, *Drosophila testacea*, *Drosophila orientacea*" 20

2005 2135 28 "Mus musculus, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Macaca fascicularis*, *Caenorhabditis elegans*, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Clostridium tetani* E88, *Danio rerio*, *Arabidopsis thaliana*, *Bacillus halodurans*"

2006 2136 28 "Mus musculus, *Caenorhabditis elegans*, *Rattus norvegicus*, *Homo sapiens*, *Sulfolobus solfataricus*, *Ornithodoros moubata*, *Helianthus annuus*, *Brassica oleracea*" 30

2007 2137 25 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum*, Lymphocystis disease virus 1, *Arabidopsis thaliana*, *Mycoplasma pulmonis*, *Danio rerio*, *Legionella pneumophila*"

2008 2138 24 "Oryza sativa (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Pyrococcus furiosus* DSM 3638, *Arabidopsis thaliana*, *Caenorhabditis elegans*"

2009 2139 25 "Mus musculus, *Arabidopsis thaliana*, *Homo sapiens*, synthetic construct, *Danio rerio*, *Drosophila melanogaster*, *Lactococcus lactis* subsp. *lactis*, *Xenopus laevis*, *Mus musculus domesticus*, *Thanatephorus cucumeris*" 40

2010 2140 28 "Malus x domestica, *Canis familiaris*, *Drosophila melanogaster*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Homo sapiens*"

2011 2141 40 "Clostridium acetobutylicum, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Monosiga brevicollis*, *Prunus avium*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Cryptosporidium parvum*, *Leishmania major*, *Drosophila melanogaster*, *Xenopus laevis*, *Arabidopsis thaliana*, *Streptococcus agalactiae* 2603V/R, *Lycopersicon esculentum*, *Methanosarcina acetivorans* C2A, *Streptococcus agalactiae* NEM316, *Capsella rubella*, *Caenorhabditis briggsae*, *Trypanosoma brucei*, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Moneuplotes cr* 50

- assus, *Bacillus megaterium*"
- 2012 2142 28 "Sus scrofa, *Drosophila melanogaster*, *Homo sapiens*, *Danio rerio*, *Caenorhabditis elegans*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Macaca mulatta*, *Lotus corniculatus* var. japonicus"
- 2013 2143 25 "Thermoanaerobacter tengcongensis, *Danio rerio*, *Homo sapiens*, *Coxiella burnetii* RSA 493, *Mus musculus*, *Pyrococcus abyssi*, *Leishmania tarantolae*"
- 2014 2144 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Mus musculus*, *Caenorhabditis elegans*, *Plasmodium falciparum*, *Pan troglodytes*, *Danio rerio*, *Staphylococcus aureus*" 10
- 2015 2145 24 "Mus musculus, *Homo sapiens*, *Atelerix albiventris*, *Plasmodium falciparum* 3D7, *Meloidogyne artiellia*, *Scleroderma hypogaeum*"
- 2016 2146 29 "Staphylococcus epidermidis ATCC 12228, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Membranipora membranacea*, *Schizosaccharomyces pombe*"
- 2017 2147 27 "Arabidopsis thaliana, *Homo sapiens*, *Acinetobacter* sp. A DP1, *Danio rerio*, *Mus musculus*, *Dictyostelium discoideum*, *Spalangia nigroaenea*, *Plasmodium falciparum* 3D7, Cowpox virus, *Oryza sativa* (japonica cultivar-group), *Glycine max*"
- 2018 2148 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Candida parapsilosis*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Medicago sativa*" 20
- 2019 2149 28 "Mus musculus, *Homo sapiens*, *Schizosaccharomyces pombe*, *Haemophilus influenzae* Rd KW20, *Caenorhabditis elegans*, *Haemophilus ducreyi* 3500 OHP, *Adoncholaimus* sp., *Corynebacterium glutamicum* ATCC 13032, *Pontonema vulgare*"
- 2020 2150 32 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Rana catesbeiana*, *Atelerix albiventris*, *Arabidopsis thaliana*, *Lycopersicon pimpinellifolium*, *Medicago truncatula*, *Danio rerio*, *Bacillus subtilis*, *Macaca fascicularis*, *Fusarium oxysporum*" 30
- 2021 2151 23 "Bacteroides thetaiotaomicron VPI-5482, *Gallus gallus*, *Faragesia edulis*, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, synthetic construct, *Staphylococcus epidermidis* ATCC 12228, Hepatitis C virus, *Yushania polytricha*, *Yushania oblonga*, *Yushania niitaka*"
- 2022 2152 28 "Danio rerio, *Mus musculus*, *Homo sapiens*, *Loligo bleekeri*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Rickettsia conorii*"
- 2023 2153 32 "Oryza sativa (japonica cultivar-group), *Mus musculus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Homo sapiens*, *Prochlorococcus marinus*, *Danio rerio*, *Silurana tropicalis*, *Phyciodes picta*, *Dictyostelium discoideum*, *Tetrahymena thermophila*, *Drosophila* " 40
- 2024 2154 28 "Homo sapiens, *Arabidopsis thaliana*, *Brachionus* sp. Cayman, *Danio rerio*, *Mus musculus*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia endosymbiont* of *Glossina brevipalpis*, *Medicago truncatula*, *Caenorhabditis elegans*, *Enterococcus faecalis* V583, *Drosophila melanogaster*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae*, *Guillardia theta*, *Streptococcus agalactiae* NEM316, *Mycoplasma genitalium*, *Trypanosoma brucei*, *Lotus corniculatus* var. japonicus, *Microporum canis*, *Rattus norvegicus*, *Actinobacillus actinomycetemcomitans*"
- 2025 2155 27 "Homo sapiens, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mus musculus*, *Cyprinu* 50

- s carpio, *Candidatus Blochmannia floridanus*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Schizosaccharomyces pombe*, *Haemophilus influenzae* Rd KW20, *Streptococcus mitis* phage SM1, *Juniperus rigida*"
- 2026 2156 24 "Danio rerio, *Mus musculus*, *Homo sapiens*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Streptococcus pneumoniae*, *Caenorhabditis elegans*, *Oryzias latipes*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Arabidopsis thaliana*, *Pan troglodytes*"
- 2027 2157 29 "*Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Haemophilus influenzae* Rd KW20, *Homo sapiens*, *Mus musculus*, *Lactococcus lactis* subsp. lactis, *Danio rerio*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Chlamydia muridarum*, *Clostridium tetani* E88, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Gibberella zeae*, *Takifugu rubripes*, *Thermoanaerobacter tengcongensis*, *Pasteurella multocida*, *Rana pipiens*, *Streptococcus agalactiae*, *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Medicago truncatula*, *Streptococcus gordonii*" 10
- 2028 2158 27 "*Caenorhabditis elegans*, *Homo sapiens*, *Danio rerio*, *Anopheles gambiae*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Caenorhabditis briggsae*, *Bos taurus*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Artibeus jamaicensis*, *Listeria monocytogenes*"
- 2029 2159 23 "*Cebus albifrons*, *Pan paniscus*, *Mus musculus*, *Homo sapiens*, *Medicago truncatula*, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Escherichia coli*, *Zea mays*, *Perameles gunnii*" 20
- 2030 2160 41 "*Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Listeria monocytogenes*, *Mycoplasma penetrans*, *Mus musculus*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Bacillus cereus* ATCC 14579, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Pneumocystis carinii*, *Rattus norvegicus*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Cyanidium caldarium*, *Schizosaccharomyces pombe*, *Helicobacter hepaticus* ATCC 51449, *Drosophila melanogaster*, *Vibrio vulnificus* CMCP6, *Austrophoroce ra* sp. JOS-2001, *Lactococcus lactis* subsp. lactis, *Prochlorococcus marinus*, *Streptococcus agalactiae*, *Oryza sativa* (indica cultivar-group), x Aranda Deborah, *Lycopodium pumilifolium*, *Lotus corniculatus* var. japonicus, *Haemophilus ducreyi* 35000HP, *Listeria innocua*, *Danio rerio*, *Bombyx mori*, *Clostridium perfringens* str. 13" 30
- 2031 2161 44 "*Chlamydia caviae* GPIC, *Thermoanaerobacter ethanolicus*, *Arabidopsis thaliana*, *Oceanobacillus ihayensis* HTE831, *Homo sapiens*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Drosophila melanogaster*, *Listeria monocytogenes*, *Caenorhabditis elegans*"
- 2032 2162 72 "*Rickettsia conorii*, *Rickettsia prowazekii*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus Mu50, *Lactococcus lactis* subsp. lactis, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Prochlorococcus marinus*, *Buchnera aphidicola*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. aureus MW2, *Mycoplasma penetrans*, *Homo sapiens*, *Felis catus*, *Ureaplasma urealyticum*, *Schizosaccharomyces pombe*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Sulfolobus tokodaii*, *Yarrowia lipolytica*, *Matricaria chamomilla*, *Clostridium perfringens* str. 13" 40
- 2033 2163 65 "*Mycoplasma pulmonis*, *Clostridium perfringens* str. 13, C 50

- Lostridium acetobutylicum*, *Mycoplasma penetrans*, *Mus musculus*, *Homo sapiens*, *Lactobacillus casei*, *Medicago truncatula*, *Leptospira interrogans* serovar lai str. 56601, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Streptococcus agalactiae* 2603V/R, *Xestia c-nigrum* granulovirus, *Streptococcus agalactiae* NEM316, *Sulfolobus acidocaldarius*"
- 2034 2164 27 "Caenorhabditis elegans, *Medicago truncatula*, *Mus musculus*, *Homo sapiens*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis briggsae*, *Lactococcus garvieae*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, Simian foamy virus, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Chironomus thummi*, *Campylobacter jejuni*" 10
- 2035 2165 28 "Nitrosomonas europaea ATCC 19718, *Homo sapiens*, *Bombyx mandarina*, *Bacteroides thetaiotaomicron* VPI-5482, *Mus musculus*, *Gallus gallus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Allanacstria cerisyi*, *Sericanus montela*, *Amsacta moorei* entomopoxvirus, *Lotus corniculatus* var. japonicus, *Papilio cresphontes*, *Ciona intestinalis*, *Danio rerio*"
- 2036 2166 32 "Dictyostelium discoideum, *Homo sapiens*, *Fusobacterium nucleatum* subsp. fusiforme, *Plasmodium falciparum* 3D7, *Mus musculus*, *Prochlorococcus marinus*, *Streptococcus salivarius*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Danio rerio*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*" 20
- 2037 2167 36 "Danio rerio, *Arabidopsis thaliana*, *Homo sapiens*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* HTE831, *Sulfolobus tokodaii*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Rickettsia prowazekii*, *Staphylococcus aureus* subsp. aureus Mu50, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2"
- 2038 2168 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Mycoplasma gallisepticum* R, *Bacillus cereus* ATCC 14579, *Zea mays*, *Danio rerio*, *Oryza sativa*, *Arabidopsis thaliana*, *Bos taurus*, *Celatoblatta notialis*, *Celatoblatta montana*, *Celatoblatta quinque maculata*, *Caenorhabditis elegans*, *Chaoborus albatrus*, *Hypoderma tarandi*, *Pristionchus pacificus*" 30
- 2039 2169 23 "Drosophila melanogaster, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Panicum virgatum*, *Neisseria meningitidis* Z2491, *Spinacia oleracea*"
- 2040 2170 28 "Homo sapiens, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Mus musculus*, *Mycoplasma penetrans*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*"
- 2041 2171 25 "Oryza sativa (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Clostridium perfringens* str. 13" 40
- 2042 2172 28 "Danio rerio, *Rattus norvegicus*, Human immunodeficiency virus 1, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Pseudomonas putida* K T2440, *Mus musculus*, *Homo sapiens*, Chilo iridescent virus, uncultured marine gamma proteobacterium EBAC31A08, *Anopheles gambiae*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Macaca mulatta*, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Papio anubis*, *Tetrahymena pyriformis*, Human immunodeficiency virus, *Mycoplasma hominis*, *Lotus corniculatus* var. japonicus, *Clostridium sordellii*"

- 2043 2173 31 "Homo sapiens, Arabidopsis thaliana, Synechocystis sp. P
CC 6803, Mus musculus, Xenopus laevis, Oryza sativa (japonica cultivar-group), D
anio rerio, Caenorhabditis elegans"
- 2044 2174 24 "Arabidopsis thaliana, Mus musculus, Homo sapiens, Lepto
spira borgpetersenii, Prochlorococcus marinus, Streptococcus agalactiae NEM316,
Plasmodium falciparum 3D7, Candida maltosa"
- 2045 2175 28 "Homo sapiens, Shewanella oneidensis MR-1, Mus musculus,
Danio rerio, Polystoma sp. DNA-40, Nitrosomonas europaea ATCC 19718, Bacillus a
nthraxis str. Ames, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabidops
is thaliana, Pan troglodytes, Gallus gallus, Oryza sativa (japonica cultivar-gro
up)" 10
- 2046 2176 23 "Homo sapiens, Mus musculus, Drosophila nigrodunni, Dros
ophila arawakana arawakana, Drosophila arawakana kittensis, Macaca fascicularis"
- 2047 2177 29 "Arabidopsis thaliana, Plasmodium falciparum 3D7, Mus mu
sculus, Homo sapiens, Euglena gracilis, Caenorhabditis elegans, Gossypium hirsut
um, Oryza sativa (japonica cultivar-group), Danio rerio, Leptospira interrogans
serovar lai str. 56601, Dictyostelium discoideum, Drosophila melanogaster, Shewa
nella oneidensis MR-1, Schmidtea mediterranea, Fusobacterium nucleatum subsp. nu
cleatum ATCC 25586, Buchnera aphidicola str. Sg (Schizaphis graminum), Pneumocys
tis carinii f. sp. muris, Campylobacter jejuni subsp. jejuni NCTC 11168, Buthus
occitanus mardochei, Tetrahymena thermophila, Wigglesworthia glossinidia endosym
biont of Glossina brevipalpis, Macaca fascicularis, Clostridium perfringens str.
13" 20
- 2048 2178 45 "Clostridium perfringens, Clostridium acetobutylicum, Cl
ostridium perfringens str. 13, Bacillus cereus ATCC 14579, Bacillus anthracis st
r. Ames, Mus musculus, Methanocaldococcus jannaschii, Sulfolobus solfataricus, H
omo sapiens, Clostridium tetani E88, Caenorhabditis elegans, Oryza sativa (japon
ica cultivar-group), Oryza sativa, Sinorhizobium meliloti, Pisum sativum, Lotus
corniculatus var. japonicus, Saccharomyces cerevisiae, Listeria innocua, Clostri
dium lentocellum, Rana catesbeiana" 30
- 2049 2179 23 "Bacteroides thetaiotaomicron VPI-5482, Leishmania major
, Homo sapiens, Mus musculus"
- 2050 2180 28 "Arabidopsis thaliana, Homo sapiens, Papio anubis, Danio
rerio, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Escher
ichia coli, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATC
C 25586, Human immunodeficiency virus 2, Pasteurella multocida, Rickettsia prowa
zekii, Sterkiella histriomuscorum, Mus musculus, Methanocaldococcus jannaschii"
- 2051 2181 31 "Homo sapiens, Mus musculus, Bos taurus, Dictyostelium d
iscoideum, Oryza sativa (japonica cultivar-group), Papio anubis, Tragulus napu,
Thermoplasma acidophilum, Arabidopsis thaliana, Petunia x hybrida, Nostoc sp. PC
C 7120" 40
- 2052 2182 27 "Clostridium tetani E88, Homo sapiens, Rattus norvegicus
, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Danio rerio,
Mus musculus, Macaca fascicularis, Acidianus ambivalens, Arabidopsis thaliana"
- 2053 2183 26 "Homo sapiens, Mus musculus, Danio rerio"
- 2054 2184 29 "Homo sapiens, Kluyveromyces lactis, Oryza sativa (japon
ica cultivar-group), Caenorhabditis elegans, Rattus norvegicus, Enterococcus fae
calis V583, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Da
nio rerio, Arabidopsis thaliana, Solanum tuberosum"
- 2055 2185 27 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Goa 50

- tpox virus, Sheeppox virus, Lumpy skin disease virus, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Salmo salar*, *Danio rerio*"
- 2056 2186 29 "Homo sapiens, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Medicago truncatula*, *Leymus chinensis*, *Thermoanaerobacter tengcongensis*, *Lycopersicon esculentum*, *Danio rerio*, *Arabidopsis thaliana*"
- 2057 2187 23 "Dictyostelium discoideum, Homo sapiens, Pan troglodytes, *Caenorhabditis elegans*, *Mus musculus*, *Vibrio cholerae*, *Oceanobacillus iheyensis* HTE831, *Danio rerio*"
- 2058 2188 25 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Campylobacter jejuni*, *Smilax hispida*, *Arabidopsis thaliana*, *Zenobia pulverulenta*, *Andromeda polifolia*, *Dictyostelium discoideum*, *Salmonella typhimurium* LT2, *Caenorhabditis elegans*, *Streptococcus pyogenes*, *Emericella nidulans*, *Tetrahymena thermophila*, *Plasmodium falciparum* 3D7" 10
- 2059 2189 35 "*Listeria monocytogenes*, *Staphylococcus epidermidis* ATCC 12228, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, Homo sapiens, *Leptospira interrogans* serovar lai str. 56601, *Bacteroides thetaiotaomicron* VPI-5482, *Enterococcus faecalis* V583, *Orygia pseudotsugata*"
- 2060 2190 53 "uncultured crenarchaeote 74A4, Homo sapiens, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Drosophila melanogaster*, *Helicobacter pylori*, *Danio rerio*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*" 20
- 2061 2191 29 "*Chilo iridescent virus*, *Danio rerio*, Homo sapiens, *Listeria monocytogenes*, *Listeria innocua*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Escherichia coli*, *Escherichia coli* K12, *Mus musculus*, *Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. *aureus* MW2, *Oryza sativa* (japonica cultivar-group), *Shigella flexneri* 2a str. 2457T, *Dictyostelium discoideum*, *Vibrio vulnificus* CMCP6, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Clostridium acetobutylicum*, *Escherichia coli* 0157:H7 EDL933, *Rickettsia prowazekii*, *Escherichia coli* 0157:H7, *Buchnera aphidicola*, *Schizosaccharomyces pombe*, *Takifugu rubripes*" 30
- 2062 2192 42 "*Streptococcus pyogenes* MGAS315, Temperate phage PhiNIH1.1, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Bacteroides thetaiotaomicron* VPI-5482, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Haemophilus ducreyi* 35000HP, *Streptococcus pneumoniae*, *Pan troglodytes*, *Haemophilus influenzae* Rd KW20, *Caenorhabditis elegans*, *Vibrio vulnificus* CMCP6, *Drosophila melanogaster*, *Mus musculus*, Homo sapiens, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* MW2, *Coxiella burnetii* RSA 493, *Rattus norvegicus*, *Pichia pastoris*" 40
- 2063 2193 25 "*Mus musculus*, Homo sapiens, *Arabidopsis thaliana*, *Bacillus anthracis* str. Ames, *Sapromyza madeirensis*, *Danio rerio*, *Listeria innocua*"
- 2064 2194 29 "*Danio rerio*, Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Lactobacillus plantarum* WCFS1, *Triticum monococcum*, *Triticum turgidum* subsp. *durum*, *Xenopus laevis*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*"
- 2065 2195 29 "*Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Escherichia coli* 0157:H7 EDL933, Homo sapiens, *Escherichia coli* 0157:H7, M 50

- us musculus, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Brucella melitensis* 16M, *Brucella suis* 1330, *Oryza sativa* (japonica cultivar-group), *Gallus gallus*, *Arabidopsis thaliana*"
- 2066 2196 32 "Homo sapiens, *Bacillus cereus* ATCC 14579, *Caenorhabditis elegans*, *Mycoplasma penetrans*, *Equus caballus*, *Plasmodium falciparum*, *Canis familiaris*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Melanoplus sanguinipes* entomopoxvirus, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Medicago truncatula*, *Dictyostelium discoideum*, *Oryza sativa*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Lactococcus lactis* subsp. *lactis*, *Mus musculus*, *Macaca fascicularis*, *Pan troglodytes*, *Streptococcus mutans* UA1 1059, *Plasmodium falciparum* 3D7, *Vesicular stomatitis Indiana virus*, *Caenorhabditis briggsae*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Bos taurus*, *Danio rerio*, *Xenopus laevis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Campylobacter jejuni*, *Guillardia theta*, *Rattus norvegicus*, *Toxotrypana littoralis*"
- 2067 2197 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Betula pendula*, *Amsacta moorei* entomopoxvirus, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Papio anubis*, *Necterosoma dispar*, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Pseudopleuronectes americanus*, *Coxiella burnetii*, *Psychotria officinalis*, *Psychotria hoffmannseggiana*, *Psychotria brachybotrya*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Melanoplus sanguinipes* entomopoxvirus, *Mycoplasma genitalium*, uncultured planctomycete, African swine fever virus" 20
- 2068 2198 29 "Arabidopsis thaliana, Homo sapiens, *Axestotrigona togogensis*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Scaura latitarsis*, *Mus musculus*, *Vibrio vulnificus* CMCP6, *Plasmodium falciparum* 3D7, *Thermoanaerobacter tengcongensis*, *Schizophyllum commune*, *Caenorhabditis elegans*, *Trichadenotecnum* sp. KPJ-2003, *Mycoplasma gallisepticum* R, *Atelerix albiventris*, *Drosophila melanogaster*, *Triticum monococcum*, *Diaeretiella rapae*, 30
Hafnia alvei, *Banksia lemmaniana*, *Meliplebeia becarii*, *Tetragonisca angustula*, *Pauesia silvestris*, *Dermatobia hominis*, *Bombus koreanus*, *Bombus consobrinus* *wittemburgi*, *Clostridium acetobutylicum*, *Sulfolobus solfataricus*, *Chrysodidymus synuroideus*, *Trochodendron aralioides*, *Mycoplasma penetrans*, *Neurospora crassa*, *Schizosaccharomyces pombe*, *Bombyx mori*"
- 2069 2199 29 "Homo sapiens, *Euglena longa*, *Mus musculus*, *Anabaena* sp., *Nostoc* sp. PCC 7120, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Mycoplasma pulmonis*, *Plasmodium falciparum*, *Lotus corniculatus* var. *japonicu*"
- 2070 2200 27 "Drosophila melanogaster, Homo sapiens, *Mus musculus*, *Papio anubis*, *Sulfolobus solfataricus*, *Danio rerio*, *Phaseolus acutifolius*, *Plasmodium falciparum* 3D7, *Glycine max*" 40
- 2071 2201 29 "Bacteroides thetaiotaomicron VPI-5482, *Drosophila melanogaster*, Homo sapiens, *Leishmania mexicana*, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Dengue virus* type 1, *Sulfolobus tokodaii*, *Strongyloides stercoralis*"
- 2072 2202 25 "Drosophila melanogaster, *Leptospira interrogans* serovar *lai* str. 56601, *Mus musculus*, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Papio anubis*, *Pyrobaculum aerophilum* str. IM2"
- 2073 2203 30 "Methanosarcina mazei Goe1, *Kluyveromyces lactis*, Homo s 50

- apiens, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Lycopersicon pennellii*, *Danio rerio*, *Pan troglodytes*, *Dictyostelium discoideum*, *Archaeoprepona demopon*, *Charaxes castor*, *Mus musculus*, *Schistosoma incognitum*, *Antheraea pernyi*, *Pisum sativum*, *Physarum polycephalum*, *Oryza sativa* (indica cultivar-group), *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Ciona intestinalis*, *Wolbachia endosymbiont of Dirofilaria immitis*"
- 2074 2204 28 "Homo sapiens, *Hyphantria cunea*, *Mus musculus*, *Melipona bicolor*, *Danio rerio*, *Pisum sativum*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Oryzias latipes*" 10
- 2075 2205 31 "*Clostridium perfringens* str. 13, *Clostridium acetobutylicum*, *Pan troglodytes*, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Methanosarcina acetivorans* C2A, *Caenorhabditis elegans*"
- 2076 2206 24 "*Enterococcus faecalis* V583, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Verbena jacksonii*, *Hymenopappus filifolius* var. filifolius, *Acmella radicans*"
- 2077 2207 30 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Pan troglodytes*, *Schinus terebinthifolius*, *Oryza sativa*, *Dictyostelium discoideum*, *Lotus corniculatus* var. japonicus, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Papio anubis*" 20
- 2078 2208 37 "*Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Homo sapiens*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Danio rerio*, *Mus musculus*, *Thermoplasma acidophilum*, *Caenorhabditis elegans*, *Prunus persica*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Sorghum bicolor*, *Streptococcus thermophilus*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Oryza sativa* (japonica cultivar-group), *Listeria innocua*, *Actinobacillus actinomycetemcomitans*, *Pan troglodytes*, *Saccharomyces cerevisiae*, *Methanosarcina acetivorans* C2A, *Escherichia coli*, *Canis familiaris*, *Candidatus Carsonella ruddii*, *Marchantia polymorpha*, *Plasmodium falciparum*, *Plasmodium vivax*, *Lotus corniculatus* var. japonicus, *Sulfolobus tokodaii*, *Pleurotus ostreatus*, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis*" 30
- 2079 2209 45 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Paramycodrosophila n. sp.* POG-2002, *Saccharomyces cerevisiae*, *Mus musculus*, *Pan troglodytes*, *Clostridium acetobutylicum*, *Candidatus Carsonella ruddii*, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Saccharomyces sp.*"
- 2080 2210 59 "*Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Lactobacillus sanfranciscensis*, *Mus musculus*, *Francisella tularensis*, *Plasmodium falciparum*, *Streptococcus mutans* UA159, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Morganel la morganii*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. aureus Mu50, *Streptococcus pyogenes* MGAS315, *Blastocrithidia culicis*, *Streptococcus pyogenes* M1 GAS, *Lactobacillus sakei*, *Streptococcus pyogenes* SSI-1, *Geobacillus thermoglucosidasius*, *Enterococcus faecalis* V583, *Drosophila melanogaster*, *Pyrococcus furiosus* DSM 3638, *Oryza sativa*, *Danio rerio*, *Mycobacterium leprae*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Medicago truncatula*, *Bacteriophage PS A*, *Bos taurus*" 40
- 2081 2211 24 "*Homo sapiens*, *Streptococcus pyogenes* MGAS315, *Xanthomonas*" 50

- as campestris pv. campestris str. ATCC 33913, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Lycopersicon esculentum, Mus musculus, Caenorhabditis elegans, Macaca fascicularis"
- 2082 2212 31 "Macaca fascicularis, Homo sapiens, Rattus norvegicus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Atelerix albiventris, Medicago truncatula, Pseudomonas putida KT2440, Caenorhabditis elegans, Bos frontalis, Bos gaurus, Bos grunniens, Bos banteng, Mus musculus, Bos taurus, Nostoc sp. PCC 7120"
- 2083 2213 32 "Homo sapiens, Caenorhabditis elegans, Rattus norvegicus, Mus musculus, Medicago truncatula, Salmonella enterica subsp. enterica serovar Typhi Ty2, Dictyostelium discoideum, Plasmodium falciparum 3D7, Infectious salmon anemia virus, Oryza sativa (japonica cultivar-group), Salmonella enterica subsp. enterica serovar Typhi, Salmonella typhimurium LT2, Acanthamoeba castellanii, Bacillus subtilis, Prochlorococcus marinus, Danio rerio, Salmonella enterica subsp. enterica serovar Pullorum" 10
- 2084 2214 29 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Listeria monocytogenes, Listeria innocua, African swine fever virus, Nostoc sp. PCC 7120"
- 2085 2215 27 "Homo sapiens, Salmonella typhimurium LT2, Drosophila melanogaster, Brassica oleracea, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Dictyostelium discoideum, Arabidopsis thaliana, Danio rerio, Pisum sativum" 20
- 2086 2216 31 "Prochlorococcus marinus, Danio rerio, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Staphylococcus epidermidis, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum, Plasmodium falciparum 3D7, Plasmodium vivax, Drosophila malerkotliana, Drosophila ananassae, Oryza sativa (japonica cultivar-group), Thermococcus litoralis, Candida parapsilosis, Moneuplotes crassus, Otobius megnini, Papio anubis" 30
- 2087 2217 23 "Homo sapiens, Listeria innocua, Mus musculus, Gallus gallus, Tropheryma whipplei TW08/27, Hydra vulgaris, Meleagrid herpesvirus 1, Oryza sativa (japonica cultivar-group)"
- 2088 2218 28 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Pantroglodytes, Sulfolobus tokodaii"
- 2089 2219 113 "Lactococcus lactis subsp. lactis, Lactococcus lactis subsp. cremoris, Clostridium tetani E88, Leptospira interrogans serovar lai str. 56601, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Prochlorococcus marii"
- 2090 2220 104 "Clostridium acetobutylicum, Nostoc sp. PCC 7120, Nicotiana tabacum, Thermoanaerobacter tengcongensis, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis " 40
- 2091 2221 173 "Clostridium tetani E88, Clostridium acetobutylicum, Zea mays, Bacillus anthracis str. Ames, Bacillus anthracis, Rickettsia prowazekii, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Li"
- 2092 2222 68 "Candidatus Blochmannia floridanus, Mycoplasma penetrans, Lycopersicon esculentum, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Bacillus anthracis, Prochlorococcus marinus subsp. marinus str. CCMP1375, O 50

ryza sativa (japonica cultivar-group), Sta"

2093 2223 27 "Pan troglodytes, Mus musculus, Homo sapiens, Drosophila melanogaster, Lactococcus lactis subsp. cremoris, Zea mays, Dictyostelium discoideum, Caenorhabditis elegans, Lactococcus lactis, Clostridium acetobutylicum, Gallus gallus, Lotus corniculatus var. japonicus, Danio rerio, Ciona intestinalis, Candida albicans"

2094 2224 29 "Dictyostelium discoideum, Staphylococcus epidermidis ATCC 12228, Prochlorococcus marinus subsp. marinus str. CCMP1375, Botryotinia fuckeliana, Saccharomyces castellii, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Mycoplasma gallisepticum R, Plasmodium falciparum 3D7, Xylella fastidiosa Temecula1, Caenorhabditis elegans, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Odontella sinensis, Staphylococcus epidermidis, Sus scrofa, Nostoc sp. PCC 7120"

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2095 2225 48 "Listeria monocytogenes, Oceanobacillus iheyensis HTE831, Brachyspira hyodysenteriae, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Lactococcus lactis subsp. lactis, Bacteroides t"

2096 2226 133 "Thermotoga maritima, Arabidopsis thaliana, Listeria innocua, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Listeria monocytogenes, Lactococcus lactis subsp. lactis, Helicobacter hepaticus ATCC 51449, Nostoc sp. PCC 7120, Dichelobacter nodosus"

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2097 2227 47 "Listeria monocytogenes, Mycoplasma capricolum, Danio rerio, Homo sapiens, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Listeria innocua, Clostridium perfringens str. 13, Coxiella burnetii RSA 493, Caenorhabditis elegans, Mus musculus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Haemophilus ducreyi 35000HP, Staphylococcus aureus subsp. aureus Mu50, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Rattus sp., Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Rattus norvegicus, Lactococcus lactis, Arabidopsis thaliana"

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2098 2228 31 "Homo sapiens, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Bacillus halodurans"

2099 2229 29 "Arabidopsis thaliana, Homo sapiens, Clostridium acetobutylicum, Mus musculus, Plasmodium falciparum 3D7, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13, Caenorhabditis briggsae, Caenorhabditis elegans, Pan troglodytes"

2100 2230 73 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Streptococcus mutans UA159, Lactobacillus plantarum WCFS1, Homo sapiens, Streptococcus pyogenes MGAS315, Streptococcus pyogenes SSI-1, Rattus norvegicus, Pseudomonas putida KT2440, Plasmodium"

40

2101 2231 129 "Lactobacillus plantarum WCFS1, Listeria innocua, Clostridium acetobutylicum, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Vibrio cholerae, Escherichia coli CFT073, Staphylococcus aureus, Escherichia coli K12, Staphylococcus aureus subsp."

2102 2232 51 "Homo sapiens, Shewanella oneidensis MR-1, Bacillus cereus ATCC 14579, Mus musculus, Drosophila erecta, Caenorhabditis elegans, Heterosigma akashiwo, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Rattus norvegicus"

2103 2233 40 "Mycoplasma pulmonis, Medicago truncatula, Oceanobacillus iheyensis HTE831, Clostridium perfringens str. 13, Streptococcus agalactiae 26

50

03V/R, glnQ expression vector pAG200, glnQ allelic exchange vector pAG101, *Streptococcus agalactiae*, Cloning vector pJAP8, *Clostridium acetobutylicum*, *Streptococcus agalactiae* NEM316, *Bacillus cereus* ATCC 14579, *Clostridium tetani* E88, *Sinorhizobium meliloti*, *Staphylococcus epidermidis*, *Enterococcus faecalis* V583, *Methanosarcina acetivorans* C2A, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Mus musculus*, *Rattus norvegicus*, *Chlorella vulgaris*, *Homo sapiens*, *Streptococcus mutans* UA159, *Oryza sativa*, *Danio rerio*, *Sulfolobus islandicus*, *Bungarus fasciatus*, *Caenorhabditis elegans*, Human immunodeficiency virus 1, *Cryptosporidium parvum*, *Schizosaccharomyces pombe*, *Bacillus halodurans*"

2104 2234 28 "Mus musculus, Homo sapiens, Danio rerio, Rattus norvegicus, Conus ventricosus" 10

2105 2235 33 "Enterococcus faecalis V583, Homo sapiens, Danio rerio, Mus musculus, Arabidopsis thaliana, Candidatus Portiera aleyrodidarum"

2106 2236 31 "Mus musculus, Homo sapiens, Coxiella burnetii RSA 493, Papio anubis, Sus scrofa, Caenorhabditis briggsae, Haemophilus ducreyi 35000HP, Listeria innocua, Ciona intestinalis, Danio rerio"

2107 2237 28 "Homo sapiens, Buchnera aphidicola str. Bp (Baizongia pistaciae), Mus musculus, Medicago truncatula, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Rattus norvegicus, Nostoc sp. PCC 7120" 20

2108 2238 28 "Homo sapiens, Mus musculus, Vibrio vulnificus CMCP6, Pasteurella multocida, Guillardia theta, Caenorhabditis briggsae, Danio rerio, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Eumesocampa frigilis, Dictyostelium discoideum, Borrelia burgdorferi B31, Caenorhabditis elegans, Olinia ventosa, Olinia vanguerioides, Olinia radiata, Olinia emarginata, Olinia capensis, Drosophila melanogaster, Clostridium tetani E88, Bacteroides thetaiotaomicron, Arabidopsis thaliana, Thermoanaerobacter tengcongensis, Sulfolobus tokodaii, Saccharomyces cerevisiae, Human immunodeficiency virus 1"

2109 2239 23 "Homo sapiens, Medicago truncatula, Gallus gallus, Arabidopsis thaliana, Mus musculus, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni" 30

2110 2240 24 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Equus caballus, Caenorhabditis elegans, Bacillus firmus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Streptococcus thermophilus, Nitrosomonas europaea ATCC 19718"

2111 2241 27 "Homo sapiens, Mus musculus, Ixodes asanumai, Bacillus cereus ATCC 14579, Danio rerio, Plasmodium falciparum 3D7, Cochliomyia hominivora x, Yarrowia lipolytica, Oryza sativa (japonica cultivar-group), Picea abies, Cryptosporidium parvum, Ptychodera flava"

2112 2242 36 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Bacillus anthracis str. Ames, Medicago truncatula, Drosophila melanogaster, Danio rerio, Leptospira interrogans serovar lai str. 56601, Enterococcus faecalis V583, Dictyostelium discoideum, Yersinia pestis" 40

2113 2243 35 "Homo sapiens, Caenorhabditis elegans, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Clostridium perfringens str. 13, Bacillus anthracis str. Ames, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Helicobacter pylori 26695, Saguinus oedipus, Callithrix jacchus, Macaca mulatta"

2114 2244 31 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Pan troglodytes, Hawa 50

- ian goose poxvirus, Plasmodium falciparum 3D7, Danio rerio, Hyposoter didymator virus, Lotus corniculatus var. japonicus"
- 2115 2245 24 "Schistosoma japonicum, Mus musculus, Homo sapiens, Paramesitium bursaria Chlorella virus 1, Caenorhabditis elegans, Clostridium botulinum, Clostridium botulinum D, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Rickettsia conorii, Tropheus moorii, Oceanobacillus iheyensis HTE831, Danio rerio"
- 2116 2246 35 "Arabidopsis thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Caenorhabditis elegans, Lotus corniculatus var. japonicus" 10
- 2117 2247 34 "Prochlorococcus marinus, Oceanobacillus iheyensis HTE831, Homo sapiens, Mus musculus, Pasteurella multocida, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Schizosaccharomyces pombe, Ciona intestinalis"
- 2118 2248 32 "Mus musculus, Homo sapiens, uncultured marine gamma proteobacterium EBAC31A08, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Leptospira interrogans serovar lai, Aeropyrum pernix, Oryctolagus cuniculus, Plasmodium falciparum 3D7"
- 2119 2249 27 "Homo sapiens, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Listeria monocytogenes, Danio rerio, Rattus norvegicus, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Ciona intestinalis, Lycopersicon esculentum, Erysipelothrix rhusiopathiae" 20
- 2120 2250 28 "Homo sapiens, Bacillus subtilis, Rattus norvegicus, Arabidopsis thaliana"
- 2121 2251 25 "Homo sapiens, Shigella flexneri 2a str. 2457T, Mus musculus, Shigella flexneri 2a str. 301, Rattus norvegicus, Mycoplasma pulmonis, Drosophila melanogaster, Escherichia coli CFT073, Escherichia coli, Escherichia coli 0157:H7 EDL933, Danio rerio, Escherichia coli K12, Psychotria maingayi, Escherichia coli 0157:H7" 30
- 2122 2252 27 "Homo sapiens, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Caenorhabditis elegans, Arabidopsis thaliana, Canis familiaris, Streptococcus pneumoniae TIGR4, Cloning vector pTX-FLAG, Cloning vector pTX-GFP, Prochlorococcus marinus, Cloning vector pBIG, Cloning vector pLITTLE, Cloning vector pTIKL, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Vibrio parahaemolyticus, Danio rerio, Phocine herpesvirus type 1"
- 2123 2253 28 "Arabidopsis thaliana, Mus musculus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Homo sapiens, Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Caenorhabditis elegans, Rickettsia prowazekii, Danio rerio" 40
- 2124 2254 27 "Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mus musculus, Staphylococcus aureus subsp. aureus Mu50, Leptospira interrogans serovar lai str. 56601, Saccharomyces servazzii, Homo sapiens, Pan troglodytes, Monosiga brevicollis, Drosophila melanogaster, Enterococcus faecium, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Rattus norvegicus"
- 2125 2255 28 "Homo sapiens, Rattus norvegicus, Mus musculus, Oryza sativa (japonica cultivar-group), Oryctolagus cuniculus, Clostridium acetobutylicum, Platynereis dumerilii, Lotus corniculatus var. japonicus, Danio rerio"
- 2126 2256 23 "Mus musculus, Homo sapiens, Drosophila melanogaster, He 50

- Licobacter hepaticus* ATCC 51449, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lactococcus lactis* subsp. *lactis*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"
- 2127 2257 27 "Mus musculus, Homo sapiens, Pan troglodytes, Drosophila melanogaster, Clostridium tetani E88, Caenorhabditis elegans, Danio rerio, Ctenodiscus crispatus, Trichomonas vaginalis"
- 2128 2258 27 "Chlorobium tepidum TLMus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Bemisia tabaci"
- 2129 2259 31 "Homo sapiens, Caenorhabditis elegans, Zea mays, Cascadia nuttallii, Saxifragella albowiana, Lemur catta, Chilo iridescent virus, Caenorhabditis briggsae, Mus musculus, Cryptosporidium parvum, Arabidopsis thaliana, Clostridium tetani E88, Escherichia coli CFT073, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Danio rerio, Lumbricus terrestris, Tetraodon nigroviridis, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Oceanobacillus iheyensis HTE831, Saccharomyces cerevisiae" 10
- 2130 2260 49 "Homo sapiens, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Clostridium perfringens str. 13, Dictyostelium discoideum, Eristalis tenax, Trypanosoma brucei, Plasmodium falciparum, Caen" 20
- 2131 2261 35 "Danio rerio, Homo sapiens, Mus musculus, Ciona intestinalis, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Lemur catta, Caenorhabditis elegans, Sus scrofa, Arabidopsis thaliana, Plasmodium falciparum 3D7, Guillardia theta, Oryza sativa, Plasmodium falciparum, Brassica napus, Artibeus jamaicensis"
- 2132 2262 29 "Homo sapiens, Mus musculus, Xenopus laevis, Shewanella oneidensis MR-1, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus, Caenorhabditis briggsae, Arabidopsis thaliana, Pneumocystis carinii, Pan troglodytes, Tetraodon nigroviridis"
- 2133 2263 32 "Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Clostridium acetobutylicum, Rickettsia typhi, Pyrococcus abyssi, Nicotiana glauca, Candidatus Blochmannia floridanus, Caenorhabditis briggsae, Neurospora crassa, Schizosaccharomyces pombe, Medicago sativa, Botryotinia fuckeliana, Chironomus pallidivittatus" 30
- 2134 2264 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Brassica rapa, Oryza sativa (japonica cultivar-group), Rattus norvegicus"
- 2135 2265 29 "Homo sapiens, Arabidopsis thaliana, Danio rerio, Thermoplasma volcanium, Mycoplasma gallisepticum R, Mus musculus, Caenorhabditis elegans, Xenopus laevis, Podospora anserina, Lotus corniculatus var. japonicus, Polyporus ornatipinnis, Schizosaccharomyces pombe, Oryza sativa (japonica cultivar-group)" 40
- 2136 2266 24 "Danio rerio, Homo sapiens, Clostridium acetobutylicum, Trypanosoma brucei, Bacillus subtilis, Mus musculus, Rattus norvegicus, Bacillus subtilis subsp. subtilis str. 168, Zea mays"
- 2137 2267 36 "Homo sapiens, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Bombyx mori, Mycoplasma imitans, Ceratitis capitata, Oryza sativa (japonica cultivar-group), Sus scrofa, Bacteriophage BL170, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, uncultured crenarchae" 50

- ote 74A4, *Xenopus laevis*, *Caenorhabditis briggsae*, *Candida albicans*, *Xiphophorus maculatus*, *Lactococcus lactis* bacteriophage F4-1, *Nostoc* sp. PCC 7120"
- 2138 2268 27 "Homo sapiens, *Listeria monocytogenes*, *Danio rerio*, *Haemophilus ducreyi* 35000HP, *Mus musculus*, *Bacillus anthracis* str. Ames, *Bacteroides thetaiotaomicron* VPI-5482, *Plasmodium falciparum* 3D7, *Staphylococcus aureus*, *Oryza sativa* (japonica cultivar-group), *Rickettsia prowazekii*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. aureus N315, *Haemophilus influenzae* Rd KW20, *Staphylococcus aureus* subsp. aureus Mu50"
- 2139 2269 29 "*Dictyostelium discoideum*, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), Lumpy skin disease virus, *Nuclearia delicatula*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Sus scrofa*, *Pan troglodytes*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Bos taurus*, *Methanosarcina acetivorans* C2A, *Canavalia lineata*, *Prochlorococcus marinus*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. japonicus, *Thermoplasma volcanium*" 10
- 2140 2270 28 "*Mus musculus*, *Homo sapiens*, *Borrelia burgdorferi* B31, *Methanosarcina mazei* Goe1, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Nicotiana tabacum*, *Pisum sativum*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Leptospira interrogans* serovar lai str. 56601, *Streptococcus agalactiae* 2603V/R, *Equinus papillomavirus*, *Equus caballus papillomavirus* type 1, *Biomphalaria glabrata*, *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Mycoplasma penetrans*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Methanocaldococcus jannaschii*" 20
- 2141 2271 24 "*Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Bacillus subtilis*, *Bacillus subtilis* subsp. subtilis str. 168, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 2142 2272 27 "*Caenorhabditis elegans*, *Drosophila littoralis*, *Homo sapiens*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Xenopus laevis*, *Borrelia burgdorferi* B31, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Mus musculus*, Berne virus, *Helicobacter hepaticus* ATCC 51449" 30
- 2143 2273 25 "*Bacteroides thetaiotaomicron* VPI-5482, *Caenorhabditis elegans*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Oryza sativa*, *Theileria parva*"
- 2144 2274 25 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*"
- 2145 2275 28 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Drosophila melanogaster*, *Sus scrofa*, *Chilo iridescent virus*, *Lycopersicon esculentum*, *Caenorhabditis briggsae*, *Rattus norvegicus*, *Chlorella vulgaris*" 40
- 2146 2276 24 "*Homo sapiens*, *Mus musculus*, *Dictyostelium discoideum*, *Notoncus* sp. RNJ-2000, *Oryza sativa*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Helicobacter hepaticus* ATCC 51449"
- 2147 2277 20 "*Homo sapiens*, *Schistosoma japonicum*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 2148 2278 71 "*Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Acidithiobacillus ferrooxidans*, *Treponema medium*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Coxiella burnetii* RSA 493, *Citrobacter rodentium*, *Salmonella typhimurium* LT2, *Shigella flexneri* 2a str."
- 2149 2279 27 "*Mus musculus*, *Homo sapiens*, *Medicago truncatula*, *Pan tr*" 50

- oglodites, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Prochlorococcus marinus*, *Pyrococcus abyssi*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*"
- 2150 2280 27 "Mus musculus, Homo sapiens, Streptococcus mutans UA159, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis elegans*"
- 2151 2281 27 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, *Photobacterium luminescens*, Cloning vector HKBS1, *Bacillus linceorum*, *Canis familiaris*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Cryptosporidium parvum*"
- 2152 2282 28 "*Oryza sativa* (japonica cultivar-group), Homo sapiens, Mus musculus, *Drosophila melanogaster*, *Danio rerio*, *Dictyostelium discoideum*, Goatpox virus, *Tetradactylus seps*, *Caenorhabditis elegans*, *Takifugu rubripes*, *Mytilus edulis*, *Mytilus galloprovincialis*, *Saccharomyces cerevisiae*" 10
- 2153 2283 28 "*Drosophila melanogaster*, *Danio rerio*, *Methanocaldococcus jannaschii*, Homo sapiens, *Caenorhabditis elegans*"
- 2154 2284 25 "Homo sapiens, *Danio rerio*, Mus musculus, *Oryza sativa* (japonica cultivar-group)"
- 2155 2285 23 "*Caenorhabditis elegans*, Homo sapiens, *Pan troglodytes*, Mus musculus, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, Papaya ringspot virus W, *Danio rerio*" 20
- 2156 2286 23 "Homo sapiens, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* NEM316, *Danio rerio*, Mus musculus"
- 2157 2287 27 "*Caenorhabditis elegans*, *Danio rerio*, *Gallus gallus*, *Plasmodium falciparum* 3D7, Homo sapiens, Mus musculus, Turkey astrovirus, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Macaca mulatta*, *Petunia x hybrida*, *Papio anubis*, *Arabidopsis thaliana*"
- 2158 2288 28 "Homo sapiens, Swinepox virus, *Danio rerio*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, Mus musculus, *Plasmodium falciparum* 3D7, *Cryptosporidium parvum*, *Synechocystis* sp. PCC 6803"
- 2159 2289 29 "*Bacteroides thetaiotaomicron* VPI-5482, Homo sapiens, *Clavibacterium pasteurianum*, *Xenopus laevis*, Mus musculus, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group)" 30
- 2160 2290 22 "*Mycoplasma genitalium*, Mus musculus, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 2161 2291 28 "Mus musculus, *Papio anubis*, *Pan troglodytes*, Homo sapiens, *Plasmodium falciparum* 3D7, *Danio rerio*, *Drosophila melanogaster*, *Macaca mulatta*, *Arabidopsis thaliana*, *Cairina moschata*"
- 2162 2292 26 "*Danio rerio*, Homo sapiens, Mus musculus, *Oryza sativa* (japonica cultivar-group), *Succinea modesta*, *Succinea manauana*, *Helianthus petiolaris*, *Porphyromonas gingivalis*, *Porphyromonas gingivalis* W83, *Megalobrama amblycephala*, *Pan troglodytes*" 40
- 2163 2293 30 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Colophospermum mopane*, Mus musculus, *Oceanobacillus ihayensis* HTE831, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*"
- 2164 2294 36 "Homo sapiens, *Medicago truncatula*, *Dictyostelium discoideum*, Mus musculus, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Sulfolobus tokodaii*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), Human immunodeficiency virus 1, *Drosophila melanogaster*, *Spodoptera exigua* nucleopolyhedrovirus, *Oryza sativa*, *Caenorhabditis elegans*, *Danio rerio*, *Methanocaldococcus*" 50

- us jannaschii, Clostridium perfringens str. 13, lepidopsocid RS-2001, Crepidula monoxyla, Tetrahymena thermophila, Hordeum vulgare subsp. vulgare, Apis mellifera, Xenopus laevis, Saccharomyces dairenensis, Discus macclintocki"
- 2165 2295 29 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Acinetobacter baumannii, Oryza sativa (japonica cultivar-group), Sus scrofa, Erwinia chrysanthemi, Danio rerio, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Drosophila melanogaster, Staphylococcus epidermidis, Chironomus tentans, Deinococcus radiodurans, Bos taurus, Cryptosporidium meleagridis"
- 2166 2296 31 "Homo sapiens, Modoc virus, Mus musculus, Pan troglodytes, Clostridium acetobutylicum, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Medicago truncatula, Rickettsia conorii, Rickettsia prowazekii, Paesia pini, Rattus norvegicus, Synechocystis sp. PCC 6803, Drosophila melanogaster, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Polyporus bichir, Haemophilus phage HP2, Plasmodium falciparum 3D7, Gallus gallus, Sus scrofa, Prochlorococcus marinus, Glycine max, Caenorhabditis briggsae, Pyrus pyrifolia, Daucus carota"
- 2167 2297 27 "Danio rerio, Human immunodeficiency virus 1, Clostridium perfringens str. 13, Homo sapiens, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Mus musculus, Solanum demissum, Staphylococcus epidermidis ATCC 12228, Chlamydomonas reinhardtii, Plasmodium falciparum 3D7, Saccharomyces kluyveri, Pan troglodytes, Hyalophora cecropia, Enterococcus faecalis V583, Takifugu rubripes, Thermoanaerobacter mathranii, Rattus norvegicus, Dictyostelium discoideum"
- 2168 2298 28 "Homo sapiens, Mus musculus, Pan troglodytes, Oryctolagus cuniculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Papio anubis, Proteus vulgaris, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Listeria monocytogenes, Listeria innocua"
- 2169 2299 36 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Glycine max, Buchnera aphidicola str. Sg (Schizaphis graminum), Swinepox virus, Trypanosoma brucei, Prochlorococcus marinus, Arabidopsis thaliana, Caenorhabditis elegans, Schizosaccharomyces pombe, Petunia x hybrida, Pan troglodytes, Dictyostelium discoideum, Plasmodium falciparum 3D7, Terriswalkerius erici, Methanosarcina acetivorans C2A, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Partula turneri, Guillardia theta, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Sus scrofa, Naegleria gruberi, Tomato yellow leaf curl China virus-associated DNA beta, Canis familiaris, Sulfolobus tokodaii, Medicago truncatula, Saccharomyces cerevisiae, unidentified mollicute, Onchocerca volvulus, Legionella pneumophila"
- 2170 2300 31 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Calyptogena magnifica, Schizosaccharomyces pombe, Dictyostelium discoideum, Caenorhabditis elegans, Zea mays, Oryza sativa (japonica cultivar-group), Ectenagena extenta, Calyptogena kilmeri, Vesicomya pacifica, Calyptogena phaseoliformis, Calyptogena n.sp., Vesicomya gigas, Danio rerio, Calyptogena sp. Florida, Piromyces sp. E2, Medicago truncatula, Arabidopsis thaliana, Candidatus Carsonella ruddii, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Bacteriophage TPW22, Saccharomyces cerevisiae, Staphylococcus aureus subsp. aureus Mu50"
- 2171 2301 35 "Homo sapiens, Pan troglodytes, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Drosophila melanogaster, Mu

- s musculus, Plasmodium falciparum, Anopheles gambiae, Lotus corniculatus var. japonicus, Staphylococcus epidermidis ATCC 12228, Sus scrofa, Arabidopsis thaliana, Tribolium castaneum, Oryza sativa, Guillardia theta, Clostridium acetobutylicum, Rickettsia prowazekii, Saccharomyces cerevisiae, Kluyveromyces lactis, Schizosaccharomyces pombe, Cryptosporidium parvum"
- 2172 2302 27 "Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Clostridium acetobutylicum, Caenorhabditis elegans, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Citrobacter freundii, Zea mays, Aegilops tauschii, Danio rerio, Triticum aestivum" 10
- 2173 2303 28 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Medicago truncatula, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Influenza A virus (A/Swine/Wisconsin/125/97(H1N1)), Ornithoptera goliath"
- 2174 2304 27 "Oryza sativa (japonica cultivar-group), Streptococcus agalactiae NEM316, Enterococcus faecalis V583, Homo sapiens, Mus musculus, Rattus norvegicus, Pan troglodytes, Streptococcus agalactiae 2603V/R, Danio rerio, Bacillus firmus"
- 2175 2305 32 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Pan troglodytes, Caenorhabditis elegans, Saccharomyces cerevisiae, Pleurotus ostreatus" 20
- 2176 2306 28 "Clostridium perfringens str. 13, Brachyspira hyodysenteriae, Halictus sexcinctus, Rickettsia prowazekii, Danio rerio, Drosophila melanogaster, Lasioglossum alphenum, Lasioglossum asteris, Lasioglossum zonulum, Lasioglossum sisymbrii, Lasioglossum pavonotum,"
- 2177 2307 42 "Danio rerio, Drosophila eugracilis, Dictyostelium discoideum, Homo sapiens, Plasmodium falciparum, Acinetobacter lwoffii, Lycopersicon esculentum, Medicago truncatula, Drosophila melanogaster, Bactrocera diversa, Plasmodium falciparum 3D7, Staphylococcus aureus"
- 2178 2308 28 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Rattus norvegicus, Saccharomyces cerevisiae, Escherichia coli CFT073, Xenopus laevis, Danio rerio, Oryza sativa (japonica cultivar-group)" 30
- 2179 2309 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Vibrio vulnificus CMCP6, Mus musculus, Caenorhabditis elegans, Aspergillus niger"
- 2180 2310 27 "Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Triticum aestivum, Aegilops tauschii subsp. tauschii, Homo sapiens, Arabidopsis thaliana, Oryctolagus cuniculus, Plasmodium falciparum 3D7, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168"
- 2181 2311 24 "Mus musculus, Homo sapiens, Danio rerio, Oceanobacillus ihayensis HTE831, Drosophila melanogaster, Papio anubis, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Nostoc sp. PCC 7120" 40
- 2182 2312 28 "Bacillus anthracis str. Ames, Homo sapiens, Sulfolobus tokodaii, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Yersinia pestis KIM, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Bos taurus, Sulfolobus solfataricus, Streptococcus pyogenes M1 GAS, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Yersinia pestis C092"
- 2183 2313 31 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Glycine max, Lactuca sativa, Clostridium tetani E88, Danio rerio, Chlamydomonas reinhardtii, Chlamydomonas reinhardtii, Chlamydomonas reinhardtii, Chlamydomonas reinhardtii" 50

teromalla, *Oryza sativa* (japonica cultivar"

- 2184 2314 32 "Homo sapiens, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Schoenoxiphium burkei*, *Pan troglodytes*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mus musculus*, *Bombus koreanus*, *Prototheca wickerhamii*, *Danio rerio*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Aotus vociferans*, *Labeo rohita*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Coxiella burnetii* RSA 493, *Drosophila melanogaster*, *Anopheles gambiae*, *Guillardia theta*, *Naegleria gruberi*, *Plasmodium falciparum*, *Bombyx mori*, *Lotus corniculatus* var. *japonicus*, *Leuconostoc mesenteroides*, *Medicago truncatula*, *Saccharomyces cerevisiae*, *Botryotinia fuckeliana*" 10
- 2185 2315 28 "Rattus norvegicus, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Arabidopsis thaliana*, *Pan troglodytes*, *Equus caballus*, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Schistocerca americana*, *Brassica napus*, *Cunninghamella elegans*, *Plasmodium falciparum*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Drosophila mauritiana*, *Salmonella choleraesuis*"
- 2186 2316 35 "Homo sapiens, *Mus musculus*, *Pachycheles rudis*, *Caenorhabditis elegans*, *Prociphilus fraxinifolii*, *Meganocytiphanes norvegica*, *Danio rerio*, *Pseudoregma* sp. south group, *Pseudoregma bambucicola*, *Chaitoregma tattakana*, *Ceratovacuna nekoashi*, *Ceratovacuna longifila*, *Pseudoregma sundanica*, *Pseudoregma pendleburyi*, *Pseudoregma panicola*, *Pseudoregma montana*, *Pseudoregma koshunensis*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Oreochromis niloticus*, *Oreochromis* sp. HT-8975, *Oreochromis niloticus vulcani*, *Oreochromis* sp. HT-8672, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Streptococcus mutans*, *Pseudoalteromonas haloplanktis*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Oreochromis niloticus baringoensis*, *Moroteuthis robsoni*, *Porphyra purpurea*, *Staphylococcus aureus* subsp. *aureus* Mu50" 30
- 2187 2317 29 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Listeria innocua*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Mycoplasma penetrans*, *Danio rerio*, *Clostridium perfringens* str. 13, *Dictyostelium discoideum*, *Guillardia theta*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Misgurnus mizolepis*, *Staphylococcus hominis*, *Ciona intestinalis*, *Malus x domestica*, *Synechocystis* sp. PCC 6803"
- 2188 2318 31 "Homo sapiens, *Mus musculus*, *Dictyostelium discoideum*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Arabidopsis thaliana*, *Dugesia japonica*, *Cryptosporidium parvum*, *Oryza sativa* (indica cultivar-group), *Oryza sativa*" 40
- 2189 2319 28 "Clostridium acetobutylicum, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Bos taurus*, *Mycoplasma penetrans*, *Danio rerio*, *Girardia tigrina*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Chrysolina polita*, *Chrysolina grossa*, *Oryza sativa* (japonica cultivar-group)"
- 2190 2320 30 "Clostridium tetani E88, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Meleagris gallopavo*"
- 2191 2321 43 "Plasmodium falciparum 3D7, *Drosophila melanogaster*, *Homo sapiens*, *Dictyostelium discoideum*, *Mus musculus*, *Saccharomyces cerevisiae*, *Danio rerio*, *Plasmodium falciparum*, *Arabidopsis thaliana*, *Kluyveromyces dobzhanskii*" 50

- , *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Xenopus laevis*, *Saccharomyces castellii*, *Oryza sativa*, *Gossypium hirsutum*, *Candidatus Blochmannia floridanus*, *Prunus dulcis*, *Marchantia polymorpha*, *Schmidtea polychroa*, *Arabidopsis arenosa*, *Saccharomyces unisporus*, *Percus stultus*, *Rhagoletis pomonella*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Placopsis macrophthalma*, *Gallus gallus*"
- 2192 2322 30 "Homo sapiens, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Papio anubis*, *Danio rerio*, *Oryza sativa* (indica cultivar-group), *Lotus corniculatus* var. japonicus, uncultured marine gamma proteobacterium EBAC31A08, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Trypanosoma brucei*, *Caenorhabditis elegans*, *Streptococcus mutans* UA159, *Mycoplasma gallinarum*, *Acinetobacter* sp. SUN" 10
- 2193 2323 27 "Shewanella oneidensis MR-1, *Homo sapiens*, *Mus musculus*, *Schizosaccharomyces pombe*, *Synechocystis* sp., *Synechocystis* sp. PCC 6803, *Drosophila melanogaster*, *Mycoplasma capricolum*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Drosophila virilis*, *Arabidopsis thaliana*"
- 2194 2324 27 "Staphylococcus aureus phage phi 12, *Staphylococcus aureus* subsp. aureus MW2, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Macaca mulatta*, *Papio anubis*, *Danio rerio*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Picea abies*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Staphylococcus aureus* temperate phage phiSLT" 20
- 2195 2325 26 "Homo sapiens, *Enterococcus faecalis* V583, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Mycoplasma pulmonis*, *Medicago truncatula*, *Oryctolagus cuniculus*"
- 2196 2326 25 "Mus musculus, *Homo sapiens*, *Pyrococcus horikoshii*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Bos taurus*, *Oryza sativa* (indica cultivar-group)"
- 2197 2327 31 "Thermotoga maritima, *Caulobacter crescentus* CB15, *Thermoplasma acidophilum*, *Thermoplasma volcanium*, *Thermoplasma acidophilum*, *Bordetella parapertussis*, *Bordetella bronchiseptica*, *Bordetella pertussis*, *Nitrosomonas europaea* ATCC 19718, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens*" 30
- 2198 2328 28 "Plasmodium falciparum 3D7, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Danio rerio*, *Streptococcus pneumoniae*, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Bacillus anthracis* str. Ames, *Oryctolagus cuniculus*, *Streptococcus agalactiae* 2603V/R, *Arabidopsis thaliana*, *Mycobacterium leprae*, *Human immunodeficiency virus 1*, *Streptococcus agalactiae* NEM316, *Nicotiana tabacum*, *Drosophila virilis*, *Lycopersicon pimpinellifolium*"
- 2199 2329 35 "Caenorhabditis elegans, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Medicago truncatula*, *Leptospira interrogans* serovar Iai str. 56601, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Lasioglossum gundlachii*, *Lampropeltis triangulum nelsoni*, *Lampropeltis triangulum sinaloae*, *Plasmodium yoelii yoelii*, *Bombus funebris*, *Huernia kennedyana*, *Pan troglodytes*, *Helicobacter hepaticus* ATCC 51449, *Vicia faba*, *Clostridium perfringens* str. 13" 40
- 2200 2330 34 "Homo sapiens, *Drosophila melanogaster*, *Danio rerio*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Cyprinus carpio*, *Plasmodium falciparum*, *Saccharomyces cerevisiae*, *Pan troglodytes*, *Gasterosteus aculeatus*, *Didelphis virginiana*, *Piromyces* sp. E2, *Caenorhabditis elegans*, *Polypterus bichir*, *Macaca mulatta*, *Helicobacter pylori*, *Rattus norvegicus*" 50

- us, *Arabidopsis thaliana*, *Wolbachia* endosymbiont of *Brugia malayi*, *Clostridium acetobutylicum*, *Papio anubis*, *Oryza sativa*, *Myocastor coypus*, *Cairina moschata*, *Solanum tuberosum*"
- 2201 2331 27 "Homo sapiens, *Bacillus subtilis*, *Mus musculus*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus cereus* ATCC 14579, *Bacillus thuringiensis*, *Caenorhabditis elegans*, *Danio rerio*, *Medicago truncatula*, *Glyptapanteles indiensis polydnavirus*, *Bacillus cereus*"
- 2202 2332 28 "Bos taurus, Homo sapiens, *Rattus norvegicus*, *Mus musculus*, *Pan troglodytes*, *Arabidopsis thaliana*, *Amsacta moorei* entomopoxvirus, *Listeria monocytogenes*, *Takifugu rubripes*, *Oryza sativa* (japonica cultivar-group), *Mytilus edulis*, *Danio rerio*, *Schizosaccharomyces pombe*, *Bacillus halodurans*" 10
- 2203 2333 25 "Mus musculus, Homo sapiens, *Danio rerio*, *Drosophila melanogaster*"
- 2204 2334 23 "Mus musculus, Homo sapiens, *Streptococcus mutans* UA159, *Listeria monocytogenes*, *Streptococcus mutans*"
- 2205 2335 27 "Homo sapiens, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Mus musculus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Clostridium acetobutylicum*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Treponema pallidum*, *Rattus norvegicus*"
- 2206 2336 27 "Mus musculus, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Pan troglodytes*, *Medicago truncatula*, *Daphniopsis quadrangula*, *Sulfolobus tokodaii*, *Cryptosporidium parvum*, *Ciona intestinalis*, *Geomys personatus*" 20
- 2207 2337 27 "Homo sapiens, *Mus musculus*, *Caenorhabditis briggsae*, *Odontella sinensis*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Haemophilus ducreyi* 35000HP, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* Mu50, *Drosophila melanogaster*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, Expression vector pFL506, Expression vector pFL505, *Spinacia oleracea*, *Arabidopsis thaliana*, *Medicago truncatula*, *Danio rerio*, *Oryzias latipes*" 30
- 2208 2338 33 "Gallus gallus, *Mus musculus*, Homo sapiens, *Mesocestoides* sp. AC9701, *Tetraodon nigroviridis*, *Drosophila melanogaster*, *Meleagris gallopavo*, *Leishmania major*, *Apis mellifera*, *Rattus norvegicus*, *Mesocricetus auratus*, *Caenorhabditis elegans*, *Takifugu rubripes*, *Danio rerio*, *Salmo salar*, *Eretmodus cyanostictus*, *Capreolus capreolus*, *Oncorhynchus masou ishikawai*, *Felis catus*, *Pinus strobus*, *Bos taurus*, *Oryza sativa* (japonica cultivar-group)"
- 2209 2339 24 "Danio rerio, Homo sapiens, *Mus musculus*, *Macaca mulatta*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Seriola quinqueradiata*, *Xenopus laevis*, *Plasmodium knowlesi*"
- 2210 2340 35 "Mus musculus, Homo sapiens, *Drosophila melanogaster*, *Mycoplasma hominis*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Bacillus halodurans*, *Oryza sativa* (japonica cultivar-group), *Bos taurus*, synthetic construct, *Dictyostelium discoideum*, *Medicago truncatula*, *Xenopus laevis*, *Leishmania major*, *Schmidtea mediterranea*, *Oryza sativa*, *Clostridium acetobutylicum*, *Pasteurella multocida*, *Pongo pygmaeus*, *Mus musculus domesticus*, *Meleagris gallopavo*, *Sulfolobus tokodaii*, *Caenorhabditis elegans*, *Anopheles gambiae*, *Plasmodium berghei*" 40
- 2211 2341 30 "Homo sapiens, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar *Typhi* Ty2, *Danio rerio*, *Salmonella enterica* subsp. *enterica* serovar *Typhi*, *Mus musculus*, *Staphylococcus epidermidis* ATCC 12228, G 50

uillardia theta, Arabidopsis thaliana"

- 2212 2342 35 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Caenorhabditis briggsae, Medicago truncatula, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Methanosarcina mazei Goe1, Clostridium tetani E88, Plasmodium falciparum 3D7, Amorphophallus yunnanensis, Canis familiaris, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rickettsia conorii, Clostridium acetobutylicum, Campylobacter jejuni subsp. jejuni NCTC 11168, Pisum sativum, Mycoplasma penetrans, Erysipelothrix rhusiopathiae, Plasmodium falciparum, Cryptophlebia leucotreta granulovirus, Schizosaccharomyces pombe, Venezuelan equine encephalitis virus, Helicobacter hepaticus ATCC 51449, Gallus gallus, Euryades corethrus, Nicotiana glauca, Nostoc sp. PCC 7120" 10
- 2213 2343 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Methanosarcina acetivorans C2A, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Mycoplasma penetrans, Danio rerio, Glycine max, Lamium amplexicaule, Pan troglodytes, Arabidopsis thaliana, Prochlorococcus marinus, Guillardia theta, Vibrio parahaemolyticus, Caenorhabditis elegans, Olimarabidopsis pumila, Rattus norvegicus" 20
- 2214 2344 29 "Drosophila melanogaster, Buchnera aphidicola str. Bp (B. aizongia pistaciae), Homo sapiens, Haemophilus ducreyi, Haemophilus ducreyi 3500 OHP, Corynebacterium glutamicum ATCC 13032, Rattus norvegicus, Mus musculus, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Streptococcus mutans UA159, Tetrahymena thermophila, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Bacteriophage bIL309, Oryza sativa (japonica cultivar-group), Xestia c-nigrum granulovirus, Streptococcus mutans" 20
- 2215 2345 28 "Homo sapiens, Mus musculus, Artibeus jamaicensis, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Zea mays, Thermoplasma acidophilum, Pan troglodytes, Methanosarcina mazei Goe1, Prochlorococcus marinus, Lotus corniculatus var. japonicus" 30
- 2216 2346 31 "Mus musculus, Pan troglodytes, Danio rerio, Homo sapiens, Arabidopsis thaliana, Clostridium botulinum, Medicago truncatula, Drosophila melanogaster, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, lepidopsocid RS-2001, Dictyostelium discoideum, Plasmodium falciparum 3D7, Roboastrea europaea, Oryza sativa, Cyclospora cayetanensis, Clostridium acetobutylicum, Acroceridae aff. Terphis sp. SLW-2002, Ciona intestinalis, Rattus norvegicus, Haemophilus influenzae Rd KW20, Solanum tuberosum, Clostridium perfringens str. 13" 40
- 2217 2347 52 "Erwinia amylovora, Buchnera aphidicola str. Sg (Schizaphis graminum), Pantoea stewartii subsp. stewartii, Enterobacter pyrinus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Buchnera aphidicola, Arsenophonus endosymbiont of Tetraleurodes mori, Coxiella" 40
- 2218 2348 38 "Drosophila melanogaster, Arabidopsis thaliana, Homo sapiens, Mus musculus, Medicago truncatula, Danio rerio, Schistosoma japonicum, Dictyostelium discoideum, Sus scrofa, Plasmodium berghei, Nicotiana tabacum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Schizosaccharomyces pombe, Oceanobacillus iheyensis HTE831, Saccharomyces sp. IFO 1802, Pan troglodytes, Bacteroides thetaiotaomicron VPI-5482, Tortula ruralis, Sheeppox virus, Xanthomonas axonop 50

- odis pv. citri str. 306, Xanthomonas campestris pv. campestris str. ATCC 33913, Streptococcus pneumoniae TIGR4, Clostridium acetobutylicum, Xenopus laevis, Allium fistulosum, Allium altaicum, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group)"
- 2219 2349 64 "Clostridium perfringens str. 13, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Prochlorococcus marinus, Buchnera aphidicola str"
- 2220 2350 66 "Campylobacter jejuni subsp. jejuni NCTC 11168, Haemophilus ducreyi 35000HP, Rickettsia prowazekii, Lactobacillus plantarum WCFS1, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Ba" 10
- 2221 2351 32 "Human immunodeficiency virus 1, Schmidtea mediterranea, Oryza sativa (japonica cultivar-group), Homo sapiens, Caenorhabditis elegans, Listeria monocytogenes, Haemophilus ducreyi 35000HP, Listeria innocua, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Arabidopsis thaliana, Plasmodium falciparum 3D7, Sinorhizobium meliloti phage PBC5, Lactococcus lactis subsp. lactis, Danio rerio, Lotus corniculatus var. japonicus, Methanocaldococcus jannaschii, Nostoc sp. PCC 7120"
- 2222 2352 24 "Homo sapiens, Mus musculus, Rattus norvegicus, Borrelia burgdorferi B31, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus" 20
- 2223 2353 26 "Lotus corniculatus var. japonicus, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Lemur catta, Papio anubis, Caenorhabditis elegans, Pasteurella multocida, Chlamydia trachomatis, Mus musculus, Ciona intestinalis"
- 2224 2354 28 "Homo sapiens, Ropalidia revolutionalis, Mus musculus, Bacillus anthracis str. Ames, Streptomyces avermitilis MA-4680, Didelphis virginiana, Arabidopsis thaliana, Plasmodium falciparum 3D7, Stealth virus 1, Zea mays subsp. mays, Stealth virus, Streptococcus pyogenes M1 GAS, Oryza sativa (japonica cultivar-group), Listeria innocua, Anopheles gambiae, Xenopus laevis, Spilogale gracilis" 30
- 2225 2355 53 "Rickettsia prowazekii, Rickettsia conorii, Listeria innocua, Lactococcus lactis subsp. lactis, Streptococcus agalactiae NEM316, Campylobacter jejuni subsp. jejuni NCTC 11168, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Gallid herpesvirus 1, Medicago truncatula, Streptococcus agalactiae 2603V/R, Homo sapiens, Mus musculus, Pan troglodytes, Oryza sativa (japonica cultivar-group), Escherichia coli, Arabidopsis thaliana"
- 2226 2356 25 "Homo sapiens, Oryza sativa (japonica cultivar-group), Agropyron pedicels, Macaca fascicularis, Mictyris brevidactylus, Mus musculus, Vibrio parahaemolyticus, Bacillus thuringiensis" 40
- 2227 2357 59 "Rickettsia prowazekii, Campylobacter jejuni subsp. jejuni NCTC 11168, Tribolium castaneum, Helicobacter hepaticus ATCC 51449, Drosophila melanogaster, Rickettsia conorii, Streptococcus agalactiae NEM316, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Papio anubis, Streptococcus agalactiae 2603V/R, Homo sapiens, Arabidopsis thaliana, Staphylococcus aureus, Bacillus cereus ATCC 14579, Mus musculus, Streptococcus suis, Lactobacillus acidophilus, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, M 50

edicago sativa"

- 2228 2358 31 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Pan troglodytes, Drosophila melanogaster, Strongylocentrotus purpuratus, Metacnephia sommermanae, Danio rerio, Caenorhabditis elegans, Medicago truncatula, Ornithorhynchus anatinus, Gigantodax adleri, Cnephia tonnoiri, Paracnephia rhodesiense, Gigantodax marginale, Haemophilus influenzae Rd KW20, Mesorhizobium loti"
- 2229 2359 64 "Oceanobacillus iheyensis HTE831, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus agalactiae NEM316, Streptococcus pyogenes SSI-1, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Bacillus anthracis str. Ames, Streptococcus mutans UA159, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Chlamydia trachomatis, Rickettsia prowazekii, Chlamydia caviae GPIC, Nostoc sp. PCC 7120, Homo sapiens, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio, Mus musculus, Coxiella burnetii RSA 493, Chlamydia muridarum, Buchnera aphidicola str. Bp (Baizongia pistaciae), Plasmodium falciparum 3D7, Clostridium acetobutylicum, Lactococcus lactis subsp. lactis, Onchocerca volvulus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Helicobacter hepaticus ATCC 51449"
- 2230 2360 29 "Enterococcus faecalis V583, Borrelia burgdorferi B31, Danio rerio, Mus musculus, Methanosarcina acetivorans C2A, Bos taurus, Caenorhabditis briggsae, Homo sapiens, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Guillardia theta, Streptococcus pyogenes M1 GAS, Mycoplasma capricolum, Campylobacter jejuni subsp. jejuni NCTC 11168, Streptococcus pyogenes SSI-1"
- 2231 2361 29 "Medicago truncatula, Homo sapiens, Dictyostelium discoideum, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Shewanella oneidensis MR-1, Plasmodium falciparum 3D7, Guillardia theta, Clostridium acetobutylicum, Danio rerio, Oryza sativa (japonica cultivar-group), Centaurea vallesiaca, Centaurea maculosa, Centaurea diffusa, Acanthaceae cymbalariifolius, Cotesia rubecula, Rattus norvegicus, Campoletis sonorensis ichnovirus, Drosophila melanogaster, Macaca mulatta, Sus scrofa, Carex angariensis, Oryza sativa, Lactococcus lactis subsp. lactis, uncultured crenarchaeote, Paramecium bursaria Chlorella virus 1, Brugia malayi, Ciona intestinalis, Pan troglodytes"
- 2232 2362 41 "Homo sapiens, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Pan troglodytes, Dictyostelium discoideum, Plasmodium falciparum 3D7, Rattus norvegicus, Mus musculus, Macaca fascicularis, Oryza sativa (japonica cultivar-group), Medicago truncatula, Arabidopsis thaliana, Sus scrofa, Escherichia coli, Echinocereus pentaloophus, Clostridium acetobutylicum, Pisum sativum, Ruminococcus albus, Tetrahymena thermophila, Stenococcus stercorarius, Haemophilus ducreyi 35000HP, Danio rerio, Anopheles gambiae, Crithidia fasciculata, Bombyx mori"
- 2233 2363 60 "Clostridium tetani E88, Clostridium acetobutylicum, Clostridium perfringens str. 13, Listeria monocytogenes, Listeria innocua, Mycoplasma penetrans, Aquifex aeolicus VF5, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Prochlorococcus marinus, Homo sapiens, Haemophilus influenzae Rd KW20, Bacteroides thetaiotaomicron VPI-5482, Ureaplasma urealyticum, Bacillus halodurans, Pasteurella multocida, Rickettsia prowazekii, Mus musculus, Caenorhabditis elegans, Oceanobacillus

- iheyensis HTE831, *Danio rerio*, *Thermotoga maritima*, *Treponema pallidum*, *Rattus norvegicus*, *Helicobacter hepaticus* ATCC 51449"
- 2234 2364 56 "Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae TW-183, Chlamydomonas pneumoniae J138, Chlamydomonas pneumoniae, Buchnera aphidicola str. Sg (*Schizaphis graminum*), Buchnera aphidicola, Chlamydia muridarum, Mycoplasma capricolum, Chlamydia trachomatis, Homo sapiens, Pasteurella multocida, Shewanella oneidensis MR-1, Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, Coxiella burnetii RSA 493, Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, *Danio rerio*, *Leptospira interrogans* serovar lai str. 56601, Chlamydomonas pneumoniae GPIC, *Zea mays*, *Prochlorococcus marinus*, Candidatus *Blochmannia floridanus*" 10
- 2235 2365 28 "Homo sapiens, *Mus musculus*, *Aeolothrips punctatum*, *Caenorhabditis elegans*, *Danio rerio*, *Dictyostelium discoideum*, *Lycopersicon esculentum*, *Plasmodium berghei*, *Crithidia oncopelti*, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Jatropha curcas*, *Pasteurella multocida*, *Rickettsia prowazekii*, *Heteroglyphis* sp. 'Costa Rica', *Arabidopsis thaliana*, *Oceanobacillus iheyensis* HTE831, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Agrocybe aegerita*, *Nematode americanus*, *Pan troglodytes*, *Bacillus anthracis* str. Ames, *Felis catus*"
- 2236 2366 35 "Homo sapiens, *Bacillus anthracis* str. Ames, *Enterococcus faecium*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Danio rerio*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Pan troglodytes*, Bacteriophage KVP40, *Nostoc* sp. PCC 7120" 20
- 2237 2367 31 "Homo sapiens, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Paralichthys olivaceus*, *Plasmodium falciparum* 3D7, *Listeria monocytogenes*, *Listeria innocua*, *Mus musculus*, *Danio rerio*, *Caulobacter crescentus* CB15, *Thermoanaerobacter tengcongensis*, *Oryza sativa* (japonica cultivar-group), *Pinus radiata*, *Pseudaletia separata*"
- 2238 2368 36 "Mus musculus, Homo sapiens, *Drosophila melanogaster*, *Danio rerio*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Papio anubis*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Schistosoma japonicum*, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Thermoanaerobacter tengcongensis*, African swine fever virus, *Brugia malayi*, Lumpy skin disease virus, *Oryza sativa* (japonica cultivar-group)" 30
- 2239 2369 34 "Bacillus cereus ATCC 14579, *Methanosarcina mazei* Goe1, Homo sapiens, *Bacillus anthracis* str. Ames, *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Papio anubis*, *Macaca mulatta*"
- 2240 2370 59 "Nitrosomonas europaea ATCC 19718, *Lithospermum erythrorhizon*, *Rickettsia conorii*, *Rickettsia prowazekii*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Clostridium tetani* E88, Homo sapiens, *Clostridium acetobutylicum*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Haemophilus influenzae* Rd KW20, *Bacillus cereus* ATCC 14579, *Bacteroides thetaiotaomicron* VPI-5482, *Aquifex aeolicus* VF5, *Vibrio vulnificus* CMCP6, *Medicago truncatula*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Danio rerio*, *Vibrio cholerae*, *Streptococcus pyogenes* SSI-1, *Haemophilus ducreyi* 35000HP, *Rana catesbeiana*, *Spinacia oleracea*" 40
- 2241 2371 31 "Homo sapiens, *Mus musculus*, *Anopheles gambiae*, *Thermoplasma acidophilum*, *Caenorhabditis elegans*, *Legionella pneumophila*, *Paracentrotus lividus*, *Pan troglodytes*, Indian peanut clump virus D, *Sus scrofa*, *Clostridium a* 50

- Cetobutylicum*, *Pasteurella multocida*, *Rattus norvegicus*, *Tetrahymena thermophila*,
Oryza sativa (japonica cultivar-group), *Vernonia glabra*, *Arabidopsis thaliana*,
Nostoc sp. PCC 7120"
- 2242 2372 41 "Homo sapiens, *Clostridium tetani* E88, *Mus musculus*, *Thermoplasma volcanium*,
Thermoplasma tengcongensis, *Danio rerio*, *Wigglesworthia glossinidia endosymbiont* of
Glossina brevipalpis, *Lactococcus lactis* subsp. *lactis*, *Oceanobacillus iheyensis* HTE831,
Clostridium perfringens str. 13, *Bos taurus*, *Caenorhabditis elegans*, *Lemur catta*,
Clostridium acetobutylicum, *Caenorhabditis briggsae*, *Mycoplasma pulmonis*,
Campylobacter jejuni subsp. *jejuni* NCTC 11168, *Oryza sativa* (japonica cultivar-group),
Schizosaccharomyces pombe" 10
- 2243 2373 107 "Bacillus cereus ATCC 14579, *Bacillus anthracis* str. Ames, *Oceanobacillus iheyensis*
 HTE831, *Candidatus Blochmannia floridanus*, *Medicago truncatula*, *Mycoplasma genitalium*,
Anopheles stephensi, *Homo sapiens*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586,
Oryza sativa (japonica cultivar-group), *Caenorhabditis elegans*, *Mus musculus*,
Salmonella typhimurium LT2, *Escherichia coli*, *Salmonella enterica* subsp. *enterica*
 serovar Typhi Ty2, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Zea mays*,
Helicobacter pylori, *Vibrio parahaemolyticus*, *Mycoplasma penetrans*, *Xenopus laevis*,
Salmonella enterica subsp. *enterica* serovar Typhi, *Helicobacter pylori* 26695,
Helicobacter pylori J99, Plasmid R100" 20
- 2244 2374 93 "Bacillus cereus ATCC 14579, *Oceanobacillus iheyensis* HTE831,
Acinetobacter sp. ADP1, *Zea mays*, *Bacillus anthracis* str. Ames, *Buchnera aphidicola*
 str. Sg (*Schizaphis graminum*), *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586,
Chlamydia muridarum, *Mus musculus*, *Chlamydia pneumoniae* CWL029, *Chlamydia pneumoniae*
 AR39, *Chlamydia pneumoniae* J138, *Mycoplasma penetrans*, *Chlamydia pneumoniae* TW-183,
Helicobacter hepaticus ATCC 51449, *Homo sapiens*, *Drosophila virilis*, *Methanosarcina acetivorans*
 C2A, *Ciona intestinalis*"
- 2245 2375 26 "Mus musculus, *Homo sapiens*, *Erwinia amylovora*, *Medicago truncatula*,
Lotus corniculatus var. *japonicus*, *Arabidopsis thaliana*, *Carabus colorator*,
Carabus cancellatus, *Carabus glabratus*, *Carabus amplipennis*, *Carabus dufourii*,
Carabus lusitanicus, *Carabus problematicus*, *Carabus rossii*, *Carabus nemoralis*,
Carabus harmandi, *Carabus crassesculptus*, *Carabus smaragdinus*, *Carabus jankowskii*,
Carabus fruhstorferi, *Carabus morbillosus*, *Carabus violaceus*, *Carabus germarii*,
Carabus kolbei, *Carabus yaconinus* oki, *Carabus dehaanii*, *Vibrio cholerae*,
Argopecten irradians, *Sulfolobus tokodaii*, *Synechocystis* sp. PCC 6803" 30
- 2246 2376 27 "Caenorhabditis elegans, *Dictyostelium discoideum*, *Shewanella oneidensis*
 MR-1, *Sulfolobus solfataricus*, *Chlamydia caviae* GPIC, *Homo sapiens*, *Streptococcus pneumoniae*
 R6, *Streptococcus pneumoniae* TIGR4, *Mus musculus*, *Oceanobacillus iheyensis* HTE831,
Danio rerio, *Helicobacter pylori* 26695, *Schizosaccharomyces pombe*, *Helicobacter pylori*
 J99, *Pyrococcus horikoshii*, *Methanocaldococcus jannaschii*, *Clostridium perfringens* str. 13" 40
- 2247 2377 28 "Mus musculus, *Leptospira interrogans* serovar *lai* str. 56601,
Caenorhabditis elegans, *Homo sapiens*, *Lactobacillus sakei*, *Oryza sativa* (japonica
 cultivar-group), *Bartonella birtlesii*, *Lactococcus lactis* subsp. *lactis*, *Arabidopsis thaliana*,
Lotus corniculatus var. *japonicus*, *Bartonella schoenbuchensis*, *Cardites antiquata*"
- 2248 2378 24 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*"
- 2249 2379 26 "Mycoplasma hominis, *Arabidopsis thaliana*, *Homo sapiens*,
Saccharomyces cerevisiae, *Danio rerio*, *Mus musculus*, *Medicago truncatula*,
Drosophila melanogaster, *Oryza sativa* (japonica cultivar-group)" 50

- 2250 2380 27 "Caenorhabditis briggsae, Homo sapiens, Arabidopsis thaliana, Nostoc sp. PCC 7120, Pan troglodytes, Danio rerio, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Plasmodium falciparum, Caenorhabditis elegans, Simian immunodeficiency virus"
- 2251 2381 32 "Kobus ellipsiprymnus, Pelea capreolus, Kobus leche, Redunca fulvorufula, Bacillus grandii grandii, Caenorhabditis elegans, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Danio rerio, Orgyia pseudotsugata single capsid nucleopolyhedrovirus"
- 2252 2382 28 "Clostridium acetobutylicum, Homo sapiens, Mus musculus, Escherichia coli CFT073, Medicago truncatula" 10
- 2253 2383 31 "Homo sapiens, Gallus gallus, Danio rerio, Mus musculus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Prochlorococcus marinus subsp. marinus str. CCMP1375, Staphylococcus aureus subsp. aureus Mu50, Bacillus anthracis str. Ames, Caenorhabditis elegans, Drosophila melanogaster, Lycopersicon esculentum, Rhizophydium sp. 136, Schizosaccharomyces pombe, Penicillium citrinum, Synechocystis sp. PCC 6803"
- 2254 2384 24 "Homo sapiens, Staphylococcus epidermidis, Danio rerio, Arabidopsis thaliana, Mus musculus, Caenorhabditis elegans, Haemophilus influenzae Rd KW20"
- 2255 2385 27 "Mus musculus, Lotus corniculatus var. japonicus, Homo sapiens, Drosophila melanogaster, Xenopus laevis, Arabidopsis thaliana, Cryptosporidium parvum, Enterococcus faecalis V583, Streptococcus mutans UA159, Borrelia garinii, Schistosoma japonicum, Solanum tuberosum, Medicago truncatula, Danio rerio, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)" 20
- 2256 2386 26 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Leptospira interrogans serovar lai str. 56601, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Danio rerio, Drosophila melanogaster, Atelerix albi ventris, Dictyostelium discoideum, Pan troglodytes, Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Lycopersicon esculentum, Thermoanaerobacter tengcongensis, Rattus norvegicus, Staphylococcus epidermidis, Sus scrofa, Clostridium acetobutylicum, Bos taurus, Oryza sativa (indica cultivar-group), Saccharomyces cerevisiae, Yersinia enterocolitica (type 0:8), Haemophilus ducreyi 35000HP" 30
- 2257 2387 24 "Caenorhabditis elegans, Sus scrofa, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Homo sapiens, Cucumis sativus, Streptococcus pyogenes M1 GAS, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Streptococcus thermophilus, Shigella flexneri 2a str. 2457T, Dictyostelium discoideum, Drosophila melanogaster, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Rickettsia conorii, Escherichia coli O157:H7 EDL933, Arabidopsis thaliana, Chlamydomonas pneumoniae CWL029, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Chlamydomonas pneumoniae TW-183, Bos taurus, Oryza sativa, Escherichia coli O157:H7" 40
- 2258 2388 30 "Homo sapiens, Hordeum vulgare, Filobasidiella neoformanis, Arabidopsis thaliana, Danio rerio, Rattus norvegicus, Drosophila melanogaster, Ureaplasma urealyticum, Mus musculus, Oryza sativa (japonica cultivar-group), Cucumis melo, Methanosarcina mazei Goe1, Clostridium tetani E88, Hordeum vulgare subsp. vulgare, Caenorhabditis elegans, Mycoplasma pneumoniae, Zonosaurus rufipes, Tracheloptychus madagascariensis"
- 2259 2389 27 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Pla 50

- smodium falciparum 3D7, *Oryza sativa* (japonica cultivar-group), *Humulus japonicus*, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*"
- 2260 2390 31 "Mus musculus, *Homo sapiens*, *Caenorhabditis elegans*, *Danio rerio*, *Lama pacos*, *Zea mays*, *Camelpox virus* CMS, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Paraphaeosphaeria obtusispora*, *Streptococcus pneumoniae*, *Clostridium perfringens* str. 13"
- 2261 2391 23 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, *Bradyrhizobium japonicum* USDA 110, *Danio rerio*"
- 2262 2392 27 "Barbus microcephalus, *Plasmodium falciparum* 3D7, *Barbus massaensis*, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Drosophila pseudoobscura*, *Libellula quadrimaculata*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Solanum tuberosum*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Barbus petenyi*, *Barbus setivimensis*, *Barbus magniatlantis*, *Barbus nasus*, *Barbus* sp. MNCN 244A, *Barbus biscarensis biscarensis*, *Barbus antinorii*, *Barbus sclateri*, *Barbus guiraonis*, *Barbus graellsii*, *Barbus pallaryi*, *Barbus ksibi*, *Barbus comizo*, *Barbus* sp. MNCN239A, *Barbus bocagei*, *Barbus biscarensis amguidensis*, *Barbus albanicus*, *Medicago truncatula*, *Tetraodon nigroviridis*" 10
- 2263 2393 24 "Homo sapiens, *Bacteroides thetaiotaomicron* VPI-5482, *Mus musculus*, *Helicobacter pylori* 26695, *Danio rerio*, *Drosophila melanogaster*, *Enterococcus faecalis* V583, *Oryza sativa*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group)" 20
- 2264 2394 31 "uncultured marine gamma proteobacterium EBAC31A08, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Homo sapiens*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Methanohalobium acetivorans* C2A, *Lotus corniculatus* var. *japonicus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Ciona intestinalis*, *Oryctolagus cuniculus*"
- 2265 2395 28 "Oryza sativa (japonica cultivar-group), *Mus musculus*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Pan troglodytes*, *Medicago truncatula*, *Acipenser fulvescens*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Danio rerio*, *Salmo trutta*" 30
- 2266 2396 50 "Mycoplasma pulmonis, *Mycoplasma gallisepticum* R, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Helicobacter pylori* J99, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Homo sapiens*, *Ureaplasma urealyticum*, *Mus musculus*, *Clostridium perfringens*, *Caenorhabditis elegans*, *Listeria innocua*, *Clostridium perfringens* str. 13, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Bos taurus*, *Danio rerio*, *Zinnia elegans*, *Aeropyrum pernix*, *Medicago truncatula*, *Bacillus halodurans*"
- 2267 2397 62 "Fusobacterium nucleatum subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Schizosaccharomyces pombe*, *Agrobacterium tumefaciens*, *Mus musculus*, *Saccharomyces douglasii*, *Bacillus anthracis* str. A2012, *Bacillus anthracis*, *Danio rerio*, *Silene viscaria*, *Silene noctiflora*, *Helicobacillus mobilis*, *Pasteurella multocida*, *Arabidopsis thaliana*, *Weissella paramesenteroides*, *Andira aubletii*, *Smilax phaeota*, *Thermosynechococcus elongatus* BP-1, *Flammulina velutipes*" 40
- 2268 2398 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*"
- 2269 2399 28 "Sus scrofa, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacteriophage SPBc2*, *Plasmo*" 50

- dium falciparum 3D7, Mycoplasma pulmonis, Melanoplus sanguinipes entomopoxvirus, Yersinia pestis KIM, Arabidopsis thaliana, Borrelia burgdorferi B31, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Buchnera aphidicola str. Sg (Schizaphis graminum), Onchocerca volvulus, Clostridium acetobutylicum, Cyprinus carpio, Streptococcus suis, Ureaplasma urealyticum, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio"
- 2270 2400 50 "Oceanobacillus iheyensis HTE831, Listeria monocytogenes, Staphylococcus epidermidis ATCC 12228, Homo sapiens, Yersinia pestis KIM, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Yersinia pestis C092, Listeria innocua, Danio rerio, Medicago truncatula, Lycopersicon esculentum, Bacillus sp. JF8, Arabidopsis thaliana, Porphyromonas gingivalis W83, Saccharomyces sp. CBS 6334, Saccharomyces martiniae" 10
- 2271 2401 33 "uncultured marine gamma proteobacterium EBAC31A08, Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Oryza sativa (japonica cultivar-group), Lymantria dispar, Caenorhabditis elegans, Rickettsia prowazekii"
- 2272 2402 59 "Prochlorococcus marinus, Rickettsia prowazekii, Rickettsia conorii, Coxiella burnetii RSA 493, Clostridium tetani E88, Homo sapiens, Candidatus Blochmannia floridanus, Prochlorococcus marinus subsp. marinus str. CCM P1375, Buchnera aphidicola str. Sg (Schizaphis graminum), Mus musculus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Buchnera aphidicola str. Bp (Baizongia pistaciae), Pasteurella multocida, uncultured marine gamma proteobacterium EBAC31A08, Rattus norvegicus, Lepidolamprologus elongatus, Caenorhabditis elegans, Medicago truncatula, Drosophila melanogaster, Pan troglodytes, Arabidopsis thaliana, Oceanobacillus iheyensis HTE831, Listeria innocua, Clostridium perfringens str. 13" 20
- 2273 2403 41 "Arabidopsis thaliana, Homo sapiens, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Aspergillus bombycis"
- 2274 2404 147 "Rickettsia prowazekii, Streptococcus mutans UA159, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Rickettsia conorii, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Campylobacter jejuni subsp. jejuni NCTC 11168, Clostridium" 30
- 2275 2405 27 "Mus musculus, Papio anubis, Homo sapiens, Arabidopsis thaliana, Human immunodeficiency virus 1, Sulfolobus solfataricus, Oryza sativa (japonica cultivar-group)"
- 2276 2406 25 "Homo sapiens, Caenorhabditis elegans, Methanocaldococcus jannaschii, Raja erinacea, Mus musculus, Danio rerio, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Rattus norvegicus"
- 2277 2407 24 "Homo sapiens, Mus musculus, Enterococcus faecalis V583, Borrelia burgdorferi B31, Caenorhabditis elegans, Anopheles gambiae, Methanosarcina mazei Goe1, Helicobacter pylori, Pea seed-borne mosaic virus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus MW2, Haemophilus ducreyi 35000HP, Methanocaldococcus jannaschii" 40
- 2278 2408 71 "Helicobacter hepaticus ATCC 51449, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella enterica subsp. enterica serovar Typhi, Shewanella oneidensis MR-1, Photobacterium phosphoreum, Sulfurospirillum multivorans, Photobacterium leiognathi, Zymomonas mobilis, Haemophilus ducreyi 35000HP, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli O157:H7 EDL933, Esc 50

- herichia coli, Escherichia coli K12, Shigella flexneri, Escherichia coli 0157:H7, Bacillus cereus ATCC 14579, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Mus musculus, Haemophilus influenzae Rd KW20, Leptospira interrogans serovar lai str. 56601, Homo sapiens, Pasteurella multocida, Campylobacter jejuni subsp. jejuni NCTC 11168"
- 2279 2409 29 "Mus musculus, Drosophila melanogaster, Homo sapiens, uncultured gamma proteobacterium, Caenorhabditis elegans, Pan troglodytes, Staphylococcus epidermidis ATCC 12228, Antirrhinum majus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Schizosaccharomyces pombe, Candida albicans, Rattus norvegicus, Staphylococcus aureus subsp. aureus Mu50" 10
- 2280 2410 27 "Homo sapiens, Mus musculus, Danio rerio, Streptococcus thermophilus, Drosophila melanogaster, Streptococcus salivarius, Arabidopsis thaliana, Medicago truncatula, Bombyx mori, Gallus gallus"
- 2281 2411 76 "Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Prochlorococcus marinus, Mus musculus, Clostridium tetani E88, Clostridium perfringens str. 13, Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Macaca mulatta, Bos taurus, Papio anubis, Arabidopsis thaliana, Drosophila hydei"
- 2282 2412 62 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Mus musculus, Dictyostelium discoideum, Homo sapiens, Desulfovibrio gigas, Pyrococcus abyssii, Bradyrhizobium japonicum USDA 110, Helicobacter hepaticus ATCC 51449, Nostoc sp. PCC 7120" 20
- 2283 2413 24 "Homo sapiens, Lactobacillus plantarum WCFS1, Danio rerio, Mus musculus, Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Oryza sativa (indica cultivar-group), Caenorhabditis elegans, Arabidopsis thaliana, Ipomoea purpurea, Saccharomyces cerevisiae"
- 2284 2414 41 "Pasteurella multocida, Shewanella oneidensis MR-1, Photobacterium leiognathi, Bacillus halodurans, Homo sapiens, Mus musculus, Drosophila melanogaster, Prochlorococcus marinus, Arabidopsis thaliana" 30
- 2285 2415 32 "Homo sapiens, Bacillus cereus ATCC 14579, Mus musculus, Sus scrofa, Oryza sativa (japonica cultivar-group), Aulopus japonicus, Arabidopsis thaliana"
- 2286 2416 65 "Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella enterica subsp. enterica serovar Typhi, Pasteurella multocida, Vibrio vulnificus CMCP6, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri"
- 2287 2417 32 "Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Danio rerio, Homo sapiens, Plasmodium falciparum 3D7, Felis catus, Bacillus cereus ATCC 14579, Rattus norvegicus, Bacillus anthracis str. Ames, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Plasmodium falciparum, Salmonella enterica subsp. enterica serovar Dublin, Arabidopsis thaliana, Actinobacillus pleuropneumoniae, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Bradyrhizobium japonicum USDA 110, Sulfolobus tokodaii, Salmonella enterica subsp. enterica serovar Typhi, Salmonella typhimurium, Staphylococcus aureus subsp. aureus Mu50" 40
- 2288 2418 31 "Clostridium perfringens str. 13, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Bos taurus, Sulfolobus tokodaii, Danio rerio, Arabidopsis thaliana, Borrelia burgdorferi B31, Saimiriine herpesvirus 2" 50

- 2289 2419 24 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana"
- 2290 2420 31 "Oryza sativa (japonica cultivar-group), Oryza sativa, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Pan troglodytes, Tonatia brasiliense, Clostridium acetobutylicum, Daucus carota"
- 2291 2421 24 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Schizosaccharomyces pombe, Drosophila melanogaster, Plasmodium falciparum 3D7, Xenopus laevis, Arabidopsis thaliana, Beta vulgaris, Caenorhabditis elegans, Saurida undosquamis" 10
- 2292 2422 39 "Dictyostelium discoideum, Mus musculus, Homo sapiens, Danio rerio, Medicago truncatula, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Arabidopsis thaliana, Schmidtea polychroa, Trypanosoma brucei, Polybioides tabidus, Trypanosoma cruzi, Drosophila melanogaster, Sus scrofa, Oryza sativa, Oryza sativa (japonica cultivar-group), Drepanosiphum oregonensis, Tribolium castaneum, Caenorhabditis elegans, Rattus norvegicus, Aplysia californica, Plasmodium falciparum, Pan troglodytes"
- 2293 2423 27 "Homo sapiens, Mus musculus, Campylobacter jejuni, Chlamydomonas pneumoniae CWL029, Amsacta moorei entomopoxvirus, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Equus caballus, Chlamydomonas pneumoniae TW-183" 20
- 2294 2424 35 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Dictyostelium discoideum, Caenorhabditis briggsae, Arabidopsis thaliana, Thermotoga maritima, Danio rerio, Pyrococcus horikoshii"
- 2295 2425 24 "Drosophila melanogaster, Homo sapiens, Triticum monococcum, Plasmodium falciparum 3D7, Plasmodium falciparum"
- 2296 2426 29 "Homo sapiens, Clostridium acetobutylicum, Dictyostelium discoideum, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Oryza sativa, Danio rerio, Caenorhabditis briggsae, Ciona intestinalis, Saccharomyces cerevisiae, Helicobacter hepaticus ATCC 51449" 30
- 2297 2427 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Lactococcus lactis subsp. lactis, Danio rerio, Nostoc sp. PCC 7120"
- 2298 2428 31 "Mus musculus, Arabidopsis thaliana, Vibrio vulnificus CMCP6, Homo sapiens, Manduca sexta, Danio rerio, Dictyostelium discoideum, Ladenbergia macrocarpa, Oryza sativa (japonica cultivar-group), Candidatus Carsonella ruddii, Rattus norvegicus, Plasmodium falciparum 3D7, Little cherry virus 2, Little cherry virus 1, Papio anubis, Shigella flexneri 2a, Sus scrofa, Goatpox virus, Sheeppox virus, Pyrocoelia rufa, Oxygastra curtisi, Lumpy skin disease virus, Shigella flexneri, Anthoceros formosae, Schizosaccharomyces pombe, Carabus granulatus" 40
- 2299 2429 71 "Streptococcus pyogenes MGAS8232, Homo sapiens, Ardea herodias, Rattus norvegicus, Mus musculus, Aedes aegypti, Caenorhabditis briggsae, Arabidopsis thaliana, Caenorhabditis elegans, Hemileuca burnsi, Hemileuca juno, Bactrocera tau F, Bactrocera tau E, Bactr"
- 2300 2430 54 "Buchnera aphidicola str. Sg (Schizaphis graminum), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Bacillus cereus ATCC 14579, Bacillus halodurans, Homo sapiens, Mycoplasma gallisepticum R, Bacillus anthracis str. Ames, Drosophila melanogaster, Mus musculus, Lactococcus lactis subsp. lactis, Bacillus cereus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Clos 50

- tridium tetani E88, Methanosarcina acetivorans C2A, Simian parainfluenza virus 4 1, Bacillus subtilis, Chlamydomphila pneumoniae CWL029, Ureaplasma urealyticum, Sus scrofa, Chlamydomphila pneumoniae AR39, Danio rerio, Prochlorococcus marinus subsp. marinus str. CCMP1375, Bacillus subtilis subsp. subtilis str. 168, Chlamydomphila pneumoniae TW-183, Chlamydomphila pneumoniae J138"
- 2301 2431 66 "Bacillus cereus ATCC 14579, Oceanobacillus iheyensis HT E831, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Bacillus anthracis str. Ames, Bacillus subtilis, Mus musculus, Bacillus subtilis subsp. subtilis str. 168, Bacteroides thetaiota omicron VPI-5482, Staphylococcus epidermidis ATCC 12228, Homo sapiens, Nitrosomonas europaea ATCC 19718, Schistosoma japonicum, Lactococcus lactis subsp. lactis, Enterococcus faecalis V583, Trypanosoma cruzi, Anopheles gambiae, Bacillus halodurans" 10
- 2302 2432 85 "Listeria monocytogenes, Listeria innocua, Thermoanaerobacter tengcongensis, Campylobacter coli, Clostridium acetobutylicum, Caenorhabditis elegans, Homo sapiens, Mus musculus, Tropheus duboisi, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Tropheus moorii, Danio rerio, Filobasidium neoformans"
- 2303 2433 69 "Streptococcus mutans UA159, Bacillus halodurans, Shewanella oneidensis MR-1, Pasteurella multocida, Arcobacter butzleri, Candidatus Blochmannia floridanus, Bacillus anthracis str. Ames, Coxiella burnetii RSA 493, Vibrio cholerae, Oceanobacillus iheyensis HTE831, Xylella fastidiosa Temecula1, Actinobacillus actinomycetemcomitans, Yersinia pestis KIM, Lactobacillus plantarum WCFS1, Yersinia pestis C092, Rickettsia conorii, Streptococcus pneumoniae R6, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Thermoanaerobacter tengcongensis, Homo sapiens, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Caenorhabditis elegans, Schizosaccharomyces pombe" 20
- 2304 2434 29 "Clostridium perfringens str. 13, Helicobacter hepaticus ATCC 51449, Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Homo sapiens, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum, Danio rerio, Yaba-like disease virus, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Mus musculus, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Leptospira interrogans serovar lai str. 56601, Borrelia burgdorferi B31, Zea mays, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Sus scrofa, Ureaplasma urealyticum, Saccharomyces cerevisiae, Neurospora crassa, Mesembryanthemum crystallinum" 30
- 2305 2435 44 "Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis elegans, Homo sapiens, Haemophilus influenzae Rd KW20, Aster yellows phytoplasma, Drosophila melanogaster, Lycopersicon esculentum, Mycoplasma gallisepticum R, Oryza sativa (japonica cultivar-gro" 40
- 2306 2436 28 "Piomyces sp. E2Homo sapiens, Shewanella oneidensis MR-1, Arabidopsis thaliana, Coriandrum sativum, Human immunodeficiency virus 1, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Mus musculus, Dictyostelium discoideum, Plasmodium falciparum, Streptococcus mutans UA159, Zea mays, Piomyces rhizinflatus, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Pseudomonas putida, Borrelia burgdorferi, Manduca sexta"
- 2307 2437 59 "Listeria innocua, Yersinia pestis KIM, Listeria monocytogenes, Yersinia pestis C092, Vibrio vulnificus CMCP6, Xenopus laevis, Homo sapi" 50

- ens, *Prochlorococcus marinus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Arabidopsis thaliana*, *Mycoplasma gallisepticum* R, *Methanosarcina acetivorans* C2A, *Pseudomonas* sp. M1, *Haemophilus influenzae* Rd KW20, *Helicobacter hepaticus* ATCC 51449, *Ricinus communis*, *Lactococcus garvieae*"
- 2308 2438 23 "Mus musculus, Bacteriophage A118, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Arabidopsis thaliana*, *Escherichia coli* CFT073, *Homo sapiens*, *Mycoplasma pulmonis*, *Streptococcus bovis*, *Caenorhabditis elegans*"
- 2309 2439 24 "Homo sapiens, *Arabidopsis thaliana*, *Neisseria meningitidis* Z2491, *Mus musculus*, *Neisseria meningitidis*, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*" 10
- 2310 2440 26 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*"
- 2311 2441 24 "Arabidopsis thaliana, *Homo sapiens*, *Danio rerio*, *Branchiostoma floridae*, *Anopheles stephensi*, *Lotus corniculatus* var. japonicus, *Longistriata blarinae*, *Caenorhabditis elegans*, *Anopheles gambiae*, *Mus musculus*, *Bacillus halodurans*"
- 2312 2442 89 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Thermoanaerobacter tengcongensis*, *Cyanidioschyzon merolae*, *Guillardia theta*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Prochlorococcus marinus*, *Borrelia burgdorferi*, *Bacillus halodurans*, *Mus musculus*, *Borrelia afzelii*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Oryzomys palustris*, *Danio rerio*, *Porphyra purpurea*" 20
- 2313 2443 33 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Sulfolobus solfataricus*, *Lactobacillus plantarum*, *Oceanobacillus iheyensis* HTE831, *Lactobacillus plantarum* WCFS1, *Physarum polycephalum*" 30
- 2314 2444 112 "Clostridium perfringens str. 13, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Thermoanaerobacter tengcongensis*, *Zea mays*, *Shewanella oneidensis* MR-1, *Clostridium difficile*, *Clostridium acetobutylicum*, *Bacteroides thetaiotaomicron* VPI-5482, *Chlamydia muridarum*, *Staphylococcus epidermidis* ATCC 12228, *Homo sapiens*, *Arabidopsis thaliana*, *Tribolium castaneum*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375"
- 2315 2445 53 "Leptospira interrogans serovar lai str. 56601, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Bacillus licheniformis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Listeria innocua*, *Danio rerio*, *Fundulus heteroclitus*" 40
- 2316 2446 28 "Pan troglodytes, *Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Takifugu rubripes*, *Mycoplasma gallisepticum* R, *Vibrio vulnificus* CMC P6, *Rhodeus ocellatus*, *Lotus corniculatus* var. japonicus, *Sarcocheilichthys variegatus* microoculus, *Mycoplasma penetrans*, *Danio rerio*"
- 2317 2447 27 "Homo sapiens, *Dictyostelium discoideum*, *Mus musculus*, *Drosophila melanogaster*, *Manihot esculenta*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*"
- 2318 2448 47 "Campylobacter jejuni subsp. jejuni NCTC 11168, *Bacillus* 50

- subtilis subsp. subtilis str. 168, Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Sorghum bicolor, Mus musculus, Porphyra purpurea, Xenopus laevis, Arabidopsis thaliana"
- 2319 2449 32 "Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Drosophila melanogaster, Mus musculus, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae TW-183, Chlamydomonas pneumoniae J138, Lymphocystis disease virus 1, Arabidopsis thaliana, Plasmodium falciparum 3D7, Dictyostelium discoideum, Lotus corniculatus var. japonicus, Danio rerio, Helicobacter pylori 26695, Ciona intestinalis, Glycine max"
- 2320 2450 43 "Clostridium acetobutylicum, Mus musculus, Cuphea hookeriana, Homo sapiens, Sparus aurata, Drosophila melanogaster, Zea mays, Arabidopsis thaliana, Chromobacterium violaceum, Clostridium perfringens str. 13"
- 2321 2451 27 "Homo sapiens, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Clostridium perfringens str. 13, Mus musculus, Aegilops tauschii, Dictyostelium discoideum, Chlamydia muridarum, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Rickettsia prowazekii, Solanum tuberosum, Chlamydomonas pneumoniae CWL029, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Guillardia theta, Chlamydomonas pneumoniae TW-183"
- 2322 2452 28 "Homo sapiens, Drosophila melanogaster, Mus musculus, Danio rerio, Bacillus cereus ATCC 14579, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Lemur catta, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Guillardia theta, Clostridium acetobutylicum, Pantroglodytes, Prochlorococcus marinus, Streptococcus agalactiae NEM316, Daucus carota, Candidatus Blochmannia floridanus, Caenorhabditis elegans, Plasmodium vivax, Andrias davidianus, Burchardia rosea, Arabidopsis thaliana"
- 2323 2453 30 "Rattus norvegicus, Enterobacteria phage T4, Ruminococcus sp., Mus musculus, Drosophila melanogaster, Homo sapiens, Medicago truncatula, Arabidopsis thaliana, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis elegans, Plasmodium falciparum 3D7, Bacillus subtilis, Yellow fever virus, Danio rerio, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168"
- 2324 2454 32 "Dirofilaria immitis, Rhizobium leguminosarum, Caenorhabditis elegans, Homo sapiens, Mus musculus, Human rhinovirus 99, Danio rerio, Ceramium sp. cerPE, Campylobacter jejuni subsp. jejuni NCTC 11168, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Guillardia theta, Staphylococcus aureus subsp. aureus Mu50, Arabidopsis thaliana, Dictyostelium discoideum, Ceramium virgatum, Plasmodium falciparum 3D7, Apteryx australis mantelli, Puumala virus, Chlamydomonas pneumoniae CWL029, Ochrosphaera neapolitana, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Mycoplasma penetrans, Human rhinovirus 5, Oryza sativa (japonica cultivar-group), Bartonella tribocorum, Chlamydomonas pneumoniae TW-183, Lupinus luteus, Pinus radiata, TTV-like mini virus"
- 2325 2455 41 "Helicobacter hepaticus ATCC 51449, Streptococcus intermedius, Streptococcus constellatus, Streptococcus anginosus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Homo sapiens, Listeria monocytogenes, Oceanobacillus ihayensis HTE831, List"
- 2326 2456 23 "Mus musculus, Homo sapiens, Xenopus laevis"
- 2327 2457 29 "Homo sapiens, Lotus corniculatus var. japonicus, Buchne

- ra aphidicola str. Bp (Baizongia pistaciae), Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Caenorhabditis elegans, Human endogenous retrovirus, Medicago truncatula, Dictyostelium discoideum, Plasmodium falciparum 3D7, Papio anubis, Rhizophyidum sp. 136, Danio rerio, Mus musculus, Saccharomyces cerevisiae, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster"
- 2328 2458 30 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Lactococcus lactis subsp. lactis, Enterococcus faecalis V583, Homo sapiens, Clostridium acetobutylicum, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Mus musculus, Medicago truncatula, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group)" 10
- 2329 2459 35 "Haemophilus ducreyi 35000HP, Pasteurella multocida, Haemophilus influenzae Rd KW20, Haemophilus influenzae, Shewanella oneidensis MR-1, Danio rerio, Homo sapiens, Ureaplasma urealyticum, Mus musculus, Medicago truncatula, Torrubiella confragosa, Arabidopsis thaliana, Phialophora lagerbergii, Dictyostelium discoideum, Fenneropenaeus merguensis, Plasmodium falciparum 3D7, Sorghum bicolor, Clostridium acetobutylicum, Prochlorococcus marinus, Neisseria meningitidis Z2491, Neisseria meningitidis MC58, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Cryptocercus darwini, Cryptocercus garciai, Plasmodium berghei, Schizosaccharomyces pombe, Laminarionema elsbetiae, Telophorus bocagei, Xenopus laevis/gilli, Staphylococcus aureus subsp. aureus Mu50" 20
- 2330 2460 29 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Pyrococcus furiosus DSM 3638, Dictyostelium discoideum, Danio rerio, Oryza sativa (japonica cultivar-group), Pan troglodytes, Methanosarcina mazei Goe1, Plasmodium falciparum, Saccharomyces cerevisiae, Oryza sativa, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 2331 2461 25 "Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Danio rerio, Haemophilus influenzae Rd KW20, Bacillus anthracis str. Ames, Medicago truncatula, Streptococcus agalactiae 2603V/R, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Candida albicans" 30
- 2332 2462 29 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Oryza sativa, Umbilicus botryoides, Umbilicus horizontalis, Umbilicus rupestris, Phedimus spurius, Pseudosedum sp. Ogisu 2000, Pseudosedum longidentatum, Rhodiola cretinii, Rhodiola amabilis"
- 2333 2463 28 "Homo sapiens, Mus musculus, Guillardia theta, Danio rerio, Canis familiaris, Human papillomavirus type 16, Dictyostelium discoideum, Schmidtea mediterranea, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Pan troglodytes, Plasmodium falciparum, Saccharomyces cerevisiae" 40
- 2334 2464 27 "Homo sapiens, Enterococcus faecalis V583, Drosophila melanogaster, Caenorhabditis elegans, Mus musculus, Zamia furfuracea, Danio rerio"
- 2335 2465 27 "Homo sapiens, Bacillus anthracis str. Ames, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"
- 2336 2466 33 "Mus musculus, Homo sapiens, Lactococcus lactis subsp. lactis, Caenorhabditis briggsae, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Sorghum bicolor, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Danio rerio, Anopheles gambiae" 50

- 2337 2467 27 "Homo sapiens, Danio rerio, Mus musculus, Caenorhabditis briggsae, Medicago truncatula, Saimiriine herpesvirus 2"
- 2338 2468 27 "Streptococcus mutans UA159, Homo sapiens, Danio rerio, Pan troglodytes, Pyrococcus abyssi, Schizosaccharomyces pombe, Bacteroides fragilis, Oryza sativa (japonica cultivar-group), Mus musculus, Enterococcus faecalis V583, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Helicoverpa armigera, Lotus corniculatus var. japonicus, Limulus polyphemus, Bombyx mori, Rabbit fibroma virus, Drosophila sturtevantii, Caenorhabditis elegans, Cyanophora paradoxa, Nostoc sp. PCC 7120" 10
- 2339 2469 58 "Haemophilus influenzae Rd KW20, Pasteurella multocida, Felis catus, Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Legionella pneumophila, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Schizosaccharomyces pombe, Medicago truncatula, Pseudoterranova decipiens, Desera sp. 'Kenya 1998', Danio rerio, Haemophilus ducreyi 35000HP, Cryptosporidium parvum, Buchnera aphidicola, Clostridium perfringens str. 13, Pan troglodytes, Papio anubis, Sus scrofa, Sphaeroides nephelus, Fragaria inumae, Arabidopsis thaliana"
- 2340 2470 35 "Yersinia pestis KIMP, Pasteurella multocida, Yersinia pestis C092, Arabidopsis thaliana, Danio rerio, Homo sapiens, Mus musculus, Cupien 20
nius salei, Oryza sativa (japonica cultivar-group), Pseudomonas citronellolis, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Gasterosteus aculeatus, Clostridium perfringens str. 13"
- 2341 2471 32 "Homo sapiens, Oryza sativa (japonica cultivar-group), Pan troglodytes, Streptococcus pneumoniae, Streptococcus pneumoniae TIGR4, Mus musculus, Meloidogyne incognita, Plasmodium falciparum 3D7, Plasmodium falciparum, Lasioglossum lanarium, Lycopersicon esculentum, Danio rerio, Arabidopsis thaliana, synthetic construct, Drosophila melanogaster, Dictyostelium discoideum, Borrelia burgdorferi B31, Caenorhabditis elegans, Agapostemon tyleri, Methanosarcina acetivorans C2A, Oryza sativa, Polyrhachis dives, Sinantherina socialis, Candida albicans, Saccharomyces cerevisiae, Schizosaccharomyces pombe" 30
- 2342 2472 53 "Xylella fastidiosa 9a5c, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Xylella fastidiosa Temecula1, Pseudomonas aeruginosa PA01, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola, Xanthomonas axonopodis pv. citri str. 306, Xantho"
- 2343 2473 29 "Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Mus musculus, Sus scrofa, Oryza sativa, Prunus serotina, Musca domestica, Mycoplasma pulmonis, Medicago truncatula, Schizosaccharomyces pombe, Onchocerca volvulus, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Shewanella oneidensis MR-1, Thermoanaerobacter tengcongensis, Meleagris gallopavo, Loofah witches'-broom phytoplasma, Lactococcus lactis subsp. lactis, Plasmodium falciparum, Rickettsia prowazekii, Arabidopsis thaliana, Drosophila simulans, Xenopus laevis, Chlorella vulgaris" 40
- 2344 2474 48 "Legionella pneumophila, Haemophilus influenzae Rd KW20, Pasteurella multocida, Drosophila melanogaster, Homo sapiens, Mus musculus, Pseudomonas citronellolis, Pan troglodytes, Monosiga brevicollis, Shewanella oneidensis MR-1, Plasmodium falciparum 3D7, Ehrl"
- 2345 2475 49 "Pasteurella multocida, Haemophilus influenzae Rd KW20, Caenorhabditis elegans, Danio rerio, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Caenorhabditis briggsae, Didiscus pusilla, Pet 50

- unia integrifolia subsp. inflata, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Medicago truncatula, Methanosarcina mazei Goe1, Clostridium tetani E88, Simian T-lymphotropic virus 3, Malus x domestica, Sus scrofa, Tetraodon nigroviridis, Chassalia subcordatifolia, Rickettsia conorii, Drymonia strigosa, Human rotavirus G9, Bacillus pseudofirmus, Lotus corniculatus var. japonicus, Pyrus pyrifolia, Solanum demissum, Ciona intestinalis, Campylobacter jejuni"
- 2346 2476 30 "Mus musculus, Homo sapiens, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Schmidtea mediterranea, Escherichia coli O157:H7 EDL933, Escherichia coli O157:H7, Labulla thoracica, Triticum monococcum, Coxiella burnetii RSA 493, Monosiga brevic" 10
- 2347 2477 113 "Clostridium acetobutylicum, Mycoplasma genitalium, Clostridium perfringens str. 13, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Homo sapiens, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Mus musculus, Methanosarcina mazei Goe1, Streptococcus pyogenes M1 GAS, Oryza sativa (japonica cultivar-group), Listeria monocytogenes, Haemophilus ducreyi 35000HP, Danio rerio, Haemophilus ducreyi"
- 2348 2478 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Medicago truncatula, Lotus corniculatus var. japonicus"
- 2349 2479 23 "Drosophila melanogaster, Mus musculus, Homo sapiens, Danio rerio, Ehrlichia canis" 20
- 2350 2480 24 "Mus musculus, Drosophila melanogaster, Dictyostelium discoideum, Homo sapiens, Oryza sativa (japonica cultivar-group), Staphylococcus aureus, Clostridium tetani E88, Kradibia copiosae, Oryza sativa, Marchantia polymorpha, Staphylococcus aureus subsp. aureus MW2, Danio rerio"
- 2351 2481 39 "Rattus norvegicus, Mus musculus, Zea mays, Streptococcus mutans UA159, Blastocystis culicis, Homo sapiens, Dictyostelium discoideum, Clostridium acetobutylicum, Trypanosoma brucei, Trypanosoma brucei brucei, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Crithidia fasciculata, Drosophila melanogaster, Caenorhabditis elegans, Trypanosoma sp., Plasmodium falciparum 3D7, Balaena mysticetus, Haemophilus ducreyi 35000HP, Bacillus subtilis subsp. subtilis str. 168, Caperea marginata, Synechocystis sp. PCC 6803, Bacillus subtilis" 30
- 2352 2482 27 "Poecilia reticulata, Mus musculus, Homo sapiens, Nicotiana tabacum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Prochlorococcus marinus, Danio rerio, Prochlorococcus marinus subsp. pastoris str. PCC 9511, Thermoplasma volcanium, Thermotoga maritima, Ciona intestinalis, Rattus norvegicus"
- 2353 2483 44 "Gallus gallus, Saccharomyces cerevisiae, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Oceanobacillus iheyensis HTE831, Arabidopsis thaliana, Caenorhabditis elegans, Schizosaccharomyces pombe, Plasmodium falciparum, Paramecium tetraurelia, Lactococ" 40
- 2354 2484 28 "Arabidopsis thaliana, Drosophila melanogaster, Homo sapiens, Mus musculus, Abies grandis, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Botryotinia fuckeliana"
- 2355 2485 28 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Didelphis virginiana, Plasmodium falciparum, Danio rerio, Pan troglodytes, Mesotaenium caldariorum, Plasmodium falciparum 3D7, Felis catus, Oenothera berteriana, Be 50

ta vulgaris subsp. vulgaris, Equine foamy virus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Elacatinus figaro, Staphylococcus aureus subsp. aureus Mu50"

2356 2486 28 "Gallus gallus, Arabidopsis thaliana, Homo sapiens, Mus musculus, Danio rerio"

2357 2487 28 "Mus musculus, Homo sapiens, Caenorhabditis briggsae, Caenorhabditis elegans, Plasmodium falciparum 3D7, Prochlorococcus marinus, Trypanosoma brucei, Schizosaccharomyces pombe, Arabidopsis thaliana"

2358 2488 23 "Homo sapiens, Mus musculus, Danio rerio, Thermotoga maritima"

2359 2489 23 "Homo sapiens, Mus musculus, Methanosarcina acetivorans C2A, Nicotiana tabacum, Caenorhabditis briggsae, Helicobacter pylori J99, Rattus norvegicus, Lycopersicon esculentum"

2360 2490 25 "Homo sapiens, Enterococcus faecalis V583, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Selenomonas ruminantium subsp. ruminantium, Streptococcus agalactiae NEM316, Geodia cydonium, Drosophila grimshawi, Oryza sativa (japonica cultivar-group)"

2361 2491 26 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Ureaplasma urealyticum, Shigella flexneri 2a str. 2457T, Bos taurus, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Arabidopsis thaliana, Escherichia coli, Streptococcus pyogenes M1 GAS, Escherichia coli O157:H7 EDL933, Campylobacter jejuni subsp. jejuni NCTC 11168, Streptococcus pyogenes, Escherichia coli K12, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Escherichia coli O157:H7, Danio rerio, Medicago truncatula, Staphylococcus aureus subsp. aureus Mu50"

2362 2492 31 "Homo sapiens, Melanoplus sanguinipes entomopoxvirus, Methanocaldococcus jannaschii, Enterococcus faecalis V583, Arabidopsis thaliana, Drosophila melanogaster, Caenorhabditis elegans, Mus musculus, Plasmodium falciparum 3D7, Amsacta moorei entomopoxvirus, Glycine max, Danio rerio, Pan troglodytes"

2363 2493 40 "Plasmodium falciparum Homo sapiens, Porcine rotavirus, Enterococcus faecalis V583, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Arabidopsis thaliana, Porlieria chilensis, Guaiacum guatemalense, Bulnesia arborea, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Drosophila yakuba, Coxiella burnetii RSA 493, Schistosoma japonicum, Poncirus trifoliata, Papio anubis, Yaba-like disease virus, Rotavirus A, Clostridium botulinum, Capsicum annuum, Human rotavirus G3, Saccharomyces servazzii, Rattus norvegicus"

2364 2494 24 "Homo sapiens, Mus musculus, Drosophila melanogaster, Danio rerio, Homarus americanus, Pan troglodytes, Borrelia burgdorferi B31, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabidopsis thaliana, Williopsis saturnus var. mrakii, Lotus corniculatus var. japonicus, Jacaranda copaia, Oryza sativa (japonica cultivar-group), Medicago truncatula"

2365 2495 32 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Bactrocera tryoni, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Buchnera aphidicola, Medicago truncatula, Borrelia burgdorferi B31, Caenorhabditis elegans, Oryza sativa, Bos taurus, Caenorhabditis briggsae, Dolichopoda schiavazzii, Danio rerio, Arabidopsis lyrata, Rattus norvegicus, Cryptosporidium parvum, Ciona intestinalis, Pan troglodytes, unidentified bacterium, Cyanopho

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ra paradoxa, *Borrelia burgdorferi*"

- 2366 2496 31 "Homo sapiens, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Ictalurus punctatus*, *Evania* sp. M242, *Methanothermococcus thermolithotrophicus*, *Carica papaya*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Mycoplasma penetrans*, *Aedes aegypti*, *Planococcus lilacinus*, *Clostridium perfringens* str. 13"
- 2367 2497 32 "Danio rerio, Homo sapiens, *Felis catus*, *Mus musculus*, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Arabidopsis thaliana*, *Euglena gracilis*" 10
- 2368 2498 26 "Caenorhabditis elegans, *Drosophila melanogaster*, Homo sapiens, *Mycoplasma penetrans*, *Medicago truncatula*"
- 2369 2499 27 "Danio rerio, Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Mesorhizobium loti*, *Drosophila melanogaster*, *Fusarium cerealis*, *Neophyllaphis podocarpi*, *Arabidopsis thaliana*, *Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis*"
- 2370 2500 24 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, *Drosophila melanogaster*"
- 2371 2501 27 "Danio rerio, Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Escherichia coli* CFT073, *Felis catus*, *Stellaria longipes*" 20
- 2372 2502 31 "*Oceanobacillus iheyensis* HTE831, *Schizosaccharomyces pombe*, *Clostridium perfringens* str. 13, *Streptococcus pneumoniae* R6, Homo sapiens, Danio rerio, *Mus musculus*, *Terebratulina retusa*, *Saccharomyces cerevisiae*, *Anolis carolinensis*"
- 2373 2503 23 "*Arabidopsis thaliana*, Homo sapiens, *Atelerix albiventris*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Mus musculus*, *Oceanobacillus iheyensis* HTE831"
- 2374 2504 27 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Arabidopsis thaliana*, Hepatitis B virus, *Lotus corniculatus* var. japonicus, *Gallus gallus*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Caenorhabditis elegans*, *Bradyrhizobium japonicum* USDA 110, *Saccharomyces cerevisiae*, *Oryza sativa*" 30
- 2375 2505 27 "Homo sapiens, *Plasmodium falciparum* 3D7, *Chlamydomonas reinhardtii* GPIC, *Lotus corniculatus* var. japonicus, Danio rerio"
- 2376 2506 24 "Danio rerio, Homo sapiens, *Mus musculus*, *Bacteroides thetaiotaomicron* VPI-5482, *Secale cereale*"
- 2377 2507 29 "*Zea mays*, *Nicotiana tabacum*, *Mus musculus*, *Dictyostelium discoideum*, Homo sapiens, *Sarcophaga peregrina*, *Nostoc* sp. PCC 7120, *Drosophila melanogaster*, *Asterosiphon dichtomus*, *Plasmodium falciparum* 3D7, *Macaca mulatta*, *Hydra vulgaris*, *Pan troglodytes*, *Caenorhabditis elegans*, *Medicago truncatula*, *Lycopersicon pennellii*, Danio rerio" 40
- 2378 2508 38 "*Clostridium tetani* E88, *Fusobacterium nucleatum*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Clostridium perfringens* str. 13, *Staphylococcus epidermidis* ATCC 12228, *Arabidopsis thaliana*, *Staphylococcus epidermidis*, *Suaeda japonica*, Homo sapiens, Stealth virus 1, *Mycoplasma penetrans*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Medicago truncatula*, *Mus musculus*, *Drosophila melanogaster*, *Pyrococcus furiosus* DSM 3638, *Prochlorococcus marinus*, Danio rerio, *Schizosaccharomyces pombe*, *Ozotoceros bezoarticus*" 50

- 2379 2509 23 "Mus musculus, Homo sapiens, Saccharomyces cerevisiae, Caenorhabditis elegans, Chlamydia muridarum, Oryza sativa (japonica cultivar-group), Bacillus halodurans"
- 2380 2510 24 "Homo sapiens, Caenorhabditis elegans, Clostridium tetani E88, Dendrolimus punctatus cytovirus 1, Thermoanaerobacter tengcongensis, Arabidopsis thaliana, Mus musculus, Shewanella oneidensis MR-1, Xenopus laevis"
- 2381 2511 24 "Clostridium perfringens, Clostridium perfringens str. 13, Mus musculus, Homo sapiens, Caenorhabditis elegans, Pan troglodytes, Enterococcus faecalis V583, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Danio rerio" 10
- 2382 2512 25 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio"
- 2383 2513 27 "Homo sapiens, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Coxiella burnetii RSA 493, Pan troglodytes, Oryctolagus cuniculus, Sulfolobus tokodaii"
- 2384 2514 29 "Arabidopsis thaliana, Caenorhabditis elegans, Mus musculus, Homo sapiens, Saccharomyces cerevisiae"
- 2385 2515 27 "Danio rerio, Mus musculus, Homo sapiens, Papio anubis, Clostridium acetobutylicum"
- 2386 2516 31 "Medicago truncatula, Lemur catta, Homo sapiens, Mus musculus, Yaba-like disease virus, Danio rerio, Canis familiaris" 20
- 2387 2517 31 "Homo sapiens, Mus musculus, Triticum aestivum, Caenorhabditis elegans, Crocodylus niloticus, Danio rerio, Nostoc sp. PCC 7120"
- 2388 2518 28 "Drosophila melanogaster, African cassava mosaic virus-[Cameroon], Plasmodium falciparum 3D7, Homo sapiens, Danio rerio, Mus musculus, Hordeum vulgare, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Thermoanaerobacter tengcongensis, Hibiscus chlorotic ringspot virus, Arabidopsis thaliana, Caenorhabditis elegans, Vibrio parahaemolyticus, Leptura modicenota, Leptura arcuata, Leishmania tarentolae, Herpetomonas muscarum"
- 2389 2519 32 "Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Oryza sativa, Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7, Macaca mulatta, Methanosarcina mazei Goe1, Heliothis zea virus 1, Papio anubis, Lactococcus lactis subsp. lactis, Danio rerio, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Pan troglodytes, Pichia pastoris, Schizosaccharomyces pombe, Apis mellifera, Rattus norvegicus" 30
- 2390 2520 28 "Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Mus musculus, Rattus norvegicus, Methanosarcina mazei Goe1, Yersinia pestis KIM, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Sulfolobus tokodaii, Yersinia pestis C092"
- 2391 2521 31 "Drosophila melanogaster, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Brassica napus var. napus, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Caenorhabditis elegans, Sus scrofa, Arabidopsis thaliana, Danio rerio, Listeria monocytogenes, Tachypleus tridentatus" 40
- 2392 2522 28 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mus musculus, Homo sapiens, Papio anubis, Caenorhabditis elegans, Plasmodium falciparum 3D7, Triticum monococcum, Danio rerio, Oryza sativa (japonica cultivar-group), Didelphis virginiana, Shigella flexneri 2a str. 2457T, Dictyostelium discoideum, Drosophila melanogaster, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli O157:H7 EDL933, Arabidopsis thaliana, Schizosaccharomyces 50

- pombe, *Spiroplasma citri*, *Octopus dofleini*, *Escherichia coli*, *Escherichia coli* 0157:H7"
- 2393 2523 30 "Mus musculus, *Dictyostelium discoideum*, *Homo sapiens*, *Podisma pedestris*, *Caenorhabditis elegans*, *Bacillus cereus* ATCC 14579, *Rattus norvegicus*, *Bacillus anthracis* str. Ames, *Ureaplasma urealyticum*, *Chryseobacterium meningosepticum*, *Treponema vincentii*, *Treponema phagedenis*, *Medicago truncatula*, *Drosophila willistoni*, *Oryza sativa* (japonica cultivar-group), *Escherichia coli* 0157:H7 EDL933, *Campylobacter jejuni*, *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Oceanobacillus iheyensis* HTE831, *Danio rerio*, *Trinoton querquedulae*, *Plasmodium berghei*, *Cyanidioschyzon merolae*, *Escherichia coli* 0157:H7" 10
- 2394 2524 24 "Methanosarcina mazei Goe1, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*"
- 2395 2525 27 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Macaca mulatta*, *Caenorhabditis elegans*, *Prochlorococcus marinus*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Oceanobacillus iheyensis* HTE831, *Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis*"
- 2396 2526 24 "Papilio zelicaon, *Homo sapiens*, *Danio rerio*, *Bacteroides thetaiotaomicron* VPI-5482, *Arabidopsis thaliana*, *Bos taurus*"
- 2397 2527 27 "Mus musculus, *Atelerix albiventris*, *Homo sapiens*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Plasmodium falciparum* 3D7, *Bacteroides thetaiotaomicron* VPI-5482, *Vigna radiata*, *Bos taurus*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Caenorhabditis elegans*, *Ciona intestinalis*, *Danio rerio*, *Staphylococcus aureus* subsp. aureus Mu50" 20
- 2398 2528 32 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Caenorhabditis elegans*, *Raphanus sativus*, *Danio rerio*, *Candida albicans*, *Zeylanurotrema sp earei*"
- 2399 2529 36 "Caenorhabditis elegans, *Homo sapiens*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Macrophthalmus brevis*, *Medicago truncatula*, *Schistosoma haematobium*, *Drosophila melanogaster*, *Simopone fulvinodis*, *Aenictus e*" 30
- 2400 2530 32 "Plasmodium falciparum 3D7, *Homo sapiens*, *Mus musculus*, *Notophthalmus viridescens*, *Drosophila pseudoobscura*, *Borrelia burgdorferi* B31, *Percus corsicus*, *Percus reichei*, *Percus grandicollis*, *Percus strictus oberleitneri*, *Percus strictus strictus*, *Percus strictus lacertosus*, *Danio rerio*, *Amsacta moorei* entomopoxvirus, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Rattus norvegicus*, *Drosophila melanogaster*, *Percus cylindricus*, *Arabidopsis thaliana*, *Entamoeba histolytica*, *Saccharomyces cerevisiae*, *Toxoplasma gondii*, *Percus stultus*, *Percus politus*, *Varuna litterata*, *Plasmodium falciparum*, *Porphyra purpurea*, *Trypanoplasma borreli*, *Medicago truncatula*" 40
- 2401 2531 32 "Desulfomicrobium baculatum, *Homo sapiens*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Shewanella oneidensis* MR-1, *Glycine max*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Plasmodium ovale*"
- 2402 2532 29 "Danio rerio, *Mus musculus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Bartonella quintana*, *Mycoplasma synoviae*, *Oryza sativa* (japonica cultivar-group), *Medicago trun* 50

- catula, *Brachycaudus cardui*, *Casimira* sp. CDvD-2003, *Arabidopsis thaliana*, *Staphylococcus epidermidis* ATCC 12228, *Sus scrofa*, *Papio anubis*, *Staphylococcus epidermidis*, *Pan troglodytes*, *Smithia ciliata*, *Bryaspis lupulina*, *Geissaspis descampsi*, *Aeschynomene pfundii*, *Lotus corniculatus* var. japonicus, *Uroleucon erigeronis*, *Uroleucon caligatum*, *Pseudoregma bambucicola*, *Candida albicans*, *Saguinus oedipus*, *Saguinus imperator*, *Aotus trivirgatus*, *Ceratovacuna lanigera*, *Cerataphis lataniae*, *Pseudoregma panicola*, *Ceratovacuna* sp., *Caenorhabditis elegans*"
- 2403 2533 20 "Salmonella typhimurium LT2, Homo sapiens, Archaeoglobus fulgidus DSM 4304, Mus musculus, Methanosarcina mazei Goe1, Danio rerio"
- 2404 2534 29 "Homo sapiens, Bos taurus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Clostridium tetani E88, Mus musculus, Arabidopsis thaliana, Rattus norvegicus, Drosophila melanogaster, Methanosarcina mazei Goe1, Lactococcus lactis subsp. cremoris, Danio rerio, Solanum tuberosum" 10
- 2405 2535 29 "Caenorhabditis elegans, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Danio rerio, Homo sapiens, Sus scrofa, Parana virus, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Microphorus sp. NCSU-99072132, Pyrococcus furiosus DSM 3638, Streptococcus agalactiae NEM316, Lupinus albus, Oryza sativa (japonica cultivar-group)"
- 2406 2536 28 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Danio rerio, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Feline calicivirus" 20
- 2407 2537 28 "Oryza sativa (japonica cultivar-group), Campylobacter fetus, Drosophila melanogaster, Felis catus, Homo sapiens, Mus musculus, Didelphis virginiana, Danio rerio"
- 2408 2538 24 "Grapevine fanleaf virus, Camponotus herculeanus, Homo sapiens, Pan troglodytes, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Musca domestica, Encephalitozoon cuniculi, Hylobates agilis"
- 2409 2539 34 "Plasmodium falciparum 3D7, Bacteriophage bIL170, Homo sapiens, Danio rerio, Xiphophorus maculatus, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Staphylococcus epidermidis, Mannhe" 30
- 2410 2540 27 "Mus musculus, Homo sapiens, Rattus norvegicus, Plasmodium falciparum 3D7, Clostridium tetani E88, Gossypium barbadense, Gossypium hirsutum, Xenopus laevis, Swinepox virus, Oryza sativa (japonica cultivar-group), Lysiphlebus fabarum, Aphidius matricariae, Lotus corniculatus var. japonicus, Methanocaldococcus jannaschii"
- 2411 2541 24 "Homo sapiens, Clostridium perfringens str. 13, Caenorhabditis elegans, Mus musculus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes, Pyrococcus horikoshii, Streptococcus pyogenes SSI-1, Panorpa vulgaris, Arabidopsis thaliana" 40
- 2412 2542 35 "Homo sapiens, Danio rerio, Mus musculus, Amsacta moorei entomopoxvirus, Medicago truncatula, Pan troglodytes, Dictyostelium discoideum, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Caenorhabditis elegans, Caenorhabditis briggsae, Drosophila melanogaster, Arabidopsis thaliana, Sus scrofa, Sulfolobus tokodaii, Synalpheus sanctithomae, Synalpheus gambarelloides, Schizosaccharomyces pombe, Cyprinus carpio, Hordeum vulgare"
- 2413 2543 23 "Homo sapiens, Danio rerio, Caenorhabditis elegans, Pan 50

			troglodytes, <i>Mus musculus</i> , <i>Agrobacterium rhizogenes</i> "	
2414	2544	29	"Mycobacteriophage Bxz1, <i>Coprinopsis cinerea</i> , <i>Homo sapiens</i> , uncultured archaeon 20b-40"	
2415	2545	23	" <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Fritillaria camtschaticensis</i> "	
2416	2546	20	" <i>Homo sapiens</i> , <i>Mus musculus</i> "	
2417	2547	19	<i>Pseudomonas syringae</i> pv. <i>syring</i>	
2418	2548	27	" <i>Homo sapiens</i> , <i>Archaeoglobus fulgidus</i> DSM 4304, <i>Mus musculus</i> , <i>Aspergillus fumigatus</i> "	
2419	2549	20	" <i>Homo sapiens</i> , <i>Arabidopsis thaliana</i> , <i>Mus musculus</i> , <i>Danio rerio</i> , <i>Rotavirus</i> "	10
2420	2550	21	" <i>Homo sapiens</i> , <i>Oryza sativa</i> (japonica cultivar-group)"	
2421	2551	23	" <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Drosophila melanogaster</i> , <i>Helicobacter hepaticus</i> ATCC 51449"	
2422	2552	23	" <i>Homo sapiens</i> , <i>Leishmania major</i> , <i>Ralstonia solanacearum</i> "	
2423	2553	27	" <i>Pseudophycodrys pulcherrima</i> , <i>Homo sapiens</i> , <i>Ginkgo biloba</i> , <i>Mus musculus</i> , <i>Stephanosphaera</i> sp. UTEX-LB 2409, <i>Chlorococcum diplobonticum</i> , <i>Ascochloris multinucleata</i> , <i>Cryptonemia undulata</i> , <i>Suhria vittata</i> , <i>Pterocladia lucida</i> , <i>Taxus baccata</i> , <i>Tsuga canadensis</i> , <i>Pice</i> "	
2424	2554	19	" <i>Homo sapiens</i> , <i>Medicago truncatula</i> , <i>Arabidopsis thaliana</i> , <i>Petroselinum crispum</i> , <i>Mus musculus</i> "	20
2425	2555	30	" <i>Arabidopsis thaliana</i> , <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Streptomyces avermitilis</i> MA-4680, <i>Caenorhabditis elegans</i> "	
2426	2556	23	" <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Vibrio parahaemolyticus</i> , <i>Caenorhabditis elegans</i> "	
2427	2557	27	" <i>Homo sapiens</i> , <i>Oryza sativa</i> (japonica cultivar-group), <i>Mus musculus</i> , <i>Rattus norvegicus</i> , <i>Schizophyllum commune</i> , <i>Danio rerio</i> , <i>Paramecium primaurelia</i> , <i>Dictyostelium discoideum</i> , <i>Staphylococcus epidermidis</i> ATCC 12228, <i>Plasmodium falciparum</i> 3D7, <i>Cochliomyia macellaria</i> , <i>Bos taurus</i> , <i>Caenorhabditis briggsae</i> , <i>Staphylococcus epidermidis</i> , <i>Caenorhabditis elegans</i> "	30
2428	2558	40	" <i>Homo sapiens</i> , <i>Trypanoplasma borreli</i> , <i>Saccharomyces paradoxus</i> , <i>Caenorhabditis elegans</i> , <i>Danio rerio</i> , <i>Mus musculus</i> , <i>Drosophila melanogaster</i> , <i>Plasmodium falciparum</i> 3D7, <i>Lasioglossum titusi</i> , <i>Arabidopsis thaliana</i> , <i>Pseudopterogorgia bipinnata</i> , <i>Didelphis virginiana</i> , <i>Tetrahymena thermophila</i> , <i>Saccharomyces douglasii</i> , <i>Pan troglodytes</i> , <i>Clostridium perfringens</i> str. 13, <i>Apis cerana</i> , <i>Oryza sativa</i> (japonica cultivar-group), <i>Anopheles aquasalis</i> , <i>Schmidtea mediterranea</i> , <i>Arabidopsis lyrata</i> , <i>Human immunodeficiency virus 1</i> , <i>Saccharomyces cerevisiae</i> , <i>Staphylococcus aureus</i> , <i>Rickettsia conorii</i> , <i>Clostridium acetobutylicum</i> , <i>Synechococcus</i> sp. WH 8102, <i>Anopheles kunmingensis</i> , <i>Butyrivibrio fibrisolvens</i> , <i>Amsacta moorei</i> entomopoxvirus, <i>Anopheles gambiae</i> , <i>Lotus corniculatus</i> var. <i>japonicus</i> "	40
2429	2559	31	" <i>Homo sapiens</i> , <i>Prochlorococcus marinus</i> subsp. <i>marinus</i> str. CCMP1375, <i>Mus musculus</i> , <i>Oncorhynchus mykiss</i> , <i>Caenorhabditis elegans</i> , <i>Danio rerio</i> , <i>Oryza sativa</i> (japonica cultivar-group), <i>Medicago truncatula</i> "	
2430	2560	25	" <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Pan troglodytes</i> , <i>Caenorhabditis elegans</i> "	
2431	2561	25	" <i>Homo sapiens</i> , <i>Mus musculus</i> , <i>Salmonella typhi</i> , <i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Typhi</i> "	
2432	2562	22	" <i>Homo sapiens</i> , <i>Drosophila melanogaster</i> , <i>Mus musculus</i> , <i>Caenorhabditis elegans</i> "	
2433	2563	20	" <i>Mus musculus</i> , <i>Homo sapiens</i> , <i>Methanopyrus kandleri</i> AV19,	50

Lycopersicon esculentum"

- 2434 2564 25 "Homo sapiens, Sorex araneus, Caenorhabditis briggsae, Rattus norvegicus, Mus musculus, Takifugu rubripes"
- 2435 2565 31 "Homo sapiens, Pasteurella multocida, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Clostridium perfringens str. 13, Nicotiana tabacum, Caenorhabditis elegans, Rattus norvegicus, Bacillus anthracis str. A2012, Oryza sativa (japonica cultivar-group), Bombus koreanus, Bombus consobrinus wittenburgi, Thermus thermophilus, Vibrio cholerae, Lotus corniculatus var. japonicus, Bacillus anthracis"
- 2436 2566 28 "Homo sapiens, Cyanophora paradoxa, Mus musculus, Arabidopsis thaliana, Chromobacterium violaceum" 10
- 2437 2567 23 "Homo sapiens, Pasteurella multocida, Pichia inositovora, Danio rerio, Schistosoma mansoni"
- 2438 2568 46 "Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuokella multacida, Arcanobacterium pyogenes, Bifidobacterium sp. IS03519, Mus musculus, Homo sapiens, Lactobacillus plantarum WCFS1"
- 2439 2569 200 "Arcanobacterium pyogenes, Bifidobacterium sp. IS03519, Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuokella multacida, Mus musculus, Homo sapiens"
- 2440 2570 200 "Arcanobacterium pyogenes, Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuokella multacida, Bifidobacterium sp. IS03519, Megasphaera elsdenii, uncultured bacterium, Homo sapiens, Mycoplasma penetrans, Drosophila melanogaster, Mus musculus, Streptococcus pyogenes" 20
- 2441 2571 200 "uncultured bacterium, Arcanobacterium pyogenes, Megasphaera elsdenii, Bifidobacterium sp. IS03519, Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuokella multacida, Bacteroides sp. 139, Homo sapiens, Oryza sativa (japonica cultivar-group), Chromobacterium violaceum, Danio rerio"
- 2442 2572 200 "uncultured bacterium, Arcanobacterium pyogenes, Bifidobacterium sp. IS03519, Megasphaera elsdenii, Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuokella multacida, Homo sapiens, Drosophila melanogaster, Sus scrofa, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus" 30
- 2443 2573 200 "uncultured bacterium, Arcanobacterium pyogenes, Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuokella multacida, Megasphaera elsdenii, Bifidobacterium sp. IS03519, Homo sapiens, Oryza sativa (japonica cultivar-group)"
- 2444 2574 200 "uncultured bacterium, Arcanobacterium pyogenes, Bifidobacterium sp. IS03519, Megasphaera elsdenii, Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuokella multacida, Aphanizomenon ovalisporum, Mus musculus, Homo sapiens, Vibrio vulnificus CMCP6, Clostridiaceae str. K10, Vibrio vulnificus"
- 2445 2575 200 "uncultured bacterium, Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuokella multacida, Megasphaera elsdenii, Bifidobacterium sp. IS03519, Arcanobacterium pyogenes, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Drosophila melanogaster, Danio rerio" 40
- 2446 2576 200 "uncultured bacterium, Arcanobacterium pyogenes, Bifidobacterium sp. IS03519, Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuokella multacida, Megasphaera elsdenii, Homo sapiens, Clostridiaceae str. K10, Streptomyces avermitilis MA-4680, Arabidopsis thaliana, Mus musculus, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon)"
- 2447 2577 200 "Arcanobacterium pyogenes, Bifidobacterium sp. IS03519, 50

- Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuoella multacida, Lactococcus lactis, Listeria monocytogenes, Megasphaera elsdenii, uncultured bacterium, Homo sapiens, Oryza sativa (japonica cultivar-group)"
- 2448 2578 200 "Arcanobacterium pyogenes, Bifidobacterium sp. IS03519, Roseburia sp. A2-183, Butyrivibrio fibrisolvens, Mitsuoella multacida, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Pirellula sp."
- 2449 2579 200 "Arcanobacterium pyogenes, Roseburia sp. A2-183, Clostridium difficile, Lactobacillus plantarum, Streptococcus agalactiae 2603V/R, Clostridium perfringens, Lactococcus lactis, Streptococcus pneumoniae, Butyrivibrio fibrisolvens, Campylobacter jejuni, Ureaplasma urealyticum, Streptococcus agalactiae, Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50, Streptococcus mutans, Enterococcus faecalis, Homo sapiens, Cloning vector pAM120, Mus musculus, Listeria monocytogenes, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Tupaia paramyxovirus, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Acinetobacter baumannii, Caenorhabditis elegans, Clostridium acetobutylicum, Xenopus laevis, Danio rerio" 10
- 2450 2580 200 "Arcanobacterium pyogenes, Caenorhabditis elegans, Pseudomonas syringae pv. tomato str. DC3000, Homo sapiens, Mus musculus, Caenorhabditis briggsae" 20
- 2451 2581 62 "Arcanobacterium pyogenes, Neurospora crassa, Mus musculus, Streptomyces avermitilis MA-4680, Aeropyrum pernix, Homo sapiens, Streptomyces avermitilis"
- 2452 2582 23 "Homo sapiens, Mus musculus"
- 2453 2583 19 "Mus musculus, Arabidopsis thaliana, Vibrio cholerae, Homo sapiens"
- 2454 2584 21 "Caenorhabditis elegans, Homo sapiens, Oryza sativa, Mus musculus"
- 2455 2585 19 "Mus musculus, Homo sapiens"
- 2456 2586 24 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Chlamydomonas reinhardtii, Chlamydomonas reinhardtii AR39, Chlamydomonas reinhardtii J138, Chlamydomonas reinhardtii TW-183" 30
- 2457 2587 27 "Caenorhabditis elegans, Arabidopsis thaliana, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Mus musculus, Clostridium tetani E88, Bacillus thuringiensis, Danio rerio, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Diplectrum formosum"
- 2458 2588 30 "Mus musculus, Danio rerio, Caenorhabditis elegans, Colinva virginiensis, Plasmodium falciparum, Homo sapiens, Clostridium perfringens, Clostridium perfringens str. 13, Cyprinus carpio, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Clostridium beijerinckii, Equus caballus, Didelphis virginiana, Drosophila melanogaster, Prochlorococcus marinus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120" 40
- 2459 2589 23 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Sinorhizobium fredii, Rhizobium sp. NGR234"
- 2460 2590 32 "Homo sapiens, Drosophila melanogaster, Dictyostelium discoideum, Campylobacter jejuni subsp. jejuni NCTC 11168, Drosophila bifasciata, Plasmodium falciparum 3D7, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Oryza sativa, Pan troglodytes, Staphylococcus epidermidis, Mus musculus," 50

- Populus kitakamiensis, Oryctolagus cuniculus, Bacillus anthracis str. Ames, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Biomphalaria glabrata, A thalamia hyalina, Fusobacterium nucleatum, Arabidopsis thaliana, Zea mays, Rattus norvegicus, Plasmodium falciparum, Humulus japonicus, Humulus lupulus, Schizosaccharomyces pombe"
- 2461 2591 27 "Saccharomyces cerevisiae, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus"
- 2462 2592 27 "Danio rerio, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Caenorhabditis elegans" 10
- 2463 2593 26 "Pan troglodytes, Homo sapiens, Mus musculus, Caenorhabditis elegans, Poecilia reticulata, Oryza sativa (japonica cultivar-group)"
- 2464 2594 23 "Homo sapiens, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Branchiostoma floridae, Salmonella enterica subsp. enterica serovar Typhi, Mus musculus"
- 2465 2595 26 "Mus musculus, Homo sapiens"
- 2466 2596 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Prochlorococcus marinus"
- 2467 2597 19 "Homo sapiens, Mus musculus, Neurospora crassa"
- 2468 2598 26 "Homo sapiens, Mus musculus, Thermotoga maritima, Rattus norvegicus, Vibrio parahaemolyticus, Methanothermobacter thermoautotrophicus, Haemophilus influenzae Rd KW20, Nostoc sp. PCC 7120" 20
- 2469 2599 25 "Mus musculus, Homo sapiens, Yersinia pestis KIM, Yersinia pestis C092, Drosophila melanogaster, Cavia porcellus, Danio rerio"
- 2470 2600 24 "Mus musculus, Homo sapiens, Bacillus anthracis str. Ames, Methylobacterium extorquens, Caenorhabditis elegans"
- 2471 2601 26 "synthetic construct, Homo sapiens, Oxytricha longa, Blastocladiella britannica, Oryza sativa (japonica cultivar-group), Strongylocentrotus purpuratus, Gallus gallus, Leptosphaeria maculans, Embellisia sp. C4, Diaporthe ambigua, Glomerella acutata, Colletotrichum" 30
- 2472 2602 24 "Mus musculus, Streptococcus pyogenes MGAS315, Homo sapiens, Sinorhizobium meliloti, Streptococcus pyogenes SSI-1, Arabidopsis thaliana"
- 2473 2603 20 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 2474 2604 21 "Shewanella oneidensis MR-1, Drosophila melanogaster, Homo sapiens, Xanthomonas campestris pv. campestris str. ATCC 33913"
- 2475 2605 21 "Methanocaldococcus jannaschii, Caenorhabditis elegans, Helicobacter sp. MIT 01-5529B, Pseudomonas aeruginosa PA01, Pseudomonas putida K T2440, Caulobacter crescentus CB15, Homo sapiens, Chromobacterium violaceum, Mus musculus, Rhodobacter capsulatus" 40
- 2476 2606 21 "Homo sapiens, Triticum aestivum, Mus musculus, Aegilops taenarioides, Aegilops taenarioides" 40
- 2477 2607 24 "Mus musculus, Sorghum bicolor, Homo sapiens, Pyrococcus furiosus DSM 3638, Leishmania major, Bradyrhizobium japonicum USDA 110, Hepatitis C virus"
- 2478 2608 20 "Lactobacillus helveticus, Homo sapiens, synthetic construct, Enterobacteriophage MS2"
- 2479 2609 19 "Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Mus musculus"
- 2480 2610 24 "Mus musculus, Bacillus subtilis, Bacillus subtilis subs" 50

- p. subtilis str. 168, Arabidopsis thaliana, Homo sapiens, Trypanosoma brucei"
- 2481 2611 24 "Homo sapiens, Caenorhabditis elegans"
- 2482 2612 24 "Homo sapiens, Trypanosoma cruzi, Sus scrofa"
- 2483 2613 19 "Homo sapiens, Citrus tristeza virus, Nostoc sp. PCC 7120"
- 2484 2614 25 "Homo sapiens, Danio rerio, Sinorhizobium meliloti, Mus musculus, Methanococcus maripaludis, Bacteroides thetaiotaomicron VPI-5482, Deinococcus radiodurans"
- 2485 2615 23 "Homo sapiens, Mus musculus, Danio rerio, Anopheles gambiae" 10
- 2486 2616 28 "Sinorhizobium meliloti, Oryza sativa (japonica cultivar-group), Neurospora crassa, Arabidopsis thaliana, Mus musculus, Walterinnesia aegyptia, Homo sapiens"
- 2487 2617 22 "Lotus corniculatus var. japonicus, Bos taurus, Homo sapiens, Drosophila pseudoobscura"
- 2488 2618 26 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, uncultured marine gamma proteobacterium EBA C31A08"
- 2489 2619 24 "Homo sapiens, Mus musculus"
- 2490 2620 25 "Bordetella bronchiseptica, Bordetella parapertussis, Bordetella pertussis, Homo sapiens, Mus musculus, Archaeoglobus fulgidus DSM 4304, Zea mays, Danio rerio" 20
- 2491 2621 28 "Homo sapiens, Rattus norvegicus, Streptomyces coelicolor A3(2), Danio rerio, Enterobacteria phage T4, Mus musculus, Oryza sativa (japonica cultivar-group), Bacteriophage RB70, Bacteriophage KC69, Bacteriophage RB15, Bacteriophage RB2, Bacteriophage Tulb, Bacteriophage Ox2, Bacteriophage K3, Helicobacter pylori 26695, Helicobacter pylori J99, Bacteriophage M1, Enterobacteria phage T6, Enterobacteria phage T2"
- 2492 2622 94 "Desulfomicrobium baculatum, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Sus scrofa, Lymantria dispar nucleopolyhedrovirus, Danio rerio, Arabidopsis thaliana, Enterococcus faecalis V583, Dictyostelium discoideum, Drosophila melanogaster, Schizosaccharomyces japonicus, Pseudomonas putida KT2440, Human herpesvirus 6, Enterococcus faecalis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Human herpesvirus 6B, Rattus norvegicus, Clostridium perfringens str. 13" 30
- 2493 2623 31 "Homo sapiens, Mus musculus, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Phyciodes picta, Danio rerio, Arabidopsis thaliana, Oryzias latipes, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus Mu50, Crematogaster captiosa, Pan troglodytes, Borrelia burgdorferi B31, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Drosophila willistoni, Sus scrofa, Psychotria avilensis, Pyrobaculum aerophilum str. IM2, Lotus corniculatus var. japonicus, Thermoplasma volcanium, Medicago truncatula, Uroleucon jaceicola, Uroleucon caligatum, Uroleucon solidaginis, Uroleucon jaceae, Uroleucon aeneum, Uroleucon astronomus, Uroleucon rudbeckiae, Uroleucon ambrosiae, Guillardia theta, Telosma accedens, Lupinus luteus" 40
- 2494 2624 29 "Mus musculus, Homo sapiens, Schizosaccharomyces pombe, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, synthetic construct" 50

- 2495 2625 27 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Sus scrofa, Clostridium acetobutylicum, Helicobacter hepaticus ATCC 51449"
- 2496 2626 77 "Oceanobacillus iheyensis HTE831, Bacillus firmus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Lactococcus lactis, Clostridium acetobutylicum, Zea mays, Bacillus halodurans, Triticum aestivum, Rickettsia conorii, Vibrio cholerae, Prochlorococcus marinus subsp. marinus str. CCMP1375, Clostridium perfringens str. 13, Rattus norvegicus, Plasmodium falciparum 3D7, Capsicum annum, Ureaplasma urealyticum, Danio rerio, Nicotiana tabacum, Guillardia theta, Mus musculus, Saccharomyces cerevisiae, Drosophila melanogaster, Homo sapiens, Methanosarcina acetivorans C2A, Cyanidium caldarium, Nonomuraea sp. ATCC 39727, Helibacillus mobilis" 10
- 2497 2627 98 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Buchnera aphidicola str. Sg (Schizaphis graminum), Bacillus firmus, Oceanobacillus iheyensis HTE831, Candidatus Blochmannia floridanus, Chlamydophila pneumoniae CWL029, Vibrio cholerae, Chlamydophila pneum"
- 2498 2628 122 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Campylobacter jejuni subsp. jejuni NCTC 11168, Clostridium tetani E88, Medicago sativa, Streptococcus agalactiae 2603V/R, Fusobacterium nu"
- 2499 2629 24 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Vigna unguiculata, Amsacta moorei entomopoxvirus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Streptococcus pneumoniae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Drosophila buzzatii, Medicago truncatula" 20
- 2500 2630 50 "Haemophilus influenzae Rd KW20, Biomphalaria glabrata, Yersinia pestis KIM, Candidatus Blochmannia floridanus, Yersinia pestis C092, Pirellula sp., Lycopersicon esculentum, Buchnera aphidicola str. Bp (Baizongia pistaciae), Vibrio vulnificus CMCP6, Homo sapiens, Mus musculus, Schizosaccharomyces pombe, Drosophila melanogaster, Plasmodium falciparum 3D7, Schistosoma mansoni, Clostridium perfringens, Clostridium perfringens str. 13" 30
- 2501 2631 36 "Listeria monocytogenes, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Homo sapiens, Solanum carolinense, Pan troglodytes, Xylella fastidiosa Temecula1, Yersinia pestis KIM, Arabidopsis thaliana, Xylella fastidiosa 9a5c, Chlamydophila pneumoniae CWL029, Mus musculus, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Haemophilus ducreyi 35000HP, Yersinia pestis C092, Listeria innocua, Tropheryma whipplei str. Twist, Chlamydophila pneumoniae TW-183, Tropheryma whipplei TW08/27, Clostridium perfringens str. 13"
- 2502 2632 32 "Homo sapiens, Pyrococcus furiosus DSM 3638, Cryptosporidium parvum, Bacillus anthracis str. Ames, Streptococcus pyogenes MGAS8232, Campylobacter jejuni subsp. jejuni NCTC 11168, Bacillus cereus ATCC 14579, Sulfolobus solfataricus, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Drosophila melanogaster, Anopheles squamifemur, Methanosarcina acetivorans C2A, Agrocybe aegerita, Staphylococcus epidermidis, Staphylococcus aureus, Staphylococcus aureus subsp. aureus MW2, Lactococcus lactis, Human immunodeficiency virus 1" 40
- 2503 2633 27 "Homo sapiens, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Candidatus Blochmannia floridanus" 50

- 2504 2634 28 "Homo sapiens, Danio rerio, Mus musculus, Xenopus laevis, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Echimys chrysurus, Capromys pilorides, Arabidopsis thaliana, Bos taurus, Capsicum annuum, Sulfolobus tokodaii"
- 2505 2635 32 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mus musculus, Vibrio vulnificus CMCP6, Homo sapiens, Danio rerio"
- 2506 2636 36 "Homo sapiens, Cyanidium caldarium, Caenorhabditis elegans, Mus musculus, Papio anubis, Spodoptera exigua nucleopolyhedrovirus, Arabidopsis thaliana, Danio rerio, Medicago truncatula, Oryza sativa (japonica cultivar-group), Edwardsiella ictaluri, Candida albicans, Plasmodium falciparum 3D7, Anopheles gambiae, Oceanobacillus iheyensis HTE831" 10
- 2507 2637 33 "Danio rerio, Homo sapiens, Caenorhabditis elegans, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mus musculus, Rickettsia prowazekii, Arabidopsis thaliana, Medicago truncatula, Candidatus Carsonella ruddii, Dictyostelium discoideum, Drosophila melanogaster, Furcarrcturus polarsterni, Variola virus, Variola minor virus, Caenorhabditis briggsae, Plasmodium vivax, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Ascaris suum, Zucchini yellow mosaic virus, Pan troglodytes, Schizosaccharomyces pombe, Variola major virus" 20
- 2508 2638 28 "Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Terebratalia transversa, Cucumis sativus, Caenorhabditis elegans, Macaca fascicularis"
- 2509 2639 31 "Homo sapiens, Danio rerio, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Caenorhabditis elegans, Plasmodium falciparum 3D7, Medicago truncatula, Borrelia burgdorferi B31, Colpidium campylum, Tribolium castaneum, Swinepox virus, Ureaplasma urealyticum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2"
- 2510 2640 26 "Homo sapiens, Bacillus anthracis str. Ames, Mus musculus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Neurospora crassa, Bacillus thuringiensis serovar morrisoni, Drosophila melanogaster, Deltistes luxatus, Oryza sativa (japonica cultivar-group), Listeria monocytogenes" 30
- 2511 2641 26 "Homo sapiens, Human herpesvirus 6, Drosophila melanogaster, Trypanosoma brucei, Danio rerio, Caenorhabditis elegans, Aquifex aeolicus VF5, Mus musculus, Drosophila virilis, Pan troglodytes, Anopheles bancroftii, Chromodoris luteorosea, Prochlorococcus marinus, Allium cepa, Rattus norvegicus, Tegula tridentata, Adoxophyes orana granulovirus"
- 2512 2642 29 "Rattus norvegicus, Caenorhabditis elegans, Homo sapiens, Arabidopsis thaliana, Mus musculus, Medicago truncatula, Guillardia theta, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Danio rerio" 40
- 2513 2643 27 "Bacillus anthracis str. Ames, Homo sapiens, Etheostoma simoterum simoterum, Vipera ammodytes, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Mus musculus, Bacillus halodurans, Micrococcus luteus"
- 2514 2644 25 "Coleochaete sp. 489a1, Homo sapiens, Nitella praelonga, Coleochaete irregularis, Nitella opaca, Lychnothamnus barbatus, Pasteurella multocida subsp. gallicida, Pasteurella multocida subsp. multocida, Pasteurella multocida, Buchnera aphidicola (Myzus persicae), Buchnera aphidicola (Macrosiphum rosae), Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Mus musculus, Podarcis muralis, Sminthopsis macroura, Cosmocladium perissum, Tolypella prolifera, Bu 50

- chnera aphidicola (*Thelaxes suberi*), *Danio rerio*, *Haemophilus influenzae*"
- 2515 2645 24 "Mus musculus, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Deronectes fairmail ei*, *Listeria monocytogenes*, *Ciona intestinalis*, Plasmid ColBM-C1139, Plasmid pCo IBM-C1139"
- 2516 2646 24 "Mus musculus, *Homo sapiens*, *Pseudomonas putida* KT2440, *Danio rerio*, *Mycoplasma pulmonis*, *Caenorhabditis elegans*"
- 2517 2647 43 "Pasteurella multocida, *Chlamydia muridarum*, *Shewanella oneidensis* MR-1, *Mus musculus*, *Arabidopsis thaliana*, *Atelerix albiventris*, *Chlamydomypha caviae* GPIC, *Homo sapiens*, *Danio rerio*, *Diadromus pulchellus* ascovirus 4a, *Leuciscus cephalus*" 10
- 2518 2648 56 "Campylobacter jejuni subsp. jejuni NCTC 11168, *Campylobacter jejuni*, *Candidatus Blochmannia floridanus*, *Haemophilus influenzae* Rd KW20, *Homo sapiens*, *Mus musculus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Lactococcus lactis* subsp. lactis, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Dictyostelium discoideum*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Anopheles gambiae*, *Haemophilus ducreyi* 35000HP, *Clostridium perfringens* str. 13, *Bacillus cereus* ATCC 14579, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Buchnera aphidicola*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Clostridium acetobutylicum*, *Oryza sativa* (*japonica* cultivar-group), *Oceanobacillus iheyensis* HTE831, *Drosophila melanogaster*, *Rattus norvegicus*" 20
- 2519 2649 58 "Haemophilus influenzae Rd KW20, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Pseudoeurycea* sp. nov. GGB-3, *Clostridium perfringens* str. 13, *Papio anubis*, *Oryza sativa* (*japonica* cultivar-group), *Pseudoeurycea mystax*, *Pasteurella multocida*, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Medicago truncatula*"
- 2520 2650 44 "Oceanobacillus iheyensis HTE831, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Homo sapiens*, *Tropheryma whipplei* str. Twist, *Danio rerio*, *Tropheryma whipplei* TW08/27, *Drosophila melanogaster*, *Phthorimaea operculella* granulovirus, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Mus musculus*, *Xylella fastidiosa* Temecula1, Bacteriophage phi3626, *Xylella fastidiosa* 9a5c, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group)" 30
- 2521 2651 29 "Homo sapiens, *Mus musculus*, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Oryza sativa* (*japonica* cultivar-group), *Nostoc* sp. PCC 7120"
- 2522 2652 23 "Homo sapiens, *Enterococcus faecalis* V583, *Pan troglodytes*, *Mus musculus*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Mamestra configurata* nucleopolyhedrovirus, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Danio rerio*"
- 2523 2653 24 "Pseudomonas putida KT2440, *Plasmodium falciparum* 3D7, *Melanoplus sanguinipes* entomopoxvirus, *Drosophila melanogaster*, *Homo sapiens*, *Saccharomyces cerevisiae*, *Sus scrofa*, *Pasteurella multocida*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Curetis acuta*, *Arabidopsis thaliana*" 40
- 2524 2654 30 "Homo sapiens, *Methanocaldococcus jannaschii*, *Mus musculus*, *Arabidopsis thaliana*, *Bacillus cereus* ATCC 14579, *Enterococcus faecalis* V583"
- 2525 2655 34 "Streptococcus pneumoniae R6, *Streptococcus pneumoniae* TIGR4, *Streptococcus sobrinus*, *Streptococcus salivarius*, *Streptococcus sanguinis*, *Streptococcus oralis*, *Streptococcus pneumoniae*, *Homo sapiens*, *Streptococcus agalactiae* 2603V/R, *Mycoplasma hyopneumoniae*, *Pseudoalteromonas tunicata*, *Streptoco* 50

- ccus agalactiae NEM316, Rattus norvegicus, Mus musculus, Danio rerio, Nitrosomonas europaea ATCC 19718"
- 2526 2656 32 "Pongo pygmaeus, Homo sapiens, Schizosaccharomyces pombe, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Aeromonas hydrophila, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Mus musculus, Mycoplasma pulmonis, Leuconostoc mesenteroides, Arabidopsis thaliana, Caenorhabditis briggsae, Pan troglodytes, Danio rerio, Caenorhabditis elegans"
- 2527 2657 27 "Homo sapiens, Saccharomyces cerevisiae, Vibrio vulnificus CMCP6, Arabidopsis thaliana, Schizosaccharomyces pombe, Papio anubis, Mus musculus, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Neospora caninum, Impatiens necrotic spot virus, Danio rerio, Staphylococcus epidermidis, Caenorhabditis elegans, Toxoplasma gondii, Marchantia polymorpha" 10
- 2528 2658 29 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Bacillus firmus, Plasmodium falciparum 3D7, Gallus gallus, Haemophilus ducreyi 35000HP, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Brassica napus var. napus, Caenorhabditis elegans, Onchocerca volvulus, Bacillus halodurans"
- 2529 2659 28 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Macaca mulatta, Dictyostelium discoideum, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Helobdella stagnalis, Wiebesia punctatae, Papio anubis, Plasmodium vivax, Caenorhabditis elegans, Danio rerio" 20
- 2530 2660 31 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Rhodomonas salina, Aedes aegypti, Neurospora intermedia, Rattus norvegicus, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Fowlpox virus, Listeria innocua"
- 2531 2661 23 "Clostridium acetobutylicum, Daphnia ambigua, Homo sapiens, Listeria innocua, Mus musculus, Streptococcus agalactiae 2603V/R, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lactococcus lactis subsp. lactis, Streptococcus agalactiae NEM316, Mycoplasma pneumoniae, Arabidopsis thaliana, Tenebrio molitor, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum, Danio rerio, Lactococcus lactis" 30
- 2532 2662 34 "Chlamydia muridarum, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Coronopus squamatus, Chlamydomonas reinhardtii, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Danio rerio, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Prochlorococcus marinus, Caenorhabditis briggsae, Plasmodium falciparum, Helicobacter hepaticus ATCC 51449" 40
- 2533 2663 41 "Mus musculus, Danio rerio, Streptococcus mutans UA159, Arabidopsis thaliana, Homo sapiens, Bacteriophage LL-H, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pasteurella multocida, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Pyrococcus furiosus DSM 3638, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum, Acinetobacter lwoffii, Medicago truncatula"
- 2534 2664 23 "Homo sapiens, Danio rerio, Borrelia burgdorferi B31, Drosophila melanogaster, Papio anubis, Clostridium acetobutylicum, Rattus norvegicus, Prochlorococcus marinus, Caenorhabditis briggsae, Caenorhabditis elegans, Po 50

- rphyromonas gingivalis W83, Oryza sativa (japonica cultivar-group), Halichoeres tenuispinnis, Ostrinia nubilalis"
- 2535 2665 31 "Homo sapiens, Zea mays, Mus musculus, Danio rerio, Clostridium tetani E88, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Branchiostoma floridae, Lotus corniculatus var. japonicus, Takifugu rubripes, Rattus norvegicus"
- 2536 2666 27 "Lactococcus lactis subsp. cremoris, Mus musculus, Caenorhabditis elegans, Rattus norvegicus, Homo sapiens, Listeria monocytogenes, Dictyostelium discoideum, Drosophila melanogaster, Mason-Pfizer monkey virus, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Oceanobacillus ihayensis HTE831, Saccharomyces cerevisiae, Clostridium intestinalis"
- 2537 2667 53 "uncultured marine gamma proteobacterium EBAC31A08, Haemophilus influenzae Rd KW20, Mus musculus, Homo sapiens, Zea mays, Pan troglodytes, Bacillus thuringiensis serovar dakota, Meleagris gallopavo, Pleurotricha lanceolata, Chlorobium tepidum TLS, Vibrio cholerae, Saccharomyces cerevisiae"
- 2538 2668 24 "Homo sapiens, Drosophila melanogaster, Ambystoma mexicanum, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Plasmodium falciparum, Plasmodium falciparum 3D7, Danio rerio"
- 2539 2669 35 "Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Caenorhabditis elegans, Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Oryctolagus cuniculus, Mycoplasma fermentans, Arabidopsis thaliana, Danio rerio"
- 2540 2670 31 "Mus musculus, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum, Plasmodium falciparum 3D7, Danio rerio, Solanum bulbocastanum, Rattus norvegicus, Drosophila pseudoobscura, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Chlamydomonas pneumoniae TW-183, Bos taurus, Bacillus cereus ATCC 14579, Pan troglodytes, Dictyostelium discoideum, Lucilia cuprina, Sus scrofa, Leptospira interrogans, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa, Amsacta moorei entomopoxvirus, Medicago truncatula, Sulfolobus tokodaii, Saccharomyces cerevisiae, Schizosaccharomyces pombe"
- 2541 2671 37 "Dictyostelium discoideum, Homo sapiens, Danio rerio, Drosophila melanogaster, Clostridium acetobutylicum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Oryza sativa (japonica cultivar-group), Mus musculus, Buchnera aphidicola str. Bp (Bai)"
- 2542 2672 31 "Mus musculus, Caenorhabditis briggsae, Bos taurus, Medicago truncatula, Homo sapiens, Macaca fascicularis, Drosophila melanogaster, Rickettsia conorii, Buchnera aphidicola str. Bp (Baizongia pistaciae), Methanosarcina mazei Goe1, Clostridium tetani, Arabidopsis thaliana, Plasmodium falciparum 3D7, Dreissena polymorpha, Danio rerio, Flaveria trinervia, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Mycoplasma penetrans, Porphyra purpurea, Caenorhabditis elegans, Spiroplasma citri"
- 2543 2673 30 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Danio rerio, Bacillus anthracis str. Ames, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Anopheles minimus, Candidatus Blochmannia floridanus, Saccharomyces cerevisiae, Hydra vulgaris, Cyclorhynchus compressa, Borealis schlumbergeri, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Caenorhabditis briggsae, Tribolium castaneum, Mycoplasma hominis, Oryza sativa (japonica cultivar-group), Gallus gallus, Lucilia cuprina, Brassica napus"

- 2544 2674 32 "Mus musculus, Drosophila melanogaster, Homo sapiens, Candidatus Blochmannia floridanus, Danio rerio, Clostridium perfringens str. 13, Ceratitidis capitata, Clostridium butyricum, Schmidtea mediterranea, Plasmodium falciparum 3D7, Prochlorococcus marinus, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Clostridium tetani E88, Buchnera aphidicola str. Sg (Schizaphis graminum), Thermoanaerobacter tengcongensis, Schizophyllum commune, Pedioplanis namaquensis, Oryza sativa, Dimastigella mimosa, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (indica cultivar-group), Lotus corniculatus var. japonicus, Fowlpox virus, Ambrostoma quadriimpressum, Bacillus subtilis subsp. subtilis str. 168, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Lactococcus lactis, Nicotiana glauca"
- 2545 2675 24 "Mus musculus, Danio rerio, Homo sapiens"
- 2546 2676 24 "Homo sapiens, Pan troglodytes, Mus musculus, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Tomato big bud phytoplasma"
- 2547 2677 27 "Homo sapiens, Caenorhabditis briggsae, Sinapis alba, Mus musculus, Mucor circinelloides f. lusitanicus, Oryza sativa (japonica cultivar-group), Pisum sativum, Mycoplasma penetrans, Danio rerio"
- 2548 2678 31 "Caenorhabditis elegans, Danio rerio, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Homo sapiens, Streptococcus pyogenes SSI-1, Rattus norvegicus, Saccharomyces cerevisiae, Entamoeba histolytica, Porphyra purpurea"
- 2549 2679 28 "Mus musculus, Homo sapiens, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Phyllotis xanthopygus, Oligoryzomys fornesi, Arabidopsis thaliana, Rattus sp., Danio rerio, Synechocystis sp. PCC 6803, Bacillus halodurans"
- 2550 2680 24 "Homo sapiens, Mus musculus, Streptococcus agalactiae 2603V/R, Pan troglodytes, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Sus scrofa, Sweet potato feathery mottle virus, Oryza sativa (japonica cultivar-group)"
- 2551 2681 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Listeria innocua, Aquifex aeolicus VF5, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Candidatus Blochmannia floridanus, Human immunodeficiency virus 1, Danio rerio, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Humulus lupulus"
- 2552 2682 27 "Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Homo sapiens, Mus musculus, Chlorobium tepidum TLS, Takifugu rubripes, Listeria innocua, Helicobacter hepaticus ATCC 51449"
- 2553 2683 24 "Homo sapiens, Xenopus laevis, Mus musculus, Staphylococcus epidermidis, Ciona intestinalis, Bacillus anthracis str. Ames, Goatpox virus, Clostridium acetobutylicum, Danio rerio"
- 2554 2684 24 "Homo sapiens, Danio rerio, Mus musculus, Thermoplasma volcanium, Caenorhabditis elegans"
- 2555 2685 29 "Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Medicago truncatula, Homo sapiens, Pan troglodytes, Mus musculus, Thermoanaerobacter tengcongensis, Rattus norvegicus, Mycoplasma penetrans, Streptococcus thermophilus bacteriophage Sfi21, Danio rerio, Clostridium perfringens"

ngens str. 13"

2556 2686 26 "Arabidopsis thaliana, Homo sapiens, Danio rerio, Bos ta
urus, Drosophila melanogaster, Solanum tuberosum, Fusobacterium nucleatum subsp.
nucleatum ATCC 25586, Rickettsia prowazekii, Mus musculus"

2557 2687 28 "Homo sapiens, Drosophila melanogaster, Mus musculus, Or
yza sativa (japonica cultivar-group), Mycoplasma penetrans, Arabidopsis thaliana
, Hordeum vulgare subsp. vulgare, Danio rerio, Pan troglodytes, Clostridium perf
ringens str. 13"

2558 2688 28 "Mus musculus, Homo sapiens, Drosophila melanogaster, Ca
enorhabditis elegans, Pan troglodytes, Medicago truncatula, Saccharomyces cerevi
siae, Danio rerio, Clostridium perfringens str. 13" 10

2559 2689 28 "Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Mu
s musculus, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, O
ryza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila mela
nogaster, Lemur catta, Escherichia coli, Rickettsia conorii, Arabidopsis thalian
a, Caenorhabditis elegans, Danio rerio, Oryzias latipes"

2560 2690 39 "Homo sapiens, Danio rerio, Dictyostelium discoideum, Ar
abidopsis thaliana, Wigglesworthia glossinidia endosymbiont of Glossina brevipal
pis, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Staphylococc
us epidermidis ATCC 12228, Plasmodium falc" 20

2561 2691 25 "Homo sapiens, Anabaena sp., Nostoc sp. PCC 7120, Shigel
la flexneri 2a str. 2457T, Shigella flexneri 2a str. 301, Pan troglodytes, Mus m
usculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Drosophila m
elanogaster, Escherichia coli CFT073, Caenorhabditis elegans, Escherichia coli O
157:H7 EDL933, Escherichia coli K12, Caenorhabditis briggsae, Danio rerio, Esche
richia coli O157:H7, Escherichia coli"

2562 2692 36 "Homo sapiens, Yersinia pestis KIM, Yersinia pestis C092
, Mus musculus, Drosophila melanogaster, Bacteriophage bIL170, Danio rerio, Eugl
ena longa, Bacteriophage sk1, Caenorhabditis elegans, Medicago sativa, Bacteriop
hage phi-41" 30

2563 2693 27 "Cicer arietinum, Drosophila melanogaster, Lotus cornicu
latus var. japonicus, Homo sapiens, Caenorhabditis elegans, Mus musculus, Pneumo
cystis carinii, Saccharomyces cerevisiae, Danio rerio"

2564 2694 23 "Mus musculus, Homo sapiens, Gallus gallus, Methanotherm
obacter thermautotrophicus, Oryza sativa (japonica cultivar-group), Danio rerio"

2565 2695 23 "Homo sapiens, Mus musculus, Staphylococcus aureus, Stre
ptococcus mutans UA159, Plasmodium falciparum 3D7, Zea mays, Oceanobacillus ihey
ensis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus su
bsp. aureus MW2, Helicobacter pylori 26695, Helicobacter pylori J99, Clostridium
perfringens, Staphylococcus aureus subsp. aureus Mu50" 40

2566 2696 35 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Caeno
rhabditis elegans, Oryza sativa (japonica cultivar-group), Sulfolobus solfataric
us, Medicago truncatula, Rattus norvegicus, Streptococcus mutans UA159, Plasmodi
um falciparum 3D7, Danio rerio, Hepatitis A virus"

2567 2697 28 "Drosophila melanogaster, Mus musculus, Homo sapiens, Me
dicago truncatula, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica c
ultivar-group), Carassius auratus"

2568 2698 24 "Homo sapiens, Mus musculus, Oryza sativa (japonica cult
ivar-group), Dictyostelium discoideum, Leptospira interrogans serovar lai str. 5
6601, Tolypocladium inflatum, Hypocrea koningii, Fusarium oxysporum f. sp. lycop 50

- ersici, Cucumis melo, Hypocrea jecorina"
- 2569 2699 28 "Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Mus musculus, Papio anubis, Ectromelia virus, Staphylococcus aureus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 2570 2700 28 "Caenorhabditis elegans, Homo sapiens, Canis familiaris, Mus musculus, Mycoplasma pulmonis, Oceanobacillus iheyensis HTE831, Enterobacteria phage RB69, Corynebacterium glutamicum ATCC 13032"
- 2571 2701 27 "Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Sus scrofa, Candidatus Blochmannia floridanus, Streptococcus thermophilus, Ciona intestinalis, Mus musculus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Danio rerio, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes SSI-1, Bacillus subtilis subsp. subtilis str. 168" 10
- 2572 2702 35 "Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Arabidopsis thaliana, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Prochlorococcus marinus, Streptococcus agalactiae NEM316, Mycoplasma penetrans, Synchocystis sp. PCC 6803" 20
- 2573 2703 33 "Arabidopsis thaliana, Medicago truncatula, Homo sapiens, Drosophila melanogaster, Helicosporidium sp. ex Cyrtobagous salviniae, Thermoaerobacter tengcongensis, Gossypium hirsutum, Lotus corniculatus var. japonicus, Mus musculus, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Shewanella oneidensis MR-1, Caenorhabditis elegans, Plasmodium falciparum 3D7, Girardia tigrina, Buchnera aphidicola str. Sg (Schizaphis graminum), Lactococcus lactis subsp. lactis, Danio rerio, Mycoplasma pulmonis, Chironomus thummi, Neurospora crassa, Bacillus cereus ATCC 14579, Didelphis virginiana, Dictyostelium discoideum, Clostridium tetani E88, Hilara sp. NCSU-99060349, Eranthemum pulchellum, Tuberaphis styraci, Petunia axillaris subsp. parodii, Lactobacillus helveticus, Oryza sativa (indica cultivar-group), Caenorhabditis briggsae, Marchantia polymorpha" 30
- 2574 2704 24 "Dictyostelium discoideum, Homo sapiens, Danio rerio, Mus musculus, Pyrobaculum aerophilum str. IM2, Arabidopsis thaliana"
- 2575 2705 23 "Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Calycanthus floridus, Danio rerio"
- 2576 2706 28 "Homo sapiens, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Danio rerio, Ciona intestinalis" 40
- 2577 2707 27 "Mus musculus, Homo sapiens, Danio rerio, Mycoplasma capricolum, Avicennia marina, Caenorhabditis elegans, Pan troglodytes"
- 2578 2708 28 "Homo sapiens, Mus musculus, Vigna unguiculata, Drosophila melanogaster, Nicotiana tabacum, Danio rerio, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes MGAS315, Streptococcus pyogenes M1 GAS, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Streptococcus pyogenes SSI-1, Caenorhabditis elegans"
- 2579 2709 27 "Danio rerio, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Mus musculus, Drosophila melanogaster, Ra 50

ttus norvegicus"

- 2580 2710 26 "Homo sapiens, Danio rerio, Mus musculus, Gallus gallus"
- 2581 2711 27 "Homo sapiens, Guillardia theta, Mus musculus, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Ceratitidis capitata, Methanococcus voltae, Neurospora crassa, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Medicago truncatula"
- 2582 2712 24 "Homo sapiens, Pan troglodytes, Onchocerca volvulus, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Methanosarcina acetivorans C2A, Oryza sativa (japonica cultivar-group), Phytophthora infestans, Danio rerio, Medicago truncatula, Rattus norvegicus, Plasmodium falciparum 3D7, Leishmania major" 10
- 2583 2713 35 "Drosophila melanogaster, Homo sapiens, Tetrahymena thermophila, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Papio anubis, Oryza sativa, Sulfolobus tokodaii, Danio rerio, Arabidopsis thaliana, Clostridium acetobutylicum, Acipenser baerii, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (indica cultivar-group), Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Schizosaccharomyces pombe, Helicobacter hepaticus ATCC 51449"
- 2584 2714 47 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Plasmodium falciparum, Methanocaldococcus jannaschii, Coxiella burnetii RSA 493, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Bacillus halodurans, Buchnera aphidicola str. Bp (Baizongia pistaciae), Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Porphyromonas gingivalis W83, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Dictyostelium discoideum, Drosophila melanogaster, Mus musculus, Haemophilus influenzae Rd KW20, Medicago truncatula, Pseudomonas syringae pv. tomato str. DC3000, Plasmodium falciparum 3D7, Trypanosoma cruzi, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Lollaemus salinicola, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Staphylococcus aureus subsp. aureus Mu50" 20
- 2585 2715 56 "Fusobacterium nucleatum, Homo sapiens, Schizosaccharomyces pombe, Didelphis virginiana, Danio rerio, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Enterococcus faecalis V583, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Caenorhabditis briggsae, Oceanobacillus iheyensis HTE831, Mycoplasma penetrans, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Clostridium acetobutylicum, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Cyanidioschyzon merolae, Oryza sativa (japonica cultivar-group), Enterobacteria phage RB49, Methanocaldococcus jannaschii" 30
- 2586 2716 51 "Pasteurella multocida, Haemophilus influenzae Rd KW20, Yersinia pestis KIM, Yersinia pestis C092, Homo sapiens, Typhlonectes natans, Mus musculus, Rattus norvegicus, Caenorhabditis elegans" 40
- 2587 2717 31 "Danio rerio, Homo sapiens, Mus musculus, Pan troglodytes, Coccotrypes cardamomi, Caenorhabditis elegans, Medicago truncatula, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Aedes aegypti"
- 2588 2718 69 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Streptococcus mutans UA159, Lactococcus lactis subsp. lactis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Listeria innocua, Listeria monocytogenes, Prochlorococcus marinus, Candidatus Blochmannia floridanus, Mus musculus, Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Wigglesworthia gl 50

- ossinidia endosymbiont of *Glossina brevipalpis*, *Arabidopsis thaliana*"
- 2589 2719 39 "Lactococcus lactis subsp. lactis, Streptococcus pneumoniae R6, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Drosophila melanogaster, Streptococcus pneumoniae TIGR4, Nicotiana tabacum, Oryza sativa (japonica cultivar-group), Danio rerio"
- 2590 2720 27 "Entamoeba histolytica, Homo sapiens, Synechocystis sp. PCC 6803, Mus musculus, Potorous longipes, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Lactococcus lactis subsp. lactis, Arabidopsis thaliana, Medicago sativa, Pan troglodytes, Clostridium perfringens str. 13" 10
- 2591 2721 28 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Drosophila melanogaster, Plasmodium falciparum 3D7, Rickettsia prowazekii, Scartomyzon rupiscartes, Moxostoma macrolepidotum, Moxostoma pisolabrum, Streptococcus mutans UA159, Medicago truncatula, Moxostoma breviceps, Capra hircus, Clostridium acetobutylicum, Caenorhabditis elegans, Ovis aries, Branchiostoma floridae, Candida albicans"
- 2592 2722 24 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Human immunodeficiency virus 1, Coxiella burnetii RSA 493, Brassica napus var. napus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Clostridium perfringens str. 13" 20
- 2593 2723 28 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Clostridium tetani E88, Danio rerio, Plasmodium falciparum 3D7, Rattus norvegicus"
- 2594 2724 41 "Thermoanaerobacter tengcongensis, Homo sapiens, Pan troglodytes, Rickettsia prowazekii, Arabidopsis thaliana, Mus musculus, Methanosarcina mazei Goe1, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Rickettsia conorii, Gossypium hirsutum, Solanum tuberosum, Clostridium perfringens str. 13" 30
- 2595 2725 27 "Homo sapiens, Schistosoma mansoni, Oryza sativa (japonica cultivar-group), Mus musculus"
- 2596 2726 23 "Homo sapiens, Calumma gastrotaenia marojezensis, Takakia lepidozoides, Mus musculus, Danio rerio, Anopheles gambiae"
- 2597 2727 28 "Oryza sativa (japonica cultivar-group), Oryza sativa (indica cultivar-group), Caenorhabditis elegans, Homo sapiens, Arabidopsis thaliana, Mus musculus, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, Bos taurus, Clostridium tetani E88, Danio rerio, Mycoplasma pulmonis, Plasmodium falciparum 3D7"
- 2598 2728 40 "Methanosarcina mazei Goe1, Homo sapiens, Mycoplasma mobile" 40
- 2599 2729 30 "Homo sapiens, Mus musculus, Listeria monocytogenes, Listeria innocua, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani E88, Plasmodium falciparum 3D7, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Candidatus Blochmannia floridanus, Saccharomyces cerevisiae, Helicobacter hepaticus ATCC 51449"
- 2600 2730 27 "Homo sapiens, Lycopersicon esculentum, Mus musculus, Caenorhabditis elegans, Danio rerio, Saccharomyces cerevisiae, Solanum demissum, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus"
- 2601 2731 24 "Homo sapiens, Listeria innocua, Nostoc sp. PCC 7120, Leptospira interrogans serovar lai str. 56601, Oryza sativa (japonica cultivar-group)" 50

up)"

- 2602 2732 25 "Homo sapiens, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Danio rerio, Giardia intestinalis, Oryza sativa (japonica cultivar-group), Mus musculus, Zymomonas mobilis, Ciona intestinalis, Dictyostelium discoideum"
- 2603 2733 28 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Streptococcus mutans UA159, Yersinia pestis KIM, Xanthomonas campestris pv. campestris str. ATCC 33913, Escherichia coli, Oryza sativa (japonica cultivar-group), Yersinia pestis C092, Danio rerio, Escherichia coli O157:H7"
- 2604 2734 28 "Homo sapiens, Staphylococcus warneri, Plasmodium falciparum 3D7, Plasmodium falciparum, Mus musculus, Medicago truncatula, Wolffia cylindracea, Wolffia arrhiza, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Aspergillus tubingensis, Euglena gracilis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mycoplasma penetrans, Nicotiana glauca, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Mycoplasma gallisepticum R, Pan troglodytes, Dictyostelium discoideum, Streptococcus mutans UA159, Pemphigus obesinymphae, Lygus lineolaris, Lygus elisus, Lygus borealis, Helicoverpa zea, Oryza sativa, Dimastigella mimosa, Arabidopsis thaliana, Scaphirhynchus platyrhynchus, Ureaplasma urealyticum, Caenorhabditis elegans, Haemophilus ducreyi 35000HP" 10
- 2605 2735 32 "Mus musculus, Arabidopsis thaliana, Clostridium baratii, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Drosophila melanogaster, Homo sapiens, Oceanobacillus iheyensis HTE831, Ciona intestinalis, Clostridium perfringens str. 13" 20
- 2606 2736 50 "Shewanella oneidensis MR-1, Sulfolobus solfataricus, Clostridium tetani E88, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Vibrio parahaemolyticus, Methanothermobacter sociabilis, Helicobacter mobilis, Homo sapiens, Methanosarcina acetivorans C2A, Mus musculus, Danio rerio"
- 2607 2737 105 "Clostridium perfringens, Clostridium perfringens str. 13, Nostoc sp. PCC 7120, Ipomoea arachnosperma, Homo sapiens, Oceanobacillus iheyensis HTE831, Staphylococcus epidermidis ATCC 12228, Clostridium tetani E88, Wolbachia endosymbiont of Brugia malayi, Stap" 30
- 2608 2738 31 "Chlamydomonas reinhardtii, Mus musculus, Homo sapiens, Cryptococcus neoformans var. grubii, Wolbachia endosymbiont of Brugia malayi, Bacillus anthracis str. Ames, Drosophila melanogaster, Clostridium acetobutylicum, Caenorhabditis elegans, Staphylococcus hyicus"
- 2609 2739 29 "Homo sapiens, Mus musculus, Bacillus anthracis str. Ames, Drosophila melanogaster, Bacillus cereus ATCC 14579, Sulfolobus solfataricus, Caenorhabditis elegans" 40
- 2610 2740 31 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Debaryomyces occidentalis, Cyanidioschyzon merolae, Listeria innocua, Oryza sativa (japonica cultivar-group), Danio rerio"
- 2611 2741 27 "Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Homo sapiens, Drosophila melanogaster, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Nesticus valentinei, Mus musculus, Sulfolobus tokodaii"
- 2612 2742 27 "Homo sapiens, Mus musculus, Capra hircus, Bos taurus, Drosophila melanogaster, Papio anubis, Methanothermobacter thermautotrophicus str. Delta H, Arabidopsis thaliana"
- 2613 2743 24 "Homo sapiens, Mus musculus, Streptococcus pneumoniae R6" 50

- , *Streptococcus pneumoniae* TIGR4, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Felis catus*, *Canis familiaris*, *Danio rerio*"
- 2614 2744 26 "Melanoplus sanguinipes entomopoxvirus, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Lycopersicon esculentum*, *Danio rerio*"
- 2615 2745 23 "Homo sapiens, *Mus musculus*, *Mycoplasma gallisepticum* R, *Oryza sativa* (japonica cultivar-group), *Physarum polycephalum*, *Danio rerio*, *Drosophila melanogaster*, *Xanthomonas axonopodis* pv. citri str. 306, *Lactobacillus casei*, Saimiriine herpesvirus 2"
- 2616 2746 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Mycoplasma pulmonis*, *Haemophilus influenzae* Rd KW20, *Gallus gallus*, *Ectoedemia populella*, *Tristellateia madagascariensis*, *Tricomaria usillo*, *Triaspis hypericoides*, *Tetrapterys microphylla*, *Tetrapterys discolor*, Sphed" 10
- 2617 2747 27 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Danio rerio*, *Caenorhabditis elegans*, *Cucumis melo*, *Brugia malayi*, *Lactococcus lactis* subsp. lactis, *Lotus corniculatus* var. japonicus, *Mycoplasma penetrans*, *Glycine max*"
- 2618 2748 27 "Plasmodium falciparum 3D7, *Homo sapiens*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Danio rerio*, *Mus musculus*, *Medicago truncatula*, *Dictyostelium discoideum*, *Polypterus bichir*, *Solanum tuberosum*, *Diasemopsis nebulosa*, *Diasemopsis signata*, *Diasemopsis fasciata*, *Chaetodiopsis meigenii*, *Candidatus Blochmannia floridanus*, *Pisum sativum*, *Cryptosporidium parvum*, *Methanocaldococcus jannaschii*, *Bombyx mori*" 20
- 2619 2749 27 "Homo sapiens, *Bos taurus*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* SSI-1, *Rattus norvegicus*, *Bacillus cereus* ATCC 14579, *Borrelia burgdorferi* B31, *Methanothermococcus thermolithotrophicus*, *Arabidopsis thaliana*, *Mus musculus*, *Bacillus cereus*, *Borrelia burgdorferi*, *Ureaplasma urealyticum*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, uncultured methanogenic archaeon, *Danio rerio*, *Legionella pneumophila*, *Clostridium perfringens* str. 13" 30
- 2620 2750 31 "Homo sapiens, *Dipteracanthus portellae*, *Mus musculus*, *Caenorhabditis elegans*, *Prochlorococcus marinus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Haemophilus ducreyi* 35000HP, *Methanocaldococcus jannaschii*, *Drosophila virilis*"
- 2621 2751 36 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Pan troglodytes*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Rattus norvegicus*, *Sulfolobus solfataricus*, *Danio rerio*"
- 2622 2752 32 "Homo sapiens, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mus musculus*, Apple chlorotic leaf spot virus, *Oryza sativa* (japonica cultivar-group), Cowpox virus, *Caenorhabditis briggsae*, *Fronitaria caulescens*, *Danio rerio*, *Plasmodium falciparum* 3D7, African swine fever virus, *Plasmodium falciparum*, *Clostridium perfringens* str. 13" 40
- 2623 2753 27 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*"
- 2624 2754 27 "Lotus corniculatus var. japonicus, *Homo sapiens*, *Caenorhabditis briggsae*, *Dictyostelium discoideum*, *Mus musculus*, *Caenorhabditis elegans*, *Meloidogyne incognita*, *Tropheryma whipplei* str. Twist, *Danio rerio*, *Tropheryma whipplei* TW08/27"
- 2625 2755 25 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Pan troglodytes*, *Mus musculus*, *Bombyx mori* densovirus 1, *Caenorhabdi* 50

tis elegans"

- 2626 2756 23 "Oryza sativa (japonica cultivar-group), Homo sapiens, Arabidopsis thaliana, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Danio rerio, Geotrichum klebahnii"
- 2627 2757 25 "Mus musculus, Phenacogrammus interruptus, synthetic construct, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Rattus norvegicus, Dictyostelium discoideum, Clostridium tetani E88, Aralia spinosa, Pyrenacantha grandifolia, Icacinia senegalensis, Xestia c-nigrum granulovirus, Danio rerio, Helicobacter pylori J99"
- 2628 2758 33 "Homo sapiens, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Mus musculus, Ceratitis capitata, Plasmodium yoelii, Arabidopsis thaliana, Saccharomyces douglasii, Plasmodium malariae, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Typhonium "
- 2629 2759 20 "Oryza sativa (japonica cultivar-group), Danio rerio, Homo sapiens"
- 2630 2760 32 "Homo sapiens, Arabidopsis thaliana, Bacillus rossius redtenbacheri, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Sus scrofa, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Tribolium castaneum, Trypanosoma brucei, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Bombyx mori, Cryptophlebia leucotreta granulovirus, Danio rerio"
- 2631 2761 26 "Homo sapiens, Rhodococcus sp. Q15, Danio rerio, Rhodococcus erythropolis, Mus musculus, Arabidopsis thaliana, Gallus gallus, Clostridium acetobutylicum, Staphylococcus sciuri, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe"
- 2632 2762 28 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Papio anubis, Arabidopsis thaliana, Ciona intestinalis"
- 2633 2763 27 "Schizosaccharomyces pombe, Homo sapiens, Mus musculus, Bartonella henselae, Spizellomyces punctatus, Chlamydomonas pneumoniae, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Caenorhabditis elegans, Chlamydomonas pneumoniae TW-183"
- 2634 2764 31 "Homo sapiens, Mus musculus, Heterosiphonia plumosa, Bacillus megaterium, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Cryptosporidium parvum, Schizosaccharomyces pombe, Caenorhabditis elegans, Arabidopsis thaliana, Lemur catta, Drosophila melanogaster, Zea mays, Nicotiana tabacum, Millettia thonningii, Millettia dura, Fordia splendidissima, Lonchocarpus lanceolatus, Brachypterum robustum, Derris laxiflora, Tephrosia heckmanniana, Pongamiopsis amygdalina, Piscidia piscipula, Caenorhabditis briggsae, Vibrio parahaemolyticus, Rattus norvegicus"
- 2635 2765 24 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Oryza sativa (indica cultivar-group), Cupiennius salei, Caenorhabditis elegans, Danio rerio"
- 2636 2766 23 "Rattus norvegicus, Homo sapiens, Mus musculus, Leptospira interrogans serovar lai str. 56601, Methanosarcina acetivorans C2A, Pyrococcus furiosus DSM 3638"
- 2637 2767 31 "Arabidopsis thaliana, Homo sapiens, Lactococcus lactis subsp. lactis, Mus musculus, Leptospira interrogans serovar lai str. 56601, Danio rerio"
- 2638 2768 32 "Homo sapiens, Mus musculus, Danio rerio, Rattus norvegicus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Papio anubis,

- Pisum sativum*, *Paramecium primaurelia*"
- 2639 2769 23 "Homo sapiens, *Methanosarcina acetivorans* C2A, *Mus musculus*, *Rattus norvegicus*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Schmidtea mediterranea*, *Arabidopsis thaliana*, *Sulfolobus solfataricus*, *Caenorhabditis briggsae*, *Danio rerio*"
- 2640 2770 24 "Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Streptococcus mutans* UA159, *Epihyas postvittana nucleopolyhedrovirus*, *Neisseria meningitidis* Z2491, *Caenorhabditis briggsae*, *Neisseria meningitidis* MC58"
- 2641 2771 31 "Homo sapiens, *Mus musculus*, *Mytilus galloprovincialis*, *Schizosaccharomyces pombe*, *Danio rerio*, *Botryotinia fuckeliana*, *Caenorhabditis elegans*, *Sorghum bicolor*, *Ciona intestinalis*, *Hordeum vulgare*, *Vibrio fischeri*" 10
- 2642 2772 33 "Mycoplasma sp. 'bovine group 7', *Homo sapiens*, *Mus musculus*, *Nostoc* sp. PCC 7120, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Bos taurus*, *Reclinomonas americana*, *Babesia microti*, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Clostridium perfringens* str. 13"
- 2643 2773 36 "Mus musculus, *Samanea saman*, *Homo sapiens*, *Mycoplasma penetrans*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Chlamydia muridarum*, *Dictyostelium discoideum*, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Hydra vulgaris*, *Phaseolus vulgaris*" 20
- 2644 2774 32 "Mus musculus, *Borrelia burgdorferi* B31, *Homo sapiens*, *Medicago truncatula*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Pisum sativum*, *Rattus norvegicus*, *Streptococcus pyogenes*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Pan troglodytes*, *Danio rerio*, *Clostridium perfringens* str. 13, *Arabis gunnisoniana*, *Oryctolagus cuniculus*, *Didelphis virginiana*, *Bacillus anthracis* str. Ames, *Candidatus Carsonella ruddii*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Borrelia hermsii*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Citrobacter rodentium*, *Mycoplasma penetrans*, *Fowlpox virus*" 30
- 2645 2775 25 "Arabidopsis thaliana, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Thermoanaerobacterium thermosaccharolyticum*, *Archaeoglobus fulgidus* DSM 4304, *Clostridium acetobutylicum*, *Mycoplasma pulmonis*, *Oryza sativa* (japonica cultivar-group), *Bacillus halodurans*, *Zea diploperennis*, *Sulfolobus tokodaii*, *Danio rerio*, *Nitrosomonas europaea* ATCC 19718, *Caenorhabditis elegans*"
- 2646 2776 58 "Coxiella burnetii RSA 493, *Oceanobacillus ihayensis* HTE 831, *Leptospira interrogans* serovar lai str. 56601, *Chlorobium tepidum* TLS, *Xanthomonas axonopodis* pv. *citri* str. 306, *Xanthomonas campestris* pv. *campestris* str. ATCC 33913, *Bacillus halodurans*, *Lactoba*"
- 2647 2777 28 "Dictyostelium discoideum, *Mus musculus*, *Caenorhabditis elegans*, *Chaetosphaeridium globosum*, *Homo sapiens*, *Rattus norvegicus*, *Cicer arietinum*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Bungarus multicinctus*, *Streptococcus dysgalactiae*, *Plasmodium falciparum* 3D7, *Mycoplasma penetrans*, *Lactobacillus plantarum* WCFS1, *Danio rerio*, *Mesembryanthemum crystallinum*" 40
- 2648 2778 31 "Nostoc sp. PCC 7120, *Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Bombyx mori*, *Shigella flexneri* 2a str. 2457T, *Drosophila melanogaster*, *Megalagrion paludicola*, *Megalagrion oahuense*, *Megalagrion nesiotes*, *Megalagrion mauka*, *Megalagrion koelense*, *Megalagrion kauaiense*, *Escherichia coli* CF T073, *Shigella flexneri* 2a str. 301, *Plasmodium falciparum* 3D7, *Agrobacterium tu* 50

- mefaciens str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Escherichia coli* 0157:H7 EDL933, *Danio rerio*, *Escherichia coli*, *Escherichia coli* K12, *Escherichia coli* 0157:H7"
- 2649 2779 30 "Homo sapiens *Botryotinia fuckeliana*, *Pisum sativum*, *Drosophila melanogaster*, *Mus musculus*, *Cyanidium caldarium*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, Human rotavirus A, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Pinus uligin*"
- 2650 2780 48 "Clostridium acetobutylicum, *Caenorhabditis elegans*, *Medicago truncatula*, *Trypanosoma equiperdum*, *Enterococcus faecalis* V583, *Tetrahymena thermophila*, *Homo sapiens*, *Danio rerio*, *Rattus norvegicus*, *Mus musculus*, *Buchnera aphidicola* str. Bp (*Baizongia pistacia*" 10
- 2651 2781 31 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Haemophilus influenzae*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Mus musculus*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Prochlorococcus marinus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Staphylococcus aureus*, *Didelphis virginiana*, *Manduca sexta*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Sus scrofa*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 2652 2782 24 "Mus musculus, *Arabidopsis thaliana*, *Bos taurus*, *Homo sapiens*, *Shigella flexneri* 2a str. 2457T, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Plasmodium falciparum* 3D7, *Mentzelia albicaulis*, *Mentzelia gracilentata*, *Mentzelia dispersa*, *Mentzelia lindleyi*, *Escherichia coli* 0157:H7 EDL933, *Oryza sativa* (japonica cultivar-group), *Takifugu rubripes*, *Lotus corniculatus* var. *japonicus*, *Listeria innocua*, *Plasmodium falciparum*, *Escherichia coli* 0157:H7" 20
- 2653 2783 32 "Bacteroides thetaiotaomicron VPI-5482, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, *Schizosaccharomyces pombe*, *Bacillus cereus* ATCC 14579, *Leptospira interrogans* serovar *laibi* str. 56601, *Schistosoma japonicum*, *Acinetobacter* sp. S429_2, *Pan troglodytes*, *Methanosarcina acetivorans* C2A, *Zea mays*, *Xenopus laevis*, *Danio rerio*"
- 2654 2784 56 "Mus musculus, *Homo sapiens*, *Nostoc* sp. PCC 7120, *Sulfolobus tokodaii*, *Borrelia burgdorferi* B31, *Plasmodium falciparum* 3D7, *Mycoplasma pulmonis*, *Oryctolagus cuniculus*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Shewanella oneidensis* MR-1, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*" 30
- 2655 2785 52 "Clostridium tetani E88, *Buchnera aphidicola* str. Sg (*Sc hizaphis graminum*), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Buchnera aphidicola*, *Rattus norvegicus*, *Homo sapiens*, *Listeria monocytogenes*, *Danio rerio*, *Medicago truncatula*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Clostridium acetobutylicum*, *Streptococcus agalactiae* NEM316, *Mus musculus*, *Methanocaldococcus jannaschii*, *Arabidopsis thaliana*, *Dic tyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*" 40
- 2656 2786 27 "Caenorhabditis elegans, *Solanum tuberosum*, *Homo sapiens*, *Mus musculus*, *Pichinde virus*, *Rattus norvegicus*, *Pan troglodytes*, *Drosophila melanogaster*, *Danio rerio*, *Ictalurus punctatus*, *Caenorhabditis briggsae*, *Buzura suppressaria* nucleopolyhedrovirus"
- 2657 2787 26 "Aphid lethal paralysis virus, *Medicago truncatula*, *Caenorhabditis elegans*, *Saccharomyces bayanus*, *Mus sp.*, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, Human rotavirus A, *Saccharomyces cerevisiae*, *Arabidopsi* 50

s thaliana"

- 2658 2788 36 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Buchnera aphidicola str. Bp (Baizongia pistaciae), Ceratitis capitata, Apis mellifera carnica, Oryctolagus cuniculus, Medicago truncatula, Dictyostelium discoideum, Lemur catta, Euphorbia pirottae, Boehmeria nivea, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pan troglodytes, Papio anubis, Shigella flexneri, Anopheles gambiae, Bacillus subtilis subsp. subtilis str. 168, Bacteriophage SPBc2"
- 2659 2789 27 "Danio rerio, Homo sapiens, Mus musculus, Vochysia ferruginea, Arabidopsis thaliana, Drosophila melanogaster, Culter mongolicus, Xenopus laevis, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group)" 10
- 2660 2790 24 "Homo sapiens, Saccharomyces cerevisiae, Mus musculus, Equus caballus, Arabidopsis thaliana"
- 2661 2791 28 "Homo sapiens, Clostridium acetobutylicum, Rickettsia prowazekii, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Listeria monocytogenes, Hordeum vulgare, Mus musculus, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Manduca sexta, Sulfolobus solfataricus, Mycoplasma pulmonis, Drosophila hydei, Arabidopsis thaliana, Debaryomyces occidentalis, Danio rerio" 20
- 2662 2792 69 "Shewanella putrefaciens, Mus musculus, Shewanella oneidensis MR-1, Homo sapiens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Plasmodium falciparum 3D7, Rickettsia conorii, Caenorhabditis elegans, Dicerantrarchus labrax, Danio rerio, Nostoc sp. PCC 7120"
- 2663 2793 28 "Homo sapiens, Haemophilus ducreyi 35000HP, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Danio rerio, Medicago truncatula, Pan troglodytes, Dictyostelium discoideum, Escherichia coli, Monosiga brevicollis, Drosophila melanogaster, Plasmodium falciparum 3D7, Methanosarcina mazei Goe1, Aplysia californica, Lampropeltis triangulum arcifera, Lampropeltis pyromelana pyromelana, Lampropeltis triangulum campbelli, Lampropeltis ruthveni, Caenorhabditis elegans, Mycoplasma penetrans, Oryza sativa (indica cultivar-group)" 30
- 2664 2794 27 "Homo sapiens, Sorghum bicolor, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 2665 2795 40 "Homo sapiens, Mus musculus, Oceanobacillus iheyensis HT E831, Coxiella burnetii RSA 493, Caenorhabditis elegans, Escherichia coli, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio, Helicobacter hepaticus ATCC 51449"
- 2666 2796 58 "Rickettsia conorii, Rickettsia prowazekii, Candidatus Blochmannia floridanus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Oryza sativa (japonica cultivar-group), Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Physconelloides anolaimae, Caenorhabditis briggsae, Pan troglodytes, Gadus morhua, Caenorhabditis elegans, Danio rerio" 40
- 2667 2797 57 "Helicobacter hepaticus ATCC 51449, Bacteroides thetaiotaomicron VPI-5482, Thermoanaerobacter tengcongensis, Helicobacter pylori 26695, Helicobacter pylori J99, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musc 50

- ulus, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Candidatus Carsonella ruddii*, *Archaeoglobus fulgidus* DSM 4304, *Homo sapiens*, *Artibeus jamaicensis*, *Bacillus cereus* ATCC 14579, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Streptococcus pneumoniae*, *Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Haemophilus ducreyi* 35000HP"
- 2668 2798 27 "Streptococcus pneumoniae TIGR4, *Homo sapiens*, *Chlorobium tepidum* TLS, *Ehrlichia ruminantium*, *Prochlorococcus marinus*, *Rickettsia prowazekii*, *Mus musculus*, *Rattus norvegicus*, *Atelerix albiventris*, *Medicago truncatula*, *Zea mays*, *Helianthus annuus*, *Paracentrotus lividus*, *Saccharomyces cerevisiae*" 10
- 2669 2799 25 "Bacillus cereus ATCC 14579, *Bacillus anthracis* str. Ames, *Oryza sativa* (*japonica* cultivar-group), *Drosophila melanogaster*, *Oryza sativa*, *Homo sapiens*, *Cryptococcus neoformans* var. *grubii*, *Saccharomyces cerevisiae*, *Mus musculus*, *Schistosoma mansoni*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Arabidopsis thaliana*, *Hyla chinensis*"
- 2670 2800 35 "Homo sapiens, *Listeria innocua*, *Bacillus thuringiensis*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Clostridium perfringens* str. 13, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Sulfolobus solfataricus*, *Pan troglodytes*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Leptospira interrogans* serovar *lai* str. 56601, *Medicago truncatula*, *Enterococcus faecalis* V583, *Poncirus trifoliata*, *Rheum nanum*, *Arabidopsis thaliana*, *Oryza sativa*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Kiefferulus cornishi*, *Cyanophora paradoxa*" 20
- 2671 2801 24 "Homo sapiens, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mus musculus*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Papio anubis*, *Chlamydomonas radiata*, *Chlamydomonas nivalis*, *Caenorhabditis elegans*, *Medicago truncatula*, *Oryza sativa* (*japonica* cultivar-group)"
- 2672 2802 27 "Mus musculus, *Homo sapiens*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Cyanidium caldarium*, *Plasmodium falciparum* 3D7" 30
- 2673 2803 24 "Lotus corniculatus var. *japonicus*, *Rattus norvegicus*, *Homo sapiens*, *Staphylococcus aureus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Oceanobacillus iheyensis* HTE831, *Arabidopsis thaliana*, *Danio rerio*, *Agaricus bitorquis*, *Leptospira interrogans* serovar *lai* str. 56601, *Oryza sativa* (*japonica* cultivar-group), *Pan troglodytes*, *Mus musculus*, *Clostridium acetobutylicum*, *Thermoplasma acidophilum*, *Guillardia theta*, *Candida albicans*, *Vibrio parahaemolyticus*, *Bacillus halodurans*"
- 2674 2804 27 "Mus musculus, *Homo sapiens*, *Chilo iridescent virus*, *Papio anubis*, *Plasmodium falciparum* 3D7, *Streptococcus thermophilus*, *Takifugu rubripes*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Medicago truncatula*" 40
- 2675 2805 28 "Junonia coenia, *Danio rerio*, *Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Trachemys scripta*, *Mycoplasma genitalium*"
- 2676 2806 27 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Clostridium tetani* E88, *Oryza sativa*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Cocculus orbiculatus*, *Arabidopsis thaliana*, *Biomphalaria glabrata*, *Entamoeba histolytica*, *Chironomus thummi*, *Mycoplasma penetrans*, *Graphium odin*, *Graphium ridleyanus*, *Graphium incerta*, *Graphium antiphates*"
- 2677 2807 28 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Caeno* 50

- rhabditis elegans*, *Danio rerio*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Neurospora crassa*"
- 2678 2808 23 "Oryza sativa (japonica cultivar-group), *Drosophila melanogaster*, *Homo sapiens*, *Sulfolobus solfataricus*, *Caenorhabditis briggsae*, *Mus musculus*, *Plasmodium falciparum* 3D7, Cassava brown streak virus, *Medicago truncatula*"
- 2679 2809 31 "Cooperia oncophora, *Plasmodium falciparum* 3D7, *Mus musculus*, *Homo sapiens*, *Ciona savignyi*, *Caenorhabditis elegans*, *Clostridium perfringens* str. 13, *Pan troglodytes*, *Clostridium tetani* E88, Human immunodeficiency virus 1, *Lactococcus lactis*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Medicago truncatula*, *Dictyostelium discoideum*, *Monosiga brevicollis*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Gossypium anomalum*, *Tetrameles nudiflora*, *Schizophyllum commune*, *Sorghum bicolor*, *Canavalia lineata*, *Mycoplasma pulmonis*, *Dendrobium* cv. 'Sonia', *Plasmodium falciparum*, *Williopsis saturnus* var. *mrakii*, *Procambarus clarkii*, *Lotus corniculatus* var. *japonicus*, *Sulfolobus tokodaii*, *Uroleucon erigeronensis*, *Trypanosoma brucei*, *Caedibacter taeniopsis*, *Treponema denticola*, *Mycoplasma gallisepticum* R, *Corylus americana*, *Methanosarcina mazei* Goe1"
- 2680 2810 31 "Homo sapiens, *Equus caballus*, *Lotus corniculatus* var. *japonicus*, *Methanosarcina mazei* Goe1, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Streptococcus thermophilus* temperate bacteriophage 01205, *Mus musculus*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Atelixer albiventris*, *Leptospira interrogans* serovar *lai* str. 56601, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Buchnera aphidicola*, *Danio rerio*"
- 2681 2811 27 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Danio rerio*, *Mus musculus*, *Lactobacillus plantarum*, *Plagiochasma appendiculatum*, *Plagiochasma rupestre*, *Asterella khasyana*, *Asterella tenella*, *Asterella wallichiana*, *Asterella gracilis*, *Mannia capensis*, *Mannia californica*, *Reboulia hemisphaerica*, *Marchantia polymorpha*, *Triticum aestivum*"
- 2682 2812 43 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Opuntia subulata*, *Opuntia phaeacantha*, *Glycine max*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Mycoplasma penetrans*, *Candida albicans*, *Rattus norvegicus*, *Oryzias latipes*, *Candidatus Carsonella ruddii*, *Lemur catta*"
- 2683 2813 27 "Arabidopsis thaliana, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Methanosarcina acetivorans* C2A, *Ureaplasma urealyticum*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Danio rerio*, *Lactobacillus plantarum* WCFS1"
- 2684 2814 40 "Homo sapiens, *Listeria monocytogenes*, *Mus musculus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Lotus corniculatus* var. *japonicus*, *Mycoplasma pulmonis*, *Chlamydia trachomatis*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Mycoplasma penetrans*, *Nitrosomonas europaea* ATCC 19718, *Bacillus halodurans*"
- 2685 2815 48 "Helicobacter hepaticus ATCC 51449, *Homo sapiens*, *Thermoplasma volcanium*, *Mus musculus*, *Lemur catta*, *Pan troglodytes*, *Staphylococcus epidermidis* ATCC 12228, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Cassidinidea* sp., *Staphylococcus epidermidis*, *Nostoc* sp. PCC 7120, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Pseudotuberculosis stali* intestine virus, *Prochlorococcus marinus* subsp. *marinus* str. CCMP13

- 75, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Saccharomyces cerevisiae*"
- 2686 2816 27 "Homo sapiens, *Mus musculus*, *Asterina pectinifera*, *Drosophila melanogaster*, *Rattus norvegicus*, *Ibalia leucospoides*, *Pyrococcus furiosus* DSM 3638, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Danio rerio*, *Enterobacter* phage RB69"
- 2687 2817 139 "Escherichia coli K12, *Escherichia coli*, *Shigella flexneri* 2a str. 2457T, *Shigella flexneri* 2a str. 301, *Candidatus Blochmannia floridanus*, *Vibrio parahaemolyticus*, *Escherichia coli* CFT073, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli* 0157:H7, *Photobacterium luminescens*, *Haemophilus influenzae* Rd KW20, *Haemophilus ducreyi* 35000HP, *Shewanella oneidensis* MR-1, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Homo sapiens*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Vibrio vulnificus* CMCP6, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Helicobacter hepaticus* ATCC 51449, *Mus musculus*, *Haemonchus contortus*, *Clostridium perfringens* str. 13" 10
- 2688 2818 70 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus Mu50, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Shigella flexneri* 2a str. 2457T, *Enterococcus faecalis* V583, *Shigella flexneri* 2a str. 301, *Vibrio parahaemolyticus*, *Photobacterium luminescens*, *Staphylococcus aureus*, *Candidatus Blochmannia floridanus*, *Staphylococcus aureus* subsp. aureus MW2, *Haemophilus ducreyi* 35000HP, *Escherichia coli* 0157:H7 EDL933, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Escherichia coli* 0157:H7, *Nostoc* sp. PCC 7120, *Bacillus cereus* ATCC 14579, *Vibrio vulnificus* CMCP6, *Staphylococcus epidermidis* ATCC 12228, *Escherichia coli* CFT073, *Homo sapiens*, *Escherichia coli*, *Escherichia coli* K12, *Staphylococcus epidermidis*, *Danio rerio*, *Mus musculus*, *Prochlorococcus marinus*, *Lactococcus lactis* subsp. cremoris" 20
- 2689 2819 136 "Haemophilus ducreyi 35000HP, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Candidatus Blochmannia floridanus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Pasteurella multocida*, *Haemophilus influenzae* Rd KW20, *Shewanella oneidensis* MR-1, *Clostridium tetani* E88, *Enterococcus faecalis* V583, *Saccharomyces cerevisiae*, *Mus musculus*, *Homo sapiens*, *Vibrio parahaemolyticus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Nitrosomonas europaea* ATCC 19718, *Lotus corniculatus* var. japonicus, *Listeria monocytogenes*, *Danio rerio*, *Oryzias latipes*" 30
- 2690 2820 33 "Homo sapiens, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, *Borrelia burgdorferi* B31, *Rickettsia conorii*, *Pasteurella multocida*, *Danio rerio*"
- 2691 2821 29 "Oryza sativa (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Coxiella burnetii* RSA 493, *Rattus norvegicus*, *Rickettsia conorii*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Danio rerio*" 40
- 2692 2822 27 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Schizosaccharomyces pombe*, *Danio rerio*, *Drosophila melanogaster*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Caenorhabditis elegans*, *Clostridium bifementans*, *Drosophila yakuba*, *Plasmodium falciparum* 3D7, *Drosophila simulans*, *Drosophila sechellia*, *Drosophila mauritiana*, *Beta vulgaris* subsp. vulgaris"
- 2693 2823 52 "Buchnera aphidicola str. Bp (*Baizongia pistaciae*), *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Coxiella burnetii* RSA 493, *Homo sapi* 50

- ens, *Vibrio vulnificus* CMCP6, *Mus musculus*"
- 2694 2824 32 "Candidatus *Carsonella ruddii*, *Mycoplasma pulmonis*, *Candida boidinii*, *Saccharomyces cerevisiae*, *Homo sapiens*, *Medicago truncatula*, *Clostridium tetani* E88, *Mycoplasma gallisepticum* R, *Bacillus cereus* ATCC 14579, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mycoplasma penetrans*, *Oryza sativa* (japonica cultivar-group), *Prochlorococcus marinus*, *Mus musculus*, *Danio rerio*, *Zyomonas mobilis*, *Avena strigosa*"
- 2695 2825 28 "Homo sapiens, *Danio rerio*, *Xenopus laevis*, *Mus musculus*, *Gasterosteus aculeatus*, *Enterococcus faecalis* V583, *Plasmodium falciparum*, *Candidatus Blochmannia floridanus*, *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* HTE831, *Pan troglodytes*" 10
- 2696 2826 27 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Biomphalaria glabrata*, *Drosophila melanogaster*, *Pan troglodytes*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Medicago truncatula*, *Saccharomyces pastorianus*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Arctium lappa*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*"
- 2697 2827 28 "Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Elatostema pedunculatum*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Murine leukemia virus*, *Boehmeria biloba*, *Saccharomyces cerevisiae*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*" 20
- 2698 2828 32 "Haemophilus influenzae Rd KW20, *Homo sapiens*, *Ateilerix albiventris*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Mus musculus*, *Drosophila silvestris*, *Oryza sativa* (japonica cultivar-group), *Drosophila heteroneura*, *Takifugu rubripes*, *Dictyostelium discoideum*, *Polypterus bichir*, *Clostridium acetobutylicum*, *Danio rerio*, *Thermotoga maritima*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Caenorhabditis elegans*"
- 2699 2829 29 "Clostridium tetani E88, *Mus musculus*, *Homo sapiens*, *Ateilerix albiventris*, *Medicago truncatula*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* SSI-1, *Oryza sativa* (japonica cultivar-group), *Helicobacter pylori* 26695, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Arabidopsis thaliana*" 30
- 2700 2830 30 "Mus musculus, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Homo sapiens*, *Danio rerio*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Dictyostelium discoideum*, *Papio anubis*, *Plasmodium falciparum* 3D7, *Meroles suborbitalis*, *Rickettsia conorii*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Oryza sativa* (japonica cultivar-group), *Methanocaldococcus jannaschii*, *Ursus thibetanus*, *Melursus ursinus*"
- 2701 2831 32 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Clostridium tetani* E88, *Homo sapiens*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Mycoplasma gallisepticum* R, *Potato witches'-broom phytoplasma*, *Plasmodium falciparum*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Mycoplasma pulmonis*, *Marchantia polymorpha*, *Canis familiaris*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Trypanosoma cruzi*" 40
- 2702 2832 27 "Homo sapiens, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Rattus norvegicus*" 50

- 2703 2833 27 "Homo sapiens, Mus musculus, Archaeoglobus fulgidus DSM 4304, Ciona intestinalis, Danio rerio, Arabidopsis thaliana, Oryza sativa, Neisseria meningitidis Z2491, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Lotus corniculatus var. japonicus, Nostoc sp. PCC 7120"
- 2704 2834 41 "Cyanidioschyzon merolae, Bacillus halodurans, Streptococcus pneumoniae TIGR4, Clostridium tetani E88, Homo sapiens, Mus musculus, Arabidopsis thaliana, Helicoverpa zea single nucleocapsid nucleopolyhedrovirus, Helicoverpa armigera nuclear polyhedrosis virus, Helicoverpa armigera nucleopolyhedrovirus G4, Lactobacillus plantarum WCFS1"
- 2705 2835 24 "Homo sapiens, Equus caballus, Streptococcus mutans UA159, Plasmodium falciparum 3D7, Mus musculus, Leishmania major, Tribolium castaneum, Pan troglodytes, Bos taurus, Rattus norvegicus, Borrelia burgdorferi B31, Drosophila melanogaster, Danio rerio, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Neurospora crassa, Pneumocystis carinii, Arabidopsis thaliana, Bacillus halodurans" 10
- 2706 2836 54 "Homo sapiens, Rattus norvegicus, Mus musculus, Listeria monocytogenes, Danio rerio, Lycopersicon esculentum, Bos taurus, Lactococcus lactis subsp. lactis, Arabidopsis thaliana, Plasmodium falciparum 3D7, Onchocerca volvulus, Medicago truncatula, Oryza sativa, Nicotiana tabacum, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Felis catus, Xanthomonas axonopodis pv. citri str. 306, Mycoplasma hyopneumoniae, Candidatus Carsonella ruddii, Schistosoma mekongi, Oryza sativa (japonica cultivar-group), Drosophila subobscura, Hypocrea nigrovirens, Hypocrea aureoviridis, Chromobacterium violaceum, Rhodotorula mucilaginosa, Schizosaccharomyces pombe, Plasmodium falciparum" 20
- 2707 2837 24 "Homo sapiens, Oryza sativa, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Anas platyrhynchos, Solanum tuberosum, Vibrio parahaemolyticus, Encephalitozoon cuniculi, Bacteriophage A118, Schizosaccharomyces pombe, Danio rerio" 30
- 2708 2838 49 "Danio rerio, Caenorhabditis elegans, Homo sapiens, Mus musculus, Helicobacter hepaticus ATCC 51449, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Lycopersicon hirsutum, Coxiella burnetii RSA 493, Plasmodium falciparum 3D7, Streptococcus pneumoniae TIGR4, Diadusia chilensis, Glycine max, Lotus corniculatus var. japonicus, Listeria monocytogenes, Zymomonas mobilis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 2709 2839 21 "Homo sapiens, Galerucella lineola, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Mus musculus, Oryza sativa (japonica cultivar-group), Gasterosteus aculeatus" 40
- 2710 2840 25 "Homo sapiens, Mus musculus, Streptococcus mutans UA159, Saccharomyces cerevisiae, uncultured bacterium, Arabidopsis thaliana, Reticulitermes santonensis, Lotus corniculatus var. japonicus, Listeria innocua, Danio rerio, Pteropus dasymallus"
- 2711 2841 27 "Ciona intestinalis, Homo sapiens, Oryza sativa (japonica cultivar-group), Oryza sativa, Bacteroides thetaiotaomicron VPI-5482, Borrelia burgdorferi B31, Felis catus, Mus musculus, Arabidopsis thaliana, Limaria hians, Danio rerio"
- 2712 2842 51 "Homo sapiens, Arabidopsis thaliana, Danio rerio, Pyrococcus abyssi, Mus musculus, Chromobacterium violaceum, Schizosaccharomyces pombe, 50

- Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 2713 2843 32 "Homo sapiens, Dictyostelium discoideum, Prochlorococcus marinus, Staphylococcus aureus, Mus musculus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Staphylococcus aureus subsp. aureus Mu50, Caenorhabditis el"
- 2714 2844 35 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Dictyostelium discoideum, Danio rerio, Rhytidoponera sp., Pan troglodytes, Escherichia coli, Arabidopsis thaliana, Saccharomyces douglasii, Oryza sativa (japonica cultivar-group), Medicago truncatula, Saccharomyces cerevisiae, Hypericum androsaemum, Drosophila melanogaster, Lemur catta, Gallus gallus, Carex filicina, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Naegleria gruberi, Zea mays, Caenorhabditis elegans, Thermoplasma volcanium, Mercenaria mercenaria, Dolomedes raptor, Drosophila simulans" 10
- 2715 2845 31 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Schizosaccharomyces pombe, Staphylococcus xylosum, Caenorhabditis elegans, Dictyostelium discoideum, Danio rerio, Caenorhabditis briggsae, Gossypium hirsutum, Oryza sativa (japonica cultivar-group), Bacteriophage phiYe03-12, Pyrococcus horikoshii"
- 2716 2846 28 "Mus musculus, Homo sapiens, Clostridium tetani E88, Danio rerio, Pyrococcus horikoshii" 20
- 2717 2847 27 "Homo sapiens, Enterococcus faecalis V583, Mus musculus, Mycoplasma hominis, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Bacillus megaterium, Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Pan troglodytes, Danio rerio, Anopheles gambiae, Paralichthys olivaceus"
- 2718 2848 79 "Dictyostelium discoideum, Mus musculus, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Arabidopsis thaliana, Danio rerio, Lactobacillus plantarum WCFS1"
- 2719 2849 29 "Cajanus cajan, Calicivirus isolate 2117, Mus musculus, Homo sapiens, Pasteurella multocida, Helicobacter pylori, Drosophila melanogaster, Caenorhabditis elegans, Bacillus anthracis str. A2012, Streptococcus agalactiae, Cloning vector pJAP8, Bacillus subtilis, Caenorhabditis briggsae, Bacillus anthracis" 30
- 2720 2850 63 "Rickettsia prowazekii, Rickettsia conorii, Clostridium tetani E88, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus, Staphylococcus epidermidis ATCC 12228, Dictyostelium discoideum, Listeria innocua, Leptospira interrogans serova"
- 2721 2851 92 "Haemophilus ducreyi 35000HP, Pasteurella multocida, Homo sapiens, Macaca fascicularis, Helicobacter hepaticus ATCC 51449, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Drosophila melanogaster, Caenorhabditis elegans, Schistosoma mansoni, Neisseria meningitidis Z2491, Mus musculus, Danio rerio, Staphylococcus aureus, Nostoc sp. PCC 7120, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Pyrococcus furiosus DSM 3638, Streptococcus pneumoniae, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Listeria monocytogenes, Plasmodium yoelii yoelii, Saccharomyces cerevisiae, Arabidopsis thaliana, Bacillus halodurans" 40
- 2722 2852 28 "Homo sapiens, Pyrocystis lunula, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus" 50

- 2723 2853 53 "Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Prochlorococcus marinus, Streptococcus agalact" 10
- 2724 2854 32 "Haemophilus influenzae Rd KW20, Schizosaccharomyces pombe, Listeria monocytogenes, Homo sapiens, Mus musculus, Dictyostelium discoideum, Salmonella enterica, Buchnera aphidicola str. Sg (Schizaphis graminum), Staphylococcus aureus, Thermoplasma acidophilum, Borrelia burgdorferi, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Andrias davidianus, Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Bacillus subtilis" 10
- 2725 2855 42 "Rickettsia conorii, Rickettsia prowazekii, Gallus gallus, Homo sapiens, Plasmodium falciparum, Plasmodium falciparum 3D7, Pantroglodytes, Clostridium tetani E88, Streptococcus pneumoniae, Sweet potato chlorotic stunt virus, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis briggsae, Mus musculus, Fowlpox virus" 10
- 2726 2856 32 "Homo sapiens, Fundulus heteroclitus, Plasmodium falciparum 3D7, Lycopersicon esculentum, Rickettsia prowazekii, Mus musculus, Drosophila melanogaster, Medicago truncatula, Pantroglodytes, Clostridium tetani E88, Clostridium acetobutylicum, Danio rerio, Arabidopsis thaliana" 20
- 2727 2857 23 "Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Homo sapiens, Clostridium acetobutylicum, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Pseudomonas fluorescens, Vibrio parahaemolyticus, Danio rerio" 20
- 2728 2858 28 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Thermoanaerobacter tengcongensis, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Hordeum vulgare subsp. vulgare, Populus balsamifera subsp. trichocarpa, Plasmodium falciparum 3D7, Plasmodium berghei, Melanoplus sanguinipes entomopoxvirus, Pisum sativum, Oryctolagus cuniculus, Clostridium perfringens str. 13" 30
- 2729 2859 23 "Arabidopsis thaliana, Mus musculus, Homo sapiens, Dictyostelium discoideum, Caenorhabditis elegans, Zea mays" 30
- 2730 2860 25 "Homo sapiens, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group)" 30
- 2731 2861 37 "Arabidopsis thaliana, Cryptosepalum tetraphyllum, Amherstia nobilis, Mus musculus, Homo sapiens, Pantroglodytes, Bacillus anthracis str. Ames, Sus scrofa domestica, Plasmodium falciparum 3D7, Guillardia theta, Zinnia leaf curl disease associated sequence, Okra leaf curl disease associated sequence, Ageratum leaf curl disease associated sequence, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Caenorhabditis elegans, Streptococcus gordonii, Pasteurella multocida, Nicotiana tabacum, Felis catus, Medicago truncatula, Danio rerio" 40
- 2732 2862 24 "Danio rerio, Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Pantroglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Takifugu rubripes, Yersinia pestis KIM, Arabidopsis thaliana, Yersinia pestis C092, Oryza sativa (japonica cultivar-group)" 40
- 2733 2863 23 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Drosophila melanogaster, Gonodactylellus rubriguttatus, Danio rerio" 40
- 2734 2864 26 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mus musculus, Homo sapiens, Drosophila melanogaster, Rattus norvegicus, Caenorhabditis elegans, Streptococcus gordonii, Pasteurella multocida, Nicotiana tabacum, Felis catus, Medicago truncatula, Danio rerio" 50

- smodium falciparum 3D7, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Medicago truncatula, Gobio gobio"
- 2735 2865 29 "Axis porcinus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Homo sapiens, Capreolus capreolus, Antilocapra americana, Bos taurus, Tragulus javanicus, Mus musculus, Saccharomyces cerevisiae, Ovis aries, Giraffa camelopardalis"
- 2736 2866 43 "Homo sapiens, Simian foamy virus-orangutan, Leishmania major, Dictyostelium discoideum, Caenorhabditis elegans, Mus musculus, Streptococcus agalactiae 2603V/R, Clostridium acetobutylicum, Streptococcus agalactiae NE M316, Prochlorococcus sp., Plasmodium falciparum 3D7, Helicobacter pylori 26695, Helicobacter pylori J99, Rhizopus niveus" 10
- 2737 2867 35 "Mus musculus, Clostridium tetani E88, Drosophila melanogaster, Danio rerio, Homo sapiens, Solanum demissum, Escherichia coli 0157:H7 ED L933, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Ciona intestinalis, Arabidopsis thaliana,"
- 2738 2868 25 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Homo sapiens, Caenorhabditis briggsae, Drosophila pseudoobscura, Danio rerio, Mus musculus, Bacillus cereus ATCC 14579, Pan troglodytes, Lapara bombycoides, Ennomos subsignaria, Drosophila melanogaster, Arabidopsis thaliana, Promicrogaster munda, Clostridium acetobutylicum, Neisseria meningitidis Z2491, Plasmodium falciparum 3D7, Neurospora crassa, Oryza sativa (japonica cultivar-group)" 20
- 2739 2869 28 "Caenorhabditis briggsae, Mus musculus, Drosophila melanogaster, Homo sapiens, Candida albicans, Spodoptera litura nucleopolyhedrovirus, Arabidopsis thaliana, Porphyra purpurea, Bacillus thuringiensis serovar aizawai, Lycopersicon esculentum, Caenorhabditis elegans, Danio rerio, Helicobacter hepaticus ATCC 51449"
- 2740 2870 38 "Mycoplasma pulmonis, Oceanobacillus iheyensis HTE831, Methanocaldococcus jannaschii, Mus musculus, Homo sapiens, Solanum tuberosum, Vibrio vulnificus CMCP6, Listeria innocua, Lactobacillus acidophilus"
- 2741 2871 28 "Homo sapiens, Rickettsia conorii, Rickettsia montanensis, Rickettsia rickettsii, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus MW2, Mus musculus, Danio rerio, Staphylococcus aureus, Bacillus halodurans, Bacillus cereus ATCC 14579, Methanothermococcus thermolithotrophicus, Rickettsia prowazekii, Rickettsia typhi, Plasmodium falciparum 3D7, Staphylococcus aureus subsp. aureus N315, Mycoplasma genitalium, Gossypium barbadense, Gossypium hirsutum, Staphylococcus aureus subsp. aureus Mu50" 30
- 2742 2872 28 "Mus musculus, Homo sapiens, Streptococcus agalactiae 2603V/R, Tetrahymena thermophila, Caenorhabditis elegans, Plasmodium falciparum 3D7, Danio rerio, Arabidopsis thaliana, Ureaplasma urealyticum, Campylobacter jejuni, Dictyostelium discoideum" 40
- 2743 2873 23 "Bacillus anthracis str. Ames, Human herpesvirus 7, Listeria monocytogenes, Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus mutans UA159, Streptococcus agalactiae 2603V/R, Danio rerio, Streptococcus agalactiae NEM316, Gallus gallus, Sus sp."
- 2744 2874 31 "Listeria innocua, Nitrosomonas europaea ATCC 19718, Listeria monocytogenes, Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Pasteurella multocida, Medicago truncatula"
- 2745 2875 24 "Homo sapiens, Oceanobacillus iheyensis HTE831, Mus musculus, Vibrio vulnificus CMCP6, Xylella fastidiosa Temecula1, Lasioglossum gattac 50

- a, *Xylella fastidiosa* 9a5c, *Pleurotus ostreatus*, *Nostoc* sp. PCC 7120"
- 2746 2876 24 "Caenorhabditis elegans, Homo sapiens, Danio rerio, Rattus sp., Rattus norvegicus, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Meloidogyne javanica, Anopheles gambiae"
- 2747 2877 24 "Mus musculus, Drosophila melanogaster, Homo sapiens, Danio rerio, Arabidopsis thaliana, Candida albicans, Bartonella alsatica"
- 2748 2878 33 "Plasmodium falciparum 3D7, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Canis familiaris, Methanosarcina acetivorans C2A, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Danio rerio, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Papio anubis, Cryphonectria cubensis, Bacillus anthracis str. Ames, Medicago truncatula, Pan troglodytes, Buchnera aphidicola str. Bp (Baizongia pistaciae), Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa, Brugia malayi, Vibrio parahaemolyticus, Buchnera aphidicola, Rattus norvegicus, Dictyostelium discoideum, Medicago sativa subsp. sativa, Clostridium tetani E88, Triticum monococcum, Xenopus laevis" 10
- 2749 2879 27 "Homo sapiens, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Mus musculus, Lactococcus lactis, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Didelphis virginiana, Medicago truncatula, Drosophila melanogaster, Shewanella oneidensis MR-1, Streptococcus agalactiae 2603V/R, Arabidopsis thaliana, Danio rerio, Streptococcus agalactiae NEM316, Oceanobacillus iheyensis HTE831, Lactobacillus plantarum WCFS1" 20
- 2750 2880 26 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae, Branchiostoma floridae, Homo sapiens, Drosophila melanogaster, Escherichia coli, Arabidopsis thaliana, Escherichia coli K12, Plasmodium falciparum 3D7, Bacillus cereus ATCC 14579, Mus musculus, Caenorhabditis elegans, Danio rerio, Mycoplasma penetrans, Oryza sativa (japonica cultivar-group), Trachemys scripta" 30
- 2751 2881 24 "Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Danio rerio, Mus musculus, Acanthurus mata, Plasmodium falciparum 3D7, Caenorhabditis elegans, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168" 30
- 2752 2882 23 "Klebsormidium bilatum, Homo sapiens, Mus musculus, Orientia tsutsugamushi"
- 2753 2883 28 "Homo sapiens, Drosophila melanogaster, Methanosarcina acetivorans C2A, Bacillus thuringiensis, Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7, Clostridium tetani E88, Staphylococcus aureus, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Gibberella moniliformis" 40
- 2754 2884 23 "Homo sapiens, Mus musculus, Campylobacter jejuni, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Manduca sexta, Danio rerio, Ciona intestinalis, Salmonella enterica subsp. enterica serovar Berta"
- 2755 2885 31 "Homo sapiens, Cowpox virus, Chlamydia trachomatis, Oceanobacillus iheyensis HTE831, Bacillus halodurans, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Mus musculus, Danio rerio, Nostoc sp. PCC 7120"
- 2756 2886 25 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Medicago truncatula, Homo sapiens, Staphylococcus aureus phage phi 1" 50

- 2, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. *aureus* MW2, *Mycoplasma genitalium*, *Nostoc* sp. PCC 7120, *Staphylococcus aureus* temperate phage phiSLT, *Staphylococcus aureus* bacteriophage PVL, *Clostridium perfringens* str. 13"
- 2757 2887 31 "Homo sapiens, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Streptococcus mutans* UA159, *Methanocaldococcus jannaschii*, *Medicago truncatula*, *Drosophila melanogaster*, *Tetraodon nigroviridis*, *Arabidopsis thaliana*, *Sorghum bicolor*, *Trypanosoma brucei*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Caenorhabditis elegans*, *Bacillus cereus* ATCC 14579, *Chlamydia muridarum*, *Canis familiaris*, *Chlamydia trachomatis*, *Danio rerio*, *Staphylococcus aureus* subsp. *aureus* N315, *Ateline herpesvirus 3*, *Schistosoma mansoni*, *Rattus norvegicus*, *Staphylococcus aureus* subsp. *aureus* Mu50" 10
- 2758 2888 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, *Clostridium baratii*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Rattus norvegicus*, *Chlamydomonas reinhardtii* GPIC, *Allophylus longipes*, *Canis familiaris*, *Cichorium intybus*"
- 2759 2889 21 "Homo sapiens, *Danio rerio*, *Arabidopsis thaliana*, *Mus musculus*, *Asterina pectinifera*"
- 2760 2890 26 "Caenorhabditis elegans, *Mus musculus*, *Homo sapiens*, *Cucumis sativus*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Arabidopsis thaliana*, *Sphaerospora dicentrarchi*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Felis catus*, *Dictyostelium discoideum*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Stenotrophomonas maltophilia*" 20
- 2761 2891 29 "Danio rerio, *Homo sapiens*, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group), *Methanocaldococcus jannaschii*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Vibrio cholerae*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Lotus corniculatus* var. *japonicus*, *Sulfolobus tokodaii*, *Chlorella vulgaris*, *Drosophila melanogaster*, *Medicago truncatula*, *Clostridium tetani* E88, *Pyrococcus furiosus* DSM 3638, *Prochlorococcus marinus*, *Caenorhabditis briggsae*, *Plasmodium falciparum*, *Ciona intestinalis*, *Armillaria gallica*" 30
- 2762 2892 25 "Homo sapiens, *Mus musculus*, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Thermotoga maritima*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Citrus psorosis virus*, *Candidatus Carsonella ruddii*, *Sus scrofa*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*, *Danio rerio*"
- 2763 2893 31 "Homo sapiens, *Candidatus Carsonella ruddii*, *Oryza sativa*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Danio rerio*, *Ciona intestinalis*, *Drosophila melanogaster*, *Apis mellifera*, *Naegleria gruberi*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Apis mellifera ligustica*, *Drosophila adastola*, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Menangle virus*, *Prochlorococcus marinus*, *Caenorhabditis briggsae*, *Clostridium argentinense*, *Staphylococcus epidermidis*, *Sulfolobus tokodaii*, *Schizosaccharomyces pombe*, *Drosophila sechellia*, *Drosophila simulans*, *Equus caballus*, *African swine fever virus*" 40
- 2764 2894 40 "Danio rerio, *Rhodella violacea*, *Homo sapiens*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Caenorhabditis elegans*, *Octopus magnificus*, *Ixodes holocyclus*, *Medicago sativa*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Entamoeba invadens*, *Clostridium tetani* E88, *Melanoplus crux*, *Salmo salar*, *Ureaplasma urealyticum*" 50

- m, *Amsacta moorei* entomopoxvirus, *Medicago truncatula*"
- 2765 2895 31 "Mus musculus, Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus Mu50, Drosophila melanogaster, Anolis chrysolepis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Anolis nitens, Sterkiella histriomuscorum, Arabidopsis thaliana"
- 2766 2896 31 "Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis elegans, Ips spinifer, Pan troglodytes, Mycoplasma capricolum, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Medicago truncatula, Drosophila melanogaster, Plasmodium falciparum 3D7, Capra hircus, Ovis aries, Plasmodium vivax, Cryptosporidium parvum, Amylomyces rouxii, Bos taurus, Bacillus halodurans" 10
- 2767 2897 25 "Homo sapiens, Mus musculus, Medicago truncatula, Danio rerio, Pan troglodytes, Avian infectious bronchitis virus, Rice dwarf virus"
- 2768 2898 27 "Homo sapiens, Dictyostelium discoideum, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Bacillus cereus ATCC 14579, Drosophila melanogaster, Clostridium tetani E88, Manduca sexta, Arabidopsis thaliana, Sulfolobus tokodaii, Aquifex aeolicus VF5, Thermoanaerobacter tengcongensis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Melanoplus sanguinipes entomopoxvirus, Rattus norvegicus, Borrelia burgdorferi, Clostridium perfringens str. 13" 20
- 2769 2899 33 "Homo sapiens, Prochlorococcus marinus, Cryptosporidium parvum, Corynebacterium glutamicum ATCC 13032, Arabidopsis thaliana, Fowlpox virus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Rhopalosiphum padi, Catharanthus roseus"
- 2770 2900 36 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Clostridium tetani E88, Homo sapiens, Caenorhabditis elegans, Pan troglodytes, Mus musculus, Rattus norvegicus, Danio rerio, Toxocara canis, Medicago truncatula, Dipylidium caninum, Legionella pneumophila, Vibrio cholerae, Oryza sativa (japonica cultivar-group), Coelodonta antiquitatis, Heliocidaris erythrogramma, Lycopersicon esculentum" 30
- 2771 2901 28 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Mus musculus, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group)"
- 2772 2902 32 "Mus musculus, Danio rerio, Homo sapiens, Caenorhabditis elegans, Equus caballus, Arabidopsis thaliana, Streptococcus agalactiae, Chlamydia pneumoniae CWL029, Chlamydia pneumoniae AR39, Ciona intestinalis, Chlamydia pneumoniae TW-183, Sus scrofa, Chlamydia pneumoniae J138"
- 2773 2903 50 "Chlamydia trachomatis, Clostridium tetani E88, Chlamydia felis, Triticum aestivum, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Prochlorococcus marinus subsp. marinus str. CCMP1375, Schizosaccharomyces pombe, Biomphalaria glabrata, Mus musculus, Petromyzon marinus" 40
- 2774 2904 33 "Kluyveromyces lactis, Homo sapiens, Clostridium perfringens str. 13, Borrelia burgdorferi B31, Lactobacillus plantarum WCFS1, Mus musculus, Caenorhabditis briggsae, Caenorhabditis elegans, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Rickettsia conorii, Rickettsia prowazekii, Chlamydia pneumoniae CWL029, Chlamydia pneumoniae AR39, Chlamydia pneumoniae J138, Chlamydia pneumoniae TW-183, Simian immunodeficiency virus" 50

- 2775 2905 29 "Danio rerio, Homo sapiens, Euglena longa, Arabidopsis thaliana, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Mus musculus, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Solanum tuberosum, Cucumis melo, Ostrinia furnacalis, Ostrinia nubilalis, Torpedo marmorata, Chrysodidymus synuroideus, Drosophila erecta, Glycine max, Mycoplasma penetrans, Listeria monocytogenes, Flammulina velutipes, Oryza sativa (indica cultivar-group)"
- 2776 2906 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Pyrobaculum aerophilum str. IM2, Mycoplasma pulmonis, Pyrobaculum aerophilum, Caldicellulosiruptor sp. Rt8B.4, Caenorhabditis elegans, Pan troglodytes, Photobacterium luminescens" 10
- 2777 2907 29 "Homo sapiens, Mus musculus, Sulfolobus tokodaii, Physarum polycephalum, Francisella tularensis subsp. novicida, Papio anubis, Plasmodium falciparum 3D7, Rickettsia conorii, Lactococcus lactis subsp. lactis, Danio rerio, Caenorhabditis elegans, Listonella anguillarum, Anopheles gambiae"
- 2778 2908 24 "Bungarus candidus, Homo sapiens, Caenorhabditis elegans, Plasmodium falciparum 3D7, Ehrlichia canis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Phytophthora infestans, Cryptosporidium parvum, Mus musculus, Zea mays, Methanosarcina acetivorans C2A, Pneumocystis carinii, Prochlorococcus marinus, Ureaplasma urealyticum, Nostoc sp. PCC 7120" 20
- 2779 2909 29 "Homo sapiens, Danio rerio, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Mus musculus, Bacillus halodurans, Plasmodium falciparum 3D7, Schmidtea mediterranea, Plasmodium vivax, Xenopus borealis"
- 2780 2910 27 "Mus musculus, Mycoplasma fermentans, Mytilus edulis, Mytilus galloprovincialis, Homo sapiens, Shigella flexneri 2a str. 2457T, Dictyostelium discoideum, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli O157:H7 EDL933, Escherichia coli K12, Oryza sativa (japonica cultivar-group), Escherichia coli, Escherichia coli O157:H7, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sulfolobus solfataricus, Danio rerio, Arabidopsis thaliana, Branchiostoma floridae, Caenorhabditis elegans, Mycoplasma penetrans, Medicago truncatula, Prochlorococcus marinus subsp. marinus str. CCMP1375, Helicobacter pylori J99, Sillago japonica, Campylobacter fetus, Anopheles gambiae" 30
- 2781 2911 28 "Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Bacillus anthracis str. Ames, Pan troglodytes, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Thermoanaerobacter tengcongensis, Gallus gallus, Oenothera berteriana, Oenothera odorata, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 2782 2912 26 "Homo sapiens, Drosophila melanogaster, Canis familiaris, Nostoc sp. PCC 7120, Mus musculus, Neisseria gonorrhoeae, Arabidopsis thaliana, Rattus norvegicus, Danio rerio" 40
- 2783 2913 95 "Haemophilus ducreyi 35000HP, Bacillus cereus ATCC 14579, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Dictyostelium discoideum, Homo sapiens, Oryza sativa (japonica cultivar-group), Fusobacterium nucleatum, uncultured pig faeces bacterium, Bacillus anthracis str. Ames, Arabidopsis thaliana, Xylella fastidiosa Temecula1, Cryptococcus neoformans var. grubii, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Leishmania major, Listeria innocua, Mus musculus" 50

- 2784 2914 32 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Saccharomyces cerevisiae, Danio rerio, Prochlorococcus marinus, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Oryza sativa (japonica cultivar-group), Pan troglodytes, Schizophyllum commune, Centruroides limpidus limpidus, Escherichia coli 0157:H7 EDL933, Lycopersicon esculentum, Plasmodium falciparum 3D7, Rattus norvegicus, Felis catus, Melanoplus sanguinipes entomopoxvirus, Escherichia coli 0157:H7, Clostridium perfringens str. 13"
- 2785 2915 35 "Homo sapiens, Clostridium acetobutylicum, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Mus musculus, uncultured bacterium, Enterococcus faecalis V583, Bacillus anthracis str. A2012, Clostridium limosum, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Bacillus anthracis, Danio rerio" 10
- 2786 2916 27 "Lampsilis teres, Margaritifera auricularia, Drosophila melanogaster, Euglena granulata, Danio rerio, Pristinicola hemphilli, Mus musculus, Cyrtonebias tampicoensis, Glebula rotundata, Gracilariopsis lemaneiformis, Homo sapiens, Gastrochaena dubia, Megerlina sp. D1218, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Pichia anomala, Hyalella sp. UnpF, Hyalella sp. UnpB, Hyalella sp. UnpA, Hyalella sp. UnpD, Hyalella sp. UnpC, Hyalella sp. UnpE, Hyalella sp. RainB, Hyalella sp. Marsh, Hyalella sp. 2-3-JW-2002, Hyalella sp. 2-2-JW-2002, Hyalella sp. 2-1-JW-2002, Nucula sulcata, Terebratalia transversa, Drosophila heteroneura, Viviparus georgianus, Spirula spirula, Katharina tunnicata, Cypraea pantherina, Magellania joubini, Ecnomiosa sp. Ecn1, Conus miles" 20
- 2787 2917 29 "Homo sapiens, Bacillus anthracis str. Ames, Spiculaea ciliata, Plasmodium falciparum 3D7, Pan troglodytes, Arabidopsis thaliana, Drosophila melanogaster, Mus musculus, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Oryza sativa (japonica cultivar-group), Chlamydophila pneumoniae J138, Danio rerio, Chlamydophila pneumoniae TW-183, Iris fulva"
- 2788 2918 27 "Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Prochlorococcus marinus subsp. marinus str. CCMP1375, Schistosoma japonicum, Bacteroides thetaiotaomicron VPI-5482, Shewanella oneidensis MR-1, Synechococcus sp. PCC 7002, Mus musculus, Bos taurus, Lotus corniculatus var. japonicus, Danio rerio, synthetic construct, Halocynthia roretzi" 30
- 2789 2919 47 "Plasmodium falciparum 3D7, Danio rerio, Dictyostelium discoideum, Mus musculus, Homo sapiens, Tetrahymena pyriformis, Pseudograpus albus, Clostridium tetani E88, Polypterus bichir, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Borrelia bissettii, Schmidtea mediterranea, Lycopersicon esculentum, Aphidius ervi, Ureaplasma urealyticum, Plasmodium vivax, Psychotria diguana, Palicourea acanthacea, Cyprinus carpio, Schizosaccharomyces pombe, Medicago truncatula, Solanum tuberosum, Borrelia sp. CA128, Borrelia sp. CA395, Plasmodium falciparum, Drosophila sp., Monosiga brevicollis, Globba wengeri, Globba spathulata, Saccharomyces castellii, Cairina moschata, Tribolium castaneum, Psychotria borjensis, Phallocephale tallagandensis, Ruhbergia bifalcata" 40
- 2790 2920 25 "Homo sapiens, Danio rerio, Helicobacter pylori 26695, Mus musculus, Bacillus anthracis str. Ames, Pan troglodytes, Schistosoma japonicum, Xenopus laevis, Lemur catta, Clostridium acetobutylicum, Prochlorococcus marinus, Oncorhynchus mykiss, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Caenorhabditis elegans, Medicago truncatula, Rattus norvegicus"
- 2791 2921 29 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Methanosarcina acetiv 50

- orans C2A, Amsacta moorei entomopoxvirus, Thermoplasma volcanium, Bacillus halodurans, Plasmodium falciparum 3D7, Pan troglodytes, Danio rerio, Plasmodium vivax "
- 2792 2922 31 "Homo sapiens, Mus musculus, Drosophila melanogaster, Vibrio parahaemolyticus, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Thermoplasma acidophilum, Caenorhabditis elegans, Sarcophaga peregrina, Aurelia aurita"
- 2793 2923 27 "Oryza sativa (japonica cultivar-group), Mus musculus, Escherichia coli CFT073, Homo sapiens, Danio rerio, Arabidopsis thaliana, Glycine max, Mycoplasma penetrans, Alicyclobacillus acidocaldarius, Bacillus sp., Bacillus caldolyticus" 10
- 2794 2924 29 "Clostridium perfringens str. 13, Homo sapiens, Equine morbillivirus, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio"
- 2795 2925 27 "Homo sapiens, Mycoplasma pulmonis, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Guillardia theta, Clostridium acetobutylicum, Arabidopsis thaliana, Chlamydophila pneumoniae CWL029, Encalypta streptocarpa, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Sulfolobus tokodaii, Bacillus subtilis subsp. subtilis str. 168, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Chlamydophila pneumoniae TW-183, Bacillus subtilis, Rana rugosa, Oryza sativa (japonica cultivar-group)" 20
- 2796 2926 23 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Danio rerio, Brachypodium sylvaticum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Sulfolobus tokodaii, Caenorhabditis elegans, Schizosaccharomyces pombe, Pan troglodytes"
- 2797 2927 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Medicago truncatula, Tetraodon nigroviridis, Danio rerio"
- 2798 2928 34 "Homo sapiens, Pan troglodytes, Caenorhabditis elegans, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 2799 2929 36 "Shewanella putrefaciens, Mus musculus, Homo sapiens, Oceanobacillus ihayensis HTE831, Danio rerio, Vibrio cholerae" 30
- 2800 2930 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, Papio anubis, Caenorhabditis elegans, Gentianella foliosa, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana"
- 2801 2931 26 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Homo sapiens, Clostridium tetani E88, Schizosaccharomyces pombe, Thermoanaerobacter tengcongensis, Oryza sativa (japonica cultivar-group), Mycoplasma capricolum, Photobacterium luminescens subsp. laumondii, Mus musculus, Caenorhabditis elegans, Pan troglodytes, Danio rerio"
- 2802 2932 24 "Homo sapiens, Ochromonas danica, Spiroplasma citri, Mus musculus, Clostridium tetani E88, Plasmodium falciparum 3D7, Saccharomyces castellii, Danio rerio, Saccharomyces dairenensis, Atelerix albiventris, Medicago truncatula, Dictyostelium discoideum, Drosophila melanogaster, Flaveria trinervia, Arabidopsis thaliana, Litopenaeus vannamei, Emericella nidulans" 40
- 2803 2933 25 "Mus musculus, Rhamdia guatemalensis, Homo sapiens, Marcantia polymorpha, Clostridium tetani E88, Thermoanaerobacter tengcongensis, Lycopersicon esculentum, Mycoplasma penetrans, Drosophila erecta, Drosophila yakuba, Solanum tuberosum"
- 2804 2934 32 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Drosophila melanogaster, Fusobacterium nucleatum subsp. nu" 50

- cleatum ATCC 25586, Rickettsia conorii, Rickettsia prowazekii, Leishmania tarentolae, Euglena gracilis, Mentha x piperita,"
- 2805 2935 25 "Homo sapiens, Melanoplus sanguinipes entomopoxvirus, Danio rerio, Mus musculus, Arabidopsis thaliana, Atelerix albiventris, Oryza sativa (japonica cultivar-group), Felis catus, Methanosarcina acetivorans C2A, Candida albicans, Caenorhabditis elegans, Medicago truncatula"
- 2806 2936 27 "Homo sapiens, Medicago truncatula, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Bacillus sphaericus, Staphylococcus epidermidis, Caenorhabditis elegans, Neurospora crassa, Panax vietnamensis, Panax sinensis, Streptococcus pyogenes M1 GAS, Mus musculus, Oryza sativa (japonica cultivar-group)" 10
- 2807 2937 31 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Plasmodium falciparum 3D7, Russula farinipes, Caenorhabditis briggsae, Oceanobacillus iheyensis HTE831, Danio rerio, Plasmodium falciparum, Methanocaldococcus jannaschii, Medicago truncatula, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani E88, Zea mays, Gallus gallus, Caenorhabditis elegans, Canine herpesvirus, Pisum sativum, Rattus norvegicus"
- 2808 2938 41 "Danio rerio, Kluyveromyces blattae, Homo sapiens, Schmidtea mediterranea, Arabidopsis thaliana, Mus musculus, Caenorhabditis briggsae, Monosiga brevicollis, Lycopersicon esculentum, Aphidius rhopalosiphii, Plasmodium falciparum 3D7, Dictyostelium discoideum," 20
- 2809 2939 33 "Homo sapiens, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Danio rerio, Medicago truncatula, Monosiga brevicollis, Streptococcus mutans UA159, Roboastrea europaea, Staphylococcus aureus, Oryza sativa, Swinepox virus, Rickettsia conorii, Prochlorococcus marinus, Rickettsia montanensis, Rickettsia rickettsii, Clostridium perfringens, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Oncorhynchus keta, Plasmid pIP404, Oryzias latipes, Plasmodium falciparum, Staphylococcus aureus subsp. aureus Mu50, Clostridium perfringens str. 13" 30
- 2810 2940 93 "Clostridium perfringens str. 13, Haemophilus ducreyi 35000HP, Homo sapiens, Arabidopsis thaliana, Ureaplasma urealyticum, Prochlorococcus marinus subsp. marinus str. CCMP1375, Mycoplasma pulmonis, Plasmodium falciparum 3D7, Bacillus megaterium, Chlamydomonas caviae GPIC, Vibrio vulnificus CMCP6, Thermoanaerobacter tengcongensis, Clostridium acetobutylicum, Chlamydomonas pneumoniae CWL029, Chlamydia trachomatis, Mus musculus, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Rattus norvegicus, Medicago truncatula, Chlamydomonas pneumoniae TW-183" 40
- 2811 2941 138 "Enterococcus faecalis V583, Bacillus megaterium, Bacillus cereus ATCC 14579, Staphylococcus aureus, Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus MW2, Clostridium perfringens, Clostridium perfringens str. 13, Streptococcus agalactiae "
- 2812 2942 46 "Listeria monocytogenes, Homo sapiens, Shigella flexneri 2a str. 2457T, Enterococcus faecalis V583, Aquifex aeolicus VF5, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli O157:H7 EDL933, Arabidopsis thaliana, Escherichia coli K12, Mus musculus, Oryza sativa (japonica cultivar-group), Listeria innocua, Danio rerio, Escherichia coli, Escherichia coli O157:H7" 50

- 2813 2943 25 "Clostridium tetani E88, Mus musculus, Mycoplasma penetrans, Homo sapiens, Papio anubis, Pan troglodytes, Takifugu rubripes, Bacillus sporoothermodurans, Ciona intestinalis, Pneumocystis carinii"
- 2814 2944 52 "Mycoplasma capricolum, Danio rerio, Prochlorococcus marinus, Homo sapiens, Chlamydia trachomatis, Mycoplasma penetrans, Mus musculus, Leptospira interrogans serovar lai str. 56601, Xylella fastidiosa Temecula1, Clostridium acetobutylicum, Xylella fastidiosa 9a5c, Bacillus cereus ATCC 14579, Drosophila melanogaster, Rattus norvegicus, Ateles belzebuth chamek, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Grapevine fanleaf virus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Chloromonas rosae, Chloromonas palmelloides, Chloromonas reticulata, Chlamydomonas macrostellata" 10
- 2815 2945 47 "Rickettsia prowazekii, Pasteurella multocida, Rickettsia conorii, Danio rerio, Oryza sativa (japonica cultivar-group), Ureaplasma urealyticum, Medicago truncatula, Homo sapiens, Vibrio cholerae, Mus musculus, Arabidopsis thaliana"
- 2816 2946 71 "Clostridium perfringens str. 13, Listeria innocua, Leptospira interrogans serovar lai str. 56601, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Chlamydia muridarum, Vibrio vulnificus CMCP6, Streptococcus agalactiae 2603V/R, Mus musculus, Geobacillus stearothermophilus, Rickettsia prowazekii, Streptococcus agalactiae NEM316, Vibrio cholerae, Oceanobacillus iheyensis HTE831, Prochlorococcus marinus subsp. marinus str. CCMP1375" 20
- 2817 2947 131 "Haemophilus influenzae Rd KW20, Pasteurella multocida, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Coxiella burnetii RSA 493, Prochlorococcus marinus, Ba"
- 2818 2948 29 "Homo sapiens, Borrelia burgdorferi B31, Caenorhabditis elegans, Danio rerio, Mus musculus, Lotus corniculatus var. japonicus, Gallus gallus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus, Triticum aestivum subsp. spelta, Neisseria meningitidis MC58, Rattus norvegicus, Triticum aestivum subsp. aestivum, Clostridium perfringens str. 13" 30
- 2819 2949 44 "Clostridium acetobutylicum, Campylobacter jejuni subsp. jejuni NCTC 11168, Listeria monocytogenes, Methanosarcina mazei Goe1, Haemophilus ducreyi 35000HP, Listeria innocua, Homo sapiens, Mus musculus, Pasteurella multocida, Euglena gracilis, Rickettsia prowazekii, Mycoplasma pulmonis, Arabidopsis thaliana, Artibeus jamaicensis, Rattus norvegicus, Medicago truncatula, Bacillus cereus ATCC 14579, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Beta vulgaris subsp. vulgaris, Danio rerio" 40
- 2820 2950 28 "Arabidopsis thaliana, Homo sapiens, Pan troglodytes, Chlamydomonas reinhardtii, Schizosaccharomyces pombe, Mus musculus, Listeria monocytogenes, Danio rerio, Cryptocercus punctulatus, Enterococcus faecalis V583, Dictyostelium discoideum, Plasmodium falciparum 3D7, Pantoea agglomerans, Buchnera aphidicola str. Sg (Schizaphis graminum), Clostridium acetobutylicum, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Ateline herpesvirus 3, Buchnera aphidicola"
- 2821 2951 28 "Homo sapiens, Mycoplasma penetrans, Caenorhabditis elegans, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa, Oryza sativa (japonica cultivar-group), Danio rerio, Rattus norvegicus, Dictyostelium discoideum, Dr 50

- osophila melanogaster, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Nostoc sp. PCC 7120"
- 2822 2952 39 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Drosophila melanogaster, Homo sapiens, Chlamydomonas reinhardtii, Cryptosporidium parvum, Chilo iridescent virus, Pseudocorticium jarrei, Oryctolagus cuniculus, Enterobacteria phage RB69, Arabidopsis thaliana"
- 2823 2953 32 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Dictyostelium discoideum, Caenorhabditis elegans, Medicago truncatula, Magnaporthe grisea, Xenopus laevis, Rickettsia prowazekii, Rickettsia typhi, synthetic construct, Rattus norvegicus, Drosophila melanogaster, Sus scrofa, Gallus gallus, Raphanus sativus, Solanum nigrum, Beta vulgaris subsp. vulgaris" 10
- 2824 2954 25 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Rattus norvegicus, Danio rerio, Pan troglodytes, Boophilus microplus"
- 2825 2955 32 "Dugesia japonica, Danio rerio, Drosophila santomea, Homo sapiens, Rickettsia conorii, Rickettsia montanensis, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Dictyostelium discoideum, Mus musculus, Clostridium acetobutylicum, Rickettsia typhi, Calycanthus floridus var. glaucus, Clostridium longisporum, Canis familiaris, Rattus norvegicus, Borrelia burgdorferi B31, Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium tetani E88, Arabidopsis thaliana, Drosophila littoralis, Buchnera aphidicola str. Sg (Schizaphis graminum), Pasteurella multocida, Plasmodium falciparum, Lycopersicon esculentum, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Ips schmutzenhoferi, Thermotoga maritima, Pan troglodytes, Medicago truncatula, Glycine max, Clostridium perfringens str. 13" 20
- 2826 2956 23 "Mus musculus, Arabidopsis thaliana, Homo sapiens"
- 2827 2957 27 "Mus musculus, Homo sapiens, Danio rerio, Papio anubis, Arabidopsis thaliana, Caenorhabditis elegans, Mycoplasma penetrans"
- 2828 2958 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Gallus gallus, Caenorhabditis briggsae, Zygonemertes simonae, Tetrahymena pigmentosa, Dictyostelium discoideum, Shewanella oneidensis MR-1, Papio anubis, Campylobacter jejuni subsp. jejuni NCTC 11168, Plasmodium knowlesi, Mycoplasma penetrans, Saccharomyces cerevisiae, Caenorhabditis elegans, Morus boninensis, Ascolepis capensis" 30
- 2829 2959 24 "Caenorhabditis elegans, Mus musculus, Rattus norvegicus, Homo sapiens, Drosophila melanogaster, Megaceros vincentianus, Arabidopsis thaliana, Megaceros aenigmaticus, Phaeoceros laevis, Hypnodendron menziesii, Danio rerio, Listeria innocua, Oryza sativa (japonica cultivar-group)"
- 2830 2960 39 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Enterococcus faecalis V583, Homo sapiens, Enterococcus faecalis, Caenorhabditis elegans, Mus musculus, Rickettsia conorii, Hemiculter leucisculus, Lactococcus phage 409, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Bacteriophage bIL309, Danio rerio, Nicotiana tabacum, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Staphylococcus aureus subsp. aureus N315, Mycoplasma penetrans, Methanocaldococcus jannaschii, Staphylococcus aureus subsp. aureus Mu50" 40
- 2831 2961 27 "Homo sapiens, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Mus musculus, Pan troglodytes, Drosophila melanogaster, Papio anubis, Torrubiella confragosa, Schizosaccharomyces pombe, Cryphonectria parasitica" 50

- ica, Hepatitis E virus, Phaseolus vulgaris, Lactobacillus sp."
- 2832 2962 32 "Homo sapiens, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Arabidopsis thaliana, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 2833 2963 24 "Mus musculus Homo sapiens, Thermotoga maritima, Drosophila melanogaster, Pseudoalteromonas haloplanktis, Danio rerio, Helicobacter hepaticus ATCC 51449"
- 2834 2964 35 "Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Strongyloides stercoralis, Arabidopsis thaliana, Bacillus anthracis str. Ames, Caenorhabditis elegans, Drosophila melanogaster, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Prochlorococcus marinus, Rickettsia prowazekii, Nicotiana tabacum, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Danio rerio, Papio anubis" 10
- 2835 2965 27 "Drosophila melanogaster, Homo sapiens, Brucella melitensis 16M, Brucella suis 1330, Oryza sativa (japonica cultivar-group), Mus musculus, Acute bee paralysis virus, Pan troglodytes, Thermotoga maritima"
- 2836 2966 31 "Danio rerio, Homo sapiens, Mus musculus, Ophthalmotilapia ventralis, Paratilapia polleni, Cucumis melo, Acanthamoeba sp. TUMSJ-341, Dictyostelium discoideum, Tursiops truncatus, Oryza sativa, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Ptyochromis xenognathus, Medicago truncatula, Dimidiochromis compressiceps, Julidochromis transcriptus, Drosophila melanogaster, Rattus norvegicus, Mus sp., Plasmodium falciparum 3D7, Glycine max, Schmidtea mediterranea, Pheidole pallidula, Ectromelia virus, Formica exsecta, Potamopyrgus antipodarum, Crotophaga ani, Schinus terebinthifolius, Lycopersicon esculentum" 20
- 2837 2967 31 "Homo sapiens, Mus musculus, Aquifex aeolicus VF5, Caenorhabditis elegans, Arabidopsis thaliana, Papio anubis, Drosophila melanogaster, Danio rerio, Oryza sativa (japonica cultivar-group), Methanosarcina mazei Goe1, Tetrahymena thermophila, Prochlorococcus marinus subsp. marinus str. CCMP1375" 30
- 2838 2968 28 "Caenorhabditis elegans, Homo sapiens, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Candidatus Blochmannia floridanus, Drosophila melanogaster, Mus musculus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Swinepox virus, Streptococcus pyogenes M1 GAS, Prochlorococcus marinus, Streptococcus pyogenes SSI-1"
- 2839 2969 24 "Homo sapiens, Oryza sativa, Cyprinus carpio, Oryza sativa (japonica cultivar-group), Mus musculus, Pan troglodytes, Lotus corniculatus var. japonicus, Danio rerio"
- 2840 2970 27 "Homo sapiens, Mus musculus, Danio rerio, Nostoc sp. PCC 7120, Papio anubis, Medicago truncatula, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Caenorhabditis elegans" 40
- 2841 2971 27 "Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Pyrococcus horikoshii, Caenorhabditis elegans, Dictyostelium discoideum, Equus caballus, Drosophila melanogaster, Plasmodium falciparum 3D7, Streptococcus salivarius, Danio rerio, Arabidopsis thaliana, Chamaecyparis obtusa"
- 2842 2972 39 "Danio rerio, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Oryza sativa (japonica cultivar-group), Lemur catta, Prochlorococcus marinus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oryza sativa, Pan troglodytes, Arabidopsis thaliana, Dictyostelium discoideum, Gallus gall 50

us, *Medicago truncatula*, *Drosophila melanogaster*, *Papio anubis*, *Sus scrofa*, *Prototheca wickerhamii*, *Porphyra purpurea*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Psilotum nudum*, *Anopheles gambiae*, *Physarum polycephalum*

2843 2973 31 "Homo sapiens, Mus musculus, Rattus norvegicus, Gallus gallus, Arabidopsis thaliana"

2844 2974 38 "Haemophilus influenzae, Homo sapiens, Helicobacter hepaticus ATCC 51449, Danio rerio, Bacillus anthracis str. Ames, Mus musculus, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Pyrococcus horikoshii, Piromyces sp."

2845 2975 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Volemys kikuchii, Xenopus laevis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Zucchini yellow mosaic virus"

2846 2976 28 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Oryctolagus cuniculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Pemphigus bursarius, Pemphigus spyrothecae, Oryza sativa (japonica cultivar-group), Pemphigus populi, Danio rerio, Medicago truncatula, Clostridium butyricum, Clostridium botulinum, Rattus norvegicus, Trapeliopsis flexuosa, Mycoplasma penetrans, Caenorhabditis elegans"

2847 2977 27 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Rhesus cytomegalovirus strain 68-1, Cercopithecine herpesvirus 8, Staphylococcus epidermidis ATCC 12228, Danio rerio, Xenopus laevis, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Peanut witches'-broom phytoplasma, Buchholzia fallax, Heronidrilus gravidus, Plasmodium falciparum, Lactococcus lactis subsp. lactis, Rickettsia prowazekii, Mycoplasma pulmonis, Streptococcus agalactiae NEM316, Caenorhabditis briggsae, Lumbricus castaneus, Heronidrilus heronae, Fridericia tuberosa, Eisenia fetida, Lumbricus rubellus, Perna viridis, Lumbricus terrestris, Dendrobaena clujensis, Octolasion lacteum"

2848 2978 31 "Homo sapiens, Vibrio vulnificus CMCP6, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Dictyostelium sp., Bacteroides thetaiotaomicron VPI-5482, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Caenorhabditis elegans, Mus musculus, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani E88, Schizosaccharomyces japonicus, Rheum nanum, Plasmodium falciparum 3D7, Arrhopalites sericus, Chaetosphaeridium globosum, Rickettsia conorii, Prochlorococcus marinus, Lotus corniculatus var. japonicus, Canis familiaris, Clostridium perfringens str. 13"

2849 2979 27 "Rattus norvegicus, Drosophila melanogaster, Mus musculus, Danio rerio, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Flanders virus, Homo sapiens, Caenorhabditis elegans, Salmonella enterica subsp. enterica serovar Typhi"

2850 2980 34 "Human immunodeficiency virus 1, Mus musculus, Homo sapiens, Didelphis virginiana, Sciurus vulgaris, Bacillus anthracis str. Ames, Pantroglodytes, Lycopersicon esculentum, Arabidopsis thaliana, Sulfolobus solfataricus, Danio rerio, Caenorhabditis elegans, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Medicago truncatula, Sulfolobus tokodaii, Rattus norvegicus"

2851 2981 27 "Methanosarcina mazei Goe1, Homo sapiens, Papio anubis,

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- Lactobacillus rhamnosus, Escherichia coli, Oryza sativa (japonica cultivar-group), Mycoplasma genitalium, Drosophila melanogaster, Trichoplusia ni, Lactococcus lactis subsp. lactis, Danio rerio, Mus musculus, Lactococcus lactis, Borrelia hermsii, Ornithorhynchus anatinus, Rattus norvegicus"
- 2852 2982 24 "Homo sapiens, Mus musculus, Methanococcus maripaludis, Chlorobium tepidum TLS, Methanosarcina acetivorans C2A, Avena strigosa, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Ciona intestinalis"
- 2853 2983 24 "Lycopersicon esculentum, Homo sapiens, Pneumocystis carinii, Ureaplasma urealyticum, Plasmodium falciparum 3D7, Bos taurus, Danio rerio, Schizosaccharomyces pombe, Mus musculus" 10
- 2854 2984 28 "Mus musculus, Homo sapiens, Papio anubis, Schizosaccharomyces pombe, Caenorhabditis elegans, Thermoanaerobacter tengcongensis, Arabidopsis thaliana, Thalictum tuberosum, Lotus corniculatus var. japonicus, Medicago truncatula, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila melanogaster, Apis mellifera, Theragra chalcogramma, Caenorhabditis briggsae, Zea mays, Saccharomyces cerevisiae, Danio rerio, Macaca fascicularis, Cricetulus griseus, Bacteroides thetaiotaomicron VPI-5482, Bemisia tabaci, Bos taurus"
- 2855 2985 25 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Drosophila melanogaster, Mus musculus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Mycoplasma fermentans, Ciona intestinalis, Leptospira borgpetersenii" 20
- 2856 2986 31 "Mus musculus, Medicago truncatula, Oceanobacillus iheyensis HTE831, Danio rerio, Dictyostelium discoideum, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Lotus corniculatus var. japonicus, Charidotella zona, Sumitrosis inaequalis, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Buchnera aphidicola str. Bp (Baizongia pistaciae), Bacillus anthracis str. A2012, Arabidopsis thaliana, Sulfolobus solfataricus, Savignium dentatum, Euglena gracilis, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Caenorhabditis elegans, Bacillus anthracis, Melanoplus sanguinipes entomopoxvirus, Helicobacter hepaticus ATCC 51449, Belenois java, Delias pasithoe, Delias ladas" 30
- 2857 2987 36 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Rattus norvegicus, Dictyostelium discoideum, Clostridium tetani E88, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Bacillus anthracis str. Ames, Macaca mulatta, Canis familiaris, Campylobacter jejuni subsp. jejuni NCTC 11168, Paramecium aurelia, Lotus corniculatus var. japonicus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio, Pan troglodytes, Methanocaldococcus jannaschii, Paramecium tetraurelia, Paramecium primaurelia" 40
- 2858 2988 27 "Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Hemicentrotus pulcherrimus, Homo sapiens, Lactobacillus johnsonii prophage Lj928, Caenorhabditis elegans, Rhodospirillum rubrum, Bangia atropurpurea, Plasmodium falciparum 3D7, Chlorobium tepidum TLS, Legionella pneumophila, Nicotiana tabacum, Rickettsia prowazekii, Cyanidium caldarium, Lotus corniculatus var. japonicus, Simian immunodeficiency virus, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 2859 2989 23 "Mus musculus, Homo sapiens, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Mycoplasma gallisepticum R, uncultured bacterium, Bacteroides thetaiotaomicron VPI-5482, Pseudomonas aeruginosa PA01, Ps 50

- eudomonas aeruginosa, Nevskia ramosa, Capsella rubella, Caenorhabditis briggsae, Caenorhabditis elegans, Saccharomyces cerevisiae, Cyanophora paradoxa, Cyanidioschyzon merolae, Arabidopsis thaliana"
- 2860 2990 29 "Homo sapiens, Yaba-like disease virus, Caenorhabditis elegans, Arabidopsis thaliana, Helicobacter pylori 26695, Helicobacter pylori J99, Mus musculus, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Rattus norvegicus, Staphylococcus epidermidis ATCC 12228, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Clostridium acetobutylicum, Ciona intestinalis, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Streptococcus pyogenes, Saccharomyces cerevisiae, Lactobacillus plantarum WCFS1, Pan troglodytes, Gallus gallus, Staphylococcus aureus subsp. aureus Mu50" 10
- 2861 2991 31 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Citrus psorosis virus, Dictyostelium discoideum, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Guillardia theta, Bacillus cereus, Plasmodium falciparum, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Strongylocentrotus purpuratus"
- 2862 2992 29 "Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Cloning vector pVLH/hsp, Cloning vector pHLH/int(+), Cloning vector pVLH/int(+), Drosophila virilis, Cloning vector pVLH-1, Plasmodium falciparum, Mycoplasma gallisepticum R, Rattus norvegicus, Medicago truncatula, Lepidospira interrogans serovar lai str. 56601, Escherichia coli, Archaeoglobus fulgidus DSM 4304, Bombyx mori, Arabidopsis thaliana, Dolichorhinotermes sp. 'Manaus', Caenorhabditis briggsae, Atriplex hortensis, Tribolium castaneum, uncultured bacterium, Pan troglodytes, Mycoplasma pirum, Candida tropicalis" 20
- 2863 2993 27 "Homo sapiens, Pelodiscus sinensis, Lotus corniculatus var. japonicus, Danio rerio, Caenorhabditis elegans, Octopus dofleini, Mus musculus, Thermotoga maritima"
- 2864 2994 28 "Thermoanaerobacter tengcongensis, Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group), Schistocerca gregaria, Mus musculus, Ureaplasma urealyticum, Ciona intestinalis, Pan troglodytes, Drosophila melanogaster, Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Prochlorococcus marinus, Trichonympha agilis, Equus caballus" 30
- 2865 2995 25 "Homo sapiens, Streptococcus pyogenes MGAS8232, Streptococcus agalactiae NEM316, Mus musculus"
- 2866 2996 27 "Homo sapiens, Mesocricetus auratus, Danio rerio, Bacillus cereus ATCC 14579, Mus musculus, Clostridium perfringens str. 13, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120" 40
- 2867 2997 30 "Danio rerio, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Pan troglodytes, Plasmodium falciparum 3D7, Staphylococcus aureus, Arabidopsis thaliana, Mus musculus, Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Ornithorhynchus anatinus, Staphylococcus aureus subsp. aureus Mu50, Macaca mulatta, Staphylococcus epidermidis ATCC 12228, Lemur catta, Papio anubis, Oryza sativa (japonica cultivar-group), Medicago truncatula, Plasmodium falciparum, Polistes annularis"
- 2868 2998 35 "Polyonchobothrium magnum, Homo sapiens, Plasmodium falc 50

- iparum 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Prochlorococcus marinus*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Takifugu rubripes*, *Clostridium acetobutylicum*, *Porphyromonas gingivalis* W83, *Danio rerio*, *Helicobacter pylori* J99"
- 2869 2999 23 "Mus musculus, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Caenorhabditis elegans*, *Danio rerio*"
- 2870 3000 24 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Thermoanaerobacter tengcongensis*, *Beta vulgaris*, *Spinacia oleracea*, *Saccharomyces cerevisiae*"
- 2871 3001 28 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Pan troglodytes*, *Caenorhabditis elegans*, *Sus scrofa*, *Medicago truncatula*, *Danio rerio*, *Thermosynechococcus elongatus* BP-1" 10
- 2872 3002 36 "Homo sapiens, *Drosophila melanogaster*, *Sorghum bicolor*, *Gallus gallus*, *Clostridium acetobutylicum*, *Mus musculus*, *Xenopus laevis*, *Borrelia burgdorferi* B31, *Streptococcus mutans* UA159, *Caenorhabditis elegans*, *Candidatus Blochmannia floridanus*, *Danio rerio*, *Schizosaccharomyces pombe*, *Ciona intestinalis*, Tick and insect-borne orbivirus, *Arabidopsis thaliana*"
- 2873 3003 23 "Mus musculus, *Branchiostoma floridae*, *Homo sapiens*, *Oryza sativa* (indica cultivar-group), *Oryza sativa* (japonica cultivar-group), *Borrelia burgdorferi* B31, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Anopheles gambiae*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Arabidopsis thaliana*" 20
- 2874 3004 35 "Dictyostelium discoideum, *Homo sapiens*, *Mus musculus*, *Zea mays*, *Drosophila melanogaster*, *Rattus norvegicus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Plasmodium vivax*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Phaeosphaeria caricicola*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Stigeoclonium helveticum*, *Streptococcus agalactiae* NEM316, *Lotus corniculatus* var. *japonicus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Medicago truncatula*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* Mu50" 30
- 2875 3005 35 "Arabidopsis thaliana, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Actinobacillus pleuropneumoniae*, *Solanum tuberosum*, *Drosophila melanogaster*, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Prochlorococcus marinus*, *Methanocaldococcus jannaschii*, *Caitharanthus roseus*"
- 2876 3006 24 "Schmidtea mediterranea, *Cryptocephalus hypochaeridis*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Rickettsia prowazekii*, *Danio rerio*, *Daucus carota*, *Pseudocaryopteris paniculata*, *Caryopteris forrestii*, *Caryopteris mongholica*, *Caryopteris tangutica*, *Amethystea caerulea*, *Drosophila melanogaster*, *Monosiga brevicollis*, *Mus musculus*, *Arabidopsis thaliana*, *Prochlorococcus marinus*, *Caryopteris incana*, *Caryopteris bicolor*, *Carassius auratus*" 40
- 2877 3007 31 "Cucumis melo, *Homo sapiens*, *Brassica rapa*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Pasteurella multocida*, *Oryza sativa* (japonica cultivar-group), *Procambarus clarkii*"
- 2878 3008 27 "Caenorhabditis elegans, *Arabidopsis thaliana*, *Mus musculus*, *Medicago truncatula*, *Drosophila melanogaster*, *Triticum monococcum*, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Bradyrhizobium japonicum* USDA 110, *Thermoanaerobacter tengcongensis*, *Strongyloides stercoralis*"
- 2879 3009 23 "Sugarcane streak mosaic virus, *Mus musculus*, *Homo sapiens*" 50

- ns, *Drosophila melanogaster*, *Papio anubis*, *Arabidopsis thaliana*"
- 2880 3010 27 "Homo sapiens, *Dictyostelium discoideum*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Gallus gallus*, *Clostridium tetani* E88, *Physcomitrella patens*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Rickettsia prowazekii*, *Oryza sativa*, *Plasmodium falciparum* 3D7, *Macrophthalmus convexus*"
- 2881 3011 25 "Mus musculus, Homo sapiens, *Bordetella bronchiseptica*, *Bordetella parapertussis*, *Bordetella pertussis*, *Sarcocystis neurona*, *Streptococcus mutans* UA159, *Danio rerio*"
- 2882 3012 24 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Thermoplasma volcanium*, *Canis familiaris*, *Clostridium acetobutylicum*, *Mus musculus*, *Sus scrofa*" 10
- 2883 3013 26 "Homo sapiens, *Pan troglodytes*, *Klebsiella pneumoniae*, *Larrea nitida*, *Larrea cuneifolia*, *Plectrocarpa tetraantha*, *Larrea ameghinoi*, *Arabidopsis thaliana*, *Tetraena mongolica*, *Fagonia indica*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Bacteriophage KVP40*, *Haemophilus influenzae* Rd KW20"
- 2884 3014 23 "Homo sapiens, *Pan troglodytes*, *Archaeoglobus fulgidus* D SM 4304, *Drosophila melanogaster*, *Danio rerio*, *Mus musculus*"
- 2885 3015 28 "Mus musculus, Homo sapiens, *Medicago truncatula*, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Filobasidiella neoformans*, *Rattus norvegicus*, *Clostridium tetani* E88, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Danio rerio*, *Methanocaldococcus jannaschii*, *Pisum sativum*, *Clostridium perfringens* str. 13" 20
- 2886 3016 28 "Clostridium acetobutylicum, *Rattus norvegicus*, *Mycoplasma gallisepticum* R, Homo sapiens, *Mus musculus*, *Bacillus halodurans*, uncultured bacterium, *Staphylococcus lugdunensis*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Medicago truncatula*"
- 2887 3017 26 "Drosophila melanogaster, Homo sapiens, *Pan troglodytes*, *Papio anubis*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Trichoplusia ni*, *Leishmania tarentolae*" 30
- 2888 3018 23 "Mus musculus, Homo sapiens, *Pan troglodytes*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Treponema pallidum*"
- 2889 3019 23 "Thermoplasma volcanium, *Drosophila melanogaster*, *Danio rerio*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), Homo sapiens, *Pan troglodytes*, *Saccharomyces servazzii*, *Mus musculus*, *Oryza sativa*, *Lactococcus lactis*, *Buchnera aphidicola*, *Rabbit fibroma virus*"
- 2890 3020 27 "Mus musculus, Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Caenorhabditis elegans*, *Oryza sativa*, *Magnaporthe grisea*, *Bacillus cereus* ATCC 14579, *Oryctolagus cuniculus*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Pyrococcus horikoshii*, *Macaca fascicularis*, *Listeria monocytogenes*" 40
- 2891 3021 23 "Schizosaccharomyces pombe, *Dictyostelium discoideum*, *Methanosarcina mazei* Goe1, Homo sapiens, *Mus musculus*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Chlamydomonas reinhardtii*, *Pyemotes tritici*"
- 2892 3022 28 "Homo sapiens, *Dictyostelium discoideum*, *Mus musculus*, *Rattus norvegicus*, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Rickettsia conorii*, *Candidatus Blochmannia floridanus*, *Caenorhabditis briggsae*, *Staphylococcus epidermidis*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Lemur catta*, *Enterobacteria*" 50

- phage T4, Pan troglodytes, Drosophila melanogaster, Pappoia anubis, Tersozia cyathiflora, Tritoxa flexa, Chilo iridescent virus, Danio rerio, Arabidopsis thaliana, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Thermoplasma volcanium, Bacteriophage RB30, Nicotiana tabacum, Human immunodeficiency virus 1, Triticum aestivum"
- 2893 3023 27 "Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus thermophilus, Arabidopsis thaliana, Homo sapiens, Mus musculus, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Mytilus galloprovincialis, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Clostridium perfringens str. 13, Staphylococcus aureus subsp. aureus Mu50" 10
- 2894 3024 31 "Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Chaetosphaeridium globosum, Homo sapiens, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Candida humilis, Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, uncultured marine gamma proteobacterium EBAC31A08, Arabidopsis thaliana, Rattus norvegicus, Plasmodium chabaudi chabaudi, Bacillus cereus ATCC 14579, Schistosoma malayensis, Pappoia anubis, Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Medicago sativa" 20
- 2895 3025 32 "Citrus junos, Homo sapiens, Didelphis virginiana, Drosophila melanogaster, Mus musculus, Expression vector GM-C79, Caenorhabditis elegans, Plasmodium falciparum 3D7, Oryctolagus cuniculus, Coxiella burnetii RSA 493, Oryza sativa (japonica cultivar-group), Caenorhabditis briggsae, Leishmania major, Picea mariana, Anopheles gambiae" 20
- 2896 3026 23 "Drosophila melanogaster, Staphylococcus aureus, Homo sapiens, Lotus corniculatus var. japonicus, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Leptospira interrogans, Arabidopsis thaliana, Mus musculus, Sus scrofa, Hydra magnipapillata" 20
- 2897 3027 24 "Mus musculus, Danio rerio, Homo sapiens, Lactobacillus helveticus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Dictyostelium discoideum, Plasmodium falciparum 3D7, Clostridium tetani E88, Plasmodium falciparum, Bacillus anthracis, Chlamydomonas reinhardtii, Osteoglossum bicirrhosum" 30
- 2898 3028 58 "Oryza sativa (japonica cultivar-group), Prochlorococcus marinus subsp. marinus str. CCMP1375, Drosophila melanogaster, Dictyostelium discoideum, Homo sapiens, Entamoeba invadens, Mus musculus, Danio rerio, Clostridium tetani E88, Macaca fascicularis, Caenorhabditis elegans, Medicago truncatula" 30
- 2899 3029 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Clostridium perfringens str. 13, Bacillus cereus ATCC 14579, Tetrodon lineatus, Sus scrofa, Tamara bat virus, Buchnera aphidicola str. Sg (Schizaphis graminum), Oryctolagus cuniculus, Haemophilus influenzae Rd KW20, Felis catus" 40
- 2900 3030 67 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Nostoc sp. PCC 7120, Buchnera aphidicola str. Sg (Schizaphis graminum), Candidatus Blochmannia floridanus, Mus musculus, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Chlamydia trachomatis, Listeria innocua, Atelixeris albiventris, Danio rerio" 40
- 2901 3031 40 "Mus musculus, Danio rerio, Styela clava, Homo sapiens, Rattus norvegicus, Drosophila melanogaster, Zea mays, Arabidopsis thaliana" 40
- 2902 3032 23 "Oryza sativa (japonica cultivar-group), Mus musculus, H 50

omo sapiens, Rice black streaked dwarf virus, Pisum sativum, Arabidopsis thaliana"

2903 3033 23 "Mus musculus, Homo sapiens, Fusobacterium nucleatum sub sp. nucleatum ATCC 25586, Pyrococcus furiosus DSM 3638, Caenorhabditis elegans, Rattus norvegicus, Medicago truncatula, Cryptosporidium parvum"

2904 3034 21 "Caenorhabditis elegans, Homo sapiens, Rattus norvegicus, Mus musculus, Danio rerio, Gallus gallus"

2905 3035 56 "Campylobacter jejuni subsp. jejuni NCTC 11168, Haemophilus ducreyi 35000HP, Vibrio vulnificus CMCP6, Buchnera aphidicola str. Sg (Schizaphis graminum), Pasteurella multocida, Helicobacter hepaticus ATCC 51449, Mycoplasma capricolum, Mycoplasma pulmonis, Bor"

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2906 3036 79 "Candidatus Blochmannia floridanus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Coxiella burnetii RSA 493, Haemophilus influenzae Rd KW20, Campylobacter jejuni subsp. jejuni NCTC 11168, Haemophilus ducreyi 35000HP, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Homo sapiens, Chlamydia muridarum, Mus musculus, Mamestra configurata nucleopolyhedrovirus B, Mamestra configurata nucleopolyhedrovirus, Mycoplasma pulmonis, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Danio rerio, Nephroselmis olivacea, Schizosaccharomyces pombe, Chlamydophila pneumoniae TW-183, Bos taurus, Drosophila melanogaster, Rickettsia prowazekii, Vibrio parahaemolyticus, Caenorhabditis elegans"

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2907 3037 31 "Homo sapiens, Danio rerio, Mus musculus, Oncorhynchus mykiss, Drosophila melanogaster, Babesia microti, Brugia malayi, Bacillus anthracis str. A2012, Sida crystallina, Clostridium perfringens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Bacillus anthracis"

2908 3038 23 "Homo sapiens, Synechococcus sp. WH 8102, Danio rerio, Mus musculus, Medicago truncatula, Zinnia elegans"

2909 3039 29 "Plasmodium berghei, Enterococcus faecalis V583, Homo sapiens, Enterococcus faecalis, Saccharomyces cerevisiae, Mus musculus, Drosophila melanogaster, Zea mays, Rattus norvegicus, Danio rerio"

30

2910 3040 27 "Vibrio cholerae, Danio rerio, Homo sapiens, Bacillus anthracis str. Ames, Mus musculus, Rattus norvegicus, Papio anubis, Lasius sp. HL-1992, Plasmodium falciparum 3D7, Tuberculatus indicus, Gallus gallus, Caenorhabditis elegans, Arabidopsis thaliana, Tomocerus elongatus, Oecophylla smaragdina, Amsacta moorei entomopoxvirus, Ampelozizyphus amazonicus, Parcoblatta pennsylvanica, Medicago truncatula, Allostoma pallidum, Clostridium perfringens str. 13"

2911 3041 24 "Neisseria meningitidis Z2491, Neisseria meningitidis MC 58, Homo sapiens, Mycoplasma gallisepticum R, Drosophila melanogaster, Medicago truncatula, Danio rerio, Mus musculus"

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2912 3042 23 "Homo sapiens, Sus scrofa, Medicago truncatula, Bos taurus, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Haemophilus ducreyi 35000HP, Eschscholzia californica, Nostoc sp. PCC 7120"

2913 3043 24 "Bacillus cereus ATCC 14579, Homo sapiens, Danio rerio, Mus musculus, Guillardia theta, Xenopus laevis"

2914 3044 24 "Homo sapiens, Rickettsia conorii, Rickettsia montanensis, Rickettsia rickettsii, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Danio rerio, Petroselinum crispum, Staphylococcus aureus subsp. aureus Mu 50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2"

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- 2915 3045 27 "Drosophila melanogaster, Mus musculus, Homo sapiens, Asplenium dalhousiae, Macaca mulatta, Haemophilus phage HP2, Papio anubis, Bacteriophage S2, Haemophilus phage HP1, Oryza sativa (japonica cultivar-group)"
- 2916 3046 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Oryza sativa (indica cultivar-group), Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Sulfolobus solfataricus, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Human immunodeficiency virus 1, Nostoc sp. PCC 7120"
- 2917 3047 27 "Homo sapiens, Mus musculus, Clostridium tetani E88, Danio rerio, Drosophila melanogaster, Papaya ringspot virus, Caenorhabditis elegans, Arabidopsis thaliana, Hordeum vulgare, Coxiella burnetii RSA 493, Petunia x hybrida, Zea mays, Caenorhabditis briggsae, Sus scrofa, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Kluyveromyces delphensis, Dictyostelium discoideum, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Cryptosporidium parvum, Achlya radiosa, Simian immunodeficiency virus, Clostridium acetobutylicum, Mycoplasma pulmonis, Bacillus cereus, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831" 10
- 2918 3048 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Mus musculus, Petromyzon marinus, Dictyostelium discoideum, Leishmania major, Drosophila melanogaster, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Medicago truncatula" 20
- 2919 3049 24 "Homo sapiens, Drosophila melanogaster, Medicago truncatula, Mus musculus, Prochlorococcus marinus, Lotus corniculatus var. japonicus, Danio rerio, Haemophilus influenzae Rd KW20, Rattus norvegicus, Populus nigra, Caenorhabditis elegans, Escherichia blattae"
- 2920 3050 24 "Xenopus laevis, Mus musculus, Trifolium subterraneum, Homo sapiens, Shewanella oneidensis MR-1, Thermosynechococcus elongatus BP-1"
- 2921 3051 23 "Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus, Chlorella virus EN5"
- 2922 3052 27 "Homo sapiens, Streptococcus agalactiae 2603V/R, Lupinus luteus, Streptococcus agalactiae NEM316, Mus musculus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Arabidopsis thaliana, Plasmodium falciparum 3D7, Amphidinium carterae" 30
- 2923 3053 35 "Mycoplasma gallisepticum R, Homo sapiens, Oryza sativa (japonica cultivar-group), Oryza sativa, Sus scrofa, Bacillus subtilis, Neisseria meningitidis, Bacillus subtilis subsp. subtilis str. 168, Caenorhabditis elegans, Mus musculus, Lotus corniculatus var. japonicus, Nostoc sp. PCC 7120"
- 2924 3054 24 "Homo sapiens, Mus musculus, Curtobacterium albidum, Mycoplasma pulmonis, Danio rerio, Archaeoglobus fulgidus DSM 4304, Dictyostelium discoideum, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Ciona intestinalis" 40
- 2925 3055 41 "Leptospira interrogans serovar lai str. 56601, Clostridium difficile, Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Mycoplasma capricolum, Protopelagonemertes sp. 544, Schistosoma japonicum, Pan troglodytes, Archaeoglobus fulgidus DSM 4304, Macaca mulatta, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Caenorhabditis briggsae, Anabaena variabilis, Geobacillus stearothermophilus, Rattus norvegicus, Papio anubis, Nostoc sp. PCC 7120"
- 2926 3056 24 "Sus scrofa, Homo sapiens, Mus musculus, Candida albicans, Aedes aegypti, Beta vulgaris, Parartemia zietziana, Bombyx mori, Danio rerio" 50

- 2927 3057 24 "Mus musculus, Homo sapiens, Danio rerio, Clostridium perfringens str. 13, Drosophila melanogaster, Triticum aestivum, Vibrio parahaemolyticus"
- 2928 3058 35 "Nostoc sp. PCC 7120, Mus musculus, Vibrio cholerae, Homo sapiens, Candida albicans, Borrelia duttonii, Fremyella diplosiphon, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Danio rerio, Pan troglodytes"
- 2929 3059 21 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Cricetulus longicaudatus"
- 2930 3060 23 "Mus musculus, Danio rerio, Drosophila melanogaster, Homo sapiens, Cloning vector TLF97-3, Cloning vector TLF97-2, Cloning vector TLF97-1, Cloning vector lambda TXF97" 10
- 2931 3061 27 "Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Danio rerio, Saccharomyces cerevisiae, Nicotiana tabacum"
- 2932 3062 71 "Oryza sativa, Oryza sativa (japonica cultivar-group), Nicotiana tabacum, Arabidopsis thaliana, Medicago truncatula, Petunia x hybrida, Homo sapiens, Caenorhabditis briggsae, Mus musculus, Drosophila melanogaster, Lycopersicon esculentum"
- 2933 3063 27 "Listeria monocytogenes, Homo sapiens, Danio rerio, Drosophila melanogaster, Mus musculus, Thermotoga neapolitana, Escherichia coli O157:H7 EDL933, Escherichia coli O157:H7" 20
- 2934 3064 25 "Homo sapiens, Drosophila melanogaster, Synechocystis sp. PCC 6803, Neosartorya stramenia, Mus musculus"
- 2935 3065 29 "Synechocystis sp. PCC 6803, Shigella flexneri 2a str. 2457T, Shigella flexneri 2a str. 301, Escherichia coli, Staphylococcus aureus, Homo sapiens, Mus musculus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Streptococcus pyogenes MGAS315, Streptococcus pyogenes SSI-1"
- 2936 3066 25 "Clostridium perfringens str. 13, Homo sapiens, Oryza sativa (japonica cultivar-group), Pan troglodytes, Caenorhabditis briggsae, Danio rerio, Mus musculus, Buchnera aphidicola (Myzus persicae)" 30
- 2937 3067 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Bovine ephemeral fever virus, Kluyveromyces delphensis, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Danio rerio"
- 2938 3068 35 "Homo sapiens, Mus musculus, Uma exsul, Clostridium acetobutylicum, Patella vulgata, Danio rerio, Oryza sativa (japonica cultivar-group), Amblyolepis setigera, Puffinosis virus, Rickettsia prowazekii, Lactobacillus sakei, Gallus gallus, Arabidopsis thaliana, Escherichia coli"
- 2939 3069 23 "Enterococcus faecalis V583, Arabidopsis thaliana, Homo sapiens, Mus musculus, Clostridium perfringens str. 13, Salmonella typhimurium LT2, Buchnera aphidicola str. Sg (Schizaphis graminum), Oryza sativa (japonica cultivar-group)" 40
- 2940 3070 31 "Arabidopsis thaliana, Homo sapiens, Aloe sp., Plasmodium falciparum 3D7, Danio rerio, Cerataphis lataniae, Solenopsis invicta, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Mus musculus, Pan troglodytes, Tetrahymena thermophila, Xylocopa sulcatipes, Clostridium acetobutylicum, Diadasia laticauda, Myzocallis pictus, Helianthus annuus, Anopheles quadrimaculatus A, Graphium stratiotes, Graphium agetes, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Euschizaphis sp. CDvD-2003-1, Candidatus Carsonella ruddii, Vaccinia virus, Bombus ruderalis, Halictus rubicundus, Halictu 50

- s quadricinctus, Clostridium beijerinckii, Lycopersicon esculentum, Diadasia bituberculata, Globigerinoides sacculifer, Drosophila simulans, Drosophila mauritiana, Rabbit fibroma virus, Oryza sativa (japonica cultivar-group), Rattus norvegicus"
- 2941 3071 31 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Coxiella burnetii RSA 493, Drosophila melanogaster, Rattus norvegicus, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Coxiella burnetii"
- 2942 3072 24 "Mus musculus, Medicago truncatula, Caenorhabditis elegans, Homo sapiens, Lotus corniculatus var. japonicus, Candida albicans, Arabidopsis thaliana" 10
- 2943 3073 27 "Danio rerio, Mus musculus, Drosophila melanogaster, Homo sapiens, Caenorhabditis briggsae, Lemur catta, Pan troglodytes, Borrelia burgdorferi B31, Caenorhabditis elegans, Dictyostelium discoideum, Arabidopsis thaliana, Swinepox virus, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Gloxinia tospovirus, Borrelia burgdorferi"
- 2944 3074 32 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Prochlorococcus marinus, Aspergillus japonicus, Cucumis melo, Bacillus anthracis str. Ames, Phthorimaea operculella granulovirus, Arabidopsis thaliana, Naegleria gruberi, Danio rerio, Bos taurus, Rattus norvegicus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Archaeoglobus fulgidus DSM 4304, Dictyostelium discoidium, Medicago truncatula, Drosophila melanogaster, Howardula sp. SP-B, Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Schmidtea mediterranea, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Ureaplasma urealyticum, Pleurotus sp. 'Florida', Toxoplasma gondii, Ovis aries, Clostridium perfringens, Bacillus halodurans, Clostridium perfringens str. 13" 20
- 2945 3075 27 "Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Mus musculus, Debaryomyces hansenii, Schizosaccharomyces pombe"
- 2946 3076 30 "Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Drosophila melanogaster, Neurospora crassa, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Danio rerio, Helicobacter pylori 26695, Helicobacter pylori J99, Onchocerca volvulus, Anopheles gambiae, Medicago truncatula, Arabidopsis thaliana" 30
- 2947 3077 33 "Cobitis striata, Vanhouttea gardneri, Vanhouttea brueggeri, Vanhouttea calcarata, Vanhouttea hilariana, Vanhouttea fruticulosa, Vanhouttea pendula, Vanhouttea leonii, Sinningia pusilla, Sinningia aghensis, Sinningia incarnata, Sinningia allagophylla, Sinnin"
- 2948 3078 29 "Homo sapiens, Mycoplasma gallisepticum R, Clostridium tetani E88, Plasmodium chabaudi, Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Bacteriophage SPBc2, Helicobacter hepaticus ATCC 51449, Bacillus atticus, Mus musculus, Streptococcus agalactiae 2603V/R, Calanoides acutus, Streptococcus agalactiae NEM316, Sulfolobus tokodaii, Bombyx mori" 40
- 2949 3079 27 "Danio rerio, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Homo sapiens, Mogera wogura, Arabidopsis thaliana, Mus musculus, Thermoplasma volcanium"
- 2950 3080 31 "Homo sapiens, Mus musculus, Danio rerio, Arabidopsis thaliana, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Campylobacter jejuni subsp. jejuni NCTC 11168, Medicago truncatula, Caenorhabditis briggsae, Osmia cornifrons, Haliotis rufescens, Caenorhabditis elegans" 50

- 2951 3081 35 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Methanosarcina mazei Goe1, Bacillus subtilis subsp. subtilis str. 168, Bacteriophage SPBc2, Medicago truncatula, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Caenorhabditis elegans, Buch"
- 2952 3082 35 "Homo sapiens, Plasmodium falciparum 3D7, Glyptostrobous pensilis, Mus musculus, Arabidopsis thaliana, Chlamydophila caviae GPIC, Lycopersicon esculentum, Sus scrofa, Caenorhabditis elegans, Ceratitidis capitata, Lactococcus lactis subsp. lactis, Bacteriophage bIL311, Oryza sativa (japonica cultivar-group), Helicobacter hepaticus, Epifagus virginiana, Danio rerio, Candida albicans, Cryptosporidium parvum, Trirhithrum coffeae, Ceratitidis rosa, Methanosarcina thermophila, Nicotiana tomentosiformis, Helicobacter hepaticus ATCC 51449, Clostridium perfringens str. 13" 10
- 2953 3083 27 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Corynebacterium glutamicum ATCC 13032"
- 2954 3084 48 "Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola, Homo sapiens, Arabidopsis thaliana, Mus musculus, Anopheles gambiae, Equus caballus, Papio anubis"
- 2955 3085 39 "Vibrio parahaemolyticus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Haemophilus influenzae Rd KW20, Methanosarcina acetivorans C2A, Homo sapiens, Caenorhabditis briggsae, Mus musculus, eukaryote marine clone ME1-20, eukaryote marine clone ME1-19, Prochlorococcus marinus, Neisseria lactamica, Neisseria cinerea, eukaryote clone OLI11066, Lotus corniculatus var. japonicus, Danio rerio" 20
- 2956 3086 31 "Rickettsia conorii, Danio rerio, Oryctolagus cuniculus, Caenorhabditis elegans, Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Shigella flexneri 2a str. 2457T, Clostridium tetani E88, Blattella germanica, Shigella flexneri 2a str. 301, Mus musculus, Chaetosphaeridium globosum, Blattella asahina i, Rickettsia prowazekii, Staphylococcus epidermidis, Plasmodium falciparum 3D7, Chironomus pallidivittatus, Leishmania major, Pirellula sp., Takifugu rubripes, Schizosaccharomyces pombe, Melanoplus sanguinipes entomopoxvirus" 30
- 2957 3087 77 "Candidatus Blochmannia floridanus, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Clostridium perfringens str. 13, Buchnera aphidicola str. Bp (Baizongia pistaciae), Clostridium tetani E88, Homo sapiens, uncultured marine gamma proteobacterium EBAC31A08, Borrelia burgdorferi B31, Yersinia pestis KIM, Pasteurella multocida, Yersinia pestis C092, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Borrelia burgdorferi, Papio anubis, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Candida albicans, Neisseria perflava, Vicia melanops, Streptococcus pyogenes SSI-1, Saccharomyces cerevisiae, Pirellula sp., Danio rerio, Nostoc sp. PCC 7120" 40
- 2958 3088 125 "Pasteurella multocida, Bacteroides thetaiotaomicron VPI-5482, Rickettsia conorii, Rickettsia prowazekii, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Chlamydophila pneumoniae TW-183, Leptospira interrogans s"
- 2959 3089 38 "Candidatus Blochmannia floridanus, Bacillus cereus ATCC 14579, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Euglena 50

- myxocylindracea, *Danio rerio*, *Pirellula* sp."
- 2960 3090 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Caenorhabditis elegans*, *Photorhabdus luminescens*, *Methanococcus voltae*, Cloning vector HKBS1, *Penaeus monodon*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Dictyostelium discoideum*, *Rickettsia conorii*, *Drosophila hydei*, *Eipterygium tozeri*, *Helicobacter pylori* 26695, *Schizosaccharomyces pombe*, *Helicobacter pylori* J99"
- 2961 3091 23 "Arabidopsis thaliana, *Schizosaccharomyces pombe*, *Xenorhabdus nematophila*, *Homo sapiens*, *Mus musculus*, *Candida albicans*, *Methylocystis* sp. M"
- 2962 3092 27 "*Coxiella burnetii* RSA 493, *Homo sapiens*, *Prochlorococcus marinus*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Microcystis aeruginosa*, *Xenopus laevis*, *Adoxophyes orana granulovirus*, *Nostoc* sp. PCC 7120" 10
- 2963 3093 24 "*Mus musculus*, *Homo sapiens*, unidentified bacterium, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*, uncultured eubacterium"
- 2964 3094 32 "*Listeria innocua*, *Trichodesmium* sp. IMS101, *Mus musculus*, *Streptococcus mutans* UA159, *Homo sapiens*, *Listeria monocytogenes*, *Danio rerio*, *Ateline herpesvirus 3*, *Rattus norvegicus*, *Shigella flexneri* 2a str. 2457T, *Chlamydomonas reinhardtii* GPIC, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Escherichia coli* CFT073, *Schmidtea mediterranea*, *Shigella flexneri* 2a str. 301, *Escherichia coli*, *Escherichia coli* 0157:H7 EDL933, *Arabidopsis thaliana*, *Oryza sativa*, *Escherichia coli* K12, *Plasmodium falciparum* 3D7, *Escherichia coli* 0157:H7, *Clostridium perfringens* str. 13" 20
- 2965 3095 29 "*Lactobacillus johnsonii*, *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Danio rerio*, *Rattus norvegicus*"
- 2966 3096 24 "*Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Pan troglodytes*"
- 2967 3097 32 "*Danio rerio*, *Entamoeba histolytica*, *Mus musculus*, *Homo sapiens*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Chlorella vulgaris*, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7" 30
- 2968 3098 28 "*Danio rerio*, *Homo sapiens*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Mus musculus*, *Medicago truncatula*, *Schmidtea mediterranea*, *Plasmodium falciparum* 3D7, *Lactococcus lactis* subsp. *lactis*, *Oryza sativa* (japonica cultivar-group), *Encephalitozoon cuniculi*, *Lactococcus lactis*"
- 2969 3099 41 "*Clostridium acetobutylicum*, *Plectonema boryanum*, *Cyanotrichia* sp. PCC 8801, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Danio rerio*, *Anabaena azollae*, *Oxidus gracilis*, *Rickettsia conorii*, *Bacillus subtilis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. *aureus* MW2, *Bacillus subtilis* subsp. *subtilis* str. 168, *Legionella pneumophila*, *Staphylococcus epidermidis* ATCC 12228, *Bacteroides thetaiotaomicron* VPI-5482, *Clostridium tetani* E88, *Trichodesmium* sp. IMS101, Human endogenous retrovirus K, *Nostoc* sp. PCC 7120, *Staphylococcus epidermidis*, *Trypanosoma brucei*, *Lotus corniculatus* var. *japonicus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Corynebacterium glutamicum* ATCC 13032, *Anopheles gambiae*" 40
- 2970 3100 37 "*Arion ater*, *Mus musculus*, *Staphylococcus gallinarum*, *Homo sapiens*, *Rattus norvegicus*, *Aegilops tauschii*, *Danio rerio*, *Streptococcus gordonii*, *Opogona glycyphaga*, *Arion lusitanicus*, *Pan troglodytes*, *Enterococcus faec* 50

alis V583, Plasmodium falciparum 3D7, Caenorhabditis elegans, Papio anubis, Lactococcus lactis subsp. lactis, Campylobacter jejuni subsp. jejuni NCTC 11168, Ureaplasma urealyticum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Staphylococcus cohnii subsp. urealyticus, Bacillus subtilis subsp. subtilis str. 168, Trachycystis flagellaris, Vigna radiata"

- 2971 3101 28 "Homo sapiens, Zygosaccharomyces mrakii, Plasmodium falciparum 3D7, Arabidopsis thaliana, Clostridium acetobutylicum, Variola minor virus, Variola virus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Mus musculus, Variola major virus, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Vibrio vulnificus CMCP6, Drosophila melanogaster, Pan troglodytes, Schizopyllum commune, Danio rerio, Plasmodium falciparum, Orobanche minor, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Brugia malayi, Medicago truncatula, Ixodes gibbosus, Botryotinia fuckeliana" 10
- 2972 3102 33 "Caenorhabditis elegans, Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Adalia bipunctata, Microcebus rufus, Medicago truncatula, Euhadra sandai, Enterococcus faecalis V583, Plasmodium falciparum 3D7, Phora sp. Malakhovka, Phora tinctoria, Bos taurus, Canavalia lineata, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Acyrthosiphon pisum virus" 20
- 2973 3103 27 "Homo sapiens, Mus musculus, Papio anubis, Drosophila melanogaster, Thermoanaerobacter tengcongensis, Danio rerio, Cladomyrma maschwitzii, Bacillus cereus ATCC 14579, Pan troglodytes, Ehrlichia canis, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Marchantia polymorpha, Arabidopsis thaliana, Cryptosporidium parvum, Phocoena sinus, Medicago truncatula, Leishmania tropica, Clostridium perfringens str. 13"
- 2974 3104 23 "Homo sapiens, Arabidopsis thaliana, Beccariophoenix madagascariensis, Attalea allenii, Allagoptera arenaria, Syagrus smithii, Rattus norvegicus, Medicago truncatula, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Treponema pallidum, Mus musculus" 30
- 2975 3105 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Clostridium tetani E88, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Geobacillus stearothermophilus, Mus musculus, Danio rerio, Medicago truncatula, Drosophila melanogaster, Brassica napus, Pisum sativum, Galidieria sulphuraria, Saccharomyces cerevisiae, Listeria monocytogenes, Arabidopsis thaliana"
- 2976 3106 27 "Homo sapiens, Arabidopsis thaliana, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Oryza sativa (japonica cultivar-group), Pan troglodytes, Oryza sativa, Mus musculus, Chlorobium tepidum TLS, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Helicobacter hepaticus ATCC 51449, Staphylococcus aureus subsp. aureus Mu50" 40
- 2977 3107 27 "Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Clostridium acetobutylicum, Branchiostoma floridae, Listeria innocua, Lupinus angustifolius"
- 2978 3108 23 "Mus musculus, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Homo sapiens, Caenorhabditis elegans, Rattus norvegicus, Hemicentrotus pulcherrimus"
- 2979 3109 27 "Pan troglodytes, Homo sapiens, Euglena gracilis, Wiggleworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Oryza s 50

- ativa (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Danio rerio*, *Rickettsia prowazekii*, *Arabidopsis thaliana*, *Oceanobacillus iheyensis* HTE831, *Caenorhabditis elegans*"
- 2980 3110 24 "Homo sapiens, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Mus musculus*, *Helobdella robusta*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Schmidtea mediterranea*, *Guillardia theta*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Danio rerio*"
- 2981 3111 22 "Homo sapiens, *Papio anubis*, *Mus musculus*, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Cyanophage* clone GS2708, *Danio rerio*, *Arabidopsis thaliana*" 10
- 2982 3112 25 "Lotus corniculatus var. japonicus, Homo sapiens, *Arabidopsis thaliana*, *Pneumocystis carinii*, *Gasterosteus aculeatus*, *Drosophila melanogaster*, *Leptospira interrogans* serovar lai str. 56601, *Mus musculus*, *Caenorhabditis elegans*, *Zea mays*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGA S8232, *Mycobacterium leprae*, *Streptococcus pneumoniae* R6, *Osteoglossum bicirrhosum*, *Streptococcus pneumoniae* TIGR4, *Streptococcus salivarius*, *Streptococcus pyogenes* M1 GAS, *Rattus norvegicus*, *Streptococcus pyogenes* SSI-1"
- 2983 3113 33 "Enterococcus faecalis V583, *Equus caballus*, *Medicago truncatula*, *Mus musculus*, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Legionella pneumophila*, *Methanosarcina acetivorans* C2A, *Manduca sexta*, *Danio rerio*, *Aeromonas salmonicida* subsp. *salmonicida*" 20
- 2984 3114 36 "Bordetella pertussis, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, Homo sapiens, *Mus musculus*, *Rickettsia conorii*, *Bordetella bronchiseptica*, *Bordetella parapertussis*, *Rickettsia prowazekii*, *Chlamydophila pneumoniae* CWL029, *Dictyostelium discoideum*, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Vibrio parahaemolyticus*, *Chlamydophila pneumoniae* TW-183, *Shewanella oneidensis* MR-1, *Danio rerio*, *Mycoplasma pulmonis*, *Lotus corniculatus* var. japonicus"
- 2985 3115 27 "Lotus corniculatus var. japonicus, *Neurospora intermedia*, Homo sapiens, *Mus musculus*, *Sulfolobus solfataricus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Bacillus anthracis* str. Ames, *Staphylococcus aureus*, *Drosophila melanogaster*, *Manduca sexta*, *Pan troglodytes*, *Pongo pygmaeus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Dysdera unguimanis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Arabidopsis thaliana*, *Bovine viral diarrhea virus* type 2, *Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50" 30
- 2986 3116 23 "Mus musculus, Homo sapiens, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Orasturmia vallicola*, *Peckhamia* sp. MCH-2001, *Ureaplasma urealyticum*, *Arabidopsis thaliana*, *Agaricus bisporus*, *Danio rerio*, *Bombina orientalis*, *Agaricus bitorquis*" 40
- 2987 3117 28 "Danio rerio, Homo sapiens, *Mus musculus*, *Bacteroides thetaiotaomicron*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Plasmodium falciparum*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Caenorhabditis elegans*, *Sulfolobus solfataricus*, *Oryza sativa* (japonica cultivar-group), *Oryctolagus cuniculus*"
- 2988 3118 35 "Medicago truncatula, *Plasmodium falciparum* 3D7, *Canis familiaris*, Homo sapiens, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Listeria innocua*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Oryza sativa*, *Danio rerio*"
- 2989 3119 24 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), A 50

- telerix albiventris, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Haemophilus influenzae* Rd KW20, *Arabidopsis thaliana*, *Danio rerio*, *Ciona intestinalis*"
- 2990 3120 32 "Homo sapiens, *Anopheles gambiae*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Methanosarcina mazei* Goe1, *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis elegans*, *Mus musculus*, *Arabidopsis thaliana*, Human parainfluenza virus 3, *Schistosoma mansoni*, *Staphylococcus epidermidis*, *Listeria monocytogenes*, *Oryza sativa* (indica cultivar-group), *Saccharomyces cerevisiae*"
- 2991 3121 33 "*Mus musculus*, *Homo sapiens*, *Listeria monocytogenes*, *Lemur catta*, *Kaikalur virus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Macaca arctoides*, *Drosophila affinis*, *Rickettsia conorii*, *Danio rerio*, *Oryza sativa*, *Photobacterium luminescens*" 10
- 2992 3122 24 "*Homo sapiens*, *Mus musculus*, *Sulfolobus solfataricus*, *Caenorhabditis elegans*, *Trichosurus vulpecula*"
- 2993 3123 22 "*Homo sapiens*, *Listeria monocytogenes*, *Pyrococcus abyssi*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Mus musculus*"
- 2994 3124 24 "*Pan troglodytes*, *Homo sapiens*, *Nostoc* sp. PCC 7120, *Arabidopsis thaliana*, *Danio rerio*, *Mus musculus*"
- 2995 3125 25 "*Homo sapiens*, *Mus musculus*, *Lyngbya majuscula*, *Arabidopsis thaliana*, *Mycoplasma gallisepticum* R, *Vibrio vulnificus* CMCP6, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Rickettsia prowazekii*, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus" 20
- 2996 3126 28 "*Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Papio anubis*, *Danio rerio*, *Farfantepenaeus duorarum*, *Vibrio cholerae*, *Odontella sinensis*, *Vibrio cholerae* 0139, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Staphylococcus epidermidis* ATCC 12228, *Macaca mulatta*, *Staphylococcus epidermidis*, *Bos taurus*"
- 2997 3127 29 "*Mus musculus*, *Homo sapiens*, *Medicago truncatula*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Pan troglodytes*, *Arabidopsis thaliana*, *Adelotus brevis*, *Plasmodium falciparum* 3D7, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Mycoplasma penetrans*, *Xenopus laevis*, *Tetrahymena thermophila*, *Rattus norvegicus*, *Staphylococcus aureus* subsp. aureus Mu50" 30
- 2998 3128 32 "*Homo sapiens*, *Swinepox virus*, *Rabies virus*, *Scenedesmus obliquus*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Mus musculus*, *Plasmodium falciparum* 3D7"
- 2999 3129 24 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Medicago truncatula*, *Stilbum* sp. SLB-2003, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Staphylococcus epidermidis*, *Listeria monocytogenes*, *Listeria innocua*, *Mus musculus*" 40
- 3000 3130 23 "*Danio rerio*, *Mus musculus*, *Caenorhabditis elegans*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*"
- 3001 3131 35 "*Homo sapiens*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Danio rerio*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar lai str. 56601, *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Cassava vein mosaic virus*, *Stylurus amnicola*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Cafeteria roenbergensis*, *Medicago truncatula*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Clostridium tetani* E88, *Papio anubis*, *Papio hamadryas*, *Epiphyas postvittana* nucleopolyhedrovi 50

- rus, *Mesostigma viride*, *Rattus norvegicus*, *Lotus corniculatus* var. *japonicus*"
- 3002 3132 28 "Mus musculus, Homo sapiens, *Fusobacterium nucleatum* sub sp. *nucleatum* ATCC 25586, *Pan troglodytes*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Xenopus laevis*, *Brassica napus*, *Paracoccus versutus*"
- 3003 3133 40 "Moorella thermoacetica, *Desulfovibrio vulgaris*, Homo sapiens, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Danio rerio*, *Thermoplasma acidophilum*, *Schistosoma mansoni*, *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, *Schizosaccharomyces pombe*"
- 3004 3134 24 "Homo sapiens, *Mycoplasma gallisepticum* R, *Mus musculus*, *Pyrococcus abyssi*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group)" 10
- 3005 3135 60 "Clostridium acetobutylicum, *Clostridium cellulolyticum*, *Archaeoglobus fulgidus* DSM 4304, Homo sapiens, *Clostridium pasteurianum*, *Bacteroides thetaiotaomicron* VPI-5482, *Danio rerio*, *Clostridium butyricum*, *Acinetobacter* sp. ADP1, *Acinetobacter calcoaceticus*, *Pseudomonas putida*, *Clostridium diolis*, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Agapostemon viquesensis*, *Ureaplasma urealyticum*, *Oryza sativa* (*japonica* cultivar-group), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Thermoplasma volcanium*, *Bombyx mori*, *Cryptosporidium parvum*, *Melanoplus sanguinipes* entomopoxvirus, *Heterochaeta costata*" 20
- 3006 3136 27 "Homo sapiens, *Mus musculus*, *Staphylococcus epidermidis* ATCC 12228, *Cryptococcus neoformans* var. *grubii*, *Listeria monocytogenes*, *Staphylococcus epidermidis*, *Oryza sativa* (*japonica* cultivar-group), *Mycoplasma penetrans*, *Schizosaccharomyces pombe*, *Caenorhabditis elegans*"
- 3007 3137 59 "Clostridium tetani E88, Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Candida maltosa*, *Drosophila melanogaster*, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*, *Methanocaldococcus jannaschii*, *Nostoc* sp. PCC 7120"
- 3008 3138 25 "Homo sapiens, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Mus musculus*, *Brassica napus*, *Macropodid herpesvirus* type 1, *Danio rerio*" 30
- 3009 3139 39 "Homo sapiens, *Ureaplasma urealyticum*, *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Papio anubis*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*, *Mycoplasma* sp. PG50, *Citrus sinensis*, *Ciona intestinalis*, *Agrocybe aegerita*"
- 3010 3140 23 "Homo sapiens, *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*, *Orgyia pseudotsugata* multicapsid nucleopolyhedrovirus, *Dictyostelium discoideum*, *Clostridium acetobutylicum*, *Mus musculus*, *Ornithodoros moubata*, *Listeria innocua*, *Streptococcus suis*, *Tarsius syrichta*, *Arabidopsis thaliana*"
- 3011 3141 23 "Homo sapiens, *Mus musculus*, *Listeria monocytogenes*" 40
- 3012 3142 32 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Pan troglodytes*, *Oryza sativa*, *Neisseria meningitidis*, *Danio rerio*, *Neisseria meningitidis* Z2491, *Lotus corniculatus* var. *japonicus*, *Neisseria meningitidis* MC58, *Arabidopsis thaliana*, *Coxiella burnetii* RSA 493, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Girardia tigrina*"
- 3013 3143 23 "Mus musculus, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, Homo sapiens, *Petunia x hybrida*, *Danio rerio*"
- 3014 3144 60 "Vibrio cholerae, Homo sapiens, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Vibrio vulnificus* CMCP6, *Shewanella oneidensis* MR-1, *Caenorhabditis briggsae*, *Bos taurus*, *Haemophilus influenzae*" 50

- Rd KW20, *Streptococcus thermophilus*, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Oryza sativa* (japonica cultivar-group), *Treponema pallidum*, *Danio rerio*"
- 3015 3145 27 "Campylobacter jejuni subsp. jejuni NCTC 11168, *Methanosarcina mazei* Goe1, *Homo sapiens*, *Arabidopsis thaliana*, *Trypanosoma brucei*, *Sulfolobus tokodaii*, *Mus musculus*"
- 3016 3146 31 "Mus musculus, *Homo sapiens*, *Xanthomonas campestris* pv. *campestris* str. ATCC 33913, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Brucella melitensis* 16M, *Drosophila melanogaster*, *Brucella suis* 1330, *Clostridium acetobutylicum*, *Caenorhabditis elegans*, *Zea mays*"
- 3017 3147 27 "Danio rerio, *Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)" 10
- 3018 3148 24 "Arabidopsis thaliana, *Homo sapiens*, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Pan troglodytes*, *Chlamydophila pneumoniae* TW-183, *Hordeum vulgare* subsp. *vulgare*, *Mus musculus*, *Danio rerio*"
- 3019 3149 24 "Homo sapiens, *Caenorhabditis elegans*, *Danio rerio*, *Bos taurus*, *Arabidopsis thaliana*, *Mus musculus*, *Thermoanaerobacter tengcongensis*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 3020 3150 30 "Streptococcus agalactiae 2603V/R, *Streptococcus agalactiae* NEM316, *Drosophila melanogaster*, *Homo sapiens*, *Leptospira interrogans* serovar *lai* str. 56601, *Mus musculus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Pirellula* sp." 20
- 3021 3151 33 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Drosophila melanogaster*, Shrimp white spot syndrome virus, *Candidatus Blochmannia floridanus*, *Rattus norvegicus*, *Sorghum bicolor*, *Mycoplasma pneumoniae*, *Lotus corniculatus* var. *japonicus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Caenorhabditis elegans*, *Rattus* sp." 30
- 3022 3152 28 "Drosophila melanogaster, *Homo sapiens*, *Mus musculus*, *Sulfolobus tokodaii*, *Danio rerio*, *Limnaporus esakii*, *Gerris latiaabdominis*, *Arabidopsis thaliana*"
- 3023 3153 27 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Caenorhabditis elegans*, *Staphylococcus epidermidis* ATCC 12228, *Ectromelia virus*, *Canis familiaris*, *Danio rerio*, *Staphylococcus epidermidis*, *Human immunodeficiency virus 1*"
- 3024 3154 28 "Oryza sativa (japonica cultivar-group), *Danio rerio*, *Homo sapiens*, *Staphylococcus aureus*, *Mus musculus*, *Zea mays*, *Lotus corniculatus* var. *japonicus*, *Pelodiscus sinensis*, *Staphylococcus aureus* subsp. *aureus* N315, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Staphylococcus aureus* subsp. *aureus* Mu50" 40
- 3025 3155 24 "Caenorhabditis elegans, *Homo sapiens*, *Mus musculus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*"
- 3026 3156 23 "Homo sapiens, *Mus musculus*, *Saccharomyces cerevisiae*"
- 3027 3157 26 "Homo sapiens, *Leptospira interrogans* serovar *lai* str. 56601, *Mycoplasma mobile*, *Pan troglodytes*, *Caenorhabditis elegans*, *Zea mays*, *Mus musculus*, *Lactococcus lactis*, *Oryza sativa* (japonica cultivar-group), *Feline calicivirus*, *Drosophila melanogaster*, *Shewanella oneidensis* MR-1, *Arabidopsis thaliana*, *Oryza sativa*, uncultured crenarchaeote 4B7, *Takifugu rubripes*, *Lilium alexa*" 50

ndrae"

- 3028 3158 27 "Brugia malayi, Plasmodium falciparum 3D7, Caenorhabditis elegans, Homo sapiens, Pan troglodytes, Danio rerio, Mus musculus, Arabidopsis thaliana"
- 3029 3159 28 "Homo sapiens, Ehrlichia ruminantium, Arabidopsis thaliana, Danio rerio, Lemur catta, Mus musculus, Plasmodium falciparum 3D7, Oryzias latipes, Gallus gallus, Mitthyridium sp. Wall s.n., Perna canaliculus, Mitthyridium undulatum, Mitthyridium fasciculatum, Mitthyridium jungquilianum, Glyptolenus sulcipennis, Rickettsia prowazekii, Sulfolobus tokodaii, Ajellomyces dermatitidis, Methanocaldococcus jannaschii, Leishmania tarentolae, Rattus norvegicus, Macaca fascicularis, Tetrahymena thermophila" 10
- 3030 3160 23 "Thermoanaerobacter tengcongensis, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus"
- 3031 3161 129 "Enterococcus faecalis V583, Clostridium tetani E88, Clostridium acetobutylicum, Thermoanaerobacter tengcongensis, Clostridium pasteurianum, Chromobacterium violaceum, Mus musculus, Homo sapiens, Treponema pallidum, Nostoc sp. PCC 7120, Clostridium perfringens str. 13, Plasmodium falciparum 3D7, Azoarcus sp. BH72, Danio rerio, Drosophila melanogaster, Banana bunchy top virus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Leptospira biflexa, Listeria monocytogenes" 20
- 3032 3162 49 "Yersinia pestis KIM, Yersinia pestis C092, Thermoanaerobacter tengcongensis, Homo sapiens, Mus musculus, Pasteurella multocida, Human immunodeficiency virus 1, Clostridium pasteurianum"
- 3033 3163 27 "Homo sapiens, Caenorhabditis elegans, Bacillus anthracis str. Ames, Mus musculus, Drosophila melanogaster, Shewanella oneidensis MR-1, Dictyostelium discoideum, Caenorhabditis briggsae, Danio rerio, Schizosaccharomyces pombe, Melanoplus sanguinipes entomopoxvirus"
- 3034 3164 23 "Mus musculus, Hevea brasiliensis, Homo sapiens, Lotus corniculatus var. japonicus, Danio rerio"
- 3035 3165 45 "Entamoeba histolytica, Homo sapiens, Mus musculus, Streptococcus mutans UA159, Pan troglodytes, Streptococcus pneumoniae R6, Streptococcus mutans, Danio rerio, Tribolium castaneum" 30
- 3036 3166 80 "Lactococcus lactis subsp. lactis, Clostridium pasteurianum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Euglena gracilis, Homo sapiens, Mus musculus, Porphyromonas gingivalis W83, Sulfolobus tokodaii, Medicago truncatula, Drosophila melanogaster, Pan troglodytes, Caenorhabditis elegans, Zea mays, Equus caballus, Human immunodeficiency virus 1, Anthoceros formosae, Danio rerio, Macaca mulatta, Candida albicans, Clostridium perfringens str. 13"
- 3037 3167 25 "Mus musculus, Homo sapiens, Drosophila melanogaster, Lemur catta, Aplocheilichthys hutereaui, Nostoc sp. PCC 7120" 40
- 3038 3168 62 "Entamoeba histolytica, Lotus corniculatus var. japonicus, Clostridium perfringens str. 13, Danio rerio, Pan troglodytes, Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Buchnera aphidicola str. Bp (Baizongia pistaciae), Muntiacus crinifrons, Muntiacus muntjak, Bos indicus, Arachis hypogaea, Schizosaccharomyces pombe, Ovis aries, Bos taurus"
- 3039 3169 28 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Sulfolobus solfataricus, Triticum aestivum, Trichosurus vulpecula, Arabidopsis thaliana, Plasmodium falciparum 3D7, Caenorhabditis elegans, Ustilago maydis, Nicotiana glauca" 50

- 3040 3170 27 "Mus musculus, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Danio rerio, Homo sapiens, Vibrio parahaemolyticus, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Macaca fascicularis"
- 3041 3171 28 "White clover mosaic virus, Homo sapiens, Rickettsia conorii, Mus musculus, Oryza sativa (japonica cultivar-group), Wolbachia endosymbiont of Plagiotrochus quercusilicis, Mycoplasma hominis, Mesostigma viride, Mycoplasma genitalium, Helicobacter pylori, Arabidopsis thaliana, Wolbachia endosymbiont of Eurema hecabe (Okinawa 4), Danio rerio, Helicobacter pylori J99, Wolbachia sp., Wolbachia sp. wNaw" 10
- 3042 3172 115 "Enterococcus faecalis V583, Lactococcus lactis subsp. lactis, Listeria monocytogenes, Anabaena sp., Nostoc sp. PCC 7120, Listeria innocua, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Thermoanaerobacter tengcongensis, Synechocystis sp. PCC 6803, Homo sapiens, Pseudoalteromonas atlantica, Clostridium perfringens str. 13, Mus musculus, Drosophila melanogaster, Pyrococcus abyssi, Candidatus Blochmannia floridanus, Entamoeba histolytica, Pyrococcus horikoshii"
- 3043 3173 35 "Homo sapiens, Lacerta bilineata chloronota, Arabidopsis thaliana, Mus musculus, Danio rerio, Aquifex aeolicus VF5, Cryptosporidium parvum, Campylobacter jejuni subsp. jejuni NCTC 11168, Clostridium perfringens str. 13" 20
- 3044 3174 82 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Campylobacter jejuni subsp. jejuni NCTC 11168, Lactococcus lactis subsp. lactis, Trichomonas vaginalis, Enterococcus faecalis V583, Escherichia coli CFT073, Clostridium pasteurianum, Listeria monocytogene"
- 3045 3175 83 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Clostridium pasteurianum, Campylobacter jejuni subsp. jejuni NCTC 11168, Listeria monocytogenes, Clostridium tetani E88, Homo sapiens, Tritrichomonas foetus, Mus musculus, Enterococcus faecalis V583, Amazona autumnalis, Prochlorococcus marinus subsp. marinus str. CCMP1375, Spirochloa barkhanus, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Saccharomyces cerevisiae, Nostoc sp. PCC 7120" 30
- 3046 3176 27 "Beta vulgaris, Mus musculus, Oceanobacillus iheyensis HTE831, Enterococcus faecalis V583, Clostridium tetani E88, Homo sapiens, Streptococcus agalactiae 2603V/R, Bacillus thuringiensis serovar galleriae, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group)"
- 3047 3177 29 "Plasmodium falciparum 3D7, Bacillus anthracis str. Ames, Homo sapiens, Mus musculus, Ciona savignyi, Medicago truncatula, Geobacillus tearothermophilus, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Danio rerio" 40
- 3048 3178 23 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Amoebidium parasiticum, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"
- 3049 3179 27 "Methanosarcina acetivorans C2A, Mus musculus, Pan troglodytes, Homo sapiens, Danio rerio, Caenorhabditis elegans, Drosophila melanogaster, Papio anubis, Plasmodium falciparum 3D7, Rice stripe virus, Arabidopsis thaliana, Streptococcus pyogenes MGAS8232, Guillardia theta, Mesostigma viride, Candidatus Blochmannia floridanus, Amsacta moorei entomopoxvirus, Candida albicans, Oryza sativa (japonica cultivar-group)"
- 3050 3180 27 "Clostridium perfringens str. 13, Homo sapiens, Danio rerio" 50

- rio, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)"
- 3051 3181 31 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Zea mays*, *Neurospora crassa*, *Mesorhizobium loti*, *Oryza sativa* (japonica cultivar-group)"
- 3052 3182 23 "Homo sapiens, *Caenorhabditis elegans*, *Hordeum vulgare* s ubsp. *vulgare*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Vibrio para haemolyticus*, ectomycorrhizal root tip 70_Ny1.E2-17.2, Human immunodeficiency virus 1"
- 3053 3183 31 "Enterococcus faecalis V583, *Mus musculus*, *Caenorhabditis elegans*, *Exeristes roborator*, *Homo sapiens*, *Danio rerio*" 10
- 3054 3184 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Sus scrofa*, *Encephalitozoon cuniculi*, *Forsythia x intermedia*"
- 3055 3185 47 "Clostridium tetani E88, *Bacillus cereus* ATCC 14579, *Clostridium acetobutylicum*, *Lactobacillus sanfranciscensis*, *Enterococcus faecalis* V583, *Homo sapiens*, *Brassica napus*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Cuphea pulcherrima*, *Bacillus subtilis*, *Mus musculus*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Helicobacter hepaticus* ATCC 51449, *Trirhabd a baccharides*, *Macaca fascicularis*, *Oryctolagus cuniculus*"
- 3056 3186 53 "Haemophilus influenzae Rd KW20, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Neurospora crassa*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168" 20
- 3057 3187 23 "Homo sapiens, Turnip mosaic virus, *Mus musculus*, *Dictyostelium discoideum*, *Helicobacter pylori*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Schizosaccharomyces pombe*"
- 3058 3188 50 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Homo sapiens*, *Pasteurella multocida*, *Arabidopsis thaliana*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Alagoasa apicalis*, *Plasmodium falciparum* 3D7, *Caulobacter crescentus* CB15, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Cnemotriccus fuscatus fuscator*, *Haemophilus ducreyi* 35000HP, *Pirella sp.*, *Schizosaccharomyces pombe*, *Sayornis phoebe*, *Danio rerio*, *Caenorhabditis elegans*, *Drosophila mauritiana*" 30
- 3059 3189 29 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Macaca mulatta*, *Pan troglodytes*, *Hevea brasiliensis*, *Papio anubis*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*"
- 3060 3190 23 "Arabidopsis thaliana, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Caenorhabditis elegans*, *Xenopus laevis*"
- 3061 3191 39 "Mycoplasma capricolum, *Medicago truncatula*, *Homo sapiens*, *Thermoanaerobacterium thermosaccharolyticum*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Gallus gallus*, *Caenorhabditis elegans*, *Pseudomonas aeruginosa*, *Streptococcus mutans* UA159, *Zea mays*, *Xylella fastidiosa* 9a5c, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Listeria monocytogenes*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Lycopersicon esculentum*, *Shewanella violacea*, *Clostridium perfringens* str. 13" 40
- 3062 3192 32 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Buchnera aphid* 50

- icola str. APS (Acyrtosiphon pisum), Enterococcus faecalis V583, Clostridium tetani E88, Zea mays, Fusobacterium nucleatum subsp. nucleatum ATCC 25586"
- 3063 3193 69 "Mycoplasma genitalium, Homo sapiens, Vibrio parahaemolyticus, Caenorhabditis briggsae, Mus musculus, Chlorobium tepidum TLS, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Pasteurella multocida, Nicotiana tabacum, Oceanobacillus iheyensis HTE831, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pan troglodytes, Danio rerio, Drosophila melanogaster, Methanosarcina mazei Goe1, Papio anubis, Arabidopsis thaliana, Plasmodium falciparum 3D7, Bacillus anthracis str. A2012, Rhizophydium sp. 136, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Zapus trinotatus, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Bacillus anthracis, Stylochytrium lemnae" 10
- 3064 3194 25 "Homo sapiens, Danio rerio, Caenorhabditis elegans, Caenorhabditis briggsae, Gallus gallus, Rattus norvegicus, Mus musculus"
- 3065 3195 38 "Chlorante-Aster yellows phytoplasma, Homo sapiens, Pseudomonas citronellolis, Acipenser oxyrinchus oxyrinchus, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Mus musculus, Xenopus laevis, Plasmodium falciparum 3D7, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Campylobacter coli, Helicobacter hepaticus ATCC 51449, Gossypium hirsutum" 20
- 3066 3196 24 "Mus musculus, Homo sapiens, Danio rerio, Helicobacter hepaticus ATCC 51449, Drosophila melanogaster, Nicotiana tabacum"
- 3067 3197 23 "Homo sapiens, Methanosarcina acetivorans C2A, Caenorhabditis elegans, Mus musculus, Oncorhynchus mykiss, Dictyostelium discoideum, Drosophila melanogaster, Heliobacillus mobilis, Mycoplasma penetrans, Danio rerio, Methanocaldococcus jannaschii, Ceratovacuna japonica"
- 3068 3198 31 "Danio rerio, Melipona bicolor, Homo sapiens, Mus musculus, Clostridium acetobutylicum, Nostoc sp. PCC 7120" 30
- 3069 3199 28 "Drosophila melanogaster, Homo sapiens, Mus musculus, Sulfolobus tokodaii, Neurospora crassa"
- 3070 3200 34 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Mus musculus, Rice black streaked dwarf virus, Chlamydomonas reinhardtii, Phthorimaea operculella granulovirus, Danio rerio"
- 3071 3201 53 "Bacillus anthracis str. Ames, Clostridium tetani E88, uncultured marine gamma proteobacterium EBAC31A08, Bacillus cereus ATCC 14579, Bacillus subtilis, Homo sapiens, Bacillus subtilis subsp. subtilis str. 168, Oryza sativa (japonica cultivar-group), Mus musculus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Prochlorococcus marinus, Clostridium perfringens str. 13, Chlamydia muridarum, Shewanella oneidensis MR-1, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Bacteriophage bIL286, Bacteriophage bIL285, Danio rerio, Caenorhabditis elegans, Schizosaccharomyces pombe, Proteus mirabilis, Panthera leo, Talpa europaea, Helicobacter hepaticus ATCC 51449, Wolbachia sp. wKue" 40
- 3072 3202 24 "Mus musculus, Coffea canephora, Coffea arabica, Homo sapiens, Candida albicans, Vibrio vulnificus CMCP6, Lactococcus lactis subsp. lact" 50

- is, *Lactococcus lactis*, *Oryza sativa*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 3073 3203 23 "Mus musculus, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Caenorhabditis elegans*, *Danio rerio*, *Mycoplasma capricolum*, *Streptococcus suis*"
- 3074 3204 24 "Homo sapiens, *Arabidopsis thaliana*, *Sulfolobus tokodaii*, *Xylella fastidiosa* Temecula1, *Mus musculus*, *Oryza sativa*, *Oryza sativa* (japonica cultivar-group), *Glycine max*"
- 3075 3205 29 "Arabidopsis thaliana, *Synechocystis* sp. PCC 6803, *Mus musculus*, *Homo sapiens*, *Rattus norvegicus*, *Bluetongue virus 2*" 10
- 3076 3206 27 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Homo sapiens*, *Listeria innocua*, *Mus musculus*, *Streptococcus pyogenes* MGAS8232, *Kladothrips hamiltoni*, *Streptococcus pyogenes* M1 GAS, *Bombyx mori*, *Danio rerio*, *Cyanophora paradoxa*"
- 3077 3207 33 "Dictyostelium discoideum, *Homo sapiens*, *Poncirus trifoliata*, *Monosiga brevicollis*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Schizaphis graminum*, *Ureaplasma urealyticum*, *Danio rerio*, *Antheraea pernyi*, *Macaca mulatta*, *Plasmodium yoelii*, *Amsacta moorei* entomop"
- 3078 3208 25 "Mus musculus, *Candida albicans*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Homo sapiens*, *Vibrio parahaemolyticus*, *Clostridium tetani* E88, *Cicer arietinum*, *Rattus norvegicus*, *Caenorhabditis elegans*" 20
- 3079 3209 27 "Homo sapiens, *Danio rerio*, *Ciona intestinalis*, *Rattus norvegicus*, *Mus musculus*, *Zea mays*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Marchantia polymorpha*, *Streptococcus pyogenes* SSI-1"
- 3080 3210 29 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Mus musculus*, *Methanosarcina acetivorans* C2A, *Plasmodium falciparum* 3D7, *Sus scrofa*, *Rattus norvegicus*, *Enterococcus faecalis* V583, *Vibrio vulnificus* CMCP6, *Medicago truncatula*, *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Triticum monococcum*, *Pan troglodytes*, *Danio rerio*, *Streptococcus agalactiae* NEM316, *Enterococcus faecalis*, *Mycoplasma capricolum*, *Ureaplasma urealyticum*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Rattus sp.*, *Clostridium perfringens* str. 13" 30
- 3081 3211 28 "Homo sapiens, *Leishmania major*, *Archaeoglobus fulgidus* DSM 4304, *Mus musculus*, *Plasmodium falciparum* 3D7, *Campylobacter lari*, *Danio rerio*, *Caenorhabditis elegans*, *Shrimp white spot syndrome virus*, *Pyrococcus furiosus* DSM 3638, *Caenorhabditis briggsae*, *Vibrio cholerae*"
- 3082 3212 24 "Homo sapiens, *Mus musculus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Streptococcus pyogenes* MGAS8232, *Crypturellus tataupa*, *Caenorhabditis elegans*, *Danio rerio*" 40
- 3083 3213 31 "*Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Homo sapiens*, *Streptococcus sanguinis*, *Streptococcus pneumoniae*, *Streptococcus parasanguinis*, *Strep*"
- 3084 3214 32 "Homo sapiens, *Plasmodium berghei*, *Mus musculus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Alipumilio avispa*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Methanosarcina mazei* Goe1, *Hypocrea jecorina*, *Ictalurus punctatus*" 50

- , *Xylella fastidiosa* 9a5c, *Hordeum vulgare*, *Plasmodium cynomolgi*, *Stomaphis malloti*, *Stomaphis aphananth*, *Stomaphis yanonis*, *Stomaphis fagi*, *Mesocricetus auratus*, *Pan troglodytes*, *Hydra vulgaris*, *Rattus norvegicus*"
- 3085 3215 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mycoplasma penetrans, Pan troglodytes, Caenorhabditis elegans, Mus musculus, Drosophila melanogaster, Actinobacillus actinomycetemcomitans, Pylaiella littoralis, Lotus corniculatus var. japonicus, Danio rerio"
- 3086 3216 28 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Guillardia theta, Cellvibrio japonicus, Oryza sativa (japonica cultivar-group), Rumex acetosa" 10
- 3087 3217 23 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Mus musculus"
- 3088 3218 28 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Drosophila yakuba, Lactococcus bacteriophage 4268, Lactococcus phage BK5-T, Arabidopsis thaliana"
- 3089 3219 27 "Mus musculus, Tribolium castaneum, Homo sapiens, Dictyostelium discoideum, Bacillus thuringiensis, Arabidopsis thaliana, Salmonella typhi, Prochlorococcus marinus"
- 3090 3220 28 "Solanum tuberosum, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Neisseria gonorrhoeae, Danio rerio" 20
- 3091 3221 23 "Homo sapiens, Mus musculus, Drosophila melanogaster, Rattus norvegicus, Medicago truncatula, Equus caballus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Sulfolobus tokodaii"
- 3092 3222 32 "Homo sapiens, Plasmodium falciparum 3D7, Buchnera aphidicola str. Bp (Baizongia pistaciae), Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Danio rerio, Gelidium divaricatum, Drosophila melanogaster, Ehrlichia ruminantium, Streptococcus pneumoniae TIGR4, Arabidopsis thaliana, Melanoplus sanguinipes entomopoxvirus"
- 3093 3223 25 "Arabidopsis thaliana, Mus musculus, Homo sapiens, Caenorhabditis briggsae, Danio rerio, Oryza sativa (japonica cultivar-group)" 30
- 3094 3224 27 "Mus musculus, Homo sapiens, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (japonica cultivar-group), Danio rerio, Staphylococcus aureus subsp. aureus Mu50"
- 3095 3225 29 "Homo sapiens, Mus musculus, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Medicago truncatula, Caenorhabditis elegans"
- 3096 3226 32 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Echiniscus carinatus, Bacteroides thetaiotaomicron VPI-5482, Arabidopsis thaliana, Ciona intestinalis, Styrax officinalis, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Crotalus atrox" 40
- 3097 3227 23 "Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Sulfolobus tokodaii"
- 3098 3228 24 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Ehrlichia ruminantium, Danio rerio, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Rattus norvegicus, Arabidopsis thaliana"
- 3099 3229 23 "Danio rerio, Mus musculus, Homo sapiens, Dictyostelium discoideum, Sus scrofa, Bactrocera papayae, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Schizosaccharomyces pombe, Neurospora crassa, Bactrocera jarvis" 50

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- 3100 3230 35 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Homo sapiens, Mus musculus, Corynebacterium glutamicum, Caenorhabditis elegans, Drosophila melanogaster, Lactococcus lactis subsp. lactis, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Rattus norvegicus, Danio rerio, Thermosynechococcus elongatus BP-1, Haemophilus influenzae Rd KW20, Methanocaldococcus jannaschii, Clostridium perfringens str. 13"
- 3101 3231 61 "Chlamydomonas reinhardtii GPIC, Homo sapiens, Plasmodium falciparum 3D7, Sus scrofa, Medicago truncatula, Drosophila melanogaster, Mus musculus, Ehrlichia ruminantium, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Danio rerio" 10
- 3102 3232 23 "Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Oryza sativa, Zoarces viviparus, Arabidopsis thaliana, Mus musculus, Thermoplasma volcanium, Theiler-like virus NGS910"
- 3103 3233 27 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oceanobacillus ihayensis HTE831, Homo sapiens, Mus musculus, Rattus norvegicus, Felis catus, Human immunodeficiency virus 1, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Clostridium perfringens str. 13, Dictyostelium discoideum, Staphylococcus aureus subsp. aureus Mu50, Danio rerio"
- 3104 3234 33 "Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium butyricum, Clostridium acetobutylicum, Neisseria meningitidis MC58, Cryptosporidium parvum" 20
- 3105 3235 27 "Mus musculus, Methanocaldococcus jannaschii, Oryza sativa (japonica cultivar-group), Homo sapiens, Caenorhabditis elegans, Danio rerio, Human immunodeficiency virus 1"
- 3106 3236 28 "Mus musculus, Homo sapiens, Hua calculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Caenorhabditis elegans, Plasmodium falciparum 3D7"
- 3107 3237 31 "Schizosaccharomyces pombe, Caenorhabditis elegans, Goat pox virus, Sheeppox virus, Lumpy skin disease virus, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Homo sapiens, Drosophila melanogaster, Leptospira interrogans serovar lai str. 56601, Tetrahymena thermophila, uncultured proteobacterium, Arabidopsis thaliana, Ovis aries, Leptospira kirschneri" 30
- 3108 3238 28 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Drosophila melanogaster, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Danio rerio, Schizosaccharomyces pombe, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Oryza sativa (japonica cultivar-group), Hordeum vulgare, Campylobacter jejuni subsp. jejuni NCTC 11168, Dianthus caryophyllus" 40
- 3109 3239 23 "Homo sapiens, Mus musculus, Medicago truncatula, Drosophila melanogaster, Arabidopsis thaliana, Danio rerio, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group)"
- 3110 3240 27 "Mus musculus, Leptospira interrogans serovar lai str. 56601, Homo sapiens, Drosophila melanogaster, Arabidopsis thaliana, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio"
- 3111 3241 78 "Nostoc sp. PCC 7120, Mesostigma viride, Chromobacterium violaceum, Porphyra purpurea, Cyanophora paradoxa, Neisseria meningitidis Z2491, Neisseria meningitidis MC58, Synechocystis sp. PCC 6803, Coxiella burnetii RSA 493, Euglena gracilis, Finnegoldia magna, "

- 3112 3242 28 "Homo sapiens, Mus musculus, Danio rerio, Nicotiana tabacum, Clostridium tetani E88, Saccharomyces cerevisiae, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Rattus norvegicus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus"
- 3113 3243 27 "Homo sapiens, Oryza sativa, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Buchnera aphidicola str. Sg (Schizaphis graminum), Mus musculus, Chironomus pallidivittatus, Medicago truncatula, Drosophila melanogaster, Schizosaccharomyces japonicus, Plasmodium falciparum 3D7, Guillardia theta, Cryptosporidium sp., Yarrowia lipolytica, Sulfolobus tokodaii, Caenorhabditis elegans, Danio rerio, Pan troglodytes" 10
- 3114 3244 27 "Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Mus musculus, Pentacomia discrepans, Yarrowia lipolytica, Sulfolobus tokodaii, Nostoc sp. PCC 7120"
- 3115 3245 28 "Mus musculus, Homo sapiens, Cryptosporidium parvum, Drosophila mauritiana, Oryza sativa (japonica cultivar-group), Danio rerio, Clostridium tetani E88, Drosophila erecta, Porcine rotavirus, Neurospora crassa"
- 3116 3246 27 "Homo sapiens, Mus musculus, Neomys fodiens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Sorghum bicolor, Danio rerio, Thermosynechococcus elongatus BP-1" 20
- 3117 3247 23 "Enterococcus faecalis V583, Medicago truncatula, Mustela frenata, Salmonella typhimurium LT2, Shigella flexneri 2a str. 2457T, Rattus norvegicus, Pinus koraiensis, Salmonella enterica subsp. enterica serovar Typhi Ty2, Mus musculus, Felis silvestris, Drosophila melanogaster, Escherichia coli CF T073, Shigella flexneri 2a str. 301, Homo sapiens, Escherichia coli O157:H7 EDL933, Salmonella typhimurium, Escherichia coli, Arabidopsis thaliana, Escherichia coli K12, Felis catus, Phacochoerus africanus, Sulfolobus tokodaii, Salmonella enterica subsp. enterica serovar Typhi, Picea abies, Sus scrofa, Rattus sp., Petaurista petaurista, Petaurista philippensis, Pinus thunbergii, Escherichia coli O157:H7, Crocidura kurodai, Crocidura dsinezumi, Crocidura lasiura" 30
- 3118 3248 27 "Drosophila melanogaster, Homo sapiens, Mus musculus, Myocastor coypus, Branchiostoma floridae, Candida albicans, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Medicago truncatula, Mycoplasma gallisepticum R, Rattus norvegicus, Enterococcus faecalis V583, Danio rerio, Solanum tuberosum, Mycoplasma pulmonis, Vigna unguiculata, Helicobacter pylori 26695"
- 3119 3249 27 "Mus musculus, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii"
- 3120 3250 27 "Schistosoma japonicum, Mus musculus, Homo sapiens, Mycoplasma capricolum, Staphylococcus epidermidis ATCC 12228, Guillardia theta, Danio rerio, Graptosaltria nigrofuscata, Plasmodium falciparum 3D7, Amsacta moorei entomopoxvirus, Oryza sativa (japonica cultivar-group), Pirya virus, Rattus norvegicus, Sorites sp. 1368, Sorites orbiculus" 40
- 3121 3251 35 "Homo sapiens, Lotus corniculatus var. japonicus, Methanosarcina mazei Goe1, Mus musculus, Clostridium perfringens str. 13, Clostridium tetani E88, Caenorhabditis elegans, Plasmodium falciparum 3D7, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Calliactis parasitica, Dictyostelium discoideum, Equus caballus, Danio rerio, Oryza sativa (japonica cultivar-group), Streptococcus mutans UA159, Oryza sativa, Rhodospirillum centenum, Aeg 50

- iceras corniculatum, Zea mays, Spinacia oleracea, Plasmodium falciparum, Listeria innocua, Medicago truncatula, Pan troglodytes, Macaca fascicularis"
- 3122 3252 29 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Plasmodium falciparum, Danio rerio, Prochlorococcus marinus, Turbinella angulata, Nostoc sp. PCC 7120"
- 3123 3253 31 "Rattus norvegicus, Oryza sativa, Staphylococcus epidermidis, Homo sapiens, Drosophila melanogaster, Brassica rapa, Brassica napus, Mus musculus, Bos taurus, Oceanobacillus iheyensis HTE831, Danio rerio"
- 3124 3254 56 "Methanosarcina mazei Goe1, Mus musculus, Homo sapiens, Sulfolobus tokodaii, Arabidopsis thaliana, Clostridium acetobutylicum" 10
- 3125 3255 23 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Carcinus maenas, Streptococcus pyogenes M1 GAS, Danio rerio"
- 3126 3256 35 "Aleochara nigra, Danio rerio, Plasmodium falciparum 3D7, Mus musculus, Schizosaccharomyces japonicus, Aphodius constans, Homo sapiens, Zyras haworthi, Lotus corniculatus var. japonicus, Parategeticula sp., Papio anubis, Liodrosophila aerea, Sulfolobus solfa"
- 3127 3257 31 "Homo sapiens, Plasmodium falciparum 3D7, Thermoplasma acidophilum, Arabidopsis thaliana, Danio rerio, Saccharomyces cerevisiae, Mus musculus, Cache Valley virus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Bacteriophage Cz, Bacteriophage Pol, Bacteriophage K3" 20
- 3128 3258 27 "Homo sapiens, Borrelia burgdorferi B31, Clostridium tetani E88, Mus musculus, Danio rerio, Borrelia burgdorferi, Pan troglodytes, Typhlochromium albidinervum, Caenorhabditis elegans, Rickettsia prowazekii, Methanocaldococcus jannaschii, Homalomena sp. Barabe 151, Homalomena rubescens, Philodendron rudgeanum, Philodendron billietiae, Philodendron solimoesense, Philodendron fragrantissimum, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Myxocyprinus asiaticus, Rice black streaked dwarf virus, Legionella pneumophila, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Tetrahymena thermophila"
- 3129 3259 27 "Caenorhabditis elegans, Arabidopsis thaliana, Homo sapiens, Medicago truncatula, Plasmodium falciparum 3D7, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio, Cupuladria sp. 5-MMHD-2002, Cupuladria sp. 4-MMHD-2002, Dictyostelium discoideum, Mus musculus, Strongyloides rotundus purpuratus, Oryza sativa (japonica cultivar-group), Glomus mosseae, Haemophilus influenzae biotype aegyptius, Phaseolus vulgaris" 30
- 3130 3260 27 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Cotesia congregata, Danio rerio, Plasmodium falciparum, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Nicotiana tabacum, Plasmodium chabaudi chabaudi" 40
- 3131 3261 33 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Biomphalaria glabrata, Danio rerio, Periplaneta americana, Drosophila melanogaster, Sus scrofa, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Felis catus, Sulfolobus solfataricus, Entamoeba histolytica, Trypanosoma brucei brucei, Medicago truncatula, Gyrodon merulioides, Tapinella panuoides, Tapinella atrotomentosa, Xenopus laevis, Silurana tropicalis"
- 3132 3262 23 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio"
- 3133 3263 28 "Drosophila melanogaster, Homo sapiens, Ovis aries, Danio rerio, Mus musculus, Zea mays, Pasteurella multocida, Arabidopsis thaliana, Or 50

- Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Megaselia scalaris*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*, *Medicago truncatula*, *Sus scrofa*, *Phycomyces blakesleeanus*"
- 3134 3264 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Bacillus subtilis, Williopsis saturnus var. mrakii, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Rattus norvegicus, Gallus gallus, Drosophila melanogaster, Danio rerio, Mycoplasma capricolum, Caenorhabditis elegans"
- 3135 3265 28 "Staphylococcus aureus subsp. aureus MW2, Homo sapiens, Williopsis saturnus var. suaveolens, Medicago truncatula, Saccharomyces cerevisiae, Mus musculus, Glycine max, Mycoplasma pulmonis, Rattus norvegicus, Staphylococcus aureus subsp. aureus N315, Caenorhabditis elegans, Macrophthalmus brevis, Staphylococcus aureus subsp. aureus Mu50, Borrelia burgdorferi B31, Drosophila willistoni, Bos taurus, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii" 10
- 3136 3266 30 "Borrelia burgdorferi B31, Drosophila melanogaster, Caenorhabditis elegans, Homo sapiens, Mus musculus, Partulina splendida, Branchipolynoe sp. VG-2002, Plasmodium falciparum 3D7, Naupactus xanthographus, Tribolium castaneum, Danio rerio, Oryza sativa (japonica cultivar-group), Melanoplus sanguinipes entomopoxvirus, Amphichaeta raptisae, Arabidopsis thaliana, Rattus norvegicus, Dendroctonus brevicomis, Thylogale stigmatica, Dactylotrypes longicollis, Tomomicus piniperda, Goniobasis semicarinata, Plasmodium falciparum, Fowlpox virus, Mycoplasma penetrans, 'Tasmania' sp. sensu Reid 1996, Bacillus subtilis subsp. subtilis str. 168, Bacteriophage SPBc2" 20
- 3137 3267 27 "Homo sapiens, Danio rerio, Hordeum vulgare, Mus musculus, Ephedra viridis, Bacillus anthracis str. Ames, Bacillus thuringiensis, Bacillus anthracis, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Oryza sativa (japonica cultivar-group), Mycoplasma gallisepticum R, Bacillus cereus ATCC 14579, Medicago truncatula, Drosophila melanogaster, Acanthamoeba castellanii, Turbinicarpus schmiedickianus, Turbinicarpus pseudomacroechele, Turbinicarpus gielsdorfianus, Coryphantha pallida, Ariocarpus retusus, Ariocarpus agavoides, Sus scrofa, Rana catesbeiana, Pedinomonas minor, Agaricia agaricites, Maeotias marginata, uncultured delta proteobacterium TIHP368-21" 30
- 3138 3268 28 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Callithrix jacchus, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Danio rerio, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii"
- 3139 3269 23 "Drosophila melanogaster, Mus musculus, Homo sapiens, Human immunodeficiency virus 1, Rickettsia conorii, Ictalurus punctatus" 40
- 3140 3270 27 "Homo sapiens, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, Mus musculus, Thermoplasma volcanium, Plagiomnium ellipticum"
- 3141 3271 24 "Homo sapiens, Danio rerio, Mus musculus, Prunus armeniaca, Drosophila melanogaster, Arabidopsis thaliana, Saccharomyces cerevisiae, Caenorhabditis elegans"
- 3142 3272 28 "Escherichia coli, Caenorhabditis elegans, Drosophila melanogaster, Homo sapiens, Mus musculus, Lemur catta, uncultured bacterium, uncul" 50

- tured sulfate-reducing bacterium 368, uncultured sulfate-reducing bacterium 330, uncultured sulfate-reducing bacterium 282, *Solanum tuberosum*, *Desulfocapsa* sp. Cad626, *Desulfocapsa thiozymogenes*, uncultured *Desulfocapsa* sp., *Gemella* sp. 1754-94, *Lycopersicon esculentum*"
- 3143 3273 23 "Lemur catta, *Homo sapiens*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Tribolium castaneum*, *Caenorhabditis elegans*, *Nitrosomonas europaea* ATCC 19718, *Schizosaccharomyces pombe*, *Danio rerio*, *Rattus norvegicus*"
- 3144 3274 25 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Rattus norvegicus*" 10
- 3145 3275 25 "Homo sapiens, *Mus musculus*, *Saccharomyces cerevisiae*, *Rattus norvegicus*, *Methanosarcina mazei* Goe1, uncultured Chlamydiales bacterium, *Coelia guatemalensis*, *Coelia macrostachya*"
- 3146 3276 28 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Danio rerio*, *Mycoplasma gallisepticum* R, *Rattus norvegicus*, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group)"
- 3147 3277 40 "Mus musculus, *Homo sapiens*, *Plasmodium falciparum*, *Clostridium acetobutylicum*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Cenocoelius* sp., *Galdieria sulphuraria*, *Oryza sativa* (japonica cultivar-group)" 20
- 3148 3278 27 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 3149 3279 27 "Mus musculus, *Rickettsia prowazekii*, *Oryza sativa* (japonica cultivar-group), *Heliothis virescens*, *Danio rerio*, *Nostoc* sp. GSV224, *Homo sapiens*, *Bovine coronavirus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Clostridium perfringens* str. 13"
- 3150 3280 28 "Bombus sylvestris, *Homo sapiens*, *Peripatoides novaezealandiae*, *Papio anubis*, *Bacteroides thetaiotaomicron* VPI-5482, *Phylloxera* sp. DAD-2001b, *Aeshna subpupillata*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Anax junius*, *Mantonipatus persiculus*, *Occiperipatus gilesii*" 30
- 3151 3281 27 "Homo sapiens, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mus musculus*, *Diostrombus politus*, Apple latent spherical virus, *Oryctolagus cuniculus*, *Bos taurus*, *Prochlorococcus marinus*"
- 3152 3282 27 "Homo sapiens, *Rickettsia conorii*, *Mus musculus*, *Mycoplasma gallisepticum* R, *Leptospira interrogans* serovar lai str. 56601, *Mycoplasma gallisepticum*, *Clostridium botulinum*, *Coxiella burnetii* RSA 493, *Pan troglodytes*, *Bos taurus*, *Drosophila melanogaster*, *Danio rerio*, *Clostridium botulinum* A, *Oryza sativa* (japonica cultivar-group), *Sus scrofa*, *Pyrococcus horikoshii*, *Dictyostelium discoideum*, *Synechocystis* sp. PCC 6803, *Nostoc* sp. PCC 7120"
- 3153 3283 27 "Homo sapiens, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Mus musculus*, *Leptospira interrogans* serovar lai str. 56601, *Sulfolobus tokodaii*, *Rattus norvegicus*, *Clostridium perfringens* str. 13, *Medicago truncatula*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Methanosarcina mazei* Goe1, *Oryza sativa* (japonica cultivar-group), *Borrelia burgdorferi*, *Canis familiaris*, *Plasmodium falciparum* 3D7, *Felis catus*, *Methanosarcina acetivorans* C2A, *Galaxias anomalus*, *Pyrobaculum aerophilum* str. IM2, *Staphylococcus aureus*, *Clostridium acetobutylicum*, *Danio rerio*, *Borrelia garinii*, *Borrelia afzelii*, *Medicago sativa*, *Bos taurus*, *Lotus corniculatus* var. japonicus, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2" 40
- 3154 3284 27 "Homo sapiens, *Danio rerio*, *Plasmodium falciparum* 3D7, M 50

- us musculus, Mycoplasma mycoides subsp. mycoides SC, Mycoplasma sp. 'bovine group 7', Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Percus cy lindricus, Lactococcus lactis subsp. lactis, Caenorhabditis elegans"
- 3155 3285 27 "Danio rerio, Mus musculus, Homo sapiens, Aspergillus fumigatus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Medicago truncatula, Drosophila melanogaster, Staphylococcus aureus, Infectious salmon anemia virus, Plasmodium falciparum, Arabidopsis thaliana, Heloniopsis orientalis, Plasmodium falciparum 3D7, Streptococcus dysgalactiae subsp. equisimilis, Schizosaccharomyces pombe, Botryotinia fuckeliana"
- 3156 3286 23 "Gallus gallus, Streptococcus pneumoniae, Caenorhabditis elegans, Homo sapiens, Xenopus laevis, Rattus norvegicus, Drosophila melanogaster, Mus musculus" 10
- 3157 3287 39 "Clostridium tetani E88, Bacillus anthracis str. Ames, Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Xanthomonas campestris pv. campestris str. ATCC 33913, Branchiostoma floridae, Picea abies, Clostridium intestinalis"
- 3158 3288 27 "Homo sapiens, Caenorhabditis elegans, Haemophilus influenzae Rd KW20, Danio rerio, Chlamydia trachomatis, Mus musculus, Takifugu rubripes"
- 3159 3289 30 "Clostridium tetani E88, Danio rerio, Lemur catta, Schmidtea mediterranea, Mus musculus, Toxoplasma gondii, Homo sapiens, Issatchenkia orientalis, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group)" 20
- 3160 3290 25 "Thermoplasma acidophilum, Homo sapiens, Borrelia turicatae, Mus musculus, Borrelia burgdorferi, Caenorhabditis elegans, Gallus gallus, Arabidopsis thaliana, Bacillus subtilis, Danio rerio, Chlamydia pneumoniae C WL029, Lotus corniculatus var. japonicus, Chlamydia pneumoniae AR39, Chlamydia pneumoniae J138, Human herpesvirus 7, Haemophilus ducreyi 35000HP, Bacillus subtilis subsp. subtilis str. 168, Chlamydia pneumoniae TW-183"
- 3161 3291 27 "Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Mycoplasma gallisepticum R, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Agelaius phoeniceus, Danio rerio, Chlorella vulgaris" 30
- 3162 3292 23 "Chlamydia muridarum, Danio rerio, Homo sapiens, Bacillus cereus ATCC 14579, Rattus norvegicus, Ischnura heterosticta, Clostridium acetobutylicum, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120"
- 3163 3293 27 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Pantoglydotes, Prochlorococcus marinus, Synechocystis sp. PCC 6803"
- 3164 3294 29 "Homo sapiens, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Clostridium tetani E88, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Streptococcus mutans UA159, Human papillomavirus type 5, Arabidopsis thaliana, Human papillomavirus type 5b, Danio rerio, Acholeplasma laidlawii" 40
- 3165 3295 27 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Drosophila melanogaster, Homo sapiens, Mus musculus, Methanocaldococcus jannaschii, Arabidopsis thaliana, Clostridium perfringens, Neurospora crassa, Oryza sativa (japonica cultivar-group), Chlamydia muridarum, Buchnera aphidicola str. Sg (Schizaphis graminum), Staphylococcus aureus, Tribolium castaneum, Prochlorococcus marinus, Bombyx mori, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Buchnera aphidicola, Staphylococcus aureus subsp. aureus Mu50" 50

- 3166 3296 33 "Danio rerio, Homo sapiens, Mus musculus, Candidatus Blochmannia floridanus, Arabidopsis thaliana"
- 3167 3297 27 "Mus musculus, Homo sapiens, Hamster papovavirus, Vicia faba, Macaca fascicularis, Drosophila melanogaster, Arabidopsis thaliana, Ureaplasma urealyticum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus Mu50"
- 3168 3298 25 "Homo sapiens, Mus musculus, Sulfolobus tokodaii, Danio rerio, Simulium sirbanum, Simulium sanctipauli, Simulium damnosum, Drosophila melanogaster, Escherichia coli, Arabidopsis thaliana, Euhadra herklotsi, Oryza sativa (japonica cultivar-group)" 10
- 3169 3299 25 "Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Melanoplus sanguinipes entomopox virus"
- 3170 3300 31 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Danio rerio, Arabidopsis thaliana, Mus musculus, Caenorhabditis elegans, Human immunodeficiency virus 1, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Staphylococcus aureus, Plasmodium falciparum 3D7, Schmidtea mediterranea, Lycopersicon esculentum, Glycine max, Plasmodium vivax, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Staphylococcus aureus subsp. aureus Mu50" 20
- 3171 3301 25 "Oryza sativa (japonica cultivar-group), Acinetobacter sp. ADP1, Mus musculus, Homo sapiens, Mycoplasma gallisepticum R, Methanosarcina mazei Goe1, Papio anubis, Ovis aries, Streptococcus agalactiae 2603V/R, Campoletis sonorensis ichnovirus, Sulfolobus islandicus rod-shaped virus 1, Sulfolobus islandicus rod-shaped virus 2, Streptococcus agalactiae NEM316, Danio rerio, Medicago truncatula"
- 3172 3302 35 "Homo sapiens, Clostridium acetobutylicum, Danio rerio, Drosophila melanogaster, Clostridium tetani E88, Bombyx mori, Mus musculus, Arabidopsis thaliana, Staphylococcus epidermidis, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Bacteroides thetaiotaomicron VPI-5482, Borrelia burgdorferi B31, Sorghum bicolor, Caenorhabditis elegans, Pongo pygmaeus, Pantoglydotes, Buchnera aphidicola str. Sg (Schizaphis graminum), Rhizophyidum sp. 136, Plasmodium vivax, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Buzura suppressaria nucleopolyhedrovirus, Helicobacter hepaticus ATCC 51449, Oryctolagus cuniculus, Staphylococcus aureus subsp. aureus Mu50" 30
- 3173 3303 77 "Clostridium acetobutylicum, Thermoanaerobacter tengcongensis, Bacillus anthracis str. Ames, Oceanobacillus iheyensis HTE831, Pasteurella multocida, Prochlorococcus marinus, Mus musculus, Oryza sativa (japonica cultivar-group), Prochlorococcus marinus subsp. marinus str. CCMP1375, Lactobacillus casei bacteriophage A2, Homo sapiens, Dixonielloa grisea, Porphyromonas gingivalis W83, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50" 40
- 3174 3304 100 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Oceanobacillus iheyensis HTE831, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Vibrio vulnificus CMCP6, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Yarrowia lipolytica, Clostridium perfringens str. 13, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus Mu50, Drosophila melanogaster, Homo sapiens, Mus musculus, Staphylococcus a 50

- ureus subsp. aureus MW2, *Synechocystis* sp. PCC 6803, *Borrelia burgdorferi* B31, *Arabidopsis thaliana*, *Lactobacillus plantarum* WCFS1, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Trypanosoma brucei*"
- 3175 3305 25 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Gallus gallus*, Human herpesvirus 6, *Bacillus licheniformis*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, Human herpesvirus 6B, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Rubus idaeus* subsp. *idaeus*, *Nostoc* sp. PCC 7120"
- 3176 3306 28 "*Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Homo sapiens*, Cassava geminivirus, *Mus musculus*, *Drosophila virilis*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Drosophila melanogaster*, *Papio anubis*, *Caenorhabditis elegans*, *Clostridium acetobutylicum*, *Lotus corniculatus* var. *japonicus*, *Mycoplasma penetrans*, *Lactococcus lactis*, *Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis*" 10
- 3177 3307 25 "Homo sapiens, *Clostridium novyi*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Mus musculus*, *Gallus gallus*, Enterobacteria phage T4, *Dictyostelium discoideum*, *Danio rerio*"
- 3178 3308 28 "*Vitis vinifera*, *Mus musculus*, *Homo sapiens*, *Coxiella burnetii* RSA 493, *Danio rerio*"
- 3179 3309 39 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Lactobacillus salivarius* subsp. *salivarius*, *Mytilus edulis*, *Leptospira interrogans* serovar *lai* str. 56601, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Schmidtea mediterranea*, *Plasmodium falciparum* 3D7, *Adoxophyes orana* granulovirus, *Staphylococcus epidermidis*, *Daucus carota*, *Caenorhabditis elegans*, *Emericella purpurea*, *Emericella heterothallica*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Crithidia fasciculata*, *Arabidopsis thaliana*, *Staphylococcus aureus*" 20
- 3180 3310 29 "*Mus musculus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Xylella fastidiosa* Temecula1, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Condylura cristata*, *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*, *Cryptomeria japonica*, *Sorghum bicolor*, *Caenorhabditis elegans*, *Katharina tunicata*, *Populus kitakamiensis*, *Tilopteris mertensii*, *Bacillus halodurans*" 30
- 3181 3311 25 "*Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*, *Medicago truncatula*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Streptococcus pneumoniae*, *Arabidopsis thaliana*, *Danio rerio*"
- 3182 3312 28 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Canis familiaris*, *Pan troglodytes*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Encephalitozoon cuniculi*, *Otolemur crassicaudatus*, *Cladomyrma mackworthi*" 40
- 3183 3313 23 "*Bacillus licheniformis*, *Drosophila melanogaster*, *Homo sapiens*, *Danio rerio*, *Caenorhabditis elegans*, *Mus musculus*, *Enterococcus faecalis* V583, *Bacteroides thetaiotaomicron* VPI-5482, *Brucella melitensis* 16M, *Borrelia burgdorferi* B31, *Oryza sativa* (japonica cultivar-group), *Brucella suis* 1330, *Listeria monocytogenes*, *Bos taurus*, *Arabidopsis thaliana*"
- 3184 3314 27 "*Plasmodium falciparum* 3D7, *Drosophila melanogaster*, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Thermoplasma volcanium*, *Danio rerio*, *Candidatus Blochmannia floridanus*, *Lotus corniculatus*" 50

- s var. japonicus, *Oryza sativa* (japonica cultivar-group), *Mycoplasma hyopneumoniae*, *Medicago sativa*, *Rattus norvegicus*"
- 3185 3315 28 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Plasmodium falciparum* 3D7, *Danio rerio*, *Gallus gallus*, Human parainfluenza virus 3, *Caenorhabditis briggsae*, *Medicago truncatula*, *Entamoeba histolytica*, *Mycoplasma penetrans*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Iris fulva*"
- 3186 3316 29 "*Mus musculus*, *Borrelia burgdorferi* B31, *Medicago truncatula*, *Homo sapiens*, *Danio rerio*, *Staphylococcus epidermidis* ATCC 12228, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola*, *Bacillus halodurans*" 10
- 3187 3317 24 "*Homo sapiens*, *Clostridium tetani* E88, *Dictyostelium discoideum*, *Danio rerio*, *Caenorhabditis elegans*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Drosophila melanogaster*, *Mus musculus*, *Gorilla gorilla*, *Mycoplasma agalactiae*, *Arabidopsis thaliana*, *Papio hamadryas*, *Streptococcus pneumoniae* TIGR4, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma mycoides* subsp. *capri*, *Mycoplasma mycoides* subsp. *mycoides* LC, *Macaca fascicularis*, *Listeria innocua*"
- 3188 3318 27 "*Caenorhabditis elegans*, *Homo sapiens*, *Pan troglodytes*, *Mus musculus*, *Mesostigma viride*, *Aeropyrum pernix*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Drosophila melanogaster*, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Borrelia burgdorferi* B31, *Saccharomyces cerevisiae*, *Tamias amoenus*, *Borrelia burgdorferi*, *Oryza sativa* (japonica cultivar-group), *Salmonella enterica* subsp. *enterica* serovar Typhi, *Salmonella enteritidis*" 20
- 3189 3319 27 "*Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Arabidopsis thaliana*, *Escherichia coli*, *Shigella boydii*, *Bos taurus*, *Schizosaccharomyces pombe*, *Rattus norvegicus*, *Clostridium difficile*, *Mus musculus*, *Caenorhabditis elegans*"
- 3190 3320 23 "*Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Piromyces* sp. E2" 30
- 3191 3321 23 "*Homo sapiens*, *Mus musculus*, *Rickettsia prowazekii*, *Nostoc* sp. PCC 7120"
- 3192 3322 23 "*Homo sapiens*, *Mus musculus*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Pisum sativum*, *Adiantum capillus-veneris*, *Phaseolus vulgaris*, *Cicer arietinum*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Macaca fascicularis*, *Clostridium perfringens* str. 13"
- 3193 3323 27 "*Mus musculus*, *Homo sapiens*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Porphyromonas gingivalis* W83, *Varanus gouldii*"
- 3194 3324 23 "*Clostridium tetani* E88, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Mus musculus*, *Listeria innocua*, *Homo sapiens*, *Methanosarcina mazei* Goe1, *Xenopus laevis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Pimpinella brachycarpa*, *Micrococcus luteus*" 40
- 3195 3325 27 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Bacillus halodurans*, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Caenorhabditis elegans*"
- 3196 3326 41 "*Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Gelidium capense*, *Plasmodium falciparum* 3D7, *Yersinia pseudotuberculosis*, *Pasteurella multocida*" 50

- , *Danio rerio*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group)"
- 3197 3327 35 "Prochlorococcus marinus subsp. marinus str. CCMP1375, *Prochlorococcus marinus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Leptospira interrogans* serovar *lai* str. 56601, *Staphylococcus epidermidis* ATCC 12228, *Mus musculus*, *Danio rerio*"
- 3198 3328 79 "*Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Helicobacter hepaticus* ATCC 51449, *Chlamydomonada caviae* GPIC, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Aquifex aeolicus* VF5, *Streptococcus agalactiae* 2603V/R, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus agalactiae* NEM316, *Streptococcus pyogenes* SSI-1, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Streptococcus mutans* UA159, *Chlamydia trachomatis*, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Rattus norvegicus*, *Leptospira interrogans* serovar *lai* str. 56601, *Caenorhabditis elegans*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Campylobacter jejuni*" 10
- 3199 3329 71 "*Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* T1GR4, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Homo sapiens*, *Chlamydomonada caviae* GPIC, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Mus musculus*, *Pasteurella multocida*, *Russula decolorans*, *Gallus gallus*, *Streptococcus milleri*, uncultured cf. *Russula* sp., *Canis familiaris*, *Lotus corniculatus* var. *japonicus*, *Caenorhabditis elegans*, *Haemophilus ducreyi* 35000HP, *Pan troglodytes*, ectomycorrhizal root tip (cf. *Russula*) 141_Ny2.0-25.3, *Clostridium perfringens* str. 13" 20
- 3200 3330 27 "*Clostridium cellulovorans*, *Homo sapiens*, *Mus musculus*, *Mycoplasma penetrans*, *Drosophila melanogaster*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Gasterosteus aculeatus*, *Amaranthus hypochondriacus*, *Odocoileus hemionus*, *Limulus polyphemus*"
- 3201 3331 28 "*Homo sapiens*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Mus musculus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Euglena gracilis*, *Arabidopsis thaliana*, *Psilodera affinis*, *Danio rerio*, *Fusobacterium nucleatum* subsp. *vincentii*, *Schizosaccharomyces japonicus*, *Siamanthus siliquosus*, *Thermoplasma acidophilum*, *Amsacta moorei* entomopoxvirus, *Sulfolobus tokodaii*, *Mycoplasma penetrans*" 30
- 3202 3332 35 "*Homo sapiens*, *Plasmodium falciparum*, *Danio rerio*, *Leptospira interrogans* serovar *lai* str. 56601, *Drosophila melanogaster*, Cloning vector pRAF800, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lactococcus lactis*, *Caenorhabditis elegans*, *Thalassoma newtoni*, *Arabidopsis thaliana*"
- 3203 3333 27 "*Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*, *Human herpesvirus 6*, *Yarrowia lipolytica*, *Human herpesvirus 6B*" 40
- 3204 3334 26 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Clostridium acetobutylicum*, *Caenorhabditis elegans*"
- 3205 3335 27 "*Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Oryza sativa*, *Coxiella burnetii* RSA 493, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*"
- 3206 3336 31 "*Mus musculus*, *Equus caballus*, *Homo sapiens*, *Drosophila littoralis*, *Canis familiaris*, *Sulfolobus solfataricus*, *Danio rerio*, *Picea abies*, *Didelphis virginiana*, *Haemophilus ducreyi* 35000HP, *Carollia perspicillata*, *Pan troglodytes*, *Synechocystis* sp. PCC 6803" 50

- 3207 3337 28 "Homo sapiens, Mus musculus, Lycopersicon esculentum, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Drosophila melanogaster, Mus musculus domesticus, Plasmodium falciparum 3D7, Methanosarcina acetivorans C2A, Rattus norvegicus, Lactococcus lactis subsp. lactis, Arabidopsis thaliana, Schizosaccharomyces pombe, Danio rerio, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae"
- 3208 3338 28 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Methanosarcina acetivorans C2A, Arabidopsis thaliana, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Enterococcus faecalis, Enterococcus faecalis V583, Candidatus Carsonella ruddii, Grapevine chrome mosaic virus, Lotus corniculatus var. japonicus, Nicrophorus marginatus, Clostridium perfringens str. 13" 10
- 3209 3339 24 "Mus musculus, Homo sapiens, Drosophila melanogaster, Gallus gallus, Sorghum bicolor, Marburg virus, Danio rerio, Caenorhabditis elegans, Plasmodium falciparum 3D7, Drosophila erecta"
- 3210 3340 31 "Homo sapiens, Clostridium botulinum, Mus musculus, Influenza C virus, Rattus norvegicus, Gallus gallus, Chlamydia trachomatis, Oryza sativa (japonica cultivar-group), Hordeum vulgare, Clostridium perfringens str. 13"
- 3211 3341 28 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Methanosarcina acetivorans C2A, Clostridium acetobutylicum, Ureaplasma urealyticum, Helicobacter hepaticus ATCC 51449, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Dictyostelium discoideum, Pimpinella brachycarpa, Lotus corniculatus var. japonicus, Danio rerio, Candida tropicalis" 20
- 3212 3342 32 "Homo sapiens, Saccharomyces cerevisiae, Pan troglodytes, Caenorhabditis elegans, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Schizosaccharomyces japonicus, Gallus gallus, Plasmodium vivax"
- 3213 3343 34 "Homo sapiens, Danio rerio, Mus musculus, Plasmodium falciparum 3D7, Rattus norvegicus, Methanosarcina mazei Goe1, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Mastacembelus favus, Arabidopsis thaliana" 30
- 3214 3344 31 "Homo sapiens, Schizosaccharomyces pombe, Plasmodium falciparum 3D7, Mantidactylus aglavei, Drosophila melanogaster, Dictyostelium discoideum, Mus musculus, Sphaeroides nephelus, Rickettsia prowazekii, Danio rerio, Caenorhabditis elegans, Bacteroides thetaio"
- 3215 3345 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Oceanobacillus ihyensensis HTE831, Snow goose hepatitis B virus, Mus musculus, Rana dybowskii, Nostoc sp. PCC 7120, Methanosarcina mazei Goe1, Escherichia coli 0157:H7 EDL933, Staphylococcus aureus, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Pleurotus sajor-caju, Pleurotus pulmonarius, Picea abies, Schizosaccharomyces pombe, Gallus gallus, Picea mariana, Staphylococcus aureus subsp. aureus Mu50, Escherichia coli 0157:H7" 40
- 3216 3346 26 "Homo sapiens, Mus musculus, Curculio camelliae, Caenorhabditis elegans, Cycas edentata, Bacillus cereus ATCC 14579, Medicago truncatula, Drosophila melanogaster, Pan troglodytes, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Encephalitozoon cuniculi, Saccharomyces cerevisiae, Carollia perspicillata, Curculio elephas, Pisum sativum"
- 3217 3347 24 "Bacillus cereus ATCC 14579, Mus musculus, Homo sapiens, Lactococcus lactis subsp. lactis, Takifugu rubripes, Methanosarcina acetivorans" 50

- C2A, *Clostridium acetobutylicum*, *Sulfolobus solfataricus*, *Arabidopsis thaliana*, *Sulfolobus tokodaii*, *Caenorhabditis elegans*, *Neurospora crassa*"
- 3218 3348 32 "Streptococcus agalactiae NEM316, Homo sapiens, Rattus norvegicus, Drosophila melanogaster, Lycopersicon esculentum, Danio rerio, Staphylococcus caprae, Mus musculus, Caenorhabditis elegans, Brownopsis disepala, Arabidopsis thaliana, Clostridium acetobutylicum, Betula pendula, Oryza sativa (japonica cultivar-group)"
- 3219 3349 29 "Mus musculus, Homo sapiens, Drosophila melanogaster, Medicago truncatula, Lotus corniculatus var. japonicus, Plasmodium falciparum 3D7, Dictyostelium discoideum, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Neocallimastix patriciarum, Arabidopsis thaliana, Pan troglodytes, Papi o anubis, Candidatus Carsonella ruddii, Rattus norvegicus, Clostridium perfringens str. 13, Methanosarcina mazei Goe1, Takifugu rubripes, Plasmodium falciparum" 10
- 3220 3350 24 "Mus musculus, Homo sapiens, Shewanella oneidensis MR-1, Pan troglodytes, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Gallus gallus, Sulfolobus tokodaii"
- 3221 3351 23 "Mus musculus, Homo sapiens, Sulfolobus solfataricus"
- 3222 3352 24 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Oryza sativa (japonica cultivar-group)" 20
- 3223 3353 27 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Coxiella burnetii RSA 493, Borrelia burgdorferi B31, Drosophila melanogaster, Rattus norvegicus, Candidatus Blochmannia floridanus, Danio rerio"
- 3224 3354 25 "Homo sapiens, Mycoplasma agalactiae, Bacteroides thetaiotaomicron VPI-5482, Chlamydia muridarum, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Helicobacter hepaticus ATCC 51449, Buchnera aphidicola str. Bp (Baizongia pistaciae), Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Oryzias latipes, Pongo pygmaeus" 30
- 3225 3355 55 "Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS8232, Homo sapiens, Streptococcus agalactiae NEM316, Oceanobacillus ihyensis HTE831, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Rattus norvegicus, Mus musculus, Lactobacillus sakei, Streptococcus mutans UA159, Buchnera aphidicola str. Sg (Schizaphis graminum), Streptococcus pyogenes MGAS315, Streptococcus pyogenes M1 GAS, Lactococcus lactis subsp. lactis, Streptococcus pyogenes SSI-1, Synechocystis sp. PCC 6803, Clostridium tetani E88, Cercopithecus aethiops, Prochlorococcus marinus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus Mu50" 40
- 3226 3356 29 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Caenorhabditis elegans, Danio rerio, Mus caroli, Streptococcus mutans UA159, Plasmodium falciparum 3D7, Silene vulgaris, Bacillus subtilis subsp. subtilis str. 168, Bacteriophage SPBc2, Campylobacter lari"
- 3227 3357 68 "Buchnera aphidicola str. Sg (Schizaphis graminum), Vibrio parahaemolyticus, Prochlorococcus marinus, Rickettsia prowazekii, Rickettsia typhi, Arabidopsis thaliana, Haemophilus influenzae Rd KW20, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shi"
- 3228 3358 25 "Plasmodium falciparum 3D7, Plasmodium falciparum, Homo 50

- sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Lapemis hardwickii, Caenorhabditis elegans, Listeria innocua, Rattus norvegicus"
- 3229 3359 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Canavalia gladiata, Mus musculus, Danio rerio, Arabidopsis thaliana"
- 3230 3360 30 "Homo sapiens, Mus musculus, Nostoc sp. PCC 7120, Pan troglodytes"
- 3231 3361 24 "Mus musculus, Homo sapiens, Rattus norvegicus, Simian rotavirus, Populus balsamifera subsp. trichocarpa x Populus deltoides, Vibrio sp. SW-9702, Vibrio sp. PN-9801, Schizosaccharomyces pombe, Populus balsamifera subsp. trichocarpa, Bos taurus" 10
- 3232 3362 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Monosiga brevicollis, Porphyromonas gingivalis W83, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Arabidopsis thaliana, Oceanobacillus iheyensis HTE831, Thermoplasma volcanium, Didelphis virginiana, Sulfolobus tokodaii, Danio rerio, Caenorhabditis elegans, Rattus norvegicus, Nicotiana sylvestris"
- 3233 3363 21 "Homo sapiens, Mus musculus, Schistosoma japonicum, Xenopus laevis, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Bovine adenovirus 4, Sulfolobus tokodaii, Lactobacillus plantarum WCFS1, Porphyra purpurea" 20
- 3234 3364 32 "Schizosaccharomyces pombe, Homo sapiens, Caenorhabditis elegans, Choricystis sp. 3D4, Choricystis sp. 1A1, Choricystis sp. 4A3, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Caenorhabditis briggsae, Mus musculus, Streptococcus pyogenes SSI-1"
- 3235 3365 27 "Homo sapiens, Gorilla gorilla, Arabidopsis thaliana, Monosiga brevicollis, Drosophila melanogaster, Mus musculus, Medicago truncatula, Kluyveromyces delphensis, Pan troglodytes, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Caenorhabditis elegans, Candidatus Blochmannia floridanus"
- 3236 3366 27 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Oryza sativa, Danio rerio, Lawsonia intracellularis, Bacteriophage phi ETA" 30
- 3237 3367 28 "Oryza sativa (japonica cultivar-group), Mus musculus, Pan troglodytes, Caenorhabditis elegans, Plasmodium falciparum 3D7, Homo sapiens, Neozeleboria monticola form 3, Dictyostelium discoideum, Drosophila melanogaster, Saccharomyces cerevisiae, Greya powelli, Mycobacterium leprae, Bos taurus, Rickettsia prowazekii, Mycoplasma pulmonis, Ureaplasma urealyticum, Branchiostoma lanceolatum, Lotus corniculatus var. japonicus, Microcanthus strigatus, Branchiostoma floridae, Schizosaccharomyces pombe, Danio rerio, Clostridium perfringens str. 13"
- 3238 3368 36 "Homo sapiens, Pan troglodytes, Danio rerio, Oryza sativa (japonica cultivar-group), Mus musculus, Anoezia fulviabdominalis, Dolichopoda schiavazzii, Lotus corniculatus var. japonicus, Nostoc sp. GSV224, Dictyostelium discoideum, Drosophila melanogaster, Methanosarcina mazei Goe1, Mycoplasma fermentans, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Phylloxera notabilis, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Ureaplasma urealyticum, Oryza sativa, Eubazus semirugosus, Rhipicephalus pulchellus, Photobacterium phosphoreum" 40
- 3239 3369 28 "Rattus norvegicus, Mus musculus, Homo sapiens, Drosophila melanogaster, Clostridium acetobutylicum, Silene latifolia, Phaeosphaeria nodorum, Plasmodium falciparum 3D7, Arabidopsis thaliana, Pagurus longicarpus, Oryz 50

- a sativa (japonica cultivar-group), *Danio rerio*"
- 3240 3370 31 "Homo sapiens, *Rickettsia conorii*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Halocynthia roretzi*, *Glycine max*, *Tolypothrix* sp. PCC 7601, *Danio rerio*, *Helicobacter hepaticus* ATCC 51449"
- 3241 3371 28 "Nostoc sp. PCC 7120, *Drosophila melanogaster*, *Homo sapiens*, *Meleagris gallopavo*, *Caenorhabditis elegans*, *Mus musculus*, *Amphiroa dilatata*, *Ahnfeltiopsis devoniensis*, *Gymnogongrus johnstonii*, *Burkholderia multivorans*, *Lolium rigidum*, *Leishmania major*, *Clostridium perfringens* str. 13"
- 3242 3372 28 "Homo sapiens, *Staphylococcus epidermidis* ATCC 12228, *Drosophila melanogaster*, *Staphylococcus epidermidis*, *Listeria monocytogenes*, *Arabidopsis thaliana*, *Danio rerio*, *Mus musculus*, *Nostoc* sp. PCC 7120, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Solanum tuberosum*, *Human herpesvirus 6*, *Lotus corniculatus* var. japonicus, *Human herpesvirus 6B*, *Rana catesbeiana*" 10
- 3243 3373 24 "Homo sapiens, *Danio rerio*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Mus musculus*, *Staphylococcus aureus*"
- 3244 3374 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Shewanella oneidensis* MR-1, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Melanoplus sanguinipes* entomopoxvirus, *Halocynthia roretzi*" 20
- 3245 3375 35 "Homo sapiens, *Mus musculus*, *Theileria parva*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Oryza sativa*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Vibrio* sp. CH-291, *Danio rerio*, *Schizocosa bilineata*, *Lotus corniculatus* var. japonicus, *Oceanobacillus iheyensis* HT E831, *Saccharomyces cerevisiae*, *Clostridium perfringens* str. 13"
- 3246 3376 23 "Methanosarcina acetivorans C2A, *Arabidopsis thaliana*, *Mus musculus*, *Homo sapiens*, *Sus scrofa*, *Streptococcus agalactiae* NEM316, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*"
- 3247 3377 63 "Mycoplasma pulmonis, *Streptococcus pyogenes* MGAS8232, *Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Danio rerio*, *Cricket paralysis virus*, *Methanocaldococcus jannaschii*, *Cucurbita maxima*" 30
- 3248 3378 25 "Carabus kruberi gaiensis, *Carabus odoratus krugeri*, *Carabus rothi hampei*, *Carabus rothi comptus*, *Carabus rothi ulrichhoffmanni*, *Carabus monilis kollari*, *Carabus rothi diffinis*, *Carabus scabriusculus*, *Carabus semiopacus*, *Thermoanaerobacter tengcongensis*, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Pseudomonas aeruginosa* PA01, *Lotus corniculatus* var. japonicus, *Carabus minimus minimus*, *Carabus gebleri ultimus*, *Carabus koreanus*, *Carabus decolor*"
- 3249 3379 24 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Homo sapiens*, *Saccharomyces cerevisiae*, *Danio rerio*, *Bacillus thuringiensis*, *Mus musculus*, *Arabidopsis thaliana*" 40
- 3250 3380 27 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, *Memecylon elaeagni*, *Danio rerio*"
- 3251 3381 28 "Arabidopsis thaliana, *Homo sapiens*, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. enterica serovar Typhi Ty2, *Mus musculus*, *Danio rerio*, *Pirellula* sp., *Salmonella enterica* subsp. enterica serovar Typhi"
- 3252 3382 29 "Leptospira interrogans serovar lai str. 56601, *Reclinomonas americana*, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Drosophila melanogaster*, *Pseudomonas phage phiKZ*, *Plasmodium falciparum* 3D7, *Lotus corniculatus*" 50

- s var. japonicus, Danio rerio, Brassica rapa, Saccharomyces cerevisiae, Glycine max, Clostridium perfringens"
- 3253 3383 35 "Homo sapiens, Clostridium perfringens, Clostridium perfringens str. 13, Dictyostelium discoideum, Vibrio vulnificus CMCP6, Mus musculus, Vibrio cholerae, Porphyromonas gingivalis W83, Pan troglodytes, Listeria innocua, Ciona intestinalis"
- 3254 3384 23 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Bacillus anthracis str. Ames, Arabidopsis thaliana, Caenorhabditis briggsae, Ureaplasma urealyticum, Schizosaccharomyces pombe"
- 3255 3385 27 "Borrelia hermsii, Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Pan troglodytes, Pinus taeda, Oryza sativa, Tetrahymena thermophila, Schizosaccharomyces pombe, Ciona intestinalis" 10
- 3256 3386 27 "Homo sapiens, Mus musculus, Tetrahymena thermophila, Clostridium tetani E88, Shewanella oneidensis MR-1, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio"
- 3257 3387 27 "Homo sapiens, Medicago truncatula, Caenorhabditis elegans, Borrelia burgdorferi B31, Bacillus megaterium, Mus musculus, Clostridium acetobutylicum, Plasmodium relictum, Oryza sativa (japonica cultivar-group), Plasmodium falciparum, Danio rerio"
- 3258 3388 29 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Bos taurus, Caenorhabditis elegans, Triticum aestivum, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Plasmodium falciparum, Mycoplasma capricolum, Danio rerio, Sus scrofa, Nostoc sp. PCC 7120" 20
- 3259 3389 24 "Rattus norvegicus, Methanosarcina mazei Goe1, Candida albicans, Mus musculus, Homo sapiens, Nostoc sp. PCC 7120, Kluyveromyces lactis, Drosophila melanogaster, Sus scrofa, Caenorhabditis elegans, Danio rerio"
- 3260 3390 30 "Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Takifugu rubripes, Oryza sativa (japonica cultivar-group), Crambe crambe, Staphylococcus aureus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Vibrio parahaemolyticus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Plasmodium falciparum, Helicobacter pylori 26695, Treponema pallidum, Danio rerio, Staphylococcus aureus subsp. aureus Mu50" 30
- 3261 3391 23 "Dermatophagoides farinae, Homo sapiens, Pfiesteria piscicida, Human immunodeficiency virus 1, Prorocentrum micans, Mus musculus"
- 3262 3392 31 "Homo sapiens, Mus musculus, Rattus norvegicus, Bacteriophage r1t, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Streptococcus salivarius, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Helianthus annuus, Vibrio parahaemolyticus, Danio rerio"
- 3263 3393 23 "Arabidopsis thaliana, Xenopus laevis, Mus musculus, Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Bos taurus, Neurospora crassa" 40
- 3264 3394 23 "Oryctolagus cuniculus, Methanocaldococcus jannaschii, Fragaria x ananassa, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Leptospira borgpetersenii, Methanococcus voltae, Candida albicans"
- 3265 3395 28 "Homo sapiens, Rattus norvegicus, Mus musculus, Lycopersicon esculentum, Prochlorococcus marinus, Danio rerio, Helicobacter pylori 26695, Helicobacter pylori J99, Dendrolimus punctatus cyovirus 1"
- 3266 3396 23 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Plasmodium falciparum, Arabidopsis thaliana, Branchiostoma floridae" 50

- 3267 3397 28 "Mus musculus, Penicillium marneffeii, Danio rerio, Arabidopsis thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Xenopus laevis"
- 3268 3398 39 "Pasteurella multocida, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120, Mus musculus, Pan troglodytes, Dictyostelium discoideum, Sus scrofa, Danio rerio, Lactococcus lactis"
- 3269 3399 31 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Bordetella bronchiseptica, Bordetella parapertussis, Danio rerio"
- 3270 3400 28 "Homo sapiens, Danio rerio, Mycoplasma pulmonis, Mus musculus, Branchiostoma floridae, Caenorhabditis briggsae, Prochlorococcus marinus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Bacillus megaterium" 10
- 3271 3401 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bacillus subtilis, Oryza sativa, Bacillus subtilis subsp. subtilis str. 168, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Adoxophyes orana granulovirus, Dictyostelium discoideum, Caenorhabditis elegans, Pan troglodytes, Tetrahymena thermophila, Clostridium perfringens, Buchnera aphidicola str. Sg (Schizaphis graminum), Methanosarcina acetivorans C2A, Tetrahymena pyriformis, Danio rerio, Amsacta moorei entomopoxvirus, Gallus gallus, Plasmodium falciparum, Selenomonas lactificex" 20
- 3272 3402 28 "Clostridium tetani E88, Mus musculus, Homo sapiens, Bazillia adnexa, Caenorhabditis elegans, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Plasmodium falciparum 3D7, Glugea plecoglossi, Escherichia coli"
- 3273 3403 24 "Schizosaccharomyces pombe, Drosophila melanogaster, Human echovirus 30, Mus musculus, Homo sapiens, Danio rerio, Tetraodon nigroviridis, Nostoc sp. PCC 7120, Clostridium perfringens str. 13" 30
- 3274 3404 28 "Danio rerio, Oncorhynchus mykiss, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Mus musculus, Crambe crambe, Bos taurus, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Cucumis sativus, Bacteriophage KVP40, Arabidopsis thaliana"
- 3275 3405 27 "Campoletis sonorensis ichnovirus, Mus musculus, Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Zea mays, Humulus japonicus, Humulus lupulus, Urochloa panicoides"
- 3276 3406 23 "Rickettsia prowazekii, Mus musculus, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Homo sapiens, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus" 40
- 3277 3407 23 "Homo sapiens, Mus musculus, Drosophila melanogaster, Clostridium tetani E88"
- 3278 3408 32 "Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Lactococcus lactis subsp. lactis, Borrelia burgdorferi B31, Drosophila melanogaster, Pyrocoelia rufa, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lactobacillus rhamnosus, Cucumis sativus, Plasmodium falciparum 3D7, Debaryomyces hansenii var. hansenii, Schizos" 50

accharomyces pombe"

- 3279 3409 24 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Plasmodium falciparum, Oryctolagus cuniculus, Nostoc sp. PCC 7120, Dictyostelium discoideum, Medicago truncatula, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans"
- 3280 3410 32 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Staphylococcus epidermidis ATCC 12228, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Staphylococcus epidermidis, Danio rerio, Medicago truncatula, Drosophila melanogaster, Empedobacter brevis, Plasmodium falciparum 3D7, Fagopyrum callianthum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Schizosaccharomyces pombe, Melanoplus sanguinipes entomopoxvirus, Staphylococcus aureus subsp. aureus Mu50" 10
- 3281 3411 32 "Dictyostelium discoideum, Homo sapiens, Allium victorialis, Vibrio vulnificus, Allium neriniflorum, Clostridium acetobutylicum, Danio rerio, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Acropora millepora, Caenorhabditis elegans, Schizosaccharomyces pombe, Human immunodeficiency virus 1, Helicobacter hepaticus ATCC 51449"
- 3282 3412 24 "Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Homo sapiens, Buchnera aphidicola, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Human immunodeficiency virus 1" 20
- 3283 3413 24 "Leptospira interrogans serovar lai str. 56601, Homo sapiens, Caenorhabditis elegans, Dictyostelium discoideum, Drosophila melanogaster, Zenarchopterus sp. CU-77844, Danio rerio, Mus musculus, Rattus norvegicus, Bacillus halodurans"
- 3284 3414 28 "Homo sapiens, Oceanobacillus iheyensis HTE831, Mus musculus, Arabidopsis thaliana, Clostridium acetobutylicum, Caenorhabditis elegans, Danio rerio"
- 3285 3415 24 "Homo sapiens, Mus musculus, Leptospira interrogans serovar lai str. 56601, Oryza sativa (japonica cultivar-group)"
- 3286 3416 25 "Mus musculus, Homo sapiens, Cryptosporidium parvum, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mycoplasma genitalium, Methanocaldococcus jannaschii" 30
- 3287 3417 24 "Mus musculus, Homo sapiens, Sulfolobus solfataricus, Arabidopsis thaliana, Cryptosporidium parvum, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes MGAS315, Rickettsia conorii, Streptococcus pyogenes S SI-1, Danio rerio, Saccharomyces douglasii"
- 3288 3418 32 "Mus musculus, Danio rerio, Nostoc sp. PCC 7120, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Homo sapiens, Oryza sativa (japonica cultivar-group), Streptococcus mutans UA159, Emericella nidulans, Leptospira interrogans serovar lai str. 56601, Staphylococcus epidermidis ATCC 12228, Lycopersicon esculentum, Prochlorococcus marinus, Caenorhabditis elegans, Guillardia theta, Candidatus Blochmannia floridanus, Arabidopsis thaliana, Staphylococcus epidermidis, Lotus corniculatus var. japonicus, Pichia jadinii" 40
- 3289 3419 24 "Homo sapiens, Danio rerio, Dictyostelium discoideum, Hepatitis GB virus C, Arabidopsis thaliana, Rattus norvegicus, Mus musculus, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii, Periplaneta americana"
- 3290 3420 27 "Homo sapiens, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mus musculus, Cicer arietinum, Hordeum vulgare subsp. vulgare, Pyrenacantha grandifolia, Danio rerio, Oryza sativa (japonica cultivar-group)" 50

- 3291 3421 25 "Homo sapiens, Mus musculus, Clostridium acetobutylicum, Pyrococcus abyssi, Tribolium castaneum"
- 3292 3422 31 "Mus musculus, Bacillus anthracis str. Ames, Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Bombyx mori, Escherichia coli O157:H7 EDL933, Campylobacter jejuni subsp. jejuni NCTC 11168, Escherichia coli O157:H7"
- 3293 3423 23 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Lycopersicon esculentum, Pleurotus ostreatus, Medicago truncatula"
- 3294 3424 27 "Homo sapiens, Pan troglodytes, Mus musculus, Danio rerio, Arabidopsis thaliana, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Pisum sativum, Oryza sativa, Streptococcus mitis, Lycopersicon esculentum, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Onion yellows phytoplasma" 10
- 3295 3425 28 "Drosophila melanogaster, Mus musculus, Homo sapiens, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Atelerix albiventris, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Danio rerio"
- 3296 3426 24 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Danio rerio, Ciona intestinalis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Human echovirus 11, Nicotiana tabacum" 20
- 3297 3427 45 "Enterococcus faecalis V583, Enterococcus faecium, Mus musculus, Lactococcus lactis, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Pyrococcus furiosus DSM 3638, Cyanidioschyzon merolae, Mycoplasma penetrans, Pyrococcus furiosus, Homo sapiens, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Oryza sativa (japonica cultivar-group), Streptococcus agalactiae NEM316, Streptococcus pyogenes SSI-1, Plasmodium falciparum 3D7, Thermoanaerobacter tengcongensis, Caenorhabditis elegans, Lotus corniculatus var. japonicus"
- 3298 3428 35 "Homo sapiens, Mus musculus, Haemophilus influenzae, Danio rerio, Schizosaccharomyces pombe" 30
- 3299 3429 24 "Homo sapiens, Mus musculus, Streptococcus mutans UA159, Plasmodium falciparum 3D7, Plasmodium vivax, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Otolemur crassicaudatus, Arabidopsis thaliana"
- 3300 3430 39 "Plasmodium falciparum 3D7, Physarum polycephalum, Oryza sativa (japonica cultivar-group), Homo sapiens, Dictyostelium discoideum, Mus musculus, Pseudonaja textilis, Danio rerio, Methanocaldococcus jannaschii, Populus tremula, Clostridium perfringens str. 13, Pan troglodytes, Drosophila melanogaster, Staphylococcus aureus, Escherichia coli, Bos taurus, Caenorhabditis elegans, Arabidopsis thaliana, Drosophila yakuba, Chironomus tentans, Drosophila simulans, Drosophila sechellia, Drosophila mauritiana, Hyphodontia paradoxa, Leptospira interrogans serovar lai str. 56601, Buchnera aphidicola str. Bp (Baizongia pistaciae), Borrelia burgdorferi B31" 40
- 3301 3431 31 "Mycoplasma penetrans, Homo sapiens, Danio rerio, Caenorhabditis elegans, Medicago truncatula, Rattus norvegicus, Drosophila melanogaster, Lactococcus lactis, Sympetrum vulgatum, Rickettsia prowazekii, Mus musculus, Borrelia afzelii, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Sorghum bicolor, Bacillus anthracis str. A2012, Arabidopsis thaliana, Ichthyophthirius multifiliis, Centruroides exilicauda, Prochlorococcus marinus, Amsacta moorei entomopoxvirus, Centruroides limpidus tecomanus, Centruroides limpidus" 50

- limpidus, *Phytophthora infestans*, *Ramaria stuntzii*, *Mycoplasma fermentans*, *Bacillus anthracis*, *Schizosaccharomyces pombe*, *Clostridium perfringens* str. 13, *Macaca fascicularis*"
- 3302 3432 23 "Mus musculus, *Bacillus anthracis* str. A2012, *Rhizobium* sp. NGR234, *Bacillus anthracis*, *Danio rerio*, *Homo sapiens*, *Xanthomonas axonopodis* pv. citri str. 306, *Equus caballus*, *Listeria monocytogenes*"
- 3303 3433 28 "Homo sapiens, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Mus musculus*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Culex nigripalpus* baculovirus, *Betula pendula*, *Caenorhabditis briggsae*, *Chaetosphaeridium globosum*, *Staphylococcus aureus*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Caenorhabditis elegans*, *Danio rerio*, *Ciona intestinalis*, *Helicobacter hepaticus* ATCC 51449, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. aureus Mu50" 10
- 3304 3434 28 "Homo sapiens, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Ciona intestinalis*, *Mus musculus*, *Danio rerio*"
- 3305 3435 27 "Homo sapiens, *Methanocaldococcus jannaschii*, *Caenorhabditis elegans*, *Mus musculus*, *Cryptosporidium parvum*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Danio rerio*"
- 3306 3436 24 "Mus musculus, *Arabidopsis thaliana*, *Poncirus trifoliata*, *Homo sapiens*, *Papio anubis anubis*, *Acacia arenaria*, *Gallus gallus*, *Trypanosoma brucei*, *Danio rerio*, *Anadenanthera colubrina*, *Albizia kalkora*, *Medicago truncatula*, *Cryptosporidium parvum*, *Anadenanthera peregrina*" 20
- 3307 3437 28 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Danio rerio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Hydra vulgaris*, *Arabidopsis thaliana*"
- 3308 3438 27 "Homo sapiens, *Pan troglodytes*, *Oryzias latipes*, *Mus musculus*, *Arabidopsis thaliana*, *Murine hepatitis virus* strain 2, *Murine hepatitis virus* strain ML-11, *Murine hepatitis virus*, *Danio rerio*, *Rattus norvegicus*"
- 3309 3439 28 "Caenorhabditis elegans, *Lotus corniculatus* var. japonicus, *Homo sapiens*, *Ovis aries*, *Oryza sativa* (japonica cultivar-group), *Bos grunniens*, *Pan troglodytes*, *Bos taurus*, *Macaca mulatta*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Papio anubis*, *Plasmodium falciparum*, *Mycoplasma capricolum*, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*" 30
- 3310 3440 23 "Mus musculus, *Homo sapiens*, *Rickettsia conorii*"
- 3311 3441 29 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*"
- 3312 3442 25 "Homo sapiens, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Rattus norvegicus*, *Helicobacter pylori* 26695" 40
- 3313 3443 32 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Zea mays*, *Arabidopsis thaliana*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Danio rerio*, *Cairina moschata*, *Schizosaccharomyces pombe*"
- 3314 3444 34 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Rattus norvegicus*, *Methanosarcina acetivorans* C2A, *Arabidopsis thaliana*, *Oryctolagus cuniculus*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Medicago truncatula*, *Methanocaldococcus jannaschii*, *Staphylococcus aureus* subsp. aureus Mu50, *Gallus gallus*, *Plasmodium falciparum* 3D7, *Goatpox virus*, *Sheeppox virus*, *Sch* 50

- izosaccharomyces pombe, Lumpy skin disease virus, Caenorhabditis briggsae, Plasmodium berghei"
- 3315 3445 28 "Homo sapiens, Pisum sativum, Danio rerio, Ciona intestinalis, Mus musculus, Francisella tularensis subsp. novicida, Francisella tularensis subsp. holarctica, Francisella tularensis subsp. tularensis, Arabidopsis thaliana, Clostridium spiroforme, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Rattus norvegicus, Entamoeba histolytica"
- 3316 3446 32 "Homo sapiens, Plasmodium falciparum, Lotus corniculatus var. japonicus, Mus musculus, Bos taurus, Drosophila melanogaster, Sus scrofa, Danio rerio, Lepidium cordatum, Drosophila pseudoobscura, Arabidopsis thaliana, Euglena longa, Plasmodium falciparum 3D7, Caenorhabditis elegans" 10
- 3317 3447 25 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Dictyostelium discoideum, Draco biaro, Clostridium acetobutylicum, Euplotes raikovi, Oceanobacillus iheyensis HTE831, Danio rerio"
- 3318 3448 29 "Homo sapiens, Clostridium acetobutylicum, Pan troglodytes, Mus musculus, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Phalaenopsis hybrid cultivar, Bos taurus, Arabidopsis thaliana, Ureaplasma urealyticum, Phalaenopsis cv. 'True Lady', Danio rerio, Clostridium perfringens str. 13" 20
- 3319 3449 25 "Homo sapiens, Mus musculus, Gossypium hirsutum, Sulfolobus tokodaii, Cryptosporidium parvum, Medicago truncatula, Caenorhabditis briggsae"
- 3320 3450 24 "Homo sapiens, Pan troglodytes, Danio rerio, Plasmodium falciparum 3D7, Medicago truncatula, Dictyostelium discoideum, Drosophila melanogaster, Mus musculus, Lotus corniculatus var. japonicus, Rattus norvegicus"
- 3321 3451 30 "Arabidopsis thaliana, Homo sapiens, Bacteroides thetaotaomicron VPI-5482, Mus musculus, Drosophila melanogaster, Tetraodon nigroviridis, Halocynthia roretzi, Coxiella burnetii RSA 493, Chlamydomonas reinhardtii, Rattus norvegicus, Pan troglodytes, Borrelia burgdorferi B31, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Listeria innocua" 30
- 3322 3452 28 "Homo sapiens, Papio hamadryas, Mus musculus, Batillus cornutus, Pan troglodytes, Methanosarcina acetivorans C2A, Danio rerio"
- 3323 3453 27 "Mus musculus, Homo sapiens, Xenopus laevis, Danio rerio, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana"
- 3324 3454 24 "Homo sapiens, Mus musculus, Gracilaria sp. Mexico, Bos taurus, Bacillus subtilis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Gracilaria sp." 40
- 3325 3455 28 "Helicobacter pylori 26695, Gallus gallus, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Methanocaldococcus jannaschii, Drosophila littoralis, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Caenorhabditis elegans, Helicobacter hepaticus ATCC 51449"
- 3326 3456 31 "Homo sapiens, Danio rerio, Arabidopsis thaliana, Escherichia coli K12, Mus musculus, Escherichia coli, Dictyostelium discoideum, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"
- 3327 3457 29 "Homo sapiens, Danio rerio, Candida albicans, Mus musculus, Acetabularia mediterranea, Oryza sativa (japonica cultivar-group), Nostoc sp" 50

- . PCC 7120, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mycoplasma genitalium*, *Vibrio cholerae*, *Mycoplasma penetrans*, *Caenorhabditis elegans*"
- 3328 3458 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Clostridium perfringens* str. 13, *Caenorhabditis elegans*, *Methanosarcina mazei* Goe1, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Pyrococcus furiosus* DSM 3638, *Xylella fastidiosa* 9a5c, *Saccharomyces cerevisiae*"
- 3329 3459 28 "Imparfinis lineatus, *Hysterocarpus traski*, *Cymatogaster aggregata*, *Dictyostelium discoideum*, *Cynolebias viarius*, *Homo sapiens*, *Boreogadus saida*, *Neoditrema ransonnetti*, *Diploprion bifasciatum*, *Galaxias zebratus*, *Lycodes paamiuti*, *Lycodes pallidus*, *Exostoma labiatum*, *Mus musculus*, *Cycleptus elongatus*, *Sebastes rufus*, *Barbus wurtzi*, *Drosophila melanogaster*, *Rhamdia quelen*, *Barbus marequensis*, *Barbus bynni occidentalis*, *Barbus johnstonii*, *Varicorhinus mariae*, *Barbus canis*, *Tylosurus acus acus*, *Channa asiatica*, *Kosswigobarbus kosswigi*, *Barbus chantrei*, *Barbus luteus*, *Barbus gruveli*, *Tylosurus acus imperialis*, *Ditrema temmincki*, *Archiaphyosemion petersi*, *Archiaphyosemion viride*, *Centropomus viridis*, *Micromesistius poutassou*"
- 3330 3460 27 "*Mus musculus*, *Danio rerio*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Homo sapiens*, *Staphylococcus epidermidis*, *Agaricus bitorquis*, *Plasmodium falciparum* 3D7, *Human immunodeficiency virus 2*, *Pan troglodytes*, *Gallus gallus*, *Rotavirus* sp." 20
- 3331 3461 25 "*Mus musculus*, *Danio rerio*, *Emericella varicolor*, *Penicillium* sp. Po29, *Penicillium* sp. Po23, *Homo sapiens*, *Candida glabrata*, *Drosophila melanogaster*, *Vaginatispora aquatica*, *Massarina corticola*, *Penicillium verruculosum*, *Mycosphaerella suttoniae*, leaf litt"
- 3332 3462 28 "*Homo sapiens*, *Caenorhabditis briggsae*, *Mus musculus*, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Papio anubis*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"
- 3333 3463 50 "*Haemophilus ducreyi* 35000HP, *Listeria innocua*, *Candidatus Blochmannia floridanus*, *Bacillus anthracis* str. Ames, *Vanhornia eunemidarum*, *Caenorhabditis elegans*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Mus musculus*, *Homo sapiens*, *Sulfolobus solfataricus*, *Danio rerio*, *Sulfolobus acidocaldarius*, *Acidianus ambivalens*, *Corynebacterium efficiens*, *Buchnera aphidicola*, *Coxiella burnetii* RSA 493, *Enterococcus faecalis* V583, *Polypterus bichir*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Saccharomyces cerevisiae*, *Mycoplasma genitalium*, *Betula pendula*, *Dictyostelium discoideum*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Takifugu rubripes*, *Leptospira interrogans*, *Euglena gracilis*, *Oryza sativa* (indica cultivar-group), *Simulium leonense*, *Lotus corniculatus* var. japonicus, *Human immunodeficiency virus 1*, *Trypanosoma cruzi*, *Salvelinus namaycush*, *Methanocaldococcus jannaschii*" 40
- 3334 3464 49 "*Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Clostridium tetani* E88, *Mus musculus*, *Pyrococcus furiosus* DSM 3638, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Arabis drummondii*, *Homo sapiens*, *Porphyromonas gingivalis* W83, *Drosophila melanogaster*, *Oryctolagus cuniculus*, *Dictyostelium discoideum*, *Zea mays*, *Chlamydomonas peterfii*, *Chlamydomonas mexicana*, *Autographa californica nucleopolyhedrovirus*, *Prochlorococcus marinus*, *Bombyx mori* nuclear polyhedrosis virus, *Bos taurus*, *Mycoplasma penetrans*, *Oryza sativa* (japonica cultivar-group), *Helicobacter pylori* J99, *Danio rerio*"
- 3335 3465 34 "*Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* MGAS315, *Thermoanaerobacter tengcongensis*, *Homo sapiens*, *Streptococcus pyogenes*" 50

- SSI-1, *Bacillus anthracis* str. Ames, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium chabaudi*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae*, *Caenorhabditis elegans*, *Streptococcus agalactiae* NEM316, *Streptococcus agalactiae* serogroup III, *Danio rerio*, Human immunodeficiency virus 1, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Schizophyllum commune*, *Sympetrum vulgatum*, *Crocothemis erythraea*, *Streptococcus pyogenes* M1 GAS, *Ciona intestinalis*"
- 3336 3466 29 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Mycoplasma pulmonis*, *Oryza sativa* (japonica cultivar-group), *Euglena longa*, *Salmonella typhimurium* LT2, *Bacteroides thetaiotaomicron* VPI-5482, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Papio anubis*, *Mycoplasma hominis*, *Necterosoma dispar*, *Arabidopsis thaliana*, *Danio rerio*, *Saccharomyces cerevisiae*, *Salmonella enterica* subsp. *enterica* serovar Typhi" 10
- 3337 3467 24 "Vibrio vulnificus CMCP6, *Plasmodium falciparum* 3D7, *Helicobacter pylori* J99, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Listeria monocytogenes*"
- 3338 3468 29 "Clostridium tetani E88, *Homo sapiens*, *Drosophila melanogaster*, *Schizophyllum commune*, *Nostoc* sp. PCC 7120, *Plasmodium falciparum* 3D7, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mycoplasma capricolum*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Methanocaldococcus jannaschii*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Clostridium perfringens* str. 13" 20
- 3339 3469 24 "Bacillus anthracis str. Ames, *Homo sapiens*, *Schmidtea mediterranea*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)"
- 3340 3470 37 "Plasmodium falciparum 3D7, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Mus musculus*, *Homo sapiens*, *Bacteroides thetaiotaomicron* VPI-5482, *Caenorhabditis elegans*, *Danio rerio*, *Pan troglodytes*, *Drosophila melanogaster*, *Drosophila erecta*, *Thermoproteus tenax* virus 1, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Pyrococcus horikoshii*" 30
- 3341 3471 31 "Melipona bicolor, *Danio rerio*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Caenorhabditis elegans*, *Oryctolagus cuniculus*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Lotus corniculatus* var. *japonicus*, *Physarum polycephalum*"
- 3342 3472 27 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Mycoplasma pulmonis*, *Danio rerio*, *Methanosarcina acetivorans* C2A, *Sinorhizobium meliloti*, *Trichinella spiralis*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*" 40
- 3343 3473 23 "Blepharipoda occidentalis, *Rhinoleucophenga obesa*, *Neoporanpa harmandi*, *Drosophila tropicalis*, *Drosophila sucinea*, *Kawanaphila iyouta*, *Homo sapiens*, *Drosophila saltans*, *Drosophila austrosaltans*, *Drosophila prosaltans*, *Drosophila sturtevanti*, *Drosophila eohydei*, *Mus musculus*, *Shewanella oneidensis* MR-1, *Onthophagus melitaeus*, *Euglena gracilis*, *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Mytilus edulis*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Carollia perspicillata*"
- 3344 3474 24 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Plasmodium vivax*, *Mus musculus*, *Drosophila melanogaster*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus* 40

- aureus subsp. aureus MW2, *Ciona intestinalis*, *Staphylococcus aureus* subsp. aureus Mu50"
- 3345 3475 27 "Homo sapiens, *Ipomoea batatas*, *Mycoplasma mycoides* subsp. *mycoides* SC, *Arabidopsis thaliana*, *Mus musculus*, *Danio rerio*, *Dicyema misakiense*"
- 3346 3476 52 "Clostridium tetani E88D, *Danio rerio*, *Homo sapiens*, *Clostridium botulinum*, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Thermoanaerobacter tengcongensis*, *Cinara dubia*, *Periphyllus lyropictus*, *Melaphis rhois*, *Schlechtendalia chinensis*, *Pemphigus obesinymphae*, *Pseudoregma* sp. south group, *Pseudoregma bambucicola*, *Chaitoregma tattakana*, *Ceratovacuna nekoashi*, *Ceratovacuna lanigera*, *Ceratovacuna japonica*, *Pseudoregma sundanica*, *Pseudoregma pendleburyi*, *Pseudoregma panicola*, *Pseudoregma montana*, *Pseudoregma koshunensis*, *Pseudoregma alexanderi*" 10
- 3347 3477 35 "Homo sapiens, *Caenorhabditis elegans*, *Pseudomonas fluorescens*, *Mokola virus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 3348 3478 28 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Pneumocystis carinii*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma gallisepticum* R, *Gallus gallus*, *Plasmodium falciparum* 3D7, *Cyanidium caldarium*, *Taenia crassiceps*, *Lotus corniculatus* var. *japonicus*, *Mycoplasma gallisepticum*, *Caltha palustris*" 20
- 3349 3479 33 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Danio rerio*, *Medicago truncatula*, *Drosophila melanogaster*, *Thermoanaerobacter tengcongensis*, *Schizosaccharomyces pombe*, *Clostridium tetani* E88, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Helicobacter pylori*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*"
- 3350 3480 27 "Homo sapiens, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Mus musculus*, *Staphylococcus aureus* subsp. aureus N315, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Staphylococcus aureus* subsp. aureus Mu50"
- 3351 3481 24 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Oryza sativa*, *Caenorhabditis elegans*, *Chlamydia muridarum*, *Drosophila melanogaster*, *Ardea herodias*, *Lactobacillus casei*, *Danio rerio*" 30
- 3352 3482 35 "Shigella flexneri 2a str. 2457T, *Shigella flexneri* 2a str. 301, *Bacillus cereus* ATCC 14579, *Homo sapiens*, *Sorghum bicolor*, *Streptococcus agalactiae* 2603V/R, *Lactococcus lactis* subsp. *lactis*, *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Mus musculus*, *Xenopus laevis*, *Medicago truncatula*"
- 3353 3483 30 "Caenorhabditis elegans, *Danio rerio*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Melanoplus sanguinipes* entomopoxvirus, *Xenorhabdus nematophila*, *Chlamydomonas caviae* GPIC, *Pan troglodytes*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Euglena gracilis*, *Schizosaccharomyces pombe*, *Agrocybe aegerita*" 40
- 3354 3484 40 "Homo sapiens, *Drosophila melanogaster*, *Lotus corniculatus* var. *japonicus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Arabidopsis thaliana*, *Sulfolobus* sp. NOB8H2, *Spirogyra maxima*, *Sulfolobus tokodaii*, *Medicago truncatula*, *Danio rerio*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Boehmeria nivea*, *Takydromus smaragdinus*, *Macaca mulatta*, *Plasmodium falciparum* 3D7, *Papio anubis*, *Pan troglodytes*, *Tetrahymena pyriformis*, *Caenorhabditis elegans*, *Tribolium castaneum*, *Macropanesthia* sp. QMa2, Clo 50

stridium perfringens str. 13"

3355 3485 29 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Candida albicans, Drosophila melanogaster, Rattus norvegicus, Canis familiaris, Pseudomonas alcaligenes, Solanum demissum, Neurospora crassa, Bacillus halodurans, Pan troglodytes, Medicago truncatula, Clostridium tetani E88, Pyganodon fragilis, Plasmodium falciparum 3D7, Anopheles gambiae, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Saccharomyces cerevisiae, Trypanosoma cruzi"

3356 3486 29 "Plasmodium falciparum 3D7, Homo sapiens, Lactobacillus delbrueckii subsp. bulgaricus, Streptococcus intermedius, Enterococcus faecalis V583, Streptococcus agalactiae 2603V/R, Campylobacter jejuni, Mus musculus, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Tetrahymena thermophila, Drosophila melanogaster, Papio anubis, Streptococcus mutans UA159, Pseudomonas syringae, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Saccharomyces cerevisiae, Prochlorococcus marinus subsp. marinus str. CCMP1375, Oryza sativa (japonica cultivar-group), Danio rerio, Clostridium perfringens str. 13"

3357 3487 28 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Daucus carota, Helicobacter hepaticus ATCC 51449, Sus scrofa, Danio rerio, Arabidopsis thaliana"

3358 3488 28 "Prunus dulcis, Papio anubis, Pan troglodytes, Homo sapiens, Caenorhabditis elegans, Human endogenous retrovirus KC4, Drosophila melanogaster, Rattus norvegicus, Erwinia chrysanthemi, Pinus taeda, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio, Xenopus laevis, Ananas comosus, Arabidopsis thaliana, Anopheles funestus, Oryza sativa, Takifugu rubripes, Solanum tuberosum, Lotus corniculatus var. japonicus, Heterodontus francisci, Neurospora crassa, Anopheles melas, Oryza sativa (indica cultivar-group), Halosiphon tomentosus"

3359 3489 27 "Homo sapiens, Clostridium tetani E88, Mus musculus, Arabidopsis thaliana, Lactobacillus acidophilus, Oryza sativa (japonica cultivar-group), Lama glama, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Mycoplasma penetrans, Asellus aquaticus, Danio rerio, Clostridium perfringens str. 13"

3360 3490 27 "Clibanarius albidigitus, Homo sapiens, Danio rerio, Mus musculus, Borrelia burgdorferi B31, Borrelia burgdorferi, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Tribolium castaneum, Lotus corniculatus var. japonicus, Medicago truncatula, Dictyostelium discoideum, Pan troglodytes, Clostridium tetani E88, Methanosarcina acetivorans C2A, Lactococcus lactis subsp. lactis, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Papio anubis, Nicotiana glauca, Candida glabrata, Oryzias latipes"

3361 3491 27 "Homo sapiens, Coxiella burnetii RSA 493, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Thrips angusticeps, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Borrelia burgdorferi B31, Rickettsia conorii, Rickettsia rickettsii, Danio rerio, Rattus norvegicus, Eulaema meriana, Oryza sativa (japonica cultivar-group)"

3362 3492 31 "Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Arabidopsis thaliana, Listeria innocua, Muscidifurax raptor"

3363 3493 27 "Lotus corniculatus var. japonicus, Homo sapiens, Oryza

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- sativa (japonica cultivar-group), *Medicago truncatula*, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*"
- 3364 3494 40 "Drosophila melanogaster, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Phytophthora infestans, Caenorhabditis elegans, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Methanococcus maripaludis, Medicago truncatula, Danio rerio, Neisseria meningitidis Z2491, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Orthotrichum stramineum, Aphyosemion cyanostictum, Schizosaccharomyces pombe, Ulota phyllantha, Oryzias latipes, Rattus norvegicus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Labidogonales sp. JC18, Pan troglodytes, Dictyostelium discoideum, Mordvilkoja vagabunda, Alphonelton talidicida, Alphonelton n. sp. 'A.R. Deans', Actinobacillus actinomycetemcomitans, Schizophyllum commune, Prochlorococcus marinus" 10
- 3365 3495 27 "Mus musculus, Homo sapiens, Trypanosoma brucei, Manduca sexta, Dictyostelium discoideum, Pan troglodytes, Plasmodium falciparum 3D7, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Drosophila melanogaster, Danio rerio, Ureaplasma urealyticum, Lotus corniculatus var. japonicus"
- 3366 3496 28 "Homo sapiens, Acipenser fulvescens, Mus musculus, Latimeria menadoensis, Oryza sativa (japonica cultivar-group), Gallus gallus, Squash leaf curl virus, Schizosaccharomyces pombe" 20
- 3367 3497 24 "Mus musculus, Homo sapiens, Cotesia congregata, Branchiostoma belcheri tsingtaunense"
- 3368 3498 24 "Caenorhabditis elegans, Homo sapiens, Arabidopsis thaliana, Clostridium tetani E88, Mus musculus"
- 3369 3499 27 "Homo sapiens, Rattus norvegicus, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio"
- 3370 3500 40 "Homo sapiens, Phaseolus vulgaris, Persea americana, Capsicum annuum, Mus musculus, Sulfolobus tokodaii, Oryza sativa (japonica cultivar-group), Sminthopsis macroura, Pan paniscus, Oryza sativa, Sulfolobus solfataricus, Caenorhabditis elegans, Streptococcus gordonii, Arabidopsis thaliana, Tetradon nigroviridis" 30
- 3371 3501 20 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Boltenia villosa, Danio rerio"
- 3372 3502 24 "Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Homo sapiens, Shewanella oneidensis MR-1, Thinopyrum scirpeum, Chlorobium tepidum TLS, Mus musculus, Trypanosoma cruzi"
- 3373 3503 25 "Homo sapiens, Mus musculus, Papio anubis, Drosophila melanogaster, Arabidopsis thaliana, Citrus unshiu, Danio rerio, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Medicago truncatula"
- 3374 3504 27 "Mus musculus, Pan troglodytes, Homo sapiens, Plasmodium falciparum 3D7, Cowpox virus, Vaccinia virus, Arabidopsis thaliana, Medicago truncatula, Ectromelia virus, Camelpox virus CMS, Monkeypox virus, Petunia x hybrida, Vaccinia virus (strain Tian Tan), Saccharomyces cerevisiae, Neurospora crassa, Camelpox virus M-96" 40
- 3375 3505 27 "Mus musculus, Homo sapiens, Pyrococcus horikoshii, Helicobacter mobilis, Oryza sativa (japonica cultivar-group), Danio rerio"
- 3376 3506 35 "Homo sapiens, Didelphis virginiana, Danio rerio, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Lycopersicon esculentum, Lactococcus lactis subsp. lactis, Murine leukemia virus, Oryza sativa (japonica cultivar-group), Cas NS-1 murine leukemia virus, Saccharomyces cerevisiae" 50

- 3377 3507 28 "Homo sapiens, Drosophila melanogaster, Danio rerio, Caenorhabditis briggsae, Mus musculus, Nitrosomonas europaea ATCC 19718, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes MGAS315, Temperate phage PhiNH1.1, Streptococcus pyogenes M1 GAS, Artemia franciscana, Streptococcus pyogenes SSI-1, Apis mellifera, Arabidopsis thaliana"
- 3378 3508 23 "Homo sapiens, Sminthopsis macroura, Asperococcus fistulosus, Mus musculus, Osmundea hybrida, Osmundea osmunda, Scytosiphon lomentaria, Polytretus reinboldii, Microspongium globosum, Aglaothamnion tripinnatum, Pyrococcus furiosus DSM 3638, Polysiphonia stric"
- 3379 3509 25 "Yersinia pestis KIMY, Yersinia pestis C092, Drosophila melanogaster, Homo sapiens, Mus musculus, Mystus bleekeri, Mystus malabaricus, Goatpox virus, Lumpy skin disease virus, Cache Valley virus, Oceanobacillus ihayensis HTE831, Bradyrhizobium japonicum USDA 110, Caenorhabditis elegans" 10
- 3380 3510 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Entamoeba histolytica, Oryza sativa, Caenorhabditis elegans, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis"
- 3381 3511 23 "Arabidopsis lyrata subsp. lyrata, Arabidopsis lyrata subsp. petraea, Homo sapiens, Mus musculus, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Streptococcus pneumoniae" 20
- 3382 3512 24 "Homo sapiens, Bacillus cereus ATCC 14579, Mus musculus, Arabidopsis thaliana, Danio rerio, Rattus norvegicus, Drosophila melanogaster, Sulfolobus islandicus filamentous virus, Schizosaccharomyces pombe"
- 3383 3513 24 "Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Homo sapiens, Thermotoga maritima, Drosophila melanogaster, Mus musculus, Pyrococcus horikoshii"
- 3384 3514 27 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Rattus norvegicus, Lycopersicon esculentum, Danio rerio, Trypanosoma cruzi, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Clostridium tetani E88, Mycoplasma pulmonis, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Ciona intestinalis, Ixodes persulcatus" 30
- 3385 3515 27 "Clostridium tetani E88, Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Trichoplusia ni, Pseudomonas phage phiKZ, Danio rerio"
- 3386 3516 27 "Homo sapiens, Mus musculus, Bacillus halodurans, Bacteroides thetaiotaomicron VPI-5482, Arabidopsis thaliana, Strongylocentrotus purpuratus"
- 3387 3517 25 "Homo sapiens, Caenorhabditis briggsae, Schizosaccharomyces pombe, Dictyostelium discoideum, Arabidopsis thaliana, Danio rerio"
- 3388 3518 27 "Plasmodium falciparum 3D7, Homo sapiens, Arisaema tortuosum, Mus musculus, Plasmodium vivax, Thermoanaerobacter tengcongensis, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group)" 40
- 3389 3519 32 "Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, Human echovirus 7, Mus musculus, Human coxsackievirus A24, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Pan troglodytes, Arabidopsis thaliana, Sulfolobus tokodaii"
- 3390 3520 25 "Homo sapiens, Triticum aestivum, Saccharomyces cerevisiae, Danio rerio, Mus musculus"
- 3391 3521 24 "Homo sapiens, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Mumps virus (STRAIN JERYL-LYNN), Mumps virus, Oryza sativa (50

- japonica cultivar-group), Simian immunodeficiency virus, *Trichomonas vaginalis*, *Prototheca wickerhamii*, *Cryptosporidium parvum*"
- 3392 3522 27 "Nostoc sp. PCC 7120, *Homo sapiens*, *Vibrio cholerae*, *Helicobacter hepaticus* ATCC 51449, *Mus musculus*, *Mycoplasma gallisepticum* R, *Rattus norvegicus*, *Caenorhabditis elegans*, *Hoplobatrachus rugulosus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*"
- 3393 3523 23 "Homo sapiens, *Pirellula marina*, *Mus musculus*"
- 3394 3524 28 "Streptococcus mutans UA159, *Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Danio rerio*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Thyropygus* sp. DVL-2001" 10
- 3395 3525 23 "Homo sapiens, *Zea mays*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Rickettsia prowazekii*, *Mus musculus*, *Caenorhabditis elegans*, *Danio rerio*"
- 3396 3526 35 "Homo sapiens, *Xenopus laevis*, *Mus musculus*, *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis elegans*, *Prochlorococcus marinus*, *Oryza sativa* (japonica cultivar-group), *Porphyromonas gingivalis* W83"
- 3397 3527 28 "Mus musculus, *Mycoplasma gallisepticum* R, *Homo sapiens*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, *Cyprinus carpio*, *Pan troglodytes*, *Gallus gallus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Clarkia heterandra*, *Cettia diphone*, *Oryza sativa* (japonica cultivar-group), *Anopheles gambiae*" 20
- 3398 3528 23 "Lotus corniculatus var. japonicus, *Homo sapiens*, *Geobacillus stearothermophilus*, *Shigella flexneri* 2a str. 2457T, *Mus musculus*, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Arabidopsis thaliana*"
- 3399 3529 27 "Homo sapiens, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Mus musculus*, *Vibrio parahaemolyticus*, *Danio rerio*, *Schizosaccharomyces pombe*, *Rattus norvegicus*"
- 3400 3530 27 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Solanum tuberosum*, *Oryctolagus cuniculus*, *Caenorhabditis elegans*, *Danio rerio*, *Anopheles gambiae*, *Pentamera lissoplaca*, *Androctonus australis*" 30
- 3401 3531 23 "Homo sapiens, *Danio rerio*, *Rattus norvegicus*, *Cercopithecine herpesvirus 7*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mus musculus*, *Fasciola hepatica*"
- 3402 3532 27 "Homo sapiens, *Arabidopsis thaliana*, *Porphyromonas gingivalis* W83, *Shigella flexneri* 2a str. 2457T, *Caenorhabditis elegans*, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Lactobacillus plantarum*, *Mus musculus*, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli*, *Escherichia coli* K12, *Pirellula* sp., *Danio rerio*, *Escherichia coli* 0157:H7" 40
- 3403 3533 29 "Homo sapiens, *Danio rerio*, *Xylella fastidiosa* Temecula1, *Caenorhabditis elegans*, *Mus musculus*, *Leptospira interrogans* serovar lai str. 56601, *Dictyostelium discoideum*, *Triticum monococcum*, *Plasmodium falciparum* 3D7, *Lactococcus lactis* subsp. *lactis*, *Lotus corniculatus* var. japonicus, *Silurana tropicalis*"
- 3404 3534 28 "Mus musculus, *Homo sapiens*, *Schistosoma japonicum*, *Babesia bigemina*, *Caenorhabditis elegans*, *Hordeum vulgare* subsp. *vulgare*, *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*"
- 3405 3535 27 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Glycine max*, *Neurospora crassa*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375" 50

- 3406 3536 27 "Homo sapiens, Hepatitis C virus, Helicobacter pylori J99, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Methanosarcina acetivorans C2A, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group), Listeria monocytogenes, Panesthia transversa, Plasmodium falciparum 3D7, Staphylococcus aureus, Zea mays, Oryza sativa, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Danio rerio, Clostridium cellulovorans, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Listeria innocua, Drosophila yakuba, Staphylococcus aureus subsp. aureus Mu50"
- 3407 3537 24 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Human immunodeficiency virus 1, Simian immunodeficiency virus, Haemophilus ducreyi 35000HP, Citrus sinensis" 10
- 3408 3538 28 "Staphylococcus epidermidis ATCC 12228, Campylobacter jejuni subsp. jejuni NCTC 11168, Homo sapiens, Arabidopsis thaliana, Ureaplasma urealyticum, Mus musculus, Salmonella typhimurium LT2, Drosophila melanogaster, Danio rerio, Nephroselmis olivacea"
- 3409 3539 24 "Homo sapiens, Danio rerio, Mus musculus, Phaseolus vulgaris, Sus scrofa, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana"
- 3410 3540 26 "Mus musculus, Schizosaccharomyces japonicus, Homo sapiens, Phalaenopsis lamelligera, Salmonella typhimurium LT2, Medicago truncatula, Phalaenopsis violacea, Arabidopsis thaliana, Drosophila melanogaster, Sorghum bicolor, Semliki forest virus, Staphylococcus aureus, Phlebotomus mireillae, Danio rerio, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 20
- 3411 3541 23 "Homo sapiens, Arabidopsis thaliana, Clostridium acetobutylicum, Mus musculus, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Hevea brasiliensis, Streptococcus pyogenes M1 GAS, Streptococcus agalactiae NEM316, Clostridium difficile, Lycopersicon esculentum, Streptococcus pyogenes SSI-1"
- 3412 3542 27 "Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Neurospora crassa, Bacteroides thetaiotaomicron VPI-5482, Streptococcus mutans UA159, Plasmodium vivax, Arabidopsis thaliana, Vitis vinifera, Danio rerio, Photorhabdus luminescens" 30
- 3413 3543 25 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Mylodon darwini, Rattus norvegicus, Choloepus didactylus, Listeria monocytogenes, Human immunodeficiency virus 1, Homo sapiens, Mus musculus, Lentinula edodes, Lentinula lateritia, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Triticum aestivum"
- 3414 3544 55 "Homo sapiens, Bovine group C rotavirus, Rattus norvegicus, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mycoplasma mycoides subsp. mycoides SC, Papio anubis, Danio rerio, Kalanchoe blossfeldiana, Arabidopsis thaliana, Apsona muscaria, Capsicum annum, Hirudo medicinalis, Medicago truncatula, Methanocaldococcus jannaschii, Takifugu rubripes, Synechocystis sp. PCC 6803, Nostoc sp. PCC 7120" 40
- 3415 3545 30 "Methanocaldococcus jannaschii, Homo sapiens, Caenorhabditis elegans, Mus musculus, Trypanosoma brucei, Drosophila melanogaster, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Danio rerio"
- 3416 3546 45 "Buchnera aphidicola, Buchnera aphidicola str. Sg (Schizaphis graminum), Yersinia pestis KIM, Homo sapiens, Yersinia pestis C092, Haemop 50

- hilus ducreyi 35000HP, *Mus musculus*, *Plasmodium falciparum* 3D7, *Lactobacillus plantarum* WCFS1, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Papio a nubis*, *Pyrococcus furiosus* DSM 3638, *Orthotomicus caelatus*, *Leishmania donovani*, *Danio rerio*"
- 3417 3547 73 "Borrelia burgdorferi B31, *Borrelia burgdorferi*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Enterococcus faecalis* V583, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Mus musculus*, *Chrysodidymus synuroideus*, *Homo sapiens*, *Helicobacter hepaticus* ATCC 51449, *Pasteurella multocida*, *Danio rerio*, *Arabidopsis thaliana*, *Sulfolobus tokodaii*"
- 3418 3548 54 "Vibrio parahaemolyticus, *Chlorella vulgaris*, *Helicobacter hepaticus* ATCC 51449, *Homo sapiens*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Listeria innocua*, *Porphyra purpurea*, *Buchnera aphidicola*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Oryza sativa* (*japonica* cultivar-group), *Salmo salar*, *Drosophila melanogaster*, *Paraeutrichopus pecoudi*, *Plasmodium falciparum* 3D7, *Schizosaccharomyces pombe*, *Arabidopsis thaliana*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Thermoanaerobacter tengcongensis*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Staphylococcus aureus* subsp. *aureus* Mu50" 10
- 3419 3549 24 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Zea mays* subsp. *mays*, *Caulobacter crescentus* CB15, Measles virus, *Caenorhabditis briggsae*, *Caenorhabditis elegans*" 20
- 3420 3550 28 "Drosophila melanogaster, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Rattus norvegicus*, *Enterococcus faecalis* V583, *Gallus gallus*, *Callicebus* sp., *Callithrix* sp., *Sus scrofa*, *Saccharomyces cerevisiae*, *Ciona intestinalis*, *Bacillus halodurans*"
- 3421 3551 104 "Plasmodium falciparum 3D7, *Borrelia burgdorferi* B31, *Borrelia burgdorferi*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Oceanobacillus ihayensis* HTE831, *Bacillus cereus* ATCC 14579, *Helicobacter hepaticus* ATCC 51449, *Bacillus anthracis* str. Ames, *Staphylococcus aureus*, *Lactobacillus leichmannii*, *Odontella sinensis*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Homo sapiens*, *Bacteroides thetaiotaomicron* VPI-5482, *Thermoanaerobacter tengcongensis*, *Clostridium acetobutylicum*, *Mus musculus*, *Listeria monocytogenes*, *Listeria innocua*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Mannheimia haemolytica*, *Bacillus subtilis*, *Brachyspira hyodysenteriae*" 30
- 3422 3552 29 "Borrelia burgdorferi B31, *Dictyostelium discoideum*, *Homo sapiens*, *Borrelia burgdorferi*, *Rattus norvegicus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mycobacterium leprae*, *Mus musculus*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Lemur catta*, *Pichia* sp. UW0(PS)99-530.3, *Bostrychia calliptera*, *Plasmodium falciparum* 3D7, *Chlorella virus*, *Oryza sativa* (*japonica* cultivar-group), *Physarum polycephalum*, *Tremella nivalis*, *Cordyceps* sp. 97003, *Cordyceps sobolifera*" 40
- 3423 3553 29 "Borrelia burgdorferi B31, *Homo sapiens*, *Mus musculus*, *Vibrio cholerae*, *Danio rerio*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Propionigenium modestum*, *Clostridium perfringens*, *Anthroceros formosae*, *Oryza sativa* (*japonica* cultivar-group), *Spiroplasma citri*, *Arabidopsis thaliana*, *Clostridium perfringens* str. 13"
- 3424 3554 38 "Fusobacterium nucleatum subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Pasteurella multocida*, *Caenorhabditis elegans*, *Lotus corniculatus* va 40

- r. japonicus, *Mus musculus*, *Didelphis virginiana*, *Oryza sativa*, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, Human immunodeficiency virus 1, *Plasmodium falciparum* 3D7, *Clostridium difficile*, *Staphylococcus epidermidis*, *Oryza sativa* (japonica cultivar-group), *Haemophilus ducreyi* 35000HP, *Arabidopsis thaliana*"
- 3425 3555 25 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Bacillus halodurans*"
- 3426 3556 32 "Mus musculus, *Lotus corniculatus* var. japonicus, Homo sapiens, *Clostridium acetobutylicum*, *Ciona intestinalis*, *Pereskia grandiflora*, *Plasmodium falciparum* 3D7, *Clostridium perfringens* str. 13" 10
- 3427 3557 47 "Homo sapiens, *Chironomus maddeni*, *Bacteroides thetaiotaomicron* VPI-5482, *Mus musculus*, *Rickettsia typhi*, *Rickettsia rhipicephali*, *Rickettsia prowazekii*, *Danio rerio*, *Clostridium perfringens* str. 13, *Arabidopsis thaliana*, *Pan troglodytes*, *Saccharomyces castellii*, *Drosophila melanogaster*, *Helobdella* sp. Australia, *Lactococcus lactis* subsp. lactis, *Ureaplasma urealyticum*, *Candida tropicalis*, *Saccharomyces cerevisiae*"
- 3428 3558 24 "Mus musculus, *Campylobacter jejuni* subsp. jejuni NCTC 1168, *Plodia interpunctella*, Homo sapiens"
- 3429 3559 44 "Streptococcus mutans UA159, *Streptococcus pyogenes* MGAS 315, *Pyrococcus furiosus* DSM 3638, *Streptococcus pyogenes* SSI-1, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Streptococcus agalactiae* 2603V/R, Homo sapiens, *Streptococcus agalactiae* NEM316, *Streptococcus agalactiae*, *Clostridium perfringens* str. 13, *Bacillus cereus* ATCC 14579, *Solanum tuberosum*, *Arabidopsis thaliana*, *Daucus carota*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Danio rerio*, *Mus musculus*" 20
- 3430 3560 24 "Caenorhabditis elegans, *Enterococcus faecalis* V583, Homo sapiens, *Medicago truncatula*, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*" 30
- 3431 3561 29 "Homo sapiens, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Plasmodium falciparum*, *Mus musculus*, *Plasmodium berghei*, *Pan troglodytes*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Macaca fascicularis*, *Drosophila melanogaster*, *Schistosoma japonicum*, *Chymomyza amoena*, *Borrelia burgdorferi* B31, *Caenorhabditis elegans*, Simian immunodeficiency virus, Chilo iridescent virus, *Neisseria gonorrhoeae*, *Rattus norvegicus*, *Saccharomyces cerevisiae*, *Listeria monocytogenes*, *Helicobacter pylori* 26695"
- 3432 3562 27 "Liposcelis paeta, *Neurospora crassa*, *Mus musculus*, Homo sapiens, *Medicago truncatula*, *Caenorhabditis elegans*, *Sus scrofa*, Bacteriophage PY54, *Danio rerio*, *Xenopus laevis*" 40
- 3433 3563 27 "Homo sapiens, Avian infectious bronchitis virus, *Clostridium acetobutylicum*, *Mus musculus*, Avian infectious bronchitis virus (strain Beaudette CK), *Danio rerio*, *Mangifera indica*"
- 3434 3564 36 "Lactobacillus helveticus, *Vibrio cholerae*, *Danio rerio*, Homo sapiens, *Alca torda*, *Mus musculus*, *Helicobacter hepaticus* ATCC 51449, *Escherichia coli*"
- 3435 3565 28 "Homo sapiens, *Bacillus anthracis* str. Ames, *Methanosarcina mazei* Goe1, *Mus musculus*"
- 3436 3566 24 "Homo sapiens, *Drosophila melanogaster*, *Arabidopsis thal* 50

- iana, *Mus musculus*, *Peripatoides morgani*, *Peripatoides novaezealandiae*, *Peripatoides sympatrica*, *Peripatoides aurorbis*, *Peripatoides suteri*, *Ooperipatellus viridimaculatus*, *Sulfolobus tokodaii*, *Peripatoides* sp. Fraser's Gully3, *Peripatoides* sp. Whare Flat1.1, *Peripatoides* sp. Graham's Bush1.1, *Peripatoides* sp. Dunedin Botanical Garden1.3, *Peripatoides* sp. Maungatua1.1, *Peripatoides* sp. Saddle Hill 3.1, *Peripatoides* sp. Outram1.2, *Peripatoides* sp. Style's Creek1.1, *Peripatoides* sp. Tomohawk Lagoon1, *Peripatoides* sp. Catlins1.1, *Peripatoides* sp. Taieri Mout h1.1, *Peripatoides* sp. Tom's Creek4.1, *Peripatoides* sp. Matai Falls1.11, *Peripatoides* sp. Piano Flat1.1, *Peripatoides* sp. Rotoroa3.1"
- 3437 3567 33 "Mus musculus, Homo sapiens, Danio rerio, Arabidopsis thaliana, Rana livida, Rana johnsi, Eurycea wilderae, Ranodon sibiricus, Cyclocheilon somaliense, Scrophularia arguta, Plethodon yonahlossee, Lotus corniculatus var. japonicus, Clostridium perfringens str. 13, Rattus norvegicus, Bacillus anthracis str. Ames, Dictyostelium discoideum, Rana temporaria, Hevea brasiliensis, Anthophora acervorum, Proboscidea fragrans, Lycopersicon esculentum, Lyonia lucida, Buddleja asiatica, Peltanthera floribunda, Stilbe ericoides, Campylobacter coli, Matricaria recutita, Oryza sativa (japonica cultivar-group), Melanoplus sanguinipes entomopoxvirus, Medicago truncatula, Nicotiana glauca" 10
- 3438 3568 23 "Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Homo sapiens, Clostridium perfringens str. 13, Lotus corniculatus var. japonicus, Leuconostoc mesenteroides" 20
- 3439 3569 56 "Streptococcus mutans UA159, Oryza sativa, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Campylobacter jejuni, Lotus corniculatus var. japonicus, Medicago sativa, Danio rerio, Tetraodon nigroviridis"
- 3440 3570 28 "Mus musculus, Homo sapiens, Astropecten duplicatus, Drosophila melanogaster, Lotus corniculatus var. japonicus, Aquifex aeolicus VF5, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Xenopus laevis, Luidia foliolata, Ceramaster patagonicus, Luidia magellanica, Culcita novaeguineae, Bombyx mori, Luidia sp. 1-EK-2003, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Medicago truncatula" 30
- 3441 3571 27 "Homo sapiens, Pan troglodytes, Mus musculus, Dictyostelium discoideum, Clostridium tetani E88, Danio rerio, Drosophila melanogaster, Zea mays, Caenorhabditis elegans, Thermoplasma volcanium, Oryza sativa (japonica cultivar-group), Ciona intestinalis"
- 3442 3572 24 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Mus musculus, Arabidopsis thaliana, Pyrococcus horikoshii, Danio rerio"
- 3443 3573 23 "Arabidopsis thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus"
- 3444 3574 27 "Prochlorococcus marinus, Plasmodium falciparum 3D7, Felis catus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Tetrahymena thermophila, Canis familiaris, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Sus scrofa, Cryptosporidium parvum, Thermoplasma acidophilum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus Mu50" 40
- 3445 3575 28 "Homo sapiens, Pan troglodytes, Papio anubis, Danio rerio, Arabidopsis thaliana, Human immunodeficiency virus 1, Equus caballus, Macaca mulatta, Plasmodium falciparum 3D7, Mus musculus, Streptococcus pneumoniae, Dorotheanthus bellidiformis, Oenococcus oeni, Ovis aries" 50

- 3446 3576 32 "Caenorhabditis elegans, Danio rerio, Plasmodium falciparum 3D7, Homo sapiens, Dyscritulus planiceps, Arabidopsis thaliana, Cyanidioschyzon merolae, Bacillus anthracis str. Ames, Dictyostelium discoideum, Clostridium tetani E88, Mus musculus, Fusobacterium n"
- 3447 3577 28 "Methanocaldococcus jannaschii, Homo sapiens, Clostridium tetani E88, Plasmodium falciparum 3D7, Methanosarcina acetivorans C2A, Spring viremia of carp virus, Oryza sativa (japonica cultivar-group), Mus musculus, Monkeypox virus, Pan troglodytes, Caenorhabditis elegans, Danio rerio, Anabaena sp., Nostoc sp. PCC 7120"
- 3448 3578 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Danio rerio, Schistosoma mansoni, Arabidopsis thaliana" 10
- 3449 3579 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Cryptosporidium parvum, Caenorhabditis elegans, Ciona intestinalis"
- 3450 3580 31 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Bovine parainfluenza virus 3, Plasmodium falciparum 3D7"
- 3451 3581 30 "Homo sapiens, Drosophila melanogaster, Mus musculus, Staphylococcus epidermidis ATCC 12228, Onchocerca volvulus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Rattus norvegicus, Plasmodium falciparum 3D7, Gossypium barbadense, Rickettsia conorii, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Caenorhabditis elegans, Parartemia zietziana, Cryptosporidium parvum, Schizosaccharomyces pombe, Nostoc sp. PCC 7120" 20
- 3452 3582 30 "Mus musculus, Homo sapiens, Danio rerio, Caenorhabditis elegans, Lotus corniculatus var. japonicus"
- 3453 3583 20 "Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group)"
- 3454 3584 25 "Homo sapiens, Danio rerio, Methanosarcina acetivorans C2A, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium falciparum 3D7, Trypanosoma brucei"
- 3455 3585 28 "Homo sapiens, Streptococcus thermophilus, Streptococcus mutans UA159, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Lotus corniculatus var. japonicus, Streptococcus pyogenes SSI-1, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. Bp (Baizongia pistaciae), Medicago truncatula, Mus musculus, Oryza sativa, Rota virus sp., Mycoplasma pulmonis, Synechocystis sp. PCC 6803" 30
- 3456 3586 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Lycopersicon esculentum, Danio rerio, Methanocaldococcus jannaschii, Synechocystis sp. PCC 6803"
- 3457 3587 40 "Homo sapiens, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Medicago truncatula, Dictyostelium discoideum, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Psechrus sinens" 40
- 3458 3588 27 "Danio rerio, Homo sapiens, Caenorhabditis elegans, Streptococcus agalactiae NEM316, Phanerochaete chrysosporium, Oryza sativa (japonica cultivar-group)"
- 3459 3589 41 "Plasmodium falciparum 3D7, Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Helicobacter hepaticus ATCC 51449, Mycoplasma gallisepticum R, Clostridium acetobutylicum, Pyrococcus horikoshii"
- 3460 3590 24 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Vitis vinifera, Gallus gallus" 50

- 3461 3591 31 "Homo sapiens, Rattus norvegicus, Mus musculus, Lentinula boryana, Lentinula raphanica, Xylella fastidiosa Temecula1, Caenorhabditis elegans, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Nitrosomonas sp. Nm33, Nitrosomonas communis, Saccharomyces cerevisiae, Methanocaldococcus jannaschii"
- 3462 3592 28 "Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Listeria monocytogenes, Enterococcus faecalis V583, Pan troglodytes, Fowlpox virus, Mus musculus"
- 3463 3593 23 "Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella enterica subsp. enterica serovar Typhi, Homo sapiens, Arabidopsis thaliana, Mus musculus, Caenorhabditis elegans" 10
- 3464 3594 30 "Homo sapiens, Fowlpox virus, Drosophila melanogaster, Plasmodium falciparum 3D7, Villa sp. LRC-2002, Mus musculus, Oryza sativa (japonica cultivar-group), Prochlorococcus marinus subsp. marinus str. CCMP1375, Candida albicans, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Arabidopsis thaliana, Serrasalmus rhombeus, Serrasalmus sp. 220, Serrasalmus manueli, Pristobrycon sp. 256, Serrasalmus spilopleura, Pristobrycon sp. 224, Serrasalmus eigenmanni, Pristobrycon serrulatus, Serrasalmus gouldingi, Discus macclintocki, Staphylococcus epidermidis, Streptococcus mutans, Glycine max, Asterias amurensis" 20
- 3465 3595 35 "Mus musculus, Homo sapiens, Danio rerio, Lotus corniculatus var. japonicus, Oryctolagus cuniculus, Spodoptera littoralis nucleopolyhedrovirus, Gallus gallus, Oryza sativa (japonica cultivar-group), Cyanophora paradoxa, Rattus norvegicus, Atelerix albiventris, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Staphylococcus epidermidis ATCC 12228, Human immunodeficiency virus 1, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pyrococcus furiosus DSM 3638, Staphylococcus epidermidis, Prochlorococcus marinus, Saimiriine herpesvirus 2, Oryza sativa (indica cultivar-group), Chlamydophila pneumoniae CWL029, Plasmodium falciparum 3D7, Caenorhabditis elegans, Arabidopsis thaliana, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138" 30
- 3466 3596 24 "Mus musculus, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Pseudomonas syringae pv. tomato str. D C3000, Homo sapiens, Leuconostoc pseudomesenteroides, Salmonella enterica subsp. enterica serovar Typhi, Danio rerio"
- 3467 3597 31 "Homo sapiens, Arabidopsis thaliana, Anaspides tasmaniae, Mus musculus, Prochlorococcus marinus, Danio rerio, Borrelia burgdorferi B31, Dictyostelium discoideum, Plasmodium falciparum 3D7, Bacillus thuringiensis, Botryotinia fuckeliana, Wolbachia sp. wKue, Oryza sativa (japonica cultivar-group), Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Oryza sativa, Bos taurus, Clostridium acetobutylicum, Oryza sativa (indica cultivar-group), Caenorhabditis elegans, Clostridium perfringens str. 13, Synechocystis sp. PCC 6803" 40
- 3468 3598 27 "Homo sapiens, Schmidtea mediterranea, Listeria innocua, Mus musculus, Zea mays, Arabidopsis thaliana, Chaetosphaeridium globosum, Danio rerio, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Anopheles gambiae, Hymenobacterium methylovorum"
- 3469 3599 28 "Homo sapiens, Mus musculus, Enterococcus faecalis V583, Mycoplasma penetrans, Melanoplus sanguinipes entomopoxvirus, Enterococcus faecalis, Dictyostelium discoideum, Archaeoglobus fulgidus DSM 4304, Solanum chacoense, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Penicilli 50

- um marneffeii, Staphylococcus aureus subsp. aureus Mu50, Lycopersicon hirsutum, Lycopersicon chmielewskii, Lycopersicon parviflorum, Lycopersicon peruvianum"
- 3470 3600 23 "Homo sapiens, Mus musculus, Rattus norvegicus"
- 3471 3601 25 "Rickettsia prowazekii, Homo sapiens, Drosophila melanogaster, Staphylococcus aureus, Mycoplasma capricolum, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Helicobacter nemurus, Rickettsia typhi, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Walleye epidermal hyperplasia virus type 1, Nicotiana tabacum" 10
- 3472 3602 31 "Homo sapiens, Bacillus cereus ATCC 14579, Oryzias latipes, Oryza sativa (japonica cultivar-group), Mus musculus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Oceanobacillus iheyensis HTE831, Equus caballus, Borrelia burgdorferi B31, Takifugu rubripes, Sus scrofa, Arabidopsis thaliana, Borrelia burgdorferi, Danio rerio, Mycoplasma penetrans, Streptococcus canis, Caenorhabditis elegans"
- 3473 3603 27 "Homo sapiens, Danio rerio, Mus musculus, Thermosynechococcus elongatus BP-1, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Helicobacter hepaticus ATCC 51449" 20
- 3474 3604 28 "Mus musculus, Homo sapiens, Bacillus cereus ATCC 14579, Xenopus laevis, Dysmicoccus brevipes, Arabidopsis thaliana, Borrelia burgdorferi B31, Dictyostelium discoideum, Plasmodium falciparum 3D7, Schizophyllum commune, Clostridium acetobutylicum, Danio rerio, Caenorhabditis elegans, Mus musculus domesticus, Schizosaccharomyces pombe, Clostridium perfringens str. 13"
- 3475 3605 28 "Caenorhabditis elegans, Homo sapiens, Helianthus annuus, Danio rerio, Mus musculus, Pan troglodytes, Oryza sativa (japonica cultivar-group), Macaca fascicularis, Ciona intestinalis"
- 3476 3606 23 "Homo sapiens, Guillardia theta, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Danio rerio, Bacillus subtilis subsp. subtilis str. 168" 30
- 3477 3607 20 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Bovine coronavirus, Drosophila melanogaster, Oreochromis aureus, Lucilia cuprina, Bacillus halodurans, Bacillus lentus"
- 3478 3608 51 "Oryza sativa (japonica cultivar-group), Pan troglodytes, Homo sapiens, Caenorhabditis elegans, Mus musculus, Bacillus subtilis, Arabidopsis thaliana, Sulfolobus tokodaii, Bacillus subtilis subsp. subtilis str. 168, Danio rerio"
- 3479 3609 41 "Pasteurella multocida, Homo sapiens, Sulfolobus solfataricus, Prochlorococcus marinus, Mycoplasma pulmonis, Arabidopsis thaliana, Danio rerio, Crematogaster sp. 'morphospecies 3', Clostridium tetani E88, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Haemophilus ducreyi 35000HP, Ciona intestinalis, Acidianus brierleyi" 40
- 3480 3610 43 "Chlamydomonas reinhardtii, Bartonella henselae, Candidatus Blochmannia floridanus, Limonium mouretii, Limonium sinuatum, Limoniastrum guyonianum, Limoniastrum monopetalum, Syngonanthus yacuambensis, Homo sapiens, Oryza sativa, Thermoanaerobacter tengcongensis, Caenorhabditis elegans, Caenorhabditis briggsae, Mus musculus"
- 3481 3611 27 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Oryza 50

- a sativa, *Oryza sativa* (japonica cultivar-group)"
- 3482 3612 31 "Homo sapiens, *Marchantia polymorpha*, *Clostridium acetobutylicum*, *Melanoplus sanguinipes* entomopoxvirus, *Mus musculus*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Danio rerio*, *Pan troglodytes*, *Papio anubis*, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Arabidopsis thaliana*, *Streptococcus agalactiae* NEM316, *Podospira anserina*, *Mycoplasma penetrans*, *Encephalitozoon cuniculi*, *Saccharomyces cerevisiae*, *Choristoneura fumiferana* entomopoxvirus, *Lycopersicon pennellii*, *Choristoneura biennis* entomopoxvirus, *Plasmodium chabaudi chabaudi*"
- 3483 3613 25 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Drosophila melanogaster, Danio rerio, Oryza sativa (japonica cultivar-group), *Coxiella burnetii* RSA 493, Human immunodeficiency virus 1, *Methanosarcina mazei* Goe1, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Arabidopsis thaliana*" 10
- 3484 3614 30 "Danio rerio, Homo sapiens, *Caenorhabditis elegans*, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Mus musculus*, *Rattus norvegicus*, *Brassica rapa* subsp. *pekinensis*, *Streptococcus mutans* UA159, *Bacillus firmus*, *Candida albicans*, *Brassica napus*, *Oryza sativa* (japonica cultivar-group)"
- 3485 3615 31 "Homo sapiens, *Mus musculus*, *Dictyostelium discoideum*, *Gallus gallus*, *Drosophila melanogaster*, *Gaillardia aristata*, *Arabidopsis thaliana*, *Lycopersicon esculentum*, *Prochlorococcus marinus*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Schizosaccharomyces pombe*, *Printzia polifolia*, *Staphylococcus aureus* subsp. *aureus* Mu50" 20
- 3486 3616 23 "Homo sapiens, *Anabaena* sp. 90, *Caenorhabditis elegans*, *Mus musculus*, *Haemophilus influenzae* Rd KW20"
- 3487 3617 23 "Homo sapiens, *Mus musculus*, *Polypterus bichir*, *Sus scrofa*"
- 3488 3618 26 "Homo sapiens, *Rattus norvegicus*, *Arabidopsis thaliana*, *Mus musculus*, *Porphyromonas gingivalis* W83" 30
- 3489 3619 27 "Mus musculus, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Citrobacter rodentium*, *Escherichia coli*, *Porphyra pulchra*, *Listeria innocua*, *Citrobacter freundii*"
- 3490 3620 31 "Gallus gallus, *Mus musculus*, Homo sapiens, *Plasmodium falciparum* 3D7, *Meleagris gallopavo*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*"
- 3491 3621 23 "Caenorhabditis elegans, Homo sapiens, *Danio rerio*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Branchiostoma floridae*, *Mus musculus*"
- 3492 3622 25 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Drosophila melanogaster*, *Cercopithecine herpesvirus 15*, *Listeria monocytogenes*, *Danio rerio*" 40
- 3493 3623 37 "*Oceanobacillus iheyensis* HTE831, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis briggsae*, *Staphylococcus epidermidis*, *Mus musculus*, Homo sapiens, *Xenopus laevis*, *Plasmodium falciparum* 3D7, *Listeria monocytogenes*, *Haemophilus influenzae* Rd KW20, *Haemophilus influenzae*"
- 3494 3624 25 "Mus musculus, Homo sapiens, *Anopheles kunmingensis*, *Anopheles yatsushiroensis*, *Anopheles anthropophagus*, *Anopheles sinensis*, *Arabidopsis thaliana*, *Little cherry virus 2*, *Pyrenophora graminea*, *Caenorhabditis briggsae*" 50

- , *Danio rerio*"
- 3495 3625 35 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*, *Candida albicans*, *Drosophila melanogaster*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Phthorimaea operculella granulovirus*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Thysanocarpus* sp. RSA-18923, *Cowpox virus*, *Bacillus anthracis* str. Ames, *Vaccinia virus*, *Dictyostelium discoideum*, *Glycine max*, *Staphylococcus epidermidis* ATCC 12228, *Papio anubis*, *Ectromelia virus*, *Camelpox virus* CMS, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Monkeypox virus*, *Staphylococcus epidermidis*, *Guillardia theta*, *Arabidopsis thaliana*" 10
- 3496 3626 29 "*Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Stegastes partitus*, *Homo sapiens*, *Oryza sativa*, *Macaca fascicularis*, *Mus musculus*, *Drosophila melanogaster*, *Danio rerio*"
- 3497 3627 24 "*Homo sapiens*, *Clostridium acetobutylicum*, *Picea abies*, *Drosophila melanogaster*, *Bacillus subtilis*, *Vitis vinifera*, *Mus musculus*, *Bacillus subtilis* subsp. *subtilis* str. 168"
- 3498 3628 27 "*Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*, *Saccharomyces cerevisiae*, *Oryza sativa* (*japonica* cultivar-group), *Oryctolagus cuniculus*"
- 3499 3629 23 "*Bradyrhizobium japonicum* USDA 110Z, *ea mays*, *Drosophila melanogaster*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Steinernema monticolum*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Staphylococcus aureus* temperate phage phiSLT" 20
- 3500 3630 24 "*Bufo gargarizans*, *Homo sapiens*, *Herpestes javanicus*, *Phyllobates lugubris*, *Callisaurus draconoides*, *Streptococcus thermophilus* bacteriophage Sfi21, *Micrixalus kottigeharensis*, *Herpestes edwardsii*, *Carollia castanea*, *Microphis brachyurus brachyurus*, *Cicindel*"
- 3501 3631 27 "*Borrelia burgdorferi* B31, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Pan troglodytes*, *Staphylococcus epidermidis* ATCC 12228, *Mus musculus*, *Staphylococcus epidermidis*, *Cervus nippon*, *Danio rerio*, *Listeria innocua*" 30
- 3502 3632 23 "uncultured marine group II euryarchaeote 37F11, *Cryptococcus neoformans* var. *grubii*, *Rattus norvegicus*, *Homo sapiens*, *Mus musculus*"
- 3503 3633 25 "*Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Homo sapiens*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Mus musculus*, *Parasponia parviflora*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Lactococcus lactis* subsp. *lactis*, *Lycopersicon esculentum*"
- 3504 3634 31 "*Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Campylobacter jejuni*, *Homo sapiens*, *Mus musculus*, *Medicago truncatula*, *Silba adipata*, *Mesostigma viride*, *Caenorhabditis briggsae*, *Dictyostelium discoideum*," 40
- 3505 3635 27 "*Acaulospora* sp. 1v5.4-1, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Mycoplasma penetrans*, *Danio rerio*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Medicago truncatula*"
- 3506 3636 23 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Gallus gallus*, *Caenorhabditis elegans*, *Clostridium perfringens*, *Saccharomyces cerevisiae*, *Mus musculus*, *Danio rerio*, *Mycoplasma hyopneumoniae*"
- 3507 3637 28 "*Homo sapiens*, *Danio rerio*, *Clostridium botulinum*, *Mus musculus*, synthetic construct, *Mycoplasma pulmonis*, *Caenorhabditis elegans*, *Arabi*" 50

- dopsis thaliana, Dictyostelium discoideum, Felis catus, Trichostrongylus vitrinus, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Oryza sativa (japonica cultivar-group)"
- 3508 3638 36 "Haemophilus influenzae Rd KW20, Candida albicans, Homo sapiens, Candida maltosa, Mycobacterium leprae, Caenorhabditis elegans, Danio rerio, Mus musculus"
- 3509 3639 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus"
- 3510 3640 27 "Homo sapiens, Mus musculus, Haemophilus influenzae Rd KW20, Rattus norvegicus, Dictyostelium discoideum, Clostridium acetobutylicum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831" 10
- 3511 3641 31 "Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Lactococcus lactis subsp. lactis, Mycoplasma pulmonis, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Prochlorococcus marinus subsp. marinus str. CCMP1375, Clostridium perfringens str. 13"
- 3512 3642 44 "Campylobacter jejuni subsp. jejuni NCTC 11168, Staphylococcus epidermidis ATCC 12228, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Homo sapiens, Mus musculus, Helicobacter hepaticus ATCC 51449, Archaeoglobus fulgidus DSM 4304, Tritrichomonas foetus, Vibrio parahaemolyticus, Danio rerio, Vibrio proteolyticus" 20
- 3513 3643 35 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Homo sapiens, Lymphocystis disease virus 1, Arabidopsis thaliana, Mus musculus, Physcomitrella patens, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168"
- 3514 3644 28 "Arabidopsis thaliana, Caenorhabditis elegans, Mus musculus, Homo sapiens, Methanosarcina acetivorans C2A, Oncorhynchus mykiss, Plasmodium falciparum 3D7, Neurospora crassa, Sphagnum rubellum, Sphagnum bartlettianum, Sphagnum andersonianum, Rattus norvegicus, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Rana chircahuensis, Clostridium acetobutylicum, Danio rerio, Streptococcus agalactiae NEM316" 30
- 3515 3645 24 "Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Homo sapiens, Mus musculus, Drosophila melanogaster, Methanocaldococcus jannaschii"
- 3516 3646 50 "Haemophilus ducreyi 35000HP, Shewanella oneidensis MR-1, Helicobacter hepaticus ATCC 51449, Rickettsia prowazekii, Homo sapiens, Methanosarcina mazei Goe1, Arabidopsis thaliana, Bungarus multicinctus, Glycine soja, Drosophila melanogaster, Mus musculus, Sagittaria latifolia, Gallus gallus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Wolbachia sp. wKue" 40
- 3517 3647 40 "Bacillus anthracis str. Ames, Pyrococcus furiosus DSM 3638, Haemophilus ducreyi 35000HP, Bacillus cereus ATCC 14579, Clostridium tetani E88, Homo sapiens, Oceanobacillus iheyensis HTE831, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus, Campylobacter jejuni subsp. jejuni NCTC 11168, Entamoeba histolytica, Bacillus halodurans, Clostridium perfringens str. 13, Medicago truncatula, Caenorhabditis elegans, Manduca sexta, Danio rerio, Rickettsia prowazekii, Rattus norvegicus"
- 3518 3648 29 "Homo sapiens, Leuconostoc mesenteroides, Drosophila pseudoobscura, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Ciona intestinalis" 50

- 3519 3649 39 "Bacillus anthracis str. Ames, Mus musculus, Homo sapiens, Bacillus cereus ATCC 14579, Plasmodium falciparum, Listeria monocytogenes, Nitrosomonas europaea ATCC 19718, Brucella melitensis 16M, Staphylococcus aureus, Drosophila melanogaster, Brucella suis 1330, Methanosarcina acetivorans C2A, Caenorhabditis briggsae, Pantoea agglomerans, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Plasmid pEA3, Arabidopsis thaliana"
- 3520 3650 27 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Escherichia coli O157:H7 EDL933, Escherichia coli O157:H7, Oryza sativa (japonica cultivar-group), Danio rerio" 10
- 3521 3651 31 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Danio rerio, Plasmodium falciparum 3D7, Oreochromis niloticus, Oreochromis mossambicus, Arabidopsis thaliana, Saccharomyces cerevisiae, Trypanosoma brucei, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Austrochilus brindini, Trichoderma pseudokoningii, Staphylococcus epidermidis ATCC 12228, Oryza sativa, Yaba-like disease virus, Staphylococcus epidermidis, Medicago truncatula"
- 3522 3652 31 "Lactobacillus plantarum, Sulfolobus tokodaii, Danio rerio, Mus musculus, Homo sapiens, Alcaligenes hydrogenophilus, Drosophila melanogaster, Plasmodium falciparum 3D7" 20
- 3523 3653 24 "Homo sapiens, Danio rerio, Lotus corniculatus var. japonicus, Plumbago europaea, Mus musculus, Arabidopsis thaliana, Lycopersicon peruvianum, Vibrio parahaemolyticus, Mercenaria mercenaria, Haemophilus ducreyi 35000 HP"
- 3524 3654 28 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Homo sapiens, Mus musculus, Schizosaccharomyces pombe, Danio rerio"
- 3525 3655 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Danio rerio, Schizosaccharomyces pombe, Felis catus" 30
- 3526 3656 25 "Drosophila melanogaster, Homo sapiens, Pasteurella multocida, Pasteurella aerogenes, Helicobacter pylori 26695, Helicobacter pylori J99, Bos taurus"
- 3527 3657 28 "Mus musculus, Pyrobaculum aerophilum str. IM2, Homo sapiens, Danio rerio, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Lotus corniculatus var. japonicus"
- 3528 3658 29 "Mus musculus, Homo sapiens, Mesostigma viride, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Candida albicans"
- 3529 3659 35 "Streptococcus pyogenes MGAS315, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Homo sapiens, Streptococcus pyogenes MGAS8232, Bacillus anthracis str. Ames, Xenopus laevis, Sinorhizobium meliloti, Mus musculus" 40
- 3530 3660 25 "Mus musculus, Homo sapiens, Xenopus laevis, Sorghum bicolor, Chlorobium tepidum TLS, Danio rerio"
- 3531 3661 48 "Chlamydia muridarum, Buchnera aphidicola str. Bp (Baizonia pistaciae), Homo sapiens, Nitrosomonas europaea ATCC 19718, Drosophila melanogaster, Mus musculus"
- 3532 3662 27 "Homo sapiens, Arabidopsis thaliana, Mus musculus"
- 3533 3663 57 "Shewanella oneidensis MR-1, Nitrosomonas europaea ATCC" 50

- 19718, Enterobacteria phage P1, Clostridium tetani E88, Homo sapiens, Buchnera aphidicola str. Bp (Baizongia pistaciae), Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Haemophilus ducreyi 35000HP, Prochlorococcus marinus subsp. marinus str. CCMP1375, Bacillus mojavensis, Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Caenorhabditis elegans, Xanthomonas axonopodis pv. citri str. 306, Thermoanaerobacter tengcongensis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Schizosaccharomyces pombe, Haemophilus influenzae Rd KW20, Neogoezia minor, Crithmum maritimum, Anthriscus sylvestris" 10
- 3534 3664 50 "Vibrio parahaemolyticus, Haemophilus ducreyi 35000HP, Pasteurella multocida, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli O157:H7 EDL933, Escherichia coli K12, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Escherichia coli, Escherichia coli O157:H7, Shigella dysenteriae, Shigella sonnei, Shigella flexneri, Shigella boydii, Clostridium tetani E88, Sulfolobus tokodaii, Haemophilus influenzae Rd KW20, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Salmonella typhimurium LT2, Homo sapiens, Salmonella typhimurium" 20
- 3535 3665 32 "Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Caenorhabditis elegans, Drosophila melanogaster, Petrolisthes galathinus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), D" 20
- 3536 3666 26 "Homo sapiens, Arabidopsis thaliana, Rattus norvegicus, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Danio rerio, Mycoplasma gallisepticum R, Mycoplasma gallisepticum, Bacteroides thetaiotaomicron VPI-5482, Caenorhabditis elegans, Streptococcus mutans UA159, Plasmodium falciparum 3D7, Canis familiaris, Oryza sativa (japonica cultivar-group), uncultured marine gamma proteobacterium EBAC31A08, Aedes aegypti, Medicago truncatula" 30
- 3537 3667 24 "Sulfolobus tokodaii, Mus musculus, Drosophila melanogaster, Homo sapiens, Human coronavirus 229E, Arabidopsis thaliana, Monosiga brevicollis, Bacteriophage phiYe03-12" 30
- 3538 3668 27 "Mus musculus, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Schistosoma mansoni, Nicotiana tabacum" 30
- 3539 3669 29 "Staphylococcus aureus, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Rickettsia conorii, Ceratophyllum demersum, Rickettsia prowazekii, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Rattus norvegicus, Enterococcus faecalis V583, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Prochlorococcus marinus, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Podisma pedestris, Danio rerio" 40
- 3540 3670 31 "Homo sapiens, Streptococcus dysgalactiae subsp. dysgalactiae, Buchnera aphidicola str. Bp (Baizongia pistaciae), Arabidopsis thaliana, Mus musculus, Danio rerio, Nucella lima, Nucella canaliculata, Helicobacter hepaticus ATCC 51449, Drosophila melanogaster, Papio anubis, Lotus corniculatus var. japonicus, Macaca fascicularis, Rattus norvegicus, Saccharomyces cerevisiae, Pan troglodytes, Tolypella nidifica" 40
- 3541 3671 24 "Rhizopogon evadens, Homo sapiens, Rhizopogon smithii, Rhizopogon sp. PtRC-49-2, Oceanobacillus iheyensis HTE831, Bacillus anthracis str 50

- . A2012, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Bacillus anthracis*
"
- 3542 3672 41 "Rickettsia montanensis, Dictyostelium discoideum, Lacto
coccus lactis subsp. lactis, Schizosaccharomyces pombe, Oryza sativa (japonica c
ultivar-group), Prochlorococcus marinus, Bacillus halodurans, Streptococcus pyog
enes MGAS315, Streptococcus pyogenes MGAS8232, Clostridium acetobutylicum, Strep
tococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Takifugu rubripes, Homo
sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Pan troglodytes, Fel
is catus, Rickettsia prowazekii, Erpetoichthys calabaricus, Oceanobacillus ihey
ensis HTE831, Staphylococcus sciuri, Saccharomyces cerevisiae, Danio rerio, Mus m 10
usculus, Equus caballus, Populus nigra, Bacillus cereus ATCC 14579, Chlamyphil
a caviae GPIC, Arabidopsis thaliana, Oryza sativa, Staphylococcus aureus, Ureapl
asma urealyticum, Listeria monocytogenes, Nitrosomonas europaea ATCC 19718, Caen
orhabditis elegans, Lycopersicon esculentum"
- 3543 3673 24 "Homo sapiens, Mus musculus, Thermoplasma acidophilum, B
acillus subtilis, Oryza sativa (japonica cultivar-group)"
- 3544 3674 27 "Homo sapiens, Drosophila melanogaster, Arabidopsis thal
iana, Mus musculus, Schmidtea mediterranea, Dictyostelium discoideum, Marchantia
polymorpha, Danio rerio"
- 3545 3675 28 "Mus musculus, Oryza sativa (japonica cultivar-group), P 20
rochlorococcus marinus subsp. marinus str. CCMP1375, Pyrococcus horikoshii, Citr
us tristeza virus, Caenorhabditis elegans, Homo sapiens, Synechocystis sp. PCC 6
803, Arabidopsis thaliana, Simian rotavirus, Bacillus anthracis str. Ames, Pan t
roglodytes, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Equu
s caballus, Plasmodium falciparum 3D7, Mundulea sericea, Tephrosia heckmanniana,
Abrus precatorius, Xenopus laevis, Plasmodium falciparum, Staphylococcus epider
midis, Danio rerio, Thermotoga maritima, Nicotiana tabacum"
- 3546 3676 46 "Dictyostelium discoideum, Streptococcus pyogenes MGAS31
5, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus
pyogenes SSI-1, Clostridium perfringens str. 13, Oceanobacillus iheyensis HTE83 30
1, Homo sapiens, Oryza sativa (japonica cu"
- 3547 3677 25 "Homo sapiens, Bacillus subtilis subsp. subtilis str. 16
8, Caenorhabditis elegans, Bacillus subtilis, Drosophila melanogaster, Mus muscu
lus, Oryza sativa (japonica cultivar-group), Mycoplasma pulmonis, Bombyx mori, D
anio rerio, Plasmodium falciparum 3D7, Arabidopsis thaliana, Human papillomaviru
s type 48"
- 3548 3678 36 "Ureaplasma urealyticum, Oceanobacillus iheyensis HTE831
, Homo sapiens, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Murid herpes
virus 4, Mus musculus, Danio rerio"
- 3549 3679 27 "Dictyostelium discoideum, Homo sapiens, Caenorhabditis 40
elegans, Mus musculus, Pan troglodytes, Drosophila melanogaster, Tetrahymena the
rmophila, Glaucoma chattoni, Xenopus laevis, Plasmodium falciparum 3D7, Arabidop
sis thaliana, Oryza sativa, Labidochirus splendescens, Staphylococcus hominis, O
ryza sativa (japonica cultivar-group), Danio rerio"
- 3550 3680 27 "Homo sapiens, Mus musculus, Danio rerio, Drosophila mel
anogaster, Sus scrofa, Bos taurus, Cryptosporidium parvum, Oryza sativa (japonic
a cultivar-group), Arabidopsis thaliana"
- 3551 3681 23 "Borrelia burgdorferi B31, Rattus norvegicus, Homo sapie
ns, Bacillus cereus ATCC 14579, Drosophila melanogaster, Mus musculus, Ciona int
estinalis, Clostridium perfringens str. 13" 50

- 3552 3682 32 "Pichia canadensis, Homo sapiens, Saccharomyces castellii, Saccharomyces cerevisiae, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13, Mus musculus, Candida albicans, Danio rerio, Sus scrofa, Borrelia burgdorferi B31, Felis catus, Dictyostelium discoideum, Trichinella spiralis, Wiseana iridescent virus"
- 3553 3683 29 "Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Rattus norvegicus, Caenorhabditis elegans, Mus musculus, Danio rerio"
- 3554 3684 35 "Homo sapiens, Rickettsia prowazekii, Ateline herpesvirus 3, Plasmodium chabaudi adami, Plasmodium berghei, Felis catus, Caenorhabditis elegans, Danio rerio, Mus musculus, Plasmodium falciparum 3D7, Swinepox virus, Stigmacros sp., Kluyveromyces lactis, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Sphiggurus villosus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pennisetum glaucum, Arachis hypogaea, Mesostigma viride, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Dictyostelium discoideum, Phocid herpesvirus 1, Yarrowia lipolytica, Schizosaccharomyces pombe, Xenopus laevis, Arabidopsis thaliana, Clostridium perfringens str. 13" 10
- 3555 3685 27 "Mus musculus, Homo sapiens, Medicago truncatula, Macaca mulatta, Pan troglodytes, Papio anubis, Nitrosomonas europaea ATCC 19718, Arabidopsis thaliana, Hypocrea lixii" 20
- 3556 3686 28 "Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Mus musculus, Mycoplasma gallisepticum R, Drosophila melanogaster, Sus scrofa, Pyrobaculum aerophilum str. IM2, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum" 20
- 3557 3687 27 "Homo sapiens, Mus musculus, Methanosarcina mazei Goe1, Lupinus luteus, Gallus gallus, Branchiostoma floridae, Methanosarcina acetivorans C2A, Mycoplasma pulmonis, Methanothermobacter thermautotrophicus, Arabidopsis thaliana, Caenorhabditis briggsae, Antithamnion sp., Fowlpox virus, Caenorhabditis elegans, Danio rerio"
- 3558 3688 28 "Homo sapiens, Mus musculus, Helicobacter pylori J99, Danio rerio, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Streptococcus pneumoniae R6, Caenorhabditis elegans, Mycoplasma penetrans, Arabidopsis thaliana, Clostridium perfringens str. 13" 30
- 3559 3689 27 "Caenorhabditis elegans, Homo sapiens, Ovis aries, Branchiostoma floridae, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Parietaria pensylvanica, Mus musculus, Staphylococcus epidermidis, Vibrio cholerae, Datisca glomerata"
- 3560 3690 27 "Homo sapiens, Pan troglodytes, Papio hamadryas, Danio rerio, Zygosaccharomyces lentus, Oncorhynchus mykiss, Dictyostelium discoideum, Arabidopsis thaliana, Trimeresurus gramineus, Trimeresurus flavoviridis, Oryza sativa (japonica cultivar-group), Mus musculus, Flammulina velutipes, Clostridium perfringens str. 13" 40
- 3561 3691 27 "Homo sapiens, Escherichia coli O157:H7 EDL933, Oryza sativa (japonica cultivar-group), Escherichia coli O157:H7, Pan troglodytes, Mus musculus, Govenia sp. Chase 0-146, Sus scrofa, Caenorhabditis briggsae, synthetic construct, Swertia volkensii, Veratrum baillonii, Swertia bimaculata"
- 3562 3692 28 "Danio rerio, Enterococcus faecalis V583, Methanococcus maripaludis, Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Caenorhabditis elegans, Felis catus"
- 3563 3693 35 "Homo sapiens, Caenorhabditis elegans, Drosophila melano 50

- gaster, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Dictyostelium discoideum*, *Pseudomonas aeruginosa* PA01, *Azemiops feae*, *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Ciona intestinalis*, *Rattus norvegicus*"
- 3564 3694 31 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Plasmodium gallinaceum*, *Dictyostelium discoideum*, *Nitella mucronata*, *Clostridium acetobutylicum*, *Sulfolobus solfataricus*, *Sinapis alba*, *Schizosaccharomyces pombe*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Didelphis virginiana*, *Leptospira interrogans* serovar *lai* str. 56601, *Cryptosepalum tetraphyllum*, *Plasmodium falciparum* 3D7, *Goatpox virus*, *Sheeppox virus*, *Carex laxiflora*, *Myrsine africana*, *Rickettsia conorii*, *Lumpy skin disease virus*, *Staphylococcus aureus*, *Weldonia candida*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Saccharomyces pastorianus*, *Carassius auratus*, *Chlorella vulgaris*, *Staphylococcus aureus* subsp. *aureus* Mu50" 10
- 3565 3695 23 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Papio anubis*, *Mus musculus*, *Pan troglodytes*"
- 3566 3696 27 "*Mus musculus*, *Drosophila melanogaster*, *Danio rerio*, *Homo sapiens*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Methanocaldococcus jannaschii*, *Cellulophaga lytica*" 20
- 3567 3697 30 "Homo sapiens, *Yersinia pestis* KIM, *Mus musculus*, *Lymantiria dispar*, *Yersinia pestis* C092, *La Crosse virus*, *Tripneustes gratilla*, *Salmonella typhimurium* LT2, *Pan troglodytes*, *Drosophila melanogaster*, *Sus scrofa*, *Salmonella typhimurium*, *Microcebus berthae*, *Staphylococcus aureus*, *Equus caballus*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Trivittatus virus*, *Schizosaccharomyces pombe*, *Danio rerio*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 3568 3698 27 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, *Medicago truncatula*, *Saccharomyces bayanus*, *Arabidopsis thaliana*, *Danio rerio*, *Mycoplasma pulmonis*" 30
- 3569 3699 23 "Homo sapiens, *Thermoanaerobacter tengcongensis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Zygosaccharomyces bisporus*"
- 3570 3700 27 "*Vibrio cholerae*, *Mus musculus*, *Homo sapiens*, *Medicago truncatula*, *Tribolium castaneum*, *Borrelia burgdorferi* B31, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Aeropyrum pernix*, *Macaca mulatta*, *Caenorhabditis elegans*, *Macaca fascicularis*, *Giardia intestinalis*"
- 3571 3701 28 "Homo sapiens, *Gallus gallus*, *Drosophila melanogaster*, *Bracon* sp., *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Xenopus laevis*, *Danio rerio*, *Arabidopsis thaliana*, *Milk vetch dwarf virus*, *Pleurotus ostreatus*" 40
- 3572 3702 28 "*Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Arabidopsis thaliana*, *Leptospira interrogans* serovar *lai* str. 56601, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Methanothermobacter thermoautotrophicus* str. Delta H, *Guillardia theta*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Anthoceros formosae*, *Paramecium tetraurelia*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Mus musculus*, *Drosophila mel*" 50

- anogaster, Chazaliella sciadephora, Phyllopetalia apicalis, Danio rerio, Human herpesvirus 2, Chlamydomonas pneumoniae CWL029, Oryza sativa (japonica cultivar-group), Plasmodium falciparum, Chlamydomonas pneumoniae AR39, Candida albicans, Podospora anserina, Leptosphaeria maculans, Chlamydomonas pneumoniae TW-183, Pan troglodytes, Bactrocera hyalina, Chlamydomonas pneumoniae J138"
- 3573 3703 27 "Haemophilus influenzae Rd KW20, Drosophila melanogaster, Homo sapiens, Mus musculus, Rattus norvegicus, Pan troglodytes, Methanosarcina mazei Goe1, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Campylobacter jejuni"
- 3574 3704 31 "Oryza sativa (japonica cultivar-group), Danio rerio, Gaasterostomus xanthurus, Arabidopsis thaliana, Homo sapiens, Mus musculus, Drosophila melanogaster, Clostridium acetobutylicum, Antithamnion sp., Caenorhabditis elegans, Methanocaldococcus jannaschii" 10
- 3575 3705 27 "Mus musculus, Homo sapiens, Thermoanaerobacter tengcongensis, Lotus corniculatus var. japonicus, Caenorhabditis elegans"
- 3576 3706 24 "Homo sapiens, Escherichia coli, Escherichia coli K12, Chlamydomonas pneumoniae GPIC, Mus musculus, Alcelaphine herpesvirus 1"
- 3577 3707 26 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Danio rerio, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Rattus norvegicus, Plasmodium falciparum 3D7, Clostridium difficile, Oryza sativa (japonica cultivar-group), Magnaporthe grisea, Reclinomonas americana, Epipsocopsis sp. KY-2002, Listeria monocytogenes, Lycopersicon esculentum, Bigeloviella natans" 20
- 3578 3708 38 "Listeria innocua, Ehrlichia muris, Prochlorococcus marinus, Gossypium barbadense, Ehrlichia chaffeensis, Caenorhabditis elegans, Homo sapiens, Mus musculus, Human herpesvirus 2, Amsacta moorei entomopoxvirus, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Lactobacillus reuteri, Sus scrofa, Arabidopsis thaliana"
- 3579 3709 27 "Homo sapiens, Clostridium perfringens str. 13, Caltha appendiculata, Psychrophila novae-zealandiae, Plectranthus barbatus, Cornus florida, Cornus canadensis, Dudleya viscida, Kalanchoe daigremontiana, Achlys triphylla, Diphyllia cymosa, Cornus suecica, Tet" 30
- 3580 3710 24 "Homo sapiens, Arabidopsis thaliana, Helicobacter hepaticus ATCC 51449, Mus musculus, Drosophila melanogaster"
- 3581 3711 32 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Drosophila melanogaster, Cucumis sativus, Mycoplasma capricolum, Coccophagus moeris, Encarsia protransvena, Encarsia sophia, Encarsia formosa, Brucella melitensis 16M, Staphylococcus epidermidis ATCC 12228, Oryza sativa (japonica cultivar-group), Brucella suis 1330, Staphylococcus epidermidis, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Carcharhinus plumbeus, Arabidopsis thaliana" 40
- 3582 3712 27 "Homo sapiens, Pan troglodytes, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Medicago truncatula, Lemur catta, Dictyostelium discoideum, Staphylococcus aureus, Mus musculus, Staphylococcus aureus subsp. aureus N315, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus Mu50"
- 3583 3713 25 "Homo sapiens, Dictyostelium discoideum, Bacteroides fragilis, Phyllotis magister, Phyllotis xanthopygus vaccarum, Danio rerio, Mus musculus, Cunninghamella elegans, Listeria monocytogenes, Phyllotis xanthopygus, Pan troglodytes, Human papillomavirus type 44" 50

- 3584 3714 26 "Homo sapiens, Drosophila melanogaster, Mus musculus, Pa
pio anubis, Rattus norvegicus, Caenorhabditis elegans, Danio rerio, Haemophilus
ducreyi 35000HP, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Fe
lis catus"
- 3585 3715 23 "Mus musculus, Oryza sativa (japonica cultivar-group), H
omo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Xanthophyllomyces
dendrorhous, Danio rerio"
- 3586 3716 35 "Homo sapiens, Vibrio vulnificus CMCP6, Prochlorococcus
marinus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Bacill
us anthracis str. Ames, Pan troglodytes, Caenorhabditis elegans, Pinus taeda, Ye
rsinia pestis KIM, Sigmodon mascotensis, Danio rerio, Mus musculus, Haemophilus
ducreyi 35000HP, Yersinia pestis C092, Rattus norvegicus, Anopheles gambiae, Clo
stridium perfringens str. 13" 10
- 3587 3717 33 "Yersinia pestis KIM, Yersinia pestis C092, Homo sapiens
, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Legionella pneumophila, C
aenorhabditis elegans, Arabidopsis thaliana, Rattus norvegicus, Bombyx mori"
- 3588 3718 43 "Nostoc sp. PCC 7120, Mus musculus, Homo sapiens, Clostr
idium acetobutylicum"
- 3589 3719 23 "Drosophila melanogaster, Homo sapiens, Danio rerio, Nit
rosomonas europaea ATCC 19718" 20
- 3590 3720 28 "Homo sapiens, Rickettsia conorii, Arabidopsis thaliana,
Danio rerio, Dictyostelium discoideum, Streptococcus gordonii, Legionella pneum
ophila, Rickettsia prowazekii, Reclinomonas americana, Oryza sativa (japonica cu
ltivar-group), Mus musculus, Clostridium perfringens str. 13"
- 3591 3721 27 "Homo sapiens, Mus musculus, Leptospira interrogans sero
var lai str. 56601, Plasmodium falciparum 3D7, Lycopersicon esculentum, Docophor
oides simplex, Platyphora eucosma, Sulfolobus solfataricus, Candidatus Blochmann
ia floridanus, Listeria monocytogenes"
- 3592 3722 28 "Homo sapiens, Mus musculus, Dictyostelium discoideum, B
uchnera aphidicola, Arabidopsis thaliana, Caenorhabditis elegans, Drosophila mel
anogaster, Prochlorococcus marinus, Sus scrofa, Danio rerio, Simian immunodefici
ency virus, Saccharomyces cerevisiae" 30
- 3593 3723 28 "Homo sapiens, Mus musculus, Human immunodeficiency viru
s 1, Arabidopsis thaliana, Bacteroides thetaiotaomicron VPI-5482, Clostridium te
tani E88, Caenorhabditis elegans"
- 3594 3724 23 "Homo sapiens, Danio rerio, Sulfolobus tokodaii, Oryza s
ativa (japonica cultivar-group), Procladius villosimanus, Drosophila melanogaste
r, Caenorhabditis elegans, Plasmodium falciparum 3D7, Mus musculus, Pan troglody
tes, Oryza sativa, Nosema tyriae, Ciona intestinalis, Equine herpesvirus 4, Emer
icella nidulans" 40
- 3595 3725 35 "Oryza sativa (japonica cultivar-group), Enterococcus fa
ecalis V583, Vibrio vulnificus CMCP6, Arabidopsis thaliana, Mus musculus, Homo s
apiens, Lymphocystis disease virus 1, Ectocarpus siliculosus virus, Sulfolobus t
okodaii, Lymphocystis disease virus, Nostoc sp. PCC 7120, Drosophila melanogaste
r, Xylella fastidiosa Temecula1, Pan troglodytes, Danio rerio, Plasmodium falcip
arum 3D7, Porphyromonas gingivalis W83, Cryptosporidium parvum, Schizosaccharomy
ces pombe"
- 3596 3726 35 "Danio rerio, Homo sapiens, Mus musculus, Plasmodium fal
ciparum 3D7, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thal
iana, Oryza sativa (japonica cultivar-group), Bacillus halodurans, Bacillus anth 50

- racis str. Ames, Clostridium tetani E88, Drosophila erecta, Sus scrofa, Lycopersicon esculentum, Fusobacterium mortiferum, Saccharomyces cerevisiae, Lotus corniculatus var. japonicus, Galega orientalis"
- 3597 3727 21 "Drosophila melanogaster, Columnea schiedeana, Homo sapiens, Kohleria spicata, Paradyrmonia fuquaiana, Paradyrmonia aurea, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 3598 3728 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Arabidopsis thaliana, Mus musculus, Pan troglodytes, Danio rerio"
- 3599 3729 27 "Homo sapiens, Medicago truncatula, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Gasterosteus aculeatus, Mesorhizobium loti, Drosophila melanogaster, Mus musculus, Porcine lymphotropic herpesvirus 1, Arabidopsis thaliana, Carpodacus mexicanus, Caenorhabditis elegans, Pan troglodytes" 10
- 3600 3730 26 "Danio rerio, Mus musculus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Homo sapiens, Oryza sativa, Prochlorococcus marinus, Oryctolagus cuniculus, Dichelobacter nodosus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Dictyostelium discoideum, Arabidopsis thaliana, Staphylococcus carnosus, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Plagiopus oederianus, Teleogryllus emma" 20
- 3601 3731 28 "Homo sapiens, Mus musculus, Danio rerio, Clostridium perfringens str. 13, Plasmodium falciparum 3D7, Rickettsia prowazekii, Ureaplasma urealyticum, Chryseobacterium meningosepticum, Treponema vincentii, Treponema phagedenis, Schizosaccharomyces pombe, Oryza sativa (japonica cultivar-group), Prunus persica, Dictyostelium discoideum, Pan troglodytes, Xenopus laevis, Schmidtea mediterranea, Branchiostoma floridae, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mycoplasma pulmonis, Arabidopsis thaliana, Bacillus subtilis subsp. subtilis str. 168, Melanoplus sanguinipes entomopoxvirus, Sulfolobus islandicus, Bacillus subtilis"
- 3602 3732 30 "Drosophila melanogaster, Homo sapiens, Mus musculus, Drosophila virilis, Anopheles gambiae, Mus sp., Shigella flexneri 2a str. 2457T, Aplysia californica, Dysaphis plantaginea, Pseudomonas syringae pv. tomato str. DC3000, Saccharomyces bayanus, Escherichia coli CFT073, Saccharomyces cerevisiae, Shigella flexneri 2a str. 301, Eimeria tenella, Shrimp white spot syndrome virus, Anopheles funestus, Arabidopsis thaliana, Colletotrichum trifolii, Escherichia coli O157:H7 EDL933" 30
- 3603 3733 28 "Danio rerio, Mus musculus, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Prochlorococcus marinus, Arabidopsis thaliana, Drosophila melanogaster, Lycopersicon esculentum, Caenorhabditis elegans, Oryctolagus cuniculus, Haemophilus influenzae, Solanum bulbocastanum, Haemophilus ducreyi 3500 OHP, Haemophilus influenzae Rd KW20" 40
- 3604 3734 27 "Homo sapiens, Danio rerio, Mus musculus, Thermoanaerobacter tengcongensis, Pyrococcus furiosus DSM 3638, Beta vulgaris, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Drosophila melanogaster, Choristoneura fumiferana granulovirus, Streptococcus mutans UA159, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Ciona intestinalis, Pyrococcus horikoshii, Haemophilus influenzae Rd KW20, Clostridium perfringens str. 13"
- 3605 3735 24 "Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Homo sapiens, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Mus musculus, Drosophila melanogaster, Orchesella dallaii, Agaricus bitorquis, Lycopers" 50

icon pennellii"

- 3606 3736 40 "Streptococcus agalactiae NEM316, Streptococcus agalactiae 2603V/R, Homo sapiens, Mycoplasma penetrans, Mus musculus, Oryza sativa (japonica cultivar-group), Haemophilus phage HP1"
- 3607 3737 49 "Campylobacter jejuni subsp. jejuni NCTC 11168, Homo sapiens, Methanocaldococcus jannaschii, Mus musculus, Babesia bovis, Clostridium tetani E88, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Bacillus sphaericus"
- 3608 3738 45 "Griffithsia pacifica, Cyanidium caldarium, Cyanidioschyzon merolae, Thermosynechococcus elongatus BP-1, Homo sapiens, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Pasteurella" 10
- 3609 3739 29 "Homo sapiens, Rattus norvegicus, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Pan troglodytes, Danio rerio"
- 3610 3740 26 "Homo sapiens, Methanocaldococcus jannaschii, Sulfolobus acidocaldarius, Mus musculus, Danio rerio, Giardia intestinalis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Paramecium primaurelia, Clostridium perfringens str. 13"
- 3611 3741 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Bombus mesomelas, Mus musculus, Arabidopsis thaliana, Pyrobaculum aerophilum str. IM2, Haemophilus ducreyi 35000HP" 20
- 3612 3742 29 "Mus musculus, Plasmodium falciparum 3D7, Lactobacillus plantarum WCFS1, Medicago truncatula, Homo sapiens, Danio rerio, Caenorhabditis elegans, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae"
- 3613 3743 27 "Homo sapiens, Mus musculus, Pyrococcus sp., Pyrococcus abyssi, Mycoplasma penetrans, Pyrococcus horikoshii"
- 3614 3744 35 "Treponema pallidum, Clostridium acetobutylicum, Homo sapiens, Candidatus Blochmannia floridanus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Coxiella burnetii RSA 493, Prochlorococcus marinus, Oncorhynchus nerka, Haemophilus ducreyi, Haemophilus ducreyi 35000HP, Bacillus subtilis subsp. subtilis str. 168, Oryza sativa (japonica cultivar-group), Thermotoga maritima, Lactuca sativa, Bacillus subtilis" 30
- 3615 3745 35 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Oryzias latipes, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Danio rerio, Brassica napus, Plasmodium falciparum, Xenopus laevis"
- 3616 3746 39 "Mus musculus, Saccharomyces cerevisiae, Stealth virus 1, Vibrio vulnificus CMCP6, Oryza sativa (japonica cultivar-group), Homo sapiens, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 40
- 3617 3747 25 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Anopheles gambiae, Trichostrongylus colubriformis, Drosophila melanogaster"
- 3618 3748 55 "Haemophilus ducreyi 35000HP, Pisum sativum, Homo sapiens, Arabidopsis thaliana, Strongylocentrotus purpuratus, Xenopus laevis, Mus musculus, Pasteurella multocida, Lotus corniculatus var. japonicus, Danio rerio"
- 3619 3749 31 "Mus musculus, Homo sapiens, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Canis familiaris, 50

- Plasmodium falciparum 3D7, Cicer arietinum, Danio rerio, Arabidopsis thaliana, Clostridium perfringens str. 13"
- 3620 3750 25 "Methanosarcina acetivorans C2A, Brassica oleracea var. botrytis, Oryza sativa, Oryza sativa (japonica cultivar-group), Danio rerio, Homo sapiens, Ciona intestinalis, Mus musculus, Drosophila melanogaster, Xenopus laevis, Caenorhabditis elegans, Loligo pealei"
- 3621 3751 23 "Mus musculus, Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Lilium davidii, Pinus thunbergii"
- 3622 3752 27 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Drosophila melanogaster, Clostridium beijerinckii, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Silurana tropicalis, Clostridium acetobutylicum" 10
- 3623 3753 28 "Oryza sativa (japonica cultivar-group), Homo sapiens, Oryza sativa, Tobacco rattle virus, Arabidopsis thaliana, Mus musculus, Rattus norvegicus, Clostridium acetobutylicum, Clostridium difficile, Danio rerio, Cloning vector pMG105, Cloning vector pMG103, Pyrococcus horikoshii, Methanocaldococcus jannaschii, Rhodopseudomonas palustris"
- 3624 3754 24 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Buchnera aphidicola, Clostridium acetobutylicum, Rattus norvegicus, Oryzias latipes" 20
- 3625 3755 27 "Vibrio vulnificus CMCP6, Pseudaspis cana, Shigella flexneri 2a str. 2457T, Homo sapiens, Borrelia burgdorferi B31, Mus musculus, Shigella flexneri 2a str. 301, Gallid herpesvirus 2, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi, Felis catus"
- 3626 3756 23 "Rattus norvegicus, Mus musculus, Homo sapiens, Lactococcus lactis subsp. lactis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio"
- 3627 3757 24 "Mus musculus, Homo sapiens, Danio rerio, Ruminococcus sp., Nicotiana glauca, Arabidopsis thaliana, Crithidia fasciculata, Oryza sativa (japonica cultivar-group)" 30
- 3628 3758 27 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Drosophila littoralis, Streptococcus mutans UA159, Rattus norvegicus, Pantropodites, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mycoplasma genitalium, Thermotoga maritima, Dictyostelium discoideum, Trypanosoma brucei, Danio rerio, Synechocystis sp. PCC 6803"
- 3629 3759 27 "Homo sapiens, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Plasmodium falciparum 3D7, Aphidius rosae, Caenorhabditis elegans, Schizosaccharomyces pombe, Arabidopsis thaliana"
- 3630 3760 29 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Medicago truncatula, Medicago sativa subsp. x varia, Rattus norvegicus, Clostridium acetobutylicum, Lupinus albus, Zea mays, Arabidopsis thaliana, Saccharomyces cerevisiae, Listeria monocytogenes, Danio rerio, Methanocaldococcus jannaschii" 40
- 3631 3761 27 "Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Gallus gallus, Drosophila melanogaster, Zea mays, Hexachaeta fallax, Bactrocera correcta, Verrallia virginica, Nephrocera daeckei, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Lactococcus lactis, Danio rerio, Schizosaccharomyces pombe, Rattus norvegicus"
- 3632 3762 28 "Homo sapiens, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Medicago truncatula, Borrelia burgdorferi B31, Aquifex aeoli" 50

- cus VF5, *Streptococcus agalactiae* 2603V/R, *Lactococcus lactis* subsp. *lactis*, *Paramecium aurelia*, *Danio rerio*, *Streptococcus agalactiae* NEM316, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Mycoplasma penetrans*, *Entamoeba histolytica*, *Paramecium tetraurelia*"
- 3633 3763 39 "Homo sapiens, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, *Oryza sativa* (japonica cultivar-group), *Didelphis virginiana*, *Streptococcus agalactiae* 2603V/R, *Mus musculus*, *Caenorhabditis elegans*, *Streptococcus agalactiae* NEM316, *Ciona intestinalis*, Blue River virus" 10
- 3634 3764 32 "*Plasmodium falciparum* 3D7, *Danio rerio*, *Mus musculus*, *Homo sapiens*, *Ureaplasma urealyticum*, *Oryza sativa* (japonica cultivar-group), *Zea mays*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Ocnaea* sp. SLW-2002c, *Schizosaccharomyces pombe*, *Staphylococcus aureus*, *Caenorhabditis elegans*, *Staphylococcus aureus* subsp. *aureus* Mu50" 10
- 3635 3765 30 "*Homo sapiens*, *Helianthus annuus*, *Caenorhabditis elegans*, *Clostridium perfringens* str. 13, *Plasmodium falciparum*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Arabidopsis thaliana*, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Dictyostelium discoideum*, *Streptococcus thermophilus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis briggsae*, *Ureaplasma urealyticum*, *Macaca fascicularis*, *Mycoplasma penetrans*, *Erinaceus europaeus*, *Methanocaldococcus jannaschii*, *Xenopus laevis*, *Crocidura russula*" 20
- 3636 3766 28 "*Mus musculus*, *Ciona intestinalis*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Enterococcus faecalis* V583, *Homo sapiens*, *Methanosarcina acetivorans* C2A, *Trypanosoma brucei brucei*, *Trypanosoma brucei*, *Clostridium beijerinckii*, Human immunodeficiency virus 1, *Aquifex aeolicus* VF5, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Streptococcus pneumoniae* bacteriophage MM1, *Macaca fascicularis*, *Methanocaldococcus jannaschii*" 30
- 3637 3767 33 "*Lactococcus lactis* subsp. *lactis*, Bacteriophage bIL312, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Homo sapiens*, *Mus musculus*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Medicago truncatula*, *Oryza sativa*, *Escherichia coli* K12, *Escherichia coli*, *Bacillus halodurans*, *Clostridium perfringens* str. 13, *Hordeum vulgare*, *Staphylococcus epidermidis* ATCC 12228, *Oryza sativa* (japonica cultivar-group), *Borrelia burgdorferi* B31, *Drosophila littoralis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Sulfolobus solfataricus*, *Streptococcus pneumoniae*, *Staphylococcus epidermidis*, *Caenorhabditis elegans*, *Glycine max*, *Schizosaccharomyces pombe*"
- 3638 3768 39 "*Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Medicago truncatula*, *Sulfolobus tokodaii*, *Pyrococcus abyssi*, *Homo sapiens*, *Danio rerio*, *Vibrio cholerae*, *Saccharomyces cerevisiae*, *Arabidopsis thaliana*, *Sulfolobus solfataricus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Thermoplasma volcanium*, *Pyrococcus horikoshii*, *Methanocaldococcus jannaschii*" 40
- 3639 3769 24 "*Homo sapiens*, *Pan troglodytes*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*, *Helicobacter pylori* J99, *Staphylococcus intermedius*"
- 3640 3770 34 "*Staphylococcus aureus*, *Homo sapiens*, *Neurospora crassa*, *Mus musculus*, *Mycoplasma gallisepticum* R, *Triticum monococcum*, *Aegilops tauschii*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Shewanella*" 50

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- 3641 3771 32 "Azotobacter vinelandii, Homo sapiens, Oryza sativa (japonica cultivar-group), Lactobacillus collinoides, Arabidopsis thaliana"
- 3642 3772 26 "Danio rerio, Arabidopsis thaliana, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Medicago truncatula, Caenorhabditis elegans, Felis catus"
- 3643 3773 24 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Arabidopsis thaliana, Tetrahymena thermophila, Clostridium bifermentans"
- 3644 3774 34 "Homo sapiens, Danio rerio, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Bufo japonicus, Arabidopsis thaliana, Nasonia vitripennis, Haemophilus ducreyi 35000HP, Yam mosaic virus, Mycoplasma hyopneumoniae, Tetraodon nigroviridis" 10
- 3645 3775 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Archaeoglobus fulgidus DSM 4304, Mus musculus, Sus scrofa, Oceanobacillus iheyensis HTE831, Rattus norvegicus"
- 3646 3776 27 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Photobacterium profundum, Legionella pneumophila" 20
- 3647 3777 23 "Escherichia coli, Mus musculus, Homo sapiens, Caenorhabditis elegans, Neurospora crassa, Medicago truncatula, Danio rerio, Pan troglodytes, Chlorella vulgaris"
- 3648 3778 24 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Methanosarcina acetivorans C2A, Arabidopsis thaliana"
- 3649 3779 24 "Leioheterodon modestus, Arabidopsis thaliana, Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus"
- 3650 3780 25 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831" 30
- 3651 3781 26 "Homo sapiens, Hepatus epheliticus, Danio rerio, Arabidopsis thaliana, Mus musculus, Oceanobacillus iheyensis HTE831, Pan troglodytes, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Pyrococcus horikoshii"
- 3652 3782 23 "Octopus vulgaris, Homo sapiens, Mus musculus, Arabidopsis thaliana, Spinacia oleracea, Schizosaccharomyces pombe"
- 3653 3783 84 "Guillardia theta, Buchnera aphidicola str. Bp (Baizongia pistaciae), Prochlorococcus marinus, Candidatus Blochmannia floridanus, Chaetosphaeridium globosum, Nostoc sp. PCC 7120, Homo sapiens, Streptococcus mutans UA159, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Mus musculus, Cyanophora paradoxa" 40
- 3654 3784 24 "Drosophila melanogaster, Vaucheria dilwynii, Vaucheria bursata, Porphyra papenfussii, Homo sapiens, Kallymenia rosea, Hildenbrandia rubra, Paralemanea annulata, Laurencia intricata, Methanothermobacter thermoautotrophicus str. Delta H, Danio rerio, Plasmodium falciparum 3D7, Glycine max"
- 3655 3785 40 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Candidatus Blochmannia floridanus, Spiroplasma citri, Clostridium tetani E88, Oceanobacillus iheyensis HTE831, Cyanophora paradoxa, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Oryza sativa, Bacillus cereus, Campylobacter jejuni subsp. jejuni NCTC 11168, Homo sapiens, Drosophila melanogaster, Arabidopsis thali 50

- ana, *Mus musculus*, *Caenorhabditis elegans*, *Cordyceps capitata*"
- 3656 3786 31 "Homo sapiens, *Mus musculus*, *Streptococcus agalactiae* 26 03V/R, *Methanosarcina mazei* Goe1, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*"
- 3657 3787 77 "Staphylococcus epidermidis ATCC 12228, *Clostridium perfringens* str. 13, *Listeria monocytogenes*, *Listeria innocua*, *Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. *aureus* MW2, *Thermoanaerobacter tengcongensis*, *Bacillus cereus* ATCC 14579, *Bacillus*"
- 3658 3788 35 "Caenorhabditis elegans, Homo sapiens, *Oryctolagus cuniculus*, *Mus musculus*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lactococcus lactis* subsp. *lactis*, *Enterococcus faecalis*, *Candida albicans*, *Porphyra purpurea*, *Arabidopsis thaliana*" 10
- 3659 3789 29 "Homo sapiens, *Mus musculus*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Arabidopsis thaliana*, Potato witches'-broom phytoplasma, *Oryza sativa* (japonica cultivar-group), *Parechinus angulosus*, *Caenorhabditis briggsae*, *Schizosaccharomyces pombe*, *Staphylococcus aureus*, *Staphylococcus aureus* prophage phiPV83"
- 3660 3790 41 "Porphyra purpurea, *Exhylella natalensis*, Homo sapiens, *Prunus persica*, *Danio rerio*, *Bacillus halodurans*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mus musculus*, *Prochlorococcus marinus*, *Vibrio cholerae*, *Anopheles gambiae*" 20
- 3661 3791 26 "Mus musculus, Homo sapiens, *Danio rerio*, *Saccharomyces cerevisiae*, *Saccharomyces pastorianus*"
- 3662 3792 29 "Bacillus cereus ATCC 14579, Homo sapiens, *Arabidopsis thaliana*, *Sulfolobus solfataricus*, *Felis catus*, *Thermoanaerobacter tengcongensis*, *Mus musculus*, *Oceanobacillus iheyensis* HTE831, *Rattus norvegicus*"
- 3663 3793 24 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis*, *Haemophilus influenzae* biotype *aegyptius*, *Arabidopsis thaliana*, *Guillardia theta*" 30
- 3664 3794 25 "Medicago truncatula, Homo sapiens, *Xenopus laevis*, *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Thermoanaerobacter tengcongensis*, *Bos taurus*, *Prochlorococcus marinus*, *Pyrococcus abyssi*, *Plasmodium falciparum* 3D7, *Ciona intestinalis*"
- 3665 3795 30 "Arabidopsis thaliana, Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Danio rerio*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, uncultured bacterium, *Schizosaccharomyces pombe*"
- 3666 3796 23 "Homo sapiens, *Oryza sativa* (indica cultivar-group), *Paratuberculosis varia*, *Myxocyprinus asiaticus*, *Lactococcus lactis* subsp. *lactis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Entamoeba invadens*" 40
- 3667 3797 28 "Danio rerio, Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*, *Medicago truncatula*"
- 3668 3798 27 "Mus musculus, Homo sapiens, *Plasmodium falciparum* 3D7, *Papio anubis*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Caenorhabditis elegans*, *Plasmodium falciparum*, *Avian infectious bronchitis virus*"
- 3669 3799 24 "Homo sapiens, *Papio anubis*, *Mus musculus*, *Gallus gallus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Rattus norvegicus*, *Melanoplus sanguinipes* entomopoxvirus, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Drosop* 50

- hila melanogaster, Graphocephala cythura, "
- 3670 3800 23 "Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Methanosarcina acetivorans C2A, Vibrio phage CTX, Campylobacter jejuni sub sp. jejuni NCTC 11168, Saccharomyces cerevisiae, Mus musculus"
- 3671 3801 27 "Homo sapiens, Mus musculus, Pan troglodytes, Plasmodium falciparum 3D7, Rickettsia prowazekii, Arabidopsis thaliana, Schizosaccharomyces pombe"
- 3672 3802 35 "Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus Mu50, Drosophila melanogaster, Escherichia coli CFT073, Magnaporthe grisea, Escherichia coli 0157:H7 EDL933, Mus musculus, Escherichia coli K12, Crithidia oncopelti, Danio rerio, Escherichia coli, Escherichia coli 0157:H7, Pan troglodytes, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group)" 10
- 3673 3803 29 "Danio rerio, Homo sapiens, Mus musculus, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Felis catus, Debaryomyces hansenii"
- 3674 3804 27 "Homo sapiens, Mus musculus, Chlamydia muridarum, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group), Gallus gallus" 20
- 3675 3805 29 "Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Rattus norvegicus, Dictyostelium discoideum, Caenorhabditis elegans, Sorghum bicolor, Gallus gallus, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Clostridium difficile, uncultured crenarchaeote 74A4, Sulfolobus solfataricus, Streptococcus agalactiae, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Nostoc sp. PCC 7120"
- 3676 3806 31 "Caenorhabditis elegans, Homo sapiens, Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Danio rerio" 30
- 3677 3807 20 "Homo sapiens, Mus musculus, Bovine adenovirus 1"
- 3678 3808 58 "Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Haemophilus ducreyi 3500HP, Enterococcus faecalis V583, Clostridium acetobutylicum, Haemophilus influenzae Rd KW20, Clostridium perfringens str. 13, Mus musculus, Homo sapiens, Clostridium tetani E88, Equus caballus, Oryza sativa (japonica cultivar-group), Melanthium parviflorum, Melanthium latifolium, Melanthium virginicum, Veratrum maackii, Melanthium woodii, Veratrum fimbriatum, Veratrum viride, Veratrum album, Veratrum californicum, Cirrhaea dependens, Human immunodeficiency virus 1, Listeria innocua" 40
- 3679 3809 48 "Campylobacter jejuni subsp. jejuni NCTC 11168, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Pan troglodytes, Oryza sativa (japonica cultivar-group), Mus musculus, Helicobacter hepaticus ATCC 51449, Shewanella oneidensis MR-1, Sulfolobus tokodaii, Danio rerio, Ciona intestinalis"
- 3680 3810 28 "Nostoc sp. PCC 7120, Mus musculus, Shigella flexneri 2a str. 2457T, Shigella flexneri 2a str. 301, Plasmodium falciparum 3D7, Homo sapiens, Streptococcus pyogenes M1 GAS, Escherichia coli 0157:H7 EDL933, Neurospora intermedia, Danio rerio, Escherichia coli "

- 3681 3811 24 "Mycoplasma fermentans, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Homo sapiens, Mycoplasma pulmonis "
- 3682 3812 49 "Rickettsia conorii, Danio rerio, Homo sapiens, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Haemophilus ducreyi 3500 OHP, Prochlorococcus marinus subsp. marinus str. CCMP1375, Mus musculus, Bacillus halodurans, Pan troglodytes, Arabidopsis thaliana, Listeria monocytogenes, Clostridium perfringens str. 13, Clostridium acetobutylicum, Schistosoma japonicum, Staphylococcus aureus, Drosophila melanogaster, Plasmodium falciparum 3D7, Schistosoma mansoni, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50" 10
- 3683 3813 34 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Vibrio vulnificus CMCP6, Homo sapiens, Xenopus laevis, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Nostoc sp. PCC 7120, Salmonella typhimurium LT2, Candidatus Blochmannia floridanus, Anabaena variabilis, Lactobacillus plantarum W CFS1, Mus musculus, Streptococcus mutans UA159, Arabidopsis thaliana, Salmo salar, Danio rerio, Neurospora crassa, Listeria monocytogenes"
- 3684 3814 44 "Homo sapiens, Macaca fascicularis, Mus musculus, Caenorhabditis elegans, Chlamydomonas reinhardtii, Chlamydomonas reinhardtii AR39, Chlamydomonas reinhardtii J138, Chlamydomonas reinhardtii TW-183, Ixodes ricinus, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Smintopsis macroura, Clostridium tetani E88, Schmidtea mediterranea, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Lotus corniculatus var. japonicus, Clostridium perfringens str. 13" 20
- 3685 3815 23 "Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Haemophilus ducreyi 3500HP, Danio rerio, Papio anubis"
- 3686 3816 39 "Mycoplasma penetrans, Clostridium perfringens str. 13, Homo sapiens, Mus musculus, Vibrio parahaemolyticus, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis, Saccharomyces cerevisiae, Nostoc sp. PCC 7120, Bacillus megaterium" 30
- 3687 3817 23 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Acanthodactylus erythrurus, Heterodoxus macropus, Rattus norvegicus, Brassica napus"
- 3688 3818 29 "Homo sapiens, Mus musculus, Danio rerio, Medicago truncatula, Pan troglodytes, Leishmania major, Drosophila melanogaster, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Dictyostelium discoideum, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Anopheles gambiae, Tetrahymena thermophila, Rattus norvegicus, Halocynthia roretzi, Staphylococcus aureus subsp. aureus Mu50" 40
- 3689 3819 28 "Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Lemur catta, Mus musculus, Danio rerio, Arabidopsis thaliana"
- 3690 3820 44 "Bacillus anthracis str. Ames, Bacillus cereus ATCC 14579, Lactococcus lactis subsp. lactis, Coxiella burnetii RSA 493, Enterococcus faecalis V583, Mus musculus, Homo sapiens, Oreochromis niloticus, Plasmodium falciparum 3D7, Pyrobaculum aerophilum str. IM2, Oryza sativa (indica cultivar-group), 50

- Theileria annulata*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group)"
- 3691 3821 27 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Chlamydomonas reinhardtii*, *Drosophila melanogaster*, *Chlamydomonas reinhardtii*, *Rattus norvegicus*, *Macaca fascicularis*, *Poncirus trifoliata*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Drosophila mediopunctata*, *Listeria monocytogenes*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Treponema pallidum*, *Danio rerio*, *Venerupis (Ruditapes) philippinarum*"
- 3692 3822 26 "Oryza sativa (japonica cultivar-group), *Arabidopsis thaliana*, *Amaranthus hybridus*, *Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*, *Clostridium tetani* E88, *Human papillomavirus type 65*" 10
- 3693 3823 31 "Homo sapiens, *Shigella flexneri* 2a str. 2457T, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Escherichia coli*, *Escherichia coli* O157:H7 EDL933, *Escherichia coli* K12, *Cavia porcellus*, *Escherichia coli* O157:H7, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Arabidopsis thaliana*"
- 3694 3824 55 "Plasmodium falciparum 3D7, *Plasmodium falciparum*, *Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Clostridium tetani* E88, *Schmidtea mediterranea*, *Arabidopsis thaliana*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Danio rerio*, *Buchnera aphidicola* str. " 20
- 3695 3825 25 "Mus musculus, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Clostridium tetani* E88, *Caenorhabditis elegans*"
- 3696 3826 31 "Homo sapiens, *Mus musculus*, *Xylella fastidiosa* Temecula 1, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Oryza sativa* (japonica cultivar-group), *Clostridium cellulovorans*, *Vibrio parahaemolyticus*, *Danio rerio*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375"
- 3697 3827 25 "Elanoides forficatus, *Homo sapiens*, *Mus musculus*, *Sulfolobus tokodaii*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Dendrographa alectoroides* f. *alectoroides*, *Dendrographa alectoroides* f. *parva*, *Danio rerio*, *Staphylococcus aureus*, *Pan troglodytes*" 30
- 3698 3828 28 "Homo sapiens, *Shrimp white spot syndrome virus*, *Mycoplasma pulmonis*, *Vicia narbonensis*, *Mus musculus*, *Medicago truncatula*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Sulfolobus solfataricus*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Danio rerio*, *Chilo iridescent virus*, *Vicia faba*, *Solanum tuberosum*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Staphylococcus aureus*, *Methanocaldococcus jannaschii*, *Ovine adenovirus 7*" 40
- 3699 3829 29 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Sulfolobus solfataricus*, *Danio rerio*"
- 3700 3830 23 "Homo sapiens, *Danio rerio*, *Clostridium perfringens* str. 13, *Mus musculus*, *Drosophila melanogaster*, *Methanosarcina acetivorans* C2A, *Oryza sativa* (japonica cultivar-group)"
- 3701 3831 25 "Arabidopsis thaliana, *Homo sapiens*, *Mus musculus*, *Clostridium tetani* E88, *Entamoeba histolytica*, *Caenorhabditis elegans*"
- 3702 3832 23 "Drosophila melanogaster, *Saccharomyces kluyveri*, *Homo sapiens*, *Mus musculus*" 50

- 3703 3833 27 "Homo sapiens, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Coxiella burnetii RSA 493, Rattus norvegicus, Rickettsia prowazekii, Caenorhabditis briggsae, Arabidopsis thaliana, Caenorhabditis elegans, Archilina deceptoria"
- 3704 3834 23 "Gallus gallus, Rattus norvegicus, Homo sapiens, Mus musculus, Campylobacter jejuni, Arabidopsis thaliana, Prevotella sp. RS2, Borrelia duttonii"
- 3705 3835 27 "Homo sapiens, Heliconius clysonymus, Arabidopsis thaliana, Drosophila melanogaster, Pinguicoccus pyrenoidosus, Caenorhabditis elegans, Mus musculus, Rattus norvegicus" 10
- 3706 3836 33 "Homo sapiens, Drosophila melanogaster, Bacillus cereus, Arabidopsis thaliana, Mus musculus"
- 3707 3837 31 "Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus, Danio rerio, Arabidopsis thaliana, Medicago truncatula, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Plasmodium falciparum 3D7, Streptococcus p"
- 3708 3838 28 "Pan troglodytes, Homo sapiens, Medicago truncatula, Plasmodium falciparum 3D7, Mus musculus, Lotus corniculatus var. japonicus, Danio rerio, Clostridium perfringens str. 13, Trypanosoma cruzi, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rattus norvegicus, Caenorhabditis elegans, Sulfolobus tokodaii, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Smintopsis macroura, Borrelia burgdorferi B31, Crypteronia paniculata, Drosophila melanogaster, Arabidopsis thaliana, Apocryptophagus sp. GW700, Bacillus anthracis str. A2 012, Gossypium hirsutum, Myoxanthus uncinatus" 20
- 3709 3839 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Entamoeba histolytica, Mus musculus, Caenorhabditis elegans"
- 3710 3840 30 "Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Clostridium perfringens str. 13, Toxotrypana curvicauda, Danio rerio, Xenopus laevis, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Borrelia burgdorferi B31, Drosophila melanogaster, Plasmodium falciparum 3D7, Saccharomyces castellii, Arabidopsis thaliana, Glycine max, Clostridium acetobutylicum, Caenorhabditis elegans, Mycoplasma pulmonis, Plasmodium falciparum, Strongylocentrotus purpuratus, Sulfolobus tokodaii, Salmonella enterica subsp. enterica serovar Typhi, Schizosaccharomyces pombe, Rattus norvegicus, Candida glabrata, Medicago truncatula, Borrelia burgdorferi, Parasorites sp. 163 4, Cataglyphis rosenhaueri, Cataglyphis velox" 30
- 3711 3841 25 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Danio rerio, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Homo sapiens, Plasmodium falciparum 3D7, Mycobacterium leprae, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Oceanobacillus ihayensis HTE831" 40
- 3712 3842 24 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Danio rerio, Drosophila melanogaster, Yersinia pestis KIM, Arabidopsis thaliana, Yersinia pestis C092, Ciona intestinalis"
- 3713 3843 39 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Arabidopsis thaliana, Bos taurus, Danio rerio, Adiantum capillus-veneris, Rattus norvegicus, Caenorhabditis elegans, Sus scrofa, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Oryza sativa, Nostoc sp. PCC 7120, Gallus gallus, Allium splendens, Allium cyaneum, Vitis vinifera" 50

- 3714 3844 31 "Mus musculus, Homo sapiens, Medicago truncatula, Enterococcus faecalis V583, Drosophila melanogaster, Schistosoma sp. CT-2002, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Escherichia coli, Arabidopsis thaliana, Vibrio cholerae, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes"
- 3715 3845 29 "Psychrobacter sp. Drosophila melanogaster, Homo sapiens, Clostridium tetani E88, Mus musculus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Streptococcus uberis, Caenorhabditis elegans, Listeria innocua, Clostridium perfringens str. 13, Enterococcus faecalis V583, Dictyostelium discoideum, Omoploites sp. CND-2002c, Xenopus laevis, Campylobacter jejuni, Arabidopsis thaliana, Pan troglodytes, Glycine max" 10
- 3716 3846 52 "Chromobacterium violaceum, Yersinia pestis KIM, Yersinia pestis C092, Escherichia coli, Escherichia coli K12, Salmonella typhimurium LT 2, Shigella flexneri 2a str. 2457T, Vibrio parahaemolyticus, Vibrio vulnificus, Vibrio fluvialis, Salmonella enterica subs"
- 3717 3847 40 "Homo sapiens, Mus musculus, Tribolium castaneum, Oryza sativa (japonica cultivar-group), Medicago truncatula, Plasmodium falciparum 3D7, Drosophila virilis, Danio rerio, Porcine parvovirus, Arabidopsis thaliana, Drosophila melanogaster, Rattus norvegicus, Caenorhabditis elegans, Pan troglodytes, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Candida parapsilosis, Schizosaccharomyces pombe, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum" 20
- 3718 3848 27 "Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Pan troglodytes, Arabidopsis thaliana, Caenorhabditis elegans, Vitis vinifera, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Drosophila melanogaster, Rickettsia prowazekii, Mycoplasma pulmonis, Clostridium perfringens, Danio rerio, Ciona intestinalis, Methanocaldococcus jannaschii, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13"
- 3719 3849 25 "Mus musculus, Homo sapiens, Danio rerio, Sulfolobus tokodaii, Schizosaccharomyces pombe" 30
- 3720 3850 61 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Clostridium acetobutylicum, Homo sapiens, Mus musculus, Nephroselmis olivacea, Enterococcus faecalis V583, Arabidopsis thaliana, Clostridium tetani E88, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rattus norvegicus, Danio rerio, Anopheles gambiae"
- 3721 3851 24 "Methanosarcina mazei Goe1, Homo sapiens, Danio rerio, Arabidopsis thaliana"
- 3722 3852 24 "Homo sapiens, Mus musculus, Danio rerio, Plasmodium berghei, Oryza sativa (japonica cultivar-group), Medicago truncatula, Oryza sativa, Drosophila melanogaster, Rickettsia conorii, Caenorhabditis elegans" 40
- 3723 3853 39 "Homo sapiens, Danio rerio, Mus musculus, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group), Sus scrofa"
- 3724 3854 112 "Coxiella burnetii RSA 493, Rickettsia conorii, Haemophilus influenzae Rd KW20, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Synechocystis sp. PCC 6803, Yersinia pestis KIM, Yersinia pestis C092, Nitrosomonas europaea ATCC 19718, Staphylococcus epider"
- 3725 3855 47 "Haemophilus influenzae Rd KW20, Caenorhabditis briggsae" 50

- , *Brachyspira hyodysenteriae*, *Shewanella oneidensis* MR-1, *Homo sapiens*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Borrelia burgdorferi* B31, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Chlamydophila pneumoniae* TW-183"
- 3726 3856 33 "Homo sapiens, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Mus musculus*, *Papio anubis*, *Methanococcus maripaludis*, *Creobius eydouxii*, *Brookesia lineata*, *Oryza sativa* (*japonica* cultivar-group), *Pisum sativum*, *Caenorhabditis briggsae*, *Danio rerio*, *Euglena longa*"
- 3727 3857 28 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Danio rerio*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Pasteurella multocida*, *Pacifastacus leniusculus*, *Caenorhabditis elegans*, *Helicobacter hepaticus* ATCC 51449, *Sparus aurata*" 10
- 3728 3858 27 "Homo sapiens, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila melanogaster*, *Arabidopsis thaliana*, *Danio rerio*, *Caenorhabditis elegans*"
- 3729 3859 33 "Mus musculus, *Homo sapiens*, *Chlamydia trachomatis*, *Urea plasma urealyticum*, *Vibrio vulnificus* CMCP6, *Caenorhabditis elegans*, *Felis catus*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Bacillus anthracis* str. Ames, *Papio anubis*, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Mycoplasma mycoides* subsp. *mycoides* SC, *Tetrahymena thermophila*, *Bacillus subtilis*, *Bombyx mori*, *Gallus gallus*, *Solanum tuberosum*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Clostridium perfringens* str. 13" 20
- 3730 3860 24 "Mus musculus, *Homo sapiens*, *Sorghum bicolor*, *Arabidopsis thaliana*"
- 3731 3861 24 "Homo sapiens, *Lotus corniculatus* var. *japonicus*, *Mus musculus*, *Gallus gallus*, *Thermoanaerobacter tengcongensis*, *Caenorhabditis briggsae*, *Schizosaccharomyces pombe*"
- 3732 3862 26 "Homo sapiens, *Chromobacterium violaceum*, *Drosophila melanogaster*, *Mus musculus*, *Bacillus sphaericus*, *Glomus* sp. Glo46, uncultured eukaryote, uncultured stramenopile, *Protocruzia adherens*, *Borrelia burgdorferi* B31, *Geleia swedmarkii*, *Geleia simplex*, *Geleia s*" 30
- 3733 3863 92 "Bacillus subtilis, *Bacillus subtilis* subsp. *subtilis* str. 168, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Oceanobacillus iheyensis* HTE831, *Listeria innocua*, *Listeria monocytogenes*, *Prochlorococcus marinus*, *Haemophilus ducreyi* 35000HP, *Haemophilus influenzae* Rd KW20, *Thermoanaerobacter tengcongensis*, *Borrelia burgdorferi* B31, *Shewanella oneidensis* MR-1, *Homo sapiens*, *Clostridium perfringens* str. 13, *Bacillus anthracis* str. Ames, *Daucus carota*, *Arabidopsis thaliana*, *Candidatus Blochmannia floridanus*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Vibrio cholerae*" 40
- 3734 3864 111 "Listeria monocytogenes, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Chlamydophila pneumoniae* TW-183, *Chlamydophila caviae* GPIC, *Candidatus Blochmannia floridanus*, *Bacillus halodurans*, *Listeria innocua*, *Oryza sativa* (*japonica* cultivar-group), *Shigella flexneri* 2a str. 2457T, Indian peanut clump virus D, *Escherichia coli* CFT 073, *Shigella flexneri* 2a str. 301, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli* K12, *Haemophilus ducreyi* 35000HP, *Escherichia coli*, *Escherichia coli* 0157:H7, *Homo sapiens*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Rattus norvegicus*"
- 3735 3865 80 "Mus musculus, *Rickettsia prowazekii*, *Tetrahymena pyriformis*" 50

- rmis, *Oreochromis mossambicus*, *Rickettsia conorii*, *Astatotilapia burtoni*, *Homo sapiens*, *Rattus norvegicus*, *Drosophila melanogaster*, *Oceanobacillus iheyensis* HTE 831, *Danio rerio*, *Bacillus halodurans*"
- 3736 3866 45 "Leptospira interrogans serovar lai str. 56601, *Listeria innocua*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Pasteurella multocida*, *Mus musculus*, *Homo sapiens*, *Salmonella enteritidis*, *Listeria monocytogenes*, uncultured bacterium, *Bacillus subtilis* subsp. *subtilis* str. 168, Plasmid NR79, *Bacillus subtilis*, *Medicago truncatula*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*"
- 3737 3867 31 "Homo sapiens, *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Microscilla* sp. PRE1, *Arabidopsis thaliana*, *Clostridium perfringens* str. 13, *Botryotinia fuckeliana*, *Drosophila melanogaster*, *Dictyostelium discoideum*, *Macaca mulatta*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Papio anubis*, *Trypanosoma cruzi*, *Rattus norvegicus*, *Schizosaccharomyces pombe*, *Oryza sativa* (*japonica* cultivar-group)" 10
- 3738 3868 28 "Homo sapiens, *Plasmodium falciparum* 3D7, *Danio rerio*, *Streptococcus mutans* UA159, *Mus musculus*, *Caenorhabditis elegans*, *Columba livia*"
- 3739 3869 20 "Homo sapiens, *Caenorhabditis briggsae*, *Tetrastemma elegans*, *Mus musculus*, *Danio rerio*"
- 3740 3870 23 "Homo sapiens, *Nostoc* sp. PCC 7120" 20
- 3741 3871 29 "*Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* TW-183, *Homo sapiens*, *Chlamydomonas pneumoniae* J138, *Mus musculus*, *Bacillus sphaericus*, *Salmonella typhimurium* LT2, *Sus scrofa*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Salmonella typhimurium*, *Caenorhabditis elegans*"
- 3742 3872 26 "Homo sapiens, *Medicago truncatula*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Haemophilus ducreyi* 35000HP, *Danio rerio*, *Plasmodium falciparum*, *Nostoc* sp. PCC 7120"
- 3743 3873 27 "*Lycopersicon esculentum*, *Homo sapiens*, *Mus musculus*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Candidatus Blochmannia floridanus*, *Danio rerio*, *Candida albicans*, *Takifugu rubripes*, *Rattus norvegicus*, *Drosophila melanogaster*, *Caenorhabditis briggsae*, *Schizosaccharomyces pombe*, *Rutiderma* sp., *Solanum tuberosum*, *Loligo beekeri*" 30
- 3744 3874 24 "Homo sapiens, *Lactococcus lactis* subsp. *lactis*, *Mus musculus*, *Anopheles gambiae*"
- 3745 3875 27 "*Mus musculus*, *Homo sapiens*, *Saccharomyces cerevisiae*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Vibrio cholerae*, *Solanum tuberosum*, *Drosophila subobscura*, *Oryza sativa* (*japonica* cultivar-group), *Schizosaccharomyces pombe*, *Danio rerio*" 40
- 3746 3876 28 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Mycoplasma pulmonis*, *Ureaplasma urealyticum*, *Oryza sativa* (*japonica* cultivar-group), *Schistocerca gregaria*, *Pan troglodytes*, *Medicago truncatula*, *Caenorhabditis elegans*, *Canis familiaris*, *Rattus norvegicus*, *Danio rerio*"
- 3747 3877 23 "*Chlorobium tepidum* TLS, *Chlorobium tepidum*, *Homo sapiens*, *Mus musculus*, *Mycoplasma gallisepticum* R, *Mycoplasma gallisepticum*, *Arabidopsis thaliana*, *Pyrococcus furiosus* DSM 3638, *Rickettsia prowazekii*, *Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Thermotoga maritima*"
- 3748 3878 24 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Caeno* 50

- rhabditis elegans, Drosophila pseudoobscura, Oryza sativa (japonica cultivar-group), Beta vulgaris, Coturnix japonica, Entamoeba histolytica"
- 3749 3879 24 "Clostridium perfringens str. 13, Papio hamadryas, Danio rerio, Homo sapiens, Mus musculus, Arabidopsis thaliana"
- 3750 3880 25 "Caenorhabditis briggsae, Caenorhabditis elegans, Homo sapiens, Dictyostelium discoideum, Xenopus laevis, Mus musculus, Clostridium acetobutylicum, Rickettsia montanensis, Campylobacter jejuni subsp. jejuni NCTC 11168, Amsacta moorei entomopoxvirus, Stenoptera ecuadorana"
- 3751 3881 24 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Medicago truncatula, Drosophila melanogaster" 10
- 3752 3882 24 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Homo sapiens, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Sus scrofa"
- 3753 3883 30 "Homo sapiens, Candida albicans, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Dictyostelium discoideum, Human immunodeficiency virus 1, Mus musculus, Lactococcus lactis subsp. lactis, Danio rerio"
- 3754 3884 31 "Sminthopsis macroura, Homo sapiens, Caenorhabditis elegans, Danio rerio"
- 3755 3885 23 "Danio rerio, Homo sapiens, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Rickettsia conorii, Amsacta moorei entomopoxvirus, Rickettsia slovacica, Rickettsia aeschlimannii, Rickettsia sp. Bar29, Rickettsia massiliae, Dictyostelium discoideum, Rickettsia rickettsii" 20
- 3756 3886 31 "Bacillus cereus ATCC 14579, Serranus baldwini, Homo sapiens, Melanthera nivea, Lundellianthus jaliscensis, Clibadium alatum, Danio rerio, Mus musculus, Papio anubis, Arabidopsis thaliana, Streptococcus agalactiae NE M316, Cyanidium caldarium, Chrysodidymus synuroideus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Caenorhabditis elegans"
- 3757 3887 48 "Homo sapiens, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Pan troglodytes, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Streptococcus pneumoniae R6, Mus musculus, Danio rerio" 30
- 3758 3888 39 "Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Prochlorococcus marinus subsp. marinus str. CCMP1375, Homo sapiens, Arabidopsis thaliana, Mus musculus, Oryctolagus cuniculus, Drosophila melanogaster, Pan troglodytes, Synechococcus sp. WH 8102, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)"
- 3759 3889 28 "Homo sapiens, Mus musculus, Pyrococcus furiosus DSM 3638, Caenorhabditis briggsae, Trypanosoma brucei, Neurospora crassa" 40
- 3760 3890 23 "Macaca mulatta, Homo sapiens, Pseudomonas putida KT2440, Arabidopsis thaliana, Mus musculus, Trypanosoma brucei, Danio rerio, Rattus norvegicus"
- 3761 3891 27 "Homo sapiens, Drosophila melanogaster, Arachis hypogaea, Danio rerio, Synanthedon culiciformis, Synanthedon pamphyla, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Plasmodium falciparum 3D7, Yersinia pestis KIM, Tetrahymena thermophila, Yersinia pestis, Yersinia pseudotuberculosis (type O:1b), Mycoplasma penetrans, Yersinia pestis C092, Listeria innocua, Mus musculus, Dictyostelium discoideum, Shewanella oneidensis MR-1, Aphanizomenon baltica, Sulfolobus solfataricus, Arabidopsis thaliana, Oryza sativa, Drosophila hydei, Lo 50

- tus corniculatus var. japonicus, Sulfolobus tokodaii, Oryza sativa (japonica cultivar-group), Tetrahymena borealis"
- 3762 3892 28 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Bombus defector, Bombus mendax, Xenopus laevis, Arabidopsis thaliana, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Dictyostelium discoideum, Plasmodium falciparum 3D7, Escherichia coli, Escherichia coli K12, Salmonella enterica subsp. enterica serovar Typhi, Lycopersicon esculentum"
- 3763 3893 32 "Homo sapiens, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Gaertneriomyces semiglobiferus, Dictyostelium discoideum, Mus musculus, Cicindela beneshi, Mycoplasma pulmonis, Brassica napus, Bovine adenovirus 4, Medicago truncatula, Danio rerio" 10
- 3764 3894 27 "Homo sapiens, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Human immunodeficiency virus 1, Arabidopsis thaliana, Sorghum bicolor"
- 3765 3895 31 "Sweet potato chlorotic stunt virus, Homo sapiens, Arabidopsis thaliana, Gossypium hirsutum, Plasmodium falciparum 3D7, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Kluyveromyces lactis, Danio rerio, Mus musculus, Helobdella triserialis, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Rattus norvegicus, Dictyostelium discoideum, Drosophila melanogaster, Xylella fastidiosa Temecula1, Yersinia pestis KIM, Xylella fastidiosa 9a5c, Pasteurella multocida, Oryza sativa (japonica cultivar-group), Yersinia pestis C092" 20
- 3766 3896 24 "Mus musculus, Pan troglodytes, Drosophila melanogaster, Homo sapiens, Danio rerio, Sarcina ventriculi, Rickettsia conorii, Raja radiata"
- 3767 3897 25 "Homo sapiens, Brassica napus var. napus, Mus musculus, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Euplotes octocarinatus, Pan troglodytes, Danio rerio, Oryza sativa (japonica cultivar-group), Dysmicoccus brevipes, Mycoplasma penetrans" 30
- 3768 3898 28 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Campylobacter jejuni, Saccharum officinarum, Pyrenomonas salina, Danio rerio, Nicotiana glauca, Nicotiana glauca, Caenorhabditis elegans, Drosophila melanogaster, Ictalurus punctatus, Schistosoma mansoni, Pan troglodytes, Sus scrofa, Oryza sativa (japonica cultivar-group)"
- 3769 3899 29 "Mus musculus, Homo sapiens, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Caenorhabditis elegans, Rattus norvegicus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Danio rerio, Haemophilus ducreyi 35000HP, Pirellula sp., Haemophilus ducreyi" 40
- 3770 3900 32 "Homo sapiens, Sus scrofa, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Danio rerio, Acetobacterium woodii, Chimpanzee cytomegalovirus, Hibiscus trionum, Oryza sativa (japonica cultivar-group)"
- 3771 3901 86 "Enterococcus faecalis V583, Chlorella vulgaris, Chaetopharidium globosum, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola, Mesostigma viride, Listeria innocua, Guillardia theta, Amphidinium operculatum, Euglena gracilis, Galdieria s"
- 3772 3902 39 "Mycoplasma pulmonis, Odontella sinensis, Spinacia oleracea" 50

- cea, *Arabidopsis arenosa*, *Arabidopsis suecica*, *Arabidopsis thaliana*, *Chaetosphaeridium globosum*, *Mesostigma viride*, *Helicobacter hepaticus* ATCC 51449, *Adiantum capillus-veneris*, *Medicago truncatula*, *Atropa belladonna*, *Marchantia polymorpha*, *Nicotiana tabacum*, *Pisum sativum*, *Oenothera elata* subsp. *hookeri*, *Nicotiana tomENTOSIFORMIS*, *Nicotiana sylvestris*, *Homo sapiens*, *Mus musculus*, *Antithamnion* sp., *Ureaplasma urealyticum*, *Oceanobacillus ihyensensis* HTE831, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Petunia x hybrida*, *Nephroselmis olivacea*, *Oryza sativa* (*japonica* cultivar-group), *Prototheca wickerhamii*, *Broad bean necrosis virus*, *Danio rerio*, *Pseudomonas syringae*, *Cyanophora paradoxa*, *Chlorella vulgaris*"
- 3773 3903 152 "Streptococcus bovis, Streptococcus pneumoniae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Phytophthora infestans, Guillardia theta, Haemophilus influenzae Rd KW20, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus"
- 3774 3904 126 "Helicobacter hepaticus ATCC 51449, Prochlorococcus marinus, Mycoplasma sp., Phytophthora megasperma, Prototheca wickerhamii, Schmidtea mediterranea, Psilotum nudum, Campylobacter jejuni subsp. jejuni NCTC 11168, Buchnera aphidicola, Prochlorococcus marinus "
- 3775 3905 118 "Clostridium perfringens str. 13, Campylobacter jejuni subsp. jejuni NCTC 11168, Bacillus pseudofirmus, Oceanobacillus ihyensensis HTE831, Clostridium pasteurianum, Candidatus Carsonella ruddii, Mus musculus, Homo sapiens, Chlamydomonas reinhardtii, Lotus corniculatus var. japonicus, Oryza sativa (*japonica* cultivar-group), Caenorhabditis elegans, Mesostigma viride, Human immunodeficiency virus 1, Chlamydia trachomatis, Ochrosphaera neapolitana, Arabidopsis thaliana, Rattus norvegicus"
- 3776 3906 25 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Mus musculus, Furcifer oustaleti, Escherichia coli O157:H7 EDL933, Bacillus pseudofirmus, Oceanobacillus ihyensensis HTE831, Oryza sativa (*japonica* cultivar-group), Escherichia coli O157:H7"
- 3777 3907 33 "Mus musculus, Homo sapiens, Bacillus pseudofirmus, Drosophila melanogaster, Pan troglodytes, Chilorhinus platyrhynchus, Rattus norvegicus, Schmidtea mediterranea, Zea mays, Caenorhabditis elegans, Danio rerio, Saccharomyces cerevisiae, Arabidopsis thaliana"
- 3778 3908 24 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Neorospira crassa, Drosophila melanogaster, Arabidopsis thaliana, Plasmodium falciparum 3D7, Medicago truncatula, Gallus gallus"
- 3779 3909 27 "Homo sapiens, Medicago truncatula, Danio rerio, Mus musculus, Pan troglodytes"
- 3780 3910 27 "Rickettsia prowazekii, Homo sapiens, Mus musculus, Tomato big bud phytoplasma, Staphylococcus aureus, Caenorhabditis elegans, Arabidopsis thaliana, Prochlorococcus marinus, Thermoplasma volcanium, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Sus scrofa"
- 3781 3911 44 "Homo sapiens, Bacillus anthracis str. Ames, Reclinomonas americana, Mus musculus, Staphylococcus aureus, Caenorhabditis elegans, Oryza sativa (*japonica* cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50"
- 3782 3912 38 "Rickettsia prowazekii, Arabidopsis thaliana, Homo sapiens, Mus musculus, Caenorhabditis elegans, Rickettsia conorii, Carteria obtusa, Leishmania monstroosa"

- 3783 3913 92 "Streptococcus bovis, Streptococcus pneumoniae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Mycoplasma pulmonis, Humulus lupulus, Streptococcus mutans UA159, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyog"
- 3784 3914 119 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Xenopus laevis, Buchnera aphidicola (Staticobium latifoliae), Coleochaete sp. 489a1, Coleochaete irregularis, Gonatozygon monotaenium, Coleochaete siebinskiana, Mycoplasma genitalium, Schmidte"
- 3785 3915 146 "Streptococcus mutans UA159, Cuscuta pentagona, Streptococcus mutans, Cuscuta gronovii, Cuscuta sandwichiana, Buchnera aphidicola str. Sgg (Schizaphis graminum), Nitella praelonga, Buchnera aphidicola, Buchnera aphidicola (Schizaphis graminum), Klebsormidium "
- 3786 3916 152 "Xenopus laevis, Coleochaete pulvinata, Schizosaccharomyces pombe, Equisetum telmateia, Equisetum x ferrissii, Equisetum arvense, Guillardia theta, Carteria crucifera, Chaetosphaeridium globosum, Nicotiana glauca, Huperzia lucidula, Sorghum bicolor, Dauc"
- 3787 3917 94 "Ilyobacter tartaricus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Propionigenium modestum, Candidatus Blochmannia floridanus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Xenopus laevis, Drosophila subobscura, Drosophila pseudoobscura, Staph"
- 3788 3918 29 "Homo sapiens, Caenorhabditis elegans, Giardia intestinalis, Mus musculus, Drosophila melanogaster, Hymenophyllum hirsutum, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Danio rerio, Staphylococcus aureus, Medicago truncatula"
- 3789 3919 28 "Homo sapiens, Mus musculus, Danio rerio, Oryzias latipes, Oryza sativa (japonica cultivar-group), Papio anubis, Plasmodium falciparum 3D7, Synbranchid sp. VietNam-TC-2002, Typhaeus momus, Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Caenorhabditis briggsae, Arabidopsis thaliana, Pavlova lutheri, Bombyx mori, Plesiolebias aruana, Buchnera aphidicola, Vibrio parahaemolyticus"
- 3790 3920 35 "Lycopersicon pimpinellifolium, Lycopersicon esculentum, Dictyostelium discoideum, Schizosaccharomyces japonicus, Homo sapiens, Mus musculus, Arabidopsis thaliana, Atelerix albiventris, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Caenorhabditis elegans, Lactobacillus acidophilus, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Samia cynthia ricini, Plasmodium falciparum, Oceanobacillus iheyensis HTE831, Medicago truncatula, Clostridium perfringens str. 13"
- 3791 3921 28 "Homo sapiens, Caenorhabditis elegans, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Mus musculus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Pseudocrossidium hornschurchianum, Medicago truncatula, Arabidopsis thaliana, Enterococcus faecalis V583, Oryctolagus cuniculus, Pan troglodytes, Plasmodium falciparum, Methanosarcina acetivorans C2A, Human immunodeficiency virus 1, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Corynebacterium efficiens YS-314, Trypanosoma brucei, Isolepis subtilisima, Rattus norvegicus, Helicobacter hepaticus ATCC 51449"
- 3792 3922 24 "Homo sapiens, Mus musculus, Pan troglodytes, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio"

- 3793 3923 24 "Danio rerio, Mus musculus, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum, Chlamydomonas eugametos, Oryza sativa (japonica cultivar-group), Chlamydomonas reinhardtii, Arabidopsis thaliana, Plasmodium falciparum 3D7, Oceanobacillus iheyensis HTE831, Eptatretus burgeri"
- 3794 3924 27 "Mus musculus, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Caenorhabditis elegans, Xenopus laevis, Plasmodium falciparum 3D7, Listeria monocytogenes, Arabidopsis thaliana"
- 3795 3925 24 "Homo sapiens, Lotus corniculatus var. japonicus, Medicago truncatula, Brassica oleracea, Arabidopsis thaliana, Porcine respiratory coronavirus, Caenorhabditis elegans, Mycobacterium leprae, Mus musculus, Danio rerio" 10
- 3796 3926 29 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Danio rerio, Caenorhabditis elegans, Mycoplasma pulmonis, Drosophila melanogaster, Methanosarcina acetivorans C2A, Mycoplasma pneumoniae, Saimiri sciureus, Chlamydomophila caviae GPIC, Arabidopsis thaliana"
- 3797 3927 37 "Homo sapiens, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Mus musculus, Dictyostelium discoideum, Danio rerio, Didelphis virginiana, Rattus norvegicus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Xenopus laevis, Equus caballus, Bacillus anthracis str. Ames, Drosophila melanogaster, Caenorhabditis elegans, Papio hamadryas, Swinepox virus, Calycanthus floridus var. glaucus, Lactobacillus plantarum WCFS1, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 20
- 3798 3928 28 "Homo sapiens, Plasmodium falciparum, Mus musculus, Aquifex aeolicus VF5, Microcystis aeruginosa, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Drosophila melanogaster, Clostridium acetobutylicum, Danio rerio, Melanoplus sanguinipes entomopoxvirus, Medicago truncatula"
- 3799 3929 26 "Homo sapiens, Takifugu rubripes, Oryza sativa (japonica cultivar-group), Mus musculus, Gallus gallus, Arabidopsis thaliana, Danio rerio" 30
- 3800 3930 31 "Homo sapiens, Mus musculus, Bos taurus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Campylobacter jejuni, Mycoplasma penetrans, Danio rerio, Caenorhabditis elegans, Medicago truncatula, Pan troglodytes"
- 3801 3931 23 "Homo sapiens, Mus musculus"
- 3802 3932 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Anopheles gambiae"
- 3803 3933 27 "Drosophila melanogaster, Saccharomyces cerevisiae, Homo sapiens, Mus musculus, Equus caballus, Danio rerio, Rattus norvegicus, Macaca fascicularis, Pan troglodytes, Sus scrofa, synthetic construct, Oncorhynchus mykiss" 40
- 3804 3934 25 "Sus scrofa, Homo sapiens, Pleurotus ostreatus, Arabidopsis thaliana, Mus musculus, Borrelia burgdorferi B31, Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Streptococcus pneumoniae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Caenorhabditis briggsae, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group)"
- 3805 3935 71 "Oceanobacillus iheyensis HTE831, Clostridium acetobutylicum, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Escherichia coli K12, Escherichia coli, Abies grandis, Shigella flexneri 2a str. 2457T, Escheric" 50

- Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Escherichia coli* 0157:H7 EDL933, *Cyanophora paradoxa*, *Escherichia coli* 0157:H7, *Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis*, *Haemophilus influenzae* Rd KW20, *Coxiella burnetii* RSA 493, *Mus musculus*, *Streptococcus agalactiae* 2603V/R, *Rattus norvegicus*, *Homo sapiens*, *Vibrio parahaemolyticus*, *Listeria innocua*, *Bacillus cereus* ATCC 14579, *Campylobacter fetus*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Shewanella oneidensis* MR-1, *Pasteurella multocida*, *Streptococcus agalactiae* NEM316, *Vibrio cholerae*, *Bifidobacterium longum* NCC2705, *Danio rerio*, *Candida tropicalis*"
- 3806 3936 39 "Homo sapiens, *Abies grandis*, *Glossina morsitans morsitans*, *Methanosarcina barkeri*, *Staphylococcus aureus* subsp. *aureus* MW2, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Mus musculus*, *Arabidopsis thaliana*" 10
- 3807 3937 23 "Homo sapiens, *Habronattus* sp. YUCUN, *Habronattus* sp. YESOS, *Habronattus* sp. CTARA, *Habronattus* sp. CHMLA, *Habronattus* sp. NMEX, *Habronattus virgulatus*, *Habronattus tlaxcalanus*, *Habronattus schlingeri*, *Habronattus mexicanus*, *Habronattus klauserii*, *Habronattus*"
- 3808 3938 24 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Synechocystis* sp. PCC 6803"
- 3809 3939 29 "*Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Mus musculus*, *Mycoplasma penetrans*, *Danio rerio*, *Takifugu rubripes*, *Acipenser oxyrinchus oxyrinchus*, *Plasmodium falciparum* 3D7, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Prochlorococcus marinus*, *Anolis leachi*, *Nostoc* sp. PCC 7120" 20
- 3810 3940 27 "*Sulfolobus solfataricus*, *Homo sapiens*, *Arabidopsis thaliana*, *Narcissus pseudonarcissus*, *Medicago truncatula*, *Lotus corniculatus* var. *japonicus*, *Mus musculus*"
- 3811 3941 27 "*Mus musculus*, *Homo sapiens*, *Leishmania major*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Rattus norvegicus*, *Pan troglodytes*"
- 3812 3942 39 "*Mycoplasma penetrans*, *Homo sapiens*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mycoplasma pneumoniae*, *Macaca fascicularis*, *Danio rerio*, *Rattus norvegicus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Papaya ringspot virus*, *Clostridium tetani* E88, *Listeria innocua*" 30
- 3813 3943 38 "*Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Bacillus cereus* ATCC 14579, *Oryza sativa*, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mus musculus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Trichoderma viride*, *Encephalitozoon cuniculi*, *Schizosaccharomyces pombe*"
- 3814 3944 27 "*Sarcodon imbricatus*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Nostoc* sp. PCC 7120, *Leptospira interrogans* serovar *lai* str. 56601, *Caenorhabditis elegans*, *Pan troglodytes*, *Pseudomonas putida* KT2440, *Oryza sativa*, *Lactobacillus helveticus*, *Canis familiaris*, *Apis mellifera*, *Dictyostelium discoideum*, *Kluyveromyces lactis*, *Schizosaccharomyces pombe*, *Danio rerio*, *Arabidopsis thaliana*, *Glycine max*" 40
- 3815 3945 105 "*Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis*, *Clostridium acetobutylicum*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Thermosynechococcus elongatus* BP-1, *Nicotiana tabacum*, *Lactococcus lactis* subsp. *lactis*, *Oryza sativa* (*japonica* cultivar-group), *Lycopersicon esculentum*, *Plasmodium falciparum*, *Sulfolobus acidocaldarius*, *Arabidopsis thaliana*, *Candidatus Blochmannia floridanus*" 50

- , *Capsicum annuum*, *Homo sapiens*, *Rattus norvegicus*, *Mus musculus*, *Pan troglodytes*, *Spiroplasma citri*, *Caenorhabditis briggsae*, *Nostoc* sp. PCC 7120"
- 3816 3946 25 "Mus musculus, *Homo sapiens*, *Carabus gemellatus gemellatus*, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Escherichia coli* CFT073, *Yersinia pestis* KIM, *Yersinia pestis*, *Yersinia enterocolitica*, *Oceanobacillus iheyensis* HTE831, *Yersinia pestis* C092"
- 3817 3947 28 "Mus musculus, *Homo sapiens*, *Leishmania major*, *Malus x domestica*, *Pan troglodytes*, *Methanosarcina acetivorans* C2A, *Oryza sativa* (japonica cultivar-group), *Guillardia theta*, *Actinobacillus actinomycetemcomitans*, *Lotus corniculatus* var. japonicus, *Lycopersicon esculentum*, *Danio rerio*, *Clostridium perfringens* str. 13" 10
- 3818 3948 27 "Homo sapiens, *Mus musculus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Vibrio cholerae*, *Danio rerio*"
- 3819 3949 25 "Homo sapiens, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Clostridium perfringens* str. 13, *Leptospira interrogans* serovar lai str. 56601, *Mus musculus*, *Streptococcus mutans* UA159, *Mesostigma viride*, *Yarrowia lipolytica*, *Thermoplasma volcanium*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*"
- 3820 3950 27 "Homo sapiens, *Drosophila melanogaster*, *Bacillus anthracis* str. A2012, *Bacillus cereus*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Bacillus anthracis*, *Human immunodeficiency virus 1*, *Mus musculus*, *Arabidopsis thaliana*, *Pan troglodytes*" 20
- 3821 3951 27 "Homo sapiens, *Bos taurus*, *Plasmodium reichenowi*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)"
- 3822 3952 29 "Homo sapiens, *Chironomus novosibiricus*, *Chironomus tuvanicus*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus Mu50, *Mus musculus*, *Chironomus acutiventris*, *Chironomus heterodontatus*, *Oryza sativa* (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Buchnera aphidicola*, *Danio rerio*, *Suberites domuncula*, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus*" 30
- 3823 3953 25 "Homo sapiens, *Danio rerio*, *Enterococcus faecalis* V583, *Mus musculus*, *Pityokteines sparsus*, *Ips avulsus*, *Leptospira interrogans* serovar lai str. 56601, *Borrelia burgdorferi* B31, *Medicago truncatula*, *Caenorhabditis elegans*, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Vibrio cholerae*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Chromobacterium violaceum*"
- 3824 3954 50 "Bacillus cereus ATCC 14579, *Bacillus anthracis* str. Ames, *Bacillus halodurans*, *Oceanobacillus iheyensis* HTE831, *Bacillus subtilis*, *Bacillus subtilis* subsp. subtilis str. 168, *Chlamydomonas caviae* GPIC, *Bacillus* sp., *Chlamydia muridarum*, *Chlamydomonas pneumoniae* CWL029, *Lotus corniculatus* var. japonicus, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Enterococcus faecalis* V583, *Chlamydia trachomatis*, *Mus musculus*, *Homo sapiens*, *Rattus norvegicus*, *Lactobacillus sakei*, *Nelumbo lutea*, *Bacteriophage sk1*, *Danio rerio*, *Eimeria tenella*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Clostridium acetobutylicum*, *Anas platyrhynchos*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Pan troglodytes*, *Treponema* 40

- pallidum, Clostridium perfringens str. 13"
- 3825 3955 39 "Nostoc sp. PCC 7120, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Sinorhizobium meliloti, Salmonella enterica subsp. enterica serovar Typhi Ty2, Pseudomonas aeruginosa PA01, Methanosarcina mazei Goe1, Methanosarcina acetivorans C2A, Salmonella enterica subsp. enterica serovar Typhi, Pseudomonas aeruginosa, Homo sapiens, Xanthomonas axonopodis pv. citri str. 306, Xanthomonas campestris pv. campestris str. ATCC 33913, Chromobacterium violaceum, Borrelia burgdorferi B31, Mus musculus, Thermoplasma acidophilum, Thermoplasma volcanium, Drosophila melanogaster, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Nephroselmis olivacea, Methanocaldococcus jannaschii" 10
- 3826 3956 28 "Homo sapiens, Danio rerio, Arabidopsis thaliana, Drosophila melanogaster, Sus scrofa, Noctilio leporinus, Noctilio albiventris, Legionella pneumophila, Mus musculus"
- 3827 3957 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Plasmodium falciparum 3D7, Thermoanaerobacter tengcongensis, Lampropeltis pyromelana pyromelana, Oryza sativa (japonica cultivar-group), Drosophila simulans, Danio rerio, Drosophila mauritiana, Drosophila sechellia"
- 3828 3958 23 "Mus musculus, Clostridium perfringens str. 13, Homo sapiens, Xenopus laevis, Lordsdale virus, Caliciviridae, Schizosaccharomyces pombe"
- 3829 3959 27 "Homo sapiens, Pan troglodytes, Mus musculus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Palicourea longistipulata, Caelospermum monticola, Schradera sp. 'Andersson 2107'" 20
- 3830 3960 27 "Mus musculus, Rattus norvegicus, Homo sapiens, Enterococcus faecalis V583, Phoenix dactylifera, Danio rerio"
- 3831 3961 26 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Shewanella oneidensis MR-1, Plasmodium falciparum 3D7, Arabidopsis thaliana"
- 3832 3962 31 "Schizosaccharomyces pombe, Homo sapiens, Mus musculus, Bacillus anthracis str. Ames, Gallus gallus, Arabidopsis thaliana, Sulfolobus tokodaii"
- 3833 3963 31 "Homo sapiens, Epifagus virginiana, Mus musculus, Danio rerio, Human immunodeficiency virus 1" 30
- 3834 3964 34 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Danio rerio, Lycopersicon esculentum, Homo sapiens, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Mus musculus"
- 3835 3965 47 "Thermoanaerobacter tengcongensis, Buchnera aphidicola, Mus musculus, Clostridium acetobutylicum, Pasteurella multocida, Archaeoglobus fulgidus DSM 4304, Prochlorococcus marinus, Homo sapiens, Caenorhabditis elegans, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Equus caballus"
- 3836 3966 42 "Gallid herpesvirus 2, Gallid herpesvirus 1, Bacillus anthracis str. Ames, Helicobacter hepaticus ATCC 51449, Homo sapiens, Staphylococcus aureus" 40
- 3837 3967 57 "Camptotheca acuminata, Homo sapiens, Methanococcus voltae, Arabidopsis thaliana, Shigella flexneri 2a str. 2457T, Mus musculus, Drosophila melanogaster, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Sus scrofa, Escherichia coli O157:H7 EDL933, Escherichia coli K12, Oryza sativa (japonica cultivar-group), Escherichia coli O157:H7, Escherichia coli, Petunia integrifolia subsp. inflata, Methanocaldococcus jannaschii, Rattus norvegicus"
- 3838 3968 35 "Pseudomonas putida KT2440, Mus musculus, Buchnera aphidicola, Nostoc sp. PCC 7120, Homo sapiens, Mycoplasma genitalium, Synechocystis sp. PCC 6803, Synechocystis sp., Acinetobacter calcoaceticus, Arabidopsis thaliana" 50

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- 3839 3969 52 "Listeria innocua, Clostridium acetobutylicum, Vibrio vulnificus CMCP6, Xylella fastidiosa 9a5c, Leptospira interrogans serovar lai str. 56601, Pyrococcus furiosus DSM 3638, Pyrococcus furiosus, Pyrococcus abyssi, Homo sapiens, Zymomonas mobilis subsp. pomaceae, Helicobacter pylori J99, Mus musculus, Saccharomyces kluyveri, Xylella fastidiosa Temecula1, Brassica juncea, Gallus gallus, Rhodobacter capsulatus, Oceanobacillus iheyensis HTE831, Thermotoga maritima, Nostoc sp. PCC 7120"
- 3840 3970 24 "Mus musculus, Corynebacterium efficiens YS-314, Homo sapiens, Streptococcus pneumoniae, Arabidopsis thaliana, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Oryza sativa (japonica cultivar-group), Danio rerio" 10
- 3841 3971 23 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Drosophila melanogaster, Schizosaccharomyces pombe, Methanocaldococcus jannaschii"
- 3842 3972 27 "Mus musculus, Homo sapiens, Clostridium acetobutylicum, Arabidopsis thaliana, Caenorhabditis elegans, Papio anubis, Zea mays, Oryza sativa (japonica cultivar-group)"
- 3843 3973 29 "Clostridium acetobutylicum, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Ureaplasma urealyticum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Monosiga brevicollis, Drosophila melanogaster, Shewanella oneidensis MR-1, Pan troglodytes, Macaca mulatta, Oxymitra incrassata, Lycogaster sp. N3, Papio anubis, Danio rerio, Arabidopsis thaliana, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Ogcodes leptisoma, Helicobacter pylori J99, Clostridium perfringens str. 13" 20
- 3844 3974 31 "Homo sapiens, Papio anubis, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Caenorhabditis elegans, Lactobacillus rhamnosus, Dictyostelium discoideum, Mus musculus, Drosophila melanogaster, Sus scrofa, Arabidopsis thaliana" 30
- 3845 3975 29 "Homo sapiens, Lactobacillus plantarum WCFS1, Buchnera aphidicola str. Bp (Baizongia pistaciae), Mus musculus, Dictyostelium discoideum, Clematis drummondii, Bacillus megaterium, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Pseudomonas phage phiKZ, Serratia marcescens, Clostridium butyricum, Oceanobacillus iheyensis HTE831, Danio rerio, Methanocaldococcus jannaschii, Nostoc sp. PCC 7120"
- 3846 3976 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Mus musculus, Apristurus sp. SI-2001, Apristurus laurussoni, Apristurus sp. nov. DYS-2001, Candidatus Carsonella ruddii, Chrysodidymus synuroideus, Bombyx mori, Candida albicans" 40
- 3847 3977 28 "Homo sapiens, Mus musculus, Crocodylus acutus, Caenorhabditis elegans, Canis familiaris, Arabidopsis thaliana, Bacteroides fragilis, Oryza sativa (japonica cultivar-group), Danio rerio, Bovine enterovirus, Schizosaccharomyces pombe, Haemophilus influenzae Rd KW20"
- 3848 3978 25 "Mus musculus, Homo sapiens, Clostridium perfringens str. 13, Oryza sativa (japonica cultivar-group), Bufo marinus, Pan troglodytes, Macaca mulatta, Pongo pygmaeus, Sus scrofa"
- 3849 3979 23 "Homo sapiens, Pasteurella multocida, Thermoanaerobacter tengcongensis, Mus musculus, uncultured eukaryote, Plasmodium falciparum 3D7" 50

- 3850 3980 28 "Danio rerio, Homo sapiens, Paralichthys olivaceus, Mus musculus, Arabidopsis thaliana, Pan troglodytes, Drosophila melanogaster, Clostridium perfringens str. 13"
- 3851 3981 25 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Penicillium chrysogenum, Oryza sativa, Oryza sativa (indica cultivar-group)"
- 3852 3982 32 "Homo sapiens, Caenorhabditis elegans, Bacillus anthracis str. Ames, Mus musculus, Drosophila melanogaster, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Streptococcus pneumoniae, Mycoplasma fermentans, Danio rerio, Puccinia carduorum, Nostoc sp. PCC 7120, Escherichia coli 0157:H7 EDL933, Brassica napus var. napus, Escherichia coli K12, Plasmodium falciparum 3D7, Escherichia coli, Loa loa, Arabidopsis thaliana, Escherichia coli 0157:H7" 10
- 3853 3983 27 "Homo sapiens, Mus musculus, Xanthomonas campestris pv. campestris, Methanosarcina acetivorans C2A, Rattus norvegicus"
- 3854 3984 27 "Homo sapiens, Mus musculus, Danio rerio, Arabidopsis thaliana, Marojejya darianii, Dyspsis leptocheilos, Acalypha wilkesiana, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Drosophila melanogaster, Clostridium tetani, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Utricularia olivacea"
- 3855 3985 23 "Homo sapiens, Leptospira interrogans serovar lai str. 5 6601, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Danio rerio, Clostridium tetani E88, Papio anubis, Encephalomyocarditis virus, Mus musculus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Malus domestica, Nostoc sp. PCC 7120" 20
- 3856 3986 36 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Knoxia corymbosa, Entamoeba histolytica, Arabidopsis thaliana, Caenorhabditis elegans, Medicago truncatula, Danio rerio, Petunia integrifolia subsp. inflata"
- 3857 3987 27 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Vibrio cholerae, Corynebacterium glutamicum ATCC 13032, Danio rerio" 30
- 3858 3988 25 "Homo sapiens, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Methanosarcina mazei Goe1, Shigella flexneri 2a, Mus musculus, Vitis vinifera"
- 3859 3989 23 "Homo sapiens, Mus musculus, Talaromyces stipitatus"
- 3860 3990 27 "Homo sapiens, Dictyostelium discoideum, Arabidopsis thaliana, Mus musculus, Caenorhabditis elegans, Neisseria sp. Z6861, Neisseria sp. Z6865, Neisseria lactamica, Neisseria meningitidis, Lotus corniculatus var. japonicus, Mastigocladus laminosus, Rattus norvegicus"
- 3861 3991 20 "Spiroplasma citri, Mus musculus" 40
- 3862 3992 25 "Homo sapiens, Clostridium perfringens str. 13, Arabidopsis thaliana, Danio rerio, Mesorhizobium loti"
- 3863 3993 36 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Bacillus anthracis str. Ames, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Chlamydia trachomatis, Fowlpox virus, Danio rerio, Streptococcus uberis"
- 3864 3994 32 "Homo sapiens, Rattus norvegicus, Listeria innocua, Mus musculus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group)" 50

- up), *Methanocaldococcus jannaschii*, *Pan troglodytes*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Oikopleura dioica*, *Caenorhabditis briggsae*, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Arabidopsis thaliana*, *Eutrichopus gonzalezi*, *Neisseria meningitidis* MC58, *Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Schizosaccharomyces pombe*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 3865 3995 41 "Bacteroides thetaiotaomicron VPI-5482, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Clostridium tetani* E88, *Yersinia pestis* KIM, *Mus musculus*, *Yersinia pestis* C092, *Listeria innocua*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Danio rerio*, *Sus scrofa*" 10
- 3866 3996 32 "Caenorhabditis elegans, *Nostoc* sp. PCC 7120, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Danio rerio*, *Schizosaccharomyces pombe*, *Rattus norvegicus*"
- 3867 3997 27 "Zea mays, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Nostoc* sp. PCC 7120"
- 3868 3998 25 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Oryctolagus cuniculus*, *Oryza longistaminata*"
- 3869 3999 25 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*" 20
- 3870 4000 30 "Homo sapiens, *Drosophila melanogaster*, *Saccharomyces pastorianus*, *Arabidopsis thaliana*, *Danio rerio*, *Mus musculus*, *Aristolochia* sp. JM02, *Aristolochia* sp. JM01, *Aristolochia foveolata*, *Medicago truncatula*, *Lotus corniculatus* var. japonicus, *Lithospermum erythrorhizon*, *Porphyromonas gingivalis* W83, *Oryza sativa* (japonica cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Clostridium perfringens* str. 13"
- 3871 4001 24 "Arabidopsis thaliana, *Homo sapiens*, *Danio rerio*, *Polypterus bichir*, *Mus musculus*, *Caenorhabditis elegans*"
- 3872 4002 27 "Homo sapiens, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Xanthomonas axonopodis* pv. citri str. 306, *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Mus musculus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*" 30
- 3873 4003 24 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Saguinus oedipus*, *Thermoanaerobacter tengcongensis*, *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Rattus norvegicus*"
- 3874 4004 24 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Aotus nancymae*, *Oryza sativa* (japonica cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Haemophilus influenzae* Rd KW20"
- 3875 4005 24 "Drosophila melanogaster, *Homo sapiens*, *Pyrococcus furiosus* DSM 3638, *Danio rerio*, *Schizosaccharomyces pombe*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Oryza sativa*, *Sulfolobus tokodaii*" 40
- 3876 4006 24 "Cricetulus griseus, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Sus scrofa*, *Danio rerio*"
- 3877 4007 24 "Sus scrofa, *Vibrio cholerae*, *Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*"
- 3878 4008 27 "Drosophila melanogaster, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Arabis drummondii*, *Calopteryx splendens balcanica*, *Enterococcus faecalis* V583, *Pan troglodytes*, *Chimpanzee cytomegalovirus*, *Vibrio fischeri*, *Arabidopsis thaliana*, *Petunia integrifolia* subsp. inflata, *Staphylococcus aureus*, *Calopteryx splendens*, *Calopteryx haemorrhoidal*" 50

- is, *Calopteryx xanthostoma*, *Calopteryx atrata*, *Mnais costalis*, *Clostridium difficile*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Caenorhabditis elegans*, *Petunia x hybrida*"
- 3879 4009 27 "Homo sapiens, *Schmidtea mediterranea*, *Mus musculus*, *Gallus gallus*, *Methanosarcina acetivorans* C2A, *Saccharomyces cerevisiae*, *Clostridium acetobutylicum*, *Saccharomyces douglasii*, *Oryza sativa* (japonica cultivar-group), *Rhabdophis subminiatus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Spinacia oleracea*, *Caenorhabditis elegans*, *Danio rerio*"
- 3880 4010 26 "Caenorhabditis elegans, *Oryza sativa* (japonica cultivar-group), *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Chlamydia trachomatis*, *Danio rerio*, *Mus musculus*, *Macrosiphum rosae*, *Brachy*" 10
- 3881 4011 31 "Drosophila melanogaster, *Plasmodium falciparum* 3D7, Human immunodeficiency virus 1, Plasmid F, *Homo sapiens*, *Clostridium perfringens* str. 13, *Mus musculus*, *Clostridium acetobutylicum*, *Riemerella anatipestifer*, *Caenorhabditis elegans*, *Danio rerio*, *Rattus norvegicus*, *Bacillus anthracis* str. Ames, *Bacteroides thetaiotaomicron* VPI-5482, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Arabidopsis thaliana*, *Tetraodon nigroviridis*, *Chilo iridescent virus*, *Canis familiaris*, *Mycoplasma capricolum*, *Plasmodium falciparum*" 20
- 3882 4012 28 "Homo sapiens, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Mus musculus*, *Saguinus oedipus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"
- 3883 4013 31 "Mus musculus, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Mycoplasma gallisepticum* R, *Pan troglodytes*, *Bacillus anthracis* str. Ames, *Populus tomentosa*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Yersinia enterocolitica*, *Bacillus anthracis*, *Candidatus Blochmannia floridanus*, *Rattus norvegicus*"
- 3884 4014 34 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Mus musculus*, *Homo sapiens*, *Porphyromonas gingivalis* W83, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Pseudomonas aeruginosa* PA01, *Sphacella subtilissima*" 30
- 3885 4015 32 "Homo sapiens, *Mus musculus*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* Mu50, *Nostoc* sp. PCC 7120, *Bacillus anthracis* str. Ames, *Penicillium marneffei*"
- 3886 4016 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Rickettsia rickettsii*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Cryptosporidium parvum*"
- 3887 4017 29 "Streptococcus agalactiae 2603V/R, *Streptococcus agalactiae* NEM316, *Mus musculus*, *Homo sapiens*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Streptomyces coelicolor* A3(2), *Listeria monocytogenes*, *Vibrio vulnificus* CMCP6, *Caenorhabditis briggsae*, *Lotus corniculatus* var. japonicus, *Vibrio parahaemolyticus*, *Danio rerio*" 40
- 3888 4018 32 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Homo sapiens*, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Physalis severe mottle virus*, *Melon yellow spot virus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Mycoplasma penetrans*, *Rattus norvegicus*, *Gallus gallus*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 3889 4019 27 "Caenorhabditis elegans, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*" 50

- s, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Agrobacterium tumefaciens*, Activation tagging vector pSKI074, *Pan troglodytes*, *Picea glauca*, *Nostoc sp. PCC 7120*"
- 3890 4020 29 "Bacillus cereus ATCC 14579, *Homo sapiens*, *Bacillus lich eniformis*, *Paramecium primaurelia*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Danio rerio*"
- 3891 4021 27 "Oryza sativa (japonica cultivar-group), *Borrelia burgdorferi* B31, *Homo sapiens*, *Glugea anomala*, *Borrelia burgdorferi*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*"
- 3892 4022 27 "Oryza sativa (japonica cultivar-group), *Mus musculus*, *Danio rerio*, *Homo sapiens*, *Methanosarcina mazei* Goe1" 10
- 3893 4023 23 "Homo sapiens, *Bacillus subtilis*, *Bacillus subtilis* subsp. subtilis str. 168, *Drosophila melanogaster*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Danio rerio*, *Pan troglodytes*, *Bos taurus*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Zymomonas mobilis*, *Glycine max*"
- 3894 4024 27 "Mycoplasma gallisepticum, *Drosophila melanogaster*, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Oryzias latipes*, *Bacteroides thetaiotaomicron* VPI-5482, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Plasmodium falciparum* 3D7, *Streptococcus pyogenes* MGAS315, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Mesostigma viride*, *Oryza sativa*, *Lotus corniculatus* var. japonicus, *Streptococcus pyogenes* SSI-1, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Pan troglodytes*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Helicobacter hepaticus* ATCC 51449" 20
- 3895 4025 27 "Homo sapiens, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Thermotoga maritima*, *Oryza sativa* (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Leptospira interrogans* serovar lai str. 56601, *Sorghum bicolor*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Ciona intestinalis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Rattus norvegicus*" 30
- 3896 4026 31 "Mus musculus, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Pseudomonas sp.*, *Clostridium perfringens* str. 13, *Bacillus cereus* ATCC 14579, *Fenneropenaeus merguensis*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Ciona intestinalis*, *Pseudodactylogyrus sp.* DTJL-2000, *Pseudodactylogyrus anguillae*, *Pseudodactylogyrus bini*"
- 3897 4027 29 "Mus musculus, *Escherichia coli*, *Macaca mulatta*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Drosophila melanogaster*, *Macaca fascicularis*, *Mycoplasma penetrans*, *Macaca nemestrina*, *Macaca fuscata*, *Schizosaccharomyces pombe*, *Caenorhabditis elegans*, *Candidatus Carsonella ruddii*, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Papio anubis*, *Swinepox virus*, *Pasteurella multocida*, *Ureaplasma urealyticum*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Clostridium perfringens* str. 13" 40
- 3898 4028 29 "Arabidopsis thaliana, *Homo sapiens*, *Clostridium perfringens*, *Mus musculus*, *Rattus norvegicus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Ictalurus punctatus*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Marmota marmota*, *Bacillus subtilis* subsp. subtilis str. 168, *Danio rerio*, *Sus scrofa*, *Bacillus subtilis*, *Nostoc sp. PCC 7120*" 40

- 3899 4029 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Pyrococcus abyssi, Oryza sativa (japonica cultivar-group), Pan troglodytes, Oryctolagus cuniculus, Escherichia coli K12, Caenorhabditis elegans, Medicago truncatula, Arabidopsis thaliana, Dictyostelium discoideum, Clostridium tetani E88, Thermoanaerobacter tengcongensis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lactococcus lactis subsp. lactis, Bacteriophage bIL286, Bacteriophage bIL285, Mycoplasma pulmonis, Lycopersicon esculentum, Ciona intestinalis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Schizosaccharomyces pombe, Ostrinia nubilalis"
- 3900 4030 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Ornithorhynchus anatinus, Methanocaldococcus jannaschii" 10
- 3901 4031 46 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Homo sapiens, Mus musculus, Caenorhabditis elegans, Pan troglodytes, Oryza sativa (japonica cultivar-group), Riccia albolimbata, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rickettsia conorii, Danio rerio, Paramecium primaurelia, Ciona intestinalis"
- 3902 4032 25 "Homo sapiens, Oryza sativa (japonica cultivar-group), Lycopersicon esculentum, Mus musculus, Xenorhabdus nematophila, Chlamydophila pneumoniae CWL029, Lotus corniculatus var. japonicus, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Schizosaccharomyces pombe, Chlamydophila pneumoniae TW-183" 20
- 3903 4033 24 "Homo sapiens, Rattus norvegicus, Medicago truncatula, Pseudomonas syringae pv. tomato str. DC3000, Staphylococcus epidermidis ATCC 12228, Mus musculus, Danio rerio, Staphylococcus epidermidis"
- 3904 4034 26 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Plasmodium falciparum 3D7, Odontella sinensis, Danio rerio, Kurthia sp. 538-KA26, Bacillus cereus ATCC 14579, Macaca fascicularis"
- 3905 4035 63 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Caenorhabditis elegans, Dictyostelium discoideum, Drosophila melanogaster, Homo sapiens, Synechococcus sp. WH 8102, Methanosarcina acetivorans C2A, Yersinia enterocolitica, Lycopersicon esculentum, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group), Haemophilus ducreyi 35000HP, Danio rerio" 30
- 3906 4036 33 "Prochlorococcus marinus, Homo sapiens, Oryza sativa (japonica cultivar-group), Pan troglodytes, Oryza sativa, Arabidopsis thaliana, Mus musculus, Medicago truncatula, Xenopus laevis, Caenorhabditis elegans, Streptococcus mutans UA159, Sus scrofa"
- 3907 4037 24 "Homo sapiens, Trifolium repens, Mus musculus, Danio rerio, Oryza sativa (indica cultivar-group), Nostoc sp. PCC 7120" 40
- 3908 4038 28 "Bacillus cereus ATCC 14579, Listeria innocua, Bacillus megaterium, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Mus musculus, Streptococcus agalactiae 2603V/R, Homo sapiens, Caenorhabditis elegans, Streptococcus agalactiae NEM316, Caenorhabditis briggsae, Listeria monocytogenes, Bacillus cereus, Thermoanaerobacter tengcongensis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pyrococcus furiosus DSM 3638, Rattus norvegicus, Clostridium acetobutylicum, Arabidopsis thaliana, Vibrio parahaemolyticus"
- 3909 4039 32 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Pseudomonas syringae pv. tomato str. DC3000, Prochlorococcus marinus, Enterococcus fa 50

ecalis V583, Lemur catta, Staphylococcus aureus phage phi 13, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Rattus norvegicus, Staphylococcus aureus prophage phiPV83, Staphylococcus aureus bacteriophage PVL, Clostridium perfringens str. 13"

3910 4040 27 "Caenorhabditis briggsae, Homo sapiens, Mus musculus, Paramecium tetraurelia, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Macaca mulatta, Human immunodeficiency virus 1, Lemur catta, Plasmodium falciparum 3D7, Oryza sativa, Papio anubis, Synechocystis sp. PCC 6308, Yaba-like disease virus, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Cryptosporidium parvum, Danio rerio, Plasmid pTD1, Staphylococcus aureus subsp. aureus Mu50" 10

3911 4041 27 "Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Homo sapiens, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Coxiella burnetii RSA 493, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Clostridium acetobutylicum, Avian infectious bronchitis virus, Danio rerio, Ureaplasma urealyticum, Mus musculus, Mus sp., Cryptosporidium parvum, Gallus gallus"

3912 4042 35 "Caenorhabditis elegans, Arabidopsis thaliana, Oryzias latipes, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Oryza sativa, Danio rerio, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Pleistodontes rigisamos, Ureaplasma urealyticum, Saccharomyces cerevisiae" 20

3913 4043 24 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Drosophila melanogaster, Salvelinus malma, Cerithium corallium, Tetrahymena thermophila, Danio rerio, Rickettsia prowazekii, Arabidopsis thaliana, Bartonella henselae, Oryza sativa (japonica cultivar-group)"

3914 4044 31 "Homo sapiens, Methanosarcina mazei Goe1, Mus musculus, Plasmodium falciparum 3D7, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Thermoanaerobacter tengcongensis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Caenorhabditis briggsae, Danio rerio" 30

3915 4045 28 "Homo sapiens, Dictyostelium discoideum, Clostridium tetani E88, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Malawimonas jakobiformis, Plasmodium falciparum 3D7, Candidatus Blochmannia floridanus, Lotus corniculatus var. japonicus, Didelphis virginiana, Medicago truncatula, Buchnera aphidicola str. Bp (Bazongia pistaciae), Caenorhabditis elegans, Lycopersicon esculentum, Phidippus sp. MCH-2001, Euglena gracilis, Rickettsia prowazekii, Caenorhabditis briggsae, Williopsis saturnus var. mrakii, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Fibriaphis fimbriata, Plasmodium falciparum, Cerataphis lataniae, Helicobacter hepaticus ATCC 51449, Lupinus angustifolius" 40

3916 4046 27 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Rattus norvegicus, Methanosarcina acetivorans C2A, Oryza sativa, Mycoplasma pulmonis, Arabidopsis thaliana, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Ciona savignyi, Danio rerio"

3917 4047 29 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Lotus corniculatus var. japonicus, Squalus acanthias, Saccharomyces cerevisiae, Caenorhabditis elegans, Arabidopsis thaliana, Pan troglodytes, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Listeria monocytogene" 50

- s, *Ciona intestinalis*, *Danio rerio*, *Tetrahymena thermophila*, *Pneumocystis jiroveci*, *Clostridium perfringens* str. 13"
- 3918 4048 38 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Prochlorococcus marinus*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Hordeum vulgare* subsp. *vulgare*, *Drosophila melanogaster*, *Bacteroides thetaiotaomicron* VPI-5482, *Rattus norvegicus*, *Modicogryllus confirmatus*, *Felis catus*, *Medicago truncatula*, *Pan troglodytes*, *Lycopersicon pimpinellifolium*, *Oryza sativa*, *Clostridium acetobutylicum*, *Brassica napus* var. *napus*, *Chlamydomonas pneumoniae* CWL029, *Candidatus Blochmannia floridanus*, *Pardosa palustris*, *Chlamydomonas pneumoniae* AR39, *Staphylococcus carnosus*, *Chlamydomonas pneumoniae* TW-183, *Sinaloa tomato leaf curl virus*, *Panax ginseng*, *Chlamydomonas pneumoniae* J138"
- 3919 4049 79 "Borrelia burgdorferi B31, *Helicobacter hepaticus* ATCC 51449, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Rickettsia conorii*, *Clostridium perfringens* str. 13, *Treponema pallidum*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium*"
- 3920 4050 29 "Bacillus cereus ATCC 14579, *Bacillus anthracis* str. Ames, *Euglena gracilis*, *Synechocystis* sp. PCC 6803, *Oryza sativa* (japonica cultivar-group), *Staphylococcus epidermidis* ATCC 12228, *Triticum aestivum*, *Zea mays*, *Staphylococcus epidermidis*, *Staphylococcus au*"
- 3921 4051 33 "Homo sapiens, *Mus musculus*, *Candidatus Blochmannia floridanus*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Pan troglodytes*, *Drosophila melanogaster*, *Saccharomyces cerevisiae*, *Lampetra fluviatilis*, *Mycoplasma capricolum*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Lucilia ampullacea*, *Macaca fascicularis*"
- 3922 4052 27 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Streptococcus pneumoniae*, *Prochlorococcus marinus*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mus musculus*, *Caenorhabditis elegans*, *Aspergillus oryzae*, *Bacillus halodurans*, *Clostridium perfringens* str. 13"
- 3923 4053 24 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Carabus violaceus violaceus*, *Oryza sativa* (japonica cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Baboon cytomegalovirus*, *Caenorhabditis elegans*, *Sulfolobus tokodaii*, *Cryptosporidium parvum*, *Medicago truncatula*"
- 3924 4054 32 "Vibrio vulnificus CMCP6, *Homo sapiens*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Xylella fastidiosa* 9a5c, *Danio rerio*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Dictyostelium discoideum*"
- 3925 4055 24 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Arabidopsis thaliana*"
- 3926 4056 29 "Mus musculus, *Homo sapiens*, *Goniobasis semicarinata*, *Plutella macrocerata* canaliculatum filum, *Danio rerio*, *Medicago truncatula*, *Methanosarcina mazei* Goe1, *Anopheles gambiae*, *Oryctolagus cuniculus*, *Borrelia burgdorferi* B31, *Archaeoglobus fulgidus* DSM 4304, *Plodia interpunctella*, *Caenorhabditis elegans*, *Ostrinia nubilalis*, *Ostrinia furnacalis*, *Plasmodium falciparum* 3D7, *Gallus gallus*, *Schistosoma mansoni*, *Philautus acutirostris*, *Limnonectes toumanoffi*, *Pyxicephalus adspersus*, *Hoplobatrachus rugulosus*, *Limnonectes leytensis*, *Zea mays*, *Fejervarya limnocharis*, *Oryza sativa* (japonica cultivar-group), *Ciona intestinalis*, *Rana macrocephala*"

- 3927 4057 27 "Mus musculus, Papio anubis, Homo sapiens, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Saccharomyces cerevisiae, Danio rerio, Drosophila melanogaster, Luffa cylindrica"
- 3928 4058 29 "Homo sapiens, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Oryza sativa, Apis cerana, Apis mellifera, Rattus norvegicus, Cryptosporidium parvum, Plasmodium chabaudi, Apis mellifera ligustica, Ceratovacuna sp., Plasmodium falciparum 3D7, Papio anubis, Litopenaeus setiferus, Soldanella pusilla, Rickettsia conorii, Petunia vein clearing virus, Saccharomyces exiguus, Helicobacter pylori, Beta vulgaris subsp. vulgaris, Pseudoregma bambucicola, Picea abies, Solanum tuberosum, Acetivibrio cellulolyticus, Pseudoregma panicola, Xenopus laevis" 10
- 3929 4059 31 "Homo sapiens, Danio rerio, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Anopheles gambiae, Poncirus trifoliata, Arabidopsis thaliana, Lotus corniculatus var. japonicus"
- 3930 4060 28 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Drosophila erecta, Haemophilus ducreyi, Plasmodium vivax, Oryza sativa (japonica cultivar-group), Haemophilus ducreyi 35000HP"
- 3931 4061 27 "Sonchus yellow net virus, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Methanothermobacter thermoautotrophicus str. Delta H, Plasmodium falciparum, Arabidopsis thaliana, Staphylococcus epidermidis, Mus musculus, Ciona intestinalis, Danio rerio, Rattus norvegicus, Methanocaldococcus jannaschii" 20
- 3932 4062 23 "Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana"
- 3933 4063 28 "Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Homo sapiens, Chalino lobus tuberculatus, Salmonella enterica, Caenorhabditis elegans, Salmonella enterica subsp. enterica serovar Typhi, Arabidopsis thaliana, Mus musculus, Caenorhabditis briggsae, Danio rerio"
- 3934 4064 29 "Oryza sativa (japonica cultivar-group), Homo sapiens, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Mus musculus, Crassostrea gigas, Arabidopsis thaliana, Danio rerio, Drosophila melanogaster, Petromyzon marinus, Ciona intestinalis, Lotus corniculatus var. japonicus" 30
- 3935 4065 24 "Homo sapiens, Danio rerio, Equus caballus, Drosophila melanogaster, Mus musculus, Entamoeba histolytica, Lotus corniculatus var. japonicus, Proformica longiseta"
- 3936 4066 31 "Mus musculus, Medicago truncatula, Oryza sativa (japonica cultivar-group), Homo sapiens, Dictyostelium discoideum, Schmidtea mediterranea, Caenorhabditis elegans, Mycoplasma penetrans, Listeria innocua, Danio rerio, Arabidopsis thaliana, Drosophila melanogaster, Escherichia coli CFT073, Plasmodium falciparum 3D7, Streptococcus pyogenes MGAS315, Streptococcus pyogenes M1 GAS, Escherichia coli O157:H7 EDL933, Escherichia coli, Escherichia coli K12, Plasmodium falciparum, Streptococcus pyogenes SSI-1, Lycopersicon esculentum, Anopheles gambiae, Gagea minima, Escherichia coli O157:H7, Tetragenococcus halophilus" 40
- 3937 4067 28 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Methanococcoides methylutens, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani E88, Pan troglodytes, Neurospora crassa, Rattus norvegicus, Arabidopsis thaliana, Caenorhabditis elegans, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Tetrahymena thermophila, Bacillus subtilis, Lycopersicon esculentum, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Ricke 50

- ttsia prowazekii, Streptococcus pyogenes M1 GAS, Emericella nidulans, Candidatus Blochmannia floridanus, Caenorhabditis briggsae, Rickettsia typhi, Streptococcus pyogenes SSI-1, Oceanobacillus iheyensis HTE831, Danio rerio, Prochlorococcus marinus subsp. marinus str. CCMP1375, Pseudomonas sp."
- 3938 4068 32 "Mus musculus, Homo sapiens, Rattus norvegicus, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Gallus gallus, Clostridium tetani E88, Macaca mulatta, Danio rerio, Papio anubis, Kluyveromyces lactis, Chlamydomonas reinhardtii, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13"
- 3939 4069 27 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Thermoplasma volcanium, Stealth virus 1, Pan troglodytes, Oryza sativa, Drosophila melanogaster, Clostridium tetani E88, Sus scrofa, Mycoplasma penetrans, Danio rerio" 10
- 3940 4070 27 "Sulfolobus solfataricus, Homo sapiens, Mus musculus, Drosophila melanogaster, Bacteriophage phi3626, Pyrobaculum aerophilum str. IM2, Arabidopsis thaliana, Trypanosoma brucei, Trypanosoma brucei brucei, Lotus corniculatus var. japonicus"
- 3941 4071 28 "Medicago truncatula, Homo sapiens, Neurospora crassa, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus" 20
- 3942 4072 27 "Homo sapiens, Trypanosoma cruzi, Mus musculus, Arabidopsis thaliana, Dictyostelium discoideum, Human immunodeficiency virus 1, Yaba-like disease virus, Odontella sinensis, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Beta vulgaris subsp. vulgaris, Danio rerio, Pan troglodytes"
- 3943 4073 36 "Clostridium tetani E88, Plasmodium falciparum 3D7, Medicago sativa, Oryza sativa (japonica cultivar-group), Danio rerio, Homo sapiens, Mus musculus, Medicago truncatula, Dictyostelium discoideum, Monosiga brevicollis, Saccharomyces uvarum, Fusobacterium nuc" 30
- 3944 4074 24 "Homo sapiens, Jaxea nocturna, Thermoanaerobacter tengcongensis, Mesorhizobium loti, Mus musculus, Ureaplasma urealyticum, Danio rerio"
- 3945 4075 31 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Pan troglodytes, Homo sapiens, Methanocaldococcus jannaschii, Mus musculus, Arabidopsis thaliana, Poncirus trifoliata, Papio anubis, Prochlorococcus marinus, Mycoplasma penetrans, Listeria monocytogenes, Caenorhabditis elegans, Glycine max"
- 3946 4076 27 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum, Plasmodium falciparum 3D7, Nostoc sp. PCC 7120, Enterococcus faecalis V583, Arabidopsis thaliana, Clostridium acetobutylicum, Danio rerio, Rattus norvegicus, Nicotiana tabacum" 40
- 3947 4077 27 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Lactococcus lactis, Danio rerio, Amphichaeta raptisae, Gallus gallus, Variola virus, Variola minor virus, Trichophthalma sp. SLW-2002, Caenorhabditis elegans, Schizosaccharomyces pombe, Aspergillus ochraceus, Saimiriine herpesvirus 2, Rattus norvegicus, Lycopersicon esculentum, Borealis schlumbergeri, Xerocomus chrysenteron"
- 3948 4078 32 "Homo sapiens, Haemophilus ducreyi 35000HP, Arabidopsis thaliana, Danio rerio, Bacillus cereus ATCC 14579, Mus musculus, Dictyostelium d" 50

- iscoideum, *Caenorhabditis elegans*, *Streptococcus mutans* UA159, *Rickettsia conorii*, *Rickettsia rickettsii*, *Bacillus sphaericus*, *Helicobacter pylori*, *Lotus corniculatus* var. japonicus, *Bacillus cereus*, *Papio anubis*"
- 3949 4079 31 "Homo sapiens, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Mus musculus*, *Nostoc* sp. PCC 7120, *Oenococcus oeni*, *Caenorhabditis elegans*, *Paurospalta johanae*, *Rhodospalta leptomera*, *Maoricicada hamiltoni*, *Maoricicada cassiope*, *Kikihia scutellaris*, *Kikihia cauta*, *Diemeniana tillyardi*, *Diemeniana frenchi*, *Rickettsia prowazekii*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* HTE831, *Anopheles gambiae*" 10
- 3950 4080 32 "*Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Bacillus subtilis* subsp. subtilis str. 168, *Xenopus laevis*, *Mus musculus*, *Drosophila melanogaster*"
- 3951 4081 27 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Dictyostelium discoideum*, *Physa* sp. RLHL-2001, *Mus musculus*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Shigella flexneri* 2a str. 2457T, *Shigella flexneri* 2a str. 301, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Oryza sativa*"
- 3952 4082 31 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Entamoeba histolytica*, *Ciona intestinalis*, *Canis familiaris*" 20
- 3953 4083 55 "*Corynebacterium efficiens* YS-314, *Corynebacterium glutamicum* ATCC 13032, *Clostridium tetani* E88, *Brucella melitensis* 16M, *Brucella suis* 1330, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Sinorhizobium meli*"
- 3954 4084 33 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Drosophila melanogaster*, *Saccharomyces uvarum*, *Chlorogomphus brunneus*, *Mus musculus*, *Dictyostelium discoideum*, *Saccharomyces cerevisiae*, *Xylocopa auripennis auripennis*, *Yarrowia lipolytica*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Clostridium perfringens* str. 13, *Alocasia cucullata*, *Alocasia odora*, *Borrelia burgdorferi* B31, *Staphylococcus epidermidis* ATCC 12228, *Shewanella oneidensis* MR-1, *Arabidopsis thaliana*, *Primula concinna*, *Leishmania braziliensis*, *Oryza sativa*, *Lycopersicon esculentum*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Melanoplus sanguinipes* entomopoxvirus, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Methanosarcina mazei* Goe1, *Clostridium tetani* E88, *Malawimonas jakobiformis*" 30
- 3955 4085 24 "*Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Canis familiaris*"
- 3956 4086 24 "*Drosophila ananassae*, *Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Ceratodon purpureus*" 40
- 3957 4087 23 "*Drosophila melanogaster*, *Danio rerio*, *Shewanella oneidensis* MR-1, *Mus musculus*, *Leptospira interrogans* serovar lai str. 56601, *Arabidopsis thaliana*, *Homo sapiens*, *Naegleria gruberi*, *Mycoplasma genitalium*"
- 3958 4088 28 "*Homo sapiens*, *Uvularia perfoliata*, *Drosophila melanogaster*, *Papio anubis*, *Yersinia pestis* KIM, *Tetrahymena ellioti*, *Yersinia pestis* CO 92, *Danio rerio*, *Pan troglodytes*, *Mus musculus*, *Rickettsia montanensis*, *Arabidopsis thaliana*, *Guillardia theta*, *Simian foamy virus*, *Pan troglodytes troglodytes*, *Pan troglodytes verus*, *Listeria monocytogenes*"
- 3959 4089 24 "*Homo sapiens*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Oryza sativa*, *Mus musculus*, *Arabidopsis thaliana*, *Methanosarci*" 50

- na acetivorans C2A, Medicago truncatula"
- 3960 4090 28 "Homo sapiens, Euglena gracilis, Medicago truncatula, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Human immunodeficiency virus 1, Plasmodium vivax, Bacillus atticus, Mus musculus, Gallus gallus, Drosophila melanogaster, Candidatus Blochmannia floridanus, Caenorhabditis elegans, Arabidopsis thaliana"
- 3961 4091 33 "Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Herpetomonas pessoai, Clostridium acetobutylicum, Mus musculus, Loxosceles arizonica, Caenorhabditis briggsae, Sulfolobus tokodaii, Clostridium perfringens str. 13, Drosophila melanogaster, Bacillus anthracis str. Ames, Coxiella burnetii RSA 493, Atelerix albiventris, Caenorhabditis elegans, Bacillus thuringiensis, Staphylococcus epidermidis ATCC 12228, Yersinia pestis KIM, Buchnera aphidicola str. Sg (Schizaphis graminum), Shrimp white spot syndrome virus, Saimiriine herpesvirus 2, Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Heliothis virescens, Mycoplasma penetrans, Sorghum bicolor, Yersinia pestis C092, Medicago sativa, Helicobacter hepaticus ATCC 51449, Dictyostelium discoideum" 10
- 3962 4092 23 "Lactobacillus plantarum WCFS1, Helicobacter hepaticus ATCC 51449, Medicago truncatula, Drosophila melanogaster, Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Edwardsiella ictaluri" 20
- 3963 4093 24 "Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Homo sapiens, Pemphigus spyrothecae, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Danio rerio, Streptococcus agalactiae NEM 316, Clostridium botulinum, Clostridium perfringens C, Clostridium perfringens"
- 3964 4094 32 "Clostridium acetobutylicum, Buchnera aphidicola, Caenorhabditis elegans, Leptospira interrogans serovar lai str. 56601, Mus musculus, Homo sapiens, Sulfolobus solfataricus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Drosophila melanogaster, Yersinia pestis KIM, Salmonella enterica subsp. enterica serovar Enteritidis, Nostoc sp. PCC 7120, Yersinia pestis C092" 30
- 3965 4095 59 "Chlamydomonas reinhardtii, Chlamydia muridarum, Caenorhabditis elegans, Mus musculus, Homo sapiens, Prochlorococcus marinus subsp. marinus str. CCMP1375, Medicago truncatula, Leptospira interrogans serovar lai str. 56601, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Papio anubis, Shigella flexneri 2a str. 301, Escherichia coli O157:H7 EDL933, Escherichia coli, Arabidopsis thaliana, Escherichia coli O157:H7"
- 3966 4096 29 "Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Leptospira interrogans serovar lai str. 56601, Macaca mulatta, Plasmodium falciparum 3D7, Papio anubis, Arabidopsis thaliana, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Xenopus laevis, Vibrio parahaemolyticus, Oryza sativa (japonica cultivar-group)" 40
- 3967 4097 27 "Homo sapiens, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SS1-1, Mus musculus, Arabidopsis thaliana, Pan troglodytes"
- 3968 4098 27 "Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus, Caenorhabditis elegans, Prochlorococcus marinus, Bombyx mori, Arabidopsis thaliana, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Rickettsia prowazekii, Heteractis magnifica, Danio rerio, Ornithoptera paradisea"
- 3969 4099 32 "Homo sapiens, Oryza sativa (japonica cultivar-group), Oryza sativa, Drosophila melanogaster, Medicago truncatula, Salmonella enterica s 50

- ubsp. enterica serovar Typhi Ty2, Arabidopsis thaliana, Solanum commersonii, Podospora anserina, Mus musculus, Penicillium urticae, Salmonella enterica subsp. enterica serovar Typhi, Nostoc sp. PCC 7120"
- 3970 4100 25 "Mus musculus, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Peanut stripe virus"
- 3971 4101 28 "Homo sapiens, Mus musculus, Eretmodus cyanostictus, Bacillus cereus ATCC 14579, Danio rerio, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Trypanosoma cruzi, Gallus gallus"
- 3972 4102 31 "Drosophila melanogaster, Mus musculus, Shewanella oneidensis MR-1, Homo sapiens, Yersinia pestis KIM, Yersinia pestis C092, Caenorhabditis elegans, Danio rerio, Lactococcus lactis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 10
- 3973 4103 23 "Caenorhabditis elegans, Mycoplasma gallisepticum R, Homo sapiens, Danio rerio, Mus musculus"
- 3974 4104 31 "Bacillus cereus ATCC 14579, Homo sapiens, Bacillus thuringiensis serovar entomocidus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Bacillus anthracis str. Ames, Danio rerio, Clostridium cellulovorans, Campylobacter jejuni, Aequipecten opercularis, Drosophila melanogaster, Plasmodium falciparum 3D7, Malawimonas jakobiformis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rickettsia conorii, Rickettsia montanensis, Rickettsia rickettsii, Clostridium pasteurianum, Nephroselmis olivacea, Caenorhabditis elegans, Carabus forreri, Debaryomyces occidentalis, Medicago truncatula, Cowpea severe mosaic virus" 20
- 3975 4105 27 "Homo sapiens, Closterium acerosum, Oryza sativa (japonica cultivar-group), Danio rerio, Bacillus anthracis str. Ames, Mus musculus, Caenorhabditis elegans, Methanosarcina acetivorans C2A, Clostridium acetobutylicum, Lycopersicon esculentum, Didelphis virginiana, Russula rosacea, Arabidopsis thaliana, Cyanidioschyzon merolae, Clostridium perfringens str. 13"
- 3976 4106 31 "Caenorhabditis elegans, Bacillus anthracis str. Ames, Homo sapiens, Pan troglodytes, Mus musculus, Arabidopsis thaliana, Mycoplasma penetrans, Danio rerio, Bacillus cereus ATCC 14579, Oryza sativa (japonica cultivar-group)" 30
- 3977 4107 23 "Bombyx moriDanio rerio, Homo sapiens, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pseudomonas phage phiKZ, Rickettsia conorii, Mus musculus, Drosophila hydei, Acinetobacter Iwoffii"
- 3978 4108 28 "Rattus norvegicus, Mus musculus, Drosophila melanogaster, Homo sapiens, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Medicago truncatula, Oryza sativa, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Colwellia maris, Clostridium perfringens str. 13" 40
- 3979 4109 27 "Homo sapiens, Drosophila melanogaster, Danio rerio, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana"
- 3980 4110 24 "Homo sapiens, Mus musculus, Xenopus laevis, Oryza sativa (japonica cultivar-group), Bradyrhizobium sp. ORS285, Danio rerio, Human adenovirus type 46, Arabidopsis thaliana"
- 3981 4111 25 "Caenorhabditis elegans, Streptococcus mutans UA159, Homo sapiens, Arabidopsis thaliana, Streptococcus mutans, Mus musculus, Hordeum vulgare subsp. vulgare, Plasmodium falciparum 3D7, Danio rerio" 40

- 3982 4112 39 "Brassica oleracea, Homo sapiens, Buchnera aphidicola str. Bp (Baizongia pistaciae), Legionella pneumophila, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Pterocomma populifoliae, Acyrthosiphon pisum, Schizaphis graminum, Rho"
- 3983 4113 37 "Homo sapiens, Mus musculus, Drosophila melanogaster, Glycine max, Arabidopsis thaliana, Xenopus laevis, Dictyostelium discoideum, Plasmodium falciparum 3D7, Danio rerio, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Medicago truncatula, Sorghum bicolor, Bacillus anthracis str. A2012, Streptococcus pneumoniae TIGR4, Chrysomela populi, Prochlorococcus marinus, Rickettsia prowazekii, Streptococcus pneumoniae, Adineta vaga, Bacillus anthracis, Bacillus halodurans" 10
- 3984 4114 27 "Mus musculus, Leptospira interrogans serovar lai str. 56601, Homo sapiens, Arabidopsis thaliana, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Methanosarcina acetivorans C2A, Danio rerio, Leskeodon cubensis, Cryptosporidium parvum, Canis familiaris"
- 3985 4115 26 "Mus musculus, Homo sapiens, Danio rerio, Saccharomyces cerevisiae, Arabidopsis thaliana, Quercus robur"
- 3986 4116 27 "Caenorhabditis elegans, Mus musculus, Danio rerio, Homo sapiens, Bombyx mori, Medicago truncatula, Scylliorhinus canicula, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831" 20
- 3987 4117 24 "Danio rerio, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Mus musculus, Salmonella enterica subsp. enterica serovar Typhi, Homo sapiens, Pan troglodytes, Myxoma virus, Neurospora crassa"
- 3988 4118 29 "Homo sapiens, Bradyrhizobium japonicum USDA 110, Mus musculus, Danio rerio"
- 3989 4119 33 "Mus musculus, Mus sp., Simian immunodeficiency virus, Drosophila melanogaster, Homo sapiens, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Campylobacter coli, Bacillus anthracis, Neurospora crassa, Danio rerio, Drosophila virilis, synthetic construct, Synechococcus sp. WH 8102, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Equus caballus, Streblomastix strix, Chlamydomonas reinhardtii, Aedes aegypti, Pan troglodytes, Gallus gallus, Medicago sativa" 30
- 3990 4120 27 "Homo sapiens, Pan troglodytes, Clostridium acetobutylicum, Arabidopsis thaliana, Mus musculus, Enchenopa sp. CPL-2, Trypanosoma brucei, Oceanobacillus iheyensis HTE831, Caenorhabditis elegans, Danio rerio"
- 3991 4121 29 "Homo sapiens, Crocidura roosevelti, Rickettsia prowazekii, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Pan troglodytes, Escherichia coli O157:H7 EDL933, Escherichia coli, Escherichia coli K12, Cryptosporidium parvum, Escherichia coli O157:H7, Bacillus anthracis str. Ames, Mus musculus, Danio rerio" 40
- 3992 4122 36 "Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Actinobacillus pleuropneumoniae, Plasmodium chabaudi, Lotus corniculatus var. japonicus, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium tetani E88, Lactococcus lactis subsp. lactis, Danio rerio, Plasmodium falciparum, Bacteriophage bIL310, Oryza sativa (japonica cultivar-group), Mus musculus"
- 3993 4123 23 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Caenorhabditis elegans, Listeria innocua, Danio rerio, Human rotavirus 4, Human rotavirus G3, Human rotavirus G4"
- 3994 4124 49 "Shigella flexneri 2a str. 2457, Escherichia coli CFT07" 50

- 3, *Shigella flexneri* 2a str. 301, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar *Typhi* Ty2, *Salmonella enterica* subsp. *enterica* serovar *Typhi*, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli* K12, *Escherichia coli* 0157:H7, *Escherichia coli*, *Homo sapiens*, *Mus musculus*, *Sus scrofa*, *Danio rerio*, *Saccharomyces cerevisiae*, *Felis catus*, *Arabidopsis thaliana*"
- 3995 4125 23 "Homo sapiens, *Saccharomyces cerevisiae*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*"
- 3996 4126 28 "*Amia calva*, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Pan troglodytes*, *Papio anubis*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Caenorhabditis elegans*, *Staphylococcus aureus* subsp. *aureus* Mu50" 10
- 3997 4127 27 "*Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Trichomonas vaginalis* virus"
- 3998 4128 26 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Enterobacteria* phage KU1"
- 3999 4129 24 "*Salmonella enterica* subsp. *enterica* serovar *Typhi* Ty2, *Homo sapiens*, *Enterococcus faecalis* V583, *Mus musculus*"
- 4000 4130 26 "*Danio rerio*, *Mus musculus*, *Medicago truncatula*, *Methanosarcina mazei* Goe1, *Homo sapiens*, *Pasteurella multocida*, *Bos taurus*, *Escherichia coli*, *Anopheles gambiae*, *Lotus corniculatus* var. *japonicus*, *Reclinomonas americana*, Plasmid R6K, synthetic construct, *Geobacillus stearothermophilus*" 20
- 4001 4131 25 "*Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Candida albicans*, *Mus musculus*, *Medicago truncatula*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Arabidopsis thaliana*"
- 4002 4132 32 "*Mus musculus*, *Borrelia burgdorferi* B31, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Borrelia burgdorferi*, *Bacteroides thetaiotaomicron* VPI-5482, *Plasmodium falciparum* 3D7, *Siphateles bicolor* *obesa*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Clostridium acetobutylicum*, *Coccidioides immitis*, *Euglena gracilis*, *Danio rerio*, *Guillardia theta*, *Zymomonas mobilis*, *Nicotiana glauca*, *Nicotiana glauca* 30
la vittata, *Nostoc* sp. PCC 7120"
- 4003 4133 28 "*Homo sapiens*, *Solanum tuberosum*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*, *Danio rerio*"
- 4004 4134 27 "*Homo sapiens*, *Chlamydia trachomatis*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Arabidopsis thaliana*"
- 4005 4135 28 "*Listeria monocytogenes*, *Homo sapiens*, *Candidatus Carsonella ruddii*, *Oryctolagus cuniculus*, *Felis catus*, *Mus musculus*, *Goatpox virus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lumpy skin disease virus*, *Caenorhabditis elegans*, *Oceanobacillus iheyensis* HTE831, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Staphylococcus epidermidis* ATCC 12228, *Danio rerio*, *Caenorhabditis briggsae*" 40
- 4006 4136 31 "*Homo sapiens*, *Yersinia pestis* KIM, *Caenorhabditis elegans*, *Lycopersicon esculentum*, *Lotus corniculatus* var. *japonicus*, *Yersinia pestis* C092, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Clostridium botulinum*, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Streptococcus mutans* UA159, synthetic construct, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Buchnera aphidicola*, *Felis catus*"
- 4007 4137 44 "*Mus musculus*, *Homo sapiens*, *Oryza sativa* (*japonica* cult 50

- ivar-group), Suaeda patagonica, Suaeda sp. Schuetze 1129, Suaeda corniculata, Suaeda pannonica, Suaeda tschujensis, Suaeda heterophylla, Suaeda prostrata, Suaeda maritima var. perennans, Suaeda spicata, Suaeda australis, Suaeda sp. Schuetze 1376, Suaeda heteroptera, Suaeda maritima subsp. salsa, Suaeda olufsenii, Suaeda crassifolia, Suaeda sp. Schuetze 1025, Suaeda maritima, Papio anubis, Plasmodium falciparum 3D7, Danio rerio, Manduca sexta, Rattus norvegicus, Caenorhabditis elegans, Drosophila melanogaster, Methanosarcina mazei Goe1, Glycine max, Oryza sativa, Sulfurospirillum deleyianum, Arabidopsis thaliana, Methanocaldococcus jannaschii, Felis catus"
- 4008 4138 27 "Homo sapiens, Sus scrofa, Lotus corniculatus var. japonicus, Medicago truncatula, Danio rerio, Mus musculus, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Arabidopsis thaliana, Rickettsia conorii, Zea mays, Spermatoce confusa, Richardia scabra, Bacillus cereus ATCC 14579, Sminthopsis macroura, Plasmodium falciparum 3D7, Pasteurella multocida, Sulfobolus tokodaii, Oryza sativa (japonica cultivar-group), Tenebrio molitor, Encop tolophus costalis" 10
- 4009 4139 27 "Homo sapiens, Mus musculus, Medicago truncatula, Danio rerio, Lotus corniculatus var. japonicus"
- 4010 4140 32 "Danio rerio, Homo sapiens, Rattus norvegicus, Medicago truncatula, Arabidopsis thaliana, Mus musculus, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pisum sativum, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Drosophila melanogaster, Clostridium tetani E88, Xylella fastidiosa 9a5c, Gallus gallus, Thermoplasma acidophilum, Listeria innocua, Schizosaccharomyces pombe" 20
- 4011 4141 24 "Homo sapiens, Didelphis virginiana, Mus musculus, Saccharomyces cerevisiae, Gallus gallus, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum, Danio rerio, Arabidopsis thaliana"
- 4012 4142 27 "Homo sapiens, Danio rerio, Mus musculus, Ciona intestinalis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Ictalurus punctatus, Lotus corniculatus var. japonicus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 30
- 4013 4143 32 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Enterococcus faecium, Homo sapiens, Candidatus Blochmannia floridanus, Mycoplasma penetrans, Helicobacter pylori J99, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa, Plasmodium falciparum, Rickettsia prowazekii, Lycopersicon esculentum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Candidatus Carsonella ruddii, Oryctolagus cuniculus, Pyrrhobryum mnioides, Dictyostelium discoideum, Xylella fastidiosa Temecula1, Melipona bicolor, Sus scrofa, Thermoaerobacter tengcongensis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pyrobaculum aerophilum str. IM2, Xylella fastidiosa 9a5c, Pasteurella multocida, Arabidopsis thaliana, Caenorhabditis briggsae, Bombyx mori, Solanum demissum, Danio rerio, Brugia malayi, Xenos vesparum" 40
- 4014 4144 28 "Homo sapiens, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Arabidopsis thaliana"
- 4015 4145 28 "Plasmodium falciparum 3D7, Mus musculus, Homo sapiens, Rattus norvegicus, Phaseolus vulgaris, Schmidtea mediterranea, Saintpaulia velutina, Vibrio cholerae, Oryza sativa (japonica cultivar-group), Danio rerio" 50

- 4016 4146 24 "Strongylocentrotus purpuratus, Homo sapiens, Oryza sativa (japonica cultivar-group), Coxiella burnetii RSA 493, Oryzias latipes, Takifugu rubripes, Mus musculus"
- 4017 4147 23 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Oceanobacillus iheyensis HTE831, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603 V/R, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Streptococcus agalactiae NEM316"
- 4018 4148 28 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Arabidopsis thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13, Mus musculus, Human immunodeficiency virus 1, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Danio rerio, Pisum sativum" 10
- 4019 4149 27 "Homo sapiens, Mus musculus, Xenopus laevis, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Leptospira interrogans serovar lai str. 56601, Lemur catta, Pan troglodytes, Plasmodium falciparum 3D7, Rattus norvegicus, uncultured marine gamma proteobacterium EBAC31A08, Danio rerio, Caenorhabditis elegans"
- 4020 4150 30 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, L oligo bleekeri, Mus musculus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes M1 GAS, Rickettsia prowazekii, Streptococcus pyogenes SSI-1, Medicago truncatula, Drosophila melanogaster, Schmidtea mediterranea, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum, Oryza sativa, Nicotiana tabacum, Caenorhabditis briggsae, Prototheca wickerhamii, Plasmodium vivax, Lotus corniculatus var. japonicus, Lycopersicon esculentum" 20
- 4021 4151 67 "Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Homo sapiens, Metapenaeus ensis, Ophiostoma novo-ulmi, Mus musculus, Bacillus subtilis, Fusobacterium necrophorum, Lotus corniculatus var. japonicus, Fowlpox virus, Danio rerio, Schizosaccharomyces pombe, Bacillus subtilis subsp. subtilis str. 168" 30
- 4022 4152 23 "Mus musculus, Homo sapiens, Danio rerio, TT virus"
- 4023 4153 27 "Homo sapiens, Arabidopsis thaliana, Leptospira interrogans serovar lai str. 56601, Canis familiaris, Danio rerio, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)"
- 4024 4154 29 "Homo sapiens, Bacillus cereus ATCC 14579, Mycoplasma capricolum, Vibrio vulnificus CMCP6, Danio rerio, Arabidopsis thaliana, Drosophila melanogaster, Pan troglodytes, Mus musculus, Clostridium tetani E88, Sus scrofa, Melipona bicolor, Caenorhabditis elegans, Prochlorococcus marinus subsp. marinus str. CCMP1375, Pirellula sp." 40
- 4025 4155 24 "Homo sapiens, Drosophila melanogaster, Mus musculus, Coxiella burnetii RSA 493, Rickettsia prowazekii, Zymomonas mobilis, Danio rerio"
- 4026 4156 31 "Plasmodium falciparum 3D7, Mus musculus, Homo sapiens, Heliothis virescens, Thermotoga maritima, Wolinella succinogenes, Danio rerio, Classical swine fever virus, Caenorhabditis elegans, Rattus norvegicus, Dictyostelium discoideum, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oceanobacillus iheyensis HTE831, Pan troglodytes, Oryza sativa (japonica cultivar-group)"
- 4027 4157 48 "Oryza sativa (japonica cultivar-group), unidentified bacterium SM-A90, unidentified bacterium SM-A13, unidentified bacterium CPA63, uni 50

- dentified bacterium SM-A75, unidentified bacterium SM-A07, Homo sapiens, Allochromatium vinosum, Neisseria meningitidis MC"
- 4028 4158 47 "Nocardioides fulvus, Nocardioides flavus, Nocardioides luteus, Nocardioides albus, Streptomyces lividans, unidentified bacterium vHge2, unidentified bacterium Rr327, Streptomyces coelicolor A3(2), Bartonella elizabethae, Bartonella quintana, Bartonella graham"
- 4029 4159 25 "Avian infectious bronchitis virus, Homo sapiens, Mus musculus, Papio anubis, Plasmodium falciparum 3D7, Gallus gallus, Danio rerio, Methanocaldococcus jannaschii, Shigella flexneri 2a str. 2457T"
- 4030 4160 20 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Anopheles albimanus" 10
- 4031 4161 28 "Homo sapiens, Mus musculus, Pan troglodytes"
- 4032 4162 25 "Homo sapiens, Arabidopsis thaliana, Nostoc sp. PCC 7120, Dictyostelium discoideum, Mus musculus, Leishmania major, Bacillus thuringiensis serovar israelensis, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Prototheca wickerhamii, Lotus corniculatus var. japonicus, Plasmodium falciparum, Danio rerio, Medicago truncatula"
- 4033 4163 27 "Staphylococcus epidermidis, Avicennia marina, Caenorhabditis briggsae, Mus musculus, Homo sapiens, Danio rerio, Caenorhabditis elegans, Drosophila melanogaster, Dictyostelium discoideum, Staphylococcus epidermidis ATCC 12228, Listeria monocytogenes, Drosophila virilis" 20
- 4034 4164 23 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Synecocystis sp. PCC 6803, Drosophila melanogaster, Eupera cubensis, Oryza sativa (japonica cultivar-group), Neurospora crassa"
- 4035 4165 28 "Rattus norvegicus, Homo sapiens, Mus musculus, Shewanella oneidensis MR-1, Rickettsia prowazekii, Bombyx mori, Mycoplasma penetrans, Cryptosporidium parvum, Papio anubis, Staphylococcus epidermidis ATCC 12228, Lemur catta, synthetic construct, Staphylococcus epidermidis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Nitrosomonas europaea ATCC 19718, Plasmodium falciparum 3D7, Caenorhabditis elegans, Helicobacter hepaticus ATCC 51449, Clostridium perfringens str. 13" 30
- 4036 4166 27 "Homo sapiens, Chlamydia muridarum, Mus musculus, Bacteroides dorsalis, Medicago truncatula, Danio rerio"
- 4037 4167 28 "Mus musculus, Danio rerio, Dictyostelium discoideum, Homo sapiens, Bombyx mori, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, Amsacta moorei entomopoxvirus, Arabidopsis thaliana"
- 4038 4168 25 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Xenopus laevis, Listeria monocytogenes, Rattus norvegicus" 40
- 4039 4169 31 "Homo sapiens, Yersinia pestis KIM, Danio rerio, Mus musculus, Yersinia pestis C092, Daucus carota"
- 4040 4170 28 "Guillardia theta, Homo sapiens, Streptococcus mutans, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Mycobacterium leprae, Mus musculus, Rattus norvegicus"
- 4041 4171 24 "Arabidopsis thaliana, Lactobacillus johnsonii prophage Lj965, Homo sapiens, Mus musculus, Anopheles gambiae, Rhizophyidum sp. 136, Medicago truncatula, Oryza sativa (japonica cultivar-group)"
- 4042 4172 24 "Clostridium tetani E88, Danio rerio, Homo sapiens, Rattus norvegicus, Mus musculus, Drosophila melanogaster, Phlebotomus perfiliewi per 50

- filiewi, *Phlebotomus tobbi*, *Phlebotomus ariasi*, *Forficula auricularia*, *Caenorhabditis elegans*, *Bos taurus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Pyrococcus furiosus* DSM 3638, primary endosymbiont of *Heteropsylla cubana*, *Candidatus Carsonella ruddii*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Schizosaccharomyces pombe*, *Aphrodoctopus schultzei*"
- 4043 4173 52 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Borrelia turicatae*, *Borrelia parkeri*, *Thermoplasma volcanium*, *Lactobacillus plantarum* WCFS1, *Borrelia hermsii*, *Leptospira interrogans* serovar *lai* str. 56601, *Borrelia burgdorferi* B31, *Plasmodium falciparum* 3D7, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*" 10
- 4044 4174 68 "Streptococcus mutans UA159, *Rickettsia conorii*, *Shewanella oneidensis* MR-1, *Rickettsia prowazekii*, *Vibrio parahaemolyticus*, *Xylella fastidiosa* Temecula1, *Escherichia coli* CFT073, *Xylella fastidiosa* 9a5c, *Oryza sativa* (*japonica* cultivar-group), *Staphylococcus aureus* subsp. *aureus* MW2, *Streptococcus agalactiae* 2603V/R, *Lactobacillus plantarum* WCFS1, *Mus musculus*, *Rattus norvegicus*, *Homo sapiens*, *Pyrococcus horikoshii*, *Haemophilus influenzae* Rd KW20, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Spiroplasma birkbeckii*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, Bovine viral diarrhoea virus-2 isolate 230/98-K3 (Gi-6), *Streptococcus pyogenes* M1 GAS, *Streptococcus agalactiae* NEM316, *Triticum aestivum*, *Streptococcus pyogenes* SSI-1, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Streptococcus agalactiae*" 20
- 4045 4175 55 "Spiroplasma birkbeckii, *Ureaplasma urealyticum*, *Oceanobacillus ihayensis* HTE831, *Methanocaldococcus jannaschii*, *Clostridium acetobutylicum*, *Haemophilus influenzae* Rd KW20, *Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group)"
- 4046 4176 38 "*Listeria monocytogenes*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Enterococcus faecalis* V583, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Zea mays*, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Staphylococcus aureus*, *Drosophila melanogaster*, *Plantago lanceolata*, *Oryza sativa* (*japonica* cultivar-group), *Pyrococcus horikoshii*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Raphanus sativus*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Methanocaldococcus jannaschii*, *Staphylococcus aureus* subsp. *aureus* Mu50, Cowpox virus, *Ectromelia virus*, *Yersinia pestis* KIM, *Anopheles gambiae*, *Dictyostelium discoideum*, *Mycoplasma hominis*, *Ureaplasma urealyticum*, *Leucon leucocephala*, *Yersinia pestis* C092, *Caenorhabditis elegans*, *Tetrapleura tetraptera*" 30
- 4047 4177 25 "*Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Schistosoma japonicum*, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Pan troglodytes*, *Dictyostelium discoideum*, *Arabidopsis thaliana*" 40
- 4048 4178 72 "*Haemophilus influenzae* Rd KW20, *Rattus norvegicus*, *Coxiella burnetii* RSA 493, *Homo sapiens*, *Clostridium acetobutylicum*, *Vibrio cholerae*, *Streptococcus mutans* UA159, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, Bacteriophage Aaphi23, *Lactobacillus plantarum* WCFS1, *Mus musculus*, *Arabidopsis thaliana*, Porcine lymphotropic herpesvirus 1, *Escherichia coli* O157:H7 EDL933, *Lactococcus lactis*, *Helicobacter pylori*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Danio rerio*, *Escherichia coli* O157:H7"
- 4049 4179 28 "*Homo sapiens*, *Takifugu rubripes*, *Drosophila melanogaster*, *Mus musculus*, Cercopithecine herpesvirus 7, *Bos taurus*, *Cyanidioschyzon merolae*, *Spiroplasma citri*" 50

- 4050 4180 49 "Oceanobacillus iheyensis HTE831, Listeria monocytogenes, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Bacillus halodurans, Staphylococcus aureus, Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Staphylococcus aureus su"
- 4051 4181 23 "Homo sapiens, Drosophila melanogaster, Danio rerio, Brucella melitensis, Mus musculus, Caenorhabditis elegans, Chromobacterium violaceum, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum, Arabidopsis thaliana"
- 4052 4182 23 "Helicobacter pylori 26695, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Homo sapiens, Mus musculus, Methanococcus jannaschii" 10
- 4053 4183 36 "Danio rerio, Leptospira interrogans serovar lai str. 56601, Mus musculus, Drosophila melanogaster, Homo sapiens, Rickettsia conorii, Rickettsia prowazekii, Bacillus cereus ATCC 14579, Pan troglodytes, Heliconius melpomene melpomene, Lotus corniculatus var. japonicus, Andrias davidianus"
- 4054 4184 24 "Microzonia velutina, Homo sapiens, Mus musculus, Dictyostella linearis, Pseudomonas aeruginosa, Undaria peterseniana, Arabidopsis thaliana, Prochlorococcus sp."
- 4055 4185 24 "Mus musculus, Porcine reproductive and respiratory syndrome virus, Homo sapiens, Oryza sativa (japonica cultivar-group)" 20
- 4056 4186 24 "Homo sapiens, Paramecium tetraurelia, Oryza sativa (indica cultivar-group), Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group)"
- 4057 4187 25 "Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Rickettsia prowazekii, Helicobacter pylori J99, Arabidopsis thaliana"
- 4058 4188 31 "Homo sapiens, Mus musculus, Pan troglodytes, Lemur catta, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Papio anubis, Caenorhabditis elegans, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Haemophilus influenzae, Ixodes spinipalpis, Arabidopsis thaliana, Plasmodium falciparum 3D7, Yersinia pestis KIM, Sus scrofa, Sulfolobus solfataricus, Tetrahymena thermophila, Triticum aestivum, Chlamydomonas pneumoniae CWL029, Spinacia oleracea, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Cafeteria roenbergensis, Listeria monocytogenes, Yersinia pestis C092, Listeria innocua, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Chlamydomonas pneumoniae TW-183, Methanococcus vannielii" 30
- 4059 4189 30 "Equine infectious anemia virus, Homo sapiens, Danio rerio, Mus musculus"
- 4060 4190 28 "Homo sapiens, Mus musculus, Methanosarcina mazei Goe1, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Pan troglodytes" 40
- 4061 4191 24 "Oryza sativa (japonica cultivar-group), Danio rerio, Neotoma americanus, Mus musculus, Staphylococcus epidermidis ATCC 12228, Streptococcus iniae, Homo sapiens, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Sus scrofa, Arabidopsis thaliana, Rattus norvegicus, Drosophila melanogaster, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis briggsae, Sulfolobus tokodaii, Medicago truncatula, Ascaris suum"
- 4062 4192 27 "Medicago truncatula, Homo sapiens, uncultured fungus from Acaulospora colossica spore IVB.10, uncultured fungus from Acaulospora colossica spore IVB.7, uncultured fungus from Acaulospora colossica spore IVB.12, Mus 40

- musculus, *Mortierella* sp. olrim338, *Drosophila melanogaster*, *Danio rerio*, *Naja atra*, *Antithamnion* sp., *Oryza sativa* (japonica cultivar-group), *Physopelta gutta*, *Naja sputatrix*, *Schizosaccharomyces pombe*"
- 4063 4193 27 "Oryza sativa (japonica cultivar-group), *Leptospira interrogans* serovar lai str. 56601, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Clostridium perfringens* str. 13, *Medicago truncatula*, *Drosophila melanogaster*, *Schizophyllum commune*, *Mus musculus*, *Methanocaldococcus jannaschii*"
- 4064 4194 29 "Plasmodium falciparum, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Sus scrofa*, *Listeria monocytogenes*, *Nicotiana tabacum*" 10
- 4065 4195 42 "Prochlorococcus marinus subsp. marinus str. CCMP1375, *Corynebacterium glutamicum* ATCC 13032, *Streptococcus mutans* UA159, *Streptococcus agalactiae* 2603V/R, *Pyrococcus furiosus* DSM 3638, *Streptococcus uberis*, *Streptococcus agalactiae* NEM316, *Bacillus* sp. HIL-"
- 4066 4196 32 "Homo sapiens, *Mus musculus*, *Trichoplusia ni*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Leptospira borgpetersenii*, *Ciona intestinalis*, *Arabidopsis thaliana*, *Medicago truncatula*, *Drosophila melanogaster*, *Pan troglodytes*, *Papio anubis*, *Plasmodium falciparum* 3D7, *Chironomus thummi thummi*, *Borrelia hermsii*, *Caenorhabditis elegans*, *Takifugu rubripes*, *Synechocystis* sp. PCC 6803" 20
- 4067 4197 68 "Listonella anguillarum, *Rickettsia prowazekii*, *Lactococcus lactis* subsp. lactis, *Mus musculus*, *Homo sapiens*, *Bacillus halodurans*, *Coxiella burnetii* RSA 493, *Dictyostelium discoideum*, synthetic construct, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Listeria innocua*, *Arabidopsis thaliana*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Cuphea hookeriana*, *Helicobacter hepaticus* ATCC 51449, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Danio rerio*, *Pantodon buchholzi*, *Streptococcus bovis*"
- 4068 4198 23 "Mus musculus, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Clostridium perfringens*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Phytomonas serpens*, *Nostoc* sp. PCC 7120, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Danio rerio*" 30
- 4069 4199 31 "Mus musculus, *Danio rerio*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Homo sapiens*, *Maoricicada cassiope*, *Takifugu rubripes*, *Shewanella violacea*, *Equus caballus*"
- 4070 4200 27 "Ciona intestinalis, *Homo sapiens*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Selinocarpus somalensis*, *Oxybaphus nyctagineus*, *Mirabilis jalapa*, *Commicarpus raynalianii*, *Boerhavia coccinea*, *Allionia incarnata*, *Oryza sativa* (japonica cultivar-group)"
- 4071 4201 23 "Mus musculus, *Bacillus cereus* ATCC 14579, *Homo sapiens*, *Physeter catodon*" 40
- 4072 4202 28 "Homo sapiens, *Atelerix albiventris*, *Mus musculus*, *Ciona intestinalis*"
- 4073 4203 27 "Homo sapiens, *Photobacterium luminescens*, *Kluyveromyces marxianus*, *Mus musculus*, *Pyrococcus horikoshii*, *Drosophila melanogaster*"
- 4074 4204 35 "Mus musculus, *Homo sapiens*, *Mycoplasma genitalium*, *Lotus corniculatus* var. japonicus, *Bacillus cereus* ATCC 14579, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Bungarus multicinctus*, *Yersinia pestis*, *Arabidopsis thaliana*, *Candidatus Blochmannia floridanus*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Bacillus cereus*, *Ustilago hord* 50

- ei, *Yersinia pestis* KIM"
- 4075 4205 29 "Mus musculus, Schizaphis graminum, Greenidea nipponica, Tuberaphis styraci, Caenorhabditis elegans, Rhopalosiphum padi, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Debaryomyces occidentalis, Clostridium perfringens str. 13, Arabidopsi"
- 4076 4206 31 "Dictyostelium discoideum, Leptospira interrogans serovar lai str. 56601, Mus musculus, Homo sapiens, Drosophila melanogaster, Mycoplasma gallisepticum R, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Campylobacter jejuni subsp. jejuni N"
- 4077 4207 44 "Homo sapiens, Caenorhabditis elegans, Streptococcus mutans UA159, Yersinia pestis KIM, Mus musculus, Yersinia pestis C092, Bacillus anthracis str. Ames, Drosophila melanogaster, Fringilla coelebs papillomavirus, Rickettsia bellii, Oryza sativa (japonica cultivar-group), Listeria monocytogenes, Listeria innocua, Schizosaccharomyces pombe" 10
- 4078 4208 24 "Arabidopsis thaliana, Mus musculus, Malawimonas jakobiformis, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Plasmodium falciparum 3D7, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Bombus brasiliensis, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Plasmodium yoelii, Torenia hybrida, Staphylococcus aureus subsp. aureus Mu50" 20
- 4079 4209 31 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Drosophila melanogaster, Sus scrofa, Mus musculus, Cairina moschata, Felis catus, Trypanosoma cruzi, Caenorhabditis elegans, Dictyostelium discoideum, Poncirus trifoliata, Populus balsamifera subsp. trichocarpa, Ceratitis capitata, Trypanosoma brucei, Medicago truncatula, Rattus norvegicus, Tetraodon nigroviridis, Sus scrofa domestica, Atelerix albiventris, Drosophila willistoni, Drosophila virilis, Plasmodium falciparum, Schinus terebinthifolius"
- 4080 4210 35 "Mus musculus, Homo sapiens, Human coxsackievirus A12, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Peziza nivalis, Borrelia burgdorferi, Dictyostelium discoideum, Felis catus, Rickettsia conorii, Campylobacter jejuni subsp. jejuni NCTC 11168, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Ateline herpesvirus 3, Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50" 30
- 4081 4211 24 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Actinobacillus actinomycetemcomitans"
- 4082 4212 25 "Homo sapiens, Arabidopsis thaliana, Human immunodeficiency virus 1, Danio rerio, Mus musculus, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Pyrococcus abyssi, Chlamydophila pneumoniae CWL029, Tetranychus urticae, Tetranychus turkestani, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Caenorhabditis elegans, Chlamydophila pneumoniae TW-183, Medicago truncatula, Lumpy skin disease virus, Oryctolagus cuniculus" 40
- 4083 4213 25 "Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Pongo pygmaeus, Mus musculus, Drepanaphis utahensis, Adelges cooleyi, Adelges japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Pantroglydites, Ceratovacuna lanigera, Xenopus laevis, Papio anubis, Methanosarcina acetivorans C2A, Dendrobates imitator, Daucus carota, Plasmodium falciparum 3D7, Cion intestinalis, Rattus norvegicus, Arabidopsis thaliana"
- 4084 4214 43 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Pas 50

- teurella multocida, Haemophilus ducreyi 35000HP, Haemophilus influenzae Rd KW20, Citrobacter rodentium, Salmonella typhimurium LT2, Shigella flexneri 2a str. 2457T, Salmonella enterica subsp. enterica s"
- 4085 4215 35 "Thermotoga maritima, Bordetella bronchiseptica, Bordetella parapertussis, Bordetella pertussis, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Clostridium tetani E88, Thermoanaerobacter tengcongensis, Bacillus halodurans, Human immunodeficiency virus 1, Pirellula sp., Homo sapiens, Yersinia pestis KIM, Chlorobium tepidum TLS, Clostridium acetobutylicum, Caenorhabditis briggsae, Bacteriophage Aeh1, Yersinia pestis C092, Mus musculus, Rattus norvegicus, Aquifex aeolicus VF5, Vibrio vulnificus CMCP6, Xylella fastidiosa Temecula1, Pseudomonas putida KT2440, Plasmodium falciparum 3D7, Sus scrofa, Xylella fastidiosa 9a5c, Photorhabdus luminescens, Pasteurella multocida, Vibrio cholerae, Trypanosoma brucei, Streptomyces avermitilis MA-4680, Vibrio parahaemolyticus, Caenorhabditis elegans, Schizosaccharomyces pombe, Lepidothamnus intermedius, Clostridium perfringens str. 13" 10
- 4086 4216 28 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Medicago truncatula, Plasmodium falciparum 3D7, Tjirtudessus raesidensis, Anolis transversalis, Clostridium acetobutylicum, Norellia striolata, Norellia spinimana, Arabidopsis thaliana, Milk vetch dwarf virus, Vicia faba, Bactrocerata tau C, Bacillus cereus ATCC 14579, Brachypalpoidea lentus, Drosophila melanogaster, Lycopersicon esculentum, Anastrepha barbiellinii, Escherichia coli, Escherichia coli K12, Calathus angustulus, Calathus rectus, Pan troglodytes, Drosophila saltans, Neurospora crassa" 20
- 4087 4217 67 "Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Homo sapiens, synthetic construct, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Oryza sativa, Bos taurus, Escherichia coli, Escherichia coli K12, Arabidopsis thaliana, Plasmodium falciparum 3D7, Streptococcus pneumoniae" 30
- 4088 4218 25 "Mus musculus, Homo sapiens, Carcharhinus plumbeus, Staphylococcus aureus, Oryza sativa (japonica cultivar-group), Tarasa thyrsoidea, Tarasa tenella, Tarasa operculata, Tarasa humilis, Tarasa capitata, Tarasa alberti, Hymenodontopsis stresemannii, Pan troglodytes, Tarasa urbaniana, Tarasa trisepta, Tarasa tenuis, Tarasa tarapacana, Tarasa rhombifolia, Tarasa pediculata, Tarasa odonellii, Tarasa nototrichoides, Tarasa meyeri, Tarasa marinii, Tarasa lateristata, Tarasa heterophylla, Tarasa geranioides, Tarasa corrugata, Tarasa congestiflora, Tarasa cerrateae, Tarasa cardenasii, Tarasa antofagastana, Nototriche anthemidifolia, Nototriche pedicularifolia, Nototriche flabellata, Sphaeralcea philippiana, Sphaeralcea wrightii, Sphaeralcea crispa, Sphaeralcea cordobensis, Sphaeralcea angustifolia, Ureaplasma urealyticum, Lycopersicon esculentum, Lotus corniculatus var. japonicus" 40
- 4089 4219 32 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Danio rerio, Gallus gallus, Bacillus anthracis str. Ames, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Sus scrofa, Plasmodium falciparum 3D7, Wolbachia endosymbiont of Brugia malayi, Glossina palpalis palpalis, Caenorhabditis briggsae, Dipodascus magnusii, Rattus norvegicus" 40
- 4090 4220 39 "Homo sapiens, Ciona intestinalis, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Ophryotrocha gracilis, Clostridium acetobutylicum, Sulfolobus solfataricus, Solanum tuberosum, Mycoplasma pneumoniae, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Danio rerio, 50

- Porphyrostachys pilifera, Pinus pinaster, Candidatus Carsonella ruddii, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Gallus gallus, Vibrio vulnificus CMCP6, Caenorhabditis elegans, Spodoptera exigua nucleopolyhedrovirus, Oryza sativa, Lactococcus lactis subsp. lactis, Mycoplasma mycoides subsp. mycoides SC, Mycoplasma sp. 'bovine group 7', Arabidopsis thaliana, Pyrococcus horikoshii, Solanum cardiophyllum, Odontocheila cayennensis, Cenothyla consobrina, Oreochromis niloticus"
- 4091 4221 25 "Mus musculus, Rattus norvegicus, Homo sapiens, Danio rerio, Dictyostelium discoideum, Takifugu rubripes, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus" 10
- 4092 4222 25 "Schizosaccharomyces pombe, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Homo sapiens, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Caulerpa selago, Caulerpa scalpelliformis, Caulerpa webbiana var. pickerlingii, Caulerpa paspaloides, Caulerpa sp. viii.00-1-52, Caulerpa lanuginosa, Caulerpa webbiana, Caulerpa racemosa var. macrophysa, Caulerpa mexicana, Caulerpa racemosa, Caulerpa peltata, Caulerpa sertularioides, Caulerpa ashmeadii, Caulerpa distichophylla, Caulerpa taxifolia, Caulerpa serrulata, Caulerpa cupressoides var. flabellata, Caulerpa cupressoides, Caulerpa cupressoides var. lycopodium" 20
- 4093 4223 23 "Mus musculus, Homo sapiens, Clostridium acetobutylicum, Arabidopsis thaliana, Drosophila melanogaster, Zea mays, Danio rerio"
- 4094 4224 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Caenorhabditis elegans, Listeria monocytogenes, Prochlorococcus marinus subsp. marinus str. CCMP1375, Tetraodon nigroviridis"
- 4095 4225 27 "Homo sapiens, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes, Staphylococcus aureus subsp. aureus MW2, Mus musculus, Spizellomyces punctatus, Danio rerio"
- 4096 4226 27 "Mus musculus, Xenorhabdus nematophila, Homo sapiens, Arabidopsis thaliana, Clostridium perfringens str. 13" 30
- 4097 4227 23 "Homo sapiens, Mus musculus, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus Mu50, Caenorhabditis elegans"
- 4098 4228 40 "Homo sapiens, Pardosa milvina, Mus musculus, Plasmodium falciparum 3D7, Sulfolobus tokodaii, Caenorhabditis elegans, Danio rerio, Luciola lateralis, Leptospira interrogans serovar lai str. 56601, Schmidtea mediterranea, Microscilla sp. PRE1, Arabidopsis thaliana, Saccharomyces cerevisiae, Ehrlichia canis, Dictyostelium purpureum"
- 4099 4229 24 "Homo sapiens, Branchiostoma lanceolatum, Mus musculus, Pan troglodytes, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Xylella fastidiosa 9a5c, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Vibrio parahaemolyticus, Medicago truncatula, Bacillus megaterium, Arabidopsis thaliana" 40
- 4100 4230 31 "Danio rerio, Homo sapiens, Mus musculus, Drosophila melanogaster, Euglena gracilis, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)"
- 4101 4231 42 "Helicobacter hepaticus ATCC 51449, Mus musculus, Homo sapiens, Rattus norvegicus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster"
- 4102 4232 55 "Listeria innocua, Bacillus cereus ATCC 14579, Staphylococcus aureus" 50

- occus epidermidis ATCC 12228, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Staphylococcus epidermidis*, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Streptococcus pneumoniae* TIGR4, *Callopietria mollissima*, *Oncocnemis obscurata*, *Raphia abrupta*, *Cryptosporidium parvum*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Listeria monocytogenes*"
- 4103 4233 27 "Caenorhabditis elegans, *Mycoplasma gallinarum*, *Homo sapiens*"
- 4104 4234 27 "Mus musculus, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pholidota imbricata*, *Neogyna gardneriana*" 10
- 4105 4235 68 "Bacillus halodurans, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Caenorhabditis elegans*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)"
- 4106 4236 28 "Homo sapiens, *Rickettsia conorii*, *Rickettsia montanensis*, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Guillardia theta*, *Danio rerio*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Bactrocera alyxiae*, *Caenorhabditis elegans*, *Pasteurella multocida*, *Plasmodium falciparum*, *Schizosaccharomyces pombe*, *Melanoplus sanguinipes* entomopoxvirus" 20
- 4107 4237 27 "Dictyostelium discoideum, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Papaver somniferum*, *Guillardia theta*, *Oryzias latipes*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Nitrosomonas europaea* ATCC 19718, *Helicobacter hepaticus* ATCC 51449"
- 4108 4238 29 "Dictyostelium discoideum, *Homo sapiens*, *Mus musculus*, *Chlamydomonas reinhardtii* GPIC, *Symbiodinium kawagutii*, *Plasmodium falciparum* 3D7, *Pasteurella multocida*, *Streptococcus thermophilus* bacteriophage Sfi21, *Danio rerio*, *Rattus norvegicus*"
- 4109 4239 27 "Homo sapiens, Human endogenous retrovirus HCML-ARV, *Vibrio vulnificus* CMCP6, *Mus musculus*, *Pan troglodytes*, *Drosophila melanogaster*, *Zea mays* subsp. *mays*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*" 30
- 4110 4240 23 "Danio rerio, *Homo sapiens*, *Sus scrofa*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Mus musculus*"
- 4111 4241 25 "Vibrio vulnificus CMCP6, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Clostridium tetani* E88, *Escherichia coli* 0157:H7 EDL933, *Cryptosporidium parvum*, *Schizosaccharomyces pombe*, *Helicobacter pylori* J99, *Helicobacter hepaticus* ATCC 51449, *Escherichia coli* 0157:H7"
- 4112 4242 27 "Mus musculus, *Homo sapiens*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Vibrio vulnificus* CMCP6, *Drosophila melanogaster*, *Danio rerio*, *Mammalian orthoreovirus 2*" 40
- 4113 4243 23 "Trypanosoma brucei, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Homo sapiens*, *Macaca fascicularis*, *Mus musculus*, *Tetraodon nigroviridis*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7"
- 4114 4244 32 "Mus musculus, *Xylella fastidiosa* Temecula1, *Xylella fastidiosa* 9a5c, *Lactococcus lactis* subsp. *lactis*, *Listeria monocytogenes*, *Bacillus cereus* ATCC 14579, *Papio anubis*, *Homo sapiens*, *Arabidopsis thaliana*, *Prochlorococcus marinus*, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27" 50

- 4115 4245 25 "Homo sapiens, Saccharomyces cerevisiae, Drosophila melanogaster, Mus musculus, Danio rerio, Clostridium perfringens str. 13, Caenorhabditis elegans"
- 4116 4246 33 "Shigella flexneri 2a str. 2457T, Drosophila melanogaster, Shigella flexneri 2a str. 301, Buchnera aphidicola str. Sg (Schizaphis graminum), Escherichia coli 0157:H7 EDL933, Escherichia coli, Escherichia coli K12, Escherichia coli 0157:H7, Bacillus halodurans, Yersinia pestis KIM, Homo sapiens, Ureaplasma urealyticum, Mus musculus, Enterobacteria phage RB49, Yersinia pestis C092, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Caenorhabditis elegans, Plasmodium falciparum 3D7, Corynebacterium efficiens YS-314, Danio rerio, Arabidopsis thaliana" 10
- 4117 4247 35 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Oryza sativa, Arabidopsis thaliana, Vibrio vulnificus CMCP6, Drosophila melanogaster, Anaplasma marginale, Borrelia garinii, Borrelia burgdorferi"
- 4118 4248 23 "Danio rerio, Homo sapiens, Mus musculus, Pseudomonas aeruginosa PA01, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Mycobacterium tuberculosis CDC1551, Mycobacterium tuberculosis H37Rv, Mycobacterium bovis s ubsp. bovis AF2122/97, Mycobacterium tuberculosis, Pseudomonas aeruginosa"
- 4119 4249 28 "Medicago truncatula, Danio rerio, Homo sapiens, Mus musculus, Gallus gallus, Arabidopsis thaliana, Caenorhabditis elegans, Clostridium perfringens str. 13, Plasmodium falciparum, Bacteroides thetaiotaomicron VPI-548 2, Drosophila melanogaster, Pasteurella multocida, Prochlorococcus marinus, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Trypanosoma brucei brucei" 20
- 4120 4250 36 "Homo sapiens, Melipona bicolor, Wolffia neglecta, Arabidopsis thaliana, Mus musculus, Dictyostelium discoideum, Paramecium tetraurelia, Caenorhabditis elegans, Cryptophlebia leucotreta granulovirus, Xenopus laevis, Allogromiina sp. 1141, Drosophila melanogaster, Rattus norvegicus, Bacillus anthracis str. Ames, Monosiga brevicollis, Plasmodium falciparum 3D7, Syrrhopodon muelleri, Leucophanes seychellarum, Syrrhopodon trachyphyllus, Syrrhopodon perarmatus, Exodictyon incrassatum, Leucophanes glaucum, Leucophanes albescens, Arthrocnemum schimperii, Syrrhopodon confertus, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium chabaudi, Schizosaccharomyces pombe, Ciona intestinalis, Bos taurus, Bacillus cereus ATCC 14579, Aster yellows phytoplasma, Vibrio proteolyticus, Staphylococcus epidermidis ATCC 12228, Collinias sp. B, Collinias sp. A" 30
- 4121 4251 27 "Homo sapiens, Drosophila melanogaster, Hericium coralloides, Candelabrochaete africana, Staphylococcus epidermidis ATCC 12228, Mus musculus, Plasmodium falciparum 3D7, Lactococcus lactis subsp. lactis, Danio rerio, Lactococcus lactis, Sparassis radicata, Postia leucomallela, Antrodia vaillantii, Bondarzewia montana, Arabidopsis thaliana, Sulfolobus solfataricus, Trypanosoma cruzi, Vicia faba, Caenorhabditis elegans, Agrocybe aegerita, Schizosaccharomyces pombe, Bondarzewia berkeleyi, Postia lactea" 40
- 4122 4252 28 "Sulfolobus solfataricus, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Rickettsia conorii, Arabidopsis thaliana, Solenostemon scutellarioides, Rattus norvegicus, Danio rerio"
- 4123 4253 25 "Homo sapiens, Mus musculus, Danio rerio, Candidatus Blochmannia floridanus, Cryptosporidium parvum, Bos taurus, Schizosaccharomyces pombe, Oryctolagus cuniculus, Rattus sp., Arabidopsis thaliana" 50

- 4124 4254 23 "Homo sapiens, Bos taurus, Mus musculus, Drosophila melanogaster, Danio rerio"
- 4125 4255 31 "Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Arabidopsis thaliana, Potorous tridactylus"
- 4126 4256 24 "Mus musculus, Dictyostelium discoideum, Homo sapiens, Mycoplasma pulmonis, Danio rerio, Caenorhabditis elegans, Vitis vinifera, Lycopersicon esculentum"
- 4127 4257 53 "Oryza sativa (japonica cultivar-group), Oryza sativa, Corynebacterium diphtheriae, Homo sapiens, Lotus corniculatus var. japonicus, Danio rerio, Arabidopsis thaliana, Caenorhabditis elegans, Mus musculus, Cryptosporidium parvum" 10
- 4128 4258 30 "Clostridium perfringens str. 13, Homo sapiens, Cyprinus carpio, Haemophilus influenzae, Liporhopalum virgatae, Clostridium perfringens, Haemophilus influenzae Rd KW20, Bombus sp. SLB-2003, Bombus flavus, Bombus campestris, Bombus sichelii, Bombus ruderarius, Bombus pascuorum, Bombus muscorum, Bombus monticola, Bombus mesomelas, Bombus hyperboreus, Bombus humilis, Bombus tricornis, Bombus schrencki, Bombus pseudobaicalensis, Bombus humilis subbaicalensis, Bombus honshuensis, Bombus flavobarbatus, Bombus deuteronymus maruhanabachi, Bombus deuteronymus deuteronymus, Bombus anachoreta, Bombus hypnorum koropokrus, Bombus ussurensis, Bombus diversus, Bombus diversus tersatus, Kradibia ohuensis, Ceratosolen riparianus, Medicago truncatula, Mus musculus, Lepidopsocid R S-2001, Trypanosoma carassii, Pan troglodytes, Arabidopsis thaliana, Plasmodium falciparum 3D7, Pherocera albihalateralis" 20
- 4129 4259 24 "Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Mus musculus, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes SSI-1, Homo sapiens, Danio rerio, Latrodectus tredecimguttatus, Anthoceros formosae, uncultured Bacilli bacterium"
- 4130 4260 23 "Mus musculus, Homo sapiens, Brucella melitensis 16M, Musa acuminata, Brucella suis 1330, Rickettsia conorii, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Rickettsia prowazekii" 30
- 4131 4261 31 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Atropa belladonna, Nicotiana tabacum, Danio rerio, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Monosiga brevicollis, Caenorhabditis elegans, Pichia pastoris, Clostridium acetobutylicum, Candidatus Carsonella ruddii, Populus balsamifera subsp. trichocarpa, Oryza sativa (japonica cultivar-group), Holops sp. SLW-2002, Ganoderma lucidum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Euhadra herklotsi, Lotus corniculatus var. japonicus, Mictyris brevidactylus, Clostridium perfringens, Clostridium perfringens str. 13"
- 4132 4262 27 "Homo sapiens, Nostoc sp. PCC 7120, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus" 40
- 4133 4263 23 "Oryza sativa (japonica cultivar-group), Homo sapiens, Pan troglodytes, Bacillus cereus ATCC 14579, Saccharomyces cerevisiae, Mus musculus, Danio rerio, Arabidopsis thaliana"
- 4134 4264 24 "Homo sapiens, Thermoanaerobacter tengcongensis, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Haemophilus influenzae Rd KW20, Clostridium tetani E88, Streptococcus mutans UA159, Mus musculus, Danio rerio, Caenorhabditis elegans, Sulfolobus tokodaii, Pirellula sp., Rattus norvegicus, Helicobacter hepaticus ATCC 51449, Bacillus halodurans"
- 4135 4265 27 "Plasmodium falciparum 3D7, Drosophila melanogaster, Mus" 50

- musculus, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Oryza sativa*, *Friesella schrottkyi*, *Proglyphus obscurus*, *Arabidopsis thaliana*, *Danio rerio*, *Saccharomyces douglasii*, *Plasmodium falciparum*"
- 4136 4266 25 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*, *Danio rerio*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Methanosarcina mazei* Goe1, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus"
- 4137 4267 61 "Deinococcus radiodurans, *Lotus corniculatus* var. japonicus, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Schizosaccharomyces pombe*" 10
- 4138 4268 31 "Arabidopsis thaliana, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Petunia x hybrida*, *Bacillus cereus* ATCC 14579, *Candidatus Carsonella ruddii*, *Aricia artaxerxes*, *Saccharomyces cerevisiae*, *Daucus carota*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Pisum sativum*, *Swertia* aff. pseudohookeri, *Clostridium perfringens* str. 13"
- 4139 4269 28 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Papio anubis*, *Cryptococcus neoformans* var. grubii, *Plasmodium falciparum* 3D7, *Pyrococcus abyssi*, *Mycoplasma penetrans*, *Danio rerio*, *Rattus norvegicus*" 20
- 4140 4270 27 "Kawanaphila yarraga, *Kawanaphila mirla*, *Kawanaphila iyo uta*, *Phytophthora colocasiae*, *Phytophthora capsici*, *Drosophila melanogaster*, *Schizosaccharomyces pombe*, *Homo sapiens*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Rickettsia prowazekii*, *Oryza sativa* (japonica cultivar-group), *Pythium volutum*, *Pythium irregulare*, *Pythium arrhenomanes*, *Pythium vanterpoolii*, *Pythium arisporum*, *Danio rerio*, *Mus musculus*, *Bacteroides thetaiotaomicron* VPI-5482, *Sulfolobus solfataricus*, *Bacillus thuringiensis*, *Bacillus thuringiensis* serovar israelensis, *Saccharomyces cerevisiae*" 30
- 4141 4271 36 "Prochlorococcus marinus subsp. marinus str. CCMP1375, *Vibrio vulnificus* CMCP6, *Oceanobacillus iheyensis* HTE831, *Listeria monocytogenes*, *Mus musculus*, *Homo sapiens*, *Saccharomyces cerevisiae*, *Ciona intestinalis*, *Enterococcus faecalis* V583, *Staphylococcus aureus*, *Sorghum bicolor*, *Methanothermobacter thermoautotrophicus* str. Delta H, *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50"
- 4142 4272 60 "Clostridium perfringens str. 13, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Drosophila littoralis*, *Rattus norvegicus*, *Danio rerio*" 40
- 4143 4273 28 "Streptococcus agalactiae 2603V/R, *Streptococcus agalactiae* NEM316, *Bacillus anthracis* str. Ames, *Staphylococcus epidermidis* ATCC 12228, *Homo sapiens*, *Caenorhabditis briggsae*, *Odontella sinensis*, *Staphylococcus epidermidis*, *Mus musculus*, *Dictyostelium discoideum*, *Bacillus licheniformis*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Apis mellifera*, *Ciona intestinalis*, *Nostoc* sp. PCC 7120"
- 4144 4274 35 "Danio rerio, *Mus musculus*, *Homo sapiens*, *Leptospira interrogans* serovar lai str. 56601, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Tetrahymena nigroviridis*, *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Caenorhabditis e* 50

- legans, *Cryptosporidium parvum*, *Oryzias latipes*"
- 4145 4275 27 "Mus musculus, Homo sapiens, *Zymomonas mobilis*, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Lotus corniculatus* var. japonicus, *Cyanidioschyzon merolae*"
- 4146 4276 27 "Danio rerio, Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Polyxena corymbosa*, *Staphylococcus aureus* subsp. aureus Mu50"
- 4147 4277 27 "Leptospira interrogans serovar lai str. 56601, Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Rattus norvegicus*, *Borrelia burgdorferi* B31, *Clostridium tetani* E88, *Prochlorococcus marinus*, *Oryctolagus cuniculus*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Danio rerio*, *Arabidopsis thaliana*" 10
- 4148 4278 27 "Homo sapiens, *Schizosaccharomyces pombe*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus*, *Synechocystis* sp. PCC 6803, *Staphylococcus aureus* subsp. aureus Mu50, *Staphylococcus aureus* bacteriophage PVL"
- 4149 4279 21 "Onchocerca volvulus, Homo sapiens, *Hordeum vulgare*, *Mus musculus*, *Dictyostelium discoideum*, *Vibrio vulnificus* CMCP6, *Ailuropoda melanoleuca*" 20
- 4150 4280 23 "*Oryza sativa* (japonica cultivar-group), *Mus musculus*, Homo sapiens, *Clostridium tetani* E88"
- 4151 4281 23 "*Bacteroides thetaiotaomicron* VPI-5482, *Arabidopsis thaliana*, Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Thermoanaerobacter tengcongensis*, *Vitis* sp. cv. 'Norton', *Oryza sativa*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Cuttsia viburnea*, *Vitis*"
- 4152 4282 27 "*Mus musculus*, Homo sapiens, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Drosophila melanogaster*, *Macaca mulatta*, *Papio anubis*, *Arabidopsis thaliana*" 30
- 4153 4283 21 "Homo sapiens, *Danio rerio*, *Drosophila melanogaster*, *Mus musculus*"
- 4154 4284 24 "*Mus musculus*, Homo sapiens, *Mycoplasma penetrans*, *Danio rerio*"
- 4155 4285 27 "Homo sapiens, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Pan troglodytes*, *Rhynchosciara americana*, *Streptococcus pyogenes*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Mus musculus*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Clostridium tetani* E88, *Hordeum vulgare* subsp. vulgare, *Bacillus subtilis*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Bacillus subtilis* subsp. subtilis str. 168, *Caenorhabditis elegans*" 40
- 4156 4286 23 "Homo sapiens, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*"
- 4157 4287 29 "Homo sapiens, *Danio rerio*, *Arabidopsis thaliana*, *Mus musculus*, *Caenorhabditis elegans*, *Medicago truncatula*, *Macaca mulatta*, *Bosmina freyi*, *Drosophila melanogaster*, *Cercopagis pengoi*, *Papio anubis*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Dictyostelium discoideum*"
- 4158 4288 31 "*Dictyostelium discoideum*, *Anopheles gambiae*, Homo sapiens, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Clostridium perfringens* str. 13" 50

- 4159 4289 30 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Gallus gallus, Danio rerio, Oryza sativa (japonica cultivar-group), Euglena deses var. mesnili"
- 4160 4290 25 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Arabidopsis thaliana, Pan troglodytes, Clostridium tetani E88, Plasmodium falciparum 3D7, Danio rerio"
- 4161 4291 23 "Homo sapiens, Medicago truncatula, Enterococcus faecalis V583, Mus musculus, Plasmodium falciparum 3D7, Clostridium tetani E88, Rattus norvegicus, Danio rerio, Enterococcus faecalis"
- 4162 4292 24 "Homo sapiens, Arabidopsis thaliana, Yersinia pseudotuberculosis, Chlamydia muridarum, Plasmodium falciparum 3D7, Danio rerio, Caenorhabditis elegans, Mus musculus" 10
- 4163 4293 27 "Mus musculus, Homo sapiens, Sus scrofa, Arabidopsis thaliana, Plasmodium falciparum 3D7, Danio rerio"
- 4164 4294 27 "Drosophila melanogaster, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Messua limbata, Danio rerio, Caenorhabditis elegans, Arabidopsis thaliana"
- 4165 4295 29 "Homo sapiens, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Drosophila melanogaster, Shewanella oneidensis MR-1, Mus musculus, Arabidopsis thaliana, Clostridium acetobutylicum, Caenorhabditis elegans, Danio rerio, Lepisosteus osseus, Medicago truncatula, Nostoc sp. PCC 7120, Clostridium perfringens, Clostridium perfringens str. 13" 20
- 4166 4296 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Oryza sativa, Bacillus cereus ATCC 14579, Mus musculus, Bacillus anthracis str. Ames, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Caenorhabditis elegans, Dictyostelium discoideum, Anilocra physodes, Mycoplasma hominis, Salmonella enterica subsp. enterica serovar Typhi, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Medicago truncatula"
- 4167 4297 27 "Danio rerio, Homo sapiens, Haemophilus influenzae Rd KW20, Mus musculus, Mycoplasma pulmonis, Plasmodium falciparum 3D7, Bos taurus, Clostridium tetani E88, Methanosarcina acetivorans C2A, Neisseria meningitidis Z2491, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Neisseria meningitidis MC58, Neisseria gonorrhoeae, Oryzias latipes" 30
- 4168 4298 24 "Rattus norvegicus, Mus musculus, Hypocrea jecorina, Homo sapiens, Drosophila melanogaster, Bos taurus, Danio rerio"
- 4169 4299 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Arabidopsis thaliana, Leptospira interrogans serovar lai str. 56601, Harpochytrium sp. JEL105, Zea mays, Cylintraustralia kochii, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Leishmania tarentolae" 40
- 4170 4300 27 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Drosophila melanogaster, Artemia franciscana, Plasmodium falciparum 3D7, Danio rerio, Oryza sativa (japonica cultivar-group), Manduca sexta, Sabella spallanzanii, Mycoplasma penetrans"
- 4171 4301 27 "Homo sapiens, Drosophila melanogaster, Acanthamoeba castellanii, Medicago truncatula, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Listeria monocytogenes, Danio rerio"
- 4172 4302 28 "Mus musculus, Clostridium tetani E88, Homo sapiens, Coturnix japonica, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Arabidopsis thaliana" 50

- 4173 4303 27 "Drosophila melanogaster, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, Arabidopsis thaliana"
- 4174 4304 73 "Desulfovibrio desulfuricans, Homo sapiens, Arabidopsis thaliana, Bordetella pertussis, Bordetella parapertussis, Mus musculus, Danio rerio, Ralstonia solanacearum"
- 4175 4305 28 "Mus musculus, Caenorhabditis briggsae, Desulfovibrio desulfuricans, Homo sapiens, Lotus corniculatus var. japonicus, Ciona intestinalis"
- 4176 4306 35 "Aquifex aeolicus VF5, Chromobacterium violaceum, Ralstonia solanacearum, Ralstonia eutropha, Leptospirillum ferrooxidans, Streptomyces coelicolor A3(2), Streptomyces avermitilis MA-4680, Enterococcus faecalis V583, Staphylococcus epidermidis ATCC 12228, Sta" 10
- 4177 4307 31 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Candidatus Carsonella ruddii, Taeniura lymma, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Clostridium acetobutylicum, Guillardia theta, Mycoplasma pneumoniae, Pichia kluyveri, Lotus co"
- 4178 4308 25 "Homo sapiens, Mus musculus, Pan troglodytes"
- 4179 4309 29 "Mus musculus, Plasmodium falciparum 3D7, Bos taurus, Homo sapiens, Bacillus anthracis str. Ames, Clostridium tetani E88, Buchnera aphidicola str. Sg (Schizaphis graminum), Clostridium acetobutylicum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Luculia grandifolia" 20
- 4180 4310 24 "Homo sapiens, Saccharomyces cerevisiae, Mus musculus, Brucella melitensis 16M, Methanosarcina mazei Goe1, Brucella suis 1330, Caenorhabditis briggsae"
- 4181 4311 24 "Homo sapiens, Danio rerio, Polypterus bichir, Caenorhabditis elegans, Mus musculus, Gallus gallus, Shewanella oneidensis MR-1, Streptococcus mutans UA159, Plasmodium falciparum 3D7, Arabidopsis thaliana, Glycine max, Oryza sativa (japonica cultivar-group), Human immunodeficiency virus 1"
- 4182 4312 25 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Papio anubis, Mizuhopecten yessoensis, Tetraodon nigroviridis, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Bacteriophage T5, Staphylococcus epidermidis, Danio rerio" 30
- 4183 4313 23 "Mus musculus, Homo sapiens, Zea mays, Clostridium acetobutylicum"
- 4184 4314 24 "Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 4185 4315 23 "Homo sapiens, Mus musculus, Mycobacterium gordonae, Saccharomyces cerevisiae, Macaca fascicularis, Arabidopsis thaliana"
- 4186 4316 23 "Homo sapiens, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Xanthomonas campestris pv. campestris str. ATCC 33913, Pyrococcus abyssi, Mus musculus, Danio rerio" 40
- 4187 4317 27 "Mus musculus, Homo sapiens, Vicia faba, Caenorhabditis elegans, Plasmodium falciparum 3D7, Triticum aestivum, Danio rerio, Arabidopsis thaliana, Medicago truncatula, Clostridium perfringens str. 13"
- 4188 4318 23 "Mus musculus, Homo sapiens, synthetic construct, Bacillus anthracis str. Ames, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Plasmodium falciparum 3D7, Danio rerio, Arabidopsis thaliana, Clostridium perfringens str. 13"
- 4189 4319 27 "Homo sapiens, Mus musculus, Leptospira interrogans serovar lai str. 56601, Banna virus, Oryza sativa (japonica cultivar-group), Lotus c" 50

- orniculatus var. japonicus, Oceanobacillus iheyensis HTE831"
- 4190 4320 28 "Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Dictyostelium discoideum, Danio rerio, Encephalitozoon cuniculi, Mus musculus"
- 4191 4321 31 "Oryza sativa (japonica cultivar-group), Homo sapiens, Candida albicans, Mus musculus, Arabidopsis thaliana, Drosophila melanogaster, Mycoplasma penetrans, Xenopus laevis, Strongylocentrotus purpuratus"
- 4192 4322 24 "Drosophila melanogaster, Homo sapiens, Danio rerio, Rhizopus microsporus var. oligosporus, Mus musculus"
- 4193 4323 25 "Buchnera aphidicola str. Sg (Schizaphis graminum), Mus musculus, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Homo sapiens, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium difficile, Fusobacterium nucleatum subsp. nucleatum ATCC 25586" 10
- 4194 4324 20 "Oryza sativa (japonica cultivar-group), Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola"
- 4195 4325 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Schizosaccharomyces pombe, Mus musculus, Caenorhabditis elegans, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Arabidopsis thaliana, Sus scrofa, Petroselinum crispum, Danio rerio, Hantaan virus, Caenorhabditis briggsae, Hantavirus LR1, Staphylococcus epidermidis, uncultured marine gamma proteobacterium EBAC31A08, Choristoneura fumiferana entomopoxvirus, Pimelia mauritanica bletoni, Influenza B virus, Choristoneura biennis entomopoxvirus, Hordeum vulgare subsp. vulgare, Plasmodium chabaudi chabaudi" 20
- 4196 4326 31 "Homo sapiens, Plasmodium falciparum 3D7, Dictyostelium discoideum, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Streptococcus pyogenes MGAS315, Temperate phage PhiNIH1.1, Plasmodium falciparum, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Neocallimastix frontalis, Glycine max, Pan troglodytes, Cyprinus carpio, Sorghum bicolor, Prochlorococcus marinus, Danio rerio, Papio anubis" 30
- 4197 4327 23 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Vibrio vulnificus CMCP6, Oryza sativa (japonica cultivar-group), Vibrio parahaemolyticus" 30
- 4198 4328 28 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Hevea brasiliensis, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Pan troglodytes, Dictyostelium discoideum, Mus musculus, Oncorhynchus tshawytscha, Oncorhynchus kisutch, Lotus corniculatus var. japonicus, Ciona intestinalis"
- 4199 4329 31 "Leptospira interrogans serovar lai str. 56601, Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Oryza sativa, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Cryptosporidium parvum, Staphylococcus aureus subsp. aureus Mu50" 40
- 4200 4330 33 "Ciona intestinalis, Homo sapiens, Clostridium perfringens str. 13, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Drosophila melanogaster, Mycoplasma capricolum, Arabidopsis thaliana, Mus musculus, Lotus corniculatus var. japonicus, Streptococcus thermophilus bacteriophage 7201, Oryza sativa (japonica cultivar-group)"
- 4201 4331 36 "Plasmodium falciparum 3D7, Homo sapiens, Danio rerio, Mus musculus, Plasmodium falciparum, Drosophila melanogaster, Kluyveromyces polysporus, Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Lotus corniculatus v 50

- ar. japonicus, Dictyostelium discoideum, Dermatobia hominis, Oryza sativa, Medicago truncatula, Monoclea gottschei subsp. gottschei, Zea mays, Caenorhabditis elegans"
- 4202 4332 28 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Nostoc sp. PCC 7120, Gibberella fujikuroi, Gibberella circinata, Pan troglodytes, Aquifex aeolicus VF5, Drosophila melanogaster, Sus scrofa, Fusarium oxysporum, Streptococcus pyogenes MGAS315, Streptococcus"
- 4203 4333 24 "Medicago truncatula, Dictyostelium discoideum, Mus musculus, Rattus norvegicus, Arabidopsis thaliana, Coxiella burnetii RSA 493, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Petunia x hybrida, Saccharomyces cerevisiae, Phalaris aquatica" 10
- 4204 4334 29 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Drosophila melanogaster, Sulfolobus solfataricus, Prochlorococcus marinus, Danio rerio, Ciona intestinalis, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Scutellospora castanea, Pan troglodytes, Bacteroides fragilis, Papio anubis, Streptococcus mutans UA159, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Scutellospora pellucida, Nostoc sp. PCC 7120"
- 4205 4335 34 "Mus musculus, Homo sapiens, Crepidogaster ambreana, Clostridium acetobutylicum, Sulfolobus solfataricus, Danio rerio, Sulfolobus tokodaii, Clostridium perfringens str. 13, Buchnera aphidicola str. Bp (Baizongia pistaciae), Caenorhabditis elegans, Plasmodium falciparum, Human papillomavirus type 65, Macaca fascicularis" 20
- 4206 4336 27 "Arabidopsis thaliana, Homo sapiens, Medicago truncatula, Oryza sativa (japonica cultivar-group), Mus musculus, Enterococcus faecalis V583, Tetrahymena thermophila, Gallus gallus, Plasmodium falciparum 3D7, Tridax babisioides, Caenorhabditis elegans, Streptococcus mutans UA159, Streptococcus agalactiae 2603V/R, TT virus, Plasmodium falciparum, Euglena gracilis, Streptococcus agalactiae NEM316, Campylobacter jejuni subsp. jejuni NCTC 11168, Tetrahymena pyriformis, Oceanobacillus iheyensis HTE831, Encephalitozoon cuniculi, Danio rerio, Methanocaldococcus jannaschii, Nostoc sp. PCC 7120" 30
- 4207 4337 27 "Monosiga brevicollis, Homo sapiens, Zymomonas mobilis, Bacillus licheniformis, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Pneumocystis carinii, Mus musculus"
- 4208 4338 27 "Homo sapiens, Oceanobacillus iheyensis HTE831, Medicago truncatula, Mus musculus, Escherichia coli, Danio rerio, Arabidopsis thaliana, Paecilomyces farinosus, Oryza sativa (japonica cultivar-group), Dennyus cypsiurus"
- 4209 4339 27 "Homo sapiens, Clostridium acetobutylicum, Mus musculus, Clostridium tetani E88, Drosophila melanogaster, Plasmodium falciparum 3D7, Mycoplasma pulmonis, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Polymixia lowei" 40
- 4210 4340 28 "Mus musculus, Homo sapiens, Clostridium acetobutylicum, Arabidopsis thaliana, Oryza sativa, Paramecium primaurelia, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Buchnera aphidicola str. Bp (Baizongia pistaciae), Coxiella burnetii, Wolbachia sp. wKue"
- 4211 4341 46 "Danio rerio, Arabidopsis thaliana, Dictyostelium discoideum, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Calomys callosus, Schmidtea mediterranea, Chrysomya megacephala, Lotus corniculatus var. japonicus, 50

- Oryza sativa* (japonica cultivar-group), *Drosophila sechellia*, *Gallus gallus*, *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Candidatus Carsonella ruddii*, *Saccharomyces transvaalensis*, *Populus balsamifera* subsp. *trichocarpa*, *Exoneura nigrescens*, *Exoneura nigrithirta*, *Exoneura robusta*, *Exoneura angophorae*, *Plasmodium falciparum*, *Trypanosoma brucei*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Agrocybe aegerita*"
- 4212 4342 35 "Zerene eurydice, *Zerene cesonia*, *Borrelia burgdorferi* B31, *Homo sapiens*, *Dictyostelium discoideum*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Mycoplasma penetrans*, *Medicago truncatula*, *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Plasmodium falciparum*, *Mycoplasma pulmonis*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Hyalophora cecropia*, *Pan troglodytes*, *Clostridium tetani* E88, *Carex humboldtiana*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Lactococcus lactis* subsp. *lactis*, *Clostridium diolis*, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*, *Saccharomyces servazzii*, *Anopheles gambiae*, *Laevipeneroplis proteus*, *Myrmecia croslandi*, *Bactrocera dorsalis*, *Chrysomya putoria*, *Clostridium perfringens* str. 13, *Enterococcus faecalis* V583"
- 4213 4343 36 "*Danio rerio*, *Homo sapiens*, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Arabidopsis thaliana*, *Rickettsia conorii*, *Leptospira interrogans* serovar *lai* str. 56601, *Oryza sativa* (japonica cultivar-group), *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mus musculus*, *Saccharomyces cerevisiae*, *Rattus norvegicus*, *Medicago truncatula*, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila erecta*, *Zea mays*, *Caenorhabditis briggsae*, *Cryphonectria parasitica*, *Sulfolobus solfataricus*, *Prochlorococcus marinus*, *Rickettsia rickettsii*, *Candidatus Blochmannia floridanus*, *Gorilla gorilla*, *Protaphidius wissmannii*, *Plasmodium falciparum* 3D7, *Gibberella zeae*, *Melanoplus sanguinipes* entomopoxvirus, *Cyprinus carpio*"
- 4214 4344 39 "*Homo sapiens*, *Danio rerio*, *Xenopus laevis*, *Mus musculus*, *Dictyostelium discoideum*, *Saccharomyces cerevisiae*, *Rickettsia prowazekii*, *Methanocaldococcus jannaschii*, *Drosophila melanogaster*, *Trabeculus hexakon*, *Streptococcus pyogenes* MGAS315, *Rattus norvegicus*, *Arabidopsis thaliana*, *Streptococcus pyogenes* SSI-1, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Hypostomus ancistroides*, *Apis mellifera*"
- 4215 4345 29 "*Gallus gallus*, *Arabidopsis thaliana*, *Methanocaldococcus jannaschii*, *Homo sapiens*, *Helicobacter hepaticus* ATCC 51449, *Mus musculus*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Caenorhabditis elegans*, *Sinorhizobium meliloti*, *Chironomus tentans*, *Danio rerio*, *Branchiostoma floridae*"
- 4216 4346 23 "*Arabidopsis thaliana*, *Homo sapiens*, *Dictyostelium discoideum*, *Mus musculus*"
- 4217 4347 29 "*Homo sapiens*, *Rattus norvegicus*, *Methanosarcina mazei* Goe1, *Mus musculus*, *Pan troglodytes*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*, *Campylobacter jejuni*, *Dictyostelium discoideum*, *Sulfolobus solfataricus*, *Takifugu rubripes*, *Rickettsia montanensis*, *Arabidopsis thaliana*, *Plasmodium chabaudi chabaudi*"
- 4218 4348 27 "*Mus musculus*, *Thermoplasma volcanium*, *Homo sapiens*, *Danio rerio*, *Streptococcus pneumoniae*, *Clostridium perfringens* str. 13"
- 4219 4349 35 "*Homo sapiens*, *Mus musculus*, *Lactococcus lactis*, *Caenorh*

- abditis elegans, Oryctolagus cuniculus, Sus scrofa, Enterococcus faecalis V583, Enterococcus faecalis, Arabidopsis thaliana, Oryza sativa, Saururus cernuus, Caenorhabditis briggsae, Plasmodium falciparum"
- 4220 4350 28 "Homo sapiens, Mus musculus, Clostridium tetani E88, Clostridium acetobutylicum, Bacillus cereus ATCC 14579, Chlamydia muridarum, Drosophila melanogaster, Beta vulgaris, Candidatus Blochmannia floridanus"
- 4221 4351 170 "Coxiella burnetii RSA 493, Chlamydia muridarum, Chlamydia ophila caviae GPIC, Chlamydia pneumoniae CWL029, Chlamydia pneumoniae AR 39, Chlamydia pneumoniae J138, Mus musculus, Chlamydia pneumoniae TW-183, Orobanchaceae cernua var. cumana, Drosophila melanogaster, Homo sapiens, Plasmodium falciparum, Plasmodium falciparum 3D7, Danio rerio" 10
- 4222 4352 31 "Homo sapiens, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Pneumocystis carinii, Arabidopsis thaliana, Mus musculus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Ovine lentivirus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Bufo himalayanus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group), Helicobacter pylori 26695, Helicobacter pylori J99, Danio rerio, Plasmodium falciparum"
- 4223 4353 28 "Mus musculus, Yersinia enterocolitica, Yersinia pestis, Yersinia pseudotuberculosis, Yersinia pestis KIM, Homo sapiens, Danio rerio, Vibrio vulnificus CMCP6, Zea mays, Entamoeba histolytica, Lotus corniculatus var. japonicus, Vibrio vulnificus, Oceanobacillus iheyensis HTE831, Tropheryma whipplei str. Twist, Arabidopsis thaliana, Takifugu rubripes, Tropheryma whipplei TW08 /27" 20
- 4224 4354 32 "Oceanobacillus iheyensis HTE831, Homo sapiens, Candidatus Blochmannia floridanus, Mus musculus, Bacillus cereus ATCC 14579, Vibrio vulnificus CMCP6, Drosophila melanogaster, Shewanella oneidensis MR-1, Danio rerio"
- 4225 4355 31 "Homo sapiens, Arabidopsis thaliana, Aquifex aeolicus VF 5, Papio anubis, Mus musculus, Plasmodium falciparum 3D7"
- 4226 4356 27 "Rattus norvegicus, Homo sapiens, Mus musculus, Pseudomonas aeruginosa PA01, Sus scrofa, Pseudomonas aeruginosa, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Oryctolagus cuniculus" 30
- 4227 4357 28 "Coxiella burnetii RSA 493, Chlamydia trachomatis, Chlamydia muridarum, Mus musculus, Xenopus laevis, Paracoccidioides brasiliensis, Homo sapiens, Tetrahymena capricornis, Danio rerio, Drosophila melanogaster, Clostridium acetobutylicum, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus"
- 4228 4358 27 "Aplysia californica, Homo sapiens, Oceanobacillus iheyensis HTE831, Mus musculus, Danio rerio, Pan troglodytes, Caenorhabditis elegans, Cryptosporidium parvum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Gallus gallus" 40
- 4229 4359 27 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Vicia faba, Oryza sativa (japonica cultivar-group)"
- 4230 4360 24 "Clostridium acetobutylicum uncultured marine gamma proteobacterium EBAC31A08, Danio rerio, Shigella flexneri 2a str. 2457T, Vibrio vulnificus CMCP6, Mus musculus, Shigella flexneri 2a str. 301, Arabidopsis thaliana, Saccharomyces cerevisiae, Homo sapiens"
- 4231 4361 27 "Homo sapiens, Schmidtea mediterranea, Macaca mulatta, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pan troglodytes, Papio anubis, Bacillus sp. BP-7, Planomicrobium okeanokoites, Dictyostelium discoideum, Mus 50

- musculus, Plasmodium falciparum 3D7, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4"
- 4232 4362 33 "Coxiella burnetii RSA 493, Medicago truncatula, Homo sapiens, Drosophila melanogaster, Methanosarcina acetivorans C2A, Mus musculus, Arabidopsis thaliana"
- 4233 4363 27 "Homo sapiens, Danio rerio, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group)"
- 4234 4364 44 "Chlamydia muridarum, Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis elegans, Oryctolagus cuniculus, Sus scrofa, Chromobacterium violaceum, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Ciona intestinalis, Saccharomyces cerevisiae, Cipura campanulata, Penicillium chrysogenum" 10
- 4235 4365 28 "Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Pyrobaculum aerophilum str. IM2, Mus musculus, Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Fragaria inumae, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Strauzia intermedia, Oryza sativa (japonica cultivar-group), Streptococcus thermophilus, Medicago truncatula, Staphylococcus aureus, Pan troglodytes, Shewanella oneidensis MR-1, Zymomonas mobilis, Phragmites australis, Streptococcus pneumoniae R6, Bos taurus, Heterodoxus macropus, Pasteurella multocida, Ceratitidis capitata, Sus scrofa, Chironomus tentans, Artibeus jamaicensis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 20
- 4236 4366 31 "Homo sapiens, Medicago truncatula, Mus musculus, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Pan troglodytes, Sorghum bicolor, Arabidopsis thaliana, Cryptosporidium parvum, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Lemur catta, Clostridium tetani E88, Papio anubis, Cryptococcus arrabidenensis, Thermoanaerobacter tengcongensis, Saccharomyces cerevisiae, Rickettsia conorii, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Rattus norvegicus, Mycoplasma penetrans, Campylobacter rectus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Borrelia burgdorferi, Oryctolagus cuniculus, Populus nigra" 30
- 4237 4367 24 "Mus musculus, Homo sapiens, Oryctolagus cuniculus, Hydra vulgaris, Pyrobaculum aerophilum str. IM2, Caenorhabditis elegans"
- 4238 4368 26 "Homo sapiens, Danio rerio, Mus musculus, Caenorhabditis elegans, Mycoplasma agalactiae, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Thermoplasma volcanium, Bacillus subtilis subsp. subtilis str. 168, Anopheles gambiae"
- 4239 4369 23 "Mycoplasma penetrans, Homo sapiens, Papio anubis, Oryza sativa (japonica cultivar-group), Xenopus laevis, Mus musculus, Oryzias latipes, Sulfolobus tokodaii, Danio rerio" 40
- 4240 4370 24 "Methanosarcina acetivorans C2A, Rattus norvegicus, Ciona intestinalis, Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Glyptotendipes barbipes"
- 4241 4371 35 "Methanocaldococcus jannaschii, Homo sapiens, Mus musculus, Arabidopsis thaliana"
- 4242 4372 28 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Enterococcus faecalis V583, Plasmodium falciparum, Allium cepa, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Rattus norvegicus, Candida albican" 50

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- 4243 4373 27 "Homo sapiens, Photobacterium damsela subsp. piscicida, Plasmodium falciparum 3D7, Mus musculus, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Bos taurus, Drosophila melanogaster, Clostridium difficile, Oryza sativa, Arabidopsis thaliana, Rattus norvegicus, Methanococcus voltae, Danio rerio, Cryptosporidium parvum"
- 4244 4374 27 "Homo sapiens, Danio rerio, Hemicentrotus pulcherrimus, Felis catus, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Opithandra primuloides, Alsobia sp., Plasmodium falciparum 3D7, Caenorhabditis elegans, Mycoplasma pulmonis, Arabidopsis thaliana, Lotus corniculatus var. japonicus" 10
- 4245 4375 31 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Trifolium repens, Oryza sativa, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Nicotiana glauca, Nicotiana glauca tabacum"
- 4246 4376 25 "Mus musculus, Staphylococcus epidermidis, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Oryza sativa (japonica cultivar-group), Leptospira interrogans, Takifugu rubripes, Dictyostelium discoideum, Caenorhabditis elegans, Plasmodium falciparum 3D7, Dichaetanthera arborea, Melastoma candidum, Tibouchina urvilleana, Tristemma mauritianum, Heterocentron elegans, Dissotis fruticosa, Wallabia bicolor, Melastoma sanguineum, Dissotis rotundifolia, Dichaetanthera asperrima, Centradenia inaequilateralis, Osbeckia chinensis, Pterolepis glomerata, Tibouchina longifolia, Heterocentron subtriplinervium, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Medicago truncatula" 20
- 4247 4377 26 "Homo sapiens, Branchiostoma floridae, Petrosavia sakuraii, Medicago truncatula, Caenorhabditis elegans, Mus musculus, Mesostigma viride, Oceanobacillus iheyensis HTE831"
- 4248 4378 23 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Xenopus laevis" 30
- 4249 4379 51 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Bacillus anthracis str. Ames, Staphylococcus epidermidis ATCC 12228, Danio rerio, Haplophragmoides wilberti, Drosophila melanogaster, Rattus norvegicus, Dictyostelium discoideum, Gastrolobium oxylobioides, Arabidopsis thaliana, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Anopheles gambiae"
- 4250 4380 27 "Homo sapiens, Mus musculus, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Papio anubis, Macaca mulatta, Lactococcus lactis subsp. lactis, Oryza sativa (japonica cultivar-group), Plasmodium berghei, Vibrio parahaemolyticus, Caenorhabditis elegans, Gibberella fujikuroi, Nostoc sp. PCC 7120" 40
- 4251 4381 28 "Glyptapanteles indiensis, Glyptapanteles liparidis, Arabidopsis thaliana, Homo sapiens, Pan troglodytes, Apanteles nephopteris, Equus caballus, Mus musculus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Fowlpox virus, Danio rerio"
- 4252 4382 27 "Mus musculus, Homo sapiens, Plasmodium vivax, Guillardia theta, Haemonchus contortus, Arabidopsis thaliana, Caenorhabditis elegans, Mycoplasma gallisepticum R, Acinetobacter baumannii, Harpochytrium sp. JEL94, Pan troglodytes, Fusobacterium nucleatum, Danio rerio"
- 4253 4383 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group)" 50

- ivar-group), *Saccharomyces cerevisiae*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Danio rerio*, *Nostoc* sp. PCC 7120"
- 4254 4384 24 "Homo sapiens, *Sus scrofa*, *Hydra vulgaris*, *Mus musculus*, *Pan troglodytes*, *Papio anubis*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Theobroma cacao*, *Clostridium pasteurianum*"
- 4255 4385 22 "Oceanobacillus iheyensis HTE831, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Elaeis guineensis*, *Danio rerio*"
- 4256 4386 23 "Mus musculus, *Trichoplusia ni*, *Homo sapiens*, *Clostridium acetobutylicum*, *Pan troglodytes*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Lactococcus lactis* subsp. *lactis*, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Helicobacter hepaticus* ATCC 51449" 10
- 4257 4387 24 "Homo sapiens, *Mus musculus*, *Sorghum bicolor*, *Plasmodium falciparum*, *Caenorhabditis elegans*, *Danio rerio*, *Podalyria myrtilifolia*"
- 4258 4388 29 "Mus musculus, *Dictyostelium discoideum*, *Homo sapiens*, *Danio rerio*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Rickettsia conorii*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Schizosaccharomyces pombe*, *Populus kitakamiensis*"
- 4259 4389 23 "Mus musculus, *Homo sapiens*, *Streptococcus agalactiae* 2603V/R, *Mycoplasma pulmonis*, *Streptococcus agalactiae* NEM316, *Danio rerio*"
- 4260 4390 27 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, *Drosophila melanogaster*" 20
- 4261 4391 24 "Shewanella oneidensis MR-1, *Homo sapiens*, *Mus musculus*, *Oceanobacillus iheyensis* HTE831, *Caenorhabditis elegans*, *Oryzias latipes*"
- 4262 4392 31 "Homo sapiens, *Borrelia burgdorferi* B31, *Hemiodus* sp., *Aegilops tauschii*, *Borrelia burgdorferi*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Staphylococcus aureus*, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 4263 4393 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Borrelia burgdorferi* B31, *Streptococcus thermophilus*, *Oryza sativa*, *Chilo iridescent virus*, *Mus musculus*, *Cyanophora paradoxa*, *Medicago truncatula*" 30
- 4264 4394 35 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Human immunodeficiency virus 1*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Yersinia pestis* KIM, *Clostridium saccharobutylicum*, *Glycine max*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Cokeromyces recurvatus*, *Yersinia pestis* C092, *Ciona intestinalis*"
- 4265 4395 31 "Arabidopsis thaliana, *Mus musculus*, *Homo sapiens*, *Dictyostelium discoideum*, *Rhadine* sp. KAO-2001, *Plasmodium falciparum* 3D7, *Danio rerio*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Melanoplus scudderii*, *Oryza sativa* (japonica cultivar-group), *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Simian immunodeficiency virus*, *Clostridium perfringens* str. 13" 40
- 4266 4396 27 "Mus musculus, *Homo sapiens*, *Staphylococcus* sp., *Staphylococcus aureus*, *Danio rerio*, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Mus musculus domesticus*, *Lotus corniculatus* var. *japonicus*, *Glaucoma charttoni*"
- 4267 4397 20 "Oceanobacillus iheyensis HTE831, *Sorghum bicolor*, *Caeno* 50

- rhabditis elegans, Zea mays, Homo sapiens, Mus musculus"
- 4268 4398 31 "Xenopus laevis, Caenorhabditis briggsae, Homo sapiens, Enterococcus faecalis V583, Mus musculus, Enterococcus faecalis, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Ciona intestinalis, Chasmagnathus granulata, Plasmodium falciparum 3D7, Bos taurus, Danio rerio, Arabidopsis thaliana, Ureaplasma urealyticum, Oceanobacillus iheyensis HTE831, Neurospora crassa, Hypholoma fasciculare, Methanocaldococcus jannaschii"
- 4269 4399 24 "Homo sapiens, Drosophila melanogaster, Clostridium tetani E88, Arabidopsis thaliana, Plasmodium falciparum 3D7, Caenorhabditis elegans, Mus musculus, Clostridium perfringens str. 13" 10
- 4270 4400 33 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Homo sapiens, Nitrosomonas europaea ATCC 19718, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Allium cepa, Hordeum vulgare subsp. vulgare, Amsacta moorei entomopoxvirus, Danio rerio, Caenorhabditis elegans"
- 4271 4401 28 "Calliphora vicina, Mus musculus, Homo sapiens, Gallus gallus, Caenorhabditis elegans, Pisum sativum, Danio rerio, Oryza sativa (japonica cultivar-group), Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Streptococcus pneumoniae R6, Prochlorococcus marinus, Phlebotomus papatasi, Arabidopsis thaliana, Glaucoma chattoni, Plasmodium falciparum 3D7, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Equus caballus, Brassica napus, Saccharomyces cerevisiae, Melanoplus sanguinipes entomopoxvirus, Buchnera aphidicola, Plasmodium falciparum" 20
- 4272 4402 27 "Chlamydia muridarum, Cyanidium caldarium, Homo sapiens, Rattus norvegicus, Ruegeria sp. PR1b, Mus musculus, Staphylococcus aureus subsp. aureus Mu50, Chromobacterium violaceum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Populus deltoides, Staphylococcus aureus, Bacillus pseudofirmus, Drosophila virilis"
- 4273 4403 23 "Homo sapiens, Drosophila melanogaster, Pyrococcus horikoshii, Human herpesvirus 7, Zaluzianskya glareosa, Reyemia chasmanthiflora, Mus musculus, Plasmodium falciparum 3D7, Danio rerio" 30
- 4274 4404 26 "Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Oryza sativa, Clostridium perfringens str. 13, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Mus musculus, Caenorhabditis elegans, Allonopithecus nigroviridis, Clostridium acetobutylicum, Staphylococcus aureus, Plasmodium falciparum 3D7, Rattus norvegicus, Ciona intestinalis"
- 4275 4405 27 "Clostridium acetobutylicum, Bacillus cereus ATCC 14579, Sus scrofa, Tribolium castaneum, Oryza sativa (japonica cultivar-group), Homo sapiens, Clostridium perfringens str. 13, Rattus norvegicus, Drosophila melanogaster, Pinus taeda, Plasmodium falciparum 3D7, Streptococcus pyogenes MGAS315, Lymphocystis disease virus 1, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Caenorhabditis elegans, Caenorhabditis briggsae, Chlamydia trachomatis, Trypanosoma brucei, Streptococcus pyogenes SSI-1, Mus musculus, Danio rerio" 40
- 4276 4406 31 "Mus musculus, Medicago truncatula, Homo sapiens, Drosophila melanogaster, Danio rerio, Equus caballus, Methanosarcina mazei Goe1, Clostridium tetani E88, Plasmodium falciparum 3D7, Brookesia peyeriasi, Toxoplasma gondii, Prochlorococcus marinus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Xenopus laevis, Helicobacter pylori 26695, Melanoplus sanguinipes entomopoxvirus" 50

- 4277 4407 27 "Mus musculus, Homo sapiens, Thermoanaerobacter tengcongensis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa, Zea mays subsp. mays, Mycoplasma pulmonis, Zea mays, Cryptosporidium parvum"
- 4278 4408 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Mus musculus, Staphylococcus epidermidis ATCC 12228, Torriella confragosa, Caenorhabditis elegans, Staphylococcus epidermidis, Mycoplasma penetrans"
- 4279 4409 24 "Saccharomyces cerevisiae, Arabidopsis thaliana, Nostoc sp. PCC 7120, Bacillus cereus ATCC 14579, Pan troglodytes, Mus musculus, Drosophila melanogaster, Homo sapiens, Pyrococcus furiosus DSM 3638, Pyrococcus woesei, Danio rerio, Pyrococcus furiosus" 10
- 4280 4410 27 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Oryza sativa (japonica cultivar-group), Citrus hybrid cultivar, Rattus norvegicus, Monosiga brevicollis, Drosophila melanogaster, Sinorhizobium meliloti, Caenorhabditis elegans, Saccharomyces cerevisiae, Gallus gallus"
- 4281 4411 25 "Homo sapiens, Mus musculus, Streptococcus pyogenes MGAS 315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)" 20
- 4282 4412 28 "Homo sapiens, Mus musculus, Bacillus anthracis str. Ames, Pan troglodytes, Aquifex aeolicus VF5, Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Arabidopsis thaliana, Caenorhabditis elegans, Fusarium oxysporum, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii"
- 4283 4413 27 "Arabidopsis thaliana, Grapevine fanleaf virus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Oryza sativa (japonica cultivar-group), Aphanocalyx pectinatus, Staphylococcus aureus, Anthopleura el" 30
- 4284 4414 23 "Bacillus cereus ATCC 14579, Oropouche virus, Caenorhabditis elegans, Homo sapiens, Mus musculus, Danio rerio, Pan troglodytes"
- 4285 4415 31 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Methanosarcina barkeri, Legionella pneumophila, Danio rerio, Plasmodium falciparum 3D7, Cardiochiles fuscipennis, Methanosarcina acetivorans C2A, Rickettsia prowazekii, Podospora anserina, Anopheles gambiae, Streptococcus pneumoniae, Carabus insulicola"
- 4286 4416 27 "Mus musculus, Homo sapiens, Haemophilus influenzae Rd K W20, Danio rerio, Caenorhabditis elegans, Plasmodium falciparum 3D7, Medicago truncatula, Pan troglodytes, Vibrio fischeri, Bacillus anthracis str. Ames, Drosophila melanogaster, Papio anubis, Thermoanaerobacter tengcongensis, Arabidopsis thaliana, Vibrio cholerae, Oryza sativa (japonica cultivar-group), Felis catus, Rattus norvegicus, Ciona intestinalis" 40
- 4287 4417 27 "Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus, Mus musculus, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Helicoverpa zea single nucleocapsid nucleopolyhedrovirus, Helicoverpa armigera nuclear polyhedrosis virus, Helicoverpa armigera nucleopolyhedrovirus G4, Medicago truncatula, Streptococcus pneumoniae TIGR4, Danio rerio, Streptococcus pneumoniae, Mycoplasma hyopneumoniae" 50

- 4288 4418 23 "Mus musculus, Homo sapiens, Rattus norvegicus, Archaeog lobus fulgidus DSM 4304, Chilo iridescent virus"
- 4289 4419 46 "Homo sapiens, Plasmodium falciparum 3D7, Dictyostelium discoideum, Danio rerio, Atelerix albiventris, Mus musculus, Carex filicina, Ric kettsia typhi, Candidatus Blochmannia floridanus, Lotus corniculatus var. japoni cus, Oryza sativa (japonica cultivar-group), Oryzias latipes, Pan troglodytes, D rosophila melanogaster, Papio anubis, Atranas pubescens, Lupinus albus, Mesostig ma viride, Arabidopsis thaliana, Medicago truncatula, Kikihia rosea, African swi ne fever virus, Florometra serratissima, Pisum sativum, Prunus dulcis, Marchanti a polymorpha, Plasmodium falciparum, Epifagus virginiana, Eryngium planum, Haqu etia epipactis, Sanicula canadensis, Lisaea papyracea, Saccharomyces servazzii, Schizosaccharomyces pombe, Necator americanus" 10
- 4290 4420 39 "Galleria mellonella, Mus musculus, Homo sapiens, Danio rerio, Sinonipponaphis monzeni, Oryza sativa (japonica cultivar-group), Arabidop sis thaliana, Plasmodium falciparum 3D7, Oryctolagus cuniculus, Dictyostelium di scoideum, Drosophila melanogaster, Paramecium tetraurelia, Clostridium acetobuty licum, Lauraceae gen. sp. Vasquez 25230, Daktulosphaira vitifoliae, Sextonia pub escens, Orpinomyces joyonii, Gasterosteus aculeatus, Neurospora crassa, Macaca f ascicularis, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Pan tro glodytes, Caenorhabditis elegans, Zea mays, Campylobacter jejuni, Solanum tubero sum, Canis familiaris, Nemoraea pellucida, Phaseolus coccineus, Chlorocardium ve nenosum, Lactococcus lactis subsp. lactis, Mesostigma viride, Oryza sativa, Afri can swine fever virus, Lycopersicon esculentum, Sinapis alba, Forda formicaria" 20
- 4291 4421 31 "Helicobacter hepaticus ATCC 51449, Drosophila melanog as ter, Mus musculus, Homo sapiens, Pan troglodytes, Caenorhabditis elegans, Buchne ra aphidicola, Schizosaccharomyces pombe, Oryza sativa (japonica cultivar-group) , Saccharomyces cerevisiae"
- 4292 4422 39 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Ara bidopsis thaliana, Danio rerio, Paramecium aurelia, Oryza sativa (japonica culti var-group), Leptospira interrogans serovar lai str. 56601, Oryza sativa, Clostri dium acetobutylicum, Caenorhabditis briggsae" 30
- 4293 4423 27 "Homo sapiens, Mus musculus, Pan troglodytes, Machaerila emus sp. KPJ-2001, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera a phidicola, Danio rerio, Human immunodeficiency virus 1, Machaerilaemus sp. KPJ-2 002"
- 4294 4424 28 "Ciona intestinalis, Mus musculus, Homo sapiens, Arabido psis thaliana, Oryzias latipes, Oryza sativa (japonica cultivar-group), Drosophi la melanogaster, Saccharomyces cerevisiae, Dictyostelium discoideum, Bacillus th uringiensis serovar israelensis, Solanum tuberosum, Leptospira interrogans serov ar lai str. 56601, Clostridium tetani E88, Plasmodium falciparum 3D7, Buchnera a phidicola str. Sg (Schizaphis graminum), Danio rerio, Buchnera aphidicola, Tribo lium castaneum, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE8 31, Staphylococcus aureus subsp. aureus N315, Sulfolobus tokodaii, Caenorhabditi s elegans, Gasterosteus aculeatus, Adoxophyes orana granulovirus, Staphylococcus aureus subsp. aureus Mu50, Nostoc sp. PCC 7120"
- 4295 4425 35 "Mus musculus, Homo sapiens, Danio rerio, Bartonella tri bocorum, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Medicago tru ncatula, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Sus scrofa, Lactococcus lactis bacteriophage ul36, Papio anubis, Arabidopsis thaliana, Cicad etta celis, Rice stripe virus, Streptococcus agalactiae NEM316, Caenorhabditis e 40 50

- legans, *Dictyostelium discoideum*, *Sulfolobus tokodaii*, *Pan troglodytes*, *Lactobacillus plantarum* WCFS1"
- 4296 4426 25 "Homo sapiens, *Leptospira interrogans* serovar lai str. 56601, *Mus musculus*"
- 4297 4427 24 "Mus musculus, *Methanothermobacter thermautotrophicus* str. Delta H, Homo sapiens, *Neisseria meningitidis*, *Scheelea butyracea*, *Orbignya barbosiana*, *Voanioala gerardii*, *Syagrus glaucescens*, *Lytocaryum weddellianum*, *Cocos nucifera*, *Butia eriospatha*, *Allagoptera*"
- 4298 4428 34 "Mus musculus, *Boophilus microplus*, *Plasmodium falciparum* 3D7, Homo sapiens, *Bryum radiculosum*, *Bryum orthothecium*, *Bryum coronatum*, *Anomobryum prostratum*, *Anomobryum humillimum*, *Haplodontium reticulatum*, *Bryum purpurascens*, *Bryum pseudotriquetrum*, *Bryum pal*" 10
- 4299 4429 24 "Lotus corniculatus var. japonicus, Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Oryza sativa*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Sulfolobus tokodaii*, *Caenorhabditis elegans*"
- 4300 4430 28 "Mus musculus, Homo sapiens, *Danio rerio*, *Plasmodium falciparum* 3D7, *Methanocaldococcus jannaschii*"
- 4301 4431 32 "Mus musculus, *Lactobacillus plantarum* WCFS1, *Lactobacillus plantarum*, *Oryza sativa* (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, Homo sapiens, *Rattus norvegicus*, *Geobacillus stearothermophilus*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Flavobacterium johnsoniae*, *Staphylococcus aureus* subsp. aureus Mu50, *Bacillus halodurans*, *Nostoc* sp. PCC 7120" 20
- 4302 4432 27 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Nicotiana tabacum*, *Mesorhizobium loti*"
- 4303 4433 25 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Xenopus laevis*, *Sulfolobus solfataricus*, *Danio rerio*"
- 4304 4434 27 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, *Pan troglodytes*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* HTE831, *Caenorhabditis elegans*" 30
- 4305 4435 23 "Dictyostelium discoideum, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Danio rerio*, *Chlamydia trachomatis*, *Mus musculus*"
- 4306 4436 23 "Homo sapiens, *Craterostigma plantagineum*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Medicago truncatula*, *Cuscuta gronovii*, *Caenorhabditis elegans*"
- 4307 4437 24 "Drosophila melanogaster, *Tetrahymena thermophila*, *Chlamydia muridarum*, *Pseudomonas syringae* pv. tomato str. DC3000, Homo sapiens, *Clostridium sordellii*, *Chlamydia trachomatis*, *Mus musculus*, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Entamoeba histolytica*, *Saccharomyces cerevisiae*, *Danio rerio*" 40
- 4308 4438 27 "Homo sapiens, Goatpox virus, Sheeppox virus, *Arabidopsis thaliana*, Lumpy skin disease virus, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Staphylococcus epidermidis* ATCC 12228, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Staphylococcus epidermidis*, *Mus musculus*, *Yersinia enterocolitica*, *Streptococcus sanguinis*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Clostridium perfringens* str. 13"
- 4309 4439 24 "Bartonella henselae, Homo sapiens, *Methanosarcina acetii*" 50

- vorans C2A, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Chlamydomydia pneumoniae* CWL029, *Caenorhabditis elegans*, *Chlamydomydia pneumoniae* AR39, *Chlamydomydia pneumoniae* J138, *Schizosaccharomyces pombe*, *Chlamydomydia pneumoniae* TW-183"
- 4310 4440 25 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Drosophila melanogaster*, *Danio rerio*, *Candidatus Blochmannia floridanus*, *Caenorhabditis elegans*"
- 4311 4441 28 "Bacillus cereus ATCC 14579, *Chlamydia trachomatis*, *Bacillus halodurans*, *Homo sapiens*, *Lycopersicon esculentum*, *Bacillus subtilis* subsp. subtilis str. 168, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Bacillus subtilis*, *Bacillus anthracis* str. Ames, *Staphylococcus epidermidis* ATCC 12228, *Chlamydomydia caviae* GPIC, *Mus musculus*, *Staphylococcus epidermidis*, San Miguel sea lion virus" 10
- 4312 4442 24 "Drosophila melanogaster, *Homo sapiens*, *Mus musculus*, *Nitrosomonas europaea* ATCC 19718, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*"
- 4313 4443 30 "Mus musculus, *Gastrolobium densifolium*, *Staphylococcus aureus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Homo sapiens*, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Leptospira interrogans* serovar lai str. 56601, *Pan troglodytes*, *Medicago truncatula*, *Arabidopsis thaliana*, *Calendula arvensis*, *Zygodactylus rufipes*, *Lotus corniculatus* var. japonicus, *Neurospora crassa*, *Saccharomyces kluyveri*, *Ciona intestinalis*, *Calendula officinalis*, *Helicobacter hepaticus* ATCC 51449" 20
- 4314 4444 19 "Homo sapiens, *Mus musculus*, *Ciona intestinalis*, *Tripneustes gratilla*, *Oryza sativa* (japonica cultivar-group)"
- 4315 4445 30 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*, *Chlamydomydia caviae* GPIC, *Varroa destructor*, *Schmidtea mediterranea*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Arabidopsis thaliana*, *Escherichia coli*, *Prochlorococcus marinus*, *Oryza sativa* (japonica cultivar-group), *Sorghum bicolor*, *Human immunodeficiency virus 1*, *Malus domestica*" 30
- 4316 4446 31 "Homo sapiens, *Prochlorococcus marinus*, *Mus musculus*, *Hordeum vulgare* subsp. vulgare, *Danio rerio*, *Cyanidioschyzon merolae*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Papio anubis*, *Maaminga rangi*, *Xorides praecatorius*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Takifugu rubripes*"
- 4317 4447 27 "Guillardia theta, *Mus musculus*, *Homo sapiens*, *Lindera thomsonii*, *Endiandra pubens*, *Cassytha ciliolata*, *Beilschmiedia tawa*, *Beilschmiedia roxburghiana*, *Beilschmiedia mexicana*, *Beilschmiedia berteriana*, *Helicobacter pylori* J99" 40
- 4318 4448 36 "Homo sapiens, *Medicago truncatula*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Rickettsia prowazekii*, *Thermoplasma acidophilum*, *Arabidopsis thaliana*, *Danio rerio*, *Pinus banksiana*"
- 4319 4449 27 "Enterococcus faecalis V583, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Haemophilus influenzae* Rd KW20, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae*, *Mycoplasma pulmonis*, *Streptococcus agalactiae* NEM316, *Medicago truncatula*, *Glycyrrhiza glabra*, *Glycine max*"
- 4320 4450 25 "Bacillus anthracis str. Ames, *Clostridium tetani* E88, uncultured rumen bacterium, *Eubacterium ruminantium*, *Medicago truncatula*, *Homo sa* 50

- piens, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Bacillus subtilis*, *Erwinia chrysanthemi*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Arabidopsis thaliana*"
- 4321 4451 23 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Nicotiana tabacum*, *Caenorhabditis briggsae*, *Lycopersicon esculentum*, *Phallusia mammilata*, *Oryza sativa* (japonica cultivar-group)"
- 4322 4452 23 "*Helicobacter pylori* J99, *Homo sapiens*, *Pan troglodytes*, *Mus musculus*, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, Crimean-Congo hemorrhagic fever virus, *Caenorhabditis elegans*, *Drosophila erecta*, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Oryzias curvinotus*" 10
- 4323 4453 24 "*Homo sapiens*, *Vigna radiata*, *Mus musculus*, *Ehrlichia chaffeensis*, *Caenorhabditis elegans*, *Streptococcus pneumoniae* TIGR4, *Leptospira interrogans* serovar Iai str. 56601, *Equus caballus*, *Drosophila melanogaster*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* SSI-1"
- 4324 4454 27 "*Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Crepidula incurva*, *Enterococcus faecalis* V583, *Plasmodium falciparum* 3D7, *Oryza sativa*, Human papillomavirus type 34, *Arabidopsis thaliana*, *Alnus glutinosa*, *Danio rerio*" 20
- 4325 4455 32 "*Pasteurella multocida*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Haemophilus ducreyi* 35000HP, *Drosophila melanogaster*, *Pseudomonas aeruginosa* PA01, *Homo sapiens*, Bacteriophage AR1, *Mus musculus*, *Medicago truncatula*"
- 4326 4456 24 "*Sulfolobus solfataricus*, *Staphylococcus epidermidis*, *Homo sapiens*, *Mycoplasma pneumoniae*, *Candida glabrata*, *Strongylocentrotus purpuratus*, *Mus musculus*, *Oryza sativa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Meleagris gallopavo*, *Helicobacter pylori* 26695, *Nostoc* sp. ATCC 29106, *Coturnix japonica*, *Gallus gallus*"
- 4327 4457 27 "*Caenorhabditis elegans*, *Bos taurus*, *Dictyostelium discoideum*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Homo sapiens*, *Caenorhabditis briggsae*, *Mus musculus*, *Glycine max*, *Danio rerio*, *Medicago truncatula*, *Heistercapsa triquetra*, *Candida albicans*, *Arabidopsis thaliana*" 30
- 4328 4458 37 "*Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Brugia malayi*, *Arabidopsis thaliana*, *Danio rerio*, *Stachys torresii*, *Stachys rotundifolia*, *Stachys pacifica*, *Stachys nepetifolia*, *Stachys lindenii*, *Stachys grahamii*, *Stachys drummondii*, *Stachys coccinea*, *Stachys albotomentosa*, *Oreochromis niloticus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Schmidtea mediterranea*, *Thermoanaerobacter tengcongensis*, *Solanum brevipedens*, Shuttle vector pBA, *Vibrio cholerae*, *Arxula adenivorans*, Cloning vector pFD288, *Bacteroides fragilis*, *Helicobacter hepaticus* ATCC 51449, *Candida albicans*, *Ehrlichia* sp. IS58" 40
- 4329 4459 23 "*Mus musculus*, *Caenorhabditis elegans*, *Danio rerio*, *Homo sapiens*, *Medicago truncatula*, *Rattus norvegicus*"
- 4330 4460 23 "*Homo sapiens*, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Mus musculus*, *Felis catus*, *Danio rerio*, *Salmonella typhimurium*, *Salmonella enterica* subsp. *enterica* serovar Typhi"
- 4331 4461 41 "*Candidatus Blochmannia floridanus*, *Caenorhabditis elegans*" 50

- ns, *Clostridium perfringens* str. 13, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Homo sapiens*, *Arabidopsis thaliana*, *Lupinus luteus*, *Gibberella zeae*, *Fusarium cerealis*, *Fusarium lunulosporum*, *Mus musculus*, *Chromobacterium violaceum*"
- 4332 4462 68 "Haemophilus ducreyi 35000HP, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Triticum aestivum*, *Homo sapiens*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis lyrata*, *Arabidopsis thaliana*, *Danio rerio*, *Bacillus halodurans*, *Triticum monococcum*, *Leptospira interrogans* serovar lai str. 56601, *Mus musculus*, *Pasteurella multocida*, *Hordeum vulgare* subsp. *vulgare*" 10
- 4333 4463 44 "Mus musculus, *Homo sapiens*, *Caenorhabditis elegans*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Citrobacter rodentium*, Yaba-like disease virus, *Candidatus Blochmannia floridanus*, *Escherichia coli*, *Arabidopsis thaliana*"
- 4334 4464 155 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Candidatus Blochmannia floridanus*, *Dictyostelium discoideum*, *Haemophilus ducreyi* 35000HP, *Haemophilus influenzae* Rd KW20, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Yersinia pestis* KIM, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Vibrio parahaemolyticus*, *Yersinia pestis* C092, *Pasteurella multocida*, *Lupinus luteus*, *Mus musculus*, *Drosophila melanogaster*, *Gallus gallus*, *Plasmodium falciparum* 3D7, *Pyrococcus furiosus* DSM 3638, *Homo sapiens*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*" 20
- 4335 4465 27 "Oryza sativa (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27, *Leptospira interrogans* serovar lai str. 56601, *Homo sapiens*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Listeria innocua*, *Arabidopsis thaliana*, *Medicago truncatula*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Danio rerio*"
- 4336 4466 28 "Homo sapiens, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Enterobacteria phage* RB69, *Mus musculus*, *Sus scrofa*, *Lotus corniculatus* var. *japonicus*, *Medicago truncatula*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Arabidopsis thaliana*, *Pan troglodytes*, *Dictyostelium discoideum*, *Xanthomonas axonopodis* pv. *citri* str. 306, *Hevea brasiliensis*, *Mycoplasma pulmonis*, *Caenorhabditis briggsae*, *Papio anubis*, *Nicotiana tabacum*, *Staphylococcus aureus*" 30
- 4337 4467 35 "Homo sapiens, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Macaca fascicularis*, *Drosophila virilis*, *Thermosynechococcus elongatus* BP-1, *Arabidopsis thaliana*, *Carnobacterium maltaromaticum*, *Cyanidium caldarium*, *Oryza sativa* (*japonica* cultivar-group), *Macaca mulatta*" 40
- 4338 4468 27 "Drosophila melanogaster, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Dictyostelium discoideum*, *Xenopus laevis*, *Plasmodium falciparum* 3D7, *Lactobacillus plantarum*, *Vibrio cholerae*, *Oryza sativa* (*japonica* cultivar-group), *Rattus norvegicus*, *Tetrahymena thermophila*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Rhizopus oryzae*, *Streptococcus gordonii* str. Challis, *Tribolium castaneum*, *Cricetulus griseus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*"
- 4339 4469 30 "Homo sapiens, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Borrelia garinii*, *Lasioglossum alphenum*, *Lasioglossum pavonotum*, *Danio rerio*, *Mus musculus*, *Pyrrhobryum mnioides*, *Drosophila*" 50

- melanogaster, *Saccharomyces cerevisiae*, *Lotus corniculatus* var. *japonicus*, *Leskea gracilescens*, *Flammulina velutipes*, *Plasmodium chabaudi chabaudi*, *Oryza sativa* (*japonica* cultivar-group), *Pan troglodytes*, *Tetrahymena thermophila*, *Lemur catata*, *Papio anubis*, *Halictus poeyi*, *Halictus ligatus*, *Gallus gallus*, *Arabidopsis thaliana*, *Pisum sativum*, *Bovine adenovirus 7*, *Medicago truncatula*, *Staphylococcus haemolyticus*, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Gigaspora albida*, *Ommastrephes sloani*"
- 4340 4470 28 "Zea mays, *Thermoanaerobacter tengcongensis*, *Homo sapiens*, *Mus musculus*, *Caenorhabditis briggsae*, *Caenorhabditis elegans*"
- 4341 4471 29 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Lactococcus lactis* subsp. *cremoris*, *Lactobacillus paracasei*, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Thermoanaerobacter tengcongensis*, *Salmonella typhimurium*, *Arabidopsis thaliana*, *Danio rerio*, *Nicotiana tabacum*, *Rattus norvegicus*, Plasmid R100" 10
- 4342 4472 24 "Medicago truncatula, *Streptococcus pneumoniae*, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Clostridium perfringens* str. 13, *Clostridium perfringens*"
- 4343 4473 27 "Xenopus laevis, *Rattus norvegicus*, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*, *Bacillus subtilis*, *Mus musculus*, *Bacillus subtilis* subsp. *subtilis* str. 168" 20
- 4344 4474 27 "Homo sapiens, *Bemisia tabaci*, *Dictyostelium discoideum*, *Schmidtea mediterranea*, *Malawimonas jakobiformis*, *Schizosaccharomyces pombe*, *Caenorhabditis elegans*, *Mycoplasma pulmonis*, *Oryza sativa* (*indica* cultivar-group), *Didelphis virginiana*, *Rattus norvegicus*, *Drosophila melanogaster*, *Papio anubis*, *Arabidopsis thaliana*, *Mus musculus*, *Bos taurus*, *Chrysops carbonarius*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Tribolium castaneum*, *Pan troglodytes*, *Helicoverpa armigera*, *Caenorhabditis briggsae*, *Oryza sativa* (*japonica* cultivar-group), *Melanargia russiae*, *Bryum cyclophyllum*, *Danio rerio*, *Melanoplus sanguinipes* entomopoxvirus, *Haemophilus influenzae* Rd KW20, *Aerochoreutes carlinianus*, *Clostridium perfringens* str. 13" 30
- 4345 4475 28 "Venerupis (*Ruditapes*) *philippinarum*, *Homo sapiens*, *Mus musculus*, *Clostridium tetani* E88, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Farfantepenaeus duorarum*, *Plasmodium chabaudi chabaudi*, *Galanthus woronowii*, *Plasmodium gallinaceum*, *Thermoanaerobacter tengcongensis*, *Prochlorococcus marinus*, *Lycopersicon esculentum*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Podocarpus macrophyllum*, *Phyllocladus trichomanoides*, *Agathis australis*, *Danio rerio*, *Rhodella reticulata*, *Rattus norvegicus*"
- 4346 4476 27 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Aedes aegypti*" 40
- 4347 4477 27 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Oryza sativa* (*japonica* cultivar-group), *Cryptosporidium parvum*"
- 4348 4478 24 "Homo sapiens, *Sus scrofa*, *Mus musculus*, *Oryctolagus cuniculus*, *Drosophila melanogaster*, *Bacillus megaterium*, *Staphylococcus aureus*, *Oryza sativa* (*japonica* cultivar-group), unidentified cloning vector"
- 4349 4479 32 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Oceanobacillus iheyensis* HTE831, *Rattus norvegicus*, *Staphylococcus epidermidis* ATCC 12228, *Arabidopsis thaliana*, *Staphylococcus simulans*, *Staphylococcus haemolyti*" 50

- cus, *Staphylococcus epidermidis*, *Pan troglodytes*, *Danio rerio*"
- 4350 4480 29 "Homo sapiens, *Mus musculus*, *Dictyostelium discoideum*, *Methanopyrus kandleri* AV19, *Arabidopsis thaliana*, *Sulfolobus tokodaii*"
- 4351 4481 24 "Homo sapiens, *Equus caballus*, *Mus musculus*, *Drosophila melanogaster*, Simian adenovirus, Simian adenovirus type 7, *Caenorhabditis elegans*, *Danio rerio*, *Microscilla* sp. PRE1, *Neisseria meningitidis* Z2491, *Neisseria gonorrhoeae*, *Arabidopsis thaliana*, *Neisseria meningitidis*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Streptococcus suis*, *Oryza sativa* (japonica cultivar-group), *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Vigna radiata*, *Trifolium repens*" 10
- 4352 4482 54 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Homo sapiens*, *Mus musculus*, *Borrelia burgdorferi* B31, *Pseudomonas putida* KT2440, *Borrelia burgdorferi*, *Pseudomonas syringae* pv. tomato str. DC3000, *Pan troglodytes*, *Caenorhabditis elegans*, *Atelerix albiventris*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Xenopus laevis*, *Caenorhabditis briggsae*, *Lactococcus lactis* subsp. lactis, *Simulium neornatipes*, *Bordetella bronchiseptica*, *Bordetella parapertussis*, *Bordetella pertussis*, *Neisseria meningitidis* Z2491, *Geobacillus stearothermophilus*, *Arabidopsis thaliana*, *Neisseria meningitidis*, *Neisseria meningitidis* MC58, *Danio rerio*"
- 4353 4483 24 "Paramecium tetraurelia, *Homo sapiens*, *Mus musculus*, *Canis familiaris*, Human immunodeficiency virus 1, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Sulfolobus tokodaii*, *Bos taurus*" 20
- 4354 4484 23 "Schizosaccharomyces pombe, *Homo sapiens*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Clostridium perfringens* str. 13"
- 4355 4485 27 "Homo sapiens, *Drosophila melanogaster*, *Chlamydomonas reinhardtii* GPIC, *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* HTE831, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Haemophilus influenzae* Rd KW20, *Corynebacterium jeikeium*, *Haemophilus influenzae*" 30
- 4356 4486 32 "*Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Bombus rudarius*, *Bombus pascuorum*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Neurospora crassa*, *Bombus humilis*, *Sminthopsis macroura*, *Clostridium perfringens* str. 13, *Bacillus anthracis* str. Ames, *Bacteroides thetaiotaomicron* VPI-5482, *Oryctolagus cuniculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Clostridium acetobutylicum*, *Xenopus laevis*, *Lycopersicon esculentum*, *Caenorhabditis briggsae*, *Danio rerio*"
- 4357 4487 35 "*Mus musculus*, *Gillichthys mirabilis*, *Homo sapiens*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Oceanobacillus iheyensis* HTE831, *Arabidopsis thaliana*, Rio Mamore hantavirus, *Equus caballus*" 40
- 4358 4488 31 "*Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Pyrococcus furiosus* DSM 3638, *Danio rerio*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Didelphis virginiana*, *Deinococcus radiodurans*, *Gallus gallus*, *Staphylococcus aureus* subsp. aureus Mu50"
- 4359 4489 30 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Geobacillus stearothermophilus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Thermoplasma volcanium*" 50

- 4360 4490 27 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis elegans, Fritillaria agrestis, synthetic construct, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Clostridium acetobutylicum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50"
- 4361 4491 28 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Gallus gallus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Rickettsia prowazekii, Arabidopsis thaliana, Caenorhabditis briggsae, Coturnix sp. IF-1995, Streptococcus pyogenes SSI-1, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 10
- 4362 4492 42 "Sulfolobus tokodaii, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Streptococcus agalactiae NEM316, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Mycoplasma gallisepticum R, Bacillus anthracis str. Ames, Thermoanaerobacter tengcongensis, Pyrococcus furiosus DSM 3638, Streptococcus pyogenes, Clostridium acetobutylicum, Arabidopsis thaliana, Corynebacterium glutamicum ATCC 13032, Drosophila melanogaster, Danio rerio, Ureaplasma urealyticum, Oceanobacillus ihayensis HTE831, Listeria innocua, Mus musculus, Gossypium hirsutum, Dictyostelium discoideum, Pan troglodytes, Clostridium tetani E88, Plasmodium falciparum 3D7, Hordeum vulgare, Vibrio parahaemolyticus, Plasmodium falciparum" 20
- 4363 4493 28 "Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Medicago truncatula, Homo sapiens, Caenorhabditis elegans, Schmidtea mediterranea, Oryza sativa (japonica cultivar-group), Candidatus Carsonella ruddii, Dictyostelium discoideum, Drosophila melanogaster, Rattus norvegicus, Sus scrofa, Arabidopsis thaliana, Rhodnius prolixus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Raja eglanteria, Danio rerio"
- 4364 4494 28 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Bertholletia excelsa, Danio rerio, Rattus norvegicus, Bacillus cereus ATCC 14579, Ovis aries, Drosophila melanogaster, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Staphylococcus aureus, Buchnera aphidicola (Tetraneura caerulea), Hordeum vulgare subsp. vulgare, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Listeria monocytogenes, Prochlorococcus marinus subsp. marinus str. CCMP1375, Macaca fascicularis, Staphylococcus aureus subsp. aureus Mu50" 30
- 4365 4495 29 "Streptococcus mutans UA159, Synechocystis sp. PCC 6803, Yersinia pestis KIM, Yersinia pestis C092, Drosophila melanogaster, Methanocaldococcus jannaschii, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Homo sapiens, Macaca mulatta, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Papio anubis, Clostridium thermocellum, Salmonella typhimurium, Salmonella enterica subsp. enterica serovar Typhi, Mus musculus" 40
- 4366 4496 31 "Homo sapiens, Lactobacillus plantarum WCFS1, Mus musculus, Streptococcus mutans UA159, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Mycoplasma gallisepticum R, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Borrelia garinii, Hippasteria spinosa, Archaster typicus, Sulfolobus tokodaii, Saccharomyces cerevisiae, Listeria monocytogenes, Pirellula sp., Mycoplasma fermentans, Rhagovelia sp. Los Banos, Arabidopsis thaliana, Clos" 50

tridium perfringens str. 13"

- 4367 4497 29 "Vibrio vulnificus CMCP6, Danio rerio, Homo sapiens, Mus musculus, Drosophila melanogaster, Oceanobacillus iheyensis HTE831, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Arabidopsis thaliana"
- 4368 4498 54 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Plasmodium falciparum 3D7, Homo sapiens, Loofah witches'-broom phytoplasma, Rattus norvegicus, Medicago truncatula, Streptococcus agalactiae 2603V/R, Mus musculus, Arabidopsis thaliana, Streptococcus agalactiae NEM316, Rattus rattus"
- 4369 4499 31 "Drosophila melanogaster, Homo sapiens, Helicobacter pylori J99, Chlorella vulgaris, Plasmodium falciparum 3D7, Caenorhabditis elegans, Danio rerio, Pachyteleles striola, Plasmodium falciparum, Arabidopsis thaliana, Mus musculus, Fusobacterium nucleatum subsp." 10
- 4370 4500 35 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Danio rerio, Drosophila melanogaster, Sulfolobus sp. NOB8H2, Rattus norvegicus, Enterococcus faecalis V583, Monosiga brevicollis, Drosophila erecta, Pseudomonas putida KT2440, Caenorhabditis elegans, Saccharomyces cerevisiae, Prochlorococcus marinus, Arabidopsis thaliana, Bombyx mori, Acholeplasma laidlawii, Oryza sativa (japonica cultivar-group), Sus scrofa, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Clarias gariepinus, Hylodendron gabunense, Pan troglodytes, Medicago truncatula, Methanosarcina mazei Goe1, Tersonia cyathiflora, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum)" 20
- 4371 4501 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Desulfobacterium oleovorans, Danio rerio"
- 4372 4502 27 "Bacillus cereus ATCC 14579, Mus musculus, Oryza sativa (japonica cultivar-group), Bos taurus, Equus caballus, Drosophila melanogaster, Caenorhabditis elegans, Homo sapiens, Oryza sativa, Ovis aries, Arabidopsis thaliana, Danio rerio, Mesorhizobium loti"
- 4373 4503 74 "Beta vulgaris, Methanosarcina mazei Goe1, Methanosarcina mazei, Methanosarcina acetivorans C2A, Prunus persica, Nicotiana tabacum, Thermoaerobacter tengcongensis, Zea mays, Plasmodium falciparum 3D7, Plasmodium falciparum, Mus musculus, Homo sapiens, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana" 30
- 4374 4504 79 "Oryza sativa (japonica cultivar-group), Nicotiana tabacum, Hordeum brevisubulatum, Chenopodium rubrum, Zea mays, Hordeum vulgare subsp. vulgare, Nitrosomonas europaea ATCC 19718, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Homo sapiens, Methanosarcina mazei Goe1, Prunus persica, Methanosarcina mazei, Beta vulgaris, Thermotoga maritima, Streptomyces avermitilis MA-4680, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus domesticus, Mus musculus, Schizosaccharomyces pombe" 40
- 4375 4505 31 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Mus musculus, Zea mays, Oryza sativa (japonica cultivar-group)"
- 4376 4506 24 "Mus musculus, Enterococcus faecalis V583, Homo sapiens, Oryza sativa (japonica cultivar-group), Dengue virus type 1"
- 4377 4507 71 "Plasmodium falciparum 3D7, Plasmodium falciparum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Methanosarcina acetivorans C2A, Methanosarcina mazei Goe1, Clostridium tetani E88, Arabidopsis thaliana, Homo sapiens, Prunus persica, Methanosarcina mazei, Figwort mosaic virus, Vitis vinifera" 50

- a, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Acetabularia mediterranea*"
- 4378 4508 31 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis briggsae"
- 4379 4509 26 "Mus musculus, Homo sapiens, Mycoplasma capricolum, Heliothis armigera entomopoxvirus, Leptospira interrogans serovar lai str. 56601, Escherichia coli, Caenorhabditis elegans, Danio rerio, Saccharomyces cerevisiae, Lepisosteus spatula, Rattus norvegicus"
- 4380 4510 125 "Clostridium tetani E88, Plasmodium falciparum 3D7, Plasmodium falciparum, Gossypium hirsutum, Nitrosomonas europaea ATCC 19718, Lycopersicon esculentum, Vitis vinifera, Homo sapiens, Prunus persica, Nicotiana tabacum, Vigna radiata, Clostridium intestinalis, Mus musculus, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Nucella lapillus, Trypanosoma brucei, Xylella fastidiosa 9a5c, Escherichia coli O157:H7 EDL933, Caenorhabditis elegans, Saccharomyces exiguus, Lotus corniculatus var. japonicus, Danio rerio, Spermophilus musicus, Spermophilus dauricus, Spermophilus citellus, Acetabularia mediterranea, Escherichia coli O157:H7" 10
- 4381 4511 28 "Mus musculus, Homo sapiens, Rattus norvegicus, Liolaemus petrophilus, Liolaemus sp. nov. MM-1, Chelydra serpentina, Xenopus laevis, Danio rerio, Capra hircus, Methanocaldococcus jannaschii, Liolaemus lineomaculatus, Liolaemus kingii, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Sus scrofa, Euglena viridis, Arabidopsis thaliana, Campylobacter jejuni subsp. jejuni NCTC 11168, Clostridium perfringens str. 13" 20
- 4382 4512 27 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Caenorhabditis briggsae, Mus musculus, Oryctolagus cuniculus, Borrelia burgdorferi B31, Aegilops tauschii, Methanococcus voltae, Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Plasmodium yoelii, Emericella nidulans, Yersinia pseudotuberculosis, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sulfolobus solfataricus, Streptococcus pyogenes M1 GAS, Sulfolobus acidocaldarius, Arabidopsis thaliana, Acremonium chrysogenum, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Streptococcus pyogenes SSI-1, Medicago truncatula, Uromyces viciae-fabae, Legionella pneumophila, Pan troglodytes, Oryza sativa (japonica cultivar-group), Gallus gallus" 30
- 4383 4513 23 "Homo sapiens, Prochlorococcus marinus, Mus musculus, Plasmodium falciparum 3D7, Rattus norvegicus, Takifugu rubripes, Caenorhabditis briggsae, Pleurotus ostreatus, Drosophila melanogaster, Medicago truncatula"
- 4384 4514 23 "Homo sapiens, Mus musculus, Danio rerio"
- 4385 4515 24 "Borrelia burgdorferi B31, Dictyostelium discoideum, Borrelia burgdorferi, Rickettsia prowazekii, Mycoplasma penetrans, Homo sapiens, Plasmodium falciparum 3D7, Pyrococcus furiosus DSM 3638, Danio rerio, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Nothofagus cunninghamii, Mus musculus, Bacillus thuringiensis serovar israelensis, Lucilia cuprina" 40
- 4386 4516 28 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Lipomyces spencermartinsiae, Polyandrocampa misakiensis"
- 4387 4517 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lactobacillus johnsonii"
- 4388 4518 31 "Mus musculus, Plasmodium falciparum 3D7, Danio rerio, H 50

- omo sapiens, Dictyostelium discoideum, Pan troglodytes, Rattus norvegicus, Diase mopsis silvatica, Diasemopsis dubia, Arabidopsis thaliana, Paranaspidas lacustri s, Dolichogenidea n. sp. 'Mardulyn & Whitfield', Oryza sativa (japonica cultivar -group), Medicago truncatula, Didelphis virginiana, Macrotermes jeanneli, Macrot ermes falciger, Macrotermes subhyalinus, Cochliomyia hominivorax, Caenorhabditis elegans, Sympetrum flaveolum, Lotus corniculatus var. japonicus, Mycoplasma pen etrans, Dennyus carljonesi fosteri, Schizosaccharomyces pombe, Chrysomya putoria , Bos taurus, Mouse mammary tumor virus, Nostoc sp. PCC 7120"
- 4389 4519 29 "Homo sapiens, Caenorhabditis briggsae, Mus musculus, Tr ypanosoma brucei, Rattus norvegicus, Danio rerio, Oryza sativa (japonica cultiva r-group), Prunus avium, Clostridium tetani E88, Plasmodium falciparum 3D7, Buchn era aphidicola str. APS (Acyrtosiphon pisum), Oceanobacillus iheyensis HTE831, Cryptosporidium parvum, Ciona intestinalis, Wigglesworthia glossinidia endosymbi ont of Glossina brevipalpis, Canarypox virus"
- 4390 4520 27 "Lactococcus lactis subsp. lactis, Mus musculus, Homo sa piens, Lactococcus lactis, Dictyostelium discoideum, Plasmodium falciparum 3D7, Plasmodium falciparum, Danio rerio, Escherichia coli K12, Timarcha perezi, Oryza sativa (japonica cultivar-group), Neurospora crassa, Escherichia coli"
- 4391 4521 30 "Homo sapiens, Danio rerio, Lotus corniculatus var. japo nicus, Schizosaccharomyces pombe, Mus musculus, Dictyostelium discoideum, Drosop hila melanogaster, Clostridium tetani E88, Rattus norvegicus, Caenorhabditis ele gans, Ochromonas danica, Tetragrapsus jouyi, Guillenia flavescens, Bacillus cere us ATCC 14579, Leptospira interrogans serovar lai str. 56601, Candidatus Carsone lla ruddii, Medicago truncatula, Pan troglodytes, Apterosperma oblata, Papio anu bis, Plasmodium falciparum 3D7, Heliocybe sulcata, Canis familiaris, Ophiogomphu s severus, Onychogomphus forcipatus, Arabidopsis thaliana, Lactobacillus plantar um, Prochlorococcus marinus, Cyprinus carpio, Mycoplasma capricolum, Onychogomph us uncatu, Brassica napus var. napus, Oryza sativa (japonica cultivar-group), C hrysomela populi, Gaetice americanus, Drosophila funebris, Mycoplasma penetrans, Manduca sexta, Goniocetena quinquepunctata, Plasmid p121BS"
- 4392 4522 38 "Clostridium acetobutylicum, Clostridium perfringens str . 13, Arabidopsis thaliana, Homo sapiens, Mus musculus, Danio rerio, Clostridium cellulovorans, Chilo iridescent virus, Caenorhabditis elegans, Bacillus halodur ans"
- 4393 4523 31 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Hom o sapiens, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Clostridium teta ni E88, Plasmodium falciparum 3D7, Danio rerio, Schizosaccharomyces pombe, Plasm odium falciparum, Echis carinatus, Drosophila melanogaster, Caenorhabditis elega ns, Arabidopsis thaliana, Mesostigma viride, Oryza sativa (japonica cultivar-gro up), Saccharomyces cerevisiae, Cryptosporidium parvum, Wigglesworthia glossinidi a endosymbiont of Glossina brevipalpis"
- 4394 4524 28 "Mus musculus, Rattus norvegicus, Danio rerio, Plasmodiu m falciparum 3D7, Oryza sativa (japonica cultivar-group), Homo sapiens, Cryptomo nas ovata, Plasmodium falciparum, Lotus corniculatus var. japonicus, Bacteriophag e A118"
- 4395 4525 40 "Clostridium perfringens str. 13, Homo sapiens, Mus musc ulus, Drosophila melanogaster, Clostridium tetani E88, Arabidopsis thaliana"
- 4396 4526 36 "Mus musculus, Homo sapiens, Oryza sativa (japonica cult ivar-group), Phytolacca acinosa, Phytolacca americana, Plasmodium falciparum 3D7 , Danio rerio, Clostridium perfringens str. 13, Methanosarcina mazei Goe1, Oryza

- sativa, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Sulfolobus tokodaii*"
- 4397 4527 35 "Clostridium perfringens str. 13, *Kluyveromyces lactis*, *Homo sapiens*, *Clostridium tetani* E88, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Papio anubis anubis*, *Encephalitozoon cuniculi*, *Gossypium hirsutum*, *Schizosaccharomyces pombe*"
- 4398 4528 23 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*"
- 4399 4529 28 "Mus musculus, *Drosophila melanogaster*, *Homo sapiens*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Candida albicans*, *Brucella melitensis* 16M, *Dictyostelium discoideum*, *Shewanella oneidensis* MR-1, *Zea mays*, *Brucella suis* 1330, *Streptococcus agalactiae* 2603V/R, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Streptococcus agalactiae* NEM316, *Caenorhabditis elegans*, *Neurospora crassa*, *Saccharomyces cerevisiae*, *Spathidium* sp., *Neisseria gonorrhoeae*, *Streptococcus agalactiae*, *Bacillus halodurans*, *Clostridium perfringens* str. 13" 10
- 4400 4530 24 "Homo sapiens, African swine fever virus, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, *Candida albicans*, *Mus musculus*, *Prochlorococcus marinus*, *Plasmodium falciparum* 3D7, *Thermosynechococcus elongatus* B P-1, *Nostoc* sp. PCC 7120, *Streptococcus equi* subsp. zooepidemicus" 20
- 4401 4531 29 "Homo sapiens, *Caenorhabditis elegans*, *Rattus norvegicus*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Papio anubis*, *Mus musculus*, *Bombyx mori*"
- 4402 4532 28 "Mus musculus, *Drosophila melanogaster*, *Clostridium tetani* E88, *Homo sapiens*, *Vibrio cholerae*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Danio rerio*"
- 4403 4533 27 "Homo sapiens, *Chlorobium tepidum* TLS, *Danio rerio*, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Atelerix albiventris*, *Pan troglodytes*, *Bacteroides thetaiotaomicron* VPI-5482, *Schizosaccharomyces pombe*, *Oryza sativa* (japonica cultivar-group), *Beta corolliflora*, *Didelphis virginiana*, *Bacillus circulans*" 30
- 4404 4534 20 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Pan troglodytes*, *Yersinia pestis* KIM, *Vibrio cholerae*, *Yersinia pestis* C092, *Danio rerio*"
- 4405 4535 24 "Danio rerio, *Chlamydia muridarum*, *Streptococcus agalactiae* 2603V/R, *Mus musculus*, *Rickettsia prowazekii*, *Yersinia pestis*, *Streptococcus agalactiae* NEM316, *Homo sapiens*, *Yersinia pestis* KIM, *Bacteroides thetaiotaomicron* VPI-5482, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Petroselinum crispum*, *Clostridium perfringens* str. 13, *Helicobacter hepaticus* ATCC 51449" 40
- 4406 4536 27 "Homo sapiens, *Drosophila melanogaster*, *Leishmania major*, *Mus musculus*, *Rattus norvegicus*"
- 4407 4537 27 "*Medicago truncatula*, *Homo sapiens*, *Mus musculus*, *Atelerix albiventris*, *Staphylococcus aureus*, *Arabidopsis thaliana*, *Vigna radiata*, *Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Schizosaccharomyces pombe*, *Staphylococcus aureus* subsp. aureus Mu50, *Drosophila melanogaster*, *Glycine max*, *Pan troglodytes*, *Papio anubis*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Vicia sativa*, *Ureaplasma urealyticum*, *Oryza sativa* (japonica cultivar-group), *Lorentziella imbricata*, *Caenorhabditis elegans*, *Lotus co* 50

- corniculatus* var. *japonicus*, *Streptococcus pyogenes* SSI-1, *Streptococcus pyogenes*,
Haemophilus influenzae Rd KW20"
- 4408 4538 24 "Homo sapiens, *Mus musculus*, *Oryza sativa* (*japonica* cult
 ivar-group), *Pan troglodytes*, *Arabidopsis thaliana*, *Cryptophlebia leucotreta* gra
 nulovirus, *Mycoplasma genitalium*"
- 4409 4539 28 "*Sorex unguiculatus*, *Mus musculus*, *Homo sapiens*, *Oryza s*
ativa (*japonica* cultivar-group)"
- 4410 4540 28 "*Homo sapiens*, *Buchnera aphidicola* str. Bp (*Baizongia pi*
staciae), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Arab*
idopsis thaliana, *Clostridium acetobutylicum*, *Lotus corniculatus* var. *japonicus*, 10
Caenorhabditis elegans, *Gallus gallus*, *Bacillus anthracis* str. Ames, *Dictyostel*
ium discoideum, *Chaetosphaeridium globosum*, *Oryza sativa* (*japonica* cultivar-grou
 p), *Danio rerio*"
- 4411 4541 27 "*Homo sapiens*, *Enterococcus faecalis* V583, *Mus musculus*,
Pan troglodytes, *Drosophila melanogaster*, *Thermoanaerobacter tengcongensis*, *Dan*
io rerio, *Oryza sativa* (*japonica* cultivar-group), *Solanum tuberosum*, *Lotus corni*
culatus var. *japonicus*"
- 4412 4542 31 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Arabidopsis th*
aliana, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Mycoplasma gallise*
pticum R, *Drosophila melanogaster*, *Pasteurella multocida*, *Medicago truncatula*, M 20
ycoplasma genitalium, *Nostoc* sp. PCC 7120"
- 4413 4543 34 "*Megastylis glandulosa*, *Megastylis gigas*, *Homo sapiens*,
Mus musculus, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum*, *Mal*
us x domestica, *Saccharomyces cerevisiae*, *Chalepoxenus muellerianus*, *Volvox cart*
eri f. weismannia, *Volvox carteri f. nagariensis*, *Volvox africanus*, *Volvox obver*
sus, *Drosophila ezoana*, *Arabidopsis thaliana*, *Volvox carteri f. kawasakiensis*"
- 4414 4544 23 "*Homo sapiens*, *Clostridium acetobutylicum*, *Arabidopsis t*
haliana, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Sus scrofa*, *Xenor*
habdus nematophila, *Caenorhabditis elegans*, *Rattus norvegicus*"
- 4415 4545 33 "*Rhagoletis conversa*, *Rhagoletis n. sp.* LMB-2001, *Mus mu* 30
sculus, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Lactococcus lactis* subsp. *la*
ctis, *Bacteriophage bIL286*, *Lotus corniculatus* var. *japonicus*, *Papio anubis*, *Dan*
io rerio"
- 4416 4546 31 "*Homo sapiens*, *Mus musculus*, *Bacteroides thetaiotaomicro*
n VPI-5482, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Caenorhabditis el*
egans, *Pan troglodytes*, *Fowlpox virus*, *Wigglesworthia glossinidia endosymbiont o*
f Glossina brevipalpis"
- 4417 4547 31 "*Homo sapiens*, *Macaca mulatta*, *Papio anubis*, *Caenorhabdi*
tis elegans, *Mus musculus*, *Plasmodium falciparum* 3D7, *Drosophila pseudoobscura*, 40
Goatpox virus, *Sheeppox virus*, *Lumpy skin disease virus*, *Xylella fastidiosa* 9a5c
 , *Danio rerio*, *Drosophila melanogaster*, *Xylella fastidiosa* Temecula1, *Rickettsia*
prowazekii, *Mycoplasma pulmonis*, *Ureaplasma urealyticum*, *Euglena gracilis*, *Oryz*
a sativa (*japonica* cultivar-group), *Haemophilus ducreyi* 35000HP, *Rattus norvegic*
us, *Lonicera orientalis*, *Medicago truncatula*, *Pan troglodytes*, *Borrelia burgdorf*
eri B31, *Dictyostelium discoideum*, *Xenopus laevis*, *Prochlorococcus marinus*, *Pogo*
notium ursinum, *Oryzias latipes*, *Tribolium castaneum*, *Arabidopsis thaliana*, *Haem*
ophilus influenzae Rd KW20, *Bactrocera dorsalis*, *Carabus yokoae*"
- 4418 4548 28 "*Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcu*
s aureus subsp. *aureus* N315, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Mus muscul*
us, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Streptococcus pyogenes* M1 G 50

- AS, *Oryza sativa* (japonica cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*, *Arabidopsis thaliana*"
- 4419 4549 27 "Homo sapiens, *Papio anubis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Drosophila melanogaster*, *Leptospira interrogans* serovar lai str. 56601, *Mesostigma viride*, *Danio rerio*, *Leptospira interrogans*, *Leuconostoc lactis*, *Enterobacteria* phage T4, *Ciona intestinalis*, *Rattus norvegicus*"
- 4420 4550 33 "Mus musculus, *Toxicodryas pulverulenta*, *Boa constrictor*, *Natrix maura*, *Crotalus triseriatus*, *Pantherophis obsoletus*, *Pantherophis bairdi*, *Coluber constrictor*, *Bothrops moojeni*, *Arabidopsis thaliana*, *Zamenis hohenackeri*, *Atheris chlorechis*, *Homo sapiens*, Tri" 10
- 4421 4551 23 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Escherichia coli*, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*, *Streptococcus mutans*"
- 4422 4552 28 "Xenopus laevis, *Homo sapiens*, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Mus musculus*, *Danio rerio*"
- 4423 4553 25 "Mus musculus, *Porphyra purpurea*, *Homo sapiens*, *Arabidopsis thaliana*, *Caenorhabditis elegans*" 20
- 4424 4554 63 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Mus musculus*, *Enterococcus faecalis* V583, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Ectocarpus siliculosus* virus, *Danio rerio*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Caenorhabditis elegans*, *Staphylococcus aureus* subsp. aureus Mu50"
- 4425 4555 31 "Mus musculus, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Ciona intestinalis*, *Haemophilus influenzae* Rd KW20, *Caenorhabditis briggsae*, *Pan troglodytes*, *Thaumalea gillespieae*, *Tropheryma whipplei* str. Twist, *Danio rerio*, *Tropheryma whipplei* TW08/27" 30
- 4426 4556 43 "Mus musculus, Plasmid pIP02T, *Homo sapiens*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Human immunodeficiency virus 1*, *Arabidopsis thaliana*, *Venezuelan equine encephalitis virus*, *Schizosaccharomyces pombe*, *Danio rerio*"
- 4427 4557 28 "Homo sapiens, *Mus musculus*, *Sus scrofa*, *Fundulus heteroclitus*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Medicago truncatula*, *Dictyostelium discoideum*, *Staphylococcus epidermidis* ATCC 12228, *Plasmodium falciparum* 3D7, *Anadenobolus excisus*, *Arabidopsis thaliana*, *Staphylococcus epidermidis*, *Caenorhabditis elegans*, *Bacillus halodurans*" 40
- 4428 4558 41 "Dictyostelium discoideum, *Mus musculus*, *Caenorhabditis elegans*, *Homo sapiens*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Danio rerio*, *Medicago truncatula*, *Pan troglodytes*, *Lotus corniculatus* var. japonicus, *Bos taurus*, *Mycoplasma pulmonis*, *Euglena longa*, *Mycoplasma capricolum*, *Felis catus*, *Rattus norvegicus*"
- 4429 4559 29 "Homo sapiens, *Enterococcus faecalis* V583, *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Porphyridium* sp., *Lotus corniculatus* var. japonicus, *Dictyostelium discoideum*, *Fusobacterium nucleatu* 50

- m subsp. nucleatum ATCC 25586, Flaveria trinervia, Mycoplasma pneumoniae, Danio rerio, Marchantia polymorpha, Pan troglodytes, Sminthopsis macroura, Sus scrofa, Sorghum bicolor, Boophilus microplus, Drosophila pseudoobscura, Mycoplasma mycoides subsp. mycoides SC, Swinepox virus"
- 4430 4560 35 "Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Prunus persica, Monkeypox virus, Danio rerio, Manduca sexta, Homo sapiens, Drosophila melanogaster, Lotus corniculatus var. japonicus, Oryza sativa (japonic)"
- 4431 4561 33 "Homo sapiens, Danio rerio, Oediopalpa guerini, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Megastigmus spermotrophus, Clostridium tetani E88, Caenorhabditis elegans, Candidatus Carsonella ruddii, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Melanoplus sanguinipes entomopoxvirus, Lepidopsocid RS-2001, Enterobacteria phage T4, Drosophila melanogaster, Medicago truncatula, Lycopersicon esculentum, Blastophaga intermedia, Lotus corniculatus var. japonicus, Plasmodium falciparum, Pan troglodytes, Ammophila sp. JC134, Paracyrtus sp. SLW-2002, Ciona intestinalis, Eresia plaginota, Mamestra configurata nucleopolyhedrovirus B, Moringa longituba, Sorghum bicolor, Phyllogomphoides albrighti, Tachyporus formosus, Cicer arietinum, Porphyra purpurea, Aulopus japonicus, Ipomoea trifida" 10
- 4432 4562 35 "Homo sapiens, Mus musculus, Proteus mirabilis, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Streptococcus pyogenes MGAS8232, Staphylococcus aureus, Vibrio cholerae, Plasmodium falciparum 3D7, Branchiostoma floridae, Staphylococcus aureus subsp. aureus N315, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus Mu50" 20
- 4433 4563 27 "Homo sapiens, Mus musculus, Oemleria cerasiformis, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Streptococcus mutans UA159, Plasmodium falciparum 3D7, Coccotrypes impressus, Arabidopsis thaliana, Plasmodium berghei, Caenorhabditis elegans, Danio rerio, Ipomoea nil" 30
- 4434 4564 27 "Yersinia pestis KIM, Yersinia pestis C092, Homo sapiens, Mus musculus, Antirrhinum majus, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Danio rerio"
- 4435 4565 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Plasmodium falciparum 3D7, Mesostigma viride, Danio rerio, Lotus corniculatus var. japonicus"
- 4436 4566 28 "Homo sapiens, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rhodotorula samanaeae, Bacillus cereus ATCC 14579, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Drosophila melanogaster, Methanosarcina acetivorans C2A, Oryza sativa, Plasmodium falciparum 3D7, Carabus buddaicus gansuicus, Carabus buddaicus linxiaicus, Carabus gigolo gigolo, Carabus buddaicus obenbergeri, Caenorhabditis elegans, Schizosaccharomyces pombe, Carabus pusio, Carabus pseudopusio, Carabus laotse" 40
- 4437 4567 24 "Drosophila melanogaster, Danio rerio, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Leptospira interrogans serovar lai str. 56601, Eubacterium acidaminophilum, Lotus corniculatus var. japonicus, Encephalitozoon cuniculi, Neurospora crassa, Leptosphaeria maculans, Synechocystis sp. PCC 6803"
- 4438 4568 23 "Ralstonia eutropha, Homo sapiens, Sus scrofa, Mus muscu" 50

- lus, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Streptomyces coelicolor* A3(2)"
- 4439 4569 33 "Homo sapiens, Goatpox virus, *Adenocystis utricularis*, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Utriculidium durvillei*, *Danio rerio*, *Mus musculus*, *Bacteroides thetaiotaomicron* VPI-5482, *Cymathaere japonica*, *Laminaria saccharina*, *Laminaria religiosa*, *Laminaria longipedalis*, *Laminaria japonica*, *Laminaria diabolica*, *Clostridium acetobutylicum*, *Lotus corniculatus* var. japonicus"
- 4440 4570 31 "Mus musculus, *Oryza sativa*, *Anabaena* sp. CA, *Homo sapiens*, *Rattus norvegicus*, *Nostoc* sp. PCC 7120, *Actinobacillus pleuropneumoniae*, *Bacillus thuringiensis*" 10
- 4441 4571 64 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Clostridium acetobutylicum*, *Plasmodium falciparum* 3D7, *Clostridium saccharobutylicum*, *Arabidopsis thaliana*, *Sulfolobus tokodaii*, *Bacillus halodurans*, *Campylobacter jejuni*, *Listeria innocua*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Danio rerio*"
- 4442 4572 28 "Dictyostelium discoideum, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Lotus corniculatus* var. japonicus, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Mus musculus*, *Saccharomyces uvarum*, *Papio anubis*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*" 20
- 4443 4573 36 "*Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Medicago truncatula*, *Schmidtea mediterranea*, *Chlamydia muridarum*, *Polypterus bichir*, *Lycopersicon esculentum*, *Flaveria trinervia*, *Lotus corniculatus* var. japonicus, *Ateline herpesvirus 3*, *Turkey adenovirus 3*, *Danio rerio*"
- 4444 4574 35 "Homo sapiens, *Mus musculus*, *Buchnera aphidicola* str. Bp (Baizongia pistaciae), *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Danio rerio*, *Bacillus anthracis* str. Ames, *Arabidopsis thaliana*, *Pan troglodytes*, *Dictyostelium discoideum*, *Borrelia burgdorferi* B31, *Medicago truncatula*, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Enterococcus columbae*, *Plasmodium falciparum* 3D7, *Cryptosporidium parvum*, *Melanoplus sanguinipes* entomopoxvirus, *Clostridium perfringens*, *Clostridium perfringens* str. 13" 30
- 4445 4575 39 "*Shewanella oneidensis* MR-1, *Homo sapiens*, *Mus musculus*, *Pan troglodytes*, *Dictyostelium discoideum*, *Danio rerio*, *Candida parapsilosis*, *Plasmodium falciparum* 3D7, *Sterkiella histriomuscorum*, *Lotus corniculatus* var. japonicus, *Neurospora crassa*, *Caenorhabditis elegans*, *Buchnera aphidicola* str. Bp (Baizongia pistaciae), *Borrelia burgdorferi* B31, *Pseudomonas syringae* pv. tomato str. DC3000, *Drosophila melanogaster*, *Trypanosoma cruzi*, *Tetrahymena thermophila*, *Tetrahymena pigmentosa*, *Papio hamadryas*, *Oryza sativa* (japonica cultivar-group), *Pontederia cordata*, *Arabidopsis thaliana*, *Tetrahymena pyriformis*, *Bos taurus*, *Dolichopoda schiavazzii*" 40
- 4446 4576 31 "Homo sapiens, *Arabidopsis thaliana*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Ehrlichia ruminantium*, *Yaba-like disease virus*, *Megachasma pelagios*, *Saccharomyces cerevisiae*, *Danio rerio*, *Pan troglodytes*, *Mus musculus*, *Dictyostelium discoideum*, *Glycine max*, *Felis catus*, *Lymphocystis disease virus 1*, *Canis familiaris*, *Pisum sativum*"
- 4447 4577 31 "Homo sapiens, *Sulfolobus tokodaii*, *Mus musculus*, *Escherichia coli*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Candidatus Carsonella ruddii*, *Arabidopsis thaliana*, *Bactrocera tryoni*, *D* 50

- Dictyostelium discoideum*, *Mannheimia glucosida*, *Mannheimia haemolytica*, *Delphinium nuttallianum*, *Oryza sativa* (japonica cultivar-group), *Campylobacter jejuni* sub sp. *jejuni* NCTC 11168, *Lycopersicon esculentum*, *Ornithorhynchus anatinus*, *Bos taurus*, *Oceanobacillus iheyensis* HTE831, *Danio rerio*"
- 4448 4578 58 "Archaeoglobus fulgidus DSM 4304, *Homo sapiens*, *Thaurea aromatica*, *Mus musculus*, *Danio rerio*, *Clostridium tetani* E88, *Mus musculus domesticus*, *Medicago truncatula*, *Rattus norvegicus*"
- 4449 4579 25 "*Mus musculus*, *Homo sapiens*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Escherichia coli*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Periplaneta americana*" 10
- 4450 4580 20 "*Arabidopsis thaliana*, *Homo sapiens*, *Shewanella oneidensis* MR-1, *Mus musculus*"
- 4451 4581 27 "*Homo sapiens*, *Dictyostelium discoideum*, *Pirellula* sp., *Mus musculus*"
- 4452 4582 28 "*Homo sapiens*, *Artibeus jamaicensis*, *Danio rerio*, *Mus musculus*, *Pan troglodytes*, *Euplotes octocarinatus*, *Rattus norvegicus*"
- 4453 4583 62 "*Homo sapiens*, *Medicago truncatula*, *Danio rerio*, *Babesia microti*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Caenorhabditis elegans*, *Juglans guatemalensis*, *Oryza sativa* (japonica cultivar-group), *Pisum sativum*, *Rattus norvegicus*, *Bupleurum fruticosum*, *Ctenocephalides felis*, u 20
 ncultured bacterium"
- 4454 4584 25 "*Cochliomyia hominivorax*, *Homo sapiens*, *Pan troglodytes*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group)"
- 4455 4585 25 "*Acinetobacter baumannii*, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Cervus elaphus hispanicus*, *Cervus elaphus atlanticus*, *Cervus elaphus*, *Cervus elaphus hippelaphus*, *Arabidopsis thaliana*"
- 4456 4586 35 "*Plasmodium falciparum* 3D7, *Bacillus cereus* ATCC 14579, *Danio rerio*, *Schizosaccharomyces pombe*, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar *Typhi* Ty2, *Mus musculus*, *Homo sapiens*, *Salmonella enterica* subsp. *enterica* serovar *Typhi*, *Medicago truncatula*, *Leptospira interrogans* serovar *Iai* str. 56601, *Galea musteloides*, *Kannabateomys amblyonyx*, *Hordeum vulgare* subsp. *vulgare*, *Trinomys albigularis*, *Rickettsia prowazekii*, *Arabidopsis thaliana*, *Lycopersicon esculentum*, *Chloroplast transformation vector pEzC2040.2*, *Caenorhabditis briggsae*, *Euglena gracilis*, *Sus scrofa*, *Gasterosteus aculeatus*" 30
- 4457 4587 31 "*Mus musculus*, *Homo sapiens*, *Staphylococcus aureus*, *Danio rerio*, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Can didatus* *Blochmannia floridanus*, *Mus* sp., *Oryza sativa* (japonica cultivar-group)"
- 4458 4588 23 "*Homo sapiens*, *Rattus norvegicus*, *Drosophila melanogaster*, *Mus musculus*, *Triteleopsis palmerii*, *Calycanthus floridus*, *Calycanthus floridus* var. *glaucus*, *Hedycarya angustifolia*, *Persea americana*, *Doryphora sassafras*" 40
- 4459 4589 23 "*Mus musculus*, *Homo sapiens*, *Mycoplasma pneumoniae*, *Pan troglodytes*, *Danio rerio*"
- 4460 4590 50 "*Arabidopsis thaliana*, *Leptospira interrogans* serovar *Iai* str. 56601, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*"
- 4461 4591 27 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Cynolebias myersi*, *Methanocaldococcus jannaschii*, *Donacia tominagai*, *Donacia splendens splendens*, *Donacia splendens hiurai*, *Donacia bicoloricornis*, *Drosophila melanogaster*, P 50

- Plasmodium falciparum 3D7, Rickettsia conorii, Arabidopsis thaliana"
- 4462 4592 27 "Homo sapiens, Mus musculus, Clostridium perfringens str. 13, Arabidopsis thaliana, Ureaplasma urealyticum, Plasmodium falciparum 3D7, Gallus gallus, Drosophila melanogaster, Methanosarcina mazei Goe1, Clostridium tetani E88, Lycopersicon esculentum, Danio rerio, Fowlpox virus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Pan troglodytes, Rattus norvegicus"
- 4463 4593 23 "Papio anubis, Arabidopsis thaliana, Homo sapiens, Mus musculus, Gymnothorax reticularis, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group)" 10
- 4464 4594 47 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Pasteurella multocida, Danio rerio"
- 4465 4595 31 "Homo sapiens, Mus musculus, Danio rerio, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Schmidtea mediterranea, Cliona sp. RFW-2001, Streptococcus agalactiae NEM316, Plasmodium falciparum 3D7, Salmonella enterica subsp. enterica serovar Typhi, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Plasmodium falciparum, Dictyostelium discoideum, Drosophila melanogaster, Papio anubis, Eremothecium gossypii, Caenorhabditis elegans, Human immunodeficiency virus 1, Arabidopsis thaliana, Haraldiphycium bonnemaisonii, Prochlorococcus marinus, Mycoplasma capricolum, Cafeteria roenbergensis, Plasmid pTD1" 20
- 4466 4596 34 "Caenorhabditis elegans, Mus musculus, Clostridium perfringens str. 13, Danio rerio, Homo sapiens, Candidatus Carsonella ruddii, Plasmodium falciparum 3D7, Amsacta moorei entomopoxvirus, Arabidopsis thaliana, Gillichthys mirabilis, Oryza sativa (japonica cultivar-group)"
- 4467 4597 28 "Staphylococcus aureus phage phiP68, Mus musculus, Clostridium perfringens str. 13, Caenorhabditis elegans, Sayornis phoebe, Homo sapiens, Eospalax rufescens, Amsacta moorei entomopoxvirus, Marchantia polymorpha, Neorotrichus gibbsii, Chimarrogale himalayica, Danio rerio, Francisella tularensis subsp. novicida, Medicago truncatula, Orgyia pseudotsugata multicapsid nucleopolyhedrovirus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Drosophila melanogaster, Sus scrofa, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Elephantulus rufescens, Lycopersicon esculentum, Plasmodium falciparum, Lotus corniculatus var. japonicus, Bombyx mori, Schizosaccharomyces pombe, Buchnera aphidicola" 30
- 4468 4598 28 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)"
- 4469 4599 23 "Homo sapiens, Mus musculus, Yersinia pestis KIM, Human immunodeficiency virus 1, Oryza sativa (japonica cultivar-group), Yersinia pestis C092, Bacillus anthracis str. Ames, Dictyostelium discoideum, Danio rerio, Prochlorococcus marinus subsp. marinus str. CCMP1375, Arabidopsis thaliana" 40
- 4470 4600 25 "Homo sapiens, Human immunodeficiency virus 1, Ovis aries, Arabidopsis thaliana, Cenchrus setigerus, Cenchrus myosuroides, Cenchrus ciliaris, Cenchrus echinatus, Clonostachyus intestinalis, Theileria parva, Nostoc sp. PCC 7120, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Danio rerio, Carassius auratus"
- 4471 4601 27 "Danio rerio, Mus musculus, Homo sapiens, Scopelogadus mizolepis, Entamoeba terrapinae, Borrelia burgdorferi B31, Borrelia burgdorferi, Arabidopsis thaliana, Plasmodium falciparum 3D7, Dictyostelium discoideum, Liste 50

- ria monocytogenes, Staphylococcus carnosus"
- 4472 4602 28 "Homo sapiens, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Sus scrofa, Clostridium cellulovorans, Lotus corniculatus var. japonicus, Pan troglodytes, Takifugu rubripes"
- 4473 4603 28 "Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Mus musculus, Streptococcus pyogenes SS I-1, Arabidopsis thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Ralstonia solanacearum, Listeria innocua, TTV-like mini virus, Dichelobacter nodosus, Penaeus monodon, Danio rerio"
- 4474 4604 37 "Enterococcus faecalis V583, Arabidopsis thaliana, Ureaplasma urealyticum, Mus musculus, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sulfolobus solfataricus, Danio rerio, Lotus corniculatus var. japonicus, Anopheles gambiae" 10
- 4475 4605 25 "Mus musculus, Homo sapiens, Zea mays, Halocynthia roretzi, Medicago truncatula, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Arabidopsis thaliana, Danio rerio"
- 4476 4606 27 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Mus musculus, Avena sativa, Caenorhabditis elegans, Arabidopsis thaliana, Drosophila melanogaster, Medicago truncatula, Lycopersicon esculentum, Mycoplasma hominis, Oryza sativa (japonica cultivar-group), Danio rerio, Nostoc sp. PCC 7120" 20
- 4477 4607 23 "Coxiella burnetii RSA 493, Sweet potato feathery mottle virus, Mus musculus, Homo sapiens"
- 4478 4608 21 "Homo sapiens, Oryza sativa (japonica cultivar-group), Lactococcus lactis subsp. lactis, Mus musculus, Lotus corniculatus var. japonicus, Danio rerio, Didelphis virginiana"
- 4479 4609 25 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Caenorhabditis briggsae, Equus caballus, Caenorhabditis elegans, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis"
- 4480 4610 25 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Methanocaldococcus jannaschii, Drosophila melanogaster, Melanogrammus aeglefinus, Danio rerio" 30
- 4481 4611 23 "Lycopersicon esculentum, Dictyostelium discoideum, Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Takifugu rubripes, Mus musculus, Arabidopsis thaliana, Prochlorococcus marinus"
- 4482 4612 31 "Homo sapiens, Staphylococcus aureus, Lupinus albus, Mus musculus, Caenorhabditis elegans, Clostridium acetobutylicum, Tetrahymena tropicalis, Drosophila melanogaster, Arabidopsis thaliana, Danio rerio, Chlamydomonas reinhardtii, Pan troglodytes, Plasmodium falciparum 3D7, Medicago truncatula, Lupinus angustifolius, Oryza sativa (indica cultivar-group), Cyanidium caldarium, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Schizosaccharomyces pombe, Cranichis ciliilabia" 40
- 4483 4613 93 "Vibrio parahaemolyticus, Chlamydomonas reinhardtii, Chlamydomonas reinhardtii AR39, Chlamydomonas reinhardtii J138, Chlamydomonas reinhardtii TW-183, Streptococcus mutans, Vibrio cholerae, Streptococcus mutans UA 159, Haemophilus influenzae Rd KW20, Paste"
- 4484 4614 76 "Anabaena variabilis, Anabaena sp., Nostoc sp. PCC 7120, Enterococcus faecalis V583, Enterococcus faecalis, Calothrix brevissima, Pasteurella multocida, Listeria monocytogenes, Clostridium perfringens, Clostridium pe 50

- rfringens str. 13, Staphylococcus aureus s"
- 4485 4615 93 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Haemophilus ducreyi 35000HP, Oceanobacillus iheyensis HTE831, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Vibrio cholerae"
- 4486 4616 144 "Nitrosomonas europaea ATCC 19718, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Buchnera aphidicola, Buchnera aphidicola str. Bp (Baizongia pistaciae), Candidatus Blochmannia floridanus, Chlamydomonas reinhardtii"
- 4487 4617 32 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Caenorhabditis briggsae, Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Saccharomyces cerevisiae, Danio rerio, Bacteriophage W0" 10
- 4488 4618 32 "Homo sapiens, Mycoplasma penetrans, Pyrococcus furiosus DSM 3638, Danio rerio, Mus musculus, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Saccharomyces cerevisiae, Methanocaldococcus jannaschii"
- 4489 4619 31 "Chlamydomonas reinhardtii, Chlamydomonas reinhardtii AR39, Chlamydomonas reinhardtii J138, Chlamydomonas reinhardtii TW-183, Schizosaccharomyces pombe, Homo sapiens, Danio rerio, Caenorhabditis elegans, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana" 20
- 4490 4620 32 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Danio rerio, Mus musculus, Arabidopsis thaliana, Homo sapiens, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Caenorhabditis elegans, Leptospira kirschneri serovar grippotyphosa, Nostoc sp. PCC 7120"
- 4491 4621 27 "Rattus norvegicus, Homo sapiens, Pan troglodytes, Mus musculus, Methanosarcina acetivorans C2A, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Sus scrofa, Haemophilus ducreyi 35000HP, Mycoplasma genitalium, Anopheles gambiae, Nostoc sp. PCC 7120" 30
- 4492 4622 25 "Mus musculus, Arabidopsis thaliana, Nostoc sp. PCC 7120, Homo sapiens, Rattus norvegicus, Notothenia coriiceps, Caenorhabditis elegans, Danio rerio, Bos taurus, Haemophilus influenzae Rd KW20"
- 4493 4623 31 "Medicago truncatula, Homo sapiens, Drosophila melanogaster, Mus musculus, Listeria innocua, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Plasmodium falciparum 3D7, Zea mays, Herpesvirus acanthomorphus, Pisum sativum, Arabidopsis thaliana, Buchnera aphidicola, Caenorhabditis elegans"
- 4494 4624 31 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Hepatitis C virus, Papio anubis, Schmidtea mediterranea, Lutzomyia longiflora, Buchnera aphidicola str. Sg (Schizaphis graminum), Felis catus, Shrimp white spot syndrome virus, Plasmodium chabaudi chabaudi, Broad bean wilt virus 1, Escherichia coli 0157:H7 EDL933, Danio rerio, Plasmodium chabaudi adami, Buchnera aphidicola, Ciona intestinalis, Escherichia coli, Medicago truncatula, Anacamptis morio, Dictyostelium discoideum, Escherichia coli 0157:H7" 40
- 4495 4625 27 "Homo sapiens, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Bacillus anthracis str. Ames, Sulfolobus solfataricus, Danio rerio, Toxoplasma gondii, Mus musculus, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis briggsae, Plasmodium falc 50

- iparum 3D7, Monacrosporium psychrophilum, Monacrosporium elegans, Bacillus halodurans, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Drosophila melanogaster, Methanosarcina acetivorans C2A, Helicoverpa zea single nucleocapsid nucleopolyhedrovirus, Helicoverpa armigera nuclear polyhedrosis virus, Clostridium acetobutylicum, Prochlorococcus marinus, Helicoverpa armigera nucleopolyhedrovirus G4, Arabidopsis thaliana, Hordeum vulgare subsp. vulgare, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae"
- 4496 4626 39 "Clostridium perfringens str. 13, Mycoplasma gallisepticum R, Mus musculus, Homo sapiens, Clostridium beijerinckii, Lotus corniculatus var. japonicus, Schmidtea mediterranea, Caenorhabditis briggsae, Ureaplasma urealyticum, Plasmodium falciparum 3D7, Danio rerio, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Caenorhabditis elegans, Manduca sexta" 10
- 4497 4627 27 "Homo sapiens, Mus musculus, Plasmodium falciparum, Clostridium tetani E88, Xenopus laevis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Oryctolagus cuniculus"
- 4498 4628 28 "Mus musculus, Homo sapiens, Brevibacterium flavum, Drosophila melanogaster, Lactococcus lactis subsp. lactis, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Corynebacterium glutamicum ATCC 13032, Corynebacterium glutamicum, Papio anubis, Arabidopsis thaliana, Caenorhabditis elegans, Ciona intestinalis, Danio rerio" 20
- 4499 4629 28 "Bacillus cereus ATCC 14579, Homo sapiens, Lactococcus lactis subsp. lactis, Aquifex aeolicus VF5, Mus musculus, Drosophila willistoni, Streptococcus mutans UA159, Caenorhabditis briggsae, Danio rerio"
- 4500 4630 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Caenorhabditis elegans, Urochordate sp. AZ-2003, Rattus norvegicus, Danio rerio, Arabidopsis thaliana"
- 4501 4631 28 "Lotus corniculatus var. japonicus, Danio rerio, Homo sapiens, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Neurospora crassa, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Hordeum vulgare subsp. vulgare, Arabidopsis thaliana, Saccharomyces cerevisiae, Listeria monocytogenes, Apis mellifera carnica, Ureaplasma urealyticum, Caenorhabditis elegans, Parategeticula sp., Listeria innocua, Saccharomyces douglasii, Ornithorhynchus anatinus, Haplotaxodon microlepis" 30
- 4502 4632 26 "Clostridium acetobutylicum, Caenorhabditis elegans, Danio rerio, Pan troglodytes, Mus musculus, Rattus norvegicus, Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mycoplasma pulmonis, Guillardia theta, Mycoplasma fermentans, Bos taurus, Borrelia burgdorferi B31, Dictyostelium discoideum, Monosiga brevicollis, Drosophila melanogaster, Clostridium tetani E88, Peanut witches'-broom phytoplasma, Leptospira interrogans, Helicoverpa armigera nuclear polyhedrosis virus, Heliothis armigera nucleopolyhedrovirus, Oryza sativa (japonica cultivar-group), Betula pendula, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Stromateus sp., Melanoplus sanguinipes entomopoxvirus, Neocallimastix patriciarum, Tomato big bud phytoplasma, Felis catus" 40
- 4503 4633 25 "Danio rerio, Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Pasteurella multocida, Rattus norvegicus, Mycoplasma penetrans, Clostridium perfringens str. 13"
- 4504 4634 24 "Homo sapiens, Mus musculus, Drosophila melanogaster, Pan troglodytes, Papio anubis, Escherichia coli" 50

- 4505 4635 33 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Thermoanaerobacter tengcongensis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Bacillus anthracis str. Ames, Chlamydia caviae GPIC, Pan troglodytes, Drosophila melanogaster, Lepidonotopodium fimbrium, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Lotus corniculatus var. japonicus, Reclinomonas americana, Caenorhabditis elegans, Danio rerio, Raphidozoum acuferum, Candidatus Portiera aleyrodidarum, Nostoc sp. PCC 7120"
- 4506 4636 51 "Candidatus Blochmannia floridanus, Homo sapiens, Danio rerio, Streptococcus pyogenes, Bacillus halodurans, Mus musculus, Lactococcus lactis subsp. lactis, Oceanobacillus iheyensis HTE831, Caenorhabditis elegans, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Western X phytoplasma, Drosophila melanogaster, Xenopus laevis, Papio anubis, Rice tungro bacilliform virus, Rivulus marmoratus, Mycoplasma pulmonis, Arabidopsis thaliana" 10
- 4507 4637 31 "Homo sapiens, Mus musculus, Drosophila melanogaster, Psychotria serfipiles, Danio rerio, Plasmodium falciparum 3D7, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Rattus norvegicus, Dictyostelium discoideum, Drosophila willistoni, Strix occidentalis lucida, Plasmodium falciparum, Thermococcus celer, Myzus persicae, Drosophila heteroneura, Lactococcus phage c2, Lactococcal bacteriophage P6, Medicago truncatula, Pan troglodytes, Gallus gallus, Cynolebias adloffii-1, Takifugu rubripes, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Marchantia polymorpha, Saccharomyces cerevisiae, Euglena gracilis" 20
- 4508 4638 28 "Bacillus thuringiensis serovar israelensis, Staphylococcus epidermidis ATCC 12228, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Homo sapiens, Enterococcus faecalis V583, Aquifex aeolicus VF5, Mus musculus, Methanosarcina acetivorans C2A, Caenorhabditis elegans, Glomerella cingulata, Methanocaldococcus jannaschii" 30
- 4509 4639 26 "Homo sapiens, Sulfolobus solfataricus, Mus musculus, Arabidopsis thaliana, Claviceps purpurea"
- 4510 4640 38 "Homo sapiens, Danio rerio, Mus musculus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Arabidopsis thaliana, Pan troglodytes, Drosophila melanogaster, Sedum modestum, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Lotus corniculatus var. japonicus"
- 4511 4641 28 "Mus musculus, Homo sapiens, Brassica napus var. napus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lotus corniculatus var. japonicus, Medicago truncatula, Danio rerio" 40
- 4512 4642 24 "Homo sapiens, Drosophila melanogaster, Danio rerio, Rattus norvegicus"
- 4513 4643 23 "Homo sapiens, Mus musculus, Rattus norvegicus, Danio rerio, Arabidopsis thaliana, Saccharomyces cerevisiae, Caenorhabditis elegans, Pisum sativum"
- 4514 4644 27 "Homo sapiens, Methanosarcina mazei Goe1, Caenorhabditis elegans, Mus musculus, Danio rerio, Brachyspira hyodysenteriae, Borrelia burgdorferi B31, Drosophila melanogaster, Clostridium tetani, Schizosaccharomyces japonicus, Campylobacter jejuni, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Sminthopsis archeri, Helicobacter pylori 26695, Methanocaldococcus ja 50

nnaschii, *Drosophila virilis*"

- 4515 4645 24 "Mus musculus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Homo sapiens, *Drosophila melanogaster*, *Methanothermobacter therm autotrophicus* str. Delta H, *Danio rerio*, *Guillardia theta*"
- 4516 4646 23 "Saccharomyces cerevisiae, Homo sapiens, Mus musculus, *Danio rerio*"
- 4517 4647 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, Mus musculus, *Plasmodium falciparum* 3D7, Lotus corniculatus var. japonicus, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Bacillus circulans*, *Staphylococcus aureus* subsp. aureus M u50, *Nostoc* sp. PCC 7120" 10
- 4518 4648 27 "Homo sapiens, Mus musculus, *Danio rerio*, *Pan troglodytes*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Escherichia coli*"
- 4519 4649 24 "*Oryza sativa* (japonica cultivar-group), *Ostertagia ostertagi*, Homo sapiens, *Papio anubis*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, Mus musculus, *Streptococcus pyogenes* SSI-1, *Streptococcus pyogenes*, *Methanocaldococcus jannaschii*, *Danio rerio*, *Rattus norvegicus*, *Daucus carota*"
- 4520 4650 28 "*Danio rerio*, Homo sapiens, Mus musculus, *Plasmodium falciparum* 3D7, *Medicago truncatula*, *Pseudomonas syringae* pv. tomato str. DC3000, *Caenorhabditis elegans*, *Theriotia lorifolia*, *Bacillus anthracis* str. A2012, *Prochlorococcus marinus*, Arabidopsis thaliana, *Oryza sativa* (indica cultivar-group), *Bacillus anthracis*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Mycoplasma genitalium*" 20
- 4521 4651 32 "Homo sapiens, Mus musculus, *Plasmodium falciparum* 3D7, *Danio rerio*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, Arabidopsis thaliana, uncultured crenarchaeote 4B7, *Oryza sativa*, *Antirrhinum majus*, *Borrelia hermsii*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Listeria innocua*, *Takifugu rubripes*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Rat cytomegalovirus*, *Moraxella bovis*, *Rattus norvegicus*, *Escherichia coli*" 30
- 4522 4652 27 "Homo sapiens, Arabidopsis thaliana, Mus musculus, *Drosophila melanogaster*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Euricania ocella*, *Plasmodium falciparum*, *Phyciodes* sp., *Rattus norvegicus*, *Synechocystis* sp. PCC 6803"
- 4523 4653 32 "Mus musculus, Homo sapiens, *Buchnera aphidicola* str. Sg (Schizaphis graminum), *Euglena gracilis*, *Medicago truncatula*, *Oryctolagus cuniculus*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, Arabidopsis thaliana, *Pan troglodytes*, *Caenorhabditis elegans*, *Tetraodon nigroviridis*, *Danio rerio*, *Tetraodon fluviatilis*, Onion yellows phytoplasma, *Oenothera elata* subsp. hookeri, Lotus corniculatus var. japonicus, *Xenopus laevis*, *Drosophila melanogaster*, *Sparus aurata*, *Botryotinia fuckeliana*, *Coxiella burnetii* RSA 493" 40
- 4524 4654 27 "Mus musculus, Homo sapiens, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, Arabidopsis thaliana, *Entamoeba histolytica*, *Panulirus japonicus*"
- 4525 4655 27 "Homo sapiens, Mus musculus, *Danio rerio*, Arabidopsis thaliana, *Rickettsia conorii*, *Rickettsia montanensis*, *Rickettsia rickettsii*, *Ciona intestinalis*, *Pinus thunbergii*" 50

- 4526 4656 27 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Caenorhabditis elegans, Carollia perspicillata, Sus scrofa, Drosophila melanogaster, Mus musculus, Felis catus, Danio rerio, Schizosaccharomyces pombe"
- 4527 4657 31 "Danio rerio, Monosiga brevicollis, Homo sapiens, Mus musculus, Bos taurus, Spiroplasma citri, Plasmodium falciparum 3D7, Apocryptophagus sp. MSPAR4, Plasmodium falciparum, Platynereis dumerilii, Medicago truncatula, Caenorhabditis elegans, Pan troglodytes, Dictyostelium discoideum, Chlamydomonas reinhardtii, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Brassica juncea, Brassica oleracea, Trypanosoma brucei, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Plasmodium berghei, Sathon falcatus, Rachiplusia ou multiple nucleopolyhedrovirus" 10
- 4528 4658 24 "Homo sapiens, Bacillus halodurans, Drosophila melanogaster, Mus musculus, Danio rerio, Rattus norvegicus, Arabidopsis thaliana, Pelargonium ionidiflorum, Pelargonium reniforme, Pelargonium album"
- 4529 4659 30 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Chaetosphaeridium globosum, Lactobacillus plantarum WCFS1, Plasmodium falciparum 3D7, Plasmodium falciparum, Drosophila melanogaster, Leishmania tarentolae, Medicago truncatula, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Oryza sativa (japonica cultivar-group), Xenopus laevis, Schmidtea mediterranea, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Chilo iridescent virus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Botryotinia fuckeliana, Bacillus licheniformis, Shewanella violacea" 20
- 4530 4660 35 "Homo sapiens, Schmidtea mediterranea, Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Mus musculus, Caenorhabditis elegans, Pan troglodytes, Mycoplasma mycoides subsp. mycoides SC, Uniola paniculata, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Gilia congesta, Salmonella enterica, Thermoanaerobacter tengcongensis, uncultured crenarchaeote 74A4, Danio rerio, Oryza sativa (japonica cultivar-group), P 30
hysarum polycephalum, Nostoc sp. PCC 7120"
- 4531 4661 27 "Homo sapiens, Mus musculus"
- 4532 4662 25 "Medicago truncatula, Homo sapiens, Oryctolagus cuniculus, Mus musculus, Oceanobacillus ihyenssis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Ciona intestinalis, Xenopus laevis, Staphylococcus aureus subsp. aureus Mu50, Nostoc sp. PCC 7120"
- 4533 4663 27 "Drosophila melanogaster, Homo sapiens, Mus musculus, Pneumocystis carinii, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Enterococcus faecalis V583, Shewanella oneidensis MR-1, Streptococcus mutans UA159, Danio rerio, Lactococcus lactis, Arabidopsis thaliana, Bacillus sphaericus, Enterococcus faecalis, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Kluyveromyces lactis, Haemophilus influenzae Rd KW20, Kluyveromyces marxianus, Streptococcus mutans" 40
- 4534 4664 23 "Nostoc sp. PCC 7120, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Homo sapiens, Mus musculus, Drosophila melanogaster, Danio rerio"
- 4535 4665 25 "Thermoanaerobacter tengcongensis, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Mycoplasma genitalium, Danio rerio"
- 4536 4666 25 "Homo sapiens, Bluetongue virus 2, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)" 50

- p), *Streptococcus gordonii*, *Medicago truncatula*, *Danio rerio*, *Neurospora crassa*"
- 4537 4667 27 "Homo sapiens, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mus musculus*, *Amsacta moorei* entomopoxvirus, *Methanocaldococcus jannaschii*, *Gallus gallus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Rickettsia conorii*, *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Helicobacter hepaticus* ATCC 51449"
- 4538 4668 31 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Clostridium tetani* E88, *Mus musculus*, *Prototheca wickerhamii*, *Francisella tularensis* subsp. *novicida*, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Vibrio vulnificus* CMCP6, *Shewanella oneidensis* MR-1, *Drosophila*" 10
- 4539 4669 27 "Homo sapiens, *Mus musculus*, *Typha minima*, *Arabidopsis thaliana*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Paramecium tetraurelia*, *Crassostrea gasar*"
- 4540 4670 27 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Methanosarcina acetivorans* C2A, *Arabidopsis thaliana*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Cryptosporidium parvum*, *Helicobacter pylori* 26695, *Helicobacter pylori*, *Danio rerio*, *Nostoc* sp. PCC 7120"
- 4541 4671 28 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Flavobacterium johnsoniae*, *Drosophila melanogaster*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*" 20
- 4542 4672 25 "Bacteriophage KVP40, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Pyrococcus horikoshii*, *Homo sapiens*, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, Spring beauty latent virus, *Chlamydomonas pneumoniae* TW-183"
- 4543 4673 24 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Netta rufina*, *Arabidopsis thaliana*"
- 4544 4674 24 "Mus musculus, Homo sapiens, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Rickettsia prowazekii*, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Ciona intestinalis*, *Chlamydomonas pneumoniae* TW-183, African swine fever virus, *Alteromonas* sp., *Chlamydomonas pneumoniae* J138" 30
- 4545 4675 27 "Homo sapiens, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Drosophila virilis*"
- 4546 4676 24 "Homo sapiens, *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Mus musculus*"
- 4547 4677 43 "Zymomonas mobilis, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Caenorhabditis briggsae*, *Rattus norvegicus*"
- 4548 4678 27 "Homo sapiens, *Mus musculus*, *Cavia porcellus*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Sus scrofa*, *Danio rerio*, *Arabidopsis thaliana*, *Staphylococcus epidermidis*, *Prototheca wickerhamii*, *Listeria innocua*" 40
- 4549 4679 30 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Clostridium tetani* E88, *Dirofilaria immitis*, *Sulfolobus tokodaii*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Clostridium perfringens* str. 13"
- 4550 4680 30 "Streptococcus agalactiae 2603V/R, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Campylobacter coli*, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Caenorhabditis elegans*, *Oryctolagus cuniculus*, *Pan troglodytes*, *Bacillus subtilis*, *Caenorhabditis briggsae*, *Bos taurus*, *Bacillus subtilis*" 50

subsp. subtilis str. 168"

4551 4681 30 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Nostoc sp. PCC 7120, Philonesia sp. BSH-2002, Staphylococcus epidermidis ATCC 12228, Corynebacterium glutamicum, Drosophila melanogaster, Plasmodium falciparum, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Viral hemorrhagic septicemia virus, Staphylococcus epidermidis, Schizosaccharomyces pombe, Corynebacterium glutamicum ATCC 13032"

4552 4682 148 "Buchnera aphidicola str. Sg (Schizaphis graminum), Campylobacter coli, Buchnera aphidicola str. Bp (Baizongia pistaciae), Thermoanaerobacter tengcongensis, Clostridium acetobutylicum, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Buch"

4553 4683 32 "Plasmodium falciparum 3D7, Homo sapiens, Oceanobacillus iheyensis HTE831, Dictyostelium discoideum, Mus musculus, Danio rerio, Drosophila melanogaster, Rattus norvegicus, Felis catus, Brassica napus, Arabidopsis thaliana, Raphanus sativus, Oryctolagus cuniculus, Atelerix albiventris, Bacillus anthracis str. Ames, Caenorhabditis elegans, Pan troglodytes, Streptococcus mutans UA159, Chaetosphaeridium globosum, Drosophila flavomontana, Dactylurina staudingeri, Cyprinus carpio, Buchnera aphidicola str. APS (Acyrtosiphon pisum)"

4554 4684 31 "Homo sapiens, Mus musculus, Zea mays, Medicago truncatula, Methanosarcina acetivorans C2A, Cryptosporidium parvum, Danio rerio, Drosophila melanogaster, Tetrahymena thermophila, Caenorhabditis elegans, Arabidopsis thaliana, Leishmania major, Plasmodium falciparum 3D7, Prochlorococcus marinus subsp. marinus str. CCMP1375, Oryza sativa (japonica cultivar-group), Helicobacter hepaticus ATCC 51449"

4555 4685 23 "Drosophila melanogaster, Homo sapiens, Glycine max, Oryza sativa (japonica cultivar-group), Medicago truncatula, Mus musculus, Caenorhabditis elegans, Zea mays"

4556 4686 24 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Caenorhabditis elegans, Bacillus anthracis str. Ames, Chlamydia muridarum, Clostridium tetani E88, Schizosaccharomyces pombe, Anopheles gambiae"

4557 4687 55 "Clostridium tetani E88, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Drosophila melanogaster, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Homo sapiens, Datura stramonium, Dugesia japonica, Nicotiana glauca, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Haemophilus influenzae Rd KW20, Haemophilus influenzae, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Arabidopsis thaliana, Yersinia pestis KIM, Methanosarcina acetivorans C2A, Solanum tuberosum, Lycopersicon esculentum, Lotus corniculatus var. japonicus, Bacillus sp. 240B1, Yersinia pestis C092, Human immunodeficiency virus 2, Cynanchum ligulatum"

4558 4688 29 "Homo sapiens, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Grateloupia sp., Caenorhabditis elegans, Cyanidium caldarium, Lotus corniculatus var. japonicus, Porphyra purpurea, Uromyces appendiculatus"

4559 4689 32 "Homo sapiens, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Oryzias latipes, Arabidopsis thaliana, Danio rerio, Pan troglodytes, Dictyostelium discoideum, Plasmodium vivax, Streptococcus mutans UA159, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Crithidia oncopelti, Oryza sativa (japonica cultivar-group)

-), *Streptococcus pyogenes* SSI-1, *Sulfolobus tokodaii*, *Plasmodium simium*"
- 4560 4690 31 "Salmonella typhimurium LT2, *Rattus norvegicus*, *Homo sapiens*, *Mus musculus*, *Pasteurella multocida*, *Oryza sativa*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group)"
- 4561 4691 29 "*Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Bacteroides thetaiotaomicron* VPI-5482, *Buchnera aphidicola*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Danio rerio*, *Cynops pyrrhogaster*"
- 4562 4692 31 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Clostridium acetobutylicum*, *Chlamydomonas pneumoniae* CWL029, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Pan troglodytes*, *Chlamydomonas pneumoniae* TW-183, *Nostoc* sp. PCC 7120" 10
- 4563 4693 24 "*Homo sapiens*, *Caenorhabditis elegans*, *Lactococcus lactis* subsp. *lactis*, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Mus musculus*, *Schmidtea mediterranea*"
- 4564 4694 31 "*Homo sapiens*, *Drosophila willistoni*, *Oryza sativa*, *Medicago truncatula*, *Caenorhabditis elegans*, *Human immunodeficiency virus 1*, *Mus musculus*, *Drosophila melanogaster*, *Papio anubis*, *Methanobacterium bryantii*, *Leptospira biflexa temperate bacteriophage* LE1, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Arabidopsis thaliana*" 20
- 4565 4695 35 "*Homo sapiens*, *Danio rerio*, *Dictyostelium discoideum*, *Lycopersicon esculentum*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Magnaporthe grisea*, *Spirula spirula*, *Saccharomyces cerevisiae*, *Human immunodeficiency virus 1*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Methanosarcina mazei* Goe1, *Cucumis melo* var. *reticulatus*, *Schizophyllum commune*, *Sulfolobus solfataricus*, *Escherichia coli* O157:H7 EDL933, *Lactococcus lactis* subsp. *cremoris*, *Rickettsia prowazekii*, *Mycoplasma hominis*, *Cicer arietinum*, *Drosophila ananassae*, *Escherichia coli* O157:H7, *Podospira anserina*" 30
- 4566 4696 35 "*Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Danio rerio*, *Drosophila* sp. 'white tip scutellum', *Drosophila iki*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Drosophila melanogaster*, *Bicyclus anynana*, *Buchnera aphidicola*, *Chrysosple*"
- 4567 4697 31 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Glycine max*, *Felis catus*, *Mus musculus*, *Danio rerio*, *Saccharomyces cerevisiae*, *Anopheles gambiae*, *Bursera simaruba*, *Arabidopsis thaliana*, *Amsacta moorei* entomopoxvirus, *Reclinomonas americana*, unidentified entomopoxvirus, *Dictyostelium* sp., *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Caenorhabditis elegans*, *Ornithorhynchus anatinus*, *Rattus norvegicus*, *Clusia nemorosa*, *Clusia minor*, *Clusia intertexta*, *Antheraea pernyi*, *Gallus gallus*, *Medicago truncatula*, *Methanosarcina mazei* Goe1, *Plasmodium falciparum*, *Melipona bicolor*, *Papio anubis*, *Streptococcus mutants* UA159, *Canis familiaris*" 40
- 4568 4698 27 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Guillardia theta*, *Caenorhabditis elegans*, *Pan troglodytes*, *Gasteruption* sp. M19, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Eimeria nieschulzi*, *Lactococcus lactis* su 50

- bsp. *lactis*, *Trichophyton rubrum*, *Prochlorococcus marinus*, *Photobacterium luminescens* subsp. *laumondii*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Anthoceros formosae*, *Solanum bulbocastanum*, *Rhipicephalus appendiculatus*"
- 4569 4699 29 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Schizosaccharomyces octosporus, Lycopersicon esculentum, Sorghum bicolor, Danio rerio, Synechococcus sp. PCC 7002"
- 4570 4700 25 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Danio rerio, Mycoplasma gallisepticum R, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Zea mays, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Mycoplasma penetrans, Staphylococcus aureus subsp. aureus Mu50" 10
- 4571 4701 24 "Mus musculus, Homo sapiens, Staphylococcus aureus phage phi 13, Babesia rodhaini, Staphylococcus aureus prophage phiPV83, Staphylococcus aureus bacteriophage PVL, Drosophila melanogaster"
- 4572 4702 28 "Vibrio cholerae, Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Clostridium acetobutylicum, Arabidopsis thaliana, Danio rerio, Sus scrofa, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Helicobacter hepaticus ATCC 51449"
- 4573 4703 28 "Homo sapiens, Mus musculus, Trypanosoma equiperdum"
- 4574 4704 24 "Drosophila melanogaster, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Escherichia coli K12, Escherichia coli, Homo sapiens, Neisseria meningitidis Z2491, Neisseria gonorrhoeae, Neisseria meningitidis MC58" 20
- 4575 4705 27 "Mycoplasma mycoides subsp. mycoides, Mus musculus, Caenorhabditis elegans, Branchiostoma floridae, Homo sapiens, Clostridium acetobutylicum, Streptococcus dysgalactiae, Streptococcus dysgalactiae subsp. equisimilis, Danio rerio, Pan troglodytes, Arabidopsis thaliana"
- 4576 4706 33 "Homo sapiens, Mus musculus, Danio rerio, Bartonella henselae, Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Staphylococcus aureus, Plasmodium falciparum 3D7, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus Mu50, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Gossypium hirsutum, Cucumis melo var. reticulatus, Entamoeba histolytica, Mycoplasma capricolum, Schizosaccharomyces pombe, Pan troglodytes" 30
- 4577 4707 32 "Lymphocystis disease virus 1, Homo sapiens, Danio rerio, gamma proteobacterium UMB20C, Mycoplasma gallisepticum R, Drosophila melanogaster, Papio anubis, Schizosaccharomyces pombe, Parascaris univalens, Rattus norvegicus"
- 4578 4708 27 "Homo sapiens, Cryptococcus neoformans var. grubii, Mus musculus, Caenorhabditis elegans, Dictyostelium discoideum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Staphylococcus aureus subsp. aureus Mu50, Clostridium perfringens, Clostridium perfringens str. 13, Leptospira interrogans serovar lai str. 56601, Lemur catta, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Brugia malayi" 40
- 4579 4709 23 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Danio rerio, Anabaena sp. 90, Lycopersicon esculentum, Allomyces macrogynus, Buchnera aphidicola str. Sg (Schizaphis graminum), Xenopus laevis, Anabaena sp. 202A2, Anabaena sp. 202A1/35, Anabaena sp. 66B, Anabaena sp. 66A, Oceanobacillus iheyensis" 50

is HTE831, *Anabaena cf. flos-aquae* NIVA-CYA83"

- 4580 4710 33 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Dictyostelium discoideum*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N 315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Gallus gallus*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Sminthopsis macroura*, *Danio rerio*, *Rattus norvegicus*, *Oryctolagus cuniculus*"
- 4581 4711 28 "*Dictyostelium discoideum*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*, *Nostoc* sp. PCC 7120, *Mus musculus*, *Pan troglodytes*, *Caenorhabditis elegans*, *Human herpesvirus 3* MSP, *Human herpesvirus 3* VZV-32, *Borrelia burgdorferi*, *Human herpesvirus 3*, *Leishmania panamensis*, *Danio rerio*" 10
- 4582 4712 23 "*Felis catus*, *Mus musculus*, *Pyrococcus horikoshii*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Homo sapiens*, *Bos taurus*, *Oryza sativa* (*japonica* cultivar-group), *Iris brevicaulis*, *Mesorhizobium loti*"
- 4583 4713 31 "*Homo sapiens*, *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Acheta domesticus*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Danio rerio*, *Clostridium tetani* E88, *Sus scrofa*, *Arabidopsis thaliana*, *Helicoverpa zea* single nucleocapsid nucleopolyhedrovirus, *Oryza sativa* (*japonica* cultivar-group), *Neurospora crassa*, *Listeria innocua*, *Acanthamoeba hatchetti*, *Picea abies*" 20
- 4584 4714 26 "*Homo sapiens*, *Bacillus cereus* ATCC 14579, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Borrelia burgdorferi* B31, *Danio rerio*, *Mus musculus*, *Schizosaccharomyces pombe*, *Plasmodium falciparum* 3D7, *Heliothis virescens*"
- 4585 4715 67 "*Buchnera aphidicola* str. *Sg* (*Schizaphis graminum*), *Caenorhabditis briggsae*, *Ehrlichia ruminantium*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Buchnera aphidicola* str. *Bp* (*Baizongia pistaciae*), *Streptococcus mutans* UA159, *Ureaplasma urealyticum*, *Sh*" 30
- 4586 4716 179 "*Proteus mirabilis*, *Lactococcus lactis* subsp. *lactis*, *Proteus vulgaris*, *Enterobacter cloacae*, *Vibrio vulnificus* CMCP6, *Lactococcus lactis*, *Haemophilus haemolyticus*, *Haemophilus* sp. CCUG 31340, *Bacillus cereus* ATCC 14579, *Staphylococcus epidermidis* ATCC 12228"
- 4587 4717 28 "*Mus musculus*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Haemophilus parainfluenzae*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Vitis vinifera*, *Baboon cytomegalovirus*, *Schizosaccharomyces pombe*"
- 4588 4718 32 "*Vibrio parahaemolyticus*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Medicago truncatula*, *Pasteurella multocida*, *Proteus vulgaris*, *Buchnera aphidicola* str. *APS* (*Acyrtosiphon pisum*), *Porphyromonas gingivalis* W83, *Danio rerio*, *Vibrio vulnificus* CMCP6, *Homo sapiens*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Oryza sativa* (*japonica* cultivar-group), *Listeria innocua*, *Ciona intestinalis*, *Streptococcus thermophilus* temperate bacteriophage 01205" 40
- 4589 4719 27 "*Mus musculus*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Epifagus virginiana*"
- 4590 4720 46 "*Listeria monocytogenes*, *Caenorhabditis elegans*, *Homo sa*" 50

- piens, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Ovis aries*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Danio rerio*"
- 4591 4721 24 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Monobryophyta* sp. JEL15, *Drosophila melanogaster*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Acetabularia acetabulum*, *Crossostoma lacustre*"
- 4592 4722 47 "Chlamydomonas reinhardtii, *Chlamydomonas reinhardtii* GPIC, *Lotus corniculatus* var. japonicus, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Tribolium castaneum*, *Sulfolobus tokodaii*, *Danio rerio*, *Pristionchus pacificus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Amorphophallus pusillus*, *Mus musculus*, *Candida glabrata*, *Listeria monocytogenes*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Ixodes auritulus*, Avian infectious bronchitis virus, *Bombus dahlbomii*, *Medicago truncatula*, *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Psychotria nervosa*, *Psychotria erythrocarpa*, *Sus scrofa*, *Physarum polycephalum*, *Rattus norvegicus*" 10
- 4593 4723 33 "Homo sapiens, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Amsacta moorei* entomopoxvirus, *Danio rerio*, *Arachis hypogaea*, *Dictyostelium discoideum*, *Monosiga brevicollis*, *Macaca mulatta*, *Acartia longiremis*, *Saccharomyces cerevisiae*, *Botryotinia fuckeliana*, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar lai str. 56601, *Xenopus laevis*, *Papio anubis*, *Equus caballus*, *Malawimonas jakobiformis*, *Oryza sativa*, *Calandrinia compressa*, *Plasmodium chabaudi*, *Staphylococcus capitis*, *Diadasia chilensis*, *Rickettsia prowazekii*, *Clostridium difficile*, *Lotus corniculatus* var. japonicus, *Staphylococcus aureus* subsp. aureus Mu50" 20
- 4594 4724 24 "Homo sapiens, *Mus musculus*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Danio rerio*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group)"
- 4595 4725 28 "Homo sapiens, *Drosophila melanogaster*, *Pan troglodytes*, *Mus musculus*, *Medicago truncatula*, *Methanothermobacter thermoautotrophicus* str. Delta H, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Danio rerio*" 30
- 4596 4726 23 "Mus musculus, *Drosophila melanogaster*, *Homo sapiens*, *Arabidopsis thaliana*, *Hordeum vulgare* subsp. vulgare, *Oryza sativa* (japonica cultivar-group)"
- 4597 4727 25 "Saccharomyces cerevisiae, *Homo sapiens*, *Mus musculus*, *Oryctolagus cuniculus*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Panorpa banksi*, *Panorpa acuta*, *Sedum modestum*, *Thermoanaerobacter tengcongensis*, *Platynereis dumerilii*, *Oryza sativa* (japonica cultivar-group), *Onchocerca volvulus*"
- 4598 4728 23 "Homo sapiens, *Drosophila melanogaster*, *Streptomyces avermitilis* MA-4680, *Ciona intestinalis*, *Danio rerio*, *Mus musculus*, *Capra hircus*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. japonicus" 40
- 4599 4729 27 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Ectromelia virus*, *Clostridium acetobutylicum*, Yaba-like disease virus, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Spirodela punctata*"
- 4600 4730 52 "Photobacterium luminescens, *Yersinia pestis* KIM, *Vibrio parahaemolyticus*, *Yersinia pestis* C092, *Yersinia enterocolitica*, *Yersinia pestis*, *Yersinia pseudotuberculosis*, *Homo sapiens*, *Mus musculus*, *Pan troglodytes*, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Chromobacterium violaceum*, *Bifidobacterium*" 50

- erium longum NCC2705, Bacillus anthracis str. Ames, Chlamydomonas reinhardtii, Salmonella enterica subsp. enterica serovar Typhi Ty2, Citrobacter rodentium, Danio rerio, Arabidopsis thaliana, Salmonella enterica subsp. enterica serovar Typhi, Plasmodium chabaudi"
- 4601 4731 25 "Poncirus trifoliata, Homo sapiens, Plasmodium falciparum 3D7, Caenorhabditis elegans, Mus musculus, Donrichardsia macroneuron, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Streptococcus pyogenes M1 GAS, Danio rerio, Arabidopsis thaliana, Caenorhabditis briggsae, Streptococcus pyogenes SSI-1, Oryza sativa (japonica cultivar-group), Thomasomys notatus, Myotis bechsteini, Rattus norvegicus" 10
- 4602 4732 26 "Homo sapiens, Medicago truncatula, Oryza sativa (japonica cultivar-group), Lymnaea stagnalis, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Helianthus annuus, Danio rerio, Paulschulzia pseudovolvox, Yamagishiella unicocca"
- 4603 4733 28 "Candidatus Blochmannia floridanus, Medicago truncatula, Sus scrofa, Homo sapiens, Rhizopogon evadens, Drosophila melanogaster, Guillardia theta, Danio rerio, Oryza sativa (japonica cultivar-group), Oceanobacillus ihayensis HTE831, Mus musculus, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Lotus corniculatus var. japonicus, Bos taurus, Dictyostelium discoideum" 20
- 4604 4734 24 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Arabidopsis thaliana, Schizosaccharomyces pombe"
- 4605 4735 27 "Homo sapiens, Plasmodium falciparum 3D7, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mus musculus, Danio rerio, Caenorhabditis elegans, Little cherry virus 1, Campylobacter jejuni subsp. jejuni NCTC 11168, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Arabidopsis thaliana, Medicago truncatula, Dictyostelium discoideum, Fenneropenaeus merguensis, Buchnera aphidicola str. Sg (Schizaphis graminum), Bacillus anthracis str. A201 2, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Trypanosoma brucei, Sulfolobus tokodaii, Bacillus anthracis, Toxoplasma gondii, Drosophila melanogaster" 30
- 4606 4736 27 "Homo sapiens, Arabidopsis thaliana, Campylobacter jejuni, SARS coronavirus Frankfurt 1, Oryza sativa (japonica cultivar-group), SARS coronavirus BJ04, SARS coronavirus BJ03, SARS coronavirus BJ02, SARS coronavirus ZJ01, SARS coronavirus Tor2, SARS coronavirus"
- 4607 4737 24 "Homo sapiens, Mus musculus, Nicotiana tabacum, Arabidopsis thaliana, Trichoplusia ni, Prochlorococcus marinus, Caenorhabditis elegans"
- 4608 4738 31 "Mus musculus, Homo sapiens, Haemonchus contortus, Acinetobacter baumannii, Escherichia coli, Dictyostelium discoideum, Klebsiella pneumoniae, Caenorhabditis elegans, Plasmodium sp., Plasmodium relictum, Citrobacter freundii, Pan troglodytes, Salmonella enterica" 40
- 4609 4739 31 "Homo sapiens, Mus musculus, Methanosarcina mazei Goe1, Clostridium tetani E88, Ehrlichia ruminantium, Buchnera aphidicola str. Bp (Baizongia pistaciae), Pan troglodytes, Schizosaccharomyces pombe, Dactylococcopsis salina"
- 4610 4740 29 "Homo sapiens, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Plasmodium falciparum, Human immunodeficiency virus 1, Bacteroides thetaiotaomicron VPI-5482, Aquifex aeolicus VF5, Staphylococcus epidermidis ATCC 12228, Arabido 50

- psis thaliana, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Danio rerio, Issatchenkia orientalis"
- 4611 4741 28 "Homo sapiens, Mus musculus, Danio rerio, Neurospora crassa, Guillardia theta, Saccharomyces cerevisiae"
- 4612 4742 74 "Yersinia pestis, Yersinia pseudotuberculosis, Yersinia pestis KIM, Yersinia enterocolitica, Homo sapiens, Mus musculus, Pediococcus pentosaceus, Rattus norvegicus, Sulfolobus tokodaii, Danio rerio, Pirellula sp., Oryza sativa (japonica cultivar-group)"
- 4613 4743 43 "Sinorhizobium fredii, Rhizobium sp. NGR234, Mus musculus, Buchnera aphidicola (Melaphis rhois), Homo sapiens, Lotus corniculatus var. japonicus, Pan troglodytes, Thermotoga maritima, Yersinia enterocolitica, Buchnera aphidicola (Schlechtendalia chinensis), Caulobacter crescentus CB15, Bradyrhizobium japonicum, Yersinia pestis, Bradyrhizobium japonicum USDA 110, Yersinia pseudotuberculosis, Yersinia pestis KIM" 10
- 4614 4744 65 "Vibrio parahaemolyticus, Salmonella typhimurium LT2, Salmonella typhimurium, Leptospira interrogans serovar lai str. 56601, Salmonella enterica subsp. enterica serovar Typhi Ty2, Mycoplasma capricolum, Oceanobacillus ihayensis HTE831, Salmonella enterica su"
- 4615 4745 53 "Oryza sativa (japonica cultivar-group), Homo sapiens, Vibrio parahaemolyticus, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7" 20
- 4616 4746 29 "Mus musculus, Chlamydia muridarum, Homo sapiens, Plasmodium yoelii"
- 4617 4747 28 "Sinorhizobium meliloti, Drosophila melanogaster, Homo sapiens, Cuscuta reflexa, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Medicago truncatula, Mus musculus, Danio rerio, Chlorella vulgaris"
- 4618 4748 27 "Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Homo sapiens, Clostridium difficile, Mycoplasma pneumoniae, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Plasmodium falciparum, Sulfolobus tokodaii, Macaca fascicularis" 30
- 4619 4749 24 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Dictyostelium discoideum, Takifugu rubripes, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Oryza sativa (japonica cultivar-group), Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50"
- 4620 4750 27 "Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Drosophila melanogaster, Arabidopsis thaliana, Homo sapiens, Nicotiana tabacum, Balanus amphitrite, Flammulina velutipes, Bacillus anthracis str. Ames, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Rattus norvegicus, Lotus corniculatus var. japonicus, Ciona intestinalis" 40
- 4621 4751 27 "Homo sapiens, Bacillus lynceorum, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Danio rerio"
- 4622 4752 27 "Mus musculus, Homo sapiens, Bacillus anthracis str. Ames, Drosophila melanogaster, Clostridium tetani E88, Porcine lymphotropic herpesvirus 1, Caenorhabditis elegans, Rattus norvegicus"
- 4623 4753 27 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Human immunodeficiency virus 1, Mus musculus, Helicobacter pylori, Pseudomonas syringae pv. tomato str. DC3000, Schizosaccharomyces japonicus, Caenorhabditis elegans, Papio anubis, Plasmodium falciparum 3D7, Hyalomma ma 50

marginatum, *Hyalomma marginatum rufipes*, *Oceanobacillus iheyensis* HTE831, *Helicobacter pylori* J99, *Danio rerio*, *Lycopersicon esculentum*, *Hemicentrotus pulcherrimus*"

- 4624 4754 31 "Mus musculus, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Phaseolus vulgaris, Mycoplasma penetrans, Wiedomys pyrrhorhinos, Anopheles gambiae, Bacillus halodurans"
- 4625 4755 27 "Danio rerio, Homo sapiens, Drosophila melanogaster, Methanopyrus kandleri AV19, Methanopyrus kandleri, Mus musculus, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Bacillus halodurans" 10
- 4626 4756 24 "Mus musculus, Homo sapiens, Danio rerio, Glycine max"
- 4627 4757 25 "Mus musculus, Medicago truncatula, Homo sapiens, Rickettsia prowazekii, Danio rerio, Oryza sativa (japonica cultivar-group), Chlamydia caviae GPIC, Vibrio vulnificus CMCP6, Plasmodium falciparum 3D7, Clostridium tetani E88, Oryza sativa, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis elegans, Helicobacter hepaticus ATCC 51449, Felis catus"
- 4628 4758 35 "Plasmodium falciparum 3D7, Caenorhabditis elegans, Homo sapiens, Danio rerio, Oreochromis niloticus, Clostridium perfringens str. 13, Mus musculus, Dugesia japonica, Leptospira interrogans serovar lai str. 56601, Vanhornia eunemidarum, Dictyostelium discoideum, Gallus gallus, Drosophila melanogaster, Pan troglodytes, Oryza sativa (japonica cultivar-group), Pasteurella multocida, Heliothis virescens, Piromyces equi, Cucumis melo, Buchnera aphidicola, Chaetosphaeridium globosum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus, Streptococcus anginosus, Ureaplasma urealyticum, Ochromonas danica, Saccharomyces douglasii, Plasmodium berghei, Felis catus, Artibeus jamaicensis, Gasterosteus aculeatus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Ixodes jellisoni, Cicer arietinum" 20
- 4629 4759 27 "Homo sapiens, Mus musculus, Clostridium tetani E88, Rattus norvegicus, Pan troglodytes, Drosophila melanogaster, Felis catus, Desulfosporosinus orientis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Methanocaldococcus jannaschii" 30
- 4630 4760 38 "Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Dictyostelium discoideum, Gastrococos crista, Desmoncus orthacanthos, Bactris humilis, Aiphanes aculeata, Acrocomia aculeata, Roystonea oleracea, Reinhardtia simplex, Podococcus barteri, Hyophorbe lagenicaulis, Wendlandiella polyclada, Salmonella enterica, Mycoplasma penetrans, Drosophila virilis, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Rickettsia prowazekii, Juanilloa aurantiaca, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio, Rattus norvegicus" 40
- 4631 4761 31 "Homo sapiens, Medicago truncatula, Pan troglodytes, Mus musculus, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Drosophila melanogaster, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Danio rerio, Lemur catta"
- 4632 4762 32 "Homo sapiens Prochlorococcus marinus, Amsacta moorei entomopoxvirus, Danio rerio, Mus musculus, Acyrthosiphon pisum, Medicago truncatula, Dictyostelium discoideum, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mycoplasma gallisepticum R, Atelerix albiventris, Drosophila mel 40

- anogaster, *Pan troglodytes*, *Clostridium tetani* E88, *Papio anubis*, *Staphylococcus aureus*, *Citrus sinensis*, *Xenopus laevis*, *Rickettsia conorii*, *Plasmodium falciparum*, *Petunia x hybrida*, *Arabidopsis thaliana*, *Oryza sativa* (indica cultivar-group), *Pichia kluyveri*, *Helicobacter hepaticus* ATCC 51449"
- 4633 4763 24 "Homo sapiens, *Felis catus*, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*, *Arabidopsis arenosa*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Escherichia coli* CFT073, *Streptococcus mutans* UA159, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Antirrhinum majus*, *Caenorhabditis briggsae*" 10
- 4634 4764 31 "*Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Homo sapiens*, *Caenorhabditis elegans*, *Papio anubis*, *Oryza sativa*, *Pinus sylvestris*, *Pinus mugo*, *Naja sputatrix*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Angraecum cultriforme*, *Angraecum chevalieri*, *Polyradicion lindeni*, *Harrisella porrecta*, *Dendrophylax varius*, *Dendrophylax funalis*, *Dendrophylax fawcettii*, *Plasmodium falciparum* 3D7, *Dendrophylax sallei*, *Campylocentrum fasciola*, *Naja atra*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Laticauda semifasciata*, *Podospora anserina*"
- 4635 4765 30 "*Mus musculus*, *Homo sapiens*, *Pisum sativum*, *Streptococcus pyogenes*, *Pan troglodytes*, *Chlamydia muridarum*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mycoplasma pulmonis*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*" 20
- 4636 4766 26 "*Arabidopsis thaliana*, *Homo sapiens*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Mycoplasma gallisepticum* R, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Mus musculus*, *Oceanobacillus ihyensensis* HTE831, *Porphyromonas gingivalis* W83, *Oryza sativa* (japonica cultivar-group)"
- 4637 4767 39 "*Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Caenorhabditis elegans*, *Homo sapiens*, *Dictyostelium discoideum*, *Digaster anomala*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Plasmodium falciparum*, *Drosophila melanogaster*, *Arisaema harmandi*, *Babesia bovis*, *Arabidopsis thaliana*, *Pleurotus ostreatus*, *Buchnera aphidicola*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis briggsae*, *Sus scrofa*, *Listeria innocua*, *Methanocaldococcus jannaschii*, *Trypanosoma cruzi*, *Atelixerix albiventris*, *Coxiella burnetii* RSA 493, *Papio anubis*, *Digaster lingi*, *Methanothermobacter thermautotrophicus* str. Delta H" 30
- 4638 4768 28 "*Mus musculus*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Medicago truncatula*, *Homo sapiens*, *Jatropha mosaic geminivirus*, *Neurospora crassa*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Papio anubis*, *Streptococcus pyogenes* M1 GAS, *Plasmodium falciparum* 3D7, *Mycoplasma penetrans*, *Brassica oleracea*, *Clostridium perfringens* str. 13" 40
- 4639 4769 29 "*Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Peltoperla tarteri*, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Dogania subplana*, *Oryza sativa*, *Streptococcus agalactiae* NEM316, *Astrammina rara*, *Homo sapiens*, *Pan troglodytes*, *Mytilus g*"
- 4640 4770 62 "*Homo sapiens*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Drosophila melanogaster*, *Pichia canadensis*, *Dictyostelium discoideum*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Saccharomyces cerevisiae*, 50

- Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Monosiga brevicollis, Caenorhabditis elegans"
- 4641 4771 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Lycopersicon esculentum, Xylella fastidiosa 9a5c, Arabidopsis thaliana, Danio rerio"
- 4642 4772 25 "Arabidopsis thaliana, Medicago truncatula, Homo sapiens, Bacillus subtilis, Saccharomyces cerevisiae, Mus musculus, Rattus norvegicus"
- 4643 4773 30 "Oryza sativa (japonica cultivar-group), Homo sapiens, Rattus norvegicus, Caenorhabditis elegans, Mus musculus, Human immunodeficiency virus 1, Lactococcus lactis subsp. lactis, Bombyx mori, Bacteriophage SPP1, Ciona intestinalis, Danio rerio" 10
- 4644 4774 74 "Escherichia coli, Clostridium acetobutylicum, Escherichia coli 0157:H7 EDL933, Escherichia coli 0157:H7, Campylobacter coli, Bacillus halodurans, Yersinia enterocolitica, Homo sapiens, Sus scrofa, Papio hamadryas, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Clostridium perfringens str. 13, Triticum monococcum, Listeria seeligeri, Borrelia burgdorferi B31, Mesoplasma entomophilum, Buchnera aphidicola str. Sg (Schizaphis graminum), synthetic construct, Caenorhabditis elegans, Clostridium sordellii, Tribolium castaneum, Erwinia amylovora"
- 4645 4775 41 "Salmonella typhimurium LT2, salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella typhimurium, Salmonella enterica subsp. enterica serovar Typhi, Yersinia pestis KIM, Yersinia pestis C092, Chlamydomonas caviae GPIC, Homo sapiens, Escherichia coli 0157:H7 EDL933, Danio rerio, Escherichia coli, Chlamydomonas caviae, Escherichia coli 0157:H7, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Photobacterium luminescens, Mus musculus, Schistosoma mansoni, Pseudomonas alcaligenes, Listeria monocytogenes" 20
- 4646 4776 45 "Yersinia pestis KIM, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Yersinia pestis C092, Chlamydomonas pneumoniae TW-183, Chlamydomonas pneumoniae J138, Chlamydomonas pneumoniae, Homo sapiens, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Vibrio vulnificus CMCP6, Yersinia enterocolitica, Prunus emarginata, Danio rerio, Mus musculus, Rattus norvegicus" 30
- 4647 4777 32 "Zea mays, Caenorhabditis elegans, Phrixothrix hirtus, Homo sapiens, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Enterococcus faecalis V583, Nicotiana tabacum, Mus musculus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group), Listeria innocua"
- 4648 4778 23 "Homo sapiens, Mus musculus, Human herpesvirus 6, Human herpesvirus 6B, Gossypium hirsutum" 40
- 4649 4779 26 "Mus musculus, Turkey astrovirus, Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Acinetobacter lwoffii, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Simian immunodeficiency virus, Prochlorococcus marinus, Polypremum procumbens, Bombyx mori, Mycoplasma penetrans, Neurospora crassa, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 4650 4780 27 "Homo sapiens, Caenorhabditis elegans, Pan troglodytes, Gelidium crinale, Escherichia coli CFT073, Trichosarcina mucosa, Streptococcus agalactiae NEM316, Mus musculus, Danio rerio, Papio anubis"
- 4651 4781 38 "Yersinia pestis KIM, Yersinia pestis C092, Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Oryza sativa (50

- japonica cultivar-group), Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Danio rerio"
- 4652 4782 28 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Photobacterium luminescens, Yersinia enterocolitica, Arabidopsis thaliana, Brassica oleracea, Brassica napus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50"
- 4653 4783 35 "Drosophila melanogaster, Homo sapiens, Mus musculus, Caenorhabditis elegans, Habronattus waughii, Arabidopsis thaliana, Clostridium acetobutylicum, Mycoplasma penetrans, Danio rerio"
- 4654 4784 27 "Aquifex aeolicus VF5, Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Caenorhabditis elegans, Drosophila melanogaster, Pan troglodytes, Medicago truncatula, Oryza sativa (japonica cultivar-group), Johnstonia parva, Danio rerio, Sacculina carcini, Felis catus" 10
- 4655 4785 34 "Homo sapiens, Pongo pygmaeus, Mus musculus, Oryza sativa (japonica cultivar-group), Branchiostoma floridae, Arabidopsis thaliana, Danio rerio, Drosophila melanogaster, Pan troglodytes, Enterococcus faecium, Marchantia polymorpha, Medicago truncatula"
- 4656 4786 24 "Sulfolobus solfataricus, Homo sapiens, Pachliopta aristolochiae, Arabidopsis thaliana, Mycoplasma pneumoniae, Mus musculus, Rattus norvegicus, Pan troglodytes, Clostridium acetobutylicum, Pachliopta polydorus, Pachliopta hector, Leptospira interrogans serovar lai str. 56601, Oryza sativa (japonica cultivar-group), Pongo pygmaeus, Gorilla gorilla, Listeria monocytogenes, Caerolliia perspicillata, Hylobates lar, Hyalophora cecropia, Caenorhabditis elegans" 20
- 4657 4787 28 "Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Medicago truncatula, Caenorhabditis elegans, Anisakis septentrionalis, Plasmodium falciparum, Pan troglodytes, Arabidopsis thaliana"
- 4658 4788 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Cucumis sativus, Pyrobaculum aerophilum str. IM2, Caenorhabditis elegans, Danio rerio, Anopheles gambiae" 30
- 4659 4789 31 "Homo sapiens, Macropus rufus, Mus musculus, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Bacteriophage N4, synthetic construct, Chlorobium tepidum TLS, Wallabia bicolor, Macropus parryi, Macropus giganteus, Macropus robustus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 4660 4790 27 "Saccharomyces cerevisiae, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mus musculus, Danio rerio" 40
- 4661 4791 29 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Yersinia pestis KIM, Haemophilus ducreyi 35000HP, Yersinia pestis C092, Leptosphaeria maculans, Danio rerio, Lactococcus lactis subsp. lactis, Lactococcus lactis, Lycopersicon esculentum, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Papio anubis"
- 4662 4792 28 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Oryctolagus cuniculus, Plasmodium falciparum 3D7, Plasmodium falciparum, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Bos taurus, Leuconostoc mesenteroides subsp. cremoris, Brassica napus var. napus, Lotus corniculatus v" 50

- ar. japonicus, *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Portieria japonica*, *Methanothermobacter fermentans*, *Nostoc* sp. PCC 7120"
- 4663 4793 23 "Homo sapiens, *Mus musculus*, *Amoebidium parasiticum*, *Oryza sativa* (japonica cultivar-group)"
- 4664 4794 36 "Arabidopsis thaliana, Homo sapiens, *Dictyostelium discoideum*, *Eulachnus rileyi*, *Kluyveromyces bacillisporus*, *Schmidtea mediterranea*, *Andricus inflator*, *Saccharomyces cerevisiae*, *Kluyveromyces lactis*, *Danio rerio*, *Mus musculus*, *Rickettsia conorii*, *Acraea encedana*, *Acraea encedon*, *Aspilota* sp., *Rattus* sp., *Candidatus Carsonella ruddii*, *Diaeretiella rapae*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Cryptocephalus coryli*, 10
Drosophila flexa, *Planococcus citri*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Coptodisca kalmiella*, *Schizosaccharomyces pombe*, *Bombyx mandarina*, *Medicago truncatula*, *Paradoxaphis plagianthi*, *Monoblepharella* sp. JEL15, *Muscoflorschetzia pilmaiquen*, *Metanipponaphis rotunda*, *Brassica oleracea*, *Tetrahymena thermophila*"
- 4665 4795 24 "Homo sapiens, *Mus musculus*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Beta vulgaris*, *Schizosaccharomyces pombe*"
- 4666 4796 49 "Desulfovibrio vulgaris, *Thermus* sp., Homo sapiens, *Mus musculus*, *Sus scrofa*, *Danio rerio*, *Microcebus murinus*, *Aquifex aeolicus* VF5, *Bos* 20
taurus, *Thermoanaerobacter tengcongensis*, *Gossypium hirsutum*, *Arabidopsis thaliana*, *Oncorhynchus mykiss*, *Rattus norvegicus*, *Takifugu rubripes*, *Tamias amoenus*, *Myotis myotis*, *Equus caballus*"
- 4667 4797 82 "planctomycete str. 139, planctomycete str. 449, *Mycoplasma hominis*, *Chlamydia muridarum*, *Chlamydia trachomatis*, uncultured *Acidobacterium* bacterium, *Actinoplanes utahensis*, *Frankia* sp., *Yersinia pestis* KIM, *Planctomyces brasiliensis*, *Yersinia pestis* C092, Pi"
- 4668 4798 202 "Chromohalobacter marismortui, *Chromohalobacter canadensis*, *Pseudomonas putida* KT2440, *Halomonas cupida*, *Chromohalobacter salexigens*, *Chromohalobacter israelensis*, unknown marine alpha proteobacterium JP57, *Pseudomonas* 30
syringae pv. tomato str. DC3000, Pseudo"
- 4669 4799 200 "Chlorobium tepidum TLS, *Leptospira interrogans* serovar lai str. 56601, *Leptospira interrogans*, *Legionella pneumophila*, *Coxiella burnetii* RSA 493, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Yersinia enterocolitica*, *Leucothrix mucor*, *Chlorobium limicola*, seco"
- 4670 4800 185 "Palmaria palmata, *Thermosynechococcus elongatus* BP-1, *Stigmatella aurantiaca*, *Leptospirillum ferrooxidans*, *Pedinomonas tuberculata*, *Synechococcus* sp. PCC 6301, *Nannocystis exedens*, *Pedinomonas minor*, *Gloeotilopsis sterilis*, *Streptococcus mutans*, *Bacillus* ce"
- 4671 4801 189 "secondary endosymbiont of *Cyphonococcus alpinus* uncultured marine gamma proteobacterium EBAC31A08, secondary endosymbiont of *Antonina pretiosa*, *Salmonella typhimurium* LT2, *Shigella flexneri* 2a str. 2457T, secondary endosymbiont of *Glycaspis brimblecombei*, "
- 4672 4802 198 "Melissococcus plutonius, *Enterococcus solitarius*, *Enterococcus raffinosus*, *Enterococcus pseudoavium*, *Enterococcus malodoratus*, *Enterococcus gallinarum*, *Enterococcus flavescens*, *Enterococcus casseliflavus*, *Enterococcus avium*, *Enterococcus asini*, *Listeria gra*"
- 4673 4803 112 "Treponema pallidum, *Candidatus Procabacter acanthamoebae*, *Candidatus Procabacter* sp. UWC6, *Neisseria meningitidis* Z2491, *Neisseria gonorrhoeae*, *Neisseria meningitidis* MC58, *Chromobacterium violaceum*, *Xanthomonas axo* 50

- nopodis pv. citri str. 306, Xanthomonas ca"
- 4674 4804 117 "uncultured gamma proteobacterium MB12D03, uncultured gamma proteobacterium MB11G09, uncultured marine gamma proteobacterium EBAC31A08, uncultured proteobacterium EBAC27G05, Thiomonas cuprina, secondary endosymbiont of Planococcus ficus, secondary endosymbio"
- 4675 4805 113 "Buchnera aphidicola, Borrelia burgdorferi B31, Borrelia burgdorferi, Nannocystis exedens, Buchnera aphidicola str. Bp (Baizongia pistaciae), Brachyspira innocens, Brachyspira hyodysenteriae, uncultured proteobacterium EBAC27G05, Planctomyces limnophilus, Bu"
- 4676 4806 193 "Desulfitobacterium hafniense, Gluconacetobacter europaeus, Wolinella succinogenes, Campylobacter jejuni, Campylobacter sp., Campylobacter coli, Campylobacter lari, Campylobacter jejuni subsp. jejuni NCTC 11168, Gluconacetobacter intermedius, Bacillus megate" 10
- 4677 4807 150 "Campylobacter jejuni, Campylobacter sp., Campylobacter coli, Campylobacter lari, Campylobacter jejuni subsp. jejuni NCTC 11168, Vibrio mediterranei, Vibrio agarivorans, uncultured actinobacterium MB11A03, Pasteurella multocida, Vibrio splendidus, Listonella"
- 4678 4808 177 "Bartonella elizabethae, Bartonella doshiae, Bartonella bacilliformis, Bartonella grahamii, Rhodopseudomonas palustris, uncultured alpha proteobacteria MB13F01, Stealth virus 1, Waddlia chondrophila, Bartonella vinsonii subsp. berkhoffii, Phyllobacterium myr" 20
- 4679 4809 164 "cf. Francisella sp. CYH-2002, Acinetobacter calcoaceticus, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, secondary endosymbiont of Australicoccus grevilleae, secondary endosymbiont of Erium globosum, Anaplasma marginale, Vibrio vulnificus CMCP6, Sh"
- 4680 4810 88 "uncultured actinobacterium MB11C06, uncultured actinobacterium MB11A03, Caulobacter crescentus CB15, Brevundimonas diminuta, Chlamydomonas radiata, Chlamydomonas nivalis, Leptospirillum ferrooxidans, Nitrobacter sp., Nitrobacter vulgaris, Nitrobacter winogr"
- 4681 4811 112 "Brevundimonas diminuta, Polyangium cellulosum, chlamydia-associated clinical sample 643-G, chlamydia-associated clinical sample 39-T, chlamydia-associated clinical sample 194-T, Pseudomonas syringae pv. tomato str. DC3000, Plasmodiophora brassicae, Pseudomo" 30
- 4682 4812 200 "Lawsonia intracellularis, Clostridium carnis, Nitrosospira sp. Nsp1, MTBE-degrading bacterium PM1, Nitrosomonas marina, Nitrosospira sp., Nitrosospira sp. NI20, Nitrosococcus mobilis, Nitrosospira sp. Np39-19, Nitrosomonas cryotolerans, Nitrosomonas sp. Nm5"
- 4683 4813 200 "Lawsonia intracellularis, Desulfovibrio fairfieldensis, Desulfovibrio desulfuricans subsp. desulfuricans, Desulfovibrio piger, Bradyrhizobium sp. LMG 15378, Bradyrhizobium sp. Crj-1, Bradyrhizobium genosp. VI, Bradyrhizobium sp. USDA 4406, Bradyrhizobium sp" 40
- 4684 4814 201 "Lawsonia intracellularis, Desulfovibrio desulfuricans subsp. desulfuricans, Desulfovibrio desulfuricans, Desulfovibrio sp., Desulfovibrio piger, Desulfovibrio intestinalis, Desulfovibrio sp. D4, Desulfovibrio oryzae, Desulfovibrio sp. JG5, Desulfovibrio sp."
- 4685 4815 202 "Lawsonia intracellularis, Desulfovibrio sp., Bilophila wadsworthia, Desulfovibrio aespoensis, uncultured bacterium, sulfate-reducing bacterium LZK1, Desulfovibrio vulgaris, Desulfovibrio profundus, Desulfovibrio oryzae, Desulfovibrio sp. R2, Desulfovibrio "
- 4686 4816 201 "Lawsonia intracellularis, Desulfovibrio sp., uncultured" 50

- bacterium, *Bilophila wadsworthia*, *Desulfovibrio piger*, *Desulfonatronum lacustre*, *Syntrophus* sp., uncultured eubacterium, uncultured eubacterium WCHA1-07, unidentified eubacterium RFLP4, eubacterial soi"
- 4687 4817 203 "Lawsonia intracellularis, *Desulfovibrio* sp., uncultured bacterium, *Desulfovibrio* sp. UNSW3caefatS, uncultured delta proteobacterium, unidentified eubacterium RFLP109, *Bilophila wadsworthia*, *Desulfovibrio desulfuricans*, *Desulfonatronum thiodismutans*, *Desulfo*"
- 4688 4818 204 "Lawsonia intracellularis, *Desulfovibrio* sp., uncultured delta proteobacterium, *Desulfovibrio desulfuricans*, *Desulfovibrio* sp. DSM12803, *Desulfovibrio* sp. D4, *Desulfovibrio desulfuricans* subsp. *desulfuricans*, *Desulfovibrio fairfieldensis*, *Desulfomonas ovales*" 10
- 4689 4819 202 "Desulfovibrio sp., *Lawsonia intracellularis*, *Desulfonatronum lacustre*, *Desulfonatronum thiodismutans*, uncultured bacterium, *Desulfovibrio* sp. Mlhm, sulfate-reducing bacterium R-LacA1, bacterium DCE36, uncultured delta proteobacterium, *Desulfovibrio giganteus*"
- 4690 4820 200 "Lawsonia intracellularis, *Desulfovibrio* sp., *Desulfovibrio* sp. UNSW3caefatS, uncultured low G+C Gram-positive bacterium, unidentified bacterium, uncultured bacterium, *Desulfovibrio* sp. ABHU1SBfatS, *Desulfovibrio* sp. ABHU1SB, *Desulfovibrio piger*, *Bilophila w*"
- 4691 4821 150 "Lawsonia intracellularis, *Desulfovibrio* sp., uncultured bacterium, uncultured delta proteobacterium, *Desulfovibrio vulgaris*, uncultured bacterium FukuN9, *Bacteriovorax stolpii*, *Desulfovibrio desulfuricans*, *Desulfovibrio vietnamensis*, *Desulfovibrio oryzae*, D" 20
- 4692 4822 33 "Homo sapiens, *Rattus norvegicus*, *Mus musculus*, *Schizosaccharomyces pombe*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Drosophila melanogaster*, *Staphylococcus phage 187*, *Naegleria gruberi*, *Tetrahymena pyriformis*, Sol"
- 4693 4823 28 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Drosophila melanogaster*, *Zea mays*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Danio rerio*, *Mastigocladus laminosus*, *Arabidopsis thaliana*, *Gallus gallus*, *Tetrahymena pyriformis*, *Candidatus Blochmannia floridanus*, *Xenopus laevis*" 30
- 4694 4824 28 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Tellima grandiflora*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Bacillus anthracis* str. A2012, *Arabidopsis thaliana*, *Candidatus Carsonella ruddii*, *Bacillus anthracis*, *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Pagrus major*, *Chrysophrys auratus*"
- 4695 4825 38 "Mycoplasma pulmonis, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Polypterus bichir*, *Danio rerio*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Haemophilus ducreyi* 35000HP, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, Sheeppox virus, *Plasmodium falciparum*, Lumpy skin disease virus, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Hydra vulgaris*" 40
- 4696 4826 26 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Medicago truncatula*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Mus musculus*, uncultured bacterium ProG, *Bombyx mori*"
- 4697 4827 24 "Mus musculus, *Homo sapiens*, *Helicobacter hepaticus* ATCC 51449, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Danio rerio*, *Haemophilus ducreyi* 35000HP" 50

- 4698 4828 24 "Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mus musculus, Lycopersicon esculentum, Homo sapiens"
- 4699 4829 29 "Mus musculus, Homo sapiens, Zyra haworthi, Bacillus anthracis str. Ames, Clostridium perfringens str. 13, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa, Rattus norvegicus, Caenorhabditis elegans, Cyanidium caldarium, Danio rerio, Bacillus subtilis subsp. subtilis str. 168, Schizosaccharomyces pombe, Mycoplasma genitalium, Bacillus subtilis"
- 4700 4830 25 "Homo sapiens, Mus musculus, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Nicotiana glauca, Trichophyton rubrum, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe" 10
- 4701 4831 35 "Cucumis sativus, Mus musculus, Homo sapiens, Arabidopsis thaliana, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryzias latipes, Mycoplasma genitalium, Pan troglodytes, Phaeothlypis fulvicauda, Rattus norvegicus, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Papio anubis, Gossypium hirsutum, Populus balsamifera subsp. trichocarpa, Mycoplasma pneumoniae, Caenorhabditis briggsae, Mus musculus domesticus, Medicago truncatula, Oryza sativa (japonica cultivar-group), Pelargonium x hortorum, Gecarcinus lateralis, Botryotinia fuckeliana" 20
- 4702 4832 23 "Mus musculus, Drosophila melanogaster, Homo sapiens, Clostridium perfringens str. 13, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Helianthus tuberosus, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Pan troglodytes"
- 4703 4833 19 "Clostridium tetani E88, Homo sapiens, Human immunodeficiency virus 1, Rickettsia conorii, Oryza sativa (japonica cultivar-group)"
- 4704 4834 25 "Homo sapiens, Danio rerio, Buchnera aphidicola str. Bp (Baizongia pistaciae), Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Pseudobarbus asper, Caenorhabditis elegans" 30
- 4705 4835 27 "Arabidopsis thaliana, Danio rerio, Homo sapiens, Lactococcus lactis subsp. lactis, Thermoplasma acidophilum, Mus musculus, Clostridium acetobutylicum, Medicago truncatula, uncultured putative methanotroph"
- 4706 4836 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana"
- 4707 4837 31 "Mus musculus, Homo sapiens, Yersinia pseudotuberculosis, Yersinia pestis, Lotus corniculatus var. japonicus, Yersinia pestis C092, Caenorhabditis elegans, Bos taurus, Danio rerio, Mycoplasma pulmonis, Arabidopsis thaliana, Trypanosoma brucei, Bacillus subtilis subsp. subtilis str. 168, Lycopersicon pennellii, Medicago truncatula, Bacillus subtilis, Papio anubis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pisum sativum, Caenorhabditis briggsae, Chlamydomonas reinhardtii, Scenedesmus obliquus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Halocynthia roretzi, Ciona intestinalis, Nostoc sp. PCC 7120, Clostridium perfringens str. 13" 40
- 4708 4838 27 "Caenorhabditis elegans, Drosophila melanogaster, Homo sapiens, Arabidopsis thaliana, Medicago truncatula, Mus musculus, Bactrocera tryoni, Danio rerio"
- 4709 4839 28 "Enterococcus faecalis V583, Medicago truncatula, Chlamydia muridarum, Drosophila melanogaster, Methanosarcina mazei Goe1, Homo sapiens, 50

- Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Sus scrofa*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis elegans*, *Mus sp.*, *Gallus gallus*, *Giardia intestinalis*"
- 4710 4840 31 "Mus musculus, Homo sapiens, Bacillus anthracis str. Ames, Medicago truncatula, Thelaxes suberi, Helicobacter hepaticus ATCC 51449"
- 4711 4841 30 "Homo sapiens, Mus musculus, Oikopleura dioica, Drosophila melanogaster, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Danio rerio, Pneumocystis carinii, Oryza sativa, Gossypium hirsutum, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Pan troglodytes" 10
- 4712 4842 31 "Homo sapiens, Mus musculus, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group), Schistosoma japonicum, Dictyostelium discoideum, Plasmodium falciparum 3D7, Oryza sativa, Candidatus Blochmannia floridanus, Rhodococcus sp. RHA1"
- 4713 4843 27 "Mus musculus, Homo sapiens, Clostridium perfringens str. 13, Helicolenus dactylopterus, Helicolenus hilgendorfi, Helicolenus sp. FAKU-8 1573, Medicago truncatula, Oryza sativa (japonica cultivar-group), Stephanolepis cirrifer, Caenorhabditis elegans"
- 4714 4844 27 "Arabidopsis thaliana, Danio rerio, Macroptilium mosaic Puerto Rico virus-[Bean], Macroptilium mosaic Puerto Rico virus, Homo sapiens, Caenorhabditis elegans, Mus musculus, Staphylococcus aureus subsp. aureus MW2, Pan troglodytes, Zea mays, Clostridium tetani E88, Sorghum bicolor, Oryza sativa (japonica cultivar-group), Lactococcus lactis subsp. lactis, Listeria monocytogenes, Lactococcus lactis, Listeria innocua, Thermoanaerobacter thermohydrosulfuricus, Clostridium perfringens str. 13" 20
- 4715 4845 31 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Plasmodium falciparum 3D7, Mus musculus, Acidithiobacillus sp. HYH-3, Acidithiobacillus sp. HYH-4, Oryza sativa (japonica cultivar-group), Human immunodeficiency virus 1, Drosophila melanogaster, Yersinia pestis KIM, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Thermoanaerobacter tengcongensis, Rhizophyidum sp. 136, Yaba-like disease virus, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Oceanobacillus ihayensis HTE831, Haemophilus ducreyi 35000HP, Yersinia pestis C092, Oryza sativa (indica cultivar-group), Giardia intestinalis" 30
- 4716 4846 28 "Myxine glutinosa, Arabidopsis thaliana, Cicer arietinum, Homo sapiens, Danio rerio, Atelerix albiventris, Orpinomyces sp. PC-2, Dictyostelium discoideum, Mus musculus, Gossypium laxum, Gossypium trilobum, Gossypium thurberi, Gossypium gossypioides, Leptospira interrogans serovar lai str. 56601, Candidatus Carsonella ruddii, Caenorhabditis elegans, Medicago truncatula, Drosophila melanogaster, Papio anubis, Plasmodium falciparum 3D7, Sus scrofa, Methanosaarcina acetivorans C2A, Autographa californica nucleopolyhedrovirus, Bombyx mori nuclear polyhedrosis virus, Mycoplasma capricolum, Spodoptera litura nucleopolyhedrovirus, Nicotiana tabacum, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Podisma pedestris, Mycoplasma penetrans, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Rachiplusia ou multiple nucleopolyhedrovirus, Thalassiosira nordenskioeldii" 40
- 4717 4847 28 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Mus musculus, Danio rerio, Entamoeba histolytica, Nicotiana glutinosa, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Rickettsia conorii, Oryza sat 50

- iva, *Rickettsia prowazekii*, *Caenorhabditis elegans*, *Beta vulgaris* subsp. *vulgaris*, *Bacillus subtilis* subsp. *subtilis* str. 168, Bacteriophage SPBc2"
- 4718 4848 24 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Enterococcus faecalis* V583, *Mus musculus*, *Dictyostelium discoideum*, *Mycoplasma fermentans*, *Arabidopsis thaliana*"
- 4719 4849 27 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Drosophila melanogaster*, *Borrelia burgdorferi* B31, *Danio rerio*, *Ciona intestinalis*, *Mus musculus*, *Homo sapiens*, *Sulfolobus solfataricus*, *Cafeteria roenbergensis*, *Anopheles gambiae*, *Equus caballus*, *Naegleria fowleri*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Torreya taxifolia*, *Nostoc* sp. PCC 7120" 10
- 4720 4850 31 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Oryza sativa* (indica cultivar-group), *Pan troglodytes*, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Thermoanaerobacter tengcongensis*, *Plasmodium falciparum* 3D7, *Inocybe leptocystis*"
- 4721 4851 23 "Medicago truncatula, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Danio rerio*, *Mus musculus*"
- 4722 4852 23 "Homo sapiens, *Escherichia coli* CFT073, *Arabidopsis thaliana*, *Escherichia coli*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Haemophilus influenzae* Rd KW20" 20
- 4723 4853 35 "Drosophila melanogaster, *Bifiditermes improbus*, *Streptococcus mutans* UA159, *Toxorhynchites rutilus*, *Homo sapiens*, *Procrptotermes australiensis*, *Acrodipsas myrmecophila*, *Acrodipsas mortoni*, *Acrodipsas melania*, *Acrodipsas hirtipes*, *Acrodipsas cuprea*, *Acrodip*"
- 4724 4854 24 "Homo sapiens, *Medicago truncatula*, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Arabidopsis thaliana*, *Botryotinia fuckeliana*"
- 4725 4855 27 "Homo sapiens, *Mus musculus*, *Plantago afra*, *Danio rerio*, *Arabidopsis thaliana*, *Drosophila bifasciata*, *Caenorhabditis elegans*, *Scaptomyza pallida*" 30
- 4726 4856 35 "Mus musculus, *Homo sapiens*, *Dictyostelium discoideum*, *Tetrahyena thermophila*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Oryza sativa*, *Mycoplasma pulmonis*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Oceanobacillus iheyensis* HTE831, *Saimiriine herpesvirus 2*, *Danio rerio*, *Rattus norvegicus*, *Papio anubis*, *Clostridium tetani* E88, *Takifugu rubripes*, *Clostridium botulinum*, *Quercus myrsinifolia*, *Marchantia polymorpha*, *Thermoplasma volcanium*, *Medicago truncatula*, *Pyrococcus horikoshii*, *Pan troglodytes*, *Crithionina mamilla*, *Bacillus halodurans*"
- 4727 4857 27 "Plasmodium falciparum 3D7, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*, *Pan troglodytes*" 40
- 4728 4858 31 "Caenorhabditis elegans, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Clostridium acetobutylicum*, *Tetraodon nigroviridis*, *Methanothermobacter thermoautotrophicus*, *Lotus corniculatus* var. *japonicus*, *Ciona intestinalis*, *Helicobacter pylori*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Triticum monococcum*, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Streptococcus agalactiae* 2603V/R, *Acropora tenuis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Streptococcus agalactiae* NEM316, *Candidatus Blochmannia floridanus*, *Ureaplasma urealyticum*, *Nicotiana tabacum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Popillia japonica*, *Bean yellow mosaic virus*" 50

- 4729 4859 31 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Methanosarcina mazei Goe1, Danio rerio, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Oryza sativa (japonica cultivar-group)"
- 4730 4860 28 "Mus musculus, Anabaena sp. 90, Homo sapiens, Plasmodium falciparum 3D7, Drosophila melanogaster, Rattus norvegicus, Arabidopsis thaliana, Drosophila hydei, Oryza sativa (japonica cultivar-group), Danio rerio"
- 4731 4861 27 "Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Mycoplasma gallisepticum R, Trichosporon multisorum, Drosophila melanogaster, Trichosporon laibachii, uncultured fungus, Mus musculus, Methanosarcina acetivorans C2A, Rattus norvegicus, Candidatus Carsonella ruddii, Caenorhabditis briggsae, Emericella nidulans" 10
- 4732 4862 34 "Homo sapiens, Sus scrofa, Mus musculus, Plasmodium falciparum 3D7, Pan troglodytes, Oryza sativa (japonica cultivar-group), Danio rerio, Bacillus anthracis str. Ames, Schlettererius cinctipes, Caenorhabditis briggsae, Capsicum annuum, Bacillus cereus ATCC 14579, Drosophila melanogaster, Caenorhabditis elegans, Chilo iridescent virus, Lycopersicon esculentum, Fagopyrum capillatum, Medicago truncatula"
- 4733 4863 24 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Caenorhabditis elegans, Listeria monocytogenes, Listeria innocua" 20
- 4734 4864 31 "Sterkiella histriomuscorum, Homo sapiens, Danio rerio, Drosophila melanogaster, Chimpanzee cytomegalovirus, Oxytricha fallax, Mus musculus, Thermoplasma acidophilum, Rattus norvegicus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lysiphlebus fabarum, Gallus gallus, Rhantus grahii, Shewanella oneidensis MR-1, Balaenoptera edeni, Plasmodium falciparum 3D7, Triticum aestivum"
- 4735 4865 27 "Clostridium acetobutylicum, Danio rerio, Plasmodium falciparum 3D7, Homo sapiens, Galago senegalensis, Pan troglodytes, Oryza sativa (japonica cultivar-group), Mus musculus"
- 4736 4866 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Dictyostelium discoideum, Salmo salar, Beta vulgaris, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Leishmania major, Tetrahymena thermophila, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Branchiostoma floridae" 30
- 4737 4867 24 "Homo sapiens, Mus musculus, Bacteriophage Sfx, Caenorhabditis elegans, Gallus gallus, Mycoplasma pulmonis, Arabidopsis thaliana"
- 4738 4868 33 "Homo sapiens, Lactobacillus reuteri, Caenorhabditis elegans, Legionella pneumophila, Mus musculus, Danio rerio, Clostridium tetani E88, Myrsine africana, Plasmodium vivax, Oceanobacillus iheyensis HTE831, Neurospora crassa, Echinops exaltatus, Arabidopsis thaliana" 40
- 4739 4869 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Trypanosoma cruzi, Pan troglodytes, Drosophila melanogaster, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Danio rerio, Lactobacillus plantarum WCFS1, Rattus norvegicus"
- 4740 4870 29 "Eremothecium gossypii, Caenorhabditis elegans, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Rattus norvegicus, Bradypodion damaranum, Clostridium tetani E88, Danio rerio, Schizosaccharomyces pombe, Felis catus"
- 4741 4871 29 "Homo sapiens, Mus musculus, Daucus carota, Danio rerio, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sinningia incarnata, Podos 50

- pora anserina, *Medicago truncatula*, *Saccharomyces cerevisiae*, *Pneumocystis carinii* f. sp. ratti, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Enterobacteria phage T4*, *Drosophila melanogaster*, *Papio anubis*, *Plasmodium falciparum* 3D7, *Sus scrofa*, *Dictyostelium discoideum*, *Candidatus Carsonella ruddii*, *Cicer montbretii*, *Cicer yamashitae*, *Cicer pinnatifidum*, *Cicer judaicum*, *Cicer flexuosum*, *Cicer chorassanicum*, *Cicer bijugum*, *Macrophthalmus latifrons*, *Helococcus ordiformis*, Yaba monkey tumor virus, *Tilopteris mertensii*"
- 4742 4872 27 "Lactococcus lactis subsp. lactis, *Homo sapiens*, *Papio anubis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Arabidopsis thaliana*, *Clostridium perfringens* str. 13" 10
- 4743 4873 27 "*Hipparchia neomiris*, *Mus musculus*, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Danio rerio*, *Ixodes scapularis*, *Kniphofia galpinii*, *Kniphofia macowanii*, *Disanthus cercidifolius* var. longipes, *Byblis liniflora*, *Spinacia oleracea*, *Zostera asiatica*, *Aletris khasiana*, *Maianthemum dilatatum*, *Smilacina robusta*, *Smilacina japonica*, *Utricularia dichotoma*, *Disanthus cercidifolius*, *Poitea immarginata*, *Lilium alexandrae*"
- 4744 4874 36 "*Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Homo sapiens*, *Heterodera filipjevi*, *Heterodera* sp. Bandar Anzali-SS-2002, *Heterodera avenae*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Heterodera australis*, *Heterodera pratensis*, *Heterodera aucklandica*, *Heterodera arenaria*, *Rickettsia conorii*, *Felis catus*, *Danio rerio*, *Rickettsia rickettsii*, *Oryza sativa* (indica cultivar-group), *Heterodera mani*, *Ciona intestinalis*" 20
- 4745 4875 31 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Amsacta moorei* entomopoxvirus, *Cyprinus carpio*, *Melanoplus sanguinipes* entomopoxvirus, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Bombyx mori*, *Catharanthus roseus*, *Leishmania major*, *Lotus corniculatus* var. japonicus, *Saccharomyces cerevisiae*, *Medicago truncatula*"
- 4746 4876 24 "*Mycoplasma pulmonis**Danio rerio*, *Homo sapiens*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Macaca fascicularis*" 30
- 4747 4877 27 "*Porphyromonas gingivalis* W83, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Bacillus thuringiensis*, *Arabidopsis thaliana*, *Branchiostoma floridae*, *Vibrio cholerae*, *Pan troglodytes*, *Bacillus thuringiensis* serovar morrisoni, *Lactobacillus plantarum* WCFS1, *Cucumis melo*"
- 4748 4878 28 "*Homo sapiens*, *Drosophila melanogaster*, *Yersinia pestis* KIM, *Mus musculus*, *Caenorhabditis elegans*, *Yersinia pestis* C092, *Mycoplasma gallisepticum* R, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Nitrosomonas europaea* ATCC 19718, *Chlamydia trachomatis*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Neurospora crassa*, *Gallus gallus*, *Clostridium perfringens* str. 13" 40
- 4749 4879 28 "*Lotus corniculatus* var. japonicus, *Trypanosoma brucei*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Mus musculus*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Fowlpox virus*"
- 4750 4880 27 "*Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 50

- 12228, *Plasmodium falciparum* 3D7, *Musa acuminata*, *Dictyostelium discoideum*, *Staphylococcus epidermidis*, *Caenorhabditis elegans*, *Ciona intestinalis*, *Escherichia coli*, *Danio rerio*"
- 4751 4881 25 "Mus musculus, Homo sapiens, Papio anubis, Arabidopsis thaliana, Cucumis sativus, Candida albicans, Drosophila melanogaster, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Caenorhabditis elegans, Saccharomyces pastorianus, Chara vulgaris, Danio rerio, Schizosaccharomyces pombe, Rattus norvegicus"
- 4752 4882 24 "Medicago truncatula, Mus musculus, Poncirus trifoliata, Homo sapiens, Gallus gallus, Caenorhabditis elegans, Fusobacterium nucleatum ssp. nucleatum ATCC 25586, Danio rerio, Tagetes patula" 10
- 4753 4883 27 "Caenorhabditis elegans, Danio rerio, Homo sapiens, Fowlpox virus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Clostridium acetobutylicum, Lotus corniculatus var. japonicus"
- 4754 4884 28 "Plasmodium falciparum 3D7, Arabidopsis thaliana, Homo sapiens, Caenorhabditis briggsae, Drosophila melanogaster, Mus musculus, Schizosaccharomyces pombe, Caenorhabditis elegans, Staphylococcus epidermidis ATCC 12228, Staphylococcus capitis, Danio rerio, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Spinacia oleracea" 20
- 4755 4885 29 "Homo sapiens, Danio rerio, Helicobacter pylori J99, Buchnera aphidicola str. Bp (Baizongia pistaciae), Mus musculus, Rattus norvegicus"
- 4756 4886 28 "Homo sapiens, Mus musculus, Pisum sativum, Drosophila melanogaster, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Medicago truncatula, Danio rerio, Petunia x hybrida, Clostridium botulinum, Pan troglodytes, Elimia hydei, Caenorhabditis elegans, Plasmodium falciparum 3D7, Baeothele saukros, Papio anubis"
- 4757 4887 28 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Papio anubis, Plasmodium falciparum 3D7, Mesostigma viride, Danio rerio, Prochlorococcus marinus, Oceanobacillus iheyensis HT E831, Porphyra purpurea, Chlamydomonas reinhardtii, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Methanocaldococcus jannaschii, Medicago truncatula, Bos taurus, Rattus norvegicus, Dictyostelium discoideum, Drosophila melanogaster, Sus scrofa" 30
- 4758 4888 29 "Glycine max, Medicago truncatula, Arabidopsis thaliana, Plasmodium falciparum 3D7, Homo sapiens, Danio rerio, Mus musculus, Dictyostelium discoideum, Plasmodium falciparum, Hypostomus uruguayensis, Ciona intestinalis, Oryza sativa (japonica cultivar-group), Pan troglodytes, Drosophila melanogaster, Avian leukosis virus, Mandarina polita, Mandarina aureola, Saccharomyces cerevisiae, Caenorhabditis elegans, Leishmania tarentolae, Monocotylus pseudoplantani, Deloyala guttata, Williopsis saturnus var. suaveolens, Saccharomyces unisporus, Saccharomyces douglasii, Lycopersicon esculentum, Rhagoletis pomonella, Gallus gallus, Drosophila triauraria, Drosophila tani, Drosophila quadraria, Drosophila biauraria, Drosophila auraria, Rattus norvegicus, Myrmecophaga tridactyla, Candida tropicalis, Tetrahymena thermophila, Lepidium vesicarium" 40
- 4759 4889 28 "Clostridium tetani E88, Clostridium acetobutylicum, Bacillus anthracis str. Ames, Prochlorococcus marinus, Arabidopsis thaliana, Homo s 50

- apiens, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Danio rerio*, Plum pox virus, *Mycoplasma pulmonis*, *Prunus persica*, *Medicago truncatula*, *Clostridium perfringens* str. 13"
- 4760 4890 24 "Homo sapiens, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Mus musculus*, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27"
- 4761 4891 28 "Clostridium tetani E88, *Candidatus Carsonella ruddii*, *Mus musculus*, *Perigona nigriceps*, *Homo sapiens*, *Danio rerio*, *Caenorhabditis elegans*, *Uroleucon jaceicola*, *Plasmodium falciparum* 3D7, *Takifugu rubripes*, *Euglena gracilis*, *Anthoceros formosae*, *Sus scrofa*, "
- 4762 4892 32 "Homo sapiens, *Eimeria sevilletensis*, *Eimeria papillata*, *Eimeria nieschulzi*, *Eimeria falciformis*, *Plasmodium falciparum* 3D7, *Eimeria lan gebarteli*, *Mus musculus*, *Marchantia polymorpha*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Clostridium tetani* E88, *Chaitophorus populialbae*, *Caenorhabditis elegans*, *Centistes* sp., *Aedes aegypti*, *Sus scrofa*, *Xenopus laevis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Theileria parva*, *Clostridium perfringens* str. 13"
- 4763 4893 24 "Cavia cutleri, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*"
- 4764 4894 28 "Caenorhabditis elegans, *Homo sapiens*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Mus musculus*, *Onchocerca volvulus*, *Drosophila montana*, *Pan troglodytes*, *Arabidopsis thaliana*, *Danio rerio*"
- 4765 4895 24 "Homo sapiens, *Lotus corniculatus* var. japonicus, *Mus musculus*, *Thermoanaerobacter tengcongensis*, *Beta vulgaris*, *Caenorhabditis elegans*, *Pan troglodytes*, *Drosophila melanogaster*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Mus musculus domesticus*, *Schizosaccharomyces pombe*"
- 4766 4896 36 "Mus musculus, *Brugia malayi*, *Homo sapiens*, *Danio rerio*, *Papio anubis*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Medicago truncatula*, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Gallus gallus*, *Drosophila melanogaster*, *Streptococcus mutans* UA159, *Oryza sativa* (japonica cultivar-group), *Staphylococcus epidermidis* ATCC 12228, *Clostridium tetani* E88, *Bos taurus*, *Chaetosphaeridium globosum*, *Caenorhabditis briggsae*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Clostridium acetobutylicum*, *Clostridium septicum*, *Solanum tuberosum*, *Staphylococcus epidermidis*, *Lotus corniculatus* var. japonicus, *Rattus norvegicus*, *Felis catus*"
- 4767 4897 42 "Homo sapiens, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, *Bos taurus*, *Oryza sativa* (japonica cultivar-group), *Gallus gallus*, *Eriosyce subgibbosa*, *Astrammina rara*, *Caenorhabditis elegans*, *Betula pendula*, *Plasmodium falciparum*, *Rattus norvegicus*"
- 4768 4898 30 "Homo sapiens, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Salmonella typhi*, *Salmonella enterica* subsp. enterica serovar Typhi, *Arabidopsis thaliana*, *Clostridium tetani* E88, *Mus musculus*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Penicillium nalgiovense*, *Diaeretus leucopterus*, *Campylobacter jejuni*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Helicobacter pylori* J99, *Lycopersicon pennellii*, *Camptotheca acuminata*"
- 4769 4899 32 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Danio rerio*, *Candidatus Blochmannia floridanus*, *Plasmodium falciparum* 3D7, *Arabido*

- psis thaliana, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Pan troglodytes"
- 4770 4900 26 "Homo sapiens, Mus musculus, Mycoplasma pulmonis, Rattus norvegicus, Drosophila melanogaster, Candida albicans, Guillardia theta, Sulfolobus tokodaii"
- 4771 4901 28 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Homo sapiens, Mus musculus, Thermoanaerobacter tengcongensis, Phaseolus vulgaris, Danio rerio, Arabidopsis thaliana, Rattus norvegicus, Drosophila melanogaster, Methanosarcina mazei Goe1, Onchocerca volvulus, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Oryza sativa, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Mycoplasma penetrans, Medicago truncatula" 10
- 4772 4902 34 "Arabidopsis thaliana, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Lactococcus lactis subsp. lactis, Bacteriophage bIL312, Bacteriophage bIL286, Sulfolobus tokodaii, Danio rerio, Mus musculus, Gallus gallus, Leptospira interrogans serovar icterohaemorrhagiae, Medicago truncatula, Caenorhabditis briggsae, Petroselinum crispum, Mycoplasma gallisepticum R, Dictyostelium discoideum, Drosophila melanogaster, Sulfolobus solfataricus, Euglena gracilis, Sus scrofa, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Carassius auratus" 20
- 4773 4903 75 "Bradyrhizobium japonicum USDA 110, Coxiella burnetii RS A 493, Sinorhizobium meliloti, Mesorhizobium loti, Pseudomonas syringae pv. tomato str. DC3000, Xylella fastidiosa Temecula1, Pseudomonas aeruginosa PA01, Bordetella parapertussis, Bordetella bronchiseptica"
- 4774 4904 32 "Homo sapiens, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mycoplasma pulmonis, Plasmodium falciparum 3D7, Danio rerio, Dictyostelium discoideum, Alaria grandifolia, Alaria marginata, Alaria nana, Alaria crassifolia, Alaria praelonga, Alaria esculenta, Yersinia pseudotuberculosis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rickettsia conorii, Clostridium acetobutylicum, Oryza sativa (indica cultivar-group), Staphylococcus hominis, Listeria monocytogenes, Toxoplasma gondii, Drosophila guttifer, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mannheimia haemolytica" 30
- 4775 4905 27 "Homo sapiens, Sulfolobus solfataricus, Mus musculus, Oryza sativa (japonica cultivar-group), Solanum tuberosum, Drosophila melanogaster, Rattus norvegicus, Caenorhabditis elegans, Arabidopsis thaliana, Danio rerio, Rickettsia prowazekii, Urotrichus talpoides, Clostridium perfringens str. 13"
- 4776 4906 31 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Listeria monocytogenes, Listeria innocua, Oryza sativa, Lactococcus lactis, Caenorhabditis briggsae, Caenorhabditis elegans, Cryptosporidium parvum, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Pan troglodytes, Dictyostelium discoideum, Drosophila erecta, Streptococcus mutans UA159, Shrimp white spot syndrome virus, Clostridium saccharobutylicum, Diphyllbothrium dendriticum, Sus scrofa, Clostridium acetobutylicum, Musca domestica, Tomato spotted wilt virus, Medicago sativa, Oryza sativa (indica cultivar-group), Ehrlichia chaffeensis, Lotus corniculatus var. japonicus, Gasterosteus aculeatus" 40
- 4777 4907 29 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Pan troglodytes, Arabidopsis thaliana, Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Schmid 50

- tea mediterranea, Danio rerio, Didelphis virginiana, Medicago truncatula, Orycto-
lagus cuniculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Strongylocen-
trotus purpuratus"
- 4778 4908 29 "Homo sapiens, Sheeppox virus, Caenorhabditis elegans, L
actobacillus sakei, Medicago truncatula, Cucumis melo, Mus musculus, Borrelia bu-
rgdorferi B31, Dictyostelium discoideum, Binary vector pINDEX2, Binary vector pl
NDEX1, Arabidopsis thaliana, Oryza sativa, Caenorhabditis briggsae, Oryza sativa
(japonica cultivar-group), Oceanobacillus iheyensis HTE831, Spiroplasma citri,
Halocynthia roretzi"
- 4779 4909 31 "Homo sapiens, Drosophila melanogaster, Lotus corniculat 10
us var. japonicus, Danio rerio, Mus musculus, Arabidopsis thaliana, Rhynchocalyx
lawsonioides, Plasmodium falciparum 3D7, Staphylococcus epidermidis ATCC 12228,
Prochlorococcus marinus, Candidatus Blochmannia floridanus, Caenorhabditis eleg
ans, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Wigglesworthia glossini
dia endosymbiont of Glossina brevipalpis, Dictyostelium sp., Rattus norvegicus"
- 4780 4910 27 "Homo sapiens, Schizosaccharomyces pombe, Chlamydomophila
caviae GPIC, Mus musculus, Caenorhabditis elegans, Danio rerio, Lotus corniculat
us var. japonicus, Oryza sativa (japonica cultivar-group), Clostridium perfringe
ns str. 13"
- 4781 4911 35 "Homo sapiens, Mycoplasma gallisepticum R, Oryza sativa 20
(japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Drosophila mela
nogaster, Xenopus laevis, Danio rerio"
- 4782 4912 23 "Mus musculus, Homo sapiens, Methanosarcina mazei Goe1,
Danio rerio"
- 4783 4913 27 "Homo sapiens, Clostridium perfringens str. 13, Danio re
rio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Cricetulus lo
ngicaudatus, Listeria monocytogenes"
- 4784 4914 27 "Homo sapiens, Mus musculus, Zea mays subsp. mays, Pinus
taeda, Clostridium difficile, Lotus corniculatus var. japonicus, Caenorhabditis
elegans, Danio rerio" 30
- 4785 4915 24 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus"
- 4786 4916 24 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7,
Danio rerio, Drosophila melanogaster, Rickettsia prowazekii, Arabidopsis thalian
a, Bacillus halodurans, Cucumis melo"
- 4787 4917 28 "Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (
japonica cultivar-group), Caenorhabditis elegans, Vibrio cholerae, Nostoc sp. PC
C 7120"
- 4788 4918 33 "Homo sapiens, Dictyostelium discoideum, Mus musculus, C
aenorhabditis elegans, Orpinomyces sp. PC-2, Danio rerio, Arabidopsis thaliana"
- 4789 4919 23 "Homo sapiens, Saccharomyces cerevisiae, Oryza sativa (j 40
aponica cultivar-group), Arabidopsis thaliana, Medicago truncatula, Papio hamadr
yas, Mus musculus, Anopheles gambiae"
- 4790 4920 24 "Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, M
us musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Clost
ridium perfringens, Clostridium perfringens str. 13"
- 4791 4921 26 "Solanum bulbocastanum, Danio rerio, Homo sapiens, Caeno
rhabditis elegans, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 4792 4922 37 "Oceanobacillus iheyensis HTE831, Thermoanaerobacter ten
gcongensis, Homo sapiens, Bacillus subtilis, Danio rerio, Bacillus subtilis subs
p. subtilis str. 168, Oryza sativa (japonica cultivar-group), Clostridium tetani 50

- E88, *Mus musculus*, *Streptococcus mutans*, *Caenorhabditis elegans*"
- 4793 4923 28 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Papio anubis*, *Danio rerio*"
- 4794 4924 23 "Arabidopsis thaliana, *Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*"
- 4795 4925 24 "Xanthomonas axonopodis pv. citri str. 306, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Drosophila melanogaster*, *Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Bacillus subtilis*, *Pan troglodytes*, *Bacillus subtilis* subsp. *subtilis* str. 168"
- 4796 4926 29 "Lactococcus lactis subsp. *lactis*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Salmo salar*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Haemophilus influenzae* Rd KW20, *Haemophilus influenzae*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Coxiella burnetii* RSA 493, *Arabidopsis thaliana*" 10
- 4797 4927 23 "Homo sapiens, *Bacillus halodurans*, *Mycoplasma hominis*, *Arabidopsis thaliana*, *Mus musculus*, *Haemophilus influenzae* Rd KW20, *Sparus aurata*"
- 4798 4928 28 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Canis familiaris*, *Zea mays*"
- 4799 4929 23 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)" 20
- 4800 4930 24 "Arabidopsis thaliana, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group)"
- 4801 4931 31 "Mus musculus, *Homo sapiens*, *Dictyostelium discoideum*, *Rickettsia prowazekii*, *Caenorhabditis elegans*, *Danio rerio*, *Rattus norvegicus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Plasmodium falciparum* 3D7, *Shewanella oneidensis* MR-1, *Borrelia burgdorferi*, *Choristoneura fumiferana* granulovirus, *Guillardia theta*, *Clostridium acetobutylicum*, *Listeria monocytogenes*, *Listeria innocua*, *Oryza sativa* (japonica cultivar-group)"
- 4802 4932 24 "Mus musculus, *Homo sapiens*, *Rickettsia prowazekii*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*" 30
- 4803 4933 24 "Mus musculus, *Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Drosophila melanogaster*, *Brugia malayi*, *Oryza sativa* (japonica cultivar-group), *Nicotiana tabacum*, *Caenorhabditis briggsae*, *Listeria monocytogenes*, *Erwinia amylovora*"
- 4804 4934 32 "Homo sapiens, *Drosophila melanogaster*, *Danio rerio*, *Dictyostelium discoideum*, *Mus musculus*, *Takifugu rubripes*, *Arabidopsis thaliana*"
- 4805 4935 24 "uncultured bacterium, *Gallus gallus*, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Bartonella bacilliformis*" 40
- 4806 4936 28 "Oryza sativa (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Lycopersicon esculentum*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Yersinia pestis* KIM, *Methanosarcina acetivorans* C2A, *Pneumocystis carinii*, *Arabidopsis thaliana*, *Brassica oleracea*, *Yersinia pestis* C092, *Danio rerio*, *Yersinia pestis*"
- 4807 4937 33 "Mus musculus, *Enterococcus faecalis*, *Homo sapiens*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Pan troglodytes*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group)"
- 4808 4938 31 "Homo sapiens, *Entamoeba histolytica*, *Mus musculus*, *Baci*" 50

- Ilus grandii maretimi*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Aeshna mixta*, *Choristoneura fumiferana* MNPV, *Pan troglodytes*, *Partula cf. taeniata*, *Dictyostelium discoideum*, *Boyeria irene*, *Bovine herpesvirus 4*, *Arabidopsis thaliana*, *Brachytriton pratense*, *Campylobacter jejuni*, *Chondrus crispus*, *Adoxophyes honmai nucleopolyhedrovirus*, *Solanum demissum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, Plasmid F"
- 4809 4939 25 "Homo sapiens, Pan troglodytes, Bos taurus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), GB virus C variant troglodytes, Schizosaccharomyces pombe, Plectonema boryanum"
- 4810 4940 28 "Homo sapiens, Didelphis virginiana, Danio rerio, Rattus norvegicus, Mus musculus, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Plasmodium vivax, Saccharomyces cerevisiae" 10
- 4811 4941 32 "Homo sapiens, Bemisia tabaci, Caenorhabditis elegans, Mus musculus, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Oryza sativa (japonica cultivar-group)"
- 4812 4942 24 "Pan troglodytes, Oryza sativa (japonica cultivar-group), Homo sapiens, Drosophila melanogaster, Mus musculus"
- 4813 4943 31 "Arabidopsis thaliana, Bacillus anthracis str. Ames, Bacillus anthracis, Homo sapiens, Drosophila melanogaster, Caenorhabditis briggsae, Mus musculus, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mandarina hahajimana, Mandarina exoptata, Mandarina polita, Mandarina aureola, Pyrobaculum aerophilum str. IM2, Staphylococcus epidermidis, Clarkia franciscana, Clarkia concinna, Clarkia mildrediae, Clarkia gracilis, Schizosaccharomyces pombe, Danio rerio" 20
- 4814 4944 28 "Caenorhabditis elegans, Prochlorococcus marinus, Homo sapiens, Arabidopsis thaliana, Rattus norvegicus, Danio rerio, Oryctolagus cuniculus, Enterococcus faecalis V583, Andricus seckendorffi, Andricus panteli, Andricus lucidus, Samia cynthia, Actias selene, "
- 4815 4945 36 "Caenorhabditis elegans, Homo sapiens, Danio rerio, Mus musculus, Phaseolus vulgaris, Plasmodium falciparum 3D7, Schistosoma japonicum, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis briggsae, Euglena longa, Acanthamoeba polyphaga, Medicago truncatula, Chlorella vulgaris" 30
- 4816 4946 36 "Dictyostelium discoideum, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Drosophila melanogaster, Mus musculus, Medicago truncatula, Eimeria tenella, Pyrococcus furiosus DSM 3638, Pyrococcus furiosus, Arabidopsis thaliana, Mercenaria mercenaria, Nico"
- 4817 4947 45 "Plasmodium falciparum 3D7, Mycoplasma pulmonis, Saccharomyces bayanus, Danio rerio, Homo sapiens, Mus musculus, Caenorhabditis elegans, Medicago truncatula, Dictyostelium discoideum, Habronattus oregonensis, Habronattus geronimoi, Oryza sativa (japonica cultivar-group)" 40
- 4818 4948 32 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Bufo woodhousii, Drosophila melanogaster, Clostridium tetani E88, Arabidopsis thaliana, Phratora laticollis, Oryza sativa (japonica cultivar-group)"
- 4819 4949 22 "Homo sapiens, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum, Mus musculus, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Danio rerio, Equus caballus, Drosophila melanogaster, Aplysia californica, Listeria innocua, Helicobacter hepaticus ATCC 51449"
- 4820 4950 24 "Homo sapiens, Mus musculus, Jujube witches'-broom phyto" 50

- plasma, Peach yellows phytoplasma, Cherry lethal yellows phytoplasma, *Drosophila melanogaster*, *Danio rerio*, *Saccharomyces castellii*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Leishmania donovani*, *Triticum monococcum*, *Caenorhabditis briggsae*, *Oligonychus platani*, *Mycoplasma penetrans*, *Lactobacillus sakei*"
- 4821 4951 25 "Homo sapiens, *Drosophila melanogaster*, *Bacteroides thetaiotaomicron* VPI-5482, *Oryza sativa*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), Hepatitis C virus"
- 4822 4952 29 "Treponema sp. OMZ804, Treponema sp. OMZ803, Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Gasterosteus aculeatus*, *Danio rerio*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group)" 10
- 4823 4953 27 "Mus musculus, *Plasmodium falciparum* 3D7, Homo sapiens, *Pan troglodytes*, *Drosophila melanogaster*, *Gallus gallus*, *Oryza sativa* (japonica cultivar-group), *Branchiostoma floridae*, *Clostridium perfringens* str. 13"
- 4824 4954 27 "Saccharomyces castellii, Homo sapiens, *Methanosarcina mazei* Goel, *Mus musculus*, *Rhaphiomydas terminatus abdominalis*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Medicago truncatula*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Geobacillus stearothermophilus*, *Arenomydas callosus*, *Clostridium acetobutylicum*, *Lactococcus lactis* subsp. *lactis*, *Chondrus crispus*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Helicobacter hepaticus* ATCC 51449, *Tetrahymena thermophila*" 20
- 4825 4955 27 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Escherichia coli* C FT073, *Salmonella enterica* subsp. *enterica*, *Danio rerio*, *Escherichia coli* K12, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Onchocerca gibsoni*"
- 4826 4956 24 "Thermotoga maritima, Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Takifugu rubripes*, *Yersinia pestis* KIM, *Cryptosporidium parvum*, *Crocodylus niloticus*, *Arabidopsis thaliana*, *Yersinia pestis* C092, *Guillardia theta*, *Macaca fascicularis*" 30
- 4827 4957 34 "Homo sapiens, *Leptospira interrogans* serovar lai str. 56601, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Clostridium perfringens* str. 13, Transformation vector pFRT, P-element cloning system vector pP{wlo-hsinGS}, P-element cloning syst"
- 4828 4958 26 "Streptococcus mutans UA159, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum*"
- 4829 4959 28 "Homo sapiens, *Mus musculus*, *Enterococcus faecalis* V583, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Ciona intestinalis*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Brucella melitensis* 16M, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Takifugu rubripes*, *Brucella suis* 1330, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Pterostemon rotundifolius*, *Brucella melitensis* biovar Abortus, *Chlamydomonas pneumoniae* CWL029, *Vibrio cholerae*, *Chlamydomonas pneumoniae* AR39, *Pristionchus sagulatus*, *Buchnera aphidicola*, *Paramecium primaurelia*, *Chlamydomonas pneumoniae* TW-183, *Cichorium intybus*, *Rattus norvegicus*, *Chlamydomonas pneumoniae* J138, *Clostridium perfringens* str. 13" 40
- 4830 4960 28 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Buchnera aphidicola*" 50

- icola, Lucia limbaria, Acrodipsas myrmecophila, Acrodipsas mortoni, Acrodipsas melania, Acrodipsas illidgei, Acrodipsas hirtipes, Acrodipsas cuprea, Acrodipsas brisbanensis, Acrodipsas aurata, Acrodipsas arcana, Plasmodium falciparum 3D7, Incisalia iroides, Caenorhabditis elegans, Mitoura grynea, Rattus norvegicus, Cupha erymanthis, Arabidopsis thaliana"
- 4831 4961 31 "Danio rerio, Homo sapiens, Drosophila melanogaster, Bos taurus, Mus musculus, Lotus corniculatus var. japonicus, Flaveria trinervia, Monoblepharella sp. JEL15, Oryza sativa (japonica cultivar-group), Lampsilis abrupta, Caenorhabditis elegans, Palustriella falcata, Plasmodium falciparum 3D7, Arabidopsis thaliana, Macaca mulatta, Saccharomyces servazzii, Oryza sativa, Glycine max, Ancylostoma duodenale, Euglena gracilis, Plasmodium falciparum, Sulfolobus tokodaii" 10
- 4832 4962 24 "Homo sapiens, Enterococcus faecalis V583, Murid herpesvirus 4, Schizosaccharomyces pombe"
- 4833 4963 35 "Mus musculus, Homo sapiens, Monomachus sp. M223, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Drosophila melanogaster"
- 4834 4964 27 "Homo sapiens, Arabidopsis thaliana, Oryzias latipes, Caenorhabditis elegans, Zea mays, Danio rerio, Mus musculus, Haemophilus ducreyi 35000HP"
- 4835 4965 27 "Homo sapiens, Caenorhabditis elegans, Mycoplasma gallisepticum R, Mus musculus, Arabidopsis thaliana, Thermoanaerobacter tengcongensis, Oryza sativa (japonica cultivar-group), Mycoplasma gallisepticum" 20
- 4836 4966 24 "Homo sapiens, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Chlamydia trachomatis, Mus musculus, Arabidopsis thaliana, Zygosaccharomyces rouxii, Caenorhabditis elegans, Caenorhabditis briggsae, Mycoplasma penetrans, Lactobacillus delbrueckii subsp. lactis"
- 4837 4967 32 "Homo sapiens, Mus musculus, Pan troglodytes, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Danio rerio, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Caenorhabditis briggsae, Drosophila melanogaster, Papio anubis, Plasmodium falciparum 3D7, Caenorhabditis elegans, Methanosarcina acetivorans C2A, Clostridium acetobutylicum, Plasmodium falciparum" 30
- 4838 4968 52 "Homo sapiens, Mus musculus, Gorilla gorilla, Empyreuma affinis, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Danio rerio, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Pan troglodytes, Papio anubis, Gallus gallus, Arabidopsis thaliana"
- 4839 4969 27 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Pristipomoides multidens, Dictyostelium discoideum, Danio rerio, Saccharomyces cerevisiae, Arabidopsis thaliana, Lycopersicon esculentum, Ureaplasma urealyticum" 40
- 4840 4970 32 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis briggsae, Danio rerio, Autographa californica nucleopolyhedrovirus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Beta vulgaris subsp. vulgaris, Oryza sativa (japonica cultivar-group), Rachiplusia ou multiple nucleopolyhedrovirus"
- 4841 4971 28 "Lotus corniculatus var. japonicus, Homo sapiens, Chlamydia trachomatis, Encephalitozoon cuniculi, Caenorhabditis elegans, Streptococcus pyogenes MGAS315, Arabidopsis thaliana, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Danio rerio, Oryza sativa (japonica cultivar-group), St 50

- reptococcus pyogenes SSI-1, *Vibrio parahaemolyticus*, *Schizosaccharomyces pombe*, *Lactobacillus plantarum* WCFS1, *Bacillus halodurans*"
- 4842 4972 39 "Mycoplasma pulmonis, *Shewanella oneidensis* MR-1, *Clostridium perfringens* str. 13, *Mus musculus*, *Homo sapiens*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Rattus norvegicus*, *Streptococcus pyogenes* MGAS8232, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Neurospora crassa*, *Medicago truncatula*, *Bacillus halodurans*"
- 4843 4973 44 "Staphylococcus epidermidis ATCC 12228, *Homo sapiens*, *Streptococcus mutans* UA159, *Arabidopsis thaliana*, *Sulfolobus acidocaldarius*, *Vibrio parahaemolyticus*, *Mus musculus*, *Vibrio vulnificus* CMCP6, *Streptococcus agalactiae* 2603V/R, *Vibrio vulnificus*, *Streptococcus agalactiae* NEM316, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Danio rerio*, *Staphylococcus aureus* subsp. aureus Mu50" 10
- 4844 4974 44 "Mus musculus, *Homo sapiens*, *Caenorhabditis elegans*, *Ureaplasma urealyticum*, *Bacillus subtilis* subsp. subtilis str. 168, *Bacillus subtilis*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Chlamydia trachomatis*, *Methanocaldococcus jannaschii*, *Trimeresurus flavoviridis*"
- 4845 4975 45 "Caenorhabditis elegans, *Staphylococcus epidermidis* ATCC 12228, *Homo sapiens*, Cyanophage clone SE38, *Mycoplasma pulmonis*, *Staphylococcus epidermidis*, *Aeropyrum pernix*, *Danio rerio*, *Arabidopsis thaliana*, *Mus musculus*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Clostridium acetobutylicum*, *Rattus norvegicus*, *Schizosaccharomyces pombe*, *Dictyostelium discoideum*, *Nostoc* sp. PCC 7120" 20
- 4846 4976 41 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Melipona bicolor*, *Gonioctena pallida*, *Tetrahymena pyriformis*, *Plasmodium falciparum* 3D7, Lep"
- 4847 4977 24 "Oryza sativa (japonica cultivar-group), *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Mus musculus*, *Nostoc* sp. PCC 7120, *Clostridium tetani* E88, *Rattus norvegicus*, *Sulfolobus solfataricus*, *Mycoplasma capricolum*, *Lotus corniculatus* var. japonicus, *Vibrio parahaemolyticus*" 30
- 4848 4978 29 "Campylobacter jejuni subsp. jejuni NCTC 11168, *Danio rerio*, *Homo sapiens*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Mus musculus*, *Streptococcus pyogenes* MGAS315, *Branchiostoma floridae*, *Clostridium saccharobutylicum*, *Schizocosa duplex*, *Schizocosa crassipes*, *Schizocosa rovnieri*, *Pardosa milvina*, *Streptococcus pyogenes* SSI-1, *Cryptosporidium parvum*, *Schizosaccharomyces pombe*, *Dicliptera yellow mottle virus*" 40
- 4849 4979 31 "Homo sapiens, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Medicago truncatula*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Buchnera aphidicola*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Enterococcus faecalis* V583, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Nicotiana tabacum*, *Discocelis tigrina*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Ciona intestinalis*"
- 4850 4980 31 "Mus musculus, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Macaca mulatta*, *Papio anubis*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Medicago truncatula*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Rickettsia conorii*, *Arabidopsis thaliana*, *Lactococcus lac* 50

- tis subsp. lactis, Danio rerio, Bacteriophage bIL312, Rickettsia prowazekii, uncultured marine alpha proteobacterium, Candida albicans, Pectinophora gossypiella "
- 4851 4981 23 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Saccharomyces cerevisiae"
- 4852 4982 24 "Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Clostridium difficile, Plasmodium falciparum 3D7, Cryptosporidium parvum, Aquifex aeolicus VF5, Rattus norvegicus, Arabidopsis thaliana, Solenopsis globularia littoralis, Clostridium acetobutylicum, Caenorhabditis elegans, Listeria monocytogenes, Clostridium perfringens str. 13" 10
- 4853 4983 27 "Human immunodeficiency virus 2, Caenorhabditis elegans, Homo sapiens, Mus musculus, Bombyx mori densovirus 1, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lotus corniculatus var. japonicus, Pyrococcus horikoshii, Danio rerio, Arabidopsis thaliana"
- 4854 4984 26 "Lactococcus lactis subsp. cremoris, Streptococcus suis, Homo sapiens, Coxiella burnetii RSA 493, Staphylococcus epidermidis ATCC 12228, Shewanella oneidensis MR-1, Staphylococcus epidermidis, Aspergillus parasiticus, Streptococcus thermophilus, Plasmodium falciparum 3D7, Streptococcus pneumoniae, Peptoniphilus lacrimalis, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Listeria monocytogenes, Schizosaccharomyces pombe" 20
- 4855 4985 65 "Leptospira interrogans serovar lai str. 56601, Leptospira interrogans, Bacillus cereus ATCC 14579, Leptospira borgpetersenii, Yersinia enterocolitica, Arabidopsis thaliana, Aneurinibacillus thermoaerophilus, Helicobacter hepaticus ATCC 51449, Arceuthobium a"
- 4856 4986 24 "Mus musculus, Dreissena bugensis, Homo sapiens, Arabidopsis thaliana, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Dreissena rostriformis, Rattus norvegicus, Triticum turgidum subsp. durum, Escherichia coli CFT073, Escherichia coli, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group), Botryotinia fuckeliana" 30
- 4857 4987 35 "Streptococcus thermophilus, Clostridium acetobutylicum, Aneurinibacillus thermoaerophilus, Homo sapiens, Bacteroides thetaiotaomicron V PI-5482, Streptococcus agalactiae 2603V/R, Arabidopsis thaliana, Streptococcus agalactiae NEM316, Bacteroides fragilis, Penicillium marneffeii, Helicobacter hepaticus ATCC 51449, Lactococcus lactis subsp. cremoris, Streptococcus mutans UA159, Thermoanaerobacter tengcongensis, Campylobacter jejuni, Streptococcus mutans, Mus musculus, Plasmodium falciparum 3D7, Plasmodium falciparum, Methanosarcina acetivorans C2A, Bacillus thuringiensis serovar medellin, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Danio rerio, Cryphonectria parasitica" 40
- 4858 4988 33 "Danio rerio, Homo sapiens, Drosophila melanogaster, Lactobacillus plantarum WCFS1, Xylella fastidiosa Temecula1, Lactobacillus gasseri, Xylella fastidiosa 9a5c, Mus musculus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Aspergillus parasiticus, Trypanosoma brucei, Lotus corniculatus var. japonicus, Glycine max, Solanum bulbocastanum, Oryctolagus cuniculus, Arabidopsis thaliana"
- 4859 4989 31 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Polyneura bonnemaisonii, Plasmodium falciparum, Lotus corniculatus var. japonicus" 50

s, *Phlebotomus papatasi*"

4860 4990 32 "Dictyostelium discoideum, Homo sapiens, Medicago truncatula, Bombyx mori, Arabidopsis thaliana, Ursus maritimus, Ursus arctos, Ursus americanus, Lactococcus lactis subsp. lactis, Listeria innocua, Danio rerio, Mus musculus, Plasmodium falciparum 3D7, Anolis imias, Pyrococcus furiosus DSM 3638, Nephroselmis olivacea, Oryza sativa (japonica cultivar-group), Pichia angusta, Zea mays, Nostoc sp. PCC 7120"

4861 4991 25 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Danio rerio, Pneumocystis carinii, Pan troglodytes, Methanosarcina acetivorans C2A, Staphylococcus aureus, Arabidopsis thaliana, Clostridium botulinum, Spinacia oleracea" 10

4862 4992 35 "Arabidopsis thaliana, Homo sapiens, Canis familiaris, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Danio rerio, Locusta migratoria, Mus musculus, Leptospira kirschneri serovar grippotyphosa, Cicer arietinum, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Borrelia burgdorferi B31, Strongyloides stenocephalus, Gitona bivisualis, Acyrthosiphon pisum, Laccornis oblongus, Candidatus Carsonella ruddii, Streptococcus agalactiae NEM316, Cercopithecidae gen. sp., Drosophila subobscura, Plasmodium berghei, Medicago truncatula, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Rhopalosiphum padi, Oryzias latipes, Trypanosoma brucei" 20

4863 4993 27 "Leptospira interrogans serovar lai str. 56601, Homo sapiens, Mus musculus, Aotus vociferans, Aotus lemurinus, Aotus nigriceps, Fowlpox virus, Danio rerio, Schizosaccharomyces pombe"

4864 4994 31 "Mus musculus, Avian infectious bronchitis virus, Influenza A virus (A/New_York/28/94(H3N2)), Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Influenza A virus (A/Finland/246/92(H3N2)), Influenza A virus (A/Swine/Wisconsin/14094/99(H3N2)), Influenza A virus (A/Swine/Oklahoma/18089/99(H3N2)), Influenza A virus (A/Swine/Illinois/21587/99(H3N2)), Influenza A virus (A/Swine/Oklahoma/18717/99(H3N2)), Lotus corniculatus var. japonicus, Influenza A virus (A/Washington/15/91(H3N2)), Influenza A virus (A/Chiba/54/92(H3N2)), Influenza A virus (A/South_Australia/36/92(H3N2)), Influenza A virus (A/Pennsylvania/09/91(H3N2)), Influenza A virus (A/Seoul/45/91(H3N2)), Influenza A virus (A/Sophia/155/93(H3N2)), Influenza A virus (A/South_Dakota/1/91(H3N2)), Influenza A virus (A/Mexico/3255/94(H3N2)), Influenza A virus" 30

4865 4995 27 "Homo sapiens, Danio rerio, Tipula iridescent virus, Mus musculus, Arabidopsis thaliana, Dictyostelium discoideum, Clostridium tetani E88, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus domesticus, Nicotiana tabacum, Oryctolagus cuniculus"

4866 4996 23 "Homo sapiens, Nostoc sp. PCC 7120, Oryza sativa (japonica cultivar-group), Oryza sativa, Caenorhabditis elegans, Mus musculus" 40

4867 4997 55 "Bacillus thuringiensis, Arabidopsis thaliana, Staphylococcus aureus, Vibrio parahaemolyticus, Drosophila melanogaster, Prochlorococcus marinus, Photobacterium damsela subsp. piscicida, Bacteroides thetaiotaomicron VPI-5482, Hirondellea dubia, Homo sapiens, Bacteroides fragilis, Saccharomyces cerevisiae, Nostoc sp. PCC 7120, Mus musculus, Danio rerio, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pyrococcus furiosus DSM 3638, Penicillium chrysogenum, Caenorhabditis briggsae, Methanocaldococcus jannaschii"

4868 4998 75 "Bacillus thuringiensis, Bacteroides thetaiotaomicron VPI-5482, Bacteroides fragilis, Coxiella burnetii RSA 493, Coxiella burnetii, Homo 50

- sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Schistosoma mansoni*, *Sus scrofa*"
 4869 4999 23 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Raja eglanteria*"
- 4870 5000 40 "*Synechococcus* sp. WH 8102, *Vibrio vulnificus*, *Shewanella oneidensis* MR-1, *Homo sapiens*, *Escherichia coli*, *Drosophila melanogaster*, *Vibrio parahaemolyticus*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Arabidopsis thaliana*, *Leptospira interrogans* serovar lai str. 56601, *Borrelia burgdorferi* B31, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Ochlerotatus atropalpus*, *Clostridium acetobutylicum*, *Oryza sativa*, *Mycoplasma pulmonis*, *Ureaplasma urealyticum*, *Haemophilus tuberculatus*, *Dictyostelium discoideum*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Ciona intestinalis*" 10
- 4871 5001 35 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Papio anubis*, *Pan troglodytes*, *Papio hamadryas*, *Xenopus laevis*, *Manninia californica*, *Rattus norvegicus*"
- 4872 5002 27 "*Homo sapiens*, *Tenebrio molitor*, *Nostoc* sp. PCC 7120"
- 4873 5003 35 "*Danio rerio*, *Homo sapiens*, *Scelotes* sp. AAW-2003, *Mus musculus*, *Clostridium perfringens* str. 13, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Mycoplasma penetrans*, *Caenorhabditis elegans*, *Ciona intestinalis*, *Borrelia burgdorferi*, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Xenopus laevis*, *Methanosarcina mazei* Goe1, *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Capra hircus*, *Sus scrofa*, *Mycoplasma pulmonis*, *Oryza sativa* (japonica cultivar-group), *Lycopersicon esculentum*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Listeria monocytogenes*, *Schizosaccharomyces pombe*, *Staphylococcus aureus* subsp. *aureus* Mu50" 20
- 4874 5004 23 "*Homo sapiens*, *Mus musculus*, *Bacillus firmus*, *Pasteurella multocida*, *Mycoplasma hominis*, *Prochlorococcus marinus* subsp. *marinus* str. CCM P1375, *Mesorhizobium loti*" 30
- 4875 5005 28 "*Arabidopsis thaliana*, *Caenorhabditis elegans*, *Homo sapiens*, *Danio rerio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Bacillus firmus*, *Mus musculus*, *Macaca fascicularis*, *Rattus norvegicus*, *Papio anubis*, *Bos taurus*, *Lactococcus lactis*, *Clostridium perfringens*, *Oceanobacillus iheyensis* HTE 831, *Pasteurella multocida*, *Schizosaccharomyces pombe*, *Haemophilus phage* HP1, *Tachypleus tridentatus*"
- 4876 5006 24 "*Homo sapiens*, *Mus musculus*, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27"
- 4877 5007 23 "*Mus musculus*, *Homo sapiens*"
- 4878 5008 30 "*Homo sapiens*, *Caenorhabditis briggsae*, *Haemophilus ducreyi* 35000HP, *Drosophila melanogaster*, *Mus musculus*, *Papio anubis*, *Caenorhabditis elegans*, *Clostridium acetobutylicum*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*" 40
- 4879 5009 27 "*Mus musculus*, *Homo sapiens*, *Pan troglodytes*, *Saccharomyces douglasii*, *Streptococcus agalactiae* 2603V/R, *Arabidopsis thaliana*, *Candidatus Blochmannia floridanus*, *Plasmodium falciparum* 3D7, *Ralstonia solanacearum*"
- 4880 5010 28 "*Mus musculus*, *Aster yellows* phytoplasma, *Homo sapiens*, *Prodontria* sp., *Danio rerio*, *Dictyostelium discoideum*, *Haemophilus influenzae*, *Haemophilus influenzae* Rd KW20"
- 4881 5011 24 "*Homo sapiens*, *Parasorites* sp. 1634, *Borrelia burgdorferi*" 50

i, *Mus musculus*, *Drosophila prolongata*, *Drosophila elegans*, *Pan troglodytes*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Papio a nubis*, *Arabidopsis thaliana*, *Pleuronectes platessa*, *Oryza sativa*, *Rickettsia prowazekii*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum*, *Danio rerio*, *Erynnis montanus*, *Crucianella maritima*"

4882 5012 31 "Homo sapiens, *Enterococcus faecalis* V583, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Mus musculus*, *Medicago truncatula*, *Schizosaccharomyces pombe*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Phallichthys amates*, *Lotus corniculatus* var. japonicus, *Ciona intestinalis*, *Pyrococcus horikoshii*, *Gallus gallus*"

10

4883 5013 32 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Bacillus subtilis* subsp. subtilis str. 168, *Rattus norvegicus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Oryzias latipes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Shigella boydii*, *Rickettsia prowazekii*, *Lycopersicon esculentum*, *Habronattus oregonensis*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Streptococcus pneumoniae*, *Cryptodacus tau*, *Staphylococcus aureus* subsp. aureus Mu50, *Clostridium perfringens* str. 13"

4884 5014 36 "*Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Mus musculus*, *Euplotes octocarinatus*, *Danio rerio*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. japonicus, *Caenorhabditis elegans*, *Anastrepha hamata*, *Mycoplasma mycoides* subsp. mycoides "

20

4885 5015 27 "*Mus musculus*, *Homo sapiens*, *Bos taurus*, *Rattus norvegicus*, *Staphylococcus epidermidis* ATCC 12228, *Arabidopsis thaliana*, *Drosophila hydei*, *Danio rerio*"

4886 5016 23 "*Mus musculus*, *Homo sapiens*, *Rattus norvegicus*, *Chlamydia muridarum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Caenorhabditis elegans*"

4887 5017 32 "*Oryza sativa* (japonica cultivar-group), *Mycoplasma mycoides* subsp. mycoides SC, *Mus musculus*, *Homo sapiens*, *Sulfolobus tokodaii*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Candidatus Blochmannia floridanus*, *Fiji disease virus*, *Leptospira interrogans* serovar lai str. 56601, *Danio rerio*, *Drosophila melanogaster*, *Rickettsia conorii*, *Entamoeba histolytica*, *Trivittatus virus*"

30

4888 5018 27 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Shigella flexneri* 2a str. 2457T, *Plasmodium falciparum* 3D7, *Shigella flexneri* 2a str. 301, *Escherichia coli*, *Escherichia coli* O157:H7 EDL933, *Staphylococcus aureus*, *Escherichia coli* K12, *Staphylococcus aureus* subsp. aureus MW2, *Cryptosporidium parvum*, *Lupinus polyphyllus*, *Planigale* sp., *Arabidopsis thaliana*, *Escherichia coli* O157:H7 "

40

4889 5019 24 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Cockfoot mottle virus*"

4890 5020 28 "*Homo sapiens*, *Spinacia oleracea*, *Plasmodium falciparum* 3D7, *Lactobacillus plantarum* WCFS1, *Enterococcus faecalis* V583, *Bos taurus*, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Nicotiana tabacum* "

4891 5021 24 "*Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Meionoplus sanguinipes* entomopoxvirus, *Arabidopsis thaliana*, *Lagorchestes hirsutus* "

50

- 4892 5022 29 "Homo sapiens, Drosophila melanogaster, Mus musculus, Macaca mulatta, Papio anubis, Arabidopsis thaliana, Helicobacter pylori, Bos taurus, Apis mellifera, Danio rerio, Oryctolagus cuniculus"
- 4893 5023 23 "Homo sapiens, Mycobacteriophage Che8, Drosophila melanogaster, Mus musculus, Bovine viral diarrhea virus-1, Neurospora crassa"
- 4894 5024 31 "Caenorhabditis elegans, Mus musculus, Medicago truncatula, Plasmodium falciparum 3D7, Homo sapiens, Bacteroides fragilis, Arabidopsis thaliana, Streptococcus pneumoniae R6, Trypanosoma brucei, Oceanobacillus iheyensis HTE831, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Danio rerio, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Cercopithecine herpesvirus 7, Oryza sativa, Mycoplasma agalactiae, Ciona intestinalis, Melanoplus sanguinipes entomopoxvirus" 10
- 4895 5025 28 "Lactobacillus johnsonii, Homo sapiens, Ustilago maydis, Staphylococcus epidermidis ATCC 12228, Drosophila melanogaster, Caenorhabditis briggsae, Staphylococcus epidermidis, Caenorhabditis elegans, Mus musculus, Tegula pelisserpentis, Tegula quadricostata, Tegula aureotincta, Norrisia norrisi"
- 4896 5026 24 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Clostridium acetobutylicum, Leptospira interrogans serovar lai str. 56601"
- 4897 5027 27 "Homo sapiens, Drosophila melanogaster, Mus musculus, Rattus norvegicus, Equus caballus" 20
- 4898 5028 27 "Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Mesembryanthemum crystallinum, Caenorhabditis briggsae, Caenorhabditis elegans, Medicago truncatula, Trimeresurus gramineus, Flavobacterium sp., Equus caballus, Kluyveromyces delphensis, Drosophila melanogaster, Ochetobius elongatus, Bombyx mori, Brassica napus, Tomato leaf curl virus satellite DNA, Phaseolus vulgaris, Plasmodium falciparum, Methanococcus voltae, Danio rerio, Bombyx mandarina"
- 4899 5029 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Dictyostelium discoideum, Danio rerio, Treponema pallidum" 30
- 4900 5030 31 "Human immunodeficiency virus 1, Homo sapiens, Mus musculus, Sulfolobus acidocaldarius, Medicago truncatula, Poncirus trifoliata, Drosophila melanogaster, Plasmodium falciparum 3D7, Anopheles gambiae, Sorghum bicolor, Arabidopsis thaliana, Oryza sativa (indica cultivar-group), Cebus sp., Sulfolobus tokodaii, Caenorhabditis elegans, Danio rerio"
- 4901 5031 36 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Papio anubis, Haemophilus influenzae Rd KW20, Ciona intestinalis, Saccharomyces cerevisiae, Felis catus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Wolbachia endosymbiont of Brugia malayi, Lactococcus lactis subsp. lactis 40, Oryctolagus cuniculus, Neurospora crassa, Trypanosoma brucei, Caenorhabditis elegans, Macaca fascicularis, Pan troglodytes, Borrelia burgdorferi B31, Dictyostelium discoideum, Lemur catta, Papaya ringspot virus, Streptococcus agalactiae 2603V/R, Yersinia pestis KIM, Streptococcus pneumoniae TIGR4, Danio rerio, Streptococcus agalactiae NEM316, Orobanche minor, Lotus corniculatus var. japonicus"
- 4902 5032 31 "Homo sapiens, Mus musculus, Ceratobaeus sp. M145, Arabidopsis thaliana, Caenorhabditis elegans, Ludwigia peruviana, Oryza sativa (japonica cultivar-group), Danio rerio, Sulfolobus acidocaldarius, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831"
- 4903 5033 31 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, 50

- Helicobacter pylori* 26695, *Xenopus laevis*, *Lotus corniculatus* var. *japonicus*, *Drosophila melanogaster*, Human immunodeficiency virus 1, *Equus caballus*, *Danio rerio*, *Schizosaccharomyces pombe*, *Methanocaldococcus jannaschii*, *Mycoplasma bovirhinis*, *Clostridium perfringens* str. 13"
- 4904 5034 24 "Pan troglodytes, *Homo sapiens*, *Mus musculus*, *Campoplex sonorensis* ichnovirus, *Danio rerio*, *Clostridium tetani* E88, *Prunus avium*, *Mycoplasma penetrans*, *Oryza sativa* (*japonica* cultivar-group), *Brachyspira hyodysenteriae*, *Rattus norvegicus*, *Nostoc* sp. PCC 7120"
- 4905 5035 29 "Clostridium tetani E88, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Shewanella oneidensis* MR-1, *Zea mays*, *Chilovirus iridescent* virus, *Arabidopsis thaliana*, *Raphanus sativus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Rattus norvegicus*, *Streptococcus mutans* UA159, *Streptococcus mutans*, *Adoxophyes honmai* nucleopolyhedrovirus, *Musapsocus* sp. KY-2003, *Artibeus jamaicensis*, *Saccharomyces cerevisiae*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Mycoplasma fermentans*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Nostoc* sp. PCC 7120" 10
- 4906 5036 29 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Bacillus cereus* ATCC 14579, *Mus musculus*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Escherichia coli*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Clostridium perfringens* str. 13, *Streptococcus pneumoniae*, *Drosophila melanogaster*, *Helicobacter pylori*, *Plasmodium falciparum* 3D7, *Cypholoba* sp. KAO-2001, *Anopheles gambiae*, *Arabidopsis lyrata*, *Saccharomyces cerevisiae*, *Listeria monocytogenes*, *Rattus norvegicus*, *Gliricidia sepium*, *Lymnaea stagnalis*" 20
- 4907 5037 31 "Homo sapiens, *Mus musculus*, *Caenorhabditis briggsae*, *Danio rerio*, *Drosophila melanogaster*, *Schistocerca emarginata*, *Schistocerca nitens*, *Schistocerca obscura*, *Lotus corniculatus* var. *japonicus*, *Goatpox virus*, *Sheeppox virus*, *Lumpy skin disease virus*, *Caenorhabditis elegans*, *Amsacta moorei* entomopoxvirus, *Pan troglodytes*, *Oryza sativa* (*japonica* cultivar-group), *Methanocaldococcus jannaschii*, *Arabidopsis thaliana*, *Nostoc* sp. PCC 7120" 30
- 4908 5038 25 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Mus musculus*, *Clostridium acetobutylicum*, *Danio rerio*"
- 4909 5039 25 "Arabidopsis thaliana, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Caenorhabditis elegans*, *Borrelia burgdorferi* B31, *Clostridium acetobutylicum*, *Oryza sativa* (*japonica* cultivar-group), *Glycine max*, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Clostridium baratii*, *Caenorhabditis briggsae*"
- 4910 5040 29 "Schistosoma mansoni, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Raphanus sativus*, *Caenorhabditis elegans*, *Streptococcus pyogenes*, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Methanocaldococcus jannaschii*, *Plasmodium falciparum* 3D7, Human immunodeficiency virus 1, *Oryza sativa*, *Lactococcus lactis* subsp. *lactis*, *Neisseria meningitidis* Z2491, *Neisseria meningitidis* MC58, *Danio rerio*, *Medicago truncatula*, *Arion anthracius*, *Bacillus halodurans*, *Clostridium perfringens* str. 13" 40
- 4911 5041 32 "Oryza sativa (*japonica* cultivar-group), *Homo sapiens*, *Pan troglodytes*, *Danio rerio*, *Mus musculus*, *Caenorhabditis elegans*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Bacillus thuringiensis*, *Chlamydia muridarum*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Papilio anubis*, *Marchantia polymorpha*, *Candida dubliniensis*, *Helicobacter pylori* J99, *Bacillus anthracis* str. Ames, *Oryctolagus cuniculus*, *Borrelia burgdorferi* B31, 50

Bos taurus, *Drosophila melanogaster*, *Streptococcus mutans* UA159, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Ostrinia furnacalis*, *Ostrinia nubilalis*, *Escherichia coli*, *Shigella boydii*, *Clostridium acetobutylicum*, *Dictyostelium discoideum*, Yaba-like disease virus, *Mycoplasma pulmonis*, *Bombyx mori*, *Silene latifolia*, *Anopheles gambiae*, *Thermosynechococcus elongatus* BP-1, *Clostridium perfringens* str. 13"

4912 5042 24 "Homo sapiens, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Pinus pinaster*, *Mus musculus*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Plasmodium vivax*, *Oryza sativa* (japonica cultivar-group), *Haemophilus ducreyi* 35000HP, *Coturnix japonica*, *Apis mellifera*, *Helicobacter hepaticus* ATCC 51449, *Clostridium perfringens* str. 13" 10

4913 5043 24 "Homo sapiens, *Mus musculus*, *Prochlorococcus marinus*, *Notococcus* sp. PCC 7120, *Schizosaccharomyces pombe*"

4914 5044 24 "*Bacillus cereus* ATCC 14579, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Arabidopsis thaliana*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Populus tremula* x *Populus tremuloides*, *Oryza sativa* (japonica cultivar-group)"

4915 5045 30 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Methanococcus vannielii*, *Oryza sativa* (japonica cultivar-group), *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Schmidtea mediterranea*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Xenopus laevis*, *Mus musculus*, *Saccharomyces cerevisiae*, *Thermotoga maritima*, *Leptospira interrogans* serovar *lai* str. 56601, *Diphyscium mucronifolium*, *Drosophila melanogaster*, *Pan troglodytes*, *Methanosarcina mazei* Goe1, *Lentaria byssiseda*, *Danio rerio*, *Oryctolagus cuniculus*, *Mycoplasma penetrans*, *Caenorhabditis elegans*, *Listeria innocua*, *Chlamydomonas reinhardtii* GPI C, synthetic construct, *Ciona intestinalis*, *Mycoplasma flocculare*, *Clostridium perfringens* str. 13" 20

4916 5046 27 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Enterococcus faecalis* V583, *Plasmodium falciparum* 3D7, *Human coxsackievirus A11*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* prophage phiPV83" 30

4917 5047 29 "*Mesostigma viride*, *Mus musculus*, *Euglena longa*, *Oryza sativa* (japonica cultivar-group), *Brucella melitensis* 16M, *Papio anubis*, *Brucella suis* 1330, *Oryza sativa*, *Homo sapiens*"

4918 5048 27 "*Drosophila melanogaster*, *Homo sapiens*, *Medicago truncatula*, *Caenorhabditis elegans*, *Bacteroides thetaiotaomicron* VPI-5482, *Mus musculus*, *Arabidopsis thaliana*, *Rickettsia prowazekii*, *Rickettsia typhi*, *Caenorhabditis briggsae*, *Mycoplasma pulmonis*, *Oryza sativa* (japonica cultivar-group), *Takifugu rubripes*, *Cucurbita maxima*" 40

4919 5049 31 "*Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Tetraodon nigroviridis*, *Silene rothmaleri*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*"

4920 5050 31 "*Homo sapiens*, *Medicago truncatula*, *Drosophila melanogaster*, *Tetrahymena thermophila*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Xenopus laevis*, *Brachyspira hiodysenteriae*, *Gossypium hirsutum*, *Salmonella enterica* subsp. *salamae* serovar 4, 12:z:1,7, *Clostridium acetobutylicum*, *Escherichia coli* O157:H7 EDL933, *Escherichia coli* K12, *Oceanobacillus ihayensis* HTE831, *Bovine adenovirus 4*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Caenorhabditis elegans*, *Schizosaccharom* 50

- yces pombe, *Danio rerio*, *Rattus norvegicus*, *Escherichia coli*, *Escherichia coli* O157:H7"
- 4921 5051 43 "Mus musculus, Homo sapiens, *Drosophila melanogaster*, *Pan troglodytes*, *Rattus norvegicus*, *Drosophila virilis*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Pan troglodytes*, *Dictyostelium discoideum*, *Sus scrofa*"
- 4922 5052 25 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Synechocystis* sp. PCC 6803, *Didelphis virginiana*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Gallus gallus*, *Lotus corniculatus* var. japonicus" 10
- 4923 5053 29 "Pan troglodytes, Homo sapiens, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Mus musculus*, Human immunodeficiency virus 1, *Streptococcus agalactiae* 2603V/R, *Danio rerio*"
- 4924 5054 27 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, Human immunodeficiency virus 1, *Arabidopsis thaliana*, *Medicago truncatula*, *Sulfolobus tokodaii*, *Ciona intestinalis*, *Danio rerio*"
- 4925 5055 31 "Mus musculus, *Arabidopsis thaliana*, *Bacillus cereus*, *Caenorhabditis elegans*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, Homo sapiens, *Nicotiana glauca*, *Danio rerio*, *Campylobacter coli*, *Pyrococcus abyssi*, *Mesembryanthemum crystallinum*, *Oryctolagus cuniculus*" 20
- 4926 5056 31 "Plasmodium falciparum 3D7, Homo sapiens, *Danio rerio*, Human herpesvirus 6, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Arabidopsis thaliana*, *Medicago truncatula*, *Pan troglodytes*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Lotus corniculatus* var. japonicus, *Cryptosporidium parvum*, *Anopheles gambiae*"
- 4927 5057 50 "Helicobacter pylori J99, Homo sapiens, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. *aureus* MW2, *Mus musculus*, *Clostridium cellulosovorans*, *Sulfolobus islandicus*, *Danio rerio*"
- 4928 5058 50 "Prochlorococcus marinus, *Medicago truncatula*, *Mus musculus*, Homo sapiens, *Clostridium acetobutylicum*, *Drosophila melanogaster*, Canine herpesvirus, *Caenorhabditis elegans*" 30
- 4929 5059 57 "Campylobacter jejuni subsp. *jejuni* NCTC 11168, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Nostoc* sp. PCC 7120, Homo sapiens, *Mycoplasma penetrans*, *Clostridium tetani* E88, *Saccharomyces cerevisiae*, *Borrelia burgdorferi* B31, *Mus musculus*, *Bacillus anthracis* str. A2012, *Bacillus subtilis*, *Bacillus thuringiensis*, *Bacillus cereus*, *Clostridium acetobutylicum*, *Bacillus anthracis*, *Leptospira interrogans* serovar *lai* str. 56601, *Caenorhabditis elegans*, *Methanopyrus kandleri* AV19, *Streptococcus pyogenes* MGAS315, Temperate phage PhiNH1.1, *Streptococcus pyogenes* MGAS8232, *Pasteurella multocida*, *Florimetra serraticornis*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Streptococcus pyogenes* SSI-1, *Danio rerio*, *Haemophilus influenzae* Rd KW20" 40
- 4930 5060 65 "Mycoplasma penetrans, *Pyrococcus furiosus* DSM 3638, *Mus musculus*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), Homo sapiens, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Haemophilus influenzae*, *Leptospira interrogans* serovar *lai* str. 56601, *Beta vulgaris* subsp. *vulgaris*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Beta vulgaris*, *Bos taurus*, *Ateleryx albiventris*, *Pan troglodytes*, *Medicago truncatula*, *Enterococcus faecalis* V583, *Borrelia burgdorferi* B31, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Methanosarcina acetivorans* C2A, *Caenorhabditis elegans*, *Danio rerio*, *Candidatus Blochmannia floridanus*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bodo saltans*, Call 50

isina quadripustulata, Bacillus subtilis"

4931 5061 31 "Clostridium tetani E88, Homo sapiens, Danio rerio, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lactobacillus helveticus, Medicago truncatula, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Paecilomyces tenuipes, Listeria innocua, Caenorhabditis elegans, Rattus norvegicus"

4932 5062 29 "Homo sapiens, Arabidopsis thaliana, Trypanosoma cruzi, Prochlorococcus marinus, Drosophila melanogaster, Methanosarcina acetivorans C2A, Pan troglodytes, Oryza sativa (japonica cultivar-group), Mus musculus, Trichophyton rubrum, Trichophyton schoenleinii, Arthroderma benhamiae"

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4933 5063 24 "Homo sapiens, Mus musculus, Clostridium difficile, Sus scrofa, Urostyla grandis, Caenorhabditis elegans, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group)"

4934 5064 32 "Homo sapiens, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Bacillus subtilis subsp. subtilis str. 168, Plasmodium falciparum, Bacillus subtilis, Rattus norvegicus, Staphylococcus epidermidis ATCC 12228, Oryza sativa (japonica cultivar-group), Clostridium saccharobutylicum, Populus nigra, Populus alba, Populus tremula, Cyanidium caldarium, Staphylococcus epidermidis, Mycoplasma penetrans, Danio rerio"

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4935 5065 27 "Homo sapiens, Pasteurella multocida, Mus musculus, Caenorhabditis elegans, Helicobacter pylori 26695, Helicobacter pylori J99, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lactobacillus sakei, Drosophila melanogaster, Pan troglodytes, Dictyostelium discoideum, Plasmodium falciparum 3D7, Tuberculolachnus salignus, Tribolium castaneum, Danio rerio"

4936 5066 39 "Homo sapiens, Oceanobacillus iheyensis HTE831, Chlorobium tepidum TLS, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Staphylococcus aureus subsp. aureus MW2, Santalum album"

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4937 5067 75 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Medicago truncatula, Homo sapiens, Pneumocystis carinii, Pan troglodytes, Vibrio vulnificus CMCP6, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Clostridium acetobutylicum, Danio rerio, Arabidopsis thaliana, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis"

4938 5068 92 "Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Enterococcus faecalis V583, Bacteroides thetaiotaomicron VPI-5482, Staphylococcus epidermidis ATCC 12228, Streptococcus mutans UA159, Staphylococcus epidermidis, Bacillus cereus ATCC 14579, Bacillus"

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4939 5069 27 "Danio rerio, Homo sapiens, Mus musculus, Nicotiana tabacum, Oryza sativa (japonica cultivar-group), Macaca fascicularis"

4940 5070 44 "Oceanobacillus iheyensis HTE831, Drosophila melanogaster, Mus musculus, Homo sapiens, Clostridium tetani E88, Caenorhabditis elegans, Botryotinia fuckeliana, Arabidopsis thaliana, Caenorhabditis briggsae"

4941 5071 25 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Physcomitrella patens"

4942 5072 35 "Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Homo s

50

- apiens, *Mycoplasma penetrans*, *Chlamydomytila caviae* GPIC, *Chlamydia muridarum*, *Borrelia burgdorferi* B31, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Chlamydomytila pneumoniae* CWL029, *Chlamydomytila pneumoniae* AR39, *Chlamydomytila pneumoniae* J138, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Chlamydomytila pneumoniae* TW-183, *Helicobacter hepaticus* ATCC 51449, *Borrelia burgdorferi*, *Caenorhabditis elegans*, *Medicago truncatula*, *Drosophila melanogaster*, *Mus musculus*, *Streptococcus agalactiae* 2603V/R, *Thermoanaerobacter tengcongensis*, *Streptococcus agalactiae* NEM316, *Danio rerio*, *Methanocaldococcus jannaschii*, *Antirrhinum majus*"
- 4943 5073 31 "Homo sapiens, *Danio rerio*, *Onchocerca volvulus*, *Oryza sativa* (japonica cultivar-group), Mumps virus, *Mus musculus*, *Plasmodium falciparum* 3D7, *Sulfolobus tokodaii*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Plasmodium falciparum*, *Cricetulus longicaudatus*, *Schizosaccharomyces pombe*, *Tetrahymena australis*, *Rattus norvegicus*, *Escherichia coli*, *Cricetulus griseus*, *Halocynthia roretzi*" 10
- 4944 5074 44 "Streptococcus mutans UA159, Homo sapiens, Plasmodium falciparum 3D7, *Campylobacter eberhardtii*, *Danio rerio*, *Arabidopsis thaliana*, *Hepialus menyuanicus*, *Hepialus luquensis*, *Mus musculus*, *Drosophila melanogaster*, *Dictyostelium discoideum*, *Blackburnia putealis*, " 20
- 4945 5075 29 "Ceratitis capitata, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mycoplasma mycoides* subsp. *mycoides* SC, Homo sapiens, *Danio rerio*, *Rattus norvegicus*, *Medicago truncatula*, *Drosophila melanogaster*, *Lemur catta*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Bacillus halodurans*, *Clostridium perfringens* str. 13, *Felis catus*, *Canis familiaris*, *Mycoplasma pulmonis*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Capra aegagrus*"
- 4946 5076 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*"
- 4947 5077 32 "Caenorhabditis elegans, *Rattus norvegicus*, Homo sapiens, *Schizosaccharomyces pombe*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Medicago truncatula*, *Oryctolagus cuniculus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*" 30
- 4948 5078 36 "Danio rerio, *Dictyostelium discoideum*, *Rattus norvegicus*, Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Oreochromis niloticus*, *Oreochromis mossambicus*, *Oryza sativa*, *Arabidopsis thaliana*, *Oryza sativa* (indica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Polybioides tabidus*, *Oryza sativa* (japonica cultivar-group), *Dugesia japonica*, *Plasmodium falciparum* 3D7, *Schmidtea mediterranea*, *Lycopersicon esculentum*, *Aphidius ervi*, *Ruhbergia bifalcata*, *Saccharomyces douglasii*, *Polistes annularis*, *Pan troglodytes*, *Kluyveromyces delphensis*, *Poncirus trifoliata*, *Drosophila melanogaster*, *Saccharomyces cerevisiae*" 40
- 4949 5079 26 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Schizosaccharomyces pombe*"
- 4950 5080 27 "Homo sapiens, *Bacteroides thetaiotaomicron* VPI-5482, *Mus musculus*, *Gallus gallus*"
- 4951 5081 29 "Homo sapiens, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mus musculus*, *Chaetosphaeridium globosum*, Shrimp white spot syndrome virus, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group)" 50

- ar-group), *Lotus corniculatus* var. *japonicus*, *Tetrahymena thermophila*"
- 4952 5082 25 "Homo sapiens, *Plasmodium falciparum* 3D7, *Macaca mulatta*, *Pan troglodytes*, *Papio anubis*, *Canis familiaris*, *Danio rerio*, *Mus musculus*"
- 4953 5083 25 "Homo sapiens, *Zea mays*, *Mus musculus*, *Leptospira interrogans* serovar *Iai* str. 56601, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Haemophilus ducreyi* 35000HP, *Nicrophorus marginatus*"
- 4954 5084 31 "Mus musculus, Homo sapiens, *Plasmodium berghei*, Simian retrovirus 2, *Pichia ciferrii*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Drosophila subobscura*, *Oryza sativa* (*japonica* cultivar-group), *Sulfolobus tokodaii*, *Haemophilus ducreyi* 35000HP, *Mycoplasma genitalium*, *Danio rerio*, *Bos taurus*, *Monodelphis domestica*" 10
- 4955 5085 27 "Oryza sativa (*japonica* cultivar-group), *Danio rerio*, Homo sapiens, *Planetes ruficollis*, *Mus musculus*, *Medicago truncatula*, *Panorpa nipponensis*, *Panorpa japonica*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Planetes* sp. KAO-2001, *Oryza sativa*, *Lotus corniculatus* var. *japonicus*, *Mycoplasma penetrans*, *Cavia* sp., *Coturnix japonica*, *Ciona intestinalis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Rattus norvegicus*"
- 4956 5086 31 "Homo sapiens, *Solanum demissum*, *Danio rerio*, *Mus musculus*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Rattus norvegicus*, *Medicago truncatula*, *Arabidopsis thaliana*, *Dermatophagoides pteronyssinus*, *Bacillus subtilis*, *Glycine max*, *Bacteroides ovatus*, *Neurospora crassa*" 20
- 4957 5087 24 "Mus musculus, Homo sapiens, *Danio rerio*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Oryza sativa* (*japonica* cultivar-group), *Mycoplasma penetrans*"
- 4958 5088 25 "Prochlorococcus marinus, Homo sapiens, *Sorghum bicolor*, *Methanocaldococcus jannaschii*, *Arabidopsis thaliana*, *Mus musculus*"
- 4959 5089 25 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*japonica* cultivar-group), *Gallus gallus*" 30
- 4960 5090 28 "Homo sapiens, *Arabidopsis thaliana*, *Bos taurus*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Mus musculus*, *Vibrio cholerae*, *Dictyostelium discoideum*, *Haemophilus ducreyi* 35000HP, *Nostoc* sp. PCC 7120"
- 4961 5091 31 "Homo sapiens, *Oryctolagus cuniculus*, *Rattus norvegicus*, *Pan troglodytes*, *Coryphopterus punctipectophorus*, *Coryphopterus dicrus*, *Papio anubis*, *Mus musculus*, *Arabidopsis thaliana*, *Rickettsia conorii*, *Lithobius forficatus*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group)"
- 4962 5092 27 "Sulfolobus tokodaii, Homo sapiens, *Methanosarcina acetivorans* C2A, *Mesostigma viride*, *Danio rerio*, *Rattus norvegicus*, *Escherichia coli*, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Tetraodon fluviatilis*, *Escherichia coli* O157:H7 EDL933, *Streptococcus agalactiae* NEM316, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Listeria monocytogenes*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Escherichia coli* O157:H7" 40
- 4963 5093 48 "Xylella fastidiosa Temecula1, *Vibrio parahaemolyticus*, *Xylella fastidiosa* 9a5c, *Bacillus anthracis* str. Ames, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Mus musculus*, uncultured marine gamma proteobacterium EBAC31A08, Homo sapiens, *Coxiella burnetii* RSA 493, *Salmonella typhimurium* LT2, *Mycoplasma pulmonis*, *Salmonella typhimurium*, *Danio rerio*, *Bacteroides thetaiota*" 50

- omicron VPI-5482, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Lactococcus lactis* subsp. *lactis*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Listeria monocytogenes*"
- 4964 5094 27 "Drosophila melanogaster, Homo sapiens, Mus musculus, Caenorhabditis elegans, Gallus gallus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Mycoplasma pulmonis, Liriodendron tulipifera, Onchocerca volvulus"
- 4965 5095 23 "Homo sapiens, Oncorhynchus mykiss, Drosophila melanogaster, Papio anubis, Mus musculus, Schmidtea mediterranea, Aspergillus parasiticus, Solanum tuberosum, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Listeria innocua, Guillardia theta, Mycoplasma genitalium" 10
- 4966 5096 27 "Homo sapiens, Borrelia burgdorferi B31, Danio rerio, Lotus corniculatus var. japonicus, Mus musculus, Sus scrofa, Pseudomonas aeruginosa PA01, Thermoplasma acidophilum, Arabidopsis thaliana"
- 4967 5097 35 "Plasmodium falciparum 3D7, Drosophila melanogaster, Homo sapiens, Sus scrofa, Danio rerio, Mus musculus, Bacillus anthracis str. Ames, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Carassius auratus"
- 4968 5098 28 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Human immunodeficiency virus 1, Danio rerio, Buchnera aphidicola str. Sg (*Schizaphis graminum*), Buchnera aphidicola, Caenorhabditis briggsae, Arabidopsis thaliana, Trypanosoma brucei rhodesiense, Staphylococcus aureus, Ciona intestinalis, Lycopersicon esculentum, Gallus gallus" 20
- 4969 5099 27 "Streptococcus mutans UA159, Homo sapiens, Mycoplasma mobile, Danio rerio, Enterococcus faecalis V583, Dictyostelium discoideum, Mus musculus, Papio anubis, Enterococcus faecalis, Tribolium castaneum, Caenorhabditis elegans, Listeria innocua, Rattus norvegicus, Nostoc sp. PCC 7120"
- 4970 5100 27 "Bacillus cereus ATCC 14579, Homo sapiens, Lactococcus lactis subsp. lactis, Danio rerio, Oryza sativa (japonica cultivar-group), Mus musculus, Oryza sativa, Clostridium acetobutylicum, Barley mild mosaic virus, Caenorhabditis elegans, Bombyx mori nuclear polyhedrosis virus, Staphylococcus aureus" 30
- 4971 5101 24 "Homo sapiens, Mus musculus, Drosophila melanogaster, Pleurotus ostreatus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Pan troglodytes, Opsopoeodus emiliae, Schizosaccharomyces pombe, Danio rerio, Synchocystis sp. PCC 6803, Clostridium perfringens str. 13"
- 4972 5102 33 "Homo sapiens, Danio rerio, Mus musculus, Felis catus, Catharanthus roseus, Archaeoglobus fulgidus DSM 4304, Dictyostelium discoideum, Caenorhabditis elegans, Lycopersicon esculentum, Lactococcus lactis subsp. cremoris, Arabidopsis thaliana, Caenorhabditis briggsae, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Podospira anserina, Brevibacillus brevis, Pan troglodytes, Bacillus halodurans" 40
- 4973 5103 27 "Homo sapiens, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SS I-1, Pantherophis obsoletus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Haemophilus influenzae Rd KW20, Staphylococcus aureus subsp. aureus Mu50, Enterococcus faecalis V583, Medicago truncatula, Mus musculus, Pantherophis vulpinus, Pantherophis bairdi, Photobacterium phosphoreum, Oryza sativa (japonica cultivar-group), Gossypium hirsutum"
- 4974 5104 23 "Homo sapiens, Mus musculus, Pseudomonas phage phiKZ, Dr 50

- Drosophila melanogaster*, Human immunodeficiency virus 1, *Aspergillus sojae*, *Oryza sativa* (japonica cultivar-group), *Musca domestica*"
- 4975 5105 31 "Homo sapiens, *Papio anubis*, *Mus musculus*, *Solanum tuberosum*, *Solanum cardiophyllum*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Sus scrofa*, *Catharanthus roseus*, *Saccharomyces cerevisiae*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Arabidopsis thaliana*"
- 4976 5106 23 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Shewanella oneidensis* MR-1, *Caenorhabditis elegans*, *Takifugu rubripes*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)" 10
- 4977 5107 36 "Pasteurella multocida, Homo sapiens, *Danio rerio*, *Drosophila melanogaster*, Porcine lymphotropic herpesvirus 3, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Mus musculus*"
- 4978 5108 28 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Arabidopsis thaliana*, *Lycopersicon esculentum*, *Allium vavilovii*, *Allium cepa*, *Danio rerio*, *Microctonus aethiopoies*, *Rattus norvegicus*, *Staphylococcus epidermidis* ATCC 12228, *Drosophila melanogaster*, *Plasmodium atheruri*, *Plasmodium vinckei*, *Plasmodium yoelii*, *Plasmodium berghei*, *Vibrio harveyi* bacteriophage VHML, *Cryptococcus neoformans* var. *grubii*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Clostridium difficile*, *Amsacta moorei* entomopoxvirus, *Galdieria sulphuraria*, *Staphylococcus epidermidis*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Bacillus halodurans*" 20
- 4979 5109 36 "Homo sapiens, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Dictyocaulus eckerti*, *Mus musculus*, *Oryza sativa*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Trypanosoma cruzi*, *Arabidopsis thaliana*, *Plasmodium falciparum*, *Plasmodium knowlesi*, *Didelphis virginiana*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Hypostomus asperatus*, *Cryptosporidium parvum*, *Piromyces* sp. E2, *Medicago truncatula*, *Chlamydia muridarum*, *Leishmania major*, *Angraecum eichlerianum*, *Sorghum bicolor*" 30
- 4980 5110 28 "*Mus musculus*, Homo sapiens, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Anartia amathea*, *Methanosarcina acetivorans* C2A, *Euglena gracilis*, *Arabidopsis thaliana*, *Yarrowia lipolytica*, *Lotus corniculatus* var. *japonicus*, *Lycopersicon esculentum*, *Danio rerio*, *Caenorhabditis elegans*, *Leptospira interrogans* serovar *lai* str. 56601, *Aspergillus flavus*, *Medicago truncatula*, *Dictyostelium discoideum*, *Chaetosphaeridium globosum*, *Staphylococcus lugdunensis*, *Tetrahymena thermophila*, *Prochlorococcus marinus*, *Pyrococcus abyssi*, *Penicillium marneffeii*, *Saccharomyces cerevisiae*, *Candida boidinii*, *Daucus carota*"
- 4981 5111 28 "*Caenorhabditis elegans*, Homo sapiens, *Monosiga brevicollis*, *Dictyostelium discoideum*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Cricetus griseus*, *Salmo salar*, *Rattus norvegicus*, *Coxiella burnetii* RSA 493, *Candidatus Carsonella ruddii*, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Bos taurus*, *Drosophila melanogaster*, *Phlebotomus sergenti*, *Danio rerio*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Adoxophyes honmai* nucleopolyhedrovirus, *Melanoplus sanguinipes* entomopoxvirus, *Cardamine hirsuta*, *Zea mays*, *Hordeum vulgare*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Guillardia theta*, *Vitis vinifera*, *Borrelia lusitaniae*, *Bacteroides fragilis*, *Carabus stroganowi*, *Carabus scabrosus caucasicus*, *Prunus salicina*, *Methanocaldococcus jannaschii*" 40

- 4982 5112 31 "Caenorhabditis elegans, Homo sapiens, Ectromelia virus, Bombyx mori, Mus musculus, Paramecium tetraurelia, Arabidopsis thaliana, Clostridium tetani E88, Plasmodium falciparum 3D7, Pyrobaculum aerophilum str. IM2, Danio rerio, Medicago truncatula, Sus scrofa, Aegla manni, Aegla denticulata lacustris, Aegla denticulata denticulata, Aegla alacalufi, Aegla hueicollensis, Aegla sp. KAC-A66, Aegla sp. KAC-A63, Aegla bahamondei, Hypochilus petrunkevitchi, Variola minor virus, Variola virus, Orf virus, Oryza sativa (japonica cultivar-group), Guillardia theta"
- 4983 5113 33 "Mus musculus, Homo sapiens, Mycoplasma gallisepticum R, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Xenopus laevis, Arabidopsis thaliana, Felis catus, Brucella melitensis 16M, Alibertia subaurea, Guillardia theta, Caenorhabditis elegans, Bombyx mori, Danio rerio" 10
- 4984 5114 31 "Mus musculus, Homo sapiens, Iris brevicaulis, Staphylococcus epidermidis ATCC 12228, Enterococcus faecalis V583, Drosophila melanogaster, Yersinia pestis KIM, Staphylococcus epidermidis, Prochlorococcus marinus, Caenorhabditis elegans, Yersinia enterocolitica, Yersinia pseudotuberculosis, Lotus corniculatus var. japonicus, Oryzias latipes, Yersinia pestis C092, Danio rerio"
- 4985 5115 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila subobscura, Clostridium perfringens str. 13" 20
- 4986 5116 27 "Homo sapiens, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mus musculus, Drosophila melanogaster, Pan troglodytes, Morone chrysope, Dictyostelium discoideum, Macaca mulatta, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Morone saxatilis, Papio anubis, Caenorhabditis elegans, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Danio rerio, Oryza sativa (japonica cultivar-group), Reclinomonas americana, Oceanobacillus ihayensis HTE831, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Enterococcus faecalis"
- 4987 5117 22 "Homo sapiens, Arabidopsis thaliana, Methanosarcina mazei Goe1, Staphylococcus epidermidis ATCC 12228, Mus musculus, Lactococcus lactis, Lactococcus lactis subsp. lactis, Strongylocentrotus purpuratus, Staphylococcus epidermidis, Plasmodium falciparum 3D7, Medicago truncatula, Oryza sativa (japonica cultivar-group), Gallus gallus" 30
- 4988 5118 29 "Homo sapiens, Mus musculus, Canis familiaris, Thermoanaerobacter tengcongensis, Sus scrofa, Leptospira interrogans serovar lai str. 56601, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bos taurus, Danio rerio, Bacillus megaterium, Cryptococcus neoformans var. neoformans, Arabidopsis thaliana, Borrelia burgdorferi"
- 4989 5119 33 "Homo sapiens, Arabidopsis thaliana, Bacillus anthracis str. Ames, Drosophila melanogaster, Lycopersicon esculentum, Papio anubis, Schedorhinotermes medioobscurus, Mus musculus, Peanut yellow spot virus, Plasmodium falciparum 3D7, Danio rerio, Gallus gallus, Sulfolobus acidocaldarius, Medicago truncatula, Dictyostelium discoideum, Pan troglodytes, Caenorhabditis elegans, Cyanidium caldarium, Myzus persicae, Lotus corniculatus var. japonicus, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Rattus norvegicus" 40
- 4990 5120 30 "Mus musculus, Methanosarcina mazei Goe1, Homo sapiens, Bos taurus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Bombyx mori, Plasmodium falciparum, Plasmodium falciparum 3D7, Human immunodeficiency virus 1, Macaca mulatta, Danio rerio, Pan troglodytes, Schi 50

- zosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pneumocystis carinii, Arabidopsis thaliana"
- 4991 5121 23 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Parachlorococcus marinus, Encephalitozoon cuniculi"
- 4992 5122 26 "Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Mycoplasma capricolum, Anopheles gambiae"
- 4993 5123 28 "Caenorhabditis elegans, Homo sapiens, Xylella fastidiosa 9a5c, Mus musculus, Gallus gallus, Bacteroides thetaiotaomicron VPI-5482, Plasmodium falciparum 3D7, Clostridium tetani E88, Danio rerio, Odontella sinensis, Bombyx mori, Zaprionus sepsoides, Tetragenococcus halophilus" 10
- 4994 5124 32 "Homo sapiens, Nostoc sp. PCC 7120, Arabidopsis thaliana, Mus musculus, Clostridium tetani, Rattus norvegicus, Schmidtea mediterranea, Danio rerio, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Staphylococcus aureus, Pan troglodytes, Dirofilaria immitis"
- 4995 5125 35 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Pleurotus ostreatus, Rattus norvegicus, Mycoplasma gallisepticum R, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Clostridium tetani E88, Plasmodium falciparum 3D7, Plasmodium falciparum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Medicago truncatula, Actinobacillus pleuropneumoniae, Leptospira interrogans serovar lai str. 56601, Actinobacillus suis, Trioxys pallidus, Oryza sativa, Brassica rapa, Euglena longa, Citrus sinensis, Cyprinus carpio, Macaca fascicularis, Clostridium perfringens str. 13, Trypanosoma brucei, Trypanosoma cruzi, Sus scrofa, Pan troglodytes, Clostridium acetobutylicum, Oryza sativa (indica cultivar-group)" 20
- 4996 5126 29 "Homo sapiens, Mus musculus, Tetrahymena thermophila, Lycopersicon esculentum, Danio rerio, Plasmodium yoelii, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Arabidopsis thaliana, Caenorhabditis elegans"
- 4997 5127 32 "Synechocystis sp. PCC 6803, Streptococcus pyogenes MGAS 315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Homo sapiens, Vibrio cholerae, Mus musculus, Arabidopsis thaliana, Oceanobacillus iheyensis HTE831, Listeria innocua, Nostoc sp. PCC 7120, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Thermoanaerobacter tengcongensis, Staphylococcus epidermidis, Schistosoma americana, Nematanthus longipes, Lactococcus lactis subsp. lactis, Mycoplasma capricolum, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Kosteletzkya virginica, Ciona intestinalis, Bacillus sp. TS-3" 30
- 4998 5128 28 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Homo sapiens, Mus musculus, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Pyrococcus furiosus DSM 3638, Thermoplasma acidophilum, Saccharomyces cerevisiae" 40
- 4999 5129 28 "Oceanobacillus iheyensis HTE831, Bacillus anthracis str. Ames, Streptococcus agalactiae 2603V/R, Entamoeba dispar, Bacillus cereus ATCC 14579, Clostridium acetobutylicum, Ureaplasma urealyticum, Mycoplasma penetrans, Listeria monocytogenes, Listeria innocua, Legionella pneumophila, Methanosarcina acetivorans C2A, Homo sapiens, Entamoeba histolytica, Caenorhabditis elegans, Bacillus firmus, Oryza sativa (japonica cultivar-group), Phoma sp. C2932, Fusob 50

- acterium nucleatum subsp. nucleatum ATCC 25586, *Mus musculus*, *Candida albicans*, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Synechocystis* sp. PCC 6803, *Danio rerio*"
- 5000 5130 28 "Homo sapiens, *Danio rerio*, *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Pan troglodytes*, *Hirudo medicinalis*, *Oryza sativa* (*japonica* cultivar-group), *Pleistodontes xanthocephalus*, *Lotus corniculatus* var. *japonicus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Listeria monocytogenes*, *Listeria innocua*, *Sus scrofa*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 5001 5131 20 "*Mus musculus*, *Homo sapiens*, *Vibrio vulnificus* CMCP6, *Caenorhabditis elegans*" 10
- 5002 5132 25 "*Mus musculus*, *Homo sapiens*, *Gallus gallus*, *Euglena longa*, *Sulfolobus tokodaii*, *Nostoc* sp. PCC 7120"
- 5003 5133 27 "*Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Danio rerio*, *Lemur catta*, *Oryza sativa*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Buchnera aphidicola*, *Staphylococcus epidermidis*, *Mus* sp., *Staphylococcus lugdunensis*"
- 5004 5134 27 "*Leptospira interrogans* serovar *lai* str. 56601, *Arabidopsis thaliana*, *Homo sapiens*, *Pan troglodytes*, *Caenorhabditis elegans*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Mytilus edulis*, 20
Clastoderma debaryanum, *Sesarmops intermedium*, *Chiromantes haematocheir*, *Nostoc* sp. PCC 7120, *Mycoplasma gallisepticum* R, *Staphylococcus epidermidis* ATCC 12228, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Danio rerio*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Caenorhabditis briggsae*, *Staphylococcus epidermidis*, *Bos taurus*, *Lotus corniculatus* var. *japonicus*, *Buchnera aphidicola*, *Saccharomyces cerevisiae*"
- 5005 5135 27 "*Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Equus caballus*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Drosophila melanogaster*, *Lemur catta*, *Oryza sativa* (*japonica* cultivar-group), *Pyrococcus furiosus* DSM 3638, *Danio rerio*" 30
- 5006 5136 44 "*Caenorhabditis elegans*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Mamestra configurata* nucleopolyhedrovirus, *Arabidopsis thaliana*, *Ureaplasma urealyticum*, *Oryza sativa* (*japonica* cultivar-group), *Percus patruelis*, *Percus strictus*, *Percus villai*,"
- 5007 5137 31 "*Rattus norvegicus*, *Caenorhabditis elegans*, *Danio rerio*, *Leptospira interrogans* serovar *lai* str. 56601, *Homo sapiens*, *Mus musculus*, *Fagopyrum tataricum*, *Fagopyrum cymosum*, *Fagopyrum tataricum* subsp. *potanini*, *Ceratitis capitata*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Tarsius bancanus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Carassius auratus*, *Mesembryanthemum crystallinum*, *Clostridium perfringens* str. 13, *Campylobacter jejuni*, *Enterococcus faecalis* V583, *Pan troglodytes*, *Dictyostelium discoideum*, *Monosiga brevicollis*, *Melipona bicolor*" 40
- 5008 5138 31 "*Bacillus cereus* ATCC 14579, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Oryza sativa* (*japonica* cultivar-group), *Schizosaccharomyces pombe*, *Danio rerio*, *Rattus norvegicus*, *Pan troglodytes*, *Dictyostelium discoideum*, *Medicago truncatula*, *Thermoanaerobacter tengcongensis*, *Candidatus Carsonella ruddii*, *Dicentrarchus labrax*, *Neisseria meningitidis* Z2491, *Nicotiana tabacum*, *Neisseria meningitidis* MC58, *Mycoplasma genitalium*, *Thermotoga maritima*, *Ciona intestinal*" 50

is"

- 5009 5139 24 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Enterococcus faecalis, Paragonimus westermani, Escherichia coli CFT073, Cingulina cingulata, Plasmid pAD 1"
- 5010 5140 24 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Shewanella oneidensis MR-1, Dictyostelium firmibasis, Medicago truncatula, Oryza sativa (japonica cultivar-group), Pedinomonas minor, Danio rerio"
- 5011 5141 27 "Homo sapiens, Drosophila melanogaster, Pyrobaculum aerophilum str. IM2, Sulfolobus tokodaii, Mus musculus, Schistosoma sinensium, Arabidopsis thaliana, Mytilus californianus, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Clostridium perfringens str. 13" 10
- 5012 5142 25 "Homo sapiens, Mus musculus, Helicobacter hepaticus ATCC 51449, Buchnera aphidicola str. Bp (Baizongia pistaciae), Campylobacter jejuni, Thelotornis capensis, Candida albicans, Bacillus subtilis subsp. subtilis str. 168, Xenopus laevis, Bacillus subtilis"
- 5013 5143 61 "Haemophilus influenzae Rd KW20, Oceanobacillus iheyensis HTE831, Clostridium acetobutylicum, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Mus musculus, Homo sapiens, Oncorhynchus masou, Arabidopsis thaliana, Coregonus lavaretus, Oncorhynchus clarki, Oncorhynchus mykiss, Salvelinus alpinus, Anopheles gambiae, Salvelinus leucomaenis, Salvelinus fontinalis, Salvelinus confluentus, Coregonus clupeaformis, Coregonus artedi" 20
- 5014 5144 32 "Spiroplasma citri, Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Methanosarcina mazei Goe1, Mus musculus, Mycoplasma genitalium, Rattus norvegicus, Schmidtea mediterranea, Campoletis sonorensis ichnovirus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Mycoplasma penetrans"
- 5015 5145 29 "Caenorhabditis elegans, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Branchiostoma belcheri, Dictyostelium discoideum, Drosophila willistonii, Bacillus cereus, Mus musculus, Plasmodium berghei, Danio rerio, Saccharomyces douglasii, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Methanocaldococcus jannaschii" 30
- 5016 5146 41 "Mus musculus, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Danio rerio, Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa, Medicago truncatula, Schmidtea mediterranea, Schinus terebinthifolius, Cyphorhinus phaeocephalus, Biomphalaria glabrata, Arabidopsis thaliana, Solanum tuberosum, Pemphigus spyrothecae, Rattus norvegicus, Sphagnum planifolium, Sphagnum cuspidatum, Sphagnum ovatum, Sphagnum perichaetiale, Sphagnum recurvum, Sphagnum torreyanum, Sphagnum macrophyllum, Cyprinus carpio, Candida maltosa, Plasmodium falciparum, Drosophila melanogaster, Sphagnum cuculliforme, Tribolium castaneum" 40
- 5017 5147 31 "Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Adoxophyes orana granulovirus, Lotus corniculatus var. japonicus, Danio rerio, Rattus norvegicus, Adoxophyes honmai granulovirus"
- 5018 5148 32 "Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Sulfolobus solfataricus, Mus musculus, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus, Vibrio parahaemolyticus, Cion 50

a intestinalis"

- 5019 5149 44 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Medicago truncatula, Danio rerio, Buchnera aphidicola, Malacothamnus chilensis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Pan troglodytes, Buchnera aphidicola str. Bp (Baizongia pistaciae), Borrelia burgdorferi B31, Dictyostelium discoideum, Drosophila melanogaster, Cryptococcus neoformans var. grubii, Chrysops carbonarius, Meloidogyne hapla, Saccharomyces cerevisiae, Tetrahymena pyriformis, Galdieria sulphuraria, Plasmodium falciparum, Schizosaccharomyces pombe, Drosophila simulans, Malus x domestica, Drosophila mauritiana, Clostridium tetani E88, Plasmodium atheruri, Plasmodium vinckei, Plasmodium yoelii, Plasmodium berghei" 10
- 5020 5150 29 "Danio rerio, Homo sapiens, Dictyostelium discoideum, Mus musculus, Caenorhabditis elegans, Oryza sativa, Terebralia palustris, Salmo salar, Oryza sativa (japonica cultivar-group), Acanthamoeba comandoni"
- 5021 5151 28 "Homo sapiens, Mus musculus, Heterodontus francisci, Gallus gallus, Oryza sativa (japonica cultivar-group), Danio rerio"
- 5022 5152 27 "Homo sapiens, Mus musculus, Clostridium perfringens str. 13, Pan troglodytes, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Saccharomyces douglasii, Lotus corniculatus var. japonicus, Danio rerio, Rattus norvegicus" 20
- 5023 5153 27 "Saccharomyces servazzii, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Lotus corniculatus var. japonicus, Gallus gallus, Rattus norvegicus"
- 5024 5154 32 "Homo sapiens, Neisseria meningitidis Z2491, Neisseria meningitidis MC58, Pan troglodytes, Neisseria meningitidis, Borrelia lonestari, Drosophila melanogaster, Mus musculus, Human immunodeficiency virus 1, Borrelia anserina, Borrelia lusitaniae, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Borrelia sp. IST7, Borrelia sp. IST6, Borrelia sp. IST4, Borrelia sp. IST2, Borrelia sp. ISTF2, Borrelia sp. ISTF1, Medicago truncatula, Danio rerio, Borrelia turdi" 30
- 5025 5155 28 "Mus musculus, Homo sapiens, Rattus norvegicus, Campylobacter jejuni subsp. jejuni NCTC 11168"
- 5026 5156 26 "Mus musculus, Homo sapiens, Beta vulgaris subsp. vulgaris, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Buchnera aphidicola str. Bp (Baizongia pistaciae), Megalobrama terminalis, Dictyostelium discoideum, Carassius auratus"
- 5027 5157 35 "Danio rerio, Homo sapiens, Enterococcus faecalis V583, Mus musculus, Rickettsia prowazekii, Schizophyllum commune, Trypanosoma brucei, Mycoplasma genitalium, Caenorhabditis elegans, Dictyostelium discoideum, Plasmodium falciparum 3D7, Medicago truncatula, Photobacterium luminescens, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Papio anubis, Ballota hispanica, Guillardia theta, Lactococcus lactis subsp. lactis, Bacillus subtilis, Zea mays, Staphylococcus epidermidis, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Bacillus subtilis subsp. subtilis str. 168, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Ciona intestinalis, Sarcophaga peregrina, Trypanosoma cruzi, Hemicentrotus pulcherrimus" 40
- 5028 5158 28 "Homo sapiens, Arabidopsis thaliana, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Danio rerio, Pan troglodytes, Macaca mulatta, Papio anubis, Plasmodium falciparum" 50

- 3D7, *Pyrococcus abyssi*, *Lotus corniculatus* var. *japonicus*, *Haemophilus ducreyi* 35000HP"
- 5029 5159 28 "Homo sapiens, *Lotus corniculatus* var. *japonicus*, *Drosophila melanogaster*, *Glycine max*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Avicennia marina*, *Mus musculus*, *Helianthus annuus*, *Pirellula* sp."
- 5030 5160 33 "Mus musculus, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Agrocybe aegerita*, *Bacillus anthracis* str. Ames, *Lotus corniculatus* var. *japonicus*, *Caenorhabditis elegans*, *Meesia triquetra*, *Arabidops*"
- 5031 5161 39 "Homo sapiens, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Gomphiocephalus hodgsoni*, *Staphylococcus aureus*, *Dichromanthus cinnabarinus*, *Dichromanthus aurantiacus*, *Iepidopsocid* RS-20 01, *Pan troglodytes*, *Blastophaga intermedi*" 10
- 5032 5162 24 "Homo sapiens, *Ciona intestinalis*, *Trypanosoma equiperdum*, *Drosophila melanogaster*, *Mus musculus*, *Goatpox virus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Paramyiolia rhino*, *Sulfolobus solfataricus*, *Danio rerio*, *Saccharomyces exiguus*, *Arabidopsis thaliana*, *Haemophilus ducreyi* 35000HP, *Anastrepha bicolor*, *Anomala cuprea* entomopoxvirus"
- 5033 5163 27 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Caenorhabditis elegans*, *Chlamydia muridarum*, *Sus scrofa*, *Cylindrotheca fusiformis*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Archegozetes longisetosus*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Drosophila yakuba*, TTV-like mini virus" 20
- 5034 5164 25 "Homo sapiens, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*, *Eriolobus trilobatus*, *Danio rerio*"
- 5035 5165 27 "Mus musculus, *Coxiella burnetii* RSA 493, *Pan troglodytes*, *Lycopersicon esculentum*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Physarum polycephalum*, *Homo sapiens*, *Hevea brasiliensis*, *Paenibacillus* sp. BP-23, *Ciona intestinalis*" 30
- 5036 5166 31 "Homo sapiens, *Danio rerio*, *Felis catus*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Schmidtea mediterranea*, *Arabidopsis thaliana*, *Escherichia coli*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Sus scrofa*, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Naegleria fowleri*, *Oryzias latipes*"
- 5037 5167 28 "Mus musculus, *Homo sapiens*, *Rattus norvegicus*, *Oryza sativa* (*japonica* cultivar-group), *Lepisosteus spatula*, *Danio rerio*, *Borrelia burgdorferi* B31, *Arabidopsis thaliana*, *Swinepox virus*, *Borrelia burgdorferi*, *Yarrowia lipolytica*, *Heterosigma akashiwo*, *Plasmodium falciparum* 3D7, *Vibrio parahaemolyticus*, *Conus lividus*, *Borrelia andersonii*, *Borrelia garinii*, *Borrelia tanukii*, *Borrelia* sp., *Borrelia japonica*, *Escherichia coli*, *Borrelia* sp. 10MT, *Borrelia* sp. 5MT, *Borrelia valaisiana*, *Clostridium perfringens* str. 13" 40
- 5038 5168 25 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Sulfolobus solfataricus*, *Danio rerio*, *Streptococcus agalactiae* NEM316, *Chlamydia trachomatis*, *Fagopyrum rubifolium*, *Mycoplasma penetrans*, *Schizosaccharomyces pombe*, *Pan troglodytes*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*"
- 5039 5169 23 "Mus musculus, *Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*, *Bacillus cereus*, *Caenorhabditis elegans*" 50

- 5040 5170 28 "Homo sapiens, Mus musculus, Danio rerio, Papio anubis, Shewanella oneidensis MR-1, Arabidopsis thaliana, Canis familiaris, Felis catus, Prochlorococcus marinus, Human papillomavirus, Human papillomavirus type 9, Mycobacterium leprae, Oryza sativa (japonica cultivar-group), Helicobacter hepaticus ATCC 51449"
- 5041 5171 27 "Mus musculus, Enterococcus faecalis V583, Rattus norvegicus, Nardostachys chinensis, Streptococcus pneumoniae R6, Convolvulus arvensis, Homo sapiens, Nardostachys jatamansi, Medicago truncatula, Dictyostelium discoideum, Caenorhabditis elegans, Danio rerio, Drosophila melanogaster, Schizosaccharomyces octosporus, Staphylococcus epidermidis ATCC 12228, Streptogyna americana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Glyceria striata, Synechococcus sp. WH 8102, Arabidopsis thaliana, Dipentodon sinicus, Drosophila mojavensis, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Felis catus" 10
- 5042 5172 31 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Sus scrofa, Danio rerio, Drosophila melanogaster, Medicago truncatula, Caenorhabditis elegans, Saccharomyces cerevisiae, Bos taurus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp"
- 5043 5173 31 "Danio rerio, Mus musculus, Medicago truncatula, Hevea brasiliensis, Homo sapiens, Arabidopsis thaliana, Rhizophyidum sp. 136, Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Rhagoletis pomonella, Lotus corniculatus var. japonicus, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Plasmid ColE6-CT14, Schizosaccharomyces pombe, Clostridium perfringens str. 13" 20
- 5044 5174 63 "Clostridium tetani E88, Synechocystis sp. PCC 6803, Lepidospira interrogans serovar lai str. 56601, Homo sapiens, Mus musculus, Bacillus anthracis str. Ames, Arabidopsis thaliana, Takifugu rubripes, Shewanella oneidensis MR-1, Pseudomonas phage phiKZ, Clostridium acetobutylicum, Danio rerio, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Vibrio vulnificus CMCP6, Caenorhabditis elegans, Poncirus trifoliata, Plasmodium falciparum 3D7, Rickettsia prowazekii, Rickettsia typhi, Listeria monocytogenes, Bacteriophage Aeh1, Listeria innocua, Clostridium perfringens str. 13" 30
- 5045 5175 20 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Danio rerio, Prunus dulcis"
- 5046 5176 31 "Mus musculus, Homo sapiens, Xenorhabdus nematophila, Arabidopsis thaliana, Bacillus anthracis str. Ames"
- 5047 5177 33 "Echinococcus granulosus, Taenia solium, Gallus gallus, Drosophila melanogaster, Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)"
- 5048 5178 28 "Homo sapiens, Mus musculus, Buchnera aphidicola str. AP S (Acyrtosiphon pisum), Coxiella burnetii RSA 493, Arabidopsis thaliana, Danio rerio, Lotus corniculatus var. japonicus" 40
- 5049 5179 24 "Mus musculus, Pan troglodytes, Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Arabidopsis thaliana, Oceanobacillus iheyensis HTE831, Lycopersicon esculentum, Schizosaccharomyces pombe, Rattus norvegicus"
- 5050 5180 27 "Homo sapiens, Medicago truncatula, Thermoanaerobacterium saccharolyticum, Mus musculus, Ovis aries, Aneurinibacillus thermoaerophilus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Arabidopsis thaliana, Buchnera aphidicola str. Sg (Schizaphis graminum), Edaphus sp., Lotus corniculatus var. 50

- japonicus, *Anopheles gambiae*, *Clostridium perfringens* str. 13"
- 5051 5181 32 "Mus musculus, *Mesembryanthemum crystallinum*, *Homo sapiens*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Staphylococcus aureus*, *Mycoplasma pulmonis*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Rattus norvegicus*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Borrelia burgdorferi* B31, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Trypanosoma brucei*, *Borrelia burgdorferi*, *Ureaplasma urealyticum*, *Plasmodium falciparum*, *Contraecium osculatum*, *Anthoceros formosae*, *Sulfolobus tokodaii*, *Didelphis virginiana*, *Dictyostelium discoideum*, *Medicago truncatula*, *Drosophila melanogaster*, *Maerua kirkii*, *Cryptococcus neoformans* var. *grubii*, *Ictalurus punctatus*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Clostridium acetobutylicum*, *Streptococcus pyogenes* M1 GAS" 10
- 5052 5182 25 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Staphylococcus aureus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Rhizomucor miehei*, *Caenorhabditis briggsae*, *Halocynthia roretzi*, *Helicobacter pylori* 26695, *Medicago truncatula*, *Monodelphis domestica*" 20
- 5053 5183 31 "Homo sapiens, *Methanosarcina acetivorans* C2A, *Arabidopsis thaliana*, *Mus musculus*, *Bacillus subtilis*, *Caenorhabditis elegans*, *Bacillus subtilis* subsp. *subtilis* str. 168, uncultured bacterium"
- 5054 5184 23 "Homo sapiens, *Mus musculus*, *Notothenia coriiceps*, *Staphylococcus epidermidis* ATCC 12228, *Zea mays*, *Danio rerio*, *Caenorhabditis elegans*"
- 5055 5185 31 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Tetrahymena pyriformis*, *Danio rerio*, *Crioceris duodecimpunctata*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Sus scrofa*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Bacillus lyncis*, *Macaca mulatta*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Staphylococcus aureus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Streptococcus pneumoniae* TIGR4, *Pan troglodytes*, *Clostridium acetobutylicum*, *Caenorhabditis briggsae*, *Bos taurus*, *Trypanosoma brucei*" 30
- 5056 5186 36 "Oryza sativa (japonica cultivar-group), *Prochlorococcus marinus*, *Lotus corniculatus* var. *japonicus*, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Romanospora culicivora*, *Silvetia compressa*, *Medicago truncatula*, *Pan troglodytes*, *Dictyostelium discoideum*, *Tetrahymena thermophila*, *Macaca mulatta*, *Drosophila melanogaster*, *Danio rerio*, *Thermoplasma volcanium*, *Saccharomyces cerevisiae*, *Arabidopsis thaliana*, *Dictyostelium mucoroides*, *Prunus persica*, *Rattus norvegicus*, *Planococcus citri*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Thermoanaerobacter tengcongensis*, *Apanthura* sp. RW98.022.335, *Diospilus* sp. M123" 40
- 5057 5187 31 "Homo sapiens, *Methanosarcina acetivorans* C2A, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Kluyveromyces marxianus*, *Campylobacter jejuni*, *Gila atraria*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Cervus nippon yesoensis*, *Rattus norvegicus*, *Mus musculus*, *Bos taurus*, *Sus scrofa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Pneumocystis carinii*, *Plasmodium chabaudi chabaudi*, *Coxiella burnetii* RSA 493, *Gallus gallus*, *Drosophila melanogaster*, *Muntiacus muntjak*, *Cynocephalus variegatus*, *Muntiacus reevesi*, *Primeuchroeus* sp. M48, *Mesostigma viride*, *Canis familiaris*" 50

- aris, *Muntiacus muntjak nigripes*, *Muntiacus muntjak yunnanensis*, *Muntiacus muntjak menglasis*, *Muntiacus muntjak annamensis*, *Candidatus Blochmannia floridanus*"
- 5058 5188 32 "Mus musculus, *Lotus corniculatus* var. *japonicus*, *Drosophila melanogaster*, *Homo sapiens*, *Caenorhabditis elegans*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Ciona intestinalis*, *Plasmodium falciparum* 3D7, *Methanosarcina mazei* Goe1, *Rheum wittrockii*, *Drosophila littoralis*, *Arabidopsis thaliana*, *Staphylococcus aureus*, *Mesostigma viride*, *Lycopersicon esculentum*, *Ureaplasma urealyticum*, *Staphylococcus aureus* subsp. *aureus* MW2, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacteriophage* SPBc2, *Spirogyra maxima*, *Dictyostelium discoideum*, *Mesorhizobium loti*" 10
- 5059 5189 24 "*Borrelia burgdorferi* B31, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Bartonella tribocorum*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Bacillus cereus* ATCC 14579, *Canis familiaris*, *Anticarditis crassispina*"
- 5060 5190 28 "*Homo sapiens*, *Mus musculus*, *Human immunodeficiency virus 1*, *Plasmodium falciparum* 3D7, *Bombyx mori*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Papio anubis*, *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Takifugu rubripes*, *Nicotiana tabacum*, *Arabidopsis thaliana*, *Methanocaldococcus jannaschii*, *Medicago truncatula*, *Equus caballus*, *Rattus norvegicus*, *Pan troglodytes*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Gallus gallus*, *Sus scrofa*, *Lycopersicon esculentum*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Bos taurus*" 20
- 5061 5191 23 "*Listeria monocytogenes*, *Mus musculus*, *Listeria innocua*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Clostridium tetani* E88, *Homo sapiens*, *Methanosarcina acetivorans* C2A, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Mycoplasma pulmonis*, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*"
- 5062 5192 28 "*Medicago truncatula*, *Homo sapiens*, *Mus musculus*, *Pseudomonas syringae* pv. *tomato* str. DC3000, *Caenorhabditis briggsae*, *Drosophila melanogaster*" 30
- 5063 5193 27 "*Arabidopsis thaliana*, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Caenorhabditis elegans*, *Pirellula* sp., *Danio rerio*, *Coxiella burnetii*"
- 5064 5194 35 "*Mus musculus*, *Homo sapiens*, *Papio anubis*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Borrelia burgdorferi* B31, *Plasmodium falciparum* 3D7, *Methanosarcina mazei* Goe1, *Clostridium tetani* E88, *Oryza sativa* (*japonica* cultivar-group), *Senecio sylvaticus*, *Streptococcus agalactiae* 2603V/R, secondary endosymbiont of *Melanococcus albizziae*, *Photobacterium luminescens*, *Danio rerio*, *Streptococcus agalactiae* NEM316, *Lycopersicon esculentum*, *Meloidogyne mayaguensis*, *Plasmodium vivax*, *Saccharomyces cerevisiae*, *Coturnix japonica*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Streptococcus agalactiae*, *Anopheles gambiae*, *Dictyostelium discoideum*, *Rattus norvegicus*, *Clostridium perfringens* str. 13" 40
- 5065 5195 29 "*Homo sapiens*, *Medicago truncatula*, *Mus musculus*, *Xenopus laevis*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Lepidopsocid* RS-2001, *Bacillus lynceorum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Furciferus horrens*, *Arabidopsis thaliana*, *Oryza sativa*, *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Sphaerothecium punctulatum*, *Dictyostelium discoideum*, *Zymomonas mobilis*, *Papio anubis*, *Rhinopoma hardwickei*, *Campylobacter jejuni*, *Rickettsia conorii*, *Plasmodium falciparum*, *Tribolium castaneum*, *Gallus gallus*, *Camp* 50

- ylobacter jejuni* subsp. *jejuni* NCTC 11168, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Escherichia coli*, endosymbiont of *Sphenophorus abbreviata*, endosymbiont of *Scyphophorus yuccae*, endosymbiont of *Metamasius hemipterus*, endosymbiont of *Metamasius callizona*, *Glycine max*, *Rattus norvegicus*"
- 5066 5196 24 "Oryza sativa (japonica cultivar-group), *Leptospira interrogans* serovar *lai* str. 56601, *Shigella flexneri* 2a str. 2457T, *Homo sapiens*, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Lactococcus lactis* subsp. *lactis*, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli*, *Escherichia coli* K12, *Lactococcus lactis* subsp. *cremoris*, *Danio rerio*, *Escherichia coli* 0157:H7, *Mus musculus*, *Rattus norvegicus*, *Oryza sativa*, *Clostridium acetobutylicum*, *Caenorhabditis elegans*" 10
- 5067 5197 23 "Homo sapiens, *Arabidopsis thaliana*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Apis mellifera*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Caenorhabditis elegans*, *Mycoplasma penetrans*"
- 5068 5198 27 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Allium senescens*, *Rattus norvegicus*, *Enterococcus faecalis* V583, *Bacteroides thetaiotaomicron* VPI-5482, *Papio anubis*, *Arabidopsis thaliana*, *Polypterus bichir*, *Sus scrofa*, *Streptococcus mutans* UA159, *Clostridium acetobutylicum*, *Lactococcus lactis* subsp. *lactis*, *Hemiselms rufescens*, *Ovis aries*, *Lotus corniculatus* var. *japonicus*, *Oceanobacillus iheyensis* HTE831" 20
- 5069 5199 67 "Prochlorococcus marinus, *Sulfolobus tokodaii*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Nostoc* sp. PCC 7120, *Methanococcus maripaludis*, *Mycoplasma pulmonis*, *Methanosarcina barkeri*, *Mus musculus*, *Pyrococcus horikoshii*, *Buchnera aphidicola*"
- 5070 5200 109 "Streptococcus agalactiae 2603V/R, *Streptococcus agalactiae* NEM316, *Cryptosporidium parvum*, *Haemophilus ducreyi* 35000HP, *Streptococcus mutans* UA159, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Helicobacter hepaticus* ATCC 51449, *Bacillus cereus* ATCC 14579, *Ric*" 30
- 5071 5201 28 "Homo sapiens, *Helicobacter pylori* 26695, *Mus musculus*, *Schizosaccharomyces pombe*, *Clostridium perfringens* str. 13"
- 5072 5202 65 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Buchnera aphidicola*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Helicobacter hepaticus* ATCC 51449, *Methanococcus maripaludis*, *Cryptosporidium parvum*, *Mycoplasma gallisepticum* R, *Candidatus Blochmannia floridanus*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Helicobacter pylori*, *Homo sapiens*, *Zea mays*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* SSI-1, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Arabidopsis thaliana*, *Coxiella burnetii* RSA 493, *Dictyostelium discoideum*, *Takifugu rubripes*, *Streptococcus mutans* UA159, *Ureaplasma urealyticum*, *Thermoanaerobacter tengcongensis*, *Caenorhabditis elegans*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Pisum sativum*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Pyrococcus horikoshii*, *Thermosynechococcus elongatus* BP-1" 40
- 5073 5203 25 "Dictyostelium discoideum, *Campylobacter jejuni*, *Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Bos taurus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Yersinia pestis* KIM, *Prochlorococcus marinus*, *Yersinia pseudotuberculosis*, *Yersinia pestis* C092, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Nonomurea* sp. ATCC 39727, *Arabidopsis thaliana*, *Meles meles*"
- 5074 5204 48 "Fusobacterium nucleatum subsp. *nucleatum* ATCC 25586, *CI*" 50

- ostridium tetani E88, Homo sapiens, Listeria innocua, Mus musculus, Arabidopsis thaliana, Clostridium acetobutylicum, Listeria monocytogenes, Cynocephalus variegatus, Danio rerio, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group)"
- 5075 5205 31 "Mus musculus, Caenorhabditis elegans, Bacillus anthracis str. Ames, Homo sapiens, Lactococcus lactis subsp. lactis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Clostridium tetani E88, Sorghum bicolor, Buchnera aphidicola str. Sg (Schizaphis graminum), Streptococcus pyogenes MGAS8232, Clostridium acetobutylicum, Danio rerio, Arabidopsis thaliana, Vicia hirsuta, Oryza sativa (japonica cultivar-group), Buchnera aphidicola, Rattus norvegicus" 10
- 5076 5206 32 "Danio rerio Borrelia sp. CA426, Homo sapiens, Lactobacillus plantarum, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium falciparum 3D7, Yersinia pestis KIM, Lycopersicon esculentum, Borrelia burgdorferi, Mycoplasma penetrans, Yersinia pestis C092, Carollia perspicillata, Clostridium acetobutylicum, Caenorhabditis elegans, Trigonectes aplocheiloides, Dictyostelium discoideum, Staphylococcus aureus, Drosophila melanogaster, Bombyx mori, Pan troglodytes, Heterodontus francisci, Streptococcus pyogenes MGAS315, Tetraodon nigroviridis, Arabidopsis thaliana, Spodoptera exigua nucleopolyhedrovirus, Oryza sativa, Swinepox virus, Streptococcus pyogenes M1 GAS, Caldicellulosiruptor lactoaceticus, Phaseolus vulgaris, Psychotria kirkii, Coptosapelta flavescens, Lotus corniculatus var. japonicus, Streptococcus pyogenes SSI-1" 20
- 5077 5207 35 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa, Gallus gallus, Oryza sativa (japonica cultivar-group), Nicotiana tabacum, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Rhagoletis cerasi, Nephrocercus daeckei, Dideopsis aegrota, Dipsepsis albifacies, Simulium tahitiense, Simulium shannonae, Simulium oviceps, Simulium middlemissae, Simulium mesodontium, Simulium maraaense, Simulium lotii, Simulium lonckei, Simulium jnabsium, Simulium fossatae, Simulium exasperans, Simulium dojeycorium, Simulium connae, Simulium concludium, Simulium clibanarium, Simulium cataractarum, Simulium teruamanga, Simulium guamense, Tetrahymena pyriformis, Staphylococcus epidermidis, Streptococcus agalactiae NEM316, Micromus sp. KY-2002, Schizosaccharomyces pombe, Molossus sinaloae, Ilyoplax tansuiensis, Vigna radiata" 30
- 5078 5208 31 "Homo sapiens, Mus musculus, Danio rerio, Medicago truncatula, Arabidopsis thaliana, Streptococcus mutans UA159, Dictyostelium discoideum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pan troglodytes, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Chlamydomonas abortus, Plasmodium falciparum 3D7, Mynes geoffroyi, Vibrio parahaemolyticus, Transformation vector pICon, Chelonia mydas, Rattus norvegicus, Listeria monocytogenes" 40
- 5079 5209 28 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 5080 5210 29 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Lymantria dispar nucleopolyhedrovirus, Nostoc sp. PCC 7120, Lotus corniculatus var. japonicus, Rattus norvegicus, Pichia canadensis, Oryza sativa (japonica cultivar-group), Panax assamicus, Panax zingiberensis, Panax wangianus, Panax vietnamicus, Panax variabilis, Panax trifolius, Panax stipuleanatus, Panax sinensis, Panax shangianus, Panax quinquefolius, Panax pseudoginseng, Panax omeiensis, Panax notoginseng, Panax japonicus var. major, Panax japonicus, Panax ginseng, Pana" 50

- x pseudoginseng var. elegantior, Panax pseudoginseng var. bipinnatifidus, Panax pseudoginseng var. angustifolius, Coxiella burnetii RSA 493, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani E88, Saccharomyces uvarum, Bolusanthus speciosus, Canis familiaris, Danio rerio, Canella winterana, Clostridium perfringens str. 13"
- 5081 5211 28 "Mus musculus, Homo sapiens, Costus lateriflorus, Danio rerio, Drosophila melanogaster, Bos taurus, Oryza sativa (japonica cultivar-group), Wuchereria bancrofti"
- 5082 5212 31 "Mus musculus, Homo sapiens, Clostridium perfringens, Plasmodium falciparum 3D7, Schmidtea mediterranea, Human immunodeficiency virus 1, Onchidoris muricata, Danio rerio, Trichodesmium sp. WH9601, Arabidopsis thaliana, Clostridium perfringens str. 13" 10
- 5083 5213 35 "Homo sapiens, Ciona intestinalis, Medicago truncatula, Mus musculus, Drosophila melanogaster, Callichirus major, Gallus gallus, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Danio rerio"
- 5084 5214 35 "Mus musculus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Schizosaccharomyces pombe, Rattus norvegicus, Mycoplasma gallisepticum R, Dictyostelium discoideum, Medicago truncatula, uncultured bacterium" 20
- 5085 5215 28 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Macaca fascicularis, Brachyspira hyodysenteriae, Caenorhabditis elegans, Pantroglodytes, Drosophila melanogaster, Euprymna berryi, Danio rerio, Oryza sativa (japonica cultivar-group), Lithobius forficatus, Plasmodium vivax, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 5086 5216 27 "Emericella nidulans, Homo sapiens, Mus musculus, Caenorhabditis elegans, Pantroglodytes, Spodoptera litura nucleopolyhedrovirus, Clostridium stercorarium, Medicago truncatula, Danio rerio"
- 5087 5217 24 "Homo sapiens, Mus musculus, Staphylococcus epidermidis, Oryza sativa, Vibriophage VpV262, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Haemophilus ducreyi 35000HP, Haemophilus influenzae Rd KW20" 30
- 5088 5218 27 "Rattus norvegicus, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Danio rerio, Mus musculus, Pantroglodytes, Staphylococcus epidermidis ATCC 12228, Thermoanaerobacter tengcongensis, Streptococcus pyogenes MGAS8232, Staphylococcus epidermidis, Arabidopsis thaliana, Ciona intestinalis"
- 5089 5219 27 "Megoura viciae, Mus musculus, Homo sapiens, Danio rerio, Streptococcus gordonii"
- 5090 5220 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Caenorhabditis elegans, Clostridium acetobutylicum, Mus musculus" 40
- 5091 5221 27 "Rattus norvegicus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis briggsae, Streptococcus mutans UA159, Argania spinosa, Mus musculus, Caenorhabditis elegans, Danio rerio, Borago officinalis, Bacillus halodurans"
- 5092 5222 24 "Homo sapiens, Bacillus cereus ATCC 14579, Mus musculus, Caenorhabditis elegans, Candida tropicalis, Chrysomya bezziana"
- 5093 5223 35 "Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola, Danio rerio, Mus musculus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Chlamydia trachomatis, Streptococcus pyogenes SSI-1, Homo sapiens, Mesostigma viride, Oceanobacillus 50

- ihyensis HTE831, *Drosophila heteroneura*, *Sulfolobus tokodaii*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Rattus norvegicus*, *Proteus mirabilis*"
- 5094 5224 23 "Homo sapiens, *Thermoplasma acidophilum*, *Oryza sativa* (japonica cultivar-group), Subterranean clover mottle virus, *Mus musculus*, *Lotus corniculatus* var. *japonicus*"
- 5095 5225 36 "Thermoanaerobacter tengcongensis, Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Papio anubis*, *Antirrhinum hispanicum*, *Ciona intestinalis*, *Pan troglodytes*, *Brucella melitensis* 16M, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Methanosarcina mazei* Goe1, *Actinobacillus actinomycetemcomitans*, *Brucella suis* 1330, *Clostridium acetobutylicum*, *Saccharomyces kluyveri*, *Sulfolobus solfataricus*, *Impatiens biflora*, *Clerodendrum trichotomum*, *Danio rerio*, *Caenorhabditis elegans*, *Eriophorum angustifolium*, *Cryptophlebia leucotreta granulovirus*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Cricetulus griseus*, *Flammulina velutipes*, *Clostridium perfringens*" 10
- 5096 5226 33 "Homo sapiens, *Mus musculus*, *Meladema lanio*, *Meladema imbricata*, *Meladema coriacea*, *Plasmodium falciparum* 3D7, *Staphylococcus aureus* subsp. *aureus* N315, *Dictyostelium discoideum*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Bacillus anthracis* str. Ames, *Drosophila*"
- 5097 5227 30 "Homo sapiens, *Dictyostelium discoideum*, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Schizophyllum commune*, *Plasmodium falciparum* 3D7, *Greenidea nipponica*, *Galactia striata*, *Pyrobaculum aerophilum* str. IM2, *Clostridium acetobutylicum*, *Bactrocera pyrifoliae*, *Methanothermobacter thermoautotrophicus*, *Mycoplasma capricolum*, *Euglena longa*, *Papio anubis*, *Siona lineata*, *Heliocidaris tuberculata*, *Candidatus Carsonella ruddii*, *Drosophila melanogaster*, *Sus scrofa*, *Methanothermobacter thermoautotrophicus* str. Delta H, *Utricularia myriocista*, *Utricularia cucullata*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pneumocystis carinii*, *Rattus norvegicus*, *Pasteurella multocida*, *Pagurus longicarpus*, *Lycopersicon esculentum*, *Gallus gallus*, *Ureaplasma urealyticum*" 20
- 5098 5228 33 "*Drosophila melanogaster*, Homo sapiens, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Naegleria fowleri*, *Medicago truncatula*, *Rattus norvegicus*, *Bacillus anthracis* str. A2012, *Cyanidium caldarium*, *Flaveria trinervia*, *Leishmania major*, *Earinus elator*, *Sulfolobus tokodaii*, *Bacillus anthracis*, *Cryptosporidium parvum*, *Bacteroides thetaiotaomicron* VPI-5482, *Lentinula edodes*, *Lucilia cuprina*, *Streptococcus agalactiae* 2603V/R, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Strongylocentrotus purpuratus*, *Streptococcus agalactiae*, *Oryza sativa*, *Streptococcus agalactiae* NEM316, *Bacillus firmus*, *Podospira anserina*, *Yarrowia lipolytica*" 30
- 5099 5229 69 "*Dictyostelium discoideum*, Homo sapiens, *Monosiga brevicollis*, *Mus musculus*, *Rattus norvegicus*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Paroligoneurus* sp., *Phyllodrepanium falcifolium*, *Trypanosoma cruzi*, *Borrelia burgdorferi*, *Arabidopsis thaliana*, *Pan troglodytes*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis elegans*, *Vesicular stomatitis Indiana virus*, *Brassica rapa*, *Brassica napus*, *Saccharomyces cerevisiae*, *Hypopterygium filiculaeforme*, *Staphylococcus epidermidis*, *Plasmodium falciparum*" 40
- 5100 5230 49 "Homo sapiens, *Nasa triphylla*, *Pan troglodytes*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Drosophila melanogaster*, *Fusobacterium nucleatum*" 50

- m subsp. nucleatum ATCC 25586, *Danio rerio*, *Saccharomyces kluyveri*, *Arisaema fargesii*, *Saccharomyces cerevisiae*, *Anopheles dravidicus*, *Saccharomyces* sp. S6U, *Lotus corniculatus* var. *japonicus*, *Candida glabrata*, *Methanosarcina mazei* Goe1"
- 5101 5231 32 "Mus musculus, *Arabidopsis thaliana*, *Homo sapiens*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Meringis hubbardi*, *Eimeria bovis*, *Plasmodium falciparum*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Pan troglodytes*, *Bacillus* "
- 5102 5232 25 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Oceanobacillus iheyensis* HTE831, *Caenorhabditis elegans*, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Drosophila melanogaster*, *Pan troglodytes*, Dengue virus type 1, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Streptococcus agalactiae* NEM316, *Chlamydomonas pneumoniae* CWL029, *Lotus corniculatus* var. *japonicus*, *Chlamydomonas pneumoniae* AR39, *Sulfolobus tokodaii*, *Borrelia burgdorferi*, *Danio rerio*, *Ciona intestinalis*, *Medicago truncatula*, *Chlamydomonas pneumoniae* TW-183, *Macaca fascicularis*, *Chlamydomonas pneumoniae* J138"
- 5103 5233 36 "Homo sapiens, *Staphylococcus aureus*, *Mus musculus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Danio rerio*, *Rattus norvegicus*, *Drosophila melanogaster*, *Bacteroides thetaiotaomicron* VPI-5482, *Plasmodium falciparum* 3D7, *Pisum sativum*, *Clostridium tetani* E88, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Actinobacillus actinomycetemcomitans*, *Caenorhabditis elegans*, *Mycoplasma capricolum*, *Thermoplasma acidophilum*, *Solanum tuberosum*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Proteus mirabilis*, *Plasmodium malariae*"
- 5104 5234 52 "Oryza sativa, *Halictus quadricinctus*, *Homo sapiens*, *Danio rerio*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Paradrymonia binata*, *Timarcha goettingensis*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Strymon melinus*, *Boehmeria nivea*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Pleurothallopsis nemorosa*, *Oryza sativa* (japonica cultivar-group), *Artogeia napi*, *Trypanosoma brucei*, *Hypostomus albopunctatus*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Medicago truncatula*, *Mamestra configurata* nucleopolyhedrovirus, *Populus tomentosa*, *Hylocomiastrum pyrenaicum*, *Tetrahymena thermophila*, *Pan troglodytes*, *Sus scrofa*, *Caenorhabditis briggsae*, *Rickettsia conorii*, *Apis cerana*, *Apis nuluensis*, *Escherichia coli* O157:H7 EDL933, *Plasmodium falciparum*, *Rickettsia prowazekii*, *Timarcha tenebricosa*"
- 5105 5235 44 "Mus musculus, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Canis familiaris*, *Arabidopsis thaliana*, *Marchantia polymorpha*, *Rattus norvegicus*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Papio anubis*, *Danio rerio*, *Mycoplasma pulmonis*, *Caenorhabditis briggsae*, *Drosophila melanogaster*, *Pan troglodytes*, *Sminthopsis macroura*, *Fragaria x ananassa*, *Saccharomyces castellii*"
- 5106 5236 30 "Dictyostelium discoideum, *Mus musculus*, *Danio rerio*, *Homo sapiens*, *Medicago truncatula*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Epinephelus quernus*, *Clostridium tetani*, *Sorghum bicolor*, *Lactococcus lactis* subsp. *lactis*, *Arabidopsis thaliana*, *Oryctolagus cuniculus*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Thermoanaerobacter tengcongensis*, *Melissodes* sp., *Brassica oleracea*, *Salmo salar*, *Caenorhabditis briggsae*, *Trypanosoma brucei*, *Cotesia kariyai* polydnavirus, *Bu tyrivibrio fibrisolvens*, *Amanita* sp. 2"

- 5107 5237 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Pan troglodytes, Ornithodoros turicata, Ixodes cookei, Danio rerio"
- 5108 5238 28 "Drosophila melanogaster, Mus musculus, Homo sapiens, Gallus gallus, Arabidopsis thaliana, Rattus norvegicus, Caenorhabditis elegans, Mus sp., Neurospora crassa, Xenopus laevis, Vigna unguiculata, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Danio rerio, Medicago truncatula, Pan troglodytes, Nicotiana tabacum, Methanosarcina mazei Goe1, Zea mays, Zamia pseudoparasitica, Caenorhabditis briggsae, Glycine max, Brassica napus, Plasmodium falciparum 3D7, Hepatitis C virus, Plasmodium vivax" 10
- 5109 5239 32 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Plasmodium falciparum 3D7, Arabidopsis thaliana, Campylobacter jejuni, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Drosophila willistoni, Prochlorococcus marinus, Brassica napus, Xenopus laevis, uncultured ascomycetous yeast"
- 5110 5240 24 "Lycopersicon esculentum, Lycopersicon pimpinellifolium, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Streptococcus mutans UA159, Oryza sativa, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Caenorhabditis elegans"
- 5111 5241 27 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Mus musculus, Methanocaldococcus jannaschii" 20
- 5112 5242 31 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Erycina cristagalli, Oryza sativa (japonica cultivar-group), Danio rerio, Ciona intestinalis, Trigona ventralis, Bombus vandykei, Bombus centralis, Bombus"
- 5113 5243 26 "Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Chlamydophila pneumoniae TW-183, Oryza sativa (japonica cultivar-group), Lactococcus lactis subsp. lactis, Oncorhynchus mykiss, Pan troglodytes, Shewanella oneidensis MR-1, Homo sapiens, Staphylococcus aureus subsp. aureus MW2, Mus musculus" 30
- 5114 5244 32 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Macaca fascicularis, Oryctolagus cuniculus"
- 5115 5245 27 "Arabidopsis thaliana, Homo sapiens, Danio rerio, Drosophila melanogaster, Neurospora crassa, Candidatus Carsonella ruddii, Mus musculus, Alicyclobacillus acidocaldarius, Schizosaccharomyces pombe"
- 5116 5246 24 "Mus musculus, Drosophila melanogaster, Oblada melanura, Homo sapiens, Triatoma dimidiata, Torrentophryne aspinia, Melanoplus sanguinipes entomopoxvirus, Mycoplasma gallisepticum R, Myomys yemeni, Holbrookia maculata, Danio rerio, Plodia interpunctella, Oryzomys nitidus, Schizosaccharomyces pombe, Picea mariana" 40
- 5117 5247 24 "Pinus taeda, Medicago truncatula, Drosophila melanogaster, Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Bacillus halodurans"
- 5118 5248 37 "Dictyostelium discoideum, Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, Caenorhabditis elegans, Neurospora crassa, Drosophila melanogaster, Lotus corniculatus var. japonicus, Mus musculus, Bombyx mori, Pan troglodytes, Papio anubis, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Ceratitis capitata, Methanocaldococcus jannaschii, Dictyostelium purpureum, Ipomoea batatas, Crocodylus intermedius, Leptospira interrogans serov 40

- ar lai str. 56601, Lemur catta, *Xenopus laevis*"
- 5119 5249 27 "Homo sapiens, *Cucumis sativus*, *Methanothermobacter thermautotrophicus* str. Delta H, *Mus musculus*, *Ciona intestinalis*, *Drosophila melanogaster*, *Galaxias maculatus*, *Bacillus thuringiensis* serovar israelensis"
- 5120 5250 24 "*Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Drosophila melanogaster*, *Streptococcus pyogenes* MGAS315, *Candida glabrata*, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Mus musculus*, *Streptococcus pyogenes* SSI-1, *Arabidopsis thaliana*"
- 5121 5251 23 "*Homo sapiens*, Yaba-like disease virus, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Staphylococcus epidermidis* ATCC 12228, *Mus musculus*, *Staphylococcus epidermidis*, *Canis familiaris*, *Plasmodium falciparum* 3D7, *Bacillus halodurans*, *Oryza sativa* (japonica cultivar-group), *Cucumis sativus*, *Danio rerio*, *Saccharomyces cerevisiae*, *Thermosynechococcus elongatus* BP-1" 10
- 5122 5252 28 "*Homo sapiens*, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Rickettsia conorii*, *Chilo iridescent virus*, *Caenorhabditis briggsae*, *Danio rerio*, *Drosophila melanogaster*, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Trachemys scripta*"
- 5123 5253 27 "*Caenorhabditis elegans*, *Clostridium tetani* E88, *Cyanidium caldarium*, *Nicotiana tabacum*, *Grevillea robusta*, *Gyrocarpus* sp. Chase 317, *Knema latericia*, *Hedyosmum arborescens*, *Ascarina* sp. Qiu-M149, *Mahonia bealei*, *Sabia* sp. Qiu 91025, *Meliosma squamulata*, *Acorus gramineus*, *Acorus calamus*, *Norantea peduncularis*, *Marcgravia* sp. Anderberg s.n., *Impatiens parviflora*, *Knema kinabaluensis*, *Cinnamomum zeylanicum*, *Hedyosmum* sp. CCWD-2000, *Mycoplasma pulmonis*, *Bacillus subtilis* subsp. subtilis str. 168, *Bacillus subtilis*, *Chlorella vulgaris*, *Arabidopsis thaliana*, *Galaxias ahuriri*, *Drosophila melanogaster*, *Bacillus thuringiensis*, *Homo sapiens*, *Bacillus anthracis* str. A2012, *Xenopus laevis*, *Oryza sativa* (japonica cultivar-group), *Bacillus anthracis*, *Mus musculus*, *Apteryx australis*" 20
- 5124 5254 32 "*Homo sapiens*, *Clostridium tetani* E88, *Mus musculus*, *Drosophila melanogaster*, *Ciona intestinalis*, *Galleria mellonella*, *Loligo bleekeri*" 30
- 5125 5255 29 "*Borrelia burgdorferi* B31, *Vibrio parahaemolyticus*, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)"
- 5126 5256 39 "*Yersinia pestis* KIM, *Yersinia pestis* C092, *Mycoplasma capricolum*, *Homo sapiens*, *Mus musculus*, *Clostridium acetobutylicum*, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Dictyopterus divaricata*, *Prochlorococcus marinus*, *Candidatus Blochmannia floridanus*, *Ureaplasma urealyticum*, *Oryza sativa* (japonica cultivar-group)"
- 5127 5257 51 "*Bacteroides thetaiotaomicron* VPI-5482, *Mycoplasma penetrans*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Plasmodium berghei*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Bacillus cereus* ATCC 14579, *Trypan*" 40
- 5128 5258 154 "*Plasmodium berghei*, *Leptospira interrogans* serovar lai str. 56601, *Plasmodium malariae*, *Plasmodium falciparum*, *Enterococcus faecalis* V583, *Xylella fastidiosa* Temecula1, *Plasmodium gallinaceum*, *Clostridium perfringens* str. 13, *Plasmodium elongatum*, *Plasmodium*"
- 5129 5259 45 "*Candidatus Blochmannia floridanus* secondary endosymbiont of *Glycaspis brimblecombei*, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Clostridium acetobutylicum*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Ciona intestinalis*, *Bacteroides uniformis*" 50

- 5130 5260 28 "Homo sapiens, Chlamydia muridarum, Drosophila melanogaster, Mus musculus, Escherichia coli CFT073, Entamoeba histolytica, Plasmodium falciparum 3D7, Rickettsia conorii, Arabidopsis thaliana, Escherichia coli, Campylobacter jejuni subsp. jejuni NCTC 11168, Schizosaccharomyces pombe, Enterococcus faecalis V583, Oryza sativa (japonica cultivar-group), Pan troglodytes, Mustelus asterias, Pseudotriakis microdon, Buchnera aphidicola str. Sg (Schizaphis graminum), Apristurus manis, Microryzomys minutus, Lactobacillus plantarum, Enterococcus faecalis, Mycoplasma hominis, Malaccotristicha malayana, Terniopsis sessilis, Phaeodactylum tricornutum, Saccharomyces cerevisiae, Lactobacillus plantarum WCFS1, Caenorhabditis elegans, Malaccotristicha australis, Danio rerio, Methanocaldococcus jannaschii, Canis familiaris, Mustelus manazo, Aristolochia nelsonii, Aristolochia micrantha" 10
- 5131 5261 31 "Danio rerio, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus, Thermoanaerobacter tengcongensis, Homo sapiens, Capra hircus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Melanoplus sanguinipes entomopoxvirus, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Kaempferia pulchra, Curcuma roscoeana, Caulokaempferia sp. LMP-2002, Caulokaempferia saxicola, Arabidopsis thaliana, Ovocorynebacterium kurbanovae, Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Helicoverpa armigera" 20
- 5132 5262 27 "Homo sapiens, Pyrococcus horikoshii, Mus musculus, Clostridium tetani E88, Thermoplasma volcanium"
- 5133 5263 28 "Homo sapiens, Medicago truncatula, Mus musculus, Rattus norvegicus, Arabidopsis thaliana, Rattus rattus, Drosophila melanogaster, Danio rerio"
- 5134 5264 22 "Mus musculus, Bacteroides fragilis, Homo sapiens, Mogurnda adspersa, Plasmodium falciparum 3D7, Dolichoris hombroniana, Caenorhabditis elegans, Arabidopsis thaliana, Danio rerio"
- 5135 5265 26 "Homo sapiens, Caenorhabditis elegans, Drosophila littoralis, Mus musculus, Arabidopsis thaliana, Mycoplasma penetrans, Rattus norvegicus" 30
- 5136 5266 35 "Homo sapiens, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Kradibia wassae, Plasmodium falciparum, Plasmodium falciparum 3D7, Pan troglodytes, Borrelia burgdorferi B31, Drosophila melanogaster, Brassica napus var. napus, Anoteropsis westlandica, Anoteropsis senica, Anoteropsis okatainae, Anoteropsis insularis, Anoteropsis forsteri, Anoteropsis canescens, Anoteropsis blesti, Anoteropsis arenivaga, Anoteropsis alpina, Anoteropsis aerescens, Brochothrix campestris, Clostridium perfringens str. 13, Dictyostelium discoideum, Rattus norvegicus, Zymomonas mobilis, Caenorhabditis elegans, Schmidtia mediterranea, Bos taurus, Buchnera aphidicola, Mycoplasma penetrans, Danio rerio, Schizosaccharomyces pombe, Arabidopsis thaliana, Adoxophyes orana granulovirus, Medicago truncatula, Plasmodium yoelii" 40
- 5137 5267 24 "Homo sapiens, Mus musculus, Medicago truncatula, Arabidopsis thaliana, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus"
- 5138 5268 24 "Homo sapiens, Mus musculus, Oceanobacillus iheyensis HT E831, Rattus norvegicus, Drosophila melanogaster, Dictyostelium discoideum, Salmonella enterica, Oryza sativa, Porphyromonas gingivalis W83, Danio rerio, Bacillus subtilis subsp. subtilis str. 168, Arabidopsis thaliana, Bacillus subtilis" 50

- 5139 5269 70 "Thermoanaerobacter tengcongensis, Homo sapiens, Chlamydomonas callosa, Rickettsia conorii, Oceanobacillus iheyensis HTE831, Mus musculus"
- 5140 5270 34 "Gallus gallus, Homo sapiens, Mus musculus"
- 5141 5271 27 "Oryza sativa (japonica cultivar-group), Mus musculus, Lactococcus lactis subsp. lactis, Mesorhizobium loti, Chlamydia muridarum, Homo sapiens, Arabidopsis thaliana, Talaromyces emersonii, Caenorhabditis elegans, Danio rerio, Macaca fascicularis"
- 5142 5272 35 "Thermoanaerobacter tengcongensis, Homo sapiens, Drosophila melanogaster, Shewanella oneidensis MR-1, Caenorhabditis elegans, Prochlorococcus marinus, Thermoplasma acidophilum, Caenorhabditis briggsae, Mus musculus, Danio rerio, Schizosaccharomyces pombe" 10
- 5143 5273 39 "Homo sapiens, Oryza sativa (japonica cultivar-group), Debaryomyces occidentalis, Clostridium tetani E88, Plasmodium falciparum 3D7, Mus musculus, Tula virus, Agrocybe aegerita, Enterobacter sakazakii, Hordeum vulgare subsp. vulgare, Drosophila melanogaster, Methanosarcina mazei Goe1, Thermoanaerobacter tengcongensis, Arabidopsis thaliana, Heterodoxus macropus, Danio rerio, Hantaan virus, Guillardia theta, Amsacta moorei entomopoxvirus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Osornophryne antisana, Melanoplus sanguinipes entomopoxvirus, Medicago truncatula, Rattus norvegicus" 20
- 5144 5274 28 "Homo sapiens, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Pestivirus PG-2, Danio rerio, Mus musculus, Prochlorococcus marinus, Bacteriophage Aeh1"
- 5145 5275 25 "Mus musculus, Amolops daiyunensis, Homo sapiens, Thermoplasma acidophilum, Arabidopsis thaliana, Danio rerio, Pan troglodytes, Macaca mulatta, Vibrio parahaemolyticus, Neurospora crassa, Candida albicans, Botryotinia fuckeliana, Bacillus halodurans"
- 5146 5276 41 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Felis catus, Streptococcus mutans UA159, Pyrococcus furiosus DSM 3638, Arabidopsis thaliana, Homo sapiens, Caenorhabditis elegans, Streptococcus mutans, Danio rerio, Leptospira interrogans serovar Iai str. 56601, Drosophila melanogaster, Mus musculus, Saccharomyces naganishii, Medicago truncatula, synthetic construct" 30
- 5147 5277 28 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Clostridium tetani E88, Sheeppox virus, Rickettsia conorii, Dolichovespula maculata, Tribolium castaneum, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Encephalitozoon cuniculi, Ciona intestinalis, Danio rerio, Helicobacter hepaticus ATCC 51449"
- 5148 5278 28 "Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Sulfolobus solfataricus, Caenorhabditis elegans, Bacillus halodurans, Mus musculus, Botryotinia fuckeliana" 40
- 5149 5279 29 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Papio anubis, Campylobacter jejuni subsp. jejuni NCTC 11168, Helianthus annuus, Arabidopsis thaliana, Williopsis saturnus var. mrakii, Danio rerio, Ixodes gibbosus, Dictyostelium discoideum, Drosophila melanogaster, Rhizophyidum sp. 136, Caenorhabditis briggsae, Bacillus sp. HIL-Y85/54728, Plasmodium falciparum 3D7, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Eimeria tenella, Glycine max, Ginkgo biloba, Ostrinia furnacalis, Clostridium acetobutylicum, Typha angustifolia, Bacillus sp., Lotus corniculatus var. japonicus, Cryptosporidium parvum" 50

- 5150 5280 26 "Mus musculus, Tomosvaryella sp. NCSU-98021997, Campylobacter jejuni-like bacterium, Homo sapiens, Vibrio parahaemolyticus, Plasmodium falciparum 3D7, Human immunodeficiency virus 1, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Bourreria costaricensis, Schizosaccharomyces pombe, Caenorhabditis elegans, Danio rerio, Brassica rapa"
- 5151 5281 25 "Mycoplasma gallisepticum R, Danio rerio, Homo sapiens, Caenorhabditis elegans, Holospora obtusa, Drosophila melanogaster, Meriones unguiculatus, Mus musculus, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Pasteurella multocida, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Rattus norvegicus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Helicobacter pylori, Arabidopsis thaliana, Saccharomyces cerevisiae" 10
- 5152 5282 72 "Nostoc sp. PCC 7120, Ureaplasma urealyticum, Clostridium perfringens, Aedes aegypti, Homo sapiens, Clostridium acetobutylicum, Enterococcus faecalis V583, Mus musculus, Xylella fastidiosa Temecula1, Staphylococcus epidermidis ATCC 12228, Escherichia fergusonii, Plasmid ColE1, Methanosarcina acetivorans C2A, Staphylococcus epidermidis, Caenorhabditis briggsae, Ovis aries, Danio rerio, Cloning vector pMK20, Pseudomonas aeruginosa, unidentified cloning vector, Escherichia coli" 20
- 5153 5283 122 "Lawsonia intracellularis, Mus musculus, Mycoplasma pneumoniae, Homo sapiens, Caenorhabditis briggsae, Synechococcus sp. WH 8102, Mycoplasma pneumoniae, Oryza sativa (japonica cultivar-group), Deinococcus radiodurans, Dictyostelium discoideum, Medicago truncatula, Equus caballus, Shigella flexneri 2a str. 2457T, Dendroctonus jeffreyi, Drosophila melanogaster, Xenopus laevis, Clostridium tetani E88, Escherichia coli CFT073, Caenorhabditis elegans, Shigella flexneri 2a str. 301, Zea mays, Escherichia coli O157:H7 EDL933, Mycoplasma pulmonis, Medicago sativa, Arabidopsis thaliana, Escherichia coli K12, Stenogramme interrupta, Escherichia coli, Rattus norvegicus, Escherichia coli O157:H7" 20
- 5154 5284 200 "Lawsonia intracellularis, Mus musculus, Homo sapiens, Drosophila melanogaster, Cynomolgus Epstein-Barr Virus TsB-B6, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Caenorhabditis elegans, Danio rerio, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Pichia angusta, Retrophyllum rospigliosii, Podocarpus oleifolius" 30
- 5155 5285 200 "Lawsonia intracellularis, Homo sapiens, Hottonia palustris, Soldanella pusilla, Arabidopsis thaliana, Glycine max, Lycopodium volubile, Mus musculus, Danio rerio, Mesotaenium cf. chlamydosporum M-2155, Geniostoma rupestre, Pseudopanax arboreus, Abies concolor, Abies grandis, Zea mays, Chaetosphaeridium globosum, Lemna trisulca, Thermoanaerobacter tengcongensis, Mainwaringia leithii, Chironomus tentans, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Piromyces sp., Oryza sativa (japonica cultivar-group)" 40
- 5156 5286 200 "Lawsonia intracellularis, Clostridium tetani E88, Homo sapiens, Rattus norvegicus, Vibrio vulnificus CMCP6, Mus musculus, Clostridium acetobutylicum, Pneumocystis carinii, Paramecium tetraurelia"
- 5157 5287 200 "Lawsonia intracellularis, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Bacillus pumilus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Apple stem pitting virus, Atelerix albiventris, Legionella pneumophila, Methanosarcina acetivorans C2A, Papio anubis, Caenorhabditis briggsae, Scaiphirhynchus platyrhynchus, Mesanthemum sp. van der Werff and McPherson 13574, Lotus corniculatus var. japonicus, Lactococcus lactis subsp. lactis bv. diacetylact 50

- is, *Ciona intestinalis*, *Medicago truncatula*, *Botryotinia fuckeliana*"
- 5158 5288 200 "Lawsonia intracellularis, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Oceanobacillus iheyensis* HTE831, *Listeria monocytogenes*, *Listeria innocua*, *Ciona intestinalis*, *Wigglesworthia* "
- 5159 5289 201 "Lawsonia intracellularis, *Trypanosoma brucei*, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Campylobacter jejuni*, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Eudromia elegans*, *Prochlorococcus marinus*, *Oryzias latipes*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Oryza longistaminata*, *Oryza sativa*, *Rattus norvegicus*, *Medicago truncatula*, *Vibrio vulnificus* CMCP6, *Equus caballus*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Phoebis agarithe*, *Glaucidium palmatum*, *Plasmodium falciparum* 3D7, *Acacia continua*, *Sphoeroides nephelus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Juglans olanchana*, *Juglans microcarpa*, *Juglans mandshurica*, *Juglans major*, *Juglans hindsii*" 10
- 5160 5290 200 "Lawsonia intracellularis, *Caenorhabditis elegans*, *Homo sapiens*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Apanteles* sp., *Acheilognathus macropterus*, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*" 20
- 5161 5291 200 "Lawsonia intracellularis, *Homo sapiens*, *Lyngbya majuscula*, *Bacillus cereus* ATCC 14579, *Saccharomyces cerevisiae*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pasteurella multocida*, *Mus musculus*, *Danio rerio*, *Oceanobacillus iheyensis* HTE831, *Oryza sativa* (japonica cultivar-group), *Helicobacter hepaticus* ATCC 51449"
- 5162 5292 200 "Lawsonia intracellularis, *Methanosarcina mazei* Goe1, *Mus musculus*, *Homo sapiens*, *Danio rerio*"
- 5163 5293 200 "Lawsonia intracellularis, *Prototheca wickerhamii*, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Synechocystis* sp. PCC 6803, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Trichloris crinita*, *Carollia perspicillata*, *Danio rerio*, *Pan troglodytes*, *Arthrobacter* sp." 30
- 5164 5294 200 "Lawsonia intracellularis, *Bartonella bacilliformis*, *Pseudoalteromonas* sp. PS1M3, *Francisella tularensis*, *Bartonella quintana*, *Pseudoalteromonas haloplanktis*, *Buchnera aphidicola*, *Bartonella grahamii*, *Bartonella henselae*, *Streptococcus constellatus*, *Buchnera*"
- 5165 5295 200 "Lawsonia intracellularis, *Campylobacter lari*, *Wigglesworthia glossinidia*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Simkania negevensis*, *Vibrio metschnikovii*, *Bartonella clarridgeiae*, *Chlamydomonas reinhardtii*, *Shewanella oneidensis* MR-1, *Homo sapiens*, *Actinobacillus ureae*, *Anaerobiospirillum succiniciproducens*, *Lycopersicon esculentum*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Chlamydomonas reinhardtii*, *Drosophila melanogaster*, *Piriformospora indica* E2, *Chlamydomonas reinhardtii*, *Zea mays*, *Arabidopsis thaliana*, *Bartonella tribocorum*, *Human immunodeficiency virus 1*, *Chlamydomonas reinhardtii*, *Brassica napus*, *Candida albicans*, *Sulfolobus shibatae*, *Neocallimastix patriciarum*, *Legionella pneumophila*" 40
- 5166 5296 200 "Lawsonia intracellularis, *Chryseobacterium meningosepticum*, *Vibrio hollisae*, *Oligella urethralis*, *Bergeyella zoohelcum*, *Bartonella birtlesii*, *Bartonella schoenbuchensis*, *Solanum tuberosum*, *Salmonella typhi*, *Raoultella planticola*, *Vibrio cholerae*, *Actinobacillus*"
- 5167 5297 200 "Lawsonia intracellularis, *Oceanobacillus iheyensis* HTE8 50

- 31, *Bacillus* sp., *Bacillus halodurans*, *Enterococcus avium*, *Enterococcus faecium*, *Vibrio harveyi*, *Bacillus* sp. N16-5, *Streptococcus bovis*, *Bacillus anthracis* str. Ames, *Anaplasma phagocytophilum*, Bartonella "
- 5168 5298 200 "Lawsonia intracellularis, *Legionella pneumophila*, *Rickettsia salmonis*, *Homo sapiens*, *Nostoc* sp. PCC 7120, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Mus musculus*, *Acetobacter acetii*, *Oryza sativa* (japonica cultivar-group), *Bacillus cereus* ATCC 14579, *Caenorhabditis elegans*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Schistosoma mansoni*, *Bacillus* sp. MS"
- 5169 5299 200 "Lawsonia intracellularis, *Chlamydia muridarum*, *Bartonella clarridgeiae*, *Bartonella vinsonii* subsp. arupensis, *Bartonella grahamii*, *Amoeba proteus* symbiotic bacterium, *Bartonella taylorii*, *Bartonella* sp. SV06uk, *Bartonella vinsonii*, *Buchnera aphidicola* (The "
- 5170 5300 200 "Lawsonia intracellularis, *Streptococcus mutans* UA159, *Streptococcus mutans*, *Enterococcus avium*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes*, *Streptococcus pyogenes* SSI-1, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Lactococcus lactis* subsp. lactis, *Lactococcus lactis*, *Streptococcus agalactiae*, *Homo sapiens*, *Staphylococcus aureus*, *Prochlorococcus marinus*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus Mu 50, *Enterococcus raffinosus*, *Enterococcus durans*, *Enterococcus casseliflavus*, *Arabidopsis thaliana*, *Fusarium oxysporum* f. sp. lycopersici, *Methanococcus vannielii*, *Buchnera aphidicola* (*Pterocomma populeum*), *Melanoplus sanguinipes* entomopoxvirus, *Aedes aegypti*, *Haemophilus influenzae* Rd KW20"
- 5171 5301 200 "Lawsonia intracellularis, *Dictyostelium discoideum*, *Piromyces* sp. E2, *Rickettsia typhi*, *Pasteurella multocida*, *Vibrio harveyi*, *Enterococcus durans*, *Oryza sativa* (japonica cultivar-group), *Myzus persicae*, *Oceanobacillus ihayensis* HTE831, *Trypanosoma brucei*, "
- 5172 5302 200 "Lawsonia intracellularis, *Plasmodium falciparum* 3D7, *Danio rerio*, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Dictyostelium discoideum*, *Lotus corniculatus* var. japonicus, *Caenorhabditis elegans*, *Haemoproteus kopki*, *Siphonochilus kirkii*, *Platyphora* "
- 5173 5303 200 "Lawsonia intracellularis, *Caenorhabditis elegans*, *Homo sapiens*, *Crotalus viridis concolor*, *Crotalus viridis helleri*, *Crotalus viridis caliginis*, *Crotalus viridis oreganus*, *Vibrio cholerae*, *Mus musculus*, *Crotalus viridis*, *Drosophila melanogaster*, *Clostridium difficile*, *Prochlorococcus marinus*, *Campylobacter coli*"
- 5174 5304 200 "Lawsonia intracellularis, *Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Lycopersicon esculentum*, *Oryza sativa* (indica cultivar-group), *Plasmodium falciparum* 3D7, *Schizosaccharomyces pombe*"
- 5175 5305 200 "Lawsonia intracellularis, *Homo sapiens*, *Drosophila melanogaster*, *Danio rerio*, *Wolbachia* sp. wKueY0, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Methanosarcina mazei* Goe1, *Mus musculus*, *Amazona ochrocephala atrix*, *Methanocaldococcus jannaschii*, *Arabidopsis thaliana*"
- 5176 5306 187 "Lawsonia intracellularis, *Caenorhabditis elegans*, *Medicago truncatula*, *Homo sapiens*, *Mus musculus*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Oryza sativa* (japonica cultivar-group), *Pseudomonas syringae* pv. tomato str. DC3000, *Danio rerio*, *Arabidopsis thaliana*, *Drosophila melanogaster*, Papi 50

- o anubis, Plasmodium falciparum, Oryza sativa (indica cultivar-group), Ureaplasma urealyticum, Plasmodium falciparum 3D7, Plasmodium yoelii, synthetic construct "
- 5177 5307 43 "Mus musculus, Homo sapiens, Euleia fratria, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Glycine max, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabi"
- 5178 5308 28 "Danio rerio, Homo sapiens, Sus scrofa, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Dictyostelium discoideum, Drosophila melanogaster, Medicago truncatula, Ureaplasma urealyticum" 10
- 5179 5309 29 "Mus musculus, Homo sapiens, Danio rerio, Rattus norvegicus, Porphyra purpurea, Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Sus scrofa, Methanosarcina acetivorans C2A, Euhadra quaesita, Oryza sativa (japonica cultivar-group)"
- 5180 5310 27 "Xenopus laevis, Clostridium tetani E88, Bacillus cereus ATCC 14579, Lactobacillus paraplantarum, Homo sapiens, Drosophila melanogaster, Lemur catta, Caenorhabditis elegans, Macaca mulatta, Papio anubis, Pan troglodytes, Arabidopsis thaliana"
- 5181 5311 27 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli 0157:H7 EDL933, Lotus corniculatus var. japonicus, Escherichia coli K12, Ciona intestinalis, Anopheles gambiae, Escherichia coli, Escherichia coli 0157:H7, Caenorhabditis elegans, Tetracarpaea tasmanica, Danio rerio, Saccharomyces cerevisiae, Medicago truncatula" 20
- 5182 5312 38 "Enterococcus faecalis V583, Listeria monocytogenes, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Vibrio cholerae, Streptococcus pyogenes SSI-1, Haemophilus influenzae Rd KW20, Bacillus halodurans, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis briggsae, Cynomolgus Epstein-Barr Virus TsB-B6, Mus musculus, Schistosoma japonicum, Dictyostelium discoideum, Danio rerio, Arabidopsis thaliana" 30
- 5183 5313 29 "Mus musculus, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Homo sapiens, Borrelia burgdorferi, Drosophila melanogaster, Caenorhabditis briggsae, Nicotiana tabacum"
- 5184 5314 28 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Zea mays, Rattus norvegicus, Listeria innocua, Schistosoma japonicum, Streptococcus agalactiae 2603V/R, Arabidopsis thaliana, Streptococcus agalactiae NEM 316, Mus musculus"
- 5185 5315 24 "Homo sapiens, Danio rerio, Enterococcus faecalis V583, Encephalitozoon cuniculi, Mus musculus" 40
- 5186 5316 24 "Homo sapiens, Arabidopsis thaliana, Clostridium acetobutylicum, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus rattus"
- 5187 5317 31 "Drosophila melanogaster, Homo sapiens, Mus musculus, Pseudomonas sp. S-47, Pseudomonas putida, Paramecium bursaria Chlorella virus 1, Oryza sativa (japonica cultivar-group), Danio rerio, Pseudomonas sp. IC, Expression vector pJB653, Plasmid pWW0, Clostridium perfringens str. 13"
- 5188 5318 27 "Homo sapiens, Mus musculus, Gallus gallus, Danio rerio"
- 5189 5319 29 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Plasmodium falciparum, Sorghum bicolor, Rattus norvegicus, Sus scrofa, Heterocapsa triquetra, Borrelia burg 50

- dorferi B31, *Caenorhabditis elegans*, *Philomachus pugnax*, *Canis familiaris*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Dictyostelium discoideum*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Phlebotomus mongolensis*, *Phlebotomus andrejevi*, *Oenothera elata* subsp. *hookeri*, *Oceanobacillus iheyensis* HTE831, *Bombyx mori*, *Medicago truncatula*, *Clostridium perfringens* str. 13"
- 5190 5320 27 "Homo sapiens, *Brassica napus*, *Mus musculus*, *Papio anubis*, *Sus scrofa*, *Caenorhabditis elegans*, *Pichia etchellsii*, *Oryza sativa* (japonica cultivar-group)"
- 5191 5321 27 "Rattus norvegicus, *Leptospira interrogans* serovar lai str. 56601, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Mangifera indica*, *Entamoeba dispar*, *Mus musculus*, *Drosophila melanogaster*, *Methanosarcina acetivorans* C2A, *Oreochromis aureus*, *Scophthalmus maximus*, *Takifugu rubripes*, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Halichoeres melanurus*" 10
- 5192 5322 27 "Drosophila melanogaster, *Homo sapiens*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Danio rerio*, *Prochlorococcus marinus*, *Oryza sativa* (japonica cultivar-group), *Clostridium perfringens*, *Clostridium perfringens* str. 13, *Monosiga brevicollis*, *Shewanella oneidensis* MR-1, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Rickettsia prowazekii*, *Caenorhabditis briggsae*, *Saccharomyces cerevisiae*, *Ciona intestinalis*" 20
- 5193 5323 24 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Arabidopsis suecica*, *Medicago truncatula*, *Lotus corniculatus* var. *japonicus*, *Neurospora crassa*, *Helicobacter pylori*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 5194 5324 25 "Danio rerio, *Mus musculus*, *Medicago truncatula*, *Shigella dysenteriae*, *Drosophila melanogaster*, *Homo sapiens*, *Ockelbo virus*, *Caenorhabditis elegans*, *Sindbis-like virus* YN87448, *Vigna radiata*, *Sindbis virus*, *Atropa belladonna*, *Spinacia oleracea*, *Nicotiana tabacum*, *Oenothera elata* subsp. *hookeri*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Lathraea clandestina*, *Cicer arietinum*, *Sindbis-like virus*, *Rattus norvegicus*, *Arabidopsis thaliana*" 30
- 5195 5325 24 "Homo sapiens, *Mentha x piperita*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 5196 5326 24 "Leptospira interrogans serovar lai str. 56601, *Arabidopsis thaliana*, *Prunus armeniaca*, *Pyrococcus furiosus* DSM 3638, *Mus musculus*, *Homo sapiens*"
- 5197 5327 43 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*, *Tetraodon nigroviridis*, *Dissostichus mawsoni*, *Macaca fascicularis*, *Drosophila simulans*, *Methanocaldococcus jannaschii*, *Ehrlichia chaffeensis*, *Simulium mengense*, *Calomys tener*, *Simulium vittatum*, *Betula pendula*, *Lactococcus lactis* subsp. *lactis* 40
- 5198 5328 27 "Homo sapiens, *Schizosaccharomyces pombe*, *Mus musculus*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Nanovirus-like particle*, *Nitrosomonas europaea* ATCC 19718, *Oryctolagus cuniculus*"
- 5199 5329 28 "Homo sapiens, *Macaca fascicularis*, *Rattus norvegicus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Plasmodium falciparum* 3D7, *Euglena viridis*, *Mus musculus*, *Sus scrofa*, *Trypanosoma brucei*, *Danio rerio*, *Bacteroides thetaiotaomicron* VPI-5482, *Dictyostelium discoideum*, *Methanosarcina* 50

- mazei Goe1, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Zea mays*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Pyrobaculum aerophilum* str. IM2, *Caenorhabditis briggsae*, *Gallus gallus*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Chromobacterium violaceum*, *Sulfolobus tokodaii*, *Saccharomyces cerevisiae*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Ciona intestinalis*, *Lactococcus lactis*, Tomato big bud phytoplasma"
- 5200 5330 51 "Clostridium perfringens str. 13, Clostridium tetani E88, Listeria monocytogenes, Clostridium acetobutylicum, Oceanobacillus iheyensis H TE831, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lemur catta, Caenorhabditis elegans, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Drosophila melanogaster, Euglena viridis, Cucumis sativus, Plasmodium falciparum, Lotus corniculatus var. japonicus, Danio rerio, Treponema pallidum, Methanocaldococcus jannaschii" 10
- 5201 5331 32 "Homo sapiens, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Papio anubis, Buchnera aphidicola str. Sg (*Schizaphis graminum*), Pseudoweinmannia lachnocarpa, Geissois superba, Geissois benthamii, Caldcuvia paniculata, Arabidopsis thaliana, Lycopersicon esculentum, Cybistetes longifolia, Oryza sativa, Danio rerio, Haemophilus influenzae Rd KW20, Medicago truncatula, Rattus norvegicus, Pan troglodytes, Liporhopalum tentacularis, Takifugu rubripes, Chilo iridescent virus, Bacterocera cucurbitae, Prochlorococcus marinus, Guillardia theta, Ismene narcissiflora, Plasmodium falciparum 3D7, Oryctolagus cuniculus, Borrelia burgdorferi, Mannheimia haemolytica, Methanocaldococcus jannaschii, Cavia porcellus, Clostridium perfringens str. 13" 20
- 5202 5332 23 "Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Human immunodeficiency virus 1, Clostridium tetani E88, Homo sapiens, Oryctolagus cuniculus, Mus musculus"
- 5203 5333 31 "Schizosaccharomyces pombe, Homo sapiens, Dictyostelium discoideum, Plasmodium falciparum 3D7, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Lotus corniculatus var. japonicus, Danio rerio, Mus musculus, Enterococcus faecalis V583, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Staphylococcus saprophyticus, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Methanocaldococcus jannaschii, Salmonella enterica, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Arabidopsis thaliana, Reticulitermes flavipes, Cyanidium caldarium, Cryptosporidium parvum, Porphyra purpurea, Actinobacillus actinomycetemcomitans" 30
- 5204 5334 44 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lactococcus lactis subsp. lactis, Clostridium tetani E88, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Staphylococcus carnosus, Vibrio alginolyticus, Bacillus cereus ATCC 14579, Mus musculus" 40
- 5205 5335 83 "Chlamydia muridarum, Spinacia oleracea, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Heterosigma akashiwo, Candidatus Blochmannia floridanus, Prochlorococcus marinus, Staphylococcus epidermidis ATCC 12228, Thermoanaerobacter tengcongensis, Staphylococcus aureus, Staphylococcus epidermidis, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Chlamydomonas caviae GPIC, Enterococcus faecalis V583, Lactococcus lactis subsp. lactis, Bacillus firmus, Oryza sativa (japonica cultivar-group), Pseudomonas syringae pv. tomato str. DC3000, Xylella fastidiosa Temecula1, Homo sapiens, Streptococcus gordonii, Vibrio 50

parahaemolyticus, *Mus musculus*, *Pseudomonas aeruginosa* PA01, *Arabidopsis thaliana*, *Pasteurella multocida*, *Cenarchaeum symbiosum*, *Rattus norvegicus*, *Anopheles gambiae*"

5206 5336 29 "Buchnera aphidicola str. Bp (*Baizongia pistaciae*), *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, Influenza A virus (A/turkey/NJ/9778-8/98(H7N2)), Influenza A virus (A/Quail/PA/20304/98(H7N2)), *Chlamydia muridarum*, *Ureaplasma urealyticum*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Listeria monocytogenes*, *Schizosaccharomyces pombe*, *Saccharomyces cerevisiae*, *Actinobacillus actinomycetemcomitans*"

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5207 5337 57 "Enterococcus faecalis V583, *Listeria monocytogenes*, *Bacillus halodurans*, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Staphylococcus carnosus*, *Haemophilus ducreyi* 35000HP, *Fusobacterium nucleatum*"

5208 5338 28 "Enterococcus faecalis V583, *Yersinia pestis* KIM, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Yersinia pestis* C092, *Medicago truncatula*, *Homo sapiens*, *Saccharomyces cerevisiae*"

5209 5339 74 "Helicobacter hepaticus ATCC 51449, *Antithamnion* sp., *Oceanobacillus iheyensis* HTE831, *Zea mays*, *Bacillus anthracis* str. Ames, *Bacillus cereus* ATCC 14579, *Chlamydomonas reinhardtii* GPIC, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis elegans*, *Rickettsia prowazekii*, *Staphylococcus epidermidis*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Mus musculus*, *Candidatus Blochmannia floridanus*, *Homo sapiens*, *Rattus norvegicus*, *Pneumocystis carinii*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Plasmodium falciparum*, *Prochlorococcus marinus*, *Nicotiana tabacum*, *Oryza sativa* (*japonica* cultivar-group), *Nostoc* sp. PCC 7120"

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5210 5340 73 "Campylobacter jejuni subsp. *jejuni* NCTC 11168, *Clostridium perfringens* str. 13, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Clostridium*"

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5211 5341 101 "uncultured marine gamma proteobacterium EBAC31A08, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Porphyra purpurea*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Ehrlichia canis*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Oryza sativa* (*japonica* cultivar-group), *Clostridium tetani* E88, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Odontella sinensis*, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Ehrlichia chaffeensis*, *Bacillus* sp., *Aquifex aeolicus* VF5, *Mus musculus*, *Spinacia oleracea*, *Antithamnion* sp., *Caenorhabditis elegans*, *Cyanidioschyzon merolae*, *Listeria innocua*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Clostridium perfringens* str. 13, *Methanosarcina mazei* Goe1, Human immunodeficiency virus 1, *Streptococcus parasanguinis*, *Helicobacter pylori* J99, *Danio rerio*"

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5212 5342 27 "Homo sapiens, *Bacillus anthracis* str. A2012, *Bacillus thuringiensis* serovar medellin, *Bacillus anthracis*, *Danio rerio*, *Medicago truncatula*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Dicystostelium discoideum*, *Plasmodium falciparum* 3D7, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Caenorhabditis elegans*, *Candidatus Blochmannia floridanus*, *Clostridium perfringens* str. 13"

5213 5343 32 "Methanosarcina acetivorans C2A, *Lotus corniculatus* var. *japonicus*, *Homo sapiens*, *Mus musculus*, *Streptococcus pyogenes* M1 GAS, *Bacillus*

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- cereus ATCC 14579, *Drosophila melanogaster*, *Clostridium tetani* E88, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Nicotiana tabacum*, *Danio rerio*"
- 5214 5344 27 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Ciona intestinalis*"
- 5215 5345 27 "Homo sapiens, *Dictyostelium discoideum*, Human immunodeficiency virus 1, *Lycopersicon esculentum*, *Caenorhabditis elegans*, *Danio rerio*"
- 5216 5346 24 "Homo sapiens, *Streptococcus mutans* UA159, *Leptospira interrogans* serovar lai str. 56601, *Thermoanaerobacter tengcongensis*, *Danio rerio*, *Mus musculus*, *Nicotiana tabacum*"
- 5217 5347 24 "Mus musculus, Homo sapiens, *Buchnera aphidicola* str. Sg (Schizaphis graminum), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Corynebacterium glutamicum* ATCC 13032, *Anopheles gambiae*" 10
- 5218 5348 31 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Sulfolobus solfataricus*, *Papio anubis*, *Neurospora crassa*"
- 5219 5349 31 "Mus musculus, Homo sapiens, *Lotus corniculatus* var. japonicus, *Sus scrofa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Branchiostoma floridae*, *Caenorhabditis elegans*, *Chlamydia trachomatis*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), Fowlpox virus, *Medicago truncatula*, *Cicer arietinum*, *Xenopus laevis*, *Cyanidioschyzon merolae*" 20
- 5220 5350 28 "Homo sapiens, *Bacillus cereus* ATCC 14579, *Medicago truncatula*, *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Lycopersicon esculentum*, *Caenorhabditis elegans*, *Plasmodium falciparum*"
- 5221 5351 28 "*Oryza sativa* (japonica cultivar-group), *Gossypium hirsutum*, *Dictyostelium discoideum*, *Mus musculus*, Homo sapiens, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Pachysolen tannophilus*, *Cricetis duodecimpunctata*, *Drosophila melanogaster*, *Macaca mulatta*, *Pan troglodytes*, *Carpinus betulus*, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Arabidopsis thaliana*" 30
- 5222 5352 35 "*Arabidopsis thaliana*, *Aspergillus oryzae*, Homo sapiens, *Drosophila melanogaster*, *Shigella flexneri* 2a str. 2457T, *Mus musculus*, *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Shigella flexneri* 2a str. 301, *Escherichia coli* O157:H7 EDL933, *Danio rerio*, *Dictyostelium discoideum*, *Escherichia coli* K12, *Lotus corniculatus* var. japonicus, *Mycoplasma penetrans*, *Listeria innocua*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Escherichia coli* O157:H7"
- 5223 5353 28 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Bordetella pertussis*" 40
- 5224 5354 27 "*Arabidopsis thaliana*, Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Enterobacteria phage* RB49, *Borrelia duttonii*"
- 5225 5355 25 "Homo sapiens, Rabbit fibroma virus, *Arabidopsis thaliana*, Human immunodeficiency virus 1, *Mus musculus*, *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Borrelia garinii*, *Borrelia bissettii*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Felis catus*"
- 5226 5356 42 "*Plasmodium falciparum*, Homo sapiens, *Methanocaldococcus jannaschii*, *Clostridium tetani* E88, *Mus musculus*, *Danio rerio*, *Saccharomyces cerevisiae*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Tetrahymena therm*" 50

ophila, *Caenorhabditis elegans*, *Zea mays*, *Silene vulgaris*, *Lotus corniculatus* var. *japonicus*, *Candidatus Carsonella ruddii*, *Oryza sativa* (*japonica* cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Clostridium perfringens* str. 13, *Lemur catta*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Canis familiaris*, *Marchantia polymorpha*, reptant nemertean sp. 281, *Pichia pijperi*, *Spiroplasma* phage 1-R8A 2B"

- 5227 5357 35 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Rickettsia prowazekii, Lotus corniculatus var. japonicus, Ciona intestinalis, Lactobacillus helveticus, Rattus norvegicus, Arabidopsis thaliana, Drosophila melanogaster, Oryza sativa (*japonica* cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Caenorhabditis elegans, Plasmodium berghei, Platyphora albiovirens, Mycoplasma penetrans, Chlamydomonas mutabilis, Venerupis (Ruditapes) philippinarum" 10
- 5228 5358 31 "Homo sapiens, Guillardia theta, Mus musculus, Medicago truncatula, Danio rerio"
- 5229 5359 23 "Homo sapiens, Oryza sativa (*japonica* cultivar-group), Danio rerio, Mus musculus, Caenorhabditis elegans, Caenorhabditis briggsae, Neisseria meningitidis MC58, Rattus norvegicus, Plasmodium falciparum, Arabidopsis thaliana, Nostoc sp. PCC 7120" 20
- 5230 5360 29 "Homo sapiens, Pan troglodytes, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Schizosaccharomyces octosporus, Caenorhabditis elegans, Neocallimastix frontalis, Lactococcus lactis subsp. lactis, Danio rerio, Buchnera aphidicola, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Thermoanaerobacter tengcongensis, Triticum aestivum, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis briggsae, Oryza sativa (*japonica* cultivar-group), Oceanobacillus iheyensis HTE 831, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Schizosaccharomyces pombe, Plasmodium falciparum" 30
- 5231 5361 31 "Oryza sativa (*japonica* cultivar-group), Homo sapiens, Listeria monocytogenes, Danio rerio, Drosophila melanogaster, Rattus norvegicus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Ciona intestinalis, Mus musculus, Caenorhabditis elegans, Papio anubis, Yaba-like disease virus, Branchiostoma floridae, Saccharomyces cerevisiae, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Macaca fascicularis"
- 5232 5362 36 "Drosophila melanogaster, Plasmodium falciparum 3D7, Homo sapiens, Lotus corniculatus var. japonicus, Danio rerio, Tetrapisispora arboricola, Pseudopsis unidentata, Mus musculus, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Staphylococcus epid" 40
- 5233 5363 35 "Homo sapiens, Cyanophora paradoxa, Mus musculus, Pan troglodytes, Dictyostelium discoideum, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Orthetrum cancellatum, Chilo iridescent virus, Ureaplasma urealyticum, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (*japonica* cultivar-group), Danio rerio, Sorghum bicolor, Schizosaccharomyces pombe, Melanoplus sanguinipes entomopoxvirus, Drosophila melanogaster, Medicago truncatula, Phthorimaea operculella granulovirus, Diasemopsis sp. M, Bos taurus, Caenorhabditis elegans, Neisseria meningitidis Z2491, Allium porrum, Pichia anomala, Plasmodium vivax, Brassica rapa, Thermoplasma volcanium, Mycoplasma penetrans, Escontria chiotilla, Agrocybe aegerita, Arabidopsis thaliana" 50

- 5234 5364 29 "Danio rerio, Homo sapiens, Caenorhabditis briggsae, Caenorhabditis elegans, Azotobacter vinelandii, Rattus norvegicus, Plasmodium falciparum 3D7, Influenza A virus (A/swine/Cotes d'Armor/604/99(H1N2)), Influenza A virus (A/swine/Cotes d'Armor/790/97(H1N2)), Influenza A virus (A/swine/Italy/1521/98(H1N2)), Influenza A virus (A/swine/Cotes d'Armor/2433/98(H1N2)), Influenza A virus (A/swine/Scotland/410440/94(H1N2)), Influenza A virus (A/Hong Kong/1774/99(H3N2)), Mus musculus, Dichelobacter nodosus, Oryza sativa (japonica cultivar-group), Bacteriophage LL-H, Streptococcus gordonii, Equus caballus, Cryptosporidium parvum, Lycopersicon esculentum"
- 5235 5365 25 "Homo sapiens, Mus musculus, Arabidopsis thaliana" 10
- 5236 5366 24 "Homo sapiens, Lactococcus lactis subsp. lactis, Enterococcus faecalis V583, Arabidopsis thaliana, Enterococcus faecalis, Lotus corniculatus var. japonicus, Danio rerio, Mus musculus, Bacillus halodurans"
- 5237 5367 25 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Clostridium tetani E88, Clostridium acetobutylicum, Clostridium intestinalis"
- 5238 5368 23 "Homo sapiens, Oryza sativa (japonica cultivar-group)"
- 5239 5369 31 "Mus musculus, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Oxyura leucocephala, Chelus fimbriata, Clostridium acetobutylicum, Litocranium walleri, Aphyocypris chinensis, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Ipomoea batatas, Cryptomys amatus, Dasyuroides byrnei" 20
- 5240 5370 35 "Homo sapiens, Conardia compacta, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Borrelia burgdorferi, Eimeria tenella, Dictyostelium discoideum, Medicago trunca"
- 5241 5371 40 "Mus musculus, Homo sapiens, Gnamptodon pumilo, Plasmodium falciparum 3D7, Danio rerio, Arabidopsis thaliana, Caenorhabditis elegans, Mycoplasma fermentans, Rhamnus cathartica, Frangula alnus, Spyridium parvifolium, Ziziphus obtusifolia, Adolphia californica, Dictyostelium discoideum, Drosophila melanogaster, Zea mays, Papio anubis, Trigonella gladiata, Ononis arvensis, Thermoaerobacter tengcongensis, Opius fuscipennis, Opius bellus, Chorebus sp., Bacteroides haemorrhoeus, Plasmodium vivax, Forelius chalybaeus, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Medicago truncatula, Rattus norvegicus, Rhamnus californica, Bos taurus, Chaetosphaeridium globosum, Felis catus, Pyrococcus abyssi, Ureaplasma urealyticum, Plasmodium falciparum, Pan troglodytes" 30
- 5242 5372 23 "Homo sapiens, uncultured bacterium, Drosophila melanogaster, Streptococcus thermophilus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Cryptosporidium parvum, Danio rerio, Oryza sativa (indica cultivar-group), Mus musculus" 40
- 5243 5373 36 "Caenorhabditis elegans, Homo sapiens, Lactobacillus plantarum WCFS1, Caenorhabditis briggsae, Danio rerio, Mus musculus, Staphylococcus epidermidis ATCC 12228, Streptococcus mutans UA159, Arabidopsis thaliana, Bacillus subtilis, Clostridium acetobutylicum, Pasteurella multocida, Streptococcus mutans, Bacillus subtilis subsp. subtilis str. 168, Schizosaccharomyces pombe, Helicobacter hepaticus ATCC 51449, Drosophila melanogaster, Staphylococcus epidermidis, Trichinella pseudospiralis, Ureaplasma urealyticum, Plasmodium falciparum, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oceanobacillus ihayensis HTE831, Saccharomyces cerevisiae, Mycosphaerella rabiei, Thermotoga maritima, Cryptosporidium parvum, Wigglesworthia glossinidia endosymbiont of Glossin 50

- a *brevipalpis*, *Ixodes scapularis*, *Clostridium perfringens* str. 13"
- 5244 5374 23 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Sus scrofa, Plasmodium falciparum"
- 5245 5375 29 "Trypanosoma brucei, Solanum bulbocastanum, Homo sapiens, Mus musculus, Caenorhabditis elegans, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Lactobacillus acidophilus, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Sulfolobus solfataricus, Arabidopsis thaliana" 10
- 5246 5376 27 "Homo sapiens, Streptococcus mutans UA159, Streptococcus mutans, Arabidopsis thaliana, Trichophyton rubrum, Mus musculus, Drosophila melanogaster, Human immunodeficiency virus 2, Emericella nidulans"
- 5247 5377 24 "Mus musculus, Vibrio cholerae, Homo sapiens, Arabidopsis thaliana, Pholidota imbricata, Neogyna gardneriana, Coelogyne macdonaldii, Coelogyne beccarii, Coelogyne cuprea, Coelogyne bilamellata, Coelogyne renae, Coelogyne naja, Coelogyne monilirachis, Coelogyne longpasiaensis, Coelogyne kelamensis, Coelogyne incrassata, Coelogyne harana, Coelogyne gibbifera, Caenorhabditis briggsae, Bacillus halodurans, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Physarum polycephalum" 20
- 5248 5378 31 "Caenorhabditis elegans, Homo sapiens, Staphylococcus hominis, Plasmodium falciparum 3D7, Mus musculus, Rattus norvegicus, Danio rerio, Oryza sativa (japonica cultivar-group), Medicago truncatula, Dictyostelium discoideum, Gossypium hirsutum, Arabidopsis thaliana"
- 5249 5379 25 "Mus musculus, Homo sapiens, Metarhizium anisopliae, Epacris impressa, Flavobacterium johnsoniae, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Arabidopsis thaliana, Ureaplasma urealyticum, Brassica rapa, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Danio rerio, Clostridium perfringens str. 13"
- 5250 5380 28 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Mus musculus, Homo sapiens, Danio rerio, Crocodylus palustris, Arabidopsis thaliana, Plasmodium falciparum 3D7, Methanothermobacter thermoautotrophicus str. Delta H, Toxocara canis, Schistosoma japonicum, Listeria monocytogenes, Arabidopsis lyrata, Brassica napus, Mycoplasma genitalium, Tetrahymena pyriformis" 30
- 5251 5381 31 "Homo sapiens, Bombyx mori, Danio rerio, Arabidopsis thaliana, Mus musculus, Medicago truncatula, Otoglossum harlingii, Lockhartia oerstedi, Cydia pomonella granulovirus, Cryptocentrum calcaratum, Lumpy skin disease virus, Lactococcus lactis subsp. lactis, Ledebouria sp. MP H641, Scilla hyacinthina, Mycoplasma hyopneumoniae, Oryza sativa (japonica cultivar-group), Drosophila madeirensis, Pterostylis curta, Pterostylis picta, Peristylus ngoyensis" 40
- 5252 5382 28 "Synechocystis sp., Synechocystis sp. PCC 6803, Homo sapiens, Haemophilus influenzae Rd KW20, Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Peppery ringspot virus, Caenorhabditis briggsae, Chlamydia trachomatis, Mus musculus, Streptococcus pyogenes SSI-1, Zymomonas mobilis"
- 5253 5383 25 "Pan troglodytes, Homo sapiens, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum, Lotus corniculatus var. japonicus, Mus musculus, Caenorhabditis elegans, Rana catesbeiana, Danio rerio, Mycoplasma pulmonis, Ureaplasma urealyticum, Arabidopsis thaliana, Schizosaccharomyces pombe, Medicago truncatula, Influenza A virus, Bombyx mori, Vitis vinifera" 50

- 5254 5384 32 "Homo sapiens, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Pan troglodytes, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Oryza sativa, Pagurus longicarpus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Berteroa incana, Bacillus cereus ATCC 14579, Leptospira interrogans serovar lai str. 56601, Sus scrofa, Canis familiaris, Staphylococcus epidermidis ATCC 12228, Methanosarcina acetivorans C2A, Staphylococcus epidermidis, synthetic construct, Danio rerio, Clostridium perfringens str. 13, Nostoc sp. PCC 7120, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Gallus gallus, Buchnera aphidicola str. Sg (Schizaphis graminum), Thermoanaerobacter tengcongensis, Borrelia sp. AI-1, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Saccharomyces cerevisiae" 10
- 5255 5385 37 "Clostridium perfringens str. 13, uncultured bacterium, Xanthomonas axonopodis pv. citri str. 306, Xanthomonas campestris pv. campestris str. ATCC 33913, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Leptospira interrogans serovar lai str. 56601, Ho" 10
- 5256 5386 28 "Homo sapiens, Sulfolobus tokodaii, Mus musculus, Medicago truncatula, Yersinia pestis KIM, Danio rerio, Yersinia pestis C092, Oryza sativa (japonica cultivar-group), Tetrahymena thermophila, Drosophila melanogaster, Lemur catta, Sus scrofa, Thermoanaerobacter tengcongensis, Oryza sativa, Tetrahymena pyriformis, Caenorhabditis elegans, uncultured bacterium, Lotus corniculatus var. japonicus, Mycoplasma mobile, Mycoplasma capricolum, Arabidopsis thaliana" 20
- 5257 5387 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Lotus corniculatus var. japonicus, Medicago truncatula, Zea mays, Arabidopsis thaliana, Saccharomyces cerevisiae, Medicago sativa, Danio rerio, Mesembryanthemum crystallinum, Lycopersicon esculentum" 20
- 5258 5388 83 "Borrelia burgdorferi B31, Borrelia burgdorferi, Campylobacter jejuni, Clostridium acetobutylicum, Campylobacter jejuni subsp. jejuni NC TC 11168, Drosophila melanogaster, Mus musculus, Homo sapiens, Arabidopsis thaliana, Helicobacter hepaticus ATCC 51449, Clostridium tetani E88, Coelomomyces stegomyiae, Vibrio parahaemolyticus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Helicobacter pylori J99, Danio rerio, Saccharomyces cerevisiae, Staphylococcus aureus subsp. aureus Mu50" 30
- 5259 5389 27 "Pneumocystis carinii, Mus musculus, Homo sapiens, Schistosoma japonicum, Mycoplasma hominis, Cicindela patruela, Cicindela sexguttata, Oryzias latipes, Oryza sativa (japonica cultivar-group), Danio rerio, Human immunodeficiency virus 1, Caenorhabditis elegans" 30
- 5260 5390 30 "Arabidopsis thaliana, Homo sapiens, Rickettsia conorii, Mus musculus, Kluyveromyces delphensis, Oryza sativa (japonica cultivar-group), Acute bee paralysis virus, Ciona intestinalis" 40
- 5261 5391 28 "Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Pan troglodytes, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pyrococcus furiosus DSM 3638, Buxus microphylla subsp. sinica, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NC TC 11168, Plasmodium vivax, Danio rerio, Medicago truncatula" 40
- 5262 5392 31 "Homo sapiens, Flaveria pringlei, Plasmodium falciparum 3D7, Mus musculus, Sus scrofa, Sclerodontium pallidum, Sclerodontium clavinerve, Arabidopsis thaliana, Oryza sativa (indica cultivar-group), Lotus corniculatus var. japonicus, Zymomonas mobilis, Oryza sativa (japonica cultivar-group), Danio 50

- rerio, *Asterias amurensis*, *Rattus norvegicus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Dictyostelium discoideum*, *Aspergillus parasiticus*, *Drosophila melanogaster*, *Mycoplasma pulmonis*, *Bacillus subtilis*, *Caenorhabditis elegans*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Ixodes persulcatus*, *Latimeria chalumnae*, *Xenopus laevis*, *Escherichia fergusonii*, *Clostridium perfringens* str. 13"
- 5263 5393 27 "Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Homo sapiens, Bacillus sp. LU11, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus MW2, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Medicago truncatula, Gallus gallus" 10
- 5264 5394 29 "Mus musculus, Homo sapiens, Saccharomyces cerevisiae, Pan troglodytes, Lemur catta, Thermoanaerobacter tengcongensis, Plasmodium vivax, Drosophila picticornis, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Methanosarcina thermophila"
- 5265 5395 24 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Trachurus murphyi, Arabidopsis thaliana, Trachurus trachurus, Oryza sativa (japonica cultivar-group), Trachurus japonicus"
- 5266 5396 27 "Homo sapiens, Gallus gallus, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Drosophila melanogaster, Pan troglodytes, Shewanella oneidensis MR-1, Streptococcus mutants UA159, Bacteriophage HK620, Alibertia pilosa, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Lycopersicon esculentum, Danio rerio, Streptococcus pneumoniae, Lotus corniculatus var. japonicus, Listeria innocua, Rattus norvegicus" 20
- 5267 5397 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sus scrofa, Caenorhabditis briggsae, Rhizopus oryzae, Saccharomyces cerevisiae, Blackburnia costata, Rattus norvegicus, Arabidopsis thaliana, Caenorhabditis elegans, Gigaspora margarita, Pan troglodytes"
- 5268 5398 24 "Mus musculus, Homo sapiens, Drosophila melanogaster, Bacillus anthracis str. Ames, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Narke japonica, Papio anubis, Methanosarcina mazei Goe1, Poeciliopsis prolifica, Cetoscarus bicolor, Tylosurus acus melanotus, Noturus gyrinus, Oryzias latipes, Fundulus zebrinus, Plasmodium falciparum 3D7, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Prochlorococcus marinus subsp. marinus str. CCMP1375, Rattus norvegicus, Staphylococcus aureus subsp. aureus Mu50" 30
- 5269 5399 31 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Cyanidium caldarium, Pelecinus polyturator, Dictyostelium discoideum, Tetrahymena thermophila, Caenorhabditis elegans, Mycoplasma pulmonis, Lycopersicon esculentum, Plasmodium falciparum 3D7, Sulfolobus tokodaii, Danio rerio, Rattus norvegicus, Candidatus Carsonella ruddii, Drosophila melanogaster, Torrubietta confragosa, Human immunodeficiency virus 1, Pan troglodytes, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rickettsia conorii, Clostridium acetobutylicum, Rickettsia prowazekii, Clostridium botulinum, Campylobacter jejuni subsp. jejuni NCTC 11168, Chlamydomonas reinhardtii, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus MW2, Clostridium botulinum phage 1C, Xynobius maculipes, Plasmodium falciparum, Clostridium botulinum D phage" 40
- 5270 5400 27 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Guillardia theta, Prochlorococcus marinus, 50

- Neisseria meningitidis* Z2491, *Mycoplasma pulmonis*, *Ciona intestinalis*, *Danio rerio*"
- 5271 5401 30 "Bacillus anthracis str. Ames, *Danio rerio*, *Rattus norvegicus*, *Xenopus laevis*, *Staphylococcus epidermidis* ATCC 12228, *Homo sapiens*, *Mus musculus*, *Staphylococcus epidermidis*, *Mycoplasma penetrans*, *Drosophila melanogaster*, *Clostridium tetani*, *Fuertesimalva limensis*, Human papillomavirus type 91, *Rivulus marmoratus*, *Mycoplasma hyopneumoniae*, *Oryza sativa* (japonica cultivar-group), *Mantidactylus horridus*, *Deinococcus radiodurans*, Human papillomavirus"
- 5272 5402 27 "Homo sapiens, *Drosophila melanogaster*, *Pan troglodytes*, *Arabidopsis thaliana*, *Mus musculus*, *Bacillus lynceorum*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Oryctolagus cuniculus*, *Sorghum bicolor*, *Bos taurus*, *Caenorhabditis briggsae*, *Chelonus* sp. 'Jones et al.', *Sus scrofa*, *Rana rugosa*" 10
- 5273 5403 28 "Perga condei, *Mus musculus*, *Buchnera aphidicola* str. Bp (Baizongia pistaciae), *Methanosarcina acetivorans* C2A, *Homo sapiens*, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Danio rerio*, *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Petunia x hybrida*, *Pyrococcus furiosus* DSM 3638, *Lotus corniculatus* var. japonicus, *Bombyx mori*"
- 5274 5404 27 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Leptospira interrogans* serovar lai str. 56601, *Campylobacter jejuni*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oryza sativa* (japonica cultivar-group), *Thermoplasma volcanium*, *Saccharomyces cerevisiae*, *Danio rerio*, *Methanocaldococcus jannaschii*" 20
- 5275 5405 25 "Medicago truncatula, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Pan troglodytes*, *Protopterus aethiopicus*, *Euthynnus alletteratus*, *Synechocystis* sp. PCC 6803"
- 5276 5406 27 "Homo sapiens, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Dictyostelium discoideum*, *Canis familiaris*, *Danio rerio*, *Schizosaccharomyces pombe*, *Salmonella typhimurium*, *Nostoc* sp. PCC 7120, *Salmonella enterica* subsp. enterica serovar Muenchen" 30
- 5277 5407 24 "Mus musculus, *Streptococcus thermophilus* bacteriophage 7201, *Homo sapiens*, Human endogenous retrovirus KC4, *Vibrio parahaemolyticus*, *Pan troglodytes*, *Clostridium perfringens* str. 13"
- 5278 5408 39 "Homo sapiens, *Streptococcus agalactiae* 2603V/R, *Clostridium acetobutylicum*, *Streptococcus agalactiae* NEM316, *Leptospira interrogans* serovar lai str. 56601, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Pasteurella multocida*, *Mus musculus*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Danio rerio*, *Staphylococcus aureus* subsp. aureus Mu50" 40
- 5279 5409 36 "Plasmodium falciparum 3D7, *Danio rerio*, *Mus musculus*, *Homo sapiens*, *Pan troglodytes*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Caenorhabditis elegans*, *Rhacocarpus purpurascens*, *Allium roylei*, *Allium cepa*, *Allium cornutum*, *Allium schoenoprasum*, *Allium asarense*, *Allium griffithianum*, *Allium altaicum*, *Allium fistulosum*, *Allium galanthum*, *Allium sativum*, *Allium ampeloprasum*"
- 5280 5410 27 "Mus musculus, *Danio rerio*, *Homo sapiens*, *Drosophila melanogaster*, *Oryza sativa*, *Populus nigra*, *Pan troglodytes*, *Chelonus inanitus* braco virus, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. au 50

reus MW2, *Staphylococcus aureus* subsp. *aureus* Mu50"

- 5281 5411 25 "Homo sapiens, *Butyrivibrio fibrisolvens*, *Chlamydomonas reinhardtii*, *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Dictyostelium discoideum*, *Danio rerio*, *Schizosaccharomyces pombe*"
- 5282 5412 27 "Homo sapiens, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Zea mays*, *Mus musculus*, *Tetrahymena thermophila*, *Arabidopsis thaliana*, Bacteriophage Aeh1, *Marchantia polymorpha*, *Nostoc* sp. PCC 7120"
- 5283 5413 28 "Homo sapiens, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Entamoeba dispar*, *Oryctolagus cuniculus*, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*" 10
- 5284 5414 30 "Homo sapiens, *Medicago truncatula*, *Danio rerio*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Rhizomucor miehei*, *Megaselia scalaris*, *Lotus corniculatus* var. *japonicus*"
- 5285 5415 23 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Danio rerio*, *Sus scrofa*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Babesia rodhaini*"
- 5286 5416 24 "*Xylella fastidiosa* Temecula1, *Mus musculus*, *Caenorhabditis elegans*, *Homo sapiens*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Anolis ophiolepis*, *Prochlorococcus marinus*, *Raphanus sativus*, *Sinapis alba*, *Brassica juncea*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Xenopus laevis*, *Danio rerio*" 20
- 5287 5417 31 "*Medicago truncatula*, *Homo sapiens*, *Mus musculus*, *Guillardia theta*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Pan troglodytes*, *Drosophila melanogaster*, Bovine herpesvirus 4, *Trichophyton rubrum*, *Listeria innocua*, *Danio rerio*"
- 5288 5418 24 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, Dengue virus type 3, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Danio rerio*, *Macaca fascicularis*, *Arabidopsis thaliana*"
- 5289 5419 28 "*Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mus musculus*, *Branchiostoma floridae*, *Homo sapiens*, *Caenorhabditis elegans*, Cowpox virus, *Vaccinia virus*, *Buchnera aphidicola*, *Plasmodium falciparum* 3D7, *Ectromelia virus*, *Camelpox virus* CMS, *Helminthosporium victoriae* 145S virus, *Methanosarcina acetivorans* C2A, *Arabidopsis thaliana*, *Vaccinia virus* (strain Tian Tan), *Danio rerio*, *Camelpox virus* M-96" 30
- 5290 5420 23 "*Mus musculus*, *Panicum chloroleucum*, *Homo sapiens*, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Paspalidium geminatum*, *Pseudomonas putida* KT2440, *Triticum monococcum*, *Emericella nidulans*, *Helicobacter hepaticus* ATCC 51449" 40
- 5291 5421 31 "*Leptospira interrogans* serovar *lai* str. 56601, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Homo sapiens*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (indica cultivar-group), *Sorghum bicolor*, *Arabidopsis thaliana*, *Drosophila erecta*, *Spalangia cameroni*, *Rattus norvegicus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Clostridium acetobutylicum*, *Danio rerio*, *Rickettsia prowazekii*, *Caenorhabditis briggsae*, *Odontella sinensis*, *Lotus corniculatus* var. *japonicus*, *Zygomonas mobilis*, *Oryza sativa* (japonica cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Salganea taylori*"
- 5292 5422 32 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Nostoc* sp. PCC 7120" 50

- 7120, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Candidatus Carsonella ruddii*, *Staphylococcus carnosus*, *Medicago truncatula*"
- 5293 5423 29 "Vibrio parahaemolyticus, *Staphylococcus aureus* subsp. *aureus* MW2, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Xenopus laevis*, *Danio rerio*"
- 5294 5424 27 "Homo sapiens, *Lotus corniculatus* var. japonicus, *Lycopersicon esculentum*, *Mus musculus*, *Caenorhabditis elegans*, *Cafeteria roenbergensis*, *Drosophila melanogaster*, *Cryptocercus clevelandi*, *Saccharomyces cerevisiae*, *Cryptocercus punctulatus*" 10
- 5295 5425 24 "Homo sapiens, *Papio anubis*, *Mus musculus*, *Rattus norvegicus*, *Paralameyctes weberi*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Ovine adenovirus 7*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Clostridium perfringens* str. 13"
- 5296 5426 26 "Sus scrofa, *Homo sapiens*, *Rattus norvegicus*, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Bacteriophage phi3626*, *Periplaneta americana*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27" 20
- 5297 5427 27 "Arabidopsis thaliana, *Homo sapiens*, *Schizosaccharomyces pombe*, *Danio rerio*, *Drosophila melanogaster*, *Mus musculus*, *Vibrio vulnificus* CM CP6, *Rattus norvegicus*, *Caenorhabditis elegans*, *Macaca mulatta*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Papio anubis*, *Ciona intestinalis*"
- 5298 5428 24 "Homo sapiens, *Rattus norvegicus*, *Caenorhabditis elegans*, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Bos taurus*, *Streptococcus pneumoniae* TIGR4, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Brassica rapa*"
- 5299 5429 20 "Mus musculus, *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Schmidtea mediterranea*, *Homo sapiens*, *Listeria innocua*, *Synechocystis* sp. PCC 6803" 30
- 5300 5430 23 "Clostridium perfringens str. 13, *Cricetulus griseus*, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Schizosaccharomyces pombe*, *Arabidopsis thaliana*"
- 5301 5431 35 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Microrhizomys minutus*, *Prunus dulcis*, *Clostridium acetobutylicum*, *Macaca fascicularis*, *Danio rerio*"
- 5302 5432 32 "Homo sapiens, *Danio rerio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Mus musculus*, *Dictyostelium discoideum*, *Enterococcus faecalis* V583, *Medicago truncatula*, *Goatpox virus*, *Sheeppox virus*, *Lumpy skin disease virus*, *Callimico goeldii*, *Lycopersicon esculentum*, *Anemone flaccida*, *Liolaemus coeruleus*, *Caenorhabditis elegans*, *Ictalurus punctatus*, *Arabidopsis thaliana*, *Vibrio haliotocoli*, *Methanocaldococcus jannaschii*, *Nostoc* sp. PCC 7120" 40
- 5303 5433 33 "Homo sapiens, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Anopheles gambiae*, *Leptospira interrogans* serovar lai str. 56601, *Mus musculus*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Goatpox virus*, *Sheeppox virus*, *Lotus corniculatus* var. japonicus, *Oceanobacillus iheyensis* HTE831, *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Lumpy skin disease vir* 50

us"

- 5304 5434 21 "Lotus corniculatus var. japonicus, Homo sapiens, Escherichia coli CFT073, Oryza sativa (indica cultivar-group), Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana"
- 5305 5435 48 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Dictyostelium discoideum, Arabidopsis thaliana, Chlorobium tepidum TLS, Cryptosporidium parvum, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Chlamydoabsidia padenii, Absidia repens, Clostridium perfringens str. 13"
- 5306 5436 31 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Acinetobacter lwoffii, Heterodera glycines, Zea mays, Lycopersicon esculentum, Arabidopsis thaliana, Human herpesvirus 7, Schizosaccharomyces pombe, Danio rerio"
- 5307 5437 23 "Homo sapiens, Mus musculus, Vibrio vulnificus CMCP6, Lactobacillus himalayana, Lycopersicon esculentum, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana"
- 5308 5438 28 "Homo sapiens, Arabidopsis thaliana, Schizosaccharomyces pombe, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Methanosarcina acetivorans C2A, Danio rerio, Rattus norvegicus"
- 5309 5439 24 "Mus musculus, Homo sapiens, Chlamydia muridarum, Thermoanaerobacter tengcongensis, Hordeum vulgare subsp. vulgare, Danio rerio, Encephalitozoon cuniculi"
- 5310 5440 68 "Candidatus Blochmannia floridanus, Prochlorococcus marinus, Saccharomyces cerevisiae, Escherichia coli CFT073, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Xylella fastidiosa Temecula1, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Porphyromonas gingivalis W83, Escherichia coli B, Pan troglodytes, Salmonella typhimurium LT2, Shigella flexneri 2a str. 2457T, Homo sapiens, Rattus norvegicus, Salmonella enterica subsp. enterica serovar Typhi Ty2, Vibrio vulnificus CMCP6, Drosophila melanogaster, Schistosoma mediterranea, Shigella flexneri 2a str. 301, Mus musculus, Escherichia coli O157:H7 EDL933, Escherichia coli, Escherichia coli K12, Chlamydia trachomatis, Bacillus halodurans, Salmonella enterica subsp. enterica serovar Typhi, Echinococcus multilocularis, Escherichia coli O157:H7"
- 5311 5441 49 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Aquifex aeolicus VF5, Homo sapiens, Brucella melitensis 16M, Brucella suis 1330, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Sinorhizobium meliloti, Mycobacterium tuberculosis CDC1551, Mycobacterium tuberculosis H37Rv, Campylobacter jejuni subsp. jejuni NCTC 11168, Mycobacterium bovis subsp. bovis AF2122/97, Clostridium perfringens str. 13, Rattus norvegicus, Gallus gallus, Leishmania mantrii dispar cypovirus 1"
- 5312 5442 78 "Ureaplasma urealyticum, Mycoplasma penetrans, Listeria innocua, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Saccharomyces cerevisiae, Lactococcus lactis subsp. lactis, Schizosaccharomyces pombe, Candidatus Blochmannia floridanus, Arabidopsis thaliana, Mus musculus, Mycoplasma capricolum, Homo sapiens, Staphylococcus aureus, Streptococcus pyogenes MGA S315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Prochlorococcus marinus subsp. marinus str. CCMP1375, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"

- 5313 5443 35 "Homo sapiens, Clostridium acetobutylicum, Escherichia coli CFT073, Arabidopsis thaliana, Aquifex aeolicus VF5, Mus musculus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Thermotoga maritima, Hyalophora cecropia"
- 5314 5444 31 "Homo sapiens, Mus musculus, Lactococcus lactis subsp. lactis, Danio rerio, Paramecium tetraurelia, Brachyspira hyodysenteriae, Triticum monococcum, Caenorhabditis elegans, Arabidopsis thaliana, Lymnaea stagnalis, Thermoplasma volcanium, Didelphis virginiana, Saccharomyces cerevisiae"
- 5315 5445 27 "Homo sapiens, Mus musculus, Pan troglodytes, Oryza sativa (japonica cultivar-group), Tuber melanosporum, Tuber indicum, Arabidopsis thaliana, Oryza sativa, Clostridium acetobutylicum, Mycoplasma penetrans" 10
- 5316 5446 38 "Mus musculus, Rattus norvegicus, Homo sapiens, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, At"
- 5317 5447 50 "Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Cordyceps brongniartii, Medicago truncatula, Bos taurus, Rattus norvegicus, Dictyostelium discoideum, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Ricettsia conorii, Necator americanus, Ancylostoma duodenale, Schizosaccharomyces pombe, Myrium hochstetteri, Pan troglodytes, Oryza sativa (japonica cultivar-group), Schizosaccharomyces octosporus, Drosophila littoralis, Tetrahymena thermophila, Gallus gallus" 20
- 5318 5448 42 "Plasmodium falciparum 3D7, Homo sapiens, Cotesia sesamiiae, Neocallimastix patriciarum, Saccharomyces douglasii, Dictyostelium discoideum, Pan troglodytes, Drosophila melanogaster, unidentified entomopoxvirus, Arabidopsis thaliana, Ureaplasma urealyticum, Mu"
- 5319 5449 44 "Caenorhabditis elegans, Lotus corniculatus var. japonicus, Homo sapiens, Mus musculus, Tetrahymena thermophila, Drosophila melanogaster, Penicillium marneffeii, Dictyostelium discoideum, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Caenorhabditis briggsae, Macaca fascicularis, Pan troglodytes, Medicago truncatula, Schmidtea mediterranea, Canscora andrographioides, Canscora alata, Oryza sativa (indica cultivar-group), Cicer arietinum, Plasmodium falciparum, Danio rerio, Gossypium barbadense, Rattus norvegicus, Arabidopsis thaliana, Daucus carota, Penstemon dissectus, Penstemon heterophyllus, Penstemon barbatus var. torreyi, Penstemon rostriflorus, Calocedrus formosana, Glycine max" 30
- 5320 5450 38 "Homo sapiens, Plasmodium falciparum 3D7, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Danio rerio, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Buchnera aphidicola str. Sg (Schizaphis graminum), Thermoanaerobacter tengco" 40
- 5321 5451 32 "Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Thamnophis cyrtopsis, Lycopersicon esculentum, Heterodera glycines, Mus musculus, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Human immunodeficiency virus 1, Sulfolobus tokodaii"
- 5322 5452 27 "Mycoplasma gallisepticum R, Homo sapiens, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Dictyostelium discoideum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Oryza sativa (japonica cultivar-group), Mus musculus"
- 5323 5453 25 "Homo sapiens, Dictyostelium discoideum, Drosophila mela" 50

- nogaster, *Drosophila erecta*, *Phaseolus coccineus*, *Schizosaccharomyces pombe*, *Mus musculus*, *Gallus gallus*"
- 5324 5454 24 "Mus musculus, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Feline herpesvirus 1*, *Oryza sativa* (japonica cultivar-group), *Hemiechinus auritus*"
- 5325 5455 27 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Eulemur fulvus albifrons*, *Eulemur fulvus fulvus*, *Eulemur fulvus sanfordi*, *Eulemur fulvus rufus*, *Eulemur fulvus mayottensis*, *Dictyostelium discoideum*, *Rattus norvegicus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Drosophila yakuba*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Adoxophyes honmai nucleopolyhedrovirus*, *Schizosaccharomyces pombe*, *Nostoc* sp. PCC 7120" 10
- 5326 5456 31 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Pan troglodytes*, *Helicobacter pylori*, *Danio rerio*"
- 5327 5457 24 "Mus musculus, *Pan troglodytes*, *Homo sapiens*, *Oryza sativa*, *Oryza sativa* (japonica cultivar-group), *Human immunodeficiency virus 1*, *Plasmodium falciparum* 3D7, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Danio rerio*, *Streptococcus pyogenes* SSI-1, *Rattus norvegicus*, *Anopheles gambiae*" 20
- 5328 5458 27 "Drosophila melanogaster, *Mus musculus*, *Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group)"
- 5329 5459 25 "Drosophila melanogaster, *Homo sapiens*, *Borrelia burgdorferi* B31, *Danio rerio*, *Mus musculus*, *Caenorhabditis elegans*"
- 5330 5460 28 "Rattus norvegicus, *Homo sapiens*, *Caenorhabditis elegans*, *Chlamydomonas debaryana*, *Mus musculus*, *Medicago truncatula*, *Mus musculus domesticus*, *Danio rerio*"
- 5331 5461 25 "Bacillus cereus ATCC 14579, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Clostridium acetobutylicum*, *Porphyromonas gingivalis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Catarrhanthus roseus*, *Porphyromonas gingivalis* W83, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Human immunodeficiency virus 1*, *Oryza sativa* (indica cultivar-group), *Medicago truncatula*, *Sorghum bicolor*, *Schizosaccharomyces pombe*" 30
- 5332 5462 23 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Leishmania major*, *Arabidopsis thaliana*, *Gallus gallus*, *Danio rerio*"
- 5333 5463 31 "Mus musculus, *Homo sapiens*, *Rattus norvegicus*, *Rickettsia conorii*, *Danio rerio*, *Bacteroides thetaiotaomicron* VPI-5482, *Dictyostelium discoideum*, *Vibrio vulnificus* CMCP6, *Ciona intestinalis*"
- 5334 5464 27 "Homo sapiens, *Mus musculus*, *Mya arenaria*, *Human immunodeficiency virus 1*, *Papio anubis*, *Calyperes palisotii*, *Oryctolagus cuniculus*, *Rattus norvegicus*, *Plasmodium falciparum*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Mytilus edulis*, *Sus scrofa*, *Thermoplasma volcanium*, *Oryza sativa* (japonica cultivar-group), *Bombyx mori*, *Arabidopsis thaliana*" 40
- 5335 5465 31 "Homo sapiens, *Danio rerio*, *Dictyostelium discoideum*, *Methanosarcina mazei* Goe1, *Mus musculus*, *Haemophilus ducreyi*, *Haemophilus ducreyi* 35000HP, *Toxoplasma gondii*, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Polytrichadelphus umbrosus*, *Polytrichadelphus aristatus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Lepto* 50

- spira interrogans serovar lai str. 56601, Candidatus Carsonella ruddii, Drosophila littoralis, African swine fever virus, Sulfolobus solfataricus, Escherichia coli O157:H7 EDL933, Pasteurella multocida, Mycoplasma pulmonis, Colorado tick fever virus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Anopheles gambiae, Emericella nidulans, Escherichia coli O157:H7"
- 5336 5466 27 "Homo sapiens, Mus musculus, Oryzias latipes, Plasmodium falciparum 3D7, Danio rerio, Trypanosoma cruzi, Pan troglodytes, Caenorhabditis elegans, Lemur catta, Felis catus, Arabidopsis thaliana, Dictyostelium discoideum, Bos taurus, Acholeplasma laidlawii, Rickettsia conorii, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Oceanobacillus ihayensis HTE831, Mycoplasma hyopneumoniae" 10
- 5337 5467 32 "Homo sapiens, Brassica oleracea, Caenorhabditis elegans, Pirellula sp., Mus musculus, Nostoc sp. PCC 7120, Coxiella burnetii RSA 493, Aquifex aeolicus VF5, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii, Camelus bactrianus"
- 5338 5468 23 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Caenorhabditis elegans, Staphylococcus aureus, Danio rerio" 20
- 5339 5469 27 "Borrelia burgdorferi B31, Dictyostelium discoideum, Homo sapiens, Guillardia theta, Danio rerio, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mus musculus, Pan troglodytes, Drosophila melanogaster, Methanosarcina mazei Goe1, Glycine ma"
- 5340 5470 72 "Clostridium acetobutylicum, Danio rerio, Drosophila melanogaster, Arabidopsis thaliana, Homo sapiens, Caenorhabditis elegans, Methanocaldococcus jannaschii, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Xylella fastidiosa Temecula1, Papio anubis, Mus musculus, Listeria monocytogenes, Listeria innocua, Sorghum bicolor, Rattus norvegicus" 30
- 5341 5471 41 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Lactococcus lactis subsp. cremoris, Lactococcus lactis subsp. lactis, Lactococcus lactis, Drosophila melanogaster, Caenorhabditis elegans, Danio rerio, Saccharomyces cerevisiae"
- 5342 5472 27 "Mus musculus, Homo sapiens, Guillardia theta, Danio rerio, Arabidopsis lyrata, Arabidopsis lyrata subsp. lyrata, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Cucumis sativus"
- 5343 5473 28 "Homo sapiens, Mus musculus, Phanas sp. MCH-2001, Palmatogecko rangei, Drosophila melanogaster, Pachydactylus capensis, Medicago truncatula, Pachydactylus tuberculosus, Pachydactylus austeni, Methanosarcina acetivorans C2A, Lotus corniculatus var. japonicus, Listeria innocua" 40
- 5344 5474 29 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Dictyostelium discoideum, Pisum sativum, Rickettsia prowazekii, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168"
- 5345 5475 24 "Mus musculus, Cryptosporidium parvum, Caenorhabditis briggsae, Homo sapiens, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Arabidopsis thaliana, Plasmodium falciparum, Chlamydomonas" 50

- ila pneumoniae, Caenorhabditis elegans, Salmonella enterica subsp. enterica sero var Typhi, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio"
- 5346 5476 25 "Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Chlamydomonas reinhardtii, Mus musculus, Oryza sativa (japonica cultivar-group), Canis familiaris, Lactococcus lactis subsp. lactis, Pasteurella multocida, Danio rerio, Haemophilus ducreyi 35000HP"
- 5347 5477 27 "Homo sapiens, Plasmodium falciparum 3D7, Coccidioides posadasii, Mus musculus, Prochlorococcus marinus, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Oryza sativa, Arabidopsis thaliana, Schizosaccharomyces pombe" 10
- 5348 5478 25 "Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus, Haemophilus influenzae Rd KW20"
- 5349 5479 24 "Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Sus scrofa, Equine infectious anemia virus"
- 5350 5480 24 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Medicago truncatula, Drosophila melanogaster, Danio rerio, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Zea mays, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Lactobacillus plantarum WCFS1" 20
- 5351 5481 23 "Caenorhabditis elegans, Prochlorococcus marinus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Staphylococcus aureus subsp. aureus Mu50, Homo sapiens"
- 5352 5482 27 "Chlamydia trachomatis, Homo sapiens, Mus musculus, Danio rerio"
- 5353 5483 32 "Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Mus musculus, Human parainfluenza virus 1 strain Washington/1964, Danio rerio, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Piromyces equi, Recombinant PIV3/PIV1 virus, Human parainfluenza virus 1, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Raninoides louisianensis, Dictyostelium discoideum, Terriswalkerius liber, Yersinia pestis KIM, Methanosarcina acetivorans C2A, Clostridium acetobutylicum, Lactococcus lactis subsp. lactis, Mycoplasma pneumoniae, Pauesia silana, Pauesia silvestris, Pauesia pini, Geobacillus stearothermophilus, Yersinia pestis C092, Rattus norvegicus" 30
- 5354 5484 25 "Homo sapiens, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Caenorhabditis briggsae, Arabidopsis thaliana, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Guillardia theta, Danio rerio, Pediococcus pentosaceus, Beta vulgaris, Lotus corniculatus var. japonicus" 40
- 5355 5485 27 "Glycine max, Mus musculus, Solanum tuberosum, Homo sapiens, Pan troglodytes, Dictyostelium discoideum, Caenorhabditis elegans, Danio rerio"
- 5356 5486 34 "Oceanobacillus iheyensis HTE831, Yersinia pestis KIM, Yersinia pestis C092, Listeria innocua, Mus musculus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Sorghum bicolor, Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Lactococcus lactis subsp. lactis, Danio rerio, Coxiella burnetii RSA 493, Medicago truncatula, Candida albicans, Anas platyrhynchos, Caenorhabditis elegans, Helicobacter pylori 26695, Schizosaccharomyces pombe" 50

ces pombe, Halichoeres tenuispinnis"

5357 5487 28 "Cowpox virusMus musculus, Homo sapiens, Danio rerio, Medicago truncatula, Methanosarcina mazei Goe1, Clostridium tetani E88, Candidatus Carsonella ruddii, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Penicillium urticae, Nostoc sp. PCC 7120"

5358 5488 29 "Gallus gallus, Pichia anomala, Homo sapiens, Mycoplasma gallisepticum R, Bos taurus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Mus musculus"

5359 5489 27 "Homo sapiens, Vibrio vulnificus CMCP6, Mus musculus, Thermoanaerobacterium thermophilum"

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5360 5490 24 "Homo sapiens, Mus musculus, Bacillus anthracis str. Ames, Clostridium acetobutylicum, Sus scrofa, Danio rerio"

5361 5491 36 "Methanosarcina mazei Goe1, Homo sapiens, Sulfolobus tokodaii, Mus musculus, Clostridium acetobutylicum, Lotus corniculatus var. japonicus, Pan troglodytes, Treponema pallidum, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Rattus norvegicus, Lymphocystis disease virus 1, Lactococcus lactis subsp. lactis, Campylobacter jejuni subsp. jejuni NCTC 11168, Staphylococcus epidermidis, Caenorhabditis elegans, Listeria monocytogenes, Pichia canadensis, Bacillus halodurans"

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5362 5492 24 "Caenorhabditis elegans, Danio rerio, Neurospora crassa, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Eudistylia vancouveri"

5363 5493 26 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Drosophila melanogaster, Takifugu rubripes, Arabidopsis thaliana"

5364 5494 47 "Mus musculus, Escherichia coli, Plasmodium falciparum 3D7, Homo sapiens, Prochlorococcus marinus, Saimiriine herpesvirus 2, Oryza sativa (japonica cultivar-group), Danio rerio, Arabidopsis thaliana, Salmonella typhimurium LT2, Bacillus anthracis str. Ames, Vibrio vulnificus CMCP6, Drosophila melanogaster, Caenorhabditis elegans, Rattus norvegicus, Spodoptera litura nucleopolyhedrovirus, Sus scrofa, Cyanidium caldarium, synthetic construct, Takifugu rubripes"

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5365 5495 26 "Homo sapiens, Clostridium perfringens str. 13, Arabidopsis thaliana, Mus musculus, Danio rerio, Mus sp., Enterococcus faecalis V583, Drosophila melanogaster, Caenorhabditis elegans, Pasteurella multocida, Reclinomonas americana"

5366 5496 35 "Haemophilus ducreyi 35000HP, Homo sapiens, Caenorhabditis elegans, Danio rerio, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lactococcus lactis subsp. lactis, Bacteriophage bIL310, Mus musculus, Plasmodium falciparum 3D7, Pan troglodytes, Oryza sativa (japonica cultivar-group), Papio anubis, Arabidopsis thaliana, Caenorhabditis briggsae, Mycoplasma penetrans, Anomobryum conicum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Melanoplus sanguinipes entomopoxvirus"

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5367 5497 39 "Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Mus musculus, Macrodiplax cora, Euglena spirogyra, Antheraea pernyi, Danio rerio, Medicago truncatula, Spodoptera exigua nucleopolyhedrovirus, Rickettsia conorii, Caenorhabditis elegans, Borrelia burgdorferi B31, Vibrio vulnificus CMCP6, Drosophila melanogaster, Lemur catta, Sus scrofa, Thermoanaerobacter tengcongensis, Ladona fulva, Amsacta moorei entomopoxvirus, Saccharomyces cere

50

- visiae, *Euglena gracilis*, *Lotus corniculatus* var. japonicus, *Saccharomyces* sp. I FO 1815, *Spinacia oleracea*, *Haemophilus influenzae* Rd KW20, *Pseudoregma panicola*, *Pneumocystis carinii*"
- 5368 5498 27 "Mus musculus, Homo sapiens, Rattus norvegicus, Buchnera aphidicola str. Bp (*Baizongia pistaciae*), Plasmodium falciparum 3D7, Human papillomavirus type 5, Yaba-like disease virus, Petalonyx nitidus, Arabidopsis thaliana, Danio rerio, Phinaea albiflora, Saccharomyces cerevisiae, Human papillomavirus type 5b"
- 5369 5499 27 "Mus musculus, Homo sapiens, Buchnera aphidicola (*Pemphigus spyrothecae*), Coxiella burnetii RSA 493, Caenorhabditis briggsae, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rattus norvegicus" 10
- 5370 5500 31 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Tomato spotted wilt virus, Chlamydomonas reinhardtii GPIC, Clostridium tetani E88, Medicago sativa, Souroubea loczyi, Arabid" 10
- 5371 5501 25 "Drosophila melanogaster, Homo sapiens, Mus musculus, Danio rerio, Buchnera aphidicola str. APS (*Acyrtosiphon pisum*)"
- 5372 5502 52 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Pyrococcus furiosus DSM 3638, Campylobacter jejuni subsp. jejuni NCTC 11168, Human herpes virus 7, Bacillus subtilis subsp. subtilis str. 168, Triticum aestivum, Bacillus subtilis" 20
- 5373 5503 76 "Bacillus halodurans, Bacillus cereus ATCC 14579, Rickettsia prowazekii, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Listeria monocytogenes, Staphylococcus aureus subsp. aureus Mu50, Plasmodium falciparum 3D7, Lactobacillus plantarum WCFS1, Homo sapiens, Mus musculus, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Rickettsia conorii, Pasteurella multocida, Streptococcus agalactiae NEM316, Danio rerio, Plasmodium reichenowi, Listeria innocua, Mycoplasma gallisepticum R, Dictyostelium discoideum, Helicobacter pylori, Caenorhabditis elegans, Arabidopsis thaliana, Gallid herpesvirus 1, Bos taurus, Plasmodium yoelii" 30
- 5374 5504 112 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Bacillus cereus ATCC 14579, Homo sapiens, Streptococcus agalactiae 2603V/R, Mus musculus, Saccharomyces cerevisiae, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Prochlorococcus marinus, Sulfolobus tokodaii, Danio rerio, Anabaena sp., Nostoc sp. PCC 7120" 40
- 5375 5505 31 "Caenorhabditis briggsae, Ornithodoros moubata, Homo sapiens, Mus musculus, Bordetella bronchiseptica, Bordetella pertussis, Caenorhabditis elegans, Ornithodoros porcinus domesticus, Ornithodoros porcinus porcinus, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Scyllarus arcus, Bacillus anthracis str. Ames, Drosophila melanogaster, Clostridium tetani E88, Plasmodium falciparum 3D7, Heterorhabditis sp., Heterorhabditis megidis, Seoul virus 80-39, Prochlorococcus marinus, Escherichia coli, Arabidopsis thaliana, Escherichia coli K12, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mycoplasma genitalium, Danio rerio, Saccharomyces cerevisiae"
- 5376 5506 25 "Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Ho 50

- mo sapiens, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Haemophilus influenzae*, *Haemophilus influenzae* Rd KW20, *Nostoc* sp. PCC 7120, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus solfataricus*, *Danio rerio*, *Oryza sativa* (indica cultivar-group), *Ciona intestinalis*"
- 5377 5507 35 "Mycoplasma pulmonis, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Mycoplasma penetrans*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Pan troglodytes*, *Staphylococcus epidermidis* ATCC 12228, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Clostridium acetobutylicum*, *Staphylococcus epidermidis*, *Listeria monocytogenes*" 10
- 5378 5508 25 "Danio rerio, *Mus musculus*, *Homo sapiens*, *Bacillus sphaericus*, *Bacillus halodurans*, *Vibrio vulnificus* CMCP6, *Plasmodium falciparum* 3D7, *Gossypium hirsutum*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Caenorhabditis elegans*"
- 5379 5509 58 "Danio rerio, *Vibrio cholerae*, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27, *Lactobacillus reuteri*, *Arabidopsis thaliana*, *Lactobacillus fermentum*"
- 5380 5510 23 "Homo sapiens, *Clostridium perfringens* str. 13, *Caenorhabditis elegans*, *Mus musculus*, *Methanothermobacter thermautotrophicus* str. Delta H, *Arabidopsis thaliana*, *Eubacterium acidaminophilum*, *Danio rerio*" 20
- 5381 5511 23 "Homo sapiens, *Abrothrix jelskii*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*"
- 5382 5512 27 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Escherichia coli* 0157:H7 EDL933, Stx1 converting bacteriophage, Stx2 converting bacteriophage II, Stx2 converting bacteriophage I, *Oryza sativa* (japonica cultivar-group), *Escherichia coli* 0157:H7, Bacteriophage 933W, Bacteriophage VT2-Sa, *Caenorhabditis elegans*, *Danio rerio*"
- 5383 5513 28 "Homo sapiens, *Rattus norvegicus*, *Leptospira interrogans* serovar lai str. 56601, *Mus musculus*, *Dictyostelium discoideum*, *Zea mays*, *Arabidopsis thaliana*, *Staphylococcus aureus*, *Prochlorococcus marinus*, *Rickettsia prowazekii*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50" 30
- 5384 5514 27 "Danio rerio, *Homo sapiens*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Mus musculus*, *Clostridium tetani* E88, *Streptococcus mutans* UA159, *Ciona intestinalis*, *Drosophila melanogaster*, *Lepidium pinnatifidum*, *Lepidium latifolium*, *Lepidium cordatum*, *Oceanobacillus iheyensis* HTE831, *Clostridium perfringens* str. 13"
- 5385 5515 24 "Homo sapiens, *Borrelia burgdorferi* B31, *Mus musculus*, *Borrelia burgdorferi*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Caenorhabditis briggsae*, *Methanothermococcus thermolithotrophicus*, *Mycoplasma mycoides* subsp. *mycoides* LC, Turnip mosaic virus, *Sulfolobus tokodaii*, *Danio rerio*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375" 40
- 5386 5516 35 "Mus musculus, *Homo sapiens*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Helicobacter bizzozeronii*, *Lotus corniculatus* var. japonicus, *Leishmania tropica*, *Oryza sativa* (japonica cultivar-group), Lumpy skin disease virus, *Oikopleura longicauda*" 50

- 5387 5517 41 "Homo sapiens, Sulfolobus solfataricus, Arabidopsis thaliana, Bacillus halodurans, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Danio rerio, Mus musculus, Atelerix albiventris, Clostridium tetani E88, Hevea brasiliensis"
- 5388 5518 32 "Homo sapiens, Papio hamadryas, Drosophila melanogaster, Mus musculus, Avenzoaria totani, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Synechocystis sp. PCC 6803"
- 5389 5519 119 "Buchnera aphidicola str. Bp (Baizongia pistaciae), Clostridium acetobutylicum, Streptococcus agalactiae NEM316, Pseudomonas syringae pv. tomato str. DC3000, Helicobacter hepaticus ATCC 51449, Bacillus cereus ATCC 14579, Prochlorococcus marinus, Homo sapiens, Bacillus halodurans, Mus musculus, Streptococcus agalactiae 2603V/R, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Mycoplasma pulmonis, Deinococcus radiodurans, Triticum aestivum, Treponema pallidum" 10
- 5390 5520 27 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Leptospira interrogans serovar lai str. 56601, Brucella melitensis 16M, Bacillus anthracis str. A2012, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Sulfolobus tokodaii, Bacillus anthracis, Methanocaldococcus jannaschii, Dictyostelium discoideum, Bluetongue virus, Gallus gallus" 20
- 5391 5521 40 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Mus musculus, Helicobacter hepaticus ATCC 51449, Homo sapiens, Bacteroides fragilis"
- 5392 5522 23 "Homo sapiens, Arabidopsis thaliana, Danio rerio, Rattus norvegicus, Mus musculus, Medicago truncatula"
- 5393 5523 30 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Daktulosphaera vitifoliae, Psychotria horizontalis, Camelpox virus CMS, Danio rerio, Saccharomyces cerevisiae, Amaranthus hypochondriacus, Camelpox vir" 30
- 5394 5524 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Zymomonas mobilis, Lactococcus lactis, Drosophila melanogaster, Pan troglodytes, Streptococcus mutans UA159, Danio rerio, Staphylococcus epidermidis, Oceanobacillus iheyensis HTE831, Cytophaga sp. KUC-1"
- 5395 5525 39 "Clostridium perfringens str. 13, Prochlorococcus marinus, Haemophilus ducreyi 35000HP, Neisseria meningitidis MC58, Homo sapiens, Medicago truncatula, Mus musculus, Oryctolagus cuniculus, Drosophila melanogaster, Methanosarcina mazei Goe1, Naegleria gruberi, Danio rerio, Oryza sativa (japonica cultivar-group), Prochlorococcus marinus subsp. marinus str. CCMP1375, Cryptosporidium parvum" 40
- 5396 5526 23 "Homo sapiens, Arabidopsis thaliana, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Lotus corniculatus var. japonicus, Ralstonia solanacearum, Mus musculus"
- 5397 5527 27 "Drosophila melanogaster, Mus musculus, Streptococcus agalactiae NEM316, Danio rerio, Homo sapiens, Rickettsia conorii"
- 5398 5528 25 "Mus musculus, Gallus gallus, Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Porphyromonas gingivalis, Nicotiana tabacum, Medicago truncatula, Xanthomonas campestris pv. campestris str. ATCC 33913, Danio rerio, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Lactobacillus plantarum WCFS1, Haemophilus influenzae Rd KW20, S" 50

- taphylococcus aureus subsp. aureus Mu50"
- 5399 5529 36 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Mus musculus, Lactobacillus plantarum WCFS1, Swertia volkensii, Drosophila melanogaster, Gallus gallus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Oceanobacillus iheyensis HTE831, Thermotoga maritima, Bacteriophage B103"
- 5400 5530 33 "Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Papio anubis, Drosophila melanogaster, Caenorhabditis elegans, Pasteurella multocida, Arabidopsis thaliana, Streptococcus thermophilus bacteriophage Sfi11, Vibrio parahaemolyticus, Coxiella burnetii RSA 493, Pantroglodytes, Plasmodium falciparum 3D7, Escherichia coli CFT073, Canis familiaris, Saccharomyces cerevisiae, Pneumocystis carinii" 10
- 5401 5531 23 "Mus musculus, Thermoanaerobacter tengcongensis, Homo sapiens, Oryza sativa (japonica cultivar-group), Triticum monococcum, Chironomus thummi thummi, Chironomus thummi, Lotus corniculatus var. japonicus, Porphyra purpurea"
- 5402 5532 31 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Danio rerio, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Haemophilus influenzae Rd KW20" 20
- 5403 5533 27 "Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Clostridium tetani E88, Mus musculus, Caenorhabditis elegans, Schizosaccharomyces pombe, uncultured cyanobacterium"
- 5404 5534 26 "Danio rerio, Homo sapiens, Arabidopsis thaliana, Andricus coriarius, Chlorobium tepidum TLS, Andricus tinctoriusnostrus, Andricus conglomeratus, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Prochlorococcus marinus, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Rio Bravo virus, Trypanosoma brucei" 30
- 5405 5535 25 "Homo sapiens, Mus musculus, Oceanobacillus iheyensis HTE831, Methanosarcina mazei Goe1, Clostridium tetani, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Plasmodium chabaudi"
- 5406 5536 29 "Homo sapiens, Lotus corniculatus var. japonicus, Plasmodium falciparum 3D7, Rickettsia prowazekii, Arabidopsis thaliana, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Danio rerio, Gallus gallus, Mus musculus, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Prunus armeniaca, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Saccharomyces cerevisiae, Zea mays, Staphylococcus aureus subsp. aureus Mu50" 40
- 5407 5537 44 "Homo sapiens, Danio rerio, Mus musculus, Oryza sativa, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Candida albicans, Arabidopsis thaliana, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Carassius auratus, Trypanosoma cruzi, Rattus norvegicus, Medicago truncatula, Pantroglodytes, Drosophila melanogaster, Papio anubis, Schmidtea mediterranea"
- 5408 5538 41 "Homo sapiens, Dictyostelium discoideum, Glycine max, Mus musculus, Meloidogyne chitwoodi, Paramecium tetraurelia, Caenorhabditis elegans" 50

- s, *Tropheryma whipplei* str. Twist, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Pasteurella multocida*, *Strongylocentrotus purpuratus*, *Danio rerio*, *Listeria monocytogenes*, *Mycoplasma genitalium*, *Bos taurus*, *Tropheryma whipplei* TW08/27, *Bescherellia elegantissima*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Ephedrus californicus*, *Arabidopsis thaliana*, *Adelges cooleyi*, *Oryza sativa*, *Pueraria phaseoloideis*, *Clostridium acetobutylicum*, *Smittium coloradense*, *Clostridium botulinum*, *Pisum sativum*, *Oryza sativa* (indica cultivar-group), *Guillardia theta*, *Euglena gracilis*, *Oceanobacillus iheyensis* HTE831"
- 5409 5539 40 "Homo sapiens, Mus musculus, Danio rerio, Arabidopsis thaliana, Spizellomyces punctatus, Euglena gracilis, Oryza sativa (japonica cultivar-group), Macaca fascicularis, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum " 10
- 5410 5540 31 "Homo sapiens, Drosophila melanogaster, Mus musculus, Danio rerio, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Neisseria meningitidis MC58, Thermoplasma volcanium, Arabidopsis thaliana, Buchnera aphidicola str. Sg (Schizaphis graminum), Pseudomonas aeruginosa, Goatpox virus, Pyrobaculum aerophilum str. IM2, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii" 20
- 5411 5541 29 "Mus musculus, Homo sapiens, Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, Enterococcus faecalis V583, Arabidopsis thaliana, Guillardia theta, Rattus norvegicus, Danio rerio, Mus musculus domesticus, Baruna trigranulum" 20
- 5412 5542 27 "Arabidopsis thaliana, Homo sapiens, Danio rerio, Pan troglodytes, Listeria monocytogenes, Mus musculus, Drosophila melanogaster, Mycoplasma pulmonis, Clostridium perfringens str. 13" 20
- 5413 5543 32 "Arabidopsis thaliana, Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus, Drosophila melanogaster, African swine fever virus, Human papillomavirus, Tolypothrix sp. PCC 7601, Schizosaccharomyces pombe, Danio rerio, Helicobacter hepaticus ATCC 51449, Bacillus halodurans" 30
- 5414 5544 27 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Pan troglodytes, Drosophila melanogaster, Entamoeba histolytica, Leptospira interrogans serovar lai str. 56601, Shewanella oneidensis MR-1, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Danio rerio, Ciona intestinalis, Bacillus cereus ATCC 14579, Medicago truncatula, Influenza A virus (A/Wisconsin/10/98 (H1N1)), Dictyostelium discoideum, Torribiella confragosa, Plasmodium falciparum 3D7, Cephalops cochleatus, Arabidopsis thaliana, Influenza A virus (A/NJ/11/76 (H1N1)), Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Influenza A virus (A/Swine/Quebec/5393/91 (SwQc91)), Influenza A virus (A/Swine/Quebec/192/81 (SwQc81)), Brugia malayi, Asterozampa clyton, Influenza A virus, Pisum sativum, Rhizopus microsporus var. oligosporus" 40
- 5415 5545 32 "Drosophila melanogaster, Mus musculus, Homo sapiens, Takifugu rubripes, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Methanocaldococcus jannaschii, Paramecium tetraurelia, Dictyostelium discoideum, Rattus norvegicus, Danio rerio, Brachyserphus abruptus, Medicago truncatula, Arabidopsis thaliana, Caenorhabditis elegans, Human immunodeficiency virus 1, Saccharomyces cerevisiae, Papio anubis, Pan troglodytes, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Plasmodium vivax, Osmia excavata, Saccharomyces uvarum, Plasmodium chabaudi, synthetic construct, Saccharomyces dairenensis, Odobenus rosmarus rosmarus, Cyanidioschyzon merolae" 40

- 5416 5546 31 "Chlamydia trachomatis, Shewanella oneidensis MR-1, Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio"
- 5417 5547 35 "Chlamydia muridarum, Homo sapiens, Buchnera aphidicola str. Bp (Baizongia pistaciae), Mus musculus, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Chlamydophila pneumoniae TW-183, Gallus gallus, Caenorhabditis elegans, Pasteurella multocida, Chlamydia trachomatis, Candida albicans, Bacillus halodurans"
- 5418 5548 28 "Homo sapiens, Staphylococcus aureus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Human immunodeficiency virus 1, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Staphylococcus aureus subsp. aureus Mu50" 10
- 5419 5549 23 "Homo sapiens, Mus musculus, Rattus norvegicus, Equus caballus, Medicago truncatula, Enterococcus faecalis V583, Dictyostelium discoideum, Arabidopsis thaliana, Sulfolobus solfataricus, Lactococcus lactis subsp. lactis, Escherichia coli O157:H7 EDL933, Oryza sativa (japonica cultivar-group), Glycine max, Escherichia coli O157:H7"
- 5420 5550 25 "Homo sapiens, Coxiella burnetii RSA 493, Danio rerio, Mus musculus, Arabidopsis thaliana, Sus scrofa, Sulfolobus solfataricus, Crocus sativus"
- 5421 5551 53 "Vibrio parahaemolyticus, Haemophilus influenzae Rd KW20, Chlamydophila caviae GPIC, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Clostridium tetani E88, Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Zea mays, Clostridium acetobutylicum, Mus musculus, Methanosarcina acetivorans C2A, Chlamydophila pneumoniae CWL029, Caenorhabditis elegans, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Chlamydophila pneumoniae TW-183, Microtus rossiaemeridionalis" 20
- 5422 5552 29 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Pan troglodytes, Lycopersicon esculentum, Drosophila melanogaster, Drosophila flavomontana, Enterococcus columbae, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Enterococcus saccharolyticus, Enterococcus dispar, Streptococcus pyogenes M1 GAS, Arabidopsis thaliana, Brugia malayi, Streptococcus pyogenes SSI-1, Lota lota" 30
- 5423 5553 96 "Buchnera aphidicola str. Sg (Schizaphis graminum), Shewanella oneidensis MR-1, Cyanidium caldarium, Campylobacter jejuni subsp. jejuni NCTC 11168, Haemophilus ducreyi 35000HP, Medicago truncatula, Chlamydia muridarum, Chlamydia trachomatis, Homo sapiens, Lactococcus lactis subsp. lactis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Rattus norvegicus, Mus musculus, Rhizobium leguminosarum, Mycoplasma penetrans, Arabidopsis thaliana, Danio rerio" 40
- 5424 5554 31 "Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mus musculus, Lotus corniculatus var. japonicus, Porphyromonas gingivalis W83, Pan troglodytes, Danio rerio"
- 5425 5555 48 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Hepatozoon catesbiana, Mus musculus, Arabidopsis thaliana, Plasmodium vivax, Bombyx mori, Rattus norvegicus, Sulfolobus tokodaii, Danio rerio, Mycoplasma gallisepticum R, Hordeum vulgare, Dictyostelium discoideum, Diaeretiella rapae, Plasmodium falciparum 3D7, Campylobacter jejuni, Clostridium acetobutylicum, Solanum tuberosum, Oryza sativa (japonica cultivar-group)" 50

- 5426 5556 37 "Danio rerio, Lotus corniculatus var. japonicus, Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa, Nicotiana tabacum, Medicago truncatula, Dictyostelium discoideum, Glycine max, Bombyx mori, Cyprinus carpio, Trypanosoma brucei, Isonodon macrourus, Gallus gallus, Saccharomyces cerevisiae, Caenorhabditis elegans"
- 5427 5557 25 "Homo sapiens, Mus musculus, Arabidopsis thaliana"
- 5428 5558 24 "Mus musculus, Homo sapiens, Pseudomonas putida KT2440, Oryza sativa (japonica cultivar-group), Danio rerio, Ovis aries"
- 5429 5559 23 "Mus musculus, Pan troglodytes, Homo sapiens, Arabidopsis thaliana, Drosophila virilis" 10
- 5430 5560 28 "Arabidopsis thaliana, Staphylococcus aureus, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Chloranthus spicatus, Danio rerio"
- 5431 5561 27 "Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Arabidopsis thaliana"
- 5432 5562 27 "Mus musculus, Homo sapiens, Papio papio, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Caenorhabditis elegans, Methanocaldococcus jannaschii" 20
- 5433 5563 31 "Neurospora crassa, Mus musculus, Homo sapiens, Rattus norvegicus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Leishmania major, Pan troglodytes, Caenorhabditis elegans, Oleria sp., Oryza sativa (japonica cultivar-group), Schizophyllum commune, Tetraodon nigroviridis, Physalis mottle virus, Arabidopsis thaliana, Leishmania infantum, Plasmodium falciparum 3D7, Echinops telfairi, Mus sp., Papio anubis, Dromiciops gliroides, Ovis aries, Tenebrio molitor"
- 5434 5564 28 "Homo sapiens, Rattus norvegicus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Bryum ruderale, Mus musculus, Pisum sativum, Enterococcus faecalis V583, Rhodobryum keniae, Haplodontium reticulatum, Haplodontium megalocarpum, Bryum radiculosum, Bryum pseudotriquetrum, Bryum pachytheca, Bryum orthothecium, Bryum lisaе, Bryum gemmiferum, Bryum funckii, Bryum cyclophyllum, Bryum coronatum, Bryum clavatum, Bryum cellulare, Bryum capillare, Bryum caespiticium, Bryum bicolor, Bryum argenteum, Bryum algovicum, Brachymerium pulchrum, Brachymerium preissianum, Brachymerium philonotula, Brachymerium globosum, Anomobryum prostratum, Anomobryum julaceum, Anomobryum conicum, Acidodontium subrotundum, Acidodontium sprucei, Caenorhabditis elegans, Clostridium acetobutylicum, Arabidopsis thaliana, Plasmodium falciparum 3D7, Canis familiaris, Gallus gallus, Cryptosporidium parvum, Mus sp." 30
- 5435 5565 24 "Homo sapiens, Mus musculus, Pan troglodytes, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Shewanella oneidensis MR-1, Staphylococcus epidermidis, Neurospora crassa, Schizosaccharomyces pombe, Danio rerio" 40
- 5436 5566 31 "Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Peromyscus maniculatus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Homo sapiens, Felis catus, Oryza sativa, Danio rerio, Saccharomyces cerevisiae, Medicago truncatula, Arabidopsis thaliana, Carya illinoensis, Petromyzon marinus, Caenorhabditis elegans, Gossypium hirsutum, Caenorhabditis briggsae, Magnaporthe grisea, Ajellomyces capsulatus, Arachis hypogaea"
- 5437 5567 23 "Mus musculus, Homo sapiens, Drosophila melanogaster, Sh 50

- Shigella flexneri* 2a, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Shigella flexneri*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Danio rerio*, *Plasmodium falciparum*"
- 5438 5568 30 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Trypanosoma cruzi*, *Medicago truncatula*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Gonioctena olivacea*, *Arabidopsis thaliana*, *Danio rerio*, *Staphylococcus epidermidis*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*"
- 5439 5569 29 "Homo sapiens, *Lactococcus lactis* subsp. *lactis*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Mus musculus*, *Rattus norvegicus*, *Sulfolobus solfataricus*, *Caenorhabditis briggsae*" 10
- 5440 5570 32 "Dictyostelium discoideum, *Drosophila melanogaster*, *Mus musculus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Bacillus subtilis*, *Plasmodium falciparum*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Ciona intestinalis*, *Papio anubis*, *Fusarium sporotrichioides*, *Arabidopsis thaliana*, *Gallus gallus*, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Oryctolagus cuniculus*, *Medicago truncatula*, *Equus caballus*, *Drosophila pseudoobscura*, *Pundamilia pundamilia*, *Takifugu rubripes*, *Canis familiaris*, *TT virus*, *Glycine max*, *Medicago sativa*, *Magnaporthe grisea*, *Oryza sativa* (japonica cultivar-group), *Xenopus laevis*, *Oryza sativa*, *Sinatherina socialis*" 20
- 5441 5571 32 "Homo sapiens, *Arabidopsis thaliana*, *Chironomus tentans*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Phalaenopsis viridis*, *Drosophila*"
- 5442 5572 32 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Danio rerio*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Oryza sativa* (indica cultivar-group), *Mus musculus*, *Trypanosoma evansi*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Trypanosoma equiperdum*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Euperipatoides rowelli*, *Clostridium acetobutylicum*, *Pan troglodytes*, *Botryotinia fuckeliana*, *Caenorhabditis elegans*, *Zea mays*, *Sus scrofa*, *Mesocentrus* sp., *Oryza sativa*, *Candidatus Carsonella ruddii*, *Haemophilus influenzae*, *Aglais urticae*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Meloidogyne javanica*, *Ciona intestinalis*, *Takifugu rubripes*, *Stylosanthes humilis*" 30
- 5443 5573 32 "Homo sapiens, *Danio rerio*, *Drosophila melanogaster*, *Mus musculus*, *Glomus mosseae*, *Listeria monocytogenes*, *Listeria innocua*, *Lupinus luteus*, *Nostoc* sp. PCC 7120, *Dictyostelium discoideum*, *Vibrio vulnificus* CMCP6, *Clostridium tetani* E88, *Clematis integrifolia*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Medicago truncatula*, *Sulfolobus tokodaii*, *Plodia interpunctella*, *Saccharomyces cerevisiae*" 40
- 5444 5574 27 "*Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Mus musculus*, *Homo sapiens*, *Harpochytrium* sp. JEL94, *Caenorhabditis elegans*, *Danio rerio*, *Canis familiaris*"
- 5445 5575 24 "*Didelphis virginiana*, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*"
- 5446 5576 31 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Xenopus laevis*, *Mus musculus*, *Drosophila melanogaster*, *Ectemnia reclusa*, *Prochlorococcus marinus*" 50

us subsp. marinus str. CCMP1375, *Danio rerio*, *Buchnera aphidicola* str. Bp (*Baizonia pistaciae*), *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Haemophilus influenzae* Rd KW20, *Streptococcus agalactiae* 2603V/R, *Lycopersicon esculentum*, *Maoricicada hamiltoni*, *Rickettsia conorii*, *Prochlorococcus marinus*, *Streptococcus agalactiae* NEM316, *Candidatus Blochmannia floridanus*, *Mischocyttarus melanarius*, *Arabidopsis thaliana*, *Candida tropicalis*, *Campylobacter rectus*, *Emericella nidulans*, *Galleria mellonella*, *Clostridium perfringens* str. 13"

5447 5577 24 "Drosophila melanogaster, *Danio rerio*, *Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Ehrlichia canis*, *Arabidopsis thaliana*, *Saccharum officinarum*"

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5448 5578 29 "Mus musculus, *Homo sapiens*, *Lotus corniculatus* var. japonicus, *Medicago truncatula*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Salmonella enterica* subsp. enterica serovar Typhi Ty2, *Drosophila melanogaster*, *Shewanella oneidensis* MR-1, *Plasmodium falciparum*"

5449 5579 32 "Mus musculus, *Homo sapiens*, *Diaeretiella rapae*, *Dictyostelium discoideum*, *Apterostigma* cf. pilosum 'Wetterer 1989', *Amsacta moorei* entomopoxvirus, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Solanum demissum*, *Danio rerio*, *Thermosynechococcus elongatus*"

5450 5580 35 "Mus musculus, *Homo sapiens*, *Medicago truncatula*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Ehrlichia ruminantium*, *Bacteroides thetaiotaomicron* VPI-5482, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Gossypium hirsutum*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Rhesus cytomegalovirus* strain 68-1, *Leptospira interrogans* serovar lai str. 56601, *Medicago sativa*, *Borrelia burgdorferi* B31, *Xenopus laevis*, *Pan troglodytes*, *Lycopersicon esculentum*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Canis familiaris*, *Plasmodium falciparum*, *Caenorhabditis briggsae*, *Sassacus vitis*, *Tribolium castaneum*, *Drosophila obscura*, *Oryza sativa*, *Chironomus tentans*"

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5451 5581 32 "Mus musculus, *Blysmus compressus*, *Rattus norvegicus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Salmonella typhimurium* LT2, *Pan troglodytes*, *Buchnera aphidicola*"

5452 5582 28 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*"

5453 5583 27 "Leptospira interrogans serovar lai str. 56601, *Mycoplasma hominis*, *Homo sapiens*, *Mus musculus*, *Saxifragopsis fragarioides*, *Lycopersicon esculentum*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Solanum demissum*, *Streptococcus agalactiae* NEM316, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Caenorhabditis briggsae*, *Sulfolobus tokodaii*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Gracilaria chilensis*, *Takifugu rubripes*, *Macaca fascicularis*, *Clostridium perfringens* str. 13"

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5454 5584 32 "Caenorhabditis elegans, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Bombyx mori*, *Mycoplasma gallisepticum* R, *Rattus norvegicus*, *Dictyostelium discoideum*, *Sus scrofa*, *Staphylococcus epidermidis* ATCC 12228, *Tetrahymena thermophila*, *Arabidopsis thaliana*, *Guillardia theta*, *Rickettsia prowazekii*, *Ureaplasma urealyticum*, *Euglena longa*, *Staphylococcus*

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us epidermidis, *Danio rerio*"

- 5455 5585 32 "Takifugu rubripes, *Mus musculus*, *Homo sapiens*, *Schizosaccharomyces japonicus*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Pan troglodytes*, *Drosophila melanogaster*, *Streptococcus mutans*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Thraustochytrium aureum*, *Vibrio parahaemolyticus*, *Rattus norvegicus*, *Sulfolobus tokodaii*, *Schizosaccharomyces pombe*, *Clostridium perfringens* str. 13"
- 5456 5586 31 "Staphylococcus aureus, *Plasmodium falciparum* 3D7, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Medicago truncatula*, *Homo sapiens*, *Nostoc* sp. PCC 7120, *Mus musculus*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Human immunodeficiency virus 1*, *Oryza sativa*, *Rattus norvegicus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Mus* sp., *Mycoplasma gallisepticum* R, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Plasmodium falciparum*, *Mycoplasma pulmonis*, *Lotus corniculatus* var. japonicus, *Thermotoga maritima*, *Lactobacillus helveticus*, *Paramecium tetraurelia*, *Methanocaldococcus jannaschii*"
- 5457 5587 28 "*Homo sapiens*, *Caenorhabditis briggsae*, *Schizosaccharomyces pombe*, *Streptococcus agalactiae* 2603V/R, *Mus musculus*, *Streptococcus agalactiae* NEM316, *Danio rerio*, *Medicago truncatula*, *Bacteroides thetaiotaomicron* VPI-5482, *Entamoeba histolytica*, *Oceanobacillus iheyensis* HTE831, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Gallus gallus*, *Arabidopsis thaliana*"
- 5458 5588 28 "*Mus musculus*, *Arabidopsis thaliana*, *Homo sapiens*, *Methanococcus maripaludis*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Canis familiaris*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"
- 5459 5589 28 "*Mus musculus*, *Ciona intestinalis*, *Macaca mulatta*, *Homo sapiens*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Solanum tuberosum*, *Amsacta moorei* entomopoxvirus, *Danio rerio*"
- 5460 5590 28 "*Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Paramecium primaurelia*, *Drosophila melanogaster*, *Lycopersicon esculentum*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Danio rerio*, *Atelerix albiventris*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Medicago truncatula*, *Bacteroides thetaiotaomicron* VPI-5482, *Schmidtea mediterranea*, *Arabidopsis thaliana*, *Sus scrofa*, *Caenorhabditis briggsae*, *Saccharomyces cerevisiae*, *Brachyspira hyodysenteriae*"
- 5461 5591 36 "*Homo sapiens*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Drosophila montana*, *Drosophila borealis*, *Drosophila laticola*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Saccharomyces* sp. I"
- 5462 5592 28 "*Homo sapiens*, *Streptococcus mutans* UA159, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Rattus norvegicus*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Silene latifolia*, *Oryza sativa*, *Saccharomyces cerevisiae*, *Medicago tr*"
- 5463 5593 28 "*Caenorhabditis elegans*, *Mus musculus*, *Rattus norvegicus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Poecilia caucana*, *Pan troglodytes*, *Apis mellifera*, *Human immunodeficiency virus 1*, *Arabidopsis thaliana*, *Listeria innocua*, *Thermoplasma volcanium*, *Schizosaccharomyces pombe*, *Bacillus halodurans*"
- 5464 5594 32 "*Arabidopsis thaliana*, *Mus musculus*, *Homo sapiens*"
- 5465 5595 24 "*Mus musculus*, *Lactobacillus bacteriophage phi adh*, *Homo sapiens*, *Chlamydomonas reinhardtii* GPIC, *Bacillus cereus*, *Oryza sativa* (japonica cul

tivar-group), *Aeropyrum pernix*"

- 5466 5596 39 "Homo sapiens, Arabidopsis thaliana, Mycoplasma gallisepticum R, Danio rerio, Mus musculus, Saccharomyces exiguus, Papio anubis, Plasmodium falciparum 3D7, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Dictyostelium discoideum, Solanum tuberosum, Drosophila orena, Cyprinus carpio, Rattus norvegicus, Macaca mulatta, Pan troglodytes, Buchnera aphidicola str. Sg (Schizaphis graminum), Oryza sativa, Pneumocystis carinii, Morinda citrifolia, Vitis vinifera, Anopheles quadrimaculatus A, Pholistoma auritum, Phacelia thermalis, Codon schenkii, Drosophila erecta, Buchnera aphidicola, Wigglesworthia glossinidia endosymbiont of Glossina morsitans, Caenorhabditis elegans" 10
- 5467 5597 24 "Homo sapiens, Clostridium tetani E88, Schizosaccharomyces pombe, Helicobacter pylori"
- 5468 5598 28 "Mus musculus, Homo sapiens, Sulfolobus tokodaii, Artibeus jamaicensis"
- 5469 5599 33 "Danio rerio, Homo sapiens, Mus musculus, Helicobacter pylori 26695, Helicobacter pylori J99, Campylobacter jejuni subsp. jejuni NCTC 11168, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Campylobacter lari, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus Mu50" 20
- 5470 5600 23 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Vigna radiata, Caenorhabditis elegans, synthetic construct, Danio rerio"
- 5471 5601 28 "Homo sapiens, Rachiplusia ou multiple nucleopolyhedrovirus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Methanosarcina mazei Goe1, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Vibrio parahaemolyticus, Bombyx mori nuclear polyhedrosis virus, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Desulfovibrio africanus, Caenorhabditis briggsae, Medicago truncatula, Pachycereus schottii, Pachycereus gatesii, Avian rotavirus PO-13, Saccharomyces cerevisiae" 30
- 5472 5602 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Lycopersicon esculentum, Danio rerio, Oryza sativa, Arabidopsis thaliana, Rattus norvegicus"
- 5473 5603 43 "Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Turnera subulata, Rattus norvegicus, Hemerocallis dumortierii, Hemerocallis fulva var. disticha, Hemerocallis middendorffii, Hemerocallis coreana, Hemerocallis minor, Hemerocallis yezoensis, Hemerocallis vespertina, Ciona intestinalis, Bacillus anthracis str. Ames, Caenorhabditis elegans, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium tetani, Mus musculus, Shewanella oneidensis MR-1, Anemone flaccida, Ceuthophilus carlsbadensis, Plasmodium falciparum, Medicago truncatula, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Buchnera aphidicola str. Sg (Schizaphis graminum), Dictyostelium discoideum, Oryza sativa, Clostridium acetobutylicum, Sulfolobus solfataricus, Arabidopsis thaliana, Chironomus thummi, Hyphantria cunea, Zea mays" 40
- 5474 5604 30 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Clostridium perfringens str. 13, Dictyostelium discoideum, Caenorhabditis elegans, Lycopersicon esculentum, Danio rerio, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Drosophila melanogaster, La Crosse virus, Pan troglodytes, Bor 50

- relia burgdorferi B31, Takifugu rubripes, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Methanosarcina acetivorans C 2A, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Serratia marcescens, Klebsiella pneumoniae, Oryza sativa, Amsacta moorei entomopoxvirus, Felis catus, Medicago truncatula, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 5475 5605 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Medicago truncatula, Caenorhabditis elegans, Mus musculus, Beet soil-borne virus, Lycopersicon esculentum, Danio rerio"
- 5476 5606 37 "Lotus corniculatus var. japonicus, Dictyostelium discoideum, Mus musculus, Homo sapiens, Plasmodium yoelii yoelii, Oryza sativa, Plasmodium yoelii, Oryza sativa (japonica cultivar-group), Atelerix albiventris, Leptospira interrogans serovar lai str. 56601, "
- 5477 5607 29 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Danio rerio, Apis mellifera, Oryza sativa (japonica cultivar-group), Medicago truncatula, Lactococcus lactis subsp. lactis bv. diacetylactis, Pan troglodytes, Drosophila melanogaster, Clostridium tetani E88, Zea mays, Arabidopsis thaliana, Staphylococcus aureus, Clostridium acetobutylicum, Lactococcus lactis subsp. lactis, Anopterus macleayanus, Antheraea pernyi, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Gracilaria chilensis, Drosophila lini"
- 5478 5608 28 "Homo sapiens, Mus musculus, Lycopersicon esculentum, Craspedocarpus erosus, Craspedocarpus venosus, Schizoseris dichotoma, Puumala virus, Oryza sativa (japonica cultivar-group), Manis tetradactyla, Danio rerio, Dudresnaya japonica, Callophyllis violacea, Bos taurus, Pan troglodytes, Drosophila melanogaster, Caloglossa leprieurii, Halopithys incurva, Arabidopsis thaliana, Aglaothamnion tripinnatum, Schizoseris sp., Delesseria decipiens, Pasteurella multocida, Plasmodium falciparum 3D7, Kallymenia reniformis, Dilsea californica"
- 5479 5609 28 "Mus musculus, Homo sapiens, Vaccinia virus, Borrelia burgdorferi B31, Lycopersicon esculentum, Lotus corniculatus var. japonicus, Vaccinia virus (strain Tian Tan), Medicago truncatula, Drosophila erecta, Arabidopsis thaliana, Cowpox virus, Saccharomyces cerevisiae, Listeria innocua, Pyrus pyrifolia"
- 5480 5610 20 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Photobacterium luminescens, Thermoplasma acidophilum, Staphylococcus epidermidis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 5481 5611 24 "Homo sapiens, Didelphis virginiana, Mus musculus, Yersinia pestis KIM, Arabidopsis thaliana, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Pan troglodytes, Yersinia pestis C092, Prochlorococcus marinus subsp. marinus str. CCMP1375, Bacillus subtilis subsp. subtilis str. 168"
- 5482 5612 27 "Mus musculus, Homo sapiens, Schizosaccharomyces pombe, Rattus norvegicus, Pan troglodytes, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"
- 5483 5613 29 "Homo sapiens, Oryza sativa (japonica cultivar-group), Amsacta moorei entomopoxvirus, Nostoc sp. PCC 7120, Gallus gallus, Mus musculus, Danio rerio, Medicago truncatula, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Dictyostelium discoideum, Clostridium tetani E88, Polypterus bichir, Pasteurella multocida, Oceanobacillus iheyensis HTE831, Arabidopsis thaliana, Methanocaldococcus jannaschii, Rattus norvegicus"
- 5484 5614 23 "Xenopus borealis, Xenopus laevis, Leptospira interrogans"

- s serovar lai str. 56601, *Caenorhabditis elegans*, *Homo sapiens*, *Gallus gallus*, *Mus musculus*, *Cupiennius salei*, *Oryzias latipes*, *Ambystoma mexicanum*"
- 5485 5615 31 "Homo sapiens, *Drosophila melanogaster*, *Bombyx mori*, *Mus musculus*, *Danio rerio*, *Neurospora crassa*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Nicotiana tabacum*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Bacteriophage Aaphi23*, *Medicago truncatula*"
- 5486 5616 29 "Homo sapiens, *Papio anubis*, *Mus musculus*, *Caenorhabditis elegans*, *Danio rerio*, *Macaca fascicularis*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Microtus agrestis*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Plasmodium falciparum*, *Takifugu rubripes*, *Channa lucius virus*, *Lotus corniculatus* var. japonicus, *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Rattus norvegicus*" 10
- 5487 5617 24 "Homo sapiens, *Mus musculus*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Trichoderma hamatum*, *Plasmodium falciparum* 3D7, *Ricinus communis*, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Pan troglodytes*, *Zea mays*, *Methanosarcina acetivorans* C2A, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Trypanosoma brucei*, *Plasmodium knowlesi*, *Pyrococcus horikoshii*"
- 5488 5618 32 "Homo sapiens, *Gallus gallus*, *Drosophila melanogaster*, *Sus scrofa*, *Pan troglodytes*, *Papio anubis*, *Mus musculus*, *Escherichia coli*" 20
- 5489 5619 31 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*, *Pan troglodytes*, *Archaeoglobus fulgidus* DSM 4304, *Oryza sativa* (japonica cultivar-group), *Zea mays*, *Plasmodium falciparum* 3D7, *Rattus norvegicus*"
- 5490 5620 51 "Mus musculus, *Cotesia congregata*, *Danio rerio*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Cryptosporidium parvum*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Rattus norvegicus*, *Schistosoma mansoni*, *Schistosoma japonicum*, *Ciona intestinalis*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Drosophila melanogaster*, *Shrimp white spot syndrome virus*, *Saccharomyces cerevisiae*, *Anopheles gambiae*, *Triticum aestivum*, *Cryptococcus neoformans* var. grubii, *Pisum sativum*, *Ropalidia revolutionalis*, *Candida albicans*" 30
- 5491 5621 23 "Arabidopsis thaliana, *Danio rerio*, *Homo sapiens*, *Ciona intestinalis*, *Mesorhizobium loti*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Mus musculus*"
- 5492 5622 32 "Mus musculus, *Homo sapiens*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Pan troglodytes*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Trollius pumilus*, *Macaca mulatta*, *Varroa destructor*, *Bos taurus*, *Sycoscapter* sp. SYC.SP66, *Buchnera aphidicola*, *Schizosaccharomyces pombe*, *Methanocaldococcus jannaschii*, *Bombyx mori* nuclear polyhedrosis virus, *Arabidopsis thaliana*" 40
- 5493 5623 31 "Homo sapiens, *Clostridium acetobutylicum*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Buchnera aphidicola*, *Bacillus cereus* ATCC 14579, *Rickettsia prowazekii*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Lotus corniculatus* var. japonicus, *Medicago truncatula*, *Pneumocystis carinii*, *Nostoc* sp. PCC 7120, *Oryctolagus cuniculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Gallus gallus*, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Arabidopsis thaliana*, *Medicago sativa*, *Bos taurus*, *Canis familiaris*, *Prochlorococcus marinus*, *Oryza sativa* (japonica cultivar-group), *Vibrio*" 40

- rio parahaemolyticus, Pan troglodytes, Cafeteria roenbergensis, Goniomonas truncata, Schizosaccharomyces pombe, Cucumaria miniata, Thermosynechococcus elongatus BP-1, Methanocaldococcus jannaschii"
- 5494 5624 27 "Enkianthus campanulatus Isomeris arborea, Homo sapiens, Oryza sativa (japonica cultivar-group), Goyazia rupicola, Sinningia cooperi, Fieidia australis, Mitraria coccinea, Gesneria christii, Kohleria spicata, Achimenes skinneri, Paliavana prasinata, Monophy"
- 5495 5625 42 "Plasmodium falciparum 3D7, Homo sapiens, Danio rerio, Mus musculus, Dictyostelium discoideum, Plasmodium falciparum, Drosophila melanogaster, Chaetosphaeridium globosum, Orpinomyces sp. PC-2, Kluyveromyces marxianus, Arabidopsis thaliana, Medicago truncatula, Asellus aquaticus, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Xenopus laevis, Caenorhabditis elegans, Saccharomyces cerevisiae, Canis familiaris" 10
- 5496 5626 36 "Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Guillardia theta, Danio rerio, Homo sapiens, Atelerix albiventris, Rattus norvegicus, Dictyostelium discoideum, Plasmodium falciparum, Toxoplasma gondii, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rickettsia prowazekii, Euhadra peliomphala, Sminthopsis macroura, Papio anubis, Bos taurus, Malawimonas jakobiformis, Carabhydrus niger, Buchnera aphidicola str. Sg (Schizaphis graminum)" 20
- 5497 5627 44 "Arabidopsis thaliana, Aleochara curtula, Mus musculus, Caenorhabditis elegans, Homo sapiens, Clostridium acetobutylicum, Aleochara binotata, Aleochara cf. chrysorrhoea, Helianthus annuus, Cicer arietinum, Saccharomyces douglasii, Clostridium perfringens str. 13, Plasmodium falciparum 3D7, Prochlorococcus marinus, Leptopelis natalensis, Danio rerio, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Aglais urticae, Drosophila melanogaster, Dictyostelium discoideum, Streptococcus agalactiae 2603V/R, Pan troglodytes, Bracon phylacteophagus, Rickettsia conorii, Canavalia lineata, Mycoplasma capricolum, Streptococcus agalactiae NEM316, Aleochara lustrica, Exophiala spinifera, Oceanobacillus iheyensis HTE831, Enterobacteria phage RB69, Xenopus laevis, Gossypium hirsutum, Exophiala jeanselmei" 30
- 5498 5628 32 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Medicago truncatula, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Danio rerio, Echium russicum, Apalocnemis sp. NCSU-95051123, Rattus norvegicus, Pan troglodytes, Drosophila melanogaster, Mycoplasma pulmonis, Arabidopsis thaliana, Bos taurus, Plasmodium falciparum, Melanoplus sanguinipes entomopoxvirus, Solanum tuberosum, Cyprinus carpio, Caenorhabditis elegans, uncultured bacterium, Bacillus cereus ATCC 14579, Chlamydomonas reinhardtii, Papio anubis, Clostridium acetobutylicum, Caenorhabditis briggsae, Saccharomyces cerevisiae, Lotus corniculatus var. japonicus, Brachymerium globosum, Neocallimastix frontalis, Kluyveromyces waltii, Leptospira interrogans serovar lai str. 56601" 40
- 5499 5629 39 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Buchnera aphidicola, Plasmodium falciparum 3D7, Trypanosoma cruzi, Danio rerio, Cryptosporidium parvum, Polytomella agilis, Schistosoma japonicum, Pan troglodytes, Streptococcus pyogenes M1 GAS, Candidatus Blochmannia floridanus, Caenorhabditis briggsae, Plasmodium falciparum, Arabidopsis thaliana, Hydra vulgaris, Prototheca wickerhamii, Trypanosoma brucei, Rattus norvegicus, Crepidula cerithicola, Bacillus cereus ATCC 14579, Adiantum capillus-veneris, Dictyostelium discoideum, Lemur catta, Streptococcus pyogenes MGA S315, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Phthorimaea operculei" 50

la granulovirus, Buchnera aphidicola str. Sg (Schizaphis graminum)"

5500 5630 32 "Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryza sativa, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Streptococcus agalactiae, Danio rerio, Lycopersicon esculentum, Rattus norvegicus, Lemur catta, Drosophila melanogaster, Macaca mulatta, Gallus gallus, Arabidopsis thaliana, Goatpox virus, Sheeppox virus, Papio hamadryas, Papio anubis, Capra hircus, Lumpy skin disease virus, Pan troglodytes, Mycoplasma pulmonis, Mesobuthus gibbosus, Escherichia coli, Schizosaccharomyces pombe, Echinolittorina radiata, Cavia porcellus"

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5501 5631 28 "Rhaphiomydas terminatus abdominalis, Mus musculus, Prototheca wickerhamii, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Medicago truncatula, Synchaeta sp. AMD-2002, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Saccharomyces castellii, Vibrio cholerae 037, Glycine max, Euglena longa, Saccharomyces cerevisiae, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Oceanobacillus iheyensis HTE831, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Melanoplus sanguinipes entomopoxvirus, Oryctolagus cuniculus, Macrophthalmus banzai"

5502 5632 29 "Homo sapiens, Shrimp white spot syndrome virus, Solanum demissum, Mus musculus, Oryza sativa (japonica cultivar-group), Parvicirrus dubius, Caenorhabditis elegans, Lycopersicon esculentum, Botryotinia fuckeliana, Dictyostelium discoideum, Drosophila melanogaster, Medicago truncatula, Plasmodium falciparum 3D7, Polytomella parva, Hemiphysalis heterophyllum, Danio rerio, Anaciaeschna isocetes, Human papillomavirus type 41, Arabidopsis thaliana, Mycoplasma penetrans, Rattus norvegicus"

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5503 5633 35 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Danio rerio, Staphylococcus sciuri, Mus musculus, Caenorhabditis elegans, Prochlorococcus marinus, Lotus corniculatus var. japonicus, Opuntia marenae, Opuntia clavata, Opuntia bradtiana, Pterocactus kuntzei, Oryza sativa (japonica cultivar-group), Euphydryas colon, Euphydryas chalcedona, Euphydryas anicia, Arabidopsis thaliana, Aedes albopictus, Ochrosphaera neapolitana, Hemerocallis dumortierii, Hemerocallis fulva var. disticha, Hemerocallis middendorffii, Hemerocallis coreana, Hemerocallis minor, Hemerocallis yezoensis, Hemerocallis vespertina, Pedicularis chamissonis, Anopheles gambiae, Nostoc sp. PCC 7120, Dictyostelium discoideum, Pan troglodytes, Gallus gallus, Vesicular stomatitis Indiana virus"

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5504 5634 28 "Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Salmonella typhimurium, Salmonella enterica subsp. enterica serovar Enteritidis, Caenorhabditis briggsae, Rattus norvegicus, Lumpy skin disease virus, Trifolium subterraneum, Salmonella typhimurium LT2, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Dictyostelium discoideum, Caenorhabditis elegans, Schistosoma mansoni, Arabidopsis thaliana, Clostridium acetobutylicum, Amsacta moorei entomopoxvirus, Human immunodeficiency virus 1, Prototheca wickerhamii, Lotus corniculatus var. japonicus, Oryza sativa, Fagopyrum esculentum, Bacillus halodurans"

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5505 5635 78 "Bordetella bronchiseptica, Bordetella parapertussis, Bordetella pertussis, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Streptomyces avermitilis MA-4680, Streptomyces coelicolor A3(2), Streptomyces vinaceus, Streptomyces coelicolor, Pseudomonas"

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- 5506 5636 32 "Homo sapiens, Oryza sativa (japonica cultivar-group), Thelohelium populi-monilis, Periphyllus obscurus, Chaitophorus tremulae, Chaitophorus leucomelas, Chaitophorus truncatus, Chaitophorus nassonowi, Mus musculus, Schlechtendalia chinensis, Neophocaena phocae"
- 5507 5637 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Drosophila melanogaster, Nicotiana glauca"
- 5508 5638 56 "Prochlorococcus marinus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Pneumocystis carinii f. sp. ratti, Plasmodium falciparum, Plasmodium falciparum 3D7, Homo sapiens, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Mus musculus, Mesembryanthemum crystallinum, Dictyostelium discoideum, Lupinus luteus, Lycopersicon esculentum, Schizosaccharomyces pombe, Equus caballus, Leptospira interrogans serovar lai str. 56601, Sorghum bicolor, Caenorhabditis elegans, Mannheimia haemolytica, Anopheles gambiae, Oryza sativa (japonica cultivar-group), Danio rerio, Medicago truncatula" 10
- 5509 5639 30 "Lupinus luteus, Nicotiana glauca, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola, Homo sapiens, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Sideritis montana, Sideritis gomeraea subsp. gomeraea, Felis catus, Oryza sativa (japonica cultivar-group), Mus musculus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Philodendron melinonii, Staphylococcus epidermidis ATCC 12228, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Prochlorococcus marinus, Ureaplasma urealyticum, Staphylococcus epidermidis, Danio rerio, Trichomonas vaginalis, Nicotiana glauca" 20
- 5510 5640 99 "Bacteroides thetaiotaomicron VPI-5482, Allium cepa, Prochlorococcus marinus subsp. marinus str. CCMP1375, Xenopus laevis, Xanthomonas campestris pv. campestris str. ATCC 33913, Homo sapiens, Nicotiana glauca, Coxiella burnetii RSA 493, Caenorhabditis elegans, Danio rerio, Mus musculus, Encephalitozoon cuniculi, Staphylococcus epidermidis ATCC 12228, Rattus norvegicus, Pyrobaculum aerophilum str. IM2, Triticum monococcum, Prochlorococcus marinus, Gallus gallus, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Mesembryanthemum crystallinum, Nicotiana glauca" 30
- 5511 5641 55 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Coxiella burnetii RSA 493, Xenopus laevis, Medicago truncatula, Homo sapiens, Mesorhizobium loti, Bacteroides thetaiotaomicron VPI-5482, Arabidopsis thaliana, Plasmodium falciparum, Plasmodium falciparum 3D7, Mus musculus, Drosophila melanogaster, Prionotropis hystrix rhodanica, Allium cepa, Aquifex pyrophilus, Danio rerio, Rattus norvegicus, Clostridium perfringens str. 13"
- 5512 5642 53 "Prochlorococcus marinus, Pneumocystis carinii f. sp. ratti, Medicago truncatula, Arabidopsis thaliana, Coxiella burnetii RSA 493, Mus musculus, Homo sapiens, Prochlorococcus marinus subsp. marinus str. CCMP1375, Oryza sativa (japonica cultivar-group), Zea mays, Plasmodium falciparum 3D7, Caenorhabditis elegans, Triticum aestivum, Bacillus anthracis str. Ames, Pan troglodytes, Drosophila melanogaster, Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Tetrahymena thermophila, Staphylococcus saccharolyticus, Pseudomonas phage phiKZ, Staphylococcus epidermidis, Danio rerio, Caenorhabditis briggsae, Rattus norvegicus, Venturia inaequalis" 40
- 5513 5643 35 "Lupinus luteus, Mus musculus, Homo sapiens, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Danio rerio, Clostridium sordellii, Dictyostelium discoideum, Drosophila melanogaster, Caulobacter crescentus CB15," 50

- Arabidopsis thaliana*, *Ophioglossum pedunculatum*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Caulobacter vibrioides*, *Nicotiana sylvestris*, *Nicotiana tabacum*"
- 5514 5644 52 "Saccharomyces cerevisiae, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Mus musculus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Staphylococcus epidermidis* ATCC 12228, *Oncomelania hupensis robertsoni*, *Danio rerio*, *Staphylococcus epidermidis*, *Iepidopso*"
- 5515 5645 32 "Dictyostelium discoideum, *Mus musculus*, *Caenorhabditis elegans*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Oryza sativa*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Arabidopsis th*" 10
- 5516 5646 27 "Bacillus subtilis subsp. subtilis str. 168, *Bacillus subtilis*, *Homo sapiens*, *Mus musculus*, *Gnatholepis anjerensis*, *Didelphis virginiana*, *Arabidopsis thaliana*, *Senna alata*, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Saccharum hybrid cultivar H32-8560*, *Corynebacterium glutamicum* ATCC 13032, *Nostoc* sp. PCC 7120"
- 5517 5647 27 "Solanum acaule, *Solanum tuberosum*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Amsacta moorei entomopoxvirus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Solanum pinnatisectum*, *Dictyostelium discoideum*, *Drosophila melanogaster*," 20
- 5518 5648 27 "Homo sapiens, *Mus musculus*, *Streptococcus mutans* UA159, *Human immunodeficiency virus 1*, *Danio rerio*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375"
- 5519 5649 28 "Homo sapiens, *Danio rerio*, *Amsacta moorei entomopoxvirus*, *Mus musculus*, *Oceanobacillus iheyensis* HTE831, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Camptotheca acuminata*, *Dictyostelium discoideum*, *Rattus norvegicus*, *Caenorhabditis briggsae*, *Bartonella quintana*, *Oryza sativa* (japonica cultivar-group), *Daucus carota*, *Anopheles gambiae*, *Ciona intestinalis*, *Melanoplus sanguinipes entomopoxvirus*, *Anopheles trinkae*, *Anopheles rangeli*, *Anopheles aquasalis*" 30
- 5520 5650 33 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27, *Mus musculus*, *Bacillus anthracis* str. Ames, *Oryzias latipes*, *Arabidopsis thaliana*, *Danio rerio*, *Clostridium perfringens* str. 13"
- 5521 5651 34 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Clostridium tetani* E88"
- 5522 5652 27 "Danio rerio, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, *Caenorhabditis elegans*, *Arion ater*, *Homo sapiens*, *Hypocrea lixii*, *Bacillus cereus* ATCC 14579, *Plasmodium falciparum* 3D7"
- 5523 5653 35 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Homo sapiens*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Leptospira interrogans* serovar *lai* str. 56601, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Borrelia burgdorferi* B31, *Arabidopsis thaliana*, *Human immunodeficiency virus 1*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Necator americanus*, *Prochlorococcus marinus*, *Danio rerio*, *Xenopus laevis*, *Caenorhabditis elegans*, *Chlamydomonas reinhardtii* GPIC, *Methanocaldococcus jannaschii*, *Felis catus*, *Clostridium perfringens* str. 13" 40
- 5524 5654 38 "Mus musculus, *Listeria monocytogenes*, *Homo sapiens*, Pro 50

- chlorococcus sp., *Danio rerio*, *Pan troglodytes*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Trypanosoma brucei*"
- 5525 5655 27 "Homo sapiens, *Takifugu rubripes*, *Mus musculus*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Drosophila virilis*, *Alcelaphus buselaphus lichtensteini*, *Alcelaphus buselaphus major*, *Danio rerio*"
- 5526 5656 27 "Mus musculus, Homo sapiens, *Pyrococcus furiosus* DSM 3638, *Pyrococcus abyssi*, *Lycopersicon esculentum*, *Ciona intestinalis*, *Zea mays*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group)"
- 5527 5657 23 "Mus musculus, Homo sapiens, *Caenorhabditis elegans*, *Danio rerio*, *Xenopus laevis*, *Escherichia coli* CFT073, *Oryza sativa* (*japonica* cultivar-group)" 10
- 5528 5658 29 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Rattus norvegicus*, *Vibrio vulnificus* CMCP6, *Arabidopsis thaliana*, *Pan troglodytes*, *Neisseria meningitidis* MC58, *Thermoplasma volcanium*, *Rattus* sp., *Danio rerio*, *Ciona intestinalis*, *Saccharomyces cerevisiae*, *Tetrahymena thermophila*"
- 5529 5659 23 "Medicago truncatula, Homo sapiens, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Medicago sativa*, *Pseudomonas aeruginosa*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Danio rerio*" 20
- 5530 5660 29 "Drosophila melanogaster, Homo sapiens, Peanut witches'-broom phytoplasma, *Danio rerio*, *Arabidopsis thaliana*, *Mus musculus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Choristoneura fumiferana* granulovirus, *Caenorhabditis elegans*, *Paralichthys olivaceus*, *Bos taurus*, *Rattus norvegicus*"
- 5531 5661 25 "Homo sapiens, *Haemophilus ducreyi*, *Haemophilus ducreyi* 35000HP, *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Bos taurus*, *Danio rerio*, *Pan troglodytes*"
- 5532 5662 23 "Homo sapiens, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Shewanella oneidensis* MR-1, *Mus musculus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group)" 30
- 5533 5663 23 "Homo sapiens, *Rattus norvegicus*, *Salmonella typhimurium* LT2, *Mus musculus*, *Arabidopsis thaliana*, *Drosophila virilis*"
- 5534 5664 27 "Mus musculus, Homo sapiens, *Bacillus anthracis* str. Ames, *Zea mays*, *Streptococcus agalactiae* 2603V/R, *Bos taurus*, *Streptococcus agalactiae* NEM316, *Danio rerio*"
- 5535 5665 23 "Homo sapiens, *Barbus* sp. CCST-2000, *Escherichia coli* O157:H7 EDL933, *Mus musculus*, *Danio rerio*, *Schizosaccharomyces pombe*, *Equus caballus*, *Escherichia coli* O157:H7"
- 5536 5666 24 "Mus musculus, *Arabidopsis thaliana*, Homo sapiens, *Borrelia burgdorferi*, *Caenorhabditis elegans*, *Danio rerio*, *Medicago truncatula*" 40
- 5537 5667 31 "Homo sapiens, *Caenorhabditis elegans*, *Clostridium acetobutylicum*, *Danio rerio*, *Dictyostelium discoideum*, *Mus musculus*, *Calymperes afzelii*, *Mycoplasma pulmonis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Drosophila melanogaster*, *Petromyzon marinus*, *Rattus norvegicus*, *Layia heterotricha*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Diolcogaster* cf. *xanthaspis* 'W.-Y. Choi', *Cydia pomonella*, *Guillardia theta*, *Lactococcus lactis*, *Mycoplasma hyorhinis*, *Pilotrichum fendleri*, *Pneumocystis carinii*, *Oryza sativa* (*japonica* cultivar-group), *Cerobasis guestfalica*, *Cyanophora paradoxa*, *Clostridium perfringens* str. 13" 50

- 5538 5668 66 "Clostridium tetani E88, Coxiella burnetii RSA 493, Coxiella burnetii, Mus musculus, Thermoanaerobacter tengcongensis, Synechococcus sp. WH 8102, Dictyostelium discoideum, Arabidopsis thaliana, Homo sapiens, Rickettsia prowazekii, Tatera kempii gambiana, Danio rerio, Bombyx mori"
- 5539 5669 27 "Homo sapiens, Spinacia oleracea, Mus musculus, Candida albicans, Staphylococcus epidermidis ATCC 12228, Clostridium acetobutylicum, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Artibeus jamaicensis, Danio rerio"
- 5540 5670 28 "Homo sapiens, Plasmodium falciparum 3D7, Bulbostylis juncooides, Oryza sativa (japonica cultivar-group), Abildgaardia ovata, Eucnide urens, Eucnide cordata, Eucnide bartonioides, Eucnide aurea, Hedyotis arenaria, Hedyotis alexanderae, Arabidopsis thaliana, V" 10
- 5541 5671 47 "Sulfolobus solfataricus, Streptococcus agalactiae 2603V/R, Homo sapiens, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Prochlorococcus marinus, Mus musculus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Rhodnius prolixus, Marcusenius sp. Nagoya University"
- 5542 5672 27 "Homo sapiens, Medicago truncatula, Danio rerio, Mus musculus, Citrobacter rodentium, Candidatus Blochmannia floridanus, Anopheles gambiae" 20
- 5543 5673 33 "Plasmodium falciparum 3D7, Homo sapiens, Chiromantes haematocheir, Mus musculus, Drosophila melanogaster, Dictyostelium discoideum, Euscyrtus amani, Mycoplasma capricolum subsp. capricolum, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Eimeria tenella"
- 5544 5674 35 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Danio rerio, Rattus norvegicus, Clostridium botulinum, Coxiella burnetii RSA 493, Helianthus annuus, Plasmodium falciparum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Helicobacter pylori, Oryza sativa (japonica cultivar-group), Clostridium botulinum A, Leishmania major, Lotus corniculatus var. japonicus, Clostridium perfringens str. 13" 30
- 5545 5675 27 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Bacillus cereus ATCC 14579, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis briggsae, Echinococcus granulosus, Vibrio parahaemolyticus, Oryza sativa, Methanocaldococcus jannaschii"
- 5546 5676 27 "Homo sapiens, Alexandrium excavatum, Mus musculus, Oryza sativa (japonica cultivar-group), Alexandrium tamarense"
- 5547 5677 27 "Homo sapiens, Sulfolobus solfataricus, Caenorhabditis elegans, Mus musculus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Listeria innocua, Schizosaccharomyces pombe, Ciona intestinalis, Haemophilus influenzae Rd KW20, Helicobacter hepaticus ATCC 51449, Staphylococcus aureus subsp. aureus Mu50, Oryza sativa (japonica cultivar-group)" 40
- 5548 5678 27 "Bacillus cereus ATCC 14579, Mus musculus, Human rhinovirus 86, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Homo sapiens, Pasteurella multocida, Caenorhabditis elegans, Ciona intestinalis, Danio rerio, Methanocaldococcus jannaschii"
- 5549 5679 30 "Buchnera aphidicola str. Sg (Schizaphis graminum), Homo sapiens, Taro bacilliform virus, Schmidtea mediterranea, Nostoc sp. PCC 7120, Drosophila melanogaster, Geobacillus stearothermophilus, Mus musculus, Caenorhabditis elegans, Phytophthora erythroseptica, Phytophthora drechsleri, Phytophthora 50

cryptogea, *Oryza sativa*, *Prochlorococcus marinus*, *Bacillus thuringiensis* serovar finitimus, *Arabidopsis thaliana*, *Pythium sulcatum*, *Pythium mamillatum*, *Pythium graminicola*, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Danio rerio*, *Petunia integrifolia* subsp. inflata, *Rattus norvegicus*"

- 5550 5680 31 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Caenorhabditis elegans*, *Boophilus microplus*, *Danio rerio*, *Ixodes persulcatus*, *Ixodes uriae*, *Ixodes scapularis*, *Ixodes pacificus*, *Ixodes nipponensis*, *Ixodes muris*, *Ixodes lasallei*, *Ixodes jellisoni*, *Ixodes nuttallianus*, *Ixodes granulatus*, *Ixodes gibbosus*, *Ixodes minor*, *Ixodes pavlovskyi*, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Lactococcus lactis* subsp. lactis, Dengue virus type 1, *Schizosaccharomyces pombe*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Pisum sativum*, *Arabidopsis thaliana*, *Tetrahymena thermophila*, *Takifugu rubripes*, *Antirrhinum hispanicum*, *Macaca mulatta*, *Lotus corniculatus* var. japonicus, *Ixodes affinis*, *Ixodes pararicinus*, *Ixodes woodi*, *Ixodes ricinus*" 10
- 5551 5681 27 "Danio rerio, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Pasteurella multocida*, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Methanosarcina acetivorans* C2A"
- 5552 5682 23 "*Drosophila melanogaster*, *Homo sapiens*, *Bassia scoparia*, *Mus musculus*, *Pan troglodytes*" 20
- 5553 5683 27 "Homo sapiens, *Arabidopsis thaliana*, *Pseudomonas putida* KT2440, *Pasteurella multocida*, *Mus musculus*, *Haemophilus influenzae* Rd KW20, *Oreochromis niloticus*, *Plasmodium falciparum* 3D7, *Vibrio cholerae*, *Oryza sativa* (japonica cultivar-group), *Geobacillus stearothermophilus*, *Danio rerio*"
- 5554 5684 26 "Homo sapiens, *Takifugu rubripes*, *Mus musculus*, *Danio rerio*, *Lupinus albus*"
- 5555 5685 23 "Homo sapiens, *Dictyostelium discoideum*, *Mus musculus*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Eucalyptus gunnii*, *Danio rerio*"
- 5556 5686 24 "*Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Mus musculus*" 30
- 5557 5687 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, *Lumnitzera littorea*, *Lumnitzera racemosa*, *Laguncularia racemosa*, *Terminalia bellirica*, *Terminalia muelleri*, *Calycopteris floribunda*, *Combretum alfredii*, *Daphniphyllum calycinum*, *Escherichia coli*, *Medicago truncatula*, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*, *Anopheles gambiae*, Plasmid ColE3-CA38"
- 5558 5688 32 "*Vaccinia virus*, *Homo sapiens*, *Sus scrofa*, *Dictyostelium discoideum*, *Mus musculus*, *Vaccinia virus* (strain Tian Tan), *Arabidopsis thaliana*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Schizosaccharomyces pombe*, *Drosophila melanogaster*, *Rattus norvegicus*, *Schizosaccharomyces japonicus*, *Yersinia pestis* KIM, *Saccharomyces cerevisiae*, *Stegastes partitus*, *Mycoplasma capricolum*, *Yersinia pestis*, *Pyrococcus abyssi*, *Phaseolus vulgaris*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Listeria monocytogenes*, *Yersinia pestis* C092, *Methanococcus vannielii*, *Helicobacter hepaticus* ATCC 51449" 40
- 5559 5689 28 "*Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Plasmodium falciparum*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Ciona intestinalis*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Brucella melitensis* 16M, *Borrelia burgdorferi* B31, *Staphylococcus*" 50

- aureus, *Pan troglodytes*, *Brucella suis* 1330, *Lactococcus lactis* subsp. *lactis*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW 2, *Lactobacillus plantarum* WCFS1, *Oryza sativa* (japonica cultivar-group), *Methanocaldococcus jannaschii*, *Borrelia burgdorferi*, *Acipenser baerii*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 5560 5690 27 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Halictus sexcinctus*, *Lotus corniculatus* var. *japonicus*, *Mus musculus*, *Caenorhabditis elegans*, *Rhodotorula armeniaca*, *Rattus norvegicus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Sakaguchia dacryoidea*, *Bacillus halodurans*"
- 5561 5691 27 "Homo sapiens, *Streptococcus pneumoniae*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Danio rerio*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Nostoc* sp. PCC 7120" 10
- 5562 5692 23 "Homo sapiens, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Bromelia* sp. Brown 3128, *Mus musculus*, *Triticum monococcum*, *Brachyramphus marmoratus*"
- 5563 5693 24 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Acidodontium ramicola*, *Bacillus anthracis* str. Ames, *Arabidopsis thaliana*, *Caenorhabditis elegans*" 20
- 5564 5694 27 "Homo sapiens, *Gallus gallus*, *Rattus norvegicus*, *Mus musculus*, *Iris hollandica*, *Bacillus subtilis*, *Uroleucon rudbeckiae*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Danio rerio*"
- 5565 5695 31 "Mus musculus, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Marchantia polymorpha*, *Maticora bivirgata*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Necator americanus*"
- 5566 5696 38 "Homo sapiens, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Mus musculus*, *Machiloides banksi*, *Arabidopsis thaliana*, *Mycoplasma pulmonis*, *Schizosaccharomyces pombe*, *Mycoplasma hyopneumoniae*, *Bacillus cereus* ATCC 14579, *Rattus norvegicus*, *Leptospira interrogans* serovar *lai* str. 56601, *Caenorhabditis elegans*, *Chlamydomonas reinhardtii* GPIC, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Python molurus*, *Mesostigma viride*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Carnobacterium* sp. St2, *Medicago truncatula*, *Listeria innocua*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Oryza sativa* (japonica cultivar-group), *Danio rerio*" 30
- 5567 5697 23 "Homo sapiens, *Pan troglodytes*, *Caenorhabditis elegans*, *Mus musculus*, *Parnassius smintheus*, *Drosophila melanogaster*, *Sus scrofa*, *Arabidopsis thaliana*, *Sulfolobus islandicus* rod-shaped virus 2, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Pyrococcus horikoshii*" 40
- 5568 5698 28 "Mus musculus, *Homo sapiens*, *Pan troglodytes*, *Tetrahymena thermophila*, *Petunia x hybrida*, *Mycoplasma penetrans*, *Danio rerio*, *Drosophila melanogaster*, *Strongylocentrotus purpuratus*, *Plasmodium falciparum* 3D7, *Methanotermobacter thermautotrophicus* str. Delta H, *Lycopersicon esculentum*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Vibrio parahaemolyticus*, *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Botryotinia fuckeliana*, *Bacillus halodurans*"
- 5569 5699 27 "Homo sapiens, *Medicago truncatula*, *Oreochromis mossambicus*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*" 40

- s, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Danio rerio*, *Dianthus caryophyllus*, *Lotus corniculatus* var. *japonicus*, *Clostridium pasteurianum*, *Leptospira interrogans* serovar *lai* str. 56601, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Chaetosphaeridium globosum*, *Streptococcus pyogenes* MGAS315, *Ptiolina fasciata*, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Prochlorococcus marinus*, *Prototheca wickerhamii*, *Streptococcus pyogenes* SSI-1, *Canis familiaris*, *Schizosaccharomyces pombe*, *Mycoplasma genitalium*, *Streptococcus pyogenes*, *Felis catus*"
- 5570 5700 31 "Danio rerio, Homo sapiens, Mus musculus, Enterococcus faecalis V583, Drosophila melanogaster, Arabidopsis thaliana" 10
- 5571 5701 23 "Mus musculus, Homo sapiens, Buchnera aphidicola str. Bp (Baizongia pistaciae), Myxoma virus, Helicobacter pylori 26695, Helicobacter pylori J99"
- 5572 5702 23 "Oryza sativa (japonica cultivar-group), Oryza sativa, Heliothrips tubulosa, Drosophila melanogaster, Homo sapiens, Arabidopsis thaliana, Mus musculus, Dynamis borassi"
- 5573 5703 29 "Danio rerio, Sus scrofa, Homo sapiens, Clostridium perfringens, Stealth virus 1, Caenorhabditis elegans, Medicago truncatula, Mus musculus, Prochlorococcus marinus, Atelerix albiventris, Candidatus Carsonella ruddii, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Entamoeba histolytica, Mycoplasma penetrans, Candida albicans, Haemophilus influenzae Rd KW20, Arabidopsis thaliana, Clostridium perfringens str. 13, Rattus norvegicus, Pan troglodytes, Dictyostelium discoideum, Psilotum nudum, Cercopithecus aethiops, Macaca mulatta, Macaca nemestrina, Cercocebus torquatus atys, Papio anubis, Rhizobium leguminosarum, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Vibrio parahaemolyticus, Sulfolobus tokodaii, Neurospora crassa, Bacillus subtilis subsp. subtilis str. 168, Bacteriophage SPBc2" 20
- 5574 5704 31 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Schlechtendalia chinensis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Cerataphis lataniae, Drosophila melanogaster, Plasmodium falciparum 3D7, Saccharomyces paradoxus, Plasmodium berghei, Medicago truncatula, Plasmodium falciparum, Arabidopsis thaliana, Pan troglodytes, Glycine max, Medicago sativa, Candidatus Carsonella ruddii, Methanosarcina mazei Goe1, Lactococcus lactis subsp. lactis, primary endosymbiont of Heteropsylla cubana, Gallus gallus, Candidatus Blochmannia floridanus, Guillardia theta, Danio rerio, Fusobacterium nucleatum, Oryza sativa (japonica cultivar-group), Entamoeba histolytica, Clostridium perfringens str. 13" 30
- 5575 5705 31 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Plasmodium falciparum 3D7, Danio rerio, Mycoplasma sp., Caenorhabditis elegans, Euproctinus pallidus, Trypanosoma cruzi, Oryctolagus cuniculus, Pan troglodytes, Drosophila melanogaster, Acacia anthochaera, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Dolichoris hombroniana, Haemaphysalis palmarum, Candida albicans" 40
- 5576 5706 28 "Pan troglodytes, Homo sapiens, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bacillus cereus ATCC 14579, Clostridium tetani E88, Mus musculus, Rickettsia conorii, Saccharomyces cerevisiae" 40
- 5577 5707 28 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Rattus norvegicus, Puumala virus, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, C 50

- aenorhabditis elegans, Staphylococcus aureus subsp. aureus Mu50, Lemur catta, Buchnera aphidicola str. Bp (Baizongia pistaciae), African swine fever virus, Arabidopsis thaliana, Ceratitis capitata, Anopheles quadrimaculatus A, Sus scrofa, Danio rerio, Musca domestica"
- 5578 5708 23 "Homo sapiens, Schistosoma mansoni, Caenorhabditis elegans, Zymomonas mobilis, Mus musculus, Enterococcus faecalis V583, Mycoplasma penetrans, Danio rerio, Clostridium perfringens str. 13"
- 5579 5709 24 "Homo sapiens, Cicer canariense, Mus musculus, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Mycobacterium leprae, Thermoplasma volcanium" 10
- 5580 5710 23 "Homo sapiens, Spalax judaei, Nannospalax ehrenbergi carmeli, Spalax galili, Mus musculus, Caenorhabditis elegans"
- 5581 5711 27 "Homo sapiens, Drosophila melanogaster, Mus musculus, Culex pipiens quinquefasciatus, Danio rerio"
- 5582 5712 24 "Homo sapiens, Danio rerio, Amphibolurus nobbi nobbi, Arabidopsis thaliana, Dictyostelium discoideum, Caenorhabditis elegans, Mus musculus, Schmidtea mediterranea, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Ureaplasma urealyticum, Epilobocera sinuatifrons, Clostridium perfringens str. 13"
- 5583 5713 27 "Homo sapiens, Drosophila melanogaster, Mus musculus, Methanosarcina acetivorans, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Lactococcus lactis subsp. lactis, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Mycoplasma penetrans" 20
- 5584 5714 23 "Dictyostelium discoideum, Bos taurus, Oryctolagus cuniculus, Homo sapiens, Equus caballus, Mus musculus, Danio rerio, Helicobacter pylori 26695, Nostoc sp. PCC 7120"
- 5585 5715 25 "Medicago truncatula, Arabidopsis thaliana, Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Clostridium acetobutylicum, Caenorhabditis elegans, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group)" 30
- 5586 5716 28 "Mus musculus, Triticum monococcum, Homo sapiens, Helicobacter hepaticus ATCC 51449, Bacteroides thetaiotaomicron VPI-5482, Prochlorococcus marinus, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Rattus norvegicus, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group)"
- 5587 5717 27 "Drosophila melanogaster, Homo sapiens, Proteus vulgaris, Oryza sativa (japonica cultivar-group), Mus musculus, Staphylococcus aureus, Oryza sativa, Lactobacillus plantarum WCFS1, Gallus gallus"
- 5588 5718 38 "Bacteroides fragilis, Danio rerio, Homo sapiens, Bacillus cereus ATCC 14579, Lactococcus lactis subsp. lactis, Equus caballus, Dictyostelium discoideum, Lemur catta, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Helicobacter pylori 26695, Macaca fascicularis" 40
- 5589 5719 60 "Danio rerio, Mus musculus, Homo sapiens, Oryza sativa, Oryza sativa (japonica cultivar-group), Cyprinus carpio, Plasmodium falciparum 3D7, Rattus norvegicus"
- 5590 5720 56 "Homo sapiens, Danio rerio, Mus musculus, Sulfolobus solfataricus, Caenorhabditis elegans, Monolopia gracilens, Eriophyllum congdonii, Plasmodium falciparum 3D7, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Neurospora crassa, Bacteroides fragilis, Macaca fascicularis, Mesocri 50

- cetus auratus, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lotus corniculatus* var. *japonicus*, *Cryptosporidium parvum*, *Nostoc* sp. PCC 7120"
- 5591 5721 31 "Homo sapiens, Human immunodeficiency virus 1, *Ureaplasma urealyticum*, *Clytus arietis*, *Mus musculus*, *Caenorhabditis elegans*, *Yarrowia lipolytica*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Escherichia coli*, *Mycoplasma penetrans*, *Danio rerio*, *Sus scrofa*, *Bacillus halodurans*"
- 5592 5722 28 "Mus musculus, Homo sapiens, *Caenorhabditis briggsae*, Hendra virus, *Felis catus*, *Caenorhabditis elegans*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Sorghum bicolor*, *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*" 10
- 5593 5723 27 "Danio rerio, *Mus musculus*, Homo sapiens, *Arabidopsis thaliana*, *Medicago truncatula*, *Caenorhabditis elegans*, *Ureaplasma urealyticum*, *Plasmodium falciparum*"
- 5594 5724 31 "Danio rerio, Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, Avian infectious bronchitis virus, *Clostridium novyi*, *Drosophila melanogaster*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Thermoplasma volcanium*, *Ureaplasma urealyticum*, *Lotus corniculatus* var. *japonicus*, *Macaca fascicularis*, *Mesorhizobium loti*" 20
- 5595 5725 31 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, Peanut witches'-broom phytoplasma, *Caenorhabditis elegans*, *Danio rerio*, *Cryptosporidium parvum*, *Schizosaccharomyces pombe*, *Theileria parva*, *Oryza sativa* (*japonica* cultivar-group), *Atelixeris albiventris*, *Dictyostelium discoideum*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Asterella palmeri*, *Plasmodium falciparum*, *Lotus corniculatus* var. *japonicus*, *Sulfolobus tokodaii*, *Pseudograpus albus*, *Hepatozoon catesbianae*, *Acomys cahirinus*, *Rattus norvegicus*, *Candidatus Carsonella ruddii*, *Equus caballus*, *Methanosarcina mazei* Goe1, *Betula pendula*"
- 5596 5726 31 "Bacillus thuringiensis, *Mus musculus*, *Arabidopsis thaliana*, Homo sapiens, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Gallus gallus*, *Drosophila melanogaster*, *Bos taurus*, *Microsporidium* sp. JES2002B, *Danio rerio*, *Mycoplasma genitalium*, Cowpox virus, *Bacillus cereus* ATCC 14579, *Vaccinia virus*, *Ectromelia virus*, *Camelpox virus* CMS, *Papio anubis*, *Swinepox virus*, uncultured crenarchaeote 4B7, *Monkeypox virus*, *Variola minor virus*, *Variola virus*, *Saimiriine herpesvirus 2*, *Oryza sativa* (*japonica* cultivar-group), *Variola major virus*, *Lotus corniculatus* var. *japonicus*, *Erebia rossi*, *Arethusana dentata*, *Coenonympha dorus*, *Brintesia circe*, *Aphantopus hyperantus*, *Sulfolobus tokodaii*, *Medicago truncatula*, *Vaccinia virus* (strain Tian Tan), *Chlamydomonas reinhardtii*, *Camelpox virus* M-96, *Chlorella vulgaris*" 30
- 5597 5727 24 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Gallus gallus*, *Lotus corniculatus* var. *japonicus*, *Helicobacter pylori* 26695, *Oryza sativa* (*japonica* cultivar-group)" 40
- 5598 5728 34 "Homo sapiens, *Drosophila melanogaster*, *Euglena longa*, *Pan troglodytes*, *Dictyostelium discoideum*, *Hamamelistes spinosus*, *Forda formicaria*, *Mus musculus*, *Drosophila* sp., *Enterococcus faecalis* V583, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Mesostigma viride*, *Danio rerio*, *Caenorhabditis elegans*, *Strongyloides stercoralis*, *Arabidopsis thaliana*, *Tetrahymena thermophila*, *Felis catus*, *Staphylococcus epidermidis* ATCC 12228, *Schmidtea mediterranea*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mimogryllus australis*, *Plasmodium falciparum*, *Caliaeschna microstigma*, *Drosophila* 50

- pseudoobscura, *Hydra vulgaris*, *Ciona intestinalis*, *Mycoplasma penetrans*, *Lycopersicon esculentum*, *Phragmites australis*, *Macaca fascicularis*, *Clostridium perfringens* str. 13"
- 5599 5729 32 "Caenorhabditis elegans, *Danio rerio*, *Homo sapiens*, *Prochlorococcus marinus*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Bacillus cereus* ATCC 14579, *Papio anubis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Acinetobacter lwoffii*, TT virus, *Helicobacter hepaticus* ATCC 51449"
- 5600 5730 31 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Entamoeba dispar*, *Drosophila guaru*, *Plasmodium falciparum* 3D7, *Thermoanaerobacter*" 10
- 5601 5731 35 "Plasmodium falciparum 3D7, *Pan troglodytes*, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Neurospora crassa*, *Lampranthus stenus*, *Lampranthus galpiniae*, *Lampranthus vallis-gratiae*, *Lampranthus rupestris*, *Dictyostelium discoideum*, *Medicago truncatula*, *Lycopersicon esculentum*, *Xenopus laevis*, *Guillardia theta*, *Danio rerio*"
- 5602 5732 27 "Caenorhabditis elegans, *Homo sapiens*, *Mus musculus*, *Pyrococcus furiosus* DSM 3638, *Methanocaldococcus jannaschii*, *Nicotiana tabacum*, *Sympterygion vulgatum*, *Clostridium thermocellum*, *Dictyostelium discoideum*, *Neisseria meningitidis* MC58, *Oryza sativa* (japonica cultivar-group)" 20
- 5603 5733 23 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Staphylococcus aureus*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Cryptosporidium parvum*, *Theobroma cacao*, *Gallus gallus*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 5604 5734 20 "Danio rerio, *Nicotiana tabacum*, *Mus musculus*, *Simian immunodeficiency virus*, *Homo sapiens*"
- 5605 5735 25 "Homo sapiens, *Danio rerio*, *Caenorhabditis elegans*, *Sminthopsis macroura*, *Rattus norvegicus*, *Didelphis virginiana*, *Fusarium sporotrichoides*, *Mus musculus*, *Colaptes auratus*, *Saccharomyces cerevisiae*, uncultured delta proteobacterium, *Arabidopsis thaliana*" 30
- 5606 5736 31 "Caenorhabditis elegans, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Mus musculus*, *Arabidopsis thaliana*, *Clostridium novyi*, *Lotus corniculatus* var. *japonicus*, *Mus musculus domesticus*, *Pan troglodytes*, *Drosophila melanogaster*, *Shewanella oneidensis* MR-1, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Haemophilus influenzae* Rd KW20"
- 5607 5737 35 "Colwellia maris, *Bacteroides thetaiotaomicron* VPI-5482, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Arabidopsis thaliana*, *Homo sapiens*, *Lactobacillus sakei*, *Schizosaccharomyces pombe*, *Mycoplasma gallisepticum* R, *Mus musculus*, *Prochlorococcus marinus*, *Geobacillus stearothermophilus*, *Thermoplasma volcanium*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Listeria innocua*, *Shewanella frigidimarina*, *Danio rerio*, *Tetragenococcus halophilus*, *Clostridium perfringens* str. 13" 40
- 5608 5738 27 "Homo sapiens, *Mus musculus*, *Zea mays*, *Shrimp white spot syndrome virus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Triticum monococcum*, *Aegilops tauschii*, *Plasmodium falciparum* 3D7, *Canine herpesvirus*, *Mesocricetus auratus*, *Clarkia lewisii*, *Sigmodon hispidus*, *Schizosaccharomyces pombe*, *Oreochromis niloticus*"
- 5609 5739 33 "Homo sapiens, *Plasmodium falciparum* 3D7, *Dictyostelium*" 50

- discoideum, *Danio rerio*, *Pan troglodytes*, *Papio anubis*, *Mus musculus*, *Medicago truncatula*, *Troglodytes troglodytes*, *Schmidtea mediterranea*, *Felis catus*, *Rattus norvegicus*, *Drosophila melanogaster*, *Physcomitrella patens*, *Petunia x hybrida*, *Canis familiaris*, *Salmo salar*, Alfalfa mosaic virus, *Macaca fascicularis*, *Arabidopsis thaliana*, *Ranunculus ficaria*, *Xenopus laevis*"
- 5610 5740 32 "Buchnera aphidicola str. APS (*Acyrtosiphon pisum*), *Homo sapiens*, *Drosophila melanogaster*, *Danio rerio*, *Chlamydia muridarum*, *Pennisetum glaucum*, *Arachis hypogaea*, *Gossypium herbaceum*, *Mus musculus*, *Chlamydomonas reinhardtii* GPIC, *Dictyostelium discoideum*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Vibrio parahaemolyticus*, *Methanocaldococcus jannaschii*, *Saccharomyces cerevisiae*" 10
- 5611 5741 46 "Buchnera aphidicola str. Bp (*Baizongia pistaciae*), *Mus musculus*, *Hordeum vulgare* subsp. vulgare, *Pseudomonas syringae* pv. tomato str. DC3000, *Homo sapiens*, *Caenorhabditis elegans*, *Arabidopsis thaliana*"
- 5612 5742 44 "Buchnera aphidicola str. Bp (*Baizongia pistaciae*), *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Mycoplasma genitalium*, *Ciona intestinalis*, *Mycoplasma salivarium*, *Mus musculus*, *Mycoplasma penetrans*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Clostridium perfringens* str. 13, *Homo sapiens*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Schistosoma mansoni*" 20
- 5613 5743 23 "Homo sapiens, *Streptococcus pneumoniae* TIGR4, *Schistosoma japonicum*, *Rattus norvegicus*, *Streptococcus pneumoniae*, *Scophthalmus maximus*, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group)"
- 5614 5744 30 "Lotus corniculatus var. japonicus, *Bacillus subtilis* subsp. subtilis str. 168, *Bacillus subtilis*, *Amsacta moorei* entomopoxvirus, *Drosophila melanogaster*, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Listeria innocua*, *Arabidopsis thaliana*, *Thermoanaerobacter tengcongensis*, *Methanosarcina acetivorans* C2A, *Mycoplasma penetrans*"
- 5615 5745 27 "Homo sapiens, *Drosophila melanogaster*, *Pyrococcus furiosus* DSM 3638, *Clostridium perfringens* str. 13, *Dictyostelium discoideum*, *Mus musculus*, *Pan troglodytes*, *Oryza sativa* (indica cultivar-group), *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group)" 30
- 5616 5746 24 "Mus musculus, *Lysiphlebus testaceipes*, *Lysiphlebus fabarum*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Diaeretus leucopterus*, *Adialytus thelaxis*, *Adialytus salicaphis*, *Adialytus arvicola*, *Lysiphlebia japonica*, *Lysiphlebus hirticornis*, *Lysiphlebus cardui*, *Euaphidius cingulatus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Pan troglodytes*, *Drosophila melanogaster*, *Ephedrus validus*, *Paralipsis enervis*, *Protaphidius wissmannii*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Clostridium acetobutylicum*, *Cletocamptus deitersi*, *Plasmodium knowlesi*" 40
- 5617 5747 33 "Mus musculus, *Homo sapiens*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Dictyostelium discoideum*, *Lactobacillus plantarum* WCFS 1, *Medicago truncatula*, *Lemur catta*, *Rattus norvegicus*, *Trifolium repens*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Bacillus anthracis* str. Ames, *Mycoplasma mycoides* subsp. mycoides SC, *Arabidopsis thaliana*, *Felis catus*, *Danio rerio*, *Enterococcus faecium*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Podospora anserina*, *Canis familiaris*, *Oryza sativa* (japonica cultivar-group), *Venturia inaequalis*, *Xenopus laevis*, *Caenorhabditis elegans*"
- 5618 5748 28 "Homo sapiens, *Mus musculus*, *Coxiella burnetii* RSA 493, 50

- Caenorhabditis elegans, Chlorella vulgaris, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Pleuronectes platessa, Zea mays, Arabidopsis thaliana, Danio rerio, Staphylococcus epidermidis, Prochlorococcus marinus subsp. marinus str. CCMP1375, Auxenochlorella protothecoides, Nostoc sp. PCC 7120"
- 5619 5749 31 "Homo sapiens, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Papio anubis, Caenorhabditis elegans, Danio rerio"
- 5620 5750 33 "Homo sapiens, Clostridium perfringens str. 13, Vibrio parahaemolyticus, Caenorhabditis elegans, Mus musculus, Populus alba, Arabidopsis thaliana, Rickettsia prowazekii, Caenorhabditis briggsae, Odontella sinensis, Sulfolobus tokodaii, Danio rerio, Bacillus halodurans" 10
- 5621 5751 59 "Vibrio vulnificus CMCP6, Escherichia coli CFT073, Escherichia coli K12, Vibrio parahaemolyticus, Escherichia coli, Shewanella oneidensis MR-1, Vibrio cholerae, Escherichia coli O157:H7 EDL933, Proteus vulgaris, Escherichia coli O157:H7, Clostridium tetani E88, Vibrio fischeri, Pantoea agglomerans, Homo sapiens, Shigella flexneri 2a str. 2457T, Chlamydia muridarum, Shigella flexneri 2a str. 301, Clostridium sticklandii, Oceanobacillus iheyensis HTE831, Leptospirillum ferrooxidans, Bacillus cereus ATCC 14579, Yersinia pestis, Listeria innocua, Enterobacter gergoviae, Mus musculus, Bacillus anthracis str. Ames, Pan troglodytes, Borrelia burgdorferi B31, Drosophila melanogaster, Aegilops tauschii, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Lotus corniculatus var. japonicus, Borrelia burgdorferi, Pirellula sp., Vibrio harveyi, Treponema pallidum" 20
- 5622 5752 27 "Homo sapiens, Rattus norvegicus, Collinias sp. B, Mus musculus, Amsacta moorei entomopoxvirus, Bos taurus, Caenorhabditis elegans, Xenopus laevis, Mycoplasma gallisepticum R, Dictyostelium discoideum, Baeopterus philpotti, Amma blanchae, Collinias sp. A, Canavalia lineata, marine psychrotrophic bacterium Mst37, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Oryza sativa, Danio rerio"
- 5623 5753 32 "Vibrio cholerae, Homo sapiens, Mus musculus, Drosophila melanogaster, Gavia immer, Ehrlichia ruminantium, Streptococcus pneumoniae R6, Oceanobacillus iheyensis HTE831, Streptococcus pneumoniae" 30
- 5624 5754 27 "Mus musculus, Pan troglodytes, Homo sapiens, Danio rerio, Mycosphaerella graminicola, Ciona intestinalis, Caenorhabditis elegans, Batrachuperus taibaiensis, Rickettsia conorii, Lotus corniculatus var. japonicus, Nicotiana tabacum"
- 5625 5755 32 "Danio rerio, Homo sapiens, Dictyostelium discoideum, Buchnera aphidicola str. Bp (Baizongia pistaciae), Oceanobacillus iheyensis HTE831, Arabidopsis thaliana, Mus musculus, Heliothis armigera entomopoxvirus, Cobitis taenia, Pan troglodytes, Drosophila melanogaster"
- 5626 5756 32 "Drosophila melanogaster, Plasmodium falciparum 3D7, Homo sapiens, Oryza sativa (japonica cultivar-group), Bacteriophage SP01, Pan troglodytes, Mus musculus, Ciona intestinalis, Borrelia duttonii, Danio rerio, Dictyostelium discoideum, Papio anubis, Schmidtea mediterranea, Trypanosoma cruzi, Arabidopsis thaliana, Saccharomyces cerevisiae, Melanoplus sanguinipes entomopoxvirus, Cyanophora paradoxa, Medicago truncatula" 40
- 5627 5757 28 "Homo sapiens, Danio rerio, Mus musculus, Ciona intestinalis, Rattus norvegicus, Medicago truncatula, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Perkinsus marinus, Perkinsus sp. 'isolate H49', Rickettsia prowazekii, Arabidopsis thaliana, Plasmodium falciparum 3D7, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Bacillus subtilis subsp. su 50

- btilis str. 168, Clostridium perfringens str. 13"
- 5628 5758 29 "Oryza sativa (japonica cultivar-group), Oryza sativa, Homo sapiens, Medicago truncatula, Mus musculus, Danio rerio, Borrelia burgdorferi B31, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Zea mays, Plasmodium falciparum 3D7, Rattus norvegicus, Hypostomus asperatus, Hypostomus emarginatus, Hypostomus squalinus, Hypostomus punctatus, Hypostomus plecostomus, Hypostomus boulengeri, Hypostomus sp., Hypostomus sp. Tib13, Hypostomus sp. 2587.10, Hypostomus sp. 2586.1, Arabidopsis thaliana, Bombyx mori"
- 5629 5759 23 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. Sg (Schizaphis graminum), Lyngbya lagerheimii, Lotus corniculatus var. japonicus, Anthoceros formosae, Rattus norvegicus" 10
- 5630 5760 24 "Homo sapiens, Mus musculus, Methanosarcina mazei Goe1, Oryza sativa (japonica cultivar-group), Danio rerio"
- 5631 5761 31 "Homo sapiens, Cucumis sativus, Choristoneura fumiferana granulovirus, Mus musculus, Entamoeba histolytica, Glycine max, Caenorhabditis elegans, Arabidopsis thaliana, Plasmodium falciparum 3D7, Paramecium bursaria Chlorella virus 1, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Candidatus Portiera aleyrodidarum, Bacillus anthracis str. Ames, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Thrips imbricatus, Dictyostelium discoideum, Drosophila melanogaster, Xenopus laevis, Papio anubis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Buchnera aphidicola str. Sg (Schizaphis graminum), Danio rerio, Caenorhabditis briggsae, Bacillus cereus, Lotus corniculatus var. japonicus, Mycoplasma penetrans" 20
- 5632 5762 28 "Homo sapiens, Danio rerio, Sus scrofa, Bos taurus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Guillardia theta, Mus musculus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Caenorhabditis elegans, Pastinaca sativa, Helicobacter hepaticus ATCC 51449, Mycoplasma gallisepticum R, Dictyostelium discoideum, Plasmodium falciparum 3D7, Clostridium tetani E88, Pan troglodytes, Solanum tuberosum, Candidatus Blochmannia floridanus, Colubrina reclinata, Alphitonia excelsa, Hovenia dulcis, Sisyndite sparteae, Rattus norvegicus, Methanocaldococcus jannaschii, Discaria chaceae, Macaca fascicularis" 30
- 5633 5763 23 "Enterococcus faecalis V583, Homo sapiens, Vancouveria hexandra, Mus musculus, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Lotus corniculatus var. japonicus, Human immunodeficiency virus 1, Mycoplasma penetrans, Caenorhabditis elegans"
- 5634 5764 35 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Macaca mulatta, Danio rerio, Caenorhabditis elegans, Drosophila melanogaster, Dictyostelium discoideum, Pan troglodytes, Plasmodium falciparum 3D7, Cupixi virus, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Saccharomyces cerevisiae, Rattus norvegicus" 40
- 5635 5765 26 "Mus musculus, Cowpox virus, Vaccinia virus, Ectromelia virus, Camelpox virus CMS, Homo sapiens, Variola minor virus, Variola virus, Vaccinia virus (strain Tian Tan), Variola major virus, Camelpox virus M-96, Bacteroides thetaiotaomicron VPI-5482, Cryptosporidium parvum, Oryctolagus cuniculus, Drosophila melanogaster, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum)"
- 5636 5766 27 "Mus musculus, Streptococcus mutans UA159, Homo sapiens, Escherichia coli 0157:H7 EDL933, Streptococcus mutans, Danio rerio, Escherichia coli 0157:H7, Oryctolagus cuniculus, Rattus norvegicus, Dictyostelium discoideu" 50

- m, *Chlamydia trachomatis*, *Saccharomyces cerevisiae*"
- 5637 5767 24 "Caenorhabditis elegans, *Lotus corniculatus* var. japonicus, *Saccharomyces cerevisiae*, *Phrynocephalus mystaceus*, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group)"
- 5638 5768 27 "Homo sapiens, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Mus musculus*, *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Laplacea fruticosa*, *Saccharomyces cerevisiae*"
- 5639 5769 30 "Homo sapiens, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Schmidtea mediterranea*, *Caenorhabditis elegans*, *Danio rerio*, *Plasmodium berghei*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Methanocaldococcus jannaschii*, *Rattus norvegicus*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Varroa destructor*, *Streptococcus agalactiae*, *Plasmodium vivax*, *Sus scrofa*, *Streptococcus agalactiae* NEM316, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Candidatus Blochmannia floridanus*, *Sapromyza bentejui*, *Sulfolobus tokodaii*, *Mycoplasma penetrans*, *Bodo saltans*, *Melanoplus sanguinipes* entomopoxvirus, *Chlamydomonas reinhardtii*, *Clostridium perfringens* str. 13" 10
- 5640 5770 27 "Homo sapiens, *Fusarium oxysporum* f. sp. *melonis*, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Brassica rapa* subsp. *pekinensis*, *Cryptosporidium parvum*" 20
- 5641 5771 27 "Homo sapiens, *Mus musculus*, *Staphylococcus epidermidis* ATCC 12228, *Dictyostelium discoideum*, *Staphylococcus epidermidis*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group)"
- 5642 5772 29 "Danio rerio, *Homo sapiens*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Rhagoletis osmanthi*, *Rhagoletis indifferens*, *Rhagoletis cingulata*, *Rhagoletis chionanthi*, *Dictyostelium discoideum*, *Mus musculus*, *Rickettsia prowazekii*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Rattus norvegicus*, *Medicago truncatula*, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Blumeria graminis* f. sp. *hordei*, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Pasteurella multocida*, *Caenorhabditis briggsae*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Bombyx mori*, *Dipodascus magnusii*" 30
- 5643 5773 23 "Acinetobacter sp. ADP1, *Homo sapiens*, *Lotus corniculatus* var. japonicus, *Lactobacillus plantarum* WCFS1, *Mus musculus*, *Danio rerio*"
- 5644 5774 25 "Homo sapiens, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Lemur catta*, *Arachis hypogaea*, *Lotus corniculatus* var. japonicus, *Cyanidioschyzon merolae*, *Oryza sativa* (japonica cultivar-group), *Clostridium perfringens* str. 13, *Medicago truncatula*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Borrelia hermsii*, *Streptococcus mutans* UA159, *Pylaiella littoralis*, *Human immunodeficiency virus 1*, *Candida albicans*, *Pirellula* sp., *Emericella nidulans*, *Photobacterium luminescens*, *Plasmodium falciparum*" 40
- 5645 5775 28 "Homo sapiens, *Mus musculus*, *Escherichia coli*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Eimeria tenella*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Bombyx mori*, *Stenocereus fricii*"
- 5646 5776 32 "Lactobacillus plantarum WCFS1, *Homo sapiens*, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Piromyces* sp. E2, *Mus musculus*, *Mycoplasma pulmonis*, *Saccharomyces cerevisiae*, *Ciona intestinalis*, *Danio rerio*, *Micrutilus calva*, *Arabidop*" 50

- 5647 5777 25 "Homo sapiens, Human immunodeficiency virus 2, Vibrio vulnificus CMCP6, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Plasmodium falciparum"
- 5648 5778 24 "Homo sapiens, Plasmodium falciparum 3D7, Rattus norvegicus, Mus musculus, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Plasmodium vivax, Danio rerio, Clostridium perfringens str. 13"
- 5649 5779 24 "Drosophila melanogaster, Homo sapiens, Mus musculus, Nicotiana tabacum, Medicago truncatula"
- 5650 5780 23 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Oryza sativa (japonica cultivar-group)" 10
- 5651 5781 29 "Clostridium acetobutylicum, Drosophila simulans, Drosophila mauritiana, Homo sapiens, Mus musculus, Cryptococcus neoformans var. neoformans, Arabidopsis thaliana, Pasteurella multocida, Danio rerio, Drosophila yakuba, Drosophila melanogaster, Schistocerca gregaria"
- 5652 5782 29 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Streptococcus pneumoniae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Petroselinum crispum, Oryza sativa (japonica cultivar-group)"
- 5653 5783 24 "Aplysia californica, Homo sapiens, Mus musculus, Danio rerio, Vombatus ursinus, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Drosophila melanogaster, Lactococcus lactis subsp. lactis, Mycoplasma gallisepticum R, Canis familiaris, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sulfolobus solfataricus, Bacteriophage bIL309, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Plasmodium falciparum" 20
- 5654 5784 24 "Convict Creek 107 virus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Homo sapiens, Drosophila melanogaster, Streptococcus pyogenes MGAS315, Streptococcus pyogenes M1 GAS, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Pan troglodytes, Staphylococcus aureus subsp. aureus Mu50" 30
- 5655 5785 27 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (indica cultivar-group), Odontella sinensis, Caenorhabditis elegans, Medicago truncatula, Clostridium perfringens str. 13"
- 5656 5786 28 "Mus musculus, Homo sapiens, Medicago truncatula, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Chondrus crispus, Plasmodium falciparum 3D7, Danio rerio, Cynops pyrrhogaster, Macaca fascicularis" 40
- 5657 5787 28 "Danio rerio, Homo sapiens, Mus musculus, Paradrymonia binata, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Candidatus Blochmannia floridanus"
- 5658 5788 32 "Homo sapiens, Candidatus Carsonella ruddii, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Saimiriine herpesvirus 2, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Staphylococcus cohnii subsp. cohnii, Haemaphysalis longicornis, Arabidopsis thaliana, Medicago truncatula, Atelerix albiventris, Rattus norvegicus, Pan troglodytes, Dictyostelium discoideum, Xenopus laevis, Equus caballus, Canis 50

- familiaris, *Bacillus licheniformis*, *Caenorhabditis elegans*, *Candidatus Blochmania floridanus*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Martes americana*, *Dictyostelium* sp., *Methanosarcina mazei* Goe1, *Clostridium tetani* E88, *Piromyces* sp. E2, *Bos taurus*"
- 5659 5789 35 "Homo sapiens, *Medicago truncatula*, *Apis cerana*, *Mus musculus*, *Dictyostelium discoideum*, *Danio rerio*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Escherichia coli*, *Pan troglodytes*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Ectromelia virus*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Euglena longa*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Methanocaldococcus jannaschii*, *Brassica rapa*" 10
- 5660 5790 82 "*Brucella melitensis* 16M, *Brucella suis* 1330, *Corynebacterium efficiens* YS-314, *Mesorhizobium loti*, *Lactobacillus delbrueckii*, *Deinococcus radiodurans*, *Corynebacterium glutamicum* ATCC 13032, *Lactobacillus sakei*, *Lactobacillus plantarum* WCFS1, *Vibrio cholerae*"
- 5661 5791 23 "*Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Corynebacterium glutamicum*, *Oryza sativa* (japonica cultivar-group), *Corynebacterium glutamicum* ATCC 13032"
- 5662 5792 31 "*Campylobacter jejuni* subsp. jejuni NCTC 11168, *Helicobacter hepaticus*, *Helicobacter hepaticus* ATCC 51449, *Homo sapiens*, *Mus musculus*, *Pan troglodytes*, *Drosophila melanogaster*, *Danio rerio*, *Guillardia theta*, *Lotus corniculatus* var. japonicus, *Caenorhabditis elegans*, *Eimeria tenella*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Helicobacter pylori*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Escherichia coli* 0157:H7 EDL933, *Campylobacter jejuni*, *Nicotiana glauca*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Prochlorococcus marinus* subsp. marinus str. CCM1375, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Campylobacter coli*, *Prochlorococcus marinus*, *Methanocaldococcus jannaschii*, *Escherichia coli* 0157:H7" 20
- 5663 5793 27 "*Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Bombyx mori*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Danio rerio*, *Plasmodium falciparum* 3D7, *Meleagris gallopavo*, *Pan troglodytes*, *Cryptosporidium parvum*" 30
- 5664 5794 29 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Pan troglodytes*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Tiarcha tenebricosa*, *Busycon perversum*, *Bos taurus*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Prochlorococcus marinus*, *Danio rerio*, *Xenopus laevis*, *Busycon sinistrum*, *Busycon carica*, *Paramecium primaurelia*, *Arabidopsis thaliana*, *Nostoc* sp. PCC 7120" 40
- 5665 5795 23 "*Mus musculus*, *Homo sapiens*"
- 5666 5796 25 "*Macaca fascicularis*, *Mus musculus*, *Homo sapiens*, *Lotus corniculatus* var. japonicus, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Sclerostegia moniliformis*, *Papio anubis*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Aspergillus fumigatus*, *Schizosaccharomyces pombe*, *Danio rerio*, *Dictyostelium mucoroides*, *Clostridium butyricum*, *Actinobacillus actinomycetemcomitans*, *Oryza sativa* (japonica cultivar-group)"
- 5667 5797 25 "*Haemophilus haemolyticus*, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Corynebacterium efficiens* YS-314, *Danio rerio*"
- 5668 5798 23 "*Mus musculus*, *Canis familiaris*, *Homo sapiens*, *Heliconia*" 50

- s melpomene rosina, *Caenorhabditis elegans*, *Medicago truncatula*, *Neurospora crassa*, *Haemophilus ducreyi* 35000HP"
- 5669 5799 28 "Chromobacterium violaceum, *Homo sapiens*, *Mus musculus*, *Eulamprus heatwolei*, *Medicago truncatula*, *Bos taurus*, *Ensatina eschscholtzii* *eschscholtzii*, *Danio rerio*, *Carlia amax*, *Rattus norvegicus*"
- 5670 5800 27 "*Danio rerio*, *Homo sapiens*, *Papio anubis*, *Actinobacillus pleuropneumoniae*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Exaerete frontalis*"
- 5671 5801 27 "*Homo sapiens*, *Crassostrea gigas*, *Mus musculus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Medicago truncatula*" 10
- 5672 5802 35 "*Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Drosophila ficusphila*, *Drosophila mimetica*, *Drosophila takahashii*, *Drosophila lutescens*, *Danio rerio*, Orf virus, *Medicago truncatula*, *Drosophila melanogaster*, *Gallus gallus*, *Eurema lisa*, *Yersinia pestis* KIM, *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Rattus norvegicus*, *Lycopersicon esculentum*, *Piper augustum*, *Saccharomyces cerevisiae*, *Yersinia pestis* C092, *Schizosaccharomyces pombe*"
- 5673 5803 29 "*Mus musculus*, Bean leafroll virus, *Homo sapiens*, *Antheraea pernyi*, *Vibrio vulnificus* CMCP6, *Sorghum bicolor*, *Caenorhabditis elegans*, *Danio rerio*, *Rattus norvegicus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Anaplasma marginale*, *Macaca mulatta*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Papio anubis*, *Medicago sativa*, *Anopheles gambiae*, *Trypanosoma brucei*" 20
- 5674 5804 45 "*Homo sapiens*, *Dictyostelium discoideum*, *Mus musculus*, *Aphidius ervi*, *Glycine max*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Pan troglodytes*, *Lycopersicon esculentum*, *Xenopus laevis*, *Caenorhabditis elegans*, *Candida albicans*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Andira aubletii*, *Cavia* sp., *Danio rerio*, *Potorous tridactylus*"
- 5675 5805 36 "*Homo sapiens*, *Helicobacter pylori* 26695, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*, *Pasteurella multocida*, *Prochlorococcus marinus*, *Schizosaccharomyces pombe*, *Streptococcus pyogenes*, *Atropa belladonna*, *Medicago truncatula*, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Clostridium tetani*, *Helicobacter pylori*, *Staphylococcus epidermidis* ATCC 12228, *Zea mays*, *Trypanosoma cruzi*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Tetrahymena thermophila*, *Rickettsia rickettsii*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Staphylococcus epidermidis*, *Leishmania major*, *Listeria monocytogenes*, *Listeria innocua*, *Eschscholzia californica*, *Borrelia burgdorferi*" 30
- 5676 5806 25 "*Homo sapiens*, *Mus musculus*, *Tetrahymena pyriformis*, *Sulfolobus tokodaii*, *Caenorhabditis elegans*, *Arabidopsis thaliana*" 40
- 5677 5807 24 "*Oryza sativa* (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Porphyra pulchra*"
- 5678 5808 28 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Drosophila melanogaster*, *Plecotus austriacus austriacus*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Carabus cribratus ispirensis*, *Carabus saphyrinus pseudosaphyrinus*, *Mugil cephalus*, *Lactobacillus plantarum* WCFS1, *Lycopersicon esculentum*, *Nostoc* sp. PCC 7120" 50

- 5679 5809 23 "Danio rerio, Mus musculus, Homo sapiens, Pseudomonas syringae pv. tomato str. DC3000, Caenorhabditis elegans, Anodonta woodiana"
- 5680 5810 31 "Artemia franciscana, Mus musculus, Homo sapiens, Shewanella oneidensis MR-1, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Dictyostelium discoideum, Clostridium tetani E88, Arabidopsis thaliana, Danio rerio, Nostoc sp. PCC 7120, Clostridium perfringens str. 13"
- 5681 5811 29 "Danio rerio, Canis familiaris, Ascaris suum, Homo sapiens, Campoletis sonorensis ichnovirus, Bos taurus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Cettia cetti, Lotus corniculatus var. japonicus, Coturnix chinensis, Leptosphaeria maculans, Photorhabdus luminescens, Plasmodium yoelii, Mus musculus" 10
- 5682 5812 32 "Campylobacter jejuni subsp. jejuni NCTC 11168, Homo sapiens, Mus musculus, Biomphalaria pfeifferi, Persicaria runcinata, Drosophila virilis, Campylobacter coli, Helicobacter hepaticus ATCC 51449, Camponotus herculeanus, Dictyostelium discoideum, Caenorhabditis elegans, Arabidopsis thaliana, Lep tothorax unifasciatus, Oryza sativa (japonica cultivar-group), Polyrhachis dives"
- 5683 5813 28 "Homo sapiens, Pan troglodytes, Enterococcus faecalis, Enterococcus faecalis V583, Mus musculus, Macaca mulatta, Oceanobacillus iheyensis HTE831, Danio rerio, Neoscopelus microchir" 20
- 5684 5814 26 "Pisum sativum, Homo sapiens, Schistosoma japonicum, Drosophila melanogaster, Octolasion tyrtaeum, Human immunodeficiency virus 1, Lotus corniculatus var. japonicus, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Dictyostelium discoideum, Terriswalke rius liber, Caenorhabditis elegans, Bos taurus, African swine fever virus, Conus acutangulus, Medicago truncatula, Schizosaccharomyces pombe, Helicobacter hepaticus ATCC 51449, Arabidopsis thaliana"
- 5685 5815 28 "Neurospora crassa, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Homo sapiens, Staphylococcus aureus, Arabidopsis thaliana, Ictalurus punctatus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Mus musculus, Suillus sinuspaulianus, Leptodontium flexifolium, Cyanidioschyzon merolae" 30
- 5686 5816 30 "Homo sapiens, Mus musculus, Ceraphron sp. M247, Lucilia cuprina, Drosophila melanogaster, Lycopersicon esculentum, Pasteurella multocida, Danio rerio, Mycoplasma hyopneumoniae, Lycopersicon peruvianum, Arabidopsis thaliana, Dictyostelium discoideum, Pichia angusta, Rattus norvegicus, Beata magna, Caenorhabditis briggsae, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Oceanobacillus iheyensis HTE831, Methanococcus voltae, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Medicago truncatula, Synechocystis sp. PCC 6803" 40
- 5687 5817 39 "Oryza sativa (japonica cultivar-group), Homo sapiens, Plasmodium berghei, Mus musculus, Rattus norvegicus, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Scaphinotus petersi, Rickettsia conorii, Rickettsia prowazekii, Danio rerio, Choristoneura fumiferana MNPV, Felis catus, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Sminthopsis macroura, Bos taurus, Clostridium acetobutylicum, Tetrahymena pyriformis, Gallus gallus, Arabidopsis thaliana, Saccharomyces cerevisiae, Chrysolina herbacea, Sus scrofa, Plasmodium falciparum, Lotus corniculatus var. 50

- japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Sulfolobus tokodaii, Chrysolina graminis, Rattus rattus, Schizosaccharomyces pombe, Pyrococcus horikoshii, Mus sp., Mesocricetus auratus, Saccharomyces douglasii"
- 5688 5818 35 "Paracoccus denitrificans, Homo sapiens, Mus musculus, Thermoplasma acidophilum, Pan troglodytes, Enterococcus faecalis V583, Arabidopsis thaliana, Caenorhabditis elegans, Ralstonia solanacearum, Oryza sativa (japonica cultivar-group), Brassica napus, Corynebacterium glutamicum ATCC 13032, Bacillus sp."
- 5689 5819 24 "Zea mays, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Gossypium lobatum, Aquifex aeolicus VF5, Drosophila melanogaster, Arabidopsis thaliana, Campylobacter jejuni subsp. jejuni NCTC 11168" 10
- 5690 5820 24 "Clostridium perfringens str. 13, Homo sapiens, Caenorhabditis elegans, Mus musculus, Methanosarcina mazei Goe1, Nostoc sp. PCC 7120"
- 5691 5821 30 "Arabidopsis thaliana, Danio rerio, Mus musculus, Pan troglodytes, Plasmodium falciparum 3D7, Homo sapiens, Rattus norvegicus, Sulfolobus tokodaii, Ursus thibetanus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Methanosarcina mazei Goe1, Xenopus laevis, Caenorhabditis elegans, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Doryphora sassafras"
- 5692 5822 31 "Mus musculus, Homo sapiens, Danio rerio, Orzyias latipes, Melanoplus sanguinipes entomopoxvirus, Medicago truncatula, Dictyostelium discoideum, Caenorhabditis elegans, Tetrahymena thermophila, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Sceliphron sp. MD1, Drosophila melanogaster, Xenopus laevis, Plasmodium falciparum 3D7, Arianta arbustorum styriaca, Streptococcus pneumoniae TIGR4, Caenorhabditis briggsae, Rattus norvegicus, Trichophyton rubrum, Arabidopsis thaliana, Paramecium tetraurelia, Oceanobacillus iheyensis HTE831, Plasmodium falciparum, Penicillium urticae, Alphamelon sp. 'Mardulyn & Whitfield', Schizosaccharomyces pombe, Drosophila mauritiana, Clostridium perfringens str. 13, Pinus taeda" 20
- 5693 5823 29 "Drosophila melanogaster, Mus musculus, Pan troglodytes, Homo sapiens, Crithidia fasciculata, Plasmodium vivax, Ciona intestinalis, Borrelia burgdorferi B31, Dictyostelium discoideum, Streptococcus mutans UA159, Glycine max, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Musca domestica, Oryza sativa (japonica cultivar-group), Eimeria tenella, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Caenorhabditis elegans, Anoda cristata, Abutilon fraseri, Sida hookeriana, Malva neglecta, Danio rerio, Simian immunodeficiency virus, Neurospora crassa, Schizosaccharomyces pombe, Leishmania tarentolae, Medicago truncatula" 30
- 5694 5824 24 "Mycoplasma pulmonis, Caenorhabditis elegans, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Lotus corniculatus var. japonicus, Cryptosporidium parvum, Arabidopsis thaliana, Danio rerio, Enterobacteria phage Iike" 40
- 5695 5825 24 "Thyropygus sp. DVL-2001, Enterococcus faecalis V583, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Homo sapiens, Clostridium tetani E88, Papio anubis, Arabidopsis thaliana, Pan troglodytes, Mycoplasma penetrans, Danio rerio, Mus musculus"
- 5696 5826 37 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Caenorhabditis elegans, Shewanella oneidensis MR-1, Homo sapiens, Oryza sativa (japonica cultivar-group)"
- 5697 5827 31 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus," 50

- Drosophila melanogaster*, *Enterobacteria* phage RB49, *Saccharomyces cerevisiae*, *Medicago truncatula*, *Pasteurella multocida*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Sminthopsis macroura*, *Equus caballus*, *Schmidtea mediterranea*, *Datronia scutellata*, *Oryza sativa* (*japonica* cultivar-group), *Entamoeba histolytica*, *Caenorhabditis elegans*, *Entamoeba dispar*, *Danio rerio*"
- 5698 5828 27 "Mus musculus, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Danio rerio*, *Methanocaldococcus jannaschii*"
- 5699 5829 27 "Homo sapiens, *Dictyostelium discoideum*, *Mus musculus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Chlorokybus atmophyticus*, *Danio rerio*, *Bacillus halodurans*" 10
- 5700 5830 27 "Pasteurella multocida, *Homo sapiens*, *Peltogyne confertiflora*, *Mus musculus*, *Danio rerio*, *Methanocaldococcus jannaschii*, *Arabidopsis thaliana*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Lycopersicon esculentum*, *Oryza sativa* (*japonica* cultivar-group), *Nicotiana tabacum*, *Oryza sativa*, *Sulfolobus tokodaii*, *Porphyra purpurea*"
- 5701 5831 23 "Mus musculus, *Homo sapiens*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Pyrococcus horikoshii*, *Candida albicans*"
- 5702 5832 39 "Antheraea pernyi, *Mus musculus*, *Caenorhabditis elegans*, *Danio rerio*, *Dictyostelium discoideum*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Euglena spirogyra*, *Lotus corniculatus* var. *japonicus*, *Streptococcus*" 20
- 5703 5833 27 "Danio rerio, *Anotogaster sieboldi*, *Cordulegaster picta*, *Homo sapiens*, *Papio anubis*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Pichia jadinii*, *Plasmodium falciparum* 3D7, *Macaca fascicularis*, *Pan troglodytes*, *Drosophila melanogaster*, *Mus musculus*, *Bos taurus*, *Impatiens necrotic spot virus*, *Campylobacter jejuni*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Ureaplasma urealyticum*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Leptospira interrogans*, *Clostridium perfringens* str. 13"
- 5704 5834 27 "*Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Mus musculus*, *Thermoanaerobacter tengcongensis*, *Porphyromonas gingivalis*, *Arabidopsis thaliana*, *Porphyromonas gingivalis* W83, *Mycoplasma penetrans*" 30
- 5705 5835 25 "Bacillus anthracis str. Ames, *Chlamydia muridarum*, *Homo sapiens*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Clostridium tetani* E88, *Mus musculus*, *Leuconostoc lactis*"
- 5706 5836 34 "Homo sapiens, *Diadasia rinconis*, *Diadasia australis*, *Danio rerio*, *Mus musculus*, *Clostridium acetobutylicum*, *Rickettsia prowazekii*, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Pan troglodytes*, *Gallus gallus*, *Arabidopsis thaliana*, *Bacillus subtilis*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Oceanobacillus iheyensis* HTE831, *Bacillus subtilis* subsp. *subtilis* str. 168" 40
- 5707 5837 27 "Homo sapiens, *Oryctolagus cuniculus*, *Mus musculus*, *Porphyromonas gingivalis* W83, *Pagamea guianensis*, *Gaertnera paniculata*, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum* 3D7, *Silene conica*, *Amsacta morei* entomopoxvirus, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Ciona intestinalis*, *Melanoplus sanguinipes* entomopoxvirus, *Danio rerio*, *Pan troglodytes*"
- 5708 5838 28 "Mus musculus, *Limnodynastes depressus*, *Leptospira interrogans* serovar *lai* str. 56601, *Cryptosporidium parvum*, *Mycobacterium leprae*, *Caenorhabditis briggsae*, *Homo sapiens*, *Sulfolobus tokodaii*, *Bacillus anthracis* str. 50

- Ames, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Oryza sativa*, *Danio rerio*, *Ciona intestinalis*, *Agrobacterium tumefaciens*, *Oryza sativa* (japonica cultivar-group)"
- 5709 5839 23 "Mus musculus, Homo sapiens, Rattus norvegicus, Sus scrofa"
- 5710 5840 28 "Dictyostelium discoideum, Homo sapiens, Mus musculus, Pan troglodytes, Gallus gallus, Plasmodium falciparum 3D7, Pasteurella multocida, Listeria innocua, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Porphyromonas gingivalis W83, Danio rerio, Oryza sativa (japonica cultivar-group), Macaca fascicularis, Botryotinia fuckeliana" 10
- 5711 5841 28 "Homo sapiens, Dictyostelium discoideum, Blattella germanica, Patriziella sardoa, Blattella asahinai, Caenorhabditis elegans, Drymophila devillei, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Streptococcus pyogenes MGAS315, Ovobathysciola gestroi, Streptococcus pyogenes MGAS 8232, Clostridium acetobutylicum, Danio rerio, Streptococcus pyogenes M1 GAS, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Oryza sativa (japonica cultivar-group)"
- 5712 5842 25 "Homo sapiens, Mus musculus, Megalagrion koelense, Solanum tuberosum, Danio rerio, Streptococcus mutans UA159, Arabidopsis thaliana, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Fatsia japonica" 20
- 5713 5843 23 "Mus musculus, Homo sapiens, Enterococcus faecalis V583, Gallus gallus, Escherichia coli CFT073, Streptococcus agalactiae 2603V/R, Enterococcus faecalis, Danio rerio, Arabidopsis thaliana, Streptococcus agalactiae NE M316, Oryza sativa (japonica cultivar-group)"
- 5714 5844 27 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Gossypium hirsutum, Expression vector pDAS112, Drosophila melanogaster, Caenorhabditis elegans, Fusobacterium nucleatum, Bos taurus, Staphylococcus aureus, Streptococcus agalactiae, Enterococcus faecalis, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Medicago truncatula, Saccharomyces cerevisiae, Danio rerio, unidentified cloning vector, Plasmodium falciparum, Staphylococcus intermedius, Micrococcus sphaerocephalus" 30
- 5715 5845 27 "Arabidopsis thaliana, Homo sapiens, Glinus lotoides, Mus musculus, Coxiella burnetii RSA 493, Drosophila melanogaster, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 5716 5846 31 "Homo sapiens, Drosophila melanogaster, Sulfolobus tokodaii, Mus musculus, Rattus norvegicus, Enterococcus faecalis V583, Pan troglodytes, Zea mays, Nitrosomonas europaea ATCC 19718, Nicotiana tabacum, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Staphylococcus aureus subsp. aureus Mu50"
- 5717 5847 27 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Homo sapiens, Mus musculus, Dictyota dichotoma, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Drosophila melanogaster, Arabidopsis thaliana, Medicago truncatula, Danio rerio, Oryzias latipes" 40
- 5718 5848 27 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Methanocaldococcus jannaschii, Arabidopsis thaliana, Rickettsia prowazekii, Clostridium perfringens"
- 5719 5849 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Citrullus lanatus, Kashmir bee virus, Drosophila melanogaster, Arabidopsis thaliana, Saimiriine herpesvirus 2, Campylobacter jejuni subsp. jejuni NCTC 11168, Saccharomyces cerevisiae, Listeria innocua, Danio rerio, Mus musculus, Ciona intestinalis" 50

inalis"

- 5720 5850 36 "Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Mycoplasma gallisepticum R, Enterococcus faecalis V583, Dictyostelium discoideum, Clostridium difficile, Rickettsia montanensis, Rickettsia rickettsii, Arabidopsis thaliana, Plasmodium yoelii, Encalypta armata, Gallus gallus, Oryza sativa (japonica cultivar-group), Equus caballus"
- 5721 5851 23 "Caenorhabditis briggsae, Homo sapiens, Symbiodinium sp. MV, Symbiodinium sp. PURPFLEX, Symbiodinium sp. PSP1-05, Symbiodinium sp. PK702, Symbiodinium sp. CCMP421, Symbiodinium sp. 141B2, Symbiodinium sp. Mp, Symbiodinium sp. Pc, Symbiodinium sp. S579, Symbiodinium sp. HPiH-2, Symbiodinium sp. S 10
571, Symbiodinium sp. Cg, Symbiodinium sp. Pa, Symbiodinium sp. 385B3, Symbiodinium sp. Ba, Symbiodinium sp. A002, Symbiodinium sp. 12B1, Gymnodinium simplex, Symbiodinium sp. Y109, Symbiodinium sp. KB8, Symbiodinium sp. Zs, Symbiodinium sp. FLCASS, Symbiodinium sp. FAipt, Symbiodinium sp. FLAP4, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Hordeum vulgare subsp. vulgare, Scrippsiella trochoidea"
- 5722 5852 24 "Homo sapiens, Sulfolobus tokodaii, Arabidopsis thaliana, Plasmodium falciparum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Pan troglodytes"
- 5723 5853 23 "Homo sapiens, Mus musculus, Eimeria tenella, Streptococcus mutans UA159" 20
- 5724 5854 23 "Homo sapiens, Lotus corniculatus var. japonicus, Danio rerio, Mus musculus"
- 5725 5855 27 "Bos taurus, Mus musculus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Papio anubis, Medicago truncatula, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Pan troglodytes, Oryza sativa, Danio rerio"
- 5726 5856 29 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio, Medicago truncatula, Dictyostelium discoideum, Caenorhabditis elegans, Xenopus laevis, Thermoanaerobacter tengcongensis, Takifugu rubripes, Pan troglodytes, Drosophila melanogaster, Papio anubis, Sphaeroides nephelus, Prochlorococcus marinus, Sweet potato chlorotic stunt virus, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Ureaplasma urealyticum, Plasmodium falciparum 3D7, Rattus norvegicus, Enterobacteria phage RB49" 30
- 5727 5857 33 "Homo sapiens, Buchnera aphidicola str. Bp (Baizongia pistaciae), Oryza sativa (japonica cultivar-group), Thermosynechococcus elongatus BP-1, Caenorhabditis elegans, Brassica napus, Mus musculus, Danio rerio, Borrelia burgdorferi B31, Drosophila melanogaster, Saccharomyces cerevisiae, Arabidopsis thaliana, Columba speciosa, Columba subvinacea, Columba plumbea, Columba oenops, Columba leucocephala, Lotus corniculatus var. japonicus, Mycoplasma penetrans 40
, Medicago truncatula, Candida albicans, Sus scrofa"
- 5728 5858 71 "Buchnera aphidicola str. Sg (Schizaphis graminum), Pasteurella multocida, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Homo sapiens, Mycoplasma capricolum, Salmonella typhi, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Salmonella enterica subsp. enterica serovar Typhi, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Caenorhabditis briggsae, Drosophila melanogaster, Mus musculus, Hylobates syndactylus, Gorilla gorilla, Hylobates lar, Pan paniscus, Arabidopsis thaliana, Variola minor virus, Variola virus, Vibrio cholerae, Oryza sativa (japonica cultivar-group), Haemophilus ducreyi 35000HP, Pan troglodytes, Clostridium perfringe 50

- ns str. 13, Variola major virus, Triticum aestivum"
- 5729 5859 25 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Pleistodontes rieki, Eupristina verticillata, Heterodoxus macropus, Culicoides imicola, Partula thetis, Laminella sanguinea, Synchaeta cf. pectinata, Phyciodes pharon, Simyra henrici, Eumacaria latiferrugat"
- 5730 5860 127 "Bacillus anthracis str. Ames, Mycoplasma capricolum, Ureaplasma urealyticum, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. Sg (Schizaphis graminum), Lycopersicon esculentum, Buchnera aphidicola str. APS (Acyrth)"
- 5731 5861 44 "Schizosaccharomyces pombe, Clostridium tetani E88, Arabidopsis thaliana, Boltenia villosa, Clostridium perfringens str. 13, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Mus musculus, Danio rerio, Vibrio vulnificus CMCP6, Drosophila melanogaster, Glycine max, Mycoplasma pulmonis, Buchnera aphidicola (Panaphis juglandis), Saccharomyces cerevisiae, Melanoplus sanguinipes entomopoxvirus" 10
- 5732 5862 27 "Mus musculus, Papio anubis, Human herpesvirus 5, Homo sapiens, Rattus norvegicus, Plasmodium falciparum 3D7, Mytilus galloprovincialis"
- 5733 5863 24 "Lotus corniculatus var. japonicus, Homo sapiens, Mus musculus, Oceanobacillus iheyensis HTE831"
- 5734 5864 37 "Dictyostelium discoideum, Homo sapiens, Lycopersicon esculentum, Drosophila melanogaster, Plasmodium falciparum 3D7, Chironomus oppositus, Chironomus maddeni, Chironomus jacksoni, Arabidopsis thaliana, Mus musculus, Pediculus schaeffi, Hordeum vulgare subsp. vulgare, Streptococcus pyogenes MGAS 8232, Streptococcus pyogenes, Nicotiana tabacum, Danio rerio, Hypostomus isbrueckeri, Ciona intestinalis, Trypanosoma equiperdum, Botryotinia fuckeliana, Rattus norvegicus, Caenorhabditis elegans, Oryzias latipes, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Bacillus megaterium, Hypostomus sp. BR 98-2 19, Gossypium herbaceum, Marginopora vertebralis, Bacillus halodurans, Clostridium perfringens str. 13" 20
- 5735 5865 28 "Drosophila melanogaster, Homo sapiens, Danio rerio, Mus musculus, Arabidopsis thaliana, Buchnera aphidicola, Medicago truncatula, Ehrlichia chaffeensis, Borrelia burgdorferi B31, Dictyostelium discoideum, Equus caballus, Plasmodium falciparum 3D7, Candidatus Blochmannia floridanus, Bacillus halodurans, Clostridium perfringens str. 13" 30
- 5736 5866 35 "Homo sapiens, Mus musculus, Drosophila melanogaster, Janacekia debaisieuxi, Papio anubis, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Asteronema ferruginea, Beta corolliflora"
- 5737 5867 36 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Dictyostelium discoideum, Oryza sativa, Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Bacillus anthracis str. Ames, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Bacillus cereus, Oryza sativa (indica cultivar-group), Plasmodium falciparum, Rattus norvegicus, Plasmodium gallinaceum, Equus caballus, Nostoc sp. PCC 71 20" 40
- 5738 5868 27 "Homo sapiens, Lotus corniculatus var. japonicus, TTV-like mini virus, Mus musculus, Bacillus subtilis, Listeria monocytogenes, Bacillus subtilis subsp. subtilis str. 168, Bacillus cereus ATCC 14579, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Lactococcus lactis subsp. lactis, Danio rerio, Ureaplasma urealyticum, Oryza sativa, An 50

- opheles gambiae, Blastocrithidia culicis"
- 5739 5869 26 "Prochlorococcus marinus, Homo sapiens, Mus musculus, Leptospira interrogans serovar lai str. 56601, Candidatus Carsonella ruddii, Dictyostelium discoideum, Danio rerio, Xenopus laevis, Methanosarcina acetivorans C2A, Caenorhabditis briggsae, Broad bean necrosis virus, Oryza sativa (japonica cultivar-group), Equus caballus"
- 5740 5870 27 "Takifugu rubripes, Homo sapiens, Mus musculus, Sulfolobus solfataricus, Caenorhabditis elegans, Pichia pastoris, Arsenophonus endosymbiont of Bemisia sp."
- 5741 5871 25 "Homo sapiens, Mus musculus, Atelerix albiventris, Human immunodeficiency virus 1, Caenorhabditis elegans, Vochysia ferruginea, Buchnera aphidicola str. Sg (Schizaphis graminum), Vagaria parviflora, Plasmodium falciparum, Oncothrips antennatus, Physarum polycephalum, uncultured bacterium" 10
- 5742 5872 20 "Mus musculus, Streptococcus mutans UA159, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio"
- 5743 5873 23 "Dictyostelium discoideum, Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Danio rerio, Lactococcus lactis, Zea mays"
- 5744 5874 38 "Mus musculus, Homo sapiens, Haemophilus ducreyi 35000HP, Caenorhabditis elegans, Leptospira interrogans serovar lai str. 56601, Gallus gallus, Drosophila melanogaster, Arabidopsis thaliana, Humiria balsamifera, Oryza sativa (japonica cultivar-group), Danio rerio" 20
- 5745 5875 27 "Rattus norvegicus, Homo sapiens, Mus musculus, Nostoc sp. PCC 7120, Streptococcus agalactiae 2603V/R, Lycopersicon esculentum, Danio rerio, Cavia porcellus"
- 5746 5876 23 "Homo sapiens, Drosophila melanogaster, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Bacteriophage PSA, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50"
- 5747 5877 28 "Homo sapiens, Methanocaldococcus jannaschii, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Cupiennius salei, Mycoplasma penetrans, Metachirus nudicaudatus, Medicago truncatula, Drosophila melanogaster, Goatpox virus, Sheeppox virus, Arabidopsis thaliana, Rickettsia conorii, Lumpy skin disease virus, Danio rerio, Mycoplasma pulmonis, Trypanosoma congolense, Nostoc sp. PCC 7120" 30
- 5748 5878 27 "Danio rerio, Mus musculus, Dictyostelium discoideum, Homo sapiens, Mycoplasma pulmonis, Caenorhabditis elegans, Methanocaldococcus jannaschii, Nicotiana glauca, Arabidopsis thaliana, Streptococcus sp. Sv30, Streptococcus sp. Sv5, Streptococcus sp. Sv29, Caldicellulosilyticus lactoacetivorus, Campylobacter jejuni subsp. jejuni NCTC 11168, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Human immunodeficiency virus 1, Cyprinus carpio" 40
- 5749 5879 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio, Ciona intestinalis"
- 5750 5880 23 "Homo sapiens, Drosophila melanogaster, Clostridium tetani E88, Mus musculus, Vibrio parahaemolyticus, Neurospora crassa, Danio rerio, Sarcophaga lomentaria, Nostoc sp. PCC 7120"
- 5751 5881 32 "Homo sapiens, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Zymomonas mobilis, Nostoc sp. PCC 7120, Caenorhabditis elegans"
- 5752 5882 31 "Vibrio cholerae, Homo sapiens, Arabidopsis thaliana, Su" 50

- Ifolobus tokodaii*, *Caenorhabditis elegans*, *Mus musculus*, *Lactobacillus plantarum* WCFS1"
- 5753 5883 31 "Mus musculus, Rattus norvegicus, Homo sapiens, Arabidopsis thaliana"
- 5754 5884 28 "Caenorhabditis elegans, Homo sapiens, Danio rerio, Influenza A virus, Papio anubis, Mus musculus, Solanum tuberosum, Schistosoma mansoni"
- 5755 5885 43 "Homo sapiens, Plasmodium falciparum 3D7, Monosiga brevicollis, Mus musculus, Linum usitatissimum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Lancetes varius, Xylosandrus cf. zimmermanni SCY05, Danio rerio, Plasm" 10
- 5756 5886 27 "Homo sapiens, Pan troglodytes, Mus musculus, Yersinia pestis KIM, Yersinia pestis C092, Bacillus cereus ATCC 14579, Drosophila melanogaster, Pyrococcus furiosus DSM 3638, Caenorhabditis elegans, Zygodontium xanthoxylum, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii"
- 5757 5887 28 "Buchnera aphidicola str. Sg (Schizaphis graminum), Mus musculus, Methanocaldococcus jannaschii, Anopheles gambiae, Mycoplasma gallisepticum R, Homo sapiens, Arabidopsis thaliana, Danio rerio, Schizosaccharomyces pombe"
- 5758 5888 32 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Parachlorococcus marinus, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Conus auricularis, Arabidopsis thaliana, Caenorhabditis elegans, Bacillus thuringiensis, Staphylococcus aureus subsp. aureus Mu50, Leptospira interrogans serovar Lai str. 56601, Danio rerio, Schizosaccharomyces pombe, Candida albicans, Pandorina morum" 20
- 5759 5889 23 "Homo sapiens, Mus musculus, Escherichia coli CFT073, Escherichia coli, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Drosophila melanogaster, Danio rerio, Saccharomyces cerevisiae, Psammophaga simplicifolia"
- 5760 5890 27 "Homo sapiens, Trigona hypogaea, Mus musculus, Oryza sativa, Clostridium tetani E88, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Rattus norvegicus, Beryx splendens, Arabidopsis thaliana, Danio rerio" 30
- 5761 5891 29 "Homo sapiens, Mus musculus, Mycoplasma genitalium, Arabidopsis thaliana, Helicobacter pylori 26695, Danio rerio, Caenorhabditis elegans, Listeria monocytogenes, Bacillus subtilis subsp. subtilis str. 168, Melanoplus sanguinipes entomopoxvirus, Bacillus subtilis"
- 5762 5892 28 "Mus musculus, uncultured bacterium, Brucella melitensis 16M, Brucella suis 1330, Homo sapiens, Brucella melitensis, Listeria innocua, Brucella melitensis biovar Abortus, Oryza sativa (japonica cultivar-group)" 40
- 5763 5893 31 "Homo sapiens, Danio rerio, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Plasmodium falciparum, Caenorhabditis elegans, Enterococcus faecalis, Streptococcus agalactiae 2603V/R, Arabidopsis thaliana, Streptococcus pneumoniae, Cloning vector pAM120, Sinapis alba, Ciona intestinalis, Xenopus laevis, Guillardia theta, Triticum aestivum, Oryza sativa (japonica cultivar-group), Glycine tabacina, Empis livida, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Nephila inaurata madagascariensis, Medicago truncatula, Clostridium perfringens str. 13"
- 5764 5894 25 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Ara 50

- bidopsis thaliana, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Lactobacillus plantarum WCFS1, Danio rerio"
- 5765 5895 26 "Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Homo sapiens, Shewanella oneidensis MR-1, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Plasmodium falciparum"
- 5766 5896 24 "Homo sapiens, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Buchnera aphidicola str. Sg (Schizaphis graminum), Danio rerio, Mus musculus, Salmonella enterica subsp. enterica serovar Typhi, Enterococcus faecalis V583, Monosiga brevicollis, Plasmodium falciparum 3D7, Caenorhabditis elegans, Sulfolobus tokodaii, Rattus norvegicus, Macaca fascicularis"
- 5767 5897 27 "Leptostomum macrocarpum, Dictyostelium discoideum, Homo sapiens, Mus musculus, Drosophila melanogaster, Pan troglodytes, Arabidopsis thaliana, Serolella bouvieri, Caenorhabditis elegans, Clostridium perfringens str. 13, Shigella flexneri 2a str. 2457T, Shigella flexneri 2a str. 301, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Giardia tigrina, Streptococcus agalactiae NEM316, Escherichia coli K12, Danio rerio, Diospyros kaki, Oryza sativa (japonica cultivar-group)"
- 5768 5898 32 "Homo sapiens, Mus musculus, Methanosarcina mazei Goe1, Oceanobacillus iheyensis HTE831, Methanosarcina mazei, Brassica oleracea, Candidatus Carsonella ruddii, Escherichia coli, Arabidopsis thaliana, Schizosaccharomyces pombe, primary endosymbiont of Pachyphylla venusta, Escherichia coli 0157:H7, Roridula gorgonias"
- 5769 5899 33 "Homo sapiens, Drosophila melanogaster, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Medicago truncatula, Arabidopsis thaliana, Petroselinum crispum, Plasmodium falciparum 3D7, Borrelia burgdorferi, Myrmica sabuleti, Myrmica hellenica, Barmah Forest virus, Pyramimonas parkeae, Methanosarcina acetivorans C2A, Rattus norvegicus, Oryza sativa (indica cultivar-group), Myrmecia froggatti, Saccharomyces cerevisiae, Listeria innocua, Schizosaccharomyces pombe, Macaca fascicularis"
- 5770 5900 27 "Danio rerio, Arabidopsis thaliana, Ralstonia solanacearum, Homo sapiens, Drosophila melanogaster, Clostridium difficile, Mus musculus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis briggsae, Bradyrhizobium japonicum USDA 110, Candida albicans, Saccharomyces cerevisiae, Pan troglodytes"
- 5771 5901 30 "Danio rerio, Zea mays, Shewanella violacea, Homo sapiens, Mus musculus, Caenorhabditis elegans, Pyrobaculum aerophilum str. IM2, Xylocopa erythrina, Medicago truncatula"
- 5772 5902 28 "Homo sapiens, Arabidopsis thaliana, Borrelia burgdorferi B31, Mus musculus, Borrelia burgdorferi, Danio rerio, Medicago truncatula, Drosophila melanogaster, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pseudocaryopteris paniculata, Amethystea caerulea, Bacillus cereus ATCC 14579, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Papio aubis, Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Staphylococcus epidermidis, Bacteriophage Tuc2009, Gallus gallus, Mussaenda arcuata, Mussaenda erythrophylla, Santiria rubiginosa, Caryopteris bicolor"
- 5773 5903 31 "Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae"

- ae AR39, *Chlamydomonas reinhardtii* J138, *Chlamydomonas reinhardtii* TW-183, *Medicago truncatula*, *Arabidopsis thaliana*, *Shewanella oneidensis* MR-1, *Mus musculus*, *Homo sapiens*, *Streptococcus pneumoniae* R6, *Leptospira interrogans* serovar lai str. 56601, *Dictyostelium discoideum*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*"
- 5774 5904 30 "Mus musculus, Human immunodeficiency virus 1, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*, *Gallus gallus*, *Atelixer albiventris*, *Solanum soganandinum*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Marpissa pikei*, *Streptococcus pyogenes* M1 GAS, *Opisthocomus hoazin*, *Streptococcus pyogenes*, *Bacillus subtilis*, *Streptococcus pyogenes* SSI-1, *Mycoplasma penetrans*, *Oryza sativa* (japonica cultivar-group), *Bacillus subtilis* subsp. *subtilis* str. 168, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*" 10
- 5775 5905 32 "Homo sapiens, *Heliobacillus mobilis*, *Schmidtea mediterranea*, *Mycoplasma pneumoniae*, *Mus musculus*, *Silurana tropicalis*, *Dictyostelium discoideum*, *Cyprinus carpio*, *Danio rerio*, *Ureaplasma urealyticum*, *Oryza sativa* (japonica cultivar-group), *Oryzias latipes*, *Nitrosomonas europaea* ATCC 19718, *Nostoc* sp. PCC 7120, *Medicago truncatula*, *Pan troglodytes*, *Aquifex aeolicus* VF5, *Xenopus laevis*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Papio anubis*, *Hodotermopsis japonica*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Gryllus firmus*, *Tetrahymena thermophila*, *Lotus corniculatus* var. *japonicus*, *Sulfolobus tokodaii*, *Mycoplasma penetrans*, *Rattus norvegicus*, *Saccharomyces cerevisiae*, *Human rhinovirus* 81, *Porphyra purpurea*, *Mesorhizobium lotii*" 20
- 5776 5906 26 "Coffea arabica, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Silene diclinis*"
- 5777 5907 29 "Candidatus *Blochmannia floridanus*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Acetabularia cliftonii*, *Entamoeba histolytica*, *Rattus norvegicus*, *Campylobacter jejuni*, *Mus musculus*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*" 30
- 5778 5908 27 "Homo sapiens, *Triatoma dimidiata*, Cloning vector pVLH/hsp, Cloning vector pVLH/int(+), Cloning vector pVLH-1, *Plasmodium falciparum*, *Cyprinus carpio*, *Staphylococcus epidermidis* ATCC 12228, *Drosophila melanogaster*, *Mus musculus*, *Staphylococcus epidermidis*, *Plasmodium falciparum* 3D7, *Puumala virus*, *Medicago truncatula*, *Oryza sativa*, *Papio anubis*, *Caenorhabditis elegans*, *Bos taurus*, *Yersinia pseudotuberculosis*, *Yersinia pestis* KIM, *Arabidopsis thaliana*, *Yersinia pestis*, *Yersinia pseudotuberculosis* (type O:1b), *Mycoplasma pulmonis*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Yersinia pestis* C092, *Listeria innocua*, *Danio rerio*, *Sus scrofa*, *Plasmodium chabaudi chabaudi*" 40
- 5779 5909 27 "Homo sapiens, *Ciona intestinalis*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Schistosoma japonicum*, *Enterococcus faecalis* V583, *Brassica oleracea*, *Clostridium acetobutylicum*, *Mus musculus*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Human immunodeficiency virus* 1, *Chaerophyllum khorossanicum*, synthetic construct, *Methanocaldococcus jannaschii*, *Clostridium perfringens* str. 13"
- 5780 5910 26 "Homo sapiens, *Arabidopsis thaliana*, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Mus musculus*, *Methanosarcina acetivorans* C2A, *Clostridium tyrobutyricum*, *Oryza sativa* (japonica cultivar-group)"
- 5781 5911 32 "Caenorhabditis elegans, *Bacillus cereus* ATCC 14579, *Hom* 50

- o sapiens, Halobacillus halophilus, Mus musculus, Rabies virus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Pirellula sp."
- 5782 5912 29 "Methanosarcina acetivorans C2A, Homo sapiens, Bacillus cereus ATCC 14579, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Oryza sativa, Caenorhabditis elegans, Xenopus laevis"
- 5783 5913 25 "Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Homo sapiens, Treponema vincentii, Haemophilus ducreyi 35000HP, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Arabidopsis thaliana, Candidatus Blochmannia floridanus" 10
- 5784 5914 27 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Caenorhabditis elegans, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Papio anubis, Panicum natalense, Panicum bulbosum, Pan troglodytes, Rhodomonas salina"
- 5785 5915 27 "Homo sapiens, Mus musculus, Danio rerio, Flammulina velutipes, Borrelia burgdorferi B31, Drosophila melanogaster, Sus scrofa, Gallus gallus, Spalacopus cyanus, Arabidopsis thaliana, Bacillus subtilis, Venerupis (Ruditapes) philippinarum"
- 5786 5916 24 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Drosophila melanogaster, Rattus norvegicus, Caenorhabditis elegans, Glomus mosseae" 20
- 5787 5917 36 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Candidatus Carsonella ruddii, Candidatus Phytoplasma pyri, Borrelia burgdorferi B31, Malus x domestica, Oryza sativa (japonica cultivar-group), Plasmodium yoelii, Clostridium perfringens st"
- 5788 5918 37 "Homo sapiens, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Medicago sativa, Pan troglodytes, Plasmodium falciparum 3D7, Danio rerio, Borrelia afzelii, Populus tremula, Medicago truncatula, Acaulospora colossica spore IVA.5, Acaulospora colossica spore VB.9, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Dictyostelium discoideum, Apis cerana, Sus scrofa, Paradamoetas sp. MCH-2001, Rickettsia prowazekii, Arabidopsis thaliana, Apis mellifera, Helle sp. SLW-2002, uncultured marine gamma proteobacterium EBAC31A08, Borrelia burgdorferi, Phlebotomus papatasi, Drosophila melanogaster, Tetrahymena thermophila, Securigera parviflora, Clostridium tetani E88, Polypterus bichir, Drosophila erecta, Varroa destructor, Streptococcus mutans UA159, Streptococcus mutans" 30
- 5789 5919 35 "Podospora anserina, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Kluyveromyces lodderae, Dictyostelium discoideum, Clostridium tetani E88, Mus musculus, Arabidopsis thaliana, Medicago truncatula, Plasmodium chabaudi chabaudi, Oryza sativa (japonica cultivar-group), Pan troglodytes, Monosiga brevicollis, Drosophila melanogaster, Brassica oleracea, Hypocrea jecorina, Plasmodium berghei, Euglena longa, Lotus corniculatus var. japonicus, Nicotiana tabacum, Rattus rattus, Saccharomyces servazzii, Melanoplus sanguinipes entomopoxvirus, Rattus norvegicus" 40
- 5790 5920 92 "Coxiella burnetii RSA 493, Borrelia burgdorferi B31, Neisseria meningitidis MC58, Shewanella oneidensis MR-1, Enterobacteria phage T4, Bacteroides thetaiotaomicron VPI-5482, Neisseria meningitidis Z2491, Bradyrhizobium japonicum USDA 110, Bradyrhizobium jap"
- 5791 5921 24 "Mus musculus, Homo sapiens, Macaca mulatta, Ehrlichia r 50

- uminantium, *Papio anubis*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Bacillus subtilis* subsp. subtilis str. 168, *Bacillus subtilis*"
- 5792 5922 28 "Homo sapiens, *Mus musculus*, *Danio rerio*"
- 5793 5923 27 "Homo sapiens, *Mannheimia haemolytica*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 5794 5924 23 "Homo sapiens, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Human immunodeficiency virus 1*, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Staphylococcus epidermidis* ATCC 12228, *Mus musculus*, *Beta vulgaris*, *Streptococcus sanguinis*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Helicobacter pylori* 26695, *Cucumis sativus*" 10
- 5795 5925 27 "Rattus norvegicus, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Lymantria dispar*, *Arabidopsis thaliana*"
- 5796 5926 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Mycobacterium leprae*, *Saccharomyces cerevisiae*"
- 5797 5927 29 "Caenorhabditis elegans, *Homo sapiens*, *Mus musculus*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), Peanut witches'-broom phytoplasma, *Chlamydia muridarum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Cygnus atratus*, *Shewanella oneidensis* MR-1, *Arabidopsis thaliana*, 'Chlorella' ellipsoidea, *Listeria innocua*, *Sarcophrynium brachystachys*, *Thermotoga maritima*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Streptococcus pneumoniae*, *Chlorella vulgaris*" 20
- 5798 5928 27 "Clostridium perfringens str. 13, *Caenorhabditis elegans*, *Mus musculus*, *Borrelia burgdorferi* B31, *Homo sapiens*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Avian infectious bronchitis virus*, *Chlamydia trachomatis*, *Schizosaccharomyces pombe*" 30
- 5799 5929 23 "Medicago truncatula, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Mus musculus*"
- 5800 5930 25 "Homo sapiens, *Dictyostelium discoideum*, *Mus musculus*, *Medicago truncatula*, *Drosophila melanogaster*, *Pyrocoelia rufa*, *Arabidopsis thaliana*, *Pachymeniopsis elliptica*, *Lotus corniculatus* var. japonicus, *Uroleucon caligatum*, *Danio rerio*, *Simian parvovirus*, *Oryza sativa* (japonica cultivar-group), *Campylobacter jejuni*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Lespesia archippivora*, *Streptococcus mutans* UA159, *Yersinia pestis* KIM, *Setonix brachyurus*, *Fowlpox virus*, *Entamoeba histolytica*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Saccharomyces cerevisiae*, *Yersinia pestis* C092, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Haemophilus influenzae* Rd KW20, *Tospovirus*, *Vigna angularis*" 40
- 5801 5931 24 "Mus musculus, *Caenorhabditis elegans*, *Syneta pilosa*, *Megascelis* sp. BDF-2000, *Chrysochus auratus*, *Colaspis* sp. BDF-2000, *Eumolpus* sp. BDF-2000, *Oomorhoides cupreatus*, *Pachybrachis mexicanus*, *Anomoea flavokansiensis*, *Saxinis saucia*, *Neochlamisus* sp. BDF-200"
- 5802 5932 28 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Paramecium tetraurelia*, *Dictyoste*" 50

lium discoideum, Cyanophora paradoxa"

- 5803 5933 23 "Homo sapiens, Yersinia pestis KIM, Hordeum vulgare subsp. vulgare, Caenorhabditis briggsae, Mus musculus, Cryptosporidium parvum, Yersinia pestis C092, Medicago truncatula, Branchiostoma floridae"
- 5804 5934 44 "Lactobacillus plantarum, Lactobacillus plantarum WCFS1, Homo sapiens, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Listeria innocua, Rattus norvegicus, Medicago truncatula"
- 5805 5935 47 "Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Human immunodeficiency virus 1, Homo sapiens, Oceanobacillus iheyensis HTE831, Cricetinae gen. sp."
- 5806 5936 28 "Oryza sativa (japonica cultivar-group), Homo sapiens, Arabidopsis thaliana, Euplotes octocarinatus, Caenorhabditis briggsae, Triticum aestivum subsp. tibeticum, Bacillus anthracis str. Ames, Aquifex aeolicus VF5, Cryptococcus neoformans var. grubii, Mus musculus, Escherichia coli, Orobanchella minor, Gallus gallus, Saccharomyces cerevisiae, Triticum aestivum, Bacillus anthracis, Danio rerio"
- 5807 5937 29 "Homo sapiens, Saccharomyces cerevisiae, Mus musculus, Oryza sativa (japonica cultivar-group), Brugia malayi, Carpilius corallinus, Borrelia burgdorferi B31, Pan troglodytes, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio, Plasmodium falciparum"
- 5808 5938 37 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Procambarus clarkii, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Antheraea pernyi, Drosophila melanogaster, Arabidopsis thaliana, Clostridium acetobutylicum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Ciona intestinalis"
- 5809 5939 23 "Macroptilium yellow mosaic Florida virus, Homo sapiens, Drosophila melanogaster, Mus musculus, Bugula dentata, Danio rerio"
- 5810 5940 28 "Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Pan troglodytes, Rattus norvegicus"
- 5811 5941 28 "Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Yersinia pestis KIM, Pan troglodytes, Mus musculus, Yersinia pestis C092, Bacillus cereus ATCC 14579, Leptospira interrogans serovar lai str. 56601, Methanosarcina mazei Goe1, Streptococcus thermophilus, Methanosarcina acetivorans C2A, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Pasteurella multocida, Cucumis melo, Lotus corniculatus var. japonicus, Danio rerio, Oryza sativa (japonica cultivar-group), Proteus mirabilis"
- 5812 5942 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Plasmodium falciparum 3D7, Plasmodium falciparum, Mus musculus, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Dictyostelium discoideum, Shigella flexneri 2a, Takydromus toyamai, Shigella flexneri"
- 5813 5943 37 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Dictyostelium discoideum, Kluyveromyces lactis, Papio anubis, Danio rerio, Arabidopsis thaliana, Zea mays, Lotus corniculatus var. japonicus, Rattus norvegicus, Blackburnia abax, Blackburnia aterrima, Bacillus phage GA-1, Petroselinum crispum, Cucumis melo, Borrelia burgdorferi B31, Drosophila melanogaster, Argia sedula, Plasmodium falciparum 3D7, Trypanosoma cruzi, Mollitrichosiphum nigrofasciatum, Streptococcus agalactiae NEM316, Nitrosomonas europaea ATCC 19718, Amsacta moore

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- i entomopoxvirus, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Medicago truncatula*, *Saccharomyces cerevisiae*, *Anopheles gambiae*"
- 5814 5944 24 "Canis familiaris, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Mus musculus*, *Homo sapiens*, *Danio rerio*, *Arabidopsis thaliana*, *Radiix auricularia*, *Bacillus anthracis* str. Ames, *Bacteroides thetaiotaomicron* VPI-5482, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Urophyllum ellipticum*, *Pravinarina leucocarpa*, *Commitheca liebrechtsiana*"
- 5815 5945 28 "Homo sapiens, *Mycoplasma pulmonis*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Podocoryne carnea*, *Lotus corniculatus* var. japonicus, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacteriophage SPBc2*, *Clostridium perfringens* str. 13" 10
- 5816 5946 35 "Mus musculus, *Homo sapiens*, *Arabidopsis thaliana*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Fusarium oxysporum*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Thermoanaerobacter tengcongensis*, *Cyanidium caldarium*, *Danio rerio*"
- 5817 5947 33 "Homo sapiens, *Moneuplotes crassus*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Clostridium tetani*, *Arabidopsis thaliana*, *Spodoptera litura* nucleopolyhedrovirus, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Rattus norvegicus*, *Dictyostelium discoideum*, *Bacillus anthracis* str. Ames, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Felis catus*, *Aedes aegypti*, *Ochlerotatus atropalpus*, *Staphylococcus aureus*, *Itosigo bellus*, *Sclerotinia sclerotiorum*, *Mycoplasma pulmonis*, *Lotus corniculatus* var. japonicus, *Tapinoma* sp. ACBJ.1, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Gasterosteus aculeatus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Candida glabrata*, *Candida albicans*, *Candida albicans* SC5314, *Synechocystis* sp. PCC 6803, *Staphylococcus aureus* subsp. *aureus* Mu50, *Clostridium perfringens* str. 13" 20
- 5818 5948 30 "Simian immunodeficiency virus, *Mus musculus*, *Gallus gallus*, *Arabidopsis thaliana*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Sulfolobus tokodaii*, *Chamaeleo fischeri*, *Danio rerio*, *Anopheles gambiae*, *Oryctolagus cuniculus*, *Drosophila melanogaster*, *Lycopersicon esculentum*, *Ehrlichia ruminantium*, *Clostridium acetobutylicum*, *Oceanobacillus iheyensis* HTE831, uncultured marine gamma proteobacterium EBAC31A08, *Rattus norvegicus*" 30
- 5819 5949 23 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*"
- 5820 5950 24 "Homo sapiens, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Ciona intestinalis*, *Oryza sativa* (japonica cultivar-group)"
- 5821 5951 32 "Lactococcus lactis subsp. *lactis*, *Homo sapiens*, *Streptococcus agalactiae* 2603V/R, *Arabidopsis thaliana*, *Mus musculus*, *Danio rerio*, *Listeria monocytogenes*, *Coxiella burnetii* RSA 493, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Yersinia pestis* KIM, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Pan troglodytes*, *Gorilla gorilla*, *Pongo pygmaeus*, *Streptococcus agalactiae* NEM316, *Candidatus Blochmannia floridanus*, *Marchantia polymorpha*, *Rattus norvegicus*, *Yersinia pestis* C092, *Listeria innocua*, *Actinobacillus actinomycetemcomitans*" 40
- 5822 5952 45 "Lactococcus lactis, *Bacillus anthracis* str. Ames, *Mycoplasma penetrans*, *Lactococcus lactis* subsp. *lactis*, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Listeria monocytogenes*, *Rickettsia conorii*, *Chlamydomonas reinhardtii*" 50

- hardtii, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Porcellionides sexfasciatus*, *Canis familiaris*, *Mus musculus*, *Porcellio scaber*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Acholeplasma laidlawii*, *Haemophilus influenzae* Rd KW20, *Haemophilus influenzae*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 5823 5953 102 "Staphylococcus epidermidis ATCC 12228, *Staphylococcus epidermidis*, *Lactococcus lactis*, *Bacillus cereus* ATCC 14579, *Streptococcus agalactiae* NEM316, *Bacillus anthracis* str. Ames, *Ureaplasma urealyticum*, *Enterococcus faecalis* V583, *Streptococcus agalactiae* 26"
- 5824 5954 28 "Bacillus halodurans, *Homo sapiens*, *Haemophilus ducreyi* 35000HP, *Mus musculus*, *Providencia stuartii*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Enterococcus faecalis* V583, *Xenopus laevis*, *Pan troglodytes*, *Hordeum vulgare* subsp. *vulgare*, *Thermoanaerobacter tengcongensis*, *Trypanosoma brucei*, *Sulfolobus tokodaii*, *Danio rerio*, *Clostridium perfringens* str. 13" 10
- 5825 5955 27 "Sparus aurata, *Caenorhabditis elegans*, *Sulfolobus shibatae*, *Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Herpetosiphon aurantiacus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Connochaetes taurinus taurinus*"
- 5826 5956 27 "Homo sapiens, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Mus musculus*, *Triatoma flavida*, *Triatoma bruneri*, *Clostridium beijerinckii*, *Danio rerio*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Synergus gallae pomiformis*, Tobacco curly shoot virus-associated DNA beta, *Rickettsia prowazekii*, *Dicliptera yellow mottle virus*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*" 20
- 5827 5957 27 "Homo sapiens, *Pan troglodytes*, *Drosophila melanogaster*, *Mycoplasma pulmonis*, *Mus musculus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Bacteroides fragilis*, *Tetrahymena thermophila*, *Danio rerio*, *Synechococcus* sp. WH 8102, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Arabis gemmifera*, *Rattus norvegicus*"
- 5828 5958 27 "Homo sapiens, *Mus musculus*, *Bos taurus*, *Caenorhabditis elegans*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, RV-Pit viper, *Lotus corniculatus* var. *japonicus*, *Thermoplasma volcanium*, *Streptococcus mutans*, *Glycyrrhiza echinata*" 30
- 5829 5959 67 "Chlamydomonas caviae GPIC, *Mycoplasma gallisepticum* R, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Mycoplasma pulmonis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Thermosynechococcus elongatus* BP-1, *Mycoplasma capricolum*, *Rickettsia prowazekii*, *Ureaplasma urealyticum*, *Mycoplasma genitalium*, *Borrelia burgdorferi* B31, *Arabidopsis thaliana*, *Streptococcus pneumoniae* R6, *Bordetella pertussis*, *Nostoc* sp. PCC 7120, *Coxiella burnetii* RSA 493, *Dictyostelium discoideum*, *Corynebacterium glutamicum* ATCC 13032, *Vibrio vulnificus* CM CP6, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Yersinia pestis* KIM, *Vibrio cholerae*, *Yersinia pestis* C092, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Lactobacillus plantarum* WCFS1, *Haemophilus influenzae* Rd KW20, *Clostridium perfringens* str. 13" 40
- 5830 5960 144 "Buchnera aphidicola str. Bp (*Baizongia pistaciae*), *Ciona intestinalis*, *Clostridium tetani* E88, *Candidatus Blochmannia floridanus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Mycoplasma genitalium*, *Borrelia burgdorferi*, *Buchnera aphidicola*"
- 5831 5961 40 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Ho 50

- mo sapiens, *Xenopus borealis*, *Candidatus Blochmannia floridanus*, *Oceanobacillus iheyensis* HTE831, *Caenorhabditis elegans*, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Enterococcus faecalis* V583, *Pterolebias longipinnis*, *Bacillus cereus*, *Synechocystis* sp. PCC 6803, *Synechocystis* sp., *Methanococcus maripaludis*, *Rattus* sp., *Bos taurus*, *Macaca fascicularis*, *Rattus norvegicus*"
- 5832 5962 32 "Caenorhabditis elegans, Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Clostridium acetobutylicum, Autographa californica nucleopolyhedrovirus, Plasmodium falciparum 3D7, Danio rerio, Bombyx mori nuclear polyhedrosis virus, Mus musculus, Dicty"
- 5833 5963 27 "Triticum monococcum, Homo sapiens, Mus musculus, Lactobacillus plantarum WCFS1, Danio rerio, Staphylococcus epidermidis ATCC 12228, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Anopheles gambiae, Arabidopsis thaliana" 10
- 5834 5964 85 "Listeria innocua, Clostridium perfringens str. 13, Candidatus Blochmannia floridanus, Ureaplasma urealyticum, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Bacillus cereus ATCC 1"
- 5835 5965 25 "Streptococcus mutans UA159, Plasmodium falciparum 3D7, Homo sapiens, Streptococcus pyogenes MGAS315, Podospira anserina, Mus musculus, Streptococcus pyogenes SSI-1, Drosophila melanogaster, Caenorhabditis elegans, Shewanella oneidensis MR-1, Schmidtea mediterranea, Oncorhynchus clarki, Trichomonas vaginalis, Dictyostelium discoideum, Arabidopsis thaliana, Euglena gracilis, Rickettsia prowazekii, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Entamoeba histolytica, Lotus corniculatus var. japonicus, Entamoeba dispar, Saccharomyces cerevisiae, Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Ajellomyces capsulatus, Nostoc sp. PCC 7120, Clostridium perfringens str. 13" 20
- 5836 5966 32 "Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Caenorhabditis briggsae, Newcastle disease virus, Homo sapiens" 30
- 5837 5967 135 "Coxiella burnetii RSA 493, Leptospira interrogans serovar lai str. 56601, Oceanobacillus iheyensis HTE831, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Listeria innocua, Helicobacter pylori J99, Helicobacter hepaticus ATCC 51449, Lis"
- 5838 5968 27 "Medicago truncatula, Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Candidatus Carsonella ruddii, Oryza sativa (japonica cultivar-group), Drosophila vulcana, Drosophila melanogaster, Arachis hypogaea, Leishmania tarentolae, Rattus norvegicus, Caenorhabditis elegans, Staphylococcus epidermidis ATCC 12228, Caenorhabditis briggsae, Staphylococcus epidermidis, Drosophila hydei" 40
- 5839 5969 35 "Nostoc sp. PCC 7120, Mus musculus, Homo sapiens, Camel pox virus CMS, Danio rerio, Plasmodium knowlesi, Camel pox virus M-96"
- 5840 5970 31 "Homo sapiens, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Rattus norvegicus, Pan troglodytes, Carex backii, Periplaneta americana, Caenorhabditis elegans, Danio rerio, Saccharomyces cerevisiae, Nicotiana tomentosiformis, Helicobacter hepaticus ATCC 51449, Mycoplasma hyopneumoniae"
- 5841 5971 37 "Enterococcus faecalis V583, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Medicago truncatula, Mus musculus, Prochlorococcus ma 50

rinus, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum*, *Felis catus*, *Arabidopsis thaliana*, *Cucumis melo*, *Caenorhabditis elegans*, *Ursus americanus*, *Dictyostelium discoideum*, *Pan troglodytes*, *Drosophila melanogaster*, *Guillardia theta*, *Rickettsia conorii*, *Caenorhabditis briggsae*, *Euglena longa*, *Spinacia oleracea*, *Calopteryx xanthostoma*, *Lotus corniculatus* var. japonicus, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Tetrahymena thermophila*, *Cerataphis brasiliensis*"

5842 5972 31 "Homo sapiens, *Mus musculus*, *Plasmodium vivax*, *Oryza sativa* (japonica cultivar-group), *Methanosarcina mazei* Goe1, Human immunodeficiency virus 1, *Arabidopsis thaliana*, *Botryotinia fuckeliana*"

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5843 5973 25 "Clostridium acetobutylicum, Homo sapiens, *Mus musculus*, *Shewanella oneidensis* MR-1, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Trypanosoma cruzi*, *Rickettsia conorii*, *Cyanidium caldarium*, *Caenorhabditis elegans*, *Danio rerio*, *Medicago truncatula*, *Streptococcus mutans* UA159, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Dictyostelium discoideum*, *Prochlorococcus marinus*, *Stylonychia lemnae*, *Trypanosoma brucei*"

5844 5974 25 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Coxiella burnetii* RSA 493, *Lycopersicon peruvianum*, *Calotes emma*"

5845 5975 23 "*Mus musculus*, Homo sapiens, *Schistosoma margrebowiei*, *Sus scrofa*, *Danio rerio*, *Enterococcus hirae*, *Rana catesbeiana*, *Lotus corniculatus* var. japonicus, *Schistosoma mansoni*"

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5846 5976 25 "Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Helicoverpa zea* single nucleocapsid nucleopolyhedrovirus, *Caenorhabditis elegans*, *Bordetella parapertussis*, *Bordetella bronchiseptica*, *Danio rerio*, *Coturnix japonica*"

5847 5977 28 "*Mus musculus*, *Leptospira interrogans* serovar lai str. 56601, Homo sapiens, *Pasteurella multocida*, *Leptospira interrogans*, *Borrelia burgdorferi* B31, *Prochlorococcus marinus*, *Caenorhabditis elegans*, Oat sterile dwarf virus, *Danio rerio*, *Buchnera aphidicola*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Neurospora crassa*"

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5848 5978 28 "Homo sapiens, *Mus musculus*, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, Goatpox virus, *Catharant hus roseus*, Lumpy skin disease virus, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Cyanea capillata*, *Bacillus megaterium*, *Rattus norvegicus*, *Staphylococcus aureus* subsp. aureus Mu50"

5849 5979 24 "*Fatsia japonica*, *Schefflera* cf. *arboricola* 317PV02, *Den dropanax arboreus*, *Polyscias balfouriana*, *Cussonia thyrsoiflora*, *Schefflera elegantissima*, *Pseudopanax* sp. Vargas 68PV01, *Hedera cypria*, *Hedera maderensis* subsp. maderensis, *Hedera helix* subsp. hibernica"

40

5850 5980 26 "*Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Mus musculus*, Homo sapiens, *Rattus norvegicus*, *Arabidopsis thaliana*, uncultured bacterium, *Saccharomyces cerevisiae*"

5851 5981 27 "Homo sapiens, *Mus musculus*, *Clostridium acetobutylicum*, *Danio rerio*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Staphylococcus aureus*, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Shewanella oneidensis* MR-1, *Caeno*

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rhabditis elegans, *Rickettsia montanensis*, *Oryza sativa*, *Neurospora crassa*, *Amsacta moorei* entomopoxvirus, *Lotus corniculatus* var. *japonicus*, *Thermoplasma volcanium*, *Rattus norvegicus*"

5852 5982 23 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Escherichia coli* CFT073, *Drosophila yakuba*, *Arabidopsis thaliana*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Candidatus Blochmannia floridanus*, Equine rotavirus"

5853 5983 26 "Pan troglodytes, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Danio rerio*, *Arabidopsis thaliana*" 10

5854 5984 23 "Homo sapiens, *Arabidopsis thaliana*, *Mycoplasma gallisepticum* R, *Mus musculus*, *Plasmodium falciparum*, *Lactococcus lactis* subsp. *lactis*, *Bacteriophage* bIL310, *Papaya ringspot virus*, *Danio rerio*"

5855 5985 35 "Oceanobacillus iheyensis HTE831, *Danio rerio*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Hildenbrandia rivularis*, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa* (*indica* cultivar-group), *Plasmodium falciparum*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Cryptolithodes typicus*, *Caprine arthritis-encephalitis virus*, *Spodoptera litura*, *Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*, *Clostridium perfringens* str. 13" 20

5856 5986 29 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Oryza sativa* (*japonica* cultivar-group), *Pan troglodytes*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Danio rerio*"

5857 5987 32 "Pan troglodytes, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Ixodes pilosus*, synthetic construct, African swine fever virus, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Neurospora crassa*, *Sminthopsis macroura*, *Neosciomyza luteipennis*, *Euperipatoides rowelli*, *Baeothele saukros*, *Candidatus Blochmannia floridanus*, *Bombyx mori*, *Saccharomyces cerevisiae*" 30

5858 5988 29 "Homo sapiens, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Caenorhabditis elegans*, *Rhesus cytomegalovirus* strain 68-1, *Rattus norvegicus*, *Arabidopsis thaliana*, *Avian infectious bronchitis virus*, *Danio rerio*"

5859 5989 31 "Mus musculus, *Crepidula immersa*, *Homo sapiens*, *Arabidopsis thaliana*, *Chlamydomonas eugametos*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Caenorhabditis elegans*, *Rattus norvegicus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Brachinus hirsutus*"

5860 5990 26 "Kluyveromyces delphensis, *Oryza sativa* (*japonica* cultivar-group), *Dictyostelium discoideum*, *Methanosarcina mazei* Goe1, *Homo sapiens*, *Lactococcus lactis* subsp. *lactis*, *Bacteriophage* bIL286, *Arabidopsis thaliana*, *Mus musculus*, *Caenorhabditis elegans*, *Danio rerio*, *Listeria ivanovii*, *Medicago truncatula*, *Drosophila melanogaster*, *Streptococcus mutans* UA159, *Lactococcus bacteriophage* 4268, *Lactococcus lactis bacteriophage* u136, *Clarkia lewisii*, *Victoria cruziana*, *Lactococcus bacteriophage* phi31" 40

5861 5991 31 "Homo sapiens, *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Gallus gallus*, *Pan troglodytes*, *Medicago truncatula*, *Dictyostelium discoideum*, *Staphylococcus epidermidis* ATCC 12228, *Rickettsia prowazekii*, *Caenorhabditis elegans*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Melanoplus sanguinipes* e 50

ntomopoxvirus, Arabidopsis thaliana"

5862 5992 27 "Homo sapiens, Parodia microsperma, Methanocaldococcus jannaschii, Danio rerio, Rattus norvegicus, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Urostrophus gallardoi, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Arabidopsis thaliana"

5863 5993 31 "Mus musculus, Homo sapiens, Danio rerio, Streptococcus agalactiae NEM316, Saccharomyces cerevisiae, Drosophila melanogaster, Arabidopsis thaliana, Pan troglodytes, Oryza sativa (japonica cultivar-group), Haemophilus ducreyi 35000HP, Rattus norvegicus, Oryzias latipes" 10

5864 5994 31 "Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus, Cryptosporidium parvum, Borrelia burgdorferi B31, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Danio rerio, Medicago truncatula, Anopheles gambiae, Orf virus, Nostoc sp. PCC 7120"

5865 5995 66 "Treponema pallidum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Amoeba proteus symbiotic bacterium, Streptococcus agalactiae 2603V/R, Lactococcus lactis subsp. lactis, Streptococcus agalactiae NEM316, Leptospira interrogans serovar lai str. 56601, Homo sapiens, Arabidopsis thaliana, Catharanthus roseus, Coxiella burnetii RSA 493, Leuconostoc mesenteroides, Mycoplasma pulmonis, Guillardia theta, Mus musculus, Bartonella henselae" 20

5866 5996 87 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Amoeba proteus symbiotic bacterium, Haemophilus ducreyi 35000HP, Homo sapiens, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Lactococcus lactis subsp. lactis, Globodera tabacum tabacum, Octopus dofleini, Streptococcus pyogenes SSI-1, Globodera rostochiensis, Mus musculus, Candidatus Blochmannia floridanus, Plasmodium falciparum 3D7, Plasmodium falciparum, Danio rerio, Arabidopsis thaliana, Ciona intestinalis, Globodera tabacum virginiae, Globodera tabacum solanacearum, Globodera sp., Medicago truncatula"

5867 5997 26 "Plasmodium falciparum 3D7, Danio rerio, Homo sapiens, Sulfolobus solfataricus, Tetrahymena thermophila, Shewanella oneidensis MR-1, Mus musculus, Mycoplasma pneumoniae, Vibrio cholerae, Caenorhabditis elegans, Haemophilus influenzae Rd KW20" 30

5868 5998 43 "Rattus norvegicus, Clostridium acetobutylicum, Clostridium tetani E88, Mus musculus, Plasmodium falciparum 3D7, Plasmodium falciparum, Listeria innocua, Caenorhabditis elegans, Amoeba proteus symbiotic bacterium, Clostridium perfringens str. 13, Homo sapiens, Treponema pallidum, Leptospira interrogans serovar lai str. 56601, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Vibrio parahaemolyticus, Danio rerio, Amoeba proteus" 40

5869 5999 91 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Haemophilus ducreyi 35000HP, Buchnera aphidicola str. Sg (Schizaphis graminum), Vibrio parahaemolyticus, Haemophilus influenzae Rd KW20, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Clo"

5870 6000 29 "Drosophila melanogaster, Mus musculus, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Caenorhabditis elegans, Danio rerio, Candidatus Blochmannia floridanus, Shuttle vector pSET3, Shuttle vector pSET2, Shuttle vector pSET1, Mycoplasma penetrans, Borrelia burgdorferi, Venerupis (Ruditapes) philippinarum, Str 50

- eptococcus suis, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Methanosarcina mazei Goe1, Canis familiaris, Oryza sativa (japonica cultivar-group), Abutilon fraseri, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Rattus norvegicus, Plocamium violaceum, Plocamiocolax pulvinata"
- 5871 6001 25 "Western X phytoplasma, Homo sapiens, Schizosaccharomyces japonicus, Drosophila simulans, Arabidopsis thaliana, Mus musculus, Apis mellifera, Apis mellifera carnica, Apis mellifera cecropia, Apis mellifera macedonica, Apis mellifera adami, Apis mellifera anatoliaca, Apis mellifera caucasica, Apis mellifera mellifera, Apis mellifera sicula, Apis mellifera ligustica, Apis mellifera pomonella, Yersinia pestis KIM, Oryza sativa (japonica cultivar-group), Cyprinus carpio, Yersinia pestis C092, Mus spicilegus, Mus musculus musculus, Fejervarya iskandari"
- 5872 6002 23 "Homo sapiens, Pyrococcus horikoshii, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Mycoplasma genitalium, Amblyomma hebraeum"
- 5873 6003 27 "Danio rerio, Mus musculus, Drosophila melanogaster, Homo sapiens, Carlia rostralis, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Meleagris gallopavo, Sus scrofa, Oryza sativa, Lotus corniculatus var. japonicus, Arabidopsis thaliana"
- 5874 6004 25 "Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Anopheles gambiae, Plasmodium falciparum 3D7, Clostridium tetani E88, Lactococcus lactis subsp. lactis, Streptococcus thermophilus, Escherichia coli, Arabidopsis thaliana, Plasmodium falciparum, IncQ-like plasmid pIE1107, Danio rerio, Clostridium perfringens str. 13"
- 5875 6005 28 "Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Pan troglodytes, Mus musculus, Shewanella oneidensis MR-1, Flexamia arizonensis, Oryza sativa (japonica cultivar-group), Gillichthys mirabilis, Arabidopsis thaliana, Danio rerio, Medicago truncatula, Sylvilagus floridanus"
- 5876 6006 27 "Mus musculus, Ateline herpesvirus 3, Homo sapiens, Arabidopsis thaliana, Danio rerio, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Rattus norvegicus, Drosophila melanogaster, Triticum monococcum, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Dictyostelium discoideum, Equus caballus"
- 5877 6007 28 "Homo sapiens, Arabidopsis thaliana, Pan troglodytes, Bacillus cereus ATCC 14579, Glycine max, Mus musculus, Pisum sativum, Floribundaria usneoides, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Plasmodium falciparum 3D7, Escherichia coli K12, Escherichia coli O157:H7 EDL933, Escherichia coli, Streptococcus thermophilus, Lotus corniculatus var. japonicus, Danio rerio, Caenorhabditis elegans, Schizosaccharomyces pombe, Listeria monocytogenes, Oryza sativa (japonica cultivar-group), Entamoeba histolytica, Escherichia coli O157:H7"
- 5878 6008 28 "Mus musculus, Homo sapiens, Aquila adalberti, Listeria monocytogenes, Pan troglodytes, Drosophila melanogaster, Blackburnia viridis, Blackburnia kukui, Rickettsia conorii, Rickettsia rickettsii, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Rattus norvegicus"
- 5879 6009 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Brassica juncea, Zea mays, Gallus gallus, Mus musculus, Human papillomavirus type 59, Arabidopsis thaliana, Dendritina zhengae, Myotis montivagus"
- 5880 6010 26 "Helicobacter hepaticus ATCC 51449, Homo sapiens, Mus musculus, Danio rerio"

- 5881 6011 23 "Homo sapiens, Danio rerio, Arabidopsis thaliana, Caenorhabditis elegans, Mus musculus"
- 5882 6012 39 "Homo sapiens, Danio rerio, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Enterococcus faecalis V583, Papio anubis, Clostridium tetani E88, Shewanella oneidensis MR-1, Canis familiaris, Plasmodium falciparum 3D7, Enterococcus faecalis, Zea mays, Oryza sativa, Leersia oryzoides, Aegilops crassa, Aegilops columnaris, Triticum aestivum, Synechocystis sp. PCC 6803, Nostoc sp. PCC 7120, Clostridium perfringens str. 13" 10
- 5883 6013 31 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Lasthenia californica subsp. californica, Lasthenia ornduffii, Medicago truncatula, Marmota caudata, Danio rerio, Triticum aestivum, Rattus norvegicus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Hordeum vulgare, Pan troglodytes, Gracilaria gracilis, Neurospora crassa, Oryza sativa (japonica cultivar-group), Arabidopsis lyrata, Gallus gallus, Felis catus, Papio anubis"
- 5884 6014 25 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Gosypium hirsutum, Danio rerio, Human immunodeficiency virus 1, Drosophila melanogaster, Papio anubis, Clostridium tetani E88, Oryza sativa (indica cultivar-group), Arabidopsis thaliana, Allium cepa, Rattus norvegicus, Synechocystis sp. PCC 6803" 20
- 5885 6015 23 "Papio anubis, Homo sapiens, Caenorhabditis elegans, Aterix albiventris, Arabidopsis thaliana, Gitona bivisualis, Neotephritis sp. PTS-2001, Clostridium acetobutylicum, Pan troglodytes, Lycopersicon esculentum"
- 5886 6016 63 "Xylella fastidiosa Temecula1, Yersinia pestis KIM, Xylella fastidiosa 9a5c, Yersinia pestis C092, Rickettsia prowazekii, Homo sapiens, Oceanobacillus ihayensis HTE831, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Vibrio vulnificus CMCP6, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Daucus carota, Ureaplasma urealyticum, Danio rerio, Helicobacter hepaticus ATCC 51449" 30
- 5887 6017 31 "Sulfolobus solfataricus, Homo sapiens, Oryza sativa (japonica cultivar-group), Prochlorococcus marinus subsp. marinus str. CCMP1375, Mus musculus, Clostridium perfringens str. 13, Vibrio parahaemolyticus, Caenorhabditis elegans"
- 5888 6018 44 "Pseudomonas aeruginosa, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Helicobacter hepaticus ATCC 51449, Homo sapiens, Clostridium acetobutylicum, Xylella fastidiosa 9a5c, Mus musculus, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Xylella fastidiosa Temecula1, Shewanella oneidensis MR-1, Xanthomonas campestris pv. campestris str. ATCC 33913, Danio rerio, Caenorhabditis elegans, Saccharomyces cerevisiae, Neurospora crassa, Xenopus laevis" 40
- 5889 6019 27 "Mus musculus, Homo sapiens, Methanosarcina mazei Goe1, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Haemophilus ducreyi 35000HP, Danio rerio"
- 5890 6020 21 "Oryza sativa (japonica cultivar-group), Homo sapiens, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Mus musculus"
- 5891 6021 28 "Homo sapiens, Oryctolagus cuniculus, Mus musculus, Hemiechinus auritus, Anabaena sp., Nostoc sp. PCC 7120, Rattus norvegicus, Avahi laniger, Dugong dugon, Danio rerio, Urotrichus talpoides, Oryza sativa (japonica cu 50

- ltivar-group), *Canis familiaris*, *Lactobacillus plantarum* WCFS1, *Reithrodontomys megalotis*, *Eumetopias jubatus*, *Brugia malayi*, *Medicago truncatula*, *Streptococcus mutans* UA159, *Clostridium acetobutylicum*, *Carnobacterium divergens*, *Chlamydia trachomatis*, *Chlamydomonas moewusii*, *Tetrahymena pyriformis*, *Caenorhabditis elegans*, *Mytilus galloprovincialis*, *Mycoplasma genitalium*"
- 5892 6022 27 "Drosophila melanogaster, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Xenopus laevis*, *Danio rerio*, *Caenorhabditis elegans*, Human herpesvirus 5, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, Human herpesvirus 6, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mycoplasma penetrans*, *Ciona intestinalis*" 10
- 5893 6023 47 "Staphylococcus epidermidis ATCC 12228, *Homo sapiens*, *Mus musculus*, *Megaptera novaeangliae*, *Pteronotus macleanii*, *Pteronotus quadridens*, *Oceanobacillus iheyensis* HTE831, *Oryza sativa* (japonica cultivar-group), *Helicobacter pylori*, *Vibrio parvulus*, *Vibrio cholerae*, *Arabidopsis thaliana*, *Bacillus halodurans*"
- 5894 6024 24 "Schistosoma japonicum, *Drosophila melanogaster*, *Homo sapiens*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Mus musculus*"
- 5895 6025 29 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Bacillus cereus* ATCC 14579, *Danio rerio*, *Mycobacterium leprae*, *Arabidopsis thaliana*, *Mytilus galloprovincialis*" 20
- 5896 6026 36 "Homo sapiens, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Saccharomyces douglasii*, *Danio rerio*, *Mus musculus*, *Goatpox virus*, *Saccharomyces cerevisiae*, *Eimeria tenella*, *Drosophila melanogaster*, *Agapanthus africanus*, *Drosophila* "
- 5897 6027 23 "Drosophila melanogaster, *Mus musculus*, *Homo sapiens*, *Saccharomyces cerevisiae*, *Danio rerio*, *Bos taurus*, *Dictyostelium discoideum*, *Pantoglycydes*, *Methanosarcina acetivorans* C2A"
- 5898 6028 24 "Medicago truncatula, *Homo sapiens*, *Staphylococcus epidermidis* ATCC 12228, *Paenibacillus polymyxa*, *Staphylococcus aureus*, *Sulfolobus solfataricus*, *Paenibacillus macerans*, *Oryza sativa* (japonica cultivar-group), *Trypanosoma brucei*, *Staphylococcus hominis*, *Staphylococcus aureus* subsp. *aureus* N315, *Mus musculus*, *Staphylococcus aureus* subsp. *aureus* Mu50" 30
- 5899 6029 30 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Chlamydia pneumoniae* CWL029, *Chlamydia pneumoniae* AR39, *Chlamydia pneumoniae* J138, *Sulfolobus tokodaii*, *Chlamydia pneumoniae* TW-183, *Danio rerio*, *Bacillus thuringiensis*, *Caenorhabditis elegans*, *Takifugu rubripes*, *Listeria monocytogenes*, *Tetrahymena pyriformis*"
- 5900 6030 23 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Haemophilus influenzae*, *Methanosarcina mazei* Goe1, *Melanoplus sanguinipes* entomopoxvirus" 40
- 5901 6031 31 "Homo sapiens, *Danio rerio*, *Zea mays*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Neurospora crassa*, *Psilotum nudum*, *Caenorhabditis elegans*, *Leptospira interrogans* serovar *lai* str. 56601, *Rattus norvegicus*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Ctenocephalides felis*, *Thermoanaerobacter tengcongensis*, *Plasmodium falciparum*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Amsacta moorei* entomopoxvirus, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Candida albicans* SC5314"
- 5902 6032 23 "Homo sapiens, *Mus musculus*, *Gallus gallus*, *Clostridium tetani* E88"
- 5903 6033 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), M 50

- ycoplasma mycoides subsp. mycoides SC, Drosophila melanogaster, Danio rerio, Mus musculus, Corynebacterium glutamicum, Caenorhabditis elegans, Caenorhabditis briggsae, Tropheryma whipplei TW08/27, Equine herpesvirus 2"
- 5904 6034 30 "Homo sapiens, Schizosaccharomyces pombe, Brucella melitensis 16M, Brucella suis 1330, Danio rerio, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Anoteropsis senica, Nitrosomonas europaea ATCC 19718, Arabidopsis thaliana, Mus musculus, Rattus norvegicus, Atelerix albiventris, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Clostridium tetani E88, Caenorhabditis elegans, Plasmodium falciparum 3D7, Yersinia pestis KIM, Mycoplasma gallinarum, Lactococcus lactis subsp. lactis, Panopodes paradoxus, Bacteriophage bIL286, Yersinia pestis C092"
- 5905 6035 28 "Medicago truncatula, Homo sapiens, Mus musculus, Danio rerio, Arabidopsis thaliana"
- 5906 6036 29 "Medicago truncatula, Homo sapiens, Lycopersicon esculentum, Mus musculus, Expression vector pNCO-HIS6-TM-YCHB, Arabidopsis thaliana, Drosophila melanogaster, Medicago sativa, Danio rerio, Caenorhabditis elegans, Plasmodium falciparum 3D7, Brassica oleracea, Oryza sativa (japonica cultivar-group), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Takifugu rubripes, Anopheles gambiae, Antheraea polyphemus"
- 5907 6037 27 "Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Clostridium pasteurianum, Oryza sativa (japonica cultivar-group), Fragaria x ananassa, Drosophila simulans, Coxiella burnetii RSA 493, Salmonella typhimurium LT2, Rattus norvegicus, Pan troglodytes, Mus musculus, Salmonella enterica subsp. enterica serovar Typhi Ty2, Dictyostelium discoideum, Streptococcus agalactiae 2603V/R, Salmonella typhimurium, Vibrio salmonicida, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Danio rerio, Gallus gallus, Salmonella enterica subsp. enterica serovar Typhi, Medicago truncatula"
- 5908 6038 29 "Daucus carota, Mus musculus, Homo sapiens, Bacillus cereus ATCC 14579, Pan troglodytes, Lycodichthys dearborni, Medicago truncatula, Drosophila melanogaster, Zea mays, Clostridium acetobutylicum, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio"
- 5909 6039 83 "Thermosynechococcus elongatus BP-1, Borrelia burgdorferi B31, Chlorella vulgaris, Zymomonas mobilis, Medicago truncatula, Ralstonia solanacearum, Nicotiana rustica, Atropa belladonna, Nicotiana tabacum, Oenothera elata subsp. hookeri, Adiantum capillus-vene"
- 5910 6040 24 "Homo sapiens, Rattus norvegicus, Danio rerio, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella enterica subsp. enterica serovar Typhi, Leptospira interrogans serovar lai str. 56601, Mus musculus, Sulfolobus tokodaii, Pan troglodytes"
- 5911 6041 78 "Mycoplasma genitalium, Clostridium tetani E88, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mycoplasma penetrans, Staphylococcus aureus subsp. aureus Mu50, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium perfringens str. 13, Homo sapiens, Mus musculus, Danio rerio, Helicobacter hepaticus ATCC 51449, Atelerix albiventris, Mycoplasma pulmonis, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group)"
- 5912 6042 58 "Buchnera aphidicola str. Sg (Schizaphis graminum), Dictyostelium discoideum, Listeria monocytogenes, Homo sapiens, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Streptococcus mutans UA159, Chlamydomonas

- reinhardtii, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Vibrio parahaemolyticus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Bacillus halodurans*"
- 5913 6043 38 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Clostridium tetani E88, Streptococcus mutans UA159, Campylobacter jejuni subsp. jejuni NCTC 11168, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Oceanobacillus iheyensis HTE831, *Caenorhabditis elegans*, Homo sapiens, Burkholderia cepacia, Pirellula sp., Xenopus laevis, Listonella anguillarum, Mus musculus, Bacillus subtilis, Dictyostelium discoideum, Burkholderia pyrrocinia, Haemophilus ducreyi 35000HP, Bacillus subtilis subsp. subtilis str. 168, Pseudomonas fluorescens" 10
- 5914 6044 29 "Saccharomyces cerevisiae, Mycoplasma capricolum, Mus musculus, Homo sapiens, *Danio rerio*, *Caenorhabditis elegans*, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Lotus corniculatus* var. japonicus, Fowlpox virus, Encephalitozoon cuniculi, Helicobacter hepaticus ATCC 51449"
- 5915 6045 22 "Pan troglodytes, Pan troglodytes troglodytes, Gorilla gorilla gorilla, Gorilla gorilla beringei, Gorilla gorilla, Pan troglodytes verus, Pongo pygmaeus pygmaeus, Pongo pygmaeus abelii, Pan paniscus, Homo sapiens, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), Schmidtea mediterranea, *Danio rerio*, Mus musculus" 20
- 5916 6046 28 "Human immunodeficiency virus 10, Oceanobacillus iheyensis HTE831, Homo sapiens, Mus musculus, *Caenorhabditis briggsae*, Sulfolobus tokodaii, Listeria monocytogenes, Helicobacter hepaticus ATCC 51449, Acinetobacter calcoaceticus, Drosophila melanogaster, Spartina mottle virus, Rattus norvegicus, Rickettsia prowazekii, Candidatus Blochmannia floridanus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, *Danio rerio*, Chiba virus, Macaca fascicularis, Dictyostelium discoideum, *Vibrio cholerae*"
- 5917 6047 23 "Homo sapiens, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, *Oryza sativa* (japonica cultivar-group), Thermotoga maritima, Drosophila melanogaster, Mus musculus, Rattus norvegicus, Pan troglodytes, Plasmodium falciparum 3D7, Takifugu rubripes" 30
- 5918 6048 29 "Mus musculus, Ureaplasma urealyticum, Bos taurus, Homo sapiens, Amsacta moorei entomopoxvirus, Plasmodium chabaudi, *Oryza sativa* (japonica cultivar-group), *Oryza brachyantha*, *Caenorhabditis elegans*, Nostoc sp. PCC 7120"
- 5919 6049 31 "Mus musculus, Homo sapiens, Bacillus subtilis subsp. subtilis str. 168, *Danio rerio*, Bacillus subtilis, *Caenorhabditis elegans*, Lemur catta, Yersinia pestis KIM, Arabidopsis thaliana, *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), Yersinia pestis C092, Mycoplasma genitalium, Plasmodium falciparum, Legionella pneumophila" 40
- 5920 6050 24 "Drosophila melanogaster, Homo sapiens, *Oryza sativa* (japonica cultivar-group), Mus musculus, Streptomyces toyocaensis, *Caenorhabditis briggsae*, *Danio rerio*"
- 5921 6051 31 "*Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, Homo sapiens, Mus musculus, *Lotus corniculatus* var. japonicus, Clostridium acetobutylicum, Diospyros ferrea var. buxifolia, Mycoplasma gallisepticum R, Campylobacter coli, Mycoplasma gallisepticum, Campylobacter jejuni subsp. jejuni NCTC 11168, Rattus norvegicus, Medicago truncatula, Sirex noctilio, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Vibrio vulnificus* CMCP6, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium tetani E88, *Danio rerio*, Mycop 50

- lasma pulmonis, Arabidopsis thaliana, Styrax japonicus, Saccharomyces cerevisiae, Cryptosporidium parvum, Botryllus schlosseri, Chlamydomonas reinhardtii"
- 5922 6052 37 "Medicago truncatula, Mus musculus, Homo sapiens, Drosophila melanogaster, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Zea mays, Prochlorococcus marinus, Trifolium repens, Danio rerio, Caenorhabditis elegans, Shewanella oneidensis MR-1, Plasmodium falciparum 3D7, Yersinia pestis KIM, Buchnera aphidicola str. Sg (Schizaphis graminum), Brassica napus var. napus, Kobresia laxa, Brassica rapa, Yersinia pestis C092, Prochlorococcus marinus subsp. marinus str. CCMP1375, Kladothrips rugosus, Candida albicans, Candida albicans SC5314" 10
- 5923 6053 31 "Homo sapiens, Rattus norvegicus, Tadarida brasiliensis, Myotis daubentoni, Bacillus cereus ATCC 14579, Drosophila melanogaster, Arabidopsis thaliana, Natalus stramineus, Solanum tuberosum, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Mus musculus, Dictyostelium discoideum, Caenorhabditis elegans, Cryptosporidium parvum, Carboxydotherrmus hydrogenoformans, Saccharomyces paradoxus, Saccharomyces douglasii, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus Mu50"
- 5924 6054 27 "Homo sapiens, Drosophila melanogaster, Mus musculus, Antithamnion sp., Oryza sativa (japonica cultivar-group), Pan troglodytes, Archaeoglobus fulgidus DSM 4304, Methanosarcina mazei Goe1, Clostridium tetani E88, Plasmodium falciparum 3D7, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Chara vulgaris" 20
- 5925 6055 32 "Homo sapiens, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Zea mays, Staphylococcus aureus phage phi 13, Sinningia macrostachya, Sinningia lineata, Sinningia reitzii, Staphylococcus aureus prophage phiPV83, Staphylococcus aureus bacteriophage PVL, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Plasmodium falciparum 3D7, Rattus norvegicus, Human papillomavirus type 35, Swinepox virus, Human papillomavirus type 35H, Ochromonas danica, Lotus corniculatus var. japonicus, Thermoplasma volcanium, Hymenosporem flavum, Bursaria spinosa, Pittosporum revolutum, Pittosporum dallii, Pittosporum tobira, Ciona intestinalis, Plasmodium falciparum, Oryzias latipes, Clostridium perfringens str. 13" 30
- 5926 6056 27 "Rattus norvegicus, Homo sapiens, Mus musculus, Medicago truncatula, Oryza sativa (japonica cultivar-group), Odobenus rosmarus rosmarus, Danio rerio, Synechococcus sp. WH 8102, Clostridium perfringens str. 13"
- 5927 6057 25 "Mus musculus, Drosophila melanogaster, Homo sapiens, Rattus norvegicus, Rickettsia conorii"
- 5928 6058 23 "Leptospira interrogans serovar lai str. 56601, Mus musculus, Homo sapiens, Drosophila melanogaster"
- 5929 6059 28 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana, Mycoplasma pulmonis, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Thermoanaerobacter tengcongensis, Human immunodeficiency virus 2, Prochlorococcus marinus subsp. marinus str. CCMP1375, Borrelia burgdorferi B31, Helicobacter pylori, Clostridium acetobutylicum, Dictyostelium discoideum, Schizosaccharomyces pombe, Mycoplasma genitalium, Primula cuneifolia" 40
- 5930 6060 24 "Rattus norvegicus, Homo sapiens, Drosophila melanogaster, Caenorhabditis briggsae, Branchiostoma floridae, Lactobacillus delbrueckii subsp. lactis, Fiji disease virus, Mus musculus, Danio rerio"
- 5931 6061 129 "Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musc 50

- ulus, *Homo sapiens*, *Schizosaccharomyces pombe*, *Vibrio vulnificus* CMCP6, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Rattus norvegicus*"
- 5932 6062 20 "Mus musculus, *Danio rerio*, *Drosophila melanogaster*, *Homo sapiens*, *Mesorhizobium loti*"
- 5933 6063 27 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*"
- 5934 6064 101 "Borrelia burgdorferi B31, *Mus musculus*, *Haemophilus ducreyi* 35000HP, *Drosophila melanogaster*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Clostridium histolyticum*" 10
- 5935 6065 27 "Mus musculus, *Homo sapiens*, *Cyprinus carpio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Mycoplasma penetrans*, *Danio rerio*, *Rattus norvegicus*, *Petunia x hybrida*, *Dryas drummondii*, *Purshia tridentata*, *Chamaebatia foliolosa*, *Cercocarpus betuloides*"
- 5936 6066 31 "Caenorhabditis elegans, *Homo sapiens*, *Saccharomyces cerevisiae*, *Bacillus thuringiensis* serovar *israelensis*, *Dengue virus* type 1, *Wiebisia punctatae*, *Xenopus laevis*, *Helianthus annuus*, *Mus musculus*, *Danio rerio*, *Clostridium perfringens* str. 13"
- 5937 6067 23 "Homo sapiens, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Candida boidinii*" 20
- 5938 6068 25 "Homo sapiens, *Pan troglodytes*, *Mus musculus*, *Drosophila melanogaster*, *Human immunodeficiency virus 1*, *Caenorhabditis elegans*, *Arabidopsis thaliana*"
- 5939 6069 32 "Mus musculus, *Streptococcus mutans* UA159, *Sparus aurata*, *Vibrio cholerae*, *Homo sapiens*, *Streptococcus mutans*, *Bacillus cereus* ATCC 14579, *Chlamydomonas reinhardtii*, *Drosophila melanogaster*, *Staphylococcus aureus*, *Arabidopsis thaliana*, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Chlamydomonas pneumoniae* TW-183"
- 5940 6070 24 "Homo sapiens, *Rickettsia prowazekii*, *Mus musculus*, *Zea mays*" 30
- 5941 6071 30 "Lactococcus lactis subsp. *cremoris*, *Lactococcus lactis* subsp. *lactis*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Mus musculus*, *Homo sapiens*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Cepaea nemoralis*, *Caenorhabditis elegans*, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Medicago truncatula*, *Streptococcus agalactiae* NEM316, *Daucus carota*, *Cyanidium caldarium*, *Artibeus jamaicensis*"
- 5942 6072 28 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Anopheles gambiae*, *Oryza sativa* (*japonica* cultivar-group), *Oceanobacillus iheyensis* HTE831"
- 5943 6073 27 "Homo sapiens, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Bacteroides thetaiotaomicron* VPI-5482, *Mus musculus*, *Akabane virus*" 40
- 5944 6074 27 "Danio rerio, *Homo sapiens*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Vibrio vulnificus* CMCP6, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group)"
- 5945 6075 27 "Homo sapiens, *Lactococcus phage* BK5-T, *Lactococcus lactis* subsp. *lactis*, *Bacteriophage* bIL286, *Mus musculus*"
- 5946 6076 24 "Homo sapiens, *Bacillus anthracis* str. *Ames*, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Felis catus*, *Ascaris lumbricoides*"
- 5947 6077 28 "Homo sapiens, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus* 50

- aureus subsp. aureus MW2, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. aureus Mu50, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Mycoplasma pulmonis*, *Caenorhabditis briggsae*, *Aphanomyces euteiches*, *Mus musculus*, *Borrelia burgdorferi*, *Papio anubis*, *Haemophilus influenzae* Rd KW20, *Methanocaldococcus jannaschii*, *Saccharomyces cerevisiae*"
- 5948 6078 27 "Clostridium acetobutylicum, Homo sapiens, Arabidopsis thaliana, Yaba-like disease virus, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Mycoplasma pneumoniae, Mus musculus"
- 5949 6079 30 "Homo sapiens, Methanocaldococcus jannaschii, Schizosaccharomyces pombe, Mus musculus, Takifugu rubripes, Saccharomyces cerevisiae, Ciona intestinalis, Rattus norvegicus, Drosophila melanogaster, Pleuranthodium schlechteri, Amomum longiopetiolatum, Trichinella spiralis, Felis catus, Rickettsia prowazekii, Rickettsia typhi, Caenorhabditis elegans, Arabidopsis thaliana, Solanum tuberosum, Oryza sativa (japonica cultivar-group), Danio rerio" 10
- 5950 6080 27 "Homo sapiens, Thermosynechococcus elongatus BP-1, Bacillus cereus ATCC 14579, Felis catus, Arabidopsis thaliana, Mus musculus, Danio rerio"
- 5951 6081 24 "Dictyostelium discoideum, Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Listeria innocua, Danio rerio, Onion yellow dwarf virus, Bacillus cereus ATCC 14579, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Lactobacillus plantarum WCFS1" 20
- 5952 6082 31 "Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Danio rerio, Pan troglodytes, Methanocaldococcus jannaschii, Drosophila simulans, Dictyostelium discoideum, Caenorhabditis elegans, Chlamydomonas reinhardtii, Canis familiaris, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Nostoc punctiforme, Arabidopsis thaliana"
- 5953 6083 31 "Arabidopsis thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Mus musculus, Staphylococcus epidermidis ATCC 12228, Perga condei, Pan troglodytes, Chlamydomonas reinhardtii, Buchnera aphidicola str. Sg (Schizaphis graminum), Thermoanaerobacter tengcongensis, Bombyx mori, Danio rerio, Staphylococcus epidermidis, Chromobacterium violaceum, Caenorhabditis elegans, Rattus norvegicus, Oryzias latipes" 30
- 5954 6084 29 "Homo sapiens, Mus musculus, Tomato big bud phytoplasma, Plasmodium falciparum 3D7, Rattus norvegicus, Plasmodium falciparum, Clostridium perfringens str. 13, Pyrrhobryum mnioides, Drosophila melanogaster, Yersinia pestis KIM, Lycopersicon esculentum, Sulfolobus solfataricus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Yersinia pestis C092, Schizosaccharomyces pombe, Caenorhabditis elegans"
- 5955 6085 23 "Drosophila melanogaster, Homo sapiens, Cheirogaleus medius, Astatoreochromis alluaudi, Melanochromis melanopterus, Stigmatochromis woodi, Neochromis nigricans, Haplochromis sp. 'butiaba', Haplochromis sp. 'george', Haplochromis sp. 'edward', Haplochromis sp. 'kazinga', Haplochromis sp. 'lututu', Yssichromis laparogramma, Ptyochromis xenognathus, Haplochromis sp. 'velvet black', Ptyochromis sauvagei, Haplochromis sp. 'wamala', Haplochromis sp. 'chala', Haplochromis sp. 'katavi', Astatotilapia bloyeti, Haplochromis sp. 'zimba', Haplochromis sp. 'kitilda', Saccharomyces cerevisiae, Danio rerio" 40
- 5956 6086 23 "Bos taurus, Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Ciona intestinalis, Medicago truncatula"
- 5957 6087 23 "Oceanobacillus iheyensis HTE831, Mus musculus, Homo sapiens, Borrelia burgdorferi B31, Drosophila melanogaster, Borrelia burgdorferi, L 50

- otus corniculatus var. japonicus, Rattus norvegicus, Macaca fascicularis"
- 5958 6088 27 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Bos taurus, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus"
- 5959 6089 30 "Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella typhi, Salmonella enterica subsp. enterica serovar Typhi, marine CFB-group bacterium MBIC04455, Homo sapiens, Mus musculus, Danio rerio, Salmonella typhimurium LT2, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Caenorhabditis elegans, Ureaplasma urealyticum, Plasmodium falciparum 3D7, Centropomus viridis, Salmonella typhimurium, Rattus norvegicus, marine CFB-group bacterium MBIC04447" 10
- 5960 6090 32 "Homo sapiens, Prochlorococcus marinus subsp. marinus str. CCMP1375, Drosophila melanogaster, Danio rerio, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Buchnera aphidicola str. Sg (Schizaphis graminum), Candida albicans, Arabidopsis thaliana, Mycoplasma pneumoniae, Mycoplasma penetrans"
- 5961 6091 24 "Homo sapiens, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Caenorhabditis elegans, Plasmodium falciparum 3D7, Mus musculus, Danio rerio"
- 5962 6092 23 "Drosophila melanogaster, Homo sapiens, Caenorhabditis briggsae, Danio rerio, Mus musculus, Borrelia burgdorferi" 20
- 5963 6093 31 "Caenorhabditis elegans, Papio anubis, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Methanocaldococcus jannaschii"
- 5964 6094 25 "Mus musculus, Drosophila melanogaster, Homo sapiens, Oryza sativa (japonica cultivar-group), Streptococcus mutans UA159, Pan troglodytes"
- 5965 6095 28 "Danio rerio, Lycopersicon esculentum, Homo sapiens, Tomato golden mottle virus-[GT94-R2], Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Streptococcus thermophilus, Borrelia burgdorferi B31, Buchnera aphidicola str. Sg (Schizaphis graminum), Clostridium acetobutylicum, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Morus alba, Buchnera aphidicola, Macaca fascicularis" 30
- 5966 6096 24 "Caenorhabditis elegans, Arabidopsis thaliana, Drosophila melanogaster, Mus musculus, Homo sapiens, Streptococcus mutans UA159, Fusobacterium nucleatum subsp. nucleatum ATCC 25586"
- 5967 6097 24 "Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Pan troglodytes, Mus musculus, Arabidopsis thaliana, Bacitracin-producing Bacillus subtilis str. 168, Bacillus subtilis" 40
- 5968 6098 27 "Homo sapiens, Mus musculus, Human immunodeficiency virus 1, Shewanella oneidensis MR-1, Mycoplasma capricolum, Arabidopsis thaliana, Drosophila melanogaster, Plasmodium falciparum 3D7, Haemophilus influenzae Rd KW20"
- 5969 6099 31 "Medicago truncatula, Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Oceanobacillus iheyensis HTE831, Macaca fascicularis, Clostridium perfringens str. 13"
- 5970 6100 24 "Archaeoglobus fulgidus DSM 4304, Homo sapiens, Ophiocytium majus, Eustigmatos magnus, Mus musculus, Drosophila melanogaster, Danio rerio" 50

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- 5971 6101 23 "Homo sapiens, Rattus norvegicus, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Channichthys rhinoceratus"
- 5972 6102 27 "Staphylococcus epidermidis ATCC 12228, Homo sapiens, Leptospira maculans, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis"
- 5973 6103 23 "Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Saccharomyces cerevisiae, Danio rerio, Mus musculus, Bacillus anthracis str. Ames, Methanosarcina mazei Goe1, Clostridium acetobutylicum, Mycoplasma pulmonis, Arabidopsis thaliana, Campylobacter jejuni subsp. jejuni NCTC 11168, Nostoc sp. PCC 7120" 10
- 5974 6104 26 "Bombyx mori, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Sus scrofa, Caenorhabditis elegans, Danio rerio, Lotus corniculatus var. japonicus, Mus musculus, Plasmodium chabaudi chabaudi"
- 5975 6105 24 "Oryza sativa (japonica cultivar-group), Rickettsia conorii, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Drosophila melanogaster, Danio rerio, Arabidopsis thaliana, Felis catus, Arctocephalus forsteri, Rattus norvegicus"
- 5976 6106 28 "Dictyostelium discoideum, Plasmodium falciparum 3D7, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Mus musculus, Acholeplasma laidlawii, Caenorhabditis elegans, Medicago truncatula, Drosophila melanogaster, Methanosarcina mazei Goe1, Arabidopsis thaliana, Oryza sativa, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Listeria innocua, Pirellula sp., Schizosaccharomyces pombe, Plasmid pIP404, Candida albicans, Lactobacillus delbrueckii" 20
- 5977 6107 28 "Olea europaea subsp. cuspidata, Homo sapiens, Drosophila melanogaster, Trimorphomyces papilionaceus, Mycoplasma genitalium, Mus musculus, Caenorhabditis elegans, Rattus norvegicus, Dictyostelium discoideum, Lycopersicon esculentum, Caenorhabditis briggsae, Danio rerio, Anopheles gambiae, Arabidopsis thaliana" 30
- 5978 6108 24 "Arabidopsis thaliana, Schmidtea mediterranea, Mus musculus, Caenorhabditis elegans, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Tetrahymena thermophila"
- 5979 6109 31 "Danio rerio, Homo sapiens, Pan troglodytes, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Rattus norvegicus, Papio anubis, Human immunodeficiency virus 1, Dictyostelium discoideum, Paragenipa lancifolia, Ceratitidis capitata, Bos taurus, Mycoplasma pulmonis, Nicotiana tabacum, Schizosaccharomyces pombe, Solanum tuberosum, Candida albicans" 40
- 5980 6110 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Equus caballus, Sulfolobus tokodaii, Tetraodon nigroviridis, Plasmodium falciparum 3D7, Bacteroides fragilis, Danio rerio, Pan troglodytes"
- 5981 6111 29 "Clostridium tetani E88, Homo sapiens, Mus musculus, Danio rerio, Anthocidaris crassispina, Pan troglodytes, Borrelia burgdorferi B31, Rattus norvegicus, Populus kitakamiensis"
- 5982 6112 28 "Clostridium perfringens str. 13, Homo sapiens, Ixodes scapularis, Mus musculus, Methanosarcina acetivorans C2A, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Caenorhabditis elegans, Clostridium acetobutylicum, Lactococcus lactis subsp. lactis, Danio rerio" 50

- 5983 6113 24 "Streptococcus mutans UA159, Homo sapiens, Mus musculus, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Danio rerio, Funastrum odoratum, Funastrum elegans"
- 5984 6114 24 "Homo sapiens, Canine rotavirus, Sulfolobus solfataricus, Mus musculus, Rotavirus sp., Sminthopsis macroura, Danio rerio, Borrelia sp."
- 5985 6115 24 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Arabidopsis thaliana, Rattus norvegicus, Caenorhabditis elegans, Drosophila melanogaster, Danio rerio, Oceanobacillus iheyensis HTE831"
- 5986 6116 29 "Lotus corniculatus var. japonicus, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Acacia glomerosa, Caenorhabditis elegans, Bostrychia calliptera, Danio rerio, Arabidopsis thaliana, Listeria monocytogenes, Gasterosteus aculeatus, Gallus gallus, Clostridium perfringens str. 13" 10
- 5987 6117 24 "Homo sapiens, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Lilium longiflorum, Danio rerio"
- 5988 6118 27 "Drosophila melanogaster, Homo sapiens, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Zea mays, synthetic construct, Pan troglodytes, Dictyostelium discoideum, Clostridium tetani E88, Schmidtea mediterranea, Lotus corniculatus var. japonicus, Canis familiaris"
- 5989 6119 27 "Mus musculus, Homo sapiens, Caenorhabditis briggsae, Arabidopsis thaliana, Danio rerio" 20
- 5990 6120 35 "Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Arabidopsis thaliana, Homo sapiens, Mus musculus, Methanocaldococcus jannaschii, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Oryza sativa, Pyrococcus horikoshii, Thermotoga maritima"
- 5991 6121 24 "Rattus norvegicus, Mus musculus, Drosophila melanogaster, Homo sapiens, Hirudo medicinalis, Clostridium tetani E88, Oryza sativa (japonica cultivar-group)"
- 5992 6122 35 "Arabidopsis thaliana, Sulfolobus tokodaii, Sulfolobus acidocaldarius, Mus musculus, Pasteurella multocida, Aptocyclus ventricosus, Homo sapiens, Enterococcus faecalis V583, Archaeoglobus fulgidus DSM 4304, Streptococcus agalactiae 2603V/R, Glycine tabacina, Glycine falcata, Glycine canescens, Paramecium tetraurelia, Streptococcus agalactiae NEM316, Caenorhabditis briggsae, Danio rerio, Rattus norvegicus" 30
- 5993 6123 27 "Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Homo sapiens, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. A2012, Zea mays, Wolbachia endosymbiont of Brugia malayi, Bacillus anthracis"
- 5994 6124 23 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)" 40
- 5995 6125 24 "Rattus norvegicus, Mus musculus, Pseudomonas phage Pf3, Homo sapiens, Synechocystis sp. PCC 6803, Danio rerio"
- 5996 6126 27 "Homo sapiens, Mus musculus, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Bacteroides thetaiotaomicron VPI-5482, Escherichia coli O157:H7 EDL933, Danio rerio, Arabidopsis thaliana, Caenorhabditis briggsae, Ciona intestinalis, Human rotavirus A, Escherichia coli O157:H7"
- 5997 6127 27 "Homo sapiens, Neurospora crassa, Danio rerio, Caenorhabditis elegans, Drosophila melanogaster, Mus musculus, Neisseria meningitidis Z2491, Arabidopsis thaliana, Caenorhabditis briggsae, Sus scrofa, Clostridium perfr 50

ingens str. 13"

5998 6128 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Rhodomonas salina, Klebsiella pneumoniae, Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, Gorilla papillomavirus, Arabidopsis thaliana"

5999 6129 37 "Hypselognathus rostratus, Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Papio anubis, Galanthus fosteri, Cancellotrysis hedleyi, Pan troglodytes, uncultured nematode AGO-2003, Arabidopsis thaliana, Methanosarcina mazei Goe1, Clostridium tetani E88, Caenorhabditis elegans, Rickettsia conorii, Lactococcus lactis subsp. lactis, Gallus gallus, Ochromonas danica, Lotus corniculatus var. japonicus, Hepatozoon sipedon, Schizosaccharomyces pombe, Pristionchus intermedius, Medicago truncatula"

6000 6130 27 "Mus musculus, Nostoc sp. PCC 7120, Homo sapiens, Chlamydia caviae GPIC, Vibrio vulnificus CMCP6, Shewanella oneidensis MR-1, Arabidopsis thaliana"

6001 6131 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Escherichia coli CFT073, Oryza sativa (japonica cultivar-group), Danio rerio, Papio hamadryas, Xanthomonas axonopodis pv. citri str. 306, Escherichia coli, Escherichia coli K12, Hydra magnipapillata"

6002 6132 29 "Plasmodium falciparum 3D7, Homo sapiens, Borrelia burgdorferi B31, Mus musculus, Dictyostelium discoideum, Danio rerio, Trypanosoma brucei, Pneumocystis carinii, Mordvilkoja vagabunda, Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Poncirus trifoliata, Drosophila melanogaster, Amoebidium parasiticum, Zea mays, Tetrodotoxigena bielanensis, Staurocladia wellingtoni, Neisseria meningitidis Z2491, Candidatus Blochmannia floridanus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group), Trichodon trichodon, Neisseria meningitidis, Plasmodium falciparum, Loligo pealei, Aptocyclus ventricosus, Cottus reinii, Trypanosoma equiperdum, Tetraodon nigroviridis, Pleurogrammus monopterygius, Pleurogrammus azonus"

6003 6133 30 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Chilo iridescent virus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Archaeoglobus fulgidus DSM 4304, Dictyostelium discoideum, Sus scrofa, Danio rerio, Oryza sativa (japonica cultivar-group)"

6004 6134 25 "Drosophila melanogaster, Mus musculus, Homo sapiens, Danio rerio, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Bacillus anthracis str. Ames, Oryza sativa (japonica cultivar-group), Pyrococcus abyssi, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Bacteroides fragilis, Felis catus, Staphylococcus aureus subsp. aureus Mu50"

6005 6135 23 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis ATCC 12228, Talpa europaea, Staphylococcus epidermidis, Caenorhabditis briggsae, Xenopus laevis"

6006 6136 45 "Oceanobacillus iheyensis HTE831, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Pinus taeda"

6007 6137 28 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Homo sapiens, Danio rerio, Medicago truncatula, Pan troglodytes, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Papio anubis, Clostridium acetobutylicum, Rattus norvegicus, Oryza sativa (japonica cultivar-group)"

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- 6008 6138 33 "Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Brassica rapa, Pan troglodytes, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Methanosarcina mazei Goe1, Hevea brasiliensis, Mycoplasma penetrans, Clostridium perfringens str. 13"
- 6009 6139 31 "Homo sapiens, Eulamprus kosciuskoi, Ciona intestinalis, Danio rerio, Pan troglodytes, Mus musculus, Hordeum vulgare subsp. vulgare, Glycine max, Caenorhabditis elegans, Methanocaldococcus jannaschii"
- 6010 6140 23 "Danio rerio, Mus musculus, Homo sapiens, Goatpox virus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lumpy skin disease virus, Gadus morhua, Nicotiana sp." 10
- 6011 6141 23 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Saccharomyces cerevisiae, Clostridium perfringens str. 13, Arabidopsis thaliana"
- 6012 6142 32 "Medicago truncatula, Shewanella oneidensis MR-1, Mus musculus, Danio rerio, Homo sapiens, Drosophila melanogaster, Staphylococcus aureus phage phi 13, Dulichium arundinaceum, Staphylococcus aureus, Staphylococcus aureus subsp. aureus MW2, Mycoplasma ferment"
- 6013 6143 35 "Campylobacter fetus, Saccharomyces cerevisiae, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Silurana tropicalis, Arabidopsis thaliana, Rattus norvegicus, Bacillus atticus, Pan troglodytes, Bacillus lynceorum, Buchnera aphidicola str. Bp (Baizongia pistaciae), Eustenogaster fraterna, Candidatus Carsonella ruddii, Tetrahymena thermophila, Capsella rubella, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Pleuronectes platessa, Helicobacter hepaticus ATCC 51449" 20
- 6014 6144 35 "Caenorhabditis elegans, Homo sapiens, Danio rerio, Mus musculus, Eriosoma lanigerum, Arabidopsis thaliana, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Elephantulus rozeti, Medicago truncatula, Dictyostelium discoideum, Clostridium tetani E88, Caenorhabditis briggsae, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Pachycereus pecten-aboriginum, Pachycereus weberi, Pachycereus grandis, Pachycereus tepamo, Pachycereus pringlei, Methanocaldococcus jannaschii, Nostoc sp. PCC 7120, Clostridium perfringens str. 13, Rattus norvegicus, Monosiga brevicollis, Plasmodium falciparum 3D7, Eurema daira, Clostridium haemolyticum, Buchnera aphidicola str. Sg (Schizaphis graminum), Mollitrichosiphum nigrofasciatum, Greenidea nipponica, Cardamine flexuosa, Parnassius smintheus" 30
- 6015 6145 27 "Ctenocephalides felis, Schizosaccharomyces pombe, Homo sapiens, Rattus norvegicus, Mus musculus, Staphylococcus epidermidis ATCC 12228, Zea mays, Caenorhabditis elegans, Danio rerio, Prochlorococcus marinus subsp. marinus str. CCMP1375, Rattus sp., Locusta migratoria" 40
- 6016 6146 28 "Homo sapiens, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mus musculus, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Pan troglodytes, Papio anubis, Takifugu rubripes, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Magnolia praecocissima"
- 6017 6147 40 "Homo sapiens, Oceanobacillus iheyensis HTE831, Mus musculus, Chlamydia muridarum, Clostridium tetani E88, Methanocaldococcus jannaschii, Caenorhabditis briggsae"
- 6018 6148 27 "Homo sapiens, Mus musculus, Pan troglodytes, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Streptococcus pneumoniae TIGR4, Caeno 50

- rhabditis elegans, Bacillus halodurans, Hordeum vulgare subsp. vulgare, Infectio us salmon anemia virus, Clostridium acetobutylicum, Danio rerio, Oryza sativa (j aponica cultivar-group)"
- 6019 6149 29 "Caenorhabditis briggsae, Rickettsia prowazekii, Mus mus culus, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-gro up), Rattus norvegicus"
- 6020 6150 71 "Chlamydia muridarum, Haemophilus influenzae Rd KW20, Ch lamydophila caviae GPIC, Vibrio parahaemolyticus, Arabidopsis thaliana, Leptospira interrogans serovar lai str. 56601, Homo sapiens, Mus musculus, Lactococcus l actis subsp. lactis, Lactococcus lactis, Hepatitis C virus, Schizosaccharomyces pombe" 10
- 6021 6151 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, M us musculus, Thermoplasma volcanium, Caenorhabditis elegans"
- 6022 6152 27 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Dan io rerio, Drosophila melanogaster, Saccharomyces castellii, Clostridium tetani E 88, Shewanella oneidensis MR-1, Caenorhabditis briggsae, Arabidopsis thaliana, F usobacterium nucleatum subsp. nucleatum ATCC 25586, Lumbricus rubellus"
- 6023 6153 27 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (japon ica cultivar-group), Lotus corniculatus var. japonicus, Mus musculus"
- 6024 6154 31 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, 20 Drosophila melanogaster, Plasmodium falciparum, Arabidopsis thaliana, Oryza sati va (japonica cultivar-group), Danio rerio, Mycoplasma penetrans, Rhipicephalus e vertsi, Pterobryella praenitens, Leptothea"
- 6025 6155 28 "Drosophila canadiana, Mus musculus, Homo sapiens, Droso phila ezoana, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultiv ar-group), Cryptosporidium parvum, Dictyostelium discoideum, Drosophila melanoga ster, Plasmodium falciparum 3D7, Bracon hebetor, Sus scrofa, Buchnera aphidicola str. Sg (Schizaphis graminum), Drosophila kanekoi, Drosophila montana, Drosophi la borealis, Drosophila flavomontana, Drosophila laticola, Drosophila virilis, D rosophila americana texana, Drosophila lummei, Drosophila novamexicana, Drosophi 30 la americana, Habrobracon hebetor, Candidatus Blochmannia floridanus, Hordeum vu lgare, Arabis lignifera, Wigglesworthia glossinidia endosymbiont of Glossina bre vipalpis"
- 6026 6156 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), S treptococcus agalactiae NEM316, Equus caballus, Mus musculus, Rattus norvegicus, Thermoanaerobacter tengcongensis, Lactococcus lactis subsp. lactis, Lotus corni culatus var. japonicus, Medicago truncatula, Danio rerio, Kluyveromyces lactis, Neurospora crassa, Borrelia burgdorferi, Strongylocentrotus purpuratus"
- 6027 6157 42 "Escherichia coli CFT073, Homo sapiens, Oryctolagus cuni culus, Sus scrofa, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Cucumi 40 s sativus, Chlamydia muridarum, Staphylococcus aureus subsp. aureus N315, Staphy lococcus aureus subsp. aureus MW2, Danio rerio, Mus musculus, Staphylococcus aur eus subsp. aureus Mu50, Staphylococcus aureus"
- 6028 6158 27 "Mus musculus, Homo sapiens, Euglena gracilis, Oryza sat iva (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Me sostoa kerri, Ipomoea purpurea, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Rattus norvegicus, Lemur catta, Biomphalaria glabrata, Chilo iridesc ent virus, Pelomedusa subrufa, Listeria monocytogenes, Lotus corniculatus var. j aponicus, Caenorhabditis elegans, Listeria innocua, Ciona intestinalis, Sus scro fa, Medicago truncatula, Felis catus" 50

- 6029 6159 35 "Mycoplasma pulmonis, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Leptospira interrogans serovar la i str. 56601, Drosophila melanogaster, Brassica oleracea, Lotus corniculatus var . japonicus, Arabidopsis thaliana, Caenorhabditis elegans, Didelphis virginiana, Plasmodium falciparum 3D7, Rattus norvegicus, Lycopersicon esculentum, Thermoplasma volcanium, Gallus gallus, Schizosaccharomyces pombe, Podospira anserina, Neocallimastix patriciarum, Sus scrofa, Streptococcus agalactiae 2603V/R, Methanoscarcina acetivorans C2A, Oryzias latipes, Streptococcus agalactiae, Streptococcus agalactiae NEM316"
- 6030 6160 27 "Homo sapiens, Thermoplasma volcanium, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Oryza sativa, Mycoplasma penetrans, Danio rerio, Prochlorococcus marinus subsp. marinus str. CCM P1375" 10
- 6031 6161 28 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Medicago truncatula, Danio rerio, Methanocaldococcus jannaschii, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum, Lotus corniculatus var. japonicus, Bombyx mori, Rattus norvegicus, Pantroglodytes, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Shigella flexneri 2a str. 2457T"
- 6032 6162 31 "Homo sapiens, Danio rerio, Mus musculus, Staphylococcus epidermidis ATCC 12228, Chaetosphaeridium globosum, Tetrahymena pyriformis, Staphylococcus epidermidis, Fowlpox virus, Caenorhabditis elegans, Listeria monocytogenes, Listeria innocua, Venerupis (Ruditapes) philippinarum, Nostoc sp. PCC 7120" 20
- 6033 6163 36 "Mus musculus, Dictyostelium discoideum, Homo sapiens, Picea mariana, Danio rerio, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Rattus norvegicus, Sulfolobus solfataricus, Clarkia delicata, Polybioides tabidus, Grapevine leafroll-associated virus 1, Sinningia canescens, Halocynthia roretzi, Vanhornia eunemidarum, Pantroglodytes, Drosophila melanogaster, Lycopersicon esculentum, Plasmodium falciparum, Schmidtea mediterranea, Arabidopsis thaliana" 30
- 6034 6164 25 "Mus musculus, Drosophila melanogaster, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Homo sapiens, Danio rerio"
- 6035 6165 27 "Homo sapiens, Borrelia burgdorferi B31, Salmonella enterica subsp. enterica, Thermoplasma acidophilum, Mus musculus, Listeria innocua, Medicago truncatula, Tetrahymena pyriformis, Carassius auratus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio"
- 6036 6166 35 "Mus musculus, Rattus norvegicus, Homo sapiens, Arabidopsis thaliana, Danio rerio, Oryzias latipes, Caenorhabditis elegans, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Medicago truncatula, Drosophila melanogaster, Plasmodium falciparum 3D7, Amsacta moorei entomopoxvirus, Carabus rutilans, Pyrearinus termitilluminans, Methanocaldococcus jannaschii, Orius tantillus, Chlorella vulgaris, Pantroglodytes, Bacillus anthracis str. Ames, Dictyostelium discoideum, Borrelia burgdorferi B31, Clostridium tetani E88, Papio anubis, Human parainfluenza virus 2, Streptococcus mutans UA159"
- 6037 6167 28 "Drosophila melanogaster, Homo sapiens, Mus musculus, Bacillus thuringiensis, Gallus gallus, Shigella flexneri 2a str. 2457T, Shigella flexneri 2a str. 301, Rickettsia conorii, Saccharomyces cerevisiae, Danio rerio, Rattus norvegicus"
- 6038 6168 31 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group)" 40

- ivar-group), *Leptospira interrogans* serovar lai str. 56601, *Oryza sativa*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Arabidopsis thaliana*"
- 6039 6169 23 "Homo sapiens, *Danio rerio*, *Amsacta moorei* entomopoxvirus, *Cryptosporidium parvum*, *Oryza sativa* (japonica cultivar-group), *Xenopus laevis*, *Medicago truncatula*, *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Pyrococcus horikoshii*, *Manduca sexta*, *Clostridium perfringens* str. 13"
- 6040 6170 29 "Drosophila melanogaster, *Plasmodium falciparum* 3D7, *Mus musculus*, *Homo sapiens*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Didelphis virginiana*, *Pan troglodytes*, *Campylobacter jejuni*, *Caenorhabditis elegans*, *Cajophora cirsiifolia*, *Cajophora chuquitensis*, *Cajophora carduifolia*, *Cajophora canarinoides*, *Cajophora* sp. Hufford 3524, *Cajophora* sp. Hufford 3522, *Cajophora* sp. Hufford 3518, *Sus scrofa domestica*, *Sus scrofa*, *Medicago truncatula*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Gallus gallus*, *Papio anubis*, *Tonatia carrikeri*, *Danio rerio*, *Takifugu rubripes*, *Oryza sativa* (japonica cultivar-group), *Trichoderma longibrachiatum*, *Penicillium chrysogenum*, *Trypanosoma brucei*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Ciona intestinalis*, *Tetrahymena thermophila*, *Clostridium perfringens* str. 13"
- 6041 6171 50 "Papio anubis, *Mus musculus*, *Pan troglodytes*, *Homo sapiens*, *Dictyostelium discoideum*, *Zea mays*, *Drosophila melanogaster*, *Artemia franciscana*, *Solanum tuberosum*, *Capsicum chinense*, *Danio rerio*, *Anopheles gambiae*, *Xenopus laevis*, *Triticum aestivum*, *Rattus norvegicus*, *Gallus gallus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Achatina fulica*, *Cryphonectria hypovirus 3*, *Brassica juncea*, *Brassica oleracea*, *Neurospora crassa*, *Ciona intestinalis*, *Zantedeschia aethiopica*, *Macaca fascicularis*"
- 6042 6172 32 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Sulfolobus tokodaii*, *Danio rerio*"
- 6043 6173 50 "Chlamydia muridarum, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Streptococcus mutans* UA159, *Arabidopsis thaliana*, *Xenopus laevis*"
- 6044 6174 23 "Homo sapiens, *Saccharomyces cerevisiae*, *Mus musculus*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586"
- 6045 6175 23 "Clostridium acetobutylicum, *Homo sapiens*, *Streptococcus pneumoniae* bacteriophage MM1, *Methanosarcina mazei* Goe1, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Bartonella bacilliformis*, *Mus musculus*"
- 6046 6176 27 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Bacillus subtilis*, *Caenorhabditis briggsae*, *Bacillus subtilis* subsp. *subtilis* str. 168"
- 6047 6177 25 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Ureaplasma urealyticum*, *Vibrio fischeri*, *Plasmodium falciparum* 3D7, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Methanothermobacter thermoautotrophicus* str. Delta H, *Canis familiaris*, *Danio rerio*, *Plasmodium vivax*"
- 6048 6178 29 "Homo sapiens, *Pan troglodytes*, *Xenopus laevis*, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Danio rerio*, *Bacillus halodurans*"
- 6049 6179 27 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Danio rerio*, *Bacillus subtilis*, *Clostridium tetani* E88, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Rattus norvegicus*"
- 6050 6180 28 "Lemur catta, *Homo sapiens*, *Mus musculus*, *Papio anubis*, *Danio rerio*, *Streptococcus agalactiae* NEM316, *Bacillus subtilis* subsp. *subtilis*"

- str. 168, *Bacillus subtilis*, *Arabidopsis thaliana*, *Medicago truncatula*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Sus scrofa*, *Zea mays*, *Chlorobium tepidum* TLS, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pan troglodytes*, *Candidatus Blochmannia floridanus*, *Amsacta moorei* entomopoxvirus, *Lotus corniculatus* var. *japonicus*, *Methanocaldococcus jannaschii*"
- 6051 6181 29 "Homo sapiens, *Methanothermobacter thermautotrophicus* str. Delta H, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Entodinium caudatum*, *Schizosaccharomyces pombe*"
- 6052 6182 49 "Prochlorococcus marinus, Homo sapiens, Nostoc sp. PCC 7120, *Plasmodium berghei*, *Oryza sativa*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Mus musculus*, *Caenorhabditis elegans*, *Shewanella oneidensis* MR-1, *Methanosarcina acetivorans* C2A" 10
- 6053 6183 27 "Caenorhabditis elegans, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Danio rerio*, *Atelixer albiventris*, *Medicago truncatula*, *Haemophilus parasuis*, *Streptococcus agalactiae* 2603V/R, *Arabidopsis thaliana*, *Mus musculus*, *Streptococcus agalactiae* NEM316, *Saccharomyces cerevisiae*, *Spiroplasma phoeniceum*"
- 6054 6184 27 "Mus musculus, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, Homo sapiens, *Drosophila melanogaster*, *Danio rerio*, *Leptospira interrogans* serovar lai str. 56601, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Arabidopsis thaliana*, *Oxytricha fallax*, *Takifugu rubripes*, *Sterkiella histriomuscorum*, *Clostridium acetobutylicum*, *Caenorhabditis elegans*, *Betula platyphylla*, *Lactuca sativa*, Nostoc sp. PCC 7120" 20
- 6055 6185 28 "Amsacta moorei entomopoxvirus, Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Papio anubis*, *Dictyostelium discoideum*, *Brassica oleracea*, Marburg virus, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Tetragona dorsalis* z"
- 6056 6186 35 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Medicago truncatula*, *Ostrinia nubilalis*, *Artibeus jamaicensis*, *Bacteroides thetaiotaomicron* VPI-5482, *Brachyspira hyodysenteriae*, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Schistosoma japonicum*, *Danio rerio*" 30
- 6057 6187 60 "Staphylococcus epidermidis ATCC 12228, *Staphylococcus epidermidis*, *Helicobacter hepaticus* ATCC 51449, *Coxiella burnetii* RSA 493, *Mus musculus*, *Listeria monocytogenes*, Homo sapiens, *Trichomonas vaginalis*, *Danio rerio*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Gallus gallus*, *Escherichia coli* CFT073, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Lymnaea stagnalis*, *Saccharomyces cerevisiae*, *Helicobacter pylori* 26695, *Mycoplasma genitalium*"
- 6058 6188 55 "Clostridium tetani E88, Homo sapiens, *Cryptosporidium parvum*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, Nostoc sp. PCC 7120, *Escherichia coli* O157:H7 EDL933, *Prochlorococcus marinus*, *Escherichia coli*, *Mus musculus*, *Anabaena* sp., *Escherichia coli* O157:H7, *Clostridium perfringens* str. 13" 40
- 6059 6189 27 "Chrysodidymus synuroideus, *Mus musculus*, Homo sapiens, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Saccharomyces cerevisiae*, *Danio rerio*"
- 6060 6190 28 "Silurana tropicalis, Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanoga* 50

- ster, *Medicago truncatula*, *Caenorhabditis elegans*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Danio rerio*, *Bacillus sphaericus*, *Myrmecobius fasciatus*"
- 6061 6191 28 "Xenopus laevis, *Mus musculus*, *Homo sapiens*, *Monosiga brevicollis*, *Saccharomyces cerevisiae*, *Bacillus cereus* ATCC 14579, synthetic construct, *Rattus norvegicus*, *Bacillus anthracis* str. Ames, *Bacteroides thetaiotaomicron* VPI-5482, *Meriones unguiculatus*, *Sigmodon hispidus*, *Vibrio cholerae*, *Nicotiana tabacum*, *Felis catus*, *Equus caballus*, *Canis familiaris*"
- 6062 6192 32 "*Homo sapiens*, *Mus musculus*, *Plasmodium falciparum*, *Drosophila melanogaster*, *Salmonella typhimurium* LT2, *Shigella flexneri* 2a str. 2457T, *Pan troglodytes*, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Caenorhabditis elegans*, *Shigella flexneri* 2a str. 301, *Escherichia coli*, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli* K12, *Caenorhabditis briggsae*, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Escherichia coli* 0157:H7" 10
- 6063 6193 44 "*Bacillus megaterium*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Pasteurella multocida*, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus halodurans*, *Methanosarcina acetivorans* C2A, *Arabidopsis thaliana*, *Cryptosporidium* sp. #691, *Cyanidioschyzon merolae*, *Caenorhabditis elegans*"
- 6064 6194 55 "*Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mycoplasma genitalium*, *Arabidopsis thaliana*, *Bacillus megaterium*, *Drosophila melanogaster*, *Streptococcus mutans* UA159, *Capsicum annuum*, *Mus musculus*, *Homo sapiens*, *Dictyostelium discoideum*, *Helicobacter hepaticus* ATCC 51449, *Nicotiana tabacum*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Cryptosporidium parvum*, *Bacillus halodurans*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Vibrio vulnificus* CMCP6, *Clematis integrifolia*, *Borrelia bissettii*, *Ceratitidis capitata*, *Polypterus* sp., *Glycine max*, *Caenorhabditis briggsae*, *Ureaplasma urealyticum*, *Borrelia burgdorferi*, *Danio rerio*, *Melanoplus sanguinipes* entomopoxvirus, *Methanocaldococcus jannaschii*, *Neocallimastix patriciarum*, uncultured bacterium, *Schistosoma mansoni*" 20
- 6065 6195 30 "*Mus musculus*, *Arabidopsis thaliana*, *Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Solanum tuberosum*, *Xanthomonas axonopodis* pv. *citri* str. 306, *Xanthomonas campestris* pv. *campestris* str. ATCC 33913, *Macaca fascicularis*, *Haemophilus influenzae* Rd KW20" 30
- 6066 6196 29 "*Homo sapiens*, *Mus musculus*, *Chilo iridescent virus*, *Caenorhabditis elegans*, *Plasmodium berghei*, *Thermoplasma volcanium*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Capsaspora owczarzaki*, *Sulfolobus islandicus filamentous virus*, *Gallus gallus*, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*, *Medicago truncatula*" 40
- 6067 6197 28 "*Homo sapiens*, *Callochromis stappersii*, *Mus musculus*, *Chalinochromis popelini*, *Enterococcus faecalis* V583, *Borrelia garinii*, *Caprine arthritis-encephalitis virus*"
- 6068 6198 27 "*Homo sapiens*, *Oceanobacillus iheyensis* HTE831, *Danio rerio*, *Medicago truncatula*, *Vibrio vulnificus* CMCP6, *Mus musculus*, *Siboglinum fiordicum*, *Xenopus laevis/gilli*"
- 6069 6199 40 "*Mus musculus*, *Homo sapiens*, *Medicago truncatula*, *Silurana tropicalis*, *Gallus gallus*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Oceanobacillus iheyensis* HTE831, *Nostoc* sp. PCC 7120, *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Galleria mellonella*, *Ureaplasma urea*" 50

lyticum, *Rattus norvegicus*"

6070 6200 29 "Oryza sativa (japonica cultivar-group), synthetic construct, *Homo sapiens*, *Dictyostelium discoideum*, *Mus musculus*, *Caenorhabditis elegans*, *Osteoglossum bicirrhosum*, *Osteoglossum ferreirai*, *Mycoplasma gallisepticum* R, *Enterococcus faecalis* V583, *Drosophila melanogaster*, Human immunodeficiency virus 1, *Drosophila pseudoobscura*, *Canis familiaris*, *Lotus corniculatus* var. japonicus, *Gallus gallus*, *Danio rerio*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Takifugu rubripes*"

6071 6201 28 "Homo sapiens, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis elegans*, *Staphylococcus epidermidis*, *Prototheca wickerhamii*, *Danio rerio*, *Neurospora crassa*, *Arrhynchus* sp. nr. vittatus SLW-2002, *Pyrococcus horikoshii*, *Paramecium tetraurelia*, *Nicotiana glauca*" 10

6072 6202 27 "Homo sapiens, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Danio rerio*, *Mycoplasma genitalium*, *Borrelia burgdorferi* B31, *Mus musculus*, *Methanothermobacter thermoautotrophicus* str. Delta H, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Thermoplasma volcanium*, *Mycoplasma penetrans*"

6073 6203 28 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Colletotrichum lagenarium*, *Caenorhabditis elegans*, *Haemophilus ducreyi* 35000HP"

6074 6204 27 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Bean common mosaic virus*, *Methanosarcina mazei* Goe1, *Macaca mulatta*, *Caenorhabditis elegans*, *Mus musculus*, *Papio anubis*, *Streptomyces coelicolor* A3(2), *Arabidopsis thaliana*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Danio rerio*, *Acinetobacter* sp. ADP1" 20

6075 6205 38 "*Salmonella typhimurium* LT2, *Shigella flexneri* 2a str. 2457T, *Salmonella enterica* subsp. enterica serovar Typhi Ty2, *Clostridium tetani* E88, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Homo sapiens*, *Escherichia coli* O157:H7 EDL933, *Escherichia coli*, *Escherichia coli* K12, *Salmonella enterica* subsp. enterica serovar Typhi, *Escherichia coli* O157:H7, *Plasmodium falciparum* 3D7, *Mus musculus*, *Arabidopsis thaliana*, *Medicago truncatula*, *Lactococcus lactis* subsp. lactis bv. diacetylactis, *Brucella melitensis* 16M, *Brucella suis* 1330, *Methanosarcina acetivorans* C2A, *Lactococcus lactis* subsp. lactis, *Caenorhabditis elegans*, *Oceanobacillus ihayensis* HTE831, *Xestia c-nigrum* granulovirus, *Danio rerio*, *Streptococcus agalactiae*" 30

6076 6206 46 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Homo sapiens*, *Danio rerio*, *Medicago truncatula*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Streptococcus mutans* UA159, *Clostridium acetobutylicum*, *Mus musculus*, *Crassostrea gigas*"

6077 6207 28 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Porphyra purpurea*, *Synechocystis* sp. PCC 6803, *Buchnera aphidicola* str. Bp (*Baizonia pistaciae*), *Staphylococcus epidermidis* ATCC 12228, *Streptococcus agalactiae* NEM316, *Staphylococcus epidermidis*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Arabidopsis thaliana*" 40

6078 6208 29 "Homo sapiens, *Mus musculus*, *Dictyostelium discoideum*, *Danio rerio*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Medicago truncatula*, *Rickettsia conorii*, *Rickettsia prowazekii*, *Rickettsia montanensis*, *Rickettsia rickettsii*, *Rickettsia typhi*, *Plasmodium falciparum*, *Caenorhabditis elegans*, *Cryptosporidium parvum*, *Aspergillus flavipes*, *Saccharomyces douglasii*, *Carnobacterium maltaromaticum*, *Bacillus thuringiensis*" 30

- 6079 6209 25 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Pan troglodytes, Danio rerio, Drosophila melanogaster, Gallus gallus, Caenorhabditis elegans"
- 6080 6210 27 "Methanosarcina mazei Goe1, Homo sapiens, Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Abrocoma cinerea, Staphylococcus aureus, Caenorhabditis elegans"
- 6081 6211 25 "Solanum chacoense, Listeria monocytogenes, Mus musculus, Homo sapiens, Pseudomonas putida, Rhizophyidum sp. 136, Chlamydomonas reinhardtii, Danio rerio"
- 6082 6212 25 "Homo sapiens, Caenorhabditis elegans, Piromyces sp. E2, Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Pan troglodytes, Danio rerio, Mus musculus" 10
- 6083 6213 28 "Homo sapiens, Mesobuthus gibbosus, Danio rerio, Mus musculus, Pan troglodytes, Bacillus cereus ATCC 14579, Drosophila melanogaster, Bacillus cereus, Plasmodium chabaudi, Oryzias latipes, Oryza sativa (japonica cultivar-group), Solanum demissum, Spiroplasma citri, Spiroplasma melliferum, Coxiella burnetii RSA 493, Escherichia coli CFT073, Caenorhabditis elegans, Bos taurus, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, Escherichia coli, Escherichia coli K12, Lotus corniculatus var. japonicus" 20
- 6084 6214 27 "Homo sapiens, Papio anubis, Danio rerio, Caenorhabditis elegans, Takifugu rubripes, Mus musculus, Rattus norvegicus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes M1 GAS, Campylobacter jejuni subsp. jejuni NCTC 11168, Vibrio cholerae, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis"
- 6085 6215 25 "Homo sapiens, Oryza sativa (japonica cultivar-group), Oryza sativa, Mus musculus, Tetraodon nigroviridis, Arabidopsis thaliana, Thermoaerobacter tengcongensis, Danio rerio, Plasmodium berghei, Caenorhabditis elegans, Ciona intestinalis"
- 6086 6216 23 "Staphylococcus epidermidis ATCC 12228S, Chlamydia mediterranea, Staphylococcus epidermidis, Homo sapiens, Yersinia pestis KIM, Yersinia pestis C092, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Mus musculus" 30
- 6087 6217 28 "Homo sapiens, Echinococcus granulosus, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Mycoplasma pneumoniae, Oryza sativa (japonica cultivar-group)"
- 6088 6218 23 "Drosophila melanogaster, Homo sapiens, Mus musculus, Sweet potato chlorotic stunt virus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Porphyromonas gingivalis W83, Porphyromonas gingivalis"
- 6089 6219 23 "Mus musculus, Homo sapiens, Rattus norvegicus, Gallus gallus, Drosophila melanogaster, Campylobacter fetus, Lotus corniculatus var. japonicus, Danio rerio, Arabidopsis thaliana, Physarum polycephalum" 40
- 6090 6220 23 "Homo sapiens, Encephalitozoon cuniculi, Mus musculus, Arabidopsis thaliana, Danio rerio"
- 6091 6221 34 "Plasmodium falciparum 3D7, Homo sapiens, Plasmodium gallinaceum, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Crassostrea gigas, Pichia canadensis, Leptospira interrogans serovar lai str. 56601, Plasmodium berghei, Saccharomyces cerevisiae, Medicago truncatula, Drosophila melanogaster, Clostridium tetani E88," 50

- Schmidtea mediterranea, Mamestra configurata nucleopolyhedrovirus B, Rhizophyidium sp. 136, Oryza sativa, Bassus sp., Agathiella sp., Clostridium acetobutylicum, Xylella fastidiosa 9a5c, Caenorhabditis elegans, Myotis myotis, Mus musculus domesticus, Pan troglodytes"
- 6092 6222 28 "Homo sapiens, Manduca sexta, Drosophila melanogaster, Papio anubis, Mus musculus, Danio rerio, Eptatretus stoutii, Buchnera aphidicola str. Bp (Baizongia pistaciae), Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Pinus taeda, Prochlorococcus marinus, Arabidopsis thaliana, Rattus norvegicus, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group)"
- 6093 6223 32 "Goatpox virus, Lumpy skin disease virus, Homo sapiens, Rattus norvegicus, Plasmodium falciparum 3D7, Sulfolobus tokodaii, Danio rerio, Human immunodeficiency virus 1, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Schizosaccharomyces pombe, Xenopus laevis, Clostridium perfringens str. 13, Enterococcus faecalis V583, Debaryomyces occidentalis, Drosophila melanogaster, Drosophila littoralis, Caenorhabditis elegans, Brugia malayi, Saccharomyces cerevisiae, Pan troglodytes, Cyanophora paradoxa" 10
- 6094 6224 24 "Homo sapiens, Drosophila melanogaster, Plasmodium chabaudi, Pan troglodytes, Arabidopsis thaliana, Spinacia oleracea, Caenorhabditis elegans, Mus musculus, Helicobacter hepaticus ATCC 51449, Medicago truncatula, Plasmodium falciparum 3D7, Streptococcus pneumoniae, Neisseria meningitidis, Neisseria meningitidis Z2491, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Neisseria meningitidis MC58, Danio rerio, Ciona intestinalis" 20
- 6095 6225 33 "Homo sapiens, Mus musculus, Listeria monocytogenes, Didelphis virginiana, Dictyostelium discoideum, Poncirus trifoliata, Methanosarcina mazei Goe1, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Medicago truncatula"
- 6096 6226 26 "Maize rough dwarf virus, Homo sapiens, Saccharomyces cerevisiae, Saccharomyces douglasii, Escherichia coli, Danio rerio, Mus musculus, Escherichia coli K12, Lycopersicon esculentum, Prochlorococcus marinus, Rice black streaked dwarf virus, Oryza sativa (japonica cultivar-group), Vibrio parahaemolyticus, Schizosaccharomyces pombe" 30
- 6097 6227 36 "Homo sapiens, Dictyostelium discoideum, Lotus corniculatus var. japonicus, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Gossypium hirsutum, Enterococcus faecium, Medicago truncatula, Danio rerio, Caenorhabditis elegans, Felis catus, Rattus norvegicus, Hemicentrotus pulcherrimus, Gasterosteus aculeatus, Leptospira interrogans serovar lai str. 56601, Borrelia burgdorferi B31, Methanosarcina mazei Goe1, Clostridium tetani E88, Arabidopsis thaliana"
- 6098 6228 28 "Mus musculus, Bacillus anthracis str. Ames, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Pan troglodytes, Dictyostelium discoideum, Shewanella oneidensis MR-1, Argopecten irradians, Piromyces equi, Atelerix albiventris, Enterococcus faecalis V583, Clostridium tetani E88, Danio rerio, Plasmodium falciparum 3D7, Aphodius quadrimaculatus, Tribolium castaneum, Rickettsia montanensis, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Enterolobium contortisiliquum, Cryptosporidium parvum, Glycine max, Arabidopsis thaliana" 40
- 6099 6229 23 "Homo sapiens, Arabidopsis thaliana, Bacillus anthracis str. Ames, Mus musculus, Drosophila melanogaster, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Danio rerio, Helicobacter hepa 50

ticus ATCC 51449"

- 6100 6230 26 "Homo sapiens, Oryza sativa (japonica cultivar-group), Leishmania major, Caenorhabditis elegans, Oryza sativa, Mus musculus, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Oceanobacillus iheyensis HTE831, Pichia angusta"
- 6101 6231 23 "Homo sapiens, Salmo salar, Medicago truncatula, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Escherichia coli 0157:H7 EDL933, Pasteurella multocida, Escherichia coli 0157:H7"
- 6102 6232 25 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Mus musculus, Didelphis virginiana, Sminthopsis macroura, Lotus corniculatus var. japonicus, Pan troglodytes, Brucella melitensis 16M, Oreochromis niloticus, Brucella suis 1330, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Pterolebias longipinnis, Sus scrofa, Triticum aestivum" 10
- 6103 6233 27 "Homo sapiens, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Drosophila melanogaster, Mycoplasma pulmonis, Mus musculus, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Clostridium perfringens, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Oryza sativa"
- 6104 6234 27 "Triticum aestivum, Caenorhabditis elegans, Mus musculus, Homo sapiens, Zea mays, Clostridium acetobutylicum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Thermosynechococcus elongatus BP-1, Botryotinia fuckeliana" 20
- 6105 6235 26 "Caenorhabditis elegans, Rickettsia conorii, Homo sapiens, Mus musculus, Prochlorococcus marinus, Clostridium perfringens, Atelerix albiventris, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Saccharomyces bayanus, Saccharomyces pastorianus, Bacteriophage phiG1e, Oryza sativa (japonica cultivar-group), Acyrthosiphon pisum virus"
- 6106 6236 23 "Mus musculus, Homo sapiens, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Oryza sativa (japonica cultivar-group), Sorghum bicolor, Methanococcus vannielii"
- 6107 6237 28 "Homo sapiens, Mus musculus, Haemophilus influenzae, Haemophilus influenzae Rd KW20, Helicobacter hepaticus ATCC 51449, Bacillus cereus, Bacillus anthracis, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Medicago sativa, Clostridium tetani E88, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Pyrococcus horikoshii, Danio rerio, Plasmodium falciparum" 30
- 6108 6238 28 "Amsacta moorei entomopoxvirus, Mus musculus, Homo sapiens, Staphylococcus caprae, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Mycoplasma capricolum, Rickettsia prowazekii, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group)"
- 6109 6239 27 "Gallus gallus, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Listeria innocua, Schizosaccharomyces pombe" 40
- 6110 6240 30 "Homo sapiens, Arabidopsis thaliana, Danio rerio, Medicago truncatula, Streptococcus mutans UA159, Mus musculus, Felis catus"
- 6111 6241 25 "Danio rerio, Drosophila melanogaster, Homo sapiens, Lotus corniculatus var. japonicus, Rattus norvegicus, Mus musculus, Papio anubis, Oryza sativa (japonica cultivar-group)"
- 6112 6242 23 "Homo sapiens, Danio rerio, Caenorhabditis elegans, Plasmodium falciparum 3D7, Mus musculus, Rickettsia conorii, Plasmodium falciparum, Streptococcus pyogenes M1 GAS, Lactococcus lactis subsp. cremoris, Prochlorococcus marinus, Streptococcus pyogenes, Staphylococcus aureus subsp. aureus N315, St 50

- aphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50"
- 6113 6243 32 "Chlamydomonas reinhardtii, Homo sapiens, Mus musculus, Helicobacter pylori, Caenorhabditis elegans, Synechocystis sp. PCC 6803, Gossypium barbadense, Gossypium raimondii, Gossypium herbaceum, Canis familiaris, Mentha x piperita, Arabidopsis thaliana, Nostoc sp. PCC 7120"
- 6114 6244 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Gomphiocephalus hodgsoni, Mus musculus, Arabidopsis thaliana, Pneumocystis carinii, Medicago truncatula"
- 6115 6245 24 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Xenopus laevis, Arabidopsis thaliana, Haemophilus influenzae biotype aegyptius" 10
- 6116 6246 27 "Homo sapiens, Rattus norvegicus, Mus musculus, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Caenorhabditis elegans, Takifugu rubripes, Staphylococcus aureus, Danio rerio, Listeria innocua"
- 6117 6247 24 "Homo sapiens, Mus musculus, Papio anubis"
- 6118 6248 28 "Mus musculus, Homo sapiens, Enterococcus faecalis V583, Drosophila melanogaster, Pseudomonas aeruginosa, Smicridea turrialbana, Gonodactylus platysoma, Gonodactylus viridis, Chrysodidymus synuroideus, Lotus corniculatus var. japonicus, Euprymna scolopes, "
- 6119 6249 41 "Plasmodium falciparum 3D7, Homo sapiens, Caenorhabditis elegans, Anopheles gambiae, Xenopus laevis, Mus musculus, Rattus norvegicus, Pan troglodytes, Drosophila melanogaster, Arabidopsis thaliana, Glycine max, Danio rerio, Dictyostelium discoideum, Lasthenia gracilis, Plasmodium falciparum, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2" 20
- 6120 6250 32 "Dictyostelium discoideum, Mus musculus, Atelerix albiventris, Homo sapiens, Mycoplasma capricolum, Candidatus Carsonella ruddii, Caenorhabditis elegans, Papio anubis, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Pan troglodytes, Plasmodium falciparum 3D7, Periphyllus lyropictus, Danio rerio, Arabidopsis thaliana, Plasmodium falciparum, Mycoplasma penetrans, Mycoplasma gallisepticum R, Medicago truncatula, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Human immunodeficiency virus 1, Canis familiaris, Lotus corniculatus var. japonicus" 30
- 6121 6251 32 "Homo sapiens, Paramecium bursaria, Chlorella virus 1, Mus musculus, Rattus norvegicus, Uracis imbuta, Thermoanaerobacter tengcongensis, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 6122 6252 27 "Mus musculus, Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 6123 6253 31 "Homo sapiens, Pan troglodytes, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Mus musculus, Cyanophora paradoxa, Medicago truncatula, Plasmodium falciparum 3D7, Caenorhabditis elegans, Danio rerio, Schizosaccharomyces pombe, Drosophila melanogaster, Rattus norvegicus, Chlamydia trachomatis, Takifugu rubripes, Arabidopsis thaliana, Mycoplasma penetrans, Saccharomyces cerevisiae, Haemophilus influenzae Rd KW20, Apis mellifera ligustica, Melon necrotic spot virus, Plasmodium falciparum, Staphylococcus capitis" 40
- 6124 6254 28 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Borrelia burgdorferi B31, Borrelia burgdorferi, Legionella pneumophila, Caenorhabditis elegans, Spinacia oleracea, Xenopus laevis, Medicago truncatula, Butyrivibrio fibrisolvens" 50

- 6125 6255 20 "Xenopus laevis, Mus musculus, Homo sapiens, Sulfolobus solfataricus"
- 6126 6256 26 "Mus musculus, Enterococcus faecalis V583, Staphylococcus phage Twort, Human immunodeficiency virus 1, Heliconius hecale, Heliconius elevatus, Homo sapiens, Heliconius besckei, Heliconius ethilla, Thermoanaerobacter tengcongensis, Heliconius atthis, Arabidopsis thaliana, Papilio scamander, Papilio rutulus, Papilio canadensis, Papilio glaucus, Papilio indra, Papilio machaon oregonius, Papilio machaon, Papilio anchisiades, Papilio demoleus, Danio rerio, Heliconius pardalinus, Methanosarcina acetivorans C2A, Xenopus laevis, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Haemophilus influenzae Rd KW20" 10
- 6127 6257 32 "Homo sapiens, Mus musculus, Schizosaccharomyces pombe, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Escherichia coli O157:H7, Escherichia coli, Drosophila melanogaster, Pseudomonas phage phiKZ, Arabidopsis thaliana"
- 6128 6258 27 "Drosophila melanogaster, Homo sapiens, Rattus norvegicus, Laudakia caucasia, Laudakia erythrogastra, Arabidopsis thaliana, Mus musculus, Ciona intestinalis, Malawimonas jakobiformis, Chlorogonium elongatum, Lotus corniculatus var. japonicus, Pan troglodytes, Danio rerio, Medicago truncatula"
- 6129 6259 30 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Vibrio parahaemolyticus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Homo sapiens, Drosophila melanogaster, Mus musculus, Acyrthosiphon pisum, Saccharomyces cerevisiae" 20
- 6130 6260 28 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Caenorhabditis elegans, Homo sapiens, Pan troglodytes, Caenorhabditis briggsae, Danio rerio, Zea mays, Lymphocystis disease virus 1, Plasmodium vivax, Heterodontus francisci, Rattus norvegicus, Arabidopsis thaliana"
- 6131 6261 31 "Mus musculus, Tupaia belangeri, Danio rerio, Homo sapiens, Chaetosphaeridium globosum, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Venerupis (Ruditapes) philippinarum, Rattus norvegicus, Vibrio vulnificus CMCP6, Listeria monocytogenes, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group)" 30
- 6132 6262 35 "Clostridium tetani E88, Mus musculus, Pan troglodytes, Homo sapiens, Oryza sativa (japonica cultivar-group), Botryllus schlosseri, Medicago truncatula, Anabaena sp., Nostoc sp. PCC 7120"
- 6133 6263 31 "Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Homo sapiens, Biomphalaria obstructa, Biomphalaria temascalensis, Biomphalaria sp. Loker specimen 255, Biomphalaria sp. Loker specimen 142, Caenorhabditis elegans, Rickettsia conorii, Rickettsia prowazekii, Arabidopsis thaliana, Chlamydomonas reinhardtii, Drosophila melanogaster, Zea mays, Prototheca wickerhamii, Nostoc sp. PCC 7120" 40
- 6134 6264 24 "Homo sapiens, Danio rerio, Mus musculus, Gallus gallus, Guillardia theta, Plasmodium falciparum 3D7, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Prunus avium, Rattus norvegicus, Dictyostelium discoideum, Arabidopsis thaliana"
- 6135 6265 31 "Homo sapiens, Buchnera aphidicola, Drosophila melanogaster, Mus musculus, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Lactococcus lactis subsp. lactis, Lactococcus lactis, Mycoplasma penetrans, Danio rerio, Oryza sativa (japonica cultivar-group)" 50

- 6136 6266 32 "Danio rerio, Homo sapiens, Gallus gallus, Mus musculus, Drosophila melanogaster, Bacillus anthracis str. Ames, Shigella flexneri 2a str. 2457T, Clostridium tetani E88, Xenopus laevis, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Plasmodium falciparum 3D7, Guillardia theta, Escherichia coli O157:H7 EDL933, Escherichia coli, Escherichia coli K12, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Neurospora crassa, Escherichia coli O157:H7"
- 6137 6267 23 "Homo sapiens, Lactococcus lactis subsp. lactis, Mus musculus, Danio rerio, Lactococcus lactis subsp. cremoris, Oryza sativa (japonica cultivar-group), Treponema phagedenis" 10
- 6138 6268 31 "Arabidopsis thaliana, Mus musculus, Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Methanosarcina mazei Goe1, Helicobacter pylori, Danio rerio, Helicobacter pylori 26695, Helicobacter pylori J99, Caenorhabditis elegans, Pan troglodytes, Glycine max, Entodinium caudatum, Xenopus laevis, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Borrelia burgdorferi B31, Buchnera aphidicola str. Sg (Schizaphis graminum), Phylloscopus trochilus, Lycopersicon esculentum, Hoplandrii ni sp. MPD1, Sulfolobus tokodaii, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 6139 6269 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, Oryza sativa, Mus musculus, Danio rerio, Arabidopsis thaliana, Plasmodium falciparum 3D7, Ehrlichia chaffeensis, Sterkiella histriomuscorum, Diodon hystrix, Chilo mycterus antennatus, Macaca fascicularis" 20
- 6140 6270 32 "Danio rerio, Pasteurella multocida, Homo sapiens, Caenorhabditis elegans, Mus musculus, Dictyostelium discoideum, Arabidopsis thaliana, Mandarina ponderosa, Streptococcus pneumoniae TIGR4, Clostridium acetobutylicum, Sus scrofa, Tetrahymena pyriformis, Varuna litterata, Tetraodon fluviatilis, Plasmid p121BS, Oryza sativa (japonica cultivar-group)"
- 6141 6271 34 "Mus musculus, Lemur catta, Homo sapiens, Guillardia theta, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Medicago truncatula, Drosophila virilis, Pan troglodytes, Aquifex aeolicus VF5, Clostridium tetani E88, Gallus gallus, Shewanella oneidensis MR-1, Plasmodium falciparum 3D7, Arabidopsis thaliana, Swinepox virus, Oikopleura dioica, Rickettsia prowazekii, Macromia splendens, Paramecium aurelia, Luciola lateralis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Candida albicans, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 30
- 6142 6272 32 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Danio rerio, Hyphantria cunea, Borrelia burgdorferi B31, Dictyostelium discoideum, Arabidopsis thaliana, Haemophilus influenzae, Chlamydia trachomatis, Brugia malayi, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group)" 40
- 6143 6273 25 "Gallus gallus, Mus musculus, Homo sapiens, Danio rerio, Helicobacter pylori 26695, Zea mays, Enterococcus faecalis V583, synthetic construct, Calonectris diomedea"
- 6144 6274 53 "Buchnera aphidicola str. Sg (Schizaphis graminum), Bacillus cereus ATCC 14579, Clostridium tetani E88, Plasmodium falciparum 3D7, Staphylococcus aureus, Mus musculus, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus N315, Danio rerio, Staphylococcus aureus subsp. aureus Mu50, Homo sapiens, Dictyostelium discoideum, Caenorhabditis elegans, Cutlelya gracilis, Methanothermobacter thermoautotrophicus str. Delta H, Arabidopsis th 50

- aliana, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Listeria innocua*, *Schizosaccharomyces pombe*"
- 6145 6275 31 "Saccharomyces cerevisiae, *Drosophila melanogaster*, *Rattus norvegicus*, *Lactococcus lactis* subsp. *lactis*, *Homo sapiens*, *Proteus vulgaris*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Nostoc* sp. PCC 7120"
- 6146 6276 36 "Rattus norvegicus, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Blepharipoda occidentalis*, *Mycoplasma capricolum* subsp. *capricolum*, *Danio rerio*, *Scytinostroma alutum*, *Archaeoglobus fulgidus* DSM 4304, *Dictyostelium discoideum*, *Methanosarcina mazei* Goe1, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Mycoplasma penetrans*, *Aulonocara hansbaenschii*, *Bombyx mori*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Pan troglodytes*, *Macaca mulatta*, *Clostridium tetani* E88, *Coccotrypes petioli*, *Papio anubis*, *Clostridium acetobutylicum*, *Rickettsia prowazekii*, *Medicago truncatula*" 10
- 6147 6277 24 "Mus musculus, *Bacillus cereus* ATCC 14579, *Homo sapiens*, *Ovine lentivirus*, *Lycopersicon esculentum*, *Pan troglodytes*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Escherichia coli* CFT073, *Medicago truncatula*, *Escherichia coli*, *Clostridium pasteurianum*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Ciona intestinalis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*" 20
- 6148 6278 29 "Drosophila melanogaster, *Mus musculus*, *Homo sapiens*, *Ferrobacterium islandicum*, *Arabidopsis thaliana*, *Danio rerio*"
- 6149 6279 26 "Caenorhabditis elegans, *Homo sapiens*, *Danio rerio*, *Plasmodium vivax*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Branchiostoma lanceolatum*, *Oryza sativa* (japonica cultivar-group), *Lycopersicon esculentum*, *Rickettsia conorii*, *Rickettsia montanensis*, *Rickettsia rickettsii*, *Caenorhabditis briggsae*, *Amsacta moorei* entomopoxvirus, *Staphylococcus aureus*, *Helicobacter pylori* 26695, *Carabus violaceus*" 30
- 6150 6280 28 "Mus musculus, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Candidatus Carsonella ruddii*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Meloidogyne incognita*, *Atelerix albiventris*, *Medicago truncatula*, *Pan troglodytes*, *Bacillus cereus* ATCC 14579, *Escherichia coli*, *Methanosarcina mazei* Goe1, *Streptococcus mutans* UA 159, *Macaca mulatta*, *Papio anubis*, *Hymenolepis diminuta*, *Chlamydophila pneumoniae* CWL029, *Caenorhabditis elegans*, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Rattus norvegicus*, *Sulfolobus tokodaii*, *Petunia integrifolia* subsp. *inflata*, *Mytilus galloprovincialis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Chlamydophila pneumoniae* TW-183" 40
- 6151 6281 31 "Mycoplasma pulmonis, *Homo sapiens*, *Medicago truncatula*, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27, *Escherichia coli* CFT073, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Escherichia coli*, *Ciona intestinalis*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Oryctolagus cuniculus*, *Streptococcus agalactiae* 2603V/R, *Clostridium acetobutylicum*, *Prochlorococcus marinus*, *Streptococcus agalactiae* NEM316, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Ureaplasma urealyticum*, *Neurospora crassa*, *Schizosaccharomyces pombe*, *Danio rerio*"
- 6152 6282 27 "Bacillus cereus ATCC 14579, *Drosophila melanogaster*, *Ho* 50

- mo sapiens, Danio rerio, Mus musculus, Arabidopsis thaliana, Pyrococcus furiosus DSM 3638, Paramecium bursaria Chlorella virus 1, Bacteriophage KVP40, Penicillium marneffeii, Equine herpesvirus 4, Triticum aestivum"
- 6153 6283 28 "Citrobacter rodentium, Malawimonas jakobiformis, Bacillus cereus ATCC 14579, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Methanosarcina acetivorans C2A, Vigna radiata, Staphylococcus aureus subsp. aureus N315, Caenorhabditis elegans, Listeria monocytogenes, Danio rerio, Staphylococcus aureus subsp. aureus Mu50, Drosophila melanogaster, Methanosarcina mazei Goe1, Phthorimaea operculella granulovirus, Chorista australis, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Penicillium marneffeii, Listeria innocua, Acromyrmex heyeri, Clostridium perfringens str. 13" 10
- 6154 6284 32 "Dictyostelium discoideum, Homo sapiens, Jatropha curcas, Lycopersicon esculentum, Mus musculus, Ropalidia revolutionalis, Trypanosoma brucei, Hamelia papillosa, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio, Trypanosoma cruzi, Xenopus laevis, Caenorhabditis elegans"
- 6155 6285 35 "Caenorhabditis briggsae, Listeria monocytogenes, Caenorhabditis elegans, Danio rerio, Schizosaccharomyces pombe, Mus musculus, Drosophila melanogaster, Homo sapiens, Clostridium thermocellum, Arabidopsis thaliana, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group)" 20
- 6156 6286 27 "Caenorhabditis elegans, Xestia c-nigrum granulovirus, Homo sapiens, Medicago truncatula, Mus musculus, Oceanobacillus iheyensis HTE831, Meleagris gallopavo"
- 6157 6287 31 "Homo sapiens, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Aeromonas hydrophila, Thermotoga maritima, Pan troglodytes, Peziza vesiculosa, Arabidopsis thaliana, Danio rerio"
- 6158 6288 27 "Homo sapiens, Methanosarcina acetivorans C2A, Mus musculus, Clostridium acetobutylicum, Mycobacterium smegmatis, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Ciona intestinalis" 30
- 6159 6289 35 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Pan troglodytes, Anopheles gambiae, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Clostridium tetani E88, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Pseudomonas phage phiKZ, Streptococcus pyogenes M1 GAS, Chlamydia trachomatis, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes SSI-1, Streptococcus mutans, Medicago truncatula, Schizosaccharomyces pombe"
- 6160 6290 35 "Homo sapiens, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mus musculus, Danio rerio" 40
- 6161 6291 24 "Homo sapiens, Mus musculus, Thermoanaerobacter tengcongensis, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Danio rerio, Arabidopsis thaliana"
- 6162 6292 27 "Homo sapiens, Pleurodeles waltl, Mus musculus, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lepidium campestre, Danio rerio, Streptococcus agalactiae NEM316, Saccharomyces cerevisiae, Plasmodium falciparum"
- 6163 6293 50 "Listeria monocytogenes, Enterococcus faecalis V583, Tet 50

- ragenococcus halophilus, Drosophila melanogaster, Homo sapiens, Rattus norvegicus, Mus musculus, Anopheles gambiae, Listeria innocua, Arabidopsis thaliana, Plasmodium falciparum 3D7, Hordeum vulgare subsp. vulgare, Pyrococcus furiosus DSM 3638, Caenorhabditis elegans, Micrococcus luteus, Pyrococcus abyssi, Sulfolobus tokodaii, Cryptosporidium parvum"
- 6164 6294 27 "Drosophila melanogaster, Homo sapiens, Lymnaea stagnalis, Mus musculus, Caenorhabditis elegans, Danio rerio, Clostridium acetobutylicum, Arabidopsis thaliana, Medicago truncatula, Pan troglodytes, Chlamydia muridarum, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Campylobacter jejuni, Cryptococcus neoformans var. grubii, Guillardia theta, Tetrahymena pyriformis, Mycoplasma capricolum, Lotus corniculatus var. japonicus, Haemophilus ducreyi, Haemophilus ducreyi 35000HP, Cucumber green mottle mosaic virus" 10
- 6165 6295 25 "Homo sapiens, Mus musculus, Platydorina caudata, Arabidopsis thaliana, Pan troglodytes, Danio rerio, Bacillus subtilis subsp. subtilis str. 168, Scenedesmus quadricauda, Bacillus subtilis"
- 6166 6296 32 "Homo sapiens, Rhynchanthera grandiflora, Pan troglodytes, Triticum aestivum, Danio rerio, Mus musculus, Trypanosoma brucei, Caenorhabditis elegans, Plasmodium berghei, Schizosaccharomyces pombe, Streptococcus mutans UA159, Haemophilus influenzae biotype aegyptius, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Suillus luteus, Arabidopsis thaliana, Caenorhabditis briggsae, Ureaplasma urealyticum, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Drosophila simulans, Staphylococcus aureus subsp. aureus MW2, Apis cerana, Xenopus laevis, Helicobacter hepaticus ATCC 51449, Drosophila melanogaster, Staphylococcus aureus subsp. aureus Mu50" 20
- 6167 6297 52 "Danio rerio, Mus musculus, Dictyostelium discoideum, Lamprolaima abrupa, Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa, Ricinus communis, Cryptosporidium parvum, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum, Oreochromis niloticus, Pan troglodytes, Dreissena bugensis, Coptotermes formosanus, Caenorhabditis elegans, Takifugu rubripes, Loligo gahi, Paralithodes camtschaticus" 30
- 6168 6298 28 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Arabidopsis thaliana, Chlamydomonas reinhardtii, Plasmodium falciparum 3D7, Listeria monocytogenes, Rattus norvegicus, Dictyostelium discoideum, Microscilla sp. PRE1, Danio rerio, Clostridium bifermentans, Saccharomyces cerevisiae"
- 6169 6299 30 "Mus musculus, Cyprinus carpio, Drosophila melanogaster, Plasmodium falciparum 3D7, Plasmodium lophurae, Homo sapiens, Danio rerio, Arabidopsis thaliana, Oryza sativa, Marrubium vulgare, Oryza sativa (japonica cultivar-group), Oncorhynchus mykiss, Didelphis virginiana, Caenorhabditis elegans, Dictyostelium discoideum, Medicago truncatula, Myzus persicae densovirus, Gallus gallus, Zea mays, Pheidole pallidula, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Plasmodium falciparum, Lotus corniculatus var. japonicus, Cryptosporidium parvum, Schizosaccharomyces pombe, Solanum tuberosum, Rattus norvegicus, Microdon mutabilis, uncultured cf. Cortinarius sp., Drosophila littoralis, Apis mellifera, Phlebotomus sergenti" 40
- 6170 6300 27 "Homo sapiens, Drosophila melanogaster, Shigella flexneri 2a str. 2457T, Shigella flexneri 2a str. 301, Clostridium acetobutylicum, Escherichia coli O157:H7 EDL933, Escherichia coli, Escherichia coli K12, Mus musculus, Danio rerio, Escherichia coli O157:H7"
- 6171 6301 28 "Homo sapiens, Drosophila melanogaster, Danio rerio, Dic 50

tyostelium discoideum, Mus musculus, Gallus gallus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Ureaplasma urealyticum, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana"

6172 6302 28 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Acanthocybium solandri, Takifugu rubripes, Sus scrofa"

6173 6303 31 "Mus musculus, Homo sapiens, Pan troglodytes, Dictyostelium discoideum, Plasmodium falciparum 3D7, Gossypium thurberi, Silene vulgaris, Haemophilus influenzae, Staphylococcus aureus, Lumpy skin disease virus, Danio rerio, Schizosaccharomyces pombe, Diaporthe helianthi, Drosophila melanogaster, Gossypium raimondii, Gossypium hirsutum, Lemur catta, Clostridium tetani E88, Lyophilum favrei, Plasmodium falciparum, Caenorhabditis elegans, Arabidopsis thaliana, Nicotiana tabacum, Scenedesmus obliquus, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Bacillus thuringiensis, Oryza sativa (japonica cultivar-group), Clostridium longisporum, Potato virus M, Saccharomyces cerevisiae"

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6174 6304 25 "Homo sapiens, Bacillus cereus ATCC 14579, Mus musculus, Gossypioides kirkii, Gossypium barbadense, Gossypium raimondii, Gossypium herbaceum, Clostridium acetobutylicum, Cricetulus griseus"

6175 6305 25 "Candidatus Carsonella ruddii, Homo sapiens, Bacillus halodurans, Bacillus sp., Mus musculus, Aquifex aeolicus VF5, Lactococcus lactis subsp. lactis, Danio rerio, Arabidopsis thaliana, Clostridium perfringens str. 13"

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6176 6306 25 "Mus musculus, Methanosarcina acetivorans C2A, Bacteroides thetaiotaomicron VPI-5482, Taenia solium, Homo sapiens, Medicago truncatula, Pirellula sp., Danio rerio"

6177 6307 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Schizosaccharomyces pombe, Macaca fascicularis, Mus musculus, Rattus norvegicus, Enterococcus faecalis V583, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Listeria monocytogenes, Ciona intestinalis, Dictyostelium discoideum, Danio rerio, Brassica rapa, Lymphocytic choriomeningitis virus, Onchocerca volvulus"

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6178 6308 30 "Thermoanaerobacter ethanolicus, Homo sapiens, Arabidopsis thaliana, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Schistosoma japonicum, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Medicago truncatula, Saccharomyces cerevisiae, Bos taurus, Danio rerio, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Haemophilus ducreyi 35000HP, Clarkia concinna, Lactobacillus plantarum W CFS1, Bacillus halodurans"

6179 6309 25 "Plasmodium falciparum, Homo sapiens, Drosophila melanogaster, Clostridium tetani E88, Plasmodium falciparum 3D7, Streptococcus pyogenes, Synechocystis sp. PCC 6803, Oryza sativa (japonica cultivar-group), Pan troglodytes, Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Chryseobacterium indologenes, Human immunodeficiency virus 1, Arachis hypogaea, Danio rerio, Clostridium butyricum, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Chlamydophila pneumoniae TW-183"

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6180 6310 44 "Listeria innocua, Xenopus laevis, Oryza sativa (japonica cultivar-group), Bacillus cereus, Bacillus anthracis, Bacillus anthracis str. Ames, Homo sapiens, Mycoplasma hominis, Mus musculus, Bacillus cereus ATCC 14579, Mycoplasma capricolum, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana"

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- 6181 6311 42 "Plasmodium falciparum 3D7, Listeria monocytogenes, Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Buchnera aphidicola str. Sg (Schizaphis graminum), Oryza sativa, Schizosaccharomyces pombe, Marchantia polymorpha, Spirogyra maxima, Listeria innocua, Restio tetraphyllus"
- 6182 6312 28 "Homo sapiens, Medicago truncatula, Zea mays, Mus musculus, Equus caballus, Oryza sativa (japonica cultivar-group), Helicobacter pylori 26695, Helicobacter pylori J99, Cucumis sativus, Rattus norvegicus, Drosophila melanogaster, Plasmodium falciparum 3D7, Campylobacter jejuni, Caenorhabditis elegans, Danio rerio, Oryza sativa, Lotus corniculatus var. japonicus" 10
- 6183 6313 62 "Prochlorococcus marinus, Candidatus Blochmannia floridanus, Haemophilus ducreyi 35000HP, Acholeplasma laidlawii, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae, Prochlorococcus marinus subsp. marinus str. CCMP1375, "
- 6184 6314 71 "Buchnera aphidicola str. Sg (Schizaphis graminum), Thermosynechococcus elongatus BP-1, Helicobacter hepaticus ATCC 51449, Bartonella bacilliformis, Peanut witches'-broom phytoplasma, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Haemophilus influenzae"
- 6185 6315 106 "Spiroplasma citri, Prochlorococcus marinus, Helicobacter hepaticus ATCC 51449, Rickettsia prowazekii, Campylobacter coli, Campylobacter lari, Rickettsia conorii, Oceanobacillus iheyensis HTE831, Bacillus cereus, Bacillus anthracis, Bacillus anthracis str. A" 20
- 6186 6316 31 "Rattus norvegicus, Homo sapiens, Zea mays, Atelerix albiventris, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Arabidopsis thaliana, Caenorhabditis elegans, Helicobacter pylori 26695, Methanocaldococcus jannaschii"
- 6187 6317 47 "Photobacterium damsela subsp. damsela, Campylobacter concisus, Shewanella violacea, Homo sapiens, Buchnera aphidicola str. Bp (Baizonia pistaciae), Arabidopsis thaliana, Mus musculus, Danio rerio, Bacillus halodurans" 30
- 6188 6318 27 "Homo sapiens, Acanthamoeba castellanii, Capsella bursa-pastoris, Bacteroides thetaiotaomicron VPI-5482, Plasmodium falciparum 3D7, Caenorhabditis elegans, Plasmodium falciparum, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Helicobacter pylori, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Edaphoallogromia australica, Helicobacter pylori 26695, Danio rerio"
- 6189 6319 39 "Caenorhabditis elegans, Homo sapiens, Danio rerio, Clostridium tetani E88, Mus musculus, Drosophila adunca, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila melanogaster, Vibrio cholerae 037, Candidatus Blochmannia floridanus, Listeria monocytogenes, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Triticum aestivum, Kluyveromyces lactis, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Vibrio vulnificus CM CP6, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Bos taurus, Cochliomyia hominivorax, Sulfolobus acidocaldarius, Caenorhabditis briggsae, Luculia gratissima, Staphylococcus epidermidis, Prochlorococcus marinus subsp. marinus str. CCMP1375, Takifugu rubripes, Mus sp., Leskeea gracilescens" 40
- 6190 6320 27 "Homo sapiens, Danio rerio, Papio anubis, Thermoanaerobacter tengcongensis, Mycoplasma pulmonis, Mus musculus, Drosophila melanogaster, Rickettsia prowazekii, Caenorhabditis elegans, Oryza sativa (japonica cultivar-g" 50

roup), Human immunodeficiency virus 1, Porphyra purpurea, Clostridium perfringens str. 13"

6191 6321 81 "Mesoplasma seiffertii, Guillardia theta, Mesoplasma syriacum, Staphylococcus epidermidis ATCC 12228, Staphylococcus haemolyticus, Mycoplasma pulmonis, Peanut witches'-broom phytoplasma, Tomato big bud phytoplasma, Mesoplasma pleciae, Prochlorococcus marinus"

6192 6322 117 "Bacillus pumilusmarine CFB-group bacterium MBIC04441, Clostridium tetani E88, Buchnera aphidicola, Chryseobacterium meningosepticum, Candidatus Blochmannia floridanus, Mesoplasma corruscae, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Cyto"

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6193 6323 39 "marine CFB-group bacterium MBIC04471, Cytophaga sp. I-1858, Mesoplasma pleciae, Listeria innocua, Cytophaga sp. MBIC04665, Legionella burtonensis, Marinospirillum minutulum, Tenacibaculum ovolyticum, Cytophaga sp. I-377, Listeria monocytogenes, Bacillus cereus"

6194 6324 52 "Clostridium acetobutylicum, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Cytophaga sp. I-545, Flavobacterium johnsoniae, Bacillus cereus ATCC 14579, Homo sapiens, Listeria monocytogenes, Bacillus thuringiensis, Bacillus cereus, Bacillus anthracis str. Ames, Drosophila melanogaster, Pseudoalteromonas luteoviolacea, Bacillus anthracis, Mus musculus, Cytophaga sp., marine CFB-group bacterium MBIC04475, Arabidopsis thaliana, Schizosaccharomyces pombe, Staphylococcus aureus subsp. aureus N315, Fluoribacter gormanii, Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Medicago truncatula, Danio rerio, Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50, Tenacibaculum ovolyticum, Cytophaga sp. MBIC04665, Cytophaga sp. T-551"

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6195 6325 27 "Dictyostelium discoideum, Homo sapiens, Mus musculus, Aphanoascus hispanicus, Diplodus sargus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Medicago truncatula, Listeria innocua, Schizosaccharomyces pombe, Danio rerio"

6196 6326 39 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Brachyspira hyodysenteriae, Danio rerio, Mus musculus, Caenorhabditis elegans, Bacillus anthracis str. Ames, Arabidopsis thaliana, Chaetosphaeridium globosum, Homo sapiens, Nostoc sp. PCC 7120, Bacteroides thetaiotaomicron VPI-5482, Staphylococcus aureus, Streptococcus mutans UA159, Methanosarcina acetivorans C2A, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Human herpesvirus 4, Staphylococcus aureus subsp. aureus Mu50, Clostridium perfringens str. 13"

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6197 6327 97 "Ureaplasma urealyticum, Cytophaga sp. MBIC01485, Cytophaga sp. MBIC01482, Buchnera aphidicola, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mesoplasma seiffertii, Polaribacter filament"

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6198 6328 73 "Mesoplasma corruscae, Oceanobacillus iheyensis HTE831, Lactococcus lactis subsp. lactis, Treponema denticola, Helicobacter hepaticus ATCC 51449, Prochlorococcus marinus subsp. marinus str. CCMP1375, Nodularia sp. PCC 73104, Listeria innocua, Chlamydomonas reinhardtii, Streptococcus mutans UA159, Mus musculus, Homo sapiens, Lactococcus lactis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mycoplasma penetrans, Chondracanthus chamissoi, Ahnfeltiopsis paradoxus"

6199 6329 28 "Bacillus cereus ATCC 14579, Homo sapiens, Danio rerio, Arabidopsis thaliana, Medicago truncatula, Pan troglodytes, Mus musculus, Borrelia burgdorferi B31, Phthorimaea operculella granulovirus, Borrelia burgdorferi,

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Oryza sativa (japonica cultivar-group), *Candida albicans*, *Agaricus* sp. 94.31, *Agaricus arvensis*, *Agaricus* sp. AA0390, *Agaricus* sp. AA0373, *Agaricus* sp. 93.10, *Agaricus* sp. 93.7, *Agaricus* sp. W3B, *Agaricus* sp. 93.9, *Schizosaccharomyces pombe*

6200 6330 28 "Drosophila melanogaster, Homo sapiens, Mus musculus, Caenorhabditis elegans, Pan troglodytes, Rickettsia conorii, Rickettsia prowazekii, Bacillus halodurans, Borrelia burgdorferi B31, Danio rerio"

6201 6331 24 "Medicago truncatula, Leptospira kirschneri serovar gripotyphosa, Homo sapiens, Salmonella typhimurium LT2, Caenorhabditis elegans, Salmonella enterica subsp. enterica serovar Typhimurium, Lotus corniculatus var. japonicus, Apis mellifera, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Mus musculus, Leptospira interrogans serovar pomona, Leptospira interrogans serovar copenhageni, Oryza sativa (japonica cultivar-group), Melanoplus sanguinipes entomopoxvirus"

6202 6332 26 "Danio rerio, Ciona intestinalis, Homo sapiens, Mus musculus, Sheeppox virus, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Oryza sativa, Phaseolus coccineus, Acinetobacter sp. AD321, Hemileuca electra, Escherichia coli 0157:H7 EDL933, Arabidopsis thaliana, Pneumocystis carinii, Caenorhabditis elegans, Schizosaccharomyces pombe, Escherichia coli, Bos taurus, Escherichia coli 0157:H7"

6203 6333 27 "Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Mus musculus, Schizosaccharomyces pombe"

6204 6334 27 "Rattus norvegicus, Mus musculus, Homo sapiens, Dictyostelium discoideum, Arabidopsis thaliana, Illex argentinus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Olisthodiscus luteus, Streptococcus pneumoniae, Escherichia coli, Cyanidium caldarium, Sulfolobus tokodaii, Listeria monocytogenes, Crocus vernus, Spirodela punctata"

6205 6335 34 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio, Staphylococcus aureus subsp. aureus MW2, Arabidopsis thaliana, Plasmodium chabaudi, Dictyostelium discoideum, Drosophila melanogaster, Clostridium te"

6206 6336 33 "Clostridium tetani E88, Nitrosomonas europaea ATCC 19718, Homo sapiens, Arabidopsis thaliana, Coxiella burnetii RSA 493, Pan troglodytes, Papio anubis, Mus musculus, Streptococcus pyogenes, Caenorhabditis elegans, Bacillus megaterium, Medicago truncatula"

6207 6337 29 "Danio rerio, Mus musculus, Homo sapiens, Spiroplasma citri, Pseudomonas syringae pv. tomato str. DC3000, Drosophila melanogaster, Plasmodium falciparum 3D7, Helicoverpa zea single nucleocapsid nucleopolyhedrovirus, Oryza sativa (japonica cultivar-group), Pan troglodytes"

6208 6338 31 "Homo sapiens, Candidatus Carsonella ruddii, Dictyostelium discoideum, Mus musculus, Mycoplasma pulmonis, Brassica oleracea, Atelerix albiventris, Plasmodium falciparum 3D7, Vicia faba, Stigmacros sp., Caenorhabditis elegans, Pan troglodytes, Anastrepha nigrifascia, Medicago truncatula, Oryza sativa (japonica cultivar-group), Pseudomonas aeruginosa PA01, Drosophila melanogaster, Papio anubis, Danio rerio, Clostridium tetani E88, Streptococcus mutans UA159, Tribolium castaneum, Lactobacillus plantarum, Arabidopsis thaliana, Caenorhabditis briggsae, Podospira anserina, Cymbalaria muralis, Puccinellia distans, Lyperia antirrhinoides, Camptoloma lyperiiflorum, Lotus corniculatus var. japonicus, Lactobacillus plantarum WCFS1, Helicobacter pylori J99, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"

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- 6209 6339 27 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Methanosarcina mazei Goe1, Pan troglodytes, Plasmodium falciparum, Bos taurus, Oryza sativa (japonica cultivar-group), Archaeoglobus fulgidus DSM 4304, Oryctolagus cuniculus, Caenorhabditis elegans, Yersinia pestis KIM, Lactococcus lactis subsp. lactis, Rickettsia prowazekii, Lotus corniculatus var. japonicus, Danio rerio, Yersinia pestis C092, Clostridium perfringens, Clostridium perfringens str. 13"
- 6210 6340 29 "Homo sapiens, Paramecium bursaria Chlorella virus 1, Mus musculus, Staphylococcus epidermidis ATCC 12228, Bacteriophage phi3626, Staphylococcus epidermidis, Danio rerio, Pan troglodytes, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Dermatemys mawii, Sus scrofa, Arabidopsis thaliana, Caenorhabditis briggsae, Neurospora crassa, Podospora anserina, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Blumeria graminis, Blumeria graminis f. sp. hordei, Saccharomyces servazzii, Dictyostelium discoideum, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Luerella pelecanceps, Zootrophion dayanum, Masdevallia uniflora, Candidatus Carsonella ruddii, Lotus corniculatus var. japonicus, Brassica rapa, Mycoplasma penetrans, Oedibasis platycarpa, Pyramidoptera cabulica, Orlaya daucoides, Paramecium primaurelia, Phrynosoma munita, Clostridium difficile" 10
- 6211 6341 31 "Homo sapiens, Oryza sativa, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Pan troglodytes, Plasmodium falciparum 3D7, Caenorhabditis elegans, Clostridium acetobutylicum, Ciona intestinalis, Dictyostelium discoideum" 20
- 6212 6342 34 "Lotus corniculatus var. japonicus, Homo sapiens, Takifugu rubripes, Pictetia aculeata, Pictetia marginata, Mus musculus, Hedera azorica, Plasmodium falciparum 3D7, Opuntia kuehnrhichiana, Opuntia echinacea, Opuntia pachypus, Opuntia subulata, Pereskia aculea"
- 6213 6343 32 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Pseudomonas putida KT2440, Dictyostelium discoideum, Drosophila melanogaster, Hordeum vulgare subsp. vulgare, Yersinia pestis KIM, Arabidopsis thaliana, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Yersinia pestis C092, Danio rerio, Human immunodeficiency virus 1, Coxiella burnetii RSA 493, Donacia ozensis, Anabaena circinalis, Schizophyllum commune, Naeckleria gruberi, Rattus norvegicus, Tetrahymena pyriformis, Strongylus vulgaris, Prochlorococcus marinus, Mycoplasma pulmonis, Streptococcus agalactiae NEM316, Escherichia coli, Campylobacter jejuni subsp. jejuni NCTC 11168, Brassica napus, Ureaplasma urealyticum, Pylaiella littoralis, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Medicago truncatula, Arethusa arethusa, Cryptosporidium parvum" 30
- 6214 6344 29 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Staphylococcus hyicus, Fusobacterium nucleatum subsp. fusiforme, Streptococcus thermophilus, Saccharomyces cerevisiae, Mus musculus, Danio rerio, Caenorhabditis elegans, Habronattus sp. YUCU" 40
- 6215 6345 31 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Bacillus anthracis str. Ames, Danio rerio, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Saccharum hybrid cultivar R570, Medicago truncatula, Clostridium perfringens str. 13"
- 6216 6346 27 "Pasteurella multocida, Homo sapiens, Brugia malayi, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, African swine fever virus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-gr" 50

- oup), *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Methanosarcina acetivorans* C2A, *Tetrahymena thermophila*, *Candida glabrata*, *Prochlorococcus marinus*, *Streptococcus agalactiae* NEM316, *Rattus norvegicus*"
- 6217 6347 27 "Mus musculus, Homo sapiens, *Caenorhabditis elegans*, *Arabidopsis thaliana*"
- 6218 6348 31 "*Drosophila melanogaster*, *Danio rerio*, *Melanoplus sanguinipes* entomopoxvirus, Homo sapiens, *Borrelia burgdorferi* B31, *Mus musculus*, *Paramecium tetraurelia*, *Arabidopsis thaliana*, Cowpox virus, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Vaccinia virus*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Ectromelia virus*, *Camelpox virus* CMS, *Monkeypox virus*, *Variola virus*, *Variola minor virus*, *Rickettsia prowazekii*, *Lotus corniculatus* var. japonicus, *Vaccinia virus* (strain Tian Tan), *Saccharomyces cerevisiae*, *Medicago truncatula*, *Bacteriophage SPP1*, *Variola major virus*, *Bombyx mori*, *Camelpox virus* M-96" 10
- 6219 6349 27 "*Bacteroides thetaiotaomicron* VPI-5482, *Rattus norvegicus*, *Arabidopsis thaliana*, *Bacillus cereus* ATCC 14579, *Mus musculus*, Homo sapiens, *Ciona intestinalis*, *Streptococcus agalactiae* 2603V/R, *Flavobacterium johnsoniae*, *Danio rerio*, *Streptococcus agalactiae* NEM316, *Saccharomyces cerevisiae*, *Helicobacter pylori* 26695, *Schizosaccharomyces pombe*, *Helicobacter pylori* J99, *Treponema pallidum*, *Caenorhabditis elegans*" 20
- 6220 6350 27 "*Mus musculus*, *Caenorhabditis elegans*, *Danio rerio*, Homo sapiens, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Rhesus cytomegalovirus* strain 68-1, *Pan troglodytes*, *Dictyostelium discoideum*, *Aneurinibacillus aneurinilyticus*, *Pisum sativum*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*, *Vitreochlamys aulata*, *Proteus mirabilis*, *Clostridium perfringens* str. 13"
- 6221 6351 27 "*Pleurotus ostreatus*, *Danio rerio*, Homo sapiens, *Helicobacter pylori* J99, *Mus musculus*, *Drosophila melanogaster*, *Pan troglodytes*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Streptococcus gordonii*, *Triatoma dimidiata*, *Oryza sativa*, *Oryza sativa* (japonica cultivar-group)" 30
- 6222 6352 27 "*Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Equus caballus*, *Oreochromis niloticus*, *Danio rerio*, *Mus musculus*, *Candidatus Carsonella ruddii*, *Brucella melitensis* 16M, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Papio anubis*, *Plasmodium falciparum* 3D7, *Brucella suis* 1330, *Arabidopsis thaliana*, *Brucella melitensis* biovar Abortus, *Lycopersicon esculentum*, *Brassica napus*, *Staphylococcus epidermidis*, *Lotus corniculatus* var. japonicus, *Pan troglodytes*"
- 6223 6353 27 "*Bacillus cereus* ATCC 14579, Homo sapiens, *Mus musculus*, *Danio rerio*, *Chlamydophila caviae* GPIC, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Mycoplasma pulmonis*, *Chlamydophila caviae*, *Arabidopsis thaliana*, *Chlamydophila abortus*, *Chlamydophila psittaci*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Bathysiphon minuta*, *Cucurbita maxima*, *Rattus norvegicus*" 40
- 6224 6354 27 "*Homo sapiens*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Bos taurus*, *Rattus norvegicus*, *Staphylococcus aureus*, *Heliconius erato/melpomene*, *Chaetosphaeridium globosum*, *Streptococcus pneumoniae* TIGR4, *Caenorhabditis elegans*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Listeria innocua*, *Medicago truncatula*, *Staphylococcus aureus* subsp. aureus Mu50" 50

- 6225 6355 32 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Borrelia burgdorferi B31, Borrelia burgdorferi, Mus musculus, Drosophila melanogaster, Homo sapiens, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Dictyostelium discoideum, Plasmodium falciparum 3D7, Neurospora crassa, Hordeum vulgare"
- 6226 6356 35 "Oryza sativa (japonica cultivar-group), Oryctolagus cuniculus, Homo sapiens, Danio rerio, Arabidopsis thaliana, Clostridium tetani E88, Mus musculus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Papio anubis "
- 6227 6357 35 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Meloidogyne artiellia, Pisum sativum, Borrelia burgdorferi B31, Dictyostelium discoideum, Buchnera aphidicola str. Sg (Schizaphis graminum), Halictus confusus, Felis catus, Medicago truncatula, Papio anubis, Caenorhabditis elegans, Anthonomus grandis, Campylobacter jejuni, Rhipicephalus pumilio, Theileria parva, Rhipicephalus rossicus, Campylobacter jejuni subsp. jejuni NCTC 11168, Canis familiaris, Oryza sativa (indica cultivar-group), Methanocaldococcus jannaschii, Hexachaeta amabilis, Bos taurus, Hordeum vulgare"
- 6228 6358 36 "Danio rerio, Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Borrelia burgdorferi B31, Caenorhabditis elegans, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Medicago truncatula, Ideopsis similis, Oryza sativa, Dictyostelium dis"
- 6229 6359 32 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Cyanophora paradoxa, Danio rerio, Leishmania major, Rattus norvegicus, Drosophila melanogaster, Oryza sativa, Dictyostelium discoideum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Medicago truncatula, Caenorhabditis elegans, Oryza sativa (indica cultivar-group), Leishmania mexicana"
- 6230 6360 27 "Homo sapiens, Mustela putorius furo, Arabidopsis thaliana, Pan troglodytes, Clostridium acetobutylicum, Ciona intestinalis, synthetic construct, Mus musculus"
- 6231 6361 25 "Homo sapiens, Hawaiian goose poxvirus, Vultur gryphus poxvirus, Mus musculus, Methanosarcina acetivorans C2A"
- 6232 6362 24 "Homo sapiens, Zea mays, Gasterosteus aculeatus, Phaseolus vulgaris, Saccharomyces cerevisiae, Mus musculus"
- 6233 6363 30 "Bacillus anthracis str. Ames, Homo sapiens, Pyrococcus horikoshii, Gallus gallus, Mycoplasma gallisepticum R, Drosophila melanogaster, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group)"
- 6234 6364 23 "Homo sapiens, Caenorhabditis elegans, Sulfolobus solfataricus, Mus musculus, Nicotiana glauca, Drosophila melanogaster, Vibrio vulnificus CMCP6, Indian peanut clump virus D, Staphylococcus epidermidis ATCC 12228, Yersinia pestis KIM, Thermoanaerobacter tengcongensis, Danio rerio, Oryza sativa, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis, Debaryomyces hansenii var. hansenii, Yersinia pestis C092, Schizosaccharomyces pombe, Arabidopsis thaliana"
- 6235 6365 31 "Danio rerio, Drosophila melanogaster, Homo sapiens, Chl

- amydia muridarum, Mus musculus, Clostridium perfringens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana"
- 6236 6366 24 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Coxiella burnetii RSA 493, Sorghum bicolor, uncultured antarctic soil bacterium, Foot-and-mouth disease virus, Candida albicans, Clostridium perfringens str. 13"
- 6237 6367 23 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Bacillus anthracis str. Ames, Drosophila melanogaster, Sulfolobus tokodaii, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Arabidopsis thaliana, Oryza sativa"
- 6238 6368 30 "Mus musculus, Chlamydomonas reinhardtii, Homo sapiens, Danio rerio, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Onchocerca volvulus, Caenorhabditis elegans" 10
- 6239 6369 24 "Homo sapiens, Bacillus anthracis str. Ames, Zea mays, Mus musculus, Tetragenococcus halophilus, Cherax tenuimanus, Cherax quinquecarinatus, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Cherax destructor, Centurio senex, Caenorhabditis briggsae, Saccharomyces cerevisiae, Caenorhabditis elegans, Enterobacteria phage RB69, Drosophila tristis"
- 6240 6370 22 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Human herpesvirus 6A, Arabidopsis thaliana, Mesocricetus auratus, Caenorhabditis elegans, Sitobion avenae endosymbiont, Vibrio sp. XY-214" 20
- 6241 6371 27 "Macaca mulatta, Homo sapiens, Papio anubis, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Thermoanaerobacter tengcongensis, Myzocallis pictus, Caenorhabditis elegans, Danio rerio, Clostridium perfringens str. 13"
- 6242 6372 27 "Homo sapiens, Batrachuperus tibetanus, Drosophila melanogaster, Danio rerio, Pisum sativum, Oryza sativa (japonica cultivar-group), Mus musculus, Medicago truncatula, Arabidopsis thaliana, Clostridium tetani E88, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis briggsae, Ureaplasma urealyticum, Isothecium alopecurum, Plasmodium falciparum 3D7, Clostridium perfringens str. 13" 30
- 6243 6373 87 "Coxiella burnetii RSA 493, Chromobacterium violaceum, Thermotoga maritima, Deinococcus radiodurans, Prochlorococcus marinus, Ureaplasma urealyticum, Lactobacillus plantarum WCFS1, Peanut witches'-broom phytoplasma, Tomato big bud phytoplasma, Leptospira interrogans"
- 6244 6374 33 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Hymenolepis diminuta, Lotus corniculatus var. japonicus, Danio rerio, Coxiella burnetii RSA 493, Cryptosporidium parvum, Methanocaldococcus jannaschii, Arabidopsis thaliana" 40
- 6245 6375 24 "Homo sapiens, Mus musculus, Rattus norvegicus, Arabidopsis thaliana, Botryllus schlosseri"
- 6246 6376 31 "Homo sapiens, Caenorhabditis elegans, Leptospira interrogans serovar lai str. 56601, Eriastrum densifolium subsp. mohavense, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Plasmodium falciparum 3D7, Drosophila melanogaster, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Dictyostelium discoideum, Equus caballus, Borrelia afzelii, Acidithiobacillus sp. HYH-4, Dysdera brevisetae, Arabidopsis thaliana, Chlamydomonas reinhardtii, Ureaplasma urealyticum, Chlamydomonas pneumoniae AR39, Danio rerio, Chlamydomonas pneumoniae TW-183, Crithionina mamilla, Ch 50

lamytophila pneumoniae J138, *Nostoc* sp. PCC 7120"

- 6247 6377 28 "Homo sapiens, *Dictyostelium discoideum*, *Pichia anomala*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Chlamydia trachomatis*, *Listeria monocytogenes*, *Enterobacteria* phage RB49, *Listeria innocua*, *Lactococcus lactis*, *Arabidopsis thaliana*, *Brugia malayi*, *Clostridium perfringens* str. 13"
- 6248 6378 28 "Homo sapiens, *Mus musculus*, *Nostoc* sp. PCC 7120, *Arabidopsis thaliana*, *Pan troglodytes*, *Vibrio vulnificus* CMCP6, *Plasmodium falciparum*, *Paranomada velutina*, *Thermoanaerobacter tengcongensis*, *Gelasinospora* sp. G114, *Caenorhabditis elegans*, *Cicer arietinum*, *Odontella sinensis*, *Rattus norvegicus*, *Cyrtolobus tuberosus*" 10
- 6249 6379 28 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *The rmotoga maritima*, *Escherichia coli*, *Escherichia coli* 0157:H7 EDL933, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Sulfolobus tokodaii*, *Escherichia coli* 0157:H7"
- 6250 6380 24 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, *Drosophila melanogaster*, *Phaseolus vulgaris*, *Arabidopsis thaliana*, *Deinococcus radiodurans*, *Medicago truncatula*, *Plasmodium ovale*"
- 6251 6381 27 "Brycon microlepis, *Petrolisthes hirtipes*, *Rickettsia prowazekii*, *Aspasma minima*, *Mus musculus*, *Pan troglodytes*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Drosophila subauraria*, *Bacillus cereus* ATCC 14579, *Petrolisthes schmitti*, *Oryza sativa* (indica cultivar-group), *Danio rerio*, *Rattus norvegicus*" 20
- 6252 6382 35 "Mus musculus, *Danio rerio*, *Homo sapiens*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Galleria mellonella*, *Borrelia burgdorferi* B31, *Psychotria horizontalis*, *Chilo iridescent virus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Dictyostelium discoideum*, *Human herpesvirus 5*, *Botryotinia fuckeliana*, *Arabidopsis thaliana*"
- 6253 6383 71 "Bacillus anthracis str. Ames, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Oceanobacillus iheyensis* HTE831, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Streptococcus agalactiae* 2603V/R, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586" 30
- 6254 6384 71 "Buchnera aphidicola str. APS (*Acyrtosiphon pisum*), *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Helicobacter hepaticus* ATCC 51449, *Yersinia enterocolitica*, *Homo sapiens*, *Haemophilus ducreyi* 35000HP, *Oceanobacillus iheyensis* HTE831, *Rattus norvegicus*, *Staphylococcus epidermidis* ATCC 12228, *Yersinia pestis* KIM, *Staphylococcus aureus*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Candidatus Blochmannia floridanus*, *Staphylococcus hominis*, *Staphylococcus aureus* subsp. aureus N315, *Yersinia pestis* C092, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Mus musculus*, *Triticum aestivum*, *Staphylococcus aureus* subsp. aureus Mu50, *Synechocystis* sp. PCC 6803" 40
- 6255 6385 27 "Mus musculus, *Homo sapiens*, *Guillardia theta*, *Helicobacter hepaticus* ATCC 51449, *Lactococcus lactis* subsp. lactis, *Leptospira interrogans* serovar lai str. 56601, *Pan troglodytes*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group)"
- 6256 6386 32 "Homo sapiens, *Haemophilus influenzae* Rd KW20, *Rattus norvegicus*, *Methanosarcina acetivorans* C2A, *Danio rerio*, *Mus musculus*, *Staphylococcus haemolyticus*, *Strobilurus tenacellus*, *Lotus corniculatus* var. japonicus, *Parazen pacificus*" 50

- 6257 6387 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Oryctolagus cuniculus, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Danio rerio, Bacillus cereus, Onchocerca volvulus, Helicobacter pylori J99, Edwardsiella tarda"
- 6258 6388 75 "Ehrlichia chaffeensis, Homo sapiens, Mus musculus, Gill-associated virus, Chlamydomphila pneumoniae CWL029, Chlamydomphila pneumoniae AR39, Chlamydomphila pneumoniae J138, Human herpesvirus 7, Chlamydomphila pneumoniae TW-183, Clostridium perfringens str. 13, Arabidopsis thaliana, Pan troglodytes, Buchnera aphidicola str. Bp (Baizongia pistaciae), Methanosarcina acetivorans C2A, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group)" 10
- 6259 6389 72 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium perfringens str. 13, Clostridium tetani E88, Clostridium acetobutylicum, Oenococcus oeni, Borrelia burgdorferi B31, Bacillus cereus ATCC 14579, Prochlorococcus marinus, Tropheryma whipplei str"
- 6260 6390 154 "Clostridium acetobutylicum, Streptococcus mutans UA159, Clostridium perfringens str. 13, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Candidatus Blochmannia floridanus, Haemophilus influenzae Rd KW20, Tropheryma whipplei str. Twist, Tropheryma whippelii"
- 6261 6391 29 "Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Bacteroides thetaiotaomicron VPI-5 482, Lotus corniculatus var. japonicus" 20
- 6262 6392 53 "Bacillus anthracis str. Ames, Bacillus cereus ATCC 14579, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Lactococcus lactis subsp. cremoris, Lactococcus lactis, Vibrio parahaemolyticus, Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Treponema denticola, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Clonorchis sinensis, Mus musculus, Yersinia pestis KIM, Felis catus, Plasmodium chabaudi, Yersinia pestis C092, Yersinia enterocolitica, Dictyostelium discoideum, Vibrio vulnificus CMCP6, Homo sapiens, Microscilla sp. PRE1, Lactococcus lactis subsp. lactis, Plasmodium falciparum 3D7, Haemophilus ducreyi 35000HP, Oryza sativa (japonica cultivar-group)" 30
- 6263 6393 24 "Mus musculus, Homo sapiens, Felis catus, Rickettsia prowazekii, Oceanobacillus ihayensis HTE831, Rattus norvegicus, Papio anubis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Chlamydomphila pneumoniae CWL029, Caenorhabditis briggsae, Chlamydomphila pneumoniae AR39, Chlamydomphila pneumoniae J138, Chlamydomphila pneumoniae TW-183"
- 6264 6394 27 "Caenorhabditis elegans, Danio rerio, Mus musculus, Vibrio parahaemolyticus, Oryza sativa (japonica cultivar-group), Homo sapiens, Diaseopsis conjuncta, Schizosaccharomyces pombe" 40
- 6265 6395 27 "Homo sapiens, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Methanosarcina mazei Goe1, Entamoeba histolytica, Caenorhabditis elegans, Goose circovirus, Campylobacter jejuni subsp. jejuni NCTC 11168"
- 6266 6396 30 "Homo sapiens, Mus musculus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Bacillus anthracis str. Ames, Pyrrhalta viburni, Lochmaea suturalis, Lochmaea capreae, Galerucella lineola, Galerucella californiensis, Galerucella pusilla, Galerucella"
- 6267 6397 62 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Homo sapiens, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Caen 50

- orhabditis elegans, Oryza sativa (japonica cultivar-group), Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Secale cereale, Danio rerio, Helicobacter pylori 26695, Schizosaccharomyces pombe, Dictyostelium discoideum, Drosophila melanogaster, Streptococcus mutans UA159, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Candidatus Blochmannia floridanus, Saccharomyces cerevisiae, Listeria monocytogenes, Bombina bombina, Methanocaldococcus jannaschii, Dichelobacter nodosus"
- 6268 6398 29 "Homo sapiens, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Oryza sativa, Danio rerio, Crepidula arenata, Bacillus cereus ATCC 14579, Drosophila melanogaster, Streptococcus mutans UA159, Lycopersicon esculentum, Chrysomya bezziana, Mycoplasma pneumoniae" 10
- 6269 6399 35 "Homo sapiens, Caenorhabditis elegans, Clostridium acetobutylicum, Vibrio parahaemolyticus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 6270 6400 116 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Rickettsia prowazekii, Pasteurella multocida, Candidatus Blochmannia floridanus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Yersinia pestis KIM, Rickettsia conorii, Haemophilus ducrey"
- 6271 6401 27 "Rotylenchulus reniformis, Homo sapiens, Mus musculus, Rickettsia conorii, Streptococcus pyogenes M1 GAS, Pirellula sp., Medicago truncatula, Pan troglodytes, Caenorhabditis elegans, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio" 20
- 6272 6402 31 "Didelphis virginiana, Mus musculus, Bacillus cereus ATCC 14579, Homo sapiens, Methanosarcina acetivorans C2A, Danio rerio, Lycopersicon esculentum, Arabidopsis thaliana, Thermococcus kodakaraensis, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Rattus norvegicus, Clostridium thermocellum, Staphylococcus aureus subsp. aureus Mu50" 30
- 6273 6403 23 "Homo sapiens, Medicago truncatula, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Caenorhabditis briggsae, Danio rerio"
- 6274 6404 76 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Candidatus Blochmannia floridanus, Chlamydia muridarum, Streptomyces sp. WA46, Oryza sativa (indica cultivar-group), Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Borrelia burgdorferi B31, Clostridium tetani E88, Streptomyces avermitilis MA-4680, Glomeropitcairnia penduliflora, Danio rerio, Borrelia burgdorferi"
- 6275 6405 32 "Thermoanaerobacter tengcongensis, Homo sapiens, Dictyostelium discoideum, Pseudomonas syringae, Danio rerio, Bacillus anthracis str. Ames, Staphylococcus epidermidis ATCC 12228, Clostridium acetobutylicum, Clostridium difficile, Arabidopsis thaliana, Mus musculus, Staphylococcus epidermidis, Anabaena azollae, Caenorhabditis elegans, Buchnera aphidicola str. Bp (Baizongia pistaciae), Pan troglodytes, Clostridium tetani E88, Buchnera aphidicola str. Sg (Schizaphis graminum), Staphylococcus aureus, Bigeloviella natans, Autographa californica nucleopolyhedrovirus, Gallus gallus, Candida tropicalis, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mycoplasma penetrans, Saccharomyces cerevisiae, Staphylococcus aureus subsp. aureus Mu50, Clostridium perfringens str. 13" 40
- 6276 6406 33 "Homo sapiens, Dictyostelium discoideum, Drosophila mela 50

- nogaster, *Oryza sativa*, *Neurospora crassa*, *Danio rerio*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Schmidtea mediterranea*, *Agave celsii*, *M. alawimonas jakobiformis*, *Lotus corniculatus* var. *japonicus*, *Psychotria pseudinundata*, *Psychotria capitata*, Norwalk-like virus"
- 6277 6407 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Arabidopsis thaliana, Danio rerio, Glycine max"
- 6278 6408 36 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Dictyostelium discoideum, Pheropsophus aequinoctialis, Buchnera aphidicola str. Sg (Schizaphis graminum), Plasmodium falciparum 3D7, Arabidopsis thaliana, Drosophila littoralis, Danio rerio, Porphyra sp., Limnodynastes grunniens, Bacillus atticus, Drosophila melanogaster, Caenorhabditis elegans, Austrobaileya scandens, Pyganodon grandis, Schmidtea mediterranea, Streptococcus agalactiae 2603V/R, Lymphocystis disease virus 1, Spiroplasma citri, Streptococcus agalactiae NEM316, Beta vulgaris, Beta vulgaris subsp. vulgaris, Caenorhabditis briggsae, Trypanosoma brucei, Brugia malayi, Lotus corniculatus var. japonicus, Medicago truncatula, Cyprinus carpio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Rattus norvegicus, Saccharomyces douglasii, Plasmodium falciparum, Helicobacter hepaticus ATCC 51449, Humulus lupulus"
- 6279 6409 29 "Mus musculus, Drosophila melanogaster, Homo sapiens, Xenopus laevis, Plasmodium falciparum 3D7, Danio rerio, Saimiri sciureus, Oryza sativa (japonica cultivar-group), Helicoverpa assulta, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Zea mays, Bos taurus, Sus scrofa, Arabidopsis thaliana, Human herpesvirus 7, Myrmica scabrinodis, Myrmica sabuleti, Myrmica rugulosa, Myrmica ruginodis, Myrmica rubra, Myrmica microrubra, Myrmica karavajevi, Myrmica hirsuta, Myrmica hellenica, Manica rubida, Camponotus herculeanus, lepidopsocid RS-2001, Curinus coeruleus, Rattus norvegicus, Callibaetis ferrugineus ferrugineus, Machiloides sp. GG-2001, Phyciodes vesta, Phyciodes tharos, Phyciodes pulchella, Phyciodes picta, Phyciodes pallescens, Phyciodes phaon, Phyciodes pallida, Phyciodes orseis, Phyciodes mylitta, Phyciodes cocyta"
- 6280 6410 30 "Mus musculus, Homo sapiens, Heterospilus prosopidis, Drosophila melanogaster, Arabidopsis thaliana, Danio rerio, Pan troglodytes, Clostridium tetani E88, Hyperolius tuberilinguis, Chlamydomonas reinhardtii, Eptatretus burgeri, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Tokudaia osimensis"
- 6281 6411 28 "Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Xylella fastidiosa Temecula1, Triatoma dimidiata, Xylella fastidiosa 9a5c, Arabidopsis thaliana, Sulfolobus tokodaii, Schizosaccharomyces pombe, Oryza sativa (japonica cultivar-group), Anopheles gambiae, African swine fever virus"
- 6282 6412 34 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Pan troglodytes, Oryza sativa (japonica cultivar-group), Lactococcus phage BK5-T, Danio rerio, Ureaplasma urealyticum, Plasmodium falciparum 3D7, Corynaea crassa, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Drosophila melanogaster, Xenopus laevis, Coleochaete scutata, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Peromyscus maniculatus, Papio hama dryas, Schizophyllum commune, Sus scrofa, Mycoplasma pulmonis, Streptococcus agalactiae NEM316, Pantoea agglomerans, Bacillus subtilis, Medicago sativa, Caenorhabditis briggsae, Staphylococcus epidermidis, Lotus corniculatus var. japonicus,

- Bacillus subtilis subsp. subtilis str. 168, Felis catus"
- 6283 6413 24 "Homo sapiens, Streptococcus agalactiae 2603V/R, Cochlio
psyche vasquezii, Lactococcus lactis, Streptococcus agalactiae NEM316, Mus muscul
us, Sus scrofa, Thermotoga maritima, Pseudomonas aeruginosa"
- 6284 6414 28 "Mus musculus, Homo sapiens, Rattus norvegicus, Linepith
ema humile, Arabidopsis thaliana, Danio rerio"
- 6285 6415 25 "Homo sapiens, Cowpox virus, Drosophila melanogaster, Mu
s musculus, Pan troglodytes, Plasmodium falciparum 3D7, Streptococcus pyogenes M
GAS315, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes SSI-1, Da
nio rerio" 10
- 6286 6416 27 "Homo sapiens, Mus musculus, Lactococcus lactis subsp. l
actis, Gallus gallus, Xylella fastidiosa 9a5c, Buchnera aphidicola, Populus trem
ula x Populus tremuloides, Helicobacter hepaticus ATCC 51449, Triticum aestivum,
Populus tomentosa"
- 6287 6417 31 "Mus musculus, Clostridium tetani E88, Prochlorococcus m
arinus, Homo sapiens, Cicindela parowana, Cicindela pimeriana, Cicindela decemno
tata, Arabidopsis thaliana, Cicindela pulchra, Oryza sativa (japonica cultivar-g
roup), Herpetomonas pessoai, Danio rerio"
- 6288 6418 31 "Homo sapiens, Mus musculus, Caenorhabditis elegans, unc
ultured environmental landfill bacterium, Arabidopsis thaliana, Prototheca wicke 20
rhamii, Zea mays, Drosophila melanogaster, Oryza sativa (japonica cultivar-group
) , Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Methanosarcina a
cetivorans C2A, Lactococcus lactis subsp. lactis, Streptococcus agalactiae NEM31
6, Trichinella pseudospiralis, Bombyx mori densovirus, Danio rerio, Tetrax ruyua
nensis, Ciona intestinalis, Schistosoma mansoni, Parvo-like virus, Trypanosoma c
ruzi, Nostoc sp. PCC 7120, Bos taurus"
- 6289 6419 32 "Mus musculus, Homo sapiens, Pasteurella multocida, Oryz
a sativa (japonica cultivar-group), Strongylus vulgaris"
- 6290 6420 32 "Homo sapiens, Rattus norvegicus, Mus musculus, Staphylo
coccus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Bacil 30
lus subtilis subsp. subtilis str. 168, Bacillus subtilis, Oryza sativa (japonica
cultivar-group), Staphylococcus aureus subsp. aureus Mu50"
- 6291 6421 27 "Homo sapiens, Streptococcus pneumoniae, Caenorhabditis
elegans, Mus musculus, Didelphis virginiana, Clostridium acetobutylicum, Delphin
ium delavayi, Delphinium patens, Delphinium luteum, Delphinium depauperatum, Del
phinium multiplex, Delphinium bicolor, Delphinium bakeri, Delphinium exaltatum,
Delphinium trolliifolium, Delphinium cardinale, Delphinium andersonii, Delphiniu
m nuttallianum, Delphinium glaucescens, Delphinium viridescens, Delphinium stach
ydeum, Delphinium polycladon, Delphinium hutchinsonae, Delphinium californicum,
Delphinium barbeyi, Delphinium nudicaule, Delphinium hesperium subsp. pallenscens 40
, Delphinium parryi, Delphinium parishii, Delphinium hesperium subsp. hesperium,
Delphinium gypsophilum, Delphinium recurvatum, Delphinium decorum, Delphinium g
randiflorum, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Sacch
aromyces cerevisiae"
- 6292 6422 31 "Homo sapiens, Nasa triphylla, Drosophila melanogaster,
Plasmodium falciparum 3D7, Mus musculus, Pan troglodytes, Saccharomyces dairenen
sis, Dictyostelium discoideum, Arabidopsis thaliana, Hantavirus, Lotus cornicula
tus var. japonicus, Danio rerio, Acroceridae gen. sp. 'New Caledonia', Rattus no
rvegicus, Staphylococcus epidermidis ATCC 12228, Amorphophallus ochroleucus, Xan
thomonas axonopodis pv. citri str. 306, Saccharomyces cerevisiae, Staphylococcus 50

- epidermidis, *Corycium orobanchoides*, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Oryza sativa* (japonica cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Arisaema fargesii*, *Bacillus cereus* ATCC 14579, *Medicago truncatula*, *Gallus gallus*, *Schmidtea mediterranea*"
- 6293 6423 29 "Danio rerio, *Mus musculus*, *Homo sapiens*, *Pyrococcus horikoshii*, *Medicago truncatula*"
- 6294 6424 30 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Prochlorococcus marinus*, *Pan troglodytes*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Nyctiphanes australis*, *Caenorhabditis elegans*, *Macaca fascicularis*" 10
- 6295 6425 31 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Staphylococcus epidermidis* ATCC 12228, *Bacillus cereus*, *Staphylococcus epidermidis*, *Danio rerio*, *Carollia perspicillata*, *Macaca fascicularis*"
- 6296 6426 31 "Homo sapiens, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Danio rerio*, *Canis familiaris*, *Mus musculus*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Equus caballus*, *Nostoc* sp. PCC 7120, *Pan troglodytes*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Triticum monococcum*, *Rana rugosa*, *Rickettsia prowazekii*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Saccharomyces cerevisiae*, *Neurospora crassa*, *Plasmodium falciparum*, *Cryptosporidium parvum*, *Ciona intestinalis*, *Sus scrofa*, *Tarsius syrichta*" 20
- 6297 6427 24 "Caenorhabditis elegans, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Mycoplasma pulmonis*, Simian immunodeficiency virus, *Melanoplus sanguinipes* entomopoxvirus, *Pisaster ochraceus*, *Clostridium perfringens* str. 13"
- 6298 6428 39 "Buchnera aphidicola str. Bp (*Baizongia pistaciae*), *Drosophila melanogaster*, *Homo sapiens*, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Mus musculus*, *Marchantia polymorpha*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Candida glabrata*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Rattus norvegicus*, *Caenorhabditis elegans*, *Helicobacter pylori* J99, *Danio rerio*, *Clostridium perfringens* str. 13" 30
- 6299 6429 31 "Homo sapiens, *Clostridium acetobutylicum*, *Thermoplasma volcanium*, *Bacillus cereus* ATCC 14579, *Staphylococcus epidermidis* ATCC 12228, *Plasmodium falciparum*, *Staphylococcus epidermidis*, *Prochlorococcus marinus*, *Mus musculus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Danio rerio*"
- 6300 6430 27 "Schmidtea mediterranea, *Rhynchosciara americana*, *Homo sapiens*, *Prochlorococcus marinus*, *Mus musculus*, *Nicotiana glauca*, *Caenorhabditis elegans*, *Pseudobagrus tokiensis*, *Aeropyrum pernix*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Thermoanaerobacter tengcongensis*, *Plasmodium falciparum*, *Streptococcus pyogenes* M1 GAS, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Euglena longa*, *Rattus norvegicus*" 40
- 6301 6431 23 "Caenorhabditis briggsae, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Homo sapiens*, *Lactobacillus plantarum* WCFS1, *Mus musculus*, *Caenorhabditis elegans*, *Sorghum bicolor*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Methanocaldococcus jannaschii*, *Heterodontus francisci*"
- 6302 6432 31 "Mus musculus, *Homo sapiens*, *Sulfolobus tokodaii*, *Bryobia praetiosa*, *Bacillus subtilis*, *Arabidopsis thaliana*, *Urotrichus talpoides*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Danio rerio*" 50

- 6303 6433 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Anopheles gambiae, Arabidopsis thaliana, Human immunodeficiency virus 1, Loligo bleekeri, Didelphis virginiana, Caenorhabditis elegans, Cafeteria roenbergensis, Clostridium perfringens str. 13"
- 6304 6434 23 "Homo sapiens, Vipera raddei, Vipera albizona, Vipera borrmuelleri, Mus musculus, Porthidium hyoprora, Didelphis virginiana, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Mesostigma viride, Caenorhabditis elegans, Agriopsis marginaria, Danio rerio, Pan troglodytes, Medicago truncatula"
- 6305 6435 32 "Danio rerio, Dictyostelium discoideum, Homo sapiens, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium vivax, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Pan troglodytes, Borrelia burgdorferi B31, Gallus gallus, Plasmodium falciparum 3D7, Lacerta media, Felis catus, Staphylococcus aureus, Campylobacter jejuni subsp. jejuni NCTC 11168, Candidatus Blochmannia floridanus, Oceanobacillus iheyensis HTE831, Psophocarpus tetragonolobus, Spinacia oleracea, Mycoplasma penetrans, Schizosaccharomyces pombe, Flexamia abbreviata, Borrelia burgdorferi, Hordeum vulgare, Reticulitermes speratus hindgut protist 130484" 10
- 6306 6436 25 "Homo sapiens, Prochlorococcus marinus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Gossypium hirsutum, Gossypium darwinii, Gossypium barbadense, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Pan troglodytes, Clostridium tetani E88, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bacillus cereus, Lotus corniculatus var. japonicus, Haemophilus influenzae Rd KW20, Iris fulva, Aglaothamnion neglectum" 20
- 6307 6437 33 "Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Sulfolobus solfataricus, Lactococcus lactis subsp. lactis, Leptospira interrogans serovar lai str. 56601, Mus musculus, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Methanosarcina acetivorans C2A, Schizosaccharomyces pombe"
- 6308 6438 107 "Enterococcus faecalis V583, Clostridium acetobutylicum, Listeria innocua, Homo sapiens, Treponema pallidum, Borrelia burgdorferi B31, Mus musculus, Oryza sativa (japonica cultivar-group), Pichia pastoris, Cowpox virus, Pseudomonas syringae pv. tomato str. DC3000, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Caenorhabditis elegans, Caenorhabditis briggsae, Lactobacillus plantarum WCFS1" 30
- 6309 6439 41 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Streptococcus pyogenes MGAS315, Streptococcus pyogenes SSI-1, Lactobacillus plantarum WCFS1, Staphylococcus epidermidis ATCC 12228, Streptococcus pyogenes MGAS8232, Homo sapiens, Streptococcus pyogenes M1 GAS, Staphylococcus epidermidis, Bacillus subtilis subsp. subtilis str. 168, Bacillus halodurans, Buchnera aphidicola str. Bp (Baizongia pistaciae), Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Mus musculus" 40
- 6310 6440 68 "Thermotoga maritima, Enterococcus faecalis V583, Clostridium tetani E88, Homo sapiens, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Bacillus halodurans, Pan troglodytes, Papio anubis, Mus musculus, Oceanobacillus iheyensis HTE831, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Danio rerio, Staphylococcus epidermidis, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mycoplasma penetrans, Staphylococcus aureus subsp. aureus Mu50, Bos taurus, Bacillus anthracis str. Ames, Xylella 50

- a fastidiosa 9a5c, *Oryza sativa* (japonica cultivar-group), *Tritrichomonas foetus*
"
- 6311 6441 27 "Mus musculus, Homo sapiens, *Corynebacterium efficiens* Y S-314, *Oryza sativa* (japonica cultivar-group), *Ciona intestinalis*, *Caenorhabditis elegans*"
- 6312 6442 32 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Pyrococcus horikoshii*, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Lycopersicon esculentum*, *Haemophilus influenzae* Rd KW20, *Danio rerio*, *Xenopus laevis*"
- 6313 6443 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Drosophila melanogaster*, *Caenorhabditis elegans*" 10
- 6314 6444 25 "Homo sapiens, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Canis familiaris*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Solanum tuberosum*, *Mus musculus*, *Danio rerio*, *Schizosaccharomyces pombe*, *Nostoc* sp. PCC 7120"
- 6315 6445 23 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Bacillus cereus* ATCC 14579, *Mus musculus*, *Vibrio parahaemolyticus*"
- 6316 6446 28 "Staphylococcus epidermidis ATCC 12228C, *Caenorhabditis elegans*, *Danio rerio*, *Homo sapiens*, *Mus musculus*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Bacillus halodurans*, *Cowpox virus*, *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Shewanella oneidensis* MR-1, *Camelpox virus* CMS, *Variola virus*, *Variola minor virus*, *Mycoplasma pulmonis*, *Pan troglodytes*, *Anopheles gambiae*, *Podospira anserina*, *Variola major virus*, *Vaccinia virus*, *Macaca fascicularis*, *Camelpox virus* M-96" 20
- 6317 6447 30 "Homo sapiens, *Clostridium acetobutylicum*, *Mus musculus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Suncus murinus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Patella vulgata*, *Arabidopsis thaliana*, *Chimaera monstrosa*, *Trichoplusia ni cytoplasmic polyhedrosis virus* 15, *Anopheles gambiae*" 30
- 6318 6448 24 "Homo sapiens, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus"
- 6319 6449 27 "Drosophila melanogaster, *Mus musculus*, *Homo sapiens*, *Rickettsia conorii*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Vibrio parahaemolyticus*, *Mycoplasma penetrans*, *Ciona intestinalis*, *Danio rerio*"
- 6320 6450 25 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Prochlorococcus marinus*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Drosophila melanogaster*, *Clostridium tetani* E88, *Guillardia theta*, *Oryza sativa* (japonica cultivar-group), *Xenopus laevis*, *Caenorhabditis elegans*" 40
- 6321 6451 23 "Methanosarcina barkeri, *Mus musculus*, *Human immunodeficiency virus* 1, *Homo sapiens*, *Pseudomonas aeruginosa* PA01, *Triticum aestivum*, *Pseudomonas aeruginosa*"
- 6322 6452 34 "Mus musculus, *Homo sapiens*, *Arabidopsis thaliana*, *Paracrototus lividus*, *Dictyostelium discoideum*, *Danio rerio*, *Drosophila melanogaster*, *Papio anubis*, *Bos taurus*, *Plasmodium falciparum* 3D7, *Xenorhabdus nematophila*, *Drosophila hydei*, *Oryza sativa* (japonica cultivar-group), *Xenopus laevis*, *Caenorhabditis elegans*, *Goatpox virus*, *Sheeppox virus*, *Lumpy skin disease virus*, *Heterodera glycines*, *Atelerix albiventris*, *Leptospira interrogans* serovar lai str. 56 601, *Medicago truncatula*, *Rattus norvegicus*" 50

- 6323 6453 43 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Euglena longa, Medicago sativa, Shigella flexneri 2a, Sphoeroides nephelus, Shigella flexneri, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Brassica rapa, Cyanophora paradoxa, Danio rerio, Methanocaldococcus jannaschii, Caenorhabditis elegans, Borrelia burgdorferi B31, Dictyostelium discoideum, Methanosarcina mazei Goe1, Fusobacterium nucleatum, Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Guillardia theta, Sulfolobus solfataricus, Lactococcus lactis subsp. lactis, Escherichia coli, Brassica napus var. napus, Schistosoma gregaria, Rickettsia americana, Oceanobacillus iheyensis HTE831, Saccharomyces cerevisiae, Helicobacter pylori 26695, Helicobacter pylori J99, Human immunodeficiency virus 1, Medicago truncatula, Lysiphlebus fabarum" 10
- 6324 6454 27 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Sus scrofa, Arabidopsis thaliana, Campylobacter jejuni, Clostridium acetobutylicum, Oryza sativa, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Fagopyrum pleioramosum, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mycoplasma penetrans, Medicago truncatula, Danio rerio, Plasmodium falciparum" 20
- 6325 6455 31 "Danio rerio, Homo sapiens, Mus musculus, Drosophila melanogaster, Staphylococcus aureus, Anabaena variabilis, Atropa belladonna, Nicotiana tabacum, Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Botryotinia fuckeliana, Staphylococcus aureus subsp. aureus Mu50, Nostoc sp. PCC 7120" 20
- 6326 6456 27 "Homo sapiens, Ciona intestinalis, Rattus norvegicus, Staphylococcus epidermidis ATCC 12228, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Medicago truncatula, Methanosarcina mazei Goe1, Mus musculus, Hordeum vulgare subsp. vulgare, Oryza sativa (japonica cultivar-group), Cephanooplus segetum, Danio rerio" 30
- 6327 6457 31 "Homo sapiens, Drosophila melanogaster, Mus musculus, Callinectes sapidus, Anabaena sp. 90, Staphylococcus aureus subsp. aureus Mu50, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, uncultured marine gamma proteobacterium EBA C31A08, Danio rerio, Pan troglodytes, Felis catus" 30
- 6328 6458 36 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Lactococcus lactis subsp. lactis bv. diacetylactis, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Rickettsia conorii, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Borrelia burgdorferi B31, Macaca mulatta, Xenopus laevis, Legionella pneumophila, Canis familiaris, Guillardia theta, Papio anubis, Trypanosoma brucei, Mycoplasma hominis, Ureaplasma urealyticum, Marchantia polymorpha, Oryza sativa (japonica cultivar-group), Streptococcus pyogenes, Picea abies, Saccharomyces cerevisiae, Borrelia burgdorferi, Synechocystis sp. PCC 6803, Clostridium perfringens str. 13" 40
- 6329 6459 89 "Bacteroides thetaiotaomicron VPI-5482, Danio rerio, Drosophila melanogaster, Homo sapiens, Bombyx mandarina, Salmonella enterica subsp. enterica serovar Typhi Ty2, Lemur catta, Mus musculus, Plasmodium falciparum 3D7, Yersinia pseudotuberculosis, Yersinia pestis KIM, Lactococcus lactis subsp. l 50

actis, *Euglena gracilis*, *Yersinia pestis*, *Yersinia pseudotuberculosis* (type 0:1b), *Neisseria meningitidis* Z2491, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Yersinia pestis* C092, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Neisseria meningitidis*, *Mesembryanthemum crystallinum*, *Neisseria meningitidis* serogroup A, *Francisella tularensis* subsp. *novicida*, *Pan troglodytes*"

6330 6460 75 "Cyanidioschyzon merolae, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Haemophilus influenzae* Rd KW20, *Nostoc* sp. PCC 7120, *Oceanobacillus iheyensis* HTE831, *Vibrio vulnificus* CMCP6, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Shewanella oneidensis* MR-1, *Homo sapiens*, *Lactococcus lactis* subsp. *lactis*, *Oryza sativa* (japonica cultivar-group), *Haemophilus ducreyi* 35000HP, *Drosophila melanogaster*, *Dendroctonus terebrans*, *Pasteurella multocida*, *Mus musculus*, *Sus scrofa*, *Pan troglodytes*, *Porphyromonas gingivalis* W83, *Caenorhabditis elegans*"

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6331 6461 113 "Prochlorococcus marinus, *Pasteurella multocida*, *Listeria monocytogenes*, *Arabidopsis thaliana*, *Lactococcus lactis* subsp. *lactis*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, *Haemophilus influenzae* Rd KW20, *Enterococcus faecalis* V583, *Caenorhabditis elegans*, *Bombyx mori*"

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6332 6462 28 "Zea mays, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Anolis lineatopus*, *Rattus norvegicus*, *Lactococcus lactis*, *Danio rerio*, *Gallus gallus*"

6333 6463 27 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*, *Bacteroides thetaiotaomicron* VPI-5482, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Guillardia theta*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*"

6334 6464 28 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*, *Dictyostelium discoideum*"

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6335 6465 33 "Homo sapiens, *Clostridium acetobutylicum*, *Chlamydophila pneumoniae* CWL029, *Mus musculus*, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Chlamydophila pneumoniae* TW-183, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Medicago truncatula*, *Pan troglodytes*, *Clostridium tetani* E88, *Uranotaenia lowii*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"

6336 6466 64 "Thermoplasma volcanium, *Nitrosomonas europaea* ATCC 19718, *Thermoplasma acidophilum*, *Cyanophora paradoxa*, *Sinorhizobium meliloti*, *Shewanella oneidensis* MR-1, *Bradyrhizobium japonicum* USDA 110, uncultured marine gamma proteobacterium EBAC31A08, *Yersinia pestis*"

40

6337 6467 37 "Mus musculus, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Danio rerio*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Papio anubis*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. japonicus, *Thrips imaginis*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Prochlorococcus marinus*, *Oryza sativa* (japonica cultivar-group), *Myzus persicae*, *Pedinomonas minor*, *Schizosaccharomyces pombe*, *Cyanophora paradoxa*, *Psychotria serfipiles*, *Aegilops tauschii*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Staphylococcus caprae*, *Eremothecium gossypii*, *Takifugu rubripes*, *Clostridium acetobutylicum*, *Amsacta moorei* entomopoxvirus, *Marchantia polymorpha*, *Leishmania donovani* chagasi, *Rabbit fibroma virus*, *Listeria mo*

50

- nocytogenes, *Listeria innocua*, *Ciona intestinalis*, *Theileria annulata*"
- 6338 6468 27 "Tetraodon nigroviridis, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Clostridium acetobutylicum*, Human immunodeficiency virus 2, *Mus musculus*, *Branchiostoma floridae*, *Danio rerio*, *Rattus norvegicus*"
- 6339 6469 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Mus musculus*, *Salmonella typhi*, *Medicago truncatula*, *Danio rerio*, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Arabidopsis thaliana*"
- 6340 6470 27 "Homo sapiens, *Mus musculus*, *Drosophila eugracilis*, *Oxya hyla intricata*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Mycoplasma gallisepticum* R, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Trichinella spiralis*, *Listeria innocua*, *Schizosaccharomyces pombe*, *Medicago truncatula*" 10
- 6341 6471 23 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Schizosaccharomyces pombe*, *Arabidopsis thaliana*, *Pan troglodytes*, *Staphylococcus epidermidis* ATCC 12228, *Lycopersicon esculentum*, *Thermoanaerobacter tengcongensis*, *Staphylococcus epidermidis*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Thermotoga maritima*" 20
- 6342 6472 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Neocollyris* sp. APV-1997, *Arabidopsis thaliana*, *Caenorhabditis elegans*"
- 6343 6473 27 "Homo sapiens, *Methanosarcina acetivorans* C2A, *Danio rerio*, *Nicotiana tabacum*, *Medicago truncatula*, *Mus musculus*, *Spinacia oleracea*, *Mycoplasma gallisepticum* R, *Dictyostelium discoideum*, *Schiffornis virescens*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Schmidtea mediterranea*, *Plasmodium falciparum* 3D7, *Ochotona collaris*, *Bos taurus*, *Amsacta moorei* entomopoxvirus, *Oceanobacillus ihyensii* HTE831, *Sulfolobus tokodaii*, *Ciona intestinalis*, *Parnassius glacialis*" 30
- 6344 6474 31 "Mus musculus, *Drosophila melanogaster*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Zygosaccharomyces cidri*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, Ch"
- 6345 6475 23 "Mus musculus, *Homo sapiens*, *Streptococcus mutans* UA159, *Methanococcus voltae*, *Capsicum annuum*, *Oryza sativa* (japonica cultivar-group), *Hemiglyphidodon plagiometopon*, *Nostoc* sp. PCC 7120"
- 6346 6476 31 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Drosophila melanogaster*, *Porcine lymphotropic herpesvirus 1*, *Caenorhabditis elegans*, *Danio rerio*, *Rattus norvegicus*, *Choristoneura fumifera* MNPV, *Medicago truncatula*, *Catharanthus roseus*, *Mus musculus*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Sus scrofa*, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Debaryomyces occidentalis*, *Staphylococcus aureus* subsp. *aureus* N315, *Lactobacillus plantarum* WCFS1, *Streptococcus pyogenes*, *Staphylococcus aureus* subsp. *aureus* Mu50" 40
- 6347 6477 24 "Arabidopsis thaliana, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Mustela vison*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Ureaplasma urealyticum*, *Lotus corniculatus* var. *japonicus*, *Streptococcus pyogenes* SSI-1, *Danio rerio*"
- 6348 6478 32 "Clostridium acetobutylicum, *Thermoanaerobacter tengcong*" 50

- ensis, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*, *Homo sapiens*, *Caenorhabditis briggsae*, *Nostoc* sp. PCC 7120"
- 6349 6479 28 "Clostridium tetani E88, *Homo sapiens*, *Staphylococcus aureus*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Drosophila melanogaster*, *Mus musculus*, *Entamoeba histolytica*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Oceanobacillus iheyensis* HTE831, *Caenorhabditis elegans*, *Synechocystis* sp. PCC 6803"
- 6350 6480 38 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Clostridium beijerinckii*, *Arabidopsis thaliana*, *Sulfolobus tokodaii*, *Meleagris gallopavo*, *Leptospira interrogans* serovar lai str. 56601, *Xenopus laevis*, *Caenorhabditis elegans*, *Gallus gallus*, *Simocephalus vetulus*, *Trichophyton rubrum*, *Oryza sativa* (japonica cultivar-group), *Listeria monocytogenes*, Bacteriophage A118, *Picea mariana*, *Zea mays* subsp. mays, *Schmidtea mediterranea*, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Rhynchocyon* sp. OM2001, *Rickettsia prowazekii*, *Rickettsia rickettsii*, *Cicer arietinum*, *Caenorhabditis briggsae*, *Artemia franciscana*, *Medicago truncatula*, *Schizosaccharomyces pombe*, *Androsina lucasi*, *Ommastrephes sloani*" 10
- 6351 6481 27 "Clostridium tetani E88, *Mycoplasma pulmonis*, *Danio rerio*, *Mus musculus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Canis familiaris*, *Staphylococcus aureus* subsp. aureus N315, *Coprinopsis echinospora*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. aureus Mu50"
- 6352 6482 31 "Homo sapiens, *Rattus norvegicus*, *Shewanella oneidensis* MR-1, *Pan troglodytes*, *Mus musculus*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Oryza sativa*, *Solanum tuberosum*, *Danio rerio*"
- 6353 6483 33 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Schistosoma japonicum*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Rickettsia conorii*, *Triatoma dimidiata*, *Rickettsia prowazekii*, *Amsacta moorei* entomopoxvirus, *Lotus corniculatus* var. japonicus, *Nostoc* sp. PCC 7120, *Pan troglodytes*, *Medicago truncatula*, *Polypterus bichir*, *Ceratosolen arabicus*, *Plasmodium falciparum* 3D7, *Camelpox virus* CMS, *Stagnicola elodes*, *Saccharomyces castellii*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Camelpox virus*, *Bacillus thuringiensis*, *Candidatus Blochmannia floridanus*, *Mycoplasma penetrans*, *Saccharomyces cerevisiae*, *Pneumocystis carinii*, *Populus tremula* x *Populus tremuloides*, *Camelpox virus* M-96" 30
- 6354 6484 29 "Methanosarcina acetivorans C2A, *Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Danio rerio*, *Rattus norvegicus*, *Pan troglodytes*, *Dictyostelium discoideum*, *Bactrocera decurtans*, *Plasmodium falciparum* 3D7, *Acidiella angustifascia*, *Tetreaesta timida*, *Arabidopsis thaliana*, *Lepus capensis mediterraneus*, *Rickettsia montanensis*, *Escherichia coli*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Neurospora crassa*, synthetic construct, *Bacillus subtilis* subsp. subtilis str. 168, *Schizosaccharomyces pombe*, *Blepharoneura manchesteri*, *Bacillus subtilis*" 40
- 6355 6485 31 "Homo sapiens, *Mus musculus*, *Xenopus laevis*, *Oryza sativa*" 50

- a (*japonica* cultivar-group), *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Danio rerio*, *Rattus norvegicus*, *Pan troglodytes*, *Gallus gallus*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Zonaria diesingiana*, *Methanosarcina acetivorans* C2A, *Bacillus subtilis*, *Chilo iridescent virus*, *Medicago truncatula*, *Beta vulgaris*, *Staphylococcus epidermidis*, Turkey adenovirus 3"
- 6356 6486 27 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Bacillus firmus*, *Bacillus anthracis* str. Ames, *Poncirus trifoliata*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Flagellaria indica*, *Danio rerio*, *Medicago truncatula*, *Drosophila bifasciata*, *Nostoc* sp. PCC 7120" 10
- 6357 6487 39 "Homo sapiens, *Danio rerio*, *Dictyostelium discoideum*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Pan troglodytes*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Medicago truncatula*, *Fenneropenaeus chinensis*, *Saccharomyces cerevisiae*, *Rattus norvegicus*, *Schmidtea mediterranea*"
- 6358 6488 28 "Homo sapiens, *Danio rerio*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Spodoptera frugiperda*, *Drosophila melanogaster*, *Mus musculus*, *Wetmorena haetiana*, Peanut witches'-broom phytoplasma, *Streptococcus thermophilus*, *Candidatus Carsonella ruddii*, *Caenorhabditis elegans*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Mycobacterium leprae*, *Streptococcus pyogenes* M1 GAS, *Caenorhabditis briggsae*, *Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Streptococcus pyogenes* SSI-1, *Listeria innocua*, *Bombyx mori* nuclear polyhedrosis virus, *Nicotiana tomentosiformis*, *Haemophilus influenzae* Rd KW20, *Clostridium perfringens* str. 13" 20
- 6359 6489 36 "Mus musculus, Homo sapiens, *Sulfolobus tokodaii*, *Danio rerio*, *Daktulosphaera vitifoliae*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Felis catus*, *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Vibrio cholerae*, *Oryza sativa* (*japonica* cultivar-group)"
- 6360 6490 35 "Dictyostelium discoideum, Homo sapiens, *Plasmodium falciparum* 3D7, *Psychotria hathewayi*, *Acyrtosiphon pisum*, *Schizaphis graminum*, *Rhopalosiphum maidis*, *Uroleucon obscurum*, *Macrosiphoniella ludoviciana*, *Uroleucon jaceicola*, *Uroleucon caligatum*, *Uroleucon s*" 30
- 6361 6491 28 "Caenorhabditis elegans, Homo sapiens, *Mougeotia* sp. UTE X LB 758, *Mus musculus*, *Sus scrofa*, *Triatoma virus*, *Schizosaccharomyces pombe*, *Danio rerio*, *Emericella nidulans*"
- 6362 6492 28 "Homo sapiens, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*japonica* cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Rattus norvegicus*, *Medicago truncatula*, *Borrelia burgdorferi* B31, *Mus musculus*, *Lepomis macrochirus*, *Bacillus anthracis* str. A2012, *Arabidopsis thaliana*, *Escherichia coli*, *Bacillus anthracis*, *Saccharomyces cerevisiae*" 40
- 6363 6493 61 "Bacillus cereus ATCC 14579, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Bacillus anthracis* str. Ames, *Lactococcus lactis* subsp. *lactis*, *Danio rerio*, secondary endosymbiont of *Glycaspis brimblecombei*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, Homo sapiens, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Clostridium acetobutylicum*, *Streptococcus pyogenes* M1 GAS, *Chlamydia trachomatis*, *Mus musculus*, *Streptococcus pyogenes* SSI-1, *Saccharomyces cerevisiae*, *Pasteurella multocida*, *Illex coindetii*, *Oryza sativa* (*japonica* cultivar-group), *Oryza sativa*" 50

- 6364 6494 29 "Homo sapiens, Rhodnius prolixus, Pan troglodytes, Caenorhabditis elegans, Aedes aegypti, Mus musculus, Ureaplasma urealyticum, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Thermoanaerobacter tengcongensis, Leptospira interrogans serovar lai, Arabidopsis thaliana, Danio rerio, Medicago truncatula, Clostridium perfringens str. 13"
- 6365 6495 27 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio"
- 6366 6496 27 "Homo sapiens, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Candidatus Carsonella ruddii, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Plasmodium falciparum 3D7, Sarcoptes scabiei, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Medicago sativa, Courtoisina assimilis, Brachelyma subulatum, Oceanobacillus iheyensis HTE831, Caenorhabditis elegans, Listeria monocytogenes, Listeria innocua, Dreissena polymorpha, Schizosaccharomyces pombe, Oryzias latipes, Clostridium sordellii, Clostridium perfringens str. 13" 10
- 6367 6497 29 "Danio rerio, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Canis familiaris, Homo sapiens, Sorghum bicolor, Oryza sativa (japonica cultivar-group), Pan troglodytes, Drosophila melanogaster, Caenorhabditis elegans, Cricetulus longicaudatus, Lactobacillus plantarum WCFS1, Cricetulus griseus" 20
- 6368 6498 62 "Mus musculus, Homo sapiens, Puma concolor, Danio rerio, Rattus norvegicus, Atelerix albiventris, Sus scrofa, Bos taurus, Lotus corniculatus var. japonicus, Carollia perspicillata, Alces alces, Felis catus, Cricetulus griseus, Anadara trapezia"
- 6369 6499 58 "Bacillus anthracis str. Ames, Bacillus cereus ATCC 14579, Helicobacter pylori 26695, Tropheryma whipplei TW08/27, Tropheryma whipplei str. Twist, Synechocystis sp. PCC 6803, Papio anubis, Methanocaldococcus jannaschii, Homo sapiens, Caulobacter crescentus CB15, Tolypothrix sp. PCC 7601/1, Oceanobacillus iheyensis HTE831, Caulobacter vibrioides, Mus musculus, Archaeoglobus fulgidus DSM 4304, Vibrio vulnificus CMCP6, Arabidopsis thaliana, Medicago truncatula, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120" 30
- 6370 6500 31 "Homo sapiens, Danio rerio, Equus caballus, Mus musculus, Caenorhabditis elegans, Bos taurus, Caenorhabditis briggsae, Rattus norvegicus, Ciona intestinalis, Dictyostelium discoideum, Bacillus anthracis str. Ames, Staphylococcus epidermidis ATCC 12228, Macaca mulatta, Drosophila melanogaster, Papio anubis, Xenopus laevis, Plasmodium falciparum 3D7, Chlorobium tepidum TLS, Trypanosoma brucei, Arabidopsis thaliana, Acanthodactylus erythrurus, Gallus gallus, Human immunodeficiency virus 1, Oryza sativa, Neisseria meningitidis Z2491, Oryza sativa (japonica cultivar-group), Heterosigma carterae, Corynebacterium efficiens YS-314, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Encyphalitozoon cuniculi, Cryptophlebia leucotreta granulovirus" 40
- 6371 6501 27 "Mus musculus, Bacillus cereus ATCC 14579, Bacillus cereus, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Leucocytozoon dubreuli, Oryza sativa (japonica cultivar-group), Danio rerio"
- 6372 6502 23 "Mus musculus, Homo sapiens, Bos taurus, Caenorhabditis 50

- elegans, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio"
- 6373 6503 42 "Danio rerio, Homo sapiens, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis ATCC 12228, Dictyostelium discoideum, Clostridium tetani E88, Staphylococcus epidermidis, Oryza sativa, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Caenorhabditis elegans, Lactuca sativa"
- 6374 6504 24 "Homo sapiens, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Potato leafroll virus" 10
- 6375 6505 25 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Pichia anomala, Streptococcus mutans UA159, Caenorhabditis elegans, Medicago truncatula, Danio rerio, Pan troglodytes, Rattus norvegicus"
- 6376 6506 26 "Bacteriophage EJ-1, Mus musculus, Homo sapiens, Schizosaccharomyces pombe, Clostridium perfringens str. 13"
- 6377 6507 24 "Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Clostridium tetani E88, Lactococcus lactis subsp. lactis, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group)" 20
- 6378 6508 32 "Mus musculus, Homo sapiens, Clostridium perfringens str. 13, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Danio rerio, Arabidopsis thaliana, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Neocallimastix frontalis, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Chlamydomonas pneumoniae TW-183, Neocallimastix patriciarum, Nostoc sp. PCC 7120"
- 6379 6509 27 "Bacillus cereus ATCC 14579, Homo sapiens, Mus musculus, Caenorhabditis elegans, Methanosarcina acetivorans C2A, Thermoplasma volcanium, Capra hircus, Rattus norvegicus"
- 6380 6510 29 "Buchnera aphidicola str. Sg (Schizaphis graminum), Plasmodium falciparum 3D7, Caenorhabditis elegans, Homo sapiens, Solanum tuberosum, Williopsis saturnus var. mrakii, Rattus norvegicus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Mus musculus, Taeniopygia guttata, Danio rerio, Pseudomonas putida, Arabidopsis thaliana, Nicotiana tabacum, Podospora curvicolle, Oryza sativa (japonica cultivar-group)" 30
- 6381 6511 27 "Homo sapiens, Mus musculus, Pan troglodytes, Bos taurus, Danio rerio, Plasmodium falciparum 3D7, Oryza sativa, Saimiriine herpesvirus 2, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Streptococcus pyogenes, Plasmodium berghei"
- 6382 6512 27 "Homo sapiens, Mus musculus, Rattus norvegicus, Plasmodium falciparum 3D7, Danio rerio, Ciona intestinalis, Clostridium perfringens, Clostridium perfringens str. 13" 40
- 6383 6513 27 "Mus musculus, Shewanella oneidensis MR-1, Homo sapiens, Hippea maritima, Clostridium tetani E88, Haemophilus influenzae Rd KW20"
- 6384 6514 32 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), African swine fever virus, Drosophila melanogaster, Lemur catta, Caenorhabditis elegans, Plasmodium falciparum 3D7, Ureaplasma urealyticum, Candida albicans, Danio rerio, Sarcophaga protuberans, Medicago truncatula, Sorghum bicolor, Clostridium saccharobutylicum, Clostridium acetobutylicum, Xenopus laevis, Mycoplasma pulmonis, Mycoplasma capricolum, Oceanobacillus" 50

- s iheyensis HTE831, Mycoplasma penetrans, Ciona intestinalis, Helicobacter pylori J99, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Methanocaldococcus jannaschii, Pan troglodytes, Felis catus"
- 6385 6515 32 "Plasmodium falciparum 3D7, Danio rerio, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Mus musculus, Medicago truncatula, Bacillus cereus ATCC 14579, Haplochromis gracilior, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Neolamprologus longior, Julidochromis marlieri, Ectodus descampsii, Aulonocranus dewindti, Asprotilapia leptura, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Candidatus Blochmannia floridanus, Prognathochromis venator, Methanocaldococcus jannaschii, Human rotavirus A" 10
- 6386 6516 32 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Caenorhabditis elegans, Chymomyza amoena, Drosophila melanogaster, Zea mays, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii, Plasmodium berghei, Danio rerio, Plasmodium falciparum 3D7, Aplysia californica, Lactococcus lactis subsp. lactis, Synechocystis sp. PCC 6803, Bacillus halodurans"
- 6387 6517 28 "Homo sapiens, Lampropeltis triangulum hondurensis, Lampropeltis triangulum abnormalis, Mus musculus, Plasmodium falciparum 3D7, Carya illinoensis, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Lampropeltis triangulum conanti, Lampropeltis triangulum oligozona, Carabus fabricii, Danio rerio, Gymnopilus sapineus, Schizosaccharomyces pombe, Xenopus laevis, Carabus depressus, Carabus indigestus" 20
- 6388 6518 27 "Candidatus Blochmannia floridanus, Chlamydia trachomatis, Homo sapiens, Drosophila melanogaster, Mus musculus, Danio rerio, Dictyostelium discoideum, Staphylococcus aureus, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Pasteurella multocida, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Arabidopsis thaliana"
- 6389 6519 26 "Arabidopsis thaliana, Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Felis catus, Mus musculus, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Drosophila melanogaster, Polypterus bichir, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Chlamydia trachomatis, Saccharomyces cerevisiae, Medicago truncatula, Trypanosoma brucei, Anopheles gambiae" 30
- 6390 6520 44 "Danio rerio, Homo sapiens, Melanoplus sanguinipes entomopoxvirus, Oryza sativa (japonica cultivar-group), Mus musculus, Apalocnemis sp. NCSU-95051123, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Caenorhabditis elegans, Plasmodium falciparum 3D7, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Plasmodium falciparum, Saccharomyces uvarum, Lysimachia nummularia, Oryza sativa, Candidatus Carsonella ruddii, Mycoplasma pulmonis, Saccharomyces cerevisiae, Lotus corniculatus var. japonicus, Tribolium castaneum, Saccharomyces sp. CID1, Canis familiaris, Hypostomus sp. 2587.10, Hypostomus sp. 2586.1, Medicago truncatula, Clostridium perfringens, Dischisma ciliatum, Clostridium perfringens str. 13, Bacillus cereus ATCC 14579, Drosophila melanogaster, Strephonema pseudocola, Strephonema manni, Pan troglodytes, Chlamydia muridarum" 40
- 6391 6521 31 "Homo sapiens, Candidatus Carsonella ruddii, Bacillus cereus ATCC 14579, Drosophila melanogaster, Escherichia coli, Mus musculus, Phaseolus vulgaris, Plasmodium falciparum 3D7, Nicotiana tabacum, Danio rerio, Lotus c 50

- orniculatus var. japonicus, Dictyostelium discoideum, Medicago truncatula, Clostridium perfringens str. 13, Mycoplasma gallisepticum R, Oryza sativa (japonica cultivar-group), Pan troglodytes, Cryptococcus neoformans var. neoformans, Caenorhabditis elegans, Bovine herpesvirus 4, Rickettsia prowazekii, Arabidopsis thaliana, Caenorhabditis briggsae, Plasmodium falciparum, Saccharomyces cerevisiae, Mycoplasma penetrans, Encephalitozoon cuniculi, Melanoplus sanguinipes entomopoxvirus, Rattus norvegicus, Chlamydomonas reinhardtii"
- 6392 6522 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Oryza sativa, Atelerix albiventris, Bacillus cereus ATCC 14579, Pan troglodytes, Dictyostelium discoideum, Plasmodium falciparum 3D7, Clostridium tetani E88, Streptococcus pneumoniae, Paramecium tetraurelia, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Physarum polycephalum, Anopheles gambiae, Saccharomyces pastorianus, Staphylococcus aureus subsp. aureus Mu50" 10
- 6393 6523 24 "Schistosoma japonicum, Mus musculus, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Ditylum brightwellii, Papio anubis, Listeria innocua"
- 6394 6524 24 "Homo sapiens, Danio rerio, Drosophila melanogaster, Pseudomonas syringae pv. tomato str. DC3000, Mus musculus, Euglena stellata" 20
- 6395 6525 24 "Saccharomyces cerevisiae, Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Bacillus halodurans, Human parainfluenza virus 4b"
- 6396 6526 40 "Homo sapiens, Mus musculus, Solanum bulbocastanum, Rattus norvegicus, Atelerix albiventris, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Pisum sativum, Dictyostelium discoideum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Helicobacter pylori 26695, Plasmodium falciparum, Staphylococcus aureus subsp. aureus Mu50"
- 6397 6527 39 "Bacillus anthracis str. Ames, Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Phyciodes tharos, Phyciodes cocyta, Phyciodes batesii, Clostridium tetani E88, Pan troglodytes, Triticum aestivum, Zea mays, Suricata suricatta, Pisum sativum, Oryza sativa (indica cultivar-group), Oryza sativa, Arabidopsis thaliana" 30
- 6398 6528 28 "Mus musculus, Homo sapiens, Danio rerio, Bacillus cereus ATCC 14579, Pan troglodytes, Strawberry mottle virus"
- 6399 6529 28 "Danio rerio, Homo sapiens, Mus musculus, Caenorhabditis elegans, Buchnera aphidicola str. Bp (Baizongia pistaciae), Rattus norvegicus"
- 6400 6530 23 "Homo sapiens, Mus musculus, Pan troglodytes, Drosophila melanogaster, Sulfolobus tokodaii, Lactococcus bacteriophage phi31, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum" 40
- 6401 6531 23 "Clostridium tetani E88, Glycine max, Mus musculus, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Homo sapiens, Plagiobothrys albiflorus, Caenorhabditis briggsae, Neurospora crassa"
- 6402 6532 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Drosophila melanogaster, Lepidopiren paradoxa, Spinacia oleracea, Plasmodium falciparum 3D7, Danio rerio, Clostridium difficile, Theobroma cacao"
- 6403 6533 31 "Homo sapiens, Rattus norvegicus, Arabidopsis thaliana, Salmonella typhimurium LT2, Campylobacter jejuni subsp. jejuni NCTC 11168, Plasm 50

- odium falciparum 3D7, Macaca fascicularis, Mus musculus, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Methanosarcina acetivorans C2A, Pan troglodytes, Odontella sinensis, Porphyromonas gingivalis W83, Danio rerio, Xenopus laevis, Medicago truncatula, Oryza sativa (japonica cultivar-group)
- 6404 6534 28 "Atelerix albiventris, Mus musculus, Homo sapiens, Clostridium acetobutylicum, Rattus norvegicus, Danio rerio, Caenorhabditis elegans, Sus scrofa, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group)"
- 6405 6535 28 "Homo sapiens, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Mus musculus, Placopsis bicolor, Oryza sativa (japonica cultivar-group), Chlamydia trachomatis, Caenorhabditis elegans, Saccharomyces cerevisiae, Arabidopsis thaliana" 10
- 6406 6536 31 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Caenorhabditis elegans, Thermoplasma volcanium, Dictyostelium discoideum, Drosophila melanogaster, Caulobacter crescentus CB15, Thermoanaerobacter tengcongensis, Clostridium acetobutylicum, Danio rerio, Caenorhabditis briggsae, Arabidopsis thaliana, Bacillus halodurans"
- 6407 6537 28 "Homo sapiens, Medicago truncatula, Candidatus Carsonella ruddii, Pan troglodytes, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Bombyx mori, Arabidopsis thaliana, Clostridium perfringens str. 13, Equus caballus, Dictyostelium discoideum, Drosophila melanogaster, Sus scrofa, Triticum aestivum, Cambaroides japonicus, Pasteurella multocida, Danio rerio, Prochlorococcus marinus, Lycopersicon esculentum, Ascaris suum, Nephroselmis olivacea, Oryza sativa (japonica cultivar-group)" 20
- 6408 6538 35 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Lotus corniculatus var. japonicus, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Ureaplasma urealyticum, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Methanosarcina mazei Goe1, Saccharomyces cerevisiae, Pythium oligandrum, Prochlorococcus marinus, Staphylococcus epidermidis, Rickettsia prowazekii, Cucumis melo, Pirata knorri, Xenopus laevis, Neurospora crassa, Silurana tropicalis, Malonomonas rubra, Rattus norvegicus" 30
- 6409 6539 41 "Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, Helicobacter hepaticus ATCC 51449, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Danio rerio, Aquifex aeolicus VF5, Macaca mulatta, Plasmodium falciparum 3D7, Papio anubis, Pseudocalotes brevipes, Melanoplus sanguinipes entomopoxvirus, Saccharomyces cerevisiae, Arabidopsis thaliana"
- 6410 6540 24 "Homo sapiens, Methanocaldococcus jannaschii, Caenorhabditis elegans, Mus musculus, Clostridium perfringens str. 13, Borrelia burgdorferi B31, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Schizosaccharomyces pombe, Staphylococcus epidermidis, Sus scrofa, Lotus corniculatus var. japonicus, Borrelia burgdorferi, Dunaliella salina" 40
- 6411 6541 56 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Rickettsia prowazekii, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus Mu50, Homo sapiens, Rickettsia conorii, Staphylococcus aureus subsp. aureus MW2, Haemophilus influenzae Rd KW20, Drosophila melanogaster, Mus musculus, Danio rerio, Prochlorococcus marinus subsp. marinus str. CCMP1375" 50
- 6412 6542 36 "Rickettsia prowazekii, Homo sapiens, Arabidopsis thaliana" 50

- na, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Caenorhabditis elegans*, *Ciona intestinalis*, *Gluconobacter oxydans*"
- 6413 6543 63 "Clostridium tetani E88, Rickettsia prowazekii, Rickettsia conorii, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Drosophila melanogaster, Medicago truncatula, Mus musculus, Lepus europaeus, Plasmodium falciparum 3D7, Agrobacterium vitis, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Rattus norvegicus"
- 6414 6544 24 "Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Enterococcus faecalis V583, Caenorhabditis elegans, Homo sapiens, Danio rerio, Mycoplasma hyopneumoniae" 10
- 6415 6545 24 "Schizosaccharomyces pombe, Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Danio rerio"
- 6416 6546 26 "Caenorhabditis elegans, Bacteroides thetaiotaomicron VP1-5482, Homo sapiens, Mus musculus, Mycoplasma gallisepticum R, Bacillus anthracis str. Ames, Drosophila melanogaster, Streptococcus pneumoniae, Bacillus anthracis, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Neurospora crassa, Pneumocystis jiroveci, Lytechinus pictus, Clostridium perfringens str. 13" 20
- 6417 6547 23 "Mus musculus, Rattus norvegicus, Drosophila melanogaster, Drosophila pseudoobscura, Glycine max, Homo sapiens, Oceanobacillus iheyensis HTE831, Danio rerio, Arabidopsis thaliana"
- 6418 6548 27 "Plasmodium falciparum 3D7, Homo sapiens, Thermoplasma acidophilum, Arabidopsis thaliana, Danio rerio, Mus musculus, Caenorhabditis elegans, Rattus norvegicus, Drosophila melanogaster, Clostridium tetani E88, Pantroglodytes, Zea mays, Lepidium apetalum, Ovis aries, Drosophila subobscura, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Staphylococcus sciuri, Polydora corruptus, Mimulus guttatus, Tectona grandis, Candida maltosa, Clostridium perfringens str. 13" 30
- 6419 6549 28 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Trichomonas vaginalis, Oryza sativa (japonica cultivar-group), Medicago truncatula, Drosophila melanogaster, Schmidtea mediterranea, Methanothermobacter thermoautotrophicus str. Delta H, Danio rerio, Dictyostelium discoideum, Cyanophora paradoxa"
- 6420 6550 27 "Mus musculus, Homo sapiens, Pantroglodytes, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium vivax, Oryza sativa, Macaca fascicularis, Bacteriophage B103"
- 6421 6551 24 "Mus musculus, Homo sapiens, Synechococcus sp. WH 8102, Zea mays, Oryza sativa (japonica cultivar-group), Papio anubis, Caenorhabditis elegans, Amsacta moorei entomopoxvirus, Danio rerio, Equus caballus, Arabidopsis thaliana" 40
- 6422 6552 35 "Homo sapiens, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Schizosaccharomyces pombe, Leptospira interrogans serovar lai str. 56601, Avena sativa, Borrelia burgdorferi B31, Oryza sativa, Gibberella zeae, Clostridium acetobutylicum, Oryza sativa (indica cultivar-group), Plasmodium falciparum 3D7, Prochlorococcus marinus subsp. marinus str. CCMP1375, Canis familiaris, Clostridium perfringens str. 13"
- 6423 6553 29 "Homo sapiens, Mus musculus, Cercopithecus aethiops, Hypocrea jecorina, Medicago truncatula, Danio rerio" 50

- 6424 6554 28 "Pyrococcus horikoshi, iHomo sapiens, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Bacillus anthracis str. Ames, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Rana catesbeiana"
- 6425 6555 28 "Mus musculus, Homo sapiens, Rickettsia conorii, Oryza sativa (japonica cultivar-group), Danio rerio, Oryza sativa, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Bombyx mori"
- 6426 6556 31 "Mus musculus, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGA S8232, Streptococcus pyogenes M1 GAS, Bacillus circulans, Arabidopsis thaliana, Streptococcus pyogenes SSI-1, Oryza sativa (japonica cultivar-group), Haemophilus paragallinarum, Danio rerio, Dictyostelium discoideum, Pan troglodytes, Plasmodium falciparum 3D7, Panorpa cognata, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Populus tremula x Populus tremuloides, Bartonella vinsonii subsp. arupensis, Saccharomyces cerevisiae, Papio anubis, Acheta domesticus" 10
- 6427 6557 33 "Pan troglodytes, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Papio hamadryas, Danio rerio, Oryza sativa (japonica cultivar-group), Oryza sativa, Caenorhabditis elegans, Cryptomys hottentotus hottentotus" 20
- 6428 6558 27 "Homo sapiens, Mus musculus, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Canis familiaris, Pisum sativum, Parastroglyoides trichosuri, Arabidopsis thaliana"
- 6429 6559 27 "Mus musculus, Homo sapiens, Papio anubis, Caenorhabditis elegans, Dictyostelium discoideum, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Hamster papovavirus, Neurospora crassa, Helicobacter hepaticus ATCC 51449"
- 6430 6560 27 "Homo sapiens, Mus musculus, Medicago truncatula, Lucilia cuprina, Listeria monocytogenes, Schizosaccharomyces pombe, Bos taurus, Leptospira interrogans serovar lai str. 56601, Ovis aries, Caenorhabditis elegans, Anopheles minimus A, Plasmodium falciparum 3D7, Clavija spinosa, Neisseria meningitidis, Lycopersicon esculentum, Anopheles minimus, Anopheles fluviatilis S, Anopheles fluviatilis T, Rattus norvegicus" 30
- 6431 6561 43 "Homo sapiens, Plasmodium falciparum 3D7, Tribolium castaneum, Arabidopsis thaliana, Eulemur fulvus albifrons, Eulemur fulvus fulvus, Eulemur fulvus sanfordi, Eulemur fulvus albocollaris, Eulemur fulvus collaris, Eulemur fulvus rufus, Eulemur fulvus mayottensis, Buchnera aphidicola str. Bp (Baizongia pistaciae), Mus musculus, Papio anubis, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Glycine max, Nemcia vestita, Nemcia rubra, Nemcia pyramidalis, Nemcia luteifolia, Nemcia leakeana, Nemcia crenulata, Nemcia coriacea, Jansonia formosa, Brachysema praemorsum, Brachysema minor, Brachysema modestum, Brachysema melanopetalum, Brachysema celsianum, Streptococcus pyogenes M1 GAS, Amsacta moorei entomopoxvirus, Simian immunodeficiency virus, Streptococcus thermophilus temperate bacteriophage 01205" 40
- 6432 6562 23 "Mus musculus, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Arabidopsis thaliana, Patella vulgata, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 6433 6563 23 "Homo sapiens, Mus musculus, Globba curtisii, Caenorhabditis elegans"
- 6434 6564 26 "Homo sapiens, Mus musculus, Carabus constricticollis, M 50

- edicago truncatula, *Oryza sativa* (japonica cultivar-group), *Pasteurella multocida*, Avian infectious bronchitis virus, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Papilio maackii*, *Arabidopsis thaliana*"
- 6435 6565 28 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Arabidopsis thaliana*, *Silene foetida*, *Plasmodium vivax*"
- 6436 6566 25 "Mus musculus, Homo sapiens, *Debaryomyces hansenii* var. *hansenii*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Bacteroides thetaiotaomicron* VPI-5482, *Zea mays*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*" 10
- 6437 6567 27 "Homo sapiens, *Mus musculus*, *Pan troglodytes*, *Arabidopsis thaliana*, *Reclinomonas americana*, *Bacillus anthracis* str. Ames, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Cyanophage S-PM2*, *Sus scrofa*, *Pneumocystis carinii*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. japonicus, *Thermoplasma volcanium*, *Danio rerio*, *Pneumocystis jiroveci*, *Dictyostelium discoideum*"
- 6438 6568 32 "Homo sapiens, *Mus musculus*, *Capra hircus*, *Danio rerio*, *Methanosarcina mazei* Goe1, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Pongo pygmaeus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Oceanobacillus iheyensis* HTE831, *Saccharomyces cerevisiae*, *Methanocaldococcus jannaschii*" 20
- 6439 6569 29 "Pan troglodytes, Homo sapiens, *Mus musculus*, *Danio rerio*, *Sulfolobus solfataricus*, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Pseudopleuronectes americanus*, *Saccharomyces cerevisiae*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Streptococcus agalactiae* 2603V/R, *Clostridium acetobutylicum*, *Streptococcus agalactiae* NEM316, *Mycoplasma penetrans*, *Oryza sativa* (japonica cultivar-group), *Haemophilus influenzae* Rd KW20"
- 6440 6570 23 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group)" 30
- 6441 6571 23 "*Pasteurella multocida*, Homo sapiens, *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*"
- 6442 6572 25 "Homo sapiens, *Mus musculus*, *Nicotiana glauca*"
- 6443 6573 24 "*Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Mycoplasma gallisepticum* R, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Clostridium acetobutylicum*, Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 6444 6574 27 "*Prochlorococcus marinus*, Homo sapiens, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Vibrio parahaemolyticus*"
- 6445 6575 29 "Homo sapiens, *Thermoanaerobacter tengcongensis*, *Mus musculus*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Synechocystis* sp. PCC 6803, *Bacteroides thetaiotaomicron* VPI-5482, *Papio anubis*, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subs"
- 6446 6576 25 "*Mus musculus*, Homo sapiens, *Oryctolagus cuniculus*, *Pasteurella multocida*, *Ascaris suum*, *Danio rerio*, *Ciona intestinalis*, *Acanthochromis polyacanthus*, *Aquifex aeolicus* VF5, *Arabidopsis thaliana*, *Sesbania rostrata*, *Rattus norvegicus*, *Haemophilus influenzae* Rd KW20"
- 6447 6577 28 "*Plasmodium falciparum* 3D7, *Mus musculus*, Homo sapiens, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), Human herpesvirus 6B, Human herpesvirus 6, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae*" 50

- TIGR4, *Haemophilus somnus*, *Macaca fascicularis*"
- 6448 6578 24 "Prototheca wickerhamii, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Escherichia coli*, *Sorghum bicolor*, *Caenorhabditis elegans*, *Lactococcus lactis*, *Lactococcus lactis* subsp. *cremoris*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Pan troglodytes*, *Arabidopsis thaliana*"
- 6449 6579 28 "*Mus musculus*, *Homo sapiens*, Saimiriine herpesvirus 2, Squirrel monkey herpesvirus 1, *Caenorhabditis elegans*, *Drosophila melanogaster*"
- 6450 6580 32 "*Homo sapiens*, *Mus musculus*, *Clostridium acetobutylicum*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Pseudomonas phage phiKZ*, *Equus caballus*, *Rana esculenta*, *Leptospira interrogans* serovar *lai* str. 56601, *Drosophila melanogaster*, *Entamoeba dispar*, *Caenorhabditis elegans*, *Danio rerio*" 10
- 6451 6581 63 "*Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Wolbachia endosymbiont of Drosophila simulans*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Lactobacillus plantarum* WCFS1, *Ciona intestinalis*, *Danio rerio*"
- 6452 6582 25 "*Mycoplasma pulmonis*, *Mus musculus*, *Homo sapiens*, Human adenovirus type 3, *Danio rerio*, *Caenorhabditis elegans*, *Pan troglodytes*, *Bacillus halodurans*"
- 6453 6583 25 "*Lotus corniculatus* var. *japonicus*, *Mus musculus*, *Homo sapiens*, *Bacillus macroides*, *Exiguobacterium* sp., *Bacillus* sp. RC607, *Listeria innocua*, *Bacillus cereus*, *Clostridium butyricum*, *Drosophila melanogaster*, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar *Typhi* Ty2, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Sus scrofa*, *Cydia pomonella granulovirus*, *Oryza sativa* (japonica cultivar-group), *Salmonella enterica* subsp. *enterica* serovar *Typhi*" 20
- 6454 6584 23 "*Rattus norvegicus*, *Homo sapiens*, *Mus musculus*"
- 6455 6585 48 "*Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Homo sapiens*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*, *Betula pendula*, *Drosophila melanogaster*, *Schmidtea mediterranea*, *Streptococcus pneumoniae* R6, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*, *Bactrocera dorsalis*, *Macaca fascicularis*, *Arabidopsis thaliana*, *Rattus norvegicus*" 30
- 6456 6586 31 "*Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Plasmodium vivax*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Mycoplasma pulmonis*, *Oryza sativa* (indica cultivar-group), *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Caenorhabditis elegans*, *Medicago truncatula*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Schmidtea mediterranea*, *Lactococcus bacteriophage* 4268, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Guillardia theta*, *Bos taurus*, *Lactococcus lactis*, *Bacillus thuringiensis* serovar *medellin*, *Clostridium thermocellum*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Oceanobacillus iheyensis* HTE831, *Lactococcus bacteriophage phi31*, *Schizosaccharomyces pombe*, *Borrelia burgdorferi*, *Plasmodium falciparum*, *Buchnera aphidicola*, *Papio anubis*, *Clostridium josui*, *Clostridium perfringens* str. 13" 40
- 6457 6587 44 "*Homo sapiens*, *Danio rerio*, *Mus musculus*, *Sus scrofa*, *Caenorhabditis elegans*, *Pan troglodytes*, *Macaca fascicularis*, *Sus scrofa domestica*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Lycopodium esculentum*, *Schistosoma mansoni*, *Anopheles gambiae*, *Oryza sativa* (japonica cultivar-group), *Canis familiaris*" 50

- iaris, *Bacillus anthracis* str. Ames, *Bacillus lynceorum*, *Plasmodium falciparum* 3 D7, *Papio anubis*, *Brassica napus*, *Macaca mulatta*, *Sporobolus indicus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Porphyra abottae*, *Sulfolobus solfataricus*, *Rattus norvegicus*, *Lactococcus lactis* subsp. *lactis*, *Lotus corniculatus* var. *japonicus*, *Medicago truncatula*, *Mycoplasma penetrans*, *Solanum demissum*, *Neurospora crassa*, *Schizosaccharomyces pombe*, *Felis catus*"
- 6458 6588 51 "Oceanobacillus iheyensis HTE831, *Homo sapiens*, *Mycoplasma pulmonis*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Rattus norvegicus*, *Bacillus anthracis* str. Ames, *Mycoplasma pneumoniae*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Schizosaccharomyces pombe*, *Methanocaldococcus jannaschii*, *Spiroplasma citri*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Nostoc* sp. PCC 7120" 10
- 6459 6589 37 "Staphylococcus aureus subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Nostoc*"
- 6460 6590 60 "Pasteurella multocida, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Enterococcus faecalis* V583, *Clostridium perfringens* str. 13, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* s" 20
- 6461 6591 30 "Synechococcus sp. PCC 7002, *Mus musculus*, *Methanosarcina acetivorans* C2A, *Caenorhabditis elegans*, *Brachyspira hyodysenteriae*, *Homo sapiens*, *Arabidopsis thaliana*, *Bradyrhizobium japonicum* USDA 110, *Ciona intestinalis*, *Danio rerio*, *Clostridium perfringens* str. 13"
- 6462 6592 28 "Oceanobacillus iheyensis HTE831, *Shigella flexneri* 2a str. 2457T, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Escherichia coli*, *Escherichia coli* O157:H7 EDL933, *Escherichia coli* K12, *Haemophilus ducreyi* 35000HP, *Escherichia coli* O157:H7, *Homo sapiens*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Coxiella burnetii* RSA 493, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Medicago truncatula*, *Mus musculus*" 30
- 6463 6593 24 "*Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Synechocystis* sp., *Arabidopsis thaliana*, *Synechocystis* sp. PCC 6803, *Mus musculus*, *Sus scrofa*"
- 6464 6594 31 "*Buchnera aphidicola*, *Mus musculus*, *Homo sapiens*, *Rattus norvegicus*, *Lactococcus lactis* subsp. *lactis*, *Arabidopsis thaliana*, *Mycoplasma hypopneumoniae*, *Oreochromis niloticus*, *Mesocricetus auratus*, *Caenorhabditis elegans*, *Pan troglodytes*, *Drosophila melanogaster*, *Danio rerio*, *Xenopus laevis*, *Human parechovirus 2*" 40
- 6465 6595 25 "*Halimolobos corrugata*, *Bacillus megaterium*, *Mus musculus*, *Saccharomyces cerevisiae*, *Homo sapiens*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Rattus norvegicus*"
- 6466 6596 28 "*Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Methanocaldococcus jannaschii*, *Oryza sativa* (*japonica* cultivar-group), *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Streptococcus mutans* UA159, *Chaetosphaeridium globosum*, *Arabidopsis thaliana*, *Oryza sativa*, *Paeonia szechuanica*, *Oryza sativa* (*indica* cultivar-group), *Ciona intestinalis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*, *Medicago truncatula*" 50

- 6467 6597 31 "Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Caenorhabditis elegans, Drosophila melanogaster, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Clostridium tetani E88, Plasmodium falciparum"
- 6468 6598 27 "Homo sapiens, Danio rerio, Mus musculus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Streptococcus pyogenes M1 GAS, Caenorhabditis elegans, Streptococcus pyogenes SSI-1, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus Mu50" 10
- 6469 6599 39 "Plasmodium falciparum 3D7, Homo sapiens, Papio anubis, Oryza sativa (japonica cultivar-group), Entamoeba histolytica, Mycoplasma capricolum, Anthoceros formosae, Medicago truncatula, Drosophila melanogaster, Mus musculus, Methanosarcina acetivorans C2A, Caenorhabditis briggsae, Amsacta moorei entomopoxvirus, Caenorhabditis elegans, Danio rerio, Thermococcus litoralis, Candidatus Carsonella ruddii, Borrelia burgdorferi B31, Dictyostelium discoideum, Streptococcus mutans UA159, Leishmania major, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Mycoplasma pulmonis, Oryza sativa, Nymphaea odorata, Fowlpox virus, Acanthamoeba tubiashi, Saccharomyces cerevisiae, Plasmodium falciparum, Borrelia burgdorferi, Neurospora crassa, Isolepis aucklandica, Clostridium perfringens str. 13" 20
- 6470 6600 50 "Salmonella typhimurium LT2, Shigella flexneri 2a str. 2457T, Salmonella enterica subsp. enterica serovar Typhi Ty2, Shigella flexneri 2a str. 301, Homo sapiens, Salmonella enterica, Escherichia coli K12, Salmonella enterica subsp. enterica serovar Typhi, Escherichia coli, Human immunodeficiency virus 1, Rattus norvegicus, Candidatus Carsonella ruddii, Mus musculus, Arabidopsis thaliana, Rattus rattus, Danio rerio, Bos taurus, Medicago truncatula, Caenorhabditis elegans, Drosophila melanogaster, Streptococcus mutans UA159, Schizosaccharomyces pombe"
- 6471 6601 27 "Mus musculus, Homo sapiens, Pan troglodytes, Macaca mulatta, Plasmodium falciparum 3D7, Papio anubis, Penicillium chrysogenum, Rattus norvegicus, Drosophila virilis, Arabidopsis thaliana" 30
- 6472 6602 78 "Haemophilus ducreyi 35000HP, Takifugu rubripes, Mus musculus, Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Homo sapiens, Vibrio cholerae, Staphylococcus epidermidis, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus"
- 6473 6603 44 "Plasmodium falciparum 3D7, Homo sapiens, Escherichia coli CFT073, Caenorhabditis elegans, Ajellomyces capsulatus, Danio rerio, Staphylococcus epidermidis ATCC 12228, Clostridium tetani E88, Streptococcus mutans UA159, Brassica napus, Caenorhabditis briggsae, Staphylococcus epidermidis, Oceanobacillus iheyensis HTE831, Schizosaccharomyces pombe" 40
- 6474 6604 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Anopheles gambiae, Danio rerio"
- 6475 6605 45 "Mus musculus, Clostridium tetani E88, Homo sapiens, Arabidopsis thaliana, Caenorhabditis briggsae, Danio rerio, Medicago truncatula, Taeniopygia guttata, Borrelia burgdorferi B31, Drosophila melanogaster, Caenorhabditis elegans, Daphnia pulicaria, Pseudomonas putida KT2440, Sulfolobus solfataricus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Gallus gallus, Rattus norvegicus, Tarsius syrichta"
- 6476 6606 24 "Pan troglodytes, Mus musculus, Homo sapiens, Clostridium 50

- m acetobutylicum, *Pisum sativum*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Aedes aegypti*, *Guillardia theta*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Heterodontus francisci*"
- 6477 6607 27 "Plasmodium falciparum 3D7, *Homo sapiens*, Swinepox virus, *Danio rerio*, *Mus musculus*, *Cryptococcus neoformans* var. *neoformans*, *Pan troglodytes*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Sulfolobus solfataricus*, *Chlamydophila pneumoniae* CWL029, *Amsacta moorei* entomopox virus, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Chlamydophila pneumoniae* AR39, *Thermoplasma volcanium*, *Chlamydophila pneumoniae* J138, *Ciona intestinalis*, *Chlamydophila pneumoniae* TW-183, *Ipomoea batatas*" 10
- 6478 6608 27 "Canis familiaris, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Guillardia theta*, *Danio rerio*, *Mycoplasma hominis*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Leptospira interrogans* serovar *lai* str. 56601, *Caenorhabditis elegans*, *Mus musculus*, *Bartonella henselae*, *Mycoplasma pneumoniae*, *Bartonella koehlerae*, *Pan troglodytes*, *Bartonella clarridgeiae*"
- 6479 6609 37 "*Homo sapiens*, *Clostridium acetobutylicum*, *Mus musculus*, *Caenorhabditis elegans*, *Sus scrofa*, *Danio rerio*, *Arabidopsis thaliana*"
- 6480 6610 24 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Drosophila pseudoobscura*, *Human papillomavirus type 82*" 20
- 6481 6611 27 "*Mus musculus*, *Arabidopsis thaliana*, *Homo sapiens*, *Danio rerio*, *Saccharomyces cerevisiae*"
- 6482 6612 24 "*Homo sapiens*, *Mus musculus*, *Papio anubis*, *Plasmodium falciparum* 3D7"
- 6483 6613 31 "*Mus musculus*, *Enterococcus faecalis*, *Enterococcus faecalis* V583, *Homo sapiens*, *Pan troglodytes*, *Streptococcus agalactiae* 2603V/R, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Oceanobacillus ihyensensis* HTE831, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Influenza A virus* (A/Turkey/Utah/24721-10/95 (H7N3))" 30
- 6484 6614 33 "*Homo sapiens*, *Acipenser baerii*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Gossypium hirsutum*, *Danio rerio*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Canis familiaris*, *Marchantia polymorpha*, *Lotus corniculatus* var. *japonicus*, *Mycoplasma penetrans*, *Hyperammina* sp. 2919, *Medicago truncatula*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Aster yellows phytoplasma*, *Xenopus laevis*, *Albuca pendula*, *Streptococcus agalactiae* 2603V/R, *Papio anubis*, *Rickettsia conorii*, *Clostridium acetobutylicum*, *Anthanassa tulcis*, *Tribolium castaneum*, *Rickettsia montanensis*, *Rickettsia rickettsii*, *Arabidopsis thaliana*, *Streptococcus agalactiae* NEM316, *Lycopersicon esculentum*, *Streptococcus agalactiae*, *Coelogyne virescens*, *Neurospora crassa*, *Schizosaccharomyces pombe*" 40
- 6485 6615 27 "*Homo sapiens*, *Arabidopsis thaliana*, *Orgyia pseudotsugata* multicapsid nucleopolyhedrovirus, *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Escherichia coli*, *Rickettsia conorii*, *Escherichia coli* 0157:H7 EDL933, *Caenorhabditis elegans*, *Moorella thermoacetica*, *Cyanidium caldarium*, *Escherichia coli* K12, *Lotus corniculatus* var. *japonicus*, *Zymomonas mobilis*, *Lactococcus lactis*, *Escherichia coli* 0157:H7"
- 6486 6616 27 "*Homo sapiens*, *Drosophila melanogaster*, *Streptococcus ag*" 50

- alactiae 2603V/R, *Mus musculus*, *Streptococcus agalactiae* NEM316, *Sus scrofa*, *Ara bidopsis thaliana*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus"
- 6487 6617 27 "Arabidopsis thaliana, *Homo sapiens*, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Helianthus tuberosus*, *Borrelia burgdorferi* B31, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Vibrio parahaemolyticus*"
- 6488 6618 27 "Homo sapiens, *Borrelia burgdorferi* B31, *Rickettsia conorii*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Bacillus megaterium*, *Lycopersicon esculentum*, *Ureaplasma urealyticum*, *Lotus corniculatus* var. japonicus, *Euphorbia esula*, *Vibrio parahaemolyticus*, *Escherichia coli*, *Rattus norvegicus*" 10
- 6489 6619 31 "Leptospira interrogans serovar lai str. 56601, *Medicago truncatula*, *Homo sapiens*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Mycoplasma penetrans*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), Plasmid p121BS, Plasmid pGT633, *Pan troglodytes*, *Dictyostelium discoideum*, *Methanosarcina mazei* Goe1, Simian immunodeficiency virus, Saimiriine herpesvirus 2, *Staphylococcus aureus*, *Helianthus annuus*, *Oryctolagus cuniculus*, *Silurana tropicalis*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Arabidopsis thaliana*, *Mycoplasma genitalium*"
- 6490 6620 31 "Homo sapiens, *Plasmodium falciparum* 3D7, *Paraligoneurus* sp. M125, *Danio rerio*, *Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Cyprinus carpio*, *Oryza sativa* (japonica cultivar-group), *Didelphis virginiana*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Papio anubis*, *Yersinia pestis* KIM, *Oryza sativa*, *Rickettsia prowazekii*, *Guillardia theta*, *Yersinia pestis* C092, *Schizosaccharomyces pombe*, *Nicotiana tabacum*, *Alteromonas* sp., *Clostridium perfringens* str. 13" 20
- 6491 6621 32 "Homo sapiens, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Mus musculus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Agathis* sp. DMA-199" 30
- 6492 6622 27 "Mus musculus, *Homo sapiens*, *Chlamydia trachomatis*, *Cyanospora* sp. PCC 8801, *Chlamydomonas reinhardtii* GPIC, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Rattus norvegicus*"
- 6493 6623 24 "Homo sapiens, *Mus musculus*, *Bacillus anthracis* str. A2012, *Bacillus anthracis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Pan troglodytes*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Arabidopsis thaliana*, *Buchnera aphidicola*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Acetabularia acetabulum*"
- 6494 6624 25 "Homo sapiens, *Didelphis virginiana*, *Mus musculus*, *Methanosarcina mazei* Goe1, *Clostridium tetani* E88, *Felis catus*, *Clostridium acetobutylicum*, Human coxsackievirus B4, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Nostoc* sp. PCC 7120" 40
- 6495 6625 43 "Oryza sativa, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Pan troglodytes*, *Leishmania major*, *Homo sapiens*, *Danio rerio*, *Takifugu rubripes*, *Saccharomyces cerevisiae*, *Paramecium primaurelia*, *Anthoceros formosae*, *Caenorhabditis elegans*, *Trypanosoma brucei*, *Oryza sativa* (japonica cultivar-group), *Apis mellifera*, *Pisum sativum*, *Glyptostrobilus pensilis*, *Oryctolagus cuniculus*, *Rattus norvegicus*, *Medicago truncatula*, *Dictyostelium discoideum*, *Xylella fastidiosa* Temecula1, *Papio anubis*, *Hordeum vulgare* subsp. vulgare" 50

- 6496 6626 28 "Agroclype aegerita, Mus musculus, Homo sapiens, Danio rerio, Arabidopsis thaliana, Pan troglodytes, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Sulfolobus solfataricus, Lotus corniculatus var. japonicus"
- 6497 6627 27 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Caenorhabditis elegans"
- 6498 6628 23 "Homo sapiens, Mus musculus, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 6499 6629 27 "Mus musculus, Homo sapiens, Drosophila melanogaster" 10
- 6500 6630 24 "Drosophila melanogaster, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio, Caenorhabditis elegans, Arabidopsis thaliana, Odontella sinensis"
- 6501 6631 23 "Homo sapiens, Arabidopsis thaliana, Lycopersicon esculentum, Mus musculus, Trypanosoma brucei rhodesiense, Oryza sativa (japonica cultivar-group)"
- 6502 6632 33 "Homo sapiens, Arabidopsis thaliana, Mycoplasma salivarium, Atelerix albiventris, Mus musculus, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13, Flavobacterium psychrophilum, Drosophila melanogaster, Danio rerio, Caenorhabditis elegans, Mycoplasma capricolum, Oceanobacillus iheyensis HTE831, Sulfolobus tokodaii, Schizosaccharomyces pombe" 20
- 6503 6633 24 "Medicago truncatula, Homo sapiens, Plasmodium falciparum 3D7, Lactobacillus johnsonii prophage Lj965, Pasteurella multocida, Ambystoma jeffersonianum, Methanosarcina mazei Goe1, Brassica oleracea, Brassica napus, Mus musculus, Turdus migratorius, Danio rerio, Sus scrofa"
- 6504 6634 23 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Pan troglodytes, Danio rerio"
- 6505 6635 29 "Rattus norvegicus, Homo sapiens, Mus musculus, Epifagus virginiana, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, African swine fever virus, Medicago truncatula, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Drosophila littoralis, Lactococcus lactis subsp. lactis, Mycoplasma pulmonis, Caenorhabditis briggsae, Bombyx mori, Arabidopsis thaliana, Tetrahymena thermophila" 30
- 6506 6636 29 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Medicago truncatula, Drosophila melanogaster, Branchiostoma floridae, Macaca mulatta, Mus musculus, Caenorhabditis elegans, Bos taurus, Papio anubis, Dictyostelium discoideum, Chaetosphaeridium globosum, Takifugu rubripes, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Campylobacter jejuni subsp. jejuni NCTC 11168, Ureaplasma urealyticum, Rhodomonas salina, Amsacta moorei entomopoxvirus, Arabidopsis thaliana, Lotus corniculatus var. japonicus" 40
- 6507 6637 31 "Leptospira interrogans serovar lai str. 56601, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Clostridium tetani E88, Oryza sativa, Caenorhabditis elegans, Dictyostelium sp., Streptococcus mutans UA159, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Guillardia theta, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Danio rerio, Rattus norvegicus, Dictyostelium discoideum, Oryctolagus cuniculus, Canine herpesvirus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Adeshasp. RDB-2000"
- 6508 6638 26 "Homo sapiens, Enterococcus faecalis V583, Mus musculus, 50

- Oryza sativa* (indica cultivar-group), *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Oryza sativa*"
- 6509 6639 30 "Caenorhabditis elegans, Homo sapiens, Mimulus guttatus, Mus musculus, Borrelia burgdorferi B31, Drosophila melanogaster, Danio rerio, Buchnera aphidicola str. Sg (Schizaphis graminum), Oryza sativa, Meleagris gallopavo, Leishmania tarentolae, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Arabidopsis thaliana, Dictyostelium discoideum, Methanosarcina mazei Goe1, Drosophila willistoni, Sus scrofa, Campylobacter jejuni"
- 6510 6640 32 "Glycine max, Homo sapiens, Caenorhabditis elegans, Danio rerio, Neisseria meningitidis Z2491, Bdelloidella candida, Neisseria meningitidis MC58, Anopheles gambiae, Mus musculus, Leptospira interrogans serovar lai str. 56601, Swinepox virus, Flaveria pringlei, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Rattus norvegicus" 10
- 6511 6641 56 "Enterococcus faecalis V583, Homo sapiens, Clostridium tetani E88, Prochlorococcus marinus, Fusobacterium nucleatum subsp. nucleatum ATCC C 25586, Arabidopsis thaliana, Clostridium acetobutylicum, Mus musculus, Clarias gariepinus, Listeria innocua"
- 6512 6642 27 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Bacteriophage N4, Staphylococcus epidermidis ATCC 12228, synthetic construct, Staphylococcus epidermidis, Zea mays, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Streptococcus sp. 'group G', Anopheles gambiae" 20
- 6513 6643 62 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Buchnera aphidicola str. Sg (Schizaphis graminum), Clostridium acetobutylicum, Mus musculus, Arabidopsis thaliana, Gallus gallus, Homo sapiens, Drosophila melanogaster, Zea mays, Streptococcus agalactiae 2603V/R, Pan troglodytes, Streptococcus agalactiae NEM316, Glycine max, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Haemophilus influenzae Rd KW20" 30
- 6514 6644 56 "Oceanobacillus iheyensis HTE831, Helicobacter hepaticus ATCC 51449, Mus musculus, Staphylococcus epidermidis, Homo sapiens, Moraxella catarrhalis, Drosophila melanogaster, Danio rerio"
- 6515 6645 24 "Plasmodium falciparum 3D7, Homo sapiens, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Rattus norvegicus, Mus musculus, Human metapneumovirus, uncultured crenarchaeote 74A4, Pan paniscus, Macaca mulatta, Danio rerio, Caenorhabditis elegans"
- 6516 6646 27 "Danio rerio, Homo sapiens, Caenorhabditis elegans, Aplysia punctata, Petrogale xanthopus, Fagus sylvatica, Mus musculus, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Pinus strobus, Dictyostelium discoideum, Vibrio vulnificus CMCP6, Drosophila melanogaster, Acacia spinescens, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Victoria cruziana, Haemophilus ducreyi 35000HP" 40
- 6517 6647 71 "Streptomyces coelicolor A3(2), Streptomyces avermitilis MA-4680, Micromonospora nigra, Micromonospora sp. ATCC 39149, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Streptomyces griseus, Chlorobium tepidum TLS, Thermoanaerobacter tengcongensis"
- 6518 6648 23 "Bacillus cereus ATCC 14579, Staphylococcus epidermidis" 50

ATCC 12228, *Staphylococcus epidermidis*, *Danio rerio*, *Arabidopsis thaliana*, *Vibrio vulnificus* CMCP6, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Ralstonia solanacearum*, *Pan troglodytes*"

6519 6649 26 "Homo sapiens, *Sulfolobus solfataricus*, *Mus musculus*, *Clostridium acetobutylicum*, *Danio rerio*, *Haemophilus influenzae* Rd KW20, *Pyrobaculum aerophilum* str. IM2"

6520 6650 27 "Homo sapiens, *Caenorhabditis elegans*, *Shigella flexneri* 2a str. 2457T, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli*, *Medicago truncatula*, *Escherichia coli* K12, *Mus musculus*, *Escherichia coli* 0157:H7, *Bacillus cereus* ATCC 14579, *Leptospira interrogans* serovar lai str. 56601, *Plasmodium falciparum* 3D7, *Danio rerio*" 10

6521 6651 21 "Homo sapiens, *Schmidtea mediterranea*, *Pseudoloma neurophilia*, *Arabidopsis thaliana*, *Amblyospora ferocious*, *Amblyospora canadensis*, *Amblyospora stictici*, *Amblyospora khaliulini*, *Staphylococcus epidermidis* ATCC 12228, *Glugoides intestinalis*, *Staphylococcus epidermidis*, *Endoreticulatus bombycis*, *Orythosomella operophtherae*, *Oryza sativa* (japonica cultivar-group), *Amblyospora connecticus*, *Cystosporogenes legeri*, *Fusobacterium nucleatum*, *Vittaforma corneae*, *Pleistophora* sp."

6522 6652 29 "Caenorhabditis elegans, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Pan troglodytes*, *Dictyostelium discoideum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Neurospora crassa*, *Mycoplasma gallisepticum* R, *Gasterosteus aculeatus*, *Streptococcus mutans* UA159, *Sorghum bicolor*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Saccharomyces castellii*, *Thermoanaerobacter tengcongensis*, *Lactococcus lactis* subsp. *lactis*, *Macaca mulatta*, *Papio anubis*, *Danio rerio*, *Bacillus thuringiensis*, *Prunus persica*, *Brassica juncea*, *Caenorhabditis briggsae*" 20

6523 6653 31 "Caenorhabditis elegans, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Secale cereale*, *Danio rerio*, *Mycoplasma hyopneumoniae*, *Hypnodendron comatum*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Plasmodium malariae*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. *japonicus*, *Candida boidinii*, *Pichia jadinii*, *Medicago truncatula*, *Borrelia burgdorferi* B31, *Epirrita autumnata*, *Pasteurella multocida*, *Montinia caryophyllacea*, *Kaliphora madagascariensis*, *Oceanobacillus iheyensis* HTE831, *Rattus norvegicus*, *Buchnera aphidicola*, *Oryza sativa*, *Borrelia burgdorferi*" 30

6524 6654 32 "Mus musculus, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Lactococcus lactis* subsp. *lactis*, *Wigglesworthia glossinidia*, *Rickettsia prowazekii*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Helicobacter hepaticus* ATCC 51449, *Bacillus cereus* ATCC 14579, *Medicago truncatula*, *Chlamydomonas reinhardtii* GPIC, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Zea mays*, *Borrelia hermsii*, *Danio rerio*, *Caenorhabditis elegans*, *Listeria monocytogenes*, *Candidatus Blochmannia floridanus*, *Listeria innocua*, *Mollicoccus occulta*, *Helicobacter pylori* 26695, *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Helicobacter pylori* J99"

6525 6655 26 "Homo sapiens, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*"

6526 6656 27 "Bacteroides thetaiotaomicron VPI-5482, *Homo sapiens*, *Sulfolobus tokodaii*, *Mus musculus*, RNA transcription vector pBRDI2, RNA transcription vector pBRDI1, *Caenorhabditis elegans*, *Feline infectious peritonitis virus*, 40 50

Danio rerio, Arabidopsis thaliana"

- 6527 6657 31 "Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Canis familiaris, Drosophila melanogaster, Mus musculus, Homo sapiens, Oryza sativa, Danio rerio, Bufo woodhousii, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Rattus norvegicus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Xenopus laevis, Triticum aestivum, Medicago truncatula, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Pan troglodytes, Clostridium tetani E88, Zea mays, Andricus inflator, Andricus coronatus, Andricus dentimitratus, Campylobacter jejuni subsp. jejuni NCTC 11168, Mycoplasma penetrans, Maculolachnus submacula" 10
- 6528 6658 27 "Mus musculus, Homo sapiens, Bacillus anthracis str. Ames, Arabidopsis thaliana, Danio rerio, Drosophila melanogaster, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Methanosarcina acetivorans C2A, Human herpesvirus 6, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Fowlpox virus, Human herpesvirus 6B, Human herpesvirus 6A" 10
- 6529 6659 29 "Homo sapiens, Mycoplasma penetrans, Clostridium acetobutylicum, Sulfolobus solfataricus, Danio rerio, Caenorhabditis briggsae, Nostoc sp. PCC 7120" 20
- 6530 6660 27 "Homo sapiens, Drosophila melanogaster, Clostridium botulinum, Clostridium botulinum phage 1C, Mus musculus, Clostridium botulinum D phage, Canis familiaris, Dictyostelium discoideum, Danio rerio, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Pan troglodytes, Salmonella enterica subsp. enterica serovar Typhi Ty2, Caenorhabditis elegans, Arabidopsis thaliana, Papio anubis, Oryza sativa, Campylobacter jejuni subsp. jejuni NCTC 11168, Medicago truncatula" 20
- 6531 6661 28 "Homo sapiens, Danio rerio, Drosophila melanogaster, Mus musculus" 20
- 6532 6662 28 "Homo sapiens, Plasmodium falciparum 3D7, Caenorhabditis elegans, Mus musculus, Danio rerio, Pan troglodytes, Escherichia coli CFT073, Campylobacter jejuni subsp. jejuni, Drosophila melanogaster, Dictyostelium discoideum, Candidatus Carsonella ruddii, Podospira anserina, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Hippopotamus amphibius" 30
- 6533 6663 85 "Haemophilus ducreyi 35000HP, Haemophilus influenzae Rd KW20, Mesorhizobium loti, Yersinia pestis KIM, Yersinia pestis C092, Vibrio vulnificus, Vibrio vulnificus CMCP6, Pseudomonas aeruginosa PA01, Shewanella oneidensis MR-1, Pseudomonas aeruginosa, Pasteurella" 40
- 6534 6664 32 "Homo sapiens, Apteranthes tuberculata, Peltospira smaragdina, Danio rerio, Mus musculus, Polyradicion lindenii, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Rattus norvegicus, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Thyroptera discifera, Albinaria caerulea, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Pandorina morum, Medicago truncatula" 40
- 6535 6665 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Pan troglodytes, Rattus norvegicus, Bos taurus, Macaca mulatta, Papio anubis, Lasioglossum oenotherae, Thermoplasma acidophilum, Trypanosoma brucei, Neurospora crassa, Listeria monocytogenes" 50

- 6536 6666 27 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Litopenaeus vannamei, Plasmodium falciparum, Danio rerio, Didelphis virginiana, Rattus norvegicus, Papio anubis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Vaccinia virus, Arabidopsis thaliana, Drosophila funebris, Vaccinia virus (strain Tian Tan), Zygosaccharomyces rouxii"
- 6537 6667 23 "Danio rerio, Mus musculus, Homo sapiens, Solanum tuberosum, Schizosaccharomyces pombe, Leptospira interrogans serovar lai str. 56601, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Medicago truncatula, Arabidopsis thaliana, Lycopersicon esculentum"
- 6538 6668 48 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Human parainfluenza virus 1 strain Washington/1964, Oryza sativa, Ochromonas danica" 10
- 6539 6669 95 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Helicobacter hepaticus ATCC 51449, Dictyostelium discoideum, Ajellomyces capsulatus, Methanosarcina mazei Goe1, Rhodococcus equi, Nitrosomonas europaea ATCC 19718, Haemophilus influenzae Rd KW20, Haemophilus influenzae, Mus musculus, Homo sapiens, Agrobacterium tumefaciens, Thermoanaerobacterium sp., Caenorhabditis elegans, Staphylococcus xylosum, Oceanobacillus iheyensis HTE831, Helianthus annuus, Arabidopsis thaliana" 20
- 6540 6670 104 "Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella typhimurium, Salmonella enterica subsp. enterica serovar Typhi, Bacillus anthracis str. Ames, Bacillus cereus ATCC 14579, Escherichia coli CFT073, Oceanobacillus iheyensis HTE831, Mus musculus, Homo sapiens, Acinetobacter calcoaceticus, Shigella flexneri 2a str. 2457T, Shigella flexneri 2a str. 301, Thermoanaerobacter tengcongensis, Anthonomus grandis, Escherichia coli O157:H7 EDL933, Escherichia coli K12, Escherichia coli, Bacillus halodurans, Escherichia coli O157:H7"
- 6541 6671 115 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Oceanobacillus iheyensis HTE831, Rattus norvegicus, Mus musculus, Solanum tuberosum, Homo sapiens, Escherichia coli, Gossypium hirsutum, Pan troglodytes, Shewanella oneidensis MR-1, Caenorhabditis elegans, Nitrosomonas europaea ATCC 19718, Arabidopsis thaliana, Beta vulgaris subsp. vulgaris, Bassozetus zenkevitchi, Danio rerio, Brassica napus" 30
- 6542 6672 59 "Dictyostelium discoideum, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella typhimurium, Salmonella enterica subsp. enterica serovar Typhi, Listeria innocua, Homo sapiens, Cryptosporidium parvum, Proteus mirabilis, Mus musculus, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Solanum polyadenium, Caenorhabditis elegans, Arabidopsis thaliana, Glycine max, Danio rerio, Bacillus halodurans" 40
- 6543 6673 27 "Homo sapiens, Drosophila melanogaster, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus"
- 6544 6674 26 "Mus musculus, Danio rerio, Homo sapiens, Drosophila melanogaster, Pan troglodytes, Arabidopsis thaliana"
- 6545 6675 27 "Mus musculus, Homo sapiens, Borrelia burgdorferi B31, Borrelia burgdorferi, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium tetani E88, Biomphalaria glabrata, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Caenorhabditis elegans, D"
- 6546 6676 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group)" 50

- ivar-group), *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, Swinepox virus, *Oryza sativa* (indica cultivar-group), *Plasmodium falciparum*"
- 6547 6677 24 "Plasmodium vivax, *Homo sapiens*, *Macaca fascicularis*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Mus musculus*, *Clostridium acetobutylicum*, *Danio rerio*, *Lotus corniculatus* var. japonicus"
- 6548 6678 39 "Plasmodium falciparum 3D7, *Homo sapiens*, *Apis mellifera*, *Loliguncula mercatoris*, *Drosophila melanogaster*, *Mus musculus*, *Dictyostelium purpureum*, *Hypnea japonica*, *Arabidopsis thaliana*, *Danio rerio*, *Arthroderma benhamiae*, *Medicago truncatula*, *Clostridium tetani* E88, *Mandarinia ponderosa*, *Caenorhabditis elegans*, *Candidatus Blochmannia floridanus*, *Plasmodium falciparum*, *Lotus corniculatus* var. japonicus, *Dyscia fagaria*, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar lai str. 56601, *Dictyostelium discoideum*, *Bactrocera arecae*, *Drosophila willistoni*, *Schmidtea mediterranea*, *Rattus norvegicus*, *Mamestra configurata* nucleopolyhedrovirus B, *Phakopsora pachyrhizi*, *Pyrococcus furiosus* DSM 3638, *Saccharomyces cerevisiae*, *Ilex repanda*, *Petrolisthes elongatus*, *Oryza sativa*, *Mesostigma viride*"
- 6549 6679 40 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Arabidopsis thaliana*, *Mus musculus*, *Adoxophyes honmai* nucleopolyhedrovirus, *Aphanogmus* sp. M87, *Pan troglodytes*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Plasmodium falciparum* 3D7, *Beta trigyna*, *Plasmodium falciparum*, *Salmo salar*, *Erwinia amylovora*, *Rhopalosiphum insertum*, *Staphylococcus epidermidis*, *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (Acyrtosiphon pisum), *Candida albicans*, *Dictyostelium discoideum*, *Clostridium perfringens* str. 13, *Medicago truncatula*, *Clostridium tetani* E88, *Borrelia bisettii*, *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Pythium oligandrum*, *Streptococcus agalactiae* NEM316, *Solanum tuberosum*, *Saccharomyces cerevisiae*, *Prototheca wickerhamii*"
- 6550 6680 32 "Plasmodium falciparum 3D7, *Mus musculus*, *Danio rerio*, *Dictyostelium discoideum*, *Homo sapiens*, *Arabidopsis thaliana*, *Papio anubis*, *Caenorhabditis elegans*, *Didelphis virginiana*, *Macaca fascicularis*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Warnstorfia fluitans*, *Loeskygnumbadium*, *Calliergus giganteum*, *Straminergon stramineum*, *Caenorhabditis briggsae*, *Oryctolagus cuniculus*, *Rattus norvegicus*"
- 6551 6681 42 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Pan troglodytes*, *Arabidopsis thaliana*, *Listeria monocytogenes*, *Cotesia ruficrus*, *Plasmodium falciparum*, *Medicago tru*"
- 6552 6682 35 "Buchnera aphidicola str. Bp (Baizongia pistaciae), *Caenorhabditis elegans*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Plasmodium falciparum*, *Dictyostelium discoideum*, *Candidatus Carsonella ruddii*, *Drosophila melanogaster*, *Medicago truncatula*, *Pan troglodytes*, *Arabidopsis thaliana*, *Danio rerio*, *Acraea encedana*, *Acraea encedon*, *Kluyveromyces lactis*, *Mycoplasma penetrans*, *Haemophilus ducreyi* 35000HP, *Chlamydomonas caviae* GPIC, *Ixodes persulcatus*, *Candida glabrata*, *Methanocaldococcus jannaschii*, *Conoplectus canaliculatus*, *Euura atra*, *Leptynia hispanica*, *Leptynia caprai*, *Tribolium castaneum*, *Candidatus Blochmannia floridanus*, *Lotus corniculatus* var. japonicus, *Glossina longipennis*, *Andrias davidianus*, *Rattus norvegicus*, *Saccharomyces douglasii*, *Acanthamoeba castellanii*"
- 6553 6683 31 "Danio rerio, *Homo sapiens*, *Arabidopsis thaliana*, *Mus mu*"

- sculus, *Ciona intestinalis*, *Caenorhabditis elegans*, *Flaveria pringlei*, *Caenorhabditis briggsae*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Medicago truncatula*, *Rattus norvegicus*, *Dictyostelium discoideum*, *Vibrio vulnificus* CMCP6, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Staphylococcus aureus*, *Mycoplasma pneumoniae*, *Lactobacillus delbrueckii* subsp. *bulgaricus*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Staphylococcus aureus* subsp. *aureus* N315, *Mycoplasma penetrans*, *Pan troglodytes*, *Gibbon ape leukemia virus*, *Hyalomma marginatum*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 6554 6684 31 "Sminthopsis macroura, *Homo sapiens*, *Mus musculus*, *Schizosaccharomyces pombe*, *Danio rerio*, *Caenorhabditis elegans*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group)" 10
- 6555 6685 24 "*Homo sapiens*, *Dictyostelium discoideum*, *Mus musculus*, *Arabis thaliana*, *Trypanosoma cruzi*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Danio rerio*"
- 6556 6686 27 "*Homo sapiens*, *Mus musculus*, *Leptospira interrogans* serovar *lai* str. 56601, *Pyrococcus horikoshii*, *Shigella flexneri* 2a str. 2457T, *Arabidopsis thaliana*, *Shigella flexneri* 2a str. 301, *Staphylococcus caprae*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*" 20
- 6557 6687 27 "*Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Didelphis virginiana*, *Methanosarcina mazei* Goe1, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*"
- 6558 6688 35 "*Homo sapiens*, *Oryza sativa* (indica cultivar-group), *Oryza sativa* (japonica cultivar-group), *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Streptococcus mutans* UA159, *Zea mays*, *Arabidopsis thaliana*, *Capsella rubella*, *Lactobacillus plantarum* WCFS1, *Danio rerio*, *Mus musculus*, *Bombyx mori*, *Viscum album* subsp. *album*"
- 6559 6689 68 "*Clostridium acetobutylicum*, *Leptospira interrogans* serovar *lai* str. 56601, *Clostridium tetani* E88, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Bacillus anthracis* str. Ames, *Thermoanaerobacter tengcongensis*, *Pyrococcus abyssi*, *Pyrococcus horikoshii*, *Homo sapiens*, *Drosophila melanogaster*, *Mus musculus*, *Helicobacter hepaticus* ATCC 51449, *Plasmodium falciparum* 3D7, *Papio anubis*, *Vibrio cholerae*" 30
- 6560 6690 50 "*Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Vibrio vulnificus* CMCP6, *Clostridium acetobutylicum*, *Listeria innocua*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Thermoanaerobacter tengcongensis*, *Vibrio cholerae*, *Pseudomonas putida*, *Oceanobacillus iheyensis* HTE831, *Vibrio parahaemolyticus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Mus musculus*, *Listeria monocytogenes*, *Homo sapiens*, *Danio rerio*, *Helicobacter hepaticus* ATCC 51449, *Clostridium tetani* E88, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168" 40
- 6561 6691 27 "*Homo sapiens*, *Mus musculus*, *Linaria vulgaris*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Pasteurella multocida*, *Oryza sativa* (japonica cultivar-group), *Hylobates lar*, *Listeria innocua*, *Danio rerio*, *Nitrosomonas europaea* ATCC 19718, *Candida albicans*, *Hylobates syndactylus*"
- 6562 6692 28 "*Homo sapiens*, *Mus musculus*, *Apis cerana*, *Danio rerio*, *Maca mulatta*, *Dictyostelium discoideum*, *Methanosarcina mazei* Goe1, *Caenorhabditis elegans*, *Felis catus*, *Thermoanaerobacter tengcongensis*, *Papio anubis*, *Pan troglodytes*, *Streptococcus agalactiae* NEM316, *Pyrococcus abyssi*, *Erinaceus europaeus*" 50

- s, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Helicobacter hepaticus* ATCC 51449"
- 6563 6693 24 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, *Caenorhabditis elegans*, *Mus musculus*, *Homo sapiens*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Ureaplasma urealyticum*, *Drosophila melanogaster*, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Erwinia chrysanthemi*, *Arabidopsis thaliana*, *Salmonella enterica* subsp. *enterica* serovar Typhi"
- 6564 6694 27 "Clostridium tetani E88, *Homo sapiens*, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Mus musculus*, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Brassica rapa*, *Danio rerio*" 10
- 6565 6695 28 "Homo sapiens, *Drosophila melanogaster*, Sheeppox virus, Macropodid herpesvirus 1, *Plasmodium falciparum* 3D7, *Mus musculus*, *Pyrococcus furiosus* DSM 3638, *Caenorhabditis elegans*"
- 6566 6696 30 "Mus musculus, *Danio rerio*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Pasteurella multocida*, *Haemophilus influenzae* Rd KW20, *Equus caballus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Chorthippus parallelus*, *Drosophila melanogaster*, *Lemur catta*, *Arabidopsis thaliana*, *Nicotiana tabacum*, *Plasmodium falciparum*, *Lucilia cuprina*, *Lactuca sativa*" 20
- 6567 6697 23 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Peripatus* sp. Per2, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis briggsae*, Human papillomavirus type 34"
- 6568 6698 25 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Pan troglodytes*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Brachymerium nepalense*, *Bryum wrightii*, *Bryum russulum*, *Rhodobryum keniae*, *Caenorhabditis elegans*, Prospect Hill virus, *Mycoplasma hominis*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Haplodontium reticulatum*, *Mielichhoferia elongata*, *Mielichhoferia bryoides*, *Pohlia bolanderi*, *Nostoc* sp. PCC 7120" 30
- 6569 6699 25 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Medicago truncatula*, *Clostridium tetani* E88, *Bacillus rossius tripolitanus*, *Lactococcus lactis* subsp. *lactis*, *Sulfolobus tokodaii*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 6570 6700 25 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Neurospora crassa*, *Mus musculus*"
- 6571 6701 30 "Homo sapiens, *Mus musculus*, *Naegleria gruberi*, *Rickettsia prowazekii*, *Myxine glutinosa*, *Danio rerio*, *Mycoplasma gallisepticum* R, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Listeria innocua*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. *aureus* Mu50" 40
- 6572 6702 26 "Mus musculus, *Homo sapiens*, *Allotoca regalis*, *Xenophorus captiva*, *Zoogoneticus quitzeoensis*, *Allotoca dugesii*, *Allotoca catarinae*, *Allotoca meeki*, *Allotoca diazi*, *Allotoca zacapuensis*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Rickettsia typhi*, *Halobacterium* sp. NRC-1, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Danio rerio*" 50

- 6573 6703 25 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Drosophila melanogaster"
- 6574 6704 32 "Homo sapiens, Mus musculus, Ixodes persulcatus, Rattus norvegicus, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Canine respiratory coronavirus, uncultured cercozoan, Bovine coronavirus, Porcine hemagglutinating encephalomyelitis virus, eukaryote marine clone ANT37-22, Geomys tropicalis, Geomys breviceps, Geomys attwateri, Human coronavirus OC43, Human enteric coronavirus 4408, Enterococcus hirae, Orthogeomys heterodus, Entamoeba polecki, Entamoeba struthionis, Methanocaldococcus jannaschii, Oryza sativa (japonica cultivar-group), Bacillus halodurans" 10
- 6575 6705 27 "Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Mus musculus, Lycopersicon esculentum, Naegleria gruberi, Caenorhabditis elegans, Arabidopsis thaliana, Bos taurus, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani E88, Avenzoaria phalaropi, Carabus brachypedilus, Sulfolobus tokodaii, Cryptosporidium parvum, Nostoc sp. PCC 7120, Clostridium perfringens str. 13"
- 6576 6706 25 "Homo sapiens, Prochlorococcus marinus subsp. marinus str. CCMP1375, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Oryctolagus cuniculus, Methanosarcina mazei Goe1, Mycoplasma penetrans, Xenopus laevis"
- 6577 6707 26 "Homo sapiens, Dictyostelium discoideum, Caenorhabditis elegans, Clostridium cellulovorans, Schistosoma japonicum, Mus musculus, Human papillomavirus" 20
- 6578 6708 32 "Homo sapiens, Plasmodium falciparum 3D7, Medicago truncatula, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Macaca fascicularis, Rickettsia prowazekii, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Fowlpox virus, Oryza sativa (japonica cultivar-group), Danio rerio, Dictyostelium discoideum, Gallus gallus, Lemur catta, Sminthopsis macroura, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Tetrahymena pyriformis, Yaba-like disease virus, Streptococcus agalactiae NEM316, Ichthyophthirius multifiliis, Methanocaldococcus jannaschii, Saccharomyces douglasii, Hyalomma truncatum, Teleogryllus taiwanemma, Clostridium perfringens str. 13" 30
- 6579 6709 25 "Danio rerio, Homo sapiens, Arabidopsis thaliana, Capsella rubella, Rattus sp., Rattus norvegicus, Plasmodium falciparum 3D7, Synechococcus sp. WH 8102, Porotermes adamsoni, Schistosoma intercalatum, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 6580 6710 25 "Homo sapiens, Saccharomyces cerevisiae"
- 6581 6711 24 "Homo sapiens, Lactococcus lactis subsp. lactis, Mus musculus, Escherichia coli CFT073, Caenorhabditis elegans, Yersinia pestis KIM, Pasteurella multocida, Yersinia pestis, Listeria monocytogenes, Yersinia pestis C092, Danio rerio" 40
- 6582 6712 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Medicago truncatula, Brassica oleracea, Rattus norvegicus, Drosophila melanogaster, Lotus corniculatus var. japonicus, Listeria innocua, Schizosaccharomyces pombe, Anopheles gambiae, Clostridium perfringens str. 13"
- 6583 6713 27 "Homo sapiens, Drosophila melanogaster, Mus musculus, Lactobacillus plantarum WCFS1, Methanocaldococcus jannaschii, Caenorhabditis elegans, Yersinia pestis KIM, Danio rerio, Saccharomyces cerevisiae, Yersinia pestis C092, Oryza sativa (japonica cultivar-group)" 50

- 6584 6714 31 "Homo sapiens, Mus musculus, Cyanophora paradoxa, Carabus porrecticollis, Carabus porrecticollis porrecticollis, Carabus porrecticollis kansaiensis, Rattus norvegicus, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Ceratitis rosa, Cryptocercus relictus, Carabus macrogonus, Carabus macrogonus giresunensis, Medicago truncatula, Danio rerio, Cryptocercus sp. MUDA3, Cryptocercus sp. MUDA2, Cryptocercus sp. MUDA1, Cryptocercus sp. SHUA2, Cryptocercus sp. SHUA1, Cryptocercus sp. XING1, Cryptocercus sp. JIRI3, Cryptocercus sp. JIRI2, Cryptocercus sp. JIRI1, Glycine max"
- 6585 6715 32 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Cryptosporidium parvum, Buchnera aphidicola str. Bp (Baizongia pistaciae), Caenorhabditis briggsae, Pedinomonas minor, Plasmodium falciparum 3D7, Danio rerio, Papio anubis, Sus scrofa, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Staphylococcus epidermidis ATCC 12228, Pan troglodytes, secondary endosymbiont of Erium globosum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus, Ureaplasma urealyticum, Plasmodium falciparum, Staphylococcus epidermidis, Tetrahymena thermophila, Bacillus ohbensis, Helicobacter pylori 26695, Lumbriculus variegatus" 10
- 6586 6716 23 "Homo sapiens, Dictyostelium discoideum, Campylobacter jejuni subsp. jejuni NCTC 11168, Escherichia coli CFT073, Chlamydomonas pneumoniae CWL029, Bankera fuligineoalba, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae TW-183, Danio rerio, Chlamydomonas pneumoniae J138, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Gossypium hirsutum, Oryza sativa, Lactococcus lactis subsp. lactis, Ceratodon purpureus, Oreochromis niloticus" 20
- 6587 6717 28 "Homo sapiens, Mus musculus, Sulfolobus solfataricus, Mesostigma viride, Pyrococcus abyssi, Locusta migratoria, Streptococcus mutans UA159, Caenorhabditis elegans, Oryza sativa (indica cultivar-group), Caenorhabditis briggsae, Corynebacterium efficiens YS-314, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Danio rerio, Schizosaccharomyces pombe" 30
- 6588 6718 25 "Homo sapiens, Danio rerio, Lotus corniculatus var. japonicus, Ciona intestinalis, Caenorhabditis elegans, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Ficus carica, Lactobacillus bacteriophage phi adh, Pan troglodytes, Albatrellus skamianus, Albatrellus flettii, Arabidopsis thaliana"
- 6589 6719 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Lupinus luteus, Danio rerio, Tetrodonophora bielensis, Oryza sativa (japonica cultivar-group), Equus caballus"
- 6590 6720 29 "Mus musculus, Homo sapiens, Pan troglodytes, Farfantepenaeus duorarum, Oryza sativa (japonica cultivar-group), Methanosarcina acetivorans C2A, Oryza sativa, Drosophila melanogaster, Rattus norvegicus, Plasmodium falciparum 3D7, Papio anubis, Arabidopsis thaliana, Prochlorococcus marinus, Mycoplasma hyopneumoniae, Lotus corniculatus var. japonicus, Danio rerio, Listeria monocytogenes, Botryotinia fuckeliana"
- 6591 6721 40 "Streptococcus agalactiae 2603V/R, Homo sapiens, Lactococcus lactis subsp. lactis, Streptococcus agalactiae NEM316, Shewanella oneidensis MR-1, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Caenorhabditis elegans, Arabidopsis thaliana, Aeropyrum pernix" 40

- 6592 6722 28 "Lactococcus lactis subsp. lactis, Homo sapiens, Takifugu rubripes, Mus musculus, Carollia perspicillata, Rattus norvegicus, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group)"
- 6593 6723 27 "Homo sapiens, Danio rerio, Staphylococcus epidermidis, Drosophila melanogaster, Medicago truncatula, Arabidopsis thaliana, Borrelia burgdorferi B31, Mus musculus, Caenorhabditis elegans, Listeria innocua, Rattus norvegicus, Macaca mulatta, Staphylococcus epidermidis ATCC 12228, Methanosarcina acetivorans C2A, Rickettsia conorii, Papio anubis, Corynebacterium efficiens YS-314, Macaca fascicularis, Kluyveromyces lactis, Kluyveromyces marxianus, Haemophilus ducreyi 35000HP, Macaca nemestrina, Macaca fuscata, Corynebacterium efficiens" 10
- 6594 6724 24 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Cryptosporidium parvum, Danio rerio, Drosophila melanogaster, Thermoanaerobacter tengcongensis, Caenorhabditis elegans, Pirellula sp."
- 6595 6725 29 "Enterococcus faecalis V583, Homo sapiens, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Mus musculus, Helicobacter pylori 26695, Nostoc sp. PCC 7120, Rattus norvegicus, Synechocystis sp. PCC 6803" 20
- 6596 6726 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Otholobium sericeum, Oryza sativa, Caenorhabditis elegans, Neurospora crassa, Bacillus anthracis str. Ames, Dictyostelium discoideum, Methanosarcina acetivorans C2A, Lactococcus lactis subsp. lactis, Arabidopsis thaliana, Plasmodium berghei, Danio rerio, Plasmodium falciparum 3D7, Schmidtea mediterranea, Cucumber mosaic virus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Brassica carinata, Rhodomonas salina, Cloning vector pSB4, synthetic construct, Binary cloning vector pAC161, Transformation binary vector pBAR-35S, Schizosaccharomyces pombe, Ciona intestinalis, Felis catus, Vararia sphaericospora, Anthocidaris crassispinosa, Cauliflower mosaic virus" 30
- 6597 6727 44 "Mus musculus, Danio rerio, Lycopersicon esculentum, Lycopersicon pimpinellifolium, Medicago truncatula, Dictyostelium discoideum, Homo sapiens, Cyprinus carpio, Drosophila melanogaster, Plasmodium falciparum, Schmidtea mediterranea, Plasmodium falciparum 3D7, Solea senegalensis, Oryza sativa, Saccharomyces cerevisiae, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Drosophila littoralis"
- 6598 6728 28 "Mus musculus, Homo sapiens, Cryptosporidium parvum, Arabidopsis thaliana, Oceanobacillus ihayensis HTE831, Drosophila melanogaster, Caenorhabditis elegans, Andropadus importunus, Prochlorococcus marinus, Deinococcus radiodurans, Gallus gallus, Dictyostelium, Pseudomonas syringae" 40
- 6599 6729 28 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Sida yellow mosaic virus-[Brazil], Sida mottle virus-[Brazil], Arabidopsis thaliana, Saccharomyces cerevisiae, Rattus norvegicus"
- 6600 6730 36 "Oryza sativa (japonica cultivar-group), Homo sapiens, Methanosarcina acetivorans C2A, Caenorhabditis elegans, Hypocrea jecorina, Torula spora delbrueckii, Mus musculus, Lycopersicon esculentum, Plasmodium berghei, Lactococcus lactis subsp. lactis, Danio rerio"
- 6601 6731 24 "Homo sapiens, Zea mays, Drosophila melanogaster, Mus musculus, Danio rerio, Caenorhabditis elegans"
- 6602 6732 29 "Mycoplasma pulmonis, Mus musculus, Caenorhabditis elegans" 50

- ns, *Drosophila melanogaster*, *Danio rerio*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Lactococcus lactis* subsp. *lactis*, Bacteriophage bIL286, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oceanobacillus iheyensis* HT E831, *Helicobacter hepaticus* ATCC 51449, *Cyprinus carpio*"
- 6603 6733 27 "Xenopus laevis, *Mus musculus*, synthetic construct, *Homo sapiens*, *Rattus norvegicus*, *Leptospira interrogans* serovar lai str. 56601, *Schistosoma japonicum*, *Caenorhabditis elegans*, *Helicobacter pylori* J99"
- 6604 6734 28 "Homo sapiens, *Mus musculus*, *Cuneopsis rufescens*, *Xylocopa appendiculata circumvolans*, *Xylocopa acutipennis*, *Sus scrofa*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Arabidopsis thaliana*, *Xylocopa lieftincki*, *Xylocopa aruana*, *Staphylococcus epidermidis*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Lactococcus lactis*, *Clostridium thermocellum*, *Caenorhabditis elegans*, *Bacillus anthracis* str. Ames, *Medicago truncatula*, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Culex tarsalis*, *Simulium piperi*, *Simulium aureum* G, *Simulium aureum* B, *Drosophila engyochracea x hawaiiensis*, *Cheilosia orthotricha*, *Labeo rohita*, *Sulfolobus solfataricus*, *Xenopus laevis*, *Oceanobacillus iheyensis* HTE831, *Rhipicephalus sanguineus*, *Rhagoletis electromorpha*, *Flaveria trinervia*, *Nicotiana tabacum*, *Cordyceps militaris*" 10
- 6605 6735 24 "Arabidopsis thaliana, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, Human coronavirus 229E, *Glycine max*, *Haemophilus influenzae* Rd KW20, *Oryzias latipes*" 20
- 6606 6736 36 "Danio rerio, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Pan troglodytes*, *Streptococcus agalactiae* 2603V/R, *Methanosarcina acetivorans* C2A, *Streptococcus agalactiae* NEM316, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Drosophila melanogaster*, *Xenopus laevis*"
- 6607 6737 29 "Drosophila melanogaster, *Homo sapiens*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Mus musculus*, *Clostridium acetobutylicum*, *Glycine max*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Chlamydomonas reinhardtii* CWL029, *Oenothera "* 30
- 6608 6738 51 "Mus musculus, *Homo sapiens*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Clostridium perfringens* str. 13"
- 6609 6739 28 "Homo sapiens, *Methanosarcina acetivorans* C2A, *Mus musculus*, *Lycopersicon esculentum*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Coturnix japonica*, *Danio rerio*, *Caenorhabditis elegans*, *Plasmodium yoelii*"
- 6610 6740 25 "Caenorhabditis elegans, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Candidatus Carsonella ruddii*, *Fusobacterium nucleatum* subsp. *fusiforme*, *Mus musculus*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Streptococcus pneumoniae*, *Rattus norvegicus*, *Macaca fascicularis*, *Bacillus halodurans*" 40
- 6611 6741 35 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mycoplasma pulmonis*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Rattus norvegicus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Chlamydomonas reinhardtii* GPIC, *Anopheles gambiae*, *Thermoanaerobacterium thermosulfurigenes*, *Danio rerio*, *Euglena longa*, *Zymomonas mobilis*"
- 6612 6742 25 "Mus musculus, *Homo sapiens*, *Lotus corniculatus* var. japonicus, *Clostridium perfringens* str. 13, *Danio rerio*"
- 6613 6743 40 "Mus musculus, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, A 50

- cidarella circumvaga*, *Glycine max*, *Borrelia burgdorferi* B31, *Medicago truncatula*, *Ceratitidis rosa*, *Methanosarcina acetivorans*"
- 6614 6744 32 "Plasmodium falciparum 3D7, *Homo sapiens*, *Mus musculus*, *Hentzia palmarum*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Leuconostoc mesenteroides* subsp. *cremoris*, *Bacillus anthracis* str. Ames, *Leptospira interrogans* serovar *lai* str. 56601, *Pan troglodytes*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, TT virus, *Danio rerio*, *Methanocaldococcus jannaschii*, *Ovis aries*, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Caenorhabditis elegans*, *Polypterus bichir*, *Stephanomeria tenuifolia*, *Bacillus anthracis* str. A2012, *Canis familiaris*, *Chondrus crispus*, *Bungarus flaviceps*, *Mycoplasma penetrans*, *Tetrahymena thermophila*, *Bacillus anthracis*, *Dohnophora trigonae*, *Xenopus laevis*" 10
- 6615 6745 32 "Plasmodium falciparum 3D7, *Bombyx mori*, *Homo sapiens*, *Dictyostelium discoideum*, *Mus musculus*, *Danio rerio*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Glossina morsitans morsitans*, *Arabidopsis thaliana*, *Saccharomyces kluyveri*, *Oryza sativa* (*japonica* cultivar-group), *Anopheles gambiae*, *Oryzias latipes*, *Xenopus laevis*, *Corcyra cephalonica*, *Zea mays*, *Papio anubis*, *Pisum sativum*, *Daucus carota*, *Lotus corniculatus* var. *japonicus*, *Trypanosoma cruzi*, *Rana catesbeiana*, *Trypanosoma brucei*, *Plasmodium falciparum*, *Brugia malayi*, *Schistosoma mansoni*" 20
- 6616 6746 24 "Danio rerio, *Mus musculus*, *Sceloporus undulatus* tedbrowni, *Drosophila melanogaster*, *Homo sapiens*, *Babesia bovis*, *Oryza sativa* (*japonica* cultivar-group), *Nostoc* sp. PCC 7120"
- 6617 6747 31 "Homo sapiens, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Danio rerio*, *Luculia grandifolia*, *Chlamydomonas reinhardtii* GPIC, *Dictyostelium discoideum*, *Sus scrofa*, *Mus musculus*, *Prochlorococcus marinus*, *Enterobacter cloacae*, *Arabidopsis thaliana*, *Klebsiella pneumoniae*, *Salmonella typhi*, *Populus kitakamiensis*, *Salmonella enteritidis*, Plasmid P4, *Caecilius quercus*, *Muscoflorschuetzia pilmaiquen*, *Diphyscium perminutum*, *Plasmodium falciparum* 3D7, *Saccharomyces cerevisiae*, *Clostridium acetobutylicum*, *Candidatus Blochmannia floridanus*, *Lactococcus lactis*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces uvarum*, *Beta procumbens*" 30
- 6618 6748 36 "Homo sapiens, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Mus musculus*, *Dictyostelium discoideum*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila littoralis*, *Rat cytomegalovirus* Maastricht, *Human immunodeficiency virus 1*, *Leptodora kindtii*, *Arabidopsis thaliana*, *Prototheca wickerhamii*, *Medicago truncatula*, *Drosophila melanogaster*, *Borrelia burgdorferi* B31, *Oryctolagus cuniculus*, *Goatpox virus*, *Sheeppox virus*, *Solenopsis globularia littoralis*, *Lumpy skin disease virus*, *Clostridium thermocellum*, *Caenorhabditis briggsae*, *Podospora anserina*, *Brettanomyces naardenensis*, *Canis familiaris*, *Plasmodium berghei*, *Mycoplasma penetrans*, *Cryptosporidium parvum*, *Pyrococcus horikoshii*, *Neomysis integer*, *Rattus norvegicus*, *Bryum donianum*, *Vicia faba*, *Musca domestica*" 40
- 6619 6749 57 "Brucella melitensis 16M, *Brucella suis* 1330, *Enterococcus faecalis* V583, *Mesorhizobium loti*, *Clostridium acetobutylicum*, *Nephroselmis olivacea*, *Chlamydomonas reinhardtii* GPIC, *Chlorella virus* K2, *Mesostigma viride*, *Thermosynechococcus elongatus* BP-1, *Prochlorococcus*"
- 6620 6750 31 "Mus musculus, *Lotus corniculatus* var. *japonicus*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Danio rerio*, *Gloriosa superba*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, SVTS2 plectrovirus 50

- , *Oryza sativa* (japonica cultivar-group), *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Nostoc* sp. PCC 7120, *Medicago truncatula*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Vibrio parahaemolyticus*, *Drosophila montana*, *Mesembryanthemum crystallinum*, *Haemophilus influenzae* Rd KW20, *Candida albicans* SC5314"
- 6621 6751 33 "Dictyostelium discoideum, Plasmodium falciparum 3D7, Homo sapiens, Technomyrmex sp. ACKZ, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Medicago truncatula, Solanum bulbocastanum, Arabidopsis thaliana, Hemiptelea davidii, Ul" 10
- 6622 6752 33 "Homo sapiens, Mus musculus, Zea mays, Arabidopsis thaliana, Helicobacter pylori J99, Pan troglodytes, Oryza sativa (japonica cultivar-group), Thermoplasma volcanium, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Borrelia garinii, Borrelia afzelii, Clostridium perfringens str. 13"
- 6623 6753 53 "Escherichia coli, Helicobacter hepaticus ATCC 51449, Citrobacter rodentium, Clostridium acetobutylicum, Homo sapiens, Clostridium tetani E88, Yersinia pestis KIM, Mus musculus, Yersinia pestis C092"
- 6624 6754 89 "Oceanobacillus iheyensis HTE831, Chlamydophila caviae GPIC, Mus musculus, Clostridium acetobutylicum, Zygosaccharomyces rouxii, Chlamydia muridarum, Homo sapiens, Equus caballus, Clostridium tetani E88, Listeria monocytogenes, Thermoanaerobacter tengcongensis, Borrelia burgdorferi, Arabidopsis thaliana, Listeria innocua" 20
- 6625 6755 35 "Buchnera aphidicola (Pemphigus spyrothecae), Chlamydia trachomatis, Chlamydophila caviae GPIC, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Chlamydophila pneumoniae TW-183, Yersinia enterocolitica, Yersinia pestis, Arabidopsis thaliana, Homo sapiens, Yersinia pseudotuberculosis, Yersinia pestis KIM, Mus musculus, Gallus gallus, Saccharomyces unisporus, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Streptomyces avermitilis MA-4680, Mesorhizobium loti, Chlamydophila pneumoniae" 30
- 6626 6756 27 "Streptococcus agalactiae 2603V/R, Dictyostelium discoideum, Streptococcus agalactiae NEM316, Chromobacterium violaceum, Oryza sativa (japonica cultivar-group), Cicer arietinum, Homo sapiens, Clostridium acetobutylicum, Mus musculus, Caenorhabditis elegans, Corynebacterium glutamicum ATCC 13032"
- 6627 6757 27 "Cucumis sativus, Homo sapiens, Mus musculus"
- 6628 6758 25 "Homo sapiens, Clostridium perfringens str. 13, Lemur catta, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Pennisetum glaucum, Spermophilus beecheyi, Marmota monax, Atelerix albiventris, Arabidopsis thaliana, Pinus radiata, Oryza sativa (japonica cultivar-group), Danio rerio" 40
- 6629 6759 27 "Homo sapiens, Mus musculus, Felis catus, Escherichia coli, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Methanocaldococcus jannaschii, Botryllus schlosseri, Plasmid F, Salmonella typhimurium"
- 6630 6760 27 "Zea mays, Homo sapiens, Clostridium acetobutylicum, Mus musculus, Mycoplasma penetrans, Caenorhabditis elegans, Lactococcus lactis subsp. lactis, Oryza sativa (japonica cultivar-group), Reclinomonas americana, Obliquaria reflexa, Danio rerio, Arabidopsis thaliana"
- 6631 6761 27 "Danio rerio, Homo sapiens, Bacillus subtilis subsp. sub" 50

- tilis str. 168, *Bacillus subtilis*, *Clostridium acetobutylicum*, *Caenorhabditis briggsae*, *Mycoplasma genitalium*"
- 6632 6762 28 "Mus musculus, Pan troglodytes, Homo sapiens, Papio anubis, Heliothis zea virus 1, *Caenorhabditis elegans*, *Danio rerio*, *Leptospira interrogans* serovar lai str. 56601, *Prionurus laticlavus*, *Malawimonas jakobiformis*, *Streptococcus agalactiae* 2603V/R, *Staphylococcus aureus* phage phi 12, *Bacteroides fragilis*, *Saccharomyces cerevisiae*, *Mycoplasma pulmonis*, *Streptococcus agalactiae* NEM316, *Candidatus Blochmannia floridanus*, *Leptospira interrogans* serovar lai, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. aureus MW2, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Medicago truncatula*" 10
- 6633 6763 23 "Mus musculus, Homo sapiens, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Schizosaccharomyces japonicus*, *Caenorhabditis elegans*, *Bacteriophage AR1*, *Danio rerio*, *Enterobacteria phage RB69*, *Oryza sativa* (japonica cultivar-group)"
- 6634 6764 23 "Homo sapiens, *Danio rerio*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Vibrio vulnificus* CMCP6, *Plasmodium falciparum* 3D7, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Clostridium acetobutylicum*, *Streptococcus pyogenes* M1 GAS, *Neisseria meningitidis* Z2491, *Caenorhabditis briggsae*, *Neisseria meningitidis* MC58, *Streptococcus pyogenes* SSI-1, *Ciona intestinalis*" 20
- 6635 6765 23 "Homo sapiens, *Gallus gallus*, *Ciona intestinalis*, *Shigella flexneri* 2a str. 2457T, *Pan troglodytes*, *Drosophila willistoni*, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Thermoplasma acidophilum*, *Oryza sativa* (japonica cultivar-group), *Candida albicans*, *Danio rerio*"
- 6636 6766 26 "*Listeria monocytogenes*, *Caenorhabditis elegans*, *Brassica oleracea*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Borrelia burgdorferi* B31, *Homo sapiens*, *Drosophila melanogaster*, *Bacillus subtilis*, *Arabidopsis thaliana*, *Bacillus subtilis* subsp. subtilis str. 168, *Borrelia burgdorferi*, *Clostridium tetani* E88, *Polypterus bichir*, *Swinepox virus*, *Chthamalus panamensis*, *Agrobacterium tumefaciens*, *Oceanobacillus iheyensis* HTE831, *Danio rerio*, *Rattus norvegicus*" 30
- 6637 6767 25 "Homo sapiens, *Clostridium tetani* E88, *Mus musculus*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Xenopus laevis*, *Mascaca fascicularis*"
- 6638 6768 24 "*Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Lotus corniculatus* var. japonicus, *Xenopus laevis*, *Clostridium perfringens* str. 13"
- 6639 6769 31 "*Mus musculus*, *Bacillus subtilis*, *Bacillus subtilis* subsp. subtilis str. 168, *Homo sapiens*, *Aquifex aeolicus* VF5, *Caulobacter crescentus* CB15, *Culex nigripalpus* baculovirus, *Pyrococcus horikoshii*, *Danio rerio*" 40
- 6640 6770 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Rice tungro bacilliform virus*, *Schizosaccharomyces pombe*, *Mus musculus*, *Bacillus* sp. LU11, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Arabidopsis thaliana*, *Nostoc* sp. PCC 7120"
- 6641 6771 28 "*Danio rerio*, *Homo sapiens*, *Klebsormidium subtilissimum*, *Pirellula* sp., *Mus musculus*"
- 6642 6772 36 "Homo sapiens, *Mus musculus*, *Clostridium acetobutylicum*, *Plasmodium falciparum* 3D7, *Bacillus subtilis* subsp. subtilis str. 168, *Danio rerio*, *Bacillus subtilis*, *Drosophila melanogaster*, *Enterococcus faecalis*, *Streptococcus agalactiae* 2603V/R, *Thermoanaerobacter tengcongensis*, *Streptococcus pneumo* 50

- niae, *Arabidopsis thaliana*, Cloning vector pAM120, *Oryza sativa* (japonica cultivar-group), *Helicobacter hepaticus* ATCC 51449"
- 6643 6773 27 "Mus musculus, Homo sapiens, Danio rerio, Macaca fascicularis, Methanosarcina mazei Goe1, Yersinia pestis KIM, Yersinia pseudotuberculosis, Prochlorococcus marinus, Arabidopsis thaliana, Plasmodium falciparum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Yersinia pestis, Enterobacteria phage RB49, Yersinia pestis C092, Bartonella tribocorum, Nicotiana tabacum, Clostridium perfringens str. 13"
- 6644 6774 23 "Oryza sativa (japonica cultivar-group), Homo sapiens, Arabidopsis thaliana, Mus musculus, Caenorhabditis briggsae, Lytechinus variegatus, Rattus norvegicus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Clostridium tetani E88, Caenorhabditis elegans, Plasmodium falciparum 3D7, Bacillus subtilis, Dictyostelium discoideum, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Saccharomyces cerevisiae, Prochlorococcus marinus subsp. marinus str. CCMP1375, Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Tetrahymena thermophila" 10
- 6645 6775 23 "Oryza sativa (japonica cultivar-group), Homo sapiens, Takifugu rubripes, Bacteroides thetaiotaomicron VPI-5482, Swietenia macrophylla, Mus musculus, Macaca fascicularis, Macaca mulatta, Macaca fuscata, Arabidopsis thaliana" 20
- 6646 6776 23 "Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Dictyostelium discoideum, Homo sapiens, Sus scrofa, Danio rerio, Staphylococcus aureus, Hirudo medicinalis, Staphylococcus aureus subsp. aureus N315, Leptomonas lactosovorans, Entamoeba histolytica, Staphylococcus aureus subsp. aureus Mu50"
- 6647 6777 24 "Schizosaccharomyces pombe, Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Rattus norvegicus, Arabidopsis thaliana"
- 6648 6778 27 "Homo sapiens, Listeria innocua, Mus musculus, Chlamydomonas reinhardtii, Rattus norvegicus, Arabidopsis thaliana, Emericella nidulans, Cricetulus griseus, Danio rerio, synthetic construct, Staphylococcus aureus phage phi 11, Oryza sativa (japonica cultivar-group), Peanut bud necrosis virus, Tomato big bud phytoplasma" 30
- 6649 6779 23 "Pinus elliottii, Homo sapiens, Rattus norvegicus, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7"
- 6650 6780 28 "Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGA S8232, Streptococcus pyogenes M1 GAS, Clostridium perfringens, Streptococcus pyogenes SSI-1, Schizosaccharomyces pombe, Clostridium perfringens str. 13"
- 6651 6781 27 "Thermoplasma volcanium, Homo sapiens, Drosophila melanogaster, Mus musculus, Streptococcus agalactiae 2603V/R, Sorghum bicolor, Dictyostelium discoideum, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group), Branchiostoma lanceolatum, Branchiostoma floridae" 40
- 6652 6782 27 "Homo sapiens, Pan troglodytes, Mus musculus, Clostridium tetani E88, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Plasmodium falciparum 3D7, Borrelia burgdorferi, Staphylococcus epidermidis, Bacillus halodurans, Danio rerio, Candida albicans"
- 6653 6783 29 "Homo sapiens, Drosophila melanogaster, Mus musculus, Takifugu rubripes, Arabidopsis thaliana, Magnaporthe grisea, Streptococcus pyogenes" 50

- s MGAS8232, *Oryza sativa* (japonica cultivar-group), *Danio rerio*"
- 6654 6784 39 "Drosophila melanogaster, Plasmodium falciparum 3D7, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Saccharomyces douglasii*, *Homo sapiens*, *Mus musculus*, *Medicago truncatula*, *Salmonella typhimurium* LT2, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oryza sativa*, *Phaseolus vulgaris*, *Lotus corniculatus* var. *japonicus*, *Megastigmus spermatrophus*, *Saccharomyces exiguus*, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Brassiaophoenix schumannii*, *Streptococcus agalactiae*, *Rattus norvegicus*, *Bacillus anthracis* str. Ames, *Bacteroides thetaiotaomicron* VPI-5482, *Pan troglodytes*, *Lepidium perfoliatum*, *Sus scrofa*, *Sorghum bicolor*, *Plasmodium falciparum*, *Vespula vulgaris*, *Solanum tuberosum*, *Mandarina polita*, *Mandarina aureola*" 10
- 6655 6785 24 "*Mus musculus*, *Homo sapiens*, *Saccharomyces cerevisiae*, *Danio rerio*, *Papio anubis*"
- 6656 6786 25 "*Homo sapiens*, *Danio rerio*, *Papio hamadryas*, *Triteleia montana*, *Triteleia lemmoniae*, *Arabidopsis thaliana*, *Helicoverpa zea* single nucleocapsid nucleopolyhedrovirus, *Helicoverpa armigera* nuclear polyhedrosis virus, *Helicoverpa armigera* nucleopolyhedrovirus G4, *Sulfolobus tokodaii*, *Mus musculus*, *Ralstonia solanacearum*"
- 6657 6787 23 "*Caenorhabditis elegans*, *Mus musculus*, *Coxiella burnetii* RSA 493, *Homo sapiens*, Human immunodeficiency virus 1, *Uroleucon caligatum*, *Uroleucon sonchi*, *Uroleucon rapunculoidis*, *Uroleucon solidaginis*, *Uroleucon jaceae*, *Uroleucon aeneum*, *Uroleucon astronomus*, *Uroleucon rudbeckiae*, *Uroleucon ambrosiae*, *Uroleucon rurale*, *Uroleucon helianthicola*" 20
- 6658 6788 24 "*Mus musculus*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Vibrio cholerae*"
- 6659 6789 33 "*Caenorhabditis elegans*, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Homo sapiens*, *Triatoma dimidiata*, *Streptococcus agalactiae* NEM 316, *Lotus corniculatus* var. *japonicus*, *Mycoplasma penetrans*, *Rattus norvegicus*, *Staphylococcus epidermidis* ATCC 12228, *Cortinarius calochrous*, *Mycoplasma pulmonis*, *Plasmodium falciparum* 3D7, *Pyrococcus horikoshii*, *Bacillus anthracis* str. Ames, *Enterococcus faecalis* V583, *Pan troglodytes*, *Dictyostelium discoideum*, *Leishmania major*, *Drosophila melanogaster*, *Papio anubis*, *Cortinarius volviornatus*, *Cortinarius achrous*, *Solanum tuberosum*, *Enterococcus faecalis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Tribolium castaneum*, *Rickettsia prowazekii*, *Bombyx mori*" 30
- 6660 6790 27 "*Homo sapiens*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis briggsae*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Porcine rubulavirus*" 40
- 6661 6791 32 "*Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Sulfolobus tokodaii*, *Homo sapiens*, *Vibrio vulnificus* CMCP6, *Staphylococcus epidermidis* ATCC 12228, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pasteurella multocida*, *Oryza sativa* (japonica cultivar-group), *Listeria innocua*, *Mus musculus*, *Enterococcus faecalis* V583, *Clostridium tetani*, *Streptococcus mutans* UA159, *Mycoplasma pulmonis*, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Danio rerio*, *Chlamydophila pneumoniae* TW-183"
- 6662 6792 31 "*Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Sulfolobus tokodaii*, *Danio rerio*, *Hepatitis B virus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group)" 50

- 6663 6793 35 "Clostridium perfringens str. 13, Homo sapiens, Mus musculus, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Plasmodium falciparum 3D7, Polyorchis penicillatus, Arabidopsis thaliana, Caenorhabditis elegans, Caenorhabditis briggsae, Ureaplasma urealyticum, Oceanobacillus iheyensis HTE831, Bombyx mori, Oryza sativa (japonica cultivar-group), Encephalitozoon cuniculi, Nitrosomonas europaea ATCC 19718, Nostoc sp. PCC 7120"
- 6664 6794 23 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Drosophila melanogaster, Danio rerio, Lotus corniculatus var. japonicus, Zymomonas mobilis, Thermosynechococcus elongatus BP-1, Oncorhynchus mykiss, Bacillus thuringiensis" 10
- 6665 6795 31 "Rattus norvegicus, Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis elegans, Arabidopsis thaliana, Drosophila melanogaster, Pan troglodytes, Casimira sp. CDvD-2003, Plasmodium falciparum 3D7, Rickettsia conorii, Oryza sativa (japonica cultivar-group), Schizanthus pinnatus, Trypanosoma cruzi, Prochlorococcus marinus subsp. marinus str. CCMP1375, Dictyostelium firmibasis, Entamoeba histolytica, Plasmodium falciparum, Helicobacter hepaticus ATCC 51449, Xenopus laevis"
- 6666 6796 28 "Dictyostelium discoideum, Homo sapiens, Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana, Clostridium difficile, Ovis aries, Pan troglodytes, Borrelia burgdorferi B31, Drosophila melanogaster, Methanosarcina mazei Goe1, Campylobacter jejuni, Plasmodium falciparum, Danio rerio, Oryza sativa (japonica cultivar-group), Psilotum nudum, Borrelia burgdorferi" 20
- 6667 6797 27 "Papio anubis, Oryza sativa (japonica cultivar-group), Pan troglodytes, Drosophila melanogaster, Schizosaccharomyces japonicus, Homo sapiens, Danio rerio, Borrelia burgdorferi B31, Mus musculus, Ectinorhynchus sp. LR C-2002, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Orussus terminalis"
- 6668 6798 34 "Elaeis oleifera, Barcella odora, Homo sapiens, Mus musculus, Oryzias latipes, Plasmodium falciparum 3D7, Pan troglodytes, Dictyostelium discoideum, Campylophyllum halleri, Clostridium acetobutylicum, Buchnera aphidicola, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Bacillus cereus ATCC 14579, Drosophila melanogaster, Caenorhabditis elegans, Hygrohypnum smithii, Gallus sp., Pear blister canker viroid PBCVd, Mycoplasma pulmonis, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis briggsae, Arabidopsis thaliana, Marchantia polymorpha, Pohlia cruda, Leptostomum macrocarpum, Bacillus subtilis subsp. subtilis str. 168, Lactobacillus acidophilus, Clostridium perfringens str. 13" 30
- 6669 6799 27 "Mus musculus, Caenorhabditis briggsae, Danio rerio, Homo sapiens, Bacillus halodurans, Human immunodeficiency virus 1, Macaca mulatta" 40
- 6670 6800 29 "Acanthostichus brevicornis, Homo sapiens, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Temnoplectron involucre, Epimeria georgiana, Amphichaeta raptisae, Eurythenes gryllus, Bacillus anthracis str. Ames, Oryza sativa (japonica cultivar-group), Styloscolex baicalensis, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Helicobacter pylori, Coccotrypes fallax, Hypochlora alba, Chrysoritis pyrois, Scaphinotus bilobus, Pan troglodytes, Hypopus occidentalis, Hordeum vulgare subsp. vulgare"
- 6671 6801 31 "Clostridium acetobutylicum, Homo sapiens, Drosophila melanogaster, Mus musculus, Danio rerio"
- 6672 6802 31 "Homo sapiens, Saccharomyces cerevisiae, Mus musculus, C 50

- onocephalum conicum, *Oryza sativa*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Methanosarcina mazei* Goe1, *Arabidopsis thaliana*, *Clostridium botulinum*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus acidocaldarius*"
- 6673 6803 35 "Equus caballus, Homo sapiens, Mus musculus, Habrotricha constricta, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Dictyostelium discoideum, Caenorhabditis elegans, Adenoviral vector Ad-SAR1-x/ASX, Leucopogon crassifloru"
- 6674 6804 35 "Arabidopsis thaliana, Helicobacter pylori J99, Homo sapiens, Streptococcus pyogenes MGAS315, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Oryza sativa (japonica cultivar-group), Clostridium perfringens, Mus musculus, Caenorhabditis elegans, Streptococcus pyogenes MGAS8232, Ciona intestinalis, Danio rerio, Mycoplasma gallisepticum R, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Pan troglodytes, Dendroctonus jeffreyi, Gallus gallus, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Tribolium castaneum, Lotus corniculatus var. japonicus, Listeria innocua, Pterygoplichthys zuliaensis, Methanocaldococcus jannaschii, Torpedo californica"
- 6675 6805 24 "Homo sapiens, Schizosaccharomyces pombe, Caenorhabditis elegans, Eimeria tenella, Mus musculus, Chilo iridescent virus, Danio rerio, Sulfolobus tokodaii, Oryza sativa (japonica cultivar-group), Tetrahymena thermophila"
- 6676 6806 27 "Mus musculus, Dictyostelium discoideum, Homo sapiens, Mycoplasma pneumoniae, Danio rerio"
- 6677 6807 32 "Danio rerio, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Mus musculus, Antheraea pernyi, Medicago truncatula, Drosophila willistoni, Arabidopsis thaliana, Papio anubis, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Adoxophyes orana granulovirus, Oryza sativa (japonica cultivar-group), Mycoplasma gallisepticum R, Borrelia burgdorferi B31, Pan troglodytes, Plasmodium falciparum 3D7, Hemipteris americana, Alcelaphine herpesvirus 1, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Borrelia burgdorferi, Schistosoma mansoni"
- 6678 6808 27 "Mus musculus, Medicago sativa, Homo sapiens, Prochlorococcus marinus, Rattus norvegicus, Sulfolobus solfataricus, Medicago truncatula, Stylosanthes humilis"
- 6679 6809 28 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Atelerix albiventris, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Sulfolobus tokodaii, Schizosaccharomyces pombe, Macaca fascicularis"
- 6680 6810 27 "Mus musculus, Homo sapiens, Clostridium perfringens str. 13, Prunus dulcis, Lotus corniculatus var. japonicus, Shinisaurus crocodilurus, Notacanthus chemnitzii, Nicotiana tabacum"
- 6681 6811 23 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Arabidopsis thaliana, Danio rerio, Oryza sativa"
- 6682 6812 27 "Mus musculus, Arabidopsis thaliana, Lemur catta, Homo sapiens, Medicago truncatula, Drosophila melanogaster, Partula nodosa, Danio rerio, Pisum sativum, Caenorhabditis elegans"
- 6683 6813 25 "Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus, Staphylococcus aureus subsp.

- aureus Mu50, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Oryza sativa*, *Ureaplasma urealyticum*, *Haemophilus ducreyi* 35000HP, *Schizosaccharomyces pombe*, *Danio rerio*, *Pan troglodytes*"
- 6684 6814 27 "Homo sapiens, *Mus musculus*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Chlamydomonas reinhardtii* GPIC, *Acinetobacter* sp."
- 6685 6815 24 "Homo sapiens, *Mustela vison*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Rickettsia conorii*, *Danio rerio*, *Rickettsia prowazekii*, *Buchnera aphidicola*, *Drosophila melanogaster*, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Xenopus laevis*" 10
- 6686 6816 34 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Scyllorhinus canicula*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Chrysodidymus synuroideus*, *Lotus corniculatus* var. japonicus, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, Human papillomavirus type 31, *Staphylococcus aureus* subsp. aureus Mu50, *Nostoc* sp. PCC 7120"
- 6687 6817 30 "*Mus musculus*, *Homo sapiens*, *Zygosaccharomyces rouxii*, *Pan troglodytes*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, Human immunodeficiency virus 1, *Gasterosteus aculeatus*, *Streptococcus mitis* phage SM1, *Rattus norvegicus*, *Arabidopsis thaliana*" 20
- 6688 6818 31 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum* 3D7, *Danio rerio*, *Dictyostelium discoideum*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Didelphis virginiana*, *Caenorhabditis elegans*, *Gallus gallus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Buchnera aphidicola*, *Bombyx mori*, *Lotus corniculatus* var. japonicus, *Medicago truncatula*, *Anoteropsis adumbrata*, *Rattus norvegicus*, *Scaptomyza pallida*"
- 6689 6819 27 "*Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Anhima cornuta*, *Homo sapiens*, *Lotus corniculatus* var. japonicus, *Pan troglodytes*, *Bacillus anthracis* str. Ames, *Bos taurus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Arabidopsis thaliana*" 30
- 6690 6820 31 "Homo sapiens, *Drosophila melanogaster*, *Danio rerio*, *Mus musculus*, *Gallus gallus*, *Plasmodium falciparum* 3D7, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Clostridium acetobutylicum*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Spinacia oleracea*, *Streptococcus pyogenes* SSI-1, *Plasmodium malariae*"
- 6691 6821 27 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Caenorhabditis elegans*, *Rickettsia conorii*, *Oryza sativa*, *Nitrosomonas europaea* ATCC 19718, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*" 40
- 6692 6822 27 "*Drosophila melanogaster*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Leptosphaeria maculans*, *Clostridium tetani* E88"
- 6693 6823 28 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Paratemnopteryx howarthi*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Danio rerio*, *Panesthia angustipennis*, *Macropanesthia* sp. QMa3, *Macropanesthia* sp. QMa1, *Ancaudellia marshallae*, *Ancaudellia kheili*, *Parapanesthia pearsoni*, *Geoscapheus woodwardi*, *Candidatus Carsonella ruddii*, *Pan troglodytes*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Paratemnopteryx centralensis*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Okapia johnsto* 50

- ni, *Canis familiaris*, *Chrysodidymus synuroideus*, *Cryptocercus relictus*, *Listeria innocua*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Junonia coenia*, *Cryptocercus* sp. MUDA3, *Cryptocercus* sp. MUDA2, *Cryptocercus* sp. MUDA1, *Cryptocercus* sp. S HUA2"
- 6694 6824 31 "Homo sapiens, *Digitaria sanguinalis*, *Mus musculus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Enterobacteria phage T4*, *Sulfolobus solfataricus*, *Arabidopsis thaliana*, *Danio rerio*, *Saccharomyces cerevisiae*"
- 6695 6825 35 "Homo sapiens, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Mus musculus*, *Arabidopsis thaliana*, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli*, *Escherichia coli* K12, *Psilotum nudum*, *Escherichia coli* 0157:H7, *Bos taurus*, R" 10
- 6696 6826 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oryctolagus cuniculus*, *Campylobacter fetus*, *Pan troglodytes*, *Dictyostelium discoideum*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pisum sativum*, *Caenorhabditis briggsae*, *Euglena longa*, *Plasmodium vivax*, *Lotus corniculatus* var. *japonicus*, *Oryzias latipes*, *Bos taurus*, *Cercopithecus aethiops*, *Drosophila littoralis*, *Clostridium perfringens* str. 13" 20
- 6697 6827 29 "*Oryctolagus cuniculus*, *Clostridium perfringens*, *Mus musculus*, *Homo sapiens*, *Rickettsia conorii*, *Danio rerio*, *Drosophila melanogaster*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Smittium culisetae*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Clostridium perfringens* str. 13"
- 6698 6828 24 "Homo sapiens, *Clostridium acetobutylicum*, *Rattus norvegicus*, *Danio rerio*, *Vespula vulgaris*, *Drosophila melanogaster*, *Lactococcus lactis* subsp. *lactis*, *Arabidopsis thaliana*, *Mus musculus*, *Caenorhabditis elegans*, *Haemophilus ducreyi* 35000HP, *Listeria innocua*"
- 6699 6829 32 "Homo sapiens, *Mycoplasma penetrans*, *Mus musculus*, *Pan troglodytes*, *Nostoc* sp. ATCC 53789, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Papio anubis*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Balaenoptera physalus*" 30
- 6700 6830 31 "*Listeria monocytogenes*, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Neurospora crassa*, *Helicobacter pylori* 26695, *Atelerix albi ventris*, *Drosophila melanogaster*, *Human immunodeficiency virus 1*, *Bombyx mori*, *Danio rerio*, *Pyrococcus abyssi*, *Listeria innocua*"
- 6701 6831 34 "*Pseudanabaena* sp., *Arabidopsis thaliana*, *Homo sapiens*, *Gryllus veletis*, *Proteus mirabilis*, *Human herpesvirus 8*, *Salmonella enterica* subsp. *enterica* serovar *Infantis*, *Listeria innocua*, *Bacteriophage phi-80*, *Mus musculus*" 40
- 6702 6832 27 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Mesotigma viride*, *Prochlorococcus marinus*, *Bacillus cereus* ATCC 14579, *Leptospira interrogans* serovar *Iai* str. 56601, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Lotus corniculatus* var. *japonicus*, *Oceanobacillus iheyensis* HTE831, *Danio rerio*"
- 6703 6833 29 "*Caenorhabditis elegans*, *Drosophila melanogaster*, *Homo sapiens*, *Danio rerio*, *Mus musculus*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Limnophyes minimus*, *Dictyostelium discoideum*, *Chlamydia muridarum*, *Gallus gallus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Nicotiana tabacum*, *Marchantia polymorpha*, *Wigglesworthia glossinidia* endosymbiont of *Glossina*" 50

- brevipalpis, *Schistosoma mansoni*"
- 6704 6834 33 "Homo sapiens, *Bacillus anthracis* str. Ames, *Plasmodium falciparum* 3D7, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Vibrio vulnificus* CMCP 6, *Caenorhabditis elegans*, *Clostridium sordellii*, *Helicobacter pylori* 26695, *Danio rerio*, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Medicago truncatula*, *Drosophila melanogaster*, *Zea mays*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*"
- 6705 6835 23 "Mus musculus, Homo sapiens, *Clostridium acetobutylicum*, *Vibrio cholerae*, *Danio rerio*"
- 6706 6836 32 "*Biomphalaria glabrata*, Homo sapiens, *Dictyostelium discoideum*, *Bombyx mori*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Danio rerio*, *Caenorhabditis elegans*, *Methanosarcina mazei* Goe1, *Plasmodium falciparum* 3D7, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Medicago truncatula*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Arabidopsis thaliana*, *Anopheles gambiae*, *Enterococcus faecalis* V583, *Monosiga brevicollis*, *Drosophila melanogaster*, *Caesalpinia gilliesii*, *Vaucheria schleicheri*, *Plasmodium falciparum*, *Oncotrips sterni*, *Oryza sativa*, *Chlamydomonas eugametos*, *Glycine max*, *Rhodomonas salina*, *Euglena gracilis*, *Bacillus subtilis*, *Saccharomyces douglasii*, *Bacillus subtilis* subsp. subtilis str. 168, *Methanocaldococcus jannaschii*, *Saccharomyces cerevisiae*, *Tetrahymena thermophila*, *Faidherbia albida*, *Synechocystis* sp. PCC 6803" 10
- 6707 6837 29 "Rattus norvegicus, *Drosophila melanogaster*, Homo sapiens, *Mus musculus*, *Xenopus laevis*, *Pan troglodytes*, *Danio rerio*, *Caenorhabditis elegans*, *Chironomus thummi*, *Zoogoneticus tequila*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Brassica napus*, *Medicago truncatula*, *Dictyostelium mucoroides*, *Brassica rapa*"
- 6708 6838 31 "*Bacillus subtilis* subsp. subtilis str. 168, *Bacillus subtilis*, Homo sapiens, *Drosophila melanogaster*, *Trypanosoma cruzi*, *Danio rerio*, *Pneumocystis carinii*, *Caenorhabditis elegans*, *Mus musculus*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Lycopersicon*" 20
- 6709 6839 28 "*Danio rerio*, Homo sapiens, *Pan troglodytes*, *Dictyostelium discoideum*, Human rhinovirus sp., *Lotus corniculatus* var. japonicus, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Bos taurus*, *Oceanobacillus iheyensis* HTE831, *Medicago truncatula*, *Papio anubis*, *Yersinia pestis* KIM, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Phaenocoma prolifera*, *Legionella pneumophila*, *Entamoeba histolytica*, *Sepia officinalis*, *Mycoplasma penetrans*, *Caenorhabditis elegans*, *Yersinia pestis* C092, *Rattus norvegicus*, *Methanocaldococcus jannaschii*, *Pipistrellus abramus*"
- 6710 6840 32 "Human immunodeficiency virus 1, Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Dictyostelium discoideum*, *Carassius auratus gibelio*, *Desulfitobacterium hafniense*, *Danio rerio*, *Caenorhabditis elegans*, *Carassius cuvieri*, *Arabidopsis thaliana*, *Methanocaldococcus jannaschii*, *Helicobacter hepaticus* ATCC 51449, *Carassius auratus*" 30
- 6711 6841 23 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Bacillus cereus* ATCC 14579, *Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa*"
- 6712 6842 27 "Homo sapiens, *Mus musculus*, *Anopheles gambiae*, *Xenopus laevis*, *Methanosarcina acetivorans* C2A, *Danio rerio*, *Mycoplasma pulmonis*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*"
- 6713 6843 24 "Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Cristatella mucedo*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces*" 40

pombe"

- 6714 6844 32 "Staphylococcus epidermidis ATCC 12228, Homo sapiens, St reptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Mus musculus, Clostridium tetani E88, Simian immunodeficiency virus, Borrelia burgdorferi B31, Macaca fascicularis, Saccharomyces cerevisiae, Prochlorococcus marinus subsp. marinus str. CCMP1375, Oryza sativa (japonica cultivar-group), Danio rerio, Tetraodon nigroviridis"
- 6715 6845 62 "Rickettsia prowazekii, Haemophilus ducreyi 35000HP, Mycoplasma gallisepticum R, Dictyostelium discoideum, Lactococcus lactis subsp. lactis, Caenorhabditis briggsae, Homo sapiens, Caenorhabditis elegans, Clostridium acetobutylicum, Saccharomyces cerevisiae, "
- 6716 6846 42 "Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Escherichia coli CFT073, Escherichia coli, Olimarabidopsis pumila, Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Macaca mulatta, Pan troglodytes, Bacillus anthracis str. Ames, Dictyostelium discoideum, Arabidopsis thaliana, Oryza sativa (indica cultivar-group), Leucophaea maderae, Danio rerio, Candida albicans, Methanocaldococcus jannaschii, Clostridium perfringens str. 13"
- 6717 6847 23 "Homo sapiens, Danio rerio, Buchnera aphidicola str. Sg (Schizaphis graminum), Mus musculus, Quercus sadleriana"
- 6718 6848 31 "Clostridium tetani E88, Homo sapiens, Mus musculus, Oryzias latipes, Danio rerio, Utricularia resupinata"
- 6719 6849 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Danio rerio, Schizosaccharomyces pombe, Helicobacter pylori J99"
- 6720 6850 24 "Saccharomyces bayanus, Saccharomyces pastorianus, Drosophila melanogaster, Homo sapiens, Mus musculus, Methanothermobacter thermoautotrophicus str. Delta H, Arabidopsis thaliana, Medicago truncatula"
- 6721 6851 32 "Homo sapiens, Timmiella crassinervis, Mus musculus, Danio rerio, Nostoc sp. PCC 7120, Dictyostelium discoideum, Caenorhabditis elegans, Influenza B virus, Pan troglodytes, Adiantum capillus-veneris, Chlamydia muridarum, Plasmodium falciparum 3D7, El Moro Canyon hantavirus, Human immunodeficiency virus 1, Mycoplasma pulmonis, Caenorhabditis briggsae, Arabidopsis thaliana, Enterobacteria phage RB69, Silene gallica, Rattus norvegicus, Clostridium perfringens str. 13"
- 6722 6852 32 "Mus musculus, Rattus norvegicus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Ciona intestinalis, Borrelia burgdorferi B31, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Papio anubis, Caenorhabditis elegans, Bos taurus, Plasmodium falciparum, Canine herpesvirus, Lotus corniculatus var. japonicus, Brassica rapa, Cryptosporidium parvum, Helicobacter pylori J99, Candida albicans"
- 6723 6853 23 "Mus musculus, Homo sapiens, Clostridium tetani E88, Arabidopsis thaliana, Danio rerio, Mesorhizobium loti"
- 6724 6854 32 "Homo sapiens, Nostoc sp. PCC 7120, Mus musculus, Arabidopsis thaliana, Shigella flexneri 2a str. 2457T, Drosophila melanogaster, Gallus gallus, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli 0157:H7 EDL933, Escherichia coli, Escherichia coli K12, Salmonella typhimurium, Escherichia coli 0157:H7, Rattus norvegicus, Streptococcus thermophilus, Pseudomonas stutzeri"
- 6725 6855 28 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Ostrinia furnacalis, Ostrinia nubilalis, Caenorhabditis elegans, Caenorhabditis briggsae"

- sae, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Pan troglodytes*, *Danio rerio*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Lymphocystis disease virus 1*, *Euhadra quaesita*, *Nicotiana tabacum*, *Oryza sativa* (japonica cultivar-group)"
- 6726 6856 39 "Homo sapiens, *Theileria parva*, *Dictyostelium discoideum*, *Mus musculus*, *Arabidopsis thaliana*, *Tetrahymena thermophila*, *Lotus corniculatus* var. japonicus, *Drosophila melanogaster*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), uncultured crenarchaeote 4B7, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Leptospira interrogans* serovar lai str. 56601, *Plasmodium falciparum* 3D7, *Goatpox virus*, *Plasmodium falciparum*, *Oryza sativa*, *Antirrhinum majus*, *Tobacco leaf curl disease associated sequence*, *Podospora anserina*, *Polysiphonia boldii*, *Paramecium primaurelia*, *Luciola lateralis*, *Pimelia sparsa*, *Aspasma minima*, *Pan troglodytes*" 10
- 6727 6857 40 "Homo sapiens, *Mus musculus*, *Simulium ornatipes*, *Trichina* sp. NCSU-99071986, *Mycoplasma penetrans*, *Neurospora crassa*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Chlamydia muridarum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Ehrlichia chaffeensis*, *Caenorhabditis elegans*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Phytomonas serpens*, *Danio rerio*, *Melipona bicolor*, *Vaucheria synandra*, *Erwinia amylovora*, *Human immunodeficiency virus 1*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Mycoplasma pulmonis*, *Helianthus annuus*, *Lotus corniculatus* var. japonicus, *Schizosaccharomyces pombe*, *Ptychodera flava*, *Dacnusa sibirica*, *Rattus norvegicus*, *Clostridium perfringens*, *Bhutanitis mansfieldi*, *Pichia canadensis*, *Clostridium perfringens* str. 13" 20
- 6728 6858 27 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Clematis drummondii*, *Arabidopsis thaliana*, *Coxiella burnetii* RSA 493, *Medicago truncatula*, *Clostridium tetani*, *Caenorhabditis elegans*, *Rickettsia conorii*, *Danio rerio*, *Prochlorococcus marinus*, *Ruminococcus gnavus*, *Euglena gracilis*, *Lotus corniculatus* var. japonicus, *Osmia excavata*, *Bacillus subtilis* subsp. subtilis str. 168, *Bacillus subtilis*, *Actinobacillus actinomycetemcomitans*" 30
- 6729 6859 56 "Streptococcus mutans UA159, *Methanosarcina acetivorans* C2A, *Methanosarcina mazei* Goe1, *Methanocaldococcus jannaschii*, *Homo sapiens*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Mus musculus*, *Lycopodium obscurum*, *Solanum tuberosum*, *Pan troglodytes*, *Human herpesvirus 7*, *Oryza sativa* (japonica cultivar-group), *Clostridium perfringens* str. 13"
- 6730 6860 76 "Streptococcus pneumoniae R6, *Streptococcus pneumoniae* TIGR4, *Clostridium acetobutylicum*, *Methanosarcina acetivorans* C2A, *Methanocaldococcus jannaschii*, *Homo sapiens*, *Lactobacillus plantarum* WCFS1, *Mus musculus*, *Cara ssius auratus*, *Bacteroides thetaiotaomicron* VPI-5482, *Dixonielloa grisea*, *Anolis carolinensis* retrovirus" 40
- 6731 6861 56 "Homo sapiens, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Enterococcus faecalis* V583, *Clostridium tetani* E88, *Lactococcus lactis* subsp. lactis, *Mus musculus*, *Listeria innocua*, *Dictyostelium discoideum*, *Pasteurella multocida*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Caenorhabditis elegans*, *Mesorhizobium loti*"
- 6732 6862 29 "Streptococcus mutans UA159, *Homo sapiens*, *Caenorhabditis elegans*, *Candida parapsilosis*, *Buchnera aphidicola*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Lactococcus lactis*, *Saccharomyces cerevisiae*, *Vibrio cholerae*, *Oryza sativa* (japonica cultivar-group)" 50

- ivar-group), *Canis familiaris*, *Mus musculus*, *Bacillus subtilis*, *Helicobacter hepaticus* ATCC 51449"
- 6733 6863 23 "Homo sapiens, *Methanosarcina acetivorans* C2A, *Chlamydia muridarum*, *Vibrio vulnificus* CMCP6, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Vibrio fischeri*"
- 6734 6864 26 "*Listeria innocua*, *Mus musculus*, *Homo sapiens*, *Streptococcus pyogenes* M1 GAS, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Rattus norvegicus*, *Borrelia burgdorferi* B31, *Papio anubis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Bacillus cereus*, *Borrelia burgdorferi*, *Oryctolagus cuniculus*"
- 6735 6865 27 "*Mus musculus*, *Oryza sativa* (*indica* cultivar-group), *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Candida glabrata*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Bacillus subtilis*, *Tetradontophora bielensis*, *Timarcha maroccana*, *Timarcha granadensis*, *Timarcha hispanica*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Candida boidinii*, *Nasutitermes takasagoensis*" 10
- 6736 6866 33 "*Homo sapiens*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Lycopersicon esculentum*, *Danio rerio*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Rickettsia conorii*, *Apodemia mormo*, *Rickettsia prowazekii*, *Anopheles gambiae*, *Procordulia* sp. BM-2003, *Leptospira interrogans* serovar *lai* str. 56601, *Dictyostelium discoideum*, *Sus scrofa*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Brassica napus*, *Lotus corniculatus* var. *japonicus*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Saccharomyces cerevisiae*, *Leishmania panamensis*, *Sorghum bicolor*, *Cicer reticulatum*, *Cicer arietinum*" 20
- 6737 6867 28 "*Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Danio rerio*, *Drosophila melanogaster*, *Apis mellifera*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Ureaplasma urealyticum*, *Chlamydomonas eugametos*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Ciona intestinalis*" 30
- 6738 6868 31 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*, *Medicago truncatula*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Rhododendron semibarbatum*, *Plasmodium falciparum* 3D7, *Drosophila flavomontana*, *Hypocrea jecorina*, *Clostridium acetobutylicum*, *Takifugu rubripes*, *Lactococcus lactis*, *Tomato black ring virus*"
- 6739 6869 43 "*Homo sapiens*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Streptococcus agalactiae* 2603V/R, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum*, *Mus musculus*, *Arabidopsis thaliana*, *Chrysops carbonarius*"
- 6740 6870 30 "*Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Medicago truncatula*, *Drosophila melanogaster*, *Shewanella oneidensis* MR-1, *Plasmodium falciparum* 3D7, *Candidatus Carsonella ruddii*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Danio rerio*, *Plasmodium falciparum*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Eimeria meleagridis*, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Xylella fastidiosa* Temecula1, *Tetrameles nudiflora*, *Platyphora boucardi*, *Candidatus Blochmannia floridanus*, *Coffea arabica*, *Rhodnius prolixus*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Eimeria maxima*, *Yarrowia lipolytica*, *Hypera postica*, *Solanum tuberosum*, *Nostoc* sp. PCC 7120" 40

- 6741 6871 59 "Mus musculus, Homo sapiens, Methanosarcina acetivorans C2A, Schizosaccharomyces pombe, Caenorhabditis elegans"
- 6742 6872 28 "Homo sapiens, Schmidtea mediterranea, Triticum aestivum, Pan troglodytes, Canis familiaris, Mus musculus, Arabidopsis thaliana"
- 6743 6873 27 "Homo sapiens, Pan troglodytes, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Oryza sativa (indica cultivar-group), Medicago truncatula, Drosophila melanogaster, Shewanella oneidensis MR-1, Clostridium acetobutylicum, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Mus musculus, Candida albicans"
- 6744 6874 35 "Ureaplasma urealyticum, Staphylococcus epidermidis ATCC 12228, Mus musculus, Staphylococcus epidermidis, Spinacia oleracea, Schizosaccharomyces pombe, Homo sapiens, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Vibrio parahaemolyticus, Oryza sativa (japonica cultivar-group), Medicago truncatula" 10
- 6745 6875 24 "Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Homo sapiens, Candidatus Blochmannia floridanus, Podosporea anserina, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Caenorhabditis briggsae, Medicago truncatula, Neurospora crassa, Sus scrofa, Candida albicans" 20
- 6746 6876 51 "Danio rerio, Homo sapiens, Mus musculus, Leptospira interrogans serovar lai str. 56601, Dictyostelium sp., Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Bean pod mottle virus, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Clostridium acidurici, Dictyostelium discoideum"
- 6747 6877 27 "Oryza sativa (japonica cultivar-group), Oryza sativa, Homo sapiens, Caenorhabditis elegans, Mus musculus, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (indica cultivar-group), Archaeoglobus fulgidus DSM 4304, Enterobacteria phage T7, Arabidopsis thaliana, Danio rerio, Trypanosoma brucei, Haemophilus ducreyi 35000HP" 30
- 6748 6878 23 "Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Mus musculus, Rattus norvegicus"
- 6749 6879 36 "Homo sapiens, Carboxydotherrmus hydrogenoformans, Mus musculus, Caenorhabditis elegans, Pan troglodytes, Prochlorococcus marinus, Loensia variegata, Psococerasstis nubila, Oryza sativa (japonica cultivar-group), Cafeteria roenbergensis, Plasmodium falciparum,"
- 6750 6880 29 "Homo sapiens, Mus musculus, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Enterococcus faecalis V583, Methanosarcina acetivorans C2A, Danio rerio, Didelphis virginiana, Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Plasmodium falciparum 3D7, Lactococcus lactis subsp. lactis, Pasteurella multocida, Plasmodium falciparum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Schizosaccharomyces pombe, Staphylococcus aureus subsp. aureus Mu50" 40
- 6751 6881 45 "Streptococcus mutans UA159, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Streptococcus thermophilus, Enterococcus faecalis V583, Ciona intestinalis, Corynebacterium glutamicum, Homo sapiens, Oceanobacillus ihayensis HTE831, Mus musculus, Euglena longa, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Danio rerio"
- 6752 6882 25 "Homo sapiens, Mus musculus, Chironomus tentans, Oryza s 50

- ativa (japonica cultivar-group), *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Zea mays*, *Shigella boydii*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*"
- 6753 6883 48 "Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Homo sapiens, Helicobacter hepaticus ATCC 51449, Varroa destructor virus 1, Arabidopsis thaliana, Lycopersicon esculentum, Oryctolagus cuniculus, Caenorhabditis elegans, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mus musculus"
- 6754 6884 24 "Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Mus musculus, Naegleria gruberi, Danio rerio, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Ciona savignyi, Listeria monocytogenes, Ralstonia solanacearum, Pan troglodytes" 10
- 6755 6885 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Prochlorococcus marinus, Arabidopsis thaliana, Oryza sativa (indica cultivar-group), Mus musculus"
- 6756 6886 31 "Homo sapiens, Clostridium acetobutylicum, Sus scrofa"
- 6757 6887 27 "Mus musculus, Homo sapiens, Bacillus cereus ATCC 14579, Papio anubis, Bacillus halodurans, Oryza sativa (japonica cultivar-group), Medicago truncatula, Bacillus anthracis str. Ames, Rattus norvegicus, Caenorhabditis elegans, Swine vesicular disease virus, Danio rerio, Antirrhinum majus" 20
- 6758 6888 25 "Homo sapiens, Macaca fascicularis, Drosophila melanogaster, Mus musculus, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Bacteroides thetaiotaomicron VPI-5482, Xylella fastidiosa Temecula1, Prochlorococcus marinus, Arabidopsis thaliana, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Chlamydomonas pneumoniae J138, Listeria innocua, Trichomonas vaginalis, Danio rerio, Chlamydomonas pneumoniae TW-183"
- 6759 6889 27 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Medicago truncatula, Papio anubis, Arabidopsis thaliana, Gossypium nelsonii, Bombyx mori, Listeria monocytogenes, Acinetobacter calcoaceticus" 30
- 6760 6890 43 "Plasmodium falciparum 3D7, Mus musculus, Homo sapiens, Caenorhabditis elegans, Cyanidium caldarium, Danio rerio, Mycoplasma genitalium, Francisella tularensis subsp. novicida, Oryza sativa (japonica cultivar-group), Bos taurus, Drosophila melanogaster, Oryz"
- 6761 6891 27 "Homo sapiens, Mus musculus, Clostridium tetani E88, Candida dubliniensis, Danio rerio, Agrocybe aegerita, Dictyostelium discoideum, Staphylococcus aureus, Drosophila melanogaster, Plasmodium falciparum 3D7, Fenneropenaeus chinensis, Candida boidinii, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Tectura testudinalis, Staphylococcus aureus subsp. aureus N315, Sulfolobus tokodaii, Staphylococcus aureus subsp. aureus MW2, Schizosaccharomyces pombe, Halocynthia roretzi, Staphylococcus aureus subsp. aureus Mu50, Vigna angularis" 40
- 6762 6892 30 "Mus musculus, Bacillus halodurans, Caenorhabditis briggsae, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Pasteurella multocida, Caenorhabditis elegans, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Helicobacter pylori 26695, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Dictyostelium discoideum, Clostridium tetani E88, Ehrlichia chaffeensis, Arabidopsis thaliana, Rhizophydium sp. 136, Human immunodeficiency virus 1, Hordeum vulgare subsp. vulgare, Antithamnion" 50

n sp., *Anthoceros formosae*"

- 6763 6893 29 "Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella enterica subsp. enterica serovar Typhi, Salmonella typhimurium, Homo sapiens, Citrobacter braakii, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Heterodrilus keenani, Escherichia coli 0157:H7 EDL933, Halobacterium sp. NRC-1, Escherichia coli K12, Doriopsisilla areolata, Heterodrilus paucifascis, Shigella dysenteriae, Trypanosoma brucei, Escherichia coli, Escherichia coli 0157:H7, Bacillus cereus ATCC 14579, Papio anubis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Trichobilharzia regenti" 10
- 6764 6894 49 "Escherichia coli CFT073, Escherichia coli K12, Escherichia coli, Borrelia burgdorferi B31, Clostridium acetobutylicum, Borrelia burgdorferi, Vibrio parahaemolyticus, Vibrio vulnificus CMCP6, Zymomonas mobilis, Vibrio fischeri, Proteus vulgaris, Bacillus cereus ATCC 14579, Vibrio cholerae, Pirellula sp., Shewanella oneidensis MR-1, Listeria innocua, Xenopus laevis, Mus musculus, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Anopheles funestus, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Vibrio harveyi, Enterococcus faecalis V583, Clostridium tetani E88, Bradyrhizobium japonicum, Arabidopsis thaliana, Bradyrhizobium japonicum USDA 110, Helicobacter hepaticus ATCC 51449, Shewanella violacea" 20
- 6765 6895 36 "Thermoanaerobacter tengcongensis, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Trachemys scripta, Homo sapiens, Danio rerio, Trypanosoma brucei brucei, Plasmodium falciparum 3D7, Arabidopsis thaliana, Canis familiaris, Mus musculus, Trypanosoma brucei"
- 6766 6896 25 "Streptococcus mutans UA159, Mus musculus, Streptococcus mutans, Oryza sativa (japonica cultivar-group), Medicago truncatula, Homo sapiens, Danio rerio, Caenorhabditis elegans, Arabidopsis thaliana"
- 6767 6897 31 "Homo sapiens, Mus musculus, Rattus norvegicus, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Arabidopsis thaliana, Reclinomonas americana, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HT E831, Danio rerio" 30
- 6768 6898 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Cryptococcus neoformans var. grubii, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Paratemnopteryx atra, Conus moreletii, Danio rerio, Dahlia mosaic virus"
- 6769 6899 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Pan troglodytes, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Caenorhabditis elegans, Bacillus thuringiensis, Bacillus thuringiensis serovar finitimus, Lactobacillus sp., Bacillus cereus, Arabidopsis thaliana, Dictyostelium discoideum, Danio rerio, Mycoplasma hypopneumoniae, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Staphylococcus intermedius, Sulfolobus tokodaii, Anopheles gambiae, Plasmodium falciparum, Hydrolagus colliei, Xenopus laevis, Rattus norvegicus, Moritella japonica" 40
- 6770 6900 35 "Arabidopsis thaliana, Mus musculus, Homo sapiens, Drosophila melanogaster, Cuphea llavea, Mesostigma viride, Nicotiana tabacum, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"
- 6771 6901 31 "Mus musculus, Homo sapiens, Chlamydia trachomatis, Oryza sativa (japonica cultivar-group), Danio rerio, Chaetoceros compressum, Hypsilurus modestus, Hordeum vulgare subsp. vulgare, Caenorhabditis elegans, Porphyromonas gingivalis, Porphyromonas gingivalis W83, Sus scrofa" 50

- 6772 6902 31 "Mus musculus, Drosophila melanogaster, Homo sapiens, Oceanobacillus ihayensis HTE831, Danio rerio, Cercospora zeae-maydis, Prochlorococcus marinus, Arabidopsis thaliana, Neuroterus macropterus, Schizosaccharomyces pombe, Ciona intestinalis, Fragaria vesca"
- 6773 6903 28 "Bacillus megaterium, Homo sapiens, Clostridium acetobutylicum, Macaca fascicularis, Xenopus laevis, Rattus norvegicus, Haemophilus influenzae Rd KW20, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Yersinia pestis KIM, Plasmodium chabaudi chabaudi, Glycine max, Lotus corniculatus var. japonicus, Plasmodium chabaudi adami, Yersinia pestis C092, Arabidopsis thaliana, Schizosaccharomyces pombe" 10
- 6774 6904 27 "Monosiga brevicollis, Dictyostelium discoideum, Arabidopsis thaliana, Staphylococcus epidermidis ATCC 12228, Mus musculus, Homo sapiens, Staphylococcus epidermidis, Mycoplasma pulmonis, Streptococcus agalactiae 2603 V/R, Francisella tularensis subsp. novicida, Francisella tularensis, Streptococcus agalactiae NEM316, Cylinthrotheca sp., Danio rerio, Schizosaccharomyces pombe"
- 6775 6905 27 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Arabidopsis thaliana, Vibrio cholerae, Oryza sativa (japonica cultivar-group), Danio rerio"
- 6776 6906 23 "Homo sapiens, Danio rerio, Trypanosoma cruzi, Medicago truncatula, Oryza sativa (japonica cultivar-group), Pan troglodytes, Mus musculus, Caenorhabditis elegans, Macaca fascicularis" 20
- 6777 6907 27 "Homo sapiens, Mus musculus, Rattus norvegicus, Borrelia burgdorferi B31, Polypterus bichir, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"
- 6778 6908 29 "Lemur catta, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Ureaplasma urealyticum, Anopheles quadrimaculatus A, Danio rerio, Acrodipsas melania, Acrodipsas illidgei, Acrodipsas hirtipes, Acrodipsas arcana, Drosophila melanogaster, Human immunodeficiency virus 1, Streptococcus agalactiae 2603V/R, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Methanosarcina acetivorans C2A, Streptococcus agalactiae NEM316, Bacillus subtilis, Pisum sativum, Lotus corniculatus var. japonicus, Bacillus subtilis subsp. subtilis str. 168, Dictyostelium discoideum" 30
- 6779 6909 30 "Homo sapiens, Drosophila melanogaster, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Mus musculus, Streptococcus mutans UA159, Zea mays, Pyrobaculum aerophilum str. IM2, Arabidopsis thaliana, Candida albicans, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus MW2"
- 6780 6910 24 "Mus musculus, Danio rerio, Homo sapiens"
- 6781 6911 27 "Plasmodium falciparum 3D7, Homo sapiens, Trypanosoma brucei, Mus musculus, Cynolebias magnificus, Schizosaccharomyces pombe, Tetraodon nigroviridis, Papio anubis, Bos taurus, Gallus gallus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Peanut witches'-broom phytoplasma, Hemipsocus chloroticus, Caenorhabditis elegans, Borrelia duttonii, Helicobacter hepaticus ATCC 51449" 40
- 6782 6912 40 "Mus musculus, Medicago truncatula, Homo sapiens, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Danio rerio, Rattus norvegicus, Cerapachys cf. mayri SGB-2003, Dorylus vishnui, Bulinus sp. Mafia Island, Dendroctonus approximatus, Lasiogloss"
- 6783 6913 27 "Mus musculus, Homo sapiens, Staphylococcus aureus subsp 50

- . aureus MW2, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Chilli veinal mottle virus, Danio rerio"
- 6784 6914 31 "Mus musculus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Bacillus anthracis str. Ames, Homo sapiens, Caenorhabditis elegans, Cafeteria roenbergensis, Clostridium perfringens str. 13, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Felis catus, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Sulfolobus tokodaii, Danio rerio, Haemophilus influenzae Rd KW20, Chlamydomonas reinhardtii, Cyanophora paradoxa"
- 6785 6915 27 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Pan troglodytes, Drosophila pseudoobscura, Plasmodium yoelii, Clostridium perfringens str. 13" 10
- 6786 6916 27 "Homo sapiens, Mycoplasma pulmonis, Panonychus ulmi, Oryza sativa (japonica cultivar-group), Mus musculus, Arceuthobium azoricum, Schizosphaera commune, Mycoplasma pneumoniae, Caenorhabditis elegans, Mycoplasma penetrans, Danio rerio"
- 6787 6917 27 "Caenorhabditis briggsae, Mus musculus, Oryza sativa (japonica cultivar-group), Oryza sativa, Homo sapiens, Archaeoglobus fulgidus DSM 4304, Rattus norvegicus, Danio rerio"
- 6788 6918 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Arabidopsis thaliana, Dolopsidea sp., Danio rerio, Oncophanes sp., Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Atelerix albiventris, Leptospira interrogans serovar lai str. 56601, Tripneustes gratilla, Plasmodium falciparum 3D7, Medicago truncatula, Planococcus citri, Buchnera aphidicola str. Sg (Schizaphis graminum), Parelaphostrongylus odocoilei, Xenos pecki, Gossypium hirsutum, Mycoplasma pulmonis, Pyrococcus abyssi, Euglena gracilis" 20
- 6789 6919 32 "Mus musculus, Homo sapiens, Xenopus laevis, Escherichia coli CFT073, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Carabus munakatai, Medicago truncatula, Sebastes gilli, Eremochrysa tibialis, Listeria monocytogenes, Anisochrysa carnea, Plasmodium falciparum, Rattus norvegicus, Chrysoperla plorabunda, Shigella flexneri 2a str. 2457T, Pan troglodytes, Drosophila melanogaster, Shigella flexneri 2a str. 301, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Wallabia bicolor, Escherichia coli O157:H7 EDL933, Prochlorococcus marinus, Polistes dominulus, Campylobacter jejuni subsp. jejuni NCTC 11168, Escherichia coli, Escherichia coli K12, Caenorhabditis elegans, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio, Hyphantria cunea, Escherichia coli O157:H7, Streptococcus suis" 30
- 6790 6920 25 "Homo sapiens, Plasmodium vivax, Pan troglodytes, Oryza sativa (japonica cultivar-group), Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Prochlorococcus marinus, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus" 40
- 6791 6921 24 "Homo sapiens, Drosophila melanogaster, Mus musculus, Escherichia coli, Lactococcus lactis, Pediculus humanus capitis, Schizosaccharomyces pombe"
- 6792 6922 31 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Danio rerio, Rattus norvegicus, Caenorhabditis elegans, Canis familiaris, Oryza sativa (japonica cultivar-group), Carassius auratus, Medicago truncatula, Borrelia burgdorferi B31, Dictyostelium discoideum, Drosophila melanogaster, Pilea depressa, Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Neisseria meningitidis MC58, Plasmodium falciparum, Saccharomyces cerevisiae, Pan troglodytes, Leuco 50

sidea sericea, Plasmodium reichenowi"

- 6793 6923 33 "Homo sapiens, Mus musculus, Gomphiocephalus hodgsoni, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Drosophila melanogaster, Euglena longa, Oceanobacillus iheyensis HTE831, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Medicago truncatula, Agroclype aegerita, Bacillus firmus, Clostridium perfringens str. 13, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Borrelia burgdorferi B31, Dictyostelium discoideum, Methanosarcina mazei Goe1, Helicobacter pylori, Plasmodium falciparum 3D7, Providencia rettgeri, Borrelia hermsii, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lycopersicon esculentum, Sus scrofa, Amsacta moorei entomopoxvirus, Pedinomonas minor, Bombyx mori" 10
- 6794 6924 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Clostridium tetani E88, Bos taurus, Plasmodium falciparum 3D7, Shrimp white spot syndrome virus, Arabidopsis thaliana, Secale cereale, Caenorhabditis elegans, Danio rerio, Macaca mulatta, Bombyx mori"
- 6795 6925 28 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Arthroderma benhamiae, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7"
- 6796 6926 29 "Mus musculus, Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Cymbidium hybrid" 20
- 6797 6927 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mus musculus, Schmidtea mediterranea, Gallus gallus, Mycoplasma pneumoniae, Oceanobacillus iheyensis HTE831"
- 6798 6928 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Ovis aries, Lotus corniculatus var. japonicus, Bacillus anthracis str. Ames, Borrelia burgdorferi B31, Cotesia congregata, Haemophilus influenzae Rd KW20, uncultured bacterium"
- 6799 6929 33 "Mus musculus, Brassica napus, Homo sapiens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Arabidopsis thaliana, Plasmodium falciparum, Schizosaccharomyces pombe, Clostridium perfringens str. 13, Caenorhabditis elegans, Sceloporus jarrovii, Sceloporus heterolepis, Lycopersicon esculentum, Ictalurus punctatus, Danio rerio, Ciona intestinalis" 30
- 6800 6930 28 "Homo sapiens, Drosophila melanogaster, Equus caballus, Mus musculus, Lycopersicon esculentum, Arabidopsis thaliana, Shigella flexneri 2a str. 2457T, Oryza sativa (japonica cultivar-group), Shigella flexneri 2a str. 301, Escherichia coli, Escherichia coli O157:H7 EDL933, Escherichia coli K12, Macaca fascicularis, Escherichia coli O157:H7"
- 6801 6931 23 "Mus musculus, Homo sapiens, Drosophila melanogaster, Danio rerio" 40
- 6802 6932 20 "Homo sapiens, Caenorhabditis briggsae, Brucella melitensis 16M, Brucella suis 1330, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio"
- 6803 6933 24 "Zea mays, Homo sapiens, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Human immunodeficiency virus 1, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana"
- 6804 6934 76 "Haemophilus ducreyi 35000HP, Haemophilus influenzae Rd KW20, Vibrio vulnificus CMCP6, Pasteurella multocida, Vibrio cholerae, Vibrio parahaemolyticus, Vibrio harveyi, Caulobacter crescentus CB15, Bradyrhizobium japonicum USDA 110, Aeromonas hydrophila, Phot" 50

- 6805 6935 27 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Sulfolobus tokodaii, Bos taurus, Danio rerio, Haemophilus ducreyi 35000HP, Synechocystis sp. PCC 6803"
- 6806 6936 28 "Homo sapiens, Mus musculus, Xenopus laevis, Danio rerio, Oryzias latipes, Medicago truncatula, Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Treponema denticola, Streptococcus pyogenes M1 GAS, Caenorhabditis elegans, Zea mays, Streptococcus pyogenes SSI-1, Cryptosporidium parvum"
- 6807 6937 27 "Homo sapiens, Oenothera elata subsp. hookeri, Mus musculus, Arabidopsis arenosa, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus domesticus, Papio anubis, Danio rerio, Bos taurus, Staphylococcus aureus, Gleditsia australis, Gleditsia sinensis, Gleditsia rolfei, Gymnocladus chinensis, Gymnocladus dioica, Arabidopsis thaliana, Plasmodium falciparum 3D7, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Saccharomyces cerevisiae, Pichia angusta, Cryptosporidium parvum, Staphylococcus aureus subsp. aureus Mu50" 10
- 6808 6938 31 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Anopheles gambiae, Candida maltosa, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Danio rerio, Lemur catta, Enterococcus faecalis, Cicer arietinum, Marchantia polymorpha, Sterna albifrons, Haemophilus ducreyi 35000HP, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Pan troglodytes, Caryedon fathalae, Sterna sp. Heidrich-1866, Aiohelix editha" 20
- 6809 6939 32 "Homo sapiens, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Mus musculus, Gallus gallus, Chlamydia muridarum, Petroselinum crispum, Oryza sativa (japonica cultivar-group), Debaryomyces hansenii var. hansenii, Triticum aestivum, Nostoc sp. PCC 7120, Drosophila melanogaster, Plasmodium falciparum 3D7, Pan troglodytes, Sheeppox virus, Lumpy skin disease virus, Lactococcus lactis subsp. lactis, Pasteurella multocida, Cherry virus A, Caenorhabditis briggsae, Buxbaumia aphylla, Andreaea nivalis, Sphaerocarpos donnelli, Plagioglossum asplenioides, Pellia epiphylla, Ricciocarpos natans, Lunularia cruciata, Corsinia coriandra, Bucegia romanica, Petunia axillaris, Petunia x hybrida, Tropheryma whipplei str. Twist, Danio rerio, Tropheryma whipplei TW08/27, Marchantia polymorpha" 30
- 6810 6940 27 "Babesia canis, Mus musculus, Lycopersicon pennellii, Clostridium tetani E88, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Medicago truncatula, Pan troglodytes, Streptococcus mutans UA159, Zea mays, Plasmodium falciparum 3D7, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Musca domestica, Streptococcus pyogenes SSI-1, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Helicobacter pylori 26695, Triticum aestivum" 40
- 6811 6941 25 "Homo sapiens, Mus musculus, Rattus norvegicus, Oryza sativa (japonica cultivar-group)"
- 6812 6942 29 "Homo sapiens, Pan troglodytes, Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Drosophila melanogaster, Podolobium ilicifolium, Podolobium aestivum, Podolobium aciculiferum, Phyllota phyllicoides, Oxyllobium"
- 6813 6943 26 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Drosophila melanogaster, Clostridium tetani E88, Clostridium acetobutylicum, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica culti 50

- var-group), *Danio rerio*, *Caenorhabditis elegans*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Cryphonectria parasitica*, *Ustilago maydis*, *Bacillus subtilis*, *Butyrivibrio fibrisolvens*"
- 6814 6944 49 "Clostridium perfringens str. 13, *Listeria monocytogenes*, *Thermoanaerobacter tengcongensis*, *Bacillus anthracis* str. Ames, *Homo sapiens*, *Haemophilus parahaemolyticus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Enterococcus faecalis* V583, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Oceanobacillus iheyensis* HTE831, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Staphylococcus aureus*, *Mus musculus*, *Silene latifolia*" 10
- 6815 6945 34 "Thermoanaerobacter tengcongensis, *Rickettsia prowazekii*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Oryza sativa*, *Drosophila melanogaster*, *Mus musculus*, *Mycoplasma penetrans*, *Danio rerio*, *Rattus norvegicus*, Peanut witches'-broom phytoplasma, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Odontella sinensis*, *Plasmodium vivax*, *Lotus corniculatus* var. japonicus, *Plasmodium falciparum*"
- 6816 6946 25 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Sus scrofa*, *Caenorhabditis elegans*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*" 20
- 6817 6947 44 "Mus musculus, *Erwinia chrysanthemi*, *Homo sapiens*, *Pan troglodytes*, *Dictyostelium discoideum*, *Aphidius ervi*, *Rickettsia prowazekii*, *Helianthus tuberosus*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Coxiella burnetii* RSA 493, *Danio rerio*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Mycoplasma penetrans*, Human immunodeficiency virus 1"
- 6818 6948 82 "Clostridium acetobutylicum, *Streptococcus agalactiae* NE M316, *Lactococcus lactis* subsp. *lactis*, *Danio rerio*, *Arabidopsis thaliana*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Campylobacter jejuni*, *Staphylococcus aureus*, *Oryza sativa*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*" 30
- 6819 6949 27 "Danio rerio, *Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, Yaba monkey tumor virus"
- 6820 6950 31 "Mus musculus, Human adenovirus type 24, *Homo sapiens*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Vibrio parahaemolyticus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Phytophthora infestans*, *Encephalitozoon cuniculi*, *Arabidopsis thaliana*" 40
- 6821 6951 61 "Clostridium tetani E88, *Xenopus laevis*, *Listeria innocua*, *Methanosarcina acetivorans* C2A, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Schizosaccharomyces pombe*, *Bacillus anthracis* str. Ames, *Staphylococcus epidermidis* ATCC 12228, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* M1 GAS, *Enterobacter cloacae*, *Staphylococcus epidermidis*, *Streptococcus pyogenes* SSI-1, *Homo sapiens*, *Mus musculus*, *Streptococcus pyogenes* MGAS823 2, *Danio rerio*, *Sulfolobus tokodaii*, *Rickettsia prowazekii*, *Bacillus subtilis* su 50

- bsp. subtilis str. 168, *Bacillus subtilis*"
- 6822 6952 31 "Mus musculus, *Arabidopsis thaliana*, *Homo sapiens*, *Sphaerooides nephelus*, *Prochlorococcus marinus*, *Actinobacillus actinomycetemcomitans*"
- 6823 6953 27 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Gallus gallus*, *Danio rerio*, *Xenopus laevis*, *Lotus corniculatus* var. japonicus, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Melanoplus sanguinipes* entomopoxvirus, *Staphylococcus aureus* subsp. aureus Mu50"
- 6824 6954 40 "Oryza sativa (japonica cultivar-group), *Danio rerio*, *Homo sapiens*, *Bryopsis* sp. A, *Bos taurus*, *Oryza sativa*, *Caenorhabditis elegans*, *Mus musculus*, *Rattus norvegicus*, *Staphylococcus aureus*, *Caenorhabditis briggsae*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Sarcodon imbricatus*, *Dictyostelium discoideum*, *Macaca mulatta*, *Monosiga brevicollis*, *Shewanella oneidensis* MR-1, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Tricholepidion gertschi*, *Papio anubis*, *Proteocephalus midoriensis*, *Lotus corniculatus* var. japonicus, *Cafeteria roenbergensis*, *Meriones unguiculatus*, *Bovine adenovirus 10*" 10
- 6825 6955 23 "Mus musculus, *Homo sapiens*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Thermoanaerobacter tengcongensis*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Danio rerio*"
- 6826 6956 25 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Danio rerio*, *Actina viridis*" 20
- 6827 6957 32 "Homo sapiens, *Vibrio cholerae*, *Mus musculus*, *Vibrio cholerae* 0139, *Rattus norvegicus*, *Sus scrofa*, *Caenorhabditis elegans*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"
- 6828 6958 31 "Tetraodon nigroviridis, *Dictyostelium discoideum*, *Mus musculus*, *Euaresta aequalis*, *Homo sapiens*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Anastrepha punctata*, *Anastrepha distincta*, *Schizosaccharomyces pombe*, *Drosophila melanogaster*, *Enterococcus faecalis* V583, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Lemur catta*, *Saccharomyces cerevisiae*, *Yaba-like disease virus*, *Mycoplasma pulmonis*, *Pisum sativum*, *Caenorhabditis briggsae*, *Porphyromonas gingivalis* W83, *Mycoplasma penetrans*, *Neurospora crassa*, *Saccharomyces* sp. S6U, *Thermosynechococcus elongatus* BP-1, *Botryotinia fuckeliana*" 30
- 6829 6959 31 "Drosophila melanogaster, *Oreina variabilis*, *Homo sapiens*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Acinetobacter* sp. ADP1, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Zamia spartea*, *Zamia pumila*, *Zamia loddigesii*, *Microcycas calocoma*, *Bowenia spectabilis*, *Bowenia serrulata*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Desulfitobacterium dehalogenans*, *Wolbachia* sp. wRi, *Wolbachia* sp. wCof, *Danio rerio*, *Stylonychia lemnae*" 40
- 6830 6960 27 "Rickettsia conorii, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Setaria italica*, *Staphylococcus epidermidis* ATCC 12228, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Anemone tenuicaulis*, *Anemone antucensis*, *Arabidopsis thaliana*"
- 6831 6961 24 "Danio rerio, *Homo sapiens*, *Mycoplasma penetrans*, *Takifugu rubripes*, *Mus musculus*, *Staphylococcus aureus*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Pyrazus ebeninus*, *Grammosciadium pterocarpum*, 50

- Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Aegokeras caespitosum, Helicobacter pylori 26695, Brassica napus, Staphylococcus aureus subsp. aureus Mu50"
- 6832 6962 36 "Plasmodium falciparum 3D7, Guillardia theta, Danio rerio, Mus musculus, Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Vibrio vulnificus CMCP6, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus, Acremonium chrysogenum, Staphylococcus aureus subsp. aureus Mu50, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Dictyostelium discoideum, Clostridium tetani E88, Glycine max, Glossina fuscipes fuscipes, Bos taurus, Chaetosphaeridium globosum, Shigella sonnei, Zea mays, Shigella flexneri 2a, Methanosarcina acetivorans C2A, Clostridium acetobutylicum, Clostridium difficile, Caenorhabditis briggsae, Plesiomonas shigelloides, Staphylococcus epidermidis, Canis familiaris, Ipomoea purpurea" 10
- 6833 6963 40 "Homo sapiens, Sorites orbiculus, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Saccharomyces douglasii, Dictyostelium discoideum, Drosophila melanogaster, Antimerina elegans, Caenorhabditis elegans, Clostridium acetobutylicum, Danio rerio, Plasmodium falciparum, Saccharomyces cerevisiae, Molinia caerulea, Rattus norvegicus, Arabidopsis thaliana, Saccharomyces dairenensis, Kluyveromyces lodderae, Eminium spiculatum, Avisaema wattii, Pan troglodytes, Monosiga brevicollis" 20
- 6834 6964 40 "Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Homo sapiens, Drosophila melanogaster, Dogania subplana, Flaveria trinervia, Oryza sativa (japonica cultivar-group), Tetrapisispora phaffii, Arabidopsis thaliana, Saccharomyces cerevisiae, Glycine max, Oryza sativa, Sorghum bicolor, Drosophila virilis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oryzias latipes, Aotus trivirgatus, Myrmecia croslandi, Plasmodium falciparum, Medicago truncatula, Dictyostelium discoideum, Pan troglodytes, Drosophila littoralis" 30
- 6835 6965 31 "Drosophila melanogaster, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Danio rerio, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Bosmaella japonica"
- 6836 6966 30 "Danio rerio, Chironomus thummi, Drosophila melanogaster, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Acidianus ambivalens, Medicago truncatula, Polypterus bichir, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa, Plasmodium falciparum 3D7, Caenorhabditis elegans, Helicobacter hepaticus ATCC 51449, Hordeum vulgare"
- 6837 6967 32 "Phthorimaea operculella granulovirus, Homo sapiens, Mus musculus, Strongyloides stercoralis, Oryza sativa, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Prototheca wickerhamii, Danio rerio, Borrelia burgdorferi B31, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Borrelia burgdorferi, Buchnera aphidicola, Leptospira interrogans serovar lai str. 56601, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Clostridium tetani E88, Plasmodium falciparum 3D7, Steinernema glaseri, Prochlorococcus marinus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Mycoplasma penetrans, Plasmodium yoelii yoelii, Cyprinus carpio" 40
- 6838 6968 43 "Mus musculus, Caenorhabditis elegans, Pasteurella multocida" 50

- cida, *Danio rerio*, *Homo sapiens*, *Populus balsamifera* subsp. *trichocarpa*, *Lotus corniculatus* var. *japonicus*, *Populus nigra*, *Neurospora crassa*, *Nostoc* sp. PCC 7120, *Dictyostelium discoideum*, *Oryza sativa* "
- 6839 6969 34 "Homo sapiens, *Orchesella flavescens*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Drosophila melanogaster*, *Kikihi a scutellaris*, *Magiicada tredecula*, *Orchesella villosa*, *Orchesella dallaii*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Methanocaldococcus jannaschii*, *Mycoplasma gallisepticum* R, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Papio anubis*, *Arachis hypogaea*, *Xenos pecki*, *Sus scrofa*, *Plasmodium falciparum*, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Hylobates lar*, *Arabidopsis thaliana*" 10
- 6840 6970 28 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Caenorhabditis briggsae*, *Oryza sativa* (*japonica* cultivar-group), *Bacillus anthracis* str. Ames, *Zizania latifolia*, *Drosophila melanogaster*, *Zizaniopsis villanensis*, *Prosophytochloa prehensilis*, *Potamophila parv*"
- 6841 6971 35 "Drosophila melanogaster, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*"
- 6842 6972 28 "Homo sapiens, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Mus musculus*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Sus scrofa*" 20
- 6843 6973 28 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Drosophila melanogaster*, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Danio rerio*, *Ciona intestinalis*, *Xenopus laevis*"
- 6844 6974 28 "Danio rerio, *Drosophila melanogaster*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Neurospora crassa*, *Bacillus anthracis* str. Ames, *Pseudoplusia includens*, *Rattus norvegicus*, *Mus musculus*, *Dictyostelium discoideum*, *Streptomyces coelicolor* A3(2), *Xylocopa virginica*"
- 6845 6975 28 "Oryza sativa (*japonica* cultivar-group), *Homo sapiens*, *Mus musculus*, *Xenopus laevis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586 " 30
- 6846 6976 30 "Trypanosoma brucei, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Neurospora crassa*, *Botryotinia fuckeliana*, *Homo sapiens*, *Glycine max*, *Mus musculus*, *Chlorobium tepidum* TLS, *Myotis macropus*, *Aphidius ervi*, *Drosophila melanogaster*, *Medicago truncatula*, *Arabidopsis thaliana*, *Mycoplasma hyopneumoniae*, *Lotus corniculatus* var. *japonicus*, *Candida albicans*, *Mycosphaerella rabiei*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Shigella flexneri* 2a str. 2457T, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Cotesia congregata*, *Escherichia coli* K12, *Escherichia coli* 0157:H7 EDL933, *Antirrhinum majus*, *Oryza sativa* (*japonica* cultivar-group)" 40
- 6847 6977 28 "Homo sapiens, *Mus musculus*, *Mycoplasma penetrans*, *Papio hamadryas*, *Plasmodium falciparum*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Salmonella typhimurium* bacteriophage ST64T, *Coxiella burnetii* RSA 493, *Medicago truncatula*, *Drosophila melanogaster*, *Pan troglodytes*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Oceanobacillus ihyensensis* HTE831, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Schizosaccharomyces pombe*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 6848 6978 36 "Mus musculus, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Caenorhabditis bri* 50

- ggsae, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Hordeum vulgare* subsp. *vulgare*, *Oryza sativa*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Puya raimondii*, *Neurospora crassa*, *Procambarus clarkii*, *Chlorella vulgaris*, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*)"
6849 6979 32 "Mus musculus, Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Rattus leucopus, Papio anubis, Gallus gallus, Arabidopsis thaliana, Melaleuca sericea, Nicotiana tabacum x Nicotiana bigelovii, Xenopus laevis, Plasmodium falciparum 3D7, Drosophila melanogaster"
6850 6980 25 "Mus musculus, Danio rerio, Homo sapiens, Lolium rigidum, Caenorhabditis briggsae, Bacillus subtilis subsp. subtilis str. 168, Enterococcus faecium, Bacillus subtilis, Gallus gallus, Drosophila melanogaster, Magnaporthe grisea, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Ursus americanus, Arabidopsis thaliana" 10
6851 6981 32 "Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Sus scrofa, Chlorohydra viridissima, Apis mellifera, Pan troglodytes, Rattus norvegicus, Plasmodium falciparum, Anthoceros formosae, Cucumis sativus, Neurospora crassa, Dictyostelium discoideum, Xenopus laevis, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7"
6852 6982 31 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Simiirine herpesvirus 2, Danio rerio, Ateline herpesvirus 3, Yarrowia lipolytica, Oryza sativa (japonica cultivar-group), Rhagoletis cingulata, Drosophila melanogaster, Clostridium tetani E88, Medicago truncatula, Sulfolobus solfataricus, Arabidopsis thaliana, Dugesia japonica, Ciona intestinalis, Dictyostelium discoideum, Rattus norvegicus" 20
6853 6983 31 "Homo sapiens, Staphylococcus aureus, Mus musculus, Danio rerio, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Streptococcus pneumoniae, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Dictyostelium discoideum, Arabidopsis thaliana, Atelerix albiventris, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Plasmodium falciparum 3D7, Papio anubis, Staphylococcus epidermidis ATCC 12228, Clostridium acetobutylicum, Staphylococcus epidermidis, Solanum tuberosum, Caenorhabditis briggsae, Ureaplasma urealyticum, Rattus norvegicus, Medicago truncatula, Ciona intestinalis, Somateria mollissima, Mycoplasma hypopneumoniae, Orzyias latipes" 30
6854 6984 35 "Mus musculus, Homo sapiens, Peromyscus maniculatus, Dictyostelium discoideum, Drosophila melanogaster, Felis catus, Danio rerio, Ajellomyces capsulatus, Medicago truncatula, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Arachis hypogaea, Arabidopsis thaliana, Mus caroli, Schizosaccharomyces pombe, Caenorhabditis elegans, Drosophila virilis, Borrelia burgdorferi" 40
6855 6985 27 "Homo sapiens, Methanothermobacter thermoautotrophicus str. Delta H, Arabidopsis thaliana, Mus musculus, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Entamoeba histolytica, Zea mays"
6856 6986 27 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Cryptosporidium parvum"
6857 6987 27 "Rickettsia prowazekii, Arabidopsis thaliana, Homo sapiens, Mus musculus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Dictyostelium discoideum, Caenorhabditis elegans, Guillardia theta, Oryza sativa (japonica cultivar-group), Danio rerio, Pan troglodytes, Methanosarcina mazei Goe1, Ciona intestinalis" 50

inalis"

- 6858 6988 25 "Mus musculus, Homo sapiens, Fusobacterium nucleatum sub sp. nucleatum ATCC 25586, Danio rerio, Drosophila melanogaster, Dictyostelium discoideum, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Thermoanaerobacter tengcongensis, Arabidopsis thaliana, Caenorhabditis elegans, Bombus hypnorum, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group)"
- 6859 6989 44 "Orpinomyces joyonii, Danio rerio, Clostridium perfringens str. 13, Mus musculus, Homo sapiens, Oceanobacillus ihayensis HTE831, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Schmidtea mediterranea, Saccharomyces douglasii, Ar" 10
- 6860 6990 44 "Homo sapiens, Pan troglodytes, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Bacillus cereus ATCC 14579, Borrelia burgdorferi B31, Drosophila melanogaster, Arabidopsis thaliana, Borrelia burgdorferi, Lactobacillus delbrueckii subsp. bulgaricus, Caen" 10
- 6861 6991 33 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Prochlorococcus marinus, Oryza sativa, Danio rerio, Bacillus anthracis str. Ames, Shigella flexneri 2a str. 245"
- 6862 6992 31 "Mycoplasma penetrans, Mus musculus, Homo sapiens, Pan troglodytes, Plasmodium falciparum 3D7, Plasmodium falciparum, Prochlorococcus marinus, Arabidopsis thaliana, Gossypium hirsutum, Canine herpesvirus, Drosophila melanogaster, Clostridium tetani E88, Rhodomonas salina, Leucomium strumosum, Saquinavir oedipus, Medicago truncatula, Danio rerio, Salganea cavagnaroi" 20
- 6863 6993 28 "Mus musculus, Homo sapiens, Sulfolobus shibatae, Bacillus anthracis str. A2012, Shrimp white spot syndrome virus, Borrelia hermsii, Clostridium acetobutylicum, Oryza sativa (indica cultivar-group), Hordeum vulgare subsp. vulgare, Euglena viridis, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Bacillus anthracis, Danio rerio, Anolis longiceps, Caenorhabditis elegans"
- 6864 6994 28 "Drosophila melanogaster, Homo sapiens, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Ureaplasma urealyticum, Mus musculus, Claviceps purpurea, Schizosaccharomyces pombe, Caenorhabditis elegans, Methanosarcina acetivorans C2A, Felis catus, Danio rerio, Cloning vector pHR'-CMVLa cZ" 30
- 6865 6995 28 "Homo sapiens, Mus musculus, Pasteurella multocida, Lotus corniculatus var. japonicus, Gaeumannomyces graminis var. tritici, Caenorhabditis elegans, Thermoplasma volcanium"
- 6866 6996 27 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Bacillus cereus, Danio rerio, Gossypioides kirkii, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Plasmodium gallinaceum, Staphylococcus epidermidis, Lotus corniculatus var. japonicus, Bradyrhizobium japonicum USDA 110, Listeria innocua, Albugo occidentalis, Clostridium perfringens str. 13" 40
- 6867 6997 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Pan troglodytes, Arabidopsis thaliana, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Danio rerio"
- 6868 6998 24 "Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Clostridium acetobutylicum, Cyanidium caldarium, Rhizopus stolonifer, Plasmodium falciparum 3D7, Thermoanaerobacter tengconge" 50

- nsis, *Porphyridium aerugineum*"
- 6869 6999 33 "Mus musculus, *Drosophila melanogaster*, *Homo sapiens*, *Escherichia coli*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Mycoplasma pneumoniae*, *Plasmodium falciparum*, *Mus sp.*, *Rattus norvegicus*, Plasmid F, *Medicago truncatula*, *Bacillus anthracis* str. Ames, Human immunodeficiency virus 1, *Sus scrofa*, *Xanthophyllum octandrum*, *Xanthophyllum affine*, *Polygala penaea*, *Polygala macradenia*, *Polygala fuertesii*, *Moutabea excoriata*, *Moutabea aculeata*, *Carpolobia alba*, *Bredemeyera lucida*, *Bredemeyera floribunda*, *Atroxima liberica*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*"
- 6870 7000 27 "Homo sapiens, *Mus musculus*, *Sorghum bicolor*, *Danio rerio*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis briggsae*, *Bacillus cereus* ATCC 14579, *Bacillus cereus*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Encephalitozoon cuniculi*, *Bombyx mori*" 10
- 6871 7001 26 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, uncultured bacterium, *Zea mays*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Schizosaccharomyces pombe*"
- 6872 7002 32 "Homo sapiens, *Mus musculus*, *Oryctolagus cuniculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Sulfolobus tokodaii*, *Helicoverpa zea*, *Danio rerio*, *Amoebidium parasiticum*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*, *Oryza sativa* (*japonica* cultivar-group), *Anastrepha ludens*, *Clostridium perfringens* str. 13, *Pan troglodytes*, *Arabidopsis thaliana*, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Sus scrofa*, *Papio anubis*" 20
- 6873 7003 27 "Mus musculus, *Homo sapiens*, *Danio rerio*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Aplysia californica*, *Takifugu rubripes*, *Neisseria gonorrhoeae*, *Trichophyton rubrum*, *Bacillus cereus*, *Caenorhabditis elegans*, *Pan troglodytes*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mycoplasma synoviae*, *Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Candida albicans*, *Haemobacter hepaticus* ATCC 51449" 30
- 6874 7004 23 "Drosophila melanogaster, *Homo sapiens*, *Papio anubis*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus domesticus*"
- 6875 7005 27 "Rickettsia prowazekii, *Mus musculus*, *Homo sapiens*, *Zea mays*, *Candidatus Carsonella ruddii*, *Danio rerio*, *Torpedo californica*, *Arabidopsis thaliana*, *Babesia bovis*, *Drosophila melanogaster*"
- 6876 7006 27 "Caenorhabditis elegans, *Homo sapiens*, *Drosophila melanogaster*, *Caenorhabditis briggsae*, *Brugia malayi*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Macaca fascicularis*"
- 6877 7007 25 "Homo sapiens, *Mus musculus*, *Sus scrofa*, *Arabidopsis thaliana*, *Pneumocystis carinii*, *Bacillus halodurans*, *Clostridium perfringens* str. 13, *Oryza sativa* (*japonica* cultivar-group), *Streptococcus pyogenes* MGAS315, Temperate phage PhiNIH1.1, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* SS1-1, *Danio rerio*, *Ilex sp.* Erixon and Bremer 52" 40
- 6878 7008 64 "Haemophilus ducreyi 35000HP, *Pasteurella multocida*, *Streptococcus mutans* UA159, *Arabidopsis thaliana*, *Staphylococcus epidermidis* ATCC 12228, *Escherichia coli* O157:H7 EDL933, *Staphylococcus epidermidis*, *Oceanobacillus ihayensis* HTE831, *Escherichia coli* O157:H7, *Homo sapiens*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Bacillus firmus*, *Mus musculus*, *Lactobacillus plantarum* WCFS1, *Thermosynechococcus elongatus* BP-1, *Coxiella burnetii* RSA 50

- 493, *Plasmodium falciparum* 3D7, *Stagnicola elodes*, *Lupinus albus*, *Bruchidius senegalensis*"
- 6879 7009 47 "Listeria monocytogenes, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Mus musculus*, *Haemophilus influenzae* Rd KW20, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Oceanobacillus iheyensis* HTE831, *Drosophila melanogaster*, *Staphylococcus aureus*, *Microlicia fasciculata*, *Lavoisiera cordata*, *Mohavea confertiflora*, *Howelliella ovata*, *Oryza sativa* (*japonica* cultivar-group), *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Staphylococcus aureus* subsp. *aureus* Mu50" 10
- 6880 7010 25 "Homo sapiens, *Danio rerio*, *Streptococcus agalactiae* 2603V/R, *Populus balsamifera* subsp. *trichocarpa*, *Mus musculus*, *Drosophila melanogaster*, *Leishmania major*"
- 6881 7011 28 "Saccharomyces castellii, *Danio rerio*, *Cinchona pubescens*, *Mus musculus*, *Homo sapiens*, *Torulaspora pretoriensis*, *Torulaspora delbrueckii*, *Saccharomyces turicensis*, *Saccharomyces exiguus*, *Leptospira interrogans* serovar *lai* str. 56601, *Pan troglodytes*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Spiroplasma citri*, *Torulaspora franciscae*, *Didelphis virginiana*, *Drosophila melanogaster*, *Rickettsia conorii*"
- 6882 7012 32 "Caenorhabditis elegans, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Pan troglodytes*, *Bos taurus*, *Papio anubis*, *Emericella nidulans*, *Danio rerio*, *Macaca mulatta*, *Medicago truncatula*, *Arabidopsis thaliana*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Hypnea japonica*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Oryza sativa*, *Bacteroides thetaiotaomicron* VPI-5482, *Dictyostelium discoideum*, *Lupinus albus*, *Glycine max*, *Amsacta moorei* entomopoxvirus, *Didelphis virginiana*, *Lactobacillus plantarum* WCFS1, *Xenopus laevis*, *Nostoc* sp. PCC 7120" 20
- 6883 7013 27 "Drosophila melanogaster, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Medicago truncatula*, *Mus musculus*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Parvo-like virus*, *Thraustochytrium aureum*, *Lotus corniculatus* var. *japonicus*, *Ciona intestinalis*" 30
- 6884 7014 23 "Drosophila melanogaster, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Human immunodeficiency virus 1*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Clostridium acetobutylicum*, *Mus musculus*, *Helicobacter hepaticus* ATCC 51449"
- 6885 7015 41 "Homo sapiens, *Candidatus Blochmannia floridanus*, *Penaeus monodon*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Plasmodium falciparum* 3D7, *Mus musculus*, *Mycoplasma penetrans*, *Danio rerio*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Naegleria gruberi*, *Caenorhabditis elegans*, *Medicago truncatula*, *Neisseria meningitidis*, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Entamoeba histolytica*, *Spodoptera frugiperda*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila lummei*, *Setaria italica*, *Arabidopsis thaliana*, *Prochlorococcus marinus*, *Ciona intestinalis*, *Lotus corniculatus* var. *japonicus*, *Penicillium marneffeii*, *Plasmodium falciparum*, *Dictyostelium discoideum*" 40
- 6886 7016 31 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Staphylococcus warneri*, *Pelecinus polyturator*, *Monosiga brevicollis*, *Tetrahymena thermophila*, *Candidatus Carsonellaruddii*, *Arabidopsis thaliana*, *Schi* 50

zosaccharomyces pombe, Venerupis (Ruditapes) philippinarum, Pan troglodytes, Aquifex aeolicus VF5, Caenorhabditis elegans, Plasmodium falciparum 3D7, secondary endosymbiont of Dysmicoccus brevipes, uncultured alpha proteobacterium, Agathis sp. DMA-1998, Sulfolobus solfataricus, Pasteurella multocida, Plasmodium falciparum, Agouti taczanowskii, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Prototheca wickerhamii, Lycopersicon esculentum, Hemiechinus auritus, Saccharomyces servazzii, Saccharomyces cerevisiae, Leptolejeunea elliptica, Actinobacillus actinomycetemcomitans"

6887 7017 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Rattus norvegicus, Danio rerio, Xenopus laevis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Ochromonas danica, Lotus corniculatus var. japonicus, Ipomoea platensis, Ipomoea graminea, Macaca fascicularis" 10

6888 7018 27 "Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Danio rerio, Caenorhabditis elegans"

6889 7019 27 "Homo sapiens, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Anopheles arabiensis, Anopheles gambiae, Pan troglodytes, Oryza sativa (japonica cultivar-group)"

6890 7020 23 "Homo sapiens, Mus musculus, Pseudomonas putida KT2440, Pseudomonas putida, Gracilaria chilensis, Candidatus Blochmannia floridanus, Danio rerio, Pseudomonas putida GB-1, Cucumis sativus, Caenorhabditis elegans" 20

6891 7021 30 "Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Lotus corniculatus var. japonicus, Arabidopsis thaliana, Dictyostelium discoideum, Plasmodium falciparum 3D7, Danio rerio, Caenorhabditis elegans, Medicago truncatula, Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Lycopersicon esculentum, Prunus dulcis, Paramecium aurelia, Drosophila guanche, Populus tomentosa, Buchnera aphidicola, Methanocaldococcus jannaschii, Clostridium perfringens str. 13, Candidatus Carsonella ruddii, Pan troglodytes, Buchnera aphidicola str. Bp (Baizongia pistaciae), Rattus norvegicus, Tamiya flagellaris" 30

6892 7022 27 "Mus musculus, Homo sapiens, Dendroctonus jeffreyi, Bacillus cereus ATCC 14579, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Danio rerio"

6893 7023 54 "Buchnera aphidicola str. Sg (Schizaphis graminum), Helicobacter hepaticus ATCC 51449, Haemophilus influenzae Rd KW20, Mus musculus, Leptospira interrogans serovar lai str. 56601, Enterococcus faecalis V583, Methanocaldococcus jannaschii, Homo sapiens, Danio rerio, Taeniopygia guttata, Haemophilus ducreyi 35000HP, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum"

6894 7024 27 "Mycoplasma penetrans, Homo sapiens, Orseolia oryzae, Dictyostelium discoideum, Poncirus trifoliata, Fusobacterium nucleatum subsp. vincentii, Caenorhabditis elegans, Campylobacter lari, Danio rerio, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Eimeria tenella, Bacillus anthracis str. Ames, Mus musculus, Plasmodium falciparum 3D7, Lactobacillus sakei, Hirudo nipponia, Clarkia xantiana, Raphanus sativus, Nothobranchius furzeri, Melanoplus sanguinipes entomopoxvirus, Methanocaldococcus jannaschii, Medicago truncatula" 40

6895 7025 27 "Homo sapiens, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Lotus corniculatus var. japonicus, Mus musculus, Danio rerio, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Lycopersi 50

con esculentum"

- 6896 7026 28 "Homo sapiens, Saccharomyces cerevisiae, Plasmodium falciparum 3D7, Drosophila melanogaster, Mus musculus, Schistosoma mansoni, Phyciodes phaon, Danio rerio, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Clostridium tetani E88, Zea mays, Oryza sativa (japonica cultivar-group), Medicago truncatula, Arabidopsis thaliana, Phyciodes tharos, Phyciodes pulchella, Phyciodes cocyta, Bacteriophage phig1e, Rattus norvegicus, Neurospora crassa, Mesembryanthemum crystallinum"
- 6897 7027 23 "Homo sapiens, Mus musculus, Erythrotrichia carnea, Caenorhabditis elegans, Danio rerio, Oceanobacillus iheyensis HTE831" 10
- 6898 7028 29 "Papio anubis, Homo sapiens, synthetic construct, Mus musculus, Glossina fuscipes fuscipes, Danio rerio, Saccharomyces cerevisiae, Schmidtea mediterranea, Staphylococcus epidermidis, Arabidopsis thaliana, Nostoc sp. PCC 7120"
- 6899 7029 27 "Mus musculus, Homo sapiens, Streptococcus mutans UA159, Arabidopsis thaliana, Thermoplasma volcanium, Papio anubis, Caenorhabditis elegans, Borrelia burgdorferi, Danio rerio, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus"
- 6900 7030 25 "Oryza sativa (japonica cultivar-group), Homo sapiens, Plasmodium falciparum 3D7, Simian immunodeficiency virus, Mus musculus, Caenorhabditis elegans, Danio rerio, Bacillus cereus ATCC 14579, Streptococcus pneumoniae, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Plasmodium falciparum, Clostridium perfringens str. 13" 20
- 6901 7031 31 "Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster, Dictyostelium discoideum, Mus musculus, Gallus gallus, Solanum tuberosum, Felis catus, Danio rerio, Caenorhabditis elegans, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus Mu50, Nostoc sp. PCC 7120"
- 6902 7032 32 "Oryza sativa (japonica cultivar-group), Bacillus halodurans, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Homo sapiens, Euglena gracilis, Oxycheila nigroaenea, Clostridium tetani E88, Caenorhabditis elegans, Arabidopsis thaliana, Vibrio cholerae, Danio rerio" 30
- 6903 7033 41 "Homo sapiens, Danio rerio, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Mus musculus, Lemur catta, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Myotis volans, Plasmodium chabaudi chabaudi, Dictyostelium discoideum, Drosophila melanogaster, Clostridium tetani, Caenorhabditis elegans, Necator americanus, Arabidopsis thaliana, Ureaplasma urealyticum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Medicago truncatula, Schizosaccharomyces pombe, Bombyx mori, Pyrococcus horikoshii, Staphylococcus aureus subsp. aureus Mu50" 40
- 6904 7034 28 "Homo sapiens, Papio anubis, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Danio rerio, Dictyostelium discoideum, Clostridium tetani E88, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sulfolobus solfataricus, Lucilia cuprina, Arabidopsis thaliana, Loligo forbesi, Neurospora crassa, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Chironomus pallidivittatus"
- 6905 7035 21 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Clostridium perfringens str. 13" 50

- 6906 7036 23 "Mus musculus, Homo sapiens, Chlamydomyxa caviae GPIC, Dictyostelium discoideum, Papio anubis, Bacillus cereus ATCC 14579, Rickettsia conorii, Vibrio parahaemolyticus, Danio rerio"
- 6907 7037 31 "Homo sapiens, Acinetobacter sp. 93A2, Acinetobacter sp. ADP1, Oryza sativa (japonica cultivar-group), Danio rerio, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Drosophila melanogaster, Oropouche virus, Listeria monocytogenes, Arabidopsis thaliana, Caenorhabditis briggsae, Paracentrotus lividus, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Buchnera aphidicola"
- 6908 7038 27 "Mus musculus, Homo sapiens, Daphnia pulex, Caenorhabditis elegans, Saccharomyces cerevisiae, Buena sp. HMR-1997, Neurospora crassa, Epicauta funebris, Cyanophora paradoxa, Rattus norvegicus, Hyalophora cecropia, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Clostridium tetani E88, Streptococcus mutans UA159, Plasmodium falciparum 3D7, Arabidopsis thaliana, Vibrio phage VSK, Ceratophora tennentii, Clostridium acetobutylicum, Elaeis guineensis, Ciona intestinalis, Oryza sativa (japonica cultivar-group), Anopheles gambiae" 10
- 6909 7039 28 "Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Arabidopsis thaliana, Homo sapiens, Petroselinum crispum, Aedes aegypti, Thermoanaerobacter tengcongensis, Sulfolobus solfataricus, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Clostridium tetani E88, Caenorhabditis elegans, Shewanella oneidensis MR-1, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Rickettsia felis, Eubacterium acidaminophilum, Amsacta moorei entomopoxvirus, Oryza sativa (japonica cultivar-group), Listeria monocytogenes, Entamoeba dispar" 20
- 6910 7040 35 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Oryza sativa (japonica cultivar-group), Thermoanaerobacter tengcongensis, Takifugu rubripes, Branchiostoma floridae, Rattus norvegicus, Danio rerio, Schizosaccharomyces pombe, Stenodus leucichthys" 30
- 6911 7041 34 "Escherichia coli, Escherichia coli K12, Caenorhabditis elegans, Homo sapiens, Medicago truncatula, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Mus musculus, Plasmodium chabaudi chabaudi, Drosophila melanogaster, Schmidtea mediterranea, Patella vulgata, Sus scrofa, Oryctolagus cuniculus, Atelerix albiventris, Rickettsia conorii, Pan troglodytes, Mycoplasma pulmonis, Canis familiaris, Bos taurus, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mycoplasma hyorhinis, Rattus norvegicus" 40
- 6912 7042 35 "Homo sapiens, Mus musculus, Acerentomon sp. CFNDS2, Clostridium tetani E88, Bos taurus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Pan troglodytes, Papio anubis, Arabidopsis thaliana, Haynaldia villosa, Methanosarcina acetivorans C2A, Streptococcus pneumoniae, Glycine max, Nephila inaurata madagascariensis, Helicobacter pylori 26695"
- 6913 7043 27 "Homo sapiens, Arabidopsis thaliana, Erwinia chrysanthemi, Drosophila melanogaster, Mus musculus, Rattus norvegicus, Aquifex aeolicus VF5, Plasmodium falciparum, Danio rerio, Malus x domestica"
- 6914 7044 39 "Plasmodium falciparum 3D7, Mus musculus, Drosophila melanogaster, Homo sapiens, Clostridium tetani E88, Clostridium tetani, Arabidopsis" 50

- thaliana, *Hypolimnas bolina*, *Marchantia polymorpha*, *Plasmodium vivax*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Buchnera aphidicola* str. Bp (Baizongia pistaciae), *Dictyostelium discoideum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis elegans*, *Phaseolus vulgaris*, *Mycoplasma penetrans*, *Pan troglodytes*, *Metaplex takahashii*, *Metaplex shenii*, *Brassica napus*, *Rattus norvegicus*, *Meretrix lamarckii*, *Medicago truncatula*, *Cymbidium floribundum*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Dreissena bugensis*"
- 6915 7045 27 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Chironomus tentans, Caenorhabditis elegans, Medicago truncatula, Enterococcus faecalis V583, Borrelia burgdorferi B31, Drosophila melanogaster, Sus scrofa, Synedrella nodiflora, Jaegeria hirta, Lactobacillus plantarum, Pan troglodytes, Bos taurus, Prochlorococcus marinus, Campylobacter jejuni subsp. jejuni NCTC 11168, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Schizosaccharomyces pombe, Polymnia canadensis" 10
- 6916 7046 47 "Archaeoglobus fulgidus DSM 4304, Mus musculus, Medicago truncatula, Dictyostelium discoideum, Homo sapiens, Plasmodium falciparum 3D7, Plasmodium falciparum, Danio rerio, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Arabidopsis thaliana, Sulfolobus tokodaii, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Borrelia burgdorferi B31, Tetrahymena thermophila, Vibrio vulnificus CMCP6, Helicobacter pylori, Blueberry red rings pot virus, Oryza sativa (japonica cultivar-group), Chrysomya megacephala, Gaeumannomyces graminis, Triticum monococcum, Ceratitis capitata, Avena fatua, Borrelia burgdorferi, Carassius auratus, Plasmodium chabaudi chabaudi" 20
- 6917 7047 41 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Dictyostelium discoideum, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Danio rerio, Gallus gallus, Ictalurus punctatus, Plasm" 30
- 6918 7048 24 "Danio rerio, Homo sapiens, Chlamydia muridarum, Mus musculus, Bovista plumbea, Yersinia pestis KIM, Yersinia pestis C092, Arabidopsis thaliana" 30
- 6919 7049 24 "Homo sapiens, Danio rerio, Bacillus anthracis str. Ames, Caenorhabditis elegans, Drosophila melanogaster, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Listeria monocytogenes, Rattus norvegicus, Oryza sativa (japonica cultivar-group)"
- 6920 7050 24 "Streptococcus mutans UA159, Homo sapiens, Caenorhabditis elegans, Danio rerio, Oreochromis niloticus, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Vibrio metschnikovii, Caenorhabditis briggsae, Sulfolobus tokodaii"
- 6921 7051 27 "Danio rerio, Arabidopsis thaliana, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Mycoplasma penetrans, Mus musculus, Plasmodium falciparum 3D7, Methanosarcina acetivorans C2A, Chenopodium rubrum, Saccharomyces cerevisiae, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Planctomyces limnophilus" 40
- 6922 7052 21 "Borrelia burgdorferi B31, Borrelia burgdorferi, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Staphylococcus aureus, Danio rerio, Equus caballus, Arabidopsis thaliana, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Campylobacter jejuni subsp. jejuni NCTC 11168"
- 6923 7053 24 "Rattus norvegicus, Caenorhabditis elegans, Homo sapiens, Plasmodium falciparum 3D7, Prototheca wickerhamii, Penaeus monodon, Danio rerio" 50

- o, *Mus musculus*, Loofah witches'-broom phytoplasma, *Laminaria digitata*, *Phytophthora infestans*, *Malassezia sympodialis*, *Ciona intestinalis*, *Gossypium hirsutum*, *Gallus gallus*, *Synechocystis* sp. PCC 6803"
- 6924 7054 40 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Human immunodeficiency virus 1, Oryza sativa (japonica cultivar-group), Isotracha sp. BBF-2003, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Dictyostelium discoideum, Papio anubis, Caenorhabditis elegans, Plasmodium falciparum 3D7, Rattus norvegicus, Ureaplasma urealyticum, Danio rerio, Phytophthora infestans, synthetic construct, Schizosaccharomyces pombe, Plasmodium falciparum, Kaupichthys hyoprорoides, Candida albicans, Brachyspira hyodysenteriae"
- 6925 7055 24 "Mus musculus, Homo sapiens, Danio rerio, Ciona intestinalis, Oryza sativa (japonica cultivar-group)"
- 6926 7056 28 "Methanosarcina mazei Goe1, Listeria monocytogenes, Homo sapiens, Arabidopsis thaliana, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Buchnera aphidicola str. Bp (Baizongia pistaciae), Clostridium tetani E88, Plasmodium falciparum 3D7, Sceloporus gadovae, Caenorhabditis elegans, Sceloporus grammicus, Danio rerio, Mus musculus, Archaeoglobus fulgidus DSM 4304, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Dictyostelium discoideum, Haliphthoros philippinensis, Mycoplasma conjunctivae, Buchnera aphidicola, Oryza sativa (japonica cultivar-group), Nephroselmis olivacea, Staphylococcus epidermidis, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Pan troglodytes, Melanoplus sanguinipes entomopoxvirus, Hyaloperonospora parasitica, Peronospora manshurica, Clostridium perfringens str. 13"
- 6927 7057 56 "Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Clostridium perfringens str. 13, Staphylococcus aureus subsp. aureus Mu50, Clostridium perfringens, Prochlorococcus marinus, Helicobacter hepaticus ATCC 51449, Staphylococcus"
- 6928 7058 51 "Haemophilus influenzae Rd KW20, Listeria monocytogenes, Listeria innocua, Enterococcus faecalis V583, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Pasteurella multocida, Buchnera aphidicola str. Bp (Baizongia pistaciae), Helicobacter hepaticus ATCC 51449, Coxiella burnetii RSA 493, Prochlorococcus marinus, Candidatus Blochmannia floridanus, Mus musculus, Homo sapiens, Chlamydomonas reinhardtii, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Bacillus halodurans, Drosophila melanogaster, Danio rerio, Canis familiaris, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Saccharomyces cerevisiae, Guillardia theta, Arabidopsis thaliana, Aiptasia pallida"
- 6929 7059 28 "Homo sapiens, Mus musculus, Caenorhabditis briggsae, Sulfolobus tokodaii, Gallus gallus, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Drosophila melanogaster, Bacillus anthracis str. Ames, Pasteurella multocida, Lotus corniculatus var. japonicus, Haemophilus ducreyi 35000 HP, Danio rerio"
- 6930 7060 41 "Haemophilus ducreyi 35000HP, Methanosarcina mazei Goe1, Arabidopsis thaliana"
- 6931 7061 21 "Nephila inaurata madagascariensis, Aquifex pyrophilus, Bacillus thuringiensis, Streptococcus pyogenes MGAS315, Streptococcus pyogenes M

- GAS8232, *Homo sapiens*, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Gallus gallus*, *Danio rerio*"
- 6932 7062 27 "Caenorhabditis briggsae, *Mus musculus*, *Dictyostelium discoideum*, *Homo sapiens*, *Heliothis zea* virus 1, *Arabidopsis thaliana*, *Aquifex aeolicus* VF5, *Papio anubis*, *Mytilus trossulus*, *Danio rerio*, *Mytilus edulis*, *Lotus corniculatus* var. japonicus, *Mytilus* sp. AU3, *Mytilus* sp. AU2, *Mytilus* sp. AU4, *Mytilus* sp. NZ4, *Mytilus* sp. SH3, *Mytilus* sp. FA1, *Mytilus* sp. CH5, *Mytilus* sp. SH2, *Mytilus* sp. NZ3, *Mytilus* sp. NZ1, *Mytilus* sp. NZ2, *Mytilus* sp. K2, *Mytilus* sp. K1, *Mytilus* sp. AU1, *Mytilus* sp. CH4, *Mytilus* sp. CH1, *Mytilus* sp. SH1, *Mytilus* sp. CH2, *Mytilus* sp., *Mytilus galloprovincialis*, *Helicobacter hepaticus* ATCC 51449" 10
- 6933 7063 83 "Streptococcus agalactiae 2603V/R, *Streptococcus agalactiae* NEM316, *Streptococcus mutans* UA159, *Odontella sinensis*, *Staphylococcus epidermidis* ATCC 12228, *Mycoplasma genitalium*, *Cyanophora paradoxa*, *Ureaplasma urealyticum*, *Buchnera aphidicola* str. Bp (Baizon"
- 6934 7064 32 "Haemophilus influenzae Rd KW20, *Mus musculus*, *Pasteurella multocida*, *Listeria innocua*, *Homo sapiens*, *Phyllodoce empetrifomis*, *Dictyoglomus thermophilum*, *Oryza sativa* (japonica cultivar-group), *Vaccinium myrtillus*, *Pinus krempfii*, *Pinus squamata*, *Pinus gera*"
- 6935 7065 100 "Staphylococcus epidermidis ATCC 12228, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Brochothrix thermosphacta*, *Oenococcus oeni*, *Lactococcus lactis* subsp. " 20
- 6936 7066 108 "Baumannia cicadellinicola, *Pseudomonas syringae* pv. tomato str. DC3000, *Bacillus halodurans*, *Chlamydia muridarum*, *Ureaplasma urealyticum*, *Listeria innocua*, *Listeria monocytogenes*, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Escherichia coli* CFT073, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Yersinia pestis* KIM, *Pasteurella multocida*, *Leuconostoc carnosum*, *Brochothrix thermosphacta*, *Haemophilus ducreyi* 35000HP, *Yersinia pestis* C092, *Chryseobacterium indologenes*" 30
- 6937 7067 27 "Homo sapiens, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mus musculus*, *Danio rerio*, *Streptococcus thermophilus*, *Drosophila melanogaster*, *Gallus gallus*, *Goatpox virus*, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Phycomyces blakesleeanus*"
- 6938 7068 25 "Gallus gallus, *Homo sapiens*, *Schmidtea mediterranea*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Xenopus laevis*, *Mus musculus*, *Plasmodium vivax*, *Schizosaccharomyces pombe*, *Danio rerio*"
- 6939 7069 47 "Homo sapiens, *Rattus norvegicus*, *Gallus gallus*, *Baumannia cicadellinicola*, *Staphylococcus epidermidis* ATCC 12228, *Arabidopsis thaliana*, *Mus musculus*, *Staphylococcus epidermidis*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Danio rerio*, *Beta vulgaris* subsp. vulgaris, *Brassica napus* var. napus, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Ciona intestinalis*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Avian infectious bronchitis virus*, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group)" 40
- 6940 7070 141 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Porphyra purpurea*, *Guillardia theta*, *Haemophilus ducreyi* 35000HP, *Helicobacter hepaticus* ATCC 51449, *Clostridium tetani* E88, *Mesostigma viride*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*)" 40

- 6941 7071 63 "Buchnera aphidicola str. Sg (Schizaphis graminum), Rickettsia prowazekii, Buchnera aphidicola str. Bp (Baizongia pistaciae), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Bacillus anthracis, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Candidatus Blochmannia floridanus, Helicobacter hepaticus ATCC 51449, Pasteurella multocida, Oceanobacillus iheyensis HTE831, Drosophila melanogaster, Homo sapiens, Mus musculus, Campylobacter jejuni subsp. jejuni NCTC 11168, Baumannia cicadellinicola, Caenorhabditis elegans, Streptococcus mutans UA159, Lotus corniculatus var. japonicus, Tylochromis polylepis, Danio rerio, Haemophilus ducreyi 35000HP, Helicobacter pylori 26695, Mimivirus, Haemophilus influenzae Rd KW20" 10
- 6942 7072 137 "Lactococcus lactis subsp. lactis, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Streptococcus pyogenes MGAS8232, Listeria innocua, Listeria monocytogenes, "
- 6943 7073 166 "Chlamydia trachomatis, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Cyanophora paradoxa, Oceanobacillus iheyensis HTE831, Rickettsia conorii, Staphylococcus aureus subsp. aureus MW2, Buchnera aphidicola str. Bp (Baizongia pistaciae), Ric" 20
- 6944 7074 45 "Homo sapiens, Danio rerio, Papio anubis, Arabidopsis thaliana, Rickettsia prowazekii, Ureaplasma urealyticum, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Leishmania tarentolae, Rattus norvegicus, Pan troglodytes, Plasmodium falciparum 3D7, Meleagris gallopavo, Guillardia theta, Physalis severe mottle virus, Fasciola hepatica, Prunus persica, Montastraea franksi, Pseudocorticium jarrei, Trypanosoma brucei, Trypanosoma brucei brucei, Saccharomyces kluyveri, Prochlorococcus marinus subsp. marinus str. CCMP1375, Schizosaccharomyces pombe, Dictyostelium discoideum, Caenorhabditis elegans, Clostridium perfringens str. 13" 30
- 6945 7075 89 "Rickettsia conorii, Haemophilus influenzae Rd KW20, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Pasteurella multocida, Homo sapiens, Caenorhabditis elegans, Neorickettsia sennetsu, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Danio rerio, Buchnera aphidicola, Tetrahymena pyriformis, Buchnera aphidicola str. APS (Acyrtosiphon pisum)" 40
- 6946 7076 180 "Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Coxiella burnetii RSA 493, Haemophilus ducreyi 35000HP, Arcobacter butzleri, Baumannia cicadellinicola, Staphylococcus lugdunensis, R" 40
- 6947 7077 31 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Sphaeria plumigera, Dictyostelium discoideum, Drosophila melanogaster, Leishmania major, Arabidopsis thaliana, Saccharomyces cerevisiae, Tribolium castaneum, Thermoplasma acidophilum, Danio rerio, Cricetulus griseus, Helicobacter hepaticus ATCC 51449" 40
- 6948 7078 47 "Clostridium acetobutylicum, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Helicobacter pylori J99, Mus musculus, Borrelia burgdorferi B31, Drosophila melanogaster, Thermoproteus tenax virus 1, Caenorhabditis briggsae, Hanseniaspora occidentalis, Candida albicans, Ciona intestinalis, Medicago truncatula, Borrelia burgdorferi" 40
- 6949 7079 171 "Borrelia burgdorferi B31, Listeria monocytogenes, Staph" 50

- Staphylococcus lugdunensis*, *Bacillus halodurans*, *Staphylococcus aureus* subsp. *aureus* MW2, *Borrelia burgdorferi*, *Listeria innocua*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus*
- 6950 7080 40 "Bacillus halodurans, Homo sapiens, Bos taurus, Staphylococcus lugdunensis, uncultured marine gamma proteobacterium EBAC31A08, *Ciona intestinalis*, *Mus musculus*, *Saccharomyces castellii*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Helicobacter hepaticus* ATCC 51449"
- 6951 7081 77 "Wolbachia pipientis, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Clostridium tetani* E88, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Buchnera aphidicola*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Leuconostoc mesenteroides*, *Mus musculus*, *Medicago truncatula*, *Homo sapiens*, *Streptococcus pasteurianus*, *Streptococcus macedonicus*, *Streptococcus gallolyticus*, *Arabidopsis thaliana*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50" 10
- 6952 7082 59 "Chlamydophila caviae GPIC, *Thermoanaerobacter tengcongensis*, *Borrelia burgdorferi* B31, *Mycoplasma pulmonis*, *Borrelia burgdorferi*, *Bacillus licheniformis*, *Anaplasma phagocytophilum*, *Listeria grayi*, *Listeria monocytogenes*, *Chlamydophila pneumoniae* CWL029, Leg" 20
- 6953 7083 30 "Homo sapiens, *Mus musculus*, *Theileria sergenti*, *Danio rerio*, *Drosophila melanogaster*, *Streptomyces coelicolor* A3(2), *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Listeria monocytogenes*, *Pan troglodytes*"
- 6954 7084 47 "Staphylococcus lugdunensis, *Staphylococcus intermedius*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Bacillus anthracis* str. Ames, *Mus musculus*, *Homo sapiens*, *Listeria innocua*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Shewanella oneidensis* MR-1, *Staphylococcus epidermidis*, *Mesostigma viride*, *Listeria grayi*, *Listeria monocytogenes*, *Oryza sativa* (japonica cultivar-group), *Ralstonia solanacearum*, *Schizosaccharomyces pombe*, *Danio rerio*, uncultured *Acidobacteria* bacterium, *Gnetum parvifolium*" 30
- 6955 7085 76 "Bartonella henselae, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, uncultured marine gamma proteobacterium EBAC31A08, *Bartonella quintana*, *Oceanobacillus* i"
- 6956 7086 75 "Candidatus *Blochmannia floridanus*, *Legionella pneumophila*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Buchnera aphidicola*, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Haemophilus ducreyi* 35000HP, *Chlamydophila pneumoniae* TW-183, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Pasteurella multocida*, *Homo sapiens*, *Anthoceros formosae*, *Archaeoglobus fulgidus* DSM 4304, *Staphylococcus epidermidis* ATCC 12228, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Staphylococcus epidermidis*, *Caenorhabditis elegans*, *Clostridium argentinense*, *Helicobacter hepaticus* ATCC 51449" 40
- 6957 7087 24 "Homo sapiens, *Ureaplasma urealyticum*, *Mus musculus*, *Caenorhabditis elegans*, *Nostoc* sp. PCC 7120"
- 6958 7088 76 "Bartonella doshae, *Vibrio parahaemolyticus*, *Staphylococcus* 50

ccus haemolyticus, Bartonella bacilliformis, Clostridium botulinum, Legionella pneumophila, Mycoplasma hominis, Bartonella vinsonii subsp. vinsonii, Klebsiella pneumoniae, Staphylococcus saccharolyticus"

6959 7089 55 "Leptospira biflexa, Enterococcus faecium, Homo sapiens, Helicobacter hepaticus ATCC 51449, Clostridium tetani E88, Clostridium argentinense, Chlamydomyxa pneumoniae CWL029, Chlamydomyxa pneumoniae AR39, Chlamydomyxa pneumoniae J138, Danio rerio, Chlamydomyxa pneumoniae TW-183, Lactococcus lactis subsp. lactis, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Mus musculus, Bacillus subtilis, Clostridium perfringens str. 13, Clostridium perfringens"

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6960 7090 200 "Bartonella elizabethae, Bartonella doshaiae, Enterococcus faecalis V583, Haemophilus influenzae Rd KW20, Legionella sainthelensi, Bartonella vinsonii subsp. vinsonii, Bartonella henselae, Mycoplasma pulmonis, Streptococcus mutans UA159, Bartonella clarridgei"

6961 7091 94 "Spiroplasma citri, Haemophilus ducreyi 35000HP, Enterococcus faecium, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Staphylococcus saccharolyticus, Lactobacillus johnsonii, Buchnera aphidicola str. Bp (Baizongia pistaciae), Borrelia burgdorferi B31, Homo sapiens, Arabidopsis thaliana, Clostridium argentinense, Mus musculus, Borrelia burgdorferi, Weissella paramesenteroides, Nitrosomonas europaea ATCC 19718, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Mycoplasma penetrans, Clostridium perfringens str. 13, Clostridium perfringens, Pseudomonas aeruginosa PA01, Streptococcus mutans UA159, Neisseria meningitidis, Leptospira biflexa, Pirellula sp."

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6962 7092 23 "Clostridium tetani E88, Clostridium perfringens, Sulfolobus tokodaii, Homo sapiens, Clostridium perfringens str. 13, Leptospira interrogans serovar lai str. 56601, Mus musculus, Sulfolobus solfataricus, Caenorhabditis briggsae, Arabidopsis thaliana, Clostridium botulinum, Clostridium botulinum D"

6963 7093 20 "Mus musculus, Homo sapiens, Enterococcus faecalis, Oryza sativa (japonica cultivar-group), Pan troglodytes, Danio rerio"

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6964 7094 23 "Homo sapiens, Helicobacter pylori 26695, Helicobacter pylori J99, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Oceanobacillus iheyensis HTE831, Methanobacterium formicicum, Macaca fascicularis"

6965 7095 70 "Bartonella quintana, Vibrio vulnificus CMCP6, Homo sapiens, Clostridium acetobutylicum, Xenopus laevis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Plasmodium berghei, Yersinia pestis KIM, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Vibrio cholerae, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Liposcelis bostrychophila, Medicago truncatula, Yersinia pestis C092, Danio rerio, Mus musculus, Pan troglodytes, Coxiella burnetii RSA 493, Dictyostelium discoideum, Gillibea adenopetala, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Lactococcus lactis subsp. lactis, Mycoplasma pulmonis, Lactococcus lactis, Coxiella burnetii, Arabidopsis thaliana, Marchantia polymorpha, Monoclea forsteri, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Ixodes nipponensis, Helicobacter hepaticus ATCC 51449"

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6966 7096 62 "Buchnera aphidicola (Diuraphis noxia), Leuconostoc mesenteroides, Enterococcus faecium, Chlamydia trachomatis, Ophlitaspongia tenuis, Homo sapiens, Mus musculus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio, Gallus gallus, Beta corolliflora, Lotus corniculatus var. japonicus, Lactobacillus johnsonii"

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- 6967 7097 26 "Mus musculus, Arabidopsis thaliana, Clostridium acetobutylicum, Homo sapiens, Bos taurus, Schmidtea mediterranea, Sugarcane mosaic virus"
- 6968 7098 23 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Drosophila melanogaster, Bacillus anthracis str. A2012, Danio rerio, Saccharomyces cerevisiae, Bacillus anthracis"
- 6969 7099 33 "Homo sapiens, Mus musculus, Danio rerio, Arabidopsis thaliana, Drosophila melanogaster, Clostridium tetani E88, Lotus corniculatus var. japonicus, Cellana tramoserica, Dictyostelium discoideum, Plasmodium falciparum 3D7, Alphonsoa talidicida, Oryza sativa, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Rattus norvegicus, Clusia lanceolata, Clusia fluminensis, Poncirus trifoliata, Papio anubis" 10
- 6970 7100 31 "Homo sapiens, Listeria monocytogenes, Danio rerio, Rattus norvegicus, Medicago truncatula, Drosophila melanogaster, Mus musculus, Sus scrofa, Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oncorhynchus mykiss, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Caenorhabditis briggsae, Staphylococcus epidermidis, Neurospora crassa, Saccharomyces cerevisiae, Rhynchosciara americana, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Branchiostoma floridae, Chaetosphaeridium globosum, Capra hircus, Xenopus laevis, Oryza sativa, African swine fever virus, Solanum tuberosum, Caenorhabditis elegans, Ciona intestinalis, Pan troglodytes, Lactococcus lactis, Pachygrapsus minutus, Lactuca sativa, Buchnera aphidicola, Ornithorhynchus anatinus, Methanothermobacter fermentans" 20
- 6971 7101 31 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Clostridium tetani E88, Mycoplasma pulmonis, Porphyromonas gingivalis W83, Fowlpox virus, Pigeonpox virus, Mycoplasma gallisepticum R, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Thermoanaerobacter tengcongensis, Danio rerio, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Mycoplasma penetrans, Listeria monocytogenes, Schizosaccharomyces pombe, Bacillus thuringiensis serovar israelensis" 30
- 6972 7102 124 "Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Drosophila melanogaster, Chlamydia trachomatis, Oryza sativa (japonica cultivar-group), Homo sapiens, Aquifex aeolicus VF5, Vibrio vulnificus CMCP6, Pongo pygmaeus, Pan troglodytes, Mus musculus, Bacillus megaterium, Arabidopsis thaliana, Sulfolobus tokodaii"
- 6973 7103 24 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Mytilus sp., Danio rerio, Pyrococcus horikoshii" 40
- 6974 7104 50 "Bacillus cereus ATCC 14579, Homo sapiens, Lycopersicon esculentum, Clostridium acetobutylicum, Nicotiana tabacum, Vibrio parahaemolyticus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Bacillus anthracis str. Ames, Potato rough dwarf virus, Mus musculus, Synechocystis sp. PCC 6803, Glycine max, Medicago truncatula"
- 6975 7105 29 "Mycoplasma mycoides subsp. mycoides, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Buchnera aphidicola, Mycoplasma mycoides, Mycoplasma capricolum, Mycoplasma sp. 'bovine group 7', Homo sapiens, Mus musculus, Sulfolobus tokodaii, Haemophilus ducreyi 35000HP, Felis catus, Tetrahymena pyriformis, Pisum sativum, Arabidopsis thaliana" 50

- 6976 7106 29 "Clostridium acetobutylicum, Sulfolobus tokodaii, Kluyve
romyces lactis, Clostridium tetani E88, Homo sapiens, Arabidopsis thaliana, Sulfo-
lobus solfataricus, Mus musculus, Staphylococcus aureus, Oryza sativa (japonica
cultivar-group), Danio rerio, Drosophila melanogaster, Schistosoma japonicum, D
ictyostelium discoideum, Caenorhabditis elegans, Pseudomonas putida KT2440, Zea
mays, Plasmodium falciparum 3D7, Rickettsia conorii, Oryzias latipes, Candidatus
Phytoplasma mali, Schizosaccharomyces pombe, Clostridium perfringens str. 13"
- 6977 7107 27 "Homo sapiens, Mus musculus, Danio rerio, Glomus mosseae
, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Nostoc sp. PCC 7120"
- 6978 7108 24 "Zea mays, Streptococcus agalactiae 2603V/R, Homo sapien 10
s, Streptococcus agalactiae NEM316, Sulfolobus tokodaii, Drosophila melanogaster
, Papio anubis, Oceanobacillus iheyensis HTE831, Mus musculus"
- 6979 7109 32 "Danio rerio, Homo sapiens, Medicago truncatula, Tetrahy
mena thermophila, Clostridium tetani E88, Mus musculus, Plasmodium falciparum 3D
7, Apis mellifera, Trypanosoma equiperdum, Caenorhabditis elegans, Drosophila me
lanogaster, Proteus mirabilis, Arabidopsis thaliana, Caenorhabditis briggsae, Or
yza sativa (japonica cultivar-group)"
- 6980 7110 32 "Homo sapiens, Danio rerio, Bacillus cereus ATCC 14579,
Mus musculus, Plasmodium falciparum 3D7, Borrelia burgdorferi B31, Dictyostelium 20
discoideum, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Fus
obacterium nucleatum subsp. nucleatum ATCC"
- 6981 7111 34 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7,
Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Amsacta moo
rei entomopoxvirus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-grou
p), Drosophila melanogaster, Prochlorococc"
- 6982 7112 25 "Maconellicoccus hirsutus, Sus scrofa, Homo sapiens, Cal
liphora vicina, Pedinomonas minor, Mus musculus, Pan troglodytes, Drosophila mel
anogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Xylella fastidiosa
9a5c, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Buchnera aphidic
ola" 30
- 6983 7113 29 "Oryza sativa (japonica cultivar-group), Mus musculus, R
attus norvegicus, Homo sapiens, Danio rerio, Pan troglodytes, Dictyostelium disc
oideum, Canis familiaris, Streptococcus pneumoniae R6, Streptococcus pneumoniae
TIGR4, Caenorhabditis elegans"
- 6984 7114 25 "Tetrahymena pyriformis, Listeria monocytogenes, Listeri
a innocua, Homo sapiens, Danio rerio, Campylobacter lari, Mus musculus, Caenorha
bditis elegans, Oryza sativa (japonica cultivar-group)"
- 6985 7115 28 "Mus musculus, Oryza sativa (japonica cultivar-group), H
omo sapiens, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Ara
bidopsis thaliana" 40
- 6986 7116 24 "Homo sapiens, Mus musculus, Bacteroides thetaiotaomicro
n VPI-5482, Drosophila melanogaster, Bacillus anthracis str. Ames, Streptococcus
agalactiae 2603V/R, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group
)"
- 6987 7117 32 "Sulfolobus tokodaii, Oryza sativa (japonica cultivar-gr
oup), Zea mays, Homo sapiens, Nostoc sp. PCC 7120, Glaphyromorphus gracilipes, C
lostridium tetani E88, Mus musculus, Danio rerio"
- 6988 7118 31 "Drosophila melanogaster, Caenorhabditis elegans, Homo s
apiens, Mus musculus, Oryza sativa (japonica cultivar-group), Plasmodium falcipa
rum 3D7, Macrocentrus sp. MD-1997, Plasmodium falciparum, Arabidopsis thaliana, 50

- Schizosaccharomyces pombe, Shewanella oneidensis MR-1, Onthophagus merdarius, Lactococcus lactis subsp. lactis, Bacillus subtilis, Phaseolus vulgaris, Danio rerio, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Bacillus subtilis subsp. subtilis str. 168, Ciona intestinalis, Medicago truncatula, Bos taurus, Staphylococcus aureus subsp. aureus Mu50"
- 6989 7119 31 "Homo sapiens, Plasmodium falciparum, Arabidopsis thaliana, Plasmodium falciparum 3D7, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Utricularia caerulea, Caenorhabditis briggsae, Mus musculus, Medicago truncatula, Colastes incertus, Leptospira interrogans serovar lai str. 5660 1, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Xanthomonas axonopodis pv. citri str. 306, Salmonella enterica subsp. enterica serovar Dublin, Gallus gallus, Leptodora kindtii, Streptococcus agalactiae NEM316, Penicillium chrysogenum, Epicrionops sp., Mycoplasma penetrans, Salmonella enterica subsp. enterica serovar Typhi, Cryptosporidium parvum, Salmonella typhimurium" 10
- 6990 7120 65 "Listeria monocytogenes, Listeria innocua, Vibrio cholerae, Pasteurella multocida, Streptococcus agalactiae 2603V/R, Neospora caninum, Streptococcus agalactiae NEM316, Mus musculus, Toxoplasma gondii, Lemur catta, Drosophila melanogaster, Homo sapiens, Lactococcus lactis subsp. lactis, Lactococcus lactis, Vibrio parahaemolyticus" 20
- 6991 7121 28 "Homo sapiens, Platymonas subcordiformis, Mus musculus, Rattus norvegicus, Borrelia burgdorferi B31, Caenorhabditis elegans, Pasteurella multocida, Danio rerio, Moritella marina"
- 6992 7122 50 "Campylobacter jejuni subsp. jejuni NCTC 11168, Homo sapiens, Clostridium acetobutylicum, Arabidopsis thaliana, Rickettsia conorii, Mus musculus, Austrobaileya scandens, Pseudomonas sp. 61-3, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Sorghum bicolor, Pyrobaculum aerophilum str. IM2, Rickettsia prowazekii, Plasmodium falciparum 3D7, Danio rerio, Helicobacter pylori J99, Saccharomyces cerevisiae"
- 6993 7123 38 "Haemophilus ducreyi 35000HP, Dictyostelium discoideum, Mus musculus, Trypanosoma cruzi, Homo sapiens, Neorhodomela larix, Chilo iridescent virus, Oryza sativa (japonica cultivar-group)" 30
- 6994 7124 32 "Plasmodium falciparum 3D7, Homo sapiens, Caenorhabditis elegans, Mus musculus, Trypanosoma brucei, Danio rerio, Drosophila melanogaster, Takifugu rubripes, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Oryza sativa, Physarum polycephalum"
- 6995 7125 28 "Sphagnum cuculliforme, Campylobacter jejuni subsp. jejuni NCTC 11168, Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Sphagnum africanum, Sphagnum junghuhnianum, Sphagnum skyense, Sphagnum fuscum, Sphagnum capillifolium, Sphagnum bartlett" 40
- 6996 7126 29 "Danio rerio, Manica rubida, Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Arabidopsis thaliana, Dictyostelium discoideum, Drosophila melanogaster, Doronomyrmex pacis, Leptospira interrogans, Cicer arietinum, Leptopilina boulardi, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Zygosaccharomyces bailii, Plasmodium falciparum, Oryza sativa (indica cultivar-group), Saccharomyces cerevisiae, Platyphora eucosma, Scathophaga stercoraria, Xenopus laevis, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Agrocybe aegerita, Hepialus yunnanensis, Hepialus menyuanicus, Hepialus cingulatus, Hepialus yulongensis, Hepialus jianchuanensis, Cryptosporidium parvum, Pichia canadensis" 50

- 6997 7127 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Pseudochirops archeri, Drosophila melanogaster, Francisella tularensis subsp. novicida, Vicia faba, Melanoplus sanguinipes entomopoxvirus, Rattus norvegicus, Brachyspira hyodysenteriae, Caenorhabditis elegans, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Clostridium acetobutylicum, Streptococcus agalactiae NEM316, Solanum tuberosum, Liriodendron tulipifera, Danio rerio, Liriodendron chinense, Arabidopsis thaliana, Flammulina velutipes"
- 6998 7128 25 "Homo sapiens, Schistosoma mansoni, Mus musculus, Danio rerio, Influenza A virus (A/chicken/NY/30749-3/00(H7N2)), Plasmodium falciparum 3D7, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Chrysosplenium americanum, Medicago truncatula" 10
- 6999 7129 25 "Homo sapiens, Mus musculus, Clostridium acetobutylicum, Bacillus anthracis str. Ames, Borrelia burgdorferi B31, Borrelia burgdorferi, Dictyostelium discoideum, Mycoplasma gallisepticum R, Drosophila melanogaster, Caenorhabditis briggsae, Amsacta moorei entomopoxvirus, Danio rerio, Lactococcus lactis subsp. cremoris, Arabidopsis thaliana"
- 7000 7130 28 "Arabidopsis thaliana, Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus, Drosophila melanogaster, Buchnera aphidicola str. Bp (Baizongia pistaciae), Aquifex aeolicus VF5, Dictyostelium discoideum, Aspilota sp., Clostridium acetobutylicum, Danio rerio, Ixodes persulcatus, Vanhornia unemidarum, Periphyllus obscurus, Plasmodium falciparum 3D7, Reboulia hemisphaerica, Candida glabrata, Cantharellus cibarius, Asterella tenella, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Ciona savignyi, Sulfolobus tokodaii, Conocephalum conicum, Medicago truncatula" 20
- 7001 7131 25 "Homo sapiens, Lycopersicon esculentum, Mus musculus, Arabidopsis thaliana, Sus scrofa domestica, Drosophila melanogaster, Spinacia oleracea, Saccharomyces servazzii, Oryza sativa (japonica cultivar-group), Thomomys bottae"
- 7002 7132 32 "Candidatus Blochmannia floridanus, Mus musculus, Caenorhabditis elegans, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Staphylococcus aureus, Staphylococcus aureus subsp. aureus MW2, synthetic construct, Campylobacter lari, Plasmodium falciparum, Clostridium perfringens str. 13" 30
- 7003 7133 37 "Pinus thunbergii, Dictyostelium discoideum, Homo sapiens, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Mus musculus, Shewanella oneidensis MR-1, Danio rerio, Mycoplasma hominis, Plasmodium falciparum, Helicobacter pylori 26695, Rattus norvegicus"
- 7004 7134 24 "Homo sapiens, Helicobacter hepaticus, Mus musculus, Oryza sativa (japonica cultivar-group), Helicobacter hepaticus ATCC 51449, Rattus norvegicus, Shewanella oneidensis MR-1, Blumeria graminis, Streptococcus pyogenes M1 GAS, Danio rerio, Cavia porcellus" 40
- 7005 7135 28 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Medicago truncatula, Plasmodium vivax, Oryctolagus cuniculus, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum, Listeria monocytogenes, Mus musculus domesticus, Arabidopsis thaliana"
- 7006 7136 31 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio, Medicago truncatula, Caenorhabditis elegans, Bos taurus, Arabidopsis thaliana, Ca 50

- lycanthus floridus var. glaucus, Sus scrofa, Ipomoea nil, Rattus norvegicus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Papio a nubis, Bacillus subtilis, Ureaplasma urealyticum, Lotus corniculatus var. japonicus"
- 7007 7137 63 "Shewanella oneidensis MR-1, Mannheimia haemolytica, Borrelia burgdorferi, Lactococcus lactis subsp. lactis, Trichinella spiralis, Corylus avellana, Methylovorus sp. SS1, Rickettsia conorii, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Haemophilus ducreyi"
- 7008 7138 38 "Streptococcus pneumoniae TIGR4, Streptococcus pneumoniae, Lactococcus lactis, Drosophila melanogaster, Oryctolagus cuniculus, Homo sapiens, Streptococcus pyogenes MGAS8232, Heliobacterium chlorum, Streptococcus pneumoniae R6, Streptococcus pyogenes M1 GAS, Caenorhabditis elegans, Haemophilus ducreyi 35000HP, Mus musculus, Haemophilus ducreyi, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Medicago truncatula, Hemigalus derbyanus, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Streptococcus agalactiae NEM316, Streptococcus pyogenes SSI-1, Pyrococcus horikoshii, Haemophilus influenzae Rd KW20, Streptococcus agalactiae" 10
- 7009 7139 144 "Candidatus Blochmannia floridanus, Acholeplasma laidlawii, Cryptosporidium baileyi, Mannheimia haemolytica, Lactobacillus sanfranciscensis, Pasteurella multocida, Haemophilus ducreyi 35000HP, Haemophilus ducreyi, Colwellia maris, Erysipelothrix rhusiopathia" 20
- 7010 7140 110 "Spinacia oleracea, Arabidopsis thaliana, Prochlorococcus marinus, Phaseolus vulgaris, Pisum sativum, Psychrobacter sp. St1, Xenopus laevis, unidentified soil organism, Colwellia maris, Oryzias latipes, Mycoplasma pneumoniae, Thermosynechococcus elongatus BP"
- 7011 7141 65 "Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50, Enterococcus faecalis V583, Lactobacillus sanfranciscensis, Lactococcus lactis subsp. lactis, Lactococcus lac"
- 7012 7142 70 "Streptococcus pyogenes, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Mycoplasma genitalium, Streptococcus aga" 30
- 7013 7143 115 "Bacillus halodurans, Rickettsia conorii, Xenopus laevis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Guillardia theta, Buchnera sp., Rattus norvegicus, Mus musculus, Clostridium tetani E88, Cricetulus griseus, Bos taurus, Enterococcus faecalis V583, Lactobacillus sanfranciscensis, Oceanobacillus iheyensis HTE831, Tetragenococcus halophilus, Francisella tularensis, Bacillus megaterium, Homo sapiens, Koliella antarctica, Cercopithecus aethiops, Macaca fascicularis, Leptospirillum ferrooxidans, Staphylococcus epidermidis ATCC 12228, Carassius auratus gibelio, Lactococcus lactis subsp. lactis, Lactobacillus sakei, Staphylococcus epidermidis, Carassius auratus, Lycopersicon esculentum, Bombyx mori" 40
- 7014 7144 98 "Homo sapiens, Cricetulus griseus, Rattus sp., Rattus norvegicus, Mus musculus, Xenopus laevis, Danio rerio, Thermoanaerobacter tengcongensis, Bos taurus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Cyanophora paradoxa, Guillardia theta, Pneumocyst"
- 7015 7145 28 "Caenorhabditis elegans, Rattus norvegicus, Homo sapiens, Lotus corniculatus var. japonicus, Bacillus anthracis str. Ames, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Escherichia coli, Danio rerio, 50

Medicago truncatula, *Enterococcus faecalis* V583, *Mus musculus*, *Thermoanaerobacter tengcongensis*, *Glycine max*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, uncultured marine gamma proteobacterium EBAC31A08, *Bacillus subtilis* subsp. *subtilis* str. 168, *Schizosaccharomyces pombe*, *Bacillus subtilis*, *Botryotinia fuckeliana*, *Legionella pneumophila*"

7016 7146 32 "Danio rerio, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Homo sapiens*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Candida albicans*, *Medicago truncatula*, *Pan troglodytes*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Arabidopsis thaliana*, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Caenorhabditis elegans*"

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7017 7147 31 "Danio rerio, *Homo sapiens*, *Reclinomonas americana*, *Mus musculus*, *Candidatus Blochmannia floridanus*, *Plasmodium falciparum* 3D7, *Chaetosphæridium globosum*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*, *Rattus norvegicus*, *Dictyostelium discoid*"

7018 7148 31 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Drosophila melanogaster*, *Thermoanaerobacter tengcongensis*, *Clostridium acetobutylicum*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Pyrococcus horikoshii*, *Nostoc* sp. PCC 7120"

7019 7149 68 "Clostridium acetobutylicum, *Vibrio parahaemolyticus*, *Paramecium tetraurelia*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Liriomyza trifolii*, *Chiastocheta inermella*, *Chiastocheta setifera*, *Chiastocheta trollii*, *Saccharomyces cerevisiae*, *Lactobacillus plantarum* WCFS1, *Danio rerio*, *Haemophilus influenzae* Rd KW20, *Drosophila melanogaster*, *Pseudomonas putida* KT2440, *Homo sapiens*, *Bemisia tabaci*, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Lymantria dispar*, *Pseudocardium sachalinensis*"

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7020 7150 104 "Helicobacter hepaticus ATCC 51449, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Haemophilus influenzae* Rd KW20, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Arabidopsis thaliana*, *Homo sapiens*, *Caenorhabditis briggsae*, *Cytophaga* sp. KUC-1"

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7021 7151 64 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Clostridium tetani* E88, *Clostridium acetobutylicum*, *Pasteurella multocida*, *Homo sapiens*, *Helicobacter hepaticus* ATCC 51449, *Listeria innocua*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Mesoplasma florum*, *Mesoplasma entomophilum*, *Arabidopsis thaliana*, *Danio rerio*, *Thermoplasma volcanium*, *Bifidobacterium longum* NCC2705, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Chlamydomonas reinhardtii*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Medicago truncatula*, *Lactococcus lactis* subsp. *lactis*, *Physalis severe mottle virus*, *Prochlorococcus marinus*, *Bacteriophage b1L286*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Melon yellow spot virus*, *Mycoplasma penetrans*, *Clostridium perfringens* str. 13"

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7022 7152 108 "Campylobacter-like bacterium, *Thermoplasma volcanium*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Bacillus cereus* ATCC 14579, *Homo sapiens*, *Saxifraga integrifolia*, *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Bos taurus*, *Anabaena* sp., *Plasmodium falciparum* 3D7, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Entamoeba histolytica*, *Rattus norvegicus*, *Nostoc* sp. PCC 7120"

7023 7153 200 "Lawsonia intracellularis, *Campylobacter*-like bacterium, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Homo sapiens*, *Arabidopsis thaliana*

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- na, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Rattus norvegicus*, *Pan troglodytes*, *Drosophila melanogaster*, *Streptococcus mutans*, *Caenorhabditis elegans*, *Takifugu rubripes*, *Caenorhabditis briggsae*, Bovine parainfluenza virus 3, *Danio rerio*, *Haemophilus ducreyi* 35000HP, *Listeria innocua*, *Sus scrofa*, Human parainfluenza virus 3"
- 7024 7154 68 "Campylobacter-like bacterium, *Meloidogyne javanica*, *Takifugu rubripes*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Sulfolobus tokodaii*, *Danio rerio*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Aquifex aeolicus* VF5, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*, *Caenorhabditis elegans*, *Pan troglodytes*, *Dictyostelium discoideum*, *Xylella fastidiosa* Temecula1, *Staphylococcus epidermidis* ATCC 12228, *Papio anubis*, *Bombyx mori*, *Aclitus obscuripennis*, *Baryconus* sp. M 195, *Oryza sativa*, *Lycopersicon esculentum*, *Caenorhabditis briggsae*, *Lama pacos*, *Staphylococcus epidermidis*, *Oikopleura dioica*, *Lotus corniculatus* var. japonicus, Shuttle vector pJIR751, Shuttle vector pJIR750" 10
- 7025 7155 25 "*Grus americana*, *Grus japonensis*, *Homo sapiens*, *Mus musculus*, *Hordeum vulgare* subsp. vulgare, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Grus nigricollis*, *Grus monacha*, *Grus grus*, *Grus antigone*, *Grus canadensis*, *Grus vipio*, *Grus leucogeranus*, *Grus carunculatus*, *Grus virgo*, *Grus paradisea*, *Hopea cordifolia*, *Peromyscus dickeyi*, *Peromyscus merriami*, *Arabidopsis thaliana*, *Danio rerio*, *Schizosaccharomyces pombe*" 20
- 7026 7156 24 "*Homo sapiens*, *Gallus gallus*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, Equine arteritis virus, Cloning vector pEAV030, *Helicobacter pylori* J99, *Mus musculus*"
- 7027 7157 24 "*Homo sapiens*, *Mus musculus*, *Danio rerio*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), Human immunodeficiency virus 1, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Methanosarcina mazei* Goe1, *Plasmodium falciparum*, *Schizosaccharomyces pombe*, *Ciona intestinalis*, *Mus* sp."
- 7028 7158 29 "*Mus musculus*, *Caenorhabditis briggsae*, *Leptospira interrogans* serovar lai str. 56601, *Homo sapiens*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Bacillus anthracis* str. Ames, *Oenococcus oeni*, *Rattus norvegicus*, *Danio rerio*, *Listeria australis*, *Pan troglodytes*, *Chlamydia muridarum*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Borrelia burgdorferi* B31, *Apis mellifera*, *Solanum gilo*, *Felis catus*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Listeria innocua*, *Cryptosporidium parvum*, *Helicobacter pylori* 26695, *Schizosaccharomyces pombe*, *Chysis laevis*" 30
- 7029 7159 28 "*Caenorhabditis elegans*, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, Simian foamy virus, *Mus musculus*, *Arabidopsis thaliana*, *Emericella nidulans*, *Papio anubis*, *Clostridium tetani* E88, *Branchiostoma floridae*, *Spiroplasma citri*, *Danio rerio*" 40
- 7030 7160 33 "*Homo sapiens*, *Mus musculus*, *Helicobacter pylori* J99, *Caenorhabditis elegans*, *Medicago truncatula*, *Equus caballus*, *Felis catus*, *Saccharomyces cerevisiae*, *Methanococcus maripaludis*, *Anas platyrhynchos*, *Ceratitidis capitata*, *Staphylococcus epidermidis*, *Spiroplasma citri*, *Oryza sativa* (japonica cultivar-group), *Delias albertisi*"
- 7031 7161 31 "*Homo sapiens*, *Enterococcus faecalis* V583, *Mus musculus*, *Drosophila melanogaster*, *Ovis aries*, *Zea mays*, *Aquifex aeolicus* VF5, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Antirrhinum majus*, *Lotus corniculatus* var. japonicus, *Xenopus laevis*, *Clostridium perfringens*, Ca 50

- ndidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Enterobacter sp. 22, Danio rerio, Rattus norvegicus, Aspergillus niger, Clostridium perfringens str. 13"
- 7032 7162 31 "Danio rerio, Homo sapiens, Mus musculus, Caenorhabditis elegans, Bacteroides thetaiotaomicron VPI-5482, Rattus norvegicus"
- 7033 7163 53 "Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. Bp (Baizongia pistaciae), Oryza sativa (indica cultivar-group), Sus scrofa, Trypanosoma cruzi, Medicago truncatula, Neurospora crassa, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio, Rattus norvegicus" 10
- 7034 7164 24 "Homo sapiens, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Didelphis virginiana, Enterococcus faecalis V583, Caenorhabditis elegans, Oryzias curvinotus, Oryza sativa (japonica cultivar-group), Oryzias latipes"
- 7035 7165 28 "Homo sapiens, Danio rerio, Helicobacter hepaticus ATCC 51449, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bursaphelenchus conicaudatus, Bursaphelenchus abruptus"
- 7036 7166 35 "Homo sapiens, Mus musculus, Melicertus canaliculatus, Prochlorococcus marinus, Serratia marcescens, Caenorhabditis briggsae, Danio rerio, Marsupinaeus japonicus, Atelerix albiventris, Pan troglodytes, Drosophila melanogaster, Canis familiaris, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Didelphis virginiana, Caenorhabditis elegans, Prochlorococcus marinus subsp. marinus str. CCMP1375, Medicago truncatula, Felis catus" 20
- 7037 7167 46 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Chlamydomonas reinhardtii, Brassica napus, Caenorhabditis elegans, Homo sapiens, Glossypium barbadense, Mus musculus, Capsicum annuum, Clostridium acetobutylicum, Danio rerio, Oryza sativa (japonica cultivar-group), Leishmania major, Cicer arietinum, Helicobacter hepaticus ATCC 51449" 30
- 7038 7168 66 "Bacillus halodurans, Ureaplasma urealyticum, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mycoplasma gallisepticum R, Western X phytoplasma, Mus musculus, Plasmodium falciparum 3D7, Bacillus subtilis"
- 7039 7169 27 "Thalassoma lunare, Homo sapiens, Mus musculus, Drosophila melanogaster, Medicago truncatula, Caenorhabditis elegans, Haemophilus ducreyi 35000HP, Ciona intestinalis, Arabidopsis thaliana"
- 7040 7170 31 "Oryza sativa (japonica cultivar-group), Medicago truncatula, Mus musculus, Homo sapiens, Tetrahymena pyriformis, Prunus persica, Neodunna richardiana, Millettia dura, Fordia splendidissima, Lonchocarpus lanceolatus, Derris laxiflora, Pongamiopsis amygdalina, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Ciona intestinalis, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus Mu50" 40
- 7041 7171 29 "Caenorhabditis elegans, Homo sapiens, Streptococcus thermophilus, Mus musculus, Drosophila melanogaster, Shigella dysenteriae, Chlorella vulgaris"
- 7042 7172 28 "Homo sapiens, Mycoplasma pulmonis, Mus musculus, Beijerinckia racemosa, Yersinia pestis KIM, Oryza sativa (japonica cultivar-group), Crassostrea gigas, Yersinia pestis C092, Danio rerio, Bombyx mori" 50

- 7043 7173 27 "Homo sapiens, Staphylococcus sciuri, Methanosarcina bar keri, Medicago truncatula, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Manduca sexta, Arabidopsis thaliana, Danio rerio, Oryza sativa (japonica cultivar-group), Bos taurus, Myleus rhombeus, Ratt us norvegicus, Helicoverpa zea, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Dictyostelium discoideum, Thermoplasma acidop hilum, Wolbachia sp. wRi, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Salmonella enterica subsp. enterica serovar Typhi, Spirogyra maxima, Candida albicans, Trifolium subterraneum, Salmonella typhimurium, Clostridium p erfringens str. 13" 10
- 7044 7174 28 "Homo sapiens, Medicago truncatula, Plasmodium falciparu m 3D7, Oryza sativa (japonica cultivar-group), Coxiella burnetii RSA 493, Arabid opsis thaliana, Mus musculus, Caenorhabditis elegans, Helicobacter pylori 26695, Helicobacter pylori J99, Bacillus cereus ATCC 14579, Pan troglodytes, Drosophil a melanogaster, Rattus norvegicus, Methanosarcina acetivorans C2A, Oryza sativa, Guillardia theta, Bos taurus, Clostridium acetobutylicum, Lactococcus lactis su bsp. lactis, Plasmodium yoelii yoelii, Saccharomyces cerevisiae, Danio rerio, Tr eponema denticola, Ascobolus immersus, Trypanosoma cruzi, Solanum bulbocastanum, Dictyostelium discoideum, Borrelia burgdorferi" 20
- 7045 7175 27 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Oce anobacillus iheyensis HTE831, Pan troglodytes, Drosophila melanogaster, Arabidop sis thaliana, Danio rerio, Plasmodium falciparum 3D7, Sulfolobus tokodaii, Schiz osaccharomyces pombe" 20
- 7046 7176 27 "Homo sapiens, Danio rerio, Mus musculus, Pan troglodyte s, Clostridium tetani E88, Anaplasma marginale, Prochlorococcus marinus, Oryza s ativa" 20
- 7047 7177 28 "Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Mus musculus, Homo sapiens, Dictyostelium discoideum, Staphylococcus a ureus subsp. aureus N315, Danio rerio, Chrysoperla harrisii, Staphylococcus aure us subsp. aureus Mu50, Drosophila melanogaster, Papio anubis, Plasmodium falcipa rum, Mycoplasma capricolum, Candidatus Blochmannia floridanus, Arabidopsis thali ana, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Carollia perspicillata " 30
- 7048 7178 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), M us musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lactococcus la ctis, Caenorhabditis elegans, Clavispora opuntiae, Arabidopsis thaliana, Stealth virus 1, Nostoc sp. PCC 7120" 30
- 7049 7179 35 "Mus musculus, Homo sapiens, Escherichia coli, Oryza sat iva (japonica cultivar-group), Danio rerio, Helicobacter hepaticus ATCC 51449" 30
- 7050 7180 27 "Homo sapiens, Mesostigma viride, Danio rerio, Oryza sat iva (japonica cultivar-group), Zygosaccharomyces mrakii, Borrelia burgdorferi B3 1, Dictyostelium discoideum, Mus musculus, Canis familiaris, Klebsiella oxytoca, Staphylococcus aureus, Staphylococcus aureus subsp. aureus MW2, Piromyces sp. E 2, Donacia flemora, Enterococcus faecalis V583, Pan troglodytes, Medicago trunca tula, Drosophila melanogaster, Drosophila littoralis, Plasmodium falciparum 3D7, Staphylococcus epidermidis, Mycoplasma mycoides subsp. mycoides SC, Tenrec ecau datus, Caenorhabditis briggsae, Takifugu rubripes, Staphylococcus haemolyticus, Arabidopsis thaliana, Phytophthora infestans, Oreina variabilis, Caenorhabditis elegans, Rattus norvegicus, Trypanosoma brucei, Ciona intestinalis, Methanocaldo coccus jannaschii, Chlorella vulgaris, Thalassiosira nordenskioeldii, Staphyloco 40 50

ccus aureus subsp. aureus Mu50"

7051 7181 28 "Mus musculus, Homo sapiens, Drosophila melanogaster, Am
sacta moorei entomopoxvirus, Leptospira interrogans serovar lai str. 56601, Meth
anosarcina mazei Goe1, Arabidopsis thaliana, Elaeis guineensis, Schizosaccharomy
ces pombe, Lactococcus phage c2, Caenorhabditis elegans, Bacteroides thetaiotaom
icron VPI-5482, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium
discoideum, Plasmodium falciparum 3D7, Chlamydomonas reinhardtii, Prochlorococ
cus marinus, Danio rerio, Caenorhabditis briggsae, Saccharomyces cerevisiae, Cyan
idium caldarium, Galdieria sulphuraria, Cryptosporidium parvum, Xenopus laevis,
Pan troglodytes, Medicago truncatula"

10

7052 7182 28 "Homo sapiens, Medicago truncatula, Arabidopsis thaliana
, Pan troglodytes, Mus musculus, Yersinia pestis KIM, Yersinia pestis C092, Poto
rous tridactylus, Staphylococcus aureus, Danio rerio, African swine fever virus,
Bacillus subtilis, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-gro
up), Plasmodium falciparum 3D7, Staphylococcus aureus subsp. aureus N315, Staphy
lococcus aureus subsp. aureus MW2, Bacillus subtilis subsp. subtilis str. 168, D
rosophila melanogaster, Staphylococcus aureus subsp. aureus Mu50"

7053 7183 27 "Mus musculus, Homo sapiens, Danio rerio, Pseudomonas pu
tida, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Caenorhabdit
is elegans, Schizosaccharomyces pombe, Pan troglodytes"

20

7054 7184 33 "Candida glabrata, Homo sapiens, Mus musculus, Plasmodiu
m falciparum 3D7, Saccharomyces cerevisiae, Swinepox virus, Danio rerio, Arabido
psis thaliana, Saccharomyces uvarum, synthetic construct, Neuroterus lanuginosus
, Monosiga brevicollis, Buchnera aphidicola str. Sg (Schizaphis graminum), Candi
datus Blochmannia floridanus, Lotus corniculatus var. japonicus, Equus caballus,
Drosophila melanogaster, Candidatus Carsonella ruddii, Calicotome villosa, Dict
yostelium discoideum, Medicago truncatula, Schizophyllum commune, Nicotiana taba
cum, Oryza sativa, Saccharomyces douglasii, Dacnusa sibirica, Plasmodium berghei
, Oryza sativa (japonica cultivar-group), Cicer arietinum, Bombina variegata, Pa
pio anubis, Clostridium septicum, Pichia jadinii, Rattus norvegicus"

30

7055 7185 23 "Homo sapiens, Mus musculus, Staphylococcus aureus, Oryz
a sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, St
aphylococcus aureus subsp. aureus Mu50"

7056 7186 24 "Homo sapiens, Pasteurella multocida, Mus musculus, List
eria innocua"

7057 7187 47 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Nemat
ostella vectensis, Latimeria menadoensis, Lithobius atkinsoni, Xenopus laevis, B
os taurus, Danio rerio, Vibrio vulnificus CMCP6, Drosophila melanogaster, Methan
osarcina acetivorans C2A, Bubalus bubalis, Branchiostoma belcheri, Ovis aries"

7058 7188 23 "Mus musculus, Homo sapiens, Rickettsia prowazekii, Hord
eum vulgare subsp. vulgare, Danio rerio, Lotus corniculatus var. japonicus, Anop
heles gambiae, Nostoc sp. PCC 7120, Oryza sativa (japonica cultivar-group)"

40

7059 7189 30 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus,
Sulfolobus solfataricus, Danio rerio, Caenorhabditis elegans, Saccharomyces cere
visiae, Oryza sativa (japonica cultivar-group), Papaver somniferum, Oryza sativa
, Nostoc sp. PCC 7120"

7060 7190 48 "Pan troglodytes, Dictyostelium discoideum, Homo sapiens
, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Mycoplasma ho
minis, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Arabidopsis t
haliana, Canis familiaris, Bacillus cereus"

50

- 7061 7191 39 "Glycine max, Homo sapiens, Mus musculus, Clostridium perfringens str. 13, Borrelia burgdorferi B31, Dictyostelium discoideum, Euglena longa, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Human papillomavirus ty"
- 7062 7192 35 "Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Homo sapiens, Mus musculus, Rattus norvegicus, Clostridium acetobutylicum, Tetrao urogallus, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Danio rerio, Arabidopsis thaliana, Drosop"
- 7063 7193 28 "Danio rerio, Mus musculus, Dictyostelium discoideum, Rattus norvegicus, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Drosophila melanogaster, Pan troglodytes, Mycoplasma pulmonis, Myrialepis paradoxa, Human immunodeficiency virus 1, Orussus terminalis, Sminthopsis macroura, Borrelia burgdorferi B31, Clostridium tetani E88, Arabidopsis thaliana, Bacillus thuringiensis serovar entomocidus, Clostridium acetobutylicum, Reticulitermes lucifugus, Tribolium castaneum, Reticulitermes santonensis, Prochlorococcus marinus, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Borrelia burgdorferi, Medicago truncatula, Chlorella vulgaris" 10
- 7064 7194 31 "Homo sapiens, Rattus norvegicus, Enterococcus avium, Arabidopsis thaliana, Mus musculus, Sulfolobus solfataricus, Oryza sativa (japonica cultivar-group), Thermotoga maritima" 20
- 7065 7195 31 "Homo sapiens, Mus musculus, Eimeria tenella, Leptospira interrogans serovar lai str. 56601, Buchnera aphidicola str. Bp (Baizongia pistaciae), Danio rerio, Thermoanaerobacter tengcongensis, Medicago truncatula"
- 7066 7196 43 "Lactococcus lactis subsp. lactis, Medicago truncatula, Lotus corniculatus var. japonicus, Danio rerio, Homo sapiens, Bos taurus, Pan troglodytes, Mus musculus, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Papio anubis, Ephydatia fluviatilis, Caenorhabditis elegans, Enterococcus faecalis V583, Ectocarpus siliculosus virus, Arabidopsis thaliana, Gallus gallus, uncultured marine gamma proteobacterium EBAC31A08, Vigna unguiculata" 30
- 7067 7197 41 "Arabidopsis thaliana, Shewanella oneidensis MR-1, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Lemur catta, Vibrio cholerae, Plasmodium falciparum 3D7, Takifugu rubripes"
- 7068 7198 29 "Medicago truncatula, Mus musculus, Drosophila melanogaster, Drosophila erecta, Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Pan troglodytes, Caenorhabditis elegans, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rickettsia conorii, Rickettsia prowazekii, Rickettsia montanensis, Rickettsia rickettsii, Clostridium perfringens str. 13"
- 7069 7199 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Pan troglodytes, Drosophila melanogaster, Ciona intestinalis, Rattus norvegicus, Medicago truncatula, Bacillus cereus ATCC 14579, Plasmodium falciparum 3D7, Lepidocyrtus biphasis, Lycopersicon esculentum, Danio rerio, Glycine max, Saccharomyces cerevisiae" 40
- 7070 7200 27 "Homo sapiens, Coxiella burnetii RSA 493, Mus musculus, Drosophila melanogaster, Danio rerio"
- 7071 7201 27 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Ophiostoma novo-ulmi mitovirus 5-Ld, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Gallus gallus" 50

- 7072 7202 29 "Mus musculus, Danio rerio, Mycoplasma gallisepticum R, Clostridium tetani E88, Homo sapiens, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Drosophila melanogaster, Caenorhabditis elegans, Escherichia fergusonii, Medicago truncatula, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Peanut witches'-broom phytoplasma, Rhizopus stolonifer, Sulfolobus solfataricus, Cicer arietinum, Oryza sativa, Entamoeba histolytica, Bacillus sp., Sulfolobus tokodaii, Chlamydomonas reinhardtii, Dictyostelium discoideum"
- 7073 7203 29 "Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Oryza sativa, Lotus corniculatus var. japonicus, Helicobacter pylori 26695, Helicobacter pylori J99, Lycopersicon esculentum, Mus musculus, Plasmodium falciparum 3D7, Sulfolobus solfataricus, Caenorhabditis elegans, Haemophilus influenzae Rd KW20" 10
- 7074 7204 26 "Homo sapiens, Arabidopsis thaliana, Mumps virus (STRAIN JERYL-LYNN), Mumps virus, Mus musculus, Drosophila willistoni, Daucus carota, Brassica juncea, Lactobacillus helveticus, Tritoniopsis unguicularis, Medicago truncatula"
- 7075 7205 25 "Homo sapiens, Danio rerio, Saccharomyces servazzii, Clostridium acetobutylicum, Arabidopsis thaliana, Mus musculus, Pan troglodytes, Vibrio fischeri, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Sus scrofa, Lotus corniculatus var. japonicus, Neurospora crassa, Plasmodium falciparum" 20
- 7076 7206 19 "Mus musculus, Homo sapiens, Drosophila melanogaster, Streptococcus pneumoniae R6, Danio rerio"
- 7077 7207 25 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Danio rerio, Pan troglodytes, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Prochlorococcus marinus, Lycopersicon esculentum, Escherichia coli K12, Heliothis virescens, Escherichia coli, Monocentris japonicus"
- 7078 7208 24 "Nicotiana tabacum, Clostridium acetobutylicum, Medicago truncatula, Mus musculus, Homo sapiens, Danio rerio" 30
- 7079 7209 31 "Oocystis perpusillus, Deltocephalus fuscineruosus, Homo sapiens, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Engelmanniella mobilis, Citrona intestinalis, Staphylococcus aureus subsp. aureus MW2, Enterobacteria phage RB49"
- 7080 7210 25 "Homo sapiens, Caenorhabditis elegans, Plasmodium falciparum 3D7, Mus musculus, Gallus gallus, Xenopus laevis, Leishmania major, Listeria innocua, Oryza sativa (japonica cultivar-group), Danio rerio"
- 7081 7211 27 "Homo sapiens, Vibrio vulnificus CMCP6, Mus musculus, Danio rerio, Lotus corniculatus var. japonicus, Caenorhabditis elegans" 40
- 7082 7212 31 "Clostridium acetobutylicum, Homo sapiens, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio"
- 7083 7213 27 "Bacillus anthracis str. Ames, Mus musculus, Caenorhabditis elegans, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Plasmodium falciparum 3D7, Vibrio parahaemolyticus, Helicobacter pylori 26695, Helicobacter pylori J99, Pyrococcus horikoshii"
- 7084 7214 28 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Caenorhabditis briggsae, Schizosaccharomyces pombe, Rhesus cytomegalovirus strain 68-1, Borrelia burgdorferi B31, Cyperus tenellus, Thermoanaerobacter tengcongensis, Isolepis cernua, Schoenoplectus americana" 50

- 7085 7215 23 "Homo sapiens, Mus musculus, Rattus norvegicus, Chlamydo
phila caviae GPIC, Arabidopsis thaliana, Danio rerio"
- 7086 7216 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Ar
abidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Agrobac
terium tumefaciens, Manduca sexta, Thermotoga maritima, Oryza sativa"
- 7087 7217 28 "Bacillus cereus ATCC 14579, Drosophila melanogaster, Mu
s musculus, Homo sapiens, Rattus norvegicus, Dictyostelium discoideum, Danio rer
io, Medicago truncatula, Arabidopsis thaliana, Lotus corniculatus var. japonicus
, Vitis vinifera"
- 7088 7218 25 "Schizosaccharomyces pombe, Homo sapiens, Mus musculus, 10
Plasmodium falciparum 3D7, Drosophila melanogaster, Pan troglodytes, Arabidopsis
thaliana, Clostridium acetobutylicum"
- 7089 7219 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cult
ivar-group), Arabidopsis thaliana, Plasmodium falciparum, Staphylococcus aureus
subsp. aureus MW2, Danio rerio, Tityus serrulatus, Drosophila melanogaster, Clos
tridium tetani E88, Plasmodium falciparum 3D7, Dictyostelium discoideum, Oryza s
ativa, Clostridium acetobutylicum, Ciona intestinalis, Wigglesworthia glossinidi
a endosymbiont of Glossina brevipalpis"
- 7090 7220 31 "Homo sapiens, Arabidopsis thaliana, Nostoc sp. PCC 7120 20
, Drosophila melanogaster, Mus musculus, Euglena gracilis, Zygosaccharomyces kom
buchaensis, Medicago truncatula, Dictyostelium discoideum, Staphylococcus epider
midis ATCC 12228, Plasmodium falciparum 3D7, Danio rerio, African swine fever vi
rus, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Caenorhabdit
is elegans, Dipodascus magnusii"
- 7091 7221 28 "Homo sapiens, Thermoanaerobacter tengcongensis, Mus mus
culus, Pisum sativum, Dictyostelium discoideum, Fusobacterium nucleatum subsp. n
ucleatum ATCC 25586, Plasmodium falciparum, Plasmodium falciparum 3D7, Oryctolag
us cuniculus, Drosophila melanogaster, Arabidopsis thaliana, Sarcophyton glaucum
, Danio rerio"
- 7092 7222 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), C 30
lostridium tetani E88, Drosophila melanogaster, Mus musculus, Danio rerio, Chlam
ydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumon
iae J138, Chlamydophila pneumoniae TW-183"
- 7093 7223 29 "Homo sapiens, Oryza sativa (japonica cultivar-group), M
us musculus, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC
25586, Sulfolobus tokodaii, Pan troglodytes, Plasmodium falciparum 3D7, Danio r
erio, Bacillus halodurans"
- 7094 7224 39 "Caenorhabditis elegans, Medicago truncatula, Urostyla g 40
randis, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-grou
p), Mus musculus, Vibrio vulnificus CMCP6, Fissidens philonotulus, Guillardia th
eta, Caenorhabditis briggsae, Drosophila melanogaster, Leptospira interrogans se
rovar lai str. 56601, Dictyostelium discoideum, Pan troglodytes, Pyrococcus furi
osus DSM 3638, Danio rerio, Bos taurus, Ciona intestinalis, Equus caballus, Anab
aena flos-aquae"
- 7095 7225 32 "Homo sapiens, Caenorhabditis elegans, Pan troglodytes,
Drosophila melanogaster, Mus musculus, Zea mays, Sulfolobus solfataricus, Danio
rerio, Oceanobacillus ihyensensis HTE831, Oryza sativa (japonica cultivar-group),
Sulfolobus tokodaii, Papio anubis"
- 7096 7226 28 "Mus musculus, Bacillus anthracis str. Ames, Arabidopsis
thaliana, Clostridium tetani E88, Homo sapiens, Danio rerio" 50

- 7097 7227 28 "Mus musculus, Danio rerio, Homo sapiens, Pan troglodytes, Oryza sativa (japonica cultivar-group), Pyrobaculum aerophilum str. IM2, Caenorhabditis elegans, Clostridium botulinum, Arabidopsis thaliana, Plasmodium falciparum 3D7, Bacteriophage d-16 phi, Clostridium botulinum D, Clostridium botulinum D phage"
- 7098 7228 26 "Buchnera aphidicola str. APS (Acyrtosiphon pisum), Homo sapiens, Mus musculus, Coxiella burnetii RSA 493, Caenorhabditis elegans, Arabidopsis thaliana"
- 7099 7229 27 "Homo sapiens, Mus musculus, Chaetosphaeridium globosum, Buchnera aphidicola str. Sg (Schizaphis graminum), Microcebus rufus, Microcebus murinus, Rattus norvegicus, Sulfolobus solfataricus, Arabidopsis thaliana, Caenorhabditis elegans, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Methanocaldococcus jannaschii" 10
- 7100 7230 23 "Mus musculus, Homo sapiens, Antithamnion sp., Caenorhabditis elegans, Schizosaccharomyces pombe"
- 7101 7231 39 "Homo sapiens, Bacillus anthracis str. Ames, Staphylococcus epidermidis ATCC 12228, Clostridium pasteurianum, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Medicago truncatula"
- 7102 7232 57 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Candidatus Blochmannia floridanus, Oceanobacillus ihayensis HTE831, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus epidermidis ATCC 12228, Streptococcus mutans UA159, Helicobacter hepaticus ATCC 51449, Bacteroides thetaiotaomicron VPI-5482, Yersinia pestis KIM, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Yersinia pestis C092, Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Sulfolobus tokodaii, Lactobacillus plantarum WCFS1, Prochlorococcus marinus subsp. marinus str. CCMP1375, Vibrio nigripulchritudo, Caenorhabditis briggsae, Mus musculus, Lotus corniculatus var. japonicus, Staphylococcus aureus, Macaca fascicularis, Clostridium perfringens str. 13" 20
- 7103 7233 31 "Oryza sativa (japonica cultivar-group), Takifugu rubripes, Mycoplasma penetrans, Homo sapiens, Medicago truncatula, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Malawimonas jakobiformis, Candidatus Blochmannia floridanus, Caenorhabditis elegans, Danio rerio, Malus x domestica, Pan troglodytes, Clostridium tetani E88, Heliconius pacheus, Heliconius cydno, Candidatus Carsonella ruddii, Clostridium perfringens, Syrrhopodon gardneri, Schizosaccharomyces pombe, Flaveria trinervia, Gracilariopsis lemaneiformis" 30
- 7104 7234 29 "Homo sapiens, Triticum monococcum, Medicago truncatula, Drosophila melanogaster, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Caenorhabditis elegans, Listeria innocua, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Methanosarcina mazei Goe1, Clostridium tetani E88, Thermoanaerobacter tengcongensis, Rhizophyidium sp. 136, Caenorhabditis briggsae, Mycoplasma pulmonis, Arabidopsis thaliana, Oryza sativa (indica cultivar-group), Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mycoplasma hyopneumoniae, Iris brevicaulis" 40
- 7105 7235 32 "Homo sapiens, Mus musculus, Brassica napus, Danio rerio, Dictyostelium discoideum, Arabidopsis thaliana, Solanum tuberosum, Entamoeba histolytica, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza 50

- sativa (japonica cultivar-group), Simian immunodeficiency virus, Sus scrofa, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Drosophila melanogaster, Marchantia polymorpha, Caenorhabditis elegans, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Rickettsia prowazekii, Oryzias latipes, Oceanobacillus iheyensis HTE831, Bacillus halodurans, Saccharomyces cerevisiae, Phycomyces blakesleeanus, Trypanosoma brucei, Papio anubis, Rattus norvegicus"
- 7106 7236 31 "Candida albicans, Homo sapiens, Mus musculus, Clarias gariepinus, Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Equus caballus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Rattus norvegicus, Aster yellows phytoplasma, Arabidopsis thaliana, Saccharomyces cerevisiae, Tribolium castaneum, Bacteriophage SPP1, Didelphis virginiana" 10
- 7107 7237 25 "Homo sapiens, Medicago truncatula, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Danio rerio, Plasmodium falciparum 3D7, Oryza sativa, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana"
- 7108 7238 23 "Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Homo sapiens, Human immunodeficiency virus 1, Archaeoglobus fulgidus DSM 4304, Medicago truncatula, Clostridium tetani E88, Oryza sativa (japonica cultivar-group), Neisseria meningitidis Z2491, Neisseria meningitidis MC58, San Angelo virus, Triticum aestivum, Pan troglodytes" 20
- 7109 7239 26 "Homo sapiens, Oryza sativa, Oryza sativa (japonica cultivar-group), Medicago truncatula, Clostridium acetobutylicum, Caenorhabditis elegans, Lemur catta, Mus musculus, Arabidopsis thaliana, Danio rerio, Drosophila melanogaster, Shorea balangeran, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Chordaria sp. Kamchatka_4, Chordaria sp. Kamchatka_5, Chordaria sp. Kamchatka_1, Chordaria sp. Kamchatka_2, Shorea ovalis"
- 7110 7240 34 "Oceanobacillus iheyensis HTE831, Xenopus laevis, Trichoderma atroviride, Mus musculus, Arabidopsis thaliana, Homo sapiens, Plasmodium berghei, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii, Cucumis melo, Shewanella oneidensis MR-1, Acacia senegal, Plasmodium falciparum 3D7, Yersinia pestis KIM, Phytomonas sp. isolate Hart1, Danio rerio, Vibrio cholerae, Sulfolobus tokodaii, Yersinia pestis C092, Enterobacteria phage RB69, Plasmodium falciparum, Haemophilus influenzae Rd KW20, Gnetum parvifolium, Nostoc sp. PCC 7120" 30
- 7111 7241 114 "Salmonella typhimurium LT2, Shigella flexneri 2a str. 2457T, Salmonella enterica subsp. enterica serovar Typhi Ty2, Escherichia coli CF T073, Shigella flexneri 2a str. 301, Escherichia coli O157:H7 EDL933, Salmonella typhimurium, Escherichia coli, Escherichia" 30
- 7112 7242 32 "Pasteurella multocida, Campylobacter jejuni subsp. jejuni NCTC 11168, Coxiella burnetii RSA 493, Homo sapiens, Neisseria meningitidis Z2491, Neisseria perflava, Mus musculus, Neisseria meningitidis MC58, Pleurotus ostreatus, Escherichia coli CFT073, uncultured marine gamma proteobacterium EBAC31A08, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Danio rerio, Brassica napus, Amsacta moorei entomopoxvirus, Platynereis dumerilii, Saccharomyces cerevisiae, Plasmodium falciparum, Arabidopsis thaliana" 40
- 7113 7243 24 "Danio rerio, Mus musculus, Stylonychia lemnae, Nicotiana glauca, Homo sapiens, Prochlorococcus marinus, Caenorhabditis elegans, Arabidopsis thaliana, Drosophila koepferae"
- 7114 7244 24 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Ure" 50

- aplasma urealyticum, *Oryza sativa* (japonica cultivar-group), *Helicobacter pylori* J99"
- 7115 7245 31 "Streptococcus pneumoniae TIGR4, Streptococcus pneumoniae, *Mus musculus*, *Homo sapiens*, *Porphyromonas gingivalis* W83"
- 7116 7246 28 "*Ciona intestinalis*, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Gallus gallus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Bos taurus*, *Pneumocystis carinii*, *Arabidopsis thaliana*"
- 7117 7247 27 "*Homo sapiens*, *Mus musculus*, *Xylella fastidiosa* Temecula 1, *Xylella fastidiosa* 9a5c, Human herpesvirus 1"
- 7118 7248 80 "*Porphyromonas gingivalis* W83, *Bacteroides thetaiotaomicron* VPI-5482, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* SSI-1, *Mycoplasma gallisepticum* R, *Mycoplasma gallisepticum*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Streptococcus pyogenes*, *Brassica napus*, *Dictyostelium discoideum*, *Streptococcus agalactiae* 2603V/R, Saimiriine herpesvirus 2, *Streptococcus agalactiae* NEM316, *Xenopus laevis*, *Rickettsia conorii*, Expression vector Zm006, *Bos taurus*, *Candida albicans*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Chlamydomonas reinhardtii*, *Mus musculus*, *Listeria monocytogenes*" 10
- 7119 7249 31 "*Oceanobacillus iheyensis* HTE831, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Thermoanaerobacter tengcongensis*, *Entamoeba dispar*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Thomomys bottae*, *Thomomys talpoides*, *Prochlorococcus marinus*, *Conus pennaceus*, *Buchnera aphidicola*, *Buchnera aphidicola* (*Thelaxes suberi*), *Enterococcus hirae*, *Euglena gracilis*, *Vibrio parahaemolyticus*, *Sminthopsis dolichura*, *Thomasomys oreas*, *Schizosaccharomyces pombe*" 20
- 7120 7250 31 "*Caenorhabditis elegans*, *Dictyostelium discoideum*, *Homo sapiens*, *Cyanophora paradoxa*, *Drosophila melanogaster*, *Lycopersicon esculentum*, *Mus musculus*, *Heliothis virescens*, *Danio rerio*, *Enterococcus faecalis* V583, *Arabidopsis thaliana*, *Aphelonema histrionica*, "
- 7121 7251 72 "*Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Oceanobacillus iheyensis* HTE831, *Reclinomonas americana*, *Prochlorococcus marinus*, *Xylella fastidiosa* 9a5c, *Homo sapiens*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Helicobacter hepaticus* ATCC 51449, *Mus musculus*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Schizosaccharomyces pombe*, *Nicotiana tabacum*, *Bacillus anthracis* str. Ames, *Clostridium acetobutylicum*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Caenorhabditis elegans*, *Corydoras rabauti*, *Arabidopsis thaliana*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Oryza sativa* (japonica cultivar-group), *Ciona intestinalis*, *Danio rerio*, *Bacillus subtilis*" 30
- 7122 7252 32 "*Caenorhabditis elegans*, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Listeria monocytogenes*, *Listeria innocua*, *Clostridium perfringens* str. 13, *Mus musculus*, *Drosophila melanogaster*, *Drosophila virilis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Ciona intestinalis*, *Lotus corniculatus* var. *japonicus*, *Bacillus halodurans*, *Danio rerio*, *Anopheles gambiae*" 40
- 7123 7253 47 "*Homo sapiens*, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Streptomyces avermitilis* MA-4680, *Vibrio parahaemolyticus*, *Paracoccidioides brasiliensis*, *Danio rerio*"
- 7124 7254 20 "*Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Vibrio cholerae*, *Danio rerio*" 50

- 7125 7255 28 "Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Homo sapiens, Staphylococcus epidermidis, Danio rerio, Arabidopsis thaliana, Mus musculus, Mycoplasma pulmonis"
- 7126 7256 32 "Arabidopsis thaliana, Macaca fascicularis, Mus musculus, Homo sapiens, haplosporidian parasite of Haliotis iris, Lupinus albus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Bacillus anthracis str. Ames, Rattus nor"
- 7127 7257 82 "Helicobacter pylori 26695, Helicobacter pylori J99, Pseudomonas putida KT2440, Thermotoga maritima, Helicobacter hepaticus ATCC 51449, Pseudomonas syringae pv. tomato str. DC3000, Pseudomonas aeruginosa PA01, Rickettsia montanensis, Rickettsia rhipicephali," 10
- 7128 7258 119 "Candidatus Blochmannia floridanus, Spirulina platensis, Rickettsia bellii, Pasteurella multocida, Cellulophaga lytica, Bartonella henselae, Chlamydomonas reinhardtii, Zea mays, Vibrio vulnificus CMCP6, Yersinia pestis KIM, Campylobacter jejuni subsp. jejuni"
- 7129 7259 125 "Ophiocytium majus, Rhodochaete parvula, Helicobacter hepaticus ATCC 51449, Cyanophora paradoxa, Heterosigma akashiwo, Pseudoalteromonas haloplanktis, Guillardia theta, Haemophilus influenzae, Mischochloa paradoxa, Eustigmatos magnus, Chroomonas sp. "
- 7130 7260 155 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Buchnera aphidicola, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola str. APS (Acyrtosiphon pisum), Thorea violacea, Geobacillus stearothermophilus, Bacillus halodurans, Galdieria " 20
- 7131 7261 29 "Drosophila melanogaster, Shewanella oneidensis MR-1, Pan troglodytes, Homo sapiens, Galdieria sulphuraria, Caenorhabditis elegans, Danio rerio, Feravidobacterium islandicum"
- 7132 7262 192 "Buchnera aphidicola, Pseudoalteromonas haloplanktis, Mycoplasma mycoides subsp. mycoides, Buchnera aphidicola str. Bp (Baizongia pistaciae), Chondrus crispus, Lactobacillus gallinarum, Lactobacillus crispatus, Lactobacillus amylovorus, Lactobacillus acidophilus" 30
- 7133 7263 113 "Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Arabidopsis thaliana, Reclinomonas americana, Lactuca sativa witches'-broom phytoplasma, Bartonella henselae, Aster yellows phytoplasma, Polytoma oviforme, Prototheca wickerhamii, Mycoplasma"
- 7134 7264 56 "Prototheca wickerhamii, Rickettsia typhi, Mus musculus, Homo sapiens, Mycoplasma capricolum, Mycoplasma genitalium, Danio rerio, Pan troglodytes, Drosophila melanogaster, Swinepox virus, Arabidopsis thaliana, Lycopersicon esculentum, Clostridium acetobutylicum, Caenorhabditis briggsae, Pinus densiflora, Brassica rapa"
- 7135 7265 84 "Helicobacter pylori 26695, Helicobacter pylori J99, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Helicobacter hepaticus ATCC 51449, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Deinococcus radiodurans, uncultured bacterium, S" 40
- 7136 7266 121 "Chlorobium tepidum TLS, Guillardia theta, Clostridium perfringens str. 13, Clostridium tetani E88, Finegoldia magna, Bacillus subtilis subsp. subtilis str. 168, Porphyra purpurea, Bacillus subtilis, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter"
- 7137 7267 28 "Homo sapiens, Pyrococcus abyssi, Caenorhabditis elegans, Mus musculus, Plasmodium falciparum 3D7, Brassica oleracea, Cyanidium caldarium, Danio rerio, Streptococcus agalactiae, Drosophila melanogaster, Streptococcus" 50

- agalactiae 2603V/R, Chaetosphaeridium globosum, Pachychilus sp., Pyrobaculum aequophilum str. IM2, Lycopersicon esculentum, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group), Pan troglodytes, Porphyromonas gingivalis W 83, Neurospora crassa, Ciona intestinalis, Carabus japonicus"
- 7138 7268 31 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Daucus carota, Mus musculus, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Human immunodeficiency virus 1, Caenorhabditis elegans, Buchnera aphidicola, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Plasmodium falciparum"
- 7139 7269 27 "Medicago truncatula, Drosophila melanogaster, Homo sapiens, Rattus norvegicus, Mus musculus, Enterococcus faecalis, Lactococcus lactis, Caenorhabditis elegans, Hylobates agilis, Pongo pygmaeus" 10
- 7140 7270 28 "Danio rerio, Mus musculus, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Thermotoga maritima, Botryotinia fuckeliana, Caenorhabditis elegans, Equus caballus, Medicago truncatula, Buchnera aphidicola, Caenorhabditis briggsae, Candida albicans, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 7141 7271 27 "Mus musculus, Arabidopsis thaliana, Staphylococcus aureus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Dictyostelium discoideum, Homo sapiens, Clostridium tetani E88, Plasmodium falciparum 3D7, Danio rerio, Bos taurus, Caenorhabditis briggsae" 20
- 7142 7272 33 "Mus musculus, Homo sapiens, Mycoplasma pulmonis, Arabidopsis thaliana, Schizosaccharomyces pombe, Danio rerio, Bos taurus, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Gallus gallus, Streptococcus agalactiae NEM316"
- 7143 7273 32 "Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Plasmodium falciparum 3D7, Danio rerio, Arabidopsis thaliana, Mus musculus, Mycoplasma genitalium, Clostridium perfringens str. 13, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Aster yellows phytoplasma, Plasmodium falciparum, Oryza sativa, Caenorhabditis briggsae, Campylobacter jejuni subsp. jejuni NCTC 11168, Glycine max, Plasmodium yoelii, Methanocaldococcus jannaschii" 30
- 7144 7274 27 "Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Mus musculus, Ateles geoffroyi, Macaca mulatta, Hylobates lar, Cebus albifrons, Arabidopsis thaliana, Clostridium perfringens str. 13, Coxiella burnetii RSA 493, Oryza sativa (japonica cultivar-group), Equus caballus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Nitrosomonas europaea ATCC 19718, Exacum affine, Plasmodium falciparum, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Pyrococcus horikoshii, Medicago truncatula, Ornithia madagascariensis, Exacum tetragonum, Candida albicans" 40
- 7145 7275 29 "Homo sapiens, Bos taurus, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio"
- 7146 7276 27 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Danio rerio, Mus musculus, Nostoc sp. PCC 7120, Plasmodium berghei, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Alcelaphine herpesvirus 1, Oryza sativa, Chironomus tentans, Oryza sativa (japonica cultivar-group)"
- 7147 7277 31 "Mus musculus, Homo sapiens, Pseudomonas sp. ED23-33, Pseudomonas sp. K-62, Caenorhabditis elegans, Porcine adenovirus 5, Saccharomyces 50

- exiguus, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Danio rerio*, *Nicotiana plumbaginifolia*"
- 7148 7278 24 "Pan troglodytes, *Zymomonas mobilis*, *Homo sapiens*, *Schmidtea mediterranea*, *Mus musculus*, *Mycoplasma gallisepticum* R, *Shigella sonnei*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Plasmodium falciparum*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Dictyostelium discoideum*, *Caenorhabditis remanei*"
- 7149 7279 28 "Caenorhabditis elegans, *Homo sapiens*, *Thermoanaerobacter tengcongensis*, *Sulfolobus solfataricus*, *Mus musculus*, *Danio rerio*, *Pan troglodytes*, *Saimiriine herpesvirus 2*, *Methanocaldococcus jannaschii*, *Synechocystis* sp. PCC 6803" 10
- 7150 7280 35 "Lotus corniculatus var. japonicus, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Nautilocalyx melittifolius*, *Plasmodium falciparum*, *Arabidopsis thaliana*, *Mycoplasma gallisepticum* R, *Oryza sativa* (japonica cultivar-group), *Populus balsamifera* subsp. *trichocarpa* x *Populus deltoides*, *Drosophila melanogaster*, *Xenopus laevis*, *Mycoplasma pulmonis*, *Danio rerio*, *Ciona intestinalis*"
- 7151 7281 32 "Drosophila melanogaster, *Homo sapiens*, *Danio rerio*, *Mus musculus*, *Clostridium acetobutylicum*, *Clostridium perfringens* str. 13, *Rattus norvegicus*, *Bacillus cereus* ATCC 14579, *Oryza sativa* (japonica cultivar-group), *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Oryctolagus cuniculus*, *Xenopus laevis*, *Plasmodium falciparum* 3D7, *Bos taurus*, *Oryza sativa*, *Lactococcus lactis* subsp. *lactis*, *Lactococcus lactis*, *Plasmodium falciparum*, *Tenebrio molitor*, *Ceratitidis capitata*, *Medicago truncatula*, *Clostridium perfringens*" 20
- 7152 7282 29 "Homo sapiens, *Zea mays*, *Plasmodium falciparum*, *Sweet potato feathery mottle virus*, *Danio rerio*, *Mus musculus*"
- 7153 7283 29 "Homo sapiens, *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*, *Mesorhizobium loti*, *Enterococcus faecalis* V583, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Tetrahymena thermophila*, *Encephalitozoon cuniculi*, *Arabidopsis thaliana*" 30
- 7154 7284 32 "Mus musculus, *Homo sapiens*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Sulfolobus solfataricus*, *Takifugu rubripes*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Streptococcus mutans* UA159, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Schizophyllum commune*, *Methanosarcina barkeri*, *Lotus corniculatus* var. japonicus, *Euphydryas aurinia*, *Medicago truncatula*, *Danio rerio*, *Daucus carota*, *Sus scrofa*"
- 7155 7285 24 "Phytophthora infestans, *Mus musculus*, *Homo sapiens*, *Clostridium acetobutylicum*, *Turkey adenovirus 3*, *Rattus norvegicus*" 40
- 7156 7286 36 "Drosophila melanogaster, *Homo sapiens*, *Danio rerio*, *Sulfolobus solfataricus*, *Arabidopsis thaliana*, *Mus musculus*, *Morone saxatilis*, *Morone chrysops*, *Oryza sativa* (japonica cultivar-group), *Sus scrofa*, *Saccharomyces cerevisiae*"
- 7157 7287 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Pyrococcus furiosus* DSM 3638, *Tarentola boettgeri boettgeri*, *Caenorhabditis elegans*, *Danio rerio*, *Lactobacillus plantarum* WCFS1"
- 7158 7288 41 "Bactrocera tryoni, *Homo sapiens*, *Danio rerio*, *Dictyostelium discoideum*, *Schmidtea mediterranea*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Lucilia cuprina*, *Drosophila melanogaster*" 50

- er, *Methanosarcina mazei* Goe1, *Chlamydomonas reinhardtii*, *Papio hamadryas*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Brassica rapa*, *Bacillus cereus* ATCC 14579, *Barnebydendron riedelii*, *Shewanella oneidensis* MR-1, *Sus scrofa*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*"
- 7159 7289 24 "Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Sulfolobus* sp. NOB8H2, *Vibrio parahaemolyticus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Cicer arietinum*, *Lytechinus variegatus*"
- 7160 7290 25 "Oryza sativa (*japonica* cultivar-group), *Homo sapiens*, *Sus scrofa*, *Xenopus laevis*, *Mus musculus*"
- 7161 7291 29 "Homo sapiens, *Mus musculus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Phalanger carmelitae*, *Danio rerio*" 10
- 7162 7292 27 "Homo sapiens, *Mus musculus*, *Clostridium acetobutylicum*, *Caenorhabditis elegans*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Clostridium perfringens* str. 13"
- 7163 7293 20 "*Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Medicago truncatula*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*"
- 7164 7294 27 "Homo sapiens, *Sulfolobus tokodaii*, *Mus musculus*, *Diclidanthera penduliflora*"
- 7165 7295 38 "*Clostridium perfringens* str. 13, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Influenza A virus* (A/Swine/Indiana/P12439/00 (H1N2)), *Danio rerio*, *Cryptosporidium parvum*, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Lactococcus lactis* subsp. *lactis*" 20
- 7166 7296 28 "Homo sapiens, *Drosophila melanogaster*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Danio rerio*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Leptospira interrogans* serovar *lai* str. 56601, *Rattus norvegicus*, *Dictyostelium discoideum*, *Rickettsia conorii*, *Pemphigus spyrothecae*, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Clostridium perfringens* str. 13"
- 7167 7297 27 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Phrixothrix hirtus*, *Danio rerio*" 30
- 7168 7298 61 "*Candidatus Blochmannia floridanus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM 316, *Enterococcus faecalis* V583, *Bacillus* "
- 7169 7299 25 "Homo sapiens, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Dictyostelium discoideum*, *Oreochromis mossambicus*, *Danio rerio*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Broad bean necrosis virus*, *Zymomonas mobilis*, *Schizosaccharomyces pombe*" 40
- 7170 7300 35 "*Helicobacter hepaticus* ATCC 51449, *Homo sapiens*, *Methanocaldococcus jannaschii*, *Arabidopsis thaliana*, *Xanthomonas campestris* pv. *campestris* str. ATCC 33913, *Mus musculus*, *Corynebacterium glutamicum* ATCC 13032, *Oryza sativa* (*japonica* cultivar-group), *Xenopus laevis*, *Caenorhabditis elegans*, *Oceanobacillus ihayensis* HTE831, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27"
- 7171 7301 24 "*Clostridium tetani* E88, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Ciona intestinalis*, *Legionella nautarum*, *Homo sapiens*, *Enterococcus faecalis* V583, *Bacteroides thetaiotaomicron* VPI-5482, *Pan tro*" 50

- glodytes, *Drosophila melanogaster*, *Mus musculus*, *Lactococcus lactis* subsp. *lactis*, *Danio rerio*"
- 7172 7302 50 "Methanothermobacter thermautotrophicus str. Delta H, *Lactococcus lactis* subsp. *lactis*, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar *lai* str. 56601, *Streptococcus mutans* UA159, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Mus musculus*, *Rattus norvegicus*, *Homo sapiens*, *Dictyostelium discoideum*, *Lemur catta*, *Pinus taeda*, *Arabidopsis thaliana*"
- 7173 7303 77 "Nicotiana tabacum, *Anabaena circinalis*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Prochlorococcus marinus*, *Helicobacter hepaticus* ATCC 51449, *Nostoc* sp. PCC 7120, *Coxiella burnetii* RSA 493, *Oceano*" 10
- 7174 7304 48 "Mus musculus, *Nicotiana tabacum*, *Leptospira interrogans* serovar *lai* str. 56601, *Methanosarcina mazei* Goe1, *Homo sapiens*, *Listeria monocytogenes*, *Vibrio vulnificus* CMCP6, *Danio rerio*"
- 7175 7305 24 "Homo sapiens, *Candidatus Blochmannia floridanus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Pinna nobilis*, *Mus musculus*"
- 7176 7306 62 "Schizosaccharomyces pombe, *Chlamydophila pneumoniae* CWL 029, *Chlamydophila pneumoniae* AR39, *Chlamydophila pneumoniae* J138, *Chlamydophila pneumoniae* TW-183, *Synechocystis* sp. PCC 6803, *Mus musculus*, *Helicobacter hepaticus* ATCC 51449, *Homo sapiens*, *Oryza sativa* (*indica* cultivar-group), *Oryza sativa* (*japonica* cultivar-group), *Helicobacter pylori* J99, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Petunia x hybrida*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Branchiostoma belcheri*, *Odontella sinensis*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Branchiostoma floridae*, *Caenorhabditis elegans*, *Rana catesbeiana*" 20
- 7177 7307 109 "Vibrio vulnificus CMCP6, *Vibrio parahaemolyticus*, *Medicago sativa*, *Candidatus Blochmannia floridanus*, *Helicobacter hepaticus* ATCC 51449, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Streptococcus pyogenes* MGAS 315, *Streptococcus pyogenes* MGAS8232, *Stre*" 30
- 7178 7308 155 "Buchnera aphidicola str. APS (*Acyrtosiphon pisum*), *Medicago sativa*, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Vibrio vulnificus* CMCP6, *Escherichia coli* CFT073, *Shewanella oneidensis* MR-1, *Helicobacter hepaticus* ATCC 51449, *Vibrio cholerae*, *Xenorhabdus nematophila*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Homo sapiens*, *Synechocystis* sp. PCC 6803, *Arabidopsis thaliana*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Enterococcus faecalis* V583, *Thermosynechococcus elongatus* BP-1, *Streptococcus mutans* UA159, *Neisseria meningitidis* Z2491, *Mus musculus*, *Neisseria meningitidis* MC58, *Medicago truncatula*, *Bacillus halodurans*, *Pinus taeda*, *Caenorhabditis elegans*, *Vibrio parahaemolyticus*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacillus subtilis*, *Streptococcus mutans*" 40
- 7179 7309 43 "Streptococcus agalactiae 2603V/R, *Streptococcus agalactiae* NEM316, *Homo sapiens*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Actinobacillus actinomycetemcomitans*, *Equus caballus*, *Pan troglodytes*, *Oryza sativa* (*japonica* cultivar-group), *Dictyostelium discoideum*, *Mus musculus*, *Arabidopsis thaliana*, *Pasteurella multocida*, *Oryza sativa*, *Zymomonas mobilis*, *Oceanobacillus iheyensis* HTE831, *Danio rerio*"
- 7180 7310 28 "Homo sapiens, *Glycine max*, *Porphyromonas gingivalis* W83, *Cryptosporidium parvum*, *Mus musculus*, *Danio rerio*, *Gallus gallus*" 50

- 7181 7311 45 "Vibrio parahaemolyticus, Clostridium acetobutylicum, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Nostoc sp. PCC 7120, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Shigella flexneri 2a str. 2457T, Buchnera aphidicola str. Bp (Baizongia pistaciae), Archaeoglobus fulgidus DSM 4304, Homo sapiens, Escherichia coli CFT073, Caenorhabditis elegans, Shigella flexneri 2a str. 301, Escherichia coli O157:H7 EDL933, Escherichia coli, Candidatus Blochmannia floridanus, Escherichia coli K12, Escherichia coli O157:H7, Mus musculus, Arabidopsis thaliana, Medicago sativa, Alcolapia grahmi, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Pan troglodytes" 10
- 7182 7312 48 "Streptococcus mutans UA159, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group), Homo sapiens, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Amma acta moorei entomopoxvirus, Mus musculus, Pyrococcus horikoshii" 10
- 7183 7313 25 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Sus scrofa, Drosophila melanogaster, Caenorhabditis elegans, Bombyx mori, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Pisum sativum, Buchnera aphidicola, Clostridium sp. T0-931"
- 7184 7314 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Schizosaccharomyces pombe, Caenorhabditis elegans, Drosophila melanogaster" 20
- 7185 7315 34 "Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Lycopersicon esculentum, Podospira anserina, Caenorhabditis elegans, Plasmodium falciparum 3D7, Diplectria divaricata, Dissochaeta bracteata, Macrolenes nemorosa, Ureapl"
- 7186 7316 24 "Mus musculus, Homo sapiens, Synechocystis sp., Synechocystis sp. PCC 6803, Pan troglodytes, Oryza sativa (japonica cultivar-group), Danio rerio, Caenorhabditis elegans"
- 7187 7317 24 "Rattus norvegicus, Schmidtea mediterranea, Gallus gallus, Mus musculus, Methanosarcina acetivorans C2A, Homo sapiens, Lotus corniculatus var. japonicus, Vibrio parahaemolyticus, Helicobacter hepaticus ATCC 51449" 30
- 7188 7318 31 "Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Streptococcus agalactiae 2603V/R, Escherichia coli, Streptococcus agalactiae NEM316, Sulfolobus tokodaii, Danio rerio"
- 7189 7319 67 "Vibrio vulnificus CMCP6, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Bacillus anthracis str. Ames, Pasteurella multocida, Bacillus cereus ATCC 14579, Listeria innocua, Mus musculus, Rickettsia conorii, Saccharomyces cerevisiae, Homo sapiens, Drosophila melanogaster, Pisum sativum, Buchnera aphidicola str. Bp (Baizongia pistaciae), Cryptosporidium sp. 1041, Streptococcus agalactiae 2603V/R, Cryptosporidium meleagridis, Cryptosporidium parvum, Arabidopsis thaliana, Streptococcus agalactiae NEM316, Cryptosporidium baileyi, Cryptosporidium wrairi, Mantella madagascariensis, Listeria monocytogenes, Danio rerio, Treponema pallidum, Plasmodium falciparum" 40
- 7190 7320 36 "Schizophyllum commune, Oryza sativa (japonica cultivar-group), Danio rerio, Eriastrum sapphirinum, Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Medicago truncatula, Dictyostelium discoideum, Arabidopsis thaliana, Rickettsia conorii, Tetrapygus niger, Caenorhabditis elegans, Cafeteria roenbergensis, Borrelia burgdorferi B31, Clostridium tetani E88, Macaca mulatta, Sus scrofa, Leishmania major, Methanosarcina acetivorans C2A, Oryza sativa, Candida albicans, Lactococcus lactis subsp. lactis, Lentinula edodes, Oryzias latipes" 50

- es, *Dipodascus magnusii*, *Lactobacillus plantarum* WCFS1, *Methanocaldococcus jannaschii*, *Phytoplasma* sp."
- 7191 7321 32 "Homo sapiens, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, *Mus musculus*, *Danio rerio*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Lasius neglectus*, *Atropa belladonna*, *Trypanosoma brucei*, *Oceanobacillus iheyensis* HTE831, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Rattus norvegicus*, *Borrelia burgdorferi* B31, *Poncirus trifoliata*, *Clostridium tetani* E88, *Drosophila pseudoobscura*, *Takifugu rubripes*, *Canis familiaris*, *Lycopersicon esculentum*, *Trametes versicolor*, *Mycoplasma genitalium*, *Dalbergia congestiflora*, *Betula pendula*, *Danaus chrysippus orientis*, *Danaus chrysippus chrysippus*, *Danaus chrysippus alcippus*, *Danaus chrysippus dorippus*" 10
- 7192 7322 147 "Mesostigma viride, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Vibrio vulnificus* CMCP6, *Porphyra purpurea*, *Shewanella oneidensis* MR-1, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Spirulina*"
- 7193 7323 107 "Cyanophora paradoxa, *Bacteroides thetaiotaomicron* VPI-5482, *Bacillus halodurans*, *Staphylococcus epidermidis* ATCC 12228, *Chlamydomonas reinhardtii*, *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Bartonella henselae*, *Ureaplasma urealyticum*, *Haemophil*" 20
- 7194 7324 53 "Cyanophora paradoxa, *Bacillus subtilis* subsp. *subtilis* str. 168, *Mus musculus*, *Bacillus subtilis*, *Leptospira interrogans* serovar *lai* str. 56601, *Enterococcus faecalis* V583, *Caenorhabditis elegans*, *Caenorhabditis briggsae*, *Homo sapiens*, *Listeria monocytogenes*, *Listeria innocua*, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Lotus corniculatus* var. *japonicus*, *Nephroselmis olivacea*"
- 7195 7325 53 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Prochlorococcus marinus*, *Thermosynechococcus elongatus* BP-1, *Thermoanaerobacter tengcongensis*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Synechococcus* sp. PCC 6301, *Synechocystis* sp. PCC 6803, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Homo sapiens*, *Bartonella birtlesii*, *Danio rerio*, *Bartonella schoenbuchensis*, *Helicobacter hepaticus* ATCC 51449, *Mus musculus*" 30
- 7196 7326 78 "Buchnera aphidicola str. Bp (*Baizongia pistaciae*), *Pasteurella multocida*, *Chlamydomonas caviae* GPIC, *Xylella fastidiosa* 9a5c, *Vibrio parahaemolyticus*, *Haemophilus ducreyi* 35000HP, *Haemophilus ducreyi*, *Thermoanaerobacter tengcongensis*, *Xylella fastidiosa* Tem"
- 7197 7327 162 "Streptococcus agalactiae 2603V/R, *Streptococcus agalactiae* NEM316, *Bartonella bacilliformis*, *Rickettsia typhi*, *Rickettsia rickettsii*, *Listeria monocytogenes*, *Listeria innocua*, *Haemophilus ducreyi* 35000HP, *Haemophilus ducreyi*, *Enterococcus faecalis* V583, Ara" 40
- 7198 7328 167 "Rickettsia bellii, *Rickettsia typhi*, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Chlamydomonas pneumoniae* TW-183, *Chlamydia muridarum*, *Mycoplasma pulmonis*, *Vibrio parahaemolyticus*, *Bacillus subtilis* subsp. "
- 7199 7329 41 "Bacillus anthracis str. Ames, *Homo sapiens*, *Lycopersicon esculentum*, *Bacillus halodurans*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Haemophilus ducreyi* 35000HP, *Bacillus subtilis* subsp. *subtilis* str. 168, *Haemophilus ducreyi*, *Bacillus subtilis*, *Medicago truncatula*, *Hordeum vulgare* subsp. *vulgare*, *Methanosarcina acetivorans* C2A, *Oryza sativa* (japonica cultivar-group) 50

- , *Danio rerio*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*"
- 7200 7330 41 "Campylobacter jejuni subsp. jejuni NCTC 11168, *Rickettsia rhipicephali*, *Rickettsia parkeri*, *Rickettsia montanensis*, *Rickettsia sibirica*, *Rickettsia rickettsii*, *Rickettsia conorii*, *Arabidopsis thaliana*, *Rickettsia felis*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Chlamydia trachomatis*, *Gallus gallus*"
- 7201 7331 25 "Homo sapiens, *Mus musculus*, *Nicotiana tabacum*, *Leptospira interrogans* serovar lai str. 56601, *Methanosarcina acetivorans* C2A, *Danio rerio*, *Schizosaccharomyces pombe*"
- 7202 7332 45 "Helicobacter hepaticus ATCC 51449, *Bartonella henselae*, 10
Aquifex aeolicus VF5, *Helicobacter pylori*, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27, *Clostridium perfringens* str. 13, *Homo sapiens*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oceanobacillus iheyensis* HTE831, *Thermosynechococcus elongatus* BP-1, *Mus musculus*, *Desulfuromusa kysingii*, *Enterococcus faecalis* V583, *Danio rerio*, *Streptococcus agalactiae* 2603V/R, *Bartonella bacilliformis*, *Rickettsia prowazekii*, *Streptococcus agalactiae* NEM316, *Nitrosomonas europaea* ATCC 19718, *Arabidopsis thaliana*, *Dahlia mosaic virus*"
- 7203 7333 68 "Helicobacter hepaticus ATCC 51449, *Vibrio cholerae*, *Clostridium perfringens* str. 13, *Bacillus halodurans*, *Helicobacter pylori* J99, *Mycoplasma pulmonis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, Buc" 20
- 7204 7334 62 "Helicobacter hepaticus ATCC 51449, *Mycoplasma penetrans*, *Sus scrofa*, *Clostridium tetani* E88, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Ureaplasma urealyticum*, *Listeria monocytogenes*, *Buchnera aphidicola* str. Bp (Baizongia pistaciae), *Homo sapiens*, *Mus musculus*, *Haemophilus influenzae* Rd KW 20, *Danio rerio*, *Arabidopsis thaliana*"
- 7205 7335 72 "Rickettsia felis, *Rickettsia parkeri*, *Rickettsia helvetica*, *Rickettsia montanensis*, *Rickettsia rhipicephali*, *Rickettsia sibirica*, *Rickettsia rickettsii*, *Rickettsia conorii*, *Xylella fastidiosa* Temecula1, *Rickettsia prowazekii*, *Mycoplasma pulmonis*, *Haemophilus ducreyi* 35000HP, *Thermoanaerobacter tengcongensis*, *Mus musculus*, *Haemophilus influenzae* Rd KW20, *Rickettsia typhi*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Vibrio cholerae*, *Mycoplasma penetrans*, *Dirofilaria immitis*, *Danio rerio*, *Thermotoga maritima*" 30
- 7206 7336 63 "Haemophilus ducreyi 35000HP, *Shewanella oneidensis* MR-1, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Vibrio parahaemolyticus*, *Candidatus Blochmannia floridanus*, *Candidatus Phytoplasma mali*, *Streptococcus pyogenes* MGAS315, *Streptococcus*"
- 7207 7337 29 "Danio rerio, *Homo sapiens*, *Dictyostelium discoideum*, *Ostrinia furnacalis*, *Ostrinia nubilalis*, *Drosophila melanogaster*, *Papio anubis*, *Malawimonas jakobiformis*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mycoplasma penetrans*, C" 40
- 7208 7338 31 "Mus musculus, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Branchiostoma floridae*, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Bacillus halodurans*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Clostridium acetobutylicum*, *Danio rerio*, *Macaca fascicularis*, *Clostridium perfringens* str. 13"
- 7209 7339 25 "Mus musculus, *Homo sapiens*, *Yersinia pestis* KIM, *Danio rerio*, *Yersinia pestis* C092, *Arabidopsis thaliana*, *Sorbaria sorbifolia*, *Spironuc* 50

leus barkhanus, Amsacta moorei entomopoxvirus"

7210 7340 32 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Clostridium tetani, Arabidopsis thaliana, Plasmodium falciparum 3D7, Felis catus, Drosophila melanogaster, Schizosaccharomyces japonicus, Clostridium difficile, Medicago truncatula, Mycoplasma penetrans, Mycoplasma hyorhinis, Haemophilus ducreyi 35000HP, Helicobacter pylori J99, Haemophilus influenzae Rd KW20, Clostridium perfringens str. 13"

7211 7341 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Danio rerio, Clostridium tetani E88, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)"

7212 7342 33 "Caenorhabditis elegans, Drosophila melanogaster, Homo sapiens, Medicago truncatula, Mus musculus, Plasmodium falciparum 3D7, Sorghum bicolor, Oryza sativa (japonica cultivar-group), Danio rerio, Gossypium hirsutum, Methanosarcina acetivorans C2A, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Salmonella enterica, Escherichia coli, Cryptosporidium parvum, Schizosaccharomyces pombe, Rattus norvegicus"

7213 7343 26 "Mus musculus, Homo sapiens, Drosophila melanogaster, Spiroplasma phage 1-R8A2B, Buchnera aphidicola str. Sg (Schizaphis graminum), Canis familiaris, Arabidopsis thaliana, Plasmodium falciparum 3D7, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oryza sativa (japonica cultivar-group), Phytonomonas serpens, Caenorhabditis elegans, Dictyostelium discoideum, Mamestra configurata nucleopolyhedrovirus, Danio rerio, Lotus corniculatus var. japonicus, Filipendula vulgaris, Hordeum vulgare"

7214 7344 24 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Pan troglodytes, Bacteroides thetaiotaomicron VPI-5482, Salmonella enterica subsp. enterica serovar Typhi Ty2, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Salmonella enterica subsp. enterica serovar Typhi, Helicobacter hepaticus ATCC 51449"

7215 7345 31 "Homo sapiens, Entamoeba histolytica, Arabidopsis thaliana, Danio rerio, Mus musculus, Anubias barteri, Drosophila melanogaster, Plasmodium falciparum 3D7, Salmonella paratyphi, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Torrubietta confragosa, Brassica nigra, Euglena gracilis, Caenorhabditis briggsae, Zygothylum coccineum, Zygothylum album, Tetraena mongolica, Brassica rapa, Schizosaccharomyces pombe, Pan troglodytes"

7216 7346 54 "Porphyra umbilicalis, Mus musculus, Malawimonas jakobiformis, Plasmodium falciparum 3D7, Homo sapiens, Bacillus thuringiensis serovar yunnanensis, Danio rerio, Sistotrema sp. UAMH5437, Monosiga brevicollis, Ambrosia trifida, Ceratobasidium goodyerae-repentii"

7217 7347 34 "Homo sapiens, Mus musculus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes SSI-1, Streptococcus pyogenes phage T12, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Plasmodium falciparum 3D7, Danio rerio, Pan troglodytes, Ascaris suum, Clostridium acetobutylicum, Salmonella enterica, Paramecium tetraurelia, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Methanocaldococcus jannaschii, Macaca fascicularis, Chlamydomonas reinhardtii"

7218 7348 37 "Homo sapiens, Guillardia theta, Caenorhabditis elegans, Danio rerio, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium botulinum D phage, Clostridium botulinum C phage, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Arabidopsis th

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- aliana, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 7219 7349 78 "Leptospira interrogans serovar lai str. 56601, *Leptospira interrogans*, *Borrelia burgdorferi* B31, *Borrelia burgdorferi*, Tomato big bud phytoplasma, *Shewanella oneidensis* MR-1, *Haemophilus ducreyi* 35000HP, *Chlamydia muridarum*, *Rickettsia prowazekii*, *Mus musculus*, *Drosophila melanogaster*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Rickettsia conorii*, *Streptococcus pyogenes* M1 GAS, *Ureaplasma urealyticum*, *Oryza sativa* (*japonica* cultivar-group), *Emericella nidulans*"
- 7220 7350 23 "Fusobacterium nucleatum subsp. *nucleatum* ATCC 25586, *Caesalpinia annuum*, *Mus musculus*, *Homo sapiens*, *Vibrio vulnificus*, *Drosophila melanogaster*, *Macaca fascicularis*, *Oryza sativa* (*japonica* cultivar-group), *Rattus norvegicus*" 10
- 7221 7351 24 "Homo sapiens, *Chlamydia muridarum*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Pagrus major*, *Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Mus musculus*, *Danio rerio*, *Acanthopagrus latus*"
- 7222 7352 39 "Staphylococcus aureus, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Haemophilus influenzae* Rd KW20, *Staphylococcus aureus* subsp. *aureus* Mu50, *Buchnera aphidicola*, *Candidatus Blochmannia floridanus*, *Ureaplasma urealyticum*, *Yersinia pestis* KIM, *Yersinia pestis* C092, *Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*, *Xylella fastidiosa* 9a5c, *Pasteurella multocida*, *Bos taurus*, *Mycoplasma hyopneumoniae*" 20
- 7223 7353 58 "Haemophilus influenzae Rd KW20, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pasteurella multocida*, *Candidatus Blochmannia floridanus*, *Buchnera aphidicola*, *Mus musculus*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Lactococcus lactis* subsp. *lactis*, *Streptococcus pyogenes* SSI-1, *Danio rerio*, *Schizosaccharomyces octosporus*, *Homo sapiens*, *Rickettsia conorii*, *Rickettsia prowazekii*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Helicobacter hepaticus* ATCC 51449" 30
- 7224 7354 61 "Staphylococcus aureus, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Plasmodium falciparum* 3D7, *Mycoplasma gallisepticum* R, *Mycoplasma gallisepticum*, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Borrelia burgdorferi* B31, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Borrelia burgdorferi*, *Drosophila melanogaster*, *Buchnera aphidicola*, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Streptococcus agalactiae* 2603V/R, *Clostridium acetobutylicum*, *Pasteurella multocida*, *Streptococcus agalactiae* NEM316, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Chlamydomonas reinhardtii*, *Danio rerio*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Triticum aestivum*" 40
- 7225 7355 24 "Mus musculus, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Homo sapiens*, *Zea mays*, *Candida parapsilosis*, *Rotavirus* sp., *Schizosaccharomyces pombe*, *Oryza sativa* (*japonica* cultivar-group), *Canine rotavirus*"
- 7226 7356 27 "Homo sapiens, *Caenorhabditis elegans*, *Rattus norvegicus*, *Avian leukosis virus*, *Avian myelocytomatosis virus*, *Mus musculus*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Pan troglodytes*, *Neurospora crassa*, *Cor*" 50

- agyps atratus, Struthio camelus, Casuarius casuarius, Gallus gallus, Avian carcinoma virus"
- 7227 7357 37 "Homo sapiens, Mus musculus, Streptococcus pyogenes MGAS 315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Plasmodium falciparum 3D7, Thermoanaerobacter tengcongensis, Candidatus Carsonella ruddii, Mycoplasma penetrans, Schizosaccharomyces pombe, Danio rerio, Mycoplasma capricolum, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Pseudomonas syringae pv. tomato str. DC3000, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Anopheles gambiae, Clostridium perfringens str. 13" 10
- 7228 7358 35 "Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Homo sapiens, Microstomum lineare, Borrelia burgdorferi B31, Caenorhabditis elegans, Gyrinocheilus sp., Clostridium perfringens, Medicago truncatula, Drosophila melanogaster, Mus musculus, Staphylococcus epidermidis ATCC 12228, Pan troglodytes, Streptococcus agalactiae 2603V/R, Staphylococcus aureus, Xiphophorus maculatus, Streptococcus pneumoniae TIGR4, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Staphylococcus epidermidis, Bacillus subtilis, Bacillus subtilis subsp. subtilis str. 168, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Melanoplus sanguinipes entomopoxvirus, Cyanophora paradoxa" 20
- 7229 7359 29 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Caenorhabditis elegans, Yersinia enterocolitica, Lotus corniculatus var. japonicus, Eimeria tenella, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Neoceratitis cyanescens, Schizosaccharomyces pombe, Danio rerio, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Clostridium tetani E88, Enterococcus faecalis, Monodon monoceros, Mustela frenata, Mustela vison, Mustela nivalis, Mustela erminea, Mustela nigripes, Mustela furo, Mustela putorius, Limulus polyphemus, Papio anubis, Clostridium botulinum, Chironomus tentans, Populus tremula x Populus tremuloides, Bacillus subtilis subsp. subtilis str. 168, Clostridium intestinalis, Delphinapterus leucas, Bacteriophage d-16 phi, Bombyx mori, Bacillus subtilis, Clostridium botulinum D, Clostridium botulinum D phage" 30
- 7230 7360 28 "Mus musculus, Clostridium tetani E88, Homo sapiens, Medicago truncatula, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Drosophila melanogaster, Bacillus anthracis str. Ames, Rattus norvegicus, Dictyostelium discoideum, Zea mays, Danio rerio, Lactococcus lactis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Listeria monocytogenes"
- 7231 7361 32 "Bacillus anthracis str. Ames, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Medicago truncatula, Pan troglodytes, Mus musculus, Drosophila melanogaster, Clostridium tetani, Streptococcus infantis, Chlamydia trachomatis, Helicobacter pylori 26695, Helicobacter pylori J99, Danio rerio, Bacillus cereus ATCC 14579, Oryza sativa (japonica cultivar-group), Fellomyces distylii, Fellomyces thailandicus, Clostridium acetobutylicum, Caenorhabditis elegans, Chara vulgaris" 40
- 7232 7362 24 "Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Caenorhabditis elegans, Mus musculus, Homo sapiens, Drosophila melanogaster, Danio rerio"
- 7233 7363 25 "Dictyostelium discoideum, Mus musculus, Drosophila melanogaster, Homo sapiens, Medicago truncatula, Methanosarcina mazei Goe1, Arabidop 50

- sis thaliana, Leishmania major, Caenorhabditis elegans, Ceratitis capitata, Allium cepa, Drosophila adiasstola, Simian immunodeficiency virus, Populus nigra"
- 7234 7364 25 "Enterococcus faecalis, Rattus norvegicus, Mus musculus, Bacillus cereus ATCC 14579, Homo sapiens, Streptococcus salivarius, Amsacta moorei entomopoxvirus, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila melanogaster, Pyrobaculum aerophilum str. IM2, Prochlorococcus marinus, Caenorhabditis elegans, Neisseria meningitidis MC58, Danio rerio"
- 7235 7365 28 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Chelonia mydas, Danio rerio, Mus musculus, Neurospora crassa" 10
- 7236 7366 31 "Mus musculus, Homo sapiens, Danio rerio, Mycoplasma genitalium, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Rattus rattus, Rattus norvegicus"
- 7237 7367 27 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Arabidopsis thaliana, Methanosarcina mazei Goe1, Clostridium perfringens str. 13"
- 7238 7368 28 "Leptospira interrogans serovar lai str. 56601, Mus musculus, Caenorhabditis elegans, Cryptosporidium parvum, Salmonella bongori, Homo sapiens, Bacillus halodurans, Archaeoglobus fulgidus DSM 4304, Drosophila melanogaster, Clostridium acetobutylicum, Methanothermobacter wolfeii, Methanothermobacter thermoautotrophicus, Arabidopsis thaliana, Caenorhabditis briggsae, Leptospira interrogans, Oryza sativa (japonica cultivar-group), Danio rerio, Plasmodium gallinaceum, Methanocaldococcus jannaschii, Oryctolagus cuniculus" 20
- 7239 7369 35 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Danio rerio, Salmonella typhimurium LT2, Arabidopsis thaliana, Salmonella enterica subsp. enterica serovar Typhi Ty2, Tayloria rudolphiana, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Salmonella enterica subsp. enterica serovar Typhi, Salmonella typhimurium, Tetrahymena thermophila"
- 7240 7370 27 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Danio rerio, Solanum tuberosum" 30
- 7241 7371 28 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Medicago truncatula, Caenorhabditis elegans, Tectocoris diophthalmus, Oryza sativa (japonica cultivar-group), Danio rerio, Felis catus, Atelerix albiventris, Enterococcus faecalis V583, Drosophila melanogaster, Mycoplasma pulmonis, Caenorhabditis briggsae, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Armillaria lutea, Armillaria mellea, Armillaria sinapina, Listeria monocytogenes, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus bacteriophage PVL"
- 7242 7372 29 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Danio rerio, Clostridium perfringens str. 13, Pan troglodytes, Drosophila melanogaster, Chaetosphaeridium globosum, Arabidopsis thaliana, Varuna litterata" 40
- 7243 7373 25 "Homo sapiens, Ciona intestinalis, Hordeum vulgare subsp. vulgare, Arabidopsis thaliana, Clostridium perfringens, Mus musculus, Clostridium perfringens str. 13, Atelerix albiventris, JC virus, Enterococcus faecalis V583, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Escherichia coli"
- 7244 7374 25 "Homo sapiens, Mus musculus, Pan troglodytes, Acinetobacter sp. ADP1, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Caenorhabditis elegans, thermophilic bacterium PS3, Caenorhabditis briggsae, Bacillus 50

- caldotenax, *Mycoplasma capricolum*"
- 7245 7375 38 "Pichia etchellsii, Homo sapiens, Plasmodium falciparum 3D7, Colpidium aqueous, Arabidopsis thaliana, Drosophila melanogaster, Clostridium tetani E88, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Ehrlichia ruminantium, Candidatus Blochmannia floridanus, Neurospora crassa, Saccharomyces servazzii"
- 7246 7376 28 "Mus musculus, Homo sapiens, Bradyrhizobium japonicum USDA 110, Papio anubis, Caulobacter crescentus CB15, Arabidopsis thaliana, Caulobacter vibrioides"
- 7247 7377 63 "Clostridium perfringens str. 13, Lactococcus lactis sub sp. lactis, Oceanobacillus iheyensis HTE831, Medicago truncatula, Homo sapiens, Mus musculus, Listeria monocytogenes, Helicobacter hepaticus ATCC 51449, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Dictyostelium discoideum, Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Blackcurrant reversion virus, Staphylococcus epidermidis, Vibrio parahaemolyticus, Danio rerio, Pan troglodytes, Human immunodeficiency virus 1, Bacillus anthracis str. Ames, Drosophila melanogaster, Methanosarcina mazei Goe1, Shewanella oneidensis MR-1, Streptococcus mutans UA159, Prochlorococcus marinus, Rattus norvegicus, Schizosaccharomyces pombe, Streptococcus mutans" 10
- 7248 7378 42 "Listeria innocua, Legionella pneumophila, Listeria monocytogenes, Homo sapiens, Clostridium perfringens str. 13, Influenza A virus (A/equine/Cambridge/1/63(H7N7)), Influenza A virus (A/equine/prague/56(H7N7)), Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Paramecium bursaria, Chlorella virus 1, Mus musculus, Dictyostelium discoideum, Staphylococcus epidermidis ATCC 12228, Nostoc sp. PCC 7120, Culex pipiens pallens, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Danio rerio, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Haemophilus influenzae Rd KW20" 20
- 7249 7379 24 "Mus musculus, Homo sapiens, Medicago truncatula, Plasmodium falciparum 3D7" 30
- 7250 7380 25 "Schistosoma japonicum, Homo sapiens, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Sulfolobus tokodaii, Bacillus halodurans"
- 7251 7381 40 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Rattus norvegicus, Drosophila melanogaster, Drosophila littoralis, Danio rerio, Chaerophyllum temulum, Oryza sativa (japonica cultivar-group), Medicago truncatula, Dictyostelium discoideum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Candidatus Carsonella ruddii, Oryzias latipes, Melanoplus sanguinipes entomopoxvirus, Dendritina zhengae, Arabidopsis thaliana, Pan troglodytes, Tetrahymena thermophila" 40
- 7252 7382 23 "Homo sapiens, Melobesia mediocris, Danio rerio, Arabidopsis thaliana, Mus musculus, Streptococcus agalactiae 2603V/R, Lasioglossum apristum, Bufo marinus, Lasioglossum mediterraneum, Streptococcus agalactiae NEM316, Caenorhabditis elegans, Schizosaccharomyces pombe"
- 7253 7383 23 "Homo sapiens, Vibrio cholerae, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group)"
- 7254 7384 28 "Mus musculus, Arabidopsis thaliana, Homo sapiens, Oryza sativa (japonica cultivar-group), Oryza sativa, Danio rerio, Oryctolagus cuniculus, Lotus corniculatus var. japonicus, Papio anubis, Beta patellaris" 50

- 7255 7385 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Lactobacillus sakei, Danio rerio, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Monosiga brevicollis, Arabidopsis thaliana, Medicago truncatula, Sulfolobus tokodaii"
- 7256 7386 31 "Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Schizosaccharomyces octosporus, Papio anubis, Caenorhabditis elegans, Medicago truncatula, Coturnix coturnix, Clostridium acetobutylicum, Prochlorococcus marinus, Arabidopsis thaliana, Ophisaurus attenuatus, Fragaria x ananassa, Mus musculus"
- 7257 7387 30 "Trypanosoma brucei, Lotus corniculatus var. japonicus, Trypanosoma equiperdum, Homo sapiens, Arabidopsis thaliana, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Dictyostelium discoideum, Plasmodium falciparum 3D7, Mus musculus, Ciona intestinalis, Melanoplus sanguinipes entomopoxvirus, Medicago truncatula, Gasterosteus aculeatus, Rattus norvegicus, Drosophila melanogaster, Papio anubis, Lobelia dunnii, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Candidatus Blochmannia floridanus, Plasmodium falciparum, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Psilotum nudum" 10
- 7258 7388 23 "Homo sapiens, Mus musculus, Schizosaccharomyces pombe, Danio rerio, Rattus norvegicus, Schistosoma japonicum, Drosophila melanogaster, Lampetra fluviatilis, Oryza sativa (japonica cultivar-group)" 20
- 7259 7389 25 "Columba flavirostris, Columba inornata inornata, Columba inornata wetmorei, Homo sapiens, Saccharomyces cerevisiae, Mus musculus, Pantoglydotes"
- 7260 7390 25 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Macaca fascicularis, Borrelia burgdorferi B31, Drosophila melanogaster, Plasmodium falciparum 3D7, Pyrenacantha grandifolia, Icacina senegalensis, Cyrilla racemiflora, Plasmodium falciparum, Danio rerio, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe"
- 7261 7391 33 "Mus musculus, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Anolis fuscoauratus, Lycopersicon esculentum, Sulfolobus tokodaii, Bactrocera tryoni, Oryza sativa (japonica cultivar-group), Shigella flexneri 2a str. 2457T, Candidatus Carsonella ruddii, Dictyostelium discoideum, Drosophila melanogaster, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Escherichia coli 0157:H7 EDL933, Oryza sativa, Escherichia coli K12, Caenorhabditis elegans, Nicotiana glauca, Candida albicans, Escherichia coli, Human immunodeficiency virus 1, Plasmodium falciparum, Escherichia coli 0157:H7" 30
- 7262 7392 32 "Homo sapiens, Caenorhabditis elegans, Bacillus anthracis str. Ames, Drosophila melanogaster, Xenopus laevis, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus MW2, Listeria monocytogenes, Corynebacterium glutamicum ATCC 13032, Methanocaldococcus jannaschii" 40
- 7263 7393 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Ciona intestinalis, Felis catus, Drosophila melanogaster, Plasmodium falciparum 3D7, Fusobacterium mortiferum, Phytophthora cinnamomi, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio, Gossypium hirsutum, Helicobacter hepaticus ATCC 51449, Daphnia pulex"
- 7264 7394 32 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Medicago truncatula, Dictyostelium discoideum, Staphylococcus epidermidis ATCC 12228," 50

- Staphylococcus epidermidis*, *Caenorhabditis elegans*, *Danio rerio*, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Drosophila melanogaster*, *Spathiphyllum wallisii*, *Cuscuta* sp. RGO 90-12, *Argyrea splendens*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum* 3D7, *Pan troglodytes*, *Luzula multiflora*, *Salmonella enterica* subsp. *enterica* serovar Typhi, *Brachymystax lenok*, *Tospovirus*"
- 7265 7395 29 "Homo sapiens, *Saccharomyces cerevisiae*, *Danio rerio*, *Pan troglodytes*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Melanoplus sanguinipes* entomopoxvirus, *Medicago truncatula*, *Sminthopsis macroura*, *Drosophila melanogaster*, *Leuciscus carolitertii*, *Chondrostoma willkommii*, *Anaocypris hispanica*, *Arabidopsis thaliana*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Caenorhabditis elegans*, *Cyprinella venusta*, *Oryza sativa* (*japonica* cultivar-group), *Chondrostoma soetta*, *Mycoplasma capricolum*" 10
- 7266 7396 27 "Homo sapiens, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Bacteriophage SPBc2*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Ciona intestinalis*, *Hapalemur griseus occidentalis*, *Hapalemur griseus alaotrensis*, *Hapalemur griseus griseus*, *Eulemur fulvus albocollaris*, *Eulemur fulvus collaris*, *Eulemur fulvus rufus*, *Eulemur coronatus*, *Eulemur mongoz*, *Drosophila melanogaster*, *Human papillomavirus* type 35, *Human papillomavirus* type 35H, *Ceratotherium simum*, *Phaseolus vulgaris*, *Nostoc* sp. PCC 7120" 20
- 7267 7397 43 "Homo sapiens, *Mus musculus*, *Mycoplasma pulmonis*, *Bacillus cereus* ATCC 14579, *Clostridium tetani* E88, *Caenorhabditis elegans*, *Clostridium perfringens* str. 13, *Bean common mosaic virus*, *Drosophila melanogaster*, *Chlamydia trachomatis*, *Arabidopsis thaliana*, *Danio rerio*, *Enterococcus faecalis* V583, *Bacteroides thetaiotaomicron* VPI-5482, *Oryza sativa* (*japonica* cultivar-group), *Clostridium acetobutylicum*, *Rattus norvegicus*, *Haemophilus ducreyi* 35000HP"
- 7268 7398 25 "Caenorhabditis elegans, *Mus musculus*, *Homo sapiens*, *Rattus norvegicus*, *Chlamydia muridarum*, *Brucella melitensis* 16M, *Arabidopsis thaliana*, *Brucella suis* 1330"
- 7269 7399 23 "Drosophila melanogaster, *Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Homo sapiens*, *Caenorhabditis elegans*, *Danio rerio*, *Vibrio vulnificus*, *Escherichia coli*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Saccharomyces cerevisiae*, *Medicago truncatula*, *Ciona intestinalis*, *Zea mays*" 30
- 7270 7400 28 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Salmonella enterica* subsp. *enterica* serovar Typhi Ty2, *Drosophila pseudoobscura*, *Salmonella typhi*, *Salmonella enterica* subsp. *enterica* serovar Typhi"
- 7271 7401 27 "Homo sapiens, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (*japonica* cultivar-group), *Cavia porcellus*, *Triticum monococcum*, *Anthracos formosae*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Thermoanaerobacter tengcongensis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Bos taurus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Arabidopsis thaliana*, *Cucurbita moschata*" 40
- 7272 7402 24 "Homo sapiens, *Mus musculus*, *Sepia officinalis*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Guillardia theta*, *Clostridium perfringens* str. 13"
- 7273 7403 27 "Drosophila melanogaster, *Homo sapiens*, *Danio rerio*, *Acanthamoeba castellanii*, *Caenorhabditis elegans*, *Yersinia pestis* KIM, *Lotus corniculatus* var. *japonicus*, *Vibrio parahaemolyticus*, *Mus musculus*, *Pan troglodytes*, *Yersinia pestis* C092, *Oryza sativa* (*japonica* cultivar-group)" 50

- 7274 7404 38 "Brucella melitensis 16M, Brucella suis 1330, Leptospira interrogans serovar lai str. 56601, Atelerix albiventris, Vibrio vulnificus CMC P6, Rattus sp., Homo sapiens, Aeropyrum pernix, Vibrio parahaemolyticus, Mus musculus, Polypterus bichir, Shewanella oneidensis MR-1, Danio rerio, Entamoeba histolytica, Haemophilus ducreyi 35000HP, Dictyostelium discoideum, Nitrosomonas europaea ATCC 19718, Rattus norvegicus"
- 7275 7405 28 "Mus musculus, Homo sapiens, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Haemophilus ducreyi 35000HP, Danio rerio, Brucella melitensis 16M, Peganum harmala, Brucella suis 1330, Homarus americanus" 10
- 7276 7406 28 "Mus musculus, Homo sapiens, Aquifex aeolicus VF5, Prochlorococcus marinus subsp. marinus str. CCMP1375, Arabidopsis thaliana, Drosophila melanogaster, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Oryctolagus cuniculus, Dianthus caryophyllus"
- 7277 7407 38 "Mus musculus, Homo sapiens, Kluyveromyces lactis, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Danio rerio, Sphaerotheca granularis, Caenorhabditis elegans, Dictyostelium discoideum, Staphylococcus aureus, Saccharomyces cerevisiae, Ar"
- 7278 7408 27 "Pyrococcus furiosus DSM 3638, Homo sapiens, Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana, Sorghum bicolor, Caenorhabditis briggsae, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Drosophila auraria, Sminthopsis macroura, Drosophila melanogaster, Clostridium tetani E88, Plasmodium falciparum 3D7, Rattus sp., Guillardia theta, Ehrlichia ruminantium, Danio rerio, Cucumis melo, Chironomus thummi, Anopheles gambiae, Lotus corniculatus var. japonicus, Thermoplasma volcanium, Carabus scheibei scheibei, Drosophila heteroneura, Medicago truncatula, Sulfolobus tokodaii, Catharanthus roseus, Neurospora crassa, Saccharomyces cerevisiae, Mucor circinelloides f. lusitanicus, Schizosaccharomyces pombe, Campylobacter coli, Clostridium perfringens str. 13" 20
- 7279 7409 27 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Dictyostelium discoideum, Methanothermobacter thermoautotrophicus, Oryza sativa (japonica cultivar-group), Danio rerio, Tribolium castaneum, Mus spicilegus" 30
- 7280 7410 27 "Plasmodium falciparum 3D7, Mus musculus, Homo sapiens, Drosophila melanogaster, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Zea mays, Oryza sativa (japonica cultivar-group), Danio rerio, Lithospermum erythrorhizon"
- 7281 7411 35 "Homo sapiens, Mus musculus, Clostridium tetani E88, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Clostridium acetobutylicum, Parnassius phoebus, Bacillus sp. NEB-606, Oryza sativa (japonica cultivar-group), Eleusine indica, Pan troglodytes, Rhinoleucopenga obesa, Bacillus anthracis str. A2012, Gossypium hirsutum, Ehrlichia chaffeensis, Arabidopsis thaliana, Bacillus anthracis, Verticillium dahliae, Methanocaldococcus jannaschii, Cordyceps sp. 97003, Cordyceps sobolifera" 40
- 7282 7412 29 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Plasmodium vivax, Arabidopsis thaliana, Danio rerio, Rattus norvegicus, Oryctolagus cuniculus, Xenopus laevis, Papio anubis, Caenorhabditis elegans, Saccharomyces cerevisiae" 50

- 7283 7413 27 "Homo sapiens, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Clostridium sticklandii, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mycoplasma capricolum, Pseudomonas sp., Mus musculus, Chlamydomonas reinhardtii, Danio rerio"
- 7284 7414 24 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Bacillus halodurans"
- 7285 7415 27 "Rattus norvegicus, Homo sapiens, Haenianthus salicifolius var. obovatus, Haenianthus incrassatus, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Utricularia laciniata, Perina nuda nucleopolyhedrovirus, Grapevine leafroll-associated virus 2, Antirrhinum siculum, Danio rerio, Loxonia hirsuta, Medicago truncatula, Drosophila pseudoobscura, Libellula composita, Arabidopsis thaliana, Neurospora crassa, Bacillus subtilis subsp. subtilis str. 168, Schizosaccharomyces pombe, Jamesbrittenia megadenia, Bacillus subtilis" 10
- 7286 7416 25 "Homo sapiens, Mycoplasma gallisepticum, Mus musculus, Clostridium difficile, Medicago truncatula, Helicobacter pylori"
- 7287 7417 37 "Candidatus Carsonella ruddii, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Pan troglodytes, Caenorhabditis elegans, Mus musculus, Drosophila melanogaster, Xenopus laevis, Canis familiaris, Haemophilus ducreyi 35000HP, Drosophila mauritiana, Euhadra peliomphala, Dictyostelium discoideum, Felis catus, Strongyloides stercoralis, Mycoplasma pulmonis, Buchnera aphidicola str. APS (Acyrtosiphon pisum), primary endosymbiont of Blastopsylla occidentalis, Dictyostelium purpureum, Typhonium giganteum, Medicago truncatula, Haplodontium reticulatum, Haplodontium megalocarpum, Bryum meesioides, Bryum argenteum, Anomobryum prostratum, Anomobryum humillimum, Acidodontium subrotundum, Acidodontium sprucei, Acidodontium ramicola, Schmidtea mediterranea, Sus scrofa, Tetrahymena thermophila, Guillardia theta" 20
- 7288 7418 32 "Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Anatoecus sp. KY-2002, Asellus aquaticus, Ciona intestinalis, Mus musculus, Caenorhabditis elegans, Pelmatocerandra setosa, Arabidopsis thaliana, Atriplex centralasiatica, Guillardia theta, Lycopersicon pimpinellifolium, Lycopersicon esculentum, Saccharomyces cerevisiae, Danio rerio" 30
- 7289 7419 27 "Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Mus musculus, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Cyanophora paradoxa, Enterococcus faecalis V583, Papio anubis, Staphylococcus aureus, Tetrahymena pyriformis, Myco"
- 7290 7420 25 "Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Lactobacillus plantarum, Mus musculus, Lactobacillus plantarum WCFS1" 40
- 7291 7421 53 "Borrelia burgdorferi B31, Borrelia burgdorferi, Homo sapiens, Mus musculus, Lycopersicon esculentum, Drosophila melanogaster, Campoletis sonorensis ichnovirus, Danio rerio, Botryotinia fuckeliana"
- 7292 7422 27 "Photorhabdus luminescens, Homo sapiens, Mus musculus, Felis catus, Synechocystis sp. PCC 6803, Drosophila melanogaster, Methanosarcina mazei Goe1, Dendroica discolor, Caenorhabditis briggsae, Pan troglodytes, Danio rerio, Caenorhabditis elegans, Schizosaccharomyces pombe, Treponema pallidum"
- 7293 7423 24 "Homo sapiens, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Pseudomonas putida KT2440, Pan troglodytes, Arabidopsis thaliana, List 50

eria monocytogenes"

7294 7424 27 "Plasmodium falciparum 3D7, Plasmodium falciparum, Mus musculus, Homo sapiens, Bordetella parapertussis, Bordetella bronchiseptica, Bordetella pertussis, Caenorhabditis elegans, Listeria innocua, Arabidopsis thaliana"

7295 7425 36 "Caenorhabditis elegans, Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Shewanella oneidensis MR-1, Mus musculus, Danio rerio, Enterobacteria phage T4, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Plasmodium falciparum, Amsacta moorei entomopoxvirus, Skeletonema costatum, Rhododendron metternichii var. hondoense, Uma scoparia, Drosophila melanogaster, Perameles nasuta, Caenorhabditis briggsae, Rickettsia conorii, Entamoeba dispar, Streptococcus pneumoniae TIGR4, Listeria monocytogenes, Triticum aestivum, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Culicicapa helianthea, Branchiostoma lanceolatum, Lotus corniculatus var. japonicus, Thermoplasma volcanium, Schizosaccharomyces pombe, Venerupis (Ruditapes) philippinarum, Pisum sativum"

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7296 7426 53 "Vibrio vulnificus CMCP6, Vibrio cholerae, Coxiella burnetii RSA 493, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Odontella sinensis, Oceanobacillus iheyensis HTE831, Buchnera aphidic"

20

7297 7427 24 "Homo sapiens, Danio rerio, Cunninghamella elegans, Mus musculus, Drosophila melanogaster, Oryza sativa, Caenorhabditis briggsae, Medicago truncatula, Murray Valley encephalitis virus, Oryza sativa (japonica cultivar-group)"

7298 7428 31 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Arabidopsis thaliana"

7299 7429 35 "Homo sapiens, Caenorhabditis elegans, Fusobacterium nucleatum subsp. vincentii, Tetrahymena thermophila, Methanocaldococcus jannaschii, Listeria seeligeri, Papio anubis, Mus musculus, Rattus norvegicus, Clostridium perfringens str. 13"

30

7300 7430 32 "Rickettsia conorii, Rickettsia prowazekii, Homo sapiens, Danio rerio, Mus musculus, Clostridium tetani E88, Caenorhabditis elegans, Arabis glabra, Oryza sativa (japonica cultivar-group)"

7301 7431 64 "Chlamydia trachomatis, Mycoplasma capricolum, Cyanidioschyzon merolae, Helicobacter hepaticus ATCC 51449, Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Mus musculus, Streptococcus pyogenes SSI-1, Haemophilus influenzae Rd KW20, Chlamydomonas caviae GPIC, Homo sapiens, Chlorella vulgaris, Caenorhabditis elegans, Staphylococcus epidermidis ATCC 12228, Malawimonas jakobiformis, Plasmodium falciparum, Plasmodium falciparum 3D7"

7302 7432 34 "Synechocystis sp. PCC 6803, Aquifex aeolicus VF5, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Mycoplasma gallisepticum R, Pan troglodytes, Caenorhabditis elegans, Mycoplasma gallisepticum, Graptosiphonia nigrofusca"

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7303 7433 111 "Vibrio parahaemolyticus, Talaromyces emersonii, Chlorella vulgaris, Bacillus cereus ATCC 14579, Pseudomonas putida KT2440, Rickettsia conorii, Mesostigma viride, Bacteroides thetaiotaomicron VPI-5482, Reclinomonas americana, Aquifex pyrophilus, Pseudomonas "

7304 7434 75 "Rickettsia prowazekii, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Homo sapiens, Arabidopsis thaliana, Danio rerio, Picea abies, Bos taurus, Vibrio parahaemolyticus, Bacillus halodurans"

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- 7305 7435 44 "Nitrosomonas europaea ATCC 19718, Cyanophora paradoxa, Danio rerio, Chara vulgaris, Homo sapiens, Bacillus cereus ATCC 14579, Medicago truncatula, Staphylococcus epidermidis ATCC 12228, Lotus corniculatus var. japonicus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Leptospira interrogans serovar lai str. 56601, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Leptospira interrogans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Caenorhabditis elegans, Phytoplasma sp."
- 7306 7436 27 "Plasmodium falciparum, Plasmodium falciparum 3D7, Homo sapiens, Listeria monocytogenes, Listeria innocua, Danio rerio, Plasmodium berghei, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Clostridium saccharobutylicum, Caenorhabditis briggsae, Mus musculus" 10
- 7307 7437 38 "Borrelia burgdorferi B31, Borrelia burgdorferi, Chlamydomonas eugametos, Danio rerio, Homo sapiens, Chlorella vulgaris, Ciona intestinalis, Plasmodium falciparum 3D7, Lactococcus lactis subsp. cremoris, Plasmodium berghei, Clostridium perfringens str. 13, P"
- 7308 7438 27 "Mus musculus, Equus caballus, Homo sapiens, Pan troglodytes, Phaseolus vulgaris, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus N315, Lactobacillus delbrueckii subsp. lactis, Rattus norvegicus, Staphylococcus aureus subsp. aureus Mu50" 20
- 7309 7439 77 "Buchnera aphidicola str. Sg (Schizaphis graminum), Pasteurella multocida, Chlamydomonas reinhardtii, Actinobacillus actinomycetemcomitans, Yersinia pestis KIM, Yersinia pestis C092, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Ureaplasma urealyticum, Vibrio cholerae, Homo sapiens, Pseudomonas syringae pv. tomato str. DC3000, Pseudomonas putida KT2440, Mesostigma viride, Bradyrhizobium japonicum USDA 110, Acyrthosiphon kondoi endosymbiont, Haemophilus influenzae Rd KW20, Haemophilus ducreyi 35000HP, Chlorella vulgaris, Gallus gallus, Drosophila melanogaster, Sinorhizobium meliloti, Streptomyces rochei, Chromobacterium violaceum"
- 7310 7440 56 "Anaeroplasma abactoclasticum, Coxiella burnetii RSA 493 30, Homo sapiens, Caenorhabditis elegans, Caenorhabditis briggsae, Chlamydomonas reinhardtii, Aedes aegypti, Danio rerio, Treponema pallidum, Mus musculus"
- 7311 7441 78 "Spiroplasma citri, Borrelia burgdorferi B31, Streptococcus mutans UA159, Bacillus halodurans, Staphylococcus epidermidis ATCC 12228, Homo sapiens, Caenorhabditis briggsae, Phytoplasma sp., Oceanobacillus iheyensis HTE831, Listeria monocytogenes, Listeria innocua, Chlorella vulgaris, Drosophila melanogaster, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Gramicidina tenuistipitata"
- 7312 7442 28 "Homo sapiens, Drosophila melanogaster, Mus musculus, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Pan troglodytes, Bacillus anthracis, Staphylococcus epidermidis ATCC 12228, Ixodes scapularis, Clostridium acetobutylicum, Caenorhabditis elegans, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Haemophilus ducreyi 35000HP, Listeria innocua, Danio rerio, Macaca fascicularis, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus Mu50, Clostridium perfringens str. 13" 40
- 7313 7443 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Shigella flexneri 2a, Helicoverpa zea single nucleocapsid nucleopolyhedrovirus, Helicoverpa armigera nuclear polyhedrosis virus, Shigella flexneri, Caenorhabditis elegans, Helicoverpa armigera nucleopolyhedrovirus G4, Escherichia coli, Mus m 50

- usculus, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Sulfolobus solfataricus*, *Rickettsia prowazekii*, *Bacillus cereus*, *Pisum sativum*, *Mycoplasma pulmonis*"
- 7314 7444 24 "Homo sapiens, *Xenopus laevis*, Bovine herpesvirus 4, *Pleurotus ostreatus*, *Oryza sativa* (japonica cultivar-group), *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Podospora anserina*"
- 7315 7445 119 "Pasteurella multocida, *Haemophilus influenzae* Rd KW20, *Rickettsia conorii*, *Candidatus Blochmannia floridanus*, *Enterococcus faecalis* V583, *Clostridium tetani* E88, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mycoplasma capricolum*, *Campylobacter jejuni*" 10
- 7316 7446 62 "Streptococcus mutans UA159, *Nephroselmis olivacea*, *Staphylococcus epidermidis* ATCC 12228, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Streptococcus agalactiae* 2603V/R, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Halobacterium* sp. NRC-1, *Streptococcus agalactiae* NEM316, *Streptococcus pyogenes* SSI-1, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Nostoc* sp. PCC 7120, *Mirabilis jalapa*, *Brugia malayi*, *Entamoeba histolytica*, *Danio rerio*, *Ureaplasma urealyticum*, *Phytophthora infestans*, *Helicobacter hepaticus* ATCC 51449, *Arabidopsis thaliana*" 20
- 7317 7447 27 "Clostridium acetobutylicum, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Rattus norvegicus*, *Chlamydomonas reinhardtii* GPIC, *Drosophila melanogaster*, *Medicago truncatula*, *Thermoanaerobacter tengcongensis*, *Laminaria digitata*, *Oryza sativa* (japonica cultivar-group), *Sulfolobus tokodaii*, *Rhodobacter capsulatus*"
- 7318 7448 39 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Mus musculus*, *Pyrobaculum aerophilum* str. IM2, *Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Diplolepis rosae*, *Caenorhabditis elegans*, *Danio rerio*, *Leptospira interrogans* serovar *lai* str. 56601, *Plasmodium falciparum* 3D7, *Lactococcus lactis* subsp. *lactis*, *Arabidopsis thaliana*, *Pauesia silvestris*, *Schizosaccharomyces pombe*, *Haemophilus influenzae* Rd KW20, *Lactococcus lactis*" 30
- 7319 7449 48 "Mus musculus, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Vibrio parahaemolyticus*, *Rattus norvegicus*, *Homo sapiens*, *Clostridium acetobutylicum*, *Danio rerio*, *Onchocerca volvulus*, *Clostridium perfringens* str. 13"
- 7320 7450 31 "Homo sapiens, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Euglena longa*, *Danio rerio*, *Mus musculus*, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Listeria innocua*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Helicobacter hepaticus* ATCC 51449" 40
- 7321 7451 28 "Mus musculus, *Homo sapiens*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Oryctolagus cuniculus*, *Bacillus anthracis* str. Ames, *Candidatus Carsonella ruddii*, *Schizosaccharomyces pombe*, *Danio rerio*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. *japonicus*, *Didelphis virginiana*, *Saccharomyces cerevisiae*, *Lactobacillus plantarum* WCFS1, *Medicago truncatula*, *Saccharomyces pastorianus*"
- 7322 7452 46 "Shewanella oneidensis MR-1, *Borrelia burgdorferi* B31, *Chlamydomonas reinhardtii*, *Homo sapiens*, *Bacillus halodurans*, *Coxiella burnetii* R SA 493, *Porphyromonas gingivalis*, *Porphyromonas gingivalis* W83, *Oryza sativa* (ja 50

- ponica cultivar-group), *Mus musculus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Bombyx mori*, *Vibrio vulnificus* CMCP6, *Streptococcus agalactiae* 2603V/R, *Neisseria meningitidis* Z2491, *Methanosarcina barkeri*, *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Ovis aries*, *Plasmodium falciparum* 3D7, *Neisseria meningitidis* MC58, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*)"
- 7323 7453 23 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, Fowlpox virus, Equine herpesvirus 2, *Clostridium perfringens* str. 13"
- 7324 7454 36 "Homo sapiens, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Staphylococcus aureus* subsp. *aureus* Mu50, *Dictyostelium discoideum*, *Physcomitrella patens*, *Euhadra quaesita*, *Bacillus cereus*, *Guillardia theta*, *Ureaplasma urealyticum*, *Plasmodium vivax*, *Porphyromonas gingivalis* W83"
- 7325 7455 29 "Homo sapiens, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mus musculus*, *Triticum aestivum*, *Danio rerio*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 7326 7456 37 "*Bacteroides thetaiotaomicron* VPI-5482, *Mycoplasma capricolum*, *Streptococcus agalactiae* 2603V/R, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Clostridium acetobutylicum*, *Streptococcus agalactiae* NEM316, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Clostridium perfringens* str. 13, *Chlamydomonas reinhardtii* GPIC, *Mycoplasma gallisepticum* R, *Mycoplasma gallisepticum*, *Listeria monocytogenes*, *Listeria innocua*, *Staphylococcus epidermidis* ATCC 12228, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Staphylococcus epidermidis*, *Homo sapiens*, *Prochlorococcus marinus*, *Prototheca wickerhamii*, *Neurospora crassa*, *Pan troglodytes*, *Haemophilus influenzae* Rd KW20"
- 7327 7457 28 "*Caenorhabditis elegans*, *Homo sapiens*, *Caenorhabditis briggsae*, *Drosophila melanogaster*, *Pan troglodytes*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*japonica* cultivar-group), *Dictyostelium discoideum*, *Xanthomonas oryzae* pv. *oryzae*, *Chroococcidiopsis* sp. PCC 6712, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa*, *Chironomus pallidivittatus*, *Schizosaccharomyces pombe*, *Mycoplasma hyopneumoniae*"
- 7328 7458 33 "*Medicago truncatula*, *Homo sapiens*, *Thermotoga maritima*, *Danio rerio*, *Mus musculus*, *Drosophila melanogaster*, Human immunodeficiency virus 1, *Periphyllus bulgaricus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Culex pipiens quinquefasciatus*, *Sulfolobus tokodaii*, *Culex pipiens*"
- 7329 7459 112 "*Streptococcus mutans* UA159, *Streptococcus pyogenes* MGAS 315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Homo sapiens*, *Oceanobacillus ihayensis* HTE831, *Bacillus halodurans*, *Enterococcus faecalis* V583, *Drosophila melanogaster*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Zea mays*, *Lactococcus lactis* subsp. *lactis*, *Listeria innocua*, *Medicago truncatula*, *Pseudomonas putida* KT2440, *Streptococcus agalactiae* 2603V/R, *Hylesinopsis* sp. Hlh10, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Ciona intestinalis*, *Helicobacter hepaticus* ATCC 51449"
- 7330 7460 23 "*Homo sapiens*, *Rattus norvegicus*, *Saccharomyces cerevisiae*"

ae, *Mus musculus*"

- 7331 7461 25 "Mus musculus, Homo sapiens, Drosophila melanogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Mycoplasma penetrans"
- 7332 7462 23 "Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Drosophila melanogaster, Danio rerio, Saccharomyces cerevisiae, Clostridium perfringens str. 13"
- 7333 7463 39 "Homo sapiens, Ralstonia solanacearum, Mus musculus, Pantroglodytes, Borrelia burgdorferi B31, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Danio rerio, Caenorhabditis elegans, Plasmodium falciparum 3D7, Lactobacillus plantarum WCFS1, Pisum sativum, Moloney murine leukemia virus, Escherichia coli CFT073, Xenopus laevis, Schmidtea mediterranea, Chaetosphaeridium globosum, Escherichia coli, Cucumis melo, Caenorhabditis briggsae, Staphylococcus aureus subsp. aureus N315, Cryptosporidium parvum, Medicago truncatula, Haemophilus influenzae Rd KW20, Murine leukemia virus, Rattus norvegicus, Myeloproliferative sarcoma virus, Macaca fascicularis, Glycine max, Staphylococcus aureus subsp. aureus Mu50" 10
- 7334 7464 29 "Amsacta moorei entomopoxvirus, Oryza sativa (japonica cultivar-group), Chlamydomonas reinhardtii, Caenorhabditis elegans, Homo sapiens, Danio rerio, Sarcocystis muris, Mus musculus, Candida dubliniensis, Pyrococcus horikoshii" 20
- 7335 7465 44 "Haemophilus ducreyi 35000HP, Borrelia burgdorferi B31, Neisseria meningitidis Z2491, Candidatus Blochmannia floridanus, Neisseria meningitidis MC58, Borrelia burgdorferi, Danio rerio, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Homo sapiens, Equus caballus, Mus musculus, Rickettsia conorii, Prochlorococcus marinus, Rickettsia prowazekii, Drosophila melanogaster, Felis catus, Silurana tropicalis, Salmo salar"
- 7336 7466 36 "Mus musculus, Homo sapiens, Mycoplasma pulmonis, Methanosarcina mazei Goe1, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Danio rerio"
- 7337 7467 76 "Chlamydia trachomatis, Dictyostelium discoideum, Neisseria meningitidis Z2491, Neisseria meningitidis MC58, Drosophila melanogaster, Shewanella oneidensis MR-1, Homo sapiens, Pasteurella multocida, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Coxiella burnetii RSA 493, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Botryotinia fuckeliana, Clostridium botulinum" 30
- 7338 7468 49 "Haemophilus ducreyi 35000HP, Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Shewanella oneidensis MR-1, Haemophilus influenzae Rd KW20, Candidatus Portiera aleyrodidarum, Mus musculus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Bacillus anthracis str. Ames, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Oryza sativa (indica cultivar-group), Bacillus halodurans" 40
- 7339 7469 49 "Ehrlichia chaffeensis, Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Trypanosoma brucei, Bacteroides thetaiotaomicron VPI-5482, Atelerix albiventris, Dictyostelium discoideum, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Ochromonas danica, Phycomyces blakesleeanus, Porphyra purpurea, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Pantroglodytes, Sorghum bicolor, Tetrahymena pyriformis, Lavoisiera cordata, Microlicia fasciculata, Buchner" 50

- a aphidicola str. Sg (Schizaphis graminum), Caenorhabditis briggsae, Arabidopsis thaliana, Rhynchanthera grandiflora, Brassica napus, Oryza sativa, Bacillus subtilis, Mycoplasma hyorhinis, Saccharomyces cerevisiae, Bacillus subtilis subsp. subtilis str. 168, Raphanus sativus, Insertion sequence IS1221, Clostridium perfringens str. 13, Oryctolagus cuniculus, Rattus norvegicus"
- 7340 7470 32 "Mus musculus, Pan troglodytes, Homo sapiens, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Methanosarcina acetivorans C2A, Caenorhabditis briggsae, Sphenoclea zeylanica, Arabidopsis thaliana, Human immunodeficiency virus 1, Mamestra configurata nucleopolyhedrovirus, Lepanthopsis astrophora, Escherichia coli O157:H7 EDL933, Prochlorococcus marinus, Ureaplasma urealyticum, Danio rerio, Lactobacillus plantarum WCFS1, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Escherichia coli O157:H7" 10
- 7341 7471 27 "Homo sapiens, Mus musculus, Oenococcus oeni, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Caenorhabditis elegans, Drosophila melanogaster, Xenopus laevis, Streptococcus mutans UA159, Guillardia theta, Pasteurella multocida, Danio rerio, Rattus norvegicus, Rabbit fibroma virus, Nostoc sp. PCC 7120"
- 7342 7472 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Helicobacter hepaticus ATCC 51449, Papio anubis, Plasmodium falciparum 3D7, Human papillomavirus type 9, Oenococcus oeni, Aphrocallistes vastus, Lotus corniculatus var. japonicus, Arabidopsis thaliana" 20
- 7343 7473 23 "Helleborus orientalis, Mus musculus, Clostridium perfringens str. 13, Homo sapiens, Bos taurus, Caenorhabditis elegans, Thermoanaerobacter tengcongensis, Paramecium tetraurelia, Xenopus laevis, Pyrococcus abyssi, Danio rerio"
- 7344 7474 32 "Homo sapiens, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Clostridium perfringens str. 13, Methanosarcina mazei Goe1, Clostridium acetobutylicum, Prochlorococcus marinus, Sulfolobus tokodaii" 30
- 7345 7475 33 "Danio rerio, Homo sapiens, Drosophila melanogaster, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lactococcus lactis, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Caenorhabditis" 30
- 7346 7476 20 "Homo sapiens, Mus musculus, Candidatus Blochmannia floridanus, Oryza sativa (japonica cultivar-group)"
- 7347 7477 28 "Homo sapiens, Helicobacter pylori J99, Caenorhabditis briggsae, Tetrahymena thermophila, Oryza sativa (japonica cultivar-group), Cicer arietinum, Bacillus anthracis str. Ames, Rattus norvegicus, Mus musculus, Plasmodium falciparum 3D7, Tetraodon nigroviridis, Pylaiella littoralis, Saccharomyces cerevisiae, Helicobacter pylori 26695" 40
- 7348 7478 45 "Nicotiana glauca, Homo sapiens, Mus musculus, Escherichia coli, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Lotus corniculatus var. japonicus, Danio rerio, Corynebacterium glutamicum ATCC 13032, Rattus norvegicus, Macaca fascicularis, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Gossypium barbadense, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Oryza sativa, Streptococcus pyogenes M1 GAS, Caenorhabditis elegans, Streptococcus pyogenes SSI-1, synthetic construct, Helicobacter pylori 26695, Schizosaccharomyces pombe, Prototheca wickerhamii"
- 7349 7479 53 "Neisseria meningitidis Z2491, Neisseria meningitidis MC58, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Shewanella violacea, Esc 50

- herichia coli CFT073, Yersinia pestis KIM, Yersinia pestis C092, Haemophilus influenzae Rd KW20, Listeria monocytogenes, L"
- 7350 7480 35 "Homo sapiens, Mus musculus, Shewanella oneidensis MR-1, Methanothermobacter thermautotrophicus str. Delta H, Yellow fever virus, Oryza sativa (japonica cultivar-group), Methanothermobacter thermautotrophicus"
- 7351 7481 61 "Shewanella violacea, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Coxiella burnetii RSA 493, Candidatus Portiera aleyrodidarum, Buchnera aphidicola str. Sg (Schizaphis graminum), Streptococcus mutans UA159, Yersinia pestis KIM, Yersinia pestis C092, Pasteurella multocida, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Haemophilus influenzae Rd KW 20, Helicobacter hepaticus ATCC 51449, Homo sapiens, Streptococcus pyogenes MGAS 315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Vibrio cholerae, Streptococcus pyogenes SSI-1, Buchnera aphidicola, Mus musculus, Pseudomonas putida KT2440, Caenorhabditis elegans, Arabidopsis thaliana, Vibrio parahaemolyticus" 10
- 7352 7482 27 "Mus musculus, Homo sapiens, Danio rerio, Vibrio vulnificus CMCP6, Platythyrea punctata, Caenorhabditis elegans, Gallus gallus"
- 7353 7483 39 "Mus musculus, Homo sapiens, Pasteurella multocida, Haemophilus influenzae Rd KW20"
- 7354 7484 27 "Staphylococcus epidermidis ATCC 12228, Streptococcus mutans UA159, Lactococcus lactis subsp. lactis, Homo sapiens, unidentified bacterium, Caenorhabditis briggsae, Danio rerio, Mus musculus" 20
- 7355 7485 24 "Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Homo sapiens, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mus musculus, Chlamydomonas reinhardtii, Danio rerio, Lucilia cuprina"
- 7356 7486 27 "Zea mays, Homo sapiens, Mus musculus, Rattus norvegicus, Enterococcus faecalis V583, Bombyx mori, Arabidopsis thaliana, Danio rerio, Listeria ovata"
- 7357 7487 30 "Leek yellow stripe potyvirus, Glycine max, Chlamydia trachomatis, Plasmodium falciparum 3D7, Mus musculus, Medicago truncatula, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Homo sapiens, Oryza sativa, Nicotiana tabacum, Pan troglodytes, Methanothermobacter thermautotrophicus str. Delta H, Lycopersicon esculentum, Locusta migratoria, Danio rerio" 30
- 7358 7488 32 "Campylobacter jejuni subsp. jejuni NCTC 11168, Rattus norvegicus, Streptococcus mutans UA159, Homo sapiens, Medicago truncatula, Danio rerio, Mus musculus, Dictyostelium discoideum, Caenorhabditis elegans, Plasmodium falciparum 3D7, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Zea mays, Oryza sativa (japonica cultivar-group), Neurospora crassa, Entamoeba histolytica" 40
- 7359 7489 27 "Homo sapiens, Mus musculus, Brassica oleracea"
- 7360 7490 34 "Homo sapiens, Danio rerio, Dictyostelium discoideum, Oryza sativa, Mus musculus, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Potamopyrgus antipodarum, Caenorhabditis elegans, Physcomitrella patens, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Rattus norvegicus, Papio anubis"
- 7361 7491 41 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Danio rerio, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Pan troglodytes, Dictyostelium discoideum, Poncirus trifoliata, Drosophila melanogaster, Methanosarcina mazei Goe1, Clostridium tetani E88, Bo 50

- mbus sporadicus, Caenorhabditis elegans, Ectromelia virus, Camelpox virus CMS, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Monkeypox virus, Rickettsia conorii, Phaseolus vulgaris, Variola minor virus, Cowpox virus, Variola virus, Dictyoglomus thermophilum, Villa fumea, Villa fuscicostata, Ligya sinuatifascia, Variola major virus, Epipsocopsis sp. K Y-2002, Anopheles quadrimaculatus A, Schizosaccharomyces pombe, Rattus norvegicus, Camelpox virus M-96"
- 7362 7492 39 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Prochlorococcus marinus, Mycoplasma gallisepticum R, Homo sapiens, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Oryza sativa, Petunia x hybrida, Zea mays, Salmonella enterica subsp. enterica, Mus musculus, Danio rerio" 10
- 7363 7493 45 "Acinetobacter calcoaceticus, Homo sapiens, Shigella boydii, Mus musculus, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Caenorhabditis elegans, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Aegilops tauschii, Oryza sativa, Yaba-like disease virus, Oceanobacillus iheyensis HTE831, Tanapox virus, Aphredoderus sayanus, Rattus norvegicus"
- 7364 7494 27 "Homo sapiens, Medicago truncatula, Tetrahymena thermophila, Mus musculus, Caenorhabditis elegans, Danio rerio, Poncirus trifoliata, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Simulium sanctipauli, Arabidopsis thaliana, Musca domestica, Raphanus sativus, Hepatitis C virus, Simulium vittatum, Campylobacter jejuni subsp. jejuni NCTC 11168, Lycopersicon esculentum, Spiroplasma citri, Sulfolobus tokodaii, Sulfurisphaera ohwakuensis" 20
- 7365 7495 27 "Methanosarcina acetivorans C2A, Mus musculus, Clostridium tetani E88, Homo sapiens, Caenorhabditis elegans, Entamoeba histolytica, Pantroglodytes, Dictyostelium discoideum, Plasmodium falciparum 3D7, Escherichia coli O157:H7 EDL933, Danio rerio, Rattus norvegicus, Escherichia coli, Escherichia coli O157:H7"
- 7366 7496 27 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Atelerix albiventris, Dictyostelium discoideum, Drosophila melanogaster, Cassava vein mosaic virus, Mycoplasma hyopneumoniae, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Haemophilus ducreyi 35000HP, Cicer arietinum, Danio rerio, Naegleria gruberi, Staphylococcus aureus subsp. aureus Mu50" 30
- 7367 7497 34 "Homo sapiens, Caenorhabditis elegans, Bacteroides thetaiotaomicron VPI-5482, Plasmodium falciparum 3D7, Clostridium tetani E88, Mus musculus, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Dictyostelium discoideum, Vibrio vulnificus CMCP6, Drosophila melanogaster, Caenorhabditis briggsae, Vibrio parahaemolyticus, Bodo saltans" 40
- 7368 7498 27 "Homo sapiens, Mus musculus, Drosophila melanogaster, Rattus norvegicus, Salmonella enterica, Danio rerio, Caenorhabditis elegans, Candida albicans, Helicobacter pylori J99"
- 7369 7499 32 "Lycopersicon esculentum, Utricularia nephrophylla, Homo sapiens, Danio rerio, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Pelomedusa subrufa, Clostridium perfringens str. 13, Drosophila melanogaster, Caretta caretta, Choristoneura par"
- 7370 7500 34 "Homo sapiens, Dictyostelium discoideum, Mus musculus, Plasmodium falciparum 3D7, Pantroglodytes, Papio anubis, Danio rerio, Saccharomyces cerevisiae, Schizosaccharomyces pombe, Huperzia campiana, Lactobacillus john 40

- sonii, Arabidopsis thaliana, Felis catus, Prochlorococcus marinus, Haemophilus ducreyi 35000HP, Huperzia rosenstockiana, Huperzia unguiculata, Huperzia reflexa, Huperzia eversa, Huperzia cumingii, Huperzia tetragona, Huperzia rufescens, Huperzia polydactyla, Huperzia hystrix, Huperzia attenuata, Huperzia crassa, Huperzia compacta, Huperzia capellae, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus mutans UA159, Sulfolobus solfataricus, Staphylococcus epidermidis, Lotus corniculatus var. japonicus, Colpodes sp. 72, Phaeosphaeria nodorum, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Neurospora crassa"
- 7371 7501 25 "Drosophila melanogaster, Homo sapiens, Danio rerio, Haemophilus influenzae, Mus musculus, Oryza sativa (japonica cultivar-group), Haemophilus influenzae Rd KW20, Rattus norvegicus, Macaca fascicularis" 10
- 7372 7502 27 "Homo sapiens, Mus musculus, Dengue virus type 2, Dengue virus type 2 (strain 16681), Bacteroides thetaiotaomicron VPI-5482, Saimiriine herpesvirus 2, Pan troglodytes, Papio anubis, Rickettsia conorii, Chlamydia muridarum, Rattus norvegicus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Medicago truncatula, Arabidopsis thaliana, Clostridium acetobutylicum, Rickettsia prowazekii, Chlamydia trachomatis, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Synechocystis sp., Synechocystis sp. PCC 6803" 20
- 7373 7503 90 "Borrelia burgdorferi B31, Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Clostridium perfringens str. 13, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Homo sapiens, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Caenorhabditis elegans, Drosophila melanogaster, Arabidopsis thaliana, Spiroplasma phage 4, Canine distemper virus strain Onderstepoort, Canine distemper virus, Sus scrofa, Litomosoides sigmodontis"
- 7374 7504 28 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Mus musculus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Drosophila melanogaster, Ceratochloa cathartica, Psathyrostachys juncea, Poa pratensis, Amphipogon strictus, Bromus inermis, Nassella viridula, Nardus stricta, Lactococcus lactis subsp. lactis, Prochlorococcus marinus, Mycoplasma capricolum, Asimina triloba, Poa fendleriana, Poa secunda, Lactobacillus plantarum WCFS1, Piptatherum miliaceum, Stipa parviflora, Anisantha rubens, Bromus hordeaceus, Bromopsis erecta, Festuca rubra, Poa angustifolia, Schizosaccharomyces pombe, Clostridium perfringens str. 13, Nicotiana tabacum" 30
- 7375 7505 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Schizosaccharomyces pombe, Mycoplasma genitalium, Clostridium tetani E88, Danio rerio, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Neurospora crassa, Staphylococcus aureus, Staphylococcus aureus subsp. aureus Mu50, Nostoc sp. PCC 7120" 40
- 7376 7506 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Enterobacteria phage RB69, Danio rerio, Botryotinia fuckeliana, Lactococcus lactis subsp. lactis, Methanocaldococcus jannaschii"
- 7377 7507 33 "Homo sapiens, Dictyostelium discoideum, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Pan troglodytes, Drosophila melanogaster, Papio anubis, Arabidopsis thaliana"
- 7378 7508 28 "Homo sapiens, Lucilia eximia, Mus musculus, Drosophila melanogaster, Thermoplasma acidophilum, Danio rerio, Dictyostelium discoideum, A 50

- rabidopsis thaliana, Plasmodium falciparum 3D7, Plasmodium chabaudi chabaudi, Caenorhabditis elegans, Pan troglodytes, Cochliobolus heterostrophus, Clostridium tetani E88, Streptococcus pyogenes MGAS8232, Chrysomya megacephala, Zea mays, Papio anubis, Streptococcus pyogenes M1 GAS, Oryza sativa, Streptococcus pyogenes, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Rattus norvegicus" 7379 7509 32 "Bacillus cereus ATCC 14579, Oceanobacillus iheyensis HT E831, Homo sapiens, Atelerix albiventris, Bacillus anthracis str. Ames, Salmonella typhimurium LT2, Danio rerio, Salmonella enterica subsp. enterica serovar Typhi Ty2, Drosophila melanogaster, Mus muscu"
- 7380 7510 51 "Oceanobacillus iheyensis HTE831, Homo sapiens, Drosophila melanogaster, Clostridium acetobutylicum, Listeria monocytogenes, Cowpox virus, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Arabidopsis thaliana, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio" 10
- 7381 7511 31 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Danio rerio, Human parainfluenza virus 1, Drosophila guanche, Oryza sativa (japonica cultivar-group), Corynebacterium glutamicum ATCC 13032, Rattus norvegicus, Nicotiana tabacum, Oryctolagus cuniculus"
- 7382 7512 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Saimiriine herpesvirus 2, Thermoanaerobacter yonseiensis, Rattus norvegicus, Medicago truncatula, Bacillus halodurans" 20
- 7383 7513 26 "Mimophis mahfalensis, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Danio rerio, Ureaplasma urealyticum, Cyprinus carpio, Pan troglodytes, Staphylococcus haemolyticus"
- 7384 7514 27 "Homo sapiens, Mus musculus, Medicago truncatula, Chlamydomophila pneumoniae CWL029, Chlamydomophila pneumoniae AR39, Chlamydomophila pneumoniae J138, Caenorhabditis elegans, Chlamydomophila pneumoniae TW-183, Simopone fulvinodis, Eciton hamatum, Buchnera aphidicola str. Bp (Baizongia pistaciae), Campylobacter jejuni subsp. jejuni NCTC 11168, Lotus corniculatus var. japonicus, Candida albicans, Danio rerio, Papio anubis, Triticum aestivum" 30
- 7385 7515 39 "Prochlorococcus marinus, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Clostridium acetobutylicum, Staphylococcus epidermidis, Danio rerio, Mus musculus, Medicago truncatula, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Thermoplasma volcanium, Caenorhabditis elegans"
- 7386 7516 28 "Homo sapiens, Caenorhabditis elegans, Mesostigma viride, Ureaplasma urealyticum, Haemophilus ducreyi 35000HP, Mus musculus, Rattus norvegicus, Danio rerio, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Thermoanaerobacter tengcongensis, Chaoborus albatrus"
- 7387 7517 68 "Mycoplasma gallisepticum R, Prochlorococcus marinus, Aquifex aeolicus VF5, Homo sapiens, Rickettsia conorii, Mycoplasma pulmonis, Enterococcus faecalis V583, Rickettsia prowazekii, Oryctolagus cuniculus, Ureaplasma urealyticum, Haemophilus influenzae Rd KW20, Mus musculus, Bacillus anthracis str. Ames, Drosophila melanogaster, Plasmodium falciparum 3D7, Gallus gallus, Prumnopitys ferruginea, Prumnopitys ferruginoides, Avian retrovirus IC10, Medicago truncatula, Equus caballus, Sus scrofa, Prototheca wickerhamii, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Caenorhabditis elegans, Danio rerio, Coturnix coturnix, Rous-associated virus type 1, Clostridium perfringens str. 13" 40
- 7388 7518 152 "Chlamydia muridarum, Nostoc sp. PCC 7120, Prochlorococcus" 50

- us marinus, Streptococcus mutans UA159, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Helicobacter hepaticus ATCC 51449, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera "
- 7389 7519 25 "Homo sapiens, Bacillus anthracis str. Ames, Vibrio cholerae, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Clostridium ordellii, Danio rerio, Caenorhabditis elegans"
- 7390 7520 28 "Mus musculus, Homo sapiens, Danio rerio, Bacteroides thetaiotaomicron VPI-5482, Arabidopsis thaliana, Escherichia coli K12, Escherichia coli, Felis catus, Photobacterium luminescens, Shewanella oneidensis MR-1, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Caenorhabditis elegans, Neurospora crassa" 10
- 7391 7521 29 "Chlamydia muridarum, Homo sapiens, Acinetobacter sp., Acinetobacter sp. LS56-7, Mus musculus, Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, Plasmodium falciparum 3D7, Arabidopsis thaliana"
- 7392 7522 27 "Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Haemophilus influenzae Rd KW20, Cyanidium caldarium, Caenorhabditis briggsae, Mus musculus, Danio rerio, Cyprinus carpio"
- 7393 7523 42 "Candidatus Blochmannia floridanus, Mus musculus, Homo sapiens, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Oryza sativa (japonica cultivar-group), Clostridium acetobutylicum, Mycoplasma capricolum, Avian infectious bronchitis virus, Danio rerio" 20
- 7394 7524 32 "Homo sapiens, Staphylococcus aureus, Drosophila melanogaster, Mus musculus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus Mu50, Calumma gastrotaenia marojezensis, Pyrobaculum aerophilum str. IM2, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 7395 7525 43 "Bacillus cereus ATCC 14579, Bacillus thuringiensis, Clostridium perfringens str. 13, Ureaplasma urealyticum, Homo sapiens, Mus musculus, Staphylococcus aureus, Clostridium tetani E88, Caenorhabditis elegans, Clostridium acetobutylicum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Thermotoga maritima, Staphylococcus aureus subsp. aureus Mu50, Bacillus anthracis str. Ames, Danio rerio, Arabidopsis thaliana, Prunus dulcis, Thermotoga neapolitana" 30
- 7396 7526 43 "Bacillus anthracis str. Ames, Vibrio vulnificus CMCP6, Lactococcus lactis subsp. lactis, Chlamydia trachomatis, Vibrio parahaemolyticus, Streptococcus uberis, Pasteurella aerogenes, Spinacia oleracea, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Staphylococcus aureus, Homo sapiens, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Rattus norvegicus, Enterococcus faecalis V583, Pseudomonas putida KT2440, Caenorhabditis elegans, Enterococcus faecalis, Thermoanaerobacter tengcongensis, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio, Haemophilus influenzae Rd KW20, Camponotus sp. ABZ1.13/SW/01, Mus musculus, Dictyostelium discoideum" 40
- 7397 7527 25 "Chlamydia caviae GPIC, Homo sapiens, Haemophilus influenzae Rd KW20, Mus musculus, Drosophila melanogaster, Mycobacterium leprae, Capra hircus"
- 7398 7528 27 "Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Homo sapiens, Antirrhinum meonanthum, Antirrhinum majus subsp. cirrhigerum, Danio rerio, Medicago truncatula" 50

- 7399 7529 33 "Homo sapiens, Danio rerio, Medicago truncatula, Clostridium perfringens, Clostridium perfringens str. 13, Didelphis virginiana, Plasmodium falciparum 3D7, Drosophila subobscura, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lycopersicon esculentum, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Macropanesthia kraussiana, Drosophila melanogaster, Atelerix albiventris, Staphylococcus aureus, Monosiga brevicollis, Buchnera aphidicola str. Sg (Schizaphis graminum), Takifugu rubripes, Campylobacter jejuni subsp. jejuni NCTC 11168, Eutropis macularia, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Macropanesthia rhinoceros, Staphylococcus aureus subsp. aureus Mu50" 10
- 7400 7530 23 "Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Drosophila melanogaster, Pan troglodytes, Trypanosoma brucei, Mus musculus, Danio rerio, Trypanosoma brucei brucei, Arabidopsis thaliana"
- 7401 7531 24 "Homo sapiens, Danio rerio, Mus musculus, Methanosarcina acetivorans C2A"
- 7402 7532 25 "Mus musculus, Homo sapiens, Human coxsackievirus B2, Oryza sativa (japonica cultivar-group), Oryza sativa (indica cultivar-group), Danio rerio"
- 7403 7533 27 "Homo sapiens, Arabidopsis thaliana, Listeria monocytogenes, Listeria innocua, Mycoplasma arthritidis, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mycoplasma penetrans, Bacillus thuringiensis" 20
- 7404 7534 68 "Cyanidioschyzon merolae, Enterococcus faecalis V583, Oceanobacillus iheyensis HTE831, Haemophilus ducreyi 35000HP, Porphyra purpurea, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-"
- 7405 7535 25 "Ocnaea sp. SLW-2002c, Mus musculus, Homo sapiens, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, uncultured haptophyte, Paracarytus sp. SLW-2002, Rattus norvegicus, Didelphis virginiana" 30
- 7406 7536 31 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Lactococcus lactis subsp. lactis, Medicago truncatula, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Prochlorococcus marinus, Calonectris diomedea, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Pan troglodytes, Bacteriophage SPBc2"
- 7407 7537 26 "Plasmodium falciparum, Dictyostelium discoideum, Homo sapiens, Mus musculus, Arabidopsis thaliana, Chlamydia muridarum, Danio rerio, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Streptomyces avermitilis MA-4680, Chlamydophila pneumoniae J138, Emericella nidulans, Chlamydophila pneumoniae TW-183" 40
- 7408 7538 32 "Candidatus Blochmannia floridanus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Arabidopsis thaliana, Homo sapiens, Schistosoma margrebowiei, Danio rerio, Mus musculus, Zea mays, Gallus gallus, Caenorhabditis elegans, Strongylocentrotus purpuratus, Paramecium primaurelia, Trypanoplasma borreli"
- 7409 7539 34 "Staphylococcus epidermidis ATCC 12228, Rattus norvegicus, Homo sapiens, Drosophila melanogaster, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Mus musculus, Lycopersicon esculentum, Medicago trunc 50

- atula, *Drosophila pseudoobscura*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus"
- 7410 7540 27 "Mus musculus, Homo sapiens, *Drosophila melanogaster*, *Pan troglodytes*, *Citrus sinensis*, *Xenopus laevis*, *Danio rerio*"
- 7411 7541 24 "Xenopus laevis, Mus musculus, *Danio rerio*, Homo sapiens, *Clostridium tetani* E88, *Oryza sativa* (japonica cultivar-group), *Thermoanaerobacter tengcongensis*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Corynebacterium glutamicum* ATCC 13032, *Rattus norvegicus*"
- 7412 7542 27 "Haemophilus ducreyi 35000HP, *Haemophilus influenzae* Rd KW20, Mus musculus, Homo sapiens, *Streptococcus pyogenes* M1 GAS, *Pyrococcus abyssi*, *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Pyrococcus furiosus* DSM 3638, *Mycoplasma pulmonis*, *Pyrococcus furiosus*, *Danio rerio*, *Staphylococcus aureus*, *Borrelia afzelii*, *Plasmodium falciparum* 3D7, *Felis catus*, *Guillardia theta*, *Borrelia burgdorferi*, *Streptococcus bovis*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Oryzias latipes*, *Mycoplasma genitalium*, *Rattus norvegicus*, *Staphylococcus aureus* subsp. aureus Mu50" 10
- 7413 7543 24 "Homo sapiens, *Danio rerio*, Mus musculus, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*" 20
- 7414 7544 27 "Homo sapiens, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, Mus musculus, *Caenorhabditis elegans*, *Mycoplasma hyopneumoniae*, *Lotus corniculatus* var. japonicus, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Listeria monocytogenes*, *Anopheles gambiae*, *Danio rerio*"
- 7415 7545 31 "Homo sapiens, Mus musculus, *Manduca sexta*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Staphylococcus aureus*, *Plasmodium falciparum* 3D7, *Clostridium tetani* E88, *Thermoanaerobacter tengcongensis*, *Rhizophyidum* sp. 136, *Rhizobium leguminosarum* bv. trifolii, *Clostridium acetobutylicum*, *Kikihia cutora cumberi*, *Kikihia muta*, *Pasteurella multocida*, *Clostridium cellulovorans*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Mycoplasma penetrans*, *Saimiriine herpesvirus 2*, *Staphylococcus aureus* subsp. aureus Mu50" 30
- 7416 7546 24 "Homo sapiens, Mus musculus, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Chilo iridescent virus*, *Branchiostoma floridae*, *Oryza sativa* (japonica cultivar-group), *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Danio rerio*, *Staphylococcus aureus* subsp. aureus Mu50, *Staphylococcus aureus*"
- 7417 7547 27 "Homo sapiens, *Adoxophyes honmai nucleopolyhedrovirus*, Mus musculus, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Hordeum vulgare* subsp. vulgare, *Suberites domuncula*, *Sulfolobus tokodaii*, *Schizosaccharomyces pombe*" 40
- 7418 7548 24 "Homo sapiens, *Saccharomyces servazzii*, *Rattus norvegicus*, Mus musculus, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group)"
- 7419 7549 32 "Caenorhabditis elegans, *Drosophila melanogaster*, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Pan troglodytes*, Mus musculus, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Drosophila willistoni*, *Amphiglossus igneocaudatus*, *Danio rerio*, S 50

- tylonychia mytilis, Lotus corniculatus var. japonicus, Stylonychia mytilus, Pyrococcus horikoshii, Dotilla wichmanni, Buchnera aphidicola str. Bp (Baizongia pistaciae), Cricetulus griseus, Erwinia chrysanthemi, Clostridium tetani E88, Ctenomys haigi, Streptococcus mutans UA159, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Saccharomyces castellii, Ips perroti, Ehrlichia ruminantium, Clostridium acetobutylicum, Trichomonas vaginalis, Sulfolobus tokodaii, Schizosaccharomyces pombe, Saccharomyces cerevisiae, Human immunodeficiency virus 1, Xenos vesparum, Ixodes woodi, Streptococcus mutans"
- 7420 7550 35 "Homo sapiens, Danio rerio, Bacillus anthracis str. Ames, Mus musculus, Dictyostelium discoideum, Drosophila melanogaster, Eimeria tenella, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Borrelia burgdorferi B31, Clostridium tetani E88, Candida glabrata, Lagerstroemia villosa, Lagerstroemia speciosa, Parablennius sanguinolentus, Candidatus Carsonella ruddii, Flaveria pringlei, Arabidopsis thaliana, Plasmodium falciparum 3D7, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Apoica pallida, Saccharomyces douglasii"
- 7421 7551 29 "Danio rerio, Haemophilus ducreyi 35000HP, Boea crassifolia, Homo sapiens, Mus musculus, Simian T-lymphotropic virus 1, Human T-lymphotropic virus 1, Simian T-lymphotropic virus 3, Mycoplasma mobile"
- 7422 7552 32 "Thermoplasma volcanium, Caenorhabditis elegans, Homo sapiens, Staphylococcus xylosum, Danio rerio, Streptococcus pneumoniae, Mus musculus, Lactococcus lactis subsp. lactis, Methanocaldococcus jannaschii"
- 7423 7553 28 "Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Rattus norvegicus, Sus scrofa, Medicago truncatula, Drosophila melanogaster, Arabidopsis thaliana, Drosophila hydei"
- 7424 7554 23 "Homo sapiens, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Oryza sativa (japonica cultivar-group), Hepialiscus sylvinus"
- 7425 7555 32 "Homo sapiens, Xylella fastidiosa 9a5c, Caenorhabditis elegans, Mus musculus, Pan troglodytes, Borrelia burgdorferi B31, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae, Clostridium perfringens str. 13"
- 7426 7556 31 "Agkistrodon piscivorus piscivorus, Trimeresurus flavoviridis, Agkistrodon blomhoffi, Homo sapiens, Mus musculus, Protobothrops mucrosquamatus, Danio rerio, Oryza sativa (japonica cultivar-group), Amphidromus sp. BSH-2002, Dictyostelium discoideum, Hydrobia "
- 7427 7557 27 "Homo sapiens, Rhesus cytomegalovirus strain 68-1, Klebsiella pneumoniae, Mus musculus, Macaca mulatta cytomegalovirus, Schmidtea mediterranea, Oryza sativa (japonica cultivar-group), Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Arabidopsis thaliana"
- 7428 7558 24 "Mus musculus, Homo sapiens, Danio rerio, Papio anubis, Pan troglodytes, Gasterosteus aculeatus, Caenorhabditis elegans, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Oryza sativa (japonica cultivar-group), Chlamydophila pneumoniae TW-183, Chlamydophila pneumoniae J138"
- 7429 7559 23 "Homo sapiens, Vibrio cholerae, Rattus norvegicus, Plasmodium falciparum 3D7, Danio rerio, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Mus musculus"
- 7430 7560 26 "Guillardia theta, Danio rerio, Homo sapiens, Mus musculus, Pan troglodytes, Caenorhabditis briggsae, Streptococcus pneumoniae TIGR4, CI

- ostridium acetobutylicum, Papio anubis, Shewanella massilia, Todarodes pacificus, Caenorhabditis elegans, Cestrum parqui, Streptococcus pneumoniae"
- 7431 7561 32 "Shewanella oneidensis MR-1, Homo sapiens, Campylobacter jejuni, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Circulifer tenellus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Bacillus anthracis str. Ames, Haemoproteus kopki, Plasmodium azurophilum, Haemoproteus sp., Plasmodium sp., Plasmodium gallinaceum, Caenorhabditis elegans, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Ipomoea batatas, Saccharomyces cerevisiae, Danio rerio, Cyanophora paradoxa"
- 7432 7562 47 "Proteus mirabilis, Helicobacter hepaticus ATCC 51449, Candida albicans, Haemophilus ducreyi 35000HP, Staphylococcus aureus, Plasmodium falciparum 3D7, Homo sapiens, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Medicago truncatula, Caenorhabditis elegans, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Mus musculus" 10
- 7433 7563 23 "Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Homo sapiens, Anabaena sp. 90, Mus musculus, Arabidopsis thaliana, Danio rerio, Buchnera aphidicola str. APS (Acyrtosiphon pisum)"
- 7434 7564 27 "Homo sapiens, Caenorhabditis elegans, Sus scrofa, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Pan troglodytes, Borrelia burgdorferi B31, Dictyostelium discoideum, Buchnera aphidicola str. Sg (Schizaphis graminum), Thermoanaerobacter tengcongensis, Tribolium castaneum, Salmonella enterica subsp. enterica serovar Typhimurium, Lactococcus lactis subsp. cremoris, Candidatus Carsonella ruddii, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Xenopus laevis" 20
- 7435 7565 29 "Mycoplasma gallisepticum R, Medicago truncatula, Homo sapiens, Enterococcus faecalis V583, Drosophila melanogaster, Mus musculus, Porphyromonas gingivalis W83, Danio rerio" 30
- 7436 7566 19 "Mus musculus, Clostridium tetani E88, Pyrenomonas helgolandii, Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni"
- 7437 7567 29 "Helicobacter hepaticus ATCC 51449, Homo sapiens, Mus musculus, Ehrlichia chaffeensis, Theileria parva, Staphylococcus aureus subsp. aureus N315, Gasterosteus aculeatus, Staphylococcus aureus subsp. aureus Mu50"
- 7438 7568 25 "Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Drosophila melanogaster, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Sheeppox virus, Lumpy skin disease virus, Arabidopsis thaliana, Proteus vulgaris, Methanocaldococcus jannaschii" 40
- 7439 7569 27 "Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Caenurgina crassiuscula, Solanum tuberosum, Rhinophis philippinus, Streptococcus agalactiae 2603V/R, Psammodromus algerus, Gallotia galloti, Prochlorococcus marinus, Streptococcus agalactiae NEM316, Asphodeline lutea, Oryza sativa (japonica cultivar-group), Tretioscincus oriximinensis, Gymnophthalmus pleei"
- 7440 7570 35 "Acinetobacter sp. 4365, Acinetobacter baumannii, Mus musculus, Haemophilus influenzae Rd KW20, Homo sapiens, Caenorhabditis elegans, Nitella praelonga, Buchnera aphidicola str. Sg (Schizaphis graminum), Ureaplasma urealyticum, Nitella translucens, Danio rerio"
- 7441 7571 24 "Homo sapiens, Prochlorococcus marinus, Arabidopsis thal 50

- iana, *Oncorhynchus keta*, *Mus musculus*, *Drosophila melanogaster*, *Sus scrofa*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*"
- 7442 7572 23 "Homo sapiens, Feline immunodeficiency virus, *Rattus norvegicus*, *Clostridium tetani* E88, *Pseudomonas syringae* pv. *maculicola*, *Mus musculus*, *Medicago truncatula*"
- 7443 7573 23 "Mus musculus, Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Anopheles gambiae*"
- 7444 7574 26 "Homo sapiens, *Danio rerio*, *Enterococcus faecalis* V583, *Mus musculus*, *Gallus gallus*, *Leishmania major*, *Thermoanaerobacter tengcongensis*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*" 10
- 7445 7575 36 "Mus musculus, *Pasteurella multocida*, Homo sapiens, *Danio rerio*, *Caenorhabditis elegans*, *Sorghum bicolor*, Mouse cytomegalovirus 1, *Cryptosporidium parvum*, *Klebsiella pneumoniae*"
- 7446 7576 25 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Clostridium perfringens* str. 13, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, Western X phytoplasma, *Staphylococcus aureus*, *Methanosarcina mazei* Goe1, *Mycoplasma pulmonis*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Lactobacillus plantarum* WCFS1, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 7447 7577 27 "Homo sapiens, *Mus musculus*, *Rickettsia conorii*, *Clostridium botulinum*, *Rattus norvegicus*, *Medicago truncatula*, *Drosophila littoralis*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Virgularia juncea*, *Trypanosoma brucei*, *Danio rerio*" 20
- 7448 7578 23 "Mus musculus, Homo sapiens, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Danio rerio*"
- 7449 7579 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Candida albicans*, *Coxiella burnetii* RSA 493, *Arabidopsis thaliana*, Human immunodeficiency virus 1, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Tetrahymena thermophila*, *Lotus corniculatus* var. *japonicus*, *Haemophilus influenzae*, *Medicago truncatula*, *Oryza sativa* (japonica cultivar-group), O'nyong-nyong virus, *Plasmodium falciparum*, *Haemophilus influenzae* Rd KW20, *Clostridium perfringens* str. 13" 30
- 7450 7580 37 "Acyrtosiphon pisum, Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*, *Arabidopsis thaliana*, *Triticum aestivum*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Bos taurus*, Saimiriine herpesvirus 2, *Clostridium thermocellum*, *Paraglomus brasiliense*, *Pan troglodytes*, *Schizosaccharomyces pombe*, *Dictyostelium discoideum*, *Halobates matsumurai*"
- 7451 7581 31 "Arabidopsis thaliana, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, Homo sapiens, *Leptospira interrogans* serovar *lai* str. 56601, *Chlamydia muridarum*, *Gallus gallus*, *Platysaurus* sp. SSV-2002, Rice grassy stunt virus, *Oceanobacillus iheyensis* HTE831, *Danio rerio*, *Saguinus mystax*, *Callithrix jacchus*, *Oryza sativa*" 40
- 7452 7582 28 "Campylobacter jejuni subsp. *jejuni* NCTC 11168, *Staphylococcus epidermidis* ATCC 12228, Homo sapiens, *Staphylococcus epidermidis*, *Enterococcus faecalis* V583, *Mus musculus*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma gallisepticum*, *Caenorhabditis elegans*, *Danio rerio*"
- 7453 7583 46 "Oceanobacillus iheyensis HTE831, *Escherichia coli* CFT073, *Mus musculus*, *Caenorhabditis elegans*, Homo sapiens, *Bacillus thuringiensis*"
- 7454 7584 26 "Homo sapiens, *Arabidopsis thaliana*, *Oryza sativa* (indic 50

- a cultivar-group), *Drosophila melanogaster*, *Chlamydia muridarum*, *Dictyostelium discoideum*, *Mus musculus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Danio rerio*, *Bacillus halodurans*"
- 7455 7585 43 "Oceanobacillus iheyensis HTE831, *Bacillus anthracis* str. Ames, *Danio rerio*, *Mus musculus*, *Homo sapiens*, *Zea mays*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Methanosarcina mazei* Goe1, *Caenorhabditis elegans*, *Lactococcus lactis* subsp. *lactis*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Schizosaccharomyces pombe*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Staphylococcus aureus*, *Bacillus halodurans*" 10
- 7456 7586 23 "*Mus musculus*, *Homo sapiens*, *Pan troglodytes*"
- 7457 7587 39 "*Staphylococcus aureus*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Plasmodium yoelii*, *Danio rerio*, *Homo sapiens*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Fagopyrum homotropicum*, *Caenorhabditis elegans*, *Pyrocystis lunula*, *Mus musculus*, *Oceanobacillus iheyensis* HTE831, *Lycopersicon esculentum*"
- 7458 7588 24 "*Homo sapiens*, *Shigella flexneri* 2a str. 2457T, *Drosophila melanogaster*, *Escherichia coli* CFT073, *Shigella flexneri* 2a str. 301, *Escherichia coli* K12, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli*, *Escherichia coli* 0157:H7, *Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Gallus gallus*, *Danio rerio*" 20
- 7459 7589 29 "*Mus musculus*, *Chaoborus trivitattus*, *Macaca fascicularis*, *Homo sapiens*, *Danio rerio*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Pisum sativum*, *Entamoeba histolytica*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Myersalina depicta*, *Caenorhabditis briggsae*, *Rattus norvegicus*"
- 7460 7590 23 "*Danio rerio*, *Pan troglodytes*, *Homo sapiens*, *Mus musculus*, *Dubautia plantaginea*, *Argyroxiphium caliginis*, *Leptospira interrogans* serovar *lai* str. 56601, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Felis catus*, *Arabidopsis thaliana*" 30
- 7461 7591 27 "*Homo sapiens*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Ciona intestinalis*, *Mus musculus*"
- 7462 7592 24 "*Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Cricetulus* sp., *Arabidopsis thaliana*"
- 7463 7593 33 "*Pan troglodytes*, *Homo sapiens*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Clostridium perfringens* str. 13, *Plasmodium falciparum*, *Drosophila melanogaster*, *Dictyostelium discoideum*, *Streptococcus pneumoniae* R6, *Plasmodium vivax*, *Rickettsia prowazekii*, *Arabidopsis thaliana*, *Candidatus Blochmannia floridanus*, *Anthoceros formosae*, *Mycoplasma penetrans*, *Medicago truncatula*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar *lai* str. 56601, *Caenorhabditis elegans*, *Zea mays*, *Staphylococcus aureus*, *Clostridium tetani* E88, *Staphylococcus epidermidis* ATCC 12228, *Drosophila melanogaster*, *Cloning vector pVLH/hsp*, *Staphylococcus epidermidis*, *Staphylococcus warneri*, *Staphylococcus sciuri*, *Lotus corniculatus* var. *japonicus*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Rabbit fibroma virus*, *Candida albicans*" 40
- 7464 7594 32 "*Mus musculus*, *Homo sapiens*, *Monosiga brevicollis*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Triticum monococcum*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Leuconostoc mesenteroides*, *Bac* 50

teroides thetaiotaomicron VPI-5482, Dictyo"

- 7465 7595 27 "Homo sapiens, Takifugu rubripes, Synechocystis sp. PCC 6803, Mus musculus, Pan troglodytes, Papio anubis, Arabidopsis thaliana, Caenorh abditis elegans, Oenothera elata subsp. hookeri, Schizosaccharomyces pombe"
- 7466 7596 28 "Vicia sativa, Homo sapiens, Papio anubis, Pisum sativum , Mycoplasma penetrans, Listeria innocua, Nostoc sp. PCC 7120, Oryza sativa (jap onica cultivar-group), Expression vector pDAS112, Pan troglodytes, Mus musculus, Tomato dwarf leaf curl geminivirus, Staphylococcus aureus, Streptococcus agalac tiae, Enterococcus faecalis, Staphylococcus aureus subsp. aureus N315, Staphyloc occus aureus subsp. aureus MW2, Danio rerio, Bipartite tomato geminivirus, unide ntified cloning vector, Wuchereria bancrofti, Staphylococcus intermedius, Staphy lococcus aureus subsp. aureus Mu50" 10
- 7467 7597 28 "Rattus norvegicus, Mus musculus, Homo sapiens, Drosophi la melanogaster, Medicago truncatula, Arabidopsis thaliana"
- 7468 7598 23 "Bacillus cereus ATCC 14579, Bacillus thuringiensis, Bac illus cereus, Homo sapiens, Mus musculus, Escherichia coli O157:H7 EDL933, Danio rerio, Escherichia coli O157:H7, Bacillus subtilis subsp. subtilis str. 168, Or yza sativa (japonica cultivar-group), Bacillus subtilis"
- 7469 7599 27 "Caenorhabditis elegans, Danio rerio, Arabidopsis thalia na, Homo sapiens, Mus musculus, Chlamydophila pneumoniae CWL029, Chlamydophila p neumoniae AR39, Pan troglodytes, Chlamydophila pneumoniae TW-183, Chlamydophila pneumoniae J138" 20
- 7470 7600 26 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Melia azedarach var. subtripinnata, Arabidopsis thaliana, Plasmodiu m falciparum, Saccharomyces bayanus, Caenorhabditis elegans, Mortierella alpina, Trypanosoma brucei"
- 7471 7601 23 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Gallus gallus"
- 7472 7602 32 "Homo sapiens, Campoletis sonorensis ichnovirus, Mus mus culus, Drosophila melanogaster, Schizosaccharomyces pombe, African swine fever v irus, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio" 30
- 7473 7603 37 "Homo sapiens, uncultured bacterium, benzene mineralizin g consortium clone SB-3, Thiomicrospira kuenenii, Thiomicrospira sp., unidentifi ed oil field bacterium TH101, unidentified oil field bacterium OCEA7, Hydrogenov ibrio marinus, Caldimonas manganoxidans, M"
- 7474 7604 34 "Homo sapiens, Mus musculus, Caenorhabditis briggsae, Pl asmodium falciparum 3D7, Danio rerio, Caenorhabditis elegans, Oryza sativa (japo nica cultivar-group), Arabidopsis thaliana, Lotus corniculatus var. japonicus, X estia c-nigrum granulovirus, Cyprinus carpio, Enterococcus faecalis V583, Borrel ia burgdorferi B31, Dictyostelium discoideum, Drosophila melanogaster, Lycopersi con peruvianum, Lycopersicon parviflorum, Daktulosphaira vitifoliae, Thermoanaer obacter tengcongensis, Rickettsia conorii, Rickettsia prowazekii, Reclinomonas a mericana, Dolichoderus lutosus, Staphylococcus aureus subsp. aureus N315, Staphy lococcus aureus subsp. aureus MW2, Schizosaccharomyces pombe, Leptobryum pyrifor me, Staphylococcus aureus subsp. aureus Mu50, Mycoplasma gallisepticum R, Medica go truncatula, Pan troglodytes, Hepatus epheliticus, Buchnera aphidicola, Pontia sisymbrii, Pontia protodice" 40
- 7475 7605 35 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Drosophila melanogaster, Bos taurus, Saccharomyces cerevisiae, unidentified ento 40

- mopoxvirus, *Monosiga brevicollis*, *Papio anubis*, *Pan troglodytes*"
- 7476 7606 33 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Danio rerio*, *Medicago truncatula*, *Dictyostelium discoideum*, *Caenorhabditis briggsae*, *Chironomus tentans*, *Oryza sativa* (japonica cultivar-group), *Leishmania lainsoni*, *Melanoplus sanguinipes entomopoxvirus*, *Arabidopsis thaliana*"
- 7477 7607 23 "Homo sapiens, *Mus musculus*, *Felis catus*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus"
- 7478 7608 25 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Saccharomyces cerevisiae*, *Danio rerio*" 10
- 7479 7609 31 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Mycoplasma pulmonis*, *Helicobacter hepaticus* ATCC 51449, *Pan troglodytes*, *Drosophila melanogaster*, *Xylella fastidiosa* Temecula1, *Rattus norvegicus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Sus scrofa*, *Xylella fastidiosa* 9a5c, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Papio anubis*, *Naegleria gruberi*"
- 7480 7610 27 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, Human immunodeficiency virus 1, *Arabidopsis thaliana*"
- 7481 7611 25 "Homo sapiens, *Drosophila melanogaster*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Haemophilus ducreyi* 35000HP, *Botryotinia fuckeliana*" 20
- 7482 7612 48 "Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, *Vibrio parahaemolyticus*, *Vibrio vulnificus* CMCP6, *Mus musculus*, *Pan troglodytes*, *Staphylococcus aureus*, *Arabidopsis thaliana*, *Mycoplasma pulmonis*, *Helicobacter pylori*, *Vibrio cholerae*, *Staphylococcus aureus* subsp. aureus N315, Gallid herpesvirus 1, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Rattus norvegicus*, *Xenopus laevis*, *Staphylococcus aureus* subsp. aureus Mu50"
- 7483 7613 27 "Sulfurospirillum deleyianum, Bacteroides thetaiotaomicron VPI-5482, *Mus musculus*, Homo sapiens, *Danio rerio*, *Rattus norvegicus*, *Schizosaccharomyces pombe*" 30
- 7484 7614 25 "Homo sapiens, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Cenarchaeum symbiosum*"
- 7485 7615 23 "Homo sapiens, *Mus musculus*, *Rattus norvegicus*, Stealth virus 1, *Lotus corniculatus* var. japonicus"
- 7486 7616 29 "Caenorhabditis elegans, *Haemophilus influenzae*, *Mus musculus*, Homo sapiens, *Clostridium acetobutylicum*, *Xenopus laevis*, *Pectobacterium carotovorum* subsp. carotovorum, *Pectobacterium wasabiae*, *Medicago truncatula*, *Acinetobacter junii*, *Vibrio cholerae*, *Yersinia pestis* KIM, *Thermoanaerobacter tengcongensis*, *Arabidopsis thaliana*, *Yersinia pestis*, *Proteus mirabilis*, *Proteus vulgaris*, *Haemophilus ducreyi* 35000HP, *Yersinia pestis* C092, *Yersinia pseudotuberculosis*, *Yersinia ruckeri*, *Yersinia kristensenii*, *Yersinia frederiksenii*, *Yersinia enterocolitica*, *Yersinia aldovae*, *Haemophilus influenzae* Rd KW20, *Listonella anguillarum*" 40
- 7487 7617 31 "Plasmodium falciparum 3D7, Homo sapiens, *Mus musculus*, *Bacillus anthracis* str. A2012, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Bacillus anthracis*, *Drosophila tsacasi*, *Drosophila serrata*, *Danio rerio*, *Clostridium perfringens* str. 13, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Anastrepha striata*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Clostridium acetobutylicum*, *Lotus corniculatus* var. japonicus, *Oceanobacillus iheyensis* HTE831, *Schizosaccharomyces pombe*, *Streptococcus pneumoniae*, *Oryza sativa* (ja 50

ponica cultivar-group)"

7488 7618 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mus musculus, Human immunodeficiency virus 1"

7489 7619 29 "Mus musculus, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Dianthus caryophyllus, Musca domestica, Oryza sativa (japonica cultivar-group)"

7490 7620 46 "Helicobacter pylori 26695, Helicobacter pylori J99, Campylobacter jejuni subsp. jejuni NCTC 11168, Helicobacter hepaticus ATCC 51449, Danio rerio, Mus musculus, Mycoplasma penetrans, Saccharomyces cerevisiae, Mesorhizobium loti, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Streptococcus pneumoniae, Macaca fascicularis, Venerupis (Ruditapes) philippinarum"

10

7491 7621 30 "Homo sapiens, Clostridium acetobutylicum, Mus musculus, Clostridium tetani E88, Bovine herpesvirus 4, Clostridium botulinum, Entamoeba histolytica"

7492 7622 40 "Drosophila melanogaster, rHomo sapiens, Oryza sativa (japonica cultivar-group), Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Schmidtea mediterranea, Caenorhabditis elegans, Listeria monocytogenes, Haemophilus ducreyi 35000HP, Danio rerio, Plasmodium falciparum 3D7, Arabidopsis thaliana, Nicotiana tabacum, Brassica rapa"

20

7493 7623 32 "Clostridium tetani E88, Mus musculus, Bacillus anthracis str. Ames, Lactococcus lactis subsp. lactis, Oceanobacillus ihayensis HTE831, Hypostomus punctatus, Homo sapiens, Geobacillus stearothermophilus, Arabidopsis thaliana"

7494 7624 31 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Caenorhabditis elegans, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Fusobacterium perfoetens, Staphylococcus epidermidis, Staphylococcus aureus"

7495 7625 25 "Homo sapiens, Streptococcus mutans UA159, Xenopus laevis, Bubalus bubalis, Caenorhabditis elegans, Mus musculus, Oryza sativa (japonica cultivar-group)"

30

7496 7626 24 "Pinus monticola, Mus musculus, Homo sapiens, Shewanella oneidensis MR-1, Mycoplasma mycoides subsp. mycoides SC, Pan troglodytes, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Rana esculenta, Caenorhabditis briggsae, Caenorhabditis elegans, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio"

7497 7627 31 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Chlamydia trachomatis, Oryza sativa (japonica cultivar-group), Homo sapiens, Synechocystis sp. PCC 6803, Bacillus anthracis str. Ames, Mus musculus, Arabidopsis thaliana, Danio rerio, Mycoplasma pulmonis, Listeria monocytogenes, Respiratory syncytial virus, Macaca fascicularis"

40

7498 7628 31 "Homo sapiens, Clostridium tetani E88, Mus musculus, Buchnera aphidicola, Oryza sativa (japonica cultivar-group)"

7499 7629 31 "Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Leishmania major, Mus musculus, Dictyostelium discoideum, Raccoonpox virus, Thermoanaerobacter tengcongensis, Danio rerio, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13"

7500 7630 31 "Dictyostelium discoideum, Sulfolobus tokodaii, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Pan troglodytes, Methanothermobacter thermoautotrophicus str. Delta H, Danio rerio, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Botryotinia fuckeliana"

50

- 7501 7631 31 "Homo sapiens, *Ciona intestinalis*, *Mus musculus*, *Papio a nubis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Clostridium botulinum* phage 1C, *Clostridium botulinum* D phage"
- 7502 7632 36 "*Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Bacillus halodurans*, *Homo sapiens*, *Caenorhabditis elegans*, *Danio rerio*, *Mus musculus*, *Synechocystis* sp. PCC 6803"
- 7503 7633 43 "*Rickettsia prowazekii*, *Clostridium acetobutylicum*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Homo sapiens*, *Tuberculatus indicus*, *Calanus helgolandicus* 10, *Eimeria tenella*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Saccharomyces cerevisiae*, *Danio rerio*, *Staphylococcus xylosus*, *Arabidopsis thaliana*, *Atropa belladonna*, *Amsacta moorei* entomopoxvirus, *Oceanobacillus iheyensis* HTE831, *Anisopoda maritima*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Parnassius stubbendorffii*, *Graphium weiskei*, *Enterococcus faecalis* V583, *Sus scrofa*, *Caenorhabditis elegans*, *Malawimonas jakobiformis*, *Microplitis demolitor*, *Staphylococcus aureus*, *Yarrowia lipolytica*, *Microplitis* sp., *Sulfolobus solfataricus*, *Lycopersicon esculentum*, *Tribolium castaneum*, *Plasmodium falciparum*, *Lotus corniculatus* var. japonicus"
- 7504 7634 24 "*Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Cryptosporidium parvum*, *Mus musculus*, *Methanosarcina acetivorans* C2A, *Homo sapiens*, *Caenorhabditis elegans*, *Beta vulgaris* subsp. vulgaris, *Danio rerio*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Sulfolobus solfataricus*, *Pasteurella multocida*, *Caenorhabditis briggsae*, *Plasmodium falciparum* 3D7, *Branchiostoma floridae*, *Vibrio parahaemolyticus*, *Rattus norvegicus*, *Nostoc* sp. PCC 7120, *Clostridium perfringens* str. 13" 20
- 7505 7635 35 "*Homo sapiens*, *Streptococcus mutans* UA159, *Rattus norvegicus*, *Enterococcus faecalis* V583, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Staphylococcus epidermidis* ATCC 12228, *Lactococcus lactis* subsp. cremoris, *Mus musculus*" 30
- 7506 7636 28 "*Homo sapiens*, *Borrelia burgdorferi* B31, *Mus musculus*, *Rattus norvegicus*, *Lotus corniculatus* var. japonicus, *Arabidopsis thaliana*, *Danio rerio*, *Cryptosporidium parvum*, *Thermoactinomyces vulgaris*"
- 7507 7637 26 "*Homo sapiens*, *Drosophila melanogaster*, *Synechocystis* sp. PCC 6803, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Bacillus halodurans*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)"
- 7508 7638 27 "*Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Danio rerio*, *Caenorhabditis elegans*, *Mus musculus*, *Halocynthia roretzi*, *Streptococcus mutans* UA159, *Arabidopsis thaliana*, *Mycoplasma pulmonis*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Mycoplasma penetrans*, *Hepatitis C virus*" 40
- 7509 7639 23 "*Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Danio rerio*, *Ciona intestinalis*"
- 7510 7640 43 "*Nostoc* sp. PCC 7120, *Chlamydia muridarum*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Homo sapiens*, *Helicobacter pylori* 26695, *Danio rerio*, *Treponema pallidum*, *Haemophilus influenzae* Rd KW20, *Lactococcus lactis* subsp. lactis, *Prochlorococcus marinus*, *Arabidopsis thaliana*, *Haemophilus ducreyi* 35000HP, *Helicobacter pylori* J99, *Bacteroides thetaiotaomicron* VPI-5482, *Buchnera aphidicola* str. Bp (B 50

- aizongia pistaciae), *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Staphylococcus epidermidis* ATCC 12228, *Yersinia pestis* KIM, *Pasteurella multocida*, *Candidatus Blochmannia floridanus*, *Mus musculus*, *Yersinia pestis* C092, *Lycopersicon esculentum*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Solanum tuberosum*"
- 7511 7641 67 "Wigglesworthia glossinidia endosymbiont of *Glossina brevipalpis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Mus musculus*, *Homo sapiens*, *Mycobacterium leprae*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Rattus norvegicus*, *Pasteurella multocida*, *Bordetella bronchiseptica*, *Yersinia enterocolitica*, *Chlamydia trachomatis*, *Danio rerio*" 10
- 7512 7642 27 "Escherichia coli O157:H7 EDL933, *Escherichia coli*, *Mus musculus*, *Escherichia coli* O157:H7, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group)"
- 7513 7643 24 "Caenorhabditis elegans, *Mus musculus*, *Homo sapiens*, *Sulfolobus solfataricus*, *Arabidopsis thaliana*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Felis catus*, *Thermoanaerobacter tengcongensis*, *Pasteurella multocida*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Listeria monocytogenes*, *Staphylococcus aureus*"
- 7514 7644 27 "Caenorhabditis elegans, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Geophagus* sp. Farias 100, *Trypanosoma brucei*, *Oceanobacillus iheyensis* HTE831, *Lacerta fraasii*, *Buchnera aphidicola*, *Dictyostelium discoideum*, *Triticum aestivum*" 20
- 7515 7645 34 "Oryza sativa (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Oryza sativa*, *Caenorhabditis elegans*, *Rickettsia prowazekii*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Arabidopsis thaliana*, *Staphylococcus epidermidis*, *Botryllus schlosseri*, *Pyura stolonifera*"
- 7516 7646 35 "Drosophila melanogaster, *Homo sapiens*, *Danio rerio*, *Arabidopsis thaliana*, *Mus musculus domesticus*, *Dictyostelium discoideum*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Schmidtea mediterranea*, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Oceanobacillus iheyensis* HTE831, *Chlamydophila pneumoniae* J138, *Mycoplasma penetrans*, *Caenorhabditis elegans*, *Chlamydophila pneumoniae* TW-183, *Haemophilus influenzae* Rd KW20, *Rhizobium leguminosarum* bv. *phaseoli*, *Medicago truncatula*, *Branchiostoma floridae*, *Tetrahymena thermophila*, *Lactococcus lactis*, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*, *Clostridium perfringens* str. 13" 30
- 7517 7647 26 "Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Xiphorhynchus spixii elegans*, *Prochlorococcus marinus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, *Oryza sativa* (indica cultivar-group), *Trichinella* sp. T9, *Trichinella* sp. T8, *Trichinella* sp. T6, *Trichinella murrelli*, *Trichinella pseudospiralis*, *Trichinella nelsoni*, *Trichinella britovi*, *Trichinella spiralis*, *Guillardia theta*, *Caenorhabditis elegans*, *Pan troglodytes*, *Cryptosporidium parvum*, *Echinococcus granulosus*, *Brassica napus*" 40
- 7518 7648 24 "Drosophila melanogaster, *Homo sapiens*, *Mus musculus*, *Medicago truncatula*, *Vibrio vulnificus* CMCP6, *Danio rerio*, Tick-borne encephalitis virus, *Arabidopsis thaliana*, *Plasmodium falciparum*"
- 7519 7649 27 "Homo sapiens, *Sus scrofa*, *Mus musculus*, *Kluyveromyces b*" 50

- latae, Mungotictis decemlineata, Caenorhabditis elegans, Methanosarcina mazei Goe1, Plasmodium falciparum 3D7, Vibrio cholerae, Branchiostoma floridae, Schizosaccharomyces pombe, Peanut mottle virus"
- 7520 7650 54 "Homo sapiens, Helicobacter hepaticus ATCC 51449, Helicobacter pylori, Yersinia pestis KIM, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Yersinia pestis C092, Helicobacter pylori J99, Enterococcus faecalis V583, Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Staphylococcus epidermidis, Danio rerio, Gallus gallus"
- 7521 7651 41 "Moraxella catarrhalis, Homo sapiens, Neisseria meningitidis Z2491, Arabidopsis thaliana, Neisseria meningitidis MC58, Dictyostelium discoideum, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Ajellomyces capsulatus, Pinellia integrifolia, Borrelia burgdorferi B31, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Pyrococcus abyssi, Rattus norvegicus" 10
- 7522 7652 29 "Bos taurus, Homo sapiens, Thermoanaerobacter tengcongensis, Mus musculus, Arabidopsis thaliana"
- 7523 7653 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Goatpox virus, Sheeppox virus, Lumpy skin disease virus, Danio rerio, Plasmodium falciparum 3D7, Medicago truncatula"
- 7524 7654 35 "Homo sapiens, Mus musculus, Sulfolobus islandicus rod-shaped virus 2, Drosophila melanogaster, Catharanthus roseus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7" 20
- 7525 7655 24 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Arthrobacter sp. S, Buchnera aphidicola str. Bp (Baizongia pistaciae), Methanosarcina mazei Goe1, Banksia laricina, Banksia laevigata subsp. laevigata, Banksia audax, Banksia benthamiana, Banksia goodii, Banksia brevidentata, Banksia hiemalis, Banksia blechnifolia, Banksia chamaephyton, Banksia repens, Banksia petiolaris, Banksia lullfitzii, Banksia aemula, Banksia serrata, Banksia ornata, Banksia aculeata, Banksia caleyi, Banksia lemmaniana, Banksia elderiana, Banksia oligantha, Banksia ilicifolia, Plasmodium falciparum 3D7, Listeria monocytogenes" 30
- 7526 7656 36 "Drosophila melanogaster, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Oryza sativa, Penicillium marneffeii, Caenorhabditis elegans, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Ephydatia fluviatilis, Arabidopsis thaliana, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Danio rerio, Medicago truncatula, Cyprinus carpio"
- 7527 7657 35 "Mus musculus, Mycoplasma pulmonis, Homo sapiens, Formica exsecta, Praon dorsale, Praon barbatum, Praon pequodorum, Dyscritulus planiceps, Herpetomonas pessoai, Pan troglodytes, Caenorhabditis elegans, Dictyostelium discoideum, Medicago truncatula, Plasmodium" 40
- 7528 7658 37 "Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Lactococcus lactis subsp. cremoris, Danio rerio, Thermosynechococcus elongatus BP-1, Oryza sativa (japonica cultivar-group), Pan troglodytes, Clostridium tetani E88, Caenorhabditis elegans, Plasmodium falciparum 3D7, Naegleria gruberi, Gallus gallus, Taenia solium, Medicago truncatula, Anopheles gambiae, Parastichopus parvimensis, Fagopyrum esculentum, Atelerix albiventris, Schizosaccharomyces japonicus, Bos taurus, Shewanella oneidensis MR-1, Buchnera aphidicola str. Sg (Schizaphis graminum), Rickettsia conorii, Clostridium acetobutylicum, Pneumocystis carinii f. sp. macaca, Oryza sativ" 50

- a, *Lotus corniculatus* var. *japonicus*, *Schizosaccharomyces pombe*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Mycoplasma genitalium*"
- 7529 7659 31 "Mus musculus, Homo sapiens, Drosophila melanogaster, Bombus sporadicus, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Campylobacter hyointestinalis, Staphylococcus epidermidis ATCC 12228, Roscoea cauleoides, Neisseria meningitidis Z2491, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Vibrio parahaemolyticus, Listeria innocua, Schizosaccharomyces pombe, Plasmid pRJF2, Arabidopsis thaliana" 10
- 7530 7660 23 "Homo sapiens, Arabidopsis thaliana, Corynebacterium efficiens YS-314, Rattus norvegicus"
- 7531 7661 26 "Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Mus musculus, Bacillus anthracis str. Ames, Listeria ivanovii, Danio rerio, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Staphylococcus xylosum, Papio anubis, Escherichia coli O157:H7 EDL933, Buchnera aphidicola, Arabidopsis thaliana, Fritschea bemisiae, Escherichia coli O157:H7"
- 7532 7662 27 "Homo sapiens, Rattus norvegicus, Mus musculus, Lotus corniculatus var. japonicus, Danio rerio, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Caenorhabditis elegans, Sus scrofa, Candida albicans, Clostridium perfringens str. 13" 20
- 7533 7663 36 "Homo sapiens, Clostridium acetobutylicum, Gossypium hirsutum, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Ateline herpesvirus 3, Pan troglodytes, Drosophila melanogaster, Xenopus laevis, Buchnera aphidicola str. Sg (Schizaphis graminum), Goatpox virus, Sheeppox virus, Lumby skin disease virus, Escherichia coli O157:H7 EDL933, Vitis vinifera, Ureaplasma urealyticum, Arachis hypogaea, Schizosaccharomyces pombe, Cenarchaeum symbiosum, Escherichia coli O157:H7" 30
- 7534 7664 35 "Danio rerio, Aulacomnium heterostichum, Mus musculus, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Cratogeomys filicinum, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Staphylococcus epidermidis, Ralstonia solanacearum, Rattus norvegicus, Bacillus cereus ATCC 14579, Pan troglodytes, Drosophila melanogaster, Medicago truncatula, Brachyspira hyodysenteriae, Farlowia mollis, Plasmodium falciparum 3D7, Chelonus sp. near curvimaculatus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Drosophila tristis, Oryzias latipes"
- 7535 7665 24 "Homo sapiens, Mus musculus, Candidatus Carsonella ruddii, Arabidopsis thaliana, Medicago truncatula" 40
- 7536 7666 27 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Borrelia burgdorferi B31, Halobacterium sp. NRC-1, Danio rerio, Clostridium perfringens str. 13"
- 7537 7667 25 "Homo sapiens, Camellia sinensis, Mus musculus, Caenorhabditis elegans, Danio rerio, Human papillomavirus type 31"
- 7538 7668 28 "Caenorhabditis elegans, Lotus corniculatus var. japonicus, Mus musculus, Bacillus anthracis str. Ames, Homo sapiens, Plasmodium falciparum 3D7, Xenopus laevis, Lycopersicon esculentum, Neurospora crassa, Enterococcus faecalis V583, Dictyostelium discoideum, Medicago truncatula, Drosophila melan 50

- ogaster, *Streptococcus mutans* UA159, *Enterococcus faecalis*, *Arabidopsis thaliana*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Brassica oleracea*, *Clostridium acetobutylicum*, *Deroceras reticulatum*, *Caenorhabditis briggsae*, *Ureaplasma urealyticum*, *Amsacta moorei* entomopoxvirus, *Oryza sativa* (japonica cultivar-group), *Tribolium castaneum*, *Danio rerio*, *Rattus norvegicus*"
- 7539 7669 27 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Ciona intestinalis*, *Isodon macrourus*, *Wolbachia* sp. wKue, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Drosophila melanogaster*, *Medicago truncatula*, *Drosophila bromeliae*, *Brassica oleracea*, *Thermoanaerobacter tengcongensis*, *Prochlorococcus marinus*, *Porcine rotavirus*, *Drosophila auraria*, *Plasmodium berghei*, *Petromyzon marinus*, *Candida boidinii*" 10
- 7540 7670 77 "Bacillus subtilis subsp. subtilis str. 168, *Bacillus subtilis*, *Bacillus sphaericus*, *Aquifex aeolicus* VF5, *Staphylococcus epidermidis* ATCC 12228, *Bacillus megaterium*, *Staphylococcus epidermidis*, *Mus musculus*, *Drosophila melanogaster*, *Pasteurella multocida*, *Chlamydia muridarum*, *Homo sapiens*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Chlamydia trachomatis*, *Bacillus anthracis* str. Ames, *Pan troglodytes*, *Poncirus trifoliata*, *Clostridium tetani* E88, *Diasia friesei*, *Mycoplasma capricolum*, *Hordeum vulgare*, *Medicago truncatula*"
- 7541 7671 23 "Clostridium perfringens, *Clostridium perfringens* str. 1 20
3, *Homo sapiens*, *Caenorhabditis elegans*, *Mus musculus*, *Clostridium acetobutylicum*, *Pasteurella multocida*, *Trichophyton rubrum*, *Danio rerio*"
- 7542 7672 23 "Homo sapiens, *Sulfolobus solfataricus*, *Mus musculus*"
- 7543 7673 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Bacteriophage TPW22*, *Xenopus laevis*, *Solanum tuberosum*, *Caenorhabditis elegans*, *Drosophila punjabensis*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Felis catus*, *Yarrowia lipolytica*, *Oryza sativa* (japonica cultivar-group), *Methanocaldococcus jannaschii*, *Rattus norvegicus*"
- 7544 7674 27 "Homo sapiens, *Drosophila melanogaster*, *Danio rerio*, *Mus musculus*, *Campylobacter jejuni*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, 30
Arabidopsis thaliana"
- 7545 7675 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)"
- 7546 7676 27 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Atelelix albiventris*, *Pan troglodytes*, *Clostridium tetani* E88, *Clostridium acetobutylicum*, *Plasmodium yoelii*, *Caenorhabditis elegans*, *Oceanobacillus iheyensis* HTE 831, *Ralstonia solanacearum*"
- 7547 7677 23 "Homo sapiens, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Ciona intestinalis*, *Nostoc* sp. PCC 7120"
- 7548 7678 29 "Phytoplasma sp., *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), 40
Ribes nigrum, *Caenorhabditis elegans*, *Danio rerio*, *Drosophila melanogaster*, *Auliscomys boliviensis*, *Pan troglodytes*, *Macaca mulatta*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Gallus gallus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Mus musculus*, *Bacteroides fragilis*, *Diuraphis noxia*, *Phenacomys intermedius*, *Haemophilus ducreyi* 35000HP, *Entamoeba histolytica*, *Bombix mori* nuclear polyhedrosis virus"
- 7549 7679 28 "Mus musculus, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Lotus corniculatus* var. *japonicus*, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Docophoroides brevis*, *Oncorhynchus keta*, *Danio rerio*, *Mycoplasma pneumoniae*, *Plasmodium vivax*, *Pan troglodytes*, W 50

- igglesworthia glossinidia endosymbiont of Glossina brevipalpis, Clostridium botulinum"
- 7550 7680 31 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Danio rerio, Bacillus subtilis"
- 7551 7681 23 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Lemur catta, Caenorhabditis elegans, Pan troglodytes, Schizosaccharomyces pombe, Rattus norvegicus, Mus sp."
- 7552 7682 27 "Homo sapiens, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Brucella melitensis 16M, Vibrio vulnificus CMCP6, Mus musculus, Brucella suis 1330, Buchnera aphidicola str. Sg (Schizaphis graminum), Gossypium hirsutum, Clostridium acetobutylicum, Arabidopsis thaliana, Cyanidium caldarium, Lotus corniculatus var. japonicus" 10
- 7553 7683 21 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Methanosarcina acetivorans C2A, Hemp dogbane yellows phytoplasma, Flavescence doree phytoplasma HD1, Pasteurella multocida, Oryza sativa (japonica cultivar-group)"
- 7554 7684 24 "Homo sapiens, Oryza sativa (japonica cultivar-group), Chlamydia muridarum, Strobilidium caudatum, uncultured eukaryote, Drosophila melanogaster, Strobilidium sp., Oxytricha saltans, Caenorhabditis elegans, Chromobacterium violaceum, Mus musculus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Methanosarcina acetivorans C2A" 20
- 7555 7685 27 "Bacillus megaterium, Homo sapiens, Caenorhabditis elegans, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Clostridium tetani E88, Arabidopsis thaliana, Pasteurella multocida, Danio rerio"
- 7556 7686 24 "Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Lotus corniculatus var. japonicus, Carnobacterium maltaromaticum"
- 7557 7687 31 "Homo sapiens, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Medicago truncatula, Dictyostelium discoideum, Plasmodium falciparum 3D7, Cryptococcus neoformans var. grubii, Sulfolobus solfataricus, Danio rerio, Schizosaccharomyces pombe, Clostridium perfringens str. 13" 30
- 7558 7688 29 "Homo sapiens, Drosophila melanogaster, Leptospira interrogans serovar lai str. 56601, Meleagrid herpesvirus 1, Mus musculus, Oryza sativa (japonica cultivar-group), Listeria innocua, Danio rerio, Gallid herpesvirus 2"
- 7559 7689 27 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Pan troglodytes, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Rickettsia conorii" 40
- 7560 7690 26 "Homo sapiens, Papio anubis, Mus musculus, Gallus gallus, Clostridium acetobutylicum, Escherichia coli CFT073, Caenorhabditis elegans, Yaba-like disease virus, Staphylococcus xylosum, Arabidopsis thaliana, Pan troglodytes"
- 7561 7691 27 "Homo sapiens, Medicago truncatula, Danio rerio, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Sulfolobus solfataricus, Oryza sativa, Staphylococcus carnosus, Haliotis rufescens, Takifugu rubripes"
- 7562 7692 26 "Mus musculus, Homo sapiens, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Salmonella enterica subs" 50

- p. enterica serovar Typhi, *Danio rerio*, *Caenorhabditis elegans*, *Salmonella typhimurium*"
- 7563 7693 29 "Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Caenorhabditis elegans*, *Mycoplasma penetrans*, *Dictyostelium discoideum*, *Carex echinoclhoe*, *Carex baccans*, *Eriophorum polystachion*, *Carex mertensii*, *Arabidopsis thaliana*, *Plasmodium falciparum*, *Aphanes a*"
- 7564 7694 28 "Homo sapiens, *Pan troglodytes*, *Equus caballus*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Amsacta moorei* entomopoxvirus, *Leptospira interrogans* serovar lai str. 56601, African swine fever virus, *Mus musculus*, *Caenorhabditis elegans*, *Methanocaldococcus jannaschii*, *Drosophila melanogaster*, *Macaca mulatta*, *Danio rerio*, *Mycoplasma pulmonis*, *Brassica oleracea* var. botrytis, *Antirrhinum hispanicum*, *Oryza sativa* (japonica cultivar-group), *Prototheca wickerhamii*, *Lotus corniculatus* var. japonicus, *Mycoplasma penetrans*, *Bos grunniens*, *Bos taurus*, *Cyanophora paradoxa*, *Pisum sativum*, *Clostridium perfringens* str. 13" 10
- 7565 7695 31 "Homo sapiens, *Lotus corniculatus* var. japonicus, *Mus musculus*, *Porphyra purpurea*, *Zea mays*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Medicago truncatula*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Sphyracephala munroi*, *Rattus norvegicus*, *Gallus gallus*, *Pan troglodytes*, *Chelonius inanitus* bracovirus, *Synechococcus* sp., *Rickettsia prowazekii*, *Cricetulus griseus*, *Pirellula* sp., *Takifugu rubripes*, *Pneumocystis jirovecii*, *Carabus kuznetzovi*, *Synechocystis* sp. PCC 6803" 20
- 7566 7696 24 "Homo sapiens, *Drosophila littoralis*, *Mus musculus*, *Lactococcus lactis* subsp. cremoris, *Leptospira interrogans* serovar lai str. 56601, *Medicago truncatula*, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Pyrococcus furiosus* DSM 3638, *Xenopus laevis*, *Danio rerio*, *Candidatus Blochmannia floridanus*, *Habronattus oregonensis*, *Plasmodium falciparum* 3D7, *Anopheles gambiae*, *Caenorhabditis elegans*"
- 7567 7697 23 "Staphylococcus aureus, *Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Medicago truncatula*, *Mycoplasma pirum*" 30
- 7568 7698 53 "Methanosarcina mazei Goe1, *Mycoplasma genitalium*, *Streptococcus pneumoniae* R6, *Homo sapiens*, *Mus musculus*, *Methanosarcina acetivorans* C2A, *Rangifer tarandus*, *Oceanobacillus ihayensis* HTE831, *Caenorhabditis elegans*"
- 7569 7699 35 "Clostridium tetani E88, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Medicago truncatula*, Wheat streak mosaic virus, Expression vector pWSMV-S1RN, *Arabidopsis thaliana*"
- 7570 7700 43 "Campylobacter jejuni subsp. jejuni NCTC 11168, *Coturnix japonica*, *Staphylococcus epidermidis* ATCC 12228, *Staphylococcus epidermidis*, *Homo sapiens*, *Bacteroides thetaiotaomicron* VPI-5482, *Staphylococcus aureus*, *Caenorhabditis elegans*, *Bacillus cereus* ATCC 14579, *Enterococcus faecalis* V583, *Mus musculus*, *Danio rerio*, *Arabidopsis thaliana*" 40
- 7571 7701 24 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Trichostrongylus colubriformis*, *Clostridium perfringens* str. 13, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Papio anubis*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Babesia bovis*, *Oryza sativa*, *Trypanosoma cruzi*, *Vibrio parahaemolyticus*, *Sus scrofa*, *Anopheles gambiae*, *Arabidopsis thaliana*"
- 7572 7702 40 "Antithamnion sp., *Mus musculus*, *Porphyra purpurea*, *Homo sapiens*, *Pyrobaculum aerophilum* str. IM2, *Danio rerio*, *Clostridium perfringens* str. 13, *Caenorhabditis elegans*, *Enterococcus faecalis* V583, *Trypanosoma cruzi*, 50

Arabidopsis thaliana"

- 7573 7703 35 "Listeria innocua, Homo sapiens, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Mus musculus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Staphylococcus aureus, Drosophila melanogaster, Clostridium tetani E88, Staphylococcus epidermidis ATCC 12228, Clostridium acetobutylicum, Staphylococcus epidermidis, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50"
- 7574 7704 25 "Saccharomyces cerevisiae, Bacteroides thetaiotaomicron VPI-5482, Homo sapiens, Lotus corniculatus var. japonicus, Dictyostelium discoideum, Equus caballus, Phthorimaea operculella granulovirus, Buchnera aphidicola str. Sg (Schizaphis graminum), Mus musculus, Chromobacterium violaceum, Arabidopsis thaliana" 10
- 7575 7705 23 "Lactococcus lactis subsp. lactis, Homo sapiens, Caenorhabditis elegans, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana"
- 7576 7706 41 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Pan troglodytes, Dictyostelium discoideum, Papio anubis, Arabidopsis thaliana, Lycopersicon esculentum, Danio rerio, Tetrahymena thermophila, Drosophila melanogaster, Bos taurus, Gorilla gorilla, Caenorhabditis elegans, Lotus corniculatus var. japonicus" 20
- 7577 7707 32 "Homo sapiens, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Takifugu rubripes, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Mus musculus, Saccharomyces cerevisiae, Pan troglodytes, Papio anubis, Thermoanaerobacter tengcongensis, Pyrobaculum aerophilum str. IM2, Methanococcus voltae, Danio rerio, Tetraodon fluviatilis, Baboon endogenous virus strain M7, Chlamydia trachomatis, Ureaplasma urealyticum, Bacteriophage A118, Ciona intestinalis, Simian type D virus 1, Pyrococcus horikoshii"
- 7578 7708 27 "Homo sapiens, Gallus gallus, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Sulfolobus tokodaii, Caenorhabditis elegans, Plasmodium falciparum 3D7, Plasmodium falciparum, Goose parvovirus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Oryza sativa (indica cultivar-group), Schizosaccharomyces pombe, Xenopus laevis, Candida albicans, Clostridium perfringens str. 13" 30
- 7579 7709 23 "Homo sapiens, Pan troglodytes, Drosophila melanogaster, Mus musculus, Avian rotavirus PO-13"
- 7580 7710 29 "Ceratomyxia douglasii, Mus musculus, Saccharomyces cerevisiae, Homo sapiens, Medicago truncatula, Salmo salar, Arabidopsis thaliana, Plasmodium falciparum 3D7, Clostridium tetani E88, Sulfolobus solfataricus, Caenorhabditis elegans, Mycoplasma pneumoniae, Amsacta moorei entomopoxvirus, Lamprolaima aenescens, Danio rerio, Methanocaldococcus jannaschii" 40
- 7581 7711 27 "Homo sapiens, Caenorhabditis elegans, Macaca mulatta, Clostridium sporogenes, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Arabidopsis thaliana, Mus musculus, Staphylococcus aureus subsp. aureus Mu50, Drosophila melanogaster, Staphylococcus epidermidis, Campylobacter jejuni subsp. jejuni NCTC 11168, Populus balsamifera subsp. trichocarpa, Pisum sativum, Oryza sativa (japonica cultivar-group), Cyanidium caldarium, Lotus corniculatus var. japonicus, Danio rerio, Listeria monocytogenes, Enterobacteria phage RB69, Prochlorococcus marinus subsp. marinus str. CCMP1375, Schizosaccharomyces pombe, Saccharomyces cerevisiae, Brassica na 50

pus"

- 7582 7712 24 "Plasmodium falciparum 3D7, Mus musculus, Homo sapiens, Staphylococcus aureus subsp. aureus N315, Human immunodeficiency virus 1, Staphylococcus aureus subsp. aureus Mu50, Caenorhabditis elegans, Drosophila melanogaster, Clostridium tetani E88, Pangasius sp. ZZSH-2001, Mycoplasma genitalium, Staphylococcus aureus subsp. aureus MW2, Cryptosporidium parvum, Haemophilus influenzae Rd KW20"
- 7583 7713 24 "Homo sapiens, Pestivirus strain mousedeer, Danio rerio, Drosophila melanogaster, Streptococcus mutans UA159, Clostridium tyrobutyricum, Mus musculus, Plasmodium falciparum 3D7, Thermoanaerobacter tengcongensis, Pasteurella multocida" 10
- 7584 7714 31 "Homo sapiens, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Sulfolobus solfataricus, Mus musculus, Caenorhabditis elegans, Danio rerio, Schizosaccharomyces pombe"
- 7585 7715 23 "Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Papio anubis, Chlamydomonas pneumoniae CWL029, Mus musculus, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Saccharomyces cerevisiae, Chlamydomonas pneumoniae TW-183"
- 7586 7716 27 "Arabidopsis thaliana, Homo sapiens, Mus musculus, Caenorhabditis elegans, Sus scrofa, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Pyrococcus horikoshii, Danio rerio, Pan troglodytes, Methanococcus vannielii" 20
- 7587 7717 27 "Homo sapiens, Danio rerio, Prochlorococcus marinus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Mus musculus, Streptococcus agalactiae 2603V/R, Arabidopsis thaliana, Pan troglodytes, Takifugu rubripes, Streptococcus agalactiae NEM316, Campylobacter jejuni subsp. jejuni NCTC 11168, Pylaiella littoralis, Chironomus tentans, Medicago truncatula, Mouse mammary tumor virus"
- 7588 7718 23 "Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Homo sapiens, Oryza sativa, Oryza sativa (japonica cultivar-group)" 30
- 7589 7719 25 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Zea mays, Rattus norvegicus, Medicago truncatula, Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Haemophilus influenzae biotype aegyptius, Oryza sativa (japonica cultivar-group), Danio rerio, Tricholoma bakamatsutake"
- 7590 7720 27 "Drosophila melanogaster, Homo sapiens, Mus musculus, Goatpox virus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lumpy skin disease virus, Lotus corniculatus var. japonicus, Danio rerio, Sorites orbiculus, Bos taurus, Aphis gossypii, Arabidopsis thaliana, Medicago truncatula, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Sorites marginalis, Macaca fascicularis" 40
- 7591 7721 62 "Stigmatella aurantiaca, Pseudomonas putida KT2440, Synchocystis sp. PCC 6803, Pseudomonas syringae pv. tomato str. DC3000, Pseudomonas aeruginosa PA01, Pseudomonas aeruginosa, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Caulobacter crescentus CB15,"
- 7592 7722 32 "Danio rerio, Candidatus Blochmannia floridanus, Homo sapiens, Mus musculus, Chrysodidymus synuroideus, Arabidopsis thaliana, Chlamydia muridarum, Drosophila melanogaster, Caenorhabditis elegans, Glaucidium palmatum, Plasmodium falciparum 3D7, Ectromelia virus, Methanosarcina acetivorans C2A, Streptococcus pyogenes M1 GAS, Xenopus laevis, Helicobacter hepaticus ATCC 51449" 50

- 7593 7723 42 "Pseudoalteromonas haloplanktis, Danio rerio, Pan troglodytes, Staphylococcus epidermidis ATCC 12228, Homo sapiens, Arabidopsis thaliana, Gallus gallus, Struthio camelus"
- 7594 7724 31 "Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabidopsis thaliana, Chlamydomonas pneumoniae CWL029, Mycoplasma pneumoniae, Candidatus Blochmannia floridanus, Chlamydomonas pneumoniae AR39, Sorghum bicolor, Chlamydomonas pneumoniae TW-183, Chlamydomonas pneumoniae J138, Clostridium perfringens str. 13"
- 7595 7725 24 "Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Dictyostelium discoideum, Chlamydia muridarum, Mamestra brassicae, Plasmodium falciparum 3D7, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Acinetobacter sp. M-1" 10
- 7596 7726 35 "Candidatus Blochmannia floridanus, Homo sapiens, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Xenopus laevis, Oryza sativa (japonica cultivar-group)"
- 7597 7727 45 "Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Lumpy skin disease virus, Mus musculus, Homo sapiens, Lycopersicon esculentum, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Prochlorococcus marinus, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Bos taurus, Shewanella oneidensis MR-1, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Staphylococcus aureus, Caenorhabditis briggsae, Chlamydia trachomatis, Ureaplasma urealyticum, Caenorhabditis elegans" 20
- 7598 7728 28 "Mus musculus, Homo sapiens, Listonella anguillarum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium perfringens str. 13, Caenorhabditis elegans, Danio rerio, Bacillus halodurans, Leptospira interrogans serovar lai str. 56601, Entamoeba histolytica, Oryza sativa (japonica cultivar-group), Methanocaldococcus jannaschii, Chlorella vulgaris, Dictyostelium discoideum, Aquifex aeolicus VF5, Plasmodium falciparum 3D7, symbiont bacterium of Paederus fuscipes, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Arabidopsis thaliana, Mycoplasma hyopneumoniae, Medicago truncatula, Saccharomyces cerevisiae" 30
- 7599 7729 35 "Oryza sativa (japonica cultivar-group), Homo sapiens, Oryza sativa, Mus musculus, Streptococcus mutans UA159, Zea mays, Capra hircus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus subsp. marinus str. CCMP1375, Ciona intestinalis, Brassica napus, Mycoplasma genitalium"
- 7600 7730 28 "Arabidopsis thaliana, Caenorhabditis elegans, Rattus norvegicus, Mus musculus, Homo sapiens, Pinus armandii, Ateline herpesvirus 3, Danio rerio, Pan troglodytes, Helicobacter pylori, Drosophila melanogaster, Methanosarcina mazei Goe1, Yersinia pestis KIM, Plasmodium falciparum 3D7, Ciona savignyi, Streptococcus sp. 'group G', Yersinia pestis C092, Helicobacter pylori J99, Streptococcus suis" 40
- 7601 7731 27 "Homo sapiens, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Cryptosporidium parvum"
- 7602 7732 23 "Homo sapiens, Danio rerio, Mus musculus, Oryctolagus cuniculus, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Streptococcus mutans UA159, Paracoccidioides brasiliensis, Mycoplasma penetrans, Cornitermes cumulans, Cornitermes walkeri" 50

- 7603 7733 27 "Mus musculus, Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Danio rerio, Buchnera aphidicola, Rattus norvegicus, Medicago truncatula, Methanosarcina acetivorans C2A, Alcelaphine herpesvirus 1, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Bacillus subtilis subsp. subtilis str. 168, Cryptosporidium parvum, Triticum aestivum"
- 7604 7734 27 "Mus musculus, Vibrio parahaemolyticus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Danio rerio, Staphylococcus aureus subsp. aureus Mu50"
- 7605 7735 27 "Caenorhabditis elegans, Medicago truncatula, Homo sapiens, Arabidopsis thaliana, Sus scrofa, Mus musculus, Shigella flexneri 2a str. 2457T, Pan troglodytes, Drosophila melanogaster, Shigella flexneri 2a str. 301, Cryptosporidium parvum" 10
- 7606 7736 25 "Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Synechocystis sp. PCC 6803, Danio rerio, Atelerix albiventris, Caenorhabditis elegans, Sus scrofa, Streptococcus mutans UA159, Clostridium acetobutylicum, Haemophilus influenzae, Medicago truncatula, Dictyostelium discoideum, Nostoc sp. PCC 7120"
- 7607 7737 27 "Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Homo sapiens, Arabidopsis thaliana, Danio rerio, Staphylococcus epidermidis ATCC 12228, Plasmodium falciparum 3D7, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Nostoc sp. PCC 7120" 20
- 7608 7738 31 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Lama pacos, Caenorhabditis elegans, Pneumocystis carinii, Arabidopsis thaliana, Danio rerio, Plasmodium falciparum 3D7, Halocynthia roretzi, Rattus norvegicus, Medicago truncatula, Enterococcus faecalis V583, Dictyostelium discoideum, Staphylococcus epidermidis ATCC 12228, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Fundulus heteroclitus, Sulfolobus islandicus rod-shaped virus 1, Staphylococcus epidermidis, Oceanobacillus iheyensis HTE831, Mycoplasma penetrans, Oryzias latipes" 30
- 7609 7739 27 "Lactococcus lactis subsp. lactis, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Arabidopsis thaliana, Caenorhabditis briggsae, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Equine herpesvirus 1, Pithecia irrorata, Callicebus torquatus, Callicebus moloch, Leptospira interrogans serovar lai str. 56601, Schistosoma japonicum, Leptospira interrogans, Caenorhabditis elegans, Danio rerio"
- 7610 7740 27 "Streptococcus pyogenes MGAS315, Homo sapiens, Streptococcus pyogenes SSI-1, Nicotiana tabacum, Mus musculus, Thermoanaerobacter tengcongensis, Gallus gallus, Danio rerio, Caenorhabditis briggsae, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Ciona intestinalis" 40
- 7611 7741 35 "Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Danio rerio, Mus musculus, Papio anubis, Arabidopsis thaliana, Medicago truncatula, Drosophila picticornis"
- 7612 7742 28 "Dictyostelium discoideum, Aquifex aeolicus VF5, Homo sapiens, Cervus dama, Cervus elaphus xanthopygus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mus musculus, Cervus elaphus hippelaphus, Campylobacter jejuni subsp. jejuni NCTC 11168, Psammodytes hispanicus, Caenorhabditis elegans, Sphenodon punctatus, Leptospira interrogans serovar lai str. 56601, Chlamydomonas reinhardtii GSI, Rattus norvegicus, Bacteroides thetaiotaomicron VPI-5482, 50

- Danio rerio, Staphylococcus intermedius, Brassica napus, Cestrum parqui, Medicago truncatula"
- 7613 7743 27 "Mus musculus, Caenorhabditis elegans, Canis familiaris, Medicago truncatula, Homo sapiens, Schoenus nigricans, Danio rerio, Clostridium perfringens str. 13"
- 7614 7744 32 "Prochlorococcus marinus, Homo sapiens, Arabidopsis thaliana, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), 0"
- 7615 7745 28 "Mus musculus, Homo sapiens, Vriesea malzinei, Tillandsia dodsonii, Puya werdermannii, Puya laxa, Puya humilis, Puya aequatorialis, Pitcairnia smithiorum, Pitcairnia rubronigriflora, Pitcairnia recurvata, Pitcairnia orchidifolia, Pepinia sprucei, Pepinia cor" 10
- 7616 7746 24 "Drosophila melanogaster, Homo sapiens, Mus musculus, Schizosaccharomyces pombe, Medicago truncatula, Caenorhabditis elegans, Allium violovii, Allium pskemense, Allium oschaninii, Allium galanthum, Allium fistulosum, Allium cepa, Allium altaicum, Allium roylei, Nicotiana tabacum, Danio rerio"
- 7617 7747 23 "Ciona intestinalis, Danio rerio, Helix lucorum, Homo sapiens, Caenorhabditis elegans, Plasmodium vivax"
- 7618 7748 28 "Engaeus laevis, Homo sapiens, Aphidius ervi, Ureaplasma urealyticum, Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Mus musculus, Methanosarcina acetivorans C2A, Beta vulgaris subsp. vulgaris, Brassica oleracea, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Danio rerio" 20
- 7619 7749 23 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Saccharomyces kluyveri"
- 7620 7750 31 "Homo sapiens, Veronica peregrina, Veronica gentianoides, Veronica serpyllifolia, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Nitrosomonas europaea ATCC 19718, Rattus norvegicus, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Neurospora crassa, Danio rerio" 30
- 7621 7751 20 "Homo sapiens, Danio rerio, Mus musculus, Prochlorococcus marinus subsp. marinus str. CCMP1375"
- 7622 7752 28 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Arabidopsis thaliana, Staphylococcus aureus, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Staphylococcus aureus subsp. aureus Mu50, Bacillus anthracis str. Ames, Brucella melitensis 16M, Streptococcus mutans UA159, Brucella suis 1330, Hemitaxonus japonicus, Bacillus halodurans, Streptococcus mutans"
- 7623 7753 31 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Bombyx mori, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Tigriopus californicus, Mycoplasma penetrans, Zygosaccharomyces rouxii, Danio rerio, Bacillus subtilis subsp. subtilis str. 168, Medicago truncatula, Bacillus halodurans" 40
- 7624 7754 27 "Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Rattus norvegicus, Dictyostelium discoideum, Danio rerio, Mus musculus, Arabidopsis thaliana, Pyrobaculum aerophilum str. IM2, Yaba-like disease virus, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Bacillus subtilis"
- 7625 7755 27 "Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Mu" 50

- s musculus, *Oryza sativa* (japonica cultivar-group), *Didelphis virginiana*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Aspergillus fumigatus*, *Neurospora crassa*, *Staphylococcus aureus*, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Rattus rattus*, *Danio rerio*, *Trichomonas foetus*, *Rattus norvegicus*, *Tospovirus*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 7626 7756 31 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Pan troglodytes*, *Lemur catta*, *Bacteroides thetaiotaomicron* VPI-5482, *Shewanella oneidensis* MR-1, *Arabidopsis thaliana*, *Xiphophorus hellerii guentheri*, *Xenopus laevis*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group)" 10
- 7627 7757 26 "Homo sapiens, *Rattus norvegicus*, *Deer papillomavirus*, *Corynebacterium glutamicum* ATCC 13032, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Bacillus cereus*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Danio rerio*, *Bacteriophage SPBc2*, *Raspberry ringspot virus*"
- 7628 7758 24 "*Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Danio rerio*"
- 7629 7759 24 "*Mycoplasma gallisepticum* R, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Sergentomyia fallax*, *Mus musculus*, *Sulfolobus solfataricus*, *Candidatus Blochmannia floridanus*, *Equus caballus*, *Phlebotomus alexandri*, *Phlebotomus perniciosus*, *Phlebotomus perfiliewi*, *Phlebotomus tobbi*, *Phlebotomus syriacus*, *Phlebotomus neglectus*, *Phlebotomus simici*, *Phlebotomus argentipes*, *Sergentomyia dentata*, *Sergentomyia minuta*, *Phlebotomus papatasi*, *Phlebotomus sergenti*, *Caenorhabditis elegans*, *Thermoplasma volcanium*, *Sulfolobus* sp. C57B, *Listeria monocytogenes*, *Sycorax* sp. 'Suapi', *Psychoda alternata*, *Warileya yungasi*, *Sergentomyia ghesquierei*, *Sergentomyia clydei*, *Sergentomyia magna*, *Sergentomyia schwetzi*, *Sergentomyia dubia*, *Sergentomyia buxtoni*, *Brumptomyia pintoi*, *Lutzomyia toroensis*, *Lutzomyia nunez-tovari anglesi*, *Phlebotomus gigas*, *Phlebotomus notteghemae*" 20
- 7630 7760 52 "*Thermoanaerobacter tengcongensis*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Caenorhabditis elegans*, *Helicobacter hepaticus* ATCC 51449, *Homo sapiens*, *Bacillus cereus* ATCC 14579, *Vibrio cholerae*, *Mus musculus*, *Macaca fascicularis*, *Vibrio vulnificus* CMCP6, *Olinia ventosa*, *Olinia vanguardoides*, *Olinia radiata*, *Olinia emarginata*, *Olinia capensis*, *Rhyncho calyx lawsonioides*, *Alzatea verticillata*, *Crypteronia paniculata*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Streptococcus mutans* UA159, *Haemophilus influenzae*, *Streptococcus pneumoniae* R6, *Clostridium acetobutylicum*, *Anaplasma marginale*, *Mesostigma viride*, *Human echovirus 11*, *Bos taurus*, *Streptococcus mutans*, *Coprinopsis cinerea*, *Streptococcus pneumoniae*" 30
- 7631 7761 24 "*Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Pan troglodytes*, *Arabidopsis thaliana*, *Danio rerio*" 40
- 7632 7762 45 "*Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Homo sapiens*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Listeria inn*"
- 7633 7763 23 "*Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group)"
- 7634 7764 28 "*Homo sapiens*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Fusobacteri*" 50

- um nucleatum subsp. nucleatum ATCC 25586, *Mus musculus*, *Sulfolobus tokodaii*, *Oryza sativa* (japonica cultivar-group), *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Listeria innocua*, *Ciona intestinalis*, *Nostoc* sp. PCC 7120"
- 7635 7765 23 "Homo sapiens, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Zea mays*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Streptococcus pyogenes* SSI-1, *Danio rerio*, *Papio anubis*"
- 7636 7766 27 "Mus musculus, Homo sapiens, *Caenorhabditis briggsae*, *Poecilia reticulata*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Caenorhabditis elegans*" 10
- 7637 7767 23 "Danio rerio, *Mus musculus*, Homo sapiens, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae*, *Canis familiaris*, *Streptococcus agalactiae* NEM316, *Campylobacter jejuni*, *Chlamydomonas pneumoniae* CWL029, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Chlamydomonas pneumoniae* TW-183"
- 7638 7768 27 "Caenorhabditis elegans, *Sus scrofa*, *Mus musculus*, Homo sapiens, *Arabidopsis thaliana*, *Danio rerio*"
- 7639 7769 27 "Mus musculus, Homo sapiens, *Bacillus halodurans*, Kunjin virus, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Danio rerio*, *Arabidopsis thaliana*" 20
- 7640 7770 73 "Enterococcus faecalis V583, *Bacillus halodurans*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, Homo sapiens, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* M W2, *Morone saxatilis*, *Helicobacter pylori* J99, *Staphylococcus aureus* subsp. *aureus* Mu50, *Medicago truncatula*, *Mus musculus*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Lactococcus lactis* subsp. *lactis*, *Danio rerio*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Xenopus laevis*, *Candidatus Portiera aleyrodidarum*, *Pan troglodytes*" 30
- 7641 7771 29 "Mus musculus, Homo sapiens, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Aquifex aeolicus* VF5, *Caenorhabditis elegans*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Coxiella burnetii* RSA 493, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Mycoplasma pulmonis*, *Mycoplasma pneumoniae*, *Lotus corniculatus* var. *japonicus*, *Oryza sativa* (japonica cultivar-group), *Candida albicans*, *Listeria monocytogenes*, *Anopheles gambiae*, *Populus tremula* x *Populus tremuloides*"
- 7642 7772 29 "Homo sapiens, *Bacillus anthracis* str. Ames, *Oryza sativa* (indica cultivar-group), *Bos taurus*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Rattus norvegicus*, *Canis familiaris*, *Drosophila melanogaster*, *Saccharomyces cerevisiae*" 40
- 7643 7773 83 "Haemophilus influenzae Rd KW20, *Candidatus Blochmannia floridanus*, *Oryza sativa* (japonica cultivar-group), *Haemophilus influenzae*, Homo sapiens, *Zea mays*, *Leptospira interrogans* serovar *lai* str. 56601, *Enterococcus faecalis* V583, *Dictyostelium discoideum*, *Staphylococcus epidermidis* ATCC 12228, *Plasmodium falciparum* 3D7, *Shigella boydii*, *Pasteurella multocida*, *Staphylococcus xylosum*, *Staphylococcus epidermidis*, *Rattus norvegicus*, *Mus musculus*, *Ciona intestinalis*, *Porphyra purpurea*"
- 7644 7774 31 "Sulfolobus solfataricus, Homo sapiens, *Bos taurus*, *Entamoeba histolytica*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Mus musculus*, 50

- Enterobacteria phage T4, *Lactobacillus gasseri*, *Lactococcus lactis* subsp. *lactis*, *Danio rerio*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Cryptosporidium parvum*, *Methanocaldococcus jannaschii*"
- 7645 7775 24 "Homo sapiens, *Pyrococcus furiosus* DSM 3638, *Schistosoma mansoni*, *Arabidopsis thaliana*, *Mus musculus*, *Drosophila melanogaster*, *Sus scrofa*, *Felis catus*, *Methanosarcina acetivorans* C2A, *Sulfolobus solfataricus*, *Vibrio cholerae*, *Danio rerio*, Human immunodeficiency virus 1, *Chlorella vulgaris*"
- 7646 7776 27 "Homo sapiens, *Rattus norvegicus*, *Mus musculus*, *Caenorhabditis elegans*, *Danio rerio*, *Saccharomyces cerevisiae*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Emericella nidulans*" 10
- 7647 7777 31 "Mus musculus, Homo sapiens, *Neurospora crassa*, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum*, *Medicago truncatula*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*"
- 7648 7778 72 "*Coxiella burnetii* RSA 493, *Aquifex aeolicus* VF5, *Borrelia burgdorferi* B31, Homo sapiens, *Didymium nigripes*, *Bacillus subtilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Anopheles gambiae*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Pan troglodytes*, *Bacillus megaterium*, *Staphylococcus epidermidis* ATCC 12228, *Sinorhizobium meliloti*, *Staphylococcus epidermidis*, *Oceanobacillus iheyensis* HTE831, *Bacillus halodurans*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Xenopus laevis*, *Staphylococcus aureus*" 20
- 7649 7779 24 "*Pseudomonas aeruginosa* PA01, *Pseudomonas aeruginosa*, *Medicago truncatula*, Homo sapiens, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Plasmodium falciparum* 3D7"
- 7650 7780 34 "*Plasmodium falciparum*, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, Homo sapiens, *Saccharomyces cerevisiae*, *Ajellomyces capsulatus*, *Saccharomyces pastorianus*, *Parnassia fimbriata*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Pan troglodytes*, *Drosophila melanogaster*, *Lotus corniculatus* var. *japonicus*, *Arabidopsis thaliana*, *Ureaplasma urealyticum*, *Schizosaccharomyces pombe*, *Clostridium perfringens* str. 13, *Rattus norvegicus*, *Medicago truncatula*, *Trifolium repens*, *Sus scrofa*, *Carax alma*, *Kobresia myosuroides*, *Scaptomyza pallida*, *Sorghum bicolor*, *Cicer arietinum*, *Guillardia theta*, *Tetrahymena thermophila*, *Trypanosoma brucei*" 30
- 7651 7781 28 "*Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Thermotoga maritima*, *Rattus norvegicus*, *Schizosaccharomyces pombe*"
- 7652 7782 33 "*Drosophila melanogaster*, Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Saccharomyces cerevisiae*, *Mus musculus*, *Simulium teruamanga*, *Pectobacterium carotovorum*, *Ciona intestinalis*, *Leptospira interrogans* serovar *lai* str. 56601, *Medicago truncatula*, *Streptococcus mutans* UA159, *Streptococcus mutans*, *Methanothermobacter thermautotrophicus* str. Delta H, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Schizosaccharomyces pombe*, *Arabidopsis thaliana*, *Pan troglodytes*, *Caenorhabditis elegans*, *Clostridium perfringens* str. 13" 40
- 7653 7783 32 "*Mus musculus*, Homo sapiens, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Danio rerio*, *Chlamydomonas reinhardtii* GPIC, *Enterococcus faecalis* V583, *Enterococcus faecalis*, African swine fever virus, *Oryza sativa* (*japonica* cultivar-group), *Lupinus angustifolius*, *Helicobacter hepaticus* ATCC 51449"
- 7654 7784 27 "*Sulfolobus solfataricus*, *Mus musculus*, *Agkistrodon contortrix*" 50

- oratrix laticinctus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio, Arabidopsis thaliana, Dictyostelium discoideum, Staphylococcus aureus, Phycospora variolosa, Glossanodon semifasciatus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Clostridium perfringens str. 13"
- 7655 7785 24 "Bacillus anthracis str. Ames, Mus musculus, Homo sapiens, Anas platyrhynchos, Coxiella burnetii RSA 493, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Gallus gallus" 10
- 7656 7786 27 "Mus musculus, Homo sapiens, Streptococcus mutans UA159, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Drosophila erecta, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Pisum sativum, Schizosaccharomyces pombe, Rattus norvegicus"
- 7657 7787 24 "Caenorhabditis briggsae, Mus musculus, Homo sapiens, Arabidopsis thaliana, Schizosaccharomyces pombe, Danio rerio, Oceanobacillus iheyensis HTE831, Medicago truncatula, Oryza sativa"
- 7658 7788 28 "Caenorhabditis elegans, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Drosophila melanogaster, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Campylobacter jejuni, Danio rerio, Methanothermobacter thermoautotrophicus, Oryza sativa (japonica cultivar-group), Petunia x hybrida, Vibrio parahaemolyticus, Utricularia longifolia, Frog adenovirus 1" 20
- 7659 7789 33 "Homo sapiens, Arabidopsis thaliana, Saccharomyces cerevisiae, Mus musculus, Trifolium repens, Medicago truncatula, Caenorhabditis elegans, Danio rerio, Eschscholzia californica, Sus scrofa, Helianthus annuus, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Sorghum bicolor, Lycopersicon esculentum, synthetic construct, Lotus corniculatus var. japonicus, Papaya leaf-distortion mosaic potyvirus, Mycoplasma penetrans, Neurospora crassa, Cochliobolus carbonum, Pan troglodytes, Methanosarcina mazei Goe1, Clostridium tetani E88, Papio anubis, Takifugu rubripes, Fusobacterium nucleatum subsp. nucleatum ATCC 25586" 30
- 7660 7790 21 "Homo sapiens, Caenorhabditis elegans, Sus scrofa, Branchiostoma floridae, Arabidopsis thaliana, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Turkey coronavirus"
- 7661 7791 29 "Homo sapiens, Danio rerio, Plasmodium falciparum, Plasmodium falciparum 3D7, Mus musculus, Macaca mulatta, Staphylococcus aureus, Amsacta moorei entomopoxvirus, Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Staphylococcus aureus subsp. aureus Mu50" 40
- 7662 7792 27 "Homo sapiens, Danio rerio, Drosophila melanogaster, Mus musculus, Bacillus anthracis str. A2012, Bacillus anthracis, Medicago truncatula, Caenorhabditis elegans, Rickettsia prowazekii, Arabidopsis thaliana, Zea mays, Trypanosoma brucei, Schizosaccharomyces pombe"
- 7663 7793 35 "Homo sapiens, Danio rerio, Mus musculus, Pinus taeda, Saccharomyces cerevisiae, Phyllomedusa bicolor, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Drosophila melanogaster, Arabidopsis thaliana, Thermoanaerobacter tengcongensis, Caenorhabditis elegans, Schizosaccharomyces pombe, Bacteriophage KVP20" 50

- 7664 7794 28 "Staphylococcus aureus, Enterococcus faecium, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Homo sapiens, Pyrococcus horikoshii, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Rattus norvegicus, Haemophilus ducreyi 35000HP, Danio rerio"
- 7665 7795 33 "Bacillus anthracis str. Ames, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Homo sapiens, Pinus sylvestris, Mus musculus, Drosophila melanogaster, Staphylococcus sciuri, Sulfolobus solfataricus, Citrus unshiu, Trypanosoma brucei brucei, Oryza sativa (japonica cultivar-group), Trypanosoma brucei, Caenorhabditis elegans, Arabidopsis thaliana, Pichia anomala, Mycoplasma mycoides, Botryotinia fuckeliana, Nostoc sp. PCC 7120" 10
- 7666 7796 40 "Clostridium perfringens str. 13, Nostoc sp. PCC 7120, Homo sapiens, Vibrio parahaemolyticus, Synechocystis sp. PCC 6803, Chlamydia muridarum, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Cryptosporidium parvum, Pectobacterium carotovorum"
- 7667 7797 43 "Homo sapiens, Strongyloides stercoralis, Capsicum annum, Plasmodium falciparum 3D7, Clostridium tetani E88, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Plasmodium falciparum, uncultured Bacteroidetes bacterium, Medicago truncatula, Mycoplasma penetrans, Danio rerio, Oryza sativa (japonica cultivar-group), Pichia canadensis, Dictyostelium discoideum, Ictalurus punctatus, Oryza sativa, Caenorhabditis elegans, Spathodus erythrodon, Lotus corniculatus var. japonicus, Linum usitatissimum, Schizosaccharomyces pombe, Melanoplus sanguinipes entomopoxvirus" 20
- 7668 7798 24 "Homo sapiens, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Plasmodium falciparum 3D7, Danio rerio, Borrelia valaisiana, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rattus norvegicus, Pan troglodytes, Gossypium hirsutum, Arabidopsis thaliana"
- 7669 7799 23 "Mus musculus, Homo sapiens, Oryzias latipes" 30
- 7670 7800 29 "Homo sapiens, Mesembryanthemum crystallinum, Mus musculus, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Oryza sativa (japonica cultivar-group), Danio rerio, Drosophila melanogaster, Petunia x hybrida, Malus x domestica, Thermoplasma volcanium, Lactobacillus plantarum WCFS1, Solanum tuberosum"
- 7671 7801 27 "Homo sapiens, Caenorhabditis elegans, Dictyostelium discoideum, Mycoplasma capricolum, Rattus norvegicus, Shigella flexneri 2a str. 2457T, Mus musculus, Clostridium tetani E88, Shigella flexneri 2a str. 301, Arabidopsis thaliana, Escherichia coli O157:H7 EDL933, Campylobacter jejuni subsp. jejuni NCTC 11168, Escherichia coli K12, Oryza sativa (japonica cultivar-group), Escherichia coli, Danio rerio, Listeria innocua, Xenopus laevis, Escherichia coli O157:H7" 40
- 7672 7802 23 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Chaetosphaeridium globosum, Arabidopsis thaliana, Danio rerio, Plasmodium falciparum 3D7, Capra hircus"
- 7673 7803 28 "Gonioctena pallida, Homo sapiens, Medicago truncatula, Mus musculus, Bacillus cereus ATCC 14579, Hyridella menziesi, Pyrococcus abyssi, Bacillus thuringiensis, Amsacta moorei entomopoxvirus, Vibrio parahaemolyticus, Tetraodon nigroviridis, Brookesia perarmata, Saccharomyces cerevisiae, Theromyzomys tessulatum, Mycoplasma capricolum, Arabidopsis thaliana, Oceanobacillus iheyensis" 50

- nsis HTE831, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Takifugu rubripes*"
- 7674 7804 24 "Homo sapiens, *Methanosarcina acetivorans* C2A, *Pinus taeda*, *Mycoplasma pneumoniae*, *Mus musculus*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Ancylostoma duodenale*, *Streptococcus pyogenes* SSI-1, *Caenorhabditis elegans*, *Danio rerio*"
- 7675 7805 32 "Arabidopsis thaliana, *Caenorhabditis elegans*, *Danio rerio*, *Streptococcus thermophilus*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Zea mays*, *Entodinium caudatum*, *Haemophilus ducreyi* 35000HP, *Ceratoglyphina styracicola*, *Bacillus cereus* ATCC 14579, *Medicago truncatula*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Goatpox virus*, *Sheeppox virus*, *Lumpy skin disease virus*, *Mycoplasma arginini*, *Thermoplasma acidophilum*, *Lotus corniculatus* var. japonicus, *Pyrococcus horikoshii*, *Rattus norvegicus*, *Helicobacter hepaticus* ATCC 51449" 10
- 7676 7806 28 "Caenorhabditis elegans, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*, *Danio rerio*, *Cryptosporidium parvum*, *Rattus norvegicus*, *Saccharomyces servazzii*, *Methanosarcina acetivorans* C2A, *Clostridium cellulolyticum*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Nostoc* sp. PCC 7120"
- 7677 7807 28 "Homo sapiens, *Staphylococcus epidermidis* ATCC 12228, *Lotus corniculatus* var. japonicus, *Staphylococcus epidermidis*, *Drosophila melanogaster*, *Saccharomyces cerevisiae*, *Mus musculus*, *Botryotinia fuckeliana*" 20
- 7678 7808 33 "Dictyostelium discoideum, *Mus musculus*, *Plasmodium falciparum* 3D7, *Gossypium hirsutum*, *Drosophila melanogaster*, *Danio rerio*, *Homo sapiens*, *Glycine max*, *Oryza sativa*, *Monoclonus pseudoplatani*, *Choristoneura fumiferana*, *Oryza sativa* (japonica cultivar-group), *Leishmania major*, *Pneumocystis carinii*, *Staphylococcus epidermidis*, *Arabidopsis thaliana*, *Capsicum annuum*, *Caenorhabditis elegans*, *Cyanidioschyzon merolae*, *Medicago truncatula*, *Kluyveromyces lactis*, *Plasmodium falciparum*, *Spiranthes spiralis*, *Clostridium perfringens*, *Lepidium perfoliatum*, *Tamijia flagellaris*, *Stahlianthus involucratus*, *Globba curtisii*, *Curcuma thorelii*, *Curcuma roscoeana*, *Canis familiaris*, *Bos taurus*" 30
- 7679 7809 40 "Psychotria succulenta, *Homo sapiens*, *Mus musculus*, *Clostridium acetobutylicum*, *Prochlorococcus marinus*, *Plasmodium falciparum*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Arabidopsis thaliana*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Saccharomyces douglasii*, *Staphylococcus epidermidis* ATCC 12228, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Pan troglodytes*, *Phthorimaea operculella* granulovirus, *Dictyostelium discoideum*, *Staphylococcus epidermidis*, *Neurospora crassa*, *Haematobia irritans*, *Methanocaldococcus jannaschii*, *Culex torrentium*, *Monosiga brevicollis*, *Papio anubis*, *Drosophila willistoni*, *Phyllophilopsis* sp. JOS-2001, *Nicotiana tabacum*, *Clostridium botulinum*, *Lotus corniculatus* var. japonicus, *Lasio mmata maera*, *Oryza sativa* (japonica cultivar-group), *Erynnis montanus*, *Lactobacillus plantarum* WCFS1" 40
- 7680 7810 31 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Diachasmimorpha longicaudata* entomopoxvirus, *Arabidopsis thaliana*, *Bacillus anthracis* str. A2012, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Sulfolobus tokodaii*, *Bacillus anthracis*, *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Enterococcus faecalis*, *Daphnia angulata*, *Daphnia longicephala*, *Dendroaspis polylepis*, *Staphylococcus epidermidis*, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*" 50

- 7681 7811 23 "Homo sapiens, Prochlorococcus marinus subsp. marinus str. CCMP1375, Borrelia burgdorferi B31, Mus musculus, Arabidopsis thaliana, Borrelia burgdorferi, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Silene latifolia, Rattus norvegicus, Nostoc sp. PCC 7120"
- 7682 7812 30 "Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Plasmodium falciparum, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Dictyostelium discoideum, Sorghum bicolor, Arabidopsis thaliana, Pyrococcus furiosus DSM 3638, Staphylococcus xylosum, Pan troglodytes, Waterstoniella dubium, Rickettsia conorii, Sulfolobus tokodaii, Methanocaldococcus jannaschii, Rattus norvegicus" 10
- 7683 7813 32 "Lotus corniculatus var. japonicus, Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Canis familiaris, Drosophila melanogaster, Arabidopsis thaliana, Rhipidomys nitela, Thermoanaerobacter tengcongensis, Terebralia palustris, Danio rerio, Human poliovirus 1, Caenorhabditis elegans, Rattus norvegicus"
- 7684 7814 24 "Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rana tigrina ranavirus, Amsacta moorei entomopoxvirus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Clostridium tetani E88, Mus musculus, Mycoplasma penetrans, Danio rerio"
- 7685 7815 24 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Pan troglodytes, Medicago truncatula, Plasmodium falciparum 3D7, Fusobacterium nucleatum, Botryotinia fuckeliana, Clostridium perfringens str. 13, Western X phytomyces, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Arabidopsis thaliana, Mycoplasma penetrans, Saccharomyces cerevisiae, Danio rerio" 20
- 7686 7816 28 "Homo sapiens, Synechococcus sp. WH 8102, Danio rerio, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Ciona intestinalis"
- 7687 7817 32 "Homo sapiens, Drosophila melanogaster, Mus musculus, Drosophila littoralis, Medicago truncatula, Gasterosteus aculeatus, Dictyostelium discoideum, Acidiella angustifascia, Acidiella sp. HYH-1, Acidiella pachypogon, Acidia cognata, Anomia purmunda, Chetostoma curvinerve, Paramyiolia rhino, Arabidopsis thaliana, Plasmodium falciparum 3D7, Euploea mulciber, Idea leuconoe, Entamoeba histolytica, Papio anubis, Gallus gallus, Danio rerio, Diadasia knobiana, Xenopus laevis, Oryza sativa (japonica cultivar-group), Galathea brachiosoma, Yarrowia lipolytica, Buchnera aphidicola, Galium hypocarpium, Candida glabrata, Mus musculus domesticus, Libythea celtis" 30
- 7688 7818 41 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Archaster typicus, Bacillus anthracis str. Ames, Drosophila melanogaster, Asterina gibbosa, Asterina minor, Asterias forbesii, Pisaster ochraceus, Orthasterias koehleri, Leptasterias hexactis, Caenorhabditis elegans, Danio rerio, Urasterias lincki, Plasmodium falciparum, Pan troglodytes, Dictyostelium discoideum, Staphylococcus aureus, Saccharomyces cerevisiae, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Henricia downeyae, Arisaema matsudae, Medicago truncatula, Oreaster occidentalis, Yersinia pestis KIM, Triatoma dimidiata, Sulfolobus solfataricus, Pycnopodia helianthoides, Echinaster sentus, Thermoplasma volcanium, Oryza sativa (japonica cultivar-group), Valvata mergella, Yersinia pestis C092" 40
- 7689 7819 29 "Homo sapiens, Mus musculus, Pan troglodytes, Medicago truncatula, Dictyostelium discoideum, Plasmodium falciparum 3D7, Caenorhabditis elegans, Girardia tigrina, Danio rerio, Saccharomyces cerevisiae, Williopsis satu" 50

rnus var. mrakii, Rattus norvegicus, Equus caballus, Bacillus anthracis str. Ames, Poncirus trifoliata, Drosophila melanogaster, Lemur catta, Oryzias latipes, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Pisum sativum, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Kluyveromyces marxianus, Plasmodium berghei, Brugia pahangi, Methanocaldococcus jannaschii, Tetrahymena thermophila"

7690 7820 32 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Thermoanaerobacter tengcongensis, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Mus musculus, Canis familiaris, Lactococcus lactis, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans" 10

7691 7821 27 "Mus musculus, Danio rerio, Homo sapiens, Caenorhabditis elegans, Shigella flexneri 2a str. 2457T, Escherichia coli CFT073, Shigella flexneri 2a str. 301, Arabidopsis thaliana, Mycoplasma capricolum, Escherichia coli, Brassica napus, Escherichia coli K12, Bacteriophage lambda, synthetic construct, Cloning vector pAL-F, unidentified cloning vector, Plasmid pAA3.7X, Cloning vector pD06, Cloning vector pD02, Cloning vector pD019, Cloning vector pD0184, Cloning vector pD017"

7692 7822 28 "Oryza sativa (japonica cultivar-group), Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Dictyostelium discoideum, Plasmodium falciparum 3D7, Haemophilus influenzae, Prochlorococcus marinus, Buchnera aphidicola, Arabidopsis thaliana, Vibrio parahaemolyticus, Danio rerio, Mus musculus, Haemophilus influenzae Rd KW20, Rattus norvegicus, Pasteurella multocida, Mycoplasma hominis, Vibrio cholerae, Paramecium primaurelia, Medicago truncatula, Sulfolobus tokodaii, Hyphantria cunea, Methanocaldococcus jannaschii, Gallus gallus" 20

7693 7823 28 "Caenorhabditis elegans, Tribolium castaneum, Vibrio vulnificus CMCP6, Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Borrelia burgdorferi B31, Drosophila melanogaster, Bos taurus, Danio rerio, Sulfolobus tokodaii, Gallid herpesvirus 1, Schizosaccharomyces pombe, Oncomelania hupensis" 30

7694 7824 25 "Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mus musculus, Lactococcus lactis"

7695 7825 35 "Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Arabidopsis thaliana, Lactococcus lactis, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Caenorhabditis elegans, Streptococcus agalactiae 2603V/R, Dirofilaria immitis, Prochlorococcus marinus, Streptococcus agalactiae NEM316, Mycoplasma capricolum, Asellus aquaticus, Cryptosporidium parvum, Brassica rapa, Raphanus sativus" 40

7696 7826 31 "Mus musculus, Homo sapiens, Medicago truncatula, Candidatus Carsonella ruddii, Caenorhabditis elegans, Danio rerio, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Acanthamoeba astronyxis, Acanthamoeba colomandoni, Schizosaccharomyces pombe, Ciona intestinalis, Arabidopsis thaliana"

7697 7827 33 "Caenorhabditis elegans, Medicago truncatula, Oryza sativa (japonica cultivar-group), Homo sapiens, Arabidopsis thaliana, Euglena gracilis, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Papio anubis, Staphylococcus aureus phage phi 11, Pagurus longicarpus, Pan troglodytes, Danio rerio, Trypanosoma cruzi, Rattus rattus, Anopheles gambiae, Clostridium perfringens str. 13" 50

- 7698 7828 28 "Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Homo sapiens, Mus musculus, Rattus norvegicus, Arabidopsis thaliana, Danio rerio, Pan troglodytes, Borrelia burgdorferi B31, Papio anubis, Oryza sativa, Mycoplasma pulmonis, Helianthus annuus, Guillardia theta, Schizosaccharomyces pombe, Borrelia burgdorferi"
- 7699 7829 23 "Homo sapiens, Danio rerio, Drosophila melanogaster, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Mus musculus, Hordeum vulgare subsp. vulgare, Clostridium perfringens str. 13"
- 7700 7830 29 "Mus musculus, Homo sapiens, Escherichia coli, Drosophila melanogaster, Solanum bulbocastanum, Alicyclobacillus acidocaldarius, Bacillus sp., Bacillus caldolyticus, Rattus norvegicus" 10
- 7701 7831 29 "Onixotis stricta, Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Human papillomavirus, Bos taurus, Ornithoptera goliath"
- 7702 7832 31 "Lotus corniculatus var. japonicus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans"
- 7703 7833 24 "Mus musculus, Caenorhabditis elegans, Homo sapiens, Rice dwarf virus, Lotus corniculatus var. japonicus, Danio rerio" 20
- 7704 7834 30 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Oryza sativa, Mesostigma viride, Methanoscarcina acetivorans C2A, Neurospora crassa, Caenorhabditis elegans, Saccharomyces cerevisiae, Dictyostelium discoideum, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rickettsia conorii, Trypanosoma brucei, Danio rerio, Clostridium perfringens str. 13"
- 7705 7835 28 "Homo sapiens, Mus musculus, Vibrio cholerae, Clostridium tetani E88, Schmidtea mediterranea, Mycobacterium tuberculosis CDC1551, Mycobacterium tuberculosis H37Rv, Lotus corniculatus var. japonicus, Mycobacterium bovis subsp. bovis AF2122/97, Mycobacterium tuberculosis, Dictyostelium discoideum" 30
- 7706 7836 27 "Homo sapiens, Pan troglodytes, Drosophila melanogaster, Leptospira interrogans serovar lai str. 56601, Staphylococcus epidermidis ATCC 12228, Pyrococcus furiosus DSM 3638, Staphylococcus epidermidis, Mus musculus, Liolaemus chiliensis, Liolaemus bellii, Plasmodium falciparum 3D7, Prochlorococcus marinus subsp. marinus str. CCMP1375, synthetic construct, Danio rerio, Lactococcus phage bIL67, Caenorhabditis elegans"
- 7707 7837 28 "Mus musculus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Drosophila pseudoobscura, Homo sapiens, Medicago truncatula, Arabidopsis thaliana, Nicotiana tabacum, Danio rerio, Schistosoma japonicum, Drosophila melanogaster, Caenorhabditis elegans, Tak" 40
- 7708 7838 47 "Homo sapiens, Danio rerio, Dictyostelium discoideum, Arabidopsis thaliana, Leptosphaeria maculans, Medicago truncatula, Canis familiaris, Plasmodium falciparum 3D7, Melitaea varia, Melitaea parthenoides, Melitaea dione, Melitaea britomartis, Melitaea ambigua, Mycoplasma pulmonis, Mus musculus, Drosophila melanogaster, Schistosoma japonicum, Taenia martis, Schizosaccharomyces japonicus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lymantria dispar, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group), Melitaea punica, Melitaea phoebe, Melitaea perseus, Chlosyne leanira, Chlosyne fulvia, Melitaea didymoides, Chlosyne cyneas, Timarcha interstitialis, Lotus corniculatus var. japonicus, Human immunodeficiency virus 1, Candida glabrata, Lactococcus lac 50

- tis, Takifugu rubripes, Kluyveromyces delphensis, Pan troglodytes, Borrelia burgdorferi B31, Monosiga brevicollis, Glycine max"
- 7709 7839 32 "Mus musculus, Medicago truncatula, Homo sapiens, Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Nephroselmis olivacea, Borrelia burgdorferi B31, Takifugu rubripes, Mycoplasma pulmonis, Arabidopsis thaliana, Mus musculus domesticus, Wiggle"
- 7710 7840 34 "Homo sapiens, Saxifraga florulenta, Saxifraga cochlearis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Borrelia burgdorferi B31, Oryza sativa, Tribolium castaneum, Alternaria japonica, Listeria ivanovii, Mycoplasma pulmonis, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Danio rerio, Schizosaccharomyces pombe, Borrelia burgdorferi, Synechocystis sp. PCC 6803" 10
- 7711 7841 33 "Plasmodium falciparum 3D7, Physarum polycephalum, Mus musculus, Homo sapiens, Arabidopsis thaliana, Saccharomyces cerevisiae, Lotus corniculatus var. japonicus"
- 7712 7842 58 "Homo sapiens, Mus musculus, Plasmodium falciparum, Alyogyne cravenii, Oryctolagus cuniculus, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Arabidopsis thaliana, Neospora caninum, Toxoplasma gondii, Pan troglodytes, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Saccharomyces uvarum, Rhogeessa tumida, Danio rerio, Clostridium perfringens str. 13, Torulaspora franciscae, Monosiga brevicollis, Papio anubis, Methanosarcina acetivorans C2A, Saccharomyces cerevisiae, Spirobrachia sp. HFV-2001, Campylobacter jejuni subsp. jejuni NCTC 11168, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Drosophila heteroneura, Penicillium marneffeii, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Candida glabrata, Eimeria bovis, Fusobacterium nucleatum, Eimeria tenella, Bacillus anthracis str. Ames" 20
- 7713 7843 37 "Homo sapiens, Chlamydomonas reinhardtii, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa, Campylobacter jejuni subsp. jejuni NCTC 11168, Pullosquilla thomassinii, Equus caballus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Bacillus lyncceorum, Bacillus whitei, Dictyostelium discoideum, Borrelia garinii, Thermoanaerobacter tengcongensis, Bacillus grandii grandii, Bacillus rossius x Bacillus grandii benazzii, Bacillus grandii benazzii, Bacillus rossius redtenbacheri, Bacillus rossius tripolitanus, Bacillus rossius rossius, Bacillus grandii maretimi, Caenorhabditis briggsae, Ureaplasma urealyticum, Ceratitidis capitata, Drosophila guanche, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Paramecium tetraurelia" 30
- 7714 7844 36 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Medicago truncatula, Danio rerio, Drosophila melanogaster, Cyllindrobasidium laeve, Dictyostelium discoideum, Caenorhabditis elegans, Plasmodium falciparum 3D7, Rattus norvegicus, Arabidopsis thaliana" 40
- 7715 7845 29 "Mus musculus, Homo sapiens, Schizosaccharomyces pombe, Medicago truncatula, Arabidopsis thaliana, Drosophila melanogaster, Methanosarcina mazei Goel, Oryza sativa (japonica cultivar-group), Pan troglodytes, Papio anubis, Calathus vuillefroyi, Calathus hispanicus, Calathus fracassii, Calathus pizarolli, Danio rerio"
- 7716 7846 27 "Plasmodium falciparum 3D7, Caenorhabditis elegans, Mus 50

- musculus, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Homo sapiens*, *Clostridium tetani* E88, *Sus scrofa*, *Clostridium acetobutylicum*, *Bos taurus*, *Medicago truncatula*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Euglena gracilis*, *Neisseria meningitidis* Z2491, *Euplotes octocarinatus*, *Neisseria meningitidis* MC58, *Cichorium intybus*, *Clostridium perfringens* str. 13"
- 7717 7847 32 "Oryza sativa (japonica cultivar-group), *Leptospira interrogans* serovar lai str. 56601, *Oryza sativa*, *Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*, *Pan troglodytes*, *Thermoanaerobacter tengcongensis*, *Mycoplasma penetrans*, *Danio rerio*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Gallus gallus*, *Schmidtea mediterranea*, *Plasmodium falciparum* 3D7, *Dictyostelium discoideum*, *Mycoplasma pulmonis*, *Listeria monocytogenes*, *Solanum bulbocastanum*, *Macaca fascicularis*" 10
- 7718 7848 25 "Chlamydia trachomatis, *Arabidopsis thaliana*, *Staphylococcus sciuri*, *Danio rerio*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Bluetongue virus*, *Homo sapiens*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Neurospora crassa*, *Prototheca wickerhamii*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Chlamydia muridarum*, *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis elegans*, *Oryza sativa*, *Caenorhabditis briggsae*, *Staphylococcus epidermidis*, *Oceanobacillus iheyensis* HTE831, *Dictyostelium discoideum*, *Flavobacterium johnsoniae*, *Dictyostelium giganteum*" 20
- 7719 7849 27 "Mus musculus, *Arabidopsis thaliana*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Pseudomonas phage phiKZ*, *Medicago truncatula*, *Danio rerio*"
- 7720 7850 32 "Mus musculus, *Homo sapiens*, *Ateline herpesvirus 3*, *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Papio anubis*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Zea mays*, *Actinidia henanensis*, *Actinidia deliciosa*, *Actinidia callosa* var. *strigillosa*, *Thermoanaerobacter tengcongensis*, *Manduca sexta*, *Hapalogaster dentata*, *Human rotavirus A*, *Sulfolobus* sp. NOB8H2, *Saccharomyces cerevisiae*, *Plasmodium falciparum* 3D7, *Plasmodium vivax*, *Lotus corniculatus* var. *japonicus*, *Pan troglodytes*, *Danio rerio*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Methanocaldococcus jannaschii*, *Plasmodium falciparum*, *Physcomitrella patens*" 30
- 7721 7851 33 "Danio rerio, *Oryza sativa* (japonica cultivar-group), *Equus caballus*, *Homo sapiens*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Piromyces* sp. E2, *Caenorhabditis elegans*, *Dendrophylax barrettiae*, *Plasmodium falciparum* 3D7, *Triticum urartu*, *Triticum monococcum* subsp. *monococcum*, *Triticum timopheevii* subsp. *armeniaceum*, *Arabidopsis thaliana*, *Mus musculus*, *Saccharomyces cerevisiae*, *Plasmodium falciparum*, *Mimulus guttatus*, *Medicago truncatula*, *Heliothis zea virus 1*, *Aphidius ervi*, *Oryza sativa*, *Human immunodeficiency virus 1*, *Lotus corniculatus* var. *japonicus*, *Neurospora crassa*, *Helicobacter pylori* J99, *Gallus gallus*, *Bartonella quintana*, *Macaca mulatta*, *Patella vulgata*, *Rickettsia conorii*, *Sus scrofa*, *Papio anubis*, *Pan troglodytes*, *Cochliomyia hominivorax*, *Cyprinus carpio*, *Drosophila yakuba*, *Drosophila simulans*, *Drosophila sechellia*, *Drosophila mauritiana*, *Soybean dwarf virus*, *Sorghum bicolor*" 40
- 7722 7852 39 "Mus musculus, *Dictyostelium discoideum*, *Homo sapiens*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Pan troglodytes*, *Danio rerio*, *Aegla laevis laevis*, *Plasmodium falciparum* 3D7, *Guillardia theta*, *Mycoplasma capricolum*, *Rattus* sp., *Mytilus edulis*, *Pichia pastoris*" 50

- 7723 7853 25 "Homo sapiens, Mus musculus, Plantago hookeriana, Plantago patagonica, Plantago aristata, Plantago erecta, Plantago sericea, Plantago lundborgii, Leptospira borgpetersenii, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Rattus norvegicus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Craterostigma plantagineum, Campylobacter jejuni subsp. jejuni NCTC 11168, Adoxophyes orana granulovirus"
- 7724 7854 28 "Oryza sativa (japonica cultivar-group), Homo sapiens, Oryza sativa, Danio rerio, Caenorhabditis elegans, Rattus norvegicus, Mus musculus, Drosophila melanogaster, Medicago truncatula"
- 7725 7855 21 "Mus musculus, Plasmodium falciparum 3D7, Homo sapiens, Oryza sativa (japonica cultivar-group)" 10
- 7726 7856 27 "Homo sapiens, Mus musculus, Schizosaccharomyces pombe, Drosophila melanogaster, Plasmodium vivax, Caenorhabditis elegans, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, European bat lyssavirus 1, Rattus norvegicus, Staphylococcus aureus subsp. aureus Mu50"
- 7727 7857 28 "Homo sapiens, Marchantia polymorpha, Dictyostelium discoideum, Clostridium tetani E88, Lactococcus lactis subsp. lactis, Danio rerio, Mus musculus, Drosophila melanogaster, Shewanella oneidensis MR-1, Aspergillus niger, Diadasia pereyreae, Vibrio parahaemolyticus, Medicago truncatula, Haemophilus ducreyi 35000HP, Cryptosporidium parvum" 20
- 7728 7858 36 "Mus musculus, Dictyostelium discoideum, Homo sapiens, Danio rerio, Clostridium botulinum, Bacteriophage c-st, Clostridium botulinum phage 1C, Clostridium botulinum C phage, Cryptosporidium parvum, Ixodes persulcatus, Bacteriophage d-16 phi, Clostridium botulinum D phage, Lemur catta, Drosophila melanogaster, Populus tremuloides, Arabidopsis thaliana, Clostridium acetobutylicum, Cowpox virus, Lotus corniculatus var. japonicus, Listeria innocua, Macaca fascicularis"
- 7729 7859 27 "Mycoplasma hyorhinis, Homo sapiens, Mus musculus, Stylosanthes hamata, Drosophila melanogaster, Papio anubis, Plasmodium falciparum 3D7, Yersinia pestis KIM, Arabidopsis thaliana, Caenorhabditis briggsae, Rickettsia conorii, Clostridium acetobutylicum, Malvastrum yellow vein virus-[Y47], Rickettsia prowazekii, Diprion pini, Caenorhabditis elegans, Yersinia pestis C092, Danio rerio, Methanocaldococcus jannaschii, Apis mellifera ligustica, Nicotiana tabacum, Apis mellifera" 30
- 7730 7860 23 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Amacta moorei entomopoxvirus, Oryctolagus cuniculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Girardia tigrina, Oryza sativa (japonica cultivar-group)" 40
- 7731 7861 26 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Streptococcus pneumoniae, Human papillomavirus"
- 7732 7862 34 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Mus musculus, Medicago truncatula, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Tetrahymena thermophila, Oryza sativa, Enterococcus faecalis, Staphylococcus aureus subsp. aureus MW2, Scutellastra laticostata, Drosophila hydei"
- 7733 7863 28 "Caenorhabditis elegans, Danio rerio, Homo sapiens, Didelphis virginiana, Gallus gallus, Mycoplasma gallisepticum R, Dictyostelium disco" 50

ideum, *Clostridium tetani* E88, *Sus scrofa*, *Bangia fuscopurpurea*, *Mesostigma viride*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Varroa destructor*, *Medicago truncatula*, *Cryptocephalus parvulus*, *Plasmodium falciparum* 3D7, *Cyprinus carpio*, *Lotus corniculatus* var. japonicus, *Pan troglodytes*, *Staphylococcus aureus* subsp. aureus N315, *Sulfolobus tokodaii*, *Staphylococcus aureus* subsp. aureus MW2, *Ciona intestinalis*, *Nicotiana glauca*, *Methanocaldococcus jannaschii*, *Staphylococcus aureus* subsp. aureus Mu50"

7734 7864 27 "Oryza sativa (japonica cultivar-group), *Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Heterophrynus* sp. 'Het', *Campylobacter coli*, *Candidatus Blochmannia floridanus*, *Thraustochytrium aureum*, *Haemophilus ducreyi* 35000HP, *Helicobacter pylori* 26695, *Bacillus halodurans*" 10

7735 7865 23 "Mus musculus, *Clostridium perfringens* str. 13, *Macaca mulatta*, *Methanosarcina mazei* Goe1, *Homo sapiens*, *Papio anubis*, *Caenorhabditis elegans*, *Danio rerio*, *Porcine cytomegalovirus*"

7736 7866 31 "Mus musculus, *Homo sapiens*, *Borrelia burgdorferi* B31, *Escherichia coli* CFT073, *Borrelia burgdorferi*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Loofah witches'*-broom phytoplasma, *Oncorhynchus mykiss*, *Borrelia garinii*, *Borrelia afzelii*, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Danio rerio*, *Felis catus*" 20

7737 7867 28 "Rattus norvegicus, *Homo sapiens*, *Staphylococcus epidermidis* ATCC 12228, *Mus musculus*, *Pan troglodytes*"

7738 7868 26 "Homo sapiens, *Dictyostelium discoideum*, *Mus musculus*, *Pan troglodytes*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, *Candidatus Blochmannia floridanus*"

7739 7869 48 "Oryza sativa (japonica cultivar-group), *Homo sapiens*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Lotus corniculatus* var. japonicus, *Oncorhynchus mykiss*, *Drosophila ficusphila*, *Drosophila melanogaster*, *Arisaema dracontium*, *Branchiostoma floridae*, "

7740 7870 38 "Mus musculus, *Lycopersicon esculentum*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Medicago truncatula*, *Danio rerio*, *Caenorhabditis elegans*, *Gasterosteus aculeatus*, *Drosophila melanogaster*, *Mayetiola destructor*, *Euconnus* sp., *Gossypium hirsutum*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group), *Dictyostelium purpureum*, *Pan troglodytes*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Monosiga brevicollis*, *Papio anubis*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Felis catus*, *Mycoplasma bovis*, *Clostridium acetobutylicum*" 30

7741 7871 29 "Mus musculus, *Homo sapiens*, *Oceanobacillus iheyensis* HT E831, *Arabidopsis thaliana*, *Pinus radiata*, *Danio rerio*" 40

7742 7872 24 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Enterococcus faecalis* V583, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Hordeum vulgare* subsp. vulgare, *Saccharomyces cerevisiae*, *Encephalitozoon cuniculi*, *Danio rerio*, *Enterococcus faecalis*, *Clostridium perfringens* str. 13"

7743 7873 25 "Oryza sativa, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Listeria innocua*, *Danio rerio*, *Homo sapiens*, *Mus musculus*, *Drosophila melanogaster*"

7744 7874 31 "Drosophila melanogaster, *Homo sapiens*, *Sulfolobus tokodaii*, *Danio rerio*, *Dictyostelium discoideum*, *Arthrobacter nicotinovorans*"

7745 7875 24 "Drosophila melanogaster, *Homo sapiens*, *Mannheimia haemolytica*" 50

- lytica, *Mus musculus*, *Dictyostelium discoideum*, *Danio rerio*, Feline foamy virus"
 7746 7876 23 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Xenopus laevis*, *Oryza sativa* (japonica cultivar-group), *Listeria innocua*, *Glycyrrhiza echinata*"
- 7747 7877 28 "Homo sapiens, *Rickettsia conorii*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Caenorhabditis elegans*, *Lotus corniculatus* var. japonicus, *Danio rerio*"
- 7748 7878 27 "Homo sapiens, *Amoeba proteus*, *Pan troglodytes*, *Clostridium tetani* E88, *Mus musculus*, *Danio rerio*, *Methanocaldococcus jannaschii*"
- 7749 7879 25 "Homo sapiens, *Chondrus crispus*, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Rattus norvegicus*, *Caenorhabditis elegans*, *Pan troglodytes*, synthetic construct" 10
- 7750 7880 27 "Homo sapiens, *Mus musculus*, *Bacillus anthracis* str. Ames, *Guillardia theta*, *Zea mays*, *Oryza sativa* (japonica cultivar-group), *Takifugu rubripes*, *Lactobacillus fermentum*, *Arabidopsis thaliana*"
- 7751 7881 24 "*Mus musculus*, *Homo sapiens*, *Danio rerio*, *Chlamydia muridarum*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group)"
- 7752 7882 28 "*Staphylococcus epidermidis* ATCC 12228, *Oncorhynchus mykiss*, *Homo sapiens*, *Mus musculus*, *Staphylococcus epidermidis*, *Lotus corniculatus* var. japonicus, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Clostridium acetobutylicum*, *Gallus gallus*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Bos taurus*, *Fragaria vesca*, *Brugia malayi*, *Rattus norvegicus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Linum usitatissimum*, *Plasmodium falciparum* 3D7, *Taeniatherum caput-medusae*, *Sus scrofa*, Cauliflower mosaic virus, *Candidatus Blochmannia floridanus*, *Polybioides tabidus*, *Medicago truncatula*, *Saccharomyces cerevisiae*, Fowl adenovirus 9, *Cryptococcus neoformans* var. *neoformans*, *Thalassiosira nordenskiöldii*" 20
- 7753 7883 27 "*Dictyostelium discoideum*, *Drosophila melanogaster*, *Mus musculus*, *Plasmodium falciparum*, *Danio rerio*, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Mesobuthus martensii*, *Oryza sativa* (japonica cultivar-group), *Oryza sativa*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Clostridium perfringens* str. 13" 30
- 7754 7884 25 "Homo sapiens, *Pan troglodytes*, *Clostridium tetani* E88, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Mus musculus*, *Leptospira interrogans* serovar lai str. 56601, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Clostridium perfringens* str. 13"
- 7755 7885 23 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Bacteroides thetaiotaomicron* VPI-5482, *Mytilus trossulus*, *Caenorhabditis elegans*, *Danio rerio*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99"
- 7756 7886 24 "Human immunodeficiency virus 1, *Streptococcus gordonii*, *Homo sapiens*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Lactococcus lactis* subsp. *lactis*, *Danio rerio*" 40
- 7757 7887 39 "*Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Methanocaldococcus jannaschii*, *Clostridium tetani*, *Dictyostelium discoideum*, *Mus musculus*, *Listeria innocua*, *Arabidopsis thaliana*, *Vibrio parahaemolyticus*, *Oryza sativa* (japonica cultivar-group), *Nostoc* sp. PCC 7120, *Bacillus cereus* ATCC 14579, *Caenorhabditis elegans*, *Pan troglodytes*, *Aquifex aeolicus* VF5, *Streptococcus agalactiae* 2603V/R, *Papio anubis*, *Pasteurella multocida*, *Triatoma virus*, *Mycoplasma penetrans*, *Murid herpesvirus 4*, *Danio rerio*"
- 7758 7888 26 "Homo sapiens, Human immunodeficiency virus 1, *Debaryomyces*" 50

- ces occidentalis, Plasmodium chabaudi chabaudi, Drosophila melanogaster, Plasmodium falciparum 3D7, Deschampsia antarctica, Sulfolobus solfataricus"
- 7759 7889 27 "Homo sapiens, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Danio rerio, Aesculus turbinata, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Oryzias latipes"
- 7760 7890 23 "Arabidopsis thaliana, Pan troglodytes, Homo sapiens, Mus musculus, Mycoplasma pulmonis"
- 7761 7891 24 "Homo sapiens, Pan troglodytes, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Lymphoproliferative disease virus, Oceanobacillus iheyensis HTE831, Plasmodium falciparum, Danio rerio" 10
- 7762 7892 25 "Homo sapiens, Salmonella enterica subsp. enterica serovar Typhi Ty2, Drosophila melanogaster, Lotus corniculatus var. japonicus, Salmonella enterica subsp. enterica serovar Typhi, Anopheles gambiae, Dictyostelium discoideum, Mus musculus, Streptococcus pneumoniae R6, Danio rerio, Arabidopsis thaliana"
- 7763 7893 27 "Homo sapiens, Nostoc sp. PCC 7120, Mus musculus, Bacillus cereus ATCC 14579, Drosophila melanogaster, Escherichia coli CFT073, Plasmodium falciparum 3D7, Streptococcus pyogenes MGAS8232, Escherichia coli 0157:H7 EDL 933, Fagus sylvatica, Escherichia coli K12, Oryza sativa (japonica cultivar-group), Danio rerio, Phaseolus vulgaris, Escherichia coli, Escherichia coli 0157:H7" 20
- 7764 7894 39 "Plasmodium falciparum 3D7, Mus musculus, Homo sapiens, Cunninghamella elegans, Danio rerio, Caenorhabditis elegans, Dictyostelium discoideum, Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Xenopus laevis, Acidithiobacillus thiooxidans, Oryza sativa (japonica cultivar-group), Trypanosoma brucei, Lotus corniculatus var. japonicus"
- 7765 7895 24 "Mus musculus, Homo sapiens, Homarus americanus, Pyrococcus abyssi, Danio rerio"
- 7766 7896 31 "Dictyostelium discoideum, Arabidopsis thaliana, Danio rerio, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Clostridium tetani E88, Plasmodium falciparum 3D7, Mus musculus, Caenorhabditis elegans, Clostridium perfringens str. 13, Clostridium perfringens, Archaeoglobus fulgidus DSM 4304, Staphylococcus epidermidis ATCC 12228, Fusobacterium nucleatum, Staphylococcus epidermidis, Medicago truncatula, Borrelia burgdorferi B31, Drosophila melanogaster, Borrelia burgdorferi, Methanosarcina acetivorans C2A, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis briggsae, Nicotiana glauca, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mycoplasma penetrans, Takifugu rubripes, Plasmodium gallinaceum, Gorilla gorilla, Pan troglodytes, Monascus purpureus, Staphylococcus aureus subsp. aureus Mu50" 40
- 7767 7897 29 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Streptococcus pyogenes MGAS315, Caenorhabditis elegans, Danio rerio, Streptococcus pyogenes SSI-1, Bombyx mori, Enterococcus faecalis V583, Methanosarcina acetivorans C2A, Naegleria gruberi, Lactococcus lactis subsp. lactis, Lactococcus lactis, Streptococcus thermophilus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Neurospora crassa, Ciona intestinalis, Botryotinia fuckeliana"
- 7768 7898 27 "Mus musculus, Dictyostelium discoideum, Homo sapiens, Campylobacter coli, Danio rerio, Medicago truncatula, Macaca mulatta, Bufo dombensis, Bufo damaranus, Bufo gariepensis, Papio anubis, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi B31, Lymphocystis disease virus 1, Gallus gall 50

- us, *Pan troglodytes*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Mycoplasma capricolum*, *Lotus corniculatus* var. *japonicus*, *Nilaparvata lugens reovirus*, *Helicobacter pylori* 26695, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Columba risoria*, *Helicobacter hepaticus* ATCC 51449"
- 7769 7899 24 "Homo sapiens, *Arabidopsis thaliana*, Human immunodeficiency virus 1, *Mus musculus*, *Schizophyllum commune*, *Caenorhabditis elegans*, *Chlorella lacinia*, *Papio anubis*"
- 7770 7900 33 "Homo sapiens, *Papio anubis*, *Oryza sativa*, *Pan troglodytes*, *Macaca mulatta*, *Danio rerio*, *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Sus scrofa*, *Schmidtea mediterranea*, *Plasmodium falciparum* 3D7, *Sitophilus zeamais*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Medicago truncatula*" 10
- 7771 7901 24 "Homo sapiens, *Thunnus thynnus*, *Danio rerio*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis elegans*, *Mus musculus*"
- 7772 7902 27 "Homo sapiens, *Mus musculus*, *Bacillus* sp. CY22, *Bacillus subtilis*, *Pyrococcus horikoshii*, *Marchantia polymorpha*"
- 7773 7903 32 "Homo sapiens, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Candidatus Carsonella ruddii*, *Caenorhabditis elegans*, *Oryza sativa*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Arabidopsis thaliana*, *Danio rerio*, *Anopheles gambiae*, *Opilio parietinus*, Human immunodeficiency virus 1, *Mus musculus*, *Aegla manni*, *Aegla denticulata lacustris*, *Aegla abtao*, *Aegla denticulata denticulata*, *Aegla alacalufi*, *Aegla hueicollensis*, *Aegla riolimayana*, *Aegla cholchol*, *Aegla* sp. KAC-A66, *Aegla* sp. KAC-A63, *Aegla bahamondei*, *Plasmodium falciparum* 3D7, *Prostoma* sp., *Rickettsia conorii*, *Escherichia coli* 0157:H7 EDL933, *Mycoplasma pulmonis*, *Bactrocera dorsalis*, *Macaca fascicularis*, *Escherichia coli* 0157:H7" 20
- 7774 7904 28 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, Sheep pox virus, Lumpy skin disease virus, *Sulfolobus solfataricus*, *Enterococcus faecalis*, *Oryza sativa* (japonica cultivar-group), *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Chlamydomonas pneumoniae* CWL029, *Caenorhabditis elegans*, *Lotus corniculatus* var. *japonicus*, *Chlamydomonas pneumoniae* AR39, *Chlamydomonas pneumoniae* J138, *Plasmodium falciparum*, *Lactococcus lactis*, *Danio rerio*, *Chlamydomonas pneumoniae* TW-183, *Methanocaldococcus jannaschii*, *Ilyoplax dentata*" 30
- 7775 7905 27 "Bacillus anthracis str. Ames, Homo sapiens, *Mus musculus*, *Pyrococcus furiosus* DSM 3638, *Saccharomyces cerevisiae*, *Danio rerio*, *Arabidopsis thaliana*"
- 7776 7906 39 "Fenneropenaeus merguensis, *Heterodoxus macropus*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, Homo sapiens, *Rattus norvegicus*, *Plasmodium falciparum* 3D7, *Clostridium perfringens* str. 13, *Pan troglodytes*, *Dictyostelium discoideum*, *Dromica* sp. APV-2001, "
- 7777 7907 27 "Homo sapiens, *Sus scrofa*, *Finergoldia magna*, *Spinacia oleracea*, *Mus musculus*, *Drosophila melanogaster*, *Pyrococcus furiosus* DSM 3638, *Pyrococcus furiosus*, *Onchocerca volvulus*, *Dugesia japonica*, *Nostoc* sp. PCC 7120"
- 7778 7908 27 "Medicago truncatula, Homo sapiens, *Ureaplasma urealyticum*, *Clarias gariepinus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Mus musculus*, *Drosophila melanogaster*, *Guillardia theta*, *Thryonomys swinderianus*, *Lotus corniculatus* var. *japonicus*, *Sulfolobus tokodaii*, *Ciona intestinalis*, *Danio rerio*"
- 7779 7909 24 "Homo sapiens, *Danio rerio*, uncultured bacterium, *Mus mu* 50

sculus, *Oryza sativa* (japonica cultivar-group)"

7780 7910 28 "Arabidopsis thaliana, Homo sapiens, Drosophila melanogaster, Mus musculus, Rattus norvegicus, Sorghum bicolor, Danio rerio"

7781 7911 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Clostridium butyricum, Mus musculus, Staphylococcus aureus, Danio rerio, Western X phytoplasma, Drosophila melanogaster, Plasmodium falciparum 3D7, Neisseria meningitidis Z2491, Neisseria meningitidis, Caenorhabditis elegans, Neisseria meningitidis MC58, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Buchnera aphidicola str. Bp (Baizongia pistaciae), Pan troglodytes, Papio anubis, Arabidopsis thaliana, Rickettsia conorii, Candidatus Blochmannia floridanus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Gallus gallus, Acidianus ambivalens, Schizosaccharomyces pombe, Lycopersicon esculentum, Buchnera aphidicola"

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7782 7912 25 "Homo sapiens, Mus musculus, Danio rerio, Trypanosoma brucei, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Ciona intestinalis, Medicago truncatula, Leishmania major"

7783 7913 44 "Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Buchnera aphidicola str. Sg (Schizaphis graminum), Campylobacter jejuni subsp. jejuni NCTC 11168, Streptococcus pyogenes SSI-1, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Schizosaccharomyces pombe, Archaeoglobus fulgidus DSM 4304, Homo sapiens, Streptococcus mutans UA159, Candidatus Blochmannia floridanus, Mus musculus, Coxiella burnetii RSA 493, Salmonella enterica subsp. enterica serovar Typhi Ty2, Drosophila subquinaria, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Caenorhabditis briggsae, Haemophilus ducreyi 35000HP, Salmonella enterica subsp. enterica serovar Typhi, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Helicobacter hepaticus ATCC 51449"

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7784 7914 23 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, uncultured bacterium, Homo sapiens, Potato virus A, Danio rerio, Lactococcus lactis subsp. lactis, Mus musculus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group)"

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7785 7915 33 "Caenorhabditis elegans, Sulfolobus tokodaii, Methanocaldococcus jannaschii, Zea mays, Yersinia pestis KIM, Clostridium acetobutylicum, Arabidopsis thaliana, Yersinia pestis C092, Mus musculus, Spodoptera exigua nucleopolyhedrovirus, Homo sapiens, Buchnera aphidicola str. Sg (Schizaphis graminum), Pyrobaculum aerophilum str. IM2, Streptococcus pyogenes M1 GAS, Oryza sativa (japonica cultivar-group), Lactobacillus plantarum WCFS1, Pyrococcus horikoshii, Danio rerio"

7786 7916 29 "Prochlorococcus marinus subsp. marinus str. CCMP1375, Homo sapiens, Clostridium tetani E88, Mus musculus, Caenorhabditis elegans, Clostridium perfringens str. 13, Danio rerio, Drosophila melanogaster, Buchnera aphidicola, Listeria monocytogenes, Listeria innocua, Methanocaldococcus jannaschii, Rattus norvegicus, Locustella pryeri"

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7787 7917 56 "Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Mus musculus, Rattus norvegicus, Borrelia burgdorferi B31, Homo sapiens, Danio rerio, Bacillus subtilis subsp. subtilis str. 168"

7788 7918 37 "Homo sapiens, Mus musculus, Haemophilus ducreyi 35000HP, Treponema pallidum, Bacillus cereus, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Methanopyrus kandleri AV19, Bos taurus, Sus scrofa, Clostridium acetobutylicum, Escherichia coli, Helicobacter hepaticus AT

50

CC 51449, *Arabidopsis thaliana*"

- 7789 7919 44 "Haemophilus ducreyi 35000HP, *Nitrosomonas europaea* ATCC 19718, *Rattus norvegicus*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Nostoc* sp. PCC 7120, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Schizosaccharomyces pombe*, *Bacillus cereus*, *Homo sapiens*, *Escherichia coli* CFT073, *Mus musculus*, *Yersinia pestis* KIM, *Pasteurella multocida*, *Hevea brasiliensis*, *Yersinia pestis* C092, *Haemophilus influenzae* Rd KW20, *Oryza sativa* (japonica cultivar-group), *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Talpa europaea*, *Lactobacillus delbrueckii* subsp. *lactis*, *Oryza sativa*, *Arabidopsis thaliana*"
- 7790 7920 53 "*Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Haemophilus ducreyi* 35000HP, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Listeria innocua*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Danio rerio*, *Homo sapiens*, *Streptococcus agalactiae* 2603V/R, *Prochlorococcus marinus*, *Streptococcus agalactiae* NEM316, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Schizosaccharomyces pombe*, *Candidatus Portiera aleyrodidarum*, *Nostoc* sp. PCC 7120, *Coxiella burnetii* RSA 493, *Mus musculus*, *Alternaria brassicae*, *Campylobacter jejuni*"
- 7791 7921 32 "*Homo sapiens*, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Bacillus anthracis* str. Ames, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Sus scrofa*, *Medicago truncatula*"
- 7792 7922 32 "*Homo sapiens*, *Bacillus cereus* ATCC 14579, *Arabidopsis thaliana*, *Mus musculus*, *Mycoplasma penetrans*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Aquifex aeolicus* VF5, *Shewanella oneidensis* MR-1, *Schmidtea mediterranea*, *Streptococcus agalactiae* 2603V/R, *Pasteurella multocida*, *Mycoplasma agalactiae*, *Streptococcus agalactiae* NEM316, *Caenorhabditis elegans*, *Cyanidioschyzon merolae*, *Haemophilus influenzae* Rd KW20, *Nostoc* sp. PCC 7120, *Clostridium perfringens* str. 13"
- 7793 7923 27 "*Plasmodium falciparum* 3D7, *Homo sapiens*, *Medicago truncatula*, *Mus musculus*, *Thamnophis marcianus*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Canis familiaris*, *Arabidopsis thaliana*, *Human respiratory syncytial virus*"
- 7794 7924 28 "*Homo sapiens*, *Danio rerio*, *Papio anubis*, *Arabidopsis thaliana*, *Mus musculus*, *Caldicellulosiruptor saccharolyticus*, *Caenorhabditis elegans*, *Smerinthus cerisyi*, *Smerinthus jamaicensis*, *Rattus norvegicus*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Monetaria caputdraconis*"
- 7795 7925 27 "*Homo sapiens*, *Clostridium tetani* E88, *Felis catus*, *Mus musculus*, *Canis familiaris*, *Caenorhabditis elegans*, *Danio rerio*, *Phaseolus vulgaris*"
- 7796 7926 35 "*Homo sapiens*, *Dictyostelium discoideum*, *Mus musculus*, *Caenorhabditis elegans*, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Papio hamadryas*, *Staphylococcus epidermidis* ATCC 12228, *Danio rerio*, *Oceanobacillus ihayensis* HTE831, *Rattus norvegicus*, *Leptospira interrogans* serovar *lai* str. 56601, *Drosophila melanogaster*, *Clostridium tetani* E88, *Sus scrofa*, *Takifugu rubripes*, *Caenorhabditis briggsae*, *Clostridium acetobutylicum*, *Litopenaeus vannamei*, *Strongyloides stercoralis*, *Arabidopsis thaliana*, *Styela plicata*, *Paracentrotus lividus*, *Plasmodium gallinaceum*, *Glycine max*, *Plasmodium falciparum*, *Schizosaccharomyces pombe*, *Carabus maacki*, *Carabus porrecticollis*, *Carabus porrecticollis* porre

cticollis, *Carabus porrecticollis kansaiensis*"

7797 7927 27 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Chlamydia muridarum, Thermoanaerobacter tengcongensis, Danio rerio, Arabidopsis thaliana, Chlamydia trachomatis, Oryzias latipes, Macaca fascicularis, Bacillus subtilis, Lactobacillus casei bacteriophage A2, Oryza sativa (japonica cultivar-group)"

7798 7928 29 "Caenorhabditis elegans, Homo sapiens, Arabidopsis thaliana, Tristicha trifaria, Hypsilurus spinipes, Drosophila melanogaster, Mus musculus, Physignathus lesueurii, Oryza sativa (japonica cultivar-group), Cowpox virus, Dictyostelium discoideum, Pseudomonas syringae pv. tomato str. DC3000, Lemur catta, Ectromelia virus, Lotus corniculatus var. japonicus, Danio rerio, Mus musculus domesticus, Macaca fascicularis, Botryotinia fuckeliana"

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7799 7929 37 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Pan troglodytes, Plasmodium falciparum 3D7, Rattus norvegicus, Ochlerotatus atropalpus, Danio rerio, Rickettsia prowazekii, Caenorhabditis elegans, Arabidopsis thaliana, Xiphinema index"

7800 7930 24 "Homo sapiens, Anolis carolinensis, Mus musculus, Caenorhabditis elegans, Lotus corniculatus var. japonicus"

7801 7931 27 "Homo sapiens, Carcinus maenas, Zea mays, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Candida albicans, Takifugu rubripes"

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7802 7932 23 "Drosophila melanogaster, Homo sapiens, Mus musculus, Danio rerio, Pisum sativum, Mycoplasma capricolum, Atropa belladonna, Solanum tuberosum, Nicotiana tabacum, Lotus corniculatus var. japonicus, Rattus norvegicus, Chlorella vulgaris"

7803 7933 32 "Mus musculus, Homo sapiens, Danio rerio, Pyrococcus furiosus DSM 3638, Lactococcus lactis subsp. lactis, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mycoplasma pneumoniae, Lotus corniculatus var. japonicus, Rattus norvegicus"

7804 7934 27 "Mus musculus, Bacillus cereus ATCC 14579, Borrelia burgdorferi B31, Homo sapiens, Oceanobacillus ihayensis HTE831, Borrelia burgdorferi, Yaba-like disease virus, Pan troglodytes, Sulfolobus tokodaii, Saccharomyces cerevisiae"

30

7805 7935 23 "Mus musculus, Spodoptera litura nucleopolyhedrovirus, Caenorhabditis elegans, Homo sapiens, Drosophila melanogaster, Sorbus americana, Canis familiaris, Mycoplasma pulmonis, Arabidopsis thaliana, Pimelia echidna, Danio rerio, Helicobacter hepaticus ATCC 51449, Clostridium perfringens, Clostridium perfringens str. 13"

7806 7936 26 "Plasmodium falciparum 3D7, Clostridium acetobutylicum, Homo sapiens, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Cotoneaster apiculata, Helicobacter pylori J99, Rattus norvegicus"

40

7807 7937 27 "Carabus arrowianus komiyai, Homo sapiens, Medicago truncatula, Mus musculus, Flaveria pringlei, Lotus corniculatus var. japonicus, synthetic construct, Brevibacterium flavum"

7808 7938 37 "Acholeplasma laidlawii, Mycobacterium leprae, Mycobacterium tuberculosis CDC1551, Mycobacterium avium subsp. paratuberculosis, Mycobacterium tuberculosis H37Rv, Zymomonas mobilis, Mycobacterium bovis subsp. bovis AF 2122/97, Corynebacterium glutamicum ATCC 1"

7809 7939 41 "Danio rerio, Leptospira interrogans serovar lai str. 56"

50

- 601, *Borrelia burgdorferi* B31, *Aquifex aeolicus* VF5, uncultured marine alpha proteobacterium, *Homo sapiens*, *Amycolatopsis methanolica*, *Caenorhabditis elegans*, *Lipomyces kononenkoae*, *Mus musculus*, *Arabidopsis thaliana* "
- 7810 7940 35 "Homo sapiens, *Mus musculus*, *Bacillus anthracis* str. Ames, *Dictyostelium discoideum*, *Danio rerio*, *Drosophila mauritiana*, *Drosophila sechellia*, *Drosophila simulans*, *Plasmodium falciparum* 3D7, *Dolichopus* sp. HYH-2002, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Drosophila melanogaster*, *Xenopus laevis*, *Urostyla grandis*, *Mycoplasma fermentans*, *Arabidopsis thaliana*, *Spinacia oleracea*, *Caenorhabditis elegans*, *Clostridium bifermentans*, *Rattus norvegicus*, *Schizosaccharomyces pombe*, *Escherichia coli*, *Clostridium perfringens* str. 13" 10
- 7811 7941 27 "Campylobacter jejuni subsp. jejuni NCTC 11168, *Homo sapiens*, *Mus musculus*, *Pseudomonas syringae* pv. tomato str. DC3000, *Clostridium acetobutylicum*, *Plasmodium falciparum* 3D7, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Danio rerio*, *Cebus capucinus*, *Caenorhabditis elegans*, *Medicago truncatula* "
- 7812 7942 31 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Reclinomonas americana*, *Pneumocystis carinii*, *Caenorhabditis elegans*, *Miscanthus sacchariflorus* f. *purpurascens*, *Miscanthus sacchariflorus*, *Botryotinia fuckeliana*" 20
- 7813 7943 24 "Borrelia burgdorferi B31, *Medicago truncatula*, *Homo sapiens*, *Mus musculus*, *Thermoplasma volcanium*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Borrelia burgdorferi*, *Staphylococcus aureus* subsp. aureus Mu50, *Archaeoglobus fulgidus* DSM 4304, *Drosophila melanogaster*, *Papio anubis*, *Prochlorococcus marinus*, *Plasmodium falciparum* 3D7, *Listeria monocytogenes*, *Methanocaldococcus jannaschii*"
- 7814 7944 20 "Arabidopsis thaliana, *Homo sapiens*, *Cryptomeigenia* n. sp. JOS-2001, *Pasteurella multocida*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola*, *Schizosaccharomyces pombe*, *Mus musculus*"
- 7815 7945 28 "Lotus corniculatus var. japonicus, *Homo sapiens*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Mycoplasma gallisepticum* R, *Mus musculus*, *Oryzias latipes*, *Arabidopsis thaliana*, *Danio rerio*, *Oceanobacillus ihayensis* HTE831, *Oryza sativa* (japonica cultivar-group), *Medicago truncatula*, *Polytrichum commune*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Clostridium tetani*, *Plasmodium falciparum* 3D7, *Polytrichadelphus magellanicus*, *Oligotrichum parallelum*, *Meiotrichum lyallii*, *Itatiella ulei*, *Dendroligotrichum dendroides*, *Clostridium acetobutylicum*, *Mycoplasma pulmonis*, *Haemophilus influenzae*, *Caenorhabditis elegans*, *Eumeces egregius*, *Vibrio parahaemolyticus*, *Cicer arietinum*, *Haemophilus influenzae* Rd KW20, *Simulium mie*, *Nostoc* sp. PCC 7120" 30
- 7816 7946 28 "Mus musculus, *Drosophila melanogaster*, *Pan troglodytes*, *Homo sapiens*, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*" 40
- 7817 7947 24 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Ciona intestinalis*, *Myrmica rugulosa*, *Schistosoma japonicum*, *Hypochaeris uniflora*, *Kerodon rupestris*, *Oryza sativa* (japonica cultivar-group), *Tigriopus japonicus*, *Danio rerio*"
- 7818 7948 28 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Craterellus tubaeformis*, *Candidatus Carsonella ruddii*, *Arabidopsis thaliana*, *Amsacta moorei* entomopoxvirus, *Mycoplasma genitalium*" 50

- 7819 7949 32 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Papio anubis, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Danio rerio, Vicia sativa, Lotus corniculatus var. japonicus, Arabidopsis thaliana"
- 7820 7950 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Guillardia theta, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Caenorhabditis elegans"
- 7821 7951 32 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Plasmodium falciparum 3D7, Danio rerio, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Clostridium perfringens str. 13" 10
- 7822 7952 28 "Helicobacter hepaticus ATCC 51449, Homo sapiens, Danio rerio, Dictyostelium discoideum, Rattus norvegicus, Plasmodium falciparum 3D7, Mus musculus, Escherichia coli"
- 7823 7953 32 "Clostridium acetobutylicum, Danio rerio, Enterobacteriophage RB49, Homo sapiens, Dictyostelium discoideum, Caenorhabditis elegans, Mus musculus, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Clostridium acetobutylicum, Campylobacter jejuni subsp. jejuni NCTC 11168, Saccharomyces cerevisiae, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Medicago truncatula, Entamoeba dispar, Pan troglodytes, Drosophila melanogaster, Borrelia burgdorferi B31, Clostridium tetani E88, Plasmodium vivax, Naegleria gruberi, Culicoides variipennis, Equine infectious anemia virus, Prochlorococcus marinus, Xenopus laevis, Arabidopsis thaliana, Ureaplasma urealyticum, Lactococcus lactis subsp. lactis, Scenedesmus obliquus, Oryza sativa (indica cultivar-group)" 20
- 7824 7954 20 "Homo sapiens, Danio rerio, Mus musculus, Shewanella sp. ANA-3, Hevea brasiliensis, Acinetobacter sp."
- 7825 7955 32 "Mus musculus, Mesostigma viride, Oryza sativa (japonica cultivar-group), Prototheca wickerhamii, Homo sapiens, Pan troglodytes, Drosophila melanogaster, Brassica napus var. napus, Mycoplasma hominis, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Danio rerio, Dictyostelium discoideum, Lactobacillus sakei, Drosophila virilis, Anopheles gambiae, Helicobacter hepaticus ATCC 51449" 30
- 7826 7956 28 "Mus musculus, Homo sapiens, Bacillus anthracis str. Ames, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Caenorhabditis elegans, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 40
- 7827 7957 31 "Schizosaccharomyces pombe, Sorghum bicolor, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Pan troglodytes, Sus scrofa, Danio rerio, Arabidopsis thaliana, Oryza sativa, Hydra vulgaris, Lotus corniculatus var. japonicus, Sulfolobus tokodaii"
- 7828 7958 24 "Medicago truncatula, Homo sapiens, Drosophila melanogaster, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Mus musculus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Rattus norvegicus, Felis catus, Lactococcus lactis subsp. lactis, Saccharomyces cerevisiae, Listeria monocytogenes, Oryza sativa (japonica cultivar-group), Lactococcus lactis" 50

- 7829 7959 37 "Caenorhabditis elegans, Homo sapiens, Lotus corniculatus var. japonicus, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bos taurus, Arabidopsis thaliana, Sulfolobus tokodaii, Oryza sativa, Enterococcus faecalis V583, Mus musculus, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Danio rerio, Streptococcus pneumoniae, Buchnera aphidicola str. APS (Acyrthosiphon pisum), Oryza sativa (japonica cultivar-group)"
- 7830 7960 31 "Homo sapiens, Drosophila melanogaster, Rattus norvegicus, Arabidopsis thaliana, Mus musculus, Caenorhabditis briggsae, Hemicentrotus pulcherrimus, Molops edurus, Methanocaldococcus jannaschii, Clostridium perfringens str. 13, Equus caballus, Caenorhabditis elegans, Danio rerio, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Salmo salar, Chlamydia trachomatis, Oryza sativa (japonica cultivar-group), Listeria monocytogenes, Listeria innocua, Locusta migratoria" 10
- 7831 7961 24 "Homo sapiens, Thermoanaerobacter tengcongensis, Rickettsia conorii, Arabidopsis thaliana, Mus musculus, Clostridium tetani E88, Sus scrofa, Caenorhabditis elegans, Saccharomyces cerevisiae"
- 7832 7962 32 "Homo sapiens, Papio anubis, Trypanosoma brucei, Sus scrofa, Mus musculus, Rickettsia conorii, Lactococcus lactis subsp. lactis, Pleurotus ostreatus, Equus caballus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Listeria monocytogenes, List" 20
- 7833 7963 24 "Homo sapiens, Mus musculus, Escherichia coli, Escherichia coli K12, synthetic construct, Arabidopsis thaliana, Cassiopea andromeda, Methanocaldococcus jannaschii"
- 7834 7964 32 "Mus musculus, Homo sapiens, Schizosaccharomyces pombe, Bacillus cereus ATCC 14579, Caenorhabditis briggsae, Oryza sativa, Oryza sativa (japonica cultivar-group), Xenopus laevis, Asterina pectinifera"
- 7835 7965 31 "Caenorhabditis briggsae, Shigella dysenteriae, Homo sapiens, Bacillus anthracis str. A2012, Bacillus anthracis, Staphylococcus aureus, Drosophila melanogaster, Mus musculus, Clostridium acetobutylicum, Arabidopsis thaliana, Danio rerio, Gallus gallus, Sporobolus airoides, Streptomyces griseus" 30
- 7836 7966 47 "Streptococcus agalactiae NEM316, Streptococcus agalactiae 2603V/R, Chlamydia trachomatis, Rickettsia conorii, Dendrochirus zebra, Mus musculus, Chlamydia muridarum, Arabidopsis thaliana, Chromobacterium violaceum, Homo sapiens, Zeus faber, Danio rerio, Mus sp., Caenorhabditis elegans"
- 7837 7967 27 "Mus musculus, Homo sapiens"
- 7838 7968 28 "Homo sapiens, Mus musculus, Drosophila melanogaster, Danio rerio, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Arabidopsis thaliana, Caenorhabditis elegans, Helicobacter pylori 26695, Helicobacter pylori J99, Equus caballus" 40
- 7839 7969 28 "Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Mycoplasma fermentans, Yersinia pestis KIM, Danio rerio, Plantago major, Yersinia pestis C092, Porphyra purpurea, Medicago truncatula, Mycoplasma gallisepticum R, Rattus norvegicus, Bacillus cereus ATCC 14579, Methanosarcina mazei Goe1, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Felis catus, Thermoanaerobacter tengcongensis, Gasteruption sp. M113, Euphranta canadensis, Plodia interpunctella, 'Chlorella' ellipsoidea, Enterococcus faecalis, Lotus corniculatus var. japonicus, Debaryomyces occidentalis, Schizosaccharomyces pombe, Brassica rapa"
- 7840 7970 27 "Danio rerio, Mus musculus, Lotus corniculatus var. japo" 50

- nicus, Homo sapiens, Arabidopsis thaliana, Sulfolobus solfataricus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Bacillus anthracis str. Ames, Methanosarcina mazei Goe1, Bacillus thuringiensis, Heliophobius argentocinereus, Bathyergus suillus, Bathyergus janetta, Georychus capensis, Cryptomys sp. H650, Cryptomys damarensis, Sulfolobus tokodaii, Saccharomyces kluyveri, Listeria monocytogenes, Helicobacter pylori J99, Pan troglodytes, Arion lizarrustii"
- 7841 7971 31 "Caenorhabditis elegans, Homo sapiens, Danio rerio, Mus musculus, Lactococcus lactis subsp. lactis, Legionella pneumophila, Listeria monocytogenes, Buchnera aphidicola (Pemphigus spyrothecae), Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Pisum sativum, Xenopus laevis, Arabidopsis thaliana, Oryzias latipes, Macaca fascicularis" 10
- 7842 7972 32 "Mus musculus, Homo sapiens, Dictyostelium discoideum, Danio rerio, Thermosynechococcus elongatus BP-1"
- 7843 7973 28 "Archips infumatana, Archips fervidana, Oryza sativa (japonica cultivar-group), Danio rerio, Homo sapiens, Mus musculus, Junonia coenia, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Dictyostelium discoideum, synthetic construct, Medicago truncatula, Clostridium tetani E88, Sorghum bicolor, Archips cerasivorana, Prunus mume, Cyprinus carpio, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Anthoceros formosae, Saccharomyces cerevisiae, Listeria monocytogenes, Bombyx mori" 20
- 7844 7974 27 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Enterococcus faecalis, Enterococcus faecalis V583, Choristoneura fumiferana granulovirus, Rattus norvegicus, Danio rerio, Caenorhabditis elegans, Macaca fascicularis, Mus musculus domesticus"
- 7845 7975 27 "Homo sapiens, Mus musculus, Pyrobaculum aerophilum str. IM2, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana"
- 7846 7976 27 "Pinus taeda, Homo sapiens, Saccharomyces cerevisiae, Danio rerio, Rattus norvegicus, Mus musculus, Pan troglodytes, Streptococcus agalactiae, Plasmodium falciparum 3D7, Medicago truncatula" 30
- 7847 7977 28 "Danio rerio, Homo sapiens, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Glycine max, Oryza sativa, Apiocera sp. #1 MEI-BMW 2000, Lactococcus lactis, Lactococcus lactis subsp. lactis, Synechocystis sp. PCC 6803"
- 7848 7978 32 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Staphylococcus aureus, Danio rerio, Staphylococcus aureus bacteriophage PVL, Drosophila melanogaster, Lactococcus lactis subsp. lactis, Spodoptera littoralis nucleopolyhedrovirus, Hebeloma cylindrosporum, Listeria monocytogenes, synthetic construct, Macaca fascicularis" 40
- 7849 7979 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, Vibrio cholerae, Danio rerio, Mus musculus, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Arabidopsis thaliana"
- 7850 7980 28 "Candidatus Blochmannia floridanus, Homo sapiens, Mus musculus, Danio rerio, Medicago truncatula, Prorocentrum minimum, Human immunodeficiency virus 1, Pyrococcus horikoshii, Candidatus Portiera aleyrodidarum"
- 7851 7981 24 "Homo sapiens, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"
- 7852 7982 31 "Homo sapiens, Lactococcus lactis subsp. lactis, Actinob 50

- acillus actinomycetemcomitans, Arabidopsis thaliana, Mus musculus, Ciona intestinalis, Caenorhabditis elegans, Danio rerio, Caenorhabditis briggsae, Haemophilus ducreyi 35000HP, Aneurinibacillus thermoaerophilus, Roridula gorgonias"
- 7853 7983 56 "Clostridium perfringens str. 13, Salmonella enterica, Archaeoglobus fulgidus DSM 4304, Lactobacillus gasseri, Escherichia coli, Escherichia coli K12, Salmonella typhimurium LT2, Shigella flexneri 2a str. 2457T, Salmonella enterica subsp. enterica serovar Ty"
- 7854 7984 39 "Campylobacter jejuni, Drosophila melanogaster, Caenorhabditis elegans, Homo sapiens, Mus musculus, Danio rerio, Lactococcus lactis, Enterococcus faecalis V583, Arabidopsis thaliana, Brassica napus var. napus, Cryptosporidium parvum" 10
- 7855 7985 37 "Pasteurella multocida, Salmonella enterica, Yersinia enterocolitica, Aeropyrum pernix, Enterococcus faecalis V583, Felis catus, Streptococcus agalactiae 2603V/R, Xanthomonas campestris pv. campestris str. ATCC 33913, Xanthomonas campestris pv. campestris, Homo sapiens, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Mus musculus, Oceanobacillus iheyensis HTE831, Arabidopsis thaliana, Haemophilus influenzae Rd KW20, Nostoc sp. PCC 7120"
- 7856 7986 41 "Mus musculus, Oceanobacillus iheyensis HTE831, Homo sapiens, Entamoeba histolytica, Bacillus anthracis str. Ames, Pasteurella multocida, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae TW-183, Chlamydomonas pneumoniae J138" 20
- 7857 7987 28 "Homo sapiens, synthetic construct, Arabidopsis thaliana, Plasmodium falciparum 3D7, Mus musculus, Didelphis virginiana, Drosophila melanogaster, Caenorhabditis elegans, Guillardia theta, Danio rerio, Oryza sativa (japonica cultivar-group)"
- 7858 7988 27 "Danio rerio, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Mus musculus, Coxiella burnetii RSA 493, Pseudomonas aeruginosa, Caenorhabditis elegans, Arabidopsis thaliana, Pan troglodytes, Medicago truncatula, Ralstonia sp. JS705, Pseudomonas putida" 30
- 7859 7989 24 "Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Euglena longa, Arabidopsis thaliana, Danio rerio, Mus musculus, Dictyostelium discoideum, Caenorhabditis elegans, Streptococcus mutans UA159, Zea mays, Streptococcus agalactiae 2603V/R, Pyrococcus furiosus DSM 3638, Prochlorococcus marinus, Candida albicans, Streptococcus agalactiae NEM316, Zymomonas mobilis, Oryza sativa (japonica cultivar-group)"
- 7860 7990 23 "Drosophila melanogaster, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Haemophilus influenzae, Caenorhabditis briggsae, Chlamydia trachomatis, Saccharomyces cerevisiae, Haemophilus influenzae Rd KW20" 40
- 7861 7991 28 "Homo sapiens, Listeria innocua, Mus musculus, Dictyostelium discoideum, Caenorhabditis elegans, Helicoverpa armigera, Brassica napus, Oryza sativa (japonica cultivar-group), Danio rerio, Clostridium perfringens str. 13"
- 7862 7992 29 "Drosophila melanogaster, Homo sapiens, Mus musculus, Arabidopsis thaliana, Danio rerio, Cryptococcus neoformans var. neoformans, Plasmodium falciparum 3D7, Sulfolobus solfataricus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Monosiga brevicollis, Fowlpox virus, Caenorhabditis elegans, Sorghum bicolor, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Rift Valley fever virus" 50

- 7863 7993 24 "Mus musculus, Geobacillus stearothermophilus, Homo sapiens, Sulfolobus tokodaii, Ciona intestinalis, Oryza sativa (japonica cultivar-group), Buchnera aphidicola str. Bp (Baizongia pistaciae), Drosophila melanogaster, Prochlorococcus marinus, Engelhardia spicata, Engelhardia roxburghiana, Epipyxis pulchra"
- 7864 7994 24 "Mus musculus, Homo sapiens, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Leptospira interrogans serovar lai str. 56601, Pan troglodytes, Borrelia burgdorferi B31, Drosophila melanogaster, Clostridium tetani, Human immunodeficiency virus 1, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Plasmodium falciparum, Caenorhabditis elegans" 10
- 7865 7995 28 "Homo sapiens, Danio rerio, Mus musculus, Arabidopsis thaliana, Papio anubis, Drosophila melanogaster, Caenorhabditis briggsae, Chlamydia trachomatis, Caenorhabditis elegans, Rattus norvegicus"
- 7866 7996 27 "Danio rerio, Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Bacillus anthracis str. Ames, Drosophila melanogaster, Clostridium acetobutylicum, Bombyx mori"
- 7867 7997 39 "Arabidopsis thaliana, Melanoplus sanguinipes entomopoxvirus, Laudakia microlepis, Laudakia himalayana, Mus musculus, Homo sapiens, Danio rerio, Rattus norvegicus, Equus caballus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Lotus corniculatus var. j" 20
- 7868 7998 28 "Arabidopsis thaliana, Homo sapiens, Mycoplasma gallisepticum R, Anopheles squamifemur, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Acholeplasma laidlawii, Schizosaccharomyces pombe, Danio rerio, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Drosophila melanogaster, Sorghum bicolor, Clostridium acetobutylicum, Lotus corniculatus var. japonicus, Listeria monocytogenes, Listeria innocua, Katharina tunicata, Clarkia breweri, Hemisphaerammina sp. 1182, Allogromiina sp. A1182"
- 7869 7999 28 "Trypanosoma brucei, Lactococcus lactis subsp. lactis, Homo sapiens, Mus musculus, Arabidopsis thaliana, Anthophora acervorum, Danio rerio, Mycoplasma gallisepticum R, Dictyostelium discoideum, Tritoxa flexa, Bacteriophage phiE125, Acidiella pachypogon, Hemileophila sibirica, Delphinia picta, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Rhagoletotrypeta p astranai, Goniglossum sp." 30
- 7870 8000 31 "Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group)"
- 7871 8001 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Danio rerio, Buchnera aphidicola, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Clostridium tetani E88, Citrobacter werkmanii, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Arabidopsis thaliana, Citrus limon, Anopheles gambiae" 40
- 7872 8002 33 "Homo sapiens, Oceanobacillus iheyensis HTE831, Saccharomyces cerevisiae, Listeria innocua, Arabidopsis thaliana, Streptococcus pyogenes MGAS315, Thamnurgus senecionis, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Mus musculus, Clostridium perfringens str. 13"
- 7873 8003 23 "Homo sapiens, Buchnera aphidicola, Mus musculus, Arabidopsis thaliana"
- 7874 8004 27 "Drosophila melanogaster, Homo sapiens, Mus musculus, Ar 50

abidopsis thaliana, *Mycoplasma genitalium*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Sphiggurus melanura*, *Gallus gallus*, *Yersinia pestis KIM*, *Mesostigma viride*, *Oceanobacillus iheyensis HTE831*, *Yersinia pestis C092*"

7875 8005 25 "Homo sapiens, Gallus gallus, Drosophila melanogaster, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Oryza latifolia, Rattus norvegicus, Nostoc sp. PCC 7120"

7876 8006 24 "Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Homo sapiens, Rattus norvegicus, Lactococcus lactis subsp. lactis, Caenorhabditis briggsae, uncultured bacterium"

7877 8007 23 "Danio rerio, Pseudoalteromonas sp. PS1M3, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Homo sapiens, Lactobacillus delbrueckii subsp. bulgaricus, Mus musculus, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans"

7878 8008 24 "Homo sapiens, Caenorhabditis elegans, Danio rerio, Mus musculus, Drosophila melanogaster, Clostridium sticklandii, Lycorma olivacea, Lycorma meliae, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Drosophila pseudoobscura, Pasteurella multocida, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Corynebacterium glutamicum ATCC 13032, Clostridium perfringens str. 13"

7879 8009 27 "Homo sapiens, Danio rerio, Haemophilus influenzae Rd KW 20, Pseudomonas phage phiKZ, Caenorhabditis elegans, Gallid herpesvirus 2, Bacteroides uniformis, Mus musculus"

7880 8010 31 "Drosophila melanogaster, Mus musculus, Homo sapiens, Danio rerio, Lotus corniculatus var. japonicus, Canis familiaris, Drosophila pseudoobscura, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Arabidopsis thaliana, Beta vulgaris, Schistosoma mansoni"

7881 8011 28 "Bos taurus, Homo sapiens, Mus musculus, Lathyrus aphaca, Buchnera aphidicola, Danio rerio, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"

7882 8012 33 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Lotus corniculatus var. japonicus, Shigella sonnei, Oryza sativa (japonica cultivar-group), Flavobacterium psychrophilum, Papio anubis, Plasmodium falciparum 3D7, Arabidopsis thaliana, Beta vulgaris subsp. vulgaris, Medicago truncatula, Lisaea papyracea, Danio rerio, Leptospira interrogans serovar lai str. 56601, Felis catus, Dictyostelium discoideum, Thrips imaginis, Spheniscus humboldti, Anas platyrhynchos"

7883 8013 32 "Corycium carnosum, Homo sapiens, Ciona intestinalis, Medicago truncatula, Mus musculus, Danio rerio, Glycine max, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Plasmodium chabaudi adami, Xenopus laevis, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), uncultured euryarchaeote, Mycoplasma penetrans, Plasmodium falciparum"

7884 8014 27 "Homo sapiens, Psacotha hilaris hilaris, Psacotha hilaris miyakejimana, Psacotha hilaris insularis, Psacotha hilaris macronotata, Psacotha hilaris maculata, Psacotha hilaris intermedia, Psacotha hilaris tenebrosa, Psacotha hilaris miyakoana, Psacotha hilaris ishigakiana, Psacotha hilaris yonaguniana, Oryza sativa (japonica cultivar-group), Mus musculus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Caenorhabditis elegans, Ciona intestinalis"

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- 7885 8015 20 "Shewanella oneidensis MR-1, Danio rerio, Lotus corniculatus var. japonicus, Homo sapiens"
- 7886 8016 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Astyanax sp. Iguassu-b, Mus musculus, Nostoc sp. PCC 7120, Flavobacterium psychrophilum, Plasmodium falciparum 3D7, Danio rerio, Thermotoga maritima, Arabidopsis thaliana, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Disa glandulosa"
- 7887 8017 28 "Listeria monocytogenes, Mus musculus, Homo sapiens, Nostoc sp. PCC 7120, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Caenorhabditis elegans, Lactococcus lactis, Arabidopsis thaliana, Medicago truncatula, Salmonella enterica subsp. enterica serovar Typhi, Danio rerio" 10
- 7888 8018 61 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bacillus cereus ATCC 14579, Leptospira interrogans serovar lai str. 56601, Clostridium tetani E88, Lactococcus lactis subsp. lactis, Mus musculus, Leptospira interrogans, Caenorhabditis elegans, Lactobacillus sakei, Lotus corniculatus var. japonicus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Homo sapiens, Enterococcus faecalis V583, Zea mays, Sus scrofa, Danio rerio, Madoqua kirkii"
- 7889 8019 27 "Mus musculus, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Drosophila melanogaster, Sulfolobus islandicus filamentous virus, Sulfolobus solfataricus, Caenorhabditis elegans" 20
- 7890 8020 32 "Haemophilus ducreyi 35000HP, Buchnera aphidicola (Myzus persicae), Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Oceanobacillus iheyensis HTE 831, Danio rerio"
- 7891 8021 24 "Homo sapiens, Hypsilurus nigrigularis, Bacillus subtilis, Plasmodium berghei, Medicago truncatula, Chrysolina coerulans, Bacillus subtilis subsp. subtilis str. 168, Mus musculus, Crocuta crocuta, Equus caballus, Dictyostelium discoideum, Drosophila melanogaster, Lonchothrix emiliae, Caenorhabditis elegans, Agra sp. nr. truquii KAO-2001, Caenorhabditis briggsae" 30
- 7892 8022 31 "Homo sapiens, Drosophila melanogaster, Human poliovirus 1, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Clostridium sporogenes, Arabidopsis thaliana, Caenorhabditis elegans, Schizosaccharomyces pombe, Melanoplus sanguinipes entomopoxvirus, Danio rerio, Mycoplasma flocculare"
- 7893 8023 23 "Homo sapiens, Methanosarcina mazei Goe1, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Caenorhabditis elegans, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Medicago truncatula, Enterococcus faecalis, Enterococcus f"
- 7894 8024 29 "Rattus norvegicus, Homo sapiens, Lactococcus phage bIL6 6M1, Bacteriophage bIL170, Oryza sativa, Oryza sativa (japonica cultivar-group), Bacteriophage sk1, Leptospira interrogans serovar lai str. 56601, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Artibeus jamaicensis, Danio rerio, Synechocystis sp. PCC 6803" 40
- 7895 8025 24 "Homo sapiens, Fusarium oxysporum, Oryza sativa (japonica cultivar-group), Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Clostridium acetobutylicum, Arabidopsis thaliana, Rattus norvegicus"
- 7896 8026 28 "Dictyostelium discoideum, Rattus norvegicus, Homo sapiens, Prochlorococcus marinus, Plasmodium falciparum 3D7, Anthriscus cerefolium, Danio rerio, Mus musculus, Cryptophlebia leucotreta granulovirus, Oryza sativa (japonica cultivar-group), Brassaiopsis prod" 50

- 7897 8027 25 "Homo sapiens, Danio rerio, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Mus musculus, Rattus norvegicus, Borrelia burgdorferi B31, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Cercopithecine herpesvirus 7, Sepia officinalis, Pichia angusta, Cercopithecine herpesvirus 9"
- 7898 8028 28 "Homo sapiens, Leptospira interrogans serovar lai str. 56601, Mus musculus, Caenorhabditis elegans, Cakile maritima, Danio rerio"
- 7899 8029 27 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Pan troglodytes, Thermoanaerobacter tengcongensis, Streptococcus pneumoniae R6, Ureaplasma urealyticum, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Strongylocentrotus purpuratus" 10
- 7900 8030 26 "Homo sapiens, Pan troglodytes, Danio rerio, Mus musculus, Loligo bleekeri, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Caenorhabditis elegans, Medicago truncatula"
- 7901 8031 27 "Rattus norvegicus, Mus musculus, Homo sapiens, Danio rerio, Nostoc sp. PCC 7120, Oryctolagus cuniculus, Cryptococcus neoformans var. grubii, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Helicobacter pylori J99, Gasterosteus aculeatus, Chlamydomonas reinhardtii, Drosophila melanogaster, Schmidtea mediterranea, Plutella xylostella granulovirus, Trypanosoma brucei, TT virus, Orobancha ramosa, Ciona intestinalis, Lycopersicon esculentum, Trypanosoma brucei brucei, Arabidopsis thaliana, Bacillus halodurans" 20
- 7902 8032 27 "Homo sapiens, Bacillus cereus, Mus musculus, Rattus norvegicus, Bacillus anthracis str. Ames, Caenorhabditis elegans, Pan troglodytes, Brassica oleracea, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Danio rerio, Dictyostelium discoideum, Ascaris suum"
- 7903 8033 28 "Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Mus musculus, Danio rerio, Medicago truncatula, Drosophila melanogaster, Lotus corniculatus var. japonicus, Triticum aestivum, Ciona intestinalis" 30
- 7904 8034 24 "Danio rerio, Homo sapiens, Mus musculus, Pseudomonas putida KT2440"
- 7905 8035 28 "Homo sapiens, Human immunodeficiency virus 1, Mus musculus, Rattus norvegicus, Bacillus halodurans, Drosophila melanogaster, Tomato black ring virus, Pisum sativum"
- 7906 8036 31 "Mus musculus, Homo sapiens, Drosophila pseudoobscura, Oryza sativa (japonica cultivar-group), Tropidia effusa, Candidatus Carsonella ruddii, Cymbidium dayanum, Coelogyne miniata, Coelogyne flexuosa, Pasteurella multocida, Halocynthia roretzi, Rattus norvegicus, Schistosoma mansoni, Rattus sp." 40
- 7907 8037 29 "Homo sapiens, Mus musculus, Clostridium acetobutylicum, Danio rerio, Acinetobacter sp. ADP1, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group), Saccharomyces cerevisiae"
- 7908 8038 27 "Plasmodium falciparum 3D7, Homo sapiens, Bacillus cereus ATCC 14579, Drosophila melanogaster, Bacillus anthracis str. Ames, Pseudomonas phage phiKZ, Danio rerio, Chlamydia muridarum, Mus musculus, Arabidopsis thaliana, Rickettsia conorii, Pan troglodytes, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Orpinomyces sp. PC-2, Macaca fascicularis, Equus caballus"
- 7909 8039 27 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, 50

Danio rerio, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Trypanosoma brucei brucei, Caenorhabditis elegans, Luciola kuroiuae, Lactuca sativa, Clostridium botulinum, Staphylococcus aureus subsp. aureus Mu50"

7910 8040 28 "Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Drosophila melanogaster, Mus musculus, Rattus norvegicus, Thermoanaerobacter tengcongensis, Homo sapiens, Caenorhabditis elegans, Pan troglodytes, Plasmodium falciparum 3D7, Arabidopsis thaliana, Clostridium acetobutylicum, Chlamydia trachomatis, Danio rerio, Bos taurus, Schizosaccharomyces pombe"

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7911 8041 28 "Homo sapiens, Mus musculus, Ricinus communis, Labidus spininodis, Camponotus yogi, Camponotus aff. vicinus BGW-2001, Borrelia burgdorferi B31, Bos taurus, Galapaganus caroli, Hordeum vulgare, Rattus norvegicus, Ctenomys rionegrensis, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Felis catus, Campylobacter jejuni, Phytophthora infestans, Ctenomys talarum, Ctenomys australis, Ctenomys mendocinus, Ctenomys porteousi, Arabidopsis thaliana, Bumilleriopsis filiformis, Plasmodium falciparum 3D7, Sulfolobus tokodaii, Cryptophlebia leucotreta granulovirus, Venezuelan equine encephalitis virus, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Danio rerio"

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7912 8042 28 "Homo sapiens, Mus musculus, Drosophila melanogaster, Takifugu rubripes, Clostridium acetobutylicum, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Campylobacter lari, Helicobacter hepaticus ATCC 51449, Clostridium perfringens str. 13"

7913 8043 36 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Escherichia coli, Bacteroides thetaiotaomicron VPI-5482, Methanosarcina mazei Goel, Prochlorococcus marinus, Mycoplasma pulmonis, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Danio rerio, Staphylococcus aureus subsp. aureus Mu50, Caenorhabditis elegans, Cophosaurus texanus, Buchnera aphidicola str. Sg (Schizaphis graminum), Methanosarcina acetivorans C2A, Smicridea talamanca, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Campylobacter jejuni subsp. jejuni NCTC 11168, Saccharomyces cerevisiae, Rhodomonas salina, Hydnellum sp. DSH 96-008, Cryptophlebia leucotreta granulovirus, Pan troglodytes, Sus scrofa, Feline immunodeficiency virus"

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7914 8044 24 "Mus musculus, Homo sapiens, Danio rerio, Trypanosoma brucei, Lotus corniculatus var. japonicus, Arabidopsis thaliana"

7915 8045 50 "Aquifex aeolicus VF5, Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Clostridium tetani E88, Legionella pneumophila, Pyrococcus furiosus DSM 3638"

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7916 8046 27 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Medicago truncatula, Rattus norvegicus, Guillardia theta, Caenorhabditis elegans"

7917 8047 24 "Bacteroides thetaiotaomicron VPI-5482, Caenorhabditis elegans, Sminthopsis macroura, Sinosenecio oldhamianus, Homo sapiens, Oryza sativa (japonica cultivar-group), Oryza sativa, Arabidopsis thaliana, Caenorhabditis briggsae, Mus musculus, Danio rerio"

7918 8048 28 "Homo sapiens, Mus musculus, Clostridium perfringens str. 13, Drosophila melanogaster, Chelonus inanitus bracovirus, Danio rerio, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Bacillus anthra

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- cis str. A2012, Chilo iridescent virus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Rattus norvegicus, Bacillus anthracis, Listeria innocua"
- 7919 8049 27 "Homo sapiens, Mus musculus, Anopheles gambiae, Oryza sativa (japonica cultivar-group), Oryza sativa, Danio rerio, Pyrenomonas salina, Medicago truncatula, Clostridium perfringens str. 13"
- 7920 8050 30 "Mus musculus, Homo sapiens, Lycopersicon esculentum, Dictyostelium discoideum, Felis catus, Drosophila melanogaster, Plasmodium falciparum 3D7, Schizosaccharomyces japonicus, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Lotus corniculatus var. japonicus, Anopheles quadrimaculatus A, Simian immunodeficiency virus" 10
- 7921 8051 32 "Mus musculus, Homo sapiens, Xylella fastidiosa Temecula 1, Caenorhabditis briggsae, Reclinomonas americana, Drosophila melanogaster, Danio rerio, Caenorhabditis elegans, Arabidopsis thaliana, Porcine rotavirus strain Gottfried, Bacillus anthracis str. Ames, Methanosarcina mazei Goe1, Glycine max, Viburnum acerifolium, Plasmodium falciparum 3D7, Aplysia punctata, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Ehrlichia chaffeensis, Pyrococcus furiosus DSM 3638, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Clostridium pasteurianum, Oryza sativa (japonica cultivar-group), Plagiomnium ellipticum, Xenopus laevis" 20
- 7922 8052 28 "Mus musculus, Human immunodeficiency virus 1, Homo sapiens, Allium cepa, Drosophila melanogaster, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7"
- 7923 8053 39 "Homo sapiens, Atelerix albiventris, Mus musculus, Canis familiaris, Drosophila melanogaster, Plasmodium falciparum 3D7, Rhizophydium sp. 136, Arabidopsis thaliana, Amsacta moorei entomopoxvirus, Dictyostelium discoideum, Pleurocera acuta acuta, Elimia showalteri, Danio rerio, Enterococcus faecalis V583, Methanosarcina mazei Goe1, Clostridium tetani E88, Jagora dactylus, Caenorhabditis elegans, Pneumocystis carinii, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Mycoplasma penetrans, Gompholobium obcordatum, Dictyostelium purpureum, Nostoc sp. PCC 7120" 30
- 7924 8054 41 "Mus musculus, Drosophila melanogaster, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio, Dictyostelium discoideum, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Human immunodeficiency virus 1, Plasmodium falciparum, Sus scrofa, Lycopersicon esculentum, Buchnera aphidicola str. Sg (Schizaphis graminum), Zea mays subsp. mays, Caenorhabditis elegans, Mycosphaerella rabiei, Cryptosporidium parvum, Gracilaria chilensis, Takifugu rubripes"
- 7925 8055 36 "Drosophila melanogaster, Mus musculus, Homo sapiens, Felis catus, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Ambystoma mexicanum, Ambystoma maculatum, Feline immunodeficiency virus, Streptococcus dysgalactiae subsp. equisimilis, Rickettsia prowazekii, Mycoplasma pulmonis, Oryza sativa (japonica cultivar-group), Streptococcus sp. 1400-98, Oryza sativa, Pan troglodytes, Dictyostelium discoideum, Danio rerio, Staphylococcus epidermidis ATCC 12228, Arabidopsis thaliana, Staphylococcus epidermidis, Rickettsia conorii, Oryza sativa (indica cultivar-group), Haemophilus influenzae, Debaryomyces occidentalis, Haemophilus influenzae Rd KW20, Rattus norvegicus, Gallus gallus" 40
- 7926 8056 28 "Caenorhabditis elegans, Methanocaldococcus jannaschii, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Dictyostelium dis 50

- coideum, *Mus musculus*, *Schistosoma mansoni*, *Schistosoma japonicum*, *Physarum polycephalum*, *Nostoc* sp. PCC 7120, *Bacillus* ce"
- 7927 8057 32 "Mus musculus, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Caenorhabditis elegans*, *Rattus norvegicus*, *Drosophila melanogaster*, *Homo sapiens*, *Fundulus heteroclitus*, *Sus scrofa*, *Saccharomyces cerevisiae*, *Iridomyrmex lividus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Vibrio parahaemolyticus*, *Ancistogaster* sp. AMEBU13956, *Danio rerio*, *Zea mays*, *Arabidopsis thaliana*, *Vibrio harveyi*"
- 7928 8058 27 "Arabidopsis thaliana, *Drosophila melanogaster*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Amyloodinium ocellatum*, *Xenopus laevis*, *Danio rerio*, *Hemibagrus nemurus*, *Agelaius phoeniceus*, *Oryza sativa* (*indica* cultivar-group), *Drosophila subobscura*, *Anopheles gambiae*" 10
- 7929 8059 33 "Homo sapiens, *Mus musculus*, *Aloe arborescens*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Plasmodium falciparum*, *Danio rerio*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Xenopus laevis*, *Lotus corniculatus* var. *japonicus*, *Brassica rapa*, *Atelerix albiventris*, *Oryza sativa* (*japonica* cultivar-group), *Cucumis melo*, *Oryza sativa*, *Glycine max*, *Drosophila virilis*, *Hordeum vulgare*, *Medicago truncatula*, *Lycopersicon esculentum*, *Brassica napus*, *Acanthamoeba* sp. TUMSJ-341, *Phellinus ralunensis*, *Melipona bicolor*, *Malawimonas jakobiformis*, *Branchiostoma floridae*" 20
- 7930 8060 35 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Saccharomyces cerevisiae*, *Rickettsia prowazekii*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Arabidopsis thaliana*, *Danio rerio*, *Pan troglodytes*, *Lemur catta*, *Actinobacillus suis*, *Mus musculus*, *Pisolithus tinctorius*, *Pisolithus* sp. SU1, *Pisolithus* sp. PH1, *Pisolithus* sp. NA1, *Papio anubis*, *Pisolithus arhizus*, *Medicago truncatula*, *Clostridium botulinum*, *Triticum turgidum* subsp. *durum*, *Didelphis virginiana*, *Schistosoma japonicum*, *Tenthredo mesomela*, *Dictyostelium discoideum*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Clostridium tetani* E88, *Trachypus bicolor*, *Urostyla grandis*, *Marchantia polymorpha*, *Helluomorphoides latitarsis*" 30
- 7931 8061 36 "Mus musculus, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Danio rerio*, *Drosophila melanogaster*, *Pan troglodytes*, *Saccharomyces castellii*, *Plasmodium berghei*, *Plasmodium falciparum*, *Bacillus anthracis* str. Ames, *Caenorhabditis elegans*, *Psychotria ipecacuanha*, *Kluyveromyces lactis*, *Clostridium perfringens* str. 13, *Eimeria tenella*, *Rattus norvegicus*, *Euhadra peliomphala*, *Dictyostelium discoideum*, *Monosiga brevicollis*, *Bos taurus*, *Arabidopsis thaliana*"
- 7932 8062 33 "Plasmodium falciparum 3D7, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Mycoplasma gallisepticum* R, *Dictyostelium discoideum*, *Spinacia oleracea*, *Lotus corniculatus* var. *japonicus*, *Carabus transiliensis transiliensis*, *Danio rerio*, *Saccharomyces cerevisiae*, *Percus corsicus*, *Carabus sauteri*, *Carabus hupeensis*, *Carabus fraterculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Lactococcus lactis* subsp. *lactis*, *Emericella nidulans*, *Cryptosporidium parvum*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Leptospira interrogans* serovar *Iai* str. 56601, *Atelerix albiventris*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Papio anubis*, *Shewanella oneidensis* MR-1, *Uropsilus* sp. CCJD_2002, *Sus scrofa*, *Streptococcus pneumoniae* R6, *Prochlorococcus marinus*, *Gallus gallus*, *Trypanosoma conorhini*, *Trypanosoma brucei*" 40
- 7933 8063 39 "Mus musculus, *Homo sapiens*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Rattus norvegicus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-gro 50

- up), *Clostridium perfringens* str. 13, *Saccharomyces cerevisiae*, *Oryza sativa*, *Mycoplasma pulmonis*, *Prototheca wickerhamii*, *Saccharomyces* sp. S6U, *Stellaria media*, *Cyanophora paradoxa*, *Medicago truncatula*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Sus scrofa*, *Wolffia microscopica*, *Plasmodium berghei*, *Zea mays*, *Clostridium acetobutylicum*, *Xenopus laevis*, *Lycopersicon esculentum*, *Oryzias latipes*, *Lotus corniculatus* var. japonicus, *Sulfolobus tokodaii*"
- 7934 8064 27 "Homo sapiens, *Danio rerio*, *Caenorhabditis elegans*, *Enterobacteria phage T4*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Enterobacteria phage RB69*, *Bacteriophage LZ11*, *Bacteriophage LZ10*, *Bacteriophage LZ6*, *Bacteriophage LZ4*, *Bacteriophage LZ1*, *Bacteriophage Pol*, *Bacteriophage RB32*, *Bacteriophage RB15*, *Bacteriophage RB3*, *Bacteriophage RB2*, *Bacteriophage Ox2*, *Bacteriophage K3*, *Bacteriophage M1*, *Enterobacteria phage T6*, *Enterobacteria phage T2*, *Thermoanaerobacter mathranii*, *Arabidopsis thaliana*, *Nicotiana tabacum*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)" 10
- 7935 8065 28 "Homo sapiens, *Schistosoma mansoni*, *Danio rerio*, *Bacillus subtilis*, *Mus musculus*, *Walterinnesia aegyptia*, *Rickettsia conorii*, *Arabidopsis thaliana*, *Vibrio parahaemolyticus*, *Medicago truncatula*"
- 7936 8066 39 "Mus musculus, *Medicago truncatula*, *Homo sapiens*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Crithidia oncopelti*, *Trypanosoma brucei rhodesiense*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Trypanosoma brucei*, *Caenorhabditis elegans*" 20
- 7937 8067 26 "Homo sapiens, *Silurana tropicalis*, *Solanum tuberosum*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Caenorhabditis briggsae*, *Mus musculus*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Haemophilus influenzae* Rd KW20, *Macaca fascicularis*"
- 7938 8068 31 "*Danio rerio*, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Bombyx mori*, *Saccharomyces cerevisiae*, *Gopherus polyphemus*, *Caenorhabditis elegans*, *Ureaplasma urealyticum*, *Thermoanaerobacter ethanolicus*, *Plasmodium falciparum* 3D7, *Plasmodium vivax*, *Oceanobacillus iheyensis* HTE831" 30
- 7939 8069 23 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Garissa virus*"
- 7940 8070 27 "Mus musculus, *Homo sapiens*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), uncultured marine gamma proteobacterium EBAC31A08, *Candidatus Carsonella ruddii*, *Methanosarcina mazei* Goe1, *Arabidopsis thaliana*, *Thyropygus* sp. DVL-2001, *Lens culinaris*, *Sulfolobus tokodaii*, *Caenorhabditis elegans*, *Danio rerio*"
- 7941 8071 28 "Homo sapiens, *Lymantria dispar*, *Caenorhabditis elegans*, *Thermotoga maritima*, *Danio rerio*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Mus musculus*, *Antilocapra americana*, *Helicobacter hepaticus* ATCC 51449" 40
- 7942 8072 28 "Mus musculus, *Homo sapiens*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Caenorhabditis elegans*, *Enterococcus faecalis* V583, *Xenopus laevis*, *Rickettsia conorii*, *Streptococcus pneumoniae* TIGR4, *Sulfolobus solfataricus*, *Prochlorococcus marinus*, *Crassostrea virginica*, *Rickettsia prowazekii*, *Oryza sativa* (japonica cultivar-group)"
- 7943 8073 32 "Homo sapiens, *Clostridium tetani* E88, *Bacillus cereus* ATCC 14579, *Dictyostelium discoideum*, *Mus musculus*, *Danio rerio*, *Medicago sativa* subsp. sativa, *Staphylococcus aureus*, *Escherichia coli* CFT073, *Escherichia coli* K12, *Oryza sativa* (japonica cultivar-group), *Iguana iguana*, *Caenorhabditis elegans*, *Thermoplasma volcanium*, *Escherichia coli*, *Bombyx mori*, *Escherichia coli* 0157 50

:H7"

- 7944 8074 25 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Arabidopsis thaliana, Vibrio cholerae, Oryza sativa (japonica cultivar-group)"
- 7945 8075 41 "Clostridium sticklandii, Chlamydomophila caviae GPIC, Vibrio vulnificus CMCP6, Thermoanaerobacter tengcongensis, Zymomonas mobilis, Shewanella oneidensis MR-1, Chlamydomophila pneumoniae CWL029, Chlamydomophila pneumoniae AR39, Chlamydomophila pneumoniae J138, Chlamydomophila pneumoniae TW-183, Leptospirillum ferrooxidans, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Caulobacter crescentus CB15, Medicago truncatula, Mus musculus, Bordetella bronchiseptica, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Vibrio fischeri, Penicillium chrysogenum virus, Homo sapiens" 10
- 7946 8076 36 "Clostridium perfringens str. 13, Oceanobacillus iheyensis HTE831, Bacillus halodurans, Clostridium tetani E88, Plasmodium falciparum 3D7, Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Prochlorococcus marinus subsp. marinus str. CCMP1375, Vibrio fischeri, Bacillus anthracis str. Ames, Zymomonas mobilis, Arabidopsis thaliana, Bacillus cereus ATCC 14579, Mus musculus, Clostridium beijerinckii, Acinetobacter calcoaceticus, Pseudomonas sp."
- 7947 8077 51 "Clostridium tetani E88, Homo sapiens, Caenorhabditis elegans, Mus musculus, Clostridium acetobutylicum, Rattus norvegicus"
- 7948 8078 27 "Homo sapiens, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Mus musculus, Penaeus monodon, Pan troglodytes, Rhodocybe fallax, Papio anubis, Danio rerio, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Oryza sativa (japonica cultivar-group), Tomato spotted wilt virus, Methanosarcina mazei Goe1, Pisum sativum, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis" 20
- 7949 8079 31 "Homo sapiens, Mus musculus, Sus scrofa, Oryza sativa (japonica cultivar-group), Danio rerio, Pan troglodytes, Plasmodium falciparum 3D7, Physcomitrella patens, Atelerix albiventris, Rattus norvegicus, Drosophila melanogaster, Canis familiaris, Dictyostelium discoideum"
- 7950 8080 27 "Lactococcus lactis subsp. lactis, Danio rerio, Homo sapiens, Mus musculus, Dictyostelium discoideum, Bacillus subtilis, Oryza sativa (japonica cultivar-group), Mycobacterium goodii" 30
- 7951 8081 27 "Bos taurus, Lactococcus lactis subsp. lactis, Lactococcus lactis subsp. cremoris, Homo sapiens, Mus musculus, Drosophila melanogaster, Campylobacter jejuni subsp. jejuni NCTC 11168, Danio rerio"
- 7952 8082 19 "Drosophila melanogaster, Mus musculus, Homo sapiens"
- 7953 8083 24 "Homo sapiens, Helicobacter hepaticus ATCC 51449, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Clostridium acetobutylicum, Borrelia turicatae, Danio rerio"
- 7954 8084 45 "Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Clostridium acetobutylicum, Bacillus cereus ATCC 14579, Enterococcus faecalis V583, Helicobacter pylori 26695, Oceanobacillus iheyensis HTE831, Staphylococcus aureus subsp. aureus N315, Stap" 40
- 7955 8085 45 "Oceanobacillus iheyensis HTE831, Bacillus anthracis str. Ames, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Bacillus cereus ATCC 14579, Clostridium tetani E88, Bacillus thuringiensis, Mus musculus, Homo sapiens, Arabidopsis thaliana, Danio rerio, Ciona intestinalis, Haemophilus influenzae Rd KW20, Staphylococcus aureus, Clostridium tetani, Mycobacterium leprae, Zea mays, Streptococcus bovis, Murine hepatitis virus, Vibrio cholerae, Tagetes patula, Str 50

- eptococcus parasanguinis, Listeria innocua, Nostoc sp. PCC 7120, Anabaena variabilis"
- 7956 8086 43 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Mus musculus, Swine vesicular disease virus, Botryotinia fuckeliana, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Striga hermonthica, Macaca fascicularis, Arabidopsis thaliana"
- 7957 8087 36 "Schizosaccharomyces pombe, Homo sapiens, Plasmodium falciparum 3D7, Drosophila melanogaster, Mus musculus, Patiriella parvivipara, Danio rerio, Solaster stimpsoni, Arabidopsis thaliana, Mycoplasma gallisepticum R, Glycine max, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Medicago truncatula, Drosophila mettleri, Rattus norvegicus" 10
- 7958 8088 31 "Arabidopsis thaliana, Homo sapiens, Dictyostelium discoideum, Plasmodium falciparum 3D7, Plasmodium falciparum, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Danio rerio, Drosophila melanogaster, Microcystis cf. wesenbergii, Nemcia pulchella, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Penicillium chrysogenum, Polybioides tabidus"
- 7959 8089 30 "Mus musculus, Eriosoma lanigerum, Homo sapiens, Danio rerio, Lotus corniculatus var. japonicus, Leishmania lainsoni, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Dictyostelium discoideum, Zea mays, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mesostigma viride, Brassica oleracea, Arabidopsis thaliana, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 20
- 7960 8090 27 "Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Schizosaccharomyces pombe"
- 7961 8091 31 "Homo sapiens, Arabidopsis thaliana, Sus scrofa, Mus musculus, Mycoplasma pulmonis, Danio rerio, Papio anubis, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Neurospora crassa, Plasmodium falciparum, Cyanidioschyzon merolae" 30
- 7962 8092 27 "Danio rerio, Homo sapiens, Coxiella burnetii RSA 493, Drosophila melanogaster, Takifugu rubripes, Xenopus laevis, Mus musculus, Plasmid pCD4, Sus scrofa, Lactococcus lactis, Salmo salar, Lactococcus lactis subsp. lactis bv. diacetylactis, Lactococcus lactis subsp. cremoris, Lactobacillus delbrueckii subsp. lactis, Streptococcus thermophilus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lactococcus lactis subsp. lactis, Sparus aurata, Rattus norvegicus, Apium graveolens"
- 7963 8093 40 "Rattus norvegicus, Mus musculus, Homo sapiens, Charadrius morinellus, Thermoanaerobacter tengcongensis, Caenorhabditis briggsae, Vibrio parahaemolyticus, Methanocaldococcus jannaschii, Bacteroides thetaiotaomicron V PI-5482, Drosophila melanogaster, Arabidopsis thaliana, Lactobacillus johnsonii prophage Lj928, Danio rerio, Oryza sativa (japonica cultivar-group), Timandra griseata, Timandra comae" 40
- 7964 8094 24 "Homo sapiens, Borrelia burgdorferi, Borrelia burgdorferi B31, Lotus corniculatus var. japonicus, Danio rerio, Mus musculus, Arabidopsis thaliana, Plasmodium falciparum 3D7"
- 7965 8095 30 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Medicago truncatula, Lactococcus phage BK5-T, Actinobacillus actinomycetemcomitans, Rattus norvegicus, Dictyostelium discoideum, 50

- Plasmodium falciparum 3D7, Canis familiaris, Caenorhabditis elegans, Rickettsia conorii, Ipomoea batatas, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Conidiobolus coronatus "
- 7966 8096 32 "Brassica napus, Homo sapiens, Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7, Schizosaccharomyces pombe, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Methanosarcina mazei Goe1, Papio anubis, Bacillus anthracis str. A2012, Barbus sublineatus, Plasmodium berghei, Clostridium acetobutylicum, Danio rerio, Oryza sativa (indica cultivar-group), Mycoplasma penetrans, Bacillus anthracis, Pan troglodytes, Plasmid F" 10
- 7967 8097 27 "Lactococcus lactis subsp. lactis, Homo sapiens, Schizosaccharomyces pombe, Crepidula cerithicola, Mus musculus, Borrelia burgdorferi B31, Clostridium tetani E88, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Caenorhabditis elegans"
- 7968 8098 24 "Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Pan troglodytes, Papio anubis, Campylobacter jejuni subsp. jejuni NCTC 11168, Canis familiaris, Arabidopsis thaliana"
- 7969 8099 20 "Homo sapiens, Drosophila melanogaster, Mus musculus, Citona intestinalis"
- 7970 8100 27 "Saccharomyces cerevisiae, Mus musculus, Homo sapiens, Haemophilus influenzae biotype aegyptius, Arabidopsis thaliana, Drosophila melanogaster, Thermoanaerobacter tengcongensis" 20
- 7971 8101 24 "Homo sapiens, Danio rerio, Drosophila melanogaster, Clostridium tetani E88, Mus musculus"
- 7972 8102 25 "Mus musculus, Homo sapiens, Lotus corniculatus var. japonicus, Danio rerio, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Medicago truncatula, Pneumocystis carinii, Arabidopsis thaliana"
- 7973 8103 32 "Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhimurium, Homo sapiens, Caenorhabditis elegans, Mus musculus, Pan troglodytes, Gallus gallus, Lotus corniculatus var. japonicus, Danio rerio, Medicago truncatula, Plasmodium falciparum 3D7, Arabidopsis thaliana, Melanoplus sanguinipes entomopoxvirus" 30
- 7974 8104 23 "Danio rerio, Homo sapiens, Mycoplasma pulmonis, Medicago truncatula, Physalis severe mottle virus, Mus musculus, Melon yellow spot virus"
- 7975 8105 24 "Mus musculus, Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Saccharomyces cerevisiae"
- 7976 8106 32 "Homo sapiens, Bacillus cereus ATCC 14579, Lotus corniculatus var. japonicus, Pan troglodytes, Drosophila melanogaster, Brugia malayi, Mus musculus, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Medicago truncatula, Danio rerio, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Arabidopsis thaliana, Plodia interpunctella, Solanum demissum" 40
- 7977 8107 27 "Homo sapiens, Streptococcus thermophilus, Mus musculus, Arabidopsis thaliana"
- 7978 8108 27 "Homo sapiens, Arabidopsis thaliana, Caenorhabditis briggsae, Mus musculus, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio"
- 7979 8109 23 "Drosophila melanogaster, Homo sapiens, Caenorhabditis e 50

legans, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group)"

7980 8110 31 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Danio rerio, Oryza sativa (japonica cultivar-group), Medicago truncatula, Oryza sativa, Prochlorococcus marinus, Fowlpox virus, Arabidopsis thaliana, Brassica rapa, Caenorhabditis elegans, Saccharomyces cerevisiae, Schizosaccharomyces pombe, Lymnaea stagnalis"

7981 8111 27 "Drosophila melanogaster, Homo sapiens, Anthalia sp. NCSU-99071950, Oedalea sp. NCSU-99071983, Phycus niger, Ataenogera abdominalis, Steenoglyphya sp., Pherocera niger, Brevitrichia sp., Mus musculus, Tobacco leaf curl virus, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Danio rerio"

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7982 8112 27 "Mus musculus, Homo sapiens, Pseudomonas syringae pv. tomato str. DC3000, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Plasmodium falciparum 3D7, Danio rerio, Caenorhabditis elegans, Listeria monocytogenes, Rattus norvegicus"

7983 8113 29 "Mus musculus, Homo sapiens, Thermoanaerobacter tengcongensis, Alcelaphine herpesvirus 1, Rattus norvegicus, Medicago truncatula, Drosophila melanogaster, Caenorhabditis elegans, Buchnera aphidicola str. Sg (Schizaphis graminum), Danio rerio, Listeria innocua, Schizosaccharomyces pombe"

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7984 8114 27 "Caenorhabditis elegans, Pan troglodytes, Homo sapiens, Human immunodeficiency virus 1, Danio rerio, Mus musculus, Rattus norvegicus, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Pongo pygmaeus"

7985 8115 25 "Rattus norvegicus, Homo sapiens, Leishmania major, Mus musculus, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Streptomyces verticillus, Mycoplasma penetrans, Nicotiana glauca, Botryotinia fuckeliana, Trypanosoma rangeli, Drosophila littoralis, Litopenaeus schmitti, Litopenaeus setiferus, Petromyzon marinus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Sulfolobus solfataricus, Caenorhabditis elegans, Saccharomyces cerevisiae, Gorilla gorilla, Pan paniscus, Eimeria acervulina, Clavariadelphus truncatus, Oryza sativa (indica cultivar-group)"

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7986 8116 25 "Homo sapiens, Equus caballus, Euphorbia esula, Caenorhabditis elegans, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120"

7987 8117 28 "Homo sapiens, Arabidopsis thaliana, Danio rerio, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Mus musculus, Plasmodium falciparum, Bacillus cereus ATCC 14579, Dictyostelium discoideum, Mesostigma viride, Caenorhabditis elegans, Campylobacter jejuni subsp. jejuni NCTC 11168, Plasmodium vivax, Theobroma cacao, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Cyanophora paradoxa, Clostridium tetani E88, Lycopersicon esculentum, Isospora insularius, Helicoverpa zea, 'Chlorella' ellipsoidea, Zymomonas mobilis, Methanocaldococcus jannaschii, Chlorella vulgaris"

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7988 8118 24 "Mus musculus, Rickettsia conorii, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Rickettsia prowazekii, Danio rerio, Paralichthys olivaceus"

7989 8119 25 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Danio rerio, Helicobacter pylori, Oryza sativa (japonica cultivar-group), Zea mays, Arabidopsis thaliana"

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- 7990 8120 31 "Prochlorococcus marinus, Mus musculus, Pan troglodytes, Caenorhabditis elegans, Homo sapiens, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Lupinus albus, Arabidopsis thaliana, Dictyostelium discoideum, Nostoc sp. PCC 7120"
- 7991 8121 23 "Mus musculus, Pan troglodytes, Homo sapiens, Vibrio cholerae, Oryza sativa (japonica cultivar-group), Takifugu rubripes, Zea mays, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Danio rerio, Xenopus laevis"
- 7992 8122 28 "Pan troglodytes, Homo sapiens, Sulfolobus tokodaii, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mus musculus, Saccharomyces cerevisiae, Clostridium perfringens str. 13, Didelphis virginiana, Phalaenopsis doweryensis, Leptospira interrogans serovar lai str. 56601, Arabidopsis thaliana, Gonioctena olivacea, Pogonatum urnigerum, Taenia solium, Human immunodeficiency virus 1" 10
- 7993 8123 24 "Mus musculus, Homo sapiens, Schizosaccharomyces pombe, Bos taurus, Rattus norvegicus, Oesophagostomum dentatum, Caenorhabditis elegans, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Danio rerio, Oryza sativa, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Lilium davidii"
- 7994 8124 30 "Homo sapiens, Drosophila melanogaster, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Lycopersicon esculentum, Oryza sativa, Caenorhabditis elegans, Porphyromonas gingivalis W83, Bactrocera papayae, Plasmodium falciparum 3D7, Sorghum bicolor, Girardia tigrina, Arabidopsis thaliana, Sus scrofa, Papio anubis, Atelerix albiventris, Medicago truncatula, Drosophila liui, Pan troglodytes, Felis catus, Misgurnus mizolepis, Vigna radiata var. radiata, Marchantia polymorpha" 20
- 7995 8125 34 "Borrelia burgdorferi B31, Homo sapiens, Medicago truncatula, Fuscidea intercincta, Cryphonectria parasitica, Streptococcus agalactiae 2603V/R, Mus musculus, Listeria innocua"
- 7996 8126 27 "Oryza sativa (japonica cultivar-group), Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Vibrio cholerae, Lotus corniculatus var. japonicus, Bombyx mori, Vibrio parahaemolyticus, Danio rerio, Bos taurus, Vibrio vulnificus CMCP6, Mus musculus, Saccharomyces cerevisiae" 30
- 7997 8127 28 "Boophilus microplus, Homo sapiens, Saccharomyces cerevisiae, Chromobacterium violaceum, Oryza sativa (japonica cultivar-group), Enterobacteria phage T4, Arabidopsis thaliana, Mus musculus, Danio rerio"
- 7998 8128 28 "Homo sapiens, Staphylococcus epidermidis ATCC 12228, Drosophila melanogaster, Lotus corniculatus var. japonicus, Mus musculus, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Danio rerio, Dictyostelium discoideum, Arabidopsis thaliana, Xenopus laevis, Buchnera aphidicola str. Sg (Schizaphis graminum), Dianthus caryophyllus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Nicotiana tabacum" 40
- 7999 8129 33 "Rattus norvegicus, Saccharomyces cerevisiae, Homo sapiens, Clostridium tetani E88, Plasmodium falciparum 3D7, Hemitragus jemlahicus, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Mus musculus, Danio rerio, Borrelia burgdorferi B31, Drosophila melanogaster, Pleistodontes blandus, Canis familiaris, Arabidopsis thaliana, Mimosa tenuiflora, Glomus etunicatum, Lactococcus lactis subsp. cremoris"
- 8000 8130 27 "Homo sapiens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mus musculus, Desmognathus fuscus, Desmognathus brimleyorum, Desmognathus santeetlah, Desmognathus quadramaculatus, Rat cytomegalovirus, Ureaplasma urea" 50

- lyticum, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Caenorhabditis elegans*, *Anguilla japonica*, *Stemonidium hypomelas*, *Anguilla rostrata*, *Anguilla mossambica*, *Anguilla dieffenbachii*, *Anguilla malgumora*, *Anguilla australis schmidtii*, *Anguilla australis australis*, *Anguilla anguilla*"
- 8001 8131 28 "Mus musculus, Homo sapiens, uncultured bacterium, Harpochytrium sp. JEL94, Arabidopsis thaliana, Chlamydia muridarum, Drosophila melanogaster, Lycopersicon esculentum, Lotus corniculatus var. japonicus"
- 8002 8132 25 "Mus musculus, Homo sapiens, Drosophila melanogaster, Oryza sativa, Oryza sativa (japonica cultivar-group), Bovine adenovirus 4"
- 8003 8133 24 "Bacillus cereus ATCC 14579, Homo sapiens, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans, Arabidopsis thaliana, Danio rerio, Bacillus anthracis str. Ames, Takifugu rubripes, Mus musculus, Euglena gracilis" 10
- 8004 8134 27 "Homo sapiens, Bacillus anthracis str. Ames, Bacillus halodurans, Medicago truncatula, Caenorhabditis elegans, Plasmodium falciparum 3D7, Mus musculus, Danio rerio"
- 8005 8135 24 "Mus musculus, Homo sapiens, Chilo iridescent virus, Escherichia coli 0157:H7 EDL933, Escherichia coli K12, Escherichia coli, Escherichia coli 0157:H7"
- 8006 8136 27 "Mus musculus, Mycoplasma pulmonis, Homo sapiens, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Trypanosoma brucei, Pantroglodytes, Halocynthia roretzi, Campylobacter jejuni subsp. jejuni NCTC 11168, Exoneurella setosa, Sus scrofa, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Listeria innocua, Danio rerio, Schizosaccharomyces pombe, Rattus norvegicus, Macaca fascicularis, Staphylococcus aureus subsp. aureus Mu50" 20
- 8007 8137 24 "Homo sapiens, Mus musculus, Caenorhabditis briggsae"
- 8008 8138 27 "Homo sapiens, Danio rerio, Mus musculus, Drosophila melanogaster, Papio anubis, Pyrococcus abyssi, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Pantroglodytes, Borrelia burgdorferi B31, Lemur catta, Xenopus laevis, Caenorhabditis elegans, Swinepox virus, Rattus norvegicus, Ureaplasma urealyticum, Lotus corniculatus var. japonicus, Gallus gallus" 30
- 8009 8139 24 "Homo sapiens, Mus musculus, Chlamydia trachomatis, Influenza B virus (B/Memphis/12/97-MA), Influenza B virus (B/Memphis/12/97), Streptococcus mutans UA159, Influenza B virus (B/Shangdong/7/97), Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Ae"
- 8010 8140 25 "Homo sapiens, Mus musculus, Danio rerio, Methanocaldococcus jannaschii, Oryza sativa (japonica cultivar-group)"
- 8011 8141 31 "Mus musculus, Homo sapiens, Plasmodium falciparum, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Caenorhabditis elegans, Danio rerio, Arabidopsis thaliana, Labidochromis caeruleus, Haplochromis sp. HT-6249, Astatotilapia burtoni, Astatotilapia bloyeti, Haplochromis sp. 'katavi', Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Pantroglodytes, Borrelia burgdorferi B31, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Gallus gallus, Candidatus Blochmannia floridanus, Fragaria x ananassa, Plasmodium vivax, Medicago truncatula, Borrelia burgdorferi, Macaca fascicularis, Equus caballus" 40
- 8012 8142 61 "Klebsiella pneumoniae, Homo sapiens, Chlamydophila pneumoniae CWL029, Chlamydophila pneumoniae AR39, Chlamydophila pneumoniae J138, Chl 50

- amydophila pneumoniae TW-183, Zymomonas mobilis, Loligo pealei, Pseudomonas fluorescens, Sulfolobus tokodaii, Mus musculus"
- 8013 8143 57 "Leptospirillum ferrooxidans, Clostridium tetani E88, Clostridium sticklandii, Campylobacter jejuni subsp. jejuni NCTC 11168, Clostridium beijerinckii, Bacillus cereus ATCC 14579, Bacteroides thetaiotaomicron VPI-5482, Borrelia burgdorferi B31, Thermoanaerobacter tengcongensis, Homo sapiens, Pisum sativum, Mus musculus, Oceanobacillus iheyensis HTE831, Pirellula sp., Borrelia burgdorferi, Clostridium acetobutylicum, Acinetobacter calcoaceticus, Prochlorococcus marinus, Listeria monocytogenes, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Danio rerio, Acinetobacter sp. ADP1" 10
- 8014 8144 57 "Mus musculus, Homo sapiens, Bacillus anthracis str. Ames, Zymomonas mobilis, Methanothermobacter thermoautotrophicus str. Delta H, Ehrlichia ruminantium, Arabidopsis thaliana, Samanea saman"
- 8015 8145 42 "Leptospira interrogans serovar lai str. 56601, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Pseudomonas putida, Caenorhabditis elegans, Homo sapiens, Pan troglodytes, Vibrio parahaemolyticus, Photobacterium luminescens, Nostoc sp. PCC 7120"
- 8016 8146 25 "Thermoanaerobacter tengcongensis, Mus musculus, Homo sapiens, Caenorhabditis elegans, Bacillus anthracis str. Ames, Medicago truncatula, Pyrobaculum aerophilum str. IM2, Danio rerio, Arabidopsis thaliana, Mychodea hamata, Eucheuma arnoldii, Erythroclonium angustatum, Besa papillaeformis, Solieria filiformis, Plocamium cornutum, Aeodes orbitosa" 20
- 8017 8147 28 "Mus musculus, Homo sapiens, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Lycopersicon esculentum, Oceanobacillus iheyensis HTE831, Medicago truncatula"
- 8018 8148 25 "Mus musculus, Zea mays, Mycoplasma hyopneumoniae, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Oryctolagus cuniculus, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Mycoplasma pneumoniae, Oryza sativa (japonica cultivar-group), Leptospira interrogans, Sulfolobus acidocaldarius" 30
- 8019 8149 34 "Homo sapiens, Prochlorococcus marinus, Mus musculus, Clostridium acetobutylicum, Bordetella bronchiseptica, Bordetella pertussis, Bordetella parapertussis, Leptospira interrogans serovar lai str. 56601, Macaca mulatta, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis briggsae, Danio rerio, Oryza sativa (japonica cultivar-group), Vibrio parahaemolyticus, Haemophilus ducreyi 35000HP, Arabidopsis thaliana, Spinacia oleracea"
- 8020 8150 31 "Mus musculus, Enterococcus faecalis V583, Bos taurus, Homo sapiens, Plasmid pCF10, Callithrix jacchus, Arabidopsis thaliana, Danio rerio, Mycoplasma genitalium, Sus scrofa, Bacillus halodurans"
- 8021 8151 28 "Mus musculus, Homo sapiens, Ciona intestinalis, Plasmodium vivax, Medicago truncatula, Drosophila melanogaster, Gallus gallus, Caenorhabditis elegans, Plasmodium falciparum 3D7, Arabidopsis thaliana, Pyrococcus furiosus DSM 3638, Caenorhabditis briggsae, Human immunodeficiency virus 1, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Oryza sativa (japonica cultivar-group), Xenopus laevis" 40
- 8022 8152 30 "Escherichia coli O157:H7 EDL933, Escherichia coli O157:H7, Mus musculus, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Yersinia pestis KIM, Arabidopsis thaliana, Danio rerio, Yersinia pestis C092, Nematanthus villosus, Vanhornia eunemidarum" 50

- 8023 8153 27 "Mus musculus, Cafeteria roenbergensis, Streptococcus agalactiae 2603V/R, Homo sapiens, Streptococcus agalactiae NEM316, Danio rerio, Eimeria tenella, Enterococcus faecalis V583, Pan troglodytes, Medicago truncatula, Poncirus trifoliata, Drosophila melanogaster, Morone saxatilis, Chlorobium tepidum TLS, Methanosarcina acetivorans C2A, Caenorhabditis briggsae, Serratia marcescens, Anopheles gambiae, Caenorhabditis elegans"
- 8024 8154 27 "Homo sapiens, Coxiella burnetii RSA 493, Pan troglodytes, Caenorhabditis elegans, Danio rerio, Schizosaccharomyces pombe, Mus musculus, Enterococcus faecalis V583, Dictyostelium discoideum, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis briggsae, Haemophilus ducreyi 35000HP, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Arabidopsis thaliana"
- 8025 8155 36 "Leptospira interrogans serovar lai str. 56601, Mus musculus, Homo sapiens, Chlamydia muridarum, Danio rerio, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Nicotiana tabacum, Streptococcus pyogenes SSI-1"
- 8026 8156 27 "Entodinium caudatum, Danio rerio, Homo sapiens, Medicago truncatula, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7, Neoceratodus forsteri"
- 8027 8157 27 "Homo sapiens, Human immunodeficiency virus 1, Mus musculus, Dictyostelium discoideum, Sulfolobus solfataricus, Thraustochytrium aureum, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Danio rerio, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Spiroplasma citri, Rattus norvegicus, Sulfolobus tokodaii, Caenorhabditis elegans"
- 8028 8158 20 "Homo sapiens, Mus musculus, Staphylococcus aureus subsp. aureus MW2, Rattus norvegicus"
- 8029 8159 23 "Mus musculus, Homo sapiens, Ganoderma subamboinense var. laevisporum, Thermoanaerobacter tengcongensis, synthetic construct, Drosophila melanogaster, Canis familiaris, Sulfolobus tokodaii, Medicago truncatula"
- 8030 8160 35 "Homo sapiens, Mus musculus, Medicago truncatula, Clostridium botulinum, Pan troglodytes, Plasmodium falciparum 3D7, Borrelia garinii, Borrelia afzelii, Danio rerio, Clostridium perfringens str. 13"
- 8031 8161 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Leptospira interrogans serovar lai str. 56601, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Tribolium castaneum, Caenorhabditis elegans"
- 8032 8162 23 "Mus musculus, Lemur catta, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13, Bacillus cereus ATCC 14579, Arabidopsis thaliana, Bacteroides thetaiotaomicron VPI-5482, Streptococcus mutans UA159, Photobacterium luminescens"
- 8033 8163 23 "Homo sapiens, Pseudobagrus ichikawai, Lycopersicon esculentum, Bacillus cereus ATCC 14579, Thermoplasma volcanium, Paramecium caudatum, Mus musculus, Xenopus laevis"
- 8034 8164 24 "Oryza sativa (japonica cultivar-group), Haemophilus influenzae Rd KW20, Drosophila melanogaster, Homo sapiens, Lupinus luteus, Bacillus anthracis str. Ames, Danio rerio, Mus musculus, Pirellula sp., Anopheles gambiae, Nostoc sp. PCC 7120"
- 8035 8165 35 "Danio rerio, Mus musculus, Homo sapiens, Medicago truncatula, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7,

Lotus corniculatus var. *japonicus*, *Dictyostelium discoideum*, *Prochlorococcus marinus*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Candida tropicalis*, *Enterococcus faecalis* V583, *Thrips imaginis*, *Aquifex aeolicus* VF5, *Meloidogyne javanica*, *Spisula solidissima*, *Clostridium acetobutylicum*, *Daucus carota*, *Takifugu rubripes*, *Caenorhabditis briggsae*, *Chlamydomonas moewusii*, *Trypanosoma cruzi*, Expression vector pRIBOTEX, *Caenorhabditis elegans*, *Xestia c-nigrum granulovirus*"

8036 8166 24 "Homo sapiens, *Myotis myotis*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Mus musculus*, *Arabidopsis thaliana*, *Hydrangea macrophylla*, *Clostridium tetani*, *Danio rerio*" 10

8037 8167 27 "*Plasmodium falciparum* 3D7, *Rattus norvegicus*, *Papio anubis*, *Thermoanaerobacter tengcongensis*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Encephalitozoon cuniculi*, *Mus musculus*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Staphylococcus epidermidis* ATCC 12228, *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Staphylococcus epidermidis*, *Streptococcus agalactiae* NEM316, *Danio rerio*, *Anopheles gambiae*"

8038 8168 28 "Homo sapiens, *Borrelia burgdorferi*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Caenorhabditis elegans*, *Melanoplus sanguinipes* entomopoxvirus, *Oryza sativa* (*indica* cultivar-group), *Oenococcus oeni*, *Arabidopsis thaliana*, *Danio rerio*" 20

8039 8169 28 "*Mus musculus*, *Homo sapiens*, *Gymnophthalmus vanzoi*, *Drosophila melanogaster*, *Tetrahymena thermophila*, *Caenorhabditis elegans*, *Anopheles gambiae*, *Cymodocea nodosa*"

8040 8170 24 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Rickettsia prowazekii*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Bassozetus zenkevitchi*, *Katharina tunicata*, *Danio rerio*"

8041 8171 65 "*Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Saccharomyces castellii*, *Kluyveromyces lactis*, *Zea mays*, *Nicotiana tabacum*, *Tropheryma whipplei* str. Twist, *Tropheryma whipplei* TW08/27, *Prochlorococcus marinus*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Ciona savignyi*, *Agaricus bisporus*, *Medicago truncatula*, *Homo sapiens*, *Pasteurella multocida*, *Danio rerio*, *Haemophilus influenzae* Rd KW20, *Aspergillus oryzae*, *Yarrowia lipolytica*" 30

8042 8172 27 "Homo sapiens, *Arabidopsis thaliana*, *Mycoplasma gallisepticum* R, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Haemophilus influenzae* biotype aegyptius, *Danio rerio*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Haemophilus influenzae* Rd KW20"

8043 8173 28 "Homo sapiens, *Mus musculus*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Goatpox virus*, *Sheeppox virus*, *Lumpy skin disease virus*, *Danio rerio*, *Yaba-like disease virus*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*" 40

8044 8174 25 "*Drosophila melanogaster*, *Homo sapiens*, *Arabidopsis thaliana*"

8045 8175 36 "*Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Homo sapiens*, *Streptococcus pneumoniae* R6, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Streptococcus agalactiae* 2603V/R, *Rickettsia prowazekii*, *Mycoplasma pulmonis*, *Anthophora pacifica*, *Saccharomyces cerevisiae*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Exaerete frontalis*, *Caenorhabditis briggsae*, *Geodia cydonium*, *Danio rerio*, uncultured marine gamma proteobacterium EBAC31A08, *Saccharomyces* sp. IFO 1816, Cloning 50

vector pGB-MEL1, *Saccharomyces pastorianus*"

8046 8176 36 "Homo sapiens, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Plasmodium falciparum* 3D7, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila melanogaster*, *Clostridium tetani* E88, *Oryza sativa*, *Lotus corniculatus* var. *japonicus*, *Dictyostelium discoides*"

8047 8177 27 "Schizosaccharomyces pombe, *Bacillus cereus* ATCC 14579, *Arabidopsis thaliana*, *Pan troglodytes*, *Homo sapiens*, *Mus musculus*, *Bos taurus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Chirospalmus quadrigatus*, *Ecchinosporangium coloratum*, *Danio rerio*, *Lotus corniculatus* var. *japonicus*, *Oceanobacillus ihayensis* HTE831, *Caenorhabditis elegans*"

8048 8178 27 "Mus musculus, *Sulfolobus solfataricus*, Human papillomavirus type 53, *Homo sapiens*, synthetic construct, *Enterococcus faecalis* V583, *Streptococcus agalactiae* 2603V/R, *Streptococcus pneumoniae*, *Tetraodon nigroviridis*, *Streptococcus agalactiae* NEM316, *Arabidopsis thaliana*, *Acinetobacter* sp. NCIMB9871, *Oryza sativa* (*japonica* cultivar-group), *Macaca fascicularis*, *Cricetulus griseus*, *Danio rerio*"

8049 8179 30 "Plasmodium falciparum 3D7, *Homo sapiens*, *Danio rerio*, *Clostridium perfringens*, *Amsacta moorei* entomopoxvirus, *Coxiella burnetii* RSA 493, *Caenorhabditis elegans*, *Dictyostelium discoideum*, *Prochlorococcus marinus*, *Elimia virginica*, *Mus musculus*, *Camptotheca acuminata*"

8050 8180 28 "Hantaan virus, *Hantavirus HTN261*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Bacillus cereus* ATCC 14579, *Bacillus thuringiensis* serovar *thuringiensis*, *Methanosarcina acetivorans* C2A, *Hantavirus A9*, *Hantavirus SN7*, *Hantaan virus E142*, *Hantaan virus 84FLi*, *Eremothecium gossypii*, *Mycoplasma pneumoniae*, *Hantavirus RG9*, *Hantavirus Z10*"

8051 8181 45 "Arabidopsis thaliana, *Shewanella violacea*, *Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Lactococcus lactis* subsp. *lactis*, *Bacillus anthracis* str. Ames, *Agrobacterium tumefaciens* str. C58 (U. Washington), *Agrobacterium tumefaciens* str. C58 (Cereon), *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Hyoscyamus niger*"

8052 8182 24 "Homo sapiens, *Arabidopsis thaliana*, *Chlamydomonas reinhardtii* CWL029, *Chlamydomonas reinhardtii* AR39, *Chlamydomonas reinhardtii* J138, *Oryza sativa* (*japonica* cultivar-group), *Chlamydomonas reinhardtii* TW-183, *Mus musculus*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Danio rerio*, *Ciona intestinalis*, *Schizosaccharomyces pombe*, *Psilotum nudum*"

8053 8183 32 "Clostridium perfringens str. 13, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Mus musculus*, *Arabidopsis thaliana*, *Bos taurus*, *Clostridium tetani* E88, *Human immunodeficiency virus 1*, *Neurospora crassa*, *Rattus norvegicus*, *Leptospira interrogans* serovar *lai* str. 56601, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Danio rerio*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Oryza sativa* (*japonica* cultivar-group), *Human betaretrovirus*"

8054 8184 36 "Guillardia theta, *Mus musculus*, *Homo sapiens*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Lotus corniculatus* var. *japonicus*, *Caenorhabditis elegans*, *Medicago truncatula*, *Chlamydomonas reinhardtii* GPIC, *Pan troglodytes*, *Drosophila melanogaster*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Danio rerio*, *Human herpesvirus 6*, *Rickettsia prowazekii*, *Bombus pullatus*, *Clostridium botulinum*, *Rattus norvegicus*, *Clostridium butyricum*, *Clostridium tetani* E88, *Fusobacterium nucleatum* subsp. *nucleatum*"

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- p. nucleatum ATCC 25586, Trichinella spiralis, Eulaema bombiformis, Xylocopa sic heli, Clostridium acetobutylicum, Prochlorococcus marinus, Allodape skaifeorum, Plasmodium falciparum 3D7, Apis nigrocincta, Acacia pulchella, Ciona intestinalis, Entamoeba histolytica, Felis catus"
- 8055 8185 27 "Homo sapiens, Mus musculus, Danio rerio, Pseudoalteromonas haloplanktis, Caenorhabditis elegans, Spizellomyces punctatus, Asplenium marinum, Asplenium setoi, Asplenium nidus, Asplenium cymbifolium, Oryza sativa (japonica cultivar-group), Rattus norvegicus"
- 8056 8186 28 "Metalepis albiflora, Cynanchum peninsulare, Homo sapiens, Micholitzia obcordata, Hoya camphorifolia, Medicago truncatula, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Schizosaccharomyces pombe, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Pantroglodytes, Dictyostelium discoideum, Lemur catta, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Bacillus subtilis, Amsactamoorei entomopoxvirus, Saccharomyces cerevisiae, Bacillus subtilis subsp. subtilis str. 168, Orthanthera jasminiflora, Leptadenia hastata, Haywardina cuculi, Orthanthera albida, Helicobacter hepaticus ATCC 51449, Plasmodium chabaudi" 10
- 8057 8187 32 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Xenopus laevis, Sulfolobus solfataricus, Danio rerio, Drosophila hydei, Dictyostelium discoideum, Branchiostoma floridae, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Prochlorococcus marinus subsp. marinus str. CCMP1375, Mesocricetus auratus, Bacillus halodurans" 20
- 8058 8188 31 "Mus musculus, Homo sapiens, Aquifex aeolicus VF5, Oryza sativa (japonica cultivar-group), Lemur catta, Streptococcus mutans UA159, Arabidopsis thaliana, Caenorhabditis briggsae, Rattus norvegicus, Chlamydomonas reinhardtii"
- 8059 8189 30 "Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Medicago truncatula, Mycoplasma penetrans, Drosophila willistoni, Caenorhabditis elegans, Plasmodium falciparum 3D7, Mus musculus, Oryza sativa (japonica cultivar-group)" 30
- 8060 8190 28 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Chilli vein mottle virus"
- 8061 8191 40 "Pyrococcus furiosus DSM 3638, Chlamydomonas caviae GPIC, Mus musculus, Homo sapiens, Lactococcus lactis subsp. lactis, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Dictyostelium discoideum, Enterococcus faecalis, Ureaplasma urealyticum, Danio rerio, Haemophilus ducreyi 3500HP"
- 8062 8192 28 "Homo sapiens, Mus musculus, Streptococcus pyogenes MGAS 315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Glomus sp. 2505.08.Otto, Rhizophyidum sp. 136, Pyrococcus furiosus DSM 3638, Oryza sativa, Arabidopsis thaliana" 40
- 8063 8193 23 "Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Plasmodium falciparum, Lactococcus lactis, Rattus norvegicus"
- 8064 8194 32 "Clostridium acetobutylicum, Homo sapiens, Methanosarcina mazei Goe1, Mus musculus, Escherichia coli CFT073, Bacillus anthracis str. Ames, Arabidopsis thaliana, Fowlpox virus, Campylobacter jejuni, Oryza sativa (japonica cultivar-group), Danio rerio"
- 8065 8195 28 "Caenorhabditis elegans, Homo sapiens, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Fusobacterium nucleatum, Danio 50

- rerio, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Ciona intestinalis*, *Rattus norvegicus*, *Chlamydia muridarum*, *Borrelia burgdorferi* B31, *Plantago nubicola*, *Campylobacter jejuni*, *Pan troglodytes*, *Misgurnus anguillicaudatus*, Human immunodeficiency virus 1, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Criethidia fasciculata*, *Lotus corniculatus* var. *japonicus*, *Botryotinia fuckeliana*, *Citrus jambhiri*"
- 8066 8196 27 "Homo sapiens, *Mus musculus*, Lactococcus phage 712, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Felis catus*, *Tripneustes gratilla*, *Danio rerio*, *Medicago truncatula*"
- 8067 8197 23 "Homo sapiens, *Enterococcus faecalis* V583, *Saccharomyces cerevisiae*, *Mus musculus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Danio rerio*, *Mantidactylus depressiceps*" 10
- 8068 8198 42 "Enterococcus *hirae*, *Clostridium tetani* E88, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Clostridium acetobutylicum*, *Danio rerio*, *Staphylococcus aureus* subsp. *aureus* Mu50, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Mus musculus*, *Homo sapiens*, *Oceanobacillus iheyensis* HTE831, *Lactococcus lactis*, *Lactococcus lactis* subsp. *lactis*, *Listeria monocytogenes*, *Microciconia prolifera*, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group)" 20
- 8069 8199 28 "Homo sapiens, *Bacillus anthracis* str. Ames, *Canis familiaris*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Mus musculus*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Physcomitrella patens*, *Oceanobacillus iheyensis* HTE831, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*"
- 8070 8200 48 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Buchnera aphidicola*, *Bacillus anthracis* str. Ames, *Bacillus cereus* ATCC 14579, *Clostridium acetobutylicum*, *Prochlorococcus marinus*, *Homo sapiens*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Listeria innocua*, *Staphylococcus epidermidis* ATCC 12228, *Rickettsia prowazekii*, *Mus musculus*, *Dictyostelium discoideum*, *Oryza sativa* (japonica cultivar-group), *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oceanobacillus iheyensis* HTE831, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Chlamys farreri*, *Caenorhabditis elegans*, *Danio rerio*, *Campylobacter jejuni*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Sulfolobus tokodaii*, *Lactobacillus plantarum* WCFS1, *Bacillus subtilis* subsp. *subtilis* str. 168, *Dasyurus hallucatus*, *Bartonella tribocorum*, Wound tumor virus, *Bacillus subtilis*" 30
- 8071 8201 28 "Homo sapiens, *Gossypium turneri*, *Gossypium thurberi*, *Gossypium trilobum*, *Gossypium arboreum* x *Gossypium thurberi*, *Rattus norvegicus*, *Filobasidiella neoformans*, *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Danio rerio*, Ictalurid herpesvirus 1" 40
- 8072 8202 41 "Clostridium acetobutylicum, *Chlamydia trachomatis*, *Clostridium tetani* E88, *Rickettsia prowazekii*, *Homo sapiens*, *Chlamydia muridarum*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Pasteurella multocida*, *Mycoplasma hominis*, *Arabidopsis thaliana*, *Medicago truncatula*, *Caenorhabditis elegans*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Danio rerio*, *Haemophilus influenzae* Rd KW20, *Eimeria tenella*, *Dictyostelium discoideum*, *Streptococcus agalactiae* 2603V/R, *Chaetosphaeridium globosum*, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Prochlorococcus marinus*, *Streptococcus* 50

- us agalactiae NEM316, Candidatus Blochmannia floridanus, Staphylococcus epidermidis, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Moritella japonica"
- 8073 8203 24 "Homo sapiens, Danio rerio, Bacillus cereus ATCC 14579, Drosophila melanogaster, Rickettsia montanensis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Incisalia s p."
- 8074 8204 24 "Mus musculus, Homo sapiens, Zea mays, Pan troglodytes, Danio rerio, Catharanthus roseus" 10
- 8075 8205 28 "Sorghum mosaic virus, Homo sapiens, Mus musculus, Brucella melitensis 16M, Brucella suis 1330, Arabidopsis thaliana, Drosophila melanogaster, Papio anubis, Peromyscus maniculatus, Caenorhabditis elegans, Oreochromis aureus, Danio rerio"
- 8076 8206 28 "Oryza sativa (japonica cultivar-group), Homo sapiens, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Thalassiosira weissflogii, Rattus norvegicus, Neriene variabilis, Clostridium tetani E88, Cryptococcus phalpus bipunctatus, Mamestra configurata nucleopolyhedrovirus B, Arabidopsis thaliana, Pericalus quadrimaculata, Danio rerio, Mycoplasma pulmonis, Oceanobacillus iheyensis HTE831, Schizosaccharomyces pombe" 20
- 8077 8207 27 "Chlamydia trachomatis, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Peanut stunt virus"
- 8078 8208 27 "Homo sapiens, Clostridium acetobutylicum, Ciona intestinalis, Papio anubis"
- 8079 8209 29 "Shewanella violacea, Homo sapiens, Mus musculus, Macaca mulatta, Methanosarcina acetivorans C2A, Pan troglodytes, Sinorhizobium meliloti, Neurospora crassa, Danio rerio, Botryotinia fuckeliana"
- 8080 8210 27 "Mus musculus, Homo sapiens, Pisum sativum, Danio rerio, Hibiscus cannabinus, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Rattus norvegicus, Capsicum annuum, Bacteriophage SP82" 30
- 8081 8211 28 "Mus musculus, Homo sapiens, Thermoanaerobacter tengcongensis, Chlamydia muridarum, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Xiphophorus maculatus, Spizellomyces punctatus, Plasmodium vivax, Pyrococcus horikoshii, Pan troglodytes"
- 8082 8212 27 "Homo sapiens, Mus musculus, Mycoplasma gallisepticum R, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Schistosoma japonicum, Dictyostelium discoideum, Plasmodium falciparum 3D7, Oryza sativa, Danio rerio, Pongo pygmaeus, Sulfolobus tokodaii, Sus scrofa, Clostridium perfringens str. 13"
- 8083 8213 31 "Homo sapiens, Chromobacterium violaceum, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Shewanella oneidensis MR-1, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Sus scrofa, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Bacillus subtilis subsp. subtilis str. 168, Clostridium perfringens" 40
- 8084 8214 38 "Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola str. APS (Acyrthosiphon pisum), Staphylococcus aureus, Homo sapiens, Clostridium acetobutylicum, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Chlamydomonas pneumoniae TW-183, Plasmodium falciparum 3D7, Mus musculus, Wigglesworthia glossinidia endosymbiont 50

- t of *Glossina brevipalpis*, *Chlamydia muridarum*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group)"
- 8085 8215 68 "Candidatus *Blochmannia floridanus*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Aquifex aeolicus* VF5, *Streptococcus agalactiae* 2603V/R"
- 8086 8216 49 "Prochlorococcus marinus, *Homo sapiens*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Haemophilus ducreyi* 35000HP, *Candidatus Blochmannia floridanus*, *Pan troglodytes*, *Caenorhabditis elegans*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Paramecium tetraurelia*, *Danio rerio*" 10
- 8087 8217 28 "Clostridium tetani E88, *Mus musculus*, *Homo sapiens*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Salmonella enterica* subsp. *enterica* serovar *Typhi* Ty2, *Arabidopsis thaliana*, *Mycoplasma penetrans*, *Saccharomyces cerevisiae*, *Salmonella enterica* subsp. *enterica* serovar *Typhi*"
- 8088 8218 27 "Bacillus anthracis str. Ames, *Homo sapiens*, *Mus musculus*, *Danio rerio*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Oryza sativa* (japonica cultivar-group)"
- 8089 8219 24 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Arabidopsis thaliana*, *Staphylococcus epidermidis* ATCC 12228, *Plasmodium falciparum* 3D7, *Eruca sativa*, *Gentianella azurea*, *Staphylococcus epidermidis*, *Lomatogonium cuneifolium*" 20
- 8090 8220 29 "Drosophila melanogaster, *Homo sapiens*, *Bacillus anthracis* str. Ames, *Mus musculus*, *Capra hircus*, *Rattus norvegicus*, *Apis mellifera*, *Clostridium perfringens* str. 13"
- 8091 8221 27 "Neisseria meningitidis, *Bacteroides thetaiotaomicron* VP I-5482, *Homo sapiens*, *Drosophila melanogaster*, *Xenopus laevis*, *Saccharomyces cerevisiae*, *Argopecten irradians*, *Staphylococcus aureus*, *Danio rerio*, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Staphylococcus aureus* subsp. *aureus* Mu50, *Nostoc* sp. PCC 7120" 30
- 8092 8222 28 "Bacillus atticus, *Homo sapiens*, African swine fever virus, *Mus musculus*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Danio rerio*, *Caenorhabditis elegans*"
- 8093 8223 23 "Mus musculus, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Bacteroides fragilis*, *Drosophila pseudoobscura*, *Danio rerio*"
- 8094 8224 31 "Homo sapiens, *Andricus mediterraneae*, *Andricus crispator*, *Andricus tinctoriusnostrus*, *Andricus kollari*, *Andricus corruptrix*, *Andricus caliciformis*, *Andricus lignicola*, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Medicago truncatula*, *Rattus norvegicus*, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Danio rerio*, *Rickettsia prowazekii*, *Lemur catta*, *Dictyostelium discoideum*, *Schmidtea mediterranea*, *Nicotiana tabacum*, *Oryza sativa* (japonica cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Dromiciops gliroides*, *Cucurbita maxima*" 40
- 8095 8225 23 "Mus musculus, *Drosophila melanogaster*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Human herpesvirus 5*, *Plasmodium falciparum* 3D7, *Sebastes umbrosus*, *Schizosaccharomyces pombe*, *Strongylocentrotus purpuratus*, *Hordeum vulgare*, *Hemicentrotus pulcherrimus*"
- 8096 8226 43 "Dictyostelium discoideum, *Mus musculus*, *Homo sapiens*, R 50

- attus norvegicus, Pan troglodytes, Drosophila melanogaster, Plasmodium falciparum 3D7, Methanosarcina acetivorans C2A, Primula sieboldii, Vigna radiata, Pisum sativum, Plasmodium falciparum, Caenorhabditis elegans, Danio rerio, Aedes aegypti, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Peanut witches' -broom phytoplasma, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Campylobacter jejuni subsp. jejuni NCTC 11168, Ureaplasma urealyticum, Opus exiguus, Candida albicans"
- 8097 8227 29 "Homo sapiens, Dictyostelium discoideum, Danio rerio, Mus musculus, Plasmodium falciparum 3D7, Drosophila melanogaster, Escherichia coli 0157:H7 EDL933, Escherichia coli, Oryza sativa (japonica cultivar-group), Escherichia coli 0157:H7, Arabidopsis thaliana, Gallus gallus, Methanosarcina acetivorans C2A, Sulfolobus solfataricus, Caenorhabditis elegans, Pisum sativum, Oceanobacillus iheyensis HTE831, Equus caballus, Rattus norvegicus, Medicago truncatula, Schizosaccharomyces pombe, Papio anubis, Didelphis virginiana, Xenopus laevis, Clostridium perfringens str. 13" 10
- 8098 8228 25 "Homo sapiens, Araptus sp. SCH05, Vitis vinifera, Mus musculus, Escherichia coli, Ursus maritimus, Ursus arctos, Danio rerio"
- 8099 8229 25 "Mus musculus, Homo sapiens, GB virus C/Hepatitis G virus, Danio rerio, Bacteroides thetaiotaomicron VPI-5482, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Synechocystis sp. PCC 6803, Nostoc sp. PCC 7120" 20
- 8100 8230 27 "Mus musculus, Phascolarctos cinereus, Homo sapiens, Drosophila melanogaster, Danio rerio, Oryza sativa (japonica cultivar-group), Anopheles gambiae, Vigna angularis"
- 8101 8231 24 "Homo sapiens, Arabidopsis thaliana, Schizosaccharomyces pombe, Mus musculus, Oryza sativa (japonica cultivar-group), Staphylococcus epidermidis ATCC 12228, Caenorhabditis elegans, Oryza sativa (indica cultivar-group), Staphylococcus epidermidis, Canis familiaris, Danio rerio, Saccharomyces cerevisiae, Chlorella vulgaris"
- 8102 8232 31 "Haemophilus ducreyi 35000HP, Homo sapiens, Methanosarcina mazei Goe1, Mus musculus, Methanosarcina acetivorans C2A, Human immunodeficiency virus 1, Oryza sativa (japonica cultivar-group), Danio rerio" 30
- 8103 8233 28 "Homo sapiens, Oryza sativa, Pseudomonas syringae pv. tomato str. DC3000, Oryza sativa (japonica cultivar-group), Mus musculus, Rabbit fibroma virus, Clostridium perfringens str. 13, Caenorhabditis elegans, Clostridium acetobutylicum, Streptococcus agalactiae NEM316, Vibrio cholerae, Vibrio parahaemolyticus"
- 8104 8234 31 "Homo sapiens, Oryza sativa (japonica cultivar-group), Sphenomorphus muelleri, Mus musculus, Lotus corniculatus var. japonicus, Eulamprus frerei, Medicago truncatula, Clostridium tetani E88, Plasmodium falciparum 3D7, Pseudomonas syringae pv. maculicola, Streptococcus thermophilus, Caenorhabditis elegans, Danio rerio, Listeria monocytogenes, Vaccinia virus, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Lemur catta, Camelpox virus CMS, Sulfolobus solfataricus, Variola minor virus, Variola virus, Eufriesea caerulescens, Schizosaccharomyces pombe, Rattus norvegicus, Variola major virus, Camelpox virus M-96" 40
- 8105 8235 28 "Homo sapiens, Mus musculus, Carteria cerasiformis, Medicago truncatula, Mycoplasma pneumoniae, Oryza sativa (japonica cultivar-group), Osmia excavata"
- 8106 8236 32 "Mus musculus, Lemur catta, Bos taurus, Homo sapiens, Clostridium tetani E88, Lactococcus lactis subsp. lactis, Gallus gallus, Enterococ 50

- cus hirae, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Methanocaldococcus jannaschii*, *Enterococcus faecalis* V583, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Campellolebias dorsimaculatus*, *Arabidopsis thaliana*, *Perilla frutescens*"
- 8107 8237 29 "Homo sapiens, *Mus musculus*, *Listeria innocua*, *Rattus norvegicus*, *Medicago truncatula*, *Caenorhabditis elegans*, *Shewanella oneidensis* MR-1, *Plasmodium falciparum* 3D7, *Prochlorococcus marinus*, *Caenorhabditis briggsae*, *Lotus corniculatus* var. japonicus, *Pinus taeda*, *Danio rerio*, *Helicobacter pylori* J99, *Macaca fascicularis*, *Arabidopsis thaliana*"
- 8108 8238 24 "Mus musculus, *Homo sapiens*, *Bos taurus*, *Sulfolobus solfataricus*, *Danio rerio*, *Dictyostelium discoideum*, *Medicago truncatula*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Sceloporus jarrovi*, *Porphyromonas gingivalis* W83" 10
- 8109 8239 29 "Buchnera aphidicola str. Sg (*Schizaphis graminum*), *Buchnera aphidicola*, *Oceanobacillus iheyensis* HTE831, *Mus musculus*, *Homo sapiens*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Danio rerio*, *Methanosarcina acetivorans* C2A, *Wollastonia biflora*, *Pirellula* sp., *Allogromiina* sp. 51, marine CFB-group bacterium MBIC04475"
- 8110 8240 29 "Homo sapiens, *Drosophila melanogaster*, *Gallus gallus*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Chironomus* sp. LRC-2002, *Arabidopsis thaliana*, *Danio rerio*, *Prunus dulcis*, *Clostridium perfringens* str. 13" 20
- 8111 8241 24 "Mus musculus, *Arabidopsis thaliana*, *Sus scrofa*, *Lotus corniculatus* var. japonicus, *Rattus norvegicus*, *Bacteroides thetaiotaomicron* VPI-5482, *Homo sapiens*, *Peromyscus leucopus*, *Peromyscus gossypinus*"
- 8112 8242 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Xylella fastidiosa* Temecula1, *Zea mays*, *Oryza sativa* (japonica cultivar-group)"
- 8113 8243 30 "Homo sapiens, Expression shuttle vector pWLG30, *Methanococcus maripaludis*, *Caenorhabditis elegans*, *Mus musculus*, *Drosophila melanogaster*, *Guillardia theta*, *Clostridium thermocellum*, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Abies grandis*, *Caenorhabditis briggsae*, *Chironomus tentans*, *Cryptosporidium parvum*, *Dictyostelium discoideum*" 30
- 8114 8244 24 "Homo sapiens, *Mus musculus*, *Clostridium perfringens* str. 13, *Candida albicans*, *Caenorhabditis elegans*, *Sus scrofa*, *Brachionus calyciflorus*, *Valeriana fauriei*, *Human coxsackievirus* B4, *Podospora anserina*, *Danio rerio*, *Mycoplasma capricolum* subsp. capripneumoniae, *Enterobacteria phage* RB69, *Nostoc* sp. PCC 7120"
- 8115 8245 28 "Homo sapiens, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Streptococcus mutans* UA159, *Mus musculus*, *Piromyces* sp. E2, *Dictyostelium discoideum*, *Vibrio vulnificus* CMCP6, *Papio anubis*, *Caenorhabditis elegans*, *Pneumocystis carinii* f. sp. muris, *Tetrahymena thermophila*, *Arabidopsis thaliana*, *Danio rerio*, *Trypanosoma brucei*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Sulfolobus tokodaii*, *Mycoplasma penetrans*, *Rattus norvegicus*, *Oryza sativa* (indica cultivar-group)" 40
- 8116 8246 28 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Macaca fascicularis*, *Enterococcus faecalis* V583, *Pan troglodytes*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Arabidopsis thaliana*, *Mesostigma viride*, *Euglena gracilis*, *Oryza sativa* (japonica cultivar-group), *Fowlpox virus*, *Haemophilus ducreyi* 350 50

00HP, *Methanocaldococcus jannaschii*"

- 8117 8247 28 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, uncultured bacterium, uncultured *Bacteroides* sp., *Bacteroides ovatus*, *Enterococcus faecalis* V583, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Haemophilus ducreyi* 35000HP, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*"
- 8118 8248 30 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Oryza sativa*, Influenza C virus (C/Johannesburg/1/66), *Lotus corniculatus* var. japonicus, *Saccharomyces cerevisiae*, *Ciona intestinalis*, Influenza C virus, *Mesorhizobium loti*" 10
- 8119 8249 27 "Arabidopsis thaliana, *Mus musculus*, Homo sapiens, *Pyrococcus abyssi*, *Hordeum vulgare*, *Bacteroides thetaiotaomicron* VPI-5482, *Drosophila melanogaster*, *Thermoanaerobacter tengcongensis*, *Rattus norvegicus*, *Clostridium acetobutylicum*, *Pyrococcus horikoshii*, *Lethenteron japonicum*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Trypanosoma cruzi*, *Clostridium perfringens* str. 13"
- 8120 8250 34 "Homo sapiens, *Plasmodium falciparum* 3D7, *Mus musculus*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Streptococcus pyogenes*, *Pasteurella multocida*, *Danio rerio*, *Guillardia theta*, *Lotus corniculatus* var. japonicus, *Anopheles stephensi*, *Heliothis zea* virus 1, *Odontella sinensis*, *Zea mays*, *Didelphis virginiana*, *Oryza sativa* (japonica cultivar-group), *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Dictyostelium discoideum*, *Lycopersicon minutum*, *Saccharomyces cerevisiae*, *Cryptosporidium felis*, *Plasmodium falciparum*, *Clostridium acetobutylicum*, *Caenorhabditis briggsae*, *Pisum sativum*, *Beta vulgaris* subsp. vulgaris, *Plasmodium vivax*, *Crassostrea gigas*, *Ichthyophthirius multifiliis*" 20
- 8121 8251 23 "*Vibrio vulnificus* CMCP6, *Arabidopsis thaliana*, *Vibrio parahaemolyticus*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), Homo sapiens, *Viola chaerophylloides*" 30
- 8122 8252 35 "*Xylella fastidiosa* Temecula1, *Xylella fastidiosa* 9a5c, Homo sapiens, *Mus musculus*, *Arabidopsis thaliana*, *Sulfolobus solfataricus*, *Mycoplasma pulmonis*"
- 8123 8253 24 "Homo sapiens, *Anadenobolus excisus*, *Clostridium perfringens* str. 13, *Arabidopsis thaliana*, *Lactobacillus delbrueckii* subsp. bulgaricus, *Thermoanaerobacter tengcongensis*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Danio rerio*, *Mus musculus*, *Helicobacter pylori*"
- 8124 8254 32 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Caenorhabditis briggsae*, *Danio rerio*, *Emericella nidulans*, *Oryza sativa* (japonica cultivar-group), *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Banksia nutans* var. cernuella, *Banksia oreophila*, *Banksia quercifolia*, *Oryza sativa*, Human adenovirus type 12, *Arabidopsis thaliana*, *Lycopersicon esculentum*, *Wuchereria bancrofti*, *Brugia malayi*, *Rattus norvegicus*, *Atelerix albiventris*, *Coxiella burnetii* RSA 493, *Dictyostelium discoideum*, *Felis catus*, *Monosiga brevicollis*, *Pan troglodytes*, *Papio anubis*, *Schmidtea mediterranea*, *Banksia coccinea*" 40
- 8125 8255 28 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Mycobacterium leprae*, *Oryza sativa* (japonica cultivar-group)" 50

- 8126 8256 24 "Homo sapiens, Drosophila melanogaster, Terebratalia transversa, Oryza sativa (japonica cultivar-group), Mus musculus, Pan troglodytes, Oceanobacillus iheyensis HTE831"
- 8127 8257 44 "Clostridium lentocellum, Homo sapiens, Nostoc sp. PCC 7120, Anabaena sp., Arabidopsis thaliana, Populus tremula x Populus tremuloides, Lotus corniculatus var. japonicus, Populus balsamifera subsp. trichocarpa, Bartonella clarridgeiae, Mus musculus, Armoracia rusticana, Thermoanaerobacter tengcongensis, Prevotella albensis, Guillardia theta, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Bartonella bacilliformis"
- 8128 8258 24 "Human herpesvirus 5, Homo sapiens, Wolbachia endosymbiont of Ceropretes cerri, Pseudomonas syringae pv. maculicola, Wolbachia pipientis, Wolbachia sp., Wolbachia endosymbiont of Onchocerca gutturosa, Wolbachia endosymbiont of Ostrinia furnacalis, Wolbachia endosymbiont of Ostrinia scapulalis, Wolbachia endosymbiont of Hishimonoides sellatifomis, Wolbachia endosymbiont of Hishimonus sellatus, Wolbachia sp. wVes, Wolbachia sp. wDry, Drosophila melanogaster, Wolbachia endosymbiont of Anastrepha fraterculus, Wolbachia endosymbiont of Aphthona nigricutis, Wolbachia endosymbiont of Diabrotica barberi, Wolbachia sp. 123B, Wolbachia endosymbiont of Brugia malayi, Mus musculus" 10
- 8129 8259 90 "Methanocaldococcus jannaschii, Helicobacter hepaticus ATCC 51449, Bacillus cereus ATCC 14579, Enterococcus hirae, Cyanidium caldarium, Staphylococcus aureus, Wolbachia endosymbiont of Onchocerca volvulus, Wolbachia endosymbiont of Dirofilaria repens, Wolbac" 20
- 8130 8260 40 "Buchnera aphidicola, Buchnera aphidicola str. Bp (Baizongia pistaciae), Bartonella bacilliformis, Ehrlichia chaffeensis, Oceanobacillus iheyensis HTE831, Homo sapiens, Danio rerio, Clostridium perfringens str. 13, Dictyostelium discoideum, Oryza sativa (japonica cultivar-group), Bartonella schoenbuchensis, Bartonella weissi, Mus musculus, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Listeria innocua, Lycopersicon esculentum"
- 8131 8261 23 "Homo sapiens, Mus musculus, Ptychodera flava, Clostridium perfringens str. 13, Rattus norvegicus" 30
- 8132 8262 28 "Mus musculus, Homo sapiens, Danio rerio, Shewanella sp. ANA-3, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Arabidopsis thaliana, Hemileuca sp. L6, Lymantria monacha, Lymantria xyliana, Delisea pulchra, Physarum polycephalum"
- 8133 8263 27 "Homo sapiens, Mus musculus, Hepatitis B virus, Feline immunodeficiency virus"
- 8134 8264 29 "Homo sapiens, Corynebacterium glutamicum ATCC 13032, Lactococcus lactis, Xenopus laevis, Caenorhabditis elegans, Capra hircus, Amsacta moorei entomopoxvirus, Sulfolobus tokodaii, Danio rerio, Clostridium novyi, Drosophila melanogaster, Buchnera aphidicola str. Bp (Baizongia pistaciae), Escherichia coli CFT073, Botryllus schlosseri, Mus musculus, Buchnera aphidicola str. Sg (Schizaphis graminum), Escherichia coli, Saccharomyces cerevisiae, Gentianella saxosa, Gentianella patula, Gentianella bellidifolia, Gentianella magellanica, Gentianella peruviana, Gentianella cosmantha, Gentianella ruizii, Gentianella cerastioides, Gentianella microcalyx, Gentianella amarella, Gentianella canosoi, Gentianella auriculata, Gentianella propinqua, Arabidopsis thaliana, Gentianella sulphurea, Gentianella germanica, Gentianella fastigiata, Gentianella caucasea" 40
- 8135 8265 23 "Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Schizosaccharomyces pombe, Caenorhabditis elegans, Brassica napus, Arabidopsis thaliana, Clostridium stercoarium" 50

- 8136 8266 28 "Mus musculus, Phasianus colchicus, Gallus gallus, Pan troglodytes, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Nostoc sp. PCC 6720, Anabaena azollae, Clostridium tetani E88, Papio anubis, Haemophilus influenzae biotype aegyptius, Clostridium acetobutylicum, Mycobacterium tuberculosis CDC1551, Mycobacterium tuberculosis H37Rv, Phoenix dactylifera, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mycobacterium bovis subsp. bovis AF2122/97, Nephrops norvegicus"
- 8137 8267 27 "Homo sapiens, Cryptosporidium parvum, Lotus corniculatus var. japonicus, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana, Danio rerio, Mycoplasma penetrans, Schizosaccharomyces pombe" 10
- 8138 8268 23 "Mus musculus, Archaeoglobus fulgidus DSM 4304, Drosophila melanogaster, Homo sapiens, Oryza sativa (japonica cultivar-group), Trypanosoma brucei, Lotus corniculatus var. japonicus, Danio rerio, Equus caballus"
- 8139 8269 27 "Danio rerio, Homo sapiens, Pseudozyma flocculosa, Mus musculus, Borrelia burgdorferi B31, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Arabidopsis thaliana, Saccharomyces cerevisiae"
- 8140 8270 37 "Mus musculus, Homo sapiens, Pan troglodytes, Papio hamadryas, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Danio rerio, Clostridium perfringens str. 13, Dictyostelium discoideum, Felis catus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Rickettsia prowazekii, Arabidopsis thaliana, Saccharomyces cerevisiae, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Medicago truncatula, Rattus norvegicus, Drosophila melanogaster, Caenorhabditis elegans, Schmidtea mediterranea, Streptococcus pneumoniae TIGR4, Bos taurus, Manihot esculenta, Entamoeba histolytica, Streptococcus pneumoniae, Schizosaccharomyces pombe" 20
- 8141 8271 28 "Homo sapiens, Onchocerca gibsoni, Oceanobacillus iheyensis HTE831, Mus musculus, Rattus norvegicus, Drosophila melanogaster, Dirofilaria immitis, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Lycopersicon esculentum, Daboia russelii, Candida glabrata, Vibrio fischeri, Danio rerio, Pan troglodytes" 30
- 8142 8272 33 "Homo sapiens, Rattus norvegicus, Lycopersicon esculentum, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Danio rerio"
- 8143 8273 23 "Homo sapiens, Vibrio cholerae, Mus musculus, Pan troglodytes, Vanilla planifolia, Arabidopsis thaliana, Danio rerio, Staphylococcus aureus, Nitrosomonas europaea ATCC 19718"
- 8144 8274 31 "Escherichia coli CFT073, Mus musculus, Homo sapiens, Caenorhabditis elegans, Aster yellows phytoplasma, Drosophila melanogaster, Danio rerio, Dictyostelium discoideum, Photorhabdus luminescens, Buchnera aphidicola str. Sg (Schizaphis graminum), Spizellomyces punctatus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Enterococcus faecalis V583, Medicago truncatula, Plasmodium falciparum 3D7, Plasmodium chabaudi chabaudi, Lotus corniculatus var. japonicus, Sulfolobus tokodaii, Plasmid pCF10, Metridium senile, Clostridium perfringens str. 13" 40
- 8145 8275 31 "Clostridium acetobutylicum, Homo sapiens, Mus musculus, Thermoanaerobacter tengcongensis, Chlamydomonas reinhardtii, Danio rerio, Plasmodium falciparum, Drosophila kuntzei, Mycoplasma pulmonis, Pyrococcus abyssi, Lotus corniculatus var. japonicus, Mycoplasma penetrans, Papio anubis, Arabidopsis thaliana" 50

- 8146 8276 29 "Mycoplasma pulmonis, Arabidopsis thaliana, Homo sapiens, uncultured crenarchaeote 4B7, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Medicago truncatula, Rattus norvegicus, Caenorhabditis elegans, Dictyostelium discoideum, Bacillus megaterium, Drosophila melanogaster, Zea mays, Lycopersicon esculentum, Mycoplasma pneumoniae, Euglena longa, Lotus corniculatus var. japonicus"
- 8147 8277 26 "Mus musculus, Drosophila melanogaster, Banana bunchy top virus, Homo sapiens, Equus caballus, Oryza sativa (japonica cultivar-group)"
- 8148 8278 23 "Homo sapiens, Mus musculus, Thermoplasma acidophilum"
- 8149 8279 29 "Danio rerio, Drosophila melanogaster, Homo sapiens, Plasmodium falciparum 3D7, Caenorhabditis elegans, Schizosaccharomyces pombe, Candida glabrata, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Arabidopsis thaliana, Graphocephala hieroglyphica, Oryza sativa (japonica cultivar-group), Tetrahymena thermophila, Theophila cylindricollis, Mycoplasma pulmonis, Zymomonas mobilis, Sminthopsis macroura, Clostridium perfringens str. 13, Medicago truncatula, Streptococcus thermophilus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Dictyostelium discoideum, Monosiga brevicollis, Clostridium tetani E88, Esenbeckia fascipennis, Oryza sativa, Canis familiaris, Rickettsia conorii, Streptococcus pneumoniae TIGR4, Clostridium acetobutylicum, Diadasia pereyrae, Rickettsia prowazekii, Cyanophora paradoxa, Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831" 10
- 8150 8280 27 "Mus musculus, Homo sapiens, Rattus norvegicus, Human immunodeficiency virus 1, Danio rerio"
- 8151 8281 27 "Mus musculus, Homo sapiens, Danio rerio, Borrelia burgdorferi, Phalaenopsis sp. 'pSPORT1', Thermosynechococcus elongatus BP-1, Mycoplasma gallisepticum R, Arabidopsis thaliana, Drosophila melanogaster, Caenorhabditis elegans, Plasmodium falciparum 3D7, Sorghum bicolor, Streptococcus pyogenes MG AS8232" 20
- 8152 8282 25 "Homo sapiens, Mus musculus, Canis familiaris, Brugia malayi, Dictyostelium discoideum, Medicago truncatula, Caenorhabditis elegans, Arabidopsis thaliana, Listeria innocua" 30
- 8153 8283 27 "Homo sapiens, Human immunodeficiency virus 1, Tobacco mosaic virus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Plasmodium falciparum 3D7, Clostridium tetani E88, Necrophilus hydrophiloides, Thermoanaerobacter tengcongensis, Colpomenia sinuosa, Clostridium acetobutylicum, Tetrahymena pyriformis, Tomato mosaic virus, Populus balsamifera subsp. trichocarpa, Mycoplasma penetrans, Danio rerio, Schizosaccharomyces pombe"
- 8154 8284 31 "Oryza sativa (japonica cultivar-group), Homo sapiens, Galaxias maculatus, Listeria monocytogenes, Helicobacter pylori J99, Mus musculus, Danio rerio, Drosophila melanogaster, Pseudomonas putida KT2440, Plasmodium falciparum 3D7, Xanthomonas campestris pv. campestris str. ATCC 33913, Campylobacter jejuni subsp. jejuni NCTC 11168, Chlamydia trachomatis, Lymnaea stagnalis, Caenorhabditis elegans, Listeria innocua, Synechocystis sp. PCC 6803" 40
- 8155 8285 28 "Homo sapiens, Drosophila melanogaster, Mus musculus, Mycoplasma gallisepticum R, Lactococcus lactis subsp. lactis, Bacteriophage bIL285, Oryctolagus cuniculus"
- 8156 8286 23 "Mycoplasma hominis, Homo sapiens, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Nicotiana tabacum, Ureaplasma" 50

- a urealyticum, *Mus musculus*, *Caenorhabditis elegans*, *Populus nigra*"
- 8157 8287 28 "Homo sapiens, *Caenorhabditis elegans*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Caenorhabditis briggsae*, *Danio rerio*"
- 8158 8288 27 "Homo sapiens, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Methanocaldococcus jannaschii*, *Rattus norvegicus*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Xenopus laevis*"
- 8159 8289 31 "Potato yellow mosaic virus-[Guadeloupe], Potato yellow mosaic Trinidad virus-[Trinidad & Tobago], *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Pyrobaculum aerophilum* str. IM2, *Papio anubis*, *Caenorhabditis elegans*, *Wigglesworthia glossinidia endosymb*" 10
- 8160 8290 28 "Homo sapiens, *Prochlorococcus marinus*, *Arabidopsis thaliana*, *Caenorhabditis briggsae*, *Bacillus cereus* ATCC 14579, *Bacillus lynceorum*, *Pan troglodytes*, *Mus musculus*, *Drosophila melanogaster*, *Brevicoryne brassicae*, *Chelone lyonii*, *Penstemon centranthifolius*, *Keckiella antirrhinoides*, *Keckiella rothrockii*, *Keckiella ternata*, *Keckiella cordifolia*, *Keckiella lemmonii*, *Keckiella breviflora*, *Keckiella corymbosa*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Bacillus whitei*"
- 8161 8291 27 "Arabidopsis thaliana, *Homo sapiens*, *Mus musculus*, *Neurospora crassa*, *Cryptosporidium parvum*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Cercopithecine herpesvirus 1*, *Pseudomonas syringae* pv. tomato str. DC 3000, *Pseudomonas putida* KT2440, *Human herpesvirus 2*, *Caenorhabditis briggsae*, *Melanoplus sanguinipes* entomopoxvirus, *Dictyostelium discoideum*, *Gallus gallus*, *Acremonium cellulolyticus* Y-94" 20
- 8162 8292 31 "Listeria monocytogenes, *Homo sapiens*, *Escherichia coli* O157:H7 EDL933, *Caenorhabditis elegans*, *Listeria innocua*, *Escherichia coli* O157:H7, *Clostridium tetani* E88, *Mus musculus*, *Oceanobacillus iheyensis* HTE831, *Brevibacillus brevis*, *Bacillus halodurans*"
- 8163 8293 28 "Homo sapiens, *Streptococcus mutans* UA159, *Arabidopsis thaliana*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Plasmodium falciparum*, *Oryza sativa*, *Pasteurella multocida*, *Danio rerio*, *Chlamydia muridarum*, *Plasmodium reichenowi*, *Plasmodium falciparum* 3D7, *Lotus corniculatus* var. japonicus, *Oryza sativa* (japonica cultivar-group)" 30
- 8164 8294 59 "Proteus vulgaris, *Shewanella oneidensis* MR-1, *Homo sapiens*, *Leptospira interrogans* serovar lai str. 56601, *Lyngbya majuscula*, *Chlamydia muridarum*, *Escherichia coli* CFT073, *Pseudomonas fluorescens*, *Escherichia coli* K12, *Pirellula* sp., *Danio rerio*, *Escherichia coli*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Saccharomyces cerevisiae*, *Vibrio cholerae*, *Schizosaccharomyces pombe*, *Mus musculus*, *Clostridium magnum*" 40
- 8165 8295 33 "Oceanobacillus iheyensis HTE831, *Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Mus musculus*, *Pan troglodytes*, *Eimeria tenella*"
- 8166 8296 27 "Homo sapiens, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Mus musculus*, *Bacillus anthracis* str. Ames, *Drosophila melanogaster*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Danio rerio*, *Bigeloviella natans*"
- 8167 8297 27 "Homo sapiens, *Mus musculus*, *Danio rerio*, *Leptospira interrogans* serovar lai str. 56601, *Medicago truncatula*, *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Sulfolobus solfataricus*, *Cylindrotheca fusiformis*, *Oryza sativa* (japonica cultivar-group), *Saccharomyces cerevisiae*" 50

- 8168 8298 41 "Homo sapiens, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Saccharomyces cerevisiae, Nostoc sp. PCC 7120, Mus musculus, Dictyostelium discoideum, Sinapis alba, Oryza sativa (japonica cultivar-group), Toxoplasma gondii, Cryptosporidium parvum, Psilotum nudum, Drosophila virilis, Pan troglodytes, Arabidopsis thaliana, Gonioctena olivacea, Penicillium sp. KCTC16076, Saccharomyces uvarum, Saccharomyces castellii, Bos taurus, Pyrobaculum aerophilum str. IM2, Ehrlichia chaffeensis, Kluyveromyces lactis, Lotus corniculatus var. japonicus"
- 8169 8299 35 "Pisum sativum, Oryza sativa (japonica cultivar-group), Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Bombyx mori nuclear polyhedrosis virus, Bacillus cereus ATCC 14579, Peanut witches'-broom phytoplasma, Plasmodium falciparum 3D7, Arabidopsis thaliana, Euglena gracilis, Nicotiana tabacum, Oryza sativa, Caenorhabditis elegans, Medicago truncatula, Dictyostelium discoideum, Monosiga brevicollis, Percus lineatus, Guillardia theta, Euphydryas phaeton, Euphydryas colon, Euphydryas chalcedona, Euphydryas anicia, Pasteurella multocida, Marchantia polymorpha, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Methanocaldococcus jannaschii, Lychnothamnus barbatus, Nitellopsis obtusa" 10
- 8170 8300 25 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Danio rerio, Pan troglodytes, Caenorhabditis elegans, Pimelia fornicata, Pimelia atlantis atlantis, Entamoeba histolytica, Saccharomyces cerevisiae" 20
- 8171 8301 31 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Caenorhabditis elegans, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Aedes aegypti, Candida boidinii, Reticulitermes grassei, Rickettsia conorii, Danio rerio, Torpedo marmorata, Equine rhinitis A virus, Lotus corniculatus var. japonicus, Pneumocystis carinii, Rickettsia rickettsii"
- 8172 8302 30 "Mus musculus, Homo sapiens, Danio rerio, Prochlorococcus marinus, Arabidopsis thaliana, Caenorhabditis elegans"
- 8173 8303 31 "uncultured alpha proteobacterium MB21A02, Danio rerio, Homo sapiens, Mus musculus, Chlorobium tepidum TLS, Enterococcus faecalis V583, Escherichia coli CFT073, Plasmodium falciparum 3D7, Arabidopsis thaliana, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group)" 30
- 8174 8304 41 "Oryza sativa (japonica cultivar-group), Mus musculus, Trichomonas vaginalis, Entamoeba histolytica, Listeria innocua, Homo sapiens, Anopheles gambiae, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Rattus norvegicus, Danio rerio, Triticum aestivum"
- 8175 8305 24 "Homo sapiens, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Schizaphis graminum, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4"
- 8176 8306 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Enterococcus faecalis V583, Dictyostelium discoideum, Bathylagus euryops, Lotus corniculatus var. japonicus, Haemophilus ducreyi 35000HP, Caenorhabditis elegans, Mus musculus, Vibrio cholerae, Arthrobacter nicotinovorans, Danio rerio, Arabidopsis thaliana, Macaca fascicularis" 40
- 8177 8307 24 "Homo sapiens, Mus musculus, Gallus gallus, Peanut witches'-broom phytoplasma, Danio rerio, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Medicago truncatula"
- 8178 8308 37 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Candida albicans, Danio rerio, Plasmodium falciparum 3D7, Arabidopsis thaliana, Mycoplasma gallisepticum, Mycoplasma gallisepticum R, Tagetes lucida, Trypanosoma b 50

- rucei, *Marshallia caespitosa*, *Drosophila melanogaster*, *Rattus norvegicus*, *Escherichia coli* CFT073, *Sorghum bicolor*, *Rickettsia conorii*, *Chlamydomonas subcaudata*, *Xenopus laevis*, *Plasmodium falciparum*"
- 8179 8309 47 "Homo sapiens, *Schizosaccharomyces pombe*, *Mus musculus*, *Guillardia theta*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Oryza sativa* (japonica cultivar-group), *Chironomus tentans*, *Danio rerio*, *Medicago truncatula*, *Pan troglodytes*, *Plasmodium falciparum*, *Trypanosoma brucei*, *Trioxys pallidus*, *Binodoxys acalephae*, *Saccharomyces* sp. URFJ 50791, *Rattus norvegicus*, Rice stripe virus, *Monosiga brevicollis*, *Drosophila melanogaster*, *Arabidopsis thaliana*" 10
- 8180 8310 27 "Homo sapiens, *Pyrococcus horikoshii*, *Mus musculus*, *Caenorhabditis briggsae*, *Arabidopsis thaliana*"
- 8181 8311 23 "Homo sapiens, *Mus musculus*, *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Danio rerio*, *Dictyostelium discoideum*"
- 8182 8312 27 "Homo sapiens, *Mus musculus*, *Enterococcus faecalis* V583, *Borrelia burgdorferi* B31, *Clostridium tetani* E88, *Arabidopsis thaliana*, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Glycine max*, *Streptococcus mutans* UA159, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Caenorhabditis elegans*, *Danio rerio*, *Heterosigma carterae*" 20
- 8183 8313 28 "Homo sapiens, *Mus musculus*, *Helicobacter hepaticus* ATCC 51449, *Bacillus cereus* ATCC 14579, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Bacillus subtilis*, *Buchnera aphidicola* (*Rhopalosiphum padi*), *Proctolabus mexicanus*, *Anopheles quadrimaculatus* A, *Bacillus subtilis* subsp. *subtilis* str. 168, *Papio anubis*"
- 8184 8314 26 "Shigella flexneri 2a str. 2457T, *Shigella flexneri* 2a str. 301, *Escherichia coli* 0157:H7 EDL933, *Escherichia coli* K12, *Escherichia coli* 0157:H7, *Chlamydia trachomatis*, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Danio rerio*, *Helicobacter hepaticus* ATCC 51449, *Ureaplasma urealyticum*, *Caenorhabditis elegans*, *Rattus norvegicus*" 30
- 8185 8315 24 "Homo sapiens, *Mus musculus*"
- 8186 8316 27 "*Oryza sativa* (japonica cultivar-group), *Homo sapiens*, *Lactobacillus fermentum*, synthetic construct, *Lactobacillus plantarum*, *Caenorhabditis elegans*, *Bacteroides thetaiotaomicron* VPI-5482, *Danio rerio*, *Drosophila melanogaster*, *Escherichia coli* CFT073, *Sulfolobus solfataricus*, *Arabidopsis thaliana*, *Mus musculus*, *Ciona intestinalis*, *Ovis aries*"
- 8187 8317 27 "Homo sapiens, *Mus musculus*, *Chlamydomonas reinhardtii*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Borrelia parkeri*, *Danio rerio*"
- 8188 8318 24 "Homo sapiens, *Danio rerio*, *Mus musculus*, *Ciona intestinalis*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Prototheca wickerhamii*, *Ascaris lumbricoides*, *Bacillus anthracis* str. Ames, *Vibrio vulnificus* CMCP6, *Drosophila melanogaster*, *Lycopersicon esculentum*, *Rattus norvegicus*, *Methanosarcina acetivorans* C2A, *Caenorhabditis briggsae*, *Pan troglodytes*, *Oryza sativa* (japonica cultivar-group), *Cryptosporidium parvum*" 40
- 8189 8319 38 "*Arabidopsis thaliana*, *Homo sapiens*, *Papio anubis*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Mus musculus*, *Drosophila melanogaster*, *Lactobacillus plantarum*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Pyrazus ebeninus*, *Xiphophorus hellerii*, *Yersinia pestis* KIM, *Oryza sativa*, *Rickettsia prowazekii*, *Plasmodium falciparum* 3D7, *Oceanobacillus iheyensis* H 50

- TE831, *Yersinia pestis* C092, *Danio rerio*, *Medicago truncatula*"
- 8190 8320 27 "Mus musculus, Homo sapiens, *Borrelia burgdorferi* B31"
- 8191 8321 82 "Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, *Galdieria sulphuraria*, Bacillus halodurans, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Mycoplasma genitalium, Staphylococcus capitis, Blastochloris viridis, Dermocarpa sp., St"
- 8192 8322 47 "Rhizomucor miehei, Tritrichomonas foetus, Helicobacter hepaticus ATCC 51449, Drosophila melanogaster, Homo sapiens, Borrelia burgdorferi B31, Borrelia burgdorferi, Plasmodium falciparum 3D7, Fasciola hepatica, Onchocerca volvulus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Giardia intestinalis, Craspedacusta sowerbyi, Mus musculus, Bacillus cereus ATCC 14579, Cladonia arbuscula, Pichia ciferrii, uncultured proteobacterium, Buchnera aphidicola str. Sg (Schizaphis graminum), Buchnera aphidicola, Caenorhabditis elegans, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Oceanobacillus iheyensis HTE831" 10
- 8193 8323 39 "Monocercomonas sp., Rattus norvegicus, Drosophila melanogaster, Mus musculus, Homo sapiens, Danio rerio, Oryctolagus cuniculus, Buchnera aphidicola str. Bp (Baizongia pistaciae), Borrelia burgdorferi B31, Dictyostelium discoideum, Cryptosporidium parvum, Actinobacillus pleuropneumoniae, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Mycoplasma penetrans, Borrelia burgdorferi" 20
- 8194 8324 28 "Mycoplasma arthritidis bacteriophage MAV1, Danio rerio, Strongylocentrotus intermedius, Homo sapiens, Bacillus halodurans, Mus musculus, Mesostigma viride, Candidatus Blochmannia floridanus"
- 8195 8325 33 "Homo sapiens, Engaeus laevis, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Spodoptera exigua, Drosophila melanogaster, Chrysomallon squamiferum, Mimulus guttatus, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mimulus platycalyx, Medicago truncatula, Dictyostelium discoideum, Gallus gallus, Monosiga brevicollis, Streptococcus agalactiae 2603V/R, Candida albicans, Clostridium acetobutylicum, Streptococcus agalactiae NEM316, Campylobacter jejuni subsp. jejuni NCTC 11168, Clostridium bifermentans, Caenorhabditis briggsae, Caenorhabditis elegans, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mycoplasma penetrans, Brachymyrmex sp. MC-1995, Clostridium perfringens str. 13" 30
- 8196 8326 34 "Homo sapiens, Schizosaccharomyces japonicus, Dictyostelium discoideum, Medicago truncatula, Caenorhabditis briggsae, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Plasmodium falciparum, Bactrocera xanthodes, Drosophila melanogaster, Sulfolobus solfataricus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Ciona intestinalis, Rattus norvegicus, Vibrio vulnificus CMCP6, Monosiga brevicollis, Caenorhabditis elegans, Vibrio vulnificus 40
- , Oryzias latipes, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Oxyopes sertatus, Staphylococcus aureus subsp. aureus Mu50, Clostridium perfringens str. 13, Bacillus cereus ATCC 14579, Borrelia burgdorferi B31, Drosophila pseudoobscura, Citrus limon, Piromyces sp. E2, Chelonus sp. near curvimaculatus, Rhizophydium sp. 136, Oryza sativa"
- 8197 8327 31 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Xanthomonas axonopodis pv. citri str. 306, Oceanobacillus iheyensis HTE831, Prunus persica"
- 8198 8328 35 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Bacil 50

- Bacillus anthracis* str. Ames, *Bacillus cereus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Xenopus laevis*"
- 8199 8329 31 "Mus musculus, *Drosophila melanogaster*, *Homo sapiens*, *Schizosaccharomyces pombe*, *Oncorhynchus mykiss*, *Medicago truncatula*, *Rattus norvegicus*, *Euglena gracilis*, *Arabidopsis thaliana*"
- 8200 8330 28 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Rickettsia conorii*, *Danio rerio*, *Pan troglodytes*, *Oryctolagus cuniculus*, *Oryza sativa* (japonica cultivar-group), *Clostridium tetani* E88, *Campylobacter jejuni*, *Salmonella enteritidis*, *Arabidopsis thaliana*, *Lotus corniculatus* var. japonicus, *Helicobacter pylori* 26695, *Papio anubis*" 10
- 8201 8331 48 "Chlamydia muridarum, *Homo sapiens*, *Drosophila melanogaster*, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Bacillus cereus* ATCC 14579, *Caenorhabditis elegans*, *Mus musculus*, *Glycine max*, *Pisum sativum*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Brassica rapa*"
- 8202 8332 30 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Mycoplasma mycoides* subsp. mycoides LC, *Papio anubis*, *Drosophila melanogaster*, *Euglena gracilis*, *Helicobacter pylori* J99, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Thermotoga maritima*, *Medicago truncatula*, *Zea mays*, *Hygrohypnum duriusculum*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Bombus dahlbomii*, *Schizosaccharomyces pombe*, *Chenopodium quinoa*, *Clostridium perfringens* str. 13" 20
- 8203 8333 26 "Homo sapiens, *Vibrio parahaemolyticus*, *Plasmodium falciparum* 3D7, *Lintonia nutans*, *Enteropogon dolichostachyus*, *Chloris truncata*, *Chloris pycnothrix*, *Oryza granulata*, *Porteresia coarctata*, *Oryza schlechteri*, *Chloris gayana*, *Triticum aestivum*, *Leymus angustus*"
- 8204 8334 35 "Mus musculus, *Bacillus cereus* ATCC 14579, *Homo sapiens*, *Mycoplasma capricolum*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma pulmonis*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Drosophila melanogaster*, *Papio hamadryas*, *Enterococcus faecalis*, *Danio rerio*, *Plasmodium falciparum* 3D7, *Taeniopoda tamaluipensis*, *Capra hircus*, *Schizosaccharomyces pombe*, *Methanocaldococcus jannaschii*, *Xenopus laevis*" 30
- 8205 8335 24 "Homo sapiens, *Clostridium perfringens* str. 13, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Schizosaccharomyces pombe*, *Drosophila melanogaster*, *Mus musculus*, *Arabidopsis thaliana*, *Staphylococcus aureus*"
- 8206 8336 24 "Pan troglodytes, *Caenorhabditis elegans*, *Homo sapiens*, *Mus musculus*, *Vibrio cholerae*, *Nostoc* sp. PCC 7120, *Medicago truncatula*, *Geophagus sp. Farias 100*, *Oryza sativa*"
- 8207 8337 27 "Mus musculus, *Homo sapiens*, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Dictyostelium discoideum*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Danio rerio*, *Prochlorococcus marinus* subsp. marinus str. C CMP1375, *Apium graveolens*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Oryza sativa*, *Lactococcus lactis* subsp. lactis" 40
- 8208 8338 27 "Caenorhabditis elegans, *Arabidopsis thaliana*, *Homo sapiens*, *Mus musculus*, *Danio rerio*, uncultured eukaryote, *Pan troglodytes*, *Sulfolobus solfataricus*, *Clostridium botulinum*, *Clostridium botulinum* phage 1C, *Anopheles gambiae*, *Clostridium botulinum* D phage"
- 8209 8339 27 "Streptococcus pyogenes MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Homo sapiens*, *Streptococcus iniae*, *Danio rerio*, *Mus musculus*, *Rattus norvegicus*, *Drosophila mela* 50

- nogaster, Porcine lymphotropic herpesvirus 1, Saccharomyces cerevisiae, Stilodes fuscolineata, Calligrapha fulvipes, Goniocetena rubripennis, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Aulacomnium turgidum, Aulacomnium androgynum, Aulacomnium acuminatum, Aulacomnium palustre"
- 8210 8340 39 "Mus musculus, Caenorhabditis elegans, Danio rerio, Homo sapiens, Candida albicans, Lotus corniculatus var. japonicus, Rattus norvegicus, Drosophila melanogaster, Escherichia coli CFT073, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum AT"
- 8211 8341 43 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Papio anubis, Prochlorococcus marinus, Plasmodium falciparum 3D7, Sus scrofa, Rattus norvegicus, Pan troglodytes, Medicago truncatula, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Buchn" 10
- 8212 8342 24 "Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Homo sapiens, Danio rerio, Mus musculus, Equus grevyi, Arabidopsis thaliana, Clostridium acetobutylicum"
- 8213 8343 32 "Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Chlamydia muridarum, Homo sapiens, Arabidopsis thaliana, Mus musculus, Clostridium acetobutylicum, Human immunodeficiency virus 1, Mycoplasma penetrans"
- 8214 8344 27 "Plasmodium falciparum 3D7, Phryma leptostachya, Homo sapiens, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50" 20
- 8215 8345 23 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Streptococcus agalactiae NEM316, Danio rerio"
- 8216 8346 27 "Cryptosporidium parvum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Thermoanaerobacter tengcongensis, Oryza sativa, Bacillus thuringiensis, Beta vulgaris subsp. vulgaris, Clostridium thermoamylolyticum, Mus musculus, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Actinomyces hordeovulneris, Clostridium perfringens str. 13"
- 8217 8347 33 "Danio rerio, Human poliovirus 1 strain Sabin, Homo sapiens, Helicobacter hepaticus ATCC 51449, Mus musculus, synthetic construct, Pasteurella multocida, Medicago truncatula, Drosophila melanogaster, Clostridium tetani E88, Drosophila rubrifrons, Drosophila falleni, Drosophila putrida, Drosophila ornatipennis, Drosophila tripunctata, Drosophila ornatifrons, Drosophila hydei, Drosophila immigrans, Drosophila melanica, Drosophila austrosaltans, Paramycodrosophila n. sp. POG-2002, Drosophila simulans, Prochlorococcus marinus, Xenopus laevis, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Zaprionus badyi, Drosophila willistoni, Drosophila virilis, Scaptomyza albivittata, Drosophila pseudoobscura, Drosophila mercatorum, Drosophila crassifemur" 30
- 8218 8348 24 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Hepatitis C virus, Artibeus jamaicensis, Danio rerio" 40
- 8219 8349 30 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Chlamydomonas reinhardtii, Plasmodium falciparum 3D7, Papaya ringspot virus, Pyrococcus furiosus DSM 3638, Caenorhabditis elegans, Danio rerio, Dictyostelium discoideum, Myxine glutinosa, Xylella fastidiosa Temecula1, Sus scrofa, Papio anubis, Caenorhabditis briggsae, Pan troglodytes, Lactococcus lactis, Haemophilus parahae molyticus, Cryptosporidium parvum, Lotus corniculatus var. japonicus, Medicago truncatula, Zea mays, Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120"

- 8220 8350 27 "Bohle iridovirus, Epizootic haematopoietic necrosis virus, Rana tigrina ranavirus, Tadpole edema virus, Sheetfish iridovirus, Bufo marinus Venezuelan iridovirus 2, Bufo marinus Venezuelan iridovirus 3, Leptodactylus Venezuelan iridovirus 1, Guppyfish iridovirus, Frog virus 3, Doctor fish virus, Bufo marinus Venezuelan iridovirus 4, Bufo marinus Venezuelan iridovirus 6, Catfish iridovirus, Bufo bufo United Kingdom iridovirus 3, Bufo bufo United Kingdom iridovirus 2, Bufo bufo United Kingdom iridovirus 1, Bufo marinus Venezuelan iridovirus 1, Rana temporaria United Kingdom iridovirus 2, Rana temporaria United Kingdom iridovirus 1, Odontella sinensis, Homo sapiens, Danio rerio, Drosophila melanogaster, Mus musculus, Papio anubis, Buchnera aphidicola str. Sg (Schizaphis graminum), Bacillus subtilis, Lutzomyia shannoni, Pan troglodytes, Gorilla gorilla, Lotus corniculatus var. japonicus, Rattus norvegicus" 10
- 8221 8351 29 "Nephroselmis olivacea, Xanthomonas axonopodis pv. citri str. 306, Xanthomonas campestris pv. campestris str. ATCC 33913, Chromobacterium violaceum, Danio rerio, Enterococcus faecalis V583, Xylella fastidiosa Temecula1, Streptococcus mutans UA159, Enterococcus" 10
- 8222 8352 33 "Homo sapiens, Dictyostelium discoideum, Plasmodium falciparum 3D7, Ciona intestinalis, Mus musculus, Psychotria borucana, Naegleria gruberi, Danio rerio, Euglena longa, Medicago truncatula, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Dolerus sp. Sus5, Bacteroides thetaiotaomicron VPI-5482, Pan troglodytes, Monosiga brevicollis, Caenorhabditis elegans, Sus scrofa, Zachvatkinia larica, Bychovskiata dubia, Arabidopsis thaliana, Methanococcus maripaludis, Jacquinia umbellata, Euglena gracilis, Lotus corniculatus var. japonicus, Clostridium bifermentans, Schizosaccharomyces pombe, Plasmid pIP404, Cyanophora paradoxa, Plasmodium falciparum, Drosophila melanogaster, Thymophylla tenuiloba, Thymophylla setifolia, Strotheria gypsophila, Dysodiopsis tagetoides, Papio anubis, Dyssodia tenuifolia, Solanum tuberosum" 20
- 8223 8353 83 "Xanthomonas campestris pv. campestris str. ATCC 33913, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Xanthomonas axonopodis pv. citri str. 306, Shewanella oneidensis MR-1, Vibrio vulnificus CMCP6, Vibrio parahaemolyticus, Ralstonia solanacearum, Bo" 30
- 8224 8354 41 "Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Tropheryma whipplei str. Twist, Tropheryma whipplei TW08/27, Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Takifugu rubripes, Neisseria meningitidis Z2491, Helicobacter felis, Neisseria meningitidis MC58, Sulfolobus tokodaii, Plasmodium chabaudi chabaudi, Lactococcus lactis subsp. lactis, Legionella longbeache, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Ciona intestinalis, Bacillus thuringiensis, Medicago truncatula" 40
- 8225 8355 86 "Oryza sativa (japonica cultivar-group), Nostoc sp. PCC 7120, Listeria monocytogenes, Listeria innocua, Enterococcus faecalis V583, Proteus mirabilis, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Prochloroco" 40
- 8226 8356 28 "Mus musculus, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Eubacterium acidaminophilum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Mycoplasma pneumoniae, Listeria innocua, Mesembryanthemum crystallinum" 40
- 8227 8357 27 "Homo sapiens, Dictyostelium discoideum, Mus musculus, O" 50

- ryza sativa (japonica cultivar-group), Danio rerio, Moxostoma duquesnei, Xanthomonas axonopodis pv. citri str. 306, Xanthomonas campestris pv. campestris str. A TCC 33913, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Thermus thermophilus, Nostoc sp. PCC 7120"
- 8228 8358 44 "Clostridium acetobutylicum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Nostoc sp. PCC 7120, Bacillus anthracis str. Ames, Pyrococcus furiosus DSM 3638, Bacillus cereus ATCC 14579, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, "
- 8229 8359 23 "Homo sapiens, Oryza sativa (indica cultivar-group), Clostridium tetani E88, Thermoplasma acidophilum, Danio rerio, Helicobacter pylori, Vibrio parahaemolyticus, Oryza sativa (japonica cultivar-group), Bacteriophage Aeh1, Helicobacter pylori 26695, Mus musculus" 10
- 8230 8360 30 "Pyrococcus furiosus DSM 3638, Oryza sativa (japonica cultivar-group), uncultured bacterium, Caenorhabditis elegans, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Mesembryanthemum crystallinum, Drosophila melanogaster, Streptococcus pneumoniae R6, Ciona intestinalis"
- 8231 8361 32 "Mus musculus, Homo sapiens, Streptococcus agalactiae 2603V/R, Caenorhabditis elegans, Streptococcus agalactiae NEM316, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Pan troglodytes, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis briggsae, Euglena gracilis, Centrobranchus nigroocellatus, Saccharomyces cerevisiae, Helicobacter pylori 26695, Helicobacter pylori J99, Danio rerio" 20
- 8232 8362 21 "Homo sapiens, Rattus norvegicus, Drosophila melanogaster, Clostridium acetobutylicum, Mus musculus, Bos taurus, Nostoc sp. PCC 7120"
- 8233 8363 29 "Homo sapiens, Borrelia burgdorferi B31, Mus musculus, Oryza sativa (japonica cultivar-group), Pseudomonas syringae pv. tomato str. DC3000, Drosophila melanogaster"
- 8234 8364 27 "Mus musculus, Homo sapiens, Thermoplasma volcanium, Lepidospira interrogans serovar lai str. 56601, Lemur catta, Schmidtea mediterranea, Danio rerio, Cryptosporidium parvum, Avena sativa" 30
- 8235 8365 36 "Homo sapiens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Dreissena polymorpha, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Leptospira interrogans serovar copenhageni, Mus musculus, Danio rerio, Dictyostelium discoideum, Drosophila melanogaster, Pneumocystis carinii, Lumbricus rubellus, Piper sp. THB-2002, Piper augustum, Teladorsagia boreoarcticus, Medicago truncatula, Pichia canadensis, Diachasmimorpha sp. M131, Chlamydomonas reinhardtii, Methanosarcina mazei Goe1, Plasmodium falciparum, Culicoides sp. LJH-2002, Leishmania major, Staphylococcus xylosum, Magnaporthe oryzae, Escherichia coli, Caenorhabditis elegans, Sulfolobus tokodaii, Parascaris univalens, Listeria monocytogenes, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Citrus limon, Arabidopsis thaliana, Nostoc sp. PCC 7120" 40
- 8236 8366 28 "Drosophila melanogaster, Homo sapiens, Mus musculus, Pan troglodytes, Danio rerio, Rattus norvegicus, Xenopus laevis, Borrelia burgdorferi B31, Pseudomonas aeruginosa PA01, Xylella fastidiosa Temecula1, Arabidopsis thaliana, Yersinia pestis KIM, Xylella fastidiosa 9a5c, Yersinia pestis C092, Clostridium histolyticum, Clostridium perfringens str. 13"
- 8237 8367 23 "Pleuronectes platessa, Homo sapiens, Mus musculus, Drosophila melanogaster, Felis catus, Sphaerocarpos texanus, Caulobacter crescentus" 40

CB15, *Caenorhabditis elegans*, *Serratia entomophila*"

- 8238 8368 28 "Arabidopsis thaliana, Homo sapiens, Danio rerio, Mus musculus, Lycopersicon esculentum, Buchnera aphidicola str. Sg (Schizaphis graminum), Perameles nasuta, Echymipera kalubu cockerelli, Echymipera kalubu kalubu, Echymipera kalubu oriomo, Echymipera rufescens australis, Echymipera rufescens rufescens, Echymipera kalubu, Lactococcus lactis subsp. lactis, Perameles nasuta pallens, Synechocystis sp. PCC 6803, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus, Neurospora crassa, Staphylococcus aureus subsp. aureus Mu50"
- 8239 8369 31 "Mus musculus, Caenorhabditis elegans, Goatpox virus, Sheep pox virus, Homo sapiens, Lumpy skin disease virus, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Rattus norvegicus" 10
- 8240 8370 24 "Homo sapiens, Campylobacter jejuni subsp. jejuni NCTC 11168, Listeria monocytogenes, Danio rerio, Mus musculus, Triticum monococcum, Zizosaccharomyces rouxii, Oryza sativa (japonica cultivar-group)"
- 8241 8371 27 "Homo sapiens, Danio rerio, Mus musculus, Caenorhabditis elegans, Clostridium sordellii"
- 8242 8372 23 "Homo sapiens, Danio rerio, Arabidopsis thaliana, Mus musculus"
- 8243 8373 27 "Felis catus, Rattus norvegicus, Homo sapiens, Lotus corniculatus var. japonicus, Danio rerio, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Pinus taeda, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Saccharomyces cerevisiae, Staphylococcus aureus subsp. aureus Mu50, Clostridium perfringens str. 13" 20
- 8244 8374 29 "Caenorhabditis elegans, Mus musculus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Lamelibrachia sp. L6, Homo sapiens, Lamelibrachia sp. L5, Lamelibrachia sp. L4, Leporinus elongatus, Hebeloma crustuliniforme icg 2, Methanococcus voltae, Danio rerio, Mycoplasma arthritidis" 30
- 8245 8375 23 "Mus musculus, Homo sapiens, Rattus norvegicus, Danio rerio, Beta procumbens, Oryza sativa (japonica cultivar-group), Vibrio vulnificus CMCP6, Pan troglodytes"
- 8246 8376 32 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Human rhinovirus 94, Danio rerio, Arabidopsis thaliana, Methanococcus maripaludis, Drosophila melanogaster, Candida bondarzewiae, Candida antillarum"
- 8247 8377 31 "Pseudomonas phage phiKZ, Mus musculus, Bacillus cereus ATCC 14579, Homo sapiens, Rattus norvegicus, Methanosarcina mazei Goe1, Drosophila erecta, Aquifex aeolicus VF5, Tonatia brasiliense, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Danio rerio, Anopheles gambiae" 40
- 8248 8378 27 "Homo sapiens, Mus musculus, Danio rerio, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Clostridium perfringens str. 13"
- 8249 8379 24 "Mus musculus, Homo sapiens, Guillardia theta, Caenorhabditis elegans, Culex tritaeniorhynchus, Rattus norvegicus, Branchiostoma floridae, Dictyostelium discoideum, Danio rerio, Prochlorococcus marinus, Bacillus licheniformis, Caenorhabditis briggsae, Methanocaldococcus jannaschii, Staphylococcus aureus" 50

- 8250 8380 31 "Mus musculus, Danio rerio, Diachasmimorpha longicaudata entomopoxvirus, Bacillus cereus ATCC 14579, Homo sapiens, Plasmodium falciparum 3D7, Caenorhabditis elegans, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus, Chlamydomonas reinhardtii, Schizosaccharomyces pombe, Melanoplus sanguinipes entomopoxvirus, Macaca fascicularis, Oreochromis niloticus"
- 8251 8381 24 "Homo sapiens, Vibrio cholerae, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Mus musculus, Methanothermobacter thermautotrophicus str. Delta H, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Meleagrid herpesvirus 1, Emericella nidulans, Dictyostelium discoideum, Nostoc sp. PCC 7120, Clostridium perfringens str. 13" 10
- 8252 8382 44 "Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Nostoc sp. PCC 7120, Listeria innocua, Prochlorococcus marinus subsp. marinus str. CCMP1375, Oceanobacillus iheyensis HTE831, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Bacillus anthracis str. Ames, Homo sapiens, Arabidopsis thaliana, Methanococcus maripaludis, Triticum aestivum, Mus musculus, Bacillus cereus ATCC 14579, Caenorhabditis elegans, Pasteurella multocida, Danio rerio, Streptococcus pyogenes, Bacillus subtilis, Lupinus luteus, Chrysodidymus synuroideus, Plasmodium falciparum 3D7, Listeria monocytogenes, Bacteriophage A118, Bacillus subtilis subsp. subtilis str. 168, Clostridium perfringens str. 13, Treponema denticola" 20
- 8253 8383 95 "Clostridium acetobutylicum, Listeria innocua, Bacillus anthracis str. Ames, Caenorhabditis elegans, Nostoc sp. PCC 7120, Clostridium perfringens str. 13, Bacillus halodurans, Streptococcus agalactiae 2603V/R, Thermoanaerobacter tengcongensis, Streptococcus "
- 8254 8384 75 "Campylobacter jejuni subsp. jejuni NCTC 11168, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Pseudomonas putida KT2440, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Lactococcus lactis subsp. lactis, Vibrio parahaemolyticus, Homo sapiens, Staphylococcus epidermidis ATCC 12228, Vibrio vulnificus CMCP6, Staphylococcus epidermidis, Clostridium acetobutylicum, Lepidothamnus laxifolius, Arabidopsis thaliana, Mus musculus, Caenorhabditis elegans, Oceanobacillus iheyensis HTE831, Bombyx mori, Enterococcus faecalis V583, Cunninghamia lanceolata, Plasmodium falciparum 3D7, Podocarpus hallii, Plasmodium falciparum, Picea abies, Listeria monocytogenes, Danio rerio, Roya obtusa, Roya anglica, Musca domestica, Oryza sativa, Bacillus halodurans" 30
- 8255 8385 33 "Homo sapiens, Caenorhabditis elegans, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Drosophila melanogaster, Arabidopsis thaliana, Oryzias latipes, Rattus norvegicus, Lemur catta, Pan troglodytes, Plasmodium falciparum 3D7, Glycine max, Candida albicans, Catharanthus roseus, Solanum tuberosum, Bombyx mori, Penicillium marneffeii, Prochlorococcus marinus subsp. marinus str. CCMP1375, Tetrahymena pyriformis, Canine herpesvirus, Bacteriophage phi ETA, Saccharomyces kluyveri" 40
- 8256 8386 28 "Homo sapiens, Caenorhabditis briggsae, Mus musculus, Thermoanaerobacter ethanolicus, Drosophila melanogaster, Arabidopsis thaliana, Felis catus, Danio rerio, Lotus corniculatus var. japonicus, Pan troglodytes, Candida albicans, Helicobacter pylori J99" 50

- 8257 8387 23 "Danio rerio, Caenorhabditis elegans, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Phthorimaea operculella granulovirus"
- 8258 8388 23 "Homo sapiens, Mus musculus, Medicago truncatula, Gallus gallus, Drosophila melanogaster, Danio rerio"
- 8259 8389 24 "Homo sapiens, Crithidia oncopelti, Mus musculus"
- 8260 8390 28 "Drosophila melanogaster, Homo sapiens, Mus musculus, Danio rerio, Dictyostelium discoideum, Bos taurus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Agrobacterium tumefaciens str. C58 (U. Washington), Agrobacterium tumefaciens str. C58 (Cereon), Agrobacterium tumefaciens, Rattus norvegicus, Sulfolobus tokodaii, Nicotiana glauca, Oryza sativa (japonica cultivar-group)" 10
- 8261 8391 33 "Homo sapiens, Mus musculus, Bacillus cereus ATCC 14579, Drosophila melanogaster, Plasmodium falciparum 3D7, Caenorhabditis elegans"
- 8262 8392 27 "Homo sapiens, Pan troglodytes, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Medicago truncatula, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Danio rerio"
- 8263 8393 50 "Schistosoma mansoni, Dictyostelium discoideum, Oceanobacillus ihayensis HTE831, Leptospira interrogans serovar lai str. 56601, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Botryotinia fuckeliana, Schistosoma japonicum, Pasteurella multocida, Francisella tularensis, Zea mays, Bacillus megaterium, Oryza sativa (japonica cultivar-group), Mycoplasma penetrans, Mycoplasma hyorhinis, Chlamydomonas reinhardtii, Staphylococcus epidermidis ATCC 12228, Mus musculus, Staphylococcus epidermidis, Mycoplasma hyopneumoniae, Lophoptera deiciens, Entamoeba histolytica, Lotus corniculatus var. japonicus, Danio rerio, Homo sapiens, Mycoplasma gallisepticum R, Adiantum capillus-veneris, Arabidopsis thaliana, Candida albicans, Plasmodium falciparum 3D7, Caenorhabditis elegans, Rhizobium etli, Lactuca sativa, Helicobacter hepaticus ATCC 51449" 20
- 8264 8394 53 "Homo sapiens, Plasmodium falciparum 3D7, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Prochlorococcus marinus, Mus musculus, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Chlamydomonas reinhardtii, Amsacta moorei entomopoxvirus" 30
- 8265 8395 35 "Mus musculus, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Apis mellifera, Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Silurana tropicalis, Helicobacter hepaticus ATCC 51449, Pan troglodytes, Xenopus laevis, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Enterococcus faecalis V583, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Rickettsia conorii, Streptococcus pyogenes M1 GAS, Streptococcus pyogenes SSI-1, Oryctolagus cuniculus, Listeria innocua, Haemophilus ducreyi 35000HP, Lactococcus lactis, unidentified cloning vector, Bacillus cereus" 40
- 8266 8396 27 "Bacillus cereus ATCC 14579, Homo sapiens, Bacteroides thetaiotaomicron VPI-5482, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Caenorhabditis elegans, Pan troglodytes, Methanosarcina mazei Goe1, Mus musculus, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Lycopersicon esculentum, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus Mu50, Bacillus halodurans"
- 8267 8397 34 "Homo sapiens, Arabidopsis thaliana, Drosophila melanogaster" 50

- ster, *Pan troglodytes*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Rickettsia conorii*, *Danio rerio*, *Methanosarcina mazei* Goe1, *Rickettsia prowazekii*, *Pteraster jordanii*, *Oryza sativa* (japonica cultivar-group), *Canis familiaris*, *Caenorhabditis elegans*, *Plasmodium yoelii*"
- 8268 8398 24 "Homo sapiens, *Mus musculus*, *Plasmodium falciparum* 3D7, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Plasmodium falciparum*, *Pan troglodytes*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa* (japonica cultivar-group), *Nostoc* sp. PCC 7120"
- 8269 8399 24 "Caenorhabditis elegans, *Homo sapiens*, *Mus musculus*, *Hordeum vulgare* subsp. *vulgare*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*" 10
- 8270 8400 30 "Homo sapiens, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Caenorhabditis elegans*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Mus musculus*, *Sus scrofa domestica*, *Dictyostelium discoideum*, *Atriplex centralasiatica*, *Myotis lucifugus carissima*, *Myotis lucifugus*, *Arabidopsis thaliana*, *Lotus corniculatus* var. *japonicus*, *Ixodes persulcatus*, *Danio rerio*, *Myotis volans*, *Myotis thysanodes*, *Buchnera aphidicola*, *Ilyoplax dentimerosa*, *Papio anubis*, *Lycopersicon esculentum*, *Tjirtudessus raesidensis*, *Alpheus amblyonyx*, *Ipomoea yellow vein virus*, *Mycoplasma penetrans*, *Flavobacterium johnsoniae*, *Equus caballus*, *Oryza sativa* (japonica cultivar-group), *Brassica rapa*" 20
- 8271 8401 27 "Oryctolagus cuniculus, *Medicago truncatula*, *Drosophila melanogaster*, *Homo sapiens*, *Danio rerio*, *Caenorhabditis elegans*, *Mus musculus*, *Porphyromonas gingivalis* W83, *Staphylococcus capitis*, *Drosophila erecta*"
- 8272 8402 27 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Drosophila melanogaster*, *Salmonella typhimurium* LT2, *Chaetocladium brefeldii*, *Salmonella enterica* subsp. *enterica* serovar *Typhimurium*, *Arabidopsis thaliana*, *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*"
- 8273 8403 51 "Chlamydia muridarum, *Spiroplasma citri*, *Listeria monocytogenes*, *Bacillus cereus* ATCC 14579, *Bacillus cereus*, *Bacillus thuringiensis*, *Bacillus anthracis* str. Ames, *Chlamydia caviae* GPIC, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Listeria innocua*, *Prochlorococcus marinus*, *Bacillus halodurans*, *Clostridium perfringens* str. 13, *Clostridium tetani* E88, *Papaver somniferum*, *Homo sapiens*, *Gossypium hirsutum*, *Clostridium acetobutylicum*, *Rickettsia prowazekii*, *Synechocystis* sp. PCC 6803, *Mus musculus*, *Drosophila melanogaster*, *Hydra vulgaris*, *Caenorhabditis elegans*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Rickettsia conorii*, *Arabidopsis thaliana*, *Danio rerio*, *Borrelia duttonii*, *Botryotinia fuckeliana*" 30
- 8274 8404 34 "Mus musculus, *Rickettsia prowazekii*, *Haemophilus influenzae* Rd KW20, *Thermoanaerobacter tengcongensis*, *Oceanobacillus iheyensis* HTE831, *Schizosaccharomyces pombe*, *Streptococcus mutans* UA159, *Oryza sativa* (japonica cultivar-group), *Lactobacillus plantarum* WCFS1, *Homo sapiens*, *Musa x paradisiaca*, *Tetranychus pellucida*, *Sulfolobus solfataricus*, *Sulfolobus tokodaii*, *Caenorhabditis elegans*, *Jamesoniella autumnalis*, *Andreaea nivalis*, *Thanatephorus cucumeris*" 40
- 8275 8405 27 "Bacillus halodurans, *Homo sapiens*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Porcine rotavirus*"
- 8276 8406 24 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Caenorhabditis elegans*, *Streptococcus pneumoniae* bacteriophage MM1, *Danio rerio*, *Bacillus halodurans*"
- 8277 8407 25 "Mus musculus, *Homo sapiens*, *Staphylococcus epidermidis*" 50

- ATCC 12228, *Tribolium castaneum*, *Schizosaccharomyces pombe*, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Lactococcus lactis*"
- 8278 8408 27 "Limulus polyphemus, Homo sapiens, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Arabidopsis thaliana, Botryotinia fuckeliana, Mus musculus, Danio rerio, Plasmodium falciparum 3D7, Caenorhabditis elegans, Ciona intestinalis, Candida albicans"
- 8279 8409 24 "Homo sapiens, Nicotiana tabacum, Pan troglodytes, Mus musculus, Arabidopsis thaliana, Aeropyrum pernix"
- 8280 8410 24 "Mus musculus, Homo sapiens"
- 8281 8411 31 "Mus musculus, Drosophila buzzatii, Lycopersicon esculentum, Drosophila koepferae, Homo sapiens, Anolis roquet, Danio rerio, Caenorhabditis elegans, Leptospira interrogans serovar lai str. 56601, Plasmodium falciparum 3D7, Rattus norvegicus" 10
- 8282 8412 50 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Amsacta moorei entomopoxvirus, Stenopsocus aphidiformes, Dictyostelium discoideum, Melipona bicolor, Mesobuthus martensii, Lactococcus lactis subsp. lactis, Bacteriophage bIL311, Ureaplasma urealyticum,"
- 8283 8413 29 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Bacillus anthracis str. Ames, Streptococcus pyogenes, Caenorhabditis elegans, Clostridium perfringens str. 13, Vigna radiata, Bacillus cereus ATCC 14579, Drosophila melanogaster, Shewanella oneidensis MR-1, Oryza sativa (japonica cultivar-group), Robinia pseudoacacia, Prochlorococcus marinus, Encephalitozoon cuniculi, Danio rerio" 20
- 8284 8414 62 "Pyrococcus abyssi, Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Lactococcus lactis, Vibrio cholerae, Mycoplasma penetrans"
- 8285 8415 31 "Caenorhabditis elegans, Mus musculus, Homo sapiens, Prochlorococcus marinus, Dictyostelium mucoroides, Human immunodeficiency virus 1, Chlamydomonas caviae GPIC, Arabidopsis thaliana, Guillardia theta, Lotus corniculatus var. japonicus, Danio rerio, Legionella pneumophila, Lactococcus lactis subsp. cremoris, Carassius auratus" 30
- 8286 8416 29 "Rattus norvegicus, Homo sapiens, Mus musculus, Mycoplasma gallisepticum R, Dictyostelium discoideum, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Chlamydomonas pneumoniae TW-183"
- 8287 8417 32 "Homo sapiens, Mus musculus, Danio rerio, Bacillus anthracis str. Ames, Shewanella oneidensis MR-1, Arabidopsis thaliana, Ischnura kellecotti, Candida albicans"
- 8288 8418 28 "Homo sapiens, Rickettsia conorii, Mus musculus, Arabidopsis thaliana, Rickettsia typhi, Rickettsia rickettsii, Drosophila melanogaster, Danio rerio, Canis familiaris, Thermodesulfatator indicus, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group)" 40
- 8289 8419 23 "Lymphocystis disease virus 1, Homo sapiens, Mus musculus, Campylobacter jejuni subsp. jejuni NCTC 11168, Brassica napus, Danio rerio"
- 8290 8420 23 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Arabidopsis thaliana"
- 8291 8421 25 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Myosotis rehsteineri, Myosotis laxa var. caespitosa, Xenopus laevis, Pan troglodytes, Felis catus"
- 8292 8422 24 "Arabidopsis thaliana, Homo sapiens, Schizosaccharomyces 50

- pombe, *Danio rerio*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Plasmodium vivax*, *Medicago truncatula*, *Oryza sativa* (indica cultivar-group), *Methanotermobacter thermotrophicus* str. Delta H, *Oryza sativa*, *Caenorhabditis elegans*, *Pisum sativum*, *Cucumis sativus*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Macaca fascicularis*, *Coxiella burnetii* RSA 493, *Rattus norvegicus*, *Dictyostelium discoideum*, *Methanosarcina mazei* Goe1, *Canis familiaris*, *Streptococcus mutans* UA159, *Methanosarcina acetivorans* C2A, *Sulfolobus solfataricus*, *Dobrava virus*, *Solanum tuberosum*, *Lotus corniculatus* var. japonicus, Rabbit fibroma virus, *Gallus gallus*, *Desmognathus auriculatus*, *Procambarus clarkii*"
- 8293 8423 32 "Chlamydia trachomatis, *Mus musculus*, *Caenorhabditis elegans*, *Periplaneta americana*, *Arabidopsis thaliana*, *Homo sapiens*, *Listeria monocytogenes*, *Danio rerio*, *Drosophila melanogaster*, *Bacteroides thetaiotaomicron* VPI-5482, *Oryza sativa* (japonica cultivar-group), *Clostridium acetobutylicum*, *Lotus corniculatus* var. japonicus, *Sarcophyton glaucum*" 10
- 8294 8424 28 "*Oryza sativa* (japonica cultivar-group), *Marchantia polymorpha*, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Danio rerio*, *Medicago truncatula*, *Equus caballus*, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, *Plasmodium falciparum* 3D7, *Felis catus*, Fowlpox virus"
- 8295 8425 27 "*Homo sapiens*, *Bacillus cereus* ATCC 14579, *Atelixeris albi ventris*, *Chlamydomonas reinhardtii*, *Arabidopsis thaliana*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Sus scrofa*, *Plasmodium falciparum* 3D7, *Hordeum vulgare* subsp. vulgare, *Ceratocystis fimbriata*, *Mus musculus*, *Oryzias latipes*, *Rattus norvegicus*, *Bacillus subtilis* subsp. subtilis str. 168, *Danio rerio*, *Bacillus subtilis*, Human immunodeficiency virus 2" 20
- 8296 8426 29 "*Clostridium acetobutylicum*, *Homo sapiens*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Plasmodium falciparum* 3D7, *Sulfolobus tokodaii*, *Schizosaccharomyces pombe*, *Bacillus anthracis* str. Ames, *Aquifex aeolicus* VF5, *Mus musculus*, *Pan troglodytes*, *Papio anubis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168"
- 8297 8427 28 "*Homo sapiens*, *Myroides odoratus*, *Borrelia burgdorferi* B31, *Plasmodium falciparum* 3D7, *Actinobacillus succinogenes*, *Danio rerio*, *Dictyostelium discoideum*, *Mus musculus*, *Oryza sativa* (japonica cultivar-group)" 30
- 8298 8428 27 "*Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Streptococcus pneumoniae*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Oryza sativa* (japonica cultivar-group), *Lotus corniculatus* var. japonicus, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50"
- 8299 8429 32 "*Danio rerio*, *Mus musculus*, *Arabidopsis thaliana*, *Homo sapiens*, *Bombyx mori*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Oryza sativa*, *Clostridium acetobutylicum*, *Aedes aegypti*, *Caenorhabditis elegans*, Respiratory syncytial virus" 40
- 8300 8430 27 "*Mus musculus*, *Homo sapiens*, *Chrysodidymus synuroideus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Rattus norvegicus*, *Pan troglodytes*, *Stethantyx* sp. RDB-2000, *Lotus corniculatus* var. japonicus"
- 8301 8431 34 "*Thermoanaerobacter tengcongensis*, *Nicotiana rustica*, *Nicotiana tabacum*, *Oryza sativa* (japonica cultivar-group), *Borrelia burgdorferi* B31, *Drosophila melanogaster*, *Homo sapiens*, *Oryza sativa*, *Clostridium acetobutylicum*, *Mycoplasma pulmonis*, *Mus musculus*, *Caenorhabditis briggsae*, *Methanosarcina* a 50

- cetivorans C2A, *Danio rerio*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Mycoplasma penetrans*, *Clostridium perfringens* str. 13"
- 8302 8432 54 "Bacillus cereus ATCC 14579, *Thermoanaerobacter tengcongensis*, *Rickettsia conorii*, *Sulfolobus solfataricus*, *Rickettsia prowazekii*, *Candidatus Blochmannia floridanus*, *Bacillus anthracis* str. Ames, *Clostridium tetani* E 88, *Lycopersicon esculentum*, *Homo sapiens*, *Nyctibius leucopterus*, *Plasmodium falciparum* 3D7, *Methanocaldococcus jannaschii*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Vibrio cholerae*, *Danio rerio*, *Botryotinia fuckeliana*, *Oryza sativa* (*japonica* cultivar-group), *Mus musculus*, *Medicago truncatula*, *Borrelia burgdorferi* B31, *Methanopyrus kandleri* AV19, *Methanosarcina acetivorans* C2A, *Bos taurus*, *Human rotavirus G9*, *Amsacta moorei* entomopoxvirus, *Caenorhabditis elegans*, *Sinorhizobium* sp. As4, *Ceratovacuna nekoashi*, *Nostoc* sp. PCC 7120" 10
- 8303 8433 31 "Homo sapiens, *Mus musculus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Caenorhabditis elegans*, *Staphylococcus epidermidis*, *Staphylococcus epidermidis* ATCC 12228, *Listeria innocua*, *Danio rerio*, *Arabidopsis thaliana*, *Snowshoe hare virus*"
- 8304 8434 30 "Danio rerio, *Borrelia burgdorferi* B31, *Mus musculus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Caenorhabditis elegans*, *Takifugu rubripes*, *Oryza sativa* (*japonica* cultivar-group), *Homo sapiens*, *Sus scrofa*, *Bacillus atticus*, *Pan troglodytes*, *Drosophila melanogaster*, *Zea mays*, *Plasmodium falciparum* 3D7, *Naegleria gruberi*, *Clostridium acetobutylicum*, *Apis mellifera*, *Arabidopsis thaliana*, *Schizosaccharomyces pombe*, *Medicago truncatula*, *Solanum tuberosum*, *Clostridium perfringens* str. 13" 20
- 8305 8435 30 "Oryza sativa (*japonica* cultivar-group), *Wigglesworthia glossinidia* endosymbiont of *Glossina brevipalpis*, *Homo sapiens*, *Danio rerio*, *Mus musculus*, *Enterococcus faecalis* V583, *Bacillus thuringiensis*, *Swinepox virus*, *Neomorphus geoffroyi*, *Methanocaldococcus jannaschii*, *Dictyostelium discoideum*, *Acipenser fulvescens*, *Bos taurus*, *Arabidopsis thaliana*, *Rickettsia conorii*, *Xenopus laevis*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Ciona intestinalis*"
- 8306 8436 23 "Plasmodium falciparum 3D7, *Caenorhabditis elegans*, *Mus musculus*, *Enterococcus faecalis* V583, *Xenopus laevis*, *Homo sapiens*, *Danio rerio*, *Craterostigma plantagineum*, *Yersinia pestis* KIM, *Vibrio cholerae*, *Staphylococcus aureus*, *Yersinia pestis* C092, *Oryctolagus cuniculus*, *Rattus norvegicus*, *Photinus pyralis*" 30
- 8307 8437 27 "Caenorhabditis elegans, *Homo sapiens*, *Mus musculus*, *Lotus corniculatus* var. *japonicus*, *Leptospira interrogans* serovar *lai* str. 56601, *Arabidopsis thaliana*, *Sulfolobus tokodaii*"
- 8308 8438 31 "Rattus norvegicus, *Homo sapiens*, *Danio rerio*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Rickettsia conorii*, *Arabidopsis thaliana*, *Piagetia bursaepelecani*, *Nostoc* sp. PCC 7120" 40
- 8309 8439 31 "Rattus norvegicus, *Homo sapiens*, *Schistosoma mansoni*, *Prochlorococcus marinus*, *Mus musculus*, *Xenopus laevis*, *Acetabularia acetabulum*"
- 8310 8440 28 "Mus musculus, *Shewanella oneidensis* MR-1, *Homo sapiens*, *Staphylococcus caprae*, *Botryotinia fuckeliana*, *Clostridium tetani* E88, *Autographa californica* nucleopolyhedrovirus, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Rachiplusia ou* multiple nucleopolyhedrovirus, *Clostridium perfringens* str. 13"
- 8311 8441 28 "Homo sapiens, *Mus musculus*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Bacillus halodurans*, *Chlamydophila pneumoniae* J138, *Chlamydia* 50

- ophila pneumoniae TW-183, Danio rerio, Arabidopsis thaliana, Dictyostelium discoideum, Plasmodium falciparum 3D7, Dichaea neglecta, Prochlorococcus marinus, Schizosaccharomyces pombe, Pyrococcus horikoshii, Oryzias latipes"
- 8312 8442 24 "Neurospora crassa, Homo sapiens, Methanosarcina acetivorans C2A, Weeping tea tree witches'-broom phytoplasma, Mus musculus, Schizosaccharomyces pombe, Dictyostelium discoideum, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Clemmys muhlenbergii, Danio rerio, Clostridium perfringens str. 13"
- 8313 8443 29 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Lycopersicon esculentum, Romalea guttata, Lotus corniculatus var. japonicus" 10
- 8314 8444 27 "Homo sapiens, Mus musculus, Trypanosoma brucei, Prunus dulcis, Ciona intestinalis, Medicago truncatula, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Leishmania mexicana, Caenorhabditis elegans, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 8315 8445 28 "Homo sapiens, Caenorhabditis elegans, Clostridium tetani E88, Mus musculus, Oceanobacillus iheyensis HTE831, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Buchnera aphidicola str. Sg (Schizaphis graminum), Clostridium acetobutylicum, Pyrococcus abyssi, uncultured bacterium, Schizosaccharomyces pombe, Danio rerio, Synechocystis sp. PCC 6803" 20
- 8316 8446 26 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Medicago truncatula, Drosophila melanogaster, Arabidopsis thaliana, Danio rerio"
- 8317 8447 23 "Homo sapiens, Mus musculus, Danio rerio, Haemophilus influenzae Rd KW20, Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Anthraxeraea polyphemus, Shewanella oneidensis MR-1, Takifugu rubripes, Prochlorococcus marinus, Gallus gallus, Clostridium perfringens str. 13"
- 8318 8448 24 "Homo sapiens, Mus musculus, Vitreoscilla sp. C1, Drosophila melanogaster, Staphylococcus aureus" 30
- 8319 8449 23 "Homo sapiens, Mus musculus, Dictyostelium discoideum, Arabidopsis thaliana, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Orientia tsutsugamushi"
- 8320 8450 31 "Mus musculus, Homo sapiens, Caenorhabditis elegans, Danio rerio, Human immunodeficiency virus 1, Oryza sativa (japonica cultivar-group)"
- 8321 8451 24 "Arabidopsis thaliana, Mus musculus, Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group), Papio anubis, Oryctolagus cuniculus, Vibrio parahaemolyticus, Mycoplasma penetrans, Caenorhabditis elegans" 40
- 8322 8452 24 "Homo sapiens, Arabidopsis thaliana, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Leptospira interrogans serovar Iai str. 56601, Drosophila melanogaster, Anopheles albitalis, Clostridium cochlearium"
- 8323 8453 24 "Borrelia burgdorferi B31, Oryza sativa (japonica cultivar-group), Borrelia burgdorferi, Caenorhabditis elegans, Atelerix albiventris, Buchnera aphidicola str. Bp (Baizongia pistaciae), Danio rerio, Mus musculus, Bacteroides thetaiotaomicron VPI-5482, Streptococcus pyogenes MGAS315, Homo sapiens, Streptococcus pyogenes M1 GAS, Entamoeba histolytica, Streptococcus pyogenes SSI-1, Dictyostelium discoideum" 50

- 8324 8454 27 "Homo sapiens, Xylella fastidiosa Temecula1, Mus musculus, Caenorhabditis elegans, Xylella fastidiosa 9a5c, Larix mastersiana, Larix potaninii, Larix lyallii, Larix occidentalis, Larix laricina, Larix sibirica, Macaca mulatta, Papio anubis, Larix decidua, Larix kaempferi, Larix gmelinii, Oryctolagus cuniculus, Arabidopsis thaliana, Thermoanaerobacter tengcongensis, Plasmodium falciparum 3D7, Pan troglodytes, Rattus norvegicus"
- 8325 8455 24 "Mus musculus, Drosophila melanogaster, Homo sapiens, Trichophyton rubrum, Oryza sativa (japonica cultivar-group)"
- 8326 8456 27 "Homo sapiens, Pan troglodytes, Candida glabrata, Papio anubis, Narceus annularis, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Yersinia pestis KIM, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Yersinia pestis C092, Danio rerio" 10
- 8327 8457 28 "Oryza sativa (japonica cultivar-group), Homo sapiens, Streptococcus pyogenes MGAS315, Streptococcus pyogenes M1 GAS, Candidatus Carsonella ruddii, Arabidopsis thaliana, Mus musculus, Streptococcus pyogenes SSI-1, Dictyostelium discoideum, Brugia malayi, Odontesthes mirinensis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Clostridium acetobutylicum, Danio rerio, Medicago truncatula, Caenorhabditis elegans, Lycopersicon esculentum"
- 8328 8458 105 "Lawsonia intracellularis, uncultured bacterium, uncultured delta proteobacterium, uncultured bacterium FukuN9, Bacteriovorax stolpii, Desulfovibrio sp., uncultured bacterium FukuN97, Desulfovibrio vulgaris, Achromatium sp. HK6, Achromatium sp. HK3, Achromatium" 20
- 8329 8459 200 "Lawsonia intracellularisDesulfovibrio sp., Treponema sp. III:F:AT004, uncultured Treponema sp., uncultured low G+C Gram-positive bacterium, uncultured eubacterium WCHB1-91, uncultured bacterium, Treponema sp. III:B:U8A, unidentified bacterium, Orenia mari"
- 8330 8460 200 "Lawsonia intracellularisDesulfovibrio sp., uncultured bacterium, Desulfovibrio sp. UNSW3caefatS, Desulfovibrio piger, Bilophila wadsworthia, Desulfomonas ovales, Desulfovibrio desulfuricans, Desulfovibrio sp. DSM12803, bacterium SRB7, Elbe River snow isol" 30
- 8331 8461 201 "Desulfovibrio sp.Lawsonia intracellularis, uncultured delta proteobacterium, Desulfovibrio desulfuricans, Desulfovibrio sp. DSM12803, Desulfovibrio sp. D4, Desulfovibrio desulfuricans subsp. desulfuricans, Desulfovibrio fairfieldensis, Desulfomonas ovales"
- 8332 8462 203 "Lawsonia intracellularis, Desulfovibrio sp., Bilophila wadsworthia, Desulfonatronum sp. DsvA, uncultured delta proteobacterium, unidentified eubacterium RFLP109, uncultured bacterium, Desulfonatronum lacustre, Desulfonatronum thiodismutans, Desulfovibrio sp"
- 8333 8463 202 "Lawsonia intracellularis, Desulfovibrio sp., uncultured bacterium, Bilophila wadsworthia, Desulfovibrio piger, Desulfovibrio sp. DSM12803, Desulfovibrio sp. D4, Desulfovibrio fairfieldensis, uncultured bacterium SHA-116, uncultured delta proteobacterium, Sy" 40
- 8334 8464 201 "Lawsonia intracellularis, Desulfovibrio sp., Desulfonatronum thiodismutans, Desulfonatronum lacustre, Desulfovibrio oryzae, Desulfovibrio longreachensis, Desulfovibrio aespoensis, Bilophila wadsworthia, uncultured eubacterium, Desulfovibrio alaskensis, Des"
- 8335 8465 201 "Lawsonia intracellularis, Desulfovibrio sp., uncultured bacterium, Desulfovibrio vulgaris, Desulfovibrio sp. FD1, Desulfovibrio desulfuricans subsp. desulfuricans, Bilophila wadsworthia, Desulfovibrio sp. ABHU2SB, Desulfovibrio desulfuricans, Desulfovibrio " 50

- 8336 8466 199 "Lawsonia intracellularis, Desulfovibrio fairfieldensis, Desulfovibrio desulfuricans subsp. desulfuricans, Desulfovibrio piger, Bradyrhizobium sp. LMG 15378, Bradyrhizobium sp. Crj-1, Candidatus Competibacter phosphatis, Bradyrhizobium genosp. VI, Bradyrhizo"
- 8337 8467 200 "Lawsonia intracellularis, Clostridium carnis, Nitrosospira sp. Nsp1, MTBE-degrading bacterium PM1, Nitrosomonas marina, Nitrosospira sp., Nitrosospira sp. NI20, Nitrosococcus mobilis, Nitrosospira sp. Np39-19, Nitrosomonas cryotolerans, Nitrosomonas sp. Nm5"
- 8338 8468 112 "Lawsonia intracellularis, Brevundimonas diminuta, Polyangium cellulosum, chlamydia-associated clinical sample 643-G, chlamydia-associated clinical sample 39-T, chlamydia-associated clinical sample 194-T, Pseudomonas syringae pv. tomato str. DC3000, Plasmodi" 10
- 8339 8469 115 "uncultured actinobacterium MB11C06, uncultured actinobacterium MB11A03, Caulobacter crescentus CB15, Nitrobacter sp., Nitrobacter vulgaris, Nitrobacter winogradskyi, Chlamydomonas radiata, Brevundimonas diminuta, Nitrobacter hamburgensis, Erythrobacter sp. "
- 8340 8470 124 "Acinetobacter calcoaceticus, Xylella fastidiosa Temecula1, Anaplasma marginale, secondary endosymbiont of Erium globosum, secondary endosymbiont of Australicoccus grevilleae, Xylella fastidiosa 9a5c, cf. Francisella sp. CYH-2002, Anaplasma phagocytophilum, " 20
- 8341 8471 151 "Bartonella elizabethae, Bartonella doshiae, Bartonella bacilliformis, Bartonella grahamii, Bartonella vinsonii subsp. berkhoffii, Rhodopseudomonas palustris, Bartonella weissi, Bartonella sp. Deer 159/660/1, Bartonella birtlesii, Bartonella henselae, Barton"
- 8342 8472 121 "Campylobacter jejuni, Campylobacter sp., Campylobacter coli, Campylobacter lari, Campylobacter jejuni subsp. jejuni NCTC 11168, Vibrio mediterranei, Vibrio agarivorans, Chlamydia muridarum, uncultured actinobacterium MB11A03, Pasteurella multocida, Vibrio s"
- 8343 8473 168 "Haemophilus influenzae Rd KW20, Xylella fastidiosa Temecula1, Xylella fastidiosa 9a5c, Gluconacetobacter europaeus, Lactobacillus amyolyticus, Gluconacetobacter intermedius, Pasteurella multocida, Xanthomonas axonopodis pv. citri str. 306, Xanthomonas camp" 30
- 8344 8474 79 "Buchnera aphidicola, Buchnera aphidicola str. Bp (Baizongia pistaciae), Buchnera aphidicola str. Sg (Schizaphis graminum), uncultured gamma proteobacterium MB12D03, uncultured gamma proteobacterium MB11G09, uncultured proteobacterium EBAC27G05, Buchnera aph"
- 8345 8475 145 "Xanthomonas axonopodis pv. citri str. 306, Xanthomonas campestris pv. campestris str. ATCC 33913, uncultured marine gamma proteobacterium EBAC31A08, Stigmatella aurantiaca, Xylella fastidiosa Temecula1, secondary endosymbiont of Planococcus citri, Xylella f" 40
- 8346 8476 112 "Treponema pallidum, Candidatus Procabacter acanthamoebae, Candidatus Procabacter sp. UWC6, Neisseria meningitidis Z2491, Neisseria gonorrhoeae, Neisseria meningitidis MC58, Chromobacterium violaceum, Xanthomonas axonopodis pv. citri str. 306, Xanthomonas ca"
- 8347 8477 169 "Nannocystis exedens, Melissococcus plutonius, Enterococcus solitarius, Enterococcus raffinosus, Enterococcus pseudoavium, Enterococcus malodoratus, Enterococcus gallinarum, Enterococcus flavescens, Enterococcus casseliflavus, Enterococcus avium, Enterococcus"
- 8348 8478 182 "uncultured marine gamma proteobacterium EBAC31A08, secondary endosymbiont of Planococcus ficus, secondary endosymbiont of Planococcus c" 50

- itri, secondary endosymbiont of *Melanococcus albizziae*, secondary endosymbiont of *Antonina pretiosa*, *Buchnera aphidicola*, "
- 8349 8479 160 "Nannocystis exedens, *Bacillus megaterium*, *Leptospirillum ferrooxidans*, *Nephroselmis olivacea*, *Pedinomonas minor*, *Microthamnion kuetzingianum*, *Pedinomonas tuberculata*, *Rhodococcus fascians*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Bacillus s*"
- 8350 8480 200 "Leptospira interrogans serovar lai str. 56601, *Leptospira interrogans*, *Chlorobium tepidum* TLS, *Coxiella burnetii* RSA 493, *Stigmatella aurantiaca*, *Leucothrix mucor*, *Bacillus* sp., *Geobacillus stearothermophilus*, *Chlorobium limicola*, *Streptococcus mutans* UA159" 10
- 8351 8481 199 "Azotobacter vinelandii, *Pseudomonas syringae* pv. tomato str. DC3000, *Pseudomonas aeruginosa* PA01, *Pseudomonas putida* KT2440, *Pseudomonas aeruginosa*, *Pseudomonas fluorescens*, *Legionella pneumophila*, *Pseudomonas stutzeri*, *Oryza sativa* (japonica cultivar-group)"
- 8352 8482 73 "Thermus thermophilus, *Halomonas cupida*, *Chromohalobacter marismortui*, *Chromohalobacter canadensis*, *Thiomonas cuprina*, *Xylella fastidiosa* Temecula1, *Xylella fastidiosa* 9a5c, *Deinococcus radiodurans*, *Treponema pallidum*, *Cyanophora paradoxa*, *Xanthomonas axonop*"
- 8353 8483 76 "Desulfovibrio vulgaris, *Thermus* sp., *Thermoactinomyces vulgaris*, *Thermoanaerobacter tengcongensis*, *Aquifex aeolicus* VF5, *Pseudonocardia hydrocarbonoxydans*, *Geobacillus stearothermophilus*, *Pseudonocardia halophobica*, *Rhodobacter sphaeroides*, *Nannocystis exed*" 20
- 8354 8484 28 "Arabidopsis thaliana, *Homo sapiens*, *Mus musculus*, *Rattus norvegicus*, *Oncorhynchus mykiss*, *Drosophila melanogaster*, *Danio rerio*, *Bos taurus*, *Leishmania major*, *Parnassius smintheus*, *Deltistes luxatus*, *Ictalurus punctatus*, *Neurospora crassa*, *Cyprinus carpio*, *Felis catus*, *Gasterosteus aculeatus*, *Saccharomyces cerevisiae*, *Oryza sativa* (japonica cultivar-group), *Trypanosoma cruzi*, *Tetraodon nigroviridis*, *Guiraguira guira*, *Caenorhabditis elegans*, *Canis familiaris*, *Pan troglodytes*, *Lama guanicoe*, *Trifolium repens*"
- 8355 8485 26 "Homo sapiens, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Paramecium tetraurelia*, *Danio rerio*" 30
- 8356 8486 27 "Legionella pneumophila, *Homo sapiens*, *Caenorhabditis elegans*, *Saccharomyces castellii*, *Mus musculus*, *Medicago truncatula*, *Drosophila melanogaster*, *Methanosarcina acetivorans* C2A, *Clostridium acetobutylicum*, *Arabidopsis thaliana*, *Danio rerio*"
- 8357 8487 27 "Adoxophyes orana granulovirus, *Staphylococcus aureus*, *Oryza sativa*, *Homo sapiens*, *Sulfolobus solfataricus*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Mus musculus*, *Pinus elliotii*, *Bacillus cereus*" 40
- 8358 8488 23 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Zea mays*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Bacillus halodurans*"
- 8359 8489 35 "Homo sapiens, *Drosophila melanogaster*, *Mus musculus*, *Pseudomonas putida* KT2440, *Sus scrofa*, *Caenorhabditis elegans*, *Arabidopsis thaliana*"
- 8360 8490 29 "Mus musculus, *Bacillus cereus* ATCC 14579, *Homo sapiens*, *Arabidopsis thaliana*, *Aconitum gigas*, *Rattus norvegicus*, *Vibrio vulnificus* CMCP 6, *Mycoplasma pulmonis*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Leptospira interrogans* serovar lai str. 56601, 50

Clostridium tetani E88, *Saccharomyces cerevisiae*, *Polygala acuminata*, *Rickettsia conorii*, *Clostridium acetobutylicum*, *Lactococcus lactis* subsp. *lactis*, *Rickettsia prowazekii*, *Candidatus Blochmannia floridanus*, *Caenorhabditis briggsae*, *Buchnera aphidicola* str. APS (*Acyrtosiphon pisum*), *Mycoplasma penetrans*, *Danio rerio*, *Anopheles gambiae*, *Ehrlichia chaffeensis*, *Oryza sativa*, *Clostridium perfringens* str. 13"

8361 8491 28 "Homo sapiens, *Arabidopsis thaliana*, *Mus musculus*, *Atelelix albiventris*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Gossypium hirsutum*, *Clostridium acetobutylicum*, *Danio rerio*, *Ciona intestinalis*, *Schisandra plena*, *Kadsura polysperma*, *Kadsura longipedunculata*, *Pan troglodytes*, *Borrelia burgdorferi* B31, *Dictyostelium discoideum*, *Rattus norvegicus*, *Papio anubis*, *Plasmodium berghei*, *Candida albicans*, *Cryptosporidium parvum*, *Oenanthe sarmentosa*, *Helicobacter hepaticus* ATCC 51449, *Oryza sativa* (*japonica* cultivar-group)"

10

8362 8492 31 "Peromyscus maniculatus, *Mus musculus*, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Homo sapiens*, *Caenorhabditis elegans*, *Cochliomyia hominivorax*, *Dictyostelium discoideum*, *Tetrahymena pyriformis*, *Prochlorococcus marinus*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Arabidopsis thaliana*, *Actinobacillus actinomycetemcomitans*, *Plasmodium falciparum* 3D7, *Oryza sativa* (*indica* cultivar-group), *Listeria innocua*, *Pan troglodytes*, *Mycoplasma pirum*"

20

8363 8493 27 "Homo sapiens, *Oryza sativa* (*japonica* cultivar-group), *Oryza sativa*, *Mus musculus*, *Medicago truncatula*, *Plasmodium falciparum* 3D7, *Vibrio cholerae*, *Mycoplasma arthritidis*, *Lilium longiflorum*, *Apis mellifera*, *Danio rerio*, *Gossypium hirsutum*, *Synechocystis* sp. PCC 6803"

8364 8494 36 "Glycine max, *Dictyostelium discoideum*, *Eimeria tenella*, *Mus musculus*, *Drosophila melanogaster*, *Homo sapiens*, *Arabidopsis thaliana*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Rattus norvegicus*, *Medicago truncatula*, *Phaseolus vulgaris*, *Apis mellifera*"

8365 8495 31 "Buchnera aphidicola str. Bp (*Baizongia pistaciae*), *Clostridium tetani* E88, *Homo sapiens*, *Arabidopsis thaliana*, *Mus musculus*, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Clostridium acetobutylicum*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Atelelix albiventris*, *Rattus norvegicus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Strongylura senegalensis*, *Strongylura timucu*, *Oryza sativa* (*indica* cultivar-group), *Ochromonas danica*, *Marchantia polymorpha*, *Anthoceros formosae*, *Danio rerio*, *Prochlorococcus marinus* subsp. *marinus* str. CCMP1375, *Papio anubis*, *Equine herpesvirus 1*"

30

8366 8496 31 "Mus musculus, *Homo sapiens*, *Geobacillus stearothermophilus*, *Caenorhabditis elegans*, *Danio rerio*, *Oryza sativa* (*japonica* cultivar-group), *Chlamydia muridarum*, *Xylella fastidiosa* Temecula1, *Prochlorococcus marinus*, *Arabidopsis thaliana*, *Anopheles gambiae*"

40

8367 8497 29 "Escherichia coli CFT073, *Escherichia coli*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Drosophila melanogaster*, *Mus musculus*, *Strongylocentrotus purpuratus*, *Arabidopsis thaliana*, *Glycine max*, *Caenorhabditis elegans*, *Medicago truncatula*"

8368 8498 33 "Homo sapiens, *Pseudomonas syringae* pv. *tomato* str. DC3000, *Mus musculus*, *Yersinia pestis* KIM, *Bacillus megaterium*, *Yersinia pestis* C092, *Shewanella oneidensis* MR-1, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Oryza sativa* (*japonica* cultivar-group), *Vibrio parahaemolyticus*, *Staphylococcus aureus* subsp. *aureus* MW2, *Pirellula* sp., *Mesembryanthemum crystallinum*, *Borre*

50

- lia burgdorferi B31, Drosophila melanogaster, Zea mays, Mycoplasma pulmonis, Arabidopsis thaliana"
- 8369 8499 24 "Mus musculus, Schizosaccharomyces pombe, Drosophila melanogaster, Homo sapiens, Alpheus schmitti, Candidatus Blochmannia floridanus, Macaca fascicularis, Papio anubis, Arabidopsis thaliana, Rhadine sp. KAO-2001, Autographa californica nucleopolyhedrovirus, Lactococcus lactis subsp. cremoris, Glycine canescens, Lotus corniculatus var. japonicus"
- 8370 8500 28 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Papio anubis, Mycoplasma gallinarum, Clostridium acetobutylicum, Arabidopsis thaliana, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Tetrahymena thermophila, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Betula pendula, Lactobacillus fermentum" 10
- 8371 8501 27 "Drosophila melanogaster, Homo sapiens, Mus musculus, Medicago truncatula, Arabidopsis thaliana, Lotus corniculatus var. japonicus, Oryza sativa (japonica cultivar-group), Danio rerio, Leptospira interrogans serovar lai str. 56601, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Lycopersicon esculentum, Calycanthus floridus var. glaucus, Cryptosporidium parvum, Staphylococcus capitis"
- 8372 8502 27 "Homo sapiens, Pan troglodytes, Lotus corniculatus var. japonicus, Danio rerio, Bombyx mori, Caenorhabditis elegans, Drosophila melanogaster, Escherichia coli CFT073, Mycoplasma penetrans, Cotesia congregata, Arabidopsis thaliana, Mus musculus, Plasmodium falciparum 3D7, Rattus norvegicus, Oryzias latipes" 20
- 8373 8503 27 "Gallus gallus, Mus musculus, Arabidopsis thaliana, Homo sapiens, Scyliorhinus stellaris, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Xenopus borealis, Thermoplasma volcanium, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Azoarcus sp. 22Lin, Emericella nidulans, Staphylococcus aureus subsp. aureus Mu50"
- 8374 8504 28 "Homo sapiens, Danio rerio, Pan troglodytes, Mus musculus, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Drosophila melanogaster, Sus scrofa, Apis mellifera ligustica, Rattus norvegicus" 30
- 8375 8505 35 "Homo sapiens, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Plasmodium falciparum 3D7, Mus musculus, Clostridium botulinum, Clostridium botulinum D, Medicago truncatula, Streptococcus pneumoniae R6, Streptococcus pneumoniae T"
- 8376 8506 31 "Heterobasidion annosum, Homo sapiens, Mus musculus, Dictyostelium discoideum, Poncirus trifoliata, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis" 40
- 8377 8507 31 "Dictyostelium discoideum, Drosophila melanogaster, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Listeria innocua, Homo sapiens, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Pseudoregma sp. south group, Pseudoregma bambucicola, Ceratovacuna nekoashi, Ceratovacuna japonica, Pseudoregma panicola, Pseudoregma montana, Pseudoregma alexanderi, Pseudoregma carolinensis, Pan troglodytes, Buchnera aphidicola str. Bp (Baizongia pistaciae), Necrophilus hydrophiloides, Clostridium acetobutylicum, Campylobacter jejuni subsp. jejuni NCTC 11168, Oceanobacillus iheyensis HTE831, Bombyx mori, Saccharomyces cerevisiae, Bacteriophage D108, Phoradendron atura, Mycoplasma hyopneumoniae, Chaitoregma tattakana" 50

- 8378 8508 24 "Mus musculus, Homo sapiens, Pan troglodytes, Arabidopsis thaliana, Plasmodium vivax, Danio rerio"
- 8379 8509 28 "Mus musculus, Drosophila melanogaster, Naegleria gruberi, Homo sapiens, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Vibrio vulnificus CMCP6, Plasmodium falciparum 3D7, Vibrio parahaemolyticus, Saccharomyces cerevisiae, Plasmodium falciparum, Salmonella enterica subsp. enterica serovar Typhi, Trypanosoma cruzi, Rattus norvegicus"
- 8380 8510 25 "Hammondia heydorni, Pleurodeles waltl, Listeria monocytogenes, Mus musculus, Borrelia burgdorferi B31, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio" 10
- 8381 8511 28 "Mus musculus, Homo sapiens, Equus caballus, Pan troglodytes, Dictyostelium discoideum, Drosophila melanogaster, Papio anubis, Rhodnius pallescens, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio, Rattus norvegicus, Oryza sativa, Anolis trinitatis, Plasmodium falciparum 3D7, Schizophyllum commune, Nepenthes macrovulgaris, Nepenthes masoalensis, Nepenthes madagascariensis, Cavia porcellus, Bilobella aurantiaca, Dictyostelium" 10
- 8382 8512 28 "Arabidopsis thaliana, Homo sapiens, Lactococcus lactis subsp. lactis, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Methanosarcina acetivorans C2A, Brassica rapa, Danio rerio, Mycoplasma mobile, Melanoplus sanguinipes entomop" 20
- 8383 8513 36 "Plasmodium falciparum 3D7, Drosophila melanogaster, Homo sapiens, Caenorhabditis elegans, Ceratitis rosa, Medicago truncatula, Mus musculus, Lycopersicon esculentum, Danio rerio, Amsacta moorei entomopoxvirus, Oryza sativa (japonica cultivar-group), Sulfolobus tokodaii, Lactobacillus plantarum WCFS1, Clostridium pasteurianum, Arabidopsis thaliana, Candidatus Carsonella ruddii, Dictyostelium discoideum, Sorghum bicolor, Clostridium perfringens, Phthorimaea operculella granulovirus, Peanut witches'-broom phytoplasma, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Plasmodium berghei, Lotus corniculatus var. japonicus, Didelphis virginiana, Lactococcus lactis, Rattus norvegicus, Clostridium tetani, Escherichia fergusonii, Plasmid ColE1, Streptococcus mutans UA159" 30
- 8384 8514 32 "Mus musculus, Homo sapiens, Amsacta moorei entomopoxvirus, Clostridium butyricum, Drosophila melanogaster, Plasmodium falciparum 3D7, Buchnera aphidicola str. Sg (Schizaphis graminum), Plasmodium berghei, Cyclamen purpurascens, Lotus corniculatus var. japon" 30
- 8385 8515 33 "Medicago sativa, Homo sapiens, Plasmodium falciparum 3D7, Goniobasis proxima, Mus musculus, Danio rerio, Takifugu rubripes, Saccharomyces cerevisiae, Leptospira interrogans serovar lai str. 56601, Drosophila melanogaster, Clostridium tetani E88, Streptococcus mutans UA159, Arabidopsis thaliana, Candidatus Blochmannia floridanus, Amsacta moorei entomopoxvirus, Nicotiana tabacum, Oryza sativa (japonica cultivar-group), Bacillus anthracis, Naemacyclus niveus, Caenorhabditis elegans, Enterococcus faecium, Dictyostelium discoideum, Drosophila littoralis, Yersinia pestis KIM, Litopenaeus vannamei, Artemia franciscana, Praon abjectum, Emericella nidulans, Neurospora crassa" 40
- 8386 8516 25 "Homo sapiens, Rattus norvegicus, Mus musculus, Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Arabidopsis thaliana, Ureaplasma urealyticum, Plasmodium falciparum 3D7, Listeria monocytogenes"
- 8387 8517 27 "Mus musculus, Homo sapiens, Chlamydia trachomatis, Drosophila melanogaster, Lactobacillus plantarum WCFS1, Bellis perennis, Aplysia cal 50

ifornica"

- 8388 8518 25 "Chlamydomonas caviae GPIC, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Lemur catta, Medicago truncatula"
- 8389 8519 28 "Phalaenopsis minor, Xenopus laevis, Caenorhabditis elegans, Bacillus subtilis subsp. subtilis str. 168, Bacillus subtilis, Homo sapiens, Danio rerio, Mus musculus, Orpinomyces sp. PC-2, Lotus corniculatus var. japonicus, Schizosaccharomyces pombe, Schippia "
- 8390 8520 33 "Mus musculus, Homo sapiens, Danio rerio, Medicago truncatula, Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Caenorhabditis elegans, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, primary endosymbiont of Psylla pyricola, Candidatus Carsonella ruddii, Poncirus trifoliata, Drosophila melanogaster, Schizosaccharomyces octosporus, Plasmodium falciparum 3D7, Bacteroides fragilis, Oryza sativa, Naegleria gruberi, Culex pipiens, Sphaeroides nephelus, Oryza sativa (japonica cultivar-group), Euglena longa, Tetrahymena thermophila, Felis catus, Arabidopsis thaliana, Mycoplasma gallisepticum R" 10
- 8391 8521 36 "Dictyostelium discoideum, Homo sapiens, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Sorghum bicolor, Naegleria gruberi, Lactococcus lactis subsp. lactis, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Lactococcus lactis, Caenorhabditis elegans, Pan troglodytes, Medicago truncatula, Chlamydomonas caviae GPIC, Enterococcus faecalis V583, Borrelia burgdorferi B31, Monosiga brevicollis, Papio anubis, Schmidtea mediterranea, Renealmia thyrsoides, Renealmia sp. Kress 96-5713, Renealmia cernua, Renealmia battenbergiana, Renealmia alpinia" 20
- 8392 8522 27 "Mus musculus, Chlamydia trachomatis, Homo sapiens, Drosophila melanogaster, Lactobacillus plantarum WCFS1, Aplysia californica"
- 8393 8523 32 "Chlamydomonas caviae GPIC, Homo sapiens, Danio rerio, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Lemur catta, Caenorhabditis elegans, Moraxella catarrhalis" 30
- 8394 8524 33 "Mus musculus, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Medicago truncatula, Zea mays, Tetrahymena pyriformis, Campylobacter jejuni subsp. jejuni NCTC 11168, Ciona intestinalis, Danio rerio, Bacteriophage phi-105, Coregonus lavaretu"
- 8395 8525 28 "Homo sapiens, Mycoplasma capricolum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Rattus norvegicus, Danio rerio, Saccharomyces cerevisiae, Mus musculus, Medicago truncatula, Buchnera aphidicola str. Sg (Schizaphis graminum), Bombyx mori, Ornithorhynchus anatinus, Pan troglodytes, Dictyostelium discoideum, Rivulus marmoratus, Mycoplasma fermentans, Caenorhabditis elegans, Arabidopsis thaliana, Drosophila arizonae, Drosophila canadensis, Drosophila littoralis, Drosophila kanekoi, Drosophila montana, Drosophila flavomontana, Drosophila laticola, Drosophila borealis, Methanosarcina acetivorans C2A, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Schizophyllum commune, Odontoglossum harryanum, Solanum demissum" 40
- 8396 8526 36 "Leptospira interrogans serovar lai str. 56601, Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Cryptosporidium parvum, Haemophilus influenzae Rd KW20, Dictyostelium discoideum, Arabidopsis thaliana, Mycoplasma penetrans, Danio rerio, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Caenorhabditis elegans, Rickettsia typhi, Gossypium arboreum, Caenorhabditis briggsae, Thermoplasma volcanium, Oryza sativa (japonica cu 50

- ltivar-group), *Salix reinii*, *Saccharomyces bayanus*, *Xestia c-nigrum granulovirus*, *Alnus incana*"
- 8397 8527 35 "Mus musculus, Homo sapiens, *Clostridium acetobutylicum*, *Danio rerio*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Saccharomyces cerevisiae*, *Arabidopsis thaliana*, *Phthorimaea operculella granulovirus*, *Enterococcus faecalis* V583, *Pan troglodytes*, *Macaca mulatta*, *Caenorhabditis elegans*, *Streptococcus agalactiae* 2603V/R, *Buchnera aphidicola* str. Sg (*Schizaphis graminum*), *Bos taurus*, *Streptococcus agalactiae* NEM316, *Caenorhabditis briggsae*, *Streptococcus agalactiae*, *Buchnera aphidicola*, *Hypostomus* sp. 2587.10, *Hypostomus* sp. 2586.1, *Lycopersicon esculentum*, *Lithocarpus dodonaeifolius*, *Rattus norvegicus*, *Oryza sativa* (*japonica* cultivar-group)" 10
- 8398 8528 32 "Homo sapiens, *Mus musculus*, *Medicago truncatula*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Caenorhabditis elegans*, *Oryza sativa* (*japonica* cultivar-group), *Danio rerio*, *Bos taurus*, *Schizosaccharomyces japonicus*, *Papio anubis*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Clostridium acetobutylicum*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Tribolium castaneum*, *Rattus norvegicus*, *Felis catus*"
- 8399 8529 30 "Rhodnius prolixus, *Gasterosteus aculeatus*, *Plasmodium falciparum* 3D7, *Arabidopsis thaliana*, *Staphylococcus aureus*, *Macaca mulatta*, *Mus musculus*, *Homo sapiens*, *Canis familiaris*, *Oryza sativa* (*japonica* cultivar-group), *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Caenorhabditis elegans*, *Schizosaccharomyces pombe*, *Danio rerio*, *Helicobacter hepaticus* ATCC 51449, *Staphylococcus aureus* subsp. *aureus* Mu50" 20
- 8400 8530 24 "Candida albicans, *Mus musculus*, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Shigella flexneri* 2a str. 2457T, *Medicago truncatula*, *Leishmania major*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Shigella flexneri* 2a str. 301, *Escherichia coli* O157:H7 EDL933, *Takifugu rubripes*, *Escherichia coli*, *Escherichia coli* K12, *Bacteriophage phiYe03-12*, *Danio rerio*, *Nicotiana tabacum*, *Escherichia coli* O157:H7" 30
- 8401 8531 49 "Plasmodium falciparum 3D7, *Homo sapiens*, *Pan troglodytes*, *Drosophila melanogaster*, *Dictyostelium discoideum*, *Papio anubis*, *Danio rerio*, *Mus musculus*, *Takifugu rubripes*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Rickettsia prowazekii*, *Proteus vulgaris*, *Medicago truncatula*"
- 8402 8532 33 "Asterina coronata, *Mus musculus*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Medicago truncatula*, *Drosophila melanogaster*, *Danio rerio*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Rattus norvegicus*, *Equus caballus*, *Dictyostelium discoideum*, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae* NEM316, *Candidatus Blochmannia floridanus*, *Oxyrhopus melanogenys*, *Oxyrhopus formosus*, *Methanococcus voltae*, *Ceratovacuna lanigera*" 40
- 8403 8533 31 "Drosophila melanogaster, *Paeonia veitchii*, *Oryza sativa* (*japonica* cultivar-group), *Caenorhabditis elegans*, *Homo sapiens*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Mus musculus*"
- 8404 8534 23 "Homo sapiens, *Sulfolobus tokodaii*, *Mus musculus*, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis*"
- 8405 8535 27 "Mus musculus, *Homo sapiens*, *Oryza sativa* (*japonica* cultivar-group), *Saccharomyces cerevisiae*"
- 8406 8536 24 "Mus musculus, *Homo sapiens*, *Caenorhabditis elegans*, *Ano* 50

pheles gambiae"

- 8407 8537 23 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Lactococcus lactis s ubsp. lactis, Bacteriophage bIL309, Methanococcus vannielii, Pasteurella multoci da, Prochlorococcus marinus subsp. marinus str. CCMP1375, Danio rerio, Naegleria fowleri"
- 8408 8538 25 "Mus musculus, Homo sapiens, Rhizobium leguminosarum, Rh izobium leguminosarum bv. viciae, Plasmodium falciparum 3D7, Plasmodium falcipar um, Gallus gallus, Zea mays, Arabidopsis thaliana, Folsomia candida, Oryza sativ a, Oryza sativa (japonica cultivar-group), Oryza sativa (indica cultivar-group), 10 Methanocaldococcus jannaschii, Saccharum officinarum"
- 8409 8539 27 "Homo sapiens, Salmonella enterica subsp. enterica serov ar Typhi Ty2, Salmonella enterica subsp. enterica serovar Typhi, Danio rerio, Mu s musculus, Medicago truncatula, Nitella praelonga, Methanosarcina acetivorans C 2A, Arabidopsis thaliana, Streptococcus thermophilus bacteriophage 7201, Sacchar omyces cerevisiae"
- 8410 8540 27 "Mus musculus, Bacillus halodurans, Homo sapiens, Arabid opsis thaliana"
- 8411 8541 24 "Echinometra mathaei, Hordeum vulgare, Mus musculus, Hom o sapiens, Danio rerio, Caenorhabditis elegans, Oryza sativa (japonica cultivar- 20 group), Arabidopsis thaliana, Caenorhabditis briggsae"
- 8412 8542 27 "Bacteriophage Aphi23, Pan troglodytes, Homo sapiens, E nterococcus faecalis, Mus musculus, Medicago truncatula, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bovine herpesvirus 4, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Caenorhabditi s elegans, Danio rerio"
- 8413 8543 33 "Clostridium acetobutylicum, Escherichia coli, Homo sapi ens, Mus musculus, Nirripierti hinzeae, Plagioderma versicolora, Drosophila melano gaster, Rattus norvegicus, Dictyostelium discoideum, Plasmodium falciparum 3D7, Camellia sinensis, Saccharomyces cerevisiae, Pasteurella multocida, Graphium dor 30 cus, Aglais urticae, Peltandra virginica, Bos taurus, Escherichia coli CFT073, U reaplasma urealyticum, Arabidopsis thaliana, Danio rerio, Prochlorococcus marinu s, Cicer arietinum, Guillardia theta, Plasmodium falciparum, Caenorhabditis eleg ans, Drosophila hydei, Oryza sativa (japonica cultivar-group), Inachis io, Candi da sp. HN95, Graphium phidias, Polistes nimpha, Moneuplotes crassus"
- 8414 8544 25 "Mus musculus, Homo sapiens, Dictyostelium discoideum, D rosophila melanogaster, Papio anubis, Methanosarcina acetivorans C2A, Caenorhabd itis briggsae, Emericella nidulans"
- 8415 8545 25 "Homo sapiens, Mizuhopecten yessoensis, Drosophila melan ogaster, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana 40 , Mus musculus, Plasmodium falciparum 3D7, Danio rerio"
- 8416 8546 35 "Homo sapiens, Mycoplasma bovis, Gallus gallus, Caenorha bditis briggsae, Mus musculus, Pasteurella multocida, Babesia rodhaini"
- 8417 8547 26 "Homo sapiens, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Shigella flexneri, Drosophila melanogaster, Pan troglodytes, M us musculus, Draba cuatrecasana, Draba hammenii, Draba pennell-hazenii, Draba cr yophila, Draba solitaria, Draba chionophil"
- 8418 8548 43 "Homo sapiens, Danio rerio, Dictyostelium discoideum, Mu s musculus, Oryctolagus cuniculus, Plasmodium falciparum 3D7, Saccharomyces cere visiae, Euphorbia esula, Oryza sativa (japonica cultivar-group), Oryza sativa, S 50

- chmidtea polychroa, Brugia pahangi, Cylicostephanus minutus, Polybioides tabidus, Arabidopsis thaliana, Medicago truncatula, Pan troglodytes, Drosophila melanogaster, Sus scrofa, Anopheles flavirostris, Papio anubis, Schmidtea mediterranea, Plasmodium falciparum, Canis familiaris"
- 8419 8549 36 "Danio rerio, Homo sapiens, Papio hamadryas, Human immunodeficiency virus 1, Mus musculus, Amsacta moorei entomopoxvirus, Euglena longa, Yarrowia lipolytica, Neurospora crassa, Medicago truncatula, Dictyostelium discoideum, Arabidopsis thaliana, Rickettsia c"
- 8420 8550 32 "Plasmodium falciparum 3D7, Plasmodium falciparum, Danio rerio, Homo sapiens, Drosophila melanogaster, Dictyostelium discoideum, Mus musculus, Oryza sativa (japonica cultivar-group), Zea mays, Oryza sativa, Arabidopsis thaliana, Pichia canadensis" 10
- 8421 8551 47 "Homo sapiens, Plasmodium falciparum 3D7, Mus musculus, Arabidopsis thaliana, Danio rerio, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Saccharomyces unisporus, Rattus norvegicus, Equus caballus, Saccharomyces cerevisiae, Paramecium primaurelia, Trypanosoma brucei, Anthoceros formosae, Carludovica palmata, Physarum polycephalum, Cryptosporidium parvum, Tetrapisispora phaffii, Borrelia burgdorferi B31, Medicago truncatula, Drosophila melanogaster, Clarkia concinna"
- 8422 8552 48 "Homo sapiens, Prochlorococcus marinus, Mus musculus, Arabidopsis thaliana, Plasmodium falciparum 3D7, Monosiga brevicollis, Drosophila virilis, Danio rerio, Eimeria tenella, Dictyostelium discoideum, Medicago truncatula, Drosophila melanogaster, Entamoeba h" 20
- 8423 8553 32 "Drosophila melanogaster, Homo sapiens, Arabidopsis thaliana, Mus musculus, Danio rerio, Rattus norvegicus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Pan troglodytes"
- 8424 8554 24 "Homo sapiens, Drosophila melanogaster, Clostridium acetobutylicum, Danio rerio, Mus musculus, Arabidopsis thaliana, Bacillus anthracis str. Ames, Crudia bracteata, Crudia klainei, Crudia gabonensis, Daniellia klainei, Daniellia oliveri, Daniellia ogea, Daniellia soyauxii, Plasmodium falciparum 3D7, Branchiostoma lanceolatum, Human immunodeficiency virus 1" 30
- 8425 8555 26 "Homo sapiens, Drosophila melanogaster, Mus musculus, Danio rerio, Pan troglodytes, Arabidopsis thaliana"
- 8426 8556 24 "Homo sapiens, Human immunodeficiency virus 1, Mus musculus, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Papio anubis, Streptococcus agalactiae 2603V/R, Escherichia coli O157:H7 EDL933, Streptococcus agalactiae NEM316, Escherichia coli K12, Arabidopsis thaliana, Escherichia coli, Escherichia coli O157:H7, Streptococcus oralis"
- 8427 8557 27 "Caenorhabditis elegans, Homo sapiens, Plasmodium chabaudi chabaudi, Drosophila melanogaster, Danio rerio, Caenorhabditis briggsae, Mus musculus, Methanosarcina mazei Goe1, Oryza sativa (japonica cultivar-group), Sulfolobus solfataricus, Arabidopsis thaliana, Mycoplasma penetrans, Bacillus halodurans" 40
- 8428 8558 24 "Homo sapiens, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Mus musculus, Lycopersicon esculentum, Oryza sativa (japonica cultivar-group)"
- 8429 8559 23 "Homo sapiens, Drosophila melanogaster, Mus musculus, Danio rerio"
- 8430 8560 25 "Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Streptococcus pneumoniae TIGR4, Caenorhabditis briggsae, Drosophila 50

- melanogaster, Plasmodium falciparum 3D7, Streptococcus pneumoniae R6, Danio rerio, Arabidopsis thaliana, Emericella nidulans, Caenorhabditis elegans"
- 8431 8561 35 "Homo sapiens, Anopheles gambiae, Bacillus subtilis, Mus musculus, Medicago truncatula, Bacillus subtilis subsp. subtilis str. 168, Drosophila melanogaster, Danio rerio, Nicotiana benthamiana, Pasteurella multocida, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Drosophila caribiana, Drosophila arawakana kittensis, Drosophila arawakana arawakana, Cordyceps kanzashiana, Dictyostelium discoideum, Caenorhabditis elegans, Plasmodium falciparum 3D7, Tetraodon nigroviridis, Rickettsia conorii, Lycopersicon esculentum, Tetrahymena pyriformis, Gallus gallus, Amsacta moorei entomopoxvirus, Cryptosporidium parvum, Rattus norvegicus" 10
- 8432 8562 26 "Mus musculus, Homo sapiens, Prochlorococcus marinus subsp. marinus str. CCMP1375, Thermosynechococcus elongatus BP-1, Plutella xylostella, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Zygosaccharomyces rouxii"
- 8433 8563 24 "Homo sapiens, Rattus norvegicus, Danio rerio, Mus musculus, Helicobacter pylori, Prochlorococcus marinus, Caenorhabditis elegans"
- 8434 8564 24 "Oryza sativa (japonica cultivar-group), Pan troglodytes, Homo sapiens, Methanosarcina acetivorans C2A, Caenorhabditis elegans, Mus musculus, Oryzias latipes, Gallus gallus, Drosophila melanogaster, Sudan Ebola virus, Clostridium acetobutylicum, Lactococcus lactis subsp. cremoris, Lactococcus lactis, Mycoplasma penetrans, Danio rerio, Debaryomyces occidentalis, Lactococcus lactis subsp. lactis bv. diacetylactis" 20
- 8435 8565 27 "Oryza sativa (japonica cultivar-group), Coxiella burnetii RSA 493, Mus musculus, Homo sapiens, Pasteurella multocida, Scopelochirus sc hellenbergi, Caenorhabditis elegans, Danio rerio, Tylomelania sarasinorum, Tylomelania insulaesacrae, Psilotum nudum, Clostridium perfringens str. 13"
- 8436 8566 27 "Homo sapiens, Caenorhabditis elegans, Rice gall dwarf virus, Mus musculus, Drosophila melanogaster, Lycopersicon esculentum, Canis familiaris, Bacillus subtilis subsp. subtilis str. 168, Bacteriophage SPBc2, Cryphonectria parasitica reovirus 9B21" 30
- 8437 8567 31 "Plasmodium falciparum 3D7, Homo sapiens, Mus musculus, Danio rerio, Rattus norvegicus, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Lotus corniculatus var. japonicus, Oceanobacillus iheyensis HTE831, Listeria innocua, Caenorhabditis elegans, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mesocricetus auratus, Methanocaldococcus jannaschii"
- 8438 8568 30 "Homo sapiens, Mus musculus, Pan troglodytes, Thermobacter tengcongensis, Carcinus maenas, Heuchera hirsutissima, Tetracarpaea tasmanica, Tolmiea menziesii, Danio rerio, Prochlorococcus marinus, Bacillus subtilis, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis briggsae, Plasmodium falciparum 3D7, Bacillus subtilis subsp. subtilis str. 168, Arabidopsis thaliana, Plasmid pCF10, Synechocystis sp. PCC 6803, Enterococcus faecalis" 40
- 8439 8569 24 "Leptospira interrogans serovar lai str. 56601, Dictyostelium discoideum, Tetrahymena thermophila, Homo sapiens, Polypterus bichir, Medicago truncatula, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Tetrahymena pyriformis, Mus musculus, Pan troglodytes, Cryptosporidium parvum, Caenorhabditis briggsae, Cydia pomonella granulovirus, Streptococcus pneumoniae TIGR4, Prochlorococcus marinus, Mycoplasma pulmonis, Helicobacter pylori, Lotus corniculatus var. japonicus, Danio rerio, Oryzias latipes, Nostoc sp. PCC 7120" 50

- 8440 8570 28 "Homo sapiens, Archaeoglobus fulgidus DSM 4304, Mus musculus, Oryza sativa (japonica cultivar-group), Danio rerio, Schistosoma mansoni, Nippostrongylus brasiliensis"
- 8441 8571 31 "Homo sapiens, Pan troglodytes, Mus musculus, Caenorhabditis elegans, Drosophila melanogaster, Prochlorococcus marinus, Oceanobacillus imheyensis HTE831, Danio rerio, Ciona intestinalis"
- 8442 8572 23 "Homo sapiens, Human immunodeficiency virus 1, Methanothermobacter thermotrophicus str. Delta H, Clostridium acetobutylicum, Mus musculus, Clostridium perfringens str. 13"
- 8443 8573 32 "Homo sapiens, Mus musculus, Sonneratia apetala, Camelus bactrianus, Vibrio fischeri, Hordeum vulgare, Caenorhabditis elegans, Danio rerio, Rattus norvegicus, Drosophila melanogaster, Papio anubis, Arabidopsis thaliana, Caenorhabditis briggsae" 10
- 8444 8574 25 "Caenorhabditis elegans, Homo sapiens, Mus musculus, Sus scrofa, Oryza sativa (japonica cultivar-group), Treponema pallidum, Danio rerio"
- 8445 8575 23 "Homo sapiens, Mus musculus, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Caenorhabditis elegans, Helicobacter hepaticus ATCC 51449"
- 8446 8576 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Salmonella typhimurium LT2, Salmonella enterica subsp. enterica serovar Typhi Ty2, Arabidopsis thaliana, Mus musculus, Salmonella enterica subsp. enterica serovar Typhi" 20
- 8447 8577 27 "Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Plasmodium falciparum, Mycoplasma penetrans, Schizosaccharomyces pombe, Danio rerio, Medicago truncatula, Caenorhabditis elegans, Nephila maculata, Trebouxia aggregata, Prochlorococcus marinus, Neurospora crassa, Enterococcus faecalis V583, Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Arabidopsis thaliana, Treponema pallidum, Coriocola nigra, Human immunodeficiency virus 1" 30
- 8448 8578 35 "Homo sapiens, Danio rerio, Xenorhabdus nematophila, Caenorhabditis elegans, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium gallinaceum, Helicobacter hepaticus ATCC 51449, Bos taurus, Arabidopsis thaliana, Borrelia burgdorferi B31, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Zea mays, Thermoanaerobacter tengcongensis, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Ochromonas danica, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis"
- 8449 8579 27 "Streptococcus mutans UA159, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Mus musculus, Danio rerio, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Papaya ringspot virus, Clostridium acetobutylicum, Caenorhabditis elegans, Linum usitatissimum, Lotus corniculatus var. japonicus, Pan troglodytes, Staphylococcus aureus subsp. aureus MW2, Corynebacterium glutamicum ATCC 13032, Haemophilus influenzae biotype aegyptius, Methanocaldococcus jannaschii, Anolis gundlachi, Saccharomyces cerevisiae" 40
- 8450 8580 25 "Homo sapiens, Mus musculus, Solanum tuberosum, Saccharomyces cerevisiae, Medicago truncatula, Bacillus cereus, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group)" 50

- a cultivar-group), *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Danio rerio*, *Schizosaccharomyces pombe*"
- 8451 8581 27 "Homo sapiens, *Caenorhabditis elegans*, *Danio rerio*, *Pan troglodytes*, *Methanosarcina mazei* Goe1, *Arabidopsis thaliana*, *Guillardia theta*, *Pongo pygmaeus*, *Pan troglodytes troglodytes*, *Pan troglodytes verus*, *Mus musculus*, *Medicago truncatula*, *Saccharomyces cerevisiae*, synthetic construct, *Gossypium barbadense*"
- 8452 8582 32 "Mus musculus, Homo sapiens, *Actinobacillus pleuropneumoniae*, *Shewanella oneidensis* MR-1, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, *Caenorhabditis elegans*, *Pan troglodytes*, *Dictyostelium discoideum*, *Arabidopsis thaliana*, *Moriosomus seticollis*, *Chlorobium tepidum* TLS, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Thermoanaerobacter tengcongensis*, *Rickettsia conorii*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Campylobacter jejuni*, *Lotus corniculatus* var. *japonicus*, *Rattus norvegicus*, *Neisseria meningitidis*, *Nicotiana tabacum*" 10
- 8453 8583 31 "Oryza sativa (japonica cultivar-group), Homo sapiens, *Mycoplasma pulmonis*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, Human immunodeficiency virus 1, *Arabidopsis thaliana*, *Mycoplasma genitalium*, *Danio rerio*"
- 8454 8584 24 "Xenopus laevis, Homo sapiens, *Drosophila melanogaster*, *Drosophila virilis*, *Bacillus subtilis* subsp. *subtilis* str. 168, *Mus musculus*, *Bacillus subtilis*, *Oryza sativa* (japonica cultivar-group), *Pan troglodytes*, *Staphylococcus epidermidis* ATCC 12228, *Buchnera aphidicola*, *Oryza sativa*, *Staphylococcus epidermidis*, Human immunodeficiency virus 1, *Encephalitozoon cuniculi*, *Danio rerio*, *Clostridium botulinum*, *Methanocaldococcus jannaschii*, *Anopheles gambiae*, *Rattus norvegicus*" 20
- 8455 8585 28 "Bacteroides thetaiotaomicron VPI-5482, *Drosophila melanogaster*, *Muntiacus muntjak*, *Muntiacus reevesi*, *Mus musculus*, *Dictyostelium discoideum*, Homo sapiens, *Pongo pygmaeus abelii*, *Caenorhabditis elegans*, *Danio rerio*"
- 8456 8586 28 "Drosophila melanogaster, Homo sapiens, *Plasmodium falciparum* 3D7, *Listeria monocytogenes*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Bacillus anthracis* str. Ames, *Danio rerio*, *Marmota menzbieri*, *Tomato yellow leaf curl China virus-Tb[Y10]*, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Arabidopsis thaliana*" 30
- 8457 8587 28 "Streptococcus mutans UA159, Homo sapiens, *Cucumis melo*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Fusobacterium nucleatum* subsp. *nucleatum* ATCC 25586, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Arabidopsis thaliana*, *Listeria monocytogenes*, *Caenorhabditis elegans*, *Danio rerio*, *Candida albicans*, *Klebsiella pneumoniae*, *Sus scrofa domestica*, *Pan troglodytes*, *Drosophila melanogaster*, *Methanosarcina mazei* Goe1, uncultured *Prochlorococcus* sp., *Clostridium acetobutylicum*, *Aythya americana*, *Oryza sativa* (japonica cultivar-group), *Aythya valisineria*, *Schizosaccharomyces pombe*" 40
- 8458 8588 27 "Homo sapiens, *Leptospira interrogans* serovar lai str. 56601, *Mus musculus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Caenorhabditis elegans*, *Helicobacter hepaticus* ATCC 51449, *Bacillus cereus* ATCC 14579, *Drosophila melanogaster*, *Papio anubis*, *Streptococcus mutans* UA159, *Plasmodium yoelii yoelii*, *Danio rerio*, *Candida albicans*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Arabidopsis thaliana*, *Oryza sativa* (japonica cultivar-group), *Clostridium perfringens* str. 13"
- 8459 8589 20 "Homo sapiens, *Mus musculus*, *Drosophila melanogaster*, *Cl*" 50

- ostridium tetani E88, Methanosarcina acetivorans C2A, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Danio rerio"
- 8460 8590 23 "Rattus norvegicus, Homo sapiens, Arabidopsis thaliana, Danio rerio, Mus musculus"
- 8461 8591 28 "Lumpy skin disease virus, Sheeppox virus, Danio rerio, Litopenaeus vannamei, Homo sapiens, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Mus musculus, Eremothecium gossypii, Plasmodium falciparum, Methanosarcina acetivorans C2A, Zea mays, Clostridium acetobutylicum, Bos taurus, Human immunodeficiency virus 1, Vibrio parahaemolyticus, Caenorhabditis elegans, Medicago truncatula, Lucilia cuprina, Arabidopsis thaliana" 10
- 8462 8592 27 "Arabidopsis thaliana, Borrelia burgdorferi B31, Homo sapiens, Campylobacter jejuni, Mus musculus, Borrelia burgdorferi, Gallus gallus, Bacillus cereus ATCC 14579, Takifugu rubripes, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Human papillomavirus type 76, Ureaplasma urealyticum, Rattus norvegicus, Oryza sativa (indica cultivar-group), Oryza sativa (japonica cultivar-group), Halocynthia roretzi"
- 8463 8593 27 "Medicago truncatula, Drosophila melanogaster, Arabidopsis thaliana, Mus musculus, Bacillus cereus ATCC 14579, Homo sapiens, Plasmodium falciparum 3D7, Trypanosoma brucei, Pan troglodytes, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Papio anubis, Nicotiana tabacum, Danio rerio, Caenorhabditis elegans" 20
- 8464 8594 26 "Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Staphylococcus epidermidis, Homo sapiens, Saccharomyces sp. IF0 1816, Borrelia burgdorferi B31, Mus musculus, Borrelia burgdorferi, Danio rerio, Dictyostelium discoideum"
- 8465 8595 29 "Homo sapiens, Mus musculus, Caenorhabditis elegans, Poncirius trifoliata, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Plasmodium vivax, Lotus corniculatus var. japonicus, Pan troglodytes, Arabidopsis thaliana, Papio anubis, Zea mays, Plasmodium falciparum 3D7, Hordeum vulgare subsp. vulgare, Antirrhinum majus, Vigna radiata, Danio rerio, Medicago truncatula, Dictyostelium discoideum, Branchiostoma floridae, Felis catus, Ingwavuma virus, Bychovskiata charadrii, Lupinus luteus, Oryza sativa (indica cultivar-group)" 30
- 8466 8596 31 "Homo sapiens, Drosophila melanogaster, Mus musculus, Plasmodium falciparum 3D7, Danio rerio, Oryza sativa (japonica cultivar-group), Caenorhabditis elegans, Neisseria meningitidis, Neisseria meningitidis serogroup B, Neisseria meningitidis MC58, Anthoceros formosae, Saccharomyces cerevisiae, Plasmodium falciparum, Strongyloides fuelleborni, Buchnera aphidicola str. Sg (Schizaphis graminum), Arabidopsis thaliana, Tetrahymena thermophila, Sulfolobus solfataricus, Amsacta moorei entomopoxvirus, Lotus corniculatus var. japonicus, Candida albicans, Ciona intestinalis, Plasmodium yoelii" 40
- 8467 8597 27 "Homo sapiens, Mus musculus, Danio rerio, Bacillus subtilis subsp. subtilis str. 168, Rattus norvegicus, Bacteriophage SPBc2"
- 8468 8598 36 "Clostridium acetobutylicum, Homo sapiens, Cochliobolus carbonum, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Bacillus subtilis subsp. subtilis str. 168, Bacteriophage SPBc2, Mus musculus, Danio rerio"
- 8469 8599 28 "Mus musculus, Rattus norvegicus, Homo sapiens, Arabidopsis thaliana, Lycopersicon esculentum, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Caenorhabditis elegans, Schizosaccharomyces pombe, Leptospira 50

- interrogans serovar lai str. 56601, *Vibrio vulnificus* CMCP6, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Pyrobaculum aerophilum* str. IM2, *Pyrobaculum aerophilum*, *Neisseria meningitidis*, *Oryza sativa* (japonica cultivar-group), *Listeria innocua*, *Ciona intestinalis*"
- 8470 8600 45 "Clostridium acetobutylicum, Homo sapiens, Listeria innocua, Mus musculus, Plasmodium falciparum 3D7, Arabidopsis thaliana, Danio rerio, Plasmodium falciparum, Clostridium perfringens str. 13"
- 8471 8601 27 "Oryza sativa (japonica cultivar-group), Mus musculus, Papio anubis, Homo sapiens, Synechococcus sp. PCC 7942, Gallus gallus, Antirrhinum hispanicum, Caenorhabditis elegans, Saccharomyces cerevisiae" 10
- 8472 8602 28 "Homo sapiens, Oryza sativa (japonica cultivar-group), Papio anubis, Oryza sativa, Neisseria meningitidis MC58, Danio rerio, Caenorhabditis elegans, Candidatus Carsonella ruddii, Dictyostelium discoideum, Drosophila melanogaster, Lycopersicon esculentum, Mus musculus, Rattus norvegicus, Pan troglodytes, Borrelia burgdorferi B31, Plasmodium falciparum 3D7, Acidiella sp. HYH-3, Carex torreyi, Guillardia theta, Rickettsia conorii, Prochlorococcus marinus, Arabidopsis thaliana, Ureaplasma urealyticum, Spinacia oleracea, Equus caballus, Lotus corniculatus var. japonicus, Plasmodium chabaudi chabaudi"
- 8473 8603 28 "Homo sapiens, Clostridium tetani E88, Drosophila melanogaster, Danio rerio, Caenorhabditis briggsae, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Escherichia coli, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Oceanobacillus iheyensis HTE831, Saccharomyces cerevisiae, Ovine adenovirus 7" 20
- 8474 8604 24 "Oryza sativa (japonica cultivar-group), Cactoblastis cactorum, Drosophila melanogaster, Homo sapiens, Mus musculus, Pan troglodytes, Dictyostelium discoideum, Prochlorococcus marinus, Gonium multicoccum, Mannheimia haemolytica, Vitreochlamys aulata, Gonium viridistellatum, Lobomonas monstruosa, Basichlamys sacculifera, Tetrabaena socialis, Gonium quadratum, Gonium pectorale, Pandorina morum, Yamagishiella unicocca"
- 8475 8605 31 "Homo sapiens, Mus musculus, Helicobacter pylori 26695, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group)" 30
- 8476 8606 27 "Homo sapiens, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Bacillus anthracis str. Ames, Shewanella oneidensis MR-1, Mus musculus, Arabidopsis thaliana, Fowlpox virus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Ciona intestinalis, Artibeus jamaicensis, Staphylococcus aureus subsp. aureus Mu50"
- 8477 8607 25 "Homo sapiens, Mus musculus, Getah virus, Drosophila melanogaster, Parapodisma mikado, Alicyclobacillus acidocaldarius"
- 8478 8608 28 "Mus musculus, Homo sapiens, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Cyrtolobus arcuatus, Dictyostelium discoideum, Drosophila melanogaster, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Hiodon alosoides, Staphylococcus epidermidis ATCC 12228, Gallus gallus, Papio anubis, Staphylococcus epidermidis, Xenopus laevis, Candidatus Carsonella ruddii, Bombyx mori" 40
- 8479 8609 31 "Homo sapiens, Buchnera aphidicola str. Bp (Baizongia pistaciae), Mus musculus, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Danio rerio, Simian immunodeficiency virus, Streptococcus pyogenes SSI-1, Pan troglodytes"
- 8480 8610 23 "Danio rerio, Homo sapiens, Drosophila melanogaster, Mus 50

- musculus, *Oryza sativa* (japonica cultivar-group)"
- 8481 8611 38 "Dictyostelium discoideum, *Mus musculus*, *Homo sapiens*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Litopenaeus vannamei*, *Schizosaccharomyces pombe*, *Danio rerio*, *Plasmodium falciparum*, *Anguilla japonica*, *Plasmodium yoelii*, *Arabidopsis thaliana*, *Phycomyces blakesleeanus*, *Fenneropenaeus chinensis*, *Ectromelia virus*, *Goatpox virus*, *Sheeppox virus*, *Cryptosporidium parvum*, *Variola minor virus*, *Variola virus*, *Loligo forbesi*, *Medicago truncatula*, *Melanoplus sanguinipes entomopoxvirus*, *Trypanosoma brucei*, *Caenorhabditis elegans*, *Rattus norvegicus*, *Penaeus monodon*, *Pisum sativum*, *Schistosoma japonicum*, *Pan troglodytes*, *Schmidtea mediterranea*, *Human immunodeficiency virus 1*" 10
- 8482 8612 31 "Homo sapiens, *Plasmodium falciparum* 3D7, *Weldenia candida*, *Danio rerio*, *Dictyostelium discoideum*, *Drosophila melanogaster*, *Mus musculus*, *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Oryza sativa* (japonica cultivar-group), *Plasmodium falciparum*, *Arabidopsis thaliana*, *Aquifex aeolicus* VF5, *Struthio camelus*, *Methanosarcina acetivorans* C2A, *Rickettsia conorii*, *Rickettsia prowazekii*, *Rickettsia rickettsii*, *Lotus corniculatus* var. japonicus, *Tetrahymena thermophila*, *Arethusana arethusa*, *Ciona intestinalis*, *Plasmodium berghei*, *Schistosoma mansoni*, *Xenopus laevis*"
- 8483 8613 27 "Homo sapiens, *Dictyostelium discoideum*, *Prochlorococcus marinus*, *Mus musculus*, *Drosophila melanogaster*, *Leptospira interrogans* serovar lai str. 56601, *Arabidopsis thaliana*, *Plasmodium falciparum* 3D7, *Rickettsia conorii*, *Caenorhabditis briggsae*, *Oryza sativa* (japonica cultivar-group), *Adoxophyes honmai nucleopolyhedrovirus*, *Saccharomyces cerevisiae*, *Danio rerio*" 20
- 8484 8614 27 "Homo sapiens, *Equus caballus*, *Campylobacter jejuni*, *Danio rerio*, *Flavobacterium psychrophilum*, *Mus musculus*, *Drosophila melanogaster*, *Clostridium tetani* E88, *Human immunodeficiency virus 1*, *Clostridium acetobutylicum*, *Felis catus*, *Saccharomyces cerevisiae*, *Human immunodeficiency virus 2*, *Caenorhabditis elegans*, *Euglena spirogyra*, *Oryza sativa* (japonica cultivar-group), *Mycoplasma penetrans*, *Zingiber officinale*, *Alpinia galanga*, *Schizosaccharomyces pombe*, *Anopheles gambiae*, *Arabidopsis thaliana*" 30
- 8485 8615 23 "Homo sapiens, *Clostridium acetobutylicum*, *Oryza sativa* (japonica cultivar-group), *Caenorhabditis elegans*, *Equus caballus*, *Shigella boydii*, *Drosophila melanogaster*, *Clostridium tetani*, *Mycoplasma fermentans*, *Plasmodium falciparum* 3D7, *Methanopyrus kandleri* AV19, *Mus musculus*, *Anthoceros formosae*, *Danio rerio*, *Rattus norvegicus*, *Arabidopsis thaliana*"
- 8486 8616 27 "Homo sapiens, *Pan troglodytes*, *Plasmodium falciparum* 3D7, *Pavetta barbertoniana*, *Ixodes hexagonus*, *Haemophilus influenzae* Rd KW20, *Synechocystis* sp. PCC 6803, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Thelaxes suberi*, *Neurospora crassa*, *Lycopersicon esculentum*"
- 8487 8617 28 "Pyrococcus horikoshii, *Bacteroides thetaiotaomicron* VPI -5482, *Mus musculus*, *Homo sapiens*, *Rickettsia prowazekii*, *Arabidopsis thaliana*, *Bacteriophage N4*, *Cryphonectria parasitica*, *Drosophila melanogaster*, *Yutjuwalia* sp. MCJ-2002, *Chlamydophila pneumoniae* CWL029, *Chlamydophila pneumoniae* AR39, *Pan troglodytes*, *Danio rerio*, *Chlamydophila pneumoniae* TW-183, *Chlamydophila pneumoniae* J138" 40
- 8488 8618 27 "Homo sapiens, *Hordeum vulgare* subsp. vulgare, *Mus musculus*, *Danio rerio*, *Enterococcus faecalis* V583, *Sulfolobus solfataricus*, *Sus scrofa*, *Caenorhabditis elegans*, *Guillardia theta*, *Arabidopsis thaliana*"
- 8489 8619 28 "Mus musculus, *Homo sapiens*, *Haemophilus aegyptius*, *Thermoanaerobacter tengcongensis*, *Haemophilus influenzae*, *Drosophila melanogaster*, P 50

- Plasmodium falciparum 3D7, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Tetrahymena thermophila, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Rattus norvegicus, Oryzias latipes"
- 8490 8620 27 "Gallus gallus, Homo sapiens, Mus musculus, Methanosarcina mazei Goe1, Clostridium acetobutylicum, Mesoplasma chauliocola, Arabidopsis thaliana, Theileria parva, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Lotus corniculatus var. japonicus, Medicago truncatula, Mycoplasma genitalium, Rana nigromaculata"
- 8491 8621 31 "Homo sapiens, Danio rerio, Mus musculus, Arabidopsis thaliana, Caenorhabditis briggsae, Caenorhabditis elegans, Drosophila melanogaster, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Prochlorococcus marinus, Streptococcus agalactiae NEM316, Amsacta moorei entomopoxvirus, Streptococcus pyogenes SSI-1, Rattus norvegicus, Cicer arietinum" 10
- 8492 8622 24 "Staphylococcus epidermidis ATCC 12228, Homo sapiens, Plasmodium falciparum 3D7, Staphylococcus epidermidis, Oryza sativa (japonica cultivar-group), Mus musculus, Ceratium horridum, Bacteroides thetaiotaomicron VPI-5482, Drosophila melanogaster, Caenorhabditis elegans, Rana ridibunda, Hevea brasiliensis, Prochlorococcus marinus, Danio rerio, Lotus corniculatus var. japonicus" 20
- 8493 8623 31 "Mus musculus, Danio rerio, Homo sapiens, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Dictyostelium discoideum, Caenorhabditis elegans, Plasmodium falciparum 3D7, Plasmodium gallinaceum, Pan troglodytes, Drosophila melanogaster, Clostridium tetani E88, Clostridium perfringens, Arabidopsis thaliana, Cyprinus carpio, Lotus corniculatus var. japonicus, Psychotria tepuiensis, Apis mellifera, Glycine max, Plasmodium falciparum, Macaca fascicularis, Oryza sativa (indica cultivar-group), Coxiella burnetii RSA 493, Methanosarcina acetivorans C2A, Saccharomyces cerevisiae, Oryza sativa, Primula cuneifolia, Primula cicutariifolia, Calopteryx maculata, Gallus gallus"
- 8494 8624 24 "Mus musculus, Homo sapiens, Medicago truncatula, Dictyostelium discoideum, Streptococcus mutans UA159, Oryza sativa (japonica cultivar-group)" 30
- 8495 8625 29 "Mus musculus, Homo sapiens, Platydictya jungermannioides, Pan troglodytes, Arabidopsis thaliana, Plasmodium falciparum 3D7, Plasmodium falciparum"
- 8496 8626 29 "Dictyostelium discoideum, Clostridium tetani E88, Mus musculus, Homo sapiens, Ciona intestinalis, Chimpanzee cytomegalovirus, Streptomyces aureofaciens, Plasmodium falciparum 3D7, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio"
- 8497 8627 24 "Homo sapiens, Mus musculus, Saccharomyces cerevisiae, Macaca mulatta, Oryza sativa (japonica cultivar-group), Zea mays, Danio rerio" 40
- 8498 8628 29 "Vibrio vulnificus CMCP6, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Prochlorococcus marinus, Mus musculus, Caenorhabditis elegans, Pan troglodytes, Staphylococcus aureus, Danio rerio, Lotus corniculatus var. japonicus, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Helicobacter pylori 26695, Helicobacter pylori J99, Trypetesa lampas"
- 8499 8629 27 "Danio rerio, Rattus norvegicus, Homo sapiens, Coxiella burnetii RSA 493, Mus musculus, Enterococcus faecalis V583, Pan troglodytes, Arabidopsis thaliana, Lactococcus lactis subsp. lactis, Caenorhabditis elegans, Myc 50

- oplasma penetrans, Aedes aegypti, Oryza sativa (japonica cultivar-group), Apis mellifera ligustica, Helicobacter hepaticus ATCC 51449"
- 8500 8630 30 "Plasmodium falciparum 3D7, Mus musculus, Homo sapiens, Danio rerio, Plasmodium falciparum, Medicago truncatula, Drosophila melanogaster, Anemone hortensis, Anemone pavonina, Anemone palmata, Knowltonia sp. OM073, Oryza sativa (japonica cultivar-group), Pan troglodytes, Spinacia oleracea, Bos taurus, Cucumis melo, Dictyostelium discoideum, Gallus gallus, Arabidopsis thaliana, Caenorhabditis briggsae, Amsacta moorei entomopoxvirus, Gasterosteus aculeatus, Cucumis sativus, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis" 10
- 8501 8631 27 "Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Homo sapiens, Caenorhabditis elegans, Drosophila melanogaster, Mus musculus, Arabidopsis thaliana, Tetrahymena thermophila, Pyrococcus furiosus DSM 3638, Paramecium primaurelia, Danio rerio, Saccharomyces cerevisiae, Acanthamoeba palestinensis, Lactobacillus plantarum WCFS1, Oryza sativa (japonica cultivar-group), Gallus gallus"
- 8502 8632 31 "Caenorhabditis elegans, Homo sapiens, Plasmodium falciparum 3D7, Danio rerio, Mus musculus, Helicobacter pylori 26695, Oryza sativa, Medicago truncatula, Human echovirus 11, Drosophila melanogaster, Schmidtea mediterranea, Shigella boydii, Clostridium acetobutylicum, Arabidopsis thaliana, Streptococcus pneumoniae, Trypanosoma brucei, Oryza sativa (japonica cultivar-group), Dictyostelium discoideum, Staphylococcus aureus, Neurospora crassa, untyped human enterovirus" 20
- 8503 8633 28 "Homo sapiens, Mus musculus, Drosophila melanogaster, Xenopus laevis, Lapemis hardwickii, Biomphalaria glabrata, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Danio rerio"
- 8504 8634 27 "Oryza sativa (japonica cultivar-group), Pseudomonas syringae pv. tomato str. DC3000, Bos taurus, Mus musculus, Pseudomonas aeruginosa PA01, Homo sapiens, Didelphis virginiana, Lactobacillus plantarum WCFS1, Caenorhabditis elegans, Nostoc sp. PCC 7120" 30
- 8505 8635 26 "Homo sapiens, Oryza sativa (japonica cultivar-group), Arabidopsis thaliana, Bos taurus, Mycoplasma pneumoniae, Saccharomyces cerevisiae, Bombyx mori, Mus musculus, Macaca fascicularis"
- 8506 8636 27 "Homo sapiens, Drosophila melanogaster, Mus musculus, Caenorhabditis elegans, Parartemia zietziana, Oceanobacillus ihayensis HTE831, Mel eagrism gallopavo, Danio rerio, Helicobacter hepaticus ATCC 51449"
- 8507 8637 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Danio rerio, Bacillus cereus ATCC 14579, Leptospira interrogans serovar lai str. 56601, Xenopus laevis, Rattus norvegicus, Thermoanaerobacter tengcongensis, Plantago major, Clostridium acetobutylicum, Arabidopsis thaliana, Mycoplasma penetrans, Lactobacillus casei bacteriophage A2, Oryza sativa (japonica cultivar-group)" 40
- 8508 8638 27 "Medicago truncatula, Homo sapiens, Caenorhabditis elegans, Arabidopsis thaliana, Mus musculus, Neisseria meningitidis Z2491, Caenorhabditis briggsae, Neisseria meningitidis MC58, Oryza sativa (japonica cultivar-group), Danio rerio, Neisseria gonorrhoeae, Neisseria lactamica"
- 8509 8639 29 "Homo sapiens, Mus musculus, Ovis aries, Pan troglodytes, Drosophila melanogaster, Staphylococcus epidermidis ATCC 12228, Zea mays, Methanosarcina acetivorans C2A, Arabidopsis thaliana, Danio rerio, Caenorhabditis elegans, Drosophila grimshawi, Oryza sativa (japonica cultivar-group), Ciona intes 50

tinalis"

- 8510 8640 27 "Tetrahymena thermophila, Drosophila melanogaster, Mus musculus, Danio rerio, Lotus corniculatus var. japonicus, Schizaphis graminum, Homo sapiens, Caenorhabditis elegans, Fagopyrum sp. C97107, Methanosarcina mazei Goe1, Clostridium tetani E88, Plasmodium falciparum 3D7, Arabidopsis thaliana, Rickettsia conorii, Clostridium acetobutylicum, Cowpox virus"
- 8511 8641 23 "Hordeum vulgare subsp. vulgare, Homo sapiens, Bartonella clarridgeiae, Mus musculus, Drosophila melanogaster, Zea mays, Poeciliopsis latidens, Saccharum hybrid cultivar CP72-2086, Saccharum hybrid cultivar CP65-357, Malus x domestica, Campylobacter coli, Avicennia marina, Lilium longiflorum, Nicotiana tabacum, Pyrus pyrifolia, Brugiera sexangula, Musa acuminata, Nicotiana paniculata" 10
- 8512 8642 26 "Botryotinia fuckeliana, Homo sapiens, Mus musculus, Vibrio cholerae, Sulfolobus tokodaii, Drosophila melanogaster, Bacteroides thetaiotaomicron VPI-5482, Clostridium tetani E88, Danio rerio, Campylobacter jejuni subsp. jejuni NCTC 11168, Arabidopsis thaliana, Mycoplasma penetrans, Didelphis virginiana"
- 8513 8643 24 "Homo sapiens, Mus musculus, Lotus corniculatus var. japonicus, Caenorhabditis elegans, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Dictyostelium discoideum, Zea mays, Oryza sativa, Oryza sativa (japonica cultivar-group), Plasmodium falciparum 3D7, Rattus norvegicus" 20
- 8514 8644 31 "Helicobacter hepaticus ATCC 51449, Lotus corniculatus var. japonicus, Homo sapiens, Sus scrofa, Danio rerio, Engyodontium aranearum, Oryza sativa (japonica cultivar-group), Medicago truncatula, Tetrahymena thermophila, Streptococcus thermophilus, Mus musculus"
- 8515 8645 48 "Thermoanaerobacter tengcongensis, Homo sapiens, Mus musculus, Thermotoga maritima, Mycoplasma genitalium, Danio rerio, Bos taurus, Canis familiaris, Oceanobacillus iheyensis HTE831"
- 8516 8646 51 "Rickettsia prowazekii, Danio rerio, Rickettsia conorii, Mus musculus, Helicobacter hepaticus, Helicobacter hepaticus ATCC 51449, Staphylococcus epidermidis ATCC 12228, Lactococcus lactis subsp. lactis, Homo sapiens, Staphylococcus epidermidis, Campylobacter jejuni subsp. jejuni NCTC 11168, Oceanobacillus iheyensis HTE831, Leptospira interrogans serovar lai str. 56601, Medicago truncatula, Staphylococcus aureus, Prochlorococcus marinus, Caenorhabditis elegans, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50" 30
- 8517 8647 80 "Mycoplasma genitalium, Leptospira interrogans serovar lai str. 56601, Clostridium perfringens str. 13, Bacillus cereus ATCC 14579, Yersinia pestis KIM, Yersinia pestis C092, Mycoplasma gallisepticum R, Coxiella burnetii RSA 493, Staphylococcus epidermidis ATCC 12228, Staphylococcus aureus, Staphylococcus epidermidis, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Nitrosomonas europaea ATCC 19718, Staphylococcus aureus subsp. aureus Mu50, Homo sapiens, Mus musculus, Molluscum contagiosum virus subtype 1, Portulacaria afra, Lewisia cantelovii, Claytonia megarhiza, Memecylon elaeagni, Danio rerio, Staphylococcus xylosum, Campylobacter jejuni subsp. jejuni NCTC 11168, Trichanthodium exilis, Cephalosorus carpesioides" 40
- 8518 8648 81 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Oryza sativa (japonica cultivar-group), Rattus norvegicus, Sulfolobus solfataricus, Homo sapiens, Mus musculus, Drosophila melanogaster, Caenorhabditis elegans, Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Cryptosporidium parv 50

um, *Clostridium perfringens* str. 13"

8519 8649 35 "Staphylococcus aureus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Staphylococcus aureus subsp. aureus Mu50, Staphylococcus epidermidis ATCC 12228, Campylobacter jejuni subsp. jejuni NCTC 11168, Mus musculus, Staphylococcus epidermidis, Danio rerio, Drosophila melanogaster, Streptococcus mutans UA159, Homo sapiens, Plasmodium falciparum 3D7, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae NEM316"

8520 8650 23 "Homo sapiens, Mus musculus, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Caenorhabditis briggsae, Agkistrodon blomhoffii siniticus"

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8521 8651 27 "Homo sapiens, Staphylococcus epidermidis ATCC 12228, Mycoplasma capricolum, Thermoplasma acidophilum, Staphylococcus epidermidis, Haemophilus ducreyi 35000HP, Helicobacter hepaticus, Mus musculus, Ureaplasma urealyticum, Helicobacter hepaticus ATCC 51449"

8522 8652 23 "Dictyostelium discoideum, Listeria monocytogenes, Homo sapiens, Drosophila melanogaster, Caenorhabditis elegans, Mus musculus, Oryza latifolia, Oryza grandiglumis, Oryza alta, Oryza minuta, Oryza eichingeri, Oryza rizzomatis, Oryza officinalis, Nostoc sp. PCC 7120"

8523 8653 28 "Homo sapiens, Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Schizosaccharomyces pombe, Mouse mammary tumor virus, Oryza sativa, Drosophila melanogaster, Heterodontus francisci, Lactococcus lactis subsp. lactis, Danio rerio, Exogenous mouse mammary tumor virus, Endogenous mouse mammary tumor virus Mtv1, Sapromyza indigena, Sapromyza hirtiloba, Sapromyza ultima, Sapromyza inconspicua, Sapromyza laurisilvae, Sapromyza imitans, Cyanidioschyzon merolae, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Human betaretrovirus"

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8524 8654 25 "Lactococcus lactis subsp. lactis, Rattus norvegicus, Plasmodium falciparum 3D7, Homo sapiens, Oryza sativa (japonica cultivar-group), Mus musculus, Drosophila melanogaster, Shewanella oneidensis MR-1, Caenorhabditis elegans, Candida albicans, Onchocerca mykiss, Danio rerio, Arabidopsis thaliana"

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8525 8655 32 "Canine herpesvirus, Pasteurella multocida, Borrelia burgdorferi B31, Dictyostelium discoideum, Homo sapiens, Arabidopsis thaliana, Plasmodium falciparum 3D7, Lotus corniculatus var. japonicus, Mus musculus, Haemophilus influenzae, Haemophilus influenzae Rd KW20, Oryza sativa (japonica cultivar-group), Trichosalpinx berlineri, Danio rerio, Oryza sativa, Pan troglodytes, Euglenyza coscaroni, Listeria innocua, Schizosaccharomyces pombe, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Rattus norvegicus, Bacillus halodurans"

8526 8656 31 "Homo sapiens, Arabidopsis thaliana, Mus musculus, Dictyostelium discoideum, Streptococcus pyogenes, Bacillus anthracis str. Ames, Caenorhabditis elegans, Plasmodium falciparum 3D7, Caenorhabditis briggsae, Rattus norvegicus, Bacillus halodurans"

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8527 8657 41 "Mycoplasma pulmonis, Mycoplasma penetrans, Arabidopsis thaliana, Listeria innocua, Homo sapiens, Oryza sativa (japonica cultivar-group), Bacillus cereus ATCC 14579, Mus musculus, Methylobacterium extorquens, Thermoaerobacter tengcongensis, Prochlorococcus marinus subsp. marinus str. CCMP1375"

8528 8658 103 "Staphylococcus epidermidis, Yersinia pestis KIM, Homo sapiens, Mycoplasma genitalium, Helicobacter hepaticus ATCC 51449, Vibrio vulnificus CMCP6, Streptococcus sp. (N1), Streptococcus pyogenes MGAS315, Streptococcus

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- pyogenes MGAS8232, Streptococcus pyogenes M1 GAS, Vibrio cholerae, Streptococcus pyogenes SSI-1, Danio rerio, Mus musculus, Lotus corniculatus var. japonicus, Yersinia pestis C092, Methanocaldococcus jannaschii, Synechocystis sp. PCC 6803, Clostridium tetani E88, Arabidopsis thaliana, Chlamydomonas pneumoniae CWL029, Chlamydomonas pneumoniae AR39, Chlamydomonas pneumoniae J138, Oryza sativa (japonica cultivar-group), Arabis gemmifera, Arabidopsis korshinskyi, Olimarabidopsis pumila, Crucihimalaya himalaica, Chlamydomonas pneumoniae TW-183, Arabidopsis lyrata subsp. kawasakiana, Arabis glabra"
- 8529 8659 31 "Caenorhabditis elegans, Homo sapiens, Medicago truncatula, Bacteroides thetaiotaomicron VPI-5482, Danio rerio, Oryza sativa (japonica cultivar-group), Neurospora crassa, Mus musculus, Macaca fascicularis, Clostridium perfringens str. 13, Drosophila melanogaster, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Ricinus communis, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus N315, Sulfolobus tokodaii, Staphylococcus aureus subsp. aureus Mu50" 10
- 8530 8660 33 "Homo sapiens, Dictyostelium discoideum, Rickettsia conorii, Rattus norvegicus, Mus musculus, Drosophila melanogaster, Clostridium tetani E88, Caenorhabditis elegans, Arabidopsis thaliana, Oryza sativa (japonica cultivar-group), Podospora anserina, Neurospora crassa, Oceanobacillus ihayensis HTE 831, Methanocaldococcus jannaschii, Clostridium perfringens str. 13" 20
- 8531 8661 27 "Mus musculus, Homo sapiens, Bacillus anthracis str. Ames, Rattus norvegicus, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe"
- 8532 8662 27 "Anguilla rostrata, Anguilla anguilla, Homo sapiens, Macaca mulatta, Mus musculus, Papio anubis, Drosophila melanogaster, Danio rerio, Walleye epidermal hyperplasia virus type 2"
- 8533 8663 31 "Oryza sativa (japonica cultivar-group), Homo sapiens, Caenorhabditis elegans, Danio rerio, Drosophila melanogaster, Plasmodium falciparum 3D7, Mus musculus, Guillardia theta, Arabidopsis thaliana, Bacillus sp., Rattus norvegicus, Rickettsia conorii, Oryza sativa, Clitoria virus Y, Campylobacter jejuni subsp. jejuni NCTC 11168, Lycopersicon esculentum, Sus scrofa, Helicobacter pylori 26695" 30
- 8534 8664 27 "Homo sapiens, Mus musculus, Thermotoga maritima, Methanococcus methylutens, Arabidopsis thaliana, Zea mays, Caenorhabditis briggsae, Lotus corniculatus var. japonicus, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group)"
- 8535 8665 32 "Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Sus scrofa, Medicago truncatula, Homo sapiens, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Danio rerio, Schizosaccharomyces pombe, Caenorhabditis elegans, Arabidopsis thaliana, Drosophila melanogaster, Plasmodium falciparum 3D7, Ureaplasma urealyticum, Prochlorococcus marinus subsp. marinus str. CCMP1375, Mus musculus, Triticum aestivum/Thinopyrum intermedium alien addition line, Thinopyrum intermedium" 40
- 8536 8666 24 "Homo sapiens, Macaca fascicularis, Orpinomyces sp. PC-2, Oryza sativa (japonica cultivar-group), Bombyx mori, Danio rerio, Mus musculus, Drosophila melanogaster, Plasmodium falciparum 3D7, Trichosurus vulpecula"
- 8537 8667 24 "Sus scrofa, Homo sapiens, Mus musculus, Danio rerio, Drosophila melanogaster, Caenorhabditis elegans, Saccharomyces cerevisiae, Oryza sativa (japonica cultivar-group), Pan troglodytes, Rattus norvegicus"
- 8538 8668 24 "Oryza sativa (japonica cultivar-group), Homo sapiens, M 50

- us musculus, *Drosophila melanogaster*, *Papio anubis*, *Leucocytozoon simondi*, *Leucocytozoon dubreuli*, *Diadasia nitidifrons*, *Diadasia martialis*, *Oceanobacillus iheyensis* HTE831, *Staphylococcus aureus* subsp. *aureus* N315, *Staphylococcus aureus* subsp. *aureus* MW2, *Danio rerio*, *Staphylococcus aureus* subsp. *aureus* Mu50"
- 8539 8669 30 "Mus musculus, Homo sapiens, Rana ridibunda, Daucus carota, Arabidopsis thaliana"
- 8540 8670 28 "Clostridium perfringens str. 13, Homo sapiens, Danio rerio, Mus musculus, Pan troglodytes, Vibrio vulnificus CMCP6, Drosophila melanogaster, Streptococcus agalactiae 2603V/R, Arabidopsis thaliana, Streptococcus agalactiae NEM316, Lunularia cruciata, Riccia fluitans, Corsinia coriandra, Timmia bavarica, Takakia lepidozoides, Marchantia polymorpha, Plasmodium falciparum 3D7, Polypterus bichir, Sus scrofa, Streptococcus pyogenes MGAS315, Streptococcus pyogenes MGAS8232, Caenorhabditis elegans, Oryza sativa (japonica cultivar-group), Mycoplasma pneumoniae, Streptococcus pyogenes SSI-1, Deinococcus radiodurans, Chara vulgaris"
- 8541 8671 27 "Oryza sativa (japonica cultivar-group), Mus musculus, Homo sapiens, Gallus gallus, Caenorhabditis elegans, Arabidopsis thaliana, Methanosarcina acetivorans C2A, Streptomyces coelicolor A3(2), Streptomyces avermitilis MA-4680, Danio rerio, Saccharomyces cerevisiae, Lactobacillus plantarum WCF51, Listeria innocua"
- 8542 8672 29 "Methanocaldococcus jannaschii, Caenorhabditis elegans, Homo sapiens, Felis catus, Capsella rubella, Crassostrea gigas, Pan troglodytes, Drosophila melanogaster, Clostridium acetobutylicum, Sus scrofa, Lotus corniculatus var. japonicus, Danio rerio, Helicobacter pylori J99, Helicobacter pylori, Mus musculus, Nostoc sp. PCC 7120, Schistosoma japonicum, Plasmodium falciparum 3D7, Arabidopsis thaliana, Geobacillus stearothermophilus, Equine rhinitis A virus, Caenorhabditis briggsae, Oryza sativa (japonica cultivar-group), Schizosaccharomyces pombe, Ipomoea nil"
- 8543 8673 28 "Streptococcus pneumoniae R6, Streptococcus pneumoniae TIGR4, Bacillus anthracis str. Ames, Mus musculus, Clostridium tetani E88, Zea mays, Prochlorococcus marinus subsp. marinus str. CCMP1375, Arabidopsis thaliana, Pan troglodytes, Homo sapiens, Schistosoma japonicum, Plasmodium falciparum 3D7, Clostridium acetobutylicum, Oryza sativa (japonica cultivar-group)"
- 8544 8674 37 "Borrelia burgdorferi B31, Mus musculus, Oryza sativa (japonica cultivar-group), Homo sapiens, Helicobacter hepaticus ATCC 51449, Listeria monocytogenes, Tomato leaf curl virus-associated DNA beta, Papaya leaf curl virus-associated DNA beta, Staphylococcus epidermidis ATCC 12228, Pseudomonas putida KT2440, Plasmodium falciparum 3D7, Staphylococcus epidermidis, Haemophilus influenzae Rd KW20, Caenorhabditis elegans"
- 8545 8675 23 "Mus musculus, Homo sapiens, Oryza sativa (japonica cultivar-group), Danio rerio"
- 8546 8676 29 "Drosophila melanogaster, Homo sapiens, Lotus corniculatus var. japonicus, Mus musculus, Oryza sativa (japonica cultivar-group)"
- 8547 8677 30 "Helicobacter hepaticus ATCC 51449, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Mus musculus, Lactococcus lactis subsp. lactis, Pasteurella multocida, Danio rerio, Haemophilus influenzae Rd KW20, Homo sapiens, Black Creek Canal virus, Arabidopsis thaliana, Maciel virus, Helicobacter pylori J99, Laguna Negra virus, Enterococcus faecalis V583, Drosophila melanogaster, Heliothis zea virus 1, Enterococcus faecalis, Rickettsia prowazekii, Oryza sativa (japonica cultivar-group), Xenopus laevis"

- 8548 8678 28 "Homo sapiens, Rattus norvegicus, Leptospira interrogans serovar lai str. 56601, Caenorhabditis elegans, Mus musculus, Drosophila melanogaster, Zea mays, Cryptocephalus hypochaeridis, Plasmodium falciparum 3D7, Streptococcus pyogenes, Danio rerio"
- 8549 8679 64 "Clostridium tetani E88, Wigglesworthia glossinidia endosymbiont of Glossina brevipalpis, Mus musculus, Clostridium perfringens str. 13, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Homo sapiens, Dictyostelium discoideum, Drosophila melanogaster, Danio rerio, Oenothera elata subsp. hookeri, Caenorhabditis elegans, Adoxophyes honmai nucleopolyhedrovirus, Staphylococcus aureus subsp. aureus N315, Staphylococcus aureus subsp. aureus MW2, Arabidopsis thaliana, Staphylococcus aureus subsp. aureus Mu50" 10
- 8550 8680 49 "Campylobacter jejuni subsp. jejuni NCTC 11168, Prochlorococcus marinus, Zymomonas mobilis, Rickettsia prowazekii, Thermoanaerobacter tengcongensis, Homo sapiens, Helicobacter pylori 26695, Helicobacter pylori J99, Bartonella bacilliformis, Bacillus halodurans, Clostridium acetobutylicum, Bacillus subtilis subsp. subtilis str. 168, Bacteroides thetaiotaomicron VPI-5482, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Dictyostelium discoideum, Listeria monocytogenes, Schizosaccharomyces pombe, Helicobacter hepaticus ATCC 51449, Caenorhabditis elegans, Borrelia burgdorferi B31, Buchnera aphidicola str. Sg (Schizaphis graminum), Xenopus laevis" 20
- 8551 8681 87 "Rickettsia prowazekii, Pasteurella multocida, Zymomonas mobilis, Helicobacter hepaticus ATCC 51449, Rickettsia conorii, Bartonella bacilliformis, Bacteroides thetaiotaomicron VPI-5482, Zea mays, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Haemophilus ducreyi, Oryza sativa (japonica cultivar-group), Haemophilus ducreyi 35000HP, Oryza sativa, Helicobacter mobilis, Dictyostelium discoideum, Bombyx mori, Brucella melitensis 16M, Brucella suis 1330, Homo sapiens, Saccharomyces cerevisiae, Clostridium tetani E88, Yersinia pestis KIM, Yersinia pestis CO92, Prochlorococcus marinus subsp. marinus str. CCMP1375, Caenorhabditis elegans, Arabidopsis thaliana, Russula caerulea, Mus musculus, Picea glauca, Danio rerio, Mycoplasma genitalium" 30
- 8552 8682 133 "Mycoplasma pulmonis, Haemophilus ducreyi 35000HP, Buchnera aphidicola str. APS (Acyrtosiphon pisum), Mycoplasma capricolum, Oceanobacillus iheyensis HTE831, Prochlorococcus marinus, Spiroplasma citri, Haemophilus ducreyi, Mycoplasma penetrans, Clostridium "
- 8553 8683 42 "Homo sapiens, Rickettsia prowazekii, Caenorhabditis elegans, Mus musculus, Danio rerio, Arabidopsis thaliana, Pan troglodytes, Drosophila melanogaster, Clostridium tetani E88, Helicobacter pylori, Helicobacter hepaticus ATCC 51449"
- 8554 8684 23 "Homo sapiens, Oreochromis niloticus, Caenorhabditis briggsae, Mus musculus, Oryza sativa (japonica cultivar-group), Campylobacter lari" 40
- 8555 8685 68 "Acinetobacter sp. ADP1, Streptococcus agalactiae 2603V/R, Streptococcus agalactiae, Streptococcus agalactiae NEM316, Oryza sativa (japonica cultivar-group), Oryza sativa, Clostridium acetobutylicum, Campylobacter jejuni subsp. jejuni NCTC 11168, Campylobacter jejuni, Mus musculus, Listeria welshimeri, Bacteroides thetaiotaomicron VPI-5482, Listeria monocytogenes, Onchocerca mykiss, Cyanidioschyzon merolae, Haemophilus ducreyi 35000HP, Homo sapiens, Caenorhabditis elegans, Borrelia burgdorferi B31, Arabidopsis thaliana, Caenorhabditis briggsae, Capsella rubella, Danio rerio, Schizosaccharomyces pombe, Bacillus thuringiensis"
- 8556 8686 92 "Campylobacter lari, Legionella pneumophila, Dictyosteli 50

- um discoideum, *Helicobacter hepaticus* ATCC 51449, *Prochlorococcus marinus*, *Campylobacter jejuni* subsp. *jejuni* NCTC 11168, *Campylobacter jejuni*, *Erwinia psidii*, *Acinetobacter johnsonii*, *Helicobacter pylori*"
- 8557 8687 89 "Fusobacterium nucleatum subsp. nucleatum ATCC 25586, *Haemophilus influenzae*, *Haemophilus influenzae* Rd KW20, *Acinetobacter* sp. ADP1, *Acinetobacter* genomsp. 10, *Acinetobacter* genomsp. 11, *Pseudomonas putida*, *Mycoplasma gallisepticum* R, *Streptococcus mutans*"
- 8558 8688 47 "Mannheimia haemolytica, *Streptococcus agalactiae* 2603V/R, *Streptococcus agalactiae*, *Streptococcus agalactiae* NEM316, *Pectobacterium carotovorum*, *Pectobacterium cacticida*, *Streptococcus pyogenes* MGAS315, *Streptococcus pyogenes* MGAS8232, *Streptococcus pyogenes* M1 GAS, *Streptococcus pyogenes* SSI-1, *Yersinia kristensenii*, *Yersinia enterocolitica*, *Streptococcus pyogenes*, *Pectobacterium carotovorum* subsp. *carotovorum*, *Pectobacterium carotovorum* subsp. *odori ferum*, *Pantoea agglomerans*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Arthrobacter ureafaciens*, *Homo sapiens*, *Samsonia erythrinae*, *Clostridium tetani* E88, *Streptococcus pneumoniae* R6, *Streptococcus pneumoniae* TIGR4, *Streptococcus pneumoniae*, *Arthrobacter* sp. 'SMCC G964', *Arthrobacter* sp. 'SMCC G960', uncultured Gram-positive bacterium, *Arabidopsis thaliana*"
- 8559 8689 28 "*Homo sapiens*, *Clostridium septicum*, *Drosophila melanogaster*, *Diasemopsis conjuncta*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Mus musculus*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Lycopersicon esculentum*, *Fusarium oxysporum*"
- 8560 8690 27 "*Enterococcus faecalis* V583, *Homo sapiens*, *Borrelia garinii*, *Mycoplasma pulmonis*, *Borrelia burgdorferi*, *Drosophila melanogaster*, *Mus musculus*, *Sulfolobus tokodaii*"
- 8561 8691 32 "*Homo sapiens*, *Bacteriophage Aeh1*, *Mus musculus*, *Plasmodium falciparum* 3D7, *Oryza sativa* (japonica cultivar-group), *Drosophila melanogaster*, *Yersinia pestis* KIM, *Arabidopsis thaliana*, *Entamoeba histolytica*, *Caenorhabditis elegans*, *Candida dubliniensis*, *Yersinia pestis* C092, *Danio rerio*"
- 8562 8692 23 "*Oryza sativa* (japonica cultivar-group), *Chlamydia muridarum*, *Homo sapiens*, *Danio rerio*, *Mus musculus*, *Disogmus areolator*, *Arabidopsis thaliana*, *Caenorhabditis elegans*, *Prototheca wickerhamii*"
- 8563 8693 23 "*Sus scrofa*, *Homo sapiens*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Human immunodeficiency virus 1*, *Arabidopsis thaliana*, *Mus musculus*"
- 8564 8694 32 "*Homo sapiens*, *Mus musculus*, *Arabidopsis thaliana*, *Clostridium acetobutylicum*, *Caenorhabditis elegans*, *Danio rerio*, *Oryza sativa* (japonica cultivar-group), *Oceanobacillus iheyensis* HTE831, *Clostridium perfringens* str. 13"
- 8565 8695 23 "*Homo sapiens*, *Mus musculus*, *Bacillus cereus* ATCC 14579, *Papio hamadryas*, *Mycoplasma pulmonis*, *Oryza sativa* (japonica cultivar-group)"
- 8566 8696 24 "*Drosophila melanogaster*, *Mus musculus*, *Homo sapiens*, *Arabidopsis thaliana*, *Danio rerio*, *Caldicellulosiruptor* sp. Tok7B.1"
- 8567 8697 28 "*Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Homo sapiens*, *Bacteroides thetaiotaomicron* VPI-5482, *Enterococcus faecalis* V583, *Pan troglodytes*, *Dictyostelium discoideum*, *Caenorhabditis elegans*, *Danio rerio*, *Arabidopsis thaliana*, *Listeria monocytogenes*"
- 8568 8698 32 "*Drosophila melanogaster*, *Homo sapiens*, *Mus musculus*, *Caenorhabditis elegans*, *Plasmodium falciparum* 3D7, *Glycine max*, *Listeria monocytogenes*, *Rattus norvegicus*, *Arabidopsis thaliana*, *Vibrio cholerae*, *Oryza sativa* (ja

- ponica cultivar-group), *Danio rerio*, *Methanocaldococcus jannaschii*, *Coscinodiscus radiatus*"
- 8569 8699 27 "Homo sapiens, *Sulfolobus solfataricus*, *Mus musculus*, *Caenorhabditis elegans*, *Methanosarcina mazei* Goe1, *Vibrio cholerae*, *Oryza sativa* (japonica cultivar-group), *Danio rerio*, Human immunodeficiency virus 2"
- 8570 8700 27 "Mus musculus, *Caenorhabditis elegans*, *Lemur catta*, *Homo sapiens*, *Drosophila melanogaster*, *Arabidopsis thaliana*, *Buchnera aphidicola* str. Bp (*Baizongia pistaciae*), *Papio anubis*, *Puelia olyriformis*, *Nicotiana tabacum*"
- 8571 8701 27 "Mus musculus, *Caenorhabditis elegans*, *Homo sapiens*, *Mycoplasma pulmonis*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Biomphalaria glabrata*, *Pisum sativum*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Sorghum bicolor*, *Eretmocerus* sp. M96076, *Eretmocerus hayati*, *Eretmocerus mundus*, *Plasmodium falciparum* 3D7, *Mycoplasma penetrans*" 10
- 8572 8702 30 "Bacillus anthracis str. Ames, *Bacillus cereus* ATCC 14579, *Bacillus thuringiensis* serovar israelensis, *Rattus norvegicus*, *Homo sapiens*, *Mus musculus*, *Clostridium perfringens* str. 13, *Drosophila melanogaster*, *Thermoanaerobacter tengcongensis*, *Pyrococcus furiosus* DSM 3638, *Danio rerio*, *Arabidopsis thaliana*, *Mus musculus domesticus*, *Oceanobacillus iheyensis* HTE831, *Leptospira borgpetersenii*, *Listeria monocytogenes*, *Oryza sativa* (japonica cultivar-group)"
- 8573 8703 27 "Danio rerio, *Homo sapiens*, *Mus musculus*, *Methanosarcina mazei* Goe1, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Equus caballus*, *Oryza sativa*, *Allomachilis froggarti*, *Dictyostelium discoideum*, *Drosophila melanogaster*, uncultured crenarchaeote 74A4, *Brassica juncea*, *Alopecosa inquilina*, *Caenorhabditis elegans*, *Cryptophlebia leucotreta* granulovirus, *Trypanosoma brucei*, *Ipomoea nil*, *Clostridium perfringens* str. 13" 20
- 8574 8704 31 "Homo sapiens, *Mus musculus*, *Oryza sativa* (japonica cultivar-group), *Bacteroides thetaiotaomicron* VPI-5482, *Dictyostelium discoideum*, *Plectrititis macrocera*, *Valerianella locusta*, *Triosteum perfoliatum*, *Symphoricarpos orbiculatus*, *Lonicera nervosa*, *Leycesteria formosa*, *Cryptocephalus decemmaculatus*, *Senecio serpens*, *Danio rerio*, *Chlamydomonas pneumoniae*, *Lonicera orientalis*, *Valeriana hirtella*, *Entamoeba histolytica*, *Pyrococcus horikoshii*, *Aedes aegypti*, *Bacillus licheniformis*" 30
- 8575 8705 29 "Mus musculus, *Homo sapiens*, *Clarkia breweri*, *Arabidopsis thaliana*, *Drosophila melanogaster*, *Danio rerio*, *Guillardia theta*, *Polistes chinensis antennalis*, *Rattus norvegicus*, *Medicago truncatula*, *Clostridium tetani* E88, *Plasmodium falciparum* 3D7, *Methanosarcina acetivorans* C2A, *Candida albicans*, *Oryza sativa* (japonica cultivar-group), *Clarkia concinna*, *Schizosaccharomyces pombe*"
- 8576 8706 33 "Homo sapiens, *Danio rerio*, *Cryptosporidium parvum*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Mus musculus*, *Neurospora crassa*, *Leptospira interrogans* serovar lai str. 56601, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Arabidopsis thaliana*, *Candida albicans*, *Caenorhabditis elegans*, *Thermoplasma volcanium*, *Staphylococcus aureus* subsp. aureus N315, *Staphylococcus aureus* subsp. aureus MW2, *Staphylococcus aureus* subsp. aureus Mu50, *Candidatus Carsonella ruddii*, *Aquifex aeolicus* VF5, *Clavelina picta*, *Maca mulatta*, *Tribolium castaneum*, *Bicyclus anynana*, *Sulfolobus solfataricus*, *Polytomella* sp. Pringsheim 198.80, *Vicia cracca*, *Pisum sativum*, *Entamoeba histolytica*, *Lotus corniculatus* var. japonicus, *Uroleucon rurale*, *Schizosaccharomyces pombe*, *Octopus bimaculoides*, *Helicobacter hepaticus* ATCC 51449, *Hydra magnipapillata*" 40

- 8577 8707 72 "Selenomonas ruminantium, Thermoanaerobacter tengcongensis, Acholeplasma laidlawii, Mycoplasma mycoides, Mycoplasma capricolum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Bacillus halodurans, Listeria monocytogenes, Mycoplasma pulmonis, Clostridium"
- 8578 8708 23 "Plasmodium falciparum 3D7, Homo sapiens, Drosophila melanogaster, Clostridium acetobutylicum, Danio rerio, Mus musculus, Tetrahymena pyriformis, Cyanophora paradoxa, Medicago truncatula, Rickettsia conorii, Ochromonas danica, Dictyostelium discoideum, Cafeteria roenbergensis, Arabidopsis thaliana, Clostridium perfringens str. 13"
- 8579 8709 29 "Arabidopsis thaliana, Mus musculus, Homo sapiens, Leishmania tarentolae, Monosiga brevicollis, Saccharomyces cerevisiae, Danio rerio, Williopsis saturnus var. mrakii, Caenorhabditis elegans, Pan troglodytes, Dictyostelium discoideum, Melipona bicolor, Staphylococcus epidermidis ATCC 12228, Cochliomyia hominivorax, Caenorhabditis briggsae, Staphylococcus epidermidis, Schizosaccharomyces pombe, Sus scrofa, Saccharomyces douglasii, Chrysomya putoria, Cordyceps sp. 97003, Drosophila melanogaster, Buchnera aphidicola str. Bp (Baizongia pistaciae), Aquifex aeolicus VF5, Archaeoglobus fulgidus DSM 4304, Saccharomyces castellii, Plasmodium falciparum 3D7, Lapine rotavirus, Phthorimaea operculella granulovirus, Anolis ortonii, Naegleria gruberi" 10
- 8580 8710 27 "Mus musculus, Homo sapiens, Drosophila melanogaster, Oryza sativa (japonica cultivar-group), Danio rerio, Caenorhabditis briggsae, Caenorhabditis elegans, Otolemur crassicaudatus, Daphnia pulex, Lactococcus lactis subsp. lactis, Triticum aestivum, Cyanidium caldarium, Lasaea sp." 20
- 8581 8711 27 "Homo sapiens, Danio rerio, Sulfolobus solfataricus, Mus musculus, Medicago truncatula, Borrelia burgdorferi B31, Oryza sativa (japonica cultivar-group), Chlamydomonas pneumoniae CWL029, Gallid herpesvirus 2, Gallid herpesvirus 1, Gloeochaete wittrockiana, Chlamydomonas pneumoniae AR39, Thermoplasma volcanium, Chlamydomonas pneumoniae J138, Chlamydomonas pneumoniae TW-183, Nostoc sp. PCC 7120"
- 8582 8712 24 "Homo sapiens, Mus musculus, Papio anubis, Lotus corniculatus var. japonicus, Thanatephorus cucumeris, Danio rerio, Lepilemur ruficaudatus, Drosophila melanogaster, Arabidopsis thaliana, Plasmodium falciparum 3D7, Oryza sativa (japonica cultivar-group)" 30
- 8583 8713 29 "Homo sapiens, Mus musculus, Arabidopsis thaliana, Cistanche salsa, Cistanche deserticola, Oryza sativa (japonica cultivar-group), Drosophila melanogaster, Plasmodium falciparum 3D7, Cyanophora paradoxa, Plasmodium falciparum, Danio rerio, Scutellospora castanea, Medicago truncatula, Shigella flexneri 2a str. 2457T, Caenorhabditis elegans, Campylobacter jejuni, Sus scrofa, Oryza sativa, Mycoplasma pulmonis, Campylobacter jejuni subsp. jejuni NCTC 11168, Helicobacter pylori J99, Venerupis (Ruditapes) philippinarum, Nicotiana tabacum, Nostoc sp. PCC 7120" 40
- 8584 8714 35 "Homo sapiens, Methanothermobacter thermoautotrophicus str. Delta H, Oryza sativa (japonica cultivar-group), Mus musculus, Plasmodium falciparum 3D7, Caenorhabditis elegans, Drosophila virilis, Amsacta moorei entomovirus, Lotus corniculatus var. japonicus, Danio rerio, Helicobacter pylori 26695, Drosophila melanogaster, Clostridium tetani E88, Zea mays, Branchiostoma floridae, Dictyostelium discoideum, Solanum tuberosum, Helicobacter pylori J99"
- 8585 8715 23 "Homo sapiens, Fusobacterium nucleatum, Fusobacterium nucleatum subsp. nucleatum ATCC 25586, Farfantepenaeus notialis, Schizosaccharomyces pombe, Mus musculus, Oryza sativa (japonica cultivar-group), Buchnera aphidicola" 50

ola str. Sg (*Schizaphis graminum*), *Oryza sativa*, *Mesobuthus gibbosus*, *Arabidopsis thaliana*, *Plasmodium falciparum*, *Plasmodium falciparum* 3D7, *Danio rerio*, *Buchnera aphidicola*"

8586 8716 28 "Oceanobacillus iheyensis HTE831, *Danio rerio*, *Homo sapiens*, *Drosophila melanogaster*, *Oryza sativa* (japonica cultivar-group), *Mus musculus*, *Rattus norvegicus*, *Bacillus halodurans*, *Ratufa affinis*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Bos taurus*, *Lotus corniculatus* var. japonicus, *Prosopodonta limbata*, *Mus sp.*"

8587 8717 28 "*Homo sapiens*, *Caenorhabditis briggsae*, *Caenorhabditis elegans*, *Rickettsia prowazekii*, *Mus musculus*, *Saccharomyces cerevisiae*" 10

8588 8718 28 "*Mus musculus*, *Homo sapiens*, *Bacillus sp.*, *Streptococcus mutans* UA159, *Streptococcus pyogenes* MGAS315, *Arabidopsis thaliana*, *Methanosarcina acetivorans* C2A, *Caenorhabditis elegans*, *Streptococcus pyogenes* SSI-1, *Nostoc sp.* PCC 7120"

8589 8719 33 "*Fusobacterium nucleatum* subsp. nucleatum ATCC 25586, *Listeria innocua*, *Prochlorococcus marinus* subsp. marinus str. CCMP1375, *Homo sapiens*, *Mus musculus*, *Lactococcus lactis* subsp. lactis, *Caenorhabditis elegans*, *Pirellula sp.*"

8590 8720 30 "*Vibrio vulnificus* CMCP6, *Campylobacter jejuni* subsp. jejuni NCTC 11168, *Haemophilus influenzae* Rd KW20, uncultured Bacteroidaceae bacterium, *Mus musculus*, *Drosophila melanogaster*, *Plasmodium falciparum* 3D7, *Homo sapiens*, *Escherichia coli*, *Oryza sativa* (japonica cultivar-group)" 20

8591 8721 42 "*Pasteurella multocida*, *Pyrococcus furiosus* DSM 3638, *Streptococcus agalactiae* 2603V/R, *Oryza sativa* (japonica cultivar-group), *Streptococcus agalactiae* NEM316, Rice grassy stunt virus, *Mus musculus*, *Lotus corniculatus* var. japonicus, *Typhlonectes natans*, *Homo sapiens*, *Haemophilus ducreyi* 35000H P, *Ciona intestinalis*, *Glycine max*, *Arabidopsis thaliana*"

8592 8722 29 "*Enterococcus faecalis* V583, *Homo sapiens*, *Leishmania major*, *Mus musculus*, *Solanum tuberosum*, *Sulfolobus solfataricus*, *Lotus corniculatus* var. japonicus, *Danio rerio*, *Anopheles gambiae*" 30

8593 8723 23 "*Homo sapiens*, *Lycopersicon esculentum*, *Mus musculus*, *Echimyis didelphoides*, *Dactylomys dactylinus*, *Mesomys hispidus*, *Danio rerio*, *Lymnaea stagnalis*, *Sulfolobus tokodaii*, *Coelodonta antiquitatis*"

8594 8724 27 "*Homo sapiens*, *Mus musculus*, *Macaca fascicularis*, *Lycopersicon esculentum*, *Arabidopsis thaliana*, *Danio rerio*, *Sulfolobus solfataricus*, *Pseudomonas putida*"

8595 8725 37 "*Homo sapiens*, *Mus musculus*, *Clostridium perfringens* str. 13, *Caenorhabditis elegans*, *Streptococcus pyogenes* MGAS8232, *Fusobacterium nucleatum* subsp. nucleatum ATCC 25586"

8596 8726 37 "*Mus musculus*, *Danio rerio*, *Kluyveromyces lactis*, *Homo sapiens*, *Dictyostelium discoideum*, *Plasmodium falciparum* 3D7, *Oryza sativa*, *Plasmodium falciparum*, *Oryza sativa* (japonica cultivar-group), *Rattus norvegicus*, *Quiscalus mexicanus*, *Saccharomyces cerevisiae*, *Acanthamoeba lenticulata*, *Penaeus monodon*, *Drosophila melanogaster*, *Coccytrypes carpophagus*, *Strongylocentrotus purpuratus*, *Pinus taeda*, *Ictalurus punctatus*, *Xenopus laevis*, *Amsacta albistriga* nucleopolyhedrovirus, *Cryptosporidium parvum*, *Lytechinus variegatus*, *Anopheles gambiae*" 40

8597 8727 19 "*Homo sapiens*, *Vibrio harveyi* bacteriophage VHML, *Mus musculus*, *Pan troglodytes*, *Punica granatum*, *Rattus norvegicus*, Shrimp white spot syndrome virus, *Schizosaccharomyces pombe*, *Danio rerio*" 50

【0036】

表2、3、4および5を参照体として用いると、10~Nヌクレオチド長の本発明の任意の核酸分子は、標準的な増幅条件下、ローソニア・イントラセルラリス核酸の存在下では、適当な第2核酸分子（例えば、オリゴヌクレオチドプライマー）を使用して増幅産物を生成するが、それぞれの配列番号に対応する表2、3、4または5に示す生物のいずれの核酸からも、適当な第3核酸分子（例えば、該他生物からの核酸に特異的にアニーリングするオリゴヌクレオチドプライマー）を使用しても増幅産物を生成しない。例えば、配列番号132（プラスミド1の断片2）に関しては、10~21ヌクレオチド長の任意のそのような分子は、標準的な増幅条件下、ローソニア・イントラセルラリス核酸からは、適当な第2核酸分子を使用して増幅産物を生成するが、ホモ・サピエンス（Homo sapiens）またはダニオ・レリオ（Danio rerio）の核酸からは、適当な第3核酸分子を使用しても増幅産物を生成しない。

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【0037】

表2、3、4および5において特定された生物に関しては、それらの幾つかは複数の種、亜種または株を表す。特定の試薬がローソニア・イントラセルラリスとそのような種、亜種または株とを識別するか否かを試験するためには、代表的な幾つかのそれぞれ種、亜種または株を試験することが望ましいかもしれない。遺伝的変異が種、亜種または株内で最小である場合には、1または2を超えるそれぞれ種、亜種または株を試験する必要はないかもしれない。他の場合には、複数の種、亜種または株を試験する必要があるかもしれないが、初期試験を、最も遺伝的に遠いそれぞれ種、亜種または株に焦点を合わせることは可能である。

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【0038】

本明細書中で用いる「標準的な増幅条件」は、増幅産物を得るための増幅反応混合物の基本成分と、鋳型核酸の変性、該鋳型核酸へのオリゴヌクレオチドプライマーのアニーリング、およびポリメラーゼによる該プライマーの伸長の複数サイクルを含むサイクリング条件とを意味する（例えば、米国特許第4,683,195号、第4,683,202号、第4,800,159号および第4,965,188号を参照されたい）。増幅反応混合物の基本成分は、一般には、例えば、約10~25nmolの4種のそれぞれのデオキシヌクレオシド三リン酸（例えば、dATP、dCTP、dTTPおよびdGTP、またはそれらの類似体）、10~100pmolのプライマー、鋳型核酸、およびポリメラーゼ酵素を含む。一般には、該反応成分を、約7~約9のpHを有する緩衝化水溶液に懸濁させる。該水性バッファーは更に、ポリメラーゼが必要とする1以上の補因子（例えば、 Mg^{2+} 、 K^{+} ）を含みうる。DMSOのような追加的成分は、必要に応じて使用する。鋳型核酸を典型的には少なくとも約90の温度で変性させ、プライマーからの伸長を典型的には少なくとも約72の温度で行う。

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【0039】

アニーリング温度は、増幅の特異性を制御するために用いることができる。プライマーが鋳型核酸にアニーリングする温度は、各プライマーの T_m より低く、かつ、鋳型核酸へのプライマーの非特異的アニーリングを避けるのに十分な程度に高くなければならない。 T_m は、DNA二本鎖の半分が一本鎖に分離する温度であり、Sambrookら（1989, Molecular Cloning: A Laboratory Manual, 2nd Ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York）の第11.46節に記載の式を用いてオリゴヌクレオチドプライマーに関して予想できる。非特異的増幅産物は、正しい増幅産物に関して予想されるサイズではないゲル上のバンドとして検出される。特許請求されている核酸分子がローソニア・イントラセルラリスに特異的であることを示すために増幅反応において用いるアニーリング温度は57でありうる。当業者には理解されるように、汚染および/またはオリゴヌクレオチドプライマーの非特異的アニーリングおよびそれからの伸長に関連した不確実性を回避するために、増幅反応の各セットで適当な陽性および陰性対照を実施すべきである。

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【0040】

適当な第2核酸分子は、一般には、ローソニア・イントラセルラリス核酸に特異的にアニーリングし、適当な増幅条件下で本発明の核酸分子（特に、例えば、本発明の10~30、

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または40、または50ヌクレオチド長の核酸分子)と共に作用してローソニア・イントラセルラリス核酸の存在下で増幅産物を与えうるオリゴヌクレオチドプライマーである。第2核酸分子を本発明の核酸分子と共に作用させて増幅産物を得るためには、それらの2つの分子は鑄型核酸の対向鎖にアニーリングしなければならない、また、ポリメラーゼが該領域にわたって有効に重合を行うことができ、増幅産物が例えば電気泳動により容易に検出されうるよう、それらの2つの分子はお互いから適当な距離を保っているべきである。類似の融解温度を有するプライマーの設計を補助するために例えばOLIGO (Molecular Biology Insights Inc., Cascade, CO) のようなコンピュタープログラムを使用して、オリゴヌクレオチドプライマーを設計することが可能である。典型的には、オリゴヌクレオチドプライマーは10~50ヌクレオチド長(例えば、12、14、16、18、20、22、24、26、28、30、32、34、36、38、40、42、44、46、48または50ヌクレオチド長)でありうる。 10

【0041】

本発明のローソニア・イントラセルラリス特異的核酸分子をそれぞれ増幅するために使用したオリゴヌクレオチドプライマーの代表的なペアを表8(配列番号8728~8735)に示す。あるいは、配列番号1~62および131~8727に示す配列を有する核酸分子を使用してオリゴヌクレオチドプライマーのペアを設計することが可能である。本発明のオリゴヌクレオチドは、ローソニア・イントラセルラリス特異的核酸分子の制限酵素消化により得ることが可能であり、あるいは標準的な化学合成および他の公知技術により製造することが可能である。

【0042】

本明細書中で用いる、ローソニア・イントラセルラリス以外の生物は、ローソニア・イントラセルラリスではない任意の生物を意味する。一般に、本発明の10ヌクレオチド長以上の核酸分子の特異性を調べるための増幅反応においては関連生物のみが使用される。特に関連する生物には、ブラキスピラ・ヒオディセンテリア (*Brachyspira hyodysenteria*)、ブラキスピラ・ピロシコリ (*Brachyspira pylosicoli*)、大腸菌 (*E. coli*)、サルモネラ・ティフィムリウム (*Salmonella typhimurium*)、サルモネラ・コレレスイス (*Salmonella choleraesuis*)、バイロフィラ・ワーズワーシエ (*Bilophila wadsworthiae*) およびクロストリジウム・ディフィシレ (*Clostridium difficile*) が含まれるが、これらに限定されるものではない。 20

【0043】

本明細書中で用いる「単離(された)」核酸分子は、該単離核酸分子に通常付随している他の核酸分子から分離された核酸分子である。したがって、「単離(された)」核酸分子には、該単離核酸が由来する生物のゲノム内の核酸分子の一方または両方の末端に天然で隣接する配列を含有しない核酸分子(例えば、PCRまたは制限エンドヌクレアーゼ消化により生成されたcDNAまたはゲノムDNA断片)が含まれるが、これらに限定されるものではない。そのような単離された核酸分子は、一般には、取扱いの便宜のために又は融合核酸分子を作製するためにベクター(例えば、クローニングベクターまたは発現ベクター)内に導入される。また、単離された核酸分子には、組換え又は合成核酸分子などの操作された核酸分子が含まれうる。例えば核酸ライブラリー(例えば、cDNAまたはゲノムライブラリー)内の数百~数百万の他の核酸分子内に存在する核酸分子や、制限消化ゲノムDNAを含有するゲル(例えば、アガロースまたはポリアクリルアミン)の一部は、単離された核酸とはみなされない。 30 40

【0044】

本発明の単離された核酸分子は、当技術分野における通常の技術を用いて得ることができる。例えば、本発明の範囲内の単離された核酸は、組換え核酸技術および/またはポリメラーゼ連鎖反応(PCR)を含む(それらに限定されるものではない)いずれかの方法を用いて得ることができる。一般的なPCR技術は、例えばPCR Primer: A Laboratory Manual, Dieffenbach & Dveksler, Eds., Cold Spring Harbor Laboratory Press, 1995に記載されている。組換え核酸技術には、例えば制限酵素消化および連結が含まれ、それらを用いて本発明の核酸分子を単離することが可能である。また、本発明の単離された核酸は、 50

単一の核酸分子または一連のオリゴヌクレオチドとして化学合成されうる。さらに、本発明の単離された核酸分子は突然変異誘発によっても入手することができる。例えば、当技術分野で公知の配列に対して同一性を有する単離された核酸を、一般的な分子クローニング技術（例えば、部位特異的突然変異誘発）を用いて突然変異させることが可能である。考えられる突然変異には、欠失、挿入、置換およびそれらの組合せが含まれるが、これらに限定されるものではない。

【0045】

本発明は、ローソニア・イントラセルラリス特異的核酸分子を含有するベクターも提供する。本発明での使用に適したベクター（発現ベクターを含む）は市販されており、および/または当技術分野における通常の組換えDNA技術により製造される。ローソニア・イントラセルラリス特異的核酸分子を含有するベクターは、そのようなローソニア・イントラセルラリス特異的核酸に機能しうる形で連結された発現に必要なエレメントを有してもよく、さらに、選択マーカー（例えば、抗生物質耐性遺伝子）をコードする配列および/またはローソニア・イントラセルラリス特異的ポリペプチドの精製において使用しうる配列（例えば、6×Hisタグ）を含みうる。

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【0046】

発現に必要なエレメントには、核酸コード配列の発現を指令し調節する核酸配列が含まれる。発現に必要なエレメントの一例として、プロモーター配列、例えばローソニア・イントラセルラリス特異的プロモーター（例えば、発現されているのと同じコード配列由来または異なるコード配列由来のもの）、または非ローソニア・イントラセルラリス特異的プロモーターが挙げられる。発現に必要なエレメントには、ローソニア・イントラセルラリス特異的核酸の発現をモジュレートするイントロン、エンハンサー配列、応答エレメントまたは誘導エレメントも含まれる。発現に必要なエレメントは細菌、酵母、昆虫、哺乳類またはウイルス由来であることが可能であり、ベクターは、異なる起源からのエレメントの組合せを含有しうる。発現に必要なエレメントは、例えばGoeddel, 1990, Gene Expression Technology: Methods in Enzymology, 185, Academic Press, San Diego, CAに記載されている。本明細書中で用いる「機能しうる形で連結された」は、ローソニア・イントラセルラリス特異的核酸の発現が指令または調節されるようにプロモーターおよび/または他の調節エレメントがローソニア・イントラセルラリス特異的核酸に対してベクター内に位置することを意味する。細胞内に核酸を導入するためのin vivoおよびin vitroの両方の多数の方法が当業者によく知られており、それらには、リン酸カルシウム沈降、電気泳動、熱ショック、リポフェクション、マイクロインジェクションおよびウイルス媒介核酸導入が含まれるが、これらに限定されるものではない。

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【0047】

本発明のもう1つの態様は、本発明のベクター（例えば、発現ベクター）または本発明の単離された核酸分子が導入された宿主細胞に関する。「宿主細胞」なる語は、その個別の細胞だけでなく、そのような細胞の後代または潜在的後代をも意味する。宿主細胞は任意の原核細胞または真核細胞でありうる。例えば、ローソニア・イントラセルラリス特異的核酸を、大腸菌（*E. coli*）のような細菌細胞または昆虫細胞、酵母もしくは哺乳類細胞（例えば、チャイニーズハムスター卵巣細胞（CHO）またはCOS細胞）内で発現させることが可能である。他の適当な宿主細胞は当業者に公知である。

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【0048】

ローソニア・イントラセルラリスに特有の核酸分子を含有するベクターは、_____日付けでAmerican Type Culture Collection (ATCC), 10801 University Boulevard Manassas, VA 20110に寄託されており、受託番号_____, _____, _____および_____が割り当てられている。各寄託は、特許手続上の微生物の寄託の国際的承認に関するブダペスト条約の条項に従い維持される。この寄託は当業者のための便宜としてなされたにすぎず、35 U.S.C. § 112に基づき寄託が要求されることを自認するものではない。

【0049】

精製されたローソニア・イントラセルラリスポリペプチド

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本発明の1つの態様は、精製されたローソニア・イントラセルラリス特異的ポリペプチドおよびポリペプチド断片に関する。「ローソニア・イントラセルラリス特異的ポリペプチド」は、ローソニア・イントラセルラリスに固有の核酸分子（例えば、ローソニア・イントラセルラリス特異的核酸分子、例えば、配列番号1～62および131～8727に示す配列を有するもの）によりコードされるポリペプチドを意味する。本発明のローソニア・イントラセルラリス特異的核酸によりコードされる推定アミノ酸配列を配列番号63～124に示す。

【0050】

本明細書中で用いる「精製（された）」ポリペプチドなる語は、それに天然で随伴する細胞成分から分離または精製されたポリペプチドを意味する。典型的には、該ポリペプチドが、天然で結合しているタンパク質および天然分子から分離されて、乾燥重量で少なくとも70%（例えば、少なくとも75%、80%、85%、90%、95%または99%）である場合に、該ポリペプチドは「精製」されているとみなされる。化学合成されたそのようなポリペプチドは、もともと、それに天然で随伴する成分から分離されているため、合成ポリペプチドは「精製」されている。

【0051】

ローソニア・イントラセルラリス特異的ポリペプチドは、DEAEイオン交換、ゲル濾過およびヒドロキシアパタイトクロマトグラフィーのような公知方法により天然源（例えば、生物学的サンプル）から精製されうる。精製されたローソニア・イントラセルラリス特異的ポリペプチドはまた、例えば、発現ベクター内のローソニア・イントラセルラリス特異的核酸を発現させることによっても入手されうる。また、精製されたローソニア・イントラセルラリス特異的ポリペプチドは化学合成により入手されうる。ローソニア・イントラセルラリス特異的ポリペプチドの純度は、例えばカラムクロマトグラフィー、ポリアクリルアミドゲル電気泳動またはHPLC分析のような任意の適当な方法を用いて測定されうる。

【0052】

天然に存在するローソニア・イントラセルラリス特異的ポリペプチドに加えて、当業者にはさらに理解されるように、本明細書に記載の核酸分子（例えば、配列番号1～62および131～8727に示す配列を有するもの）内に変化を導入してコードされているポリペプチドのアミノ酸配列内に変化をもたらす。例えば、ローソニア・イントラセルラリス特異的核酸コード配列内に変化を導入して、1以上のアミノ酸残基において保存的および/または非保存的アミノ酸置換をもたらすことが可能である。「保存的アミノ酸置換」は、1つのアミノ酸残基が、類似側鎖を有する異なるアミノ酸残基により置換されたものである。アミノ酸残基間の類似性は当技術分野において評価されてきた。例えば、Dayhoffら（1978, in Atlas of Protein Sequence and Structure, Vol. 5, Suppl. 3, pp 345-352）は、アミノ酸の類似性の尺度として用いられうるアミノ酸置換に関する頻度表を記載している。非保存的置換は、アミノ酸残基が、類似側鎖を有しないアミノ酸残基により置換されたものである。

【0053】

本発明はキメラまたは融合ポリペプチドも提供する。本明細書中で用いる「キメラ」または「融合」ポリペプチドには、異種ポリペプチドに機能しうる形で連結されたローソニア・イントラセルラリス特異的ポリペプチドが含まれる。異種ポリペプチドはローソニア・イントラセルラリス特異的ポリペプチドのN末端またはC末端に位置しうる。キメラまたは融合ポリペプチドにおいて、「機能しうる形で連結された」なる語は、それらの2つのポリペプチドがお互いに対してインフレームでコードされていることを示すと意図される。融合ポリペプチドにおいては、異種ポリペプチドは、一般には、融合ポリペプチドを（例えば、アフィニティー精製により）精製可能にする特性のような所望の特性を有する。本発明のキメラまたは融合ポリペプチドは、標準的な組換えDNA技術により製造することが可能であり、商業的に入手可能なベクターを使用することが可能である。

【0054】

精製のために融合ポリペプチドにおいて一般に使用されるポリペプチドはグルタチオン

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Sトランスフェラーゼ (GST) であるが、多数の他のポリペプチドが入手可能であり利用可能である。また、ローソニア・イントラセルラリス特異的ポリペプチドと非ローソニア・イントラセルラリス特異的ポリペプチドとの間の連結部に、融合タンパク質の精製後にそれらの2つのポリペプチドの分離を可能にするためにタンパク質切断部位を導入することが可能である。そのようなタンパク質切断部位を切断する酵素には、Xa因子、トロンピンまたはエンテロキナーゼが含まれる。ローソニア・イントラセルラリスポリペプチドのアフィニティー精製において使用しうる異種ポリペプチドをコードする代表的な発現ベクターには、pGEX (Pharmacia Biotech Inc; Smith & Johnson, 1988, Gene, 67:31-40)、pMAL (New England Biolabs, Beverly, MA) およびpRIT5 (Pharmacia, Piscataway, NJ) が含まれる。

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【0055】

抗ローソニア・イントラセルラリス特異的抗体

本発明のもう1つの態様は抗ローソニア・イントラセルラリス特異的抗体に関する。本明細書中で用いる「抗ローソニア・イントラセルラリス特異的抗体」なる語は、ローソニア・イントラセルラリス特異的ポリペプチドに対する特異的結合親和性を有する免疫グロブリン分子および免疫グロブリン分子の免疫学的に活性な部分を意味する。本発明は、ローソニア・イントラセルラリス特異的ポリペプチドに対する特異的結合親和性を有するポリクローナルおよびモノクローナル抗体を提供する。抗ローソニア・イントラセルラリス特異的抗体を生成させるために使用しうる多数のローソニア・イントラセルラリス特異的ポリペプチドの配列が本明細書中に開示されている (例えば、配列番号63~124)。免疫グロブリン分子の免疫学的に活性な部分には、免疫グロブリン分子をペプシンのような酵素で処理することにより生成されうるF(ab) およびF(ab')₂フラグメントが含まれる。本明細書中で用いる、ローソニア・イントラセルラリス特異的ポリペプチドに対する「特異的結合親和性」を有する抗体は、ローソニア・イントラセルラリス特異的ポリペプチドには結合するが非ローソニア・イントラセルラリス特異的ポリペプチドには結合しない抗体である。本明細書中で用いる非ローソニア・イントラセルラリス特異的ポリペプチドは、ローソニア・イントラセルラリスにおいて見出されうる又は見出され得ないがローソニア・イントラセルラリス以外の少なくとも1つの他の生物において見出されるポリペプチドを意味する。

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【0056】

ローソニア・イントラセルラリス特異的ポリペプチドに対する特異的結合親和性を有するポリクローナルまたはモノクローナル抗体を生成させるためには、精製されたローソニア・イントラセルラリス特異的ポリペプチドまたはその断片を免疫原として使用することが可能である。そのような抗体は、本明細書に記載の標準的な技術を用いて生成させることが可能である。完全長ローソニア・イントラセルラリス特異的ポリペプチド (表1を参照されたい)、またはローソニア・イントラセルラリス特異的ポリペプチドの抗原性断片を免疫原として使用することが可能である。ローソニア・イントラセルラリス特異的ポリペプチドの抗原性断片は、通常、ローソニア・イントラセルラリス特異的ポリペプチド (例えば、配列番号63~124に示す配列を有するもの) の少なくとも8 (例えば、10、15、20または30) アミノ酸残基を含み、該抗原性断片に対して生成された抗体 (例えば、ポリクローナルまたはモノクローナル抗体) がローソニア・イントラセルラリス特異的ポリペプチドに対する特異的結合親和性を有するようになるローソニア・イントラセルラリス特異的ポリペプチドのエピトープを含む。

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【0057】

抗体は、典型的には、適当な動物 (例えば、ウサギ、ヤギ、マウスまたは他の哺乳動物) に免疫原性調製物で初回免疫することにより製造される。適当な免疫原性調製物は、例えば、組換え的に発現された若しくは化学合成されたローソニア・イントラセルラリス特異的ポリペプチドまたはその断片を含有しうる。該調製物は更に、フロイント完全もしくは不完全アジュバントのようなアジュバントまたは類似の免疫促進剤を含みうる。免疫原性ローソニア・イントラセルラリス特異的ポリペプチド調製物での適当な動物の免疫はポ

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リクローナル抗ローソニア・イントラセルラリス特異的抗体応答を誘導する。

【0058】

免疫された動物における抗ローソニア・イントラセルラリス特異的抗体の力価は、固定化されたローソニア・イントラセルラリス特異的ポリペプチドを使用する酵素結合免疫ソルベントアッセイ (ELISA) のような標準的な技術により、経時的にモニターすることが可能である。所望により、ローソニア・イントラセルラリス特異的ポリペプチドに対する抗体分子を該動物から単離し、プロテインAクロマトグラフィーのような良く知られた技術により更に精製してIgG画分を得ることが可能である。

【0059】

免疫後の適当な時点、例えば、抗ローソニア・イントラセルラリス特異的抗体価が最高になった時点で、抗体生成細胞を該動物から得、KohlerおよびMilstein (1975, *Nature*, 256:495-497) により最初に記載されたハイブリドーマ法、ヒトB細胞ハイブリドーマ法 (Kozborら, 1983, *Immunol. Today*, 4:72) またはEBV-ハイブリドーマ法 (Coleら, 1985, *Monoclonal Antibodies and Cancer Therapy*, Alan R. Liss, Inc., pp. 77-96) のような標準的な技術によるモノクローナル抗体の製造に使用することが可能である。種々のモノクローナル抗体ハイブリドーマを製造するための技術は良く知られている (全般的には、*Current Protocols in Immunology*, 1994, Coliganら. (編), John Wiley & Sons, Inc., New York, NYを参照されたい)。簡潔に説明すると、不死化細胞系 (例えば、骨髄腫細胞系) を、前記のとおり免疫原性ローソニア・イントラセルラリス特異的ポリペプチドで免疫された動物からのリンパ球 (例えば、脾細胞) に融合させ、得られたハイブリドーマ細胞の培養上清をスクリーニングして、ローソニア・イントラセルラリス特異的ポリペプチドに対する特異的結合親和性を有するモノクローナル抗体を生成するハイブリドーマを同定する。

【0060】

リンパ球と不死化細胞系とを融合させるために用いられる良く知られたプロトコールのいずれかを、抗ローソニア・イントラセルラリス特異的モノクローナル抗体を生成させるために応用することが可能である (例えば、*Current Protocols in Immunology*, supra; Galfreら, 1977, *Nature*, 266:55052; R.H. Kenneth, in *Monoclonal Antibodies: A New Dimension In Biological Analyses*, Plenum Publishing Corp., New York, New York, 1980; およびLerner, 1981, *Yale J. Biol. Med.*, 54:387-402を参照されたい)。さらに、当業者は、同様に有用でありうるそのような方法の多数の変更が存在すると認識するであろう。典型的には、不死細胞系は、リンパ球と同じ種から誘導される。例えば、マウスハイブリドーマは、免疫原性調製物で免疫されたマウスからのリンパ球を、例えば、ヒポキサンチン、アミノプテリンおよびチミジンを含む培地 (「HAT培地」) に感受性である骨髄腫細胞系のような不死化マウス細胞系と融合することにより作製されうる。ATCCから入手可能な多数の骨髄腫細胞系のいずれか、例えばP3-NS1/1-Ag4-1、P3-x63-Ag8.653またはSp2/0-Ag14骨髄腫系を、標準的な技術に従い融合相手として使用することが可能である。典型的には、ポリエチレングリコール (PEG) を使用して、HAT感受性マウス骨髄腫細胞をマウス脾細胞に融合させる。ついで、融合により得られたハイブリドーマ細胞を、HAT培地を使用して選択する。モノクローナル抗体を生成するハイブリドーマ細胞は、例えば標準的なELISAアッセイを用いて、ローソニア・イントラセルラリス特異的ポリペプチドに結合する抗体に関してハイブリドーマ培養上清をスクリーニングすることにより検出される。

【0061】

モノクローナル抗体を分泌するハイブリドーマの製造の別法として、組換えコンビナトリアル免疫グロブリンライブラリー (例えば、抗体ファージディスプレイライブラリー) をローソニア・イントラセルラリス特異的ポリペプチドでスクリーニングすることにより、抗ローソニア・イントラセルラリス特異的モノクローナル抗体を同定し単離することが可能である。ローソニア・イントラセルラリス特異的ポリペプチドに対する特異的結合親和性を有する免疫グロブリンライブラリーメンバーは、そのようなライブラリーから単離

されうる。ファージディスプレイライブラリーを作製しスクリーニングするためのキットは市販されている（例えば、the Pharmacia Recombinant Phage Antibody System, Catalog No. 27-9400-01; および the Stratagene SurfZAP Phage Display Kit, Catalog No. 240612）。また、抗体ディスプレイライブラリーの作製およびスクリーニングにおける使用に特に適した方法および試薬の具体例は、例えば、米国特許第5,223,409号、PCT公開番号WO 92/20791、PCT公開番号WO 93/01288、Hayら、1992、Hum. Antibod. Hybridomas, 3: 81-85、Griffithsら、1993、EMBO J., 12:725-734ならびにそれらにおける参考文献に記載されている。

【0062】

また、ヒト部分および非ヒト部分の両方を含むキメラおよびヒト化モノクローナル抗体などの、組換え抗ローソニア・イントラセルラリス特異的抗体は、本発明の範囲内である。そのようなキメラおよびヒト化モノクローナル抗体は、例えばPCT公開番号WO 87/02671、欧州特許（EP）出願184,187、米国特許第4,816,567号、Betterら、1988、Science, 240:1041-1043、Shawら、1988、J. Natl. Cancer Inst., 80:1553-1559、米国特許第5,225,539号、Verhoeyanら、1988、Science, 239:1534、Beidlerら、1988、J. Immunol., 141:4053-4060およびそれらにおける参考文献に記載の方法を用いて、当技術分野で公知の組換えDNA技術により製造されうる。

【0063】

アフィニティークロマトグラフィーまたは免疫沈降のような標準的な技術によりローソニア・イントラセルラリス特異的ポリペプチドを単離するために、抗ローソニア・イントラセルラリス特異的抗体（例えば、モノクローナル抗体）を使用することが可能である。抗ローソニア・イントラセルラリス特異的抗体は、細胞からの天然ローソニア・イントラセルラリス特異的ポリペプチドの精製、および宿主細胞内で発現された組換えローソニア・イントラセルラリス特異的ポリペプチドの精製を促進しうる。さらに、ローソニア・イントラセルラリス特異的ポリペプチドの存在または非存在を評価するために、（例えば、細胞ライセートまたは細胞上清中の）ローソニア・イントラセルラリス特異的ポリペプチドを検出するために、抗ローソニア・イントラセルラリス特異的抗体を使用することが可能である。生物学的サンプル中のローソニア・イントラセルラリス特異的ポリペプチドを検出し従ってローソニア・イントラセルラリスを検出して、例えば、動物の感染状態を判定したり、与えられた治療計画の効力を測定するために、抗ローソニア・イントラセルラリス特異的抗体を診断用に使用することが可能である。

【0064】

ローソニア・イントラセルラリスの検出方法

本明細書に記載のローソニア・イントラセルラリス特異的核酸分子およびポリペプチドならびに抗ローソニア・イントラセルラリス特異的抗体は、ローソニア・イントラセルラリスの検出のための診断アッセイにおいて使用することが可能である。ローソニア・イントラセルラリスの存在または非存在を判定するための診断アッセイは、動物がローソニア・イントラセルラリスにさらされていたことがある又はローソニア・イントラセルラリスに感染しているかどうかを判定するために生物学的サンプル（例えば、糞便サンプル）を使用して行う。生物学的サンプル中のローソニア・イントラセルラリスの存在または非存在を検出するための典型的な方法は、動物から生物学的サンプルを入手し、ローソニア・イントラセルラリス特異的核酸もしくはポリペプチドまたは抗ローソニア・イントラセルラリス特異的抗体を検出しうる適当な因子と該生物学的サンプルとを接触させることを含む。

【0065】

「生物学的サンプル」なる語は、動物から得た細胞および生物学的流体を含むと意図される。1つの実施形態においては、生物学的サンプルは該動物からのポリペプチドを含有する。あるいは、生物学的サンプルは該動物からの核酸分子を含有しうる。あるいは、生物学的サンプルは該動物からの抗体を含有しうる。ローソニア・イントラセルラリス特異的核酸もしくはポリペプチドまたは抗ローソニア・イントラセルラリス特異的抗体が存在

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しうる任意の生物学的サンプルを本明細書に記載の方法において使用しうると理解されるべきである。

【0066】

1つの実施形態においては、生物学的サンプル中のローソニア・イントラセルラリスの存在または非存在を検出するための薬剤は、本発明の単離されたローソニア・イントラセルラリス特異的核酸分子である。サンプル中のローソニア・イントラセルラリス特異的核酸の存在は該サンプル中のローソニア・イントラセルラリスの存在を示す。核酸の検出方法には、例えばPCRおよび核酸ハイブリダイゼーション（例えば、サザンブロット、ノーザンブロットまたは *in situ* ハイブリダイゼーション）が含まれる。特に、薬剤は、PCRを用いてローソニア・イントラセルラリス特異的核酸を増幅しうる1以上のオリゴヌクレオチド（例えば、オリゴヌクレオチドプライマー）でありうる。PCR法は、一般には、動物から生物学的サンプルを集め、該サンプルから核酸（例えば、DNA、RNAまたは両方）を単離し、ローソニア・イントラセルラリスが存在すればローソニア・イントラセルラリス特異的核酸の増幅が生じる条件下でローソニア・イントラセルラリス特異的核酸に特異的にハイブリダイズする1以上のオリゴヌクレオチドプライマーと該核酸とを接触させるステップを含む。ローソニア・イントラセルラリスの存在下では、ローソニア・イントラセルラリス特異的核酸に対応する増幅産物が生成される。核酸の増幅および増幅産物の検出のための条件は当業者に公知である（例えば、PCR Primer: A Laboratory Manual, 1995, Dieffenbach & Dveksler, Eds., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY; ならびに米国特許第4,683,195号、第4,683,202号、第4,800,159号および第4,965,188号を参照されたい）。初期のPCRに対する変法も開発されている。例えば、アンカー（anchor）PCR、RACE PCRまたはライゲーション連鎖反応（LCR）は、当技術分野で公知の更なるPCR法である（例えば、Landegranら, 1988, Science, 241:1077-1080; および Nakazawaら, 1994, Proc. Natl. Acad. Sci. USA, 91:360-364を参照されたい）。

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【0067】

あるいは、ローソニア・イントラセルラリス特異的核酸を検出するための薬剤は、サザンブロット上でローソニア・イントラセルラリス特異的核酸にハイブリダイズしうる標識されているオリゴヌクレオチドプローブでありうる。オリゴヌクレオチドプローブは、例えばローソニア・イントラセルラリス特異的核酸分子、例えば、配列番号1~62または131~8727に示す配列を有する核酸分子またはそれらの断片でありうる。ローソニア・イントラセルラリスの存在下では、ローソニア・イントラセルラリス核酸と該オリゴヌクレオチドプローブとの間でハイブリダイゼーション複合体が生成される。核酸分子間のハイブリダイゼーションはSambrookら（1989, Molecular Cloning: A Laboratory Manual, 2nd Ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY; Sections 7.37-7.57, 9.47-9.57, 11.7-11.8および11.45-11.57）に詳細に記載されている。

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【0068】

約100ヌクレオチド未満のオリゴヌクレオチドプローブに関して、Sambrookらは第11.45-11.46節において、適当なサザンブロット条件を開示している。100ヌクレオチド長未満の配列と第2配列との間の T_m は、第11.46節に記載の式を用いて計算することができる。Sambrookらは更に、約100ヌクレオチドを超えるオリゴヌクレオチドプローブを使用するサザンブロットのためのプレハイブリダイゼーションおよびハイブリダイゼーション条件を開示している（第9.47-9.52節を参照されたい）。100ヌクレオチドを超えるオリゴヌクレオチドでのハイブリダイゼーションは、一般には、 T_m より15~25 低い温度で行う。100ヌクレオチド長を超える配列と第2配列との間の T_m は、Sambrookらの第9.50-9.51節に記載の式を用いて計算することができる。また、Sambrookらは、約100ヌクレオチドを超えるオリゴヌクレオチドでプローブされたサザンブロットを洗浄するためには、第9.54節に示されている条件を推奨している。

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【0069】

核酸を含有するメンブランをプレハイブリダイズさせハイブリダイズさせる条件、ならびに過剰の及び非特異的に結合したプローブを除去するために、核酸を含有するメンブラ

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ンを洗浄する条件は、ハイブリダイゼーションのストリンジェンシーにおいて重要な役割を果たしうる。そのようなハイブリダイゼーションおよび洗浄は、適当な場合には、中等度の又は高いストリンジェンシーの条件下で行うことが可能である。そのような条件は、例えば、Sambrookらの第11.45-11.46節に記載されている。例えば、洗浄条件は、洗浄溶液中の塩濃度を減少させることにより、および/または、洗浄を行う温度を高くすることにより、よりストリンジェントとなりうる。また、ハイブリダイゼーションの量の解釈は、例えば、標識されたオリゴヌクレオチドプローブの比活性、プローブがハイブリダイズした鋳型核酸上のプローブ結合部位の数、およびオートラジオグラフまたは他の検出媒体の曝露の量により影響されうる。

【0070】

固定化標的核酸へのプローブ核酸分子のハイブリダイゼーションを検査するためにはハイブリダイゼーションおよび洗浄条件を数多く何回でも用いることが可能であるが、例えばローソニア・イントラセルラリスおよびローソニア・イントラセルラリス以外の少なくとも1つの生物からの標的核酸へのプローブのハイブリダイゼーションを同一のハイブリダイゼーション、洗浄および曝露条件下で検査することがより重要である、ことが当業者には容易に理解されるであろう。好ましくは、標的核酸（例えば、ローソニア・イントラセルラリスおよびローソニア・イントラセルラリス以外の少なくとも1つの生物からの核酸）を同一メンブラン上に配置する。代表的なサザンプロット条件を実施例9に記載する。

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【0071】

ローソニア・イントラセルラリス由来の核酸へのハイブリダイゼーションがローソニア・イントラセルラリス以外の生物由来の核酸へのハイブリダイゼーションより少なくとも5倍（例えば、少なくとも6倍、7倍、8倍、9倍、10倍、20倍、50倍または100倍）大きい場合には、核酸分子は、ローソニア・イントラセルラリス核酸にはハイブリダイズするがローソニア・イントラセルラリス以外の生物からの核酸にはハイブリダイズしないとみなされる。ハイブリダイゼーションの量は、例えばホスホルイメージャー（PhosphorImager）またはデンストメーター（Densitometer）（Molecular Dynamics, Sunnyvale, CA）を使用して、直接的にメンブラン上で又はオートラジオグラフから定量することができる。本発明の有用なプライマーおよびプローブには、ローソニア・イントラセルラリス以外の生物の核酸（ただし、該核酸は典型的には関連試験動物に存在しない）に、それぞれアニーリングおよびハイブリダイズするプライマーおよびプローブが含まれると理解されうる。例えば、ある特定のプライマーまたはプローブがヒト核酸にそれぞれアニーリングまたはハイブリダイズするという事実は、反芻動物におけるマイコバクテリウム・パラツベルクローシス（*Mycobacterium paratuberculosis*）の存在または非存在を検出するためのそのプライマーまたはプローブの価値を減少させるものではない。なぜなら、反芻動物が、典型的には、ヒト核酸で汚染されることはないからである。

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【0072】

また、本発明により提供される抗ローソニア・イントラセルラリス特異的抗体は、生物学的サンプル中のローソニア・イントラセルラリス特異的ポリペプチドの存在または非存在を検出するための薬剤として使用することが可能である。ローソニア・イントラセルラリス特異的ポリペプチドの存在は該サンプル中のローソニア・イントラセルラリスの存在を示す。ローソニア・イントラセルラリス特異的ポリペプチドを検出するための方法には、酵素結合イムノソルベントアッセイ（ELISA）、ウエスタンプロット、免疫沈降および免疫蛍光が含まれる。本発明の抗体はポリクローナル抗体またはモノクローナル抗体であることが可能であり、通常は、検出できるよう標識されている。ローソニア・イントラセルラリス特異的ポリペプチドに対する特異的結合親和性を有する抗体は、本明細書に記載の方法を用いて生成させることが可能である。該抗体は、当技術分野において公知の方法（例えば、Leahyら、1992、BioTechniques、13:738-743を参照されたい）を用いてマイクロタイタープレートのような固相支持体に結合されうる。ローソニア・イントラセルラリスの存在下では、抗体-ポリペプチド複合体が形成される。

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【0073】

また、本発明のローソニア・イントラセルラリス特異的ポリペプチドは、生物学的サンプル中の抗ローソニア・イントラセルラリス特異的抗体の存在または非存在を検出するための薬剤として使用することが可能である。サンプル中の抗ローソニア・イントラセルラリス特異的抗体の存在は、該サンプルの入手源動物がローソニア・イントラセルラリスに対する免疫応答を惹起したことを示す。ローソニア・イントラセルラリスのその宿主動物における病因論を考えると、検出可能なレベルの抗ローソニア・イントラセルラリス特異的抗体を有する動物はローソニア・イントラセルラリスにおそらく感染している。あるいは、抗ローソニア・イントラセルラリス特異的抗体に関して陽性である動物は、以前にローソニア・イントラセルラリスにさらされた後の感染を阻止した可能性があり、あるいは母体由来抗ローソニア・イントラセルラリス特異的抗体を有する可能性がある。生物学的サンプル中の抗ローソニア・イントラセルラリス特異的抗体を検出するための方法には、ELISA、ウエスタンブロット、免疫沈降および免疫蛍光が含まれる。ローソニア・イントラセルラリス特異的ポリペプチドは、公知方法（Leahyら、前掲）によりマイクロタイタープレートのような固相支持体に結合せらる。ローソニア・イントラセルラリスの存在下では、ポリペプチド-抗体複合体が形成される。

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【0074】

増幅産物、ハイブリダイゼーション複合体、抗体-ポリペプチド複合体またはポリペプチド-抗体複合体の検出は、通常、それぞれの薬剤を検出できるよう標識することにより達成される。薬剤（例えば、オリゴヌクレオチド、ポリペプチドまたは抗体）に関する「標識」なる語は、検出可能な物質を該薬剤にカップリング（すなわち、物理的に連結）することによる該薬剤の直接的な標識、および検出可能な物質で直接的に標識されている別の試薬との反応性による該薬剤の間接的な標識を含むと意図される。検出可能な物質には、種々の酵素、補欠分子族、蛍光性物質、発光性物質、生物発光性物質および放射性物質が含まれる。適当な酵素の具体例には、ホースラディッシュペルオキシダーゼ、アルカリホスファターゼ、ガラクトシダーゼまたはアセチルコリンエステラーゼが含まれる。適当な補欠分子族の具体例には、ストレプトアビジン/ビオチンおよびアビジン/ビオチンが含まれる。適当な蛍光性物質の具体例には、ウンベリフェロン、フルオレセイン、フルオレセインイソチオシアナート、ローダミン、ジクロロトリアジニルアミンフルオレセイン、ダンシルクロリドまたはフィコエリトリンが含まれる。発光性物質の一例にはルミノールが含まれる。生物発光性物質の具体例には、ルシフェラーゼ、ルシフェリンおよびエクオリンが含まれる。適当な放射性物質の具体例には、 ^{125}I 、 ^{131}I 、 ^{35}S または ^3H が含まれる。間接的な標識の具体例には、適当な薬剤（例えば、一次抗体）を検出するための、蛍光標識された二次抗体の使用、または蛍光標識されたストレプトアビジンで検出されるようなビオチンでの薬剤の末端標識が含まれる。

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【0075】

もう1つの実施形態においては、本方法は更に、ローソニア・イントラセルラリスに感染していることが判明している動物（陽性対照）および未感染（陰性対照）動物から生物学的サンプルを得、ローソニア・イントラセルラリス特異的核酸もしくはポリペプチドまたは抗ローソニア・イントラセルラリス特異的抗体を検出する薬剤と該対照サンプルとを接触させて、該サンプル中のローソニア・イントラセルラリス特異的核酸もしくはポリペプチドまたは抗ローソニア・イントラセルラリス特異的抗体の存在または非存在を判定することを含む。該対照サンプル中のローソニア・イントラセルラリス特異的核酸もしくはポリペプチドまたは抗ローソニア・イントラセルラリス特異的抗体の存在または非存在は、陽性対照サンプルおよび陰性対照サンプル中のローソニア・イントラセルラリスの存在および非存在とそれぞれ相関するはずである。

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【0076】

ローソニア・イントラセルラリス感染の予防方法

1つの態様においては、本発明は、動物におけるローソニア・イントラセルラリスによる感染に関連した疾患または状態（例えば、増殖性腸疾患）の予防方法であって、ローソ

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ニア・イントラセルラリス感染に対して該動物を免疫する化合物を該動物に投与することによる予防方法を提供する。ローソニア・イントラセルラリス感染に特徴的な症状の出現前に、ローソニア・イントラセルラリス感染のリスクを有する動物に該化合物を投与して、ローソニア・イントラセルラリス感染を予防し又はその進行を遅延させることが可能である。

【0077】

1つの実施形態においては、動物を免疫する化合物はローソニア・イントラセルラリス特異的ポリペプチドでありうる。代表的なローソニア・イントラセルラリス特異的ポリペプチドの配列は本明細書に開示されており（例えば、配列番号63～124）、本明細書に記載の方法を用いて製造されうる。ローソニア・イントラセルラリス特異的ポリペプチドは融合ポリペプチドであることが可能であり、例えば、免疫グロブリンファミリーのメンバーから誘導された配列にローソニア・イントラセルラリス特異的ポリペプチドの全部または一部が融合したローソニア・イントラセルラリス特異的ポリペプチド-免疫グロブリン融合ポリペプチドでありうる。本発明のローソニア・イントラセルラリス特異的ポリペプチドまたは融合ポリペプチドは、動物において抗ローソニア・イントラセルラリス特異的抗体を惹起して該動物を免疫するための免疫原として使用することが可能である。

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【0078】

もう1つの実施形態においては、動物を免疫する化合物はローソニア・イントラセルラリス特異的核酸分子でありうる。動物を免疫するために使用するローソニア・イントラセルラリス特異的核酸分子には、配列番号1～62または131～8727に示す配列を有するローソニア・イントラセルラリス特異的核酸分子のうち1つが含まれうる。ローソニア・イントラセルラリス特異的核酸コード配列（例えば、完全長のものなど）を適当な発現ベクター内に導入して、該発現ベクターの適当な発現に際して、ローソニア・イントラセルラリス特異的ポリペプチドまたは融合ポリペプチドが動物において生成されるようにすることが可能である。動物におけるローソニア・イントラセルラリス特異的核酸分子の発現およびローソニア・イントラセルラリス特異的ポリペプチドの生成は、該動物において免疫応答を惹起し、該動物を免疫する。

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【0079】

本発明の免疫原性組成物において使用しうる化合物（例えば、ローソニア・イントラセルラリス特異的核酸分子またはローソニア・イントラセルラリス特異的ポリペプチド）を、投与に適した医薬組成物中に含有させることが可能である。そのような組成物は、典型的には、該核酸分子またはポリペプチドと製薬上許容される担体とを含む。本明細書中で用いる「製薬上許容される担体」は、医薬投与に適した任意のあらゆる溶媒、分散媒、コーティング、抗細菌および抗真菌剤、等張および吸収遅延剤などを含むと意図される。薬学的に活性な物質のためのそのような媒体および作用剤の使用は当技術分野において良く知られている。いずれかの通常の媒体または作用剤が該活性化合物に不適合である場合を除き、該組成物中におけるその使用が意図される。補助活性化合物も該組成物中に含有させることが可能である。

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【0080】

本発明の医薬組成物は、その意図される投与経路に適するように製剤化される。投与経路の具体例には、非経口、例えば静脈内、皮内、皮下、経口（例えば、経口摂取または吸入）、経皮（局所）、経粘膜および直腸投与が含まれる。非経口、皮内または皮下投与に使用する溶液または懸濁液は以下の成分を含みうる：無菌希釈剤、例えば注射用水、塩溶液（例えば、リン酸緩衝食塩水（PBS））、不揮発性油、ポリオール（例えば、グリセロール、プロピレングリコールおよび液体ポリエチレングリコールなど）、グリセリンまたは他の合成溶媒；抗細菌および抗真菌剤、例えばパラベン、クロロブタノール、フェノール、アスコルビン酸、チメロサルなど；抗酸化剤、例えばアスコルビン酸または亜硫酸水素ナトリウム；キレート化剤、例えばエチレンジアミン四酢酸；バッファー、例えば酢酸塩、クエン酸塩またはリン酸塩、ならびに等張性の調節のための物質、例えば塩化ナトリウムまたはデキストロース。適当な流動性は、例えば、レシチンのようなコーティング

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の使用、分散液の場合には必要粒径の維持、および界面活性剤の使用により維持されうる。多くの場合、等張化剤、例えば糖、多価アルコール、例えばマンニトールまたはソルビトール、および塩化ナトリウムを該組成物中に含有させることが好ましい。注射用組成物の持続的投与は、吸収を遅延させる物質を含有させることにより達成されうる。そのような物質には、例えばモノステアリン酸アルミニウムおよびゼラチンが含まれる。非経口製剤は、ガラス製またはプラスチック製のアンプル、使い捨てシリンジまたは多用量バイアル内に封入することが可能である。

【0081】

経口組成物は、一般には、不活性希釈剤または可食性担体を含む。経口組成物は液体であることが可能であり、あるいはゼラチンカプセル内に封入され又は錠剤に圧縮されうる。薬学的に許容される結合剤および/または補助物質を経口組成物の一部として含有させることが可能である。錠剤、丸剤、カプセル剤、トローチ剤などは以下の成分または同様の性質の化合物のいずれかを含有しうる：結合剤、例えば微晶質セルロース、ガムトラガカントまたはゼラチン；賦形剤、例えばデンプンまたはラクトース；崩壊剤、例えばアルギン酸、プリモゲル (Primogel)、コーンスターチ；滑沢剤、例えばステアリン酸マグネシウムまたはステロート (Sterotes)；流動促進剤 (glidant)、例えばコロイド性二酸化ケイ素；甘味料、例えばスクロースまたはサッカリン；または香味剤、例えばハッカ、サリチル酸メチルまたはオレンジ香料。経粘膜投与は、鼻腔内噴霧剤または坐剤を使用することにより達成されうる。経皮投与には、活性化化合物を、当技術分野において一般に公知である軟膏剤、ロウ剤 (salve)、ゲル剤またはクリーム剤に製剤化する。

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【0082】

投与の容易さ及び投与の均一性のために、経口または非経口組成物を投与単位剤形に製剤化することが特に有利である。本明細書中で用いる投与単位剤形は、治療すべき動物への単位投与として適した物理的に分離した単位を意味し、各単位は、所望の治療効果が得られるように算出された所定量の活性化化合物と、必要な医薬用担体とを含有する。本発明の投与単位剤形は、動物を免疫するのに必要な化合物の量に左右される。動物を免疫するのに必要な化合物の量は1回量または多用量単位として製剤化されうる。動物の免疫は1回の投与または反復投与を要しうる。

【0083】

ポリペプチドワクチンの場合には、用量は典型的には、約0.1mg/kg～約100mg/kg(体重) (一般には、約0.5mg/kg～約5mg/kg)である。ポリペプチドを安定化し、取り込みおよび組織浸透を促進するために、脂質化 (Cruikshankら, 1997, J. Acquired Immune Deficiency Syndromes and Human Retrovirology, 14:193) のような修飾を用いることが可能である。核酸ワクチンの場合には、投与用量は発現ベクターの発現レベルに左右される。好ましくは、約0.1mg/kg～約100mg/kg(体重)のローソニア・イントラセルラリス特異的ポリペプチドの量を与えるベクターの量を動物に投与する。

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【0084】

本発明の製造物品

本発明は、生物学的サンプル(試験サンプル)中のローソニア・イントラセルラリス特異的核酸もしくはポリペプチドまたは抗ローソニア・イントラセルラリス特異的抗体の存在を検出するための製造物品(例えば、キット)を包含する。そのようなキットは、動物がローソニア・イントラセルラリスにさらされたことがあるか又は感染しているかどうかを判定するために使用することができる。例えば、本発明のキットは、生物学的サンプル中のローソニア・イントラセルラリス特異的核酸もしくはポリペプチドまたは抗ローソニア・イントラセルラリス特異的抗体の存在を検出しうる薬剤(例えば、それぞれローソニア・イントラセルラリスオリゴヌクレオチド、抗ローソニア・イントラセルラリス特異的抗体またはローソニア・イントラセルラリス特異的ポリペプチド)を含みうる。

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【0085】

ローソニア・イントラセルラリス特異的ポリペプチドを検出するための、抗体に基づくキットの場合には、該キットは、例えば、ローソニア・イントラセルラリス特異的ポリペ

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プチドに対する特異的結合親和性を有する第1抗体（例えば、固相支持体に結合しているもの）、および場合によっては、ローソニア・イントラセルラリス特異的ポリペプチドに又は該第1抗体に結合し、検出可能な様式で標識されている第2抗体を含みうる。ローソニア・イントラセルラリス特異的核酸を検出するための、オリゴヌクレオチドに基づくキットの場合には、該キットは、例えば、1以上のオリゴヌクレオチドを含みうる。例えば、本発明のキットは、ローソニア・イントラセルラリス特異的核酸分子にハイブリダイズする検出できるよう標識されたオリゴヌクレオチドプローブ、またはローソニア・イントラセルラリス特異的核酸分子を増幅するためのオリゴヌクレオチドプライマーのペアを含みうる。本発明のキット内で提供されるそのようなオリゴヌクレオチドは、検出できるよう標識されていることが可能であり、あるいは検出できるようオリゴヌクレオチドを標識するために必要な成分が該キット内で提供されうる。生物学的サンプル中の抗ローソニア・イントラセルラリス特異的抗体を検出するための、ポリペプチドに基づくキットは、本明細書に開示されているローソニア・イントラセルラリス特異的ポリペプチド（例えば、固相支持体に結合しているもの）、および場合によっては、ローソニア・イントラセルラリス特異的ポリペプチドに又は抗ローソニア・イントラセルラリス特異的抗体に結合し、検出できるよう標識されている抗体を含有しうる。

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【0086】

キットは、更なる試薬（例えば、バッファー、補因子または酵素）、ならびに該薬剤を検出するための試薬（例えば、標識または他の検出分子）、ならびにローソニア・イントラセルラリス特異的核酸もしくはポリペプチドまたは抗ローソニア・イントラセルラリス特異的抗体の存在または非存在を検出するためのそのような薬剤および試薬の使用説明書を含みうる。該キットはまた、アッセイされ該生物学的サンプルと比較されうる対照サンプルまたは一連の対照サンプルを含有しうる。該キットの各成分は、通常、個々の容器内に封入され、それらの種々の容器のすべてが、単一のパッケージ内に配置される。

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【0087】

本発明はまた、動物におけるローソニア・イントラセルラリス感染を予防するための製造物品（例えば、ワクチン）を包含する。本発明の製造物品は、ローソニア・イントラセルラリス特異的核酸分子またはローソニア・イントラセルラリス特異的ポリペプチドを含有する医薬組成物を含みうる。そのような核酸分子またはポリペプチドは、本明細書に記載のとおり投与用に製剤化され、意図される投与経路に適するように包装される。本発明の医薬組成物は更に、投与のための説明書を含みうる。

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【0088】

本発明は以下の実施例により更に詳しく説明されるが、これらの実施例は特許請求の範囲に記載されている本発明の範囲を限定するものではない。

【実施例】

【0089】

実施例1 ローソニア・イントラセルラリス分離株

ローソニア・イントラセルラリス (*L. intracellularis*) VPB4は、米国における増殖性出血性腸疾患 (PE) の突発的発生中にブタから回収された細菌の分離株の一例である。この分離株は、実験室の細胞培養物内で比較的高い力価まで良く増殖しうる。ローソニア・イントラセルラリス (*L. intracellularis*) VPB4のバイアルを、0.218 M スクロース、0.0038 M KH_2PO_4 、0.0072 M K_2HPO_4 および0.0049 M グルタミン酸カリウム と 10% ウシ胎仔血清 (FBS; Sigma, St. Louis, MO) を含有するスクロース-グルタミン酸カリウム (SPG; pH 7.0) 溶液内に -80 で保存した。

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【0090】

実施例2 ローソニア・イントラセルラリスの培養

抗生物質の非存在下に1% L-グルタミン (Gibco Invitrogen Corporation) および5% FBSを含有するダルベッコ変法イーグル培地 (DMEM; Gibco Invitrogen Corporation, Carlsbad, CA) 内で、5% CO_2 中、37 で、マウス繊維芽細胞様McCoy細胞 (ATCC CRL 1696) を増殖させた。簡潔に説明すると、McCoy細胞をトリプシン処理し、 5×10^4 細胞を 175 cm^2

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フラスコ内に播き、5% CO₂中、37 で一晩インキュベートした。37 で急速に解凍した後、約10⁴個のローソニア・イントラセルラリス (*L. intracellularis*) VPB4生物を、1% L-グルタミンおよび7% FBSを含有するDMEMで希釈し、ついで、約30%コンフルエントのMcCoy細胞の単層を含有するこの175 cm²フラスコに加えた。ついで該フラスコを、500mm Hgまで減圧し医薬品級の水素で再び満たした容器内に配置し、ついで8% O₂、8.8% CO₂ および83.2% N₂ の微好気雰囲気中、37 でインキュベートした。感染の2日後および4日後に培地を再び交換し、継代のために、接種の7日後に該感染物を回収した。各継代の前に、該感染フラスコからMcCoy細胞単層の小領域を擦り取り、それらの細胞を清潔なガラススライドに移し、それらをアセトン固定し、ローソニア・イントラセルラリス (*L. intracellularis*) に特異的なモノクローナル抗体 (McOristら, 1987, Vet. Rec., 121:421-422) を使用する間接的免疫ペルオキシダーゼにより染色することにより、感染のレベルを評価した。

【0091】

感染細胞の継代は、0.1% 塩化カリウムで処理し次いで細胞スクレーパー (scraper) で該フラスコから該細胞を取り出すことにより行った。擦り取った細胞を、20ゲージの針に6回通過させることにより破裂させ、それを使用して175 cm²フラスコ内の新鮮なMcCoy細胞に感染させた。

【0092】

実施例3 ローソニア・イントラセルラリスの精製

ローソニア・イントラセルラリス (*L. intracellularis*) に高度に感染したMcCoy細胞の単層を回収し、上述と同じ技術を用いて該感染を175 cm²フラスコ内に毎週継代した。該単層が100%感染したら、ローソニア・イントラセルラリス (*L. intracellularis*) 感染McCoy単層を含有するフラスコの数毎週、3週間にわたり3倍にし、その時点で、上清中に存在する細菌を合わせ、150×gで20分間遠心分離して、該細胞培養上清中に存在するMcCoy細胞をペレット化した。ついで該細菌細胞を3,400×gで30分間遠心分離し、得られたローソニア・イントラセルラリス (*L. intracellularis*) ペレットをPBSで3回洗浄し、4 で保存した。

【0093】

実施例4 ローソニア・イントラセルラリスのランダムな小インサートライブラリーの構築

ローソニア・イントラセルラリス (*L. intracellularis*) 細胞をTESバッファー (50 mM Tris, 250 mM EDTA, 200 mM NaCl, pH 7.6) に再懸濁させた。該懸濁液をTESバッファー中の等容量の1.3% ローメルト調製グレードアガロース (Bio-Rad Laboratories, Richmond, CA) と混合し、プラグモールド (plug mold) に分注した。リゾチームおよびプロテイナーゼKでの後続の処理を、既に記載されているとおりに行い (Maslowら, 1993, Diagnostic Molecular Microbiology, American Society of Microbiology, 563-72)、アガロースプラグ中のDNAをSau3A1 (New England Biolabs, Beverly, MA) で消化し、ゲル電気泳動により分離した。0.8~2.0kbの範囲内の得られた断片をQIAEX IIゲル抽出キット (Qiagen, Valencia, CA) でゲル精製し、ついで、BamHIで制限処理され子ウシ腸アルカリホスファターゼ処理済みpUC18ベクター (Pharmacia, Piscataway, NJ) 内にクローニングした。得られたライブラリーは、> 90%が組換え体であり、50,000個を超える独立した組換えクローンを含有していた。

【0094】

実施例5 ローソニア・イントラセルラリスの配列決定

配列決定のための鋳型源として、前記の小インサート全ゲノムライブラリーを使用した。ミネソタ大学のAdvanced Genetic Analysis Center (AGAC) において、M13リバーズおよびフォワードプライマーならびにABIモデル377自動DNAシーケンサー (Applied Biosystems, Foster City, CA) を使用して、約300個の組換えクローンを配列決定した。配列データの解析および編集はパブリック・ドメインのソフトウェア (phred, phrap, and consed; <http://www.genome.washington.edu/UWGC/protocols/>) で行った。類似性検索は、

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非重複GenBank、SwissProt、OWL、TrEMBL、PIRおよびNRLデータベースを含むローカルペプチドデータベースを使用するBLASTnおよびBLASTx解析で行った。整列させたヌクレオチド配列を視覚的に検査し、類似性検索に基づいて該遺伝子に既知の機能または推定上の機能を割り当てた。

【0095】

実施例6 ローソニア・イントラセルラリスの電子顕微鏡検査

透過型電子顕微鏡検査によるローソニア・イントラセルラリス (*L. intracellularis*) の検査のために、7日目細胞培養上清からの細菌を3400×gで30分間の遠心分離によりペレット化し、PBSで1回洗浄した。細菌をFormvarコート化銅グリッド (Electron Microscopy Sciences, Fort Washington, PA) 上に5分間吸着させ、1滴の0.5% グルタルアルデヒド上で2分間固定した。ついで該グリッドを蒸留水で3回洗浄し (各洗浄は10秒間)、3% ホスホタングステン酸 (pH 6.8) でネガティブ染色し、透過型電子顕微鏡 (Jeol 1200EX, Jeol USA, Inc., Peabody, MA) で検査した。

【0096】

実施例7 ヌクレオチド配列の登録番号

本研究において記載されている多数のローソニア・イントラセルラリス (*L. intracellularis*) 遺伝子のヌクレオチド配列はGenBank/EMBLヌクレオチド配列データライブラリーに寄託され、登録番号BH795457~BH795518が割り当てられた。

【0097】

実施例8 同定された代表的な配列

合計498の配列決定反応を最初に完了したが、その際、配列決定反応あたり平均632塩基であった。これは、282,699bpのユニーク (非重複) ローソニア・イントラセルラリス (*L. intracellularis*) ゲノムDNA配列またはこの病原体の全ゲノム配列の約15%に相当する、386,616bpを超える合計配列の生成をもたらした (表6)。498個のローソニア・イントラセルラリス (*L. intracellularis*) 配列と、SwissProtからの配列またはGenBankの微生物データベースに寄託されている他の配列との比較は、ほんの少数の配列 (n=82; 17%) が該パブリック配列データベース内にオーソログを有していたことを示している。これらのオーソログは、例えばアクイフレックス (*Aquiflex*)、バシラス (*Bacillus*)、エシェリキア (*Escherichia*)、ヘモフィルス (*Hemophilus*)、ヘリコバクター (*Helicobacter*)、マイコバクテリウム (*Mycobacterium*)、シュードモナス (*Pseudomonas*)、シネコシステイス (*Synechocystis*)、トレポネーマ (*Treponema*)、デスルホビブリオ (*Desulfovibrio*) などの属のものであった。推定機能、登録番号、および最も近いオーソログが由来する種を含む、該データベース内の全オーソログの完全な一覧を表7に示す。

【0098】

表6. 小インサート全ゲノム *L. intracellularis* ライブラリーのランダム配列決定の概要

合計配列決定反応	498
平均塩基数/配列決定反応	632
得られた塩基数の合計	386,616
DNAのユニーク塩基数の合計	282,699
公知タンパク質に対するマッチの数 ^a	82 (17%)

^a 有意な相同性に関する閾値; 最小確率 < 1.0e-10 (非重複 GenBank、SwissProt、OWL、TrEMBL、PIR および NRL 上で BLASTX を使用)。

【0099】

表 7. *L. intracellularis* 配列とパブリックデータベース内の配列との間の配列類似性^a

推定機能	遺伝子	登録番号	種	P (n)	
I 細胞エンベロップ及び細胞過程					
I. 1 細胞構造					
桿菌形状決定タンパク質	rodA	SWP 083514	<i>Treponema pallidum</i>	2.00E-23	
ペニシリン結合タンパク質	pbpA1	PIR C71661	<i>Rickettsia prowazekii</i>	3.00E-18	
ペニシリン結合タンパク質 3		PIR S54872	<i>Pseudomonas aeruginosa</i>	1.00E-14	10
ペニシリン結合タンパク質 1A	pbpA	SWP P02918	<i>Escherichia coli</i>	1.00E-20	
防御表面抗原 D15		EMB 025369	<i>Helicobacter pylori</i>	3.00E-14	
膜タンパク質		PIR H70597	<i>Mycobacterium tuberculosis</i>	4.00E-13	
I. 2 輸送/結合タンパク質及びリポタンパク質					
膜結合 Yop タンパク質	pcrD	PIR 030536	<i>Pseudomonas aeruginosa</i>	3.00E-33	20
GTP 結合タンパク質	lepA	SWP P74751	<i>Synechocystis sp.</i>	4.00E-41	
垂テルル酸塩抵抗性タンパク質	tehA	SWP P25396	<i>Escherichia coli</i>	2.00E-11	
ABC-トランスポーター	tycD	PIR T31077	<i>Brevibacillus brevis</i>	1.00E-13	
PSCJ 前駆体	pscJ	EMB P95438	<i>Pseudomonas aeruginosa</i>	5.00E-13	
I. 3 膜生体エネルギー論 (電子伝達系)					
タンパク質 ATP アーゼ β サブユニット		EMB Q46585	<i>Desulfovibrio vulgaris</i>	1.00E-37	30
I. 4 運動性及び走化性					
鞭毛フック基部タンパク質	flgG	PIR C70372	<i>Aquifex aeolicus</i>	3.00E-24	
鞭毛特異的 ATP シンターゼ		EMB 006682	<i>Treponema denticola</i>	3.00E-28	
鞭毛フック随伴タンパク質	flgK	PIR E71297	<i>Treponema pallidum</i>	3.00E-11	
I. 5 タンパク質分泌					
プレタンパク質トランスロカーゼ SECA secA サブユニット		SWP Q55709	<i>Synechocystis sp.</i>	8.00E-27	
シグナル認識粒子タンパク質		SWP P37105	<i>Bacillus subtilis</i>	9.00E-25	40
I. 6 細胞分裂					
細胞分裂タンパク質 FTSA	ftsA	SWP P47203	<i>Pseudomonas aeruginosa</i>	2.00E-11	
細胞分裂タンパク質 FTSH	ftsH	SWP P71377	<i>Haemophilus</i>	4.00E-42	

細胞分裂タンパク質 ALGI	algI	EMB 052196	influenzae Azotobacter vinelandii	9.00E-14
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II 中間代謝

II. 1 炭水化物の代謝

チオレドキシニペルオキシダーゼ	ytgI	PIR F69992	Bacillus subtilis	1.00E-26
ピルビン酸-フェレドキシン酸化還元 酵素		EMB P94692	Desulfovibrio vulgaris	4.00E-34

II. 2 アミノ酸及び関連分子の代謝

ジヒドロオロターゼ	pyrC	PIR B70959	Mycobacterium tuberculosis	3.00E-14
ポルホピリノーゲンデアミナーゼ		EMB 034090	Pseudomonas aeruginosa	2.00E-20
ウロポルフィリン-III C-メチルトラ ンスフェラーゼ		SWP P29928	Bacillus megaterium	1.00E-25
D-アラニン-D-アラニンリガーゼ	ddlB	SWP P44405	Haemophilus influenzae	6.00E-15
グルタミン酸デカルボキシラーゼ α	dceA	SWP P80063	Escherichia coli	1.00E-44

II. 3 スクレオチド及び核酸の代謝

エキソデオキシリボヌクレアーゼ V, α		PIR D71564	Chlamydia trachomatis	9.00E-16
CTP シンテターゼ	pyrG	SWP P96351	Mycobacterium tuberculosis	2.00E-22
グルタミル-tRNA アミドトランスフェ ラーゼサブユニット		PIR B70342	Aquifex aeolicus	3.00E-26
エンドヌクレアーゼ I 前駆体		SWP P25736	Escherichia coli	1.00E-17
0-シアロ糖タンパク質エンドペプチダ ーゼ		SWP 066986	Aquifex aeolicus	5.00E-22
dTDP-グルコース 4, 6-デヒドラター ゼ		PIR H69105	Methanobacterium thermoautotrophicu m	1.00E-21
チアミン-リン酸ピロホスホリラーゼ		SWP P72965	Synechocystis sp.	4.00E-16

II. 4 脂質の代謝

3-オキソアシル-(アシル-担体タンパ ク質)レダクターゼ	fabG	SWP 067610	Aquifex aeolicus	1.00E-25
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推定機能

III 情報経路

III. 1 DNA 合成

DNA トポイソメラーゼ		SWP P06612	Escherichia coli	1.00E-15
DNA ポリメラーゼ III サブユニット τ 及び γ	dnaX	SWP P43746	Haemophilus influenzae	1.00E-15

III. 2 RNA 合成

ATP 依存性 RNA ヘリカーゼ	srmB	SWP P21507	Escherichia coli	1.00E-53
DNA 依存性 RNA ポリメラーゼ, β 鎖		EMB AAF07229	Salmonella	2.00E-18

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転写抗終結タンパク質	nusG	SWP P16921	typhimurium Escherichia coli	5.00E-16	
III. 3 タンパク質合成					
50S リボソームタンパク質 L1		PIR C70466	Aquifex aeolicus	2.00E-27	
プロリル-tRNA シンテターゼ		GEN 303557	Escherichia coli	1.00E-12	
アルギニル-tRNA シンテターゼ	argS	SWP P46906	Bacillus subtilis	7.00E-11	
チロシル-tRNA シンテターゼ	tyrS	SWP P56417	Helicobacter pylori	7.00E-46	
システイン-tRNA リガーゼ		PIR D71108	Pyrococcus horikoshii	2.00E-17	10
プロリン-tRNA リガーゼ	drpA	PIR B64744	Escherichia coli	4.00E-19	
IV 他の機能					
IV. 1 非定型条件への順応					
ATP 依存性プロテアーゼ LA2		SWP P36774	Myxococcus xanthus	1.00E-29	
IV. 2 ファージ関連機能					
バクテリオファージ Mu 主頭部サブユニット		EMB AAF01112	Bacteriophage Mu	9.00E-14	20
IV. 3 その他					
CAPL タンパク質	capL	SWP P94692	Staphylococcus aureus	1.00E-30	
熱ショックタンパク質 HSLV 前駆体	hslV	SWP P39070	Bacillus subtilis	7.00E-15	
HYPF タンパク質	hypF	EMB 007039	Rhizobium leguminosarum	5.00E-17	
ルブレドキシシン様タンパク質		EMB P94698	Desulfovibrio vulgaris	4.00E-16	
V. 仮想タンパク質					
仮想タンパク質 MJ1665		PIR G64507	Methanococcus jannaschii	2.00E-17	30
仮想 29.2 KD タンパク質		SWP P37545	Bacillus subtilis	4.00E-18	
仮想 15.6 KD タンパク質		SWP Q99342	Escherichia coli	4.00E-11	
仮想 70.4 KD タンパク質		SWP P54123	Synechocystis sp.	2.00E-11	
仮想 34.6 KD タンパク質		SWP P45476	Escherichia coli	2.00E-17	
仮想 45.9 KD タンパク質		SWP P71607	Mycobacterium tuberculosis	3.00E-18	
仮想タンパク質 sir 1117		PIR S74480	Synechocystis sp.	1.00E-11	
仮想 37.1 KD タンパク質		EMB 069560	Streptomyces coelicolor	5.00E-17	
仮想 34.6 KD タンパク質		GEN P45476	Escherichia coli	4.00E-14	40
仮想タンパク質 2		PIR S60064	Corynebacterium glutamicum	1.00E-11	

^a 有意な相同性に関する閾値; 最小合計確率 $< 1.0e^{-10}$ (非重複 GenBank、SwissProt、OWL、TrEMBL、PIR および NRL 上で BLASTX を使用)。

【 0 1 0 0 】

表7から分かるとおり、ローソニア・イントラセルラリス (*L. intracellularis*) は、3つ全ての生物界 (古細菌、細菌および真核生物) からの配列に対して相同性を示す配列 50

を含有する。最も普通に見られるオーソログは、グラム陰性菌およびグラム陽性菌を含む細菌、ならびに著しく異なったレベルのG+C含量を有する細菌からのものであった。

【0101】

該ランダム配列決定アプローチは、診断、遺伝、ビルレンスまたは免疫予防の観点で興味深いローソニア・イントラセルラリス (*L. intracellularis*) 中の幾つかの配列を同定した。例えば、鞭毛の生合成および組み立てに関与するタンパク質をコードする遺伝子に相同な遺伝子が、本発明者らのローソニア・イントラセルラリス (*L. intracellularis*) ゲノムの予備スクリーニングにおいて同定されている (表7)。これらの知見は、ローソニア・イントラセルラリス (*L. intracellularis*) の幾つかの分離株が単一極鞭毛を有するという最近の観察の確認を提供するものである。これらの観察は、ローソニア・イントラセルラリス (*L. intracellularis*) が、活発な培養物中で可視化された場合に、突進するような又は一定方向の運動を示すという事実と合致し、該細菌がこの活動を達成しうる分子メカニズムを示唆している。重要なことには、鞭毛の組み立てに関与する遺伝子の領域に対応する配列と共に、ローソニア・イントラセルラリス (*L. intracellularis*) の分離株における鞭毛の同定は、ビルレンスおよび感染性におけるその役割を明らかにするための特異的試薬を開発する簡便な手段を提供するものである。鞭毛構造体が、しばしば、高度に免疫反応性であることは注目に値し、鞭毛構造体に対する抗体が細菌のオプソニン作用および殺菌を招きうることは、種々のモデル系から十分に認識されている。したがって、これらの遺伝子は免疫予防の観点からも興味深いであろう。

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【0102】

また、予備配列解析は膜結合型Yop (エルシニア (*Yersinia*) 外膜タンパク質) のローソニア・イントラセルラリス (*L. intracellularis*) ホモログを同定した。エルシニア (*Yersinia*) (エルシニア・ペスティス (*Y. pestis*)、エルシニア・シュードツベルクルーシス (*Y. pseudotuberculosis*) およびエルシニア・エンテロコリチカ (*Y. enterocolitica*)) がそれらの宿主の免疫系に抵抗する能力はYopビルロン (virulon) に依存している。この系は、真核細胞の表面に付着している細胞外細菌が細菌タンパク質を標的細胞のサイトゾル内に注入するのを可能にし、それらを無力化し又はそれらの情報伝達を混乱させうる。いくつかのYop (例えば、エフェクターYop) は、III型ターゲティングとして知られた系により、標的細胞内に直接的に注入されうる。他のものは細胞外環境に排出されたり、あるいは細菌膜に会合したままとなりうる。後者の一例はLcrVであり、これは、ペスト桿菌エルシニア・ペスティス (*Y. pestis*) の防御抗原として1950年代中頃に記載された41kDaの分泌タンパク質である。LcrVは、ビルレンスに必須であることが知られている主要Yopの1つである。ビルロンにおけるその厳密な役割は明らかでないが、それは、その他のものが標的細胞膜を越えて移行するのに必要である。それは次に標的細胞膜内に孔様構造体を形成することを助ける。LcrVのホモログは、侵入または病原性のためにこのIII型分泌メカニズムを用いる多数の細菌病原体 (サルモネラ属細菌種 (*Salmonella* sp.) およびシュードモナス・エルジノーサ (*Pseudomonas aeruginosa*) を含む) において見出されている。興味深いことに、ローソニア・イントラセルラリス (*L. intracellularis*) の予備配列解析はLcrVのホモログ (シュードモナス・エルジノーサ (*P. aeruginosa*) タンパク質PcrDのオーソログ) を同定しており、このことは、ローソニア・イントラセルラリス (*L. intracellularis*) がおそらくIII型分泌系を含有していることを強く示唆している。

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【0103】

ワクチンおよび免疫診断試薬の開発において潜在的に重要な第3の遺伝子は、ヘリコバクター・ピロリ (*H. pylori*) における主要膜タンパク質D15 (Oma87とも称される) のローソニア・イントラセルラリス (*L. intracellularis*) ホモログである。D15/Oma87タンパク質ファミリーの機能は明らかではない。しかし、D15/Oma87はホモログを有し、ヘモフィルス・インフルエンゼ (*H. influenzae*)、パスツレラ・ムルトシダ (*P. multocida*) およびシゲラ・フレクスネリ (*Shigella flexneri*) の分離株における主要防御抗原の1つであることが示されている。そのような多様な種において相同遺伝子が保存されている

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ことは、この遺伝子が重要であることを示唆している。ヘモフィルス・インフルエンゼ (*H. influenzae*) 感染から回復した患者からの9つの血清中8つの血清において抗D15抗体が検出された。したがって、D15および他の新たに同定される標的は、ワクチン、診断試験または薬品開発の観点から潜在的に興味深いであろう。

【0104】

実施例9 DNAハイブリダイゼーション

当技術分野において公知の方法(例えば、*Diagnostic Molecular Microbiology: Principles and Applications*, Persingら(編), 1993, American Society for Microbiology, Washington D.Cを参照されたい)を用いて、ローソニア・イントラセルラリス (*L. intracellularis*) の幾つかの分離株からゲノムDNAを抽出した。簡潔に説明すると、8,000rpmで15分間の遠心分離によりローソニア (*Lawsonia*) を集め、1mg/ml Qiagen RNアーゼAを含有する11mlのQiagenバッファーB1にペレットを再懸濁させた。細胞壁脂質を消化するために、リパーゼ(450,000単位, Sigmaカタログ番号L4384)を加えた。37°Cで2時間のインキュベーションの後、20mgのリゾチームを加え、インキュベーションを37°Cで更に3時間継続した。500µlのQiagenプロテイナーゼK(20mg/ml)を加え、37°Cで1.5時間インキュベートした。QiagenバッファーB2(4ml)を加え、スラリーを混合し、50°Cで16時間インキュベートする。残りの細胞残渣を10,000rpmで20分間の遠心分離により除去した。上清を、予め平衡化されたQiagen 500/Gゲノムチップ(genomic tip)上に注いだ。製造業者の指示に従い、そのローディングされたカラムを洗浄し処理した。

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【0105】

PstIで制限処理されたDNA断片を1%アガロースゲル上で分離した。Sambrookら(1989, *Molecular Cloning: A Laboratory Manual*, Second Ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York)により記載されているとおりに、DNA含有ゲルを脱プリン化し、変性させ、中和した。DNAを毛管作用によりBrightStar-Plusメンブラン(Ambion, Austin, TX)に移し、[$^{-32}$ P]dCTP(ICN, Cost Mesa, CA)を使用してランダムプライミングによりプローブを標識した。AUTOBLOTハイブリダイゼーションオープン(Bellco Biotechnology, Vineland, NJ)内のExpressHybハイブリダイゼーション溶液(Clontech, Palo Alto, CA)中、45°Cで16時間にわたりハイブリダイゼーションを行った。以下のとおりに、ストリンジェンシーが増加する溶液でプローブ化プロットを順次洗浄した: 2×SSC、0.1% SDS中、室温で2回の洗浄; 0.2×SSC、0.1% SDS中、室温で2回の洗浄; および0.16×SSC、0.1% SDS中、室温で2回の洗浄。Kodak増感スクリーンと共にBioMax MRフィルム(Kodak, Rochester, NY)を使用し、室温で16時間未満のオートラジオグラフィにより、検出を行った。

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【0106】

実施例10 PCR増幅

タンデム・リピート・ファインダー(Tandem Repeat Finder)ソフトウェアを使用して、可変数異縦列反復(VNTR)配列の存在に関してローソニア・イントラセルラリス (*L. intracellularis*) ゲノムを分析した。この分析から、4つの推定VNTR領域が見出された。プライマー3(Primer 3)ソフトウェアを使用して、これらの領域の上流および下流の特異的プライマー配列を設計した。増幅反応において使用するプライマーの配列および位置を表8に示す。

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【0107】

表 8

プラスミド#	増幅位置	反復 (コピー数)	左プライマー	右プライマー
1	配列番号 8736 の 18,951-18,988	ATA (12)	5' -TTCTCA CAT TTT CAA ATC TTT TCC-3' (配列番号 8728)	5' -CCC CAC CTT TGT GGT TAC TT-3' (配列番号 8729)
3	配列番号 8738 の 194,585-194,619	CA (17)	5' -TTG ACG TTA TCT TTA GCC TAC CA-3' (配列番号 8730)	5' -TTG TAT ATT CAA AAA GGT TCA ATG TAA-3' (配列番号 8731)
3	配列番号 8738 の 130,523-130,562	ATA (13)	5' -CAA CAC AAA ATA TCC CCT TGG-3' (配列番号 8732)	5' -TCA TGC ATC GCA TCT TTT AAT TT-3' (配列番号 8733)
3	配列番号 8738 の 164,830-164,863	CA (19)	5' -GGT TAC TAT TCT TAG GTT AAT GCC AGA-3' (配列番号 8734)	5' -TGT GCC TGT CTT TCT TGT AGT GA-3' (配列番号 8735)

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【 0 1 0 8 】

ローソニア・イントラセルラリス (*L. intracellularis*) 特異的核酸分子のPCR増幅を以下のとおりに行った。2.5 μ lの10xバッファー、2.0 μ lの10mM dNTP混合物、1.0 μ lの25mM MgCl₂、1.0 μ lのローソニア・イントラセルラリス (*L. intracellularis*) DNA、3.0 μ lの5 μ M 左プライマーストック、3.0 μ lの5 μ M 右プライマーストック、0.15 μ lのポリメラーゼおよび12.85 μ lのH₂Oを含有するPCR反応混合物を調製した。PCR反応条件は以下のとおりであった：94 で5分間の変性工程、ついで94 で30秒間、57 で30秒間および72 で1分間の30サイクル。30サイクルの終了時に、該サンプルを72 で10分間インキュベートし、ついで反応を4 で維持した。PCR増幅には、一般に、Taq DNAポリメラーゼおよび対応バッファー (Roche Molecular Biochemicals, Indianapolis, IN) を使用した。

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【 0 1 0 9 】

実施例 1 1 大腸菌内でのローソニア・イントラセルラリス遺伝子の発現

新規ローソニア・イントラセルラリス (*L. intracellularis*) 遺伝子のコード化予想を確認し、それらの免疫原性を評価するために、コード配列をPCRによりゲノムから増幅し、pMAL-c2大腸菌 (*E. coli*) 発現プラスミド内にクローニングした。アミラーゼ樹脂カラム上でのアフィニティー精製を可能にするために、これらのタンパク質を大腸菌 (*E. coli*) マルトース結合タンパク質 (MBP) との融合体として発現させた。各融合タンパク質を同定する、MBPに結合するモノクローナル抗体で免疫プロットをプローブした。ローソニア・イントラセルラリス (*L. intracellularis*) の熱不活化調製物で免疫されたウサギからのポリクローナル血清で二重免疫プロットをプローブした。ローソニア・イントラセルラリス (*L. intracellularis*) 特異的ポリペプチドを含有する融合タンパク質のみが該ウサギ血清により検出されるはずであり、このことは、該ポリペプチドがローソニア・イントラセルラリス (*L. intracellularis*) により生成されることを示す。MBPタンパク質は該ポリクローナル血清によっては検出されなかった。

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【 0 1 1 0 】

実施例 1 2 ワクチンの製造

ローソニア・イントラセルラリス (*L. intracellularis*) 特異的DNA断片内のコード配列を大腸菌 (*E. coli*) 発現ベクター (例えば、6xHisタグをコードする配列を含有するもの) 内にクローニングする。異種発現されたローソニア・イントラセルラリス (*L. intracellularis*) タンパク質はポリヒスチジンタグにより大腸菌 (*E. coli*) ライセートからアフィニティー精製される。ついでこれらの精製タンパク質を感染ブタおよび対照ブタからの血清のパネルで血清学的に評価して、該タンパク質が該感染動物からの血清により

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認識されるかどうかを判定する。

【0111】

具体的には、ローソニア・イントラセルラリス (*L. intracellularis*) に特有のものとして同定されたオープンリーディングフレームをゲノムDNAから増幅し、pCRT7発現ベクター (Invitrogen) 内にクローニングし、大腸菌 (*E. coli*) DH5- 内に形質転換する。構築物のそれぞれをDNA配列解析により確認する。組換え大腸菌 (*E. coli*) ライセートをSDS-PAGE上にローディングし、それをクーマシーブルー中で染色することにより、関心のある遺伝子の発現レベルを評価する。金属イオンに対する親和性を有する、該ベクターによりコードされるポリヒスチジンタグを使用して、発現されたタンパク質を大腸菌 (*E. coli*) ライセートから精製する。TALON金属樹脂 (Clontech) を使用するカラム精製を用いる。融合体単独を陰性対照として使用する。ブタ抗血清を集めたものと該融合タンパク質との反応性の比較を、スロット・プロット装置 (BioRad) を使用して行う。組換え大腸菌 (*E. coli*) のライセートを調製用12% (w/v) ポリアクリルアミドゲル上にローディングし、ニトロセルロースに移す。ブロッキング後、これらのフィルターを該スロット・プロット装置内に配置する。それぞれ1:200に希釈された個々のブタ抗血清を個々のスロットに加える。操作の残りは、標準的な免疫プロットプロトコルを用いて行う。1:25,000に希釈されたプロテインG-ペルオキシダーゼまたは1:20,000に希釈された抗ブタIgG-ペルオキシダーゼを結合抗体の検出に使用する。

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【0112】

実施例 1 3 ローソニア・イントラセルラリス特異的ポリペプチドに対するモノクローナルおよびポリクローナル抗体の製造

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すべての発現および精製ローソニア・イントラセルラリス (*L. intracellularis*) 特異的ポリペプチドを使用して、BALB/cマウスおよびニュージーランドホワイトウサギの両方を免疫する。各場合に、標準的な免疫法を用いる。TiterMaxまたはフロイント不完全アジュバントをアジュバントとして使用する。モノクローナル抗体の生成のために、該免疫マウスからの脾リンパ球を骨髄腫細胞とハイブリダイズさせる。ELISAは、精製抗原との反応性に関して分泌ハイブリドーマをアッセイするために用いる方法である。標準的な方法を用いて、陽性ウェル中のハイブリドーマをクローニングし増殖させる。十分な力価が得られるまで単離ポリペプチドの追加免疫注射を行った後、ウサギ抗血清を集める。

【0113】

実施例 1 4 ELISAアッセイ

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動物 (例えば、ブタ) における増殖性腸疾患の検出のためのELISA試験の特異性における改善は、常に、大きな目標であった。評価すべき精製ローソニア・イントラセルラリス (*L. intracellularis*) 特異的ポリペプチドをPBS中で希釈し、96ウェルマイクロタイタープレートに加える。結合ポリペプチドを含有するプレートを、1%ゼラチンを含有するPBS中でブロッキングし、ついで、0.05% Tweenを含有するPBSで3回洗浄する。試験すべきブタ血清をPBS中で1:400に希釈し、個々のウェルに加え、標準的なELISAとして処理する。マウス抗ウシIgMまたはマウス抗ウシIgGはこれらのアッセイにおける二次抗体である。結果は、一般には、ビオチン化二次抗体の使用およびそれに続くストレプトアビジン/アルカリホスファターゼの使用および酵素検出が、標準的な直接ELISAと比較して、試験感度を (抗体価に基づいて) 8~16倍増加させうることを示している。

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【0114】

すべての評価において、特異性を評価するために既知陰性動物からのサンプルを含めることが必要である。また、他の細菌、特に他のローソニア・イントラセルラリス (*L. intracellularis*) との潜在的交差反応性が生じうるため、他のローソニア・イントラセルラリス (*L. intracellularis*) に天然で又は実験的に感染していることが知られている動物からの血清を含める。

【0115】

実施例 1 5 感染ブタ組織の免疫組織化学的診断におけるローソニア・イントラセルラリス特異的ポリペプチドに対する抗体の使用

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ローソニア・イントラセルラリス (*L. intracellularis*) を検出するために、感染動物からの組織の組織病理学的分析を用いることが可能である。しかし、これらの方法は非特異的であり、分離株間での識別をもたらさない。したがって、ローソニア・イントラセルラリス (*L. intracellularis*) 特異的ポリペプチドに対する高力価抗体を使用する組織病理学的分析により、ブタ組織であってローソニア・イントラセルラリス (*L. intracellularis*) 感染および未感染動物からのものを試験する。簡潔に説明すると、ブタからの組織サンプルを緩衝化ホルマリン中で固定し、常法により加工し、パラフィンロウ中に包埋する。6 μ m切片を通常の方法によりヘマトキシリンおよびエオシンまたはZiehl-Neelsenで染色する。追試用の未染色切片を、免疫組織化学的検査のために調製する。通常の方法 (Stabelら, 1996, *J. Vet. Diagn. Invest.*, 8:469-73) を用いて、免疫染色切片を脱パラフィン化し、再水和させ、ブロッキングする。ブロッキングされた切片を、上述研究において開発されたローソニア・イントラセルラリス (*L. intracellularis*) 特異的抗体と共にインキュベートする。一次抗体の性質に応じて、ヤギ抗ウサギピオチン化抗体またはヤギ抗マウスピオチン化抗体を加え、ついでストレプトアビジン-アルカリホスファターゼ溶液中で洗浄する。該組織を色素原およびヒストマークレッド (Histomark Red) で染色する。結果を明視野顕微鏡下で可視化する。異なる感染および未感染組織の間で染色強度を定量的に比較する。

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【0116】

実施例 16 PCR増幅によるローソニア・イントラセルラリスの検出

ローソニア・イントラセルラリス (*L. intracellularis*) 特異的核酸配列に相補的なオリゴヌクレオチドプライマーを使用するローソニア・イントラセルラリス (*L. intracellularis*) 分離株の検出および同定を、PCRにより検査した。

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【0117】

地理的および時間的に多様なローソニア・イントラセルラリス (*L. intracellularis*) 分離株 (PHE/MN1-00、VPB4、15540D、963/93、子ウマ/96およびハムスター-1) を使用して、そのゲノムのVNTR領域を増幅することにより、ローソニア・イントラセルラリス (*L. intracellularis*) の分離株における株内変異性が存在するかどうかを判定した。特定の分離株においてVNTRプロフィールが保存されており安定であるかどうかを評価するために、細胞培養下で培養する前、低および高継代細胞培養の後、ならびにブタにおける連続継代の後、分離株を試験した。また、4つの異なる増殖性腸疾患の突発的発生からの100個の糞便サンプルを、前培養無しで該糞便サンプルからゲノムDNAを抽出することにより試験した。各DNAサンプルを、4つのそれぞれのプライマーセットを使用する4つの異なるラウンドのポリメラーゼ連鎖反応 (PCR) 増幅に付した。ついで、ABI 3100自動蛍光DNAシーケンサーを使用して、PCR産物を配列決定した。各遺伝子座の縦列反復配列の数を算出して、各サンプルのVNTRプロフィールを得た。

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【0118】

表9は、6つローソニア・イントラセルラリス (*L. intracellularis*) 分離株が、検査したVNTRのそれぞれを、異なる数で含有していたことを示している。したがって、これらの結果は、ローソニア・イントラセルラリス (*L. intracellularis*) 分離株間に同定可能なゲノム相違が存在することを示している。罹患腸から直接的に入手したローソニア・イントラセルラリス (*L. intracellularis*) のVNTRプロフィールは、精製および細胞培養物内への接種の後、低継代の後ならびにブタにおける連続継代の後で得られたものと同であった。したがって、本明細書に記載のVNTR領域は、種々の条件下で依然として安定であり保存されたままである。増殖性腸疾患の突発的発生を被った別個の集団からのサンプルは独自のVNTRプロフィールを示したが、同じ突発的発生におけるサンプルは同一プロフィールを共有していた。

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【0119】

表 9

VNTR (遺伝的エレメント)	L. intracellularis 分離株あたりの VNTR の数					
	963/93	15540D	PHE	VPB4	子ウシ/96	ハムスター-1
CA (17) (3)	16	10	17	15	13	13
ATA (13) (3)	12	10	13	11	5	5
CA (19) (3)	16	17	19	16	16	13
ATA (12) (1)	9	8	12	9	10	13

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【 0 1 2 0 】

VNTRは高レベルの多型を含有し、これは高い識別能をもたらす。本研究の結果に基づけば、VNTRプロフィールの解析は、ローソニア・イントラセルラリス (*L. intracellularis*) の株または分離株間の識別のための有用な手段であると考えられる。該アッセイは有力であることが判明しており、反復分析に際して同一の結果を与えた。ローソニア・イントラセルラリス (*L. intracellularis*) を迅速に検出し特定の分離株を追跡する方法を疫学的に用いて、感染源の迅速な同定を可能にし、それにより伝染率を減少させることが可能である。

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【 0 1 2 1 】

実施例 17 ローソニア・イントラセルラリス遺伝的エレメントのアノテーション

ローソニア・イントラセルラリス (*L. intracellularis*) に関して本発明において用いた配列決定および組み立てのストラテジーは、パスツレラ・ムルトシダ (*Pasteurella multocida*) に関して記載されているとおりであった (Mayら, 2001, Proc. Natl. Acad. Sci. USA, 98:3460-5を参照されたい)。これらの研究には、10kbを超える組み立てられたローソニア・イントラセルラリス (*L. intracellularis*) コンティグ断片を選択した。ARTEMISソフトウェアおよびTB-parse (Coleら, 1998, Nature, 393:537-44) を使用して、推定コード配列を同定した。TB-parseの結果をARTEMISにおいて手動で比較し確認した。また、推定リボソーム結合部位 (RBS) を各コード配列に関して評価した。開始コドンの約30bp上流のAGリッチ配列の存在を推定RBS配列として評価した。GenBankおよびミネソタ大学のComputational Biology Center (<http://www.cbc.umn.edu>) により構築されたローカルデータベースを使用することにより、BLASTP解析で類似性を同定した。

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【 0 1 2 2 】

ARTEMISおよびACTはWellcome Trust's Beowulf Genomicsの主導により資金提供されており、<http://www.sanger.ac.uk/Software/>においてインターネット上で無料で入手可能である。図または図式的説明を与える配列アライメントをAssemblyLIGN (商標) ソフトウェア (Accelrys, Princeton, NJ) で行った。

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【 0 1 2 3 】

実施例 18 ローソニア・イントラセルラリスのゲノムの解析

ローソニア・イントラセルラリス (*L. intracellularis*) のゲノムを配列決定するために、ショットガン法を採用した。1.5~3.0kbのインサートサイズを有するライブラリーを作製するために、クロロホルム/セチルトリメチルアンモニウムブロミドに基づく方法を用いてローソニア・イントラセルラリス (*L. intracellularis*) PHE分離株のゲノムDNAを単離し、DNAを噴霧化によりせん断し、文献 (Mayら, 2001, Proc. Natl. Acad. Sci., USA, 98:3460-5) に記載されているのと実質的に同様にしてショットガン配列解析のためにpUC18プラスミドベクター内にクローニングした。ABI 3700および3100 (Applied Biosystems) 配列決定装置上で色素ターミネーター化学法を用いて、得られたクローンを両末端

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から配列決定した。phredPhrapおよびConsedの一連のソフトウェア (<http://genome.washington.edu>) を使用することにより、配列の組み立ておよび確認を達成した。ショットガン段階の終了時に最終ギャップを閉じるために、プライマーウォーキングおよびランダムPCRを含む幾つかの方法を用いた。最終配列は、ローソニア・イントラセルラリス (*L. intracellularis*) ゲノムが4つの遺伝的エレメント (3つのプラスミドおよび1つの染色体) よりなることを示した。

【 0 1 2 4 】

各ローソニア・イントラセルラリス (*L. intracellularis*) 遺伝的エレメントの配列を表10、11、12および13 (これらは、参照により本明細書に組み入れる添付のコンパクトディスク上に含有されている) に示す。表10はプラスミド1の配列 (遺伝的エレメント1; 配列番号8736) を含み、これは27,048nt長であり、29.05%のGC含量率を有する。表11はプラスミド2の配列 (遺伝的エレメント2; 配列番号8737) を含み、これは39,794nt長であり、29.23%のGC含量率を有する。表12はプラスミド3の配列 (遺伝的エレメント3; 配列番号8738) を含み、これは194,553nt長であり、32.91%のGC含量率を有する。表13は染色体の配列 (遺伝的エレメント4; 配列番号8739) を含み、これは1,457,619nt長であり、33.28%のGC含量率を有する。

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【 0 1 2 5 】

表10

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aaaatgaaacacgagcaacatttatgtttctgaacaacagttagaatctattaaagcccttgcttatgggaacgattg
tctatcaaagaacttatgacatatgatggaatgttatggaaacaaaaagtgaaactgctcttttatc
atataggaagaaagtaacagtttctaacagcatagaaaaagaataactggctttatttaggagttatgtgcctcatca
ggttatgtaaaatattggtacatagataagggaaatatttggctattagaaaacgtaactttaaagtaagaatgctat
atcttatcaagtatttgaataatccatatacaggtctacgtgaagcaaaaacgtttccaacgttatttgaagctagtg
cgttgaatcatttaataagcataggttaaaatagaaaagacattttttaagcctaaagaaaaatactacgttagaacct
gtaaccttatatgatgctgtgttatgttatcttcaaaagaaaaaatttactcccaatatacaaaaaataatcagttgtag
cttgcagttctataataacatcctatgggtgatgtaaaactttctgagcttaaaacagattttttgttcatttgaaaaatt
atcttgaacaaaaacgaaaaagaatgggtgaatgtttttcacgatcatatatacatatccaactatctcgtctaagaaca
atttgaaatgggcatatgaacaaggtatgcttgttatgcttcttaaaatgaaataggagatccttattatactcggac
tatccctcctacgtttgatgaaatfacaaggcttatagcagtatcaccaccccatftagttaggataaattatccttgggtg
cagcctttgggtctaagagtaggaccaagtgaaatgttttctttaacatgggataaaaatagatttgaagtggtgtagta
aggataagcacaagtaaaaaaaatcctcgtatcccttggcgtgaggtccctataaaaagatgagttgaaacctttttttc
facttggtttgaagaagatactaaaaatggattgtcatatgttatfacatataaaggtaaacccatctcgttctatacata
gttcttgggtcaaaagcattaaaaaaatgccggaataactcgtcggatcggccttatgatftacgtcatagttttgctagt
gaacttatftcatctgggtgtagatgtgggaactgttgacaaatattgaaatcattcttctccaaatagctgtttaaata
ttaccaatatgtggagactaaacagaagaaaagagctattgaactgcttccctcagtttcatgtgacattactatgtgac
gctataaaagagatgtctataaactttgactataacatattgatftaataatgtgaaatftattgttatctattataagcaat
agtctttacaagactattgcttataatagataacatagtcattaggtatfaactgttaaccaagtagtattaggtttatat
ttgtttcaatctgagaagactacatgggttaaggctttagctattagttatccaaagacttacgttttagtttctacatcc
cagttgggctaataataggatattttttgttctaattgacgtagagttgtattatccgggacacgcactgtcatctgtgc
tatagcctcaatcattgataattctcctggcgtgatgtttggagctataaaaaaacctttatctggggctataagaaatt
ttgggtgttatattatattgagattcaaatcgtgctatagtaaaccttatfttttcattaggctgtatttctgcagtgatt
gccccaaagataacaacgtgatcaggataaaggggatcccacggcatatftttaatcccatggagtaagggctaacat
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tggttttacaggtaaatgaagacgttttgttatftcatftaataatgaaataatattgtgatgactatctccagtaagaa
ttattccatgatctgttaataaaaaatatttgtttttgtagaagatactgttctgataaaataatgacttaaagataac
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agaatggataaatagcatcaatcatatgtaaataaacaactagtttttgggtgaaatagcatgtattgggtgtttctatag
atggaagtaagaagtttgcataaacaagatcagaaagagattctatcctgtttttactctttcaagtacggagggt
agtgatagggaaagaaaaatgttttttttcatgtcttgagaaagccatagtcagaaagctftaatccataatgttccc
tttctttaagagataatttctcctgctccttgtgtaagtaacggattagagccaagtaagcacttagaagatttatt

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tgagaaagagaagatatcggaagcatggtttactttattatgtatgtgatgttgcgtgtttatftttatagataaagga
 agaatccaagctataaatgtagggaatactataaaagtaaataacatgagatctgtaaagtatgagctcactaaaaaggg
 agcaagcatggagatggataataatftacaaatagggctcaaaaagagacaaaagaattctccaatagtctcctatgtac
 ctatftttatcttgagtttttgggtgtaaaaaaggatataaagagatatttatgcatggtaaaagtftttcttcttct
 caagagtaagcatctftttatfcagaagatagccaaagfttccaaagacacataacatfacataacttaatacagtttagac
 catctagattaaaatgttcaaaggfacatgatatagcctatcatalatagaccctfttatgtagggtgctatftctataa
 ftftctctttatagataaggtagaatttgataatgttctctgggtgggtacaaaataaaaaacatctfttctctgctaagc
 tacttaagtttcccataggggtatftaaaatfttaataagtggtfttaatagtatataacctaattgttgaaaacgtftcc
 taactctgcatggagataataggttgaatttcatgggttctfttttctctataaaataaaaatgagctaaccaccta
 caatggtaggtagtaacaaatgggtfttggttacctfttcatftttttatfttaactatfttaattfttaaaaataaatctc
 ctgtaggatctattaggatacgttcatatccttagcaaagftaagttgttataaagctctfttgagagttftttatftactata
 gcattaggtgagacatctfttacccaatftataaagaagatctgttcttctfttggtaggatfttctaaatftaagaaaagc
 agcaatattaggatcgtataactftaatgtatftcatctagtgcactaagtatctatftgtaaggacatgatatctfttct
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 aataaaaagaaataagcacataftaaactaaaaccaataatctgtgggacaataaagatftgctgaagaagtacatccaaatg
 cagcaacagaaagaagaagacatftaaaatgtctfttcttctftttatcgtftaataaaatcccaaatagaactatagata
 agaggtaacaatftactftacaaaataagcctfttccctggaaaaatctftacaaaggtaaagtttccgaaagatgcatgact
 ftcagcftaataagaaactgagtagtaaaaaaggaaagaataftactcgtgggtgttatftccaaagtgaaggaagaacgtg
 accaagcftaacggataatagtatggaagataftgttgcaaggatgtaatgagagactfttagcaggtgttaagttgtttaa
 gtagacaatacagcagaaagaacatftaaatgatftcaaacftgataaggccaaatftftaaatggftatctgftgaaataatgg
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 taaaaaataatgtagtatatftgtaaaaaagaaaagaagataagacagtatgtaggaaagtgaatacataaagaaaaga
 tacggtttatfttcataggtcacatfttattagtattagtttatataaaaaatftccctftaagaagaggggaagaaatataaa
 actaaactagctataaaactatfttaatfttctftaaataaaatftaacgaataataaaatftatftgcaatctccatfttaaaa
 caatftttatctftaagtgatftatcttaactaaatftagaataatftaataatftagtatftaatftatagttatftatftacca
 taatatftttataatftttatfttgactaaaaggaatftaaaaatftttacgtftaccaaggtftacaactgtctftaatgaaaat
 atfttcttcaatataatctatagtatgatatftcatcatfttttaacatfttactataacttagatattagttcttctataaaa
 aagaaaggaagftgccaataaataatfttttatagtacaaaaatftgtaaaatftaactcttctftaatftatftgctacaaaaataa
 tctftcaaaacactftftgagtaaaaacaataggtfttcaaaaaatagaactaatgctfttatftttctatfttccagaatftatft
 tftgctataaaatftcggftaactaaacacatftaataagataaaaaaagaagftataccaagtaactgtatctcgttaagtt
 ggataaaataggtatfttcatgaaaaaatftatftgctgtftgtagcgggtgtgtagcaaaaaatftatagcagatctfttt
 tgcaaaaaatagttfttttctfttttaacaaaagaaaagatagtatgagtaaaagaaagftataaagatacaccaagctatftg
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t t a a a a a c t c t a t a a t c t a c a a c a t a t g c t a a g t a a t c a t g t a a a a t c a t t c c a t g t t c a t t a g c a a a g g c t t c t g c g t c
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 t a a t t c a a t a a t a a a g t a g a t t a t a a c t a c t a t g a g t t a t c t t t a a t g t a a a g a t t g t c t t a t t a t a a t a a g a t a t a g a t
 a g a t a a c t c t a t c t a a a g t a g a g t a a a a a t t t t t t c t a t c t a t a a g a g a a c t t a t t g g g a t a a t t g t a t t a t t a a a g a a
 g t a a a a t t a a g a a a t t t t t c a a a a a a t c c a a t a a a g t c a c c a c c a a t t t t t t t g a c a a c a t t t t g t a t a a a a a a a t
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 a t a t a a t g a t a t a t t t t a t a t t a g a t t g a c c c a a t a a t c t a t a a c a g a c t c c c a t a c t t g t a t a t g c t c a a g a a c a t a a
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 a t c t t c c c c c c c c c c c c c c a t a c a a a c g g g a g g c a t a a t t a a t a c c t t c t t t t g a a a a a t c a a c a c c c t t t a t t t t a g
 c a t t a g g a a a a a t t t t t a t t a a a t t g t a t g t c t t t g a c c a t c a c c a c a a c c a a c a t c a c a a t a c t t t t g a t t t g g g a c
 a c a t c a a a a t t a c a t a a c a a t t t t t t t a a a a g g t a t a a a a t a t a c c t a g c a g a a g g c t a t c t c t t t t a t c c c a t g a a t g
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 g t t t c a t c a a a a t a t a t g c t g g t c g t a a a t g a t a t t t a c g c a g a t t c t g a t t a c a t a a a t c a a c c a a t t c t t g a c c t g t a
 a a t a t a t c a g t a t c t a t c a c a c a a t t a t g a c t a c c a t c t t c t g t a a g c c a t t g a g a a a a t c c t c t g t c t t c a a a t a a c c
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 a c g a a a a a c t a g a c c a g g g a c a t t a t g t a a a g a c a a c t t t t g t t c t a a a g c a t g t g c t a t a t c a c g a a t t g t a a a a t c a t
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 a t c c a a t a c a g c t a t a t c t g g g a t a a a a t c t t c t a g t a a a g t a a a a a t a t c t t g t a a t t c t a a a t t a t c a g c a g g a g c a t
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 c c t t t t g t t a t a g c t g g a c t a c g t g a t g t a c g a g a a a a c c g a c c t t t a a a c g g a g g a t t t a a a a a a a a g a t t t t c a c a a t
 a g a c t c t t t t a a t t t t a a g g t t a g t a a t c t t c t a t t t t a a a a g a a a a a t a a g a c c a a t a a a a a c a a a a a a g a a c t c c a a c t
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 a a a t c c a t a a g t a a c c g c t g g t t a c t a t a t a g c a a a t c c c c t g t g t a a a g t c t a a a t t t t t c c t c c a t a t c t c a t c a a a
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表 11

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t t a a g a t t g a t t a t g g c a g a a a a g t a t g c a g a t g c a c t t t t t a a t a c t c c a a g t c a g g c a g g a c t a g c c t t a a g a c c t t a
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t a c t g c a t g t g c t a a a t a t c t t g a t g c a a t t a a t g g t a c t a c t t c a c c t g a t t t t a t t c c a c g t t t t t t g c g a g a t a c g t
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c t c a t c t a t a a a a c c a t t a a t t a a c a a a a c g g g a a a t t a c t t a c c t t a c a t c t a c t t c a t t a g a a g c a g c t c t t a c t t
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t g t t a c t t t t t a c a t a a t g a c t a c t g a c a g t a a t c a t t a g t g a c a t t t t c t t t t t t t c a t g t a a t a a t t a a c c t a a
 c t t a t a g a t t t c t t a g g g g a g a g t a a t g a t g t t a g g t c g c a t g t t a g g t a g t c t a t t a g g a a a a t t t t t g a t a a a g t t
 t t t c c t g a c c g c t c a a c a c a t t g a a g t t c a a a g t a c a g t t a a t g a a g c a g a g c t t t a a g g t a t a c t t a c t t c t a t c c t t a
 g t t t a t g a a g a a c t t t t t a g g a t g g g t t t t g g c c a t t g c t t t t c c t g g g a a g a a a t a g g g c a a c t c a t g g t c a t a c c a
 g t g t t t c t c c t g a t a t a g g g a t a a a c t c t t a a a a t t t c a a t t a a a g c a g a t t a g c a c a t t a t t g c t a g g a a a a t g t t a a
 g g t t a g g a t g g t a a a g t a t g g a t g a a a a a c a g g a c a a t g t g g t c t a a a g t t a a g t a t g g a t t a g g g a a a g t g t t c a t a
 g g t c t t t c t g t c t a t t a g t t g t t t c t g t a g t c a c a g c a t t a t t c a c c a a t c t c a t c t t a t t a a a t c g t a t g g a t g a a c g
 t g t t c a a g c t a t a g a g t a t t c t t a t a a g c a a c a g g a c a a a a a t t t g c a a g t g a t t a c g g a g t t a t g a g t c t t g g t t g a
 a a g c a a t t a c a c a a a a g g t a g a t g t a t t a c a a c c a c g t g t g a t c c a a g t a g a a g c t a g a g t t g a g t a t a c a c a a c a c t g t
 c t t g a a g a a t t a a a a a g a g g t t g a a t t g a t a t a g g t t g a a a g t a g t t g a a a a t g c t a c g a a a a a a t g t g t t a a g g t a g
 t c t t t g t a a t g t a t t g g t g g c g t g t a a a t t c c c a a t a g a a t a g a g t t g t t a c t g t t t a t t a t c a a t c a t c t g a t c t a g t t
 g c a t a t g a g t a t c c c t t g a t t c a t a t g t a a c t t a t t t t c a a a g a c t c c t c a t a g a c a a a a a g t c t a t g a a a a t a t c t t c
 a a a a a a g a a g g t g t t t t t a g a a a a t t a t t a t t a a a c g t a t c c t c c c t c t t t g t a c t t t a g a g c t t a a g g g t a a a a a t a
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 a t t t t c a a a a a t c a g g a t a g c t g t g a c a g a t t a t a c a a a g a a c t a t c t t c g t g c a a a g a a t a a a t a t t t t c t g g a a t g t g
 t t a g a c a g t c t a a a a a a a a a a a a g c a a c a t a t c a g a c c a a a t a a t a a t c a t a t t t c a c t a g c t t t c c t g t c t g t t g a a a
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 c t t t t a c t a c a a c t g g t t a t t a t a c a g g a g t t a g c c c t g c t g a g a a c g a c a g a t a t a c a g c t g a t a a t t c c c t t c t g t t g
 a g t c t a c a t g a g a t g g t a a t t g a c c a a a a t g g a c a g g t a a t a c a t g a a t c t a a a g a a a g a t t c t t a t g c t c a a g a a a a c t
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 c c a a a t a a a g a a c a a a a a g a t a t a t t a a c a a a a c a a a t a a a t a a a a t g c t g t t a a a a t t g t a g g a t a t a a a t a t t g a t a t
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 at t g t c t c t c a a g c t t t t a t a t g g g a t c c c a g c t a t t c a g g a t t a a g g g a t a t a t a g t t a g t g c t t a t g g g t g g g g
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 gcaata t a c a a g t a a g a t a g a a g c a a t t c c a c t t a g t t c a c c t a a g t c t t t t t a t t t a t c t c a g a t c c c a a a a a t a
 aaaaagaata t a c t c a a a a g a a a t t g g g a t a t c c t a t a a a a g g a a a t t a t a g a g g a a a t g g c t a t t a c t t t t g a c a g t
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表 12

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a a c a c a a g c t a g t a g c a a t a t t c g t t g a a a a a g a t g g g t a t g g a t a t a t g a t a a a t a t g c t a a a g g g a t a g t a g t c a a a
a c g g a c c t c g t t a t a a a a a t a g t a t t a g a c t g a a g t a a a a t t g t g t g t g t g t g t g t g t g t g t g t g t g t g t g t g t g g
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t a t g t a g t a a a t a t t a a g a t a c c t a t t a g c t a t a t t g a t g t a t g t t g t a t c g t t a a a c a c a c a a g t a a g g a g g a t a
t a a a t a a c c t a a c a a c t c t a g a t a a a a c a t a t a g c a a a a g a a t a t c t a a t t t a t t a g a a t t g t c t t t a a a a t g a t a a t a
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a c t c t a a a c a a a a a c a t a t c c a t t g t t t t t t a g a a g c t a c a a t a g c t a a a t c t a t t a t c a c c t a t t t t g a a g a a c a t c c
c c a t a t c t a t t a g c t a t a a c t a a a a a t a a a t g t t t t c a c c t c a c a a g t t a t t t g a t a a t g c g c c c t t t t a g c t a t t c a t
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t t t t a a a g t t a a t g a t a c g t t a a t a a a g a t a a t g t a t t a c t t a g t c a t c t a t t g a c a g t t a g t t a t t a t a a c t a g t t g t
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a a c c t t t t t t c a a c a a g c t c t g c a a t a g c c t c t c g a a t c t g t c g a c g t g t c t c t t t a a a g g a a c a t g a g g a t c c a t a t
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 t t t t c a t a t t t g g t t c c c t t a g t a t a a t g g t t a a t a t a g t g t g a g t t g t g a t t t t a t t t t t t g a t a t a t t a c t a a g c a
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 a a c a c t a a g g g g a a a g c t a a a a g c c g t g a g c a a t g c c t c a a a g a a t a c a g a g t g t t a g a g c t t t g c t t a c g g c a a a t g g g
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 a c a a t g a a a a g t a t c c t a c a g g a g t a g g t a a t t g c a g t g t t c a a t g g a c g t c t a a t g g a a g t c c a g g a g t a c a t c c t c a a

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c t t g t t t a a a c c t t a g a t g t t c a g g c g t a g g t a a t a a t g t c c t t g a a t t a a g t g t a a c c t a t g a t a t c a g t a a g c a a t a c
t c t a c t g t a a c t g c t c t t c t c a a t c t c a a g g a a t g a a a t t c a c a g g c a a t a c c t a t c c t t a a a t c t g t t g c t a c a g a
t t c a g a c a c a c c a t c t c g t c c a t t a g t t c t c a g g a a a g g a c a t a t t g a t a a t a c a c a g t t t t t a a c a a a c a t a g c a g a g a
a t a t t a t t c a t g a a g g g a a c t t t g t a g t g t t a c a g t g a t g g c a a a a g t t c a g g g g c a t t t t g t t g a g c c t g g a g t a t t a
t g g g a a c c a g g a c a a c g a g t t a c t a t t t t t a g t g a a c c t c a t g a a a t a g a t g a a a c g t t t t t c t t a c a a a g a g a a c a t t
20 t a t a g g t g g t c g c t t t g g a a c g t t t a c a c t g t t g a a g t t a c a g c a a g a c a a t g t a t g g t t g a g t a c a t a g t g a g a t a t t c
a a a a g a t g g t a g a t t a a a t a g t a c c a t g t a t c a c a a a a a a g g a a t c t t t a t g t c t t t t a t g a t g c a g t g a a c a a g
c a a a t t a a t a a a g c a c t t g t t g c t g t a a g a c t t c c a t t t c g t g c c c g t t t g a c a a a a c t t c a g a c a a a a c a c c a t t g c a
a c t t g t a c a g g g a g a a g g t c t t t c a c a a g a a c a a c t a c a a t c t g t a g a a c t t c t g c a a c a g t t t g g g t t t a c g t c a g g t g
t c c c c a t a g a c t c t c a a t t a a t t g t t c t t c c a a t a g g g g a a a g a c t g t t c a t t c a g t t a t c a t t g c a a c a g a a a a t a c a
g c a t t t c g t g t c c a t g t t g a a c a t g g t g a a a c a g c t a t t t a c a a t c a a t g g g g a g c a a a g g t t g t t c t t a a a a a g a a a a
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g t t t c a a t g a g c t c t t c a t t t t t a g g g a g g g g t t g a a g a g t c t t c a c a g a g g t t a c a c a a a a g g g t g t t a c c c c t t g
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 t g a a c a t g a t a g g a a g t t a t t a c a a a t a g a t t t a t a a a t a g t a t a g a t a g c t a t a t t t g t c a t t t t t c t a a g a t t t g t t a
 g t c t a c a a c a t t a t t t t g t g t a t t t g t t a c c a t t a a g g g a t a t c c t t t t c a t t a a t a a c t t t g c t a t a t t t t t g t t a
 a t t t t t a g g a a a g t a t t t t t c a t t t a g t a g t g a t a a c a c t a a a a a t a t t a g t t t a a t a t t t t t a g t a t t a a g c a g t a t
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 a a a g a g t t c c a a a c a g t g a a g c a c t t c c a a g a g c a a g g a a a g c g c t g c a t a a t t a t t g g t t a g t t g t g a a g t a g g a a t a
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 a c c a t c a t g a a t c c t g t a c t t c t t t g a g g a g c a a g t t t g c t a t c a t a g c a a g t c c t a g g c c a c t g a t t a a t a a t t c t c
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 a c a c c t a a c g a t a a a a a g g c a a g a g c a c a c a c a g a a c a t t c c t g c a g c a a a t t t a g a a g g t a a a g a g a c g t a t t t t g c t g a
 g t g g c t a a a a a t a t a t g c c a t g a t a g g g c t t g c a g c a a t a a t c c a t a c a g g a t t g a g a c t t t g g a a g g c t g c a g g t t c t a
 t a g g a a a g t c t a a a a t c a t a t g g t c t g t g c a a c g g a t a a c a a a g a g a t t a a g g g a g g t t g g c a t t t g t t g a t a g a g a a t a
 t a a a a c c a a c a g c t t c g a c a a t a a g a a a a g g c a a a c a a t a a g t t t t t t c t t t c t t g a c t a t t g g a a a g t t g a t t t c
 t c g a a a g a t c a t a a g t a a t a c t a t a a t t g c a g c a c a g t a t a a c a t g g t a t a g g c a a t a t a a a g g t g a c t a a g t a a a c c a
 t g g a a a t a c c a c t g a t a c c t a t t a c t a t a c t g a g a a g a c a a c a a t a t c a c c t a g g g a t a g t g g t t c a a a t c c t g g a g g t
 g a a t c a a g a c c t a c a a g c c a t t t c g t t t a a t t a t a a a g g c t a a g a t a g c a a g a g t g a g c c c t a t g a c g c t g c t t c c a a a
 a g c c a t a t g g a a t c c a a a t g c t g t a t a a a g a t a t g g c a c a a t a a g c a t g g a a a t a a a c g a g c c t a a a t t a a t a g a c a t a t
 a a t a t a a t g t g a a t g c g c t t t c g g c c t t t g g a t g t t c a t a a g g g a a t a t t t t t g c t a t t a a t g t t g a a g g g t t t g c t t t a
 a a a a g t g t a t t c c c t g c g a t a a t a a t a c t a a g t g c c a t t g t g a t g g t t c c a t t t g t a c c t a t a a a a a g g a t t a g a t a a c c
 a c a t a g t a g a g t a a t a g c t c c t g c t a a a a g c g t a c g t t g g g t t c c a a t a a t t t t g t c t c c a a t c c a t c c g c c a a t g a a c a
 t a a a g t a t a t g c a a g a c c a a t a a a g g c a c t a a a t a g a t t t t c a g c a g t a g c a t c a g a c a t a c g t a a g t c t t g a a t c a t g
 a a g a g g a c a a a a a t a g c t t g a a t a c c a t a a a a c c c a a a a c g t t c c c a t a g t t c t a c a a a a a a a a t g a g t t t a a a a g c t g g
 g g g g a a a t a t t g g a t a t g g a a g a a g a c a t g a t a g t t c t c c a t g t g t g a t c a g t a a c t t t t a a t g g a t a t t g a g t a a t a
 a a a a a g a g a t t a g a t t t t t g t t g g a c a a a t a g g t a a g c a a t g t a g g a t a t a a t t a g a a c t t t t c t a a t a t a t a a g a a
 c t c a a a g t c a t t a a a t c a a c c c a t a a t a a c c a t t t t t a t t a c c a c t a t c c c t a t t t a c t c t a a c c c t t t t t a a a t a t a g
 t a t g a a c t a t c g t t c a t g a t a t a t a a a g g g g t t c a t a t a g c t a g a t a t a t g a a t a t a c t g t t a t c t a t t g t g t c g t a t t t
 t a a t a t t t t t c a t t a c t g a a c t a a t a t c t t a t a t t a a a t c t a t t a t t g t c t a c t a c t a a t t t a a t a c a t a a a t a a c t a t
 a t g c a t t a t t a a t g t a c a t a t a t t a t a g t a a t a t t a g t t a t a t a t t t t t a t a a a t g c a a a a a a t g t t t t a t t t a t t a a a t
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 t t a t t t c t a a t g t a t t t a g a a a a a a a t a a t a t a a t t a t a t g t a c t a t t a a a a t t a a a t t c a t t t g t t a a t t a g g a a
 t a c a t t a a a t a t a t g t a a g t t t a t a g t a a t a t t t t a t a a t a a t t t t t a t t a a t a a a t a a g t a t t t t a t g t c c a t t t a t a t
 t a c t a a a t a c g t c a t t a a t a c t t t t t t a a g t a a g t g g a g a g c t a t a g t a g c t t t g t t c c t a t g t a t a t g t a t t a t t t t a a
 a t a g t g t a a c t g t t a c t a t t t c t g c t g a t a a a g a t t c t g a a a a a a t a t a a a t t c t t c a a a g a a a a t a t t g c a g c a c c a
 t t a g g g g a a a g t g g t a a t a c t g a a g a t t t t c a a c a g g c t g a a a c a t c a a g t a a t a c a c a c a a c c t c a a g t a c c t a c c a g
 t c c t t c a g g g a t g c c a g t t a c t t c t g g t t c a c a a g t t g t t t t a g a t c t t t t t t c t c c t c c t c c t c c t c c t c c t t c t t
 c t a c a a t t t t c t c t c c t c c t t t t t a t g t g c c c a t t a a c a c t t t a t g g t c c t c c t g c c a t g a g t t a t a t t c c t a t t c c a
 a a t a t g g g a g t t a g a a g a g t t a c a g c t c c c c a g a t a t t a a t t g t a a t t t t g a a a g a a a g a a t g a g c a t g a g a a a a g t g g
 a t c a t t a a g t g t t c c a g t c c t g t t a g a a a a t g t a t a t a t g a t a a a a a t a g t g a g t c t a a g a g a t g t a c a a a t a t t t g t t
 t a a c t a t a g a g t c t a t a a t t a g a g g a c a t g a a g a a c a g t t a a c a g a a a g a g a a a a a g a a a a a a a g t a a a a a a t a c g a t
 a a a a g g a a t a t a a a g g a c a c a a a g a a g a a t t g a a a a g a g g c a a c a a g a a g a g a a a g t a g c a c t a t t a a a g c a a t a t g a
 a g a a a a g t t g c a a g c a t t a c a g a g t c a c a a g c g t c a c a g c g t t t a g a a g c a t t a a c a a t g g t a c t g a t a t g t a t a c a t
 t g t t t a g c c a a c a a t a t a a c g a a g a g c a a g a t t g c c a t a g g g a a a a g a a a a a a a a t t a g a a g a a t t g t t a a t g t g c a t
 a a c a a g a g c g t g a t a t t t t t t t a t a c c t g t a a g t g a t t c t a c a g a a a a g g g a c a g t a g a a g g t a g a c a a g a a g a t t a
 t a g t g a t a t t a a c a a a g a t a g a c g a c a t t c a a c g c c t t c t a t c c c t g t a a c a g c a t t a a a t a t t t t t a t a g a a g a t a g t t
 c a a a a a g c a c a c c a g g g a g g t t a g a c a t c a a g a c t c a t a t a g c a a t a t a t c a a a t g a g c c t a a a a g c t t a t c g t c t g a t
 t t a g a t g t a t a t a a t a a c a g a g a c g t t g t a a g t a g t a t c c c t t t a t c a t t a a t a a a t c c a g a t g a a g a a g c a a c t g t t g a
 g g t c t c a g c a a g t g a a a g t t t a a c a g a g a c a a g t a t t c a a g t a g g a c c t t t c c c a a g t a a a c a t c a t t a c t t a a a t a t t
 t t a a t a g a g t c a t g a a t g a a g a a g g a t t t g g c t c t a t a c a a a a a t a t t a t a g a g a t g a t t t g t a t c t t c c t g g t t g t g c t

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g t t a t c a g a c a g c t a a a a a g a a c a c a a a a g a a a c a t t c t g g t a t t c g a c t c c c a t g g c t c a a g a g a t t t a a t c t t t c
 t t c t a a a a c a a a a c t g a t c t t c a a g a t g a g a g t t t a c a a g a a g t t c g c c t c c a a a a t c g t t a a g a g a g g a t g g a a t a t
 a t c c a c c g c t t c t t c a g c a t a a a c g t c c t a g t g t a t a t t a t a c t a a a g a a g t a g g g g c a g g g g a t g a t a c a c c a c a c t c c
 c t t a a g c a t g t a a a g t a t c g t a a a a a c g t g t a g g a g g a a t a c t a c a a t c g c c a g a a a t c c c t g a t t t t t g t a a a a t t g a
 a a g a t t t t t a g a a g c c t a c c t t c t a g t g a a g a a g a g c a g g a a a g c g a a t t a t g t c c a t c a g g c c c t c a a g g g a a a a t a t
 a t c t t t t a c a c t t g g g a c a c a a g g c t c t g a a c c t g g a t a t t g t a t t a t g a g a g a t c c t t t c g a a t c c a c t t c a t g t t a c
 t a t c c t t c t g g c t c t g a c g c a a a g a g t g a a a g t a g t g a a c a a g g c t t t t a t t c t t c t a a c c t c g a a a c a g a g a a c a a t a c
 t t t t t g t t t a a t a g a g t a t c t c c t c c a g a g g a g t t a c a a t a t g g c a a g a a a a a t c t a c g t t a c c a c t t c a g a a a a g a a
 c a t c c t g t a a a a g a a t a a a a g t g g a a g t c t t c a t a t g t t g t t g a c g a t a a a c a a c g a g c t c a a a g t a a a a t g g a g c t a
 c a g a a g c a t c a a t a t t a t a t a a c t g a c t g t c t t c t t c g a t t a g a g a a g t g c a t a a g c a c c a a t a t g a a g t a g c a a a a a
 a a c a g g a g a t g a c c t t t g t t c t t t a g a a a g a a g c a a g c a a a a g a t a a a g a g a g g c t c c a a g c a a c a c t t a a t g a a c a a t
 a t t t a g a c c t t t t a a c a a a a c a t c a a c a g t t a a t a g c a a g a a a t a c t c a t c c t a g t g a a g a g a g t t t a t c a g a a a t t t c t
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 a a a g c t t a a a a a c t a t t a g t t g a a a t t a t a c a a t t g g t c g g a a t c a c c g a c a a t c a g t t g a a g a a a c t a c t a c c a a a a
 t a g a t a a a c g t c a t g c t c a a g a a g a t g t c a t t g g a c t a c t a a a a a a g g c c c t t t t c a c a a t g t t t g a t g c t a c a a a c t
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 a a t g t c t t c g t t c t g a a c t c g a a g a g t t a t g g a a g c a a a c a a g a g a a g c a c a g g c c t c t t c t a g t a g t g a a a g t a g t g g g
 a g t a t a g t t t c a t c a g a t a t a c g t t c a a g a g g t g g g t a t g a t a t a g a a t c t g a t g t a g a t c a a g a a c a a g c a a t a a g a g
 a g c t a g a g a t a a a c a a a t a a g t a a a c t t c a a a a g a a g c a c a a a a g g g a a g a a a a a c a t t a t t g g c a a t g c a g a g g a c a a
 a a c a a g a g c a a t t g g a t g a a a t t c a g g a g g a a a g a a g a a g g a a a g c t a a g a g g t t a g g g a t g t c t c t t g t a g a g t t a a a c
 c t a a t g c a g c a a g a a c a g a a a g a a a t g t t g c a t a a c c a g c a a c a a c a g c a a g t t a a t a g a t t g g t a g a a g a c a a c g t c a
 g c a a a t g a a t g a a c t g t t a g c t t c a t t a c a t c a g c c a a c t a t g t c t g a a a g t a c t a t g t a t a c a a g t t g t t a t a g t g g a a
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 a a a a t c a c t g a a g a g a a g g t g a a a g c t g t t g c t g g g a t t g g a a c t t t a g g a a g t g a t g c a g a g t t a g a a g a a g g t a t a t t
 t t c t g a t g g a g c g g a t t t c a g t a g t a c t a t t c t t c a a g t t a t g t c t g a t t c a g a g t t g a g t a a t g a t a t a g a a c a a g t a a
 c a g a g c a g g t a g a a t a t a a a g g t g t a g t a a g t a g a g g t t c t g a a t g t g a t g a g a t a g g a g a g c c c a t g g a t g a a a g t c a t
 g t t c c t g a a a a g a t t a t g c g a c t t t t t g a g c g g g c a a c a t t t g t a g a t a a a g a t a g t t c t a g t g g a a a g g a a g g a g a t t t
 t t c t t c a g a a g a a g a a a a t c t a g t t c t t a c a g a a a t c g t t a t t a c g g a g t t g a a a a c g a a g a a a a c t a c g g a a g a t a c
 a t t t a a a g g a g a a g g c a c a a t t a g a g a a c a a t t a a a a g a a c c a g a a g a a a a g a t a a g a t t a c a a t t a g a a c a a a g a c a g
 c a a g a g c g g c g t a g a a a a a t c t t a t g t t t g g t t a t c a t a t c a g t g a a g a t t t t t t a g a t a a a c t g g a g g a a g a t g a a t a
 t a a a a c a t c a t t t g a a c c a t t t a a t a a g t t a c g t g c a g a g t t g g a g c a g a a g c a a g c a a g a a a a g g t t g t c t c t t c a a g
 c t g c a t t a a a a a a g a g t t t g a g g a g a g c t g t c a a c a a g a c a g c g a a g a t a t t t c t g a t c c a g a g g t t a a a c a g a a a a a g
 a a g a a g a g c g a g a t c t t c t t g t a g c a c t t a t t g a a g a a g c c g c a g g t g a t a t a c a a g a t g t a g a a g a a t c a g a g g a a g a
 a t a c a t t a t t g a a t g g a a a a a g a a t g a a a g a g c a a g a c g t g c t g c c t t a t t a g c t t c t g c a a g a g a g t c t g g a a a a c c t t
 t a t g c t t t c a a t t t a c a g c a c a a t c t t c t t c t g c a a a t g c a g c c t c a t c a a t g c a t g g t a g t c a c c c t g a a a c a c a a g a g
 g g a c a g t c t a g t g a t a a a g c t a g t g c c a c a a c a g t t g a a c c t t c t a a t a t a a c t t g t c c a g g a g a c a c t a c t t c t a c a g c
 c c t t a c t a a a g a a c a t c a t c a g t t c t g c t a c a a t c g t c t t c t t c a a g c a t a g t a a c a t c a c a a g a t c c a g a a g a a a t a c
 a a c a t a c t g a t g a a a a t a a c a a g a t a c a t c t c t t t t g a t g g t g a g a a t a g g a a a a a a g a g c a a g a g a a g g a t a g t a c a
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 a t a a c a a c a c t a c t a c t c t t g t t a c t t c t g t a g a g g a g c t g a a g g a t t a t t t c c a a t t g a a g a a g a g a c a g a a c a a a a
 t t t a g a g g a t g t a c a g g g t t c a g g c g c t a c t c a a g g a a t g g t a g g a t t a t c t a c g a t t g a a g a a g a a g t g g a g g a g g c t c
 c t g g a g c t t c t g a a g a t t t a g a c t c t a a t c a a g g a g c a a c a g g a g a g g t c t c a t c t c c a g g a a g t a a a g a g g a a g t t g t t
 t a t t t a t c a t c a a g t g g a g a a a g a g c a a t a c a t a a a t g g c t t g a a t c c a g t a t a t c t a t g c c a g t g a c t a t g g a a g a a g g
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 a c g g t a a t g g a g a a a a g g c t a g t t c t t c a a a t a a c a a a g t a a a a g a t c t c c a g a g g a a t g t a a g g c t t t t g a a g a a a a
 c a a g t t c a a c a a c g g c a t a a t t t a t t a c a g a g t a t t g a a g a g a a a a g a a a g a a t t a c t t t t a a c c t t t g a g a a a c a a t g
 t c c t c c t g g g c t t c c t t c a t a t a a a a a g a c a a g t t a g t a a a a g a c a a a a a g t a a c a a t g g a g g a t t t c c t c t g t g t a a
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 g a a g a a g a t c t t a t t t g t t a t g g g a c a c a c t a g a t a a t g a g g c a g a a g a a g g g a c t a a a g a a g a g c a t g c a g a g g t t a a
 a g t a g a g g g a g t a g a a g g a a g t t t t g a t g g a a t a t c t g a a g a a g a t a a g c c a a a a a a g g a t g a t a a a g a a g a a c a g g
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 a a g a a a a t a g t c c t a g t g g g t c t a a t g a a a g t c c t t c a c c a c a g c a g g a a g a a g a a g t g t a g a t g a a a c t t c t a g t g t
 t g t t a c t t c t t c a c c a t t g t t a t c t a t a a a t g a a g t t a a g c a a c a g a a g a c a a a a g t g c a a a g a a g a a g a g a t c a g a a a
 a a g a g c t t g a t g a t t t a a c a g a a a c a a g c t g a a c a g a a g g a t t g t t t t t a g g a c a g g t t c a g c a a g c a a a a a t g a a
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 a a a t c a g a a a t t a g a t t c t a c t a g t g a a g c c c a g t t t a a g a a g t t g g a a c g t c g t c a a g a a g a c a a g a g a a a t a g a t g g g
 a a g a a g g t g a a g a t g t t c t t c a g a t g a a g a g a t a g t t t c a t a t g g t c t t c a g a t g a g t c a t a t g a g a a a g t g a t a g a
 c t t c a t g a a a a g c a t a c t c a a g a a c t a g c t g a c t t t t g g c g t a a t t a t a a g a a a a a t t g t c g a c a c t a a a a g a g a t t c a
 g c a a g a a c g t c g t g a t c a g a g c a g t g a g g a t a g c a a a g a g a a c a a g c a a t g g a a g a g a t g t t t c t t g c a g a a c a a g a a g
 c t a t g t a t a a a a g c c a g a t g a a c a c t t t t g c t g a g t t a a a c a c a c a a a a a g a a a g a a g a g g a a c t a g a a g a g t t a g g t
 t g g a c a t t g g a a a a t a t g c a a g g a g c t g t t g g a g g t g t a g a g c c a g a g g a t g a a g a t a a a a t t g a a t c t c c t c t t g a t a g
 a a a a c a t c a a c a a g a a a g g a a g a g t t t t t g g g a a a a a t g t a g g g t g a t a g t a a g t t t a t t g a a c a a g a a c a a a g t g a a a
 g a c g a g a t c g g t g g a g a a a c a g g g g a a c c a a t a g c c t c a t t a g a a g a g a t t t t t a t t g a g g a g c a a c a a g c a g t t t t t
 g a a a c a a a a a t g c t t t t t g g g a a t c a t t g c a a g a g c g a c a a a a g a a g a a g a a g a g a a g a a g a a g a a g g a g a g a g a a c a
 g a a a a g g a t a g c a g a a t t a g a a a a c a g t t a t c t c c a t t t t g g a a g g c t t t t a a a g a t g a t c a a g c t c g a a t g a g a g a a a
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 g a a a t a t t t t t c a a g a t a a g a t g c a g a t g t t a g a g g a g t t a g a a g a a a a a a t a c t t t g a a g a a a a c a a a g c t c a a g
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 t t g t c c a a g g g g a g g g a g a a c c c c c a g g g a a t g a g g c a c c a c c a c c t c t c c c a t t t c c c c c t c c t g t t t t a g g t g a t a g t
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 c t a g t t t t g a a a c a t c t t c a g a t g a a g g t c c a g a t t g t g t t g a t g g t g t c t a t g g t g c t g t c g g a g g t g a a g a a c c t g a g
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 g c t t a a g a a g c t a a a a g a t a a g t t g c a a c a a c t t g a a a a g g a g t a c c a t a a a t c a a t t g c a g a c t g t c a a a a c a g g t a t c
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 a a a a g a a t a g t g a g a a a a t a a a a a a a t t g a a g a t g g a t a t c g t c g t c a a t a t g a a c a a t t a a c a g a a a g t t a t t a c a c
 a a g a a a c a g g t a g t a t t g a a t a a g t t g t c t g c a g t g a t g g a a a a g a a g g c a c t g c t t a a g c a a a a g a t a c a a g a a t a t g
 a t t c t g t t g a c g g t a a c a t a g a g t t t c t a a a g g g t a t a a g a a a a a g c t a g t a a g t t a a a a a a g a g a g t a a a a a g t t a
 g a a a a a g a g t t g g a a g c a c t t a a g g a g c a c a a a c t a a a g a a t t a c a a g a t t t t g a t c a g a a g a g t g a c g c a t g t a g a c a
 g c a a a t t t t a t t t t t c a a a a a g a a g a a g t g a a c a g t a t a a a a g a t g c a g g a g g a g a c c t t t g t g c t c t t c a a a a c a a g c
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 g c a t g g c a t a g a t a a t a t a g t t a a g c t t t t a g a g g a a g a g a t c g a a a g t t t a g a a a a a g a g t t g g a a g a a c t t g a g g a a a
 a a c a a g a g g a a g a g t g g a a a g c a t t t g a g t t a c a a a c t g a a g c t t g t a g a a a g c a a g t c c t a t t t t t g c a a a a a g c t a a a
 c c c a a a g a t a g t g c c a g a g a a g g t g g g g a a g a a g a t c g c a g a g c c t t t g a a a g t a t g g t t g c t a g t c a g c a g g a a t t g t t
 a c t t a a a g a a c a a g a a g a c a g a g a a c a g a a a a g t t a a t t a g a t t a a c a g a g g c a a a g g a a a a a a g a a a a c a g c a t a a a a
 a g a a a c a g c a a c a g a a g c a a g a a g a a a a a g a a a g a g a a a a g c a g a a a a a g a a a c a g g a g c a a g t a a a a a g g g a a a a g a a
 a g a g a a t a g a g a g a c a a a a a c a g c a g c t t a a a a a g a a c a t g t a c a a g a t a g a a a a t g t t t t g t t a c a a c t t t t a a t t t

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g g a a a t c t t t t a a t a a t g c t c t c t g c g a c a t t a t t a g c t a c a a t t c c t t t a c a t t a t a t a g g t c c t c g t a t c g c a c g a t t
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t c t c t t t t t a t t t a a a a a t a t a t t t t t a a a a a t t c t a t a a g c c t a c t a a t g a t a c a c t a t t a a g t t t t a t t t t t g c a
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g a t a a g g a a a t a a t t t t t c a a a a a a g t t t g a t t c a g c a t t a t c t t t a t a a g a t g t a a c t c c t a t a t c a a g a a c a t g t t c t
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t a g c g g t a a a t t g t a a t c t a t a c c a t g t a t a a g t g a a a c a c g a c t c a t a t c t t t a t c c c a t t g a g c a c t a g g t t a a c t a t
g t t t a a a g a a g a a t g a a a t a a t a a c t a a c a t a t c t t a g t t a t a t t g t t t t c t

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表 13

a t g a a g a t c t t t t t a t a g a g a t a g t a a t a a a a a a t g t c a g a t a g a t a t a c a t t a t a g t a t a g t a g a g a a t a t a t a a a a t
g a c c a a g t g a t a t t a a a g a a a a a g t t a g a a a a t g t a t a g t t a t t a a t t a t a g t c t g t t g a a a a a t a a a t a t a t a t c t
g t t a a t a a c t t c t t a g a a t t t t g t t t a a a t t a t g t a t c t c c a a t a t a t c t g a g a a a t c t t a g t a a a a t g c c a t a a t t a a t
a a a a a t t a a a t a a a c a a t a t a t t a t g t t a t t t t a c t t g g g g a a a t a t t c t a t a g a t g a c t c c t a g a a a c a c g a t a
a t c c a t c t t g t t t t t t t a t a a c t c t a g g a t a a t t a t g t c a t a t a t g a a t a c a a c a t g g g a a a a g t c t g t g a t a g c c
t t c a a a a a a g g c t t a g t c c a g g a a c g t t t a a a g t t g g a t t g c t c c a t t a g t a g c t t c t g a a c a c g a t g g a c a a t t a t t t
c t t t a t g c t c c t a g t c t a t t t g t t a t g a a t t g g a t t c a g g a c g t c t t t t t g t a g a t a t t a c t g a a g c t g t g a g t g a a g t
t t c a g g a g g g a c t a t g a a a g t c a g a t t g a a g t a a a a t c t a g t g t c c c a g a c a a a c c a c a a g t t t c t t t a a c t g a t t a t a
a t a a t a a a c a a c a t a t a c c a t a t a a t g g t t t c c t a a t a c t a a a g t t t c t a t t t c a a g a a g t c a t a t a t c c t c t c a a a c a
g a a c a g t t a c c t t a c c t g t t c a t t a g t t a a a g c t c c a t t t t c t a g t c g t t c a t g g c g t t a t a g t t t t g a t t c a t t t g t
t g t t g g t c c t t g t a a t a a c t t a g c c c a t g c t g c t g c a c a a a a t a t g a t t a a a g a t a c a g c c t c a g t a g a t a c g t t a t t t t
t a a g t t c t g g t c c a g g t c t t g g a a a a c a c a t c t t a c a c a g g c t g t a g g g c a a g c a c t t t g t a a c a t a t c t a a c a g a g c a
a a t c c a a a a g t c g a g t a t c t a a c t g c g g a g g a g t t t t g t t c t t g t t t t g t g c a g t c a t t a c g a c a a a a a a a t g t c g a t t c
t t t t a a a g g a a g g t t a g a g a t a c a g a t c t t t t c c t t t t g g a a g a t a t a c a t t t t t t a c a a g g t a a a g a g a a g a t g c a g g
a t g a a t g t t a g c a a c t a t t c g a t c a t t a c a a g g a c g a g g a a g t c g t g t t g t t t t a a c a a g c t c a t t t g c t c c t a a g g a g
t t a a a a a a t g t c g a t a a t c g c c t g g t a t c a c g a t t t t g c t c t g g g t t t t a g c t g g a a t t g a a a a c c c a a t g c t g a a a c
a c g t c g g c g t a t t t t a a t a g a a a a a g c a a a a g t a c a t g c t g t c g t g t t a t c a g a g g c t g t a g c t g a t t t t t a g c t a t g a
a g c t t g t a g g a g a t a t t c g t c a g c t t g a a a g t t c t a t t t c t a a c c t t g t a c t t a a a g c a a a g c t t t t g g a t t g t a t g a t c
t c t a t g g a t a t g g c t a a a g a t g t t a t a g c t c a a t a t a c a c a a g a t g a t c c a t t t a t g a a t a t a g a c t c t a t t a t c c a t g c
a g t a t c a g g a a g c t t t g g a t t a c a a g c t g a g a a g c t t t a t t c a c g t a g t c g t a a a c a a g a t t t t g t t g t t g c t c g a a a t a
c a a t t t t t a t c t t g c t a g a a a c a t a c a g a t a t g t c t c t t c a g g a g a t t g g t g a t c g t t t t c a t a g a a g a c a t t c a a c t
g t t t t a a a a g g a a t t g c t t c t a t t g a a a g g g a a a t t c a a a g a a a g t c a c c t a c t g g c c g t c a g a t t g c t a a t a c a c t t a a
t t t a c t t g a a c g t a c t a a c a t t c a t t t a a a t t g a a t a g a t a a c t g t a t a t a a g a t a g c g a t a g t t a t t a a c t a g c t a t t t
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a c c t t t a t a a g g c t a t a a a g t g t t a g a t t a a t a c g a t g a t c a g t a a c t c g t c c t t g a g g g a a a t t a t a t g t a c g g a t t c g
t t c t g a a c g a t c a c c a g a t c c t a c a a g a g c a c g t c t a g c a t c a g c t t g t t c a a t t t c t t g t t g t t c c t g t t t t a t t t g t a
a c a a c c g g g a a g a g a g a a c c t t t a g t g c t t t t g c t t t a t t t t t a t g t t g a g a t t t t t c a t c t t g g c a g g t g a c t a c a a t a
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a t c a a a t c g t a a c t c t c a g g a c g a a t t t c a a t a t c t a c a t c t t c t g c t t c t g g t a a t a c a g c a a c a g t t g c t g c a g a a g
t a t g g a t a c g t c c c t g a g a c t c t g t t g t a g g t a c t c g c t g g a c a c g a t g t g t t c c a g a t t c a a a t t t t a g a c g a c t a t a t
a c g t t g t c t c c t t g a a t a a g t g c a a t a a t t t c t t t a a a t c c a c c a g t a t c a g a a t c a c t t t g a c t c a t a a t t t c t a c t t t
c c a a t g c a t t t t t t c a g c a t a g c g g c a a t a c a t t c g a a a a a g g t c a g c t g c a a a t a g t g c t g c t t c t t c a c c t c c t g t a c
c a g c a c g a a t t t c c a g a a g a a t g t t t t t t c a t c t a g t g g a t c t t t a g g t a a t a g t a a t a t t t t t a g c t c a t a t t c a a g a
t g a g t t a a c t c t a a t t c a a g t t t t t t a t t t c t t c a a g t g c c a t t t c t t g a a t a t c a g g a t c a a t a t c a c t a a t a a g t t c

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t t t g t t t c a c t a a g c t g t t g t t g g a g t t t t t a a a c t g t t g a a a g t a g t g a c t a t a g g t t t t a a g t c a g a a t g t g t t t
 t t g t t a g t t t t c g a t a t t g t t c t t g a t c a t t a a a a t a t t a g g t t g a g c a a g a c t a c a t t c a a t t t c t a t a a a t t t t g t
 t c t a g a t t t t c a a g t t t g g c a a c a t a a t t t t t c a c a t g t t a g a g a a a g a g a t g g t t g t a t t a g g t a t a a t t a a t a c a g
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 a a a a a g g a t g g c a a g a g g a a c a a a t t t c a a c c t g c a c a t t t t c a c c t t t g g t a g a a a g g g c t t c t a t a c t a a a g c c a
 a g c a c a a g t a a t a g t t g c t t t a t a a a c t t g a g g a t g a a t a t c t t t t t c a t a g a g t a c a c c t t t c a g a t t t t g a a c a a t
 a t a c a t a t a c t a t t t t g t t a t g a c t a g c a a g c t a a t a t t t a t g t g t t a t a t t a t c a c t a t a t a t t t t t a t a a a t a a t a a g
 a t g a g a g a a a g a a t g g c c a a c a t a a a g t a c g t g c t g a t g a a c t g t t t t t t t a c a a g g g t t a g c a g a a a g t c g t g a a c 10
 a a g c t a a a c g a c t t a t t a t g g c a g g t a a g g t t a c a t t a a c t a a t a a t t c t a c a a c t a t a c c a t t a c g t t t g g a a a a c c a
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 a t t g t c t t t t a c a c a t g g a g c a t c t a a a g t a t a t g c g a t t g a t g t a g g c a a a g g t c a a t t a c a t g a g a a a c t g t a t a c t
 a a t g a a c a a g t t a t a a a t a t t g a g g g a g t g a a t t t a c g t a c a g c a t c t a a a g a t c t t a t t c c t g a a g a a g t a g a t a t t t
 a a c t a t t g a t g t t t c t t t t a t a t c g c t t a c t t t g a t t t t a c c g t c a t g t a t a c g t t g g c t a a a g g c t t c c g g a a t t a t t a
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 a g g t c c a a a a g g a a a c a a g a a t a t c t t a t t t a c t t g a a a a a a c g t t a a t a a t a c t t a t t a t a a t t t g t a t t c t a t a t t a
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 c a a c a a t a a t t t t a a c t a g t t t g g t a t a a c a c c a c a a g c t a t a c g a g c a c c a c c a c c g c c a a g a g g a a g a g g t t t a t c t
 g a a t a g t t a t c a c c a c c a g c a t g g a t c a t a a c t g t a c g a c c c t a a t t t c t t t a a c t g t t a a t c t t g g a g c t a a g a g t g t
 t t c t t t t g c t a t t c c a t c a g c t t t a a c t a c a a g t c t a g g t a a g t c t c c c t t g t g t c c a t t a c c a a g a g g t c c t t c a t g t t
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 g a t c c t c c t t c a t g g a t a t g a a a c c a t g t t c t c c t g c a g g a a g g c c t t t a a g a t c a g t t t t t a t t t g t a g a c c t t t a t c
 t g t a t c a g t a a a a g t t a c t g t g c c t a t a c t c t g t t t t a t t c c a t t g t c a t c a a t c a t a t g g a c t t c t g a a g t a a c a g a a c
 a t g c t a a t a c t a c a c t a g t a a t a c t a g t t a a g a g a g a a a t a g t t a c t a t t g a a g t a a c a a a a a a t a g t t t t a t t t t c a t a
 a t a a g g a a t t c c t t t t t a a t a c a a a t t g t a t t a t a t a a t t a t t a c a t t a a c a t c c t c a t a t c a t t g t a t a a a a a a a g a g
 a g g t a t c t g g c a a g t a t t a c t t a t t t a t t t t a t t g a a a t t t t t g a a a a a t a t t t t t t c t t a c t t a t t a a t t t t t a t a
 g a t a a a c t c a a g a g a a c a g a t t t a t t t t a t t t t a a c t a c t t t t t t g a g a g g t t t a t a c t t t g g t t a a t t g a a g t t t t 30
 t t c t a t a a t g t a t a a t t a t c t t a t g a t a c a c t a t a c c c t t t t t a t t t c c c a t a t a t t t t g g a t c t t c a t g t t a t t a t t c
 a t t t t a t a t t a t a a t a t a a t g t t a t a a a a t t g a t t t t t a t c g a t a c t t a g t t t a g t t a a c t a t c t a a a a a a t a a a g a c t
 t a a t t t c t a g t t a a a t t a a t a t a g a t g g c t t c t t g c a a t a t t t t t a t g t t a a a t a t a g a t t a c a t a a a t t a a t t t a a
 t t a t t a c t a t g a a a t t a t t c t t t t a a g c t a a a a a t a g c t a t a a c t c a t t a t t t t t a a t g a t a a t t t t t a t t t t c t a
 t a a t t a a g a a a a a g t t t t t g t t t t a a t g g c a c a a a t a g t a t a t a c a a c c t a a c g a c a t g t g t a t g t t a t a c a t a t g g a t
 a c t t t t a t a a t a a a a t g g a g a a a a g a a a t g a g t g a t a a a g g c a a g a c a g g t g g a t c t a t g c c g g a a g a a g a t t t t a c a g
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 a g g t t t t c t t a a a c t t t g g g g t g t a a c t c c t t c a g c t a t t t t a t t a t g a t a a t c t t t g t t a a g c t t g c t a a t a a a t t a a
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 a c a g a a t a c t t t c a t a t g a g t t a t g a a a c t a t t t c t c a c c t t c a g a c t a c a a t g c c a a g a t t a t a t t g g g t a t g g c c a a t
 t a t a g g t a a t t g g a g c t a t g c a a t t t t t t a t a t t c t t t c a g a a c t t t g g g g t a g t g t a g t a t t a t c a g c t c t a t t t t g g c
 a a t t t g c a a a t g a a a t t a c a a a a a t a g t g a a g c a a a a a g a t t t t a t a g t c t t t t t g g t t t t g t t g g g a a c t t t g g a c t a
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 a g a a a g t t t a a a g t a t c a a a t g t t a g c t g t t c t g t t t t t g g t c t t c t a t t a c t t t a t t t g t a t a g a t g g a t g a a c a a a
 a t g t t t t a a c a g a t c c a a a g c t t t a t a c a c c t g g a g c t g g t t c a a a g a a a a a a t c t a a a c c a a a a c t a g g g t t a a t t g a a
 a g t a c a a a a t g a t t t t a a c t t c a a g a t a t c t t t t a a t g a t a t c g g c a c t a g t c a t t g g t t a t g g a a t t t c t a t t a a t c t
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 a c c a t t a a c a a a a c a g c t g t a a a t t c t t g c a g t g c t t c a t a a g c t t t t c t t t g c c a t g g t a t t g t g t t a c a a t g t c a a
 c a g c t a a c t g t t c t t t t a c t t t c t t a g g a t g g a g a t g t c c t t c t t t a a c a t t t t g t t t t a a t t t t t c t a c t t c a g a t a g a
 c t a c t a g t a g a g a t a a g t t c a t a a t a t c g c c a c a t a a g t t c a t c a g a g a t a g a c a t a a c t t t a c t a a a t t g a a c a t a a g g
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 t a a g a a t a c a t t g a g g t t c a a t a t t a t a g t g t g a c a t a a g t g t a c g a c c a a c t a a t a a g t t a a a c t t t t g a t c t g t a c c t
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 a g t c t a c t g a t g a c a t a g a c a t t a g c c a t t t a g a a t t g a a a a c t a c a t t t g t t t t a a g a g g a t c a a g a a t t t t a a a a a t t
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g a a g c a c c a t t t c c t t c a a g a a c a a t t t t t g c t g t t g c a g c a g c t t g a g g a t c a a c t t c a c a a c g a t g c a t a a a g a t a g t
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t a c a g a a t t c t g t a t c c a t g a t g a t a t c t t t a t a g g c t t t a c t a a t a g c a c g g a c a c c t t t a g c t a t t t g t t c a g c t t g a
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g g c a c t c a g g a t a c t a a t c g a t t a a g t g a t a g a c t a t t t a g a g g a c a c t a t a c a g t t c c t g c t a a t a c a g c t t c a a g a g t
a g g t g g t c a t c t t c a g c g g g t g a t g a c a a t a a a a g t a g c a g t t c a g c a g c t a a t g t t g c a a a a a g a g c t g c a g c a c a t t
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c a a g t t a a a a g t a g g g a a t t a c t g c a a g g a a t t t t c g g a t t c t a a t a a t a a t t c t a t a g g a t c a g g g t c a a g c a g t g g
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g g a g g t g c t c a a g g a g a g t c t c c t g g a g t a a a a g a t g c t a a a g a a g c t a c t a a a g g a g t t a g t g t t t c t a a t t t a a g a g g
a a t a t t t g a a g g a a g a g g t g g t g c a g a t a a t a a t c a a g t a g g t a g a a g c t c t g g t g g a g t t t c a g g a g c a t c a g g a t c a g

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a g g a g c t c a a g g g a c a g g a g g a a c a t c g g g a t t a g g t g g a g c a c a a g g t a c a t t a g g a a g t g g a g g t c t t g a t g g a g g a g
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c c t g g a g c a a g a g a g c a c a a g a a a c t a t t a a a a a t g c t g g t g t t a g t g t a a g a g a t t t a g c t g g a a g a t t t a g t g g a g c
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g g g a g c a g c t g g t g c t t c a g g a g c a g c g g g a g c t t c a g g a g c a g c a g a g c c a c t t c c t a c t a a t g g t a c a g a t c a g c a g a
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t c t c a g t g a g a t g g g a t c a t g g a t g g a t a g c c c t a a t g c t a g t c c t a c a a a t g c a c c a g a g t c t c t t a c a g a t g a t c a t a
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g a a g c t a t g c c t g g c g t a g c a t t t g a a g g t g c a a g t g t c c a a a t g a c a t t a c c t g a a c c a g g t g a t a c a c a g a c t a t g c c
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t a g a t a t t a t t t c a a c t a g t t c a a g a a a t g a t a a c t g t a a g g a g t a a g g g a a g t a t t c g t a a g c a g a a g t a g t a g t t t a t

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t a g a t t a a a t t c a g a a g c a t a a c a g a c t a c t t t g t t a a c a t g c t a t g a c a c a a a a a t c t a c a a a g t a a t t t t g t g t c a t
a t c a g t a t a t t t a t a t a a g t a a t t a t g a t g t g a t a t t a t c a g a t a a t a t a a t t t a a t a t a a t t c t a c t t g t t a g a a t t a t
t a g t t g t t a g t t g g a t a t a g t g t c t a g t t g c g t t t g c t a g c a a t g t a c t a t g g t t a t c t a t t t a t a t a a t a a t t a t a t a g
g a a a a t a t a g c t a g c a t a c t a t a a t t a t a g a c t a t t a t a t t t c t a g a t a t t a t t t c a a c t a g t t c t a t a t a g a a a a a t a a
t g a a g g a a t a c t g c a a g a t a c c t t t a t t g t t a t g t a g t g t g t t a a t a g t a a a t g g g g t t t a a t t c t t t t t t a t t a t t a a
t a a t a t a g t t a g t t a t g t t g t t t t a t t g a g a g g t t g a a a g t a t g a t t t c a t c a g g a g t a g a t a g c a t a t t t t c t t t a a g
t t t a c c c t g g g t a a a g a g c t c t t g t g c t g t t t g a t a t a c a g c a a t t g c t g t t g g a t t a a t a t t g a a t t a g a t t t a t t t g
t a g c a g t t g t a t a a g a t g a t a a a a a a g a t t c t a t t a t t g g a t t t t t a a t g g t t c t a a t a t t a c t a g t t c t t t t t c a g t t
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a c t a g a a c t a t a a t t c c a g t t c a a t a g t g a a a a a a g a g t a g g t g c a a t a t c t a a t t g a c a a c a t a a t g t g t c t a t t t t t t
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 a t a t t a g g c g t a g t t t g t t g t a t t g t t a t a t t a t t a g t a g a g g t a t c a a c t t g t t c t t t c a a c t g a c t a c t a a a a g t g g a
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 a a t c a a t t t t t g t a a g t a t t a a c t t t t t g t a a t g t a t a a a g c a a t a a t t t t a t t a t a t a t g a a t g t g t t a a c a t a a a t a
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 a g g g a g g t a c a c g g g g a t g c t c a t t a t t t t a c t a g t a t t a a t t a a t a a a t a g t a t a t a a t t c a t c t g g t a g t a a c a t a a t
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 a g g g a g t t t t t a a t c c c a t t t t a t t a t g a t a t t g t t a t c a a g a g t a t g a a c t a a t g t t c c t t t t a t a t a t t g t a a t g t a a
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 a g a t c a a t a a a c t t a t t t c c g t t t g c a t c c a a t a t g a t a g a a c c a t g g g c t t c t a c t a c a t g t a t g g g g t a t c g t c c a t a
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 g g a c a a c t a t t a t t t c g c c t c g a t a g t c a g g a t c a a t a a c a c c a a c a c c t t g g g c a a c a g t a a g c c c a t g t a t t g c a c c a
 a g a c c a c t a c g a g a a t a a c a a a t c c a g c a a t a t t t t t t t c a a g a g g c t c a a t a g c a a t a c c a c a t g g t a t t g t t t c t c t
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 c g t c c a g c a a t g a g a g c t t g t g c a g c a t c t g a g a t a t t t t t t t t g a t a a g a a t t c g c a t g c t t c a c t a t a t a a a g g a t t
 a g a t g t a c c t t c a t t t a c t t g g a c t a a c c g t t g a t t a a t g g t t t t g c a t g t t c c a t t g a t g a t t t t t t a c a t a a a t a t
 g t a a c a g t t c g t c t a a t a t a t c t c t a t a c t t c c t t t t a c t t c c t t t a c c t t t c c a t g c t g t t g c t a a t g c t a g a a g t g c a
 t t t g c a t g t t c a g g t t g a t g t t t t a c t a t a t a g t t t a a t t g a g t a a t a g c t t c a t c c c a a t t t t t t t c t c g t a t g g c t t t
 a a t t c c a g c t g t a a a c t g t t t t c a g a a g a t a a c t c t t t a g t g c t t t g a t g a g t t t t g a t a a a a t a t t c a a g t g c t g t t t
 c a a a a g c a a t t g t a t t t g a g g t a a c t g t a t g t t g a a t a g a t t g t g t t t t t c c t t a g c t a a t t g a a t g g a c t t a a g t a a a
 t c g g a a g a t g a a t a a g g a c g c t t t a a t a t g g a a t a a t a c a t a t t t t c t g c a t g t t c t t g a g a a a t g t t t g t t a t t g t c a t
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t c c t g g a t c t a a a a a g t a c a a a a g a a a c a c a a c a t c t g t t a a t g t t a t a c c a a a g c t a g t t c t a a a a g a c a a a g t
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c a t c a a a t t t t t t t g a a c a g g t a a g g g t a g t g a g g a g a a t t a t c t t t t a t a g a t t c t a a t g a a g g a a a g t c t t g a a a a
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t g g c c a t t g a g a a g g t a a t a a t c c t t c a t c t t c t t t a a a g c t t t t t a g t g t a g t a a t t t t t c a g c t t t a c t t g c t g g a t
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t a g c g g t g t g c a a t t g a t g c a a g g c a a t c a t c a g c t t c g c t a t t a c t a g c a a c a g t t a a c a t a g t c c t a a a c t t a t t a c
t a a g c g t t t t a t a g g t t c a a t t t g t t t t a t a a g t g c t t c a g g a g c a g g g c t a c g t t g a g c t t t a t a a a g a g g g a a a a g t g
t a t g t c t a a a a t t t g t t c c a g g g c c a t c t a a g a c a a a t a c a a a a t a t t t t g g t t g t t c t t c a c g t a a t a t t t t t a a g a a a
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c a a g g a g a g t t a t t c a a t a a t a t a a g a a a a a t t a a a t t a t a a a a t a c a a a a a g a c t g g t a g a t a a a c a c t t c a c a g t
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g a a a a a g a a c c t a t g c t t g a a g a g t a a t t g a g g a a t c t a t a t c t c c a c c a c c a c c t g c g t c a a c t t t t a a t a a t t a t g a
g c a a g g a a g t a a a c a c a t a t t t a g a g a t a a g g a t g a a c a g g a g c t t c t g a a c g t g g g a t t t t t t c c a c a a a a t c t a c a c
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cat t a t t a g a g g c a a t a t a t g g t a a t a g t a g a g a a g a g t a g a g a a g c a a t t a g t a g g g a t t a g g t t t a a a a a a g a g a a
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t t t t t g g g g t t t a t g t t t g t t a t a t a g g a a g a t t t t a g a a t t a t a g t a a t g a t a a a a a a t a a t c t a t g g a t t t g t a g t
t t t t a g t a a g g t a c t t t t t a t t g t t a t a g c t a a t a a t t a t a g t g a g a t a t t g a g t a a a a g t t a g a g g t a a t c t a a a a
g a t a a t a g t a t a c t t t t t a t a a t a t t a t a a t a a a a t t a t a t a t t a t c a t a a t a t t t a t a t a a g t g a a c a t a g t t t c t a a
a a g a c t a t a a t g a t c c t c a t t a g g a g g t a t t t t t g t g g c t g t t g a g t a c a a a g a t t a t t a t a a a g t t c t t g g g g t t g a g
a g a a a t g c t a c a a a g a t a t g a t a t c t a a a g c a t a t a a a a a g c t t g c t a a a a a a t a t c a t c c a g a t c t t a a t c c a g g t a a
c a c a g a g g c a g a a g a a a a t t t a a g a a t a t t a c a g a a g c t t a t g a a g t a c t t a a a g a t g a t g a a a a a g a a a a t g t a t g
a t c a a c t a g g t t c a a a c t g g a a a g a t g g t c a a t a t t c c a g a a c g a a a g t g g a t t t g a t a a t t t t a g c t t t a a t t t c g g c
g g a g a t g c c t t t g g g g g c t c t g g t t t t a g t g a c t t t t t g a a t c t c t t t t g g t g g g g g c a a a g a g g t a g a a g t a g t g g
g t t t a g t g g g t t t c t t c t c g c c a a c a t c g t g g a a g g g a t a t t g a a g c t g a a a t t t c t a t t t c t c t t g a a g a t g c a c t c c
a t g g t g g t g a a c g t a g t t t t a c t c t a c a a a c g c c a g a t g g t c c a a a g a c a t t a a a a g t t a a c a t t c c t g c a g g t g t t c g t
g a a g g t g c t a a a t t a a g a c t t g c a g g c c a a g g a t a c t c t g g c t c a g g t g g a g g a g c a a c a g g a g a t t t a t a t t t a c a t a t
t c g c t t t t g c c t c a t t c t c a g t t t c a t g t t g a a a a t a a t a a t a t c a c a t a c a a t g t a c a a a t a a t g c c t t g g g a g g c t g
t a t t a g g a c a a a a a t t a g g g t t c c t a c t c t t g a a g g a a a t g t t g a g c t t t c t g t t c c t g c t g g a c a a g t a g t g g a c g t
a a a a t g c g g c t a c g t g g a a a a g g a t t a g g c t c t c a a a t t c t c g t g g t g c t c t t t t g t t a t t a t a g g t a t t a a a a c a c c
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 g a a t a g c a t g t t c a a c g c c a c c a a t a t a t t g g t c t a c a t t g a g c c a a t a t t t t g c t a t t g a t g t a t c a a a t g g t t g t t t t
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at t g t a g a a t g c c t g t a a c c a t t t t a a g g c g a g t c g t t g g a g t t t t t t a g c t a a t a c t g g a c g a c t a a g t t g t g t c c c a
t t t a t t c t a g a a t t a c a c a t a c t a t a g a c t g g a c a t a t a a g a c a c a t t g g t t t t t t t t a c a a a c a a g t g c t c c a a g t t c
c a t a a c t g a c t g a t t a a a g t c a c g t g c a t t c t t t t t t g g c a t g a g t t g c t t g a c t a a a t c a t a c a g t t t a c t t t t t g t a g
g c t c t t t t t t a t a t g a g t g t t a a t a t c a a a a t t c t t g a t a g t a c t c g t t c t a c g t t g c c a t c a a t a c a a g g a a a a t c t
t g g t t a a a g g c t g t a c t a g c a a t t g c a c c a g c t g t a t a a g g a c c a a t t c c t g g t a a t t c t a a a a t a t c t t c a t a t c g t t c
a g g a a a t g t t c c a t t a t a t t t a t g c a t a a t g a c t t g t g c a g c a g a c t g a a g a t g c c t f a c t c t t c t a t a a t a a c c a a g a c
c t t c c c a t g c a g a t a a t a a t t t t t c t t c a g g t g c a t a g g c t a c a g a a g c a a t a t c a g g g a a c t g t t t t a t c c a a c g t a a a
a a a t a c t c a a c a c c t c t a t c c a t t t g t g t t t g c t g c a t c a t a a c t t c a g c a a t c c a t a c a t g a t a g g g g a g a t a t g t t t c
a c g c c a a g g a a g a g c t c t t t t a t t t t t a t a a a c c a g t t a a g c a a a g c t g t t g t a t t t c t t t c a c a a t a t a g a t c t t t a
g t a a t a a t t a a t t a c a t t t a t t t t a c t a t t g c t a a t a t a g t c t a t t g t t g a t t a t t t t a t t t t t a g a c t a a c c a g a t c
a a g c t g a a c t a c t t t a t a c t t a a g g a g t a t a t c c t a a t g g c a a a t c c t a t a g t t t t a a t t g a a c a t c a t t t g g a g a t a t
t c t a g t a g a a c t t t t t a c t g a a c a a g c t c c a g t c a c a g t t a a a a a t t t t t a a a a t a t g t a a a t g a a g g t t t t t a t a a a a
a t a c a a t t t t t c a t c g a g t a a t t g a t g g a t t t a t g a t a c a a g g a g g t g g a t t a a a t a t t a a a a t g g a g a a a a c a a a c t
g a t g c t c c t a t a g a a a a t g a g g c t t c a a a t g g g c t t a a a a a t a t t c g t g g g a c t a t t g c a a t g g c a c g g a c a t c t g a a c c
a c a t a g t g c t a c t t c t c a g t t t t t a t t a a t a c t a t a g a t a a t g a t t t t t a g a c t a t c a a t c t c c t g a t g a a g a t g g a t
a t g g t t a t t g t g t t t t g g t a a g g t c a t a g a a g g a a t g a a t g t t g t t g a c a a g a t t c a a a a a c a a a a a c g c a t c a a g t t
g g a a t t c a t t c t g a t g t c c c a a a a g a t a t t g t a t t a a t a c a a a a t a t t c a t t a t t t g a a t a a a a t a g t t g a a t a g a a a a
g a g t a g t a a c t a g c a c t a g t t a c t a c t c t t t a t a g t g a g a a t t t t t t g a a a a t a a a a a t a a a g a t a g a a a g a g t g g t g c
c t g g g g a c a g g a t t g a a c t g c c g a c a c g g g g a t t t t c a g t c c c c t g c t c t a c c a a c t g a g c t a c c c a g g c a a t g t g t t g c
a t c t c t a a c t g a a a g t t t g t t a c t t a g c a a g c a t t t t t t a t a a c t t a t t a g c a t a a a c a t c a t a a a t t c t t a t a a g a c a t
c t a g c a a t a c t a t t t g t t a a a t g t a t t t a t g a a a a t g a a g t a a c a t a a g t t t a t a g a t a a c c t a a t t a a t t a t t a g c t t a
a g t t a t t a t t a t c t t t t g t t t t t c t t c a g c t g g g a t g a t c a c c a t t g a t t c a a t a a t a a c a g g t a c g a t a g g a c a t c
a t t a t g c a t a c c a a c t g t a t g a g t a g g a a c t t g c t t t a t a a g a t c c a c t a t a t t t t g t c c g c t a a t a a c t t g t c c a a a a a
c a g t a t a t c c a t a a c c a c t a g g a g t a g g a g c t t t a t a g t t a a g a g c t t t a t t a t c t t c a a c a t t a a t a a a a a a t t g t g t t
g t a g c t g a a t g t g g a t c a t t t g t t c t a g c c a t a g a a a t a g t a t a t t t t t a t t t a a t a a t c c a t t t g c a g c t t c a t t t t g
a a t a g g t t t t t a a t t g g c t t c t t t t c t t c c a t a t t t t c a g t a a a a c c a c c a c c t t g t a t c a t a a a t c c a t c a a t t a c t c
g a t g a a a a a t g g t t t t a t t a t a a a a t c c a g a t t t t a c a t a a a a a g a a a a t t a c c t g c t g t t t t a g g t g c t t t c t g t g t a
t c a a c t t c t a t a g t a a a c g t t c c a t a a t t t g t t t t t a c a a g a a c t t t a g g t a g t t c c c c a g a t t g a a c a t c t t t t a a g a a
g a a a a a a g a t a a a a t a c a a c t t a a t g t a a a a a a a g a a g c t a t t a a t t t t t c a t a a a a a t c t c c a c a g g t c t a t t a a t a a
t a t t t a a c t a t g t t t t t a t a a t t t a t t a t a a c t a t a g g t a a a t a t t g a t g c t g a g c a c a c t a g a t t t c a a a t a g c a t t
t c t a a a t c t t c t t t a g t a a g a g a t t t c c a a g t a t c t t g t c c a g g a a t a a t t g c t t c t g c a a c a c c a c g t t t c a t t t c t t g
a a g t t t a a g g a t t t t t c t t c t a c t g t a t t t t g a c a g a t a a g c t t a t a a g a a a c a c t t g t c g t g t c t g t c c a a t a c g a t
g t g t t c t a t c t g t t g c t t g g c t t t c a a c a g c a g g g t t c c a c c a t g g a t c a t a a t g a a t g a c g t a a t c t g c a g a g g t t a a g
t t a a g a c c t g t t c c t c c a g c t t t a a g a g a g a t a a g g a a g a c a g g a a t t t c t g g a g t g t t a t t a a a t t a t c t a c t t g t t c
a a g t c t a t c t t t a c t a g t t c c a t c a a g a t a a c a a a a t g g a a t a t c a g t t a t t t g t a g c c a g c t t t t g a t c a a t t g a a g c a
t c t g t a c a a a t t g t g a g a c a c a a g a a c t t t g t g t c c a c c t t c a a c a a t a t c a a a g a t c a t a t c t t t g a a a g c t t c a a a t
t t c c c t g a t g c a a g a c t t c c a a t a g a g a a g c c t g g c a t a t c t a c t t t g a g t a g g c g t g g a t g a c a c a t a t c t g t c g a a g
t t t t a g t a g t g c a t c a a g t a t a g a c a t t t g a c t t t t t g c a a t a c c c t t a g t t t c t a t a t c a g c a a g t a c t t g t g a g c g a a
g t t t t t a g t a a g t g c t g t a t a a a g c t g t t t t g t t c a t c t g t c a t t g c a c a a t a t g t a a t a t t t t c a a t t t t t g g t g g a
a g a t c t t t g c t a c t t c t g a c t t t g t c c g t c g t a a a a t a a a t g g t t t t a c g c g a g t t c g t a a g t a t t c t a a g g t t t c a t t
a t c a c c a t c g c g t a t a g g t t t a a t a a c t c c a c g t t g g a a t g c a t g t t g t g a c c a a g a a a t c c a g g c a t a a g g a a t t c a a
a t a a t g a c c a t a a t t c a a a t a a g t t a t t t t c a a t a g g a g t a c c t g a t a a g c a a a g a c g c a t a c g t g c t t t g a t t g t c c t a
a c a g a c t t a g c t g t a a t t g t a t t t g g a t t t t t a t a t t t t g g g c t t c a t c a a g a a t a a t a g t a t t a a a g t a a t g t t t t t c
t a a c t c t t c t a a a t c t t t c t a a g t a g a g c a t a t g t t g t t a t a a c t a a a t c t g a a t t t a c a a c t t t t t t g a a c a t g c c t t
c a c g t c g t g t t c c a t a a a t a g t t a a t c t t t t t a a a t c t g g a c a a a t t t t t c t g c t t c t c t t t c c c a g t t t t g g a a g a a c t
g a g g t a g g a a c a a c t a t a a g g t t t g g t c c t t c a t a c t t t c g a t t t a c c a t a t g t t g a a t a a a g g a a a g a g t t t g t a t t g t
t t t t c c t a a t c c c a t t t c a t c a g c a a g g a t a c c t c c a a a c c a t a t t c a c t a a g a a a a t t a a g g t a a g a t a c g c c t t g t a
g t t g g t a a c t a c g t a a t g t t g c a t t t a a t c c t t t a g g t g t t t c a a t a g g t g t a a t t t c t t t g a a a c t t c t a a t t t t a t t t
c g t a a t g a a t t c c a a a a t g a a t c t g t t t c t g a a t t a g g a a g t t c a t c a a g a a t a g t a t c a a g a a c a g g t g c t t c a a a t t g
t t t a a a t t g a t g t t t t g g a g g t t t a g t t g g a t c a a a g c c a a g t g c a t g a a g t t t a t g a g a g a g t t t t t g t a g c c a t g t t t

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c t t t t g t a c c t t a t t c t t t a c c t a t t a t a a a a t c t a a a t t t c a t g g g a t a a a a c c a g c a c c a g c a g g t a t t a t g t a t a a
 t c t t g a t c a g t g g t g g a t t c c t a a a a a g c t t c a a t a c a t a t a a t a a t t a t a t c a a t c a t t t t a c a t t t a t t t a a a a t g a
 t t a t t a t t t a t t a t t a t t a t t a a a g t a t a t a a c g g c t g t g a c t g t a g t a a t a t a t c t a t t t a c c a t g g a c t g t t c a
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 a c t g c c a c a g a g c g t t c a c t t g t t c a a a a a g c a t a t g t t t a t g c a g c a g c a g c t c a t g a g g g a c a a c t t a g g c t t t c a g g
 a g a a c c c t a c c t a t c t c a t c c t c t a g c t g t a g c t g a a a t g t t a t c t g a a a t g g g t t t g a t g c t t a t g c t a t t a t g g c a g
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 a t t g t t a a t g g t g t a a c t a a a a t t a g t a t g a t g a g t t t t g a a a g t a a g g a g a c a a c a a g c t g a a a a t t t t c g t a a a a t
 g a t t c t t g c t a t g t c t c a a g a t a t t a g a g t t c c t a t t g t t a a g t t a g c a g a t a g a c t g c a t a a t a t g a g a a c a t t a a a t t
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 c a t a g a a t t a a a t t a g a g c t t g a a g a t t t a a g c t t t a a a t a t c t c c a t c c a g a t a t t t a t a c a c a a a t t t c t a c c t g g a t
 g c a t t c c a a t a g a g t t g t a g a a g a a a t c t t a t t g a a a g a a t t a t t t c t a a g a t t a a a g c t a t t c t t c a t a a a a a c g g g c
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 a g t a t g c a t g a t a t c c t t g c a t t t c g a g t t a t c g t a g a t a c g a t t a g t g a t t g c t a t g c a g t a t t a g g a c t t c t t c a c t c
 t c a g t g g a a g c c t t t a c a t g g a c g a t t t a a a g a t t a t a t c t c c a t g c c a a a a g t a a a t g g a t a t c a a a g c t t a c a c a c a a
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 g c t t c t c a c t g g t t a t a t a a a g a a c g t a a c c a t t c a g t t a a t t t a a g t g a t g t a c c t c a a t t t g a a t g g t t a a g a g a g t
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 a t g t c t t t a c a c c t g c a g g a g a t g t t a a a g a g c t a c c t a a a g g a g c a a c a c c t c t t g a t t t t g c g t t t c t t a t c c a t a c a
 g a a a t g g t a a t c a t t g t g t g g g c a g t a g a g t t a a t g g t a a g c t t g t t c c t c t t t a c t c a g t t c t t a a a a g t g g t g a t a c
 t g t t g a a a t t a t t a c a g a t a a a a a t a g g t a t c c t a g t c g t g a t t g g c t t a a a a t a g t a a a a a c a g c t a a a g c t a g a a a t c
 g t a t t c a a c a a t a t c t t c g a a c t g a g g a a a a a g c t g c a g c t a t t t c t c t t g g t a g a g a a c t g t t a g a a a a g a a g g g c g t
 a a a c t t g g t a t t a g t c t t a c a a a g c t g a a a a a g a a g g a c a c c t t a t a t c t c t t g c t a c c c a t c t t t c t t t a g g t t c t g t
 t g a c g a g t t a c t a g c t t c a g t t g g a t a t g c c c g c a a t a c a c c t c g g t a t a c a t t a a a a c g c t t a c a g a c a t t a a t g t c t t
 c
 a g a t g a g a c t t c t a g t t a t t c t a a a g t a a t t g c t c c t c a t a a a a a g a a a a a g a a t c t t c t g t a t t g c a a a a t t t t a g t g
 g a g t t a c c g t t a g a g g c a t t g a t a a t a t g c t t g t a c g g t t t g c t a a a t g c t g t a a t c c a g t g c c a g g t g a t t c t a t t g t t
 g g a t t t a t a a g t c g t g g c c g t g g t g t t a t t g t t c a c a c a g a a a c a t g t c c t a a t g t t c a a g c a c t t g a a t c t g a c a g a c t
 t g t t t c a g t t c a a t g g g a t g g a c a t g a a a c t g t t c c t t t t c c t g c a c g t a t t t a t t t a g t t g g t a t a a a t g t t g t t g g a t
 t a c t t g c t g a t a t t g c t c t a g t t t t t a a a g c a g a a a a t g t g a a t g t t g a a t c g t g t a t t g t t c a a c g t t t a a t t g a t g g a
 a g a t c a g a a a t g g a t g c t a c c a t t g g a g t a a g a g a t a t t g c a c a t t t a t a t c a a g t t a t t g a t a a a c t a c g t c a a c t a c c
 t a a t a t t g t a g a a g t c c t t a g a a a a c a g c a g a c g a g t a a t t g t a t a a t t a t a g t a t t a a a a g t t t g t a a t t g g t g g a g
 t a a a a g a g g g t a c t a t t g t t g g a a a a g a g c a t g a t a a g t c a t a a c a a g t a t a a t a a t a c c a a t g c c a c a t t t t a t a a t a
 a t a c c t a a t a a t c t t c c a a t a a g t g c a c c t t t a g c t g c c c g g c t g g c t c t t c a c g a c t a c g t c c a t t a a g g a t t t c c a t
 a a a a t a g c a a c c t a t c c a t g c t c c a g c t a a t g c t c c a a t a a a a g c a c c c a a t c c a a a t a a a a a t g g t a a t c c t a a t a t t g
 c a c c a a t a a a c g c t c c t a a t a a a c c t a t c c a c a t t c c a c t t g t a c t a g a a c c a t a t t t t t t a c t t c c c c a a c t t t g a g c t
 a t a t a t t c a a t a a t t t c t c c a a g a a t a g c t a g t c c a a a t a a c a t a a t a a a g a a a a c a t a t t c a t a t c a g a t g t g t t t g g
 a c c a a t a a a t t t c c a c a g a g a a a t a a g a c c t a g c a t a a t c c a a t t t g c a g g t a a t g t a a g a a t a t t t a a t a g a a g g a t a a
 c a g a t a a a a t a a g a g a a a a a t a g a a g g a a a t a a a a c a t c c a t a g c a a t a t c c t a a g c a g a c g t a a a t a g a g t t a g t a t g
 a t g t c a c t a t a g t t a t a t t a t c c a g t t a g t a t a t t t t a t t c t a c g t a t t t t t a t a a a a g a t a g g t a g t a a t t t g t t a t a a
 c t a g t t g a a c t a g a a a t a a g t g t a a a t a a a a a a a g a g a g a t g a a c a a g t a t t g t c t t t t t t a c a a t a c t t a t g t t a c t a c
 t a a a a g t a g t g t t t a c g t a t g t a t t a g t g t a t a g t a g a t a g a t a g t t t c c a a a a a g a t t c a a t c t t a c t t t t t t g g t a t a
 g a a c t a t t t t t a t a c a t t t a a g a g a g a t a a g a g a a t g t a g a a a a a g g t a g t g c t a a c a a t a g g c a a a t t a t a a t t a t g t c
 t a t t a t a t g t a t t g t c a a t t a a g c a a a a a a a t a a a a t a t a t t g t a c t a a c t a g t a g g a t a t t a t c t t c c t a a t a t t a a a g
 a a a g a t a t g a a t g t t t t t g t t a a a a a g t a t a c c t a a g t g t a c a a a t a a a t c t a t a t g c a t t g c t t t t t g t a t c a t g a c t g
 t t c c a t a t t t t t t a t c a a g t t t a a g a t g c a t c c a g t t a a g t t c t a a t c c a a c c a t a a g a t t t t c a t a t a t t t t g t a a a a
 a g a a t t a a t t t t a a c t c t a g t a c a g a g t c t t t t t t g t c a a a t a a a g t c c a t t t g g a g t a a g a a a t c c a t t t c t a g a t a
 a c c c a c t a t t a g g t a a a g c t g c g a a t a a g g c a t a t t g c t t t g c a a t t t c t t t a t t a t t t g t t c c t t g a t a c c a t g c t a g c
 c g t a a a t t a t g t t t t a a t t t t t c a a t a a a a c t a a t a t c c a t c a g t t g t c c g g c a a t t c c c c a t g t t c c t g t a g g a t c a t t
 t c c a g c t a t t g a t g c t c c t g t c c c a c g a t c t t g c c a g t a a c c a t c a a a c c c c a t a c t t g t t c c t g t c c a a t t t g a a t c a t

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 t t c t c t t g g t g a g g c g c a a a a g t t a c t c t g a t g t c a t t t c t c c a a t c a t t c a a a a g g a g t a t a a c a a c t c g g c a c g t c
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 cgcat t t c a g g t t c a c g a t c g a c c c c a c g t g c c t t c g a g c g c g a a t c c a t g c c c g a a a g c t g a t c g a c t c c c t g c t g t g t
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 ggtggttacgctaaaactcct t t c c a t g a g a g a g c a g t c c a t g a g g g c a g c t c t c t c g t t t t t t g a c c a t g a g g a g c a c
 t t t t a c c g a c a c a a c c g t a c a a a a c a g a c c t c t a t g c t c c c g t a c t g a t c c c c t c c c a c a c c g c c t a t c c g c c t c a c
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 at t c a a a a c g a g a g g a c t t a g a c c a g g a c a t c c g a t t t t a g c g g a a a a t c a g c t a a a a a t c c c t c c c c c c g a t t t t t
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 g t t c c t t c t t t t t a t c c g t c a t c t t a g a a t a a g a t g a t a t a a g t t t a t a a a a t a a t t c g g a c a a g a t a t t a t g t a a c c a
 aatcaattat t t t c a c a a g t a t a c t t t t t c t a a c a t g t a a a t a a a t t a t a t a t t t a a t a g g t a t c a t g t a g t a t a t a t
 aaacaacat t a a a a a c t a t a t a t a c a g a a t t t a c a a a t a a a c a t a a t a c a t c a t a t c t c a t a a a a a c t g t a t t c t a a a c
 t a t c a c a t c a a a a a a c a t t t t a a c t c c a a c a a a a a g a g g a a a a g c a t g a a t a a c a a a a a a c t a t t t c c a t a c t a t c a a t g a
 a g a a t g a a a a c t t a c t a t c a a c t a t a t a t c a a a t c a c a c a a a g t a t t a c c g g t a t t c t t c a a c g t c a g a t a t c c t c
 a a c a t t a t c c t t a c c c t c a a a g a a g a t a t t c c t c g t t a t t c g a t a a g g t c a a t a c g t a t t a t t t c g t t t a g g t t a t
 gatccttactact t t t g g a a a g a g a a c a g a a t a t a t c a g a a c a c c a c c a t t a c c a c t g c t t g c t t t t c t g a a t g g t a a
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 t t g t c c t a t a a a c t a g a c a g a t t c g t a t g g c t g c t t c c t a t c t g g c a a a a a c a g c t a c t t c a g g t t t t g t g a a t g a c g g
 a t a t c g g a a c t t t g g c t g t t c t c g t a t a t a a g t t t a t g t a a t t t t t a t t t t a c t t t t a t a t a t a t a g a g t t c g a a t a a c
 g a t a a t c a g t c t t a t t a t t g g a g t a g c a c a t g a a a a g c a a g a a g t t t c t g t c c c g g a a a a c a t c t t a t c a g t a t c c a
 c g g c a a t g a t a t t c c a a g a t t t t a g g c a t g g t c g a c a t a g c g c a t c a a c t g g g t c t a c a a t c a a t t g a t a c t a t a c c a c
 t a c a a t t c c c t c a t c t g a c a a t g g a a a t a c c g c t a t a t t c a a a a g t a c g g t t a c t t t g a a a a g c g g t a t c g t a t g t t c t
 g c t a t a g g a g a t g c t a c g c c t g a a a a t g t t c c t c c t g c g t g t c g t a a c g c c t t c a t c c g t a t g g c a a g t a c a c g a g c a a c
 c a g c a g a g c t a t a g g a c t g c t t g t a a c g t a g g c a c t c t g g a t t t t g a g t c c g a a a c g a t g a a c g a c c a g g t g a t c g a t g
 t g g a t t a c c g t g a t a g c t c t g c a t c a t c a c c g t c c a a a c t g c t c a t a g c a a g c c c g t a a g t c a g a a a c a g c t t g a g t a t

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at t c a t a g t c t c a g t g a c a a c g c a g a a c a g a t a g c c a t g g a a a a t t c a g t a a g g a c t t g a a c t c t c t g a c a a c a a c a g a
a g c g c a t g a a g t t a t t t g t g a g t g c a g a g c c a g g g a g a a t a a t a c a t t g t a t g a t a c c g t c g t a g c t a t c a a a g c a a a
a a a g c c t c a t c g a a t c c a a g t c c a a g a a g a g g g a c t a t c c g g t a a t g a g t c c t c c c a a a a g a t c a t c a a c a a g a a c a t c
g
a t g a a c t t a c a g g g g c a g a g g a a g a t t t a g t t a t a a a a t c a a t t t t a t a a t t a t a g t g t g a t a t t c g a a c a a c a a g g a g t
g t a g t a t g g a c t t a t t t c a a g a a c a t c c a g g c a t a g a a c t g a g a a t a t a a t c a a c a a a a g g a t a t g a a c a t c t c t g a a
t t t g c g c g t a t g a t g a t g t c t c t c c a t c a c g c a t c a a t g a g a t g t t c a c g c c a a a g a a g c a t a a c t c t t g a c a c t g c
c a t a a g a c t c g c c a a a g c a c t c a a t a c c a c a c a a a a t a c t g g a t g g a a a a c a g g t a g a t t a t g a t a t a g c t c a a t t t g c
a t t c a t a a g c a g t a a a t a c a t t a t t t g g a t g c g a a a g a g g a t c g a c t t t t t a c a g c c g a t c c t c t c a a t t t t a g c a a t t
a t c g t a a g t c g t t g t t g g g c a t c a t a t t t a a c g g a t t t g c t t c a t a a a t t t g a t a c c t c a t t t t t t g a t t a t t t g a t g
t g t c c a t a t t a t c c a g c c c t a t a c g a t g g g c t g t t a t c a a a t g t t a t c g g t g g t g a t a a c g g g g g t a g c a g g g t g t t
g t t t c t c t g g t g g t t t a c a a c t a c a t t t t a c c a c g a a a g g c a g g g a a t g c a a t a a c c a t c c t t g c t g t g g c g t a t c a a
g g a a t c t t a c t g a a c a t a t g g c g c a c c t t a t c c a a a c g g c t g t t g g a c g a c g g g g c t g g a t g a t t g g c t c g c c g a c a g t
g g c c t g a t a c c t t t c a g t t c c g t c a g g c a c a c a c t c c g c c c g t t g g t g t a a a a g g c c a a a t c a g t a c g g t a t g c c t g t a
t g c a a c g g g c g g g a a t c t c g c c a g t a a g a c a a c t t c a t c c t t t t t a t c t g g g c c g t t t c g a t g g t g g c a c a g t a t t t c
g g c g c a t c a t g a t a a g c c t g g a a g g t a t t c c t g g g g c g c a t a g a g g t g a a g g a g a g a t a a g g t t c c a g c a a c t g c g t
c c c a g a t t t c t t c a a t g c c t g t t c c a a t a c a a t c g g g g c c a a t g a g c g g a a g t c c g c c g g c g t a c t g a c c g g g c t a t a g t
a a a g t c c g t a t t c a a g c a a a t c t t a c a g t c c g t t a c g t t c c a g c c a c a c a a g c c t t g c c c a a a a c c g t a a c g g a t a c c a
t c c a t g a c a g c g t t t g a a a a c t c t g g t t c a g g t a t c c c a g g g a a a c c c g g c t c t c g t a t t t t a c a c c g g a g c c a a g c g g
g a g c g g t g t a a c a g a c a g t c c g a t a g a t g c c c a a a a c g g g t t a g g c g g c a c c t c g a t a t g g a t g g t g t g a c t g g c c a c t t
t g a g c g g c c g c t c a a a t a a a t g a c g g t g g g t t c c t t c a c t g c t g t t t c a a t c t t g t a t t t t t c c g t c a g c a a a g c g g a a
a c a a c c t c c a a c t g c a t c c g a c c c a a a a a g a a g a a t g a t c t c a t g g g t g g t g g a a t c c a c c t c g t a g t g c a a a a g c g g
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t c g t g g g a a g g a t g a c a a t t t c g c c c t t a t g g g c g g t a t c t g t c c g a a c a a t c t c c c c t t t g g a t g g a a t a c g c a t c t c
t g t g a t t t t c a g c t t t t c t c t c c c g g c t a g g g c c a c c g t a t c c c g c a g a c g c a g c g t t c c g c t g t a t a g c c g c a g a t a g a
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t g g a a c a g c c c t a t c a c c g c a t c c a t c a a c t g t t g a a t g c c a a g g c c g t t t t t g g c g t a c c a t g a t a g a c c g g g a g c a g
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c c a c t t a t c a g t a t c a c c t a c c t a t t t t t a t t g a t g c t a c a g c t g g g a a t g g t t a t g a t a c a t g c t t c t t a g c a c a a c t t
g c t g g a a c a c a a g g t a t a g t a t t a g c c t t t g a t a t c c a a c a a g a g g c t a t a a c g a a t a c a t a t c a a a g g c t t a t a t c t t t
a c a t t t g g a a c a a c a a g t t a c a c t c a t a a a a a g t g g a c a t g a a c g c t t a t a t g c t g a a a c a t t a a a c t t t t t t c a a a a a a
a t a c t c a t t t a g t a g a g t t c t a c c a t t t t a a t a a t c a a a t a g a t a t t t g t t c t g g t g t g a t g t t t a a t c t t g g g t t t c t t
c c t a a a a g t g a t a a a a a a a t t g t t a c a c a a c c t a c t a c t a c a a t a a t g g c a t t a a a t a a t g c a t t a a a t g t a t t a g c t c c
t g g a g g a a t t a t a a c t a t t c a t t g t t a t a c a g g a c a c t t a g g a g g a g t a g a a g a a g t g a a g c t g t t t t a t a t t g g a g t g
a a c a a c t t t c t t t a a a t a a a t g g g a t a t a a c a a t c t a t a a a c a a a t t t t t a a a c a a a a g a a c a a t g a g c a a t t a g t g c t t
a t t a a a c g t a a a c a g t t a t g a a t a g t t t t t c a c a g c c a t g g a t a t t t t a t t t g t g t g c a t c a a t t g c a a t a g g t t a t g c a
t t a g g t a g a c t a a a c t a t a a g g g a g c c t c c c t t g g c a g t g c a g c t a t t t t a t t t g t a g g t a t t g c t t t t g g t a a a a t g g g
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a g a a a t t t c t a a a t t t c c a t g a g c t c c a c c a g t a a a g t c t g t t a t a g t a t a t a t a a t a g a t a t g g c t t t a t c a g a g g g t t
t a g t a a t a g a a t a g t c t g c c c t a a g t t c a t a g g g a c c a a t g g c a a g t t c t t t t c a c t a t t a g t t g t t t t a a a a t t t c a
a c a a g t g t t g g g c c a a c c t t t g a t a t c t t g a t c a a t c t t a c t a c t a t g a a t t t c t g g a t a a t g t a c a g a a a c c t g c a t
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t a a t a a t a a a a a a a a a t a g a a a t a a t a a t a a t a a t a a t a a t a a t a a t a a t a a t a a t a a t a a c g c a t a a c a a a a c c t a t t t t a t a g a t a
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c a g a a c a t a c c c t a a t t a t a a t c t a t a t t g a c t c a c t a t g t t t c c a a a c t t t t c t t c a c c t t t a a t g a g a c g t t g a a t a
t t t t g t t t a t g a c t c c a a a a a a t a a g t g c c a t a a t a a t t a g t g a t a a t g g a a t a t a t g c a a a t t t c c t g t a a t g a a c a a
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t a g c a g c a a a t a a c a g t t g c c a a a a g c a a t t g g a a t a a g a a c a c c t a t a g a g g t g c t a c a g c t t t c c t c c c t t a a a g
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t g t t g c t a t t a c a a c a g g a a a a a t c c t t t c a a t a c a t c a a a a a a t a a g g t a a t a a a c c c a a g t t t t c t a c c a c a a a t t c
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t a g a c t t g c t g a a t t t c t a a t a t a t g a a t t t c a t t a t g t a g t g g t t g a a t a t t a c c t a t a c g a a t a t a a a t a g a c t g t c c
t a t t t c a g g a a c a g c t g t a a a a a g t t t t c g a c g a g c c c g a a g a g t a a g t t g c t c t c t t g g c a a a t t a a c a a c a a t g t a a t
g t t c t g t t a c c t c a g t a a c a a t a g c t g g c c a c c a t g t a t t c t t a t c t t g t t g a a g a a t a t a t a c c a a c t t c c a a t a t c t t
t g t c g a a a c c g c t g t a t t g g t t t g t a t a t t c a a g a c g a g a a g t a a t a t a a g g t a g c a t t a t c t c t a a c t c t t t t a a a g a
c c a t t t a t a t t t t c a t g t t g t a a t a c a t g a a g a a t t t g t g c t t g a t t a c c a t a t c t g g a t a t c g t c t t a a t g g t g a c g
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c g t t c t a c t a t a a c a g c a c c a t g t t t a a g a c g a t a t t t t t g a t a g g t t t g t g c t a c a t g a a a a g c t a a c t t c a g t t g t t c
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g g t t g c t c t t t t t c t a a c t g c t t g a t c a a g g g g a t c a t c a a a t g g c c a a t t c a a t g c a g g g c a g g c t a a t g c a a c a c c a
c t t t c c a t c c a t t g t c t a t t g g t t c a a t a a a a a a a g c a t c a t c t t t a t c t t t t g t t g t t t c t g a a t c a a t a c t t a t a a a g
g g a a g g g g t a g g g t a g a c g t t g t a t a a a g a g a a g a t t g t t t a c a c a a c a t g t c t a t a g t g t t t t g g a a a g g t t g t t g c c a
a t t a t c t g t a g g a t c a t a a t c t a t a c g c t c a a a c c a a a t g t t a t g a t g t g g t t g t a a t a t t c c c c a t g c t t g t g c a a g a t
a t a a a g c a a g a a a t g g a t c a t c a g g a a g t c c t g t t a c a a g t t t t t c c a t a a c t g a c t a t c a g c t t t t t c t g g a t t t g a a
a t t t g t t c c a t a a t g a t c t g a c g a a g c t g t t c t t c a a a t t g c g t a t a a a c a t t a g c a g t a t t a a t a g a a t a g a c t t t t t t
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 a t a a a t c t t c c a t a c t c t a t t a a c c a t g g a g a t g g a g c a t t t t a t g g g c c t a a a a t t g a t a t a a a a g t t a c t g a t g c t a t
 t g g t c g t g a a t g g c a a c t t t c a a c a t a c a a t g t g a c t t t a c a t t g c c a g a g c g t t t t g a g t t a g a a t a t g t a g g t c a a g
 a t g g a a a c g t c a t c a g c c t g t a a t g a t t c a t a g a g c t a t t t t t g g c t c a a t a g a a c g c t t t a t t g g t a t a t t a a c a g a a
 c a t t a t g c a g g t g c t t t c c c c a c a t g g t t a a c a c c t a t a c a a g t a a a a a t a t t a a c t g t t a c t g a t g c a c a a a c a c c t t t
 t g c a a a a c a t g t c t a t a g t c a a c t a c a g g a t g t a g g t a t t c g t g t a g g a c t a g a c a t t c g t a a t g a a a a a t t a g g t t t t a
 a a a t t c g c g a a g c a c a a c t t g c t a a a a t t c c t t a t a t t c t t g t t a t c g g a c a g a a a g a a t t a g a a t t a g a a g t g t a a a t 10
 g t a c g a t t g c g a a c a g g a g a a a a t a t t g g t a t g c a g t c a g t t a c a g a g t t t a t t a a a c t t g t t g a a a a t g a c t g t a t a c a
 a c c g t t c a a a c g t g g a g g g a t g a a t t a t c g c t t c t c t t a a t a t t a a a c c t c g t a g a g a g g t t t c c c a a g a t g g a g t a t g c
 c g t a a t g a g c a a a t t t t g c t c g a g a a g t g c g g g t t a t t g g a c c a g a t g g t g a g c a g c t t g g t a t t t t a g a c c g t a a t c a
 a g c t a t t g c t a t t g c t a a a g a a c a t g g c c t t g a t c t t g t t g a a g t a g c a g c a a c a g c a g a t c c a c c t g t a t g t c g t a t t a
 t g g a c t a t g g a a a g t t t a a a t a t g a g g c a c a a a a a a g a a c a a g a a g c t a a a a a a c g c c a a a c a a t a g t c c a a a t t a a a
 g a a a t a a a a t t c g t c c a a a a c t g a t g a a c a t g a c t t t g a a a c t a a a g t t c g a c a t a t t a a a c g t t t t t t a g a a g a a g g
 t g a t c g t g t t a a a g t t a c a g t c t t t t t c c g t g g a c g a g a a a t t g t a c a t a a g g a t a g a g g a a t t g t a a t t t t a g a a c g a a
 t t a t a c t t g a g a c a a a a g a a g t a g g g a a g g t a g a g c a g g a g c c a a a a g c c g a a g g a c g t a c a c t t c a a a t g t t a c t t g c c
 c c c t g c c t a a a a a a g c t g t a t a a a t a t g a c t a t a a c t c a t a a a c c a t a t a g t t a c t a t a a t a c a a c t a a a c a t a t t t t g
 a t t t c a t t a g g a g a a a g a t a t t a t g c c c a a a c t a a a a a c a a g a c g t t c t g c a g c a a a a c g t t t t t c t t c t a c a g g a a g t 20
 g g t a a g t t t a a a c g c c g t a g a c a a a a c c t t a g a c a t a t c c t t a c a a a a a a a t c a c c t a a a c g a a a a a t g c a g c t a g g g c a
 a g t t a c t a t t c t a g c t c c a a g t a a c g t t a a a g c a g t t c g t c g t a t g a t g c c a t a t g a t t g t t a g t t c t g t t t t a a t g g t t
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 t a a a a a g a g g g t t t t c t g c c c a t c g t c g a c a t a a a a a a t a t t a g a a a t g g c a a a a g g g t t t c g t g g g g g a c g t a g t c g g
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 g a a a t g c t a a a a a t c a a g t t c a t t a a t t a t a a t a c a a t a t t a c t t a t t a a c a a a a g t a g t t a a g a a t a a a g t a a t a g
 t t a t c a a a t t a g a t a t a a a a a g t t a a t t g a a t g g a c c t a a t t a a g g a a t t t g a a c g c c t g a t a c c a g a a a t t a a a a a a a
 t c t g g a a c a g g c g t c t t c a t t a g a a c a t a t t g a a c a a a t a a g a g t a g c t t t t t t a g g a c g a a a a g g g c a a c t t g c t g c a c 30
 t t a t g t c a a a a a t a c c t t c a g t a g a t a c t t c a c t a c g g c c a g t a g t t g g a g a a a c t g c a a a t a g t g t a a a g a a t c a a c t t
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g t t a a a a a a t t t c t t a g t t t t c a t g a t c a t a a c g a a g a a a a a a a a c t t a a a c c t c t t c t t a c a a t g t t a t c t a g t g g g a a
 a a c g t t a g c c t t a a t t t c t g a t g c a g g t a t g c c a a t t a t a a g t g a t c c t g g a t a t t g t t t a g t a a a t g c c t g t a g a a a g
 c t t c a a t a c c a g t t t c a g t a g t t c c a g g t c c t t c a g c a c c a a t a a c t g c t c t t g t a g g t t c t g g a a t t a t a c c a c a t c c t
 t t t a c a t t t t t a g g a t t t t g c c t a g a g a t t t c a t a g a c a a g a a a a a a t t t t t t c t t c a t t t a t t a t g c t g t c a c a c a c
 a c t c g t t t t t t t g a a c g t a a a a a t c g a t t a a t t a a t a c a t t a a a a a a t g c t t a t a c a g t c c t t g g t a a t a g a g a a g t a t
 g t a t t g c t c g a g a g c t t a c c a a a c t a c a t g a a g a a t t t c t t t t t t t a a c c t t g g a g a a g a a g t t a c a t t t a a a a a c t t a
 c t a g g t g a a c t t a c t g t t a t t a t t a g t c c t c c a a a g a a a a a c a t a t a a c a g a a c a c a g c a t a t t a t a t a a a a t a a t a a c
 a g a a g a a a a a a a t a t g g t g g g a c a g c t c g t g a a g t t g c t a a a a g a g t a c a a a c a c g t a c a a t g g g c t g g a c g a c a a a g c
 a g a t t t a c a g c a t c a t t a c a t c a a g g a g c t a a t a a t g t c t g c t a a a a a a a a t a g t c a t c t t g t a t t t g a a a a t a g a a a g
 c t a g a c a t c t t t a t g a t c t t c t t g a t t t t c t t g a a g c a g g a a t t g t t c t t a c a g g c c c t g a a g t a a a a a g t t t a c g a t c a
 g g c c a t g c a a g t t t t c a a g a t a g t t a t g t c g a c t t t a a a c a a g g t g a a g g a t a t a t t g t a g g a c t t c a t a t c c c t c c a t a
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 a g c g a a a a a a g a g c t c c t g a t t t a g a a a t t t a t a t c c c a c c a g g a c c a c g t t t a g g a a a a a c t g t t a t t g a a g c a a g a g g
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 g t t c a g a t c a a c a a a a a a g c g t t g a t g t t t t a t c a g g a g g a g a a c g t a a t a g g g t t c a c t t a g c t a a t a t g t t g a a g t c a
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 a a a c t t t g c a g g t t g t g t a t t a g t g a t t a g c c a t g a t c g t t g g t t t c t t g a t c g a c t t g c t a c a c a t a t t t t a g c t t t t g
 a a g g t g a t t c t a a g g t g t c t t t c t t t g a a g g g a a t t a t t c t g a t t a t g a a g a a g a t a a a a a g a a a c g t c t t g g a a a a g c t
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 c a a t a a a a t a a a g t t t t t a t t a t a a c t c t t a g a a a a a g a a a a t a t t a a a t t a t a t c t a a a c t t t t t t g a t t a t t a g t t
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 a a c a c t a a t a t t a t t a t c t a t t g t a g a t a t a t g t t c t t c c a a a a t a g g a g t a a c c a t a c g t g a t a a a a c a c c t t t a g g g c
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 a a a g t t c a a a a g a t c c a t a c t t a c a a a g a t t t a t a g a t c g t a a a c c t g a a a g g a a a g t a t t c g t g t a g a a g c t t c c c t
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 a g t a a a t a t a t t t t t g g g a a g g t a t a a c t a t a t g t c a a t a c a a a a a c t t t c t t t a a c t t t a t a t t t t c t t t t t a a t a c
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 a t a t a g a a t g a t g t c a a a a a g a a t a c t t g g g t g t t t a t g a t g t a a t t a t t g a a a a t a t t a g t t t a a t a a a a a t t a t a
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 t t t t a t a t a a t c a t a a t g a t t a t a a t a c a t t t t t t t g c t t a c c a g c a c a t g c a a a a c a t c t c c c t c c a a t a g a g a a t a
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 a g t c t a c g a g t t a c c t a a a g g g g t a a c g c c t g a t g a t g a a t t c c g a c g a c t t g c a c g t g a a g g t t t a c a a a a a c g a t t a g
 a a g t a t a c c c a a a t a a a a a c a g t t a c c a c a g a a a a c t a c t g g a a a a g g c t t g a a c a a g a a c t t g a t a t t a t a t g t a a a
 a t g g g g t t c c c a g g a t a c t t t c t a a t t g t t c a a g a c t t t a t t a a c t g g g c a a a a g a t a a t a a t a t t c c t g t a g g a c c t g g
 t c g t g g t t c t g c a a c a g g a t c t c t t g t a g c a t g g g c a t t a c g t a t t a c a a a c a t t g a t c c a c t t c c t t a c a a t c t t c t c t
 t t g a a c g a t t t t t a a a t a t a g a a c g t a t t a g c t t a c c t g a t a t t g a t g t t g a c t t c t g t g a a g a t a a a c g t g g a g a t g t t
 a t t c g c t a t g t t a t g a a c a a a t a t g g t g t a a a c t c t g t a g c c c a a a t t a c a a c t t t t g g g a a a a t g a a g g c c a a a g c a g t
 a g t g c g t g a t a t a g g t a g a g t t t t g g a t a t g t c t t t t a a a g a g a c a g a t a a t a t c g c a a a g t t a a t a c c a g a t g a t t t g c 30
 a t a t g a c t a t t c t t a a a g c a a t g g a a g t t g a c c a a a a c t t c a a g c a t t a t a c a a t g a a g a g c c t c a t a t t a a a a g a c t t
 c t t g a t a t c t c a a t g a a a c t t g a a g g c c t t g t t c g t c a t g c t t c t a c c c a t g c c g c a g g t g t t g t a g t c t c a g a t a a a c c
 t a t g g a t g a a t a c c t t c c t c t a t a t c g t g g t a a a a a a g g t g a a c t t g t t a c t c a a t t t g a t a t g a a g a t g g t a g a a a a a g
 t t g g a c t t g t a a a g t t t g a c t t t c t a g g c c t a c g t a c a a t g a c t c t c a t c c a t a c a a c t c t c a a a c a a t a a a a g a c c a g
 g g g a a a a t t c c t c c a a a c c t t g a t a c a c t t c c t t t a g a t g a t c c t a a a a c a t a t a g a c t t c t t t c t a a a g g a g a t a c t g a
 t g g t g t t t t c c a a g t g g a a a g t t c t g g t a t g c g t c a a t a c c t c c g a a t g c t t a a a c c c a a c t g t t t t g a a g a t c t c a t t g
 c t a t g c t t g c a c t a t a t c g c c c t g g t c c t c t t g g t t c c g g t a t g g t t g a t g a a t t t a t t a a g c g g a a a c a t g g a a c a g t a
 a c a a t c g a a t a t c c c c t t c c a t c t t t a a a g g a t t g c t t a a a a g a t a c a t a t g g c g t t a t g t t t a t c a a g a a c a g g t t a t
 g c a a a t t g c t c a a a t t g t t g c a g g a t a t t c t c t t g g a g a a g c a g a t c t t t t a c g g c g a g c c a t g g g c a a a a a a a a t c c t g
 a a g c t a t g g c a a a a g a g c g c a c t c g c t t t g t t g a a g g t g c c a t a a a a a a t a a t g t t a c t g a a a g t a t t g c t t c t g a t a t c 40
 t t t g a t t t a a t g g a a a a t t t g c t g a a t a t g g t t t t a c a a a t c a c a t t c a g c t g c t t a t g c a c t t a t t t c t t a t c a t a c
 a g c c t a t t t a a a a g c t c a c t t t a c a t t a g a a t t t a t g g c t g c t t t a t t a a c a t c a g a a a g t g g t a a t c a a a c a a a a t t c
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 a c g a a a a a a a g a t g g c c c t t t t c t t t c a t t a c t a g a t a t g t c t t t t c g g g t a a a c c t a a a a a a a g t c a c a a g g c g t g t g t
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 a a a a a g a g g c a c t a g g t t t c t t t c t a a c a a g c c a t c c a c t a c a a c a t a t a g a c a a g a a a t t t a t c g c t t a g g a c t t c a a
 c c a c t t g a a g a a g t a a g a g a a t g a a t g a t a a a a t t a c t a t t a a a t c a g c t a t t a t t g t c a a t a a t a t t a g a g a a a t t c t 50

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gaata t g c t g g a a c t t g c c a t c c a c g a g t t c t t a a c g a t c t g a a g a t c a t a t a a a c t a a a t g g g t a c t t t t t t c a t c
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 a a a a t a a g a t c t t c a g g t a a a t c a g t t t t c t c t c t c c a t a c a c c c a g c c c a t a c c t a a a g g t g c a a g t c c a a a c t t a t
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 c c a t c t c c a c t t t a a t g c c a t a c c a c c a a g c a t g g c t g c t t c a c t a g a a c c a a t a g c t g a a c a t c c t a t t g t a t t t g t t g
 g a t c t g g g g a a t t c c a a a g a t c a g c t a a c a t a t t t a c a c a g c g c a t t t c c a g t t c t g c t g t c t g t g g a t a t t c a t c c t t a
 t c a a t c a t g t t c t t a g c a a c a c a t t c a t c c a t a a g t t t a t g g a t t t c a g g a t c a a c c c a a g t c t g a c a a a a t g t t g c a a g
 a t t t t g c c g t g c a t t a c c a t c t a g c a t a a g c t c a t c a t g a a c a g c c t g a t a a a t a t c t c t a g g t c t a t g c t c a t a c a g t g
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 a g c c t t t c t t g c a g t t g c c a t g t a a t t a t c t c c t t c a t a a g t a a g c t g t t a t t t a a g a a a a t g c t t a a c c a t t a g t t a t t
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 g a t g c a a c a a g a g t t a c a t a t a a t t c t g g a t t t c c a a c a g g t a g a t t g t t g g a g g g a a a a a a c c c a c t a t t g t a g c a a a
 t g c t a c t c c t a a a a a a c c t a t t c c t g c t a c t a t a a a c a t t c c a a t a a t t c c a c c a g g a a t t t t a t a t a c t c g a g g a a g a t
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 g a t a a t a c a a a g a a g c a a c a c t t a c a t t a t c t a t a a t a a a a t a t a a g c a a g c t a a a a t a g a t a c t a t a a t a g c t t g g a t
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 a c t t a a t g t t a t t g t t t c t a t a a c a a a g c a t t a t c a t t t c c t t g a a a t a t c c a t a g t g c a c c t a a g a c a a t a a t a a g t g
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 t g c t a a a c a t g a t g a t g c a a a t c c a a g c a c t g t t g g a t a c c a g a c a a c g t t t t g t a t c c a c t g t a a c c a a a t a g c t g t a a
 a g c c c a t c g a g a c c a a a a a g c t g c t t t t a c c a a g c a t a t a c t c c t c c a g a c t t a c t a c t a a a a g c a c t t c c a a g t t c t
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 a a t t t c t t t c c a t a a g a a a a a c c c t t t t a a g t t a c a a t a t a a c t a g t a t g c t t t c t a t t a g g t t a c a t c t t a t t t t t a t
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t a c t g t a a c a c g a c a t t a c t t a c a c c c t a t g g a t t a a g a a c t c t a g a c c c a t c t a a t c c t g c c t a c a a a g g t a t c t g t g
a g g g a t c t c a a g a a g a a g g g a t a a g c a t a t c a t c a a g g t a c a g t a t g g c c a t g g c t c t t g g t g c a t a t g g t g a t g c a
t t a c t c c a g t c a g c a g c c t c c c a g a a c t t g c a t t a c a a c a a c t t c t t t c t t t c t t a c t c c a c t g t t t a c t a t t c a c c t
t g a a g a g g c a g g t a t a g g c t t t a t a t c t g a a a t t t t g a t g g a g a t a g c c c a c a t c t t c c a a g a g g a t g t a t t g c t c a a g
c t t g g a g c a t t g g a g a a t g t a t a a g a c t t c t c t a c c g t a g t g a a a a g a a t t c c c t a c t g t t t t a a a a c a t g g a a g a a t
t a t t t a g c t t c t t a a a g a a g c g c c a c t t t a t g a t a c a a c a a c c t t a a c a a g a t a t t t a a a a t a a c t t g g a g g a g c a t a
a a t t a t g c g t a t t c t c a t g t t t g g t t g g g a a t t c c t c c a t a t t t a a g t g g a g g a t t a g g a a c a g c a t g t t a t g g a a t g a
c t c a g g c t c t a t t c g a t c a g g a g c c a a a a t t g t c t t t a t t c t t c c t c g a t c a g a a c a c a g c t c a c g c t a t g t c g a a c a a
a a t a a a c a t t t t c c t a a a a t a c g t t c t g c t g c t g a t g t t t g t a t t a c a c a a c a t a a a c a a c t t g g t t a c t t c a c t c a a c a
a t t t c a a g a a a t c t g g a g a a a a a c t t t t c t a t c c g t c c t a t t a a g c a a c a c t t c a t c c a t a t g t t t c c t t t a g t c a a a
c a c t t t c t g c t t a t t a t t c t a c t c a g a a t c a t t t a a c t g a a c a c a a t g a a t t c t c t a c a g t t a g t t c a g c a t g t g c t t t a
c c t c c t t g t t c t g g t g g a t a t g g t c c a c a c t t a a t g g a a g a a g t a t t c c g t t a t a g c c a a g c t g c t g c a c a a a t a g c t a t
g g a a g a a a t g t a t g a t g t t a t c a t g t c c a t g a c t g g a t g a c a t a c c c t g c t g g a a t c a t a g c t a a a a a a a t t a g t a a t a
a a c c a c t t a t t g c c c a t g t t c a t g c t a c a g a a t t g a t c g a t g t g g t g a c t c a c c t a a t c a a g a t a t t c t a a a t a t a g a a
a a g g t t g g t c t t g a g c g t g c t g a t c a t a t t a t t g c t g t c a g c c a c t a t a c t c g t a a t c t t a t t a t g a a a a a a t a t c a t a t
t c c a g g a g a a a a a a t t a g t g t t g t t c a t a a t g c t g t a c t t c c a g c a t c t g g a a a t t a c a t g g c a g a a a a a a g a a a t t
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g t t t c a a a a a a a t t a c a a a a t g t a t g t t t t a t c a t g g c t g g t a g c g g g g a t a t g t t a c c c t c a a t g a t c c g t a a a g t a g c
t t c a t t a c g c c t t g g g a g t c g t t t c c a c t t t a c t g g c t t t t a c a t a a c c a a c a a g t t g a a c a t a t a t a t t c t c t t a g c a
a t g t a t a t g t t a t g c c t a g t a t t t c t g a a c c a t t t g g a a t t a c a c c a c t t g a a g c t a t a a g a c a t g g a a c a c c t g t a a t t
a t a t c a a a a c a a t c c g g a g t t a g t g a a g t a t t a a a g a g t g c a c t c c a a g t a g a c t t c t g g g a t a t a g a a a g a c t t g c t c a
t t t a a t t g c t c t t a c t t a c a t a t c c a a a a c t t g a g a a t c a a t a a t g g g a c t a g c t t a t a a t g a a c t a c a a a g t a t c c
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 a a c c t t t a g t a a g g g a a t a t g g a t g t g a a c a a a t t c t t a a t a c a t g g a a a c g a c t a c a a a c a t c a g a t c a t t t t t a c t a c
 a t g t g c a c a a a a t g g t t t t c t g a t g g a g a t g t t c a t a a a t a c t t c a a t c c a t a c c c a t c a c c a t a t g a t g c c t a t a t t a a
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 a g t a g t a a c t a c c a a a g t c c c t c a a g c a a t a a a g a c t t t t g g a g a c a a t t a t t a t c t t a t t g g a c c c a a c t t a g g a a a t a
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 a a c t t c c t a a t g a t a c a c g t a t t a t g a t t a t t t c t g g t c g a t a c a g a t t t c a t a a t a a a g g a t t t g a t g t c t t t c t t g a t
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 a t c a t g t t t a t a a t a t a g a g c a a g a t c c t a t t a t t a c a a a a t g t t t g a g a t t a g g a c t c a c a a a t c a t g a a g a a g a c c a t
 g t a a a a t t a t a t t t g t a c c t g c g c t t c t t a a t g g t c a a g a c g g t t t c t t t a a t a t g c a a t a t g a a c a a g t a c t g c c a g g
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 c a g t t a c a a c t g a t c t t t c a g g t t t t g g a a t g t g g g t a c g t a a a c t c c a a g a a a a t a a c c a t g t t a c a g a t g g t a t t t c t
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 a t a t t c a a t c a t a t c a t t c t g c a c t t g c a a a g c c a a c g a g c g t a t c a g c a t a c a t g a a c c a c a a a a c a a c a a c a c a c a
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 a c t c a g a g a a g t t g t g a a t a a t g t t t g g t g g a c c t g g c a g c c t g a a g c a g a a a c c a t c t t c a c t t t a c t g a g c a a a g a a c
 t a t g g a a a c a a t c a g g c c a t a a c c c a c t c a a a a t g c t t g a a g a t a t a t g c c c t g c a g c c c t t a t g g c a g c a g a a a a a a t
 a c a g a a a t a c a g g a a t g t t a t a a c g a a t t g a t c a c a a a a t t g a t g a a t a t a t g a a g a a t a a a c c t c a c a c a a c t g a t c c
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 a a g t c c t t g c g g c t g c c t c a a c c c c a t a a g a a t g a g c a c c t a a a a a t g t c t g a t t t a a g t a t a t a g t t a a a a t t t c a t c t
 t t a g a a a g a t a t t t c t c t a g a c g g t a g g c a a g a a t t g c c t c t t t a t c t t a c g c t c a t a a c t t c t t t c a g g g c t t a a c a a
 a a g a c g t t t a a t g a c t t g t t g a g t a a t c g t a c t t c c a c c t t g g c g t g t t g t c c c t g a t t g a a g a t t t a t t a a a a a a g c c c
 g g a t a a t a g c a a g c g g a t t a a c a c c t t c a t g t t c a t a a a a c t c a g c a t c t t c t g c a g c t a a a a a t g c c t t a g g c a a a a a a
 g g a g a c a t t t c g c t t a a t g g g a t a a g a a a a c g c t t c t c t c g a t a t a t a t a c c c a a t a a g t g t t c c a t c t c t a g c a a g a a c
 t g t t g t t a c t a a a g c t g g t c t a t a g t c a t t a a g c t t t g t a a t a t t a g g a a g a t c t c t a c t a a c c c a a a a a t a a a g a c c t a
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agcaggatcacgccctataataacggaagaaaagaggaatagctccccctgcaagggatcctgcaaccataatccgtcataa
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 a a a a a t t g t a g a g g g a g c t g t a a a a a a t a t c t a a a a g a a g t t t g t t t a t t g g a t c a a c c a t a t a t t c g t g a t g a t a a a
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 c t c a t t a c g t c t a a c a a a t a c t a t t g g t c c a c g g a t g c g t a t c c g t g a t g a t c g t c a g a c a t t t t t a g g g a t a t g g a t t a
 a a a a c g t a c t t t g t g g g a a g c c t a t t g a a g t g t g g g g a g g a a c a a t t a a g a g a c t t t t t g t a t g t t g a t g a t t g t a t t
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 t c c t c a a g c t a a c c t a g c a t t t a c t t c c a a c a g t a t c g t g a a c t a t t a t a a a a a a a t a g a g g a a g t a c t t a a t a g t g
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 a c a t a c a g c c g t g g c t a c t g t t g c t g c c a t t g a g c g t a c a g g t g c c c t c c c t g t c t t a g t a g a t a t a a c a c a a a a t a c a t
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 a t c c c t g t a c a t c t t t a t g g a g a a t g t g c a g a t a t g a a t g a a a t a c t t c a t g t t g c a g g a c a g t t a c c t g t t a t t g a a g a
 t t g c g c a c a g g c t c a t g g a g c t a a a t a t a a t a a a a a t g c t g g t a g t a t a g g t a t t g c a g g a a c c t t t a g t t t c t a t c
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 t g c a a a a a t t a a a a a t a t a c a a t t a c c a t t a g a a a a c c c g a t a g a a c a c a t a t a t a t c a c t t a t a t g t t a t c c a a g t a
 g a t a a t a g g g a t a g t t a a a a a t a t c t t g a g t a a c a a a g g a a t t a c t a c a g g t a t t c a c t a c c c g c a a c c c g t t c a t a a
 a c a a c c a g c a t a t a t c a a t a g a c t t c c c c t t t c a c c a c a t g g a c t a c c t g a a a c a g a t a a a a t t t t t c c a a a a a t a t t g a
 g c c t t c c t c t a t c c a g g c c t t t c t g a a a a t g a t a t a t t g t a t a t t a c a t c a a c t a t a c a a a a a t a t t t t g a t t c a t c c
 t c t c g g a a t a a c t a a a t g a a t a t g t c t t c a a c t a a g g a t a t t c c t c a c t c a a a a a t t a c c c c t t c t a t t a c a g g c c t g t
 t t t a a c a t a t a a t g g a g a a g a c t g c t t g a a c a t t g c c t t a c t t c a c t t c a a t t t t g t a a c c a t a t c c t t g t a g t a g a t t
 c t t t a g t t c t g a t a g a a c a a t t g a a a t t g c t a a a t c t c a t a a t g t g c a a t t t a t a c a a a a t a a a t g g a a t g g t c c t g t t
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 t g c t g c a g c a a c a g g t g t t a a t g g a a t t t t t c t t g a a t g c c a t c c a a a t c c t g a c a a a g c c t t a t g t g a t g g t c c c a a c a
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g a t c a a g c t c a a t c t c t a a a c t t a t a c c t a g a t a c t c c t t c t g g g a a a a a a a t g g a t g a a a t a t a c a a a c t t g c t t g g t t
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 a c c a t t g g a c t c c a c t t g a a a t t a g t a t g t c a c a a g a c g t t t a t g a c t a t a a t c a t a c a c t t a c a c a a a t g a a c g t c a t
 g t t t t g a c a a t g t c t t a g c t t a t t t a a c g a c a t c t g a c a t t c t t g c t a t g c g t a a t a t t g g a t t a g c t g t t a t g g a a a a
 a a t g a c t g c t c c a g a a t t a c a g a t a t a c c a a g c a c g a c a a g t t t a t g a a g a a g c t t t a c a t a c c t g g a c a t a c c a a c a t t
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 c t a t c c a a t a a a a g a t t a g a a c a a g t t t t a c g t t c t g a t a t a a a t t t a t c a g a t a a a g a t a a t t t a c a t g a a t t c a t a a t
 g t c t t a c a t c t t t t t t g c a g c t a t t t t c g a a g g a t g c t g g t t t t a t a a t g g a t t t t c t c c t a t t t t c t c t t t a c a g c g t a
 g a g g a t t a a t g a a a g g a a c t g c t g a c a a t t t c a a t a t a t c c t a c g a g a t g a a g t t t t a c a c t g t a c a t t t g g t a t a a c t
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 a g c a g a a a t a g c t t a t g c t a a t t a t a t t t t a c a t g a a c c t a t t a t t g g g t a t a a t g c a g a t t t a c a t a t a g g a c a a t t t c
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 g a t g a g c a g t c a a a t c t t a g a a a a g a a a a a a a c t t t t t t g a a a c a c g g g t t a c t g a g t a t c a a a c t g g t g g t g g a c t a a a
 a t g g g a t t a a t a c a t t c a a a t a g a c a a a a a a a g a t t a a a t a g a g a t t a c g a t t a t t g t t g t c a g a c t a a a t a a a g t a t t c
 t t c a t t g a a t c t a a t t t a t a t t c t a c t c a a a t a a c a a c c t c a t a g t a t t c t a t t a a g c g c t a g t a g t t a g a a g t a a t a a a
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 a c t a c t a a t t a g t a g t a t a c a a c t c t g a t a c a c t t t a a a a t t a c t a t c a t a a t a c c a t t a c a g a g t a a t t a c c c t t a t a a
 g t g t a a t c a a c a c a t a g c c c c c a a a a t a t a t a a a a a t a t a c a a a c t a t a a a c t t a a c a a a a c t t t t t a c a a c a a t t g t a
 a c t t t t c t t t t a c c c a a t g g c t c a c t t t t t t c a t c t c a t t a g a t a a g c t a t c a t a a t c a a a g c g t g t g a a t g t a c c a t t a
 t a a t a t a a a a t t t c a c c t t c a a c c a t a g t a a g a a a a a c t t c c a t t c c t g t a g t a g c a t a a a t a a g a t g a g a a t t g g g t t
 a a a c a t t g g t t g a a g a t t a g g c a t a c t c a t g t c t a a a g c a a t a a g a t c t g c a g g a t g t c c a g g t g c a a g g a c a c c t a a t t
 t a g g t t g a t g t a t a g c t g c a g a c c a c c t a a t g t a g c c a t a t c t a g a a c a g t t t g t g c a a a a a g a g c t g t t g g a t t a t t c
 c a a t a g a c t t t g t g t a g t a g t g c g c a a c g t c c c a t c t c c a t a a a c a t a t t a a g a c a a t t a t t a c t a g c a g c c c c a t c t g t
 a c c a a g g c c t a c a g a a a g a t t a c g t t t t a t c a t t t c a g g g a t g g g a g a t a c a c c t g a a g c a a g c t t c a t a t t a g a a g a a g
 g a t t g t g a g a a a t c a c a c a t c c a t g t t c a g c a a g a c a a g t t a a c t c t t c a a g a t t a a c a t c t a c a a c a t g a g c t a a t g t c
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 t g a g a t a t c a a a a c t a a c a g a a c t t t c a g c a t t t g a a t c a a c g a t t a t a a a a c a a g t t t c t t t a a a t a c a g t c a t a g g a g
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t t t t c t a g a a a a a t g g c t t c t a t t g c t c a a g a a c a g a c a a t c c g a t a t t t t g g a a a a c t a t a c a a c t t t t t a c t c c t c
 t c t a c c t c t c t a a t t t t t g c a t a a a t a a t t g t a a a t a t t g t a g t t t t a g c g c a a c t a a c c g t a t a a a a a g a a t a c a g t t a
 a c a a t t g a a g a a a t c g a a a a a g a a g c t g c t g c t a t t g c t g c a a c t g g g c t t a g a c a t a t t t t a c t c t t a a c a g g t g a t g c
 t c c a t c t a a a g c a a c t a t a g c t t a t c t t a a a g a a g c t a t t c a a t g t c t t a a t a a c t a t t t t c c t a g c g t a g g a a t c g a a a
 t t t a t g c c a t t g a a a a a a g a a t a c g a a t t g c t t g a a t g t a c t g g a g t a g a t t c t a t g a c g t t a t t t c a a g a a c a t a t
 a a c g a a a a a c g t t a t a t g g c a c t t c a t a c t a a g g g a a c t a a c a a a a t t c c g t t t t c g t t t a g a a g c a c a a a g t a g a g c
 t g c a t c t g c a g g c a t t c g c t t t a t a a c a c t t g g t g c a c t a t t a g g c c t a g a c c a c t g g t g g a g a g a t a t a t t t t a t g t a g
 g c c t c c a t g c a a a t t g g t t a c a a a t g a a t a t c c t g g a g t g g a t c t t a c t a t c t c t g t a c c t c g g a t a c g c c c t c a t g a a
 g g a t a t t t c t c t g a t t a c t a t c c t g t a t c t g a t a a a a c c t t g t a c a a g c t a t t c a a g c t a t a c g a c t a t t t t t a c c a a c
 a t c t g g t a t t a t t c t t t c a a c a c g c g a a a a a c c c t c t c t c a g a g a t a g a t t a a t a t c t c t t a g t g t t a c a a a a t g t c t g
 c a g g a g t t t c t a c t g c t g t a g g a g g c a t a c t g a t c a t c a t a t a g c a a a g a t a a t a t g c c c a a t t c g a a a t t g c a g a t
 a c a c g c t c t g t a g a g c a a a t a a t t a c a g c a a t a a a a g c a a a a g g t t a t c a a c c t a t t t t t a a a a a c t g g a t a a a a t t a t c
 t a a t g c a c c t a t g c a t t a a g g a a t a a c a t g t c t a c c t t t c a t t g g a a a a t g t t a t g g a t g a g c a c t t a c c t g a a t c a c
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 c g a a c a g g a a t a g g t c a t t t a g t c a t t g t t g a t c a t g a t a t t g t t a g t g t t t c t a a t c t t a a c a g g c a a c a g t a t t t a c c
 a t c t c a t a t t g g t a t g c c a a a g t t g a a g c a c t a a a a g a a g t t c t c t t a a c a t t a a t c c t g g g t t a a a a c t t a c a a t a t
 a t c a a c a a t a c a t g a a t c c t a a c a a t a t c t t a a c t c t a t t t g a a g a c t g t c a g t t t g t t a t a g a a g c a g t a g a c a a t g c t
 a t c a c t a a a a a a a t g c t t g t a g a a a c a c t t a t t a c t g t a g a t t a t a c t g t t a t a t c t g c a t c a g g t g t t g c a g g a t g g g g
 t g g g c t a c c t a t g a c a c a a a a a c a g c t a g g c a a a a a a c t c t t a g t a g t t g g a g a t c a t a c c t a t g g a g t a t c t t c t a t a a
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 a a c g a c t a a t a t c t a t c a a t a c c c t t t a c c t a t c t t a t t a a a g a t t a t a t t a a a c t a t a g t c t t a t t a g g c t g t a a c a t
 a g c t a a t g c c a g a t t c t t t t c a t c t t g c a t t c t a c g t a g t g c a g a t g c t t g t a t t t c a g c t g t t g a a g a g c c a a a a a g t g
 t a c c t c t c a a c t c a t a a a t a c t t t t a a t a a g t t g t t g t t c c t c t t g g t c a c c a a t a g a t t g t c c t t c a g a a a t a c c a a c c
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 t g c t g g a g a c a a a g a t t c t a c t t c a t a t c c t g c t g c t t t a a t a c c t t t t a a g g c a g g t t g a t a a t g a c t t t c a g a a a t a a
 a a c g t t t t g t a a a t c c t c a a a a a g t t c g g g t t g t t c t t g a g c t a t a g a t c t c c a t a c t t g c g g c a t t t t c c c a t c a c g a
 c t a c c a g t g t c a g c a g g t c c t g c a c t t t t t a a c c g t g c t g c t a t a t t a g g a t t t t c t c t c t c a a g a a a c t t t a t a a a t t g
 a t c c a t a c t t c c t g g c t t t g a t g c t a t t t g a t a c t t c c c a t a t g a a g t t c c a c c a g t t c g a t c a t a a c c t a t a g c a g a a a
 t a c c t t c a t t t c c a g a t t c a a a t c g a g c a g a a a g c t g c c c t a t c c t t g t t t c a t t t t g t a t a g t t t t a t t t a g a g t t a t a
 t t a g c t g t a t t t a a t t c t g t t t t a c t t c t a c t t a t t g t c t g t t g a g t a t t c a t t c c c c c a t g t t t t c t a t t t a a t g c t a t
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 g a a g t g g t a t c c c a g a t a c a g c t t g a g t t a a t g g t a c a c t a t t t t a t g t t g t t g a t t t t g a g g t a a t a t a g a c t g c a t c
 a c c a t t t c a t t t t g c t g a t g t t g a g c c t c t c c a t t g c c a a t c c a t t a g c a a a a a g g c g a g a a a t t a c a t t t a a c c c t t t
 t g t a t c t t t a c t a t t t t c t t g a g t t t c t a c t g t t a c t t c a g a a g t t t t t c c a a c c a t t t c t g a a a a a g a t t c a t t g t c a a
 t t t t t g t c c t g a a g t t c t c t t a a a g a c t t t c g c a t g t t c t g g t g a t g t a c c g c c a a g a a t a a a t g g t g a c t t g g c t a t a
 g a c a t a t a a t c c c c c a a a a g a t g a t a t t c t t a t a c a t t a g a a t t t a a c a t g c a a a t t t t a g g c c t t a a t a t a t a a c t t a g
 t a t a a a a a t a g a t t a t a a t c c c t t a c t t a c c t t c t t a t a a a a t t t g t g c t c a a g a a t g g t t a c t c t c c a t a a a c c a a g a a
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 c c a a g g a t g t a t c c t a c a g g t a t t g c a a a a a c c a a t a a g c a a a a a g t g t t a t a t a g a a c a c t g t c t t t g t a t c t t t a t a
 t c c t t t a a t a a t a c c c a t t g t g a t t g c t t g t a a t g c t t c a a a g c a t t g a t t g a t a g c a g t a a a a a t c a t t a a a g a a g t t g
 c t a c t t t t a a t a c t t c a a c a t c a t t a t t a t a g a t t c c t g c t a t t t c a t a a c g a a g t g t a a g a a t a a a t a t a a t a g a g c a t
 a a t g c a a t a a a t a a t c c c a a a c t t a g a g a g a c a a a g c t g a c a c a a t g t a a c a t t t c a t a t g a a t g c c t g c c a a t a c t a t a
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 a g a g c t c c a g g g a a c c a a t a c g t a a c a a t t g c c a t t g t g t t t t t t a t c t a t c c a t t c a a c c c a a t t t t t a a a c g a t a a
 a a a t c t t c g a a c a t c t g g t a g a g t c a t t g c a t a a c a a a a a a t a a c a a a a a a c a t t a c c c a a t a t a c t a t a c c t g t a g c a a
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 aagactcata t c t c c t a g t a g t a c a t t c c a t a t t t g a g g a a g t t c a t c t a a g c t t g t t c g t c t t a a c a a c t t a c c t a c c t
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 t t g c c t a a a a a a a t a g g c c c t g g t g a t t c c a a c c g t a t c c a a a t g c a a t a a a a c a a a t g a g t g g g a a a g t a g c a a t a c
 c t a t a a t a a t a g a t a a a a t a a g a t c t a t a c a c c t t t t a a c a a c t a g c t t t c g t g g a t c a a g c a a a t t t t g t c t t a c t t t c
 a a c a a a g g a a a g a a c c a a t t t c t a a a g g a c g a a c c c a t a g a g g a a t a c c a c a c t t a a a a a a t c t t c a g a a a c a a g g a t
 a a t g g a a g a a a c a a a g t t g t g g c t a c c t t c t a a g c t t t g t a t g g t a t a t g t c a t c t t t t g a t a a a a g a a c a a a t g c a c
 a g c t t c t t g g a t g g t t a g a t a c a a a t t g t t t a a t t t t t g c t c t g t c t c a a g g t a c a t t a a a g a a g g t t t t a a a t a t c c a
 t c g g a a g t c t t a t c c t c t t t a t c t t c t a t t g t t t g a t t t a t a g a a t a c g c a t a g c c c a t a g g t g t t a a a c c a a a t t c t g g
 a t g t t t a c t a a a t a t t t t g a a t c a a t g a a g a a t a c t a c c a t t g c c c a a a a a a t t g t t g g t a t t c c c c a c c a a g a t t
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 a g a c g a g a a g g a a g a t c t g c t c t a a a a a a g a a t a a a t a a a t a g c a a t a c a a a a a t a a g c t a a t g a a a c t g a a a g a c t c a a
 a c t t t t c a c c t c t t c a g g a a g a g g t g g a g g c g t a g c a t c a t a a a g t t c c t t c a t a t a a t t a a c a a a a a t a g c t a c a a g a a
 g g a a t a a t a a t a a g g t c c a a t g t t g t g a a a a t t c g a c t g g t g t a a a a a t a t t c c g t a t a t a t g c a g c a a t a a t a a c t g t a
 c t t a a a a g t g c t a t a c a g t c t g a g c a t a c t a a t a t t a g t g t a c g c c t t g t c g t g a a g t t t a a a a a a a c t t t t t t a c c t t
 a a t c a t a t t g t a a t g a a t g a a c t a t a t a t t a g t a t a g c t a a g g t t a a c t a a a a a t a t a a a a c a a t t a t t g t a t g t t a t c c
 t t a c t a g c a c a t a a g t t a t c a a c a a c t t t t g a a a a c g c t t g a t g a a a t t g a g t c t c a c t a a a t t t a g a g g c a t g t t t t a c
 a a g c t g c t g a g t a t t a a t g g t a t g t t c a t g t t t t t c a a a a t a c t c a a t a g c c t t t a a t a a a g c t t c t g g t g t t t g t t c a t
 g a a a g a a a a a a c c t g t t a t a c c a t c a g a a a c t g t t t c t g a t g c c c c t c c t t t g c t a t a a g c a a t g a c a g g t c t t c c t g a t
 g c c a t a g c t t c t a t a g g a a c t a t a c c a a a a t c t t c t t c c c c a g g a a g a g t a g t g c a c g a c a a c c a g c t a g t a a t t t a g c
 c c t t t c g t c c a t a g a a a t t t t a c c t a t a a a a a t a a c a c t t g g a c c t g c c a g t t g t t t a a g t t t t g t a t a t g c a t c t c c a t
 c a c c a g c a a c a a t t a a t t t a c g a c c t g t t t c c g a t g c a a c t t t a a t a g c c a a a t c t a c c c t c t t a t a c t c t a c a a g c t g a
 c c a a a a c a t a g g t a a t a a t c a c c a a c a t c t c t t g t g g g t t t a a a t a g g t c a a g c t c a a c a g g t g g a t a a a t a a c a g a a g c
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t t g c t c c g g t t a t t g a a c t t g t t t t a a a g a t g g a c a g c c t g t t a a t a g t a t g t t t t t t g g c t t a c a g g t a t t c t t t c a
t c c t t t t a g a t a a t g c t c c a a c t t a t c t a g t a t t t t t t a a t a c a g c c a c a g g t g a t g c t a c t c a t c t a a t g g g g g a a t g
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t g g t t c g t t c t a t t g c t g t a a c a c a t g g a a t a t c t a t g c c a a g t t t c t t t g g a t a c a t g t t a t g g t c t a t t t g t a t c c t t
t t c c a t g t t t t a t t t t a c t t a c a t g g c t c t t t t t t t a a t g t a t g t t a t c t t t t c a a a a a g t a t t g g t c t a a c c a c t t a t
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t t a g t a a g a t a a c a t c a t c t g t a t t a a t t a a g t a g t a t a a a a c c a t a a t a t a a t a t a a t g a t a c t a a c a c a t a c c c
t c a c t a a t g t t t t a t g a a t a t c t a t a c t a c t t a t a t a g a a c a a g a g c t g c c t t a c a t t a a t g c t g c t a t a a a a a a a g c a
t a g c a g a a c t c c c t t c a t c t a t t c a g c c t g t a g c t g a a c a t a t t c t t c t c t c a a a a g g t a a a a g a t t a c g t c c a a t g c t t
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a g c g a c a t t a c t a c a t g a t g a t g t a t t a g a t a a t g c g c t a t t a a g a c g t a a t a c t a t t a c a g c t c a t a a c c t c t t t g g g a
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a t c c t a a c g a t a t c c c a a g c t c t t t a c c a a a c a g c a c a t g g t g a a a t t c t t g a g a t a t a a t c a a g g g g a a a t a t g g g a
a a c a a a a a t a t t t a t t t a g a a a t t a t t a c t g g a a a a c a g c t t g g g t a t t c a a g c a g c t t g t a a a g t t g g t g c a c t g a
a a g c a g g t g c t a c t c c a c a a c a g g t g g a t g t t g c t g c t t t a t t g g c t a t a a t c t t g g t a t g c t t t t c a a a t c a t a g a t
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t t t c a a a a g c t t t a a c a a a t t t a g a a t t a t t a a c t a a t g t t c c c a a g c c t g a a t a c a a a a c c a t a c t c a t a g a a t g c c t
c a a t t a c a t c t c t a c a a g a a c c t c a t a a a t a t c c t t t t t a t c a g g a g a a a t a a a t g c t t c a t c g t a t t a g c g t g g g a t t
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t a t a c a c a t c a a a c c a a t a t c a t t t a t a t g g t a c a c t t a c a g a a c a a c a a g t a c a t c g t a t t g c a a c t g a a t t a t t a t c t
a a t a c a c t t a t t c a t t g t t t t g a a a t a a a a a g t c g a c a a a a t t g g a a a a c a a t c c a g g a t t c c c a g c t a a a a c a g c a a a
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a a g a a g a a c a t t a g c c t t a t c t c t t g a a g a g a t g c a a g t c a t t c a a c g t t g g t t t a t g c a g c c t g a g g t a a a a a a a g a a
a g a g t t g c t a t t g g a t t a a c a c c t g a t c c t a c t g a t g t a g a a a t a g a g a t g c t t g c t c a a a c t t g g t c t g a a c a c t g c a a
a c a t a a a a t t t t t g c t g c a c a a a t a t c t t a t a a g a t t t a g a a c a a a a t t c t c a a g a a g t t a t t a a t a g t c t c t a t a a a a
c a t a t a t c c a a a a t a c a a c t g a c a t t a t t a g a g c t c a a c t t g g t g a c a a a g a t t t t t g t c t a t c t g t t t t t a a g a t a a c
g c t g g t g t t g t t g c t t t t a a t g a t a c a c a t g a c g t c t g t a t t a a a g t t g a a a c a c a t a a t a g t c c c t c a g c g t t a g a t c c
t t a t g g t g g t g c a c t t a c a g g t a t t g t t g g t g t t a a t a g a g a t c c t a t g g g t a c a g g t c t t g g t g c a g a g c t t g t t t g t a
a t a c t g a t g t a t t t t g t t t t g c t t c c c t t t c a t a g g g a g c c t c t t c c a c c t c g c t t a c t a c a c c c a c g t a g a a t t t t t
g a a g g t g t t a g a g a g g g t g t g g a a c a t g g t g g g a a t a a a t c c g g a a t c c c t a c t a t a a a t g g c t c t a t c g t a t t t g a t g a
t c g c t t t c t t g g t a a a c c t c t t g t t t t t t g t g g c a c t a t t g g c a t t a t c c c t t g c a t a a t t a a c a a t a a a a a a g g g t a t g
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t c t t c a g a a g a a c t a c a t g a a c a a t c t c c t g t t a c t g c g g t a c a a a t t g g a g a t c c t a t t a c t c a a a g a a a a t g t a t g a
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g a g a a a t g g c t c a a g a t a c a g g a g g a t g t c a t a t t g a t c t t t c t a a g g c a c t a t t a a a a t a c g a t g g g t t a t g t c c a t g g
g a a a t t t a c t t t c a g a a g c a c a a g a a a g g a t g a c a a t t g c t g t a c c a a a g a a a a t a t t c a a a a a c t t t c t t c t a t t g c
a a a a c a t a t g g g t g t t g a a a t t t c c a t c c t a g g t g a a t t t a c a a a t a g t g g a t a t t t c a t g c t a c a t a t g g t t c a a a g a
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t a t c c c a a t a a t a g a a t a g a a t c t g t a g g t a t t g a c c a a t c t a t g t t c c t t c a t a c c a t g c t t g g a c g g c t t a a c a t c t g
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a a g a t g c a c c t a t g g a t g c t g g t g t a t t a c g a c c t a t t t t a a a t t c a g a a a c t g g a c t t g t t a t t a g t c a t g g t a t c t g t

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agcatattcctatfcgaatgtgcacataatgtaagactcgtactgctaaagcatctgctaaaacgataatattcttttccaa

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c a c c t g g a c a t g a a g c a t t c a c t a c a a t g c g t g c t c g t g g t g c t c a a g t c a c t g a c a t t g t t g t g c t t g t t g t t g c t g c t
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 a a g t g a a a a t g a a c t g a c c t c t c t t c c g c a t g a a g t a a t a t c t t t t g a a c c t a a a a t a g c t c t t a c a c c a c a t a a a t g t a
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 a a a a c a a a a a t a a a a a t a a g a t a t a a a t a t t t t t t t a a t a a a a t t a a g c a a t t a c t a a t a t c t t t t t t g g a t c g t t
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 c a a t a t c a a c a g t t g a a c a t c t t c t t g c t t c c a t t a g a g g c c t t g a a a t g a t a a c a t c c g c a t t t g t g t t g a a g g t g c a
 g a a a t a c c t a t t a t g g a t g g t t c t g c t a a g a t a t t c a c t a a t g a a t t a c t c c a a g c a g g a t t a a a t a t c t t c c a g c a a c
 a a a a a a a a t t t t a c a a g t g a t t a a a c c g t c g a a t t c a t t a a g g g a g a g a a a c g t a t t c g t g c a t t a c c g t a t a a t g g a t
 t c a a a c t a g a t t a t a c t a t t a a t t a c a t a c a t c c a a t t a t t g g c c a c c a a c g a c t t g t a t t a g a t g t t a c a c c a a c g a c c
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 t t a t a c t t c t t c c a g a g g c a c t a c a a a c c a a a t t g c t g c a g g t g a a g t t g t a g a a c g t c c t g c t a g t a t t a t t a a a g a a
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 a c a a t c a a c a a c a a c t g a c t c t c a t g g t t t c t c a t t a c a a c a t a t g t t a c a a a a t a c g t t t g t c c t t g a g c c a g a t t g t c
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 c t a c c t a a c c t t a c a t c a a c a g t a c a g a t t c c a a c a a a g a a a t g a g a t c t c a a t t a a a t a t a t a g a t a a a a a a a t g t g
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 c a g t c t c a a c a g c t t g t t t t a c c t a t t c a a t t a a a a c t g c a c t a c t c a g a a c a a g a a g a g c t c c a a g a a a t c g c t a a c t c
 c c t a a c t t c c c t t g g a t t t a t a t t c t c t c t t a a a g g a g a t a t t c t t c a t g t t g a g t c t a t c c c t c c a c t a c t t g a t c g t a
 g t c a a g c a a c a a t a a t t c t t c g a a a g c c c t c t c a a g g c a a c a a g a a a a t a t a g a a a a g c t t t g g a t c t c a a t g g c a t g t
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 a c g t g a a a a c t g c c c t c a t g g a c g a c c c t g t g t a c t t g t t t g g a c a a t c c a a g a t t t a g a t a a a c t a t t t a a g c g t a g a a
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t c t a a a a c a c a a a c t a t a c t a t c a g c a a t a g c a a g a c c t t g c c a t g c a g a t t g c a c a t a a g c t t t c c a a g c t g a c c c t g
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t c t t a t t t c t a g t t g t t t g a g g c t t t g a g g t t a c a a t a g c a a c c t t t t g a c c t a c a a a g g t a t t t g t t a a g g t g g a c t t c
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c a t a g t t a t t c c a t a t a t c t a t a t a g t t a a t t a t t t t a t t c t a t t c a t t c c a c t t g g g a c g a c a t a a a c g t t a a a c a a
g c t a a c a a c t a t t a a t c a c c t t a a a g t t a a g a t g a t c c t t c a a t t c t a a a a c a t g a t t a c a t a t a t a a g a c a a g t t a a t
t a t g a t t t g g a c c a t a g c t c g t a a t c g t a t g a c t c t a t c a t g a a t a t c g g g g t g g g t a c t a a a t a a a g t a g c c a t a t t c
c c a c t a a a c a a t g g t g c a a c a t a a a t a a t t c t g a a g t t g a t g g a t t a c c t t g t t g c a t t g g a a t c t g t t g g t t c c a a t t
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g t g a a c g a g a a a t a g c a a a t t g a a t g a t t g t t g c a g c a a t t g g t g c a a g t a a t g c c a t a g c t a a t a c t a c a a g a g g a t t t
g a g t t t t c a c c a t c t t c a t t g t g t t g t c c a a a a c c a a a a a t a g c t g t a a a c t g t a a t a a a t t g g c a a t a g a a a c t a t c g c
c g a a c c t a t a a c a c t t g c t a c t g t t t g a a t a a g g a t a t c t c g g t t t g c a a t a t g t g c a a c t t c g t g t g c t a a a a c g c c t t
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a a c t c c a a a t a t t c a t a a g t a a a g c t a a a c c a a a g g c a a t a a t a a g g c c t g t c c t c c c a c c t a a c a c c c c a c c a a t a a c a
a t a a g t a a g c c a g a a a g g a c t g c a a g t a g a a t a a a a g t t t t t a t t t g a c t t g t c a c a a c t c t a a t a c t c c t t a a c a a c a a
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a a a c t t g a t t c t t t a a g c a t a t t a g t t a c c a t t c a a t c c t a g c c t a a a a g c t t t a t t a a t t a t a c t a t a c a a a g t a a t t a
g t t a t a t t g c t a t g c a t t a a t t t a c c a t a t g t t a t a g g a t a a c t t t g a c a a t g a c t t a t c c a c c t a t a a t g a t t a t t g c c
t t a c t a a g g a g c t a g t t a t g t a t a t t g g a c t t g a t a t g g g t g g a a c t c a t a c t g a t g c a g t t a t c a t t a a t a a t a a a a c c
g t t g t t g c t g a a g c a a a a g t a c c t a c a a a t c a t a a a a a t t t t t c a t c c t c a a t a g a a c a a g c t c t a a c a c a a c t t t t t t t
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a a c a a t c a c c a g t a g g a c t t c t c t t a g g t t c t g g c c c a g g g a t t a a t c c t a a t t g g t t t a c t a t t g g c g a g c a t a g c t t t
c t t a c a t c t g c t a a g c t t g a t c a t a g a g g t a t a g a g a t t a a t c c t t t a c a a a g a g g t c c a c t a c a a a c a t g t a t c a a t g a
a t g g a a a a a a a t g g t a t t a a t a c a t t t g c g t g t g a t c t a a a t t t t c t a t t c g t a a c c c t a a c a t g a a a a t g a c a t g g
a a t t a g t t a t a c a a a a a a t a t t t g a a c a c t a t a c a a c a c c a g t t a t c t c a a a a g g c c a t a t g c t a t c a g g c a g t t t a a a t
t t c c c a c g t c g t a t t a c a a c a g c a t a c t g g a a t g c t g c t g t a t g g a a t a t c c a t a a t a a a t t t a t a a c t t c g a t t g a a c t
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g t t c t a t c c c t a t a g a g g c t a t t c a c t c t g g c c c t t c t g c a a g c a t c a t g g g a c t c a t c g c a t t a t a t c c t a c t t c t g a a
a c a t g t c t c c t t t t a g a t a t a g g t g g a a c a c a c a c a g a t a t t t c t a t c a t a g t a a a a g g t a a c c a a t a t t a t c a a c a t c
a g g g c t a a t t a t c c a a a a a a a a c c t a c a t t g a t a a g a g c a t t a g c a t c t t a c t c t a t a c c t c t t g g a g g a g a t t c t t t a g
t a a a t a t t c a a c t a a t g g a t g g a a t c c c c c a t a t a a a a g t a g g a c c a c t a c g t g a a g g a c c t g c a a t g g c t t t t g a t g g g
g a a c a c c c c a c a t t t c t t g a t t g t c t t a a t a t c t t a g g c t a t g c a c a a g t a g g g a a t a t t a c t a a a t c t t a t g a t g g t a t
t t c c t t a c t t t c t a a a a a a t a t a a t a t a a t t c c a c a a g a t a t t g c a c a a t c t g t t g t a t a c t c a g c a c a c a a c a a c t a c
a a g a a g g a a t t a g c c a t c t t c t c a a t g a a a t a a a c a g t a a g c c t a t a c a t a c a a t t g a a g c a c t t c t t g a a a c c a t a a t

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 c a t t a g g t a a t a g c a t a g a t c c a a t c c a a a t g a t a g a a a a a t a t g g a a c a g a t g c t t t a c g a t t t a c c c t t a c t g c a t t t
 g c a g c t a t g g g a a g g g a t a t t c g c c t t t c a g a a g a a c g a a t t g a a g g c t a t a g a c a t t t c a t g a a t a a g c t c t g g a a t g c
 t t c t c g c t t g c a t t g a t g a a t c t t c c c a c a g a t t c t g t t c a a t t a g t a t c a a t a g a a g a g a t t a c a g c t c t c c a t c a t a
 a a t g g t t t t a c a c c g c c t t g a a g a a g t a a a a a t a g a t g t a a a c g a c t c t a t a a a a a t t a t c g c t t t a a t g a t a t g g c c
 c a a a c a c t t t a c a a a t t c t t t g g a a t g a a t t c t g t g a t t g g t a t c t a g a a a t c a t a a a a a t a g a t t t c a a g a a g a a g g
 a t t a c a c a a a a c t a a g c a c a a t a t g t t c t t t g g c t t g g a t t a a a g a a c t a c t t a t t c t c c t a c a t c c t a t t a t t c c c t
 t t a t c a c a a g t g a a a t t t g g a a g g c g c t t c c t g g t c a t a c a c a a g a a c t t g c t t g t g a a c c c t t t c c t t c a a c t c g t t c t
 c a c t g t c t t t c t c c t a a c g a a g c t a a c c a g a t g a t c t t t t a c a a g a g g t a a t a a g t g c t a t t c g g a c t a t c a g a g c t g a
 a c t a a a t a t t c a c c a t c t t a t a a a c t c t c t g t a c t a t t a c g t c c t a t c g a c t c t a t c c a a t t a t c t c t t c t a c a a a a a a
 a t t c t a a c c t t a t t a t a a c a c t t g c t a a a t t a g a a a c t c t t a c t a t t g a t t c t a a c c a a a a a g c t c c t g g t c c t t c a g c a
 a a c c a t a t c a t c c a a c a t t g t g a a a t c a t a g t t t t t c t a t c t g g t g c t a t t g a c t t t a a t g c a g a a t a c a a a c g a c t a a c
 t a a a g a a t t a a a t a a a a t t g a t a c t g a g c t t c a a a a a a a a c a g a a a g g t t a a a a a t a a a a t t t t a t a c a a a a t g c t c
 c t a a a g a a a t g t t c a a a a a g a a c a g g c t a g a a a a g a t g a a c t t t t a t c t t c t c a t c a a a a a a t a t a t g t a t t a a t g a a c
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 t a t a a a t t t a t a t t a t a a a a a t t t t a a g t t t t a c t a a a t a a c t a a a a a a a t t t t t a t g t a t a a a a a t a t g t t a t a t a t t a
 t t a t a t t t t t a t g t a t t a a a t c t a a a t t a t a a a a t a t a t a g t a c t a a c t a c t t a a a a c t g t a t a a t t a c c a t a a a g a t a
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g c t a c c t g a a a t g c t t c t g a a t t c c g a t a t c a a g a g c t t a t t a c t a g c c c t g g a g a a c t a a t a a t a g t t a t t a g t c a a t
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 a a c a a c a t c t t c a t c a c a a c a a g t a a c t c c t g a a a c t g a a g t t t a t a t t c a c c a c c t a t t t a a c c c a a g a a a a c t t g t t g
 a t g t a c a t a a t a c a t c a c t a g c g t t a g a a c t t g a t g c a g c a c a g t t a t c a a a t a t t c t t g c a a a c a a t t a t g a a g a a a t t
 a a c c a a g c a c t c a a c t c g a t t g t a a t a c a t t t g g t c c a t a t g g a t t t t g t t t a a a t g t t g g g a a c c g t t a t t t a t c g a c
 t a a a g a c t c a a a a g t a t c t c a a t c t a t a g g t a t g g t t a a t g t t g c t t t c a a a t t t a c t c c t t a t t t a a g a a t t g g a c t t g
 c t t t g g a c a a a g c t c t a c a a a a t a c a a t a a t c a a t a t a a a a t t a a a t g t t c a g a a c c g c t t a c a a c a t t a t a t t g t g t c
 t a t g a g c a a t c a a c a c a g t c t a c a g g a a t t a a g t t t a a a a t a a c t g g a a c c c a a g a a t a t c t g a t g t a a a g a t t g c t c g
 a a t a c t a c t a c c a t a t a c a g a a g a g g t a a a g g a c a t a c a a a a t g a a a a g t t t t g g a t t t g a g g c a c a a g c t g g t t a t g
 g g t t a t g t t a t c t t c t a a t t g g t c t c t c a g c c a a t t g t t g g t g t a c a g c a t a t a a a t a t t a c t c g a a a a a a g t a t c a a
 g a g t t t c c t c a a g t t c a a t t c c a a t t a c c t a t a a c c a a g c a g g a a t t c a a a t a c a a a t g t a g a a a c g g c t g c t c t c t
 a g a a g g a a a a g t a a c t a a c t g g t t c a c c a t a g a t t t t a c a g g a a g t a t a a a a c a c a t t a t a c a t c a a a a t a a t a a a a g t t
 a t a c t g g g a c t a t a c c a t a t c t a g g a g a g t t c a a g t t a c c t t t c a a c a c a a a a a a a a a a a t a c t a t g c t g t t a g a g t t g
 g t a c a a c a t t t t a c t t g a t t c t a a a c a a a c t t t a c g t t t a c a a a t a g a a t a t a a t c a a t c t t t t t t c a t a a a a a a a t
 a a c c t t t g t g t a a c c c t t c a a t a t t g t g t t g g a t t t t a a c a c t a a a a t a g a a a g c a g t a c c t a t t t a t t a a t t a t t a g t
 t g t a t c t t t a t t c t t a t a t a a t a t t a a t a g a t a t a t c t t t a t g a t a g t t a t a t a a t t a a a t t a a t t a t t t a t t a g t a c t a t
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 t a c t a g c a g c a t g t t c c c a c c a c c a a t a a g c a t a a t a a t t a c g g c a a c t g a a c t a c a a a t a g c c c c t a t g c c a a a a g t
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 a a g a a t a t c c a t t a c a t t t t g g a t a c t c a t a g a a t a a t t a c a g a a c t a a t t c c t a t t a a t a a t g a a a g g a g t c t g g c a a c
 a a a g g t t t c t c t t t a a g g a t g t t c a g t t a a c t t a g g a g c a a a g a t a g g c t c a g c t a c a t c a t g a a t c a a a c a t a t a a c a g
 t a g c a t t a a g a a a g c a t c t a c g g a t g a c a t t a c a a t t g a a a t a a c a g c t g c a a t a g c t c t a a c c c t c t t a g c c c t a t t a
 g g a a g a a t a a c t t t c a a a a t t c g t t a g c a t c c t t t g t t a g g t t a a c a g c c g g a g a t a a a a g a t c a a t c t c a c c t g t a a c t
 a a a a a a a t g g a a t c g a a a g c a a g a t a g t a a a a a a t a c c c c t t a g a c a t t a t t g a t g c a t t a c g t c c a a a a t t c t t t g g a
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 ct c a g c t a a t t a a t a t t a g a t a g t c c a t a c t a c a c a a c a a t c a t t t a c t g g t a t t a a c g c t a t c t a g a c a a a t a a c t a a
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 t t a a t t a a t a a g c t a t a a c a a t c t a t c t c t t t a t a t c t t g c t g t a t t a t a t a a a t t t c t c t c a t a t c a a c t c t c a a c c a
 t t t t a c c t t a a a a g t c g t a c c a g a a a t g a a t t c c c a t a c a t t g a g g t t t t a c t t t t a t c t t t t t c a c c a t c t t t t g t a
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 a a a t c c t t c a c t t t c t c t a a t a a t t g t c t a c t a t c t c c t t g t c c t t g a a t a t t a t t a g c a c c a a a c c c t g g a g c t g g a g c
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 a a c t a t c a c t g c t a t c t a g a t c a c t t g a a c t a t c c t g a g t a t c a c t a g t a t a a c t a g t a a t g t c a c t g g a a c t a t c a t c a
 a a a t c a t c t t c g a a a t c a c t g t c a t c g a a t t t a t c a t c a a a t t c g t c t g c a c t a t c a c t a a c a g a a c c t t c a c t g t t a t c
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 c g a a a g c t c t t a c c t g c t c a a g a a t g t c c t a t a c g t a t a c t a g g c c g g c t t g c t t g g g t t t t c c a a a c c t t t t a a a t a t
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t c t a a c a g t t t t c c t t c t c g a c a a a c a a a a a c c a a g a g c t a a c c c a t t a t t a a c t a c c g c a a t t c c a a t a a c a t c c a t
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 t t g c a c a g a a g t g a t a t t t c t t c t a a t g g c c a c a c a a t a c a g c a a c c t g t t a t a a c t t g a t g t t t t c c t c c c t g a a a a c
 g a g a a g c a t a g a a a a g a a t c a t t g c c t g a t t g a g g t t t g c c t a t t a t t t c a a a a a c a t c a t c t t t a g t a t a t a t a a c t
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 a t a c t c t a a a g g a t g t t c a g a a g a a g t g g t a a a g g c t a c t g t c t a c a c t a a c a a t t t t a a a t a a a a g a c c t a a t t g c t
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t a t t g a t g t a t a a a a a g t a a t a t a g a g a a c t t c c a t a t t a t c t t t a a a t a a g g t a t g a a a c g g t a t c t g a t c t g a a c c g
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 c a t a g t c c t a t a t t c c a a g a c a t a c c a t t c t c t a t t g t t a t a g a t c a t c a t c c t a t t c t a c c t g a a t t t c c t t c a a a a g c
 t a c a t a t t c t g a t a t c g a c c t g a a t a t g g t g c g a c t a g t a c t a t c t t t a c t g a a t a c t t g c g t a g t c t t c a t a t t a g a c
 c t g g a a g a c g t c t t g c a a c a g c g c t a c a a t a t g g t a t t c g a a c a g a t a c t g g a a c a t t c a c t c g t a a a t t t a c a g a t g c t

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g a t a t c a g a g c c t a t c a a t g g c t a g c t a a c a t g c a a g t a a t a c a c t g c t a a t a c g t a t t a c c c g t a g t g a a t a c t t a c a
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 a c a t t c a t a a t a g c t c t t c t g t t a g c g t t c t t t t c t a a c a a t c a a c t a t a a g a t a a t c a a a g g t a t g a t c a a g g a g t t c c
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 g a c t a c c t a t t g g g a a a a t g a a a c t t c a c a a a g g t g g a g g a a c t g c a g g t c a t a a t g g a c t a a a a t c t a t t a t t c a t a a
 c t t a g g a a c c a a a g a t t t t t a t c g c c t c c g a a t a g g c a t t g g t c g t t c t c c t c t t c c c t c t g a a a a t a c a g t a a a c t g g g
 t c c t t g g c c a c c t t t c t a t g a a a g a g c t t a c t a c t c t t a c a a t c t c t t c c c t a c a a t t t t g a t g c a c t c t c c t t c t t t
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 a a a a a t t g a a a a t t t a t c t t t t a t t t a t t c a g t t g c t a t a a a a g a t t a c t a a a t t a g t a a t t t t t a t t t a c t a a c a t
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 c c a t a t g t a t c a t a g a t c a a c a a g a a t t t t c t g t a a t g t a t c g t c a c c t t g c t c c a t t a t t a t g g a a t a a a a a t g t t g t t
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 a g t a a a c c t t a c c t c a c c t a c a a c t a a a a c t a a t g t a t t a a c a t t t g c a c a a t c c c a a a a t c c a t a t a c a a a a a t t a c t a
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 a a a g g a a a t a a t g a t t g g a t a a t a t t a t a c c a t g t t c a c t c t t c t a a t a t t t c t a c a a a t t a t t a t c t t a t t c t a c c t c a
 t c c t a a g g a a a g t t t a c c t a t t g a g c c a c a a t t a a t t g c t a t a t g c g a t g a g c t a a a t a a t a c t t g t a c a a t a a t a a a t g
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 t a t a a c t a t t c t t g g a g t a c a a g g t a a a c a g g t a a a a a t t g g t c t t g a t g t c c c t c c t g a a a t g a a t a t t t a t a g g g a a g
 a a g t t t a t c a a c g t g t c a a a g a g a a a a t a c a t t a g c a a c t a c a a t c a a t a a t a a t g a t t t a a t t g c a g c t g c t c a a t t a
 a c a a c a a a g a a g a a a t a a t a a t a g a c a c t a g a t t a g g a c a c a a a c t a t t g a a c c t g a a a a a a t t a t t a a t t c c c t c a
 a g g a t t a a t a g g t t t t g a a a a t a a c a a a a a t t t a t a c t a t t a c a a a t t c a a c c a g c a t c a c c a t t t a t t a t c t t a c a a a
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t a a t t c c a t a t t a g a a t t a t g a c g t t t c c c t g t c a t a c t a t c a g c a a c t a c a c a t g a a a g a a g g g a c t c t a t t g c a a t t a
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a t a c t a t t c t c t c a c t a t t a t t a c a g t t a a t t a c t c t a a t a t t a t a c t a a a a a a t t t a c c t a a a a a g t t a t g t c t a g c c t
t g a a t g t t c t a t t a t a a a a c a a a c c a t t a c a a a t g a t a a a a g a a t a a t g t c a g a a a a c a t g a a t a t t t t c a a a c a g a a a
a g t c t a t t t c t a g t a a t a g a c a c a a t a g c a a t a a t a a a c c t c a c g c a c a a t a t a t t c a a c t t a c c c t a a a a a a a g a t a c a
a t g a c a c a g t t a g a a g a a c t a t c c c t g t a a t g g c a g a g c a c t c t a a t c a a a a a a c t g c t t c a c c a a c a a c t c a t a a c c a
t a g c a t a a t t a a t g a a a t a g a a a c t a a g a t a c t c a a c a g a c a c t t g a a a g t c a g c c t a t a g t g a c t c a t a g c c t a a c t t
t a c a a c a a a c t t c c c a a g c a a c a c c a g a a c a t t c a g a g c a a a c a a g t a c t a a c t c a t g g a g t g a a a a t a a t a t a t c t a a a
a a a a t a c c t c a t a a t g t a t a c c a a g c t a g t a c a a a a a a a c t a a a a a c t c g t t c a c g t t c a a a a a a t a a a a t a g a a c a a c
a a a a a t t c a a c a c t a c c t g t g c c t a c a a c a a a t c a c t t a c c t g c a c t t a t a t c c a a a a a c t c t g g a t t a g a a c a a a a t t
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g g a c t a c t a c c a c a c t a c c c a t g a t a c a g a a t t a a t c t a t a t a c a c t a c t c c t t a t t a t a g g a g c t a t c a c t a t t g g
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c t t t t t t a t g t t c a t g g g g g c a t g t g c t g g t t c t a c t g c t g g t g g c c t a a a a a c t a t g c g g a t t a t a g t t a t t g c a a a
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t a g c t a g g c t t a c a a a t a c a t c t a g t g a a t t t g g t g t a c a a c t a g a t t c t c t t g t a g a c c t t g t a g c a t t t g g t g t c a c a
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gcccc t t a a a t g a t t c t t t a g c t a t a c g a c g t g g g g c t c t t t t a g g a g c t t t a a c a c t t t a t c t t g a t t t t a t t a a t t t
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a t a a t a a a a g c c t t a t t t t t a g t t a g a t a a a c c t a t a a a a g a g a a a a g t a a a a a a a a g c a a t a c c t a t a a t c g c t g a t g
c a g g g a t t g t a a t c a t c c a t g c t t t c a c a a g a g t t a t t g c t a c a a c c a c c g a a c c g c a g a a a g t c t t t t a g t a g a a c c a
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c a c c a a c a g c t g t a c c a g c a g c c a t t g c t a t a g c a c a g a c t a c t t t t a c c c a g a a t g g t a c t g t a a t a g a t t c a a t t t t a
t t a a a a a t a a a g a g g g c a a g a g t a a t a a c a c c c a t a g t t t t t g a g c a t c a t t t a a a g c a t g g c t t g t a g c c a t a a a g g c
a g c a g a a a g a a t t t g t a g a t g t g t a a a t t t t t t a g t g a g t t t t t c c t a t g a g t t t t g g c a a a t a g g a a c t a a g a a g a g
t c a t a a a g c t a a a t c c a g t a a a a a a c c t a a g a g a g g t g c a a g g a a t a a g g g t a a a a t a a t c t t t t g t a a g a t g g a t a a g
a t a t t a a g a c t a g t a a a g c c a g c a g a t a t g a t a g a a g a t c c a a t a a g t c c a c c a a t a a g t g c a t g a g a a g a a g a t g a t g g
a a t a c c a t a g t a c c a t g t a a t a a a a t t c c a a g t t a t t g c a c c a g a t a g t g c t g c a a g a a c t a g t a t t t g a t t t c c a g a t a
c a a c t t c t g t g t t a a c a a t t c c t t t t c c t a a t g t t g a g g c a a c c t c t g t g c c t a a a a a t g c t c c a a g a a g g t t t a a a a c a
g c t g c c a t t a a t a c a g c t g t c t g t g g t g t a a g a g c t t t t g t a g a t a t a a c a g t t g c a a t g g c a t t a g c a c a a t c a t g t g c
a c c a t t g g t a a a a t c a a a a t t a a t g c t a t t a t t a t a a t a a g g a t a a g a a g g a g g g g a a t t t c a a a c a t a t t t a a t c a t c
g t t t t t c t a a t a t a t c a g c g a g a t t c a a t g t t t g t t c c a t a g c t a g a g c t a a t t t a t c a t a a t a t t t t g a t a a a a t a a a
a a g t t c t t t a g t a g t a c t a a t g t c a g t a a a g t t a a a a t c t t g t a t t t t t t t a a c c c c a t t a c t a g a a g g a t t g c t c c a t
t t t c t t t t t t c t c t a a t t t c t c g a a g a t t g g a a c t a a t a t c t g t t t t t t t a g g a a g t t c t t t a t c a t a c t t a g a a t a
t c a t c t a t c a t a t t t t g c t c g t t a g c a a t t a g t a a t t c t a g a g a a g a t g g a a t a g a a t t a g g t a t t c t g c a a t a a a a a a
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g t t a t t t t t g a a a t a g a t a c t a t t t t a a t t g t t a t t t t t t a t t g t a t t a a g a a t t a a t a a a t a a a g a g t a a t t a c a t t
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g a a g c a a t t t a t a t t t a t a a a a t g c t a g t a g t a t t a t a a a t t a a c t a t a a t a a t t t t g a t c c a t t a a c t t a c t a t t t a t t
a t a c c t a t c a t t a t a t t c t a t c a a t a g t a a c a a g t a t a a a a t t c c c c t a g g t a g t t a a a a g c a g t a t g a t a a a a a t a a a
c t g t a a t t g c t t t a c g c a c t c c t t c a c t a t a a a t t t a a t a a g g a a a t t t a g t a a a c t t a a t t a a a c t t c t a t t a t a a a g
a a t t g t a t a t c a g t a t g t t a t t t t t t g t c g a g t a t a g a g c c t a t a t t t t t t g a t t a a a c a t t a a t a t a t c t a t t t a
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a a t g a t g a c t t c c c a c a t t t t t t a t c c c c t t t g c a c a t a g t t g t g t t a g g t t t t a t t a t t a c t g t g c t a a a t c a t t a t t
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a g a a t t a t t a t t a t t a t t a t t a t t a t g a t a t a a g a t a t t a t t t a t a t a g t g a a c g t t a a c a g c a g c a a c a g a a t a t c t t
t t a g c a g a t a a g t a g t a t a a t t a t t g a t a a t a a t g a a t a a t t t t t a t g g a g t t t a g a a g g a g a a t t t t t a g a t a a g a a g
t t t t a c a t a a c c t g t t t a a a a a c t t a c t t g a a t a g t c g t t a t a t a g t t a g c t a t t t c c a t g a g t t a a a a a t a g a a t t t
t g a c a t a a a t t t t t g a c a g g t t g t t t t a g t a a a t a g a a g a t t t a t t a a t t g g c a t a t t a g t g t a a g t t c a t c t t t t t t a
t t a a a a t t t t a t t g a t t t a t t a g t a g c t a a t t t t g a a c g a t a g t c g t t a t a t t a t t a c t t t t t g a g t t a a a t g a g t a a g
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c t t t t c t c c a a g t a c a c g a t t a a a a g t a g g a a t g c a t a t t t t t a t t c a g c t a c c t g a a g t t g t t t c a g c a t t g c t c c c g g
a g g a a g g a t t t t t a g a g a t t c t t t t t t c t g a t g a a c a t c t t g c t a t a a t a a a t a a a c c t c c c g g a t t a a c a g t g c a t c c t
g c a c c a a g c t g t c a a g a g t c a a c g t t g g t t c a t a g a t t g t t a a a g t a t t t c c c a a a g c t t a t a g a g c a a g g t g g c c t a c g
t c c a g g g a t t g t a c a t a g a a t t g a t a a a g a c a c a a g t g g a c t t c t t t g t a t t g c t t t a a c g g a a g a c a c a c g t t t a a a g c
t c t c a a a a a t t t t t t a g a t a g a a a g a t t a a t a a a g a a t a c t t a g c g t t a g t c c a t g g t g t t c c t t c t a t g g a g g g a t a t
a t a g c a g t a c c a c t t g g a a g a g a t c c a a a a a c a a a a g t a a a g g t t g c t g t t a a c c c a a a a g g g a a a c c a g c t c a t a c a g a
a t g g c g t g t t t t g c a t a g a g g t a a a a a t g a t g t t t a t t c a a t a t t a g c a t t g a c a a t t c a a a c g g g a a g a a c a c a c c a a a
t t c g t g t a c a t a t g a a g c a t a t t g g t c a t c c t t t a g t t g g a g a t a a a c t t t a t g c t g g a g g a c a t g t t a a t a a g a c t t t t

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 c c a t a t g a g g t c a a t a t t a a t a t t t g t a c a t a a t g c a t c t c t a a g c a t a t t a t a t g a t t g t a t a g c a t c a a t t a t a t t a t
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 aatcccagcagcattttccaaggtttgaaagtcccttagaagagctcttttgtctgaactactacttccaatatgggt
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tttcccaattctaaatggtaatccatgtatttgaacatagttgatactggcttcaagagcataagagcgtactaaatatg
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 gacctatagcatctgccaatcttagtagtaaatcttctatggagtaaaatctataaactgttctcttatagcatctgct

at t t t t a t a g c a g t a g g a t t a t c t t t t c t t g c a g g a a c t a t t t c c c a a t c t a a t g t t a g t a t a g c t c g t t t t c t t t t g g a
 t a t t c a g c a g c a a g g t g t t c a c a g c g a t c t t c c a t g t c a g a a a g a g t t g a t g c t g t t c a g t g a t a t t t c c t t c a t c t g
 c a g c t t g a a g g a t a g a t c t a a g g c g g c a g g g t c a g a c c a a a g a a a t a t t t c c c c a c t g t t c t a a g g t t a a t a a a g a t
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 t a a c t t c a t g t c a c t a t c t a c c t t t a t t t t a a c a a t t t t t a a a a g c t g c t g g a a t a g t a t a a g a t t t t t t t a a a a t a c g c
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 t c g t a c a c t a c t t g g a t t a t t g c a g t t g a a a a g g t g a t c t a t c c c g a g c a c a a c t t t a t g g a a a g a g g c a g a a t c c c
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 c t c c t g a a t a t c c t t t t t t c t t t a t a g a g g c t g a c c a g t a a g a t a g c c a a c c t t c t g g c t t t t g g a g g t t a t c t t g g a g t
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 t a t g a t t g c c c t g a a t c c a t t g a t a t t c c a t g a t g t a a g t c g t a a c a a g g a a g g c a t a g t a g t c a t c c a t t t a a t a g t c t
 a t t g c t a t g g t a a g t c a g c a t c a t a a g t a t a t t g c t t c t a t a a a a a a a t t a g t a g a a g a a t a t a g a t t a t c t a a a a a c
 a a t a t t a c a t g t t a a a g t t a t a g c t t t t t a a t a t t a a t t a a t c t t a t t a a t a g a g a a g c c t a a a a g t a t a a g a a t t a t c

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t c t t t g c t g t a a g a a t c a t a t a g t t t t a g t g g g a t a g t a g t a a a t a t c t t t t t t t t t t t t a a a g t a c t a a c t g c a t c c t t t
t g t t t c a a a a t t t g t t a a a a a t t t t t g t t a t c t t t t a a t a t g t t t t g t t a a t c g t t t t a a a t t a a t g a t g g c t t t a t a g a
t g t g a t a g g c t c a a g a a t a g a t g g t t t t c t a g t g a g a g t t g t a g g t t c t t t t t t a g t t g a g t t t a t a g a t g c t t g a t t a g
a a t a c t c t t t a g g t g t t t c t g g t g t c c g t t a a g t t t a a g c t g a g c t t c t t t t t g t a t a c t a a t a t c t t t t a g a t a a t t c t
t g t t t t t t a t t g a a t t t g a a g g c t t a a t t c t a g c t t c c t t t a t a g c a g c t t c t t t t t t a t t a g a g a t t t t t t t a t c t t t
a g a t a t a a a t g g a t t a g a g t t t t t t g g g c t a t a g g a g g a a a a g t t t g c t t g t g t a c a t a g g a c t t c c a t a g t t t a t
c a g a t a g a a g a g t c c t a c t t t c t t c g t g c t g t t c t a g t c c a g t a t a g g t t g a a g t a c t c c c c a a a a a t g a g a g a c t c a t t
t c t c c a a a g g c a t a c g g t g t a t a t a t c a a a a g g g a g a g g c t t a g a a t a g a t a a a a a t a g g c g a g t c a t g t t g a g a t c c t c
c a a c t a a t t t a t g t t t g t t a c a g a c t a g t a t c g g t t g a a a g t a g a g a a t g t t t a g g g a c a g t t t t t a t a t a a a a t c a c c a
t t g a t g a t g a a a t g a a g a t a t t t a t c t g a t c t t a t a a t a t c g a a a a a a t a t c c t t g a t t a a c a a g g a g t t a c t a g g a g c
c t a t t a a t t a t a g g t a t a g c t c a a t g a g t a c t t t g t c a g t t c a t t g a t g a a t t t t c t g t t g g t g c a g a a a t a t t a a g a a a
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t t a t t a t a c a a c a t c t a a a a a g t t a a c t a t a a c t t c a c t c c t t c a g g t a t c t a t t c t t a t a g t t a t t a t g t t t t t t t t
t g c a g a a c a t a t c g g a a a c t t t t g g a g a a a c a g a a a t g c t g c a c a c a a a g t t t t t t c a g g g g t a a a g a a t t t t t t a a
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t g a a g t t a g a a t g t t a a c g t g c a c t t a a t a t a a t t t g a t g c a t a a a t a t t t c t t t t g t t t t t a a a c t a g c a t t a g c a g t
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c a a a a c g a t a t c c t a a a t c a a g a g c a a a a g t t t c t g a a a t t t c a t a t g a a g t a c c t a c t g t a g c c a t c c a g g c a a a g t t c
t t t t t g t t t t a t c a t c a a g t t t t a c t t t g a t a t c g t a g c c t a a g c t a t c t a t g a t a g c a t t a g a c t t t g t t t t t a c a c c
a g c a a t g c c a a g t c c a a c a c c t a t a t a t g g t g t a a a t g g a g a a t c a g t t t t a t a t c a a a a t a t c c g t t t a c t a g a a g a g
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a t a g g a g t t t g a a a c a t a t g a t t a a a a t c a t a t c c a a c a g c t a a t g c t c c c c c a g g a a g t g a t t c t g t t t t t t a t g g c t
a a c a g a g t c t g a g a t a g t t t g t a c g t t t a c t a t a c c a a t t g t t c c t g t t g t t t t g a t a t c a a c a g g t g c a a a t c c c c a a a
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g a a c t t a g g a g c a a t a t a t a a t c c t g t t t g t t c a g c t g a a g c a a t t g t a g g t g a t a t a g a t a a t a a a c a t g c t g a a a g t a
a a a t c c a t a a t t t t c t c a t t g a a t a a t t t c t c c t t t a t g t t a g g g c t t a a a t t t t t t a a t a t a c t a a a c t a t a a a a a a g
t a a a t a g g a t a a t t t g t g a a c t t a t t t t a t t t g t t a c a a t a g g a t a a a t t a c c t t a a t a a g g t a a a a g a a t t a t a t t g a c
a t a a c a t g t t a c a a t g t g t a g a a g c a t c a t t a a t t g g g g c t g t a g c t c a a t t g g g a g a g c g c t t g a a t g g c a t t c a a g a
g g t a g t c g g t t c a a t c c c g a c c a g c t c c a c c a t a t t t t t t a t a a t a t a t a a t a g c t t a a t a g t t t a g g t a g c t t t a t t a t
a t t a g a t t t c t c t t c t t t t t t a a g a t a c t t t t t a t t g t a t a a t t t a c a g t a g t a t c a t t g t a a t t t t t a t t t t a g t t a g a
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a a t t a a t c a g t c t a a a a g a c a t t a t t a t a a t a a t a t t a c c t a g t a a t a g t t a t t a t a a t a t t c a t t a c c a g t g g a t a t a a
a g t t t a a t t t a g a a g g t a t t a t g g c t a a c a a g t a t a a a c t c a a a c g a a t a a t a t g c t t a a g t g t g c t g c a t g t g g a a a
c a a t g a g t t t g a a g a c a t c a t a a a g a g a a a g a a g a a a a g t g g a t c t a t g t t t g c t c a a a g t g t g g a t t g a t g a
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a t a t t g t a c c a g a g t a t a t t a a t t t g g a a t t a a c t a a g g a t g a g c t a t g t a a c t t c a t t t a a c t t t g a g t a t t g g a g g t
c c t a t g g g t a a t a a c a a t a a t g a t a a t g g a a t a t c a g t t a a t t c t c t a c c a t t t a g a g a t g g g a a g t c a g c a g a a c c a c a
c t a t t c t a a t a c t a t c c c c c a a a g t a a a t a t a a a a t t t c t c a a a g a c c a a c a c c a c c t g g a g t t g a g c c t a t g a c t t c a g
g t t c a t t t a a a a c t c c a g a t a a t a c t a c a g a a a a g a t t a a g g c t a t g g a c t c a g t t c g t g t c a a t g g t c a t g a t a t g g c t
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a g a t t t t c a t c t t c a t g a g a a g t t a g c a c a c t t c c a t c g t g a a a g a a t t c c t g a g c g a g t t g t a c a t g c a a g g g g g t c a g
g a g c t t a t g g a t a t t t t c a a g t a t a t a a a t c a a t g a g g c a a t a t a c a a a a g c t g c t t t t c t t c a g g a t c c a g g a g t c a a a
a c g c c a g t t t t t g t t c g t t t t t c t a c t g t a c a a g g t t t t a g g g g t t c t c c t g a t a c t g c a a g a g a t t t a c g a g g c t g g g c
a a c a a a g t t t t a t a c t c a a g a a g g t a a c t t t g a c t t a g t a g g t a a t a a t a c a g c t g t a t t t t t a t a c a a g a t g c t a t c a
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g c a t a a a t t g a c t t t g a t a t t t t a g a c g c t a c a a a g t t a a t c c c a g a a g c a t t a g t c c c t a t a g a a c t t g t a g g g a a a a

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gat t g t a t g g c a t a a t g c a a t a c t g t t t t g g a c t t t t g t t c c a t a g g g t a a a c g t g c t g t a t c a c c t a a a t a a a g a t a
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a t t a t c c a c t g t a a t a g t g c a g c t c t t a t t a t a g a t a a a a g t t t t t t a t t a t a g t a a t a a t a t a a a t t a a t t t g a c t a t a
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t t a a c t g c a c t a g a a t t a c a g g t a a a a a a t t t c a a g a t g c t a t g g a a g a a g c a g a g a t g t a t c t t c t t c t t g g a g c a g a
a g a a g a t a a a a t g g a t g c t a t a t t a g a a a t t c a t c c t g g a g c t g g a g g t a c a g a a g c t c a g g a t t g g g c a g a a a t g t t a g
a g c g t a t g t a t t a c g c t g g g c a g a t t t a c a t g g t t t t t c t a a a g a a g a g a t g g a t t a c c t c c c t g g t g a t g a g g c t g g t
a t t a a a t c a g t a a c a t t g a g a a t t t c t g g t g a g a a t g c t t a t g g g t t g c t t a a a g g a g a a a g a g g a a t a c a t a g g c t t a t
t c g c a t t t c t c c a t t t g a c t c g t c t g g a a g g c t c a t a c g t c t t t t g c a t c t g t t g a c g t t a t t c c t g a c g c a g g t g a a g
a a g t g t t a t a g a t a t a a a a g a t t c t g a t t t a c g t a t t g a t g t t t t t c g c t c a a g t g g t c c t g g a g g a c a g a g c g t a a a t

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t t g c a a a t c a a c t t g g g t t a g t t g g a a c t a a c g t c a a a g t c a t g a c g g c a a g t a a a g a g a t a a t a g a g c t t a a t t t g a a t
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t c a a g a g g g t t a t t c c a a c a t t t t a a g a c a a t a g c a a g t c a g g a a t c t a t t c c t a t c t t a t t a t a c a a t g t c c c a g g g c
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t a t a t t a c c a t c t a t g a t c c t a g g a g g a t g t g g c g t t a t t t c t g t a a t a t c t a a t a t t g t t c c a g c t a t g g t t g t t g a g c
t a t g t t c a t t a a t t g a a a a a a t a a a t t a g a g g a a g c a c g t c a a a t c c a t t a t a a t t a g c g c c a c t a t g t a g g t t a a t g
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c t a t a t c t a a t a g c a a a t t a t a a t a a t g t a c t a t t a g t a a c t a a t g t t g t t t a t g a g a t t a t t a a t c t a t a c t a t t t a t
t a t a a t a a a t g a t a c t t t a t t a a c t a a c t t a t t t a t g t t a t a t a t a a a a a a g t c t t a t a g c a t t a t c t t t t g g t a c c c
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g c a g g a c a t c t c a t t t c a g c a t a t g c t t c t g g t g t a t t t a t t g g t g c t c c t t t t t a a t a t t t g t t c g t c g t t a t c c c c t
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t g a t g t t a g c t c g t t t t a t t t c t g g a c t t c c t c a t g g a t c c t a t t t t g g a g t t g g t t c t a t t a t t g c t g a g a a g t t a t c a
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a t g a a g t t g t t a g t g a g g c t t g a g t a a t t c c t a a t a c c a a t g g t t c t g c t g t a g c g g g t t c t a a t c c t t c t t c c a c a a t t
t t t t g g t t t t c t t c t t t a a a g t c a c c t t t a t c t a c t t g t t c t c c a a c a a g g a a c g t t g t t c c t c c a g g a t t t g t t a c a g t
g a t t t t a c g t a a c a t t t g t t c g a a c a a t g a c t t c a a t a t g t t t a t c g t c a a t t c c t a c a c c t t g a a a g c g g t a a a c t t c t t
g a a t t t c a t c a a c a a g a t a t g c a g c a a g a t a c t t t t c a c c t c t t g t t t t a a g g a t a t c a t g a a g t t c a g g a t g t c c t t c t
g t t a a g a g a t c t c c t g c t t c a c a a a g t c a c c a t c a g a a a c g t t a a t g t g t t t a c c t t t t g g a a t a a g a t a t t c t t t a g g
a t c a c c t a t t t c a g g a g t a a c a a t a a g t t t a c g t t t t c c t t t g g a t t c a c c t g c a t a a g t a a c t a t a c c t g c a a t t t c g g
a a c a a c a g c c a t a t c t t t t g g t t t a c g g a c t t c a a a c a a t t c a g c a a c t c g a g g a a g c c c g c c a c a a t a t c a c g t g t t
t t t g a a g t t t c a c g a g g t t t a c g a g c t a t a a t g t c c c c a g c t t g t a c t t c t t g a c c a t c t t t g a c c a t t a t a a t a g c t c c
t g c a g g g a g a c t a t a t a t t g c a g g t g t t g t a c t t g t g a t a c g t t g t t t t g t t t g g c c t t c t g c a t c a c a t a t t g a t a t t g
a a g g a c g g a a g c t a g t a g t t c t g t a t t c a a t t a t t g t c a t g g a t g a t t g a t g a g t a g c t t c a t c a a g t t t t t c t t g g t a t
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t g c a a g a a a a g t a c c t t t t g t g a c t t c t t g t c c t t c t t t t a c a t a a a g t c t a g c t c c a t t a g g t a a a g a a t a t c t t t t c t c
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 a a a c t c a a g a c t t g a t g t g c g a t t a a a g t c t t c a a t a g g a a g a c a g a a c g g a a a a c a c t t t c t a a t c c t t c t t c t g g g a
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t a g a a a g a g t g g g c a t a a t c a c t c c a a t a a g t a a t t a g a g a g t t a t t c a a a t g a t t a t t a t g g t t a a a a g a a a a a g c g c
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a g t t g t t t t t g g c t t c t t c a g c a t c t t c t t t a g a t a c a c c t t c t t t a g g g t a g a a g g t g c t c c g t c t a c t t t a t c t t t
t g c t t c t t t t a a t c c a a g a c c t g t a a g t g c t g t a c t t a t t a a t a a c t g c a a t c t t g t t a g c t c c a g c t t c t t t a a g a a
t a a c a t c a a a t t c a g t t t t t t c t t c a g c t t c a g c t t c a g c t g a t g c a g c a g t a g g c g c t g c c a t c a t c a t c c c a a c a g c a
g g a g c t g c t g c a g a a a c a c c a a a t t t t t c t t c a a g t t c c t t a a t a a a t t g g g a a a g t t c t a a t a c t g t c a t a t t a g a t a t
a a a t t c a a t a a c t t g t t c t t t g g t t a c a g a c a t g g a a t t a c t c c t c t a a a a t a t g t t t g c a a t t a a t t t a a g t t g t t t g c
c t a t g c a g c t t t t t t g c c t c a a t a g c t t g a a g a g c a t a a a a a a g t g g c c g a a t t a t a t t a g c a a a c a g g g a t a c a a a a t
t g g t a g g c a c a g c a t t t a a t g t t c c a a g t g t t t g a g c a a t a a a g c t a g g t t t a c t t g g t a g t t t g g c a a g a t c t t c t a t a
t c t t t g t t g t a a g a a g a g t t c c t t c a a g a c t a c c a t g a c g a a c a g t a a t a a a c t t a c t a g t t t t t a c a a a g t c g t t g a t
a g t t t t g c t a t t g c c a c a g g t t c a t t a t a g c c a a a t g c a a t a g c a c a a t t g t c t t t g a a c t g a t c t t t t a t a a t g c t a t
g g a t a c c a t c g g t g a a t g c t a t t c g t g c c a g t g t a t t t t t t a c a a c a a g a t a t t c a c c a c c g c t t t c a c g g a g t t t t g c t
c t c a g g c a c g t t a g c t c t t c c a c c g a t a t c c c c t t a a a a t c t g t g a c t a c t a c a a a a g a t g c a g t a t c a g c t t t t g c t t t
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c a a g c c a a a g g t g t t g t c t a g a c a g g t t a t t t a a g g a a g t t t c a c c t g t t g t c t t c g a c t c g a a t t c c a g t c c t t a g c c
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c a g c a c c a c g a a c c a t t g a t c a g a a t a c t t a g g a t c t a c t c c t a g g c c a a t a g c a a t a t c t a c a g t t t c a t c a a a a t t t
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t a a a t t t a g g c c g t g g t t g t t c t t g g c g t g t t t c c a t g a g t g a a a g g a t c t t t g a a g c c t c t t c a t c t t t c a t t g g t g c a
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t g t t g t a g c a t a a t t a c g g c g t t t a c a t t c a g t a c a a g c a a g t a a t a t a t t a a t a c g c a t g a g t t t t g t t t a c t c c a c a a
t t t c a g t c a c t a c a c c a g c a c c a a c a g t t c g a c c a c c t c a c g a a t a g c a a a a c g t a a a c c t t g c t c c a t a g c t a t t g g g
t a t a t a a g t t c a a c a t t a a a a g t t g c a t t a t c a c c a g g c a t a a c c a t t t c a a c t c c t t c a t t a a g a g t a a t a a c g c c t g t
t a c g t c a g t t g t a c g a c a a t a a a a t t g t g g a c g a t a a c c t g a g a a a a t g g t g t a t g t c t a c c a c c t t c t t c t t t t g a a a
g t a c a t a a a c t t c a g c t t t a a a c t t a c g a t g a g g t g t a a t g g a t t t t a a t g c a g a g a g t a c t t g a c c t c g t t c t a c t t c a
t c a c g t t t t a c a c t t c t t a g a a g a a c t c c a a t g t t g t c a c c t g c t t c t c c c t g g t c a a g a a g t t t g c g g a a c a t t t c a a c
a c c t g t g c a a g t a g t t t t t a t a g t g g g t t t a a t g c c t a c a a t t t c t a t t t c t t c t c c a a c t t t a a t g a c a c c t c t t t c t a
c t c g t c c a g t a a c t a c t g t a c c a c g g c c a g a a a t a g a a a a a c a t c t t c a a t a g g c a t a a g g a a t g g t t t a t c g a t a t c a
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t c a t a t c c t a c a a a t t t t c c a c c a t t t t c a t a g a a g c t a c t t t t g t a a t a g c a g c t g t a a g c g t a g t t t t a c c a t g g t c
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t t t g t c a t c c a g t a t t a a t g a a t a c g g c c a a a a g g a g c a g a g t c a t a t t t g g a g c g g g a a a c g a g a t t c g a a c t c g c a a c
c c t c a g c t t g g a a g g c t g a t g c t c t a g c c a a t t a g a c t a t t c c c g c t a a t g t g c c g t a g t c c c c t g g c a g a t a t t g t g t
c t c c t a c a g c c g t g t a t c t a a c t c t a t t a c a t a g t t c t t g t g g t g g a g g g a g a a g g a t t t g a a c c t a c g a a g t c t t a c g a
c g a c a g a t t t a c a g t c t g t t c c c t t t a g c c a c t t g g g t a t c c c t c c a t a t g g a g c t g g t g a t g g g a c t t g a a c c c g c a a c
c t g c t g a t t a c a a a t c a g c t g c t c t g c c a a t t a g a c t a c a c c a g c a a c a g g a t a a g c t a t t t a c c t a t t c t t t t t g a g a t
t g g c a a g t a a a a a a t a t g t t a a t t a g c a a t c t a c t a t t t a a t t t t t a t a t t t t c t c c t a a a c a a t a a t a g t a t a t t t t t
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t c g a g a a c c t c a t a a g a a a g a a a a g t a t g t t c t a t g t g t g g a g a t t t t g t t c a a t g g a t a t g t t a a a t g a t a a a t g g t
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 c a a g g a a a c g t a a t g g a g g a c a g c t t a c a c g g a a a t g g a t t t c a g a a g c t t t t a a t t c a c g t a g t t t t t t a c t c t t g t
 a c t t a c a g t g g t t c c t c t t a c a a t g g a a t c g t c t a t a a t a c a c a a t c g t t t a t t a g c a a t c a t t g a g c g a a c a g g g t t a a
 g t t t t a t a c g t a c a c c a a a t c c c t a a t a t t t t g a g a a g g t t g a a t a a a a g t t c t t c c a c a t a a t g a t t g c g a a t a t a a
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c a t g t c t t t a a a g g g a a a a a g a t g g c t g g c c a t t g g g g t a c a g a g a a g g t g a c a g t t c a a a a t c t t g t t g t a g t a g a t a t
t c g g c c a g a g g a t a a t a t t a t t c t g a t a c a t g g t t c t g t t c c a g g g c c a a a a a a t a g t t t t t a t t a t a t c t a t g c a a t
a g g t t t g g a g a a a a t a t a t g g c g a t t g t t a c a g t t t a t a a t c a g c a a a a a g a a g a a a c t g g t a a a a t t a a t t t a t c t t c t
a a a a t a t t t g a a g t t c a a g t g c a g c c a g a a a t t c t c c a t c t t g t a g t a a g a g c a c a g t t g g c a g c t a a g c g t g c a g g a a c
t c a t t c t g t c a a g a c a a g a g g a c a t g t c t c a g g t g g t g g t g c a a a g c c t t g g c g t c a a a a a g g a a c t g g a c g t g c a c g t g
c t g g c t c a a a t c g t t c t c c a t t a t g g a g a g g g g g a g g a a t a g t t t t t g g c c c t c a g c c t c g t g a t t a t a g t t t t a a a g t c

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 g t g a c a t g g t g g c a t a a t a g a a a a g a a t t g c c t a t a g t t a c t t c t a a t c t a a t g a t t a t t g c t c t t c g t g t a c a t c t
 c c a a c a c g c g t a c a c t a t c g t t a t t c t g a a a g t g g t a a a a a t t a c g t a t t t g t a a a a a t g t a a t g a g t c a c t a t a a g g
 t g a t a t t a t g a c a c g a c t t g a a a a t t t t a t c a a g a a a a g t a g t t c c a g c t t t a c a a a a g a a t t t c t t t a t a a g t c t a
 t t a t g c a a g t t c c t a c a a t t g a a a a a t t t c a c t c a a t a t t g g a c t t g g t g t t g c t a g t c a a a g c a a t a a a a t t a t g g a a
 g a g g c a a t a t c a g a g c t t t c t t t a a t t g c t g g t c a a a a a g c t g t t a t a a c t c g c g c t a a g a a g t c a a t t g c a t c a t t t a a
 g t t g c g t g a a g g g a t g c c g a t a g g c t g t a g g g t a a c t t t a a g a a a g a g c g t a t g t g g g a t t t c t t g a t a a g t t a a t g a
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 t a g t g c t g t a t t a g a c a g t g a a g g t a a a g t t c t a t t a g a t t t a t t a g g a a t g c c t t t t a a a a a t a a a a t a a g g g g t c a a
 a a t t g t g t c a c g t a c t t c t c t t g a a g t a a a g g c a a g a c g t a a a c c t a a a t t t t t g t t c g t g c a t a t a a t c g t t g t c c t a
 t a t g t g g t a g a g g c g t g c t t t t a t g c g t a a g t t t g g t t t a t g t c g t a t a t g t g t t c g t a a t a t g g c t c a t c g t g g t g a g
 c t g c c t g g t g t t c g t a a a t c a a g c t g g t a a t a a t g c a a t g t g t t a g g a g a a t a t a t a a t g a t g a c t g a t c c t a t t t c g g
 a t a t g t t a a c a c g t a t t c g t a a t g c a c a g t t g g c t c t a c a t a a a g a t g t a g c a a t c c c a t a t t c a a a g a t a a a a t a t t c t
 a t t g c a a a t a t t c t t a a a g a a g a g g g t t a t a t t a a t g a a t t a a c t t t g a a t a a t g g t a c t a t t a c t c t t t a c t t c a a a t a
 t t a t a a a g g c a a a g c t g c t a t t g a a g g c t t g a g g c g t a t a a g t a a a t c t g g a a g a a g a g t t t a t g t a a g t a c a c a t g a t a
 t t c c t t c t g t a c a a a t g g a t t a g g t a t t t g t a t t c t t t c t a c a t c g a t t g g t g t g a t t g g c t g t a a t a a a g c t c g t t g c
 t c a a a a g t g g g t g g a g a g c t t t t a t g t g a a g t a t g g t a g g g a t a t a t g t c a a g a a t t g g a a a g t t a c c t a t t a t g a t t c
 c a g c t g g t g t g g a a a t t a c a t t t g g t g a a a a a a t a t t a g t a t a a a a g g a c c a a a g g c a a c t c t t g t t a c a c c a a a g t g t
 g a a c t c c t t t c t t a t g a g c a t a a a g a g a t a a a a t a a t t t t a a c t t g t a a t t t t g a t a c a c g t g a a t c a t t a g c a c a g t a
 t g g a t t a c g t c g a a c t c t t t t a g c t a a t t g t a t a g a a g g g t a a c t a a a g g t t t t t c a a a a c a c t t g a a g t a a t t g g t g
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 c t g g t a a g t c a g g t g g c a a g g g g a a a a g t a g t t a g g a g t a g t t a t g a g t a t t a a a a g t a a g a a t a a a c t t a g a c a a c a t
 c g t a a a a t t c g a a t t a g a a a a a a a t t t t t g g t a c t g c t g a c c a a c a a g a c t a g t a a t t t t t a g a t c t a a c t t a c a c a t
 t t a t g c a c a a c t t g t t g a t g a t a t t a c a g g a t c t a c t c t t t t a a c a a c t t c a a c t c t t t c t t t a a a a g a t a a t g g a a t a a
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 g t g t a g c t a a a g t g g t a a a g g g t g g t c g t c g t t t t a g c t t t a g t g c g c t t g t g g t t g t t g g t g a t g g t a a g g g g a g t g t t
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 a a t t c c t c t t a t t g a a g g t a c t c t t c c a t a t g a a a t a c t t g g a g a g t t t g g t g c a g g t a g t g t a a t g c t t a a g c c a g c a t
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 t t t g a a c a t a t g c t t c a t g a t g c t t t a g g a a g t a t t a t g g a g c a t c c a a a g g t g c g t g a a a t t t t t c c t c t a a c t a t t a t
 a t a t a c a a a a a g g t c a a g a g c g c c a a t t a t t g a g c g a t g t t t a t g a g t t g t t a a c a g t t g t a g a t t c a a c t a t t c a g g a t g
 c t g c a a a a g a a g c a t t a a a a g a t t t t g a a a c a c g c a g a g a g a g a t t g t t t a a t g a g g g g c a g a a g c a g c t t g a a a a a g g a
 a a t a t t t t a g a a g c t a g a g a a g c t t t t a g t a a a c t t g c t a a a g a a t t t a a a g a t g a t c c a g a a t t a a t g g g c c a g a t t g g
 t a a a a t g t a t c t t a a a t a t g a g t a t t a t g a a g a t g c a a t t a t a t a c t t a g a g a c a g c g t t a a c t a t t a a t c c t g a g c t a g
 c a t a c c t t t a t a a t t a c a t t g g a a t a g c a c t a c g t a a a g t t g g a a g t t t g a t a t a g c t g a a a a a t a c t a t c t c a g g g c a
 t c t a a g t a t t t a g g g a a a g a t c c t a a t c t t t t t t t a a t c t t g g g a g a t t a t a t a t t g a t t g g g g a g a t t g g g a a a a g g c
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 a t c t a c c a g t a g a a t g t t t c a t g t a a t a c t t t a c t a c g g t a t a c a t c a t a t t t a c c c a t a a t t c c a g c a a g a g t g t a g g g
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a t a c t a a t t g g t t a c t t t t t t c c t a a g t a g a a a a a t a t a a a t a a t g a a g t t a a t g t t g a c c a a a a a c t t a t a g t a g c a
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 a a g g t g t a g t a a g t g g t g t a t a a t a g g t a a t g g c t g g a c a t a g c a g g a a t a t t a a g t g c a a g a a g t a t t a a a g c t t t t
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 a c a a a g c a t g c t t t t t t t c a t t g a g t a a c c c t t a t t a t a t a g c t t t g g t a g a t a g t c a a a a g a c t a a c a g a t t t a g a a a
 g a g a t a c a t a g t a g t t a g a g t t g t t g t g g a g g g g t a t a c c a t a c a a c a a g c t t t t t g c t t t t t a t t a a t g a a t t g t t
 a g t a g a a a g c t g c a a g a a t a g a a a g t a g g t t a g a a t a a a g t c a g a a c t t t a g t a a t a t a a c a t t t g a t g g t t a g t t a g t
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 a a g t g t t c t t c a a a t g a a c a a g c a a g t a t g c c a g c t c c a c t t g t t g a a g t g a t g a c c a t t g a a t c a a a a g a t a c g c c t a
 t t g t t t t a a c a t t t g t t g g a c a a c a g a a g g c t c a a g g t c t g t t g a a g t t c g t g c t c a g g t t t c a g g c a t t t t a a t g a a t
 a g a g c c t a t g a a g a a g g g c a a t a t g t t g a a a a a g g a c a g c t t c t t t t g a a a t a g a a c c t g a t a c c t a t a a a g c t a a c t t
 a g a g c a a g c c c a a a g t a t g a t g g a g c a a g c t a a a g c a a a g t t t g t t c a a g c t c a a c a g g a a c g c g a t c g t a t t c t t c c a t
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 a t c c t a t a t a t g c a a a t t t t t c t a t t c c a a g t c c t c a a t a c a t g c a t a t a a a g a t g t t a a a g t c t g a a a a t c t t c t t a c t
 a t t g a t a a t c c t a c g g c a a c a a t g a c a t t a g c a g a t g g a a g t a t a t a t a a a g a a a c a g g t a a a g t a a c t t t t a t t g a t a a
 a c a a g t g a a t c c a t c a a c c a g t g t t g t t g c a g c t a g g g c a g a g t t t a t t a a t c c a g a c g c t c a t g t g t t a c c a g g a c a a t
 t t g t a c g t g t g a a t g t t c a a g g t g t t a t a t t a g t a a a t g c t a t t t t a a t a c c a c a g a a a g c t c t c a t t c a a a c a c a g a a a
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 t t t t t t g t a t a t a g t g g a c t c t c c a a t g g a g a t c g t g t g a t t g t t g a a g g g a a t a a c a a g g c a a t c c c t g g t c a a c c t g
 t a c g t c t a a a a g a a t c t a t a c a a c c g c a a t g a a t g a a g c a g g c g g t a a g a a g t a a t g a g t a a t a a g g a g a a t a t t a c a g
 a a g t g a a a g a a g g a t t t t t t c t t c g c c g t c c t a t t t t c t c t a c t g t t a t t c a t t a t t t a t t a c a t t t a t a g g g a t a t t a
 g c t a t t t t t c t t t g c c a a t t g a g c a g t a t c c t a a t t t a a c a c c t c c a c a g g t a g a g a t a a a a a c a a c a t a t a a t g g t g c
 a a g t g c t a a t a c t g t a t c t g a a a g t g t t g c t t c a g t c c t t g a a g a c a a g t g a a c g g c g t t g a t a a t a t g a g t t a t a t g a
 a c t c t g t t a g t g c a g g a a c a g g t a c t a t g a c t c t t a c t g t t a c c t t t g a t g t a g g t a c a g a t c c t g a a g a g g c c a c t a t t
 a a c g t t a a t a a c a g g t t a c a a t t a g c a a c t c c a a a a c t t c c t c a a g a c g t a c a g c g a a c a g g g a t t t c t g t t t t a a a a a a
 a t c t c a g c a a t t t t a c a a a t t g t c t t t c t t a c t t c t c c a g a t g a a c g c t a t g a t a c a a t t t t t c t t a g t a a c t a t g c g c
 t a c t t a a c a t t g t t g a t g a t t t a a a g c g t g t t c c t g g t g t a g g g g a t g t t c a a a a t t t t g c a g g a c a a g a t t a t g c t a t t
 a g a g t c t g g t t a a a a c c a g a t c g t a t g g a a c a g t t a a a a t t a c a c c a a a t g a t g t a a t t a a t g c t a t t a a t g a t c a a a a
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 a t t g c a c g g a t a g a a c t t g g t g c t c a a g t t t a c a a t t t t a c a g g t a g g c a a g a t g g a c t t g c t g c t a t t c c t a t a g g c a t
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 t g t g a g g c a a t g t t t c t t g t t t t t t a g t g g t t t a t t t a t t t c t a c a g a a t t g g a g a g c a a c a c t t a t a c c t t g t t t g g c
 a g t a c c a g t g t c t a t t g t a g g t a c g t t t g c a g g t a t g c a t c t a t t a g g t t t t t c t a t t a a t a c a t t a c a a t g t t t g g a c
 t t g t c c t t g c t a t t g g a a t t g t t g t t g a t g a t g c a a t c g t t g t a t t a g a a a a t g t t g a g c g a c a t a t a t c t g a a g g g c a g
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 t g a t t t c a g g t g t t g t a g c a t t a a c t t t t a c t c c a g c g t a t g t a t t g t t t t a t t a a g a a a t t a t g a a c c a a c a a c t a g t
 a g t t t t t t a a a a a t t t a a t g a t t g g t t t g c t a a t a t a a c a g g a a a g t a t a t t c a t a t t g t t a a g g t t t t a t t a c g t c g
 t a c t t t a t t a a c t a t t t g c c t t t t t g t t t a g t a t t a t t a g g a c c a c a g c a c t t a t a a a a a t t g t t c c a a g t g g a t t a g
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 g c t a g t a t c c t t g a g c a a c a g c t t a t t a a a g a t t c t t c t g t a g a g c a t g t t a t g a g t t t t t c t g g a t t a g a t g c t a t t a g

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 t a t t c c t t g a a t t c c a a c a c t a t c a t t g g g t t t a a g t a c a a a a c c t t c t t g t c c a t c g a c t g t a a g g a a t g g t t c a a t a g
 c a t g a g g t g a a g g t g t a a g c g t a a t t g t t g t t g a t a g a g g t a a a a c t a g c g g a g g t g t a c t t c t g a a g a g t g t c g a t a c a
 g a g g t c a g t g t a a g t g c t t g c a c a t c a g g a t g a a c t a a t g g t c c a t g a g c a g a a a t t g t a t a a c c a g a g g t c c c a a g a g g
 a g t a g a a a c a a g a a t a c c a t c a g a g c g a a t c a c t c c a a t a t g a t g t t a t t a a t a g a a a c a t c a a c a g c a a g a a c t c g t g
 c a a g a g c t c c a g c t c c t a c t a c a a c a t c a t t t a t a g c a a a a c c a t t t t t t a t a a c t t g a t t a t g a c g a a t t a t t g a c c a g
 g a a a g g a c t a t t t t t t t t g a a g a a c a a g c t t a t g a g a a t a a a g t t g t t c a a g c a t t t g t g g c c a g t t t t c a g g a t g a a t
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t g a a a t a a a a a a a a t t a g a a a g c t a t t t a t t t t a t g t g a a a g g a g t a g t c c t a g t t t c a t g a a t a a a g c a t t t c a a c t t
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 a c c c c t t a g t t c a g g a g g t a c a t g c a a c t a t t g g a c a t a t g c t a t g t a t g t t a a t a g a t t a t t t c c t t t t g a g a a c g t
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 a a a t t c a g t a t a a c t a g t g t a t a a a a g t a g t a a g t t t a a t a t a a c t a t t t t a g a t a g g a a a t a g c t g t g t a t t a g t a a
 a c t a a c a a c a c t c t t a t a a a g a t t a a t t a t t a a g a t t a a t t a g c a t c t a c a g a g t a g t t t a t a t t t a a a t a a t g t g a c t a
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 t g t a t t c t t a t c t t g a a g t a g a t t t a a t g g t t a t t a a a c a a a a g g t g a t c a t a t t c t t g a t g t t c c a c t g g c a a a a g t t
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 a g a t g t c c c t a t g g a g t t a c c t t t t g a a c t t g t t t a g c t g c t a t t a c a g a a c g c g a a g a t c c t a c a g a t a t g t t t c t t t
 c t a t a a a g t a t a g t g g t g t t a a a a g t c t a c c t g a a a a t g c a t t a g t g g g g a c a a g t a g t c t g c g a a g g c a a g c a c a a c t t
 t t a g c a t t a c g g c c a g a t c t t c a a a t t a t a c c a t t a a g a g g t a a c a t t g a t a c t a g a c t a c g g a a a c t t a t g g c a g a a g a
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 g g t t c c t a t t g c a g g t t a t g c t a c t a t t t g t a a c a a g a a a c t a t c t g c t t a g a a g g t t t a g t t g c t a a g a g t g a t g g t t
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 c g t c t a t c t t c a g c c t c g t g t g c a t a a a g c a t t a g a g c g t g c a c t t g c t a t a a c g a t t t c a g g t t a t a a t a t a t a t c t
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 c a g a t t t a c t t t t t g t a c a t a a t t t t a a t g a a g t a g a c a a a c c a t g t t t a c t c a c t g t t c c t t c t g g a c a a g g g a a a a a g
 a t a c a a a c a g g a t t a a c a a a g g t t t t g t c t g a a a t t c g t a a c a a g t t c c t t t g t g g c t t g a a a a t g a a g a a t a t a t t a a
 g a a g c a t a a t a c a a t a a a a g a t a a g t t c c a a a g t a g c c g t a a t a a a c t t c t t a a a g a a a t g c g a g g a g t g g c t a a t a a a c
 a a g a g t t t a a t g t a g a t c t t g a t g a c a t g g t g g a t t a a c a t t a t a t c c g c t a g t t g a a g g a a a a c g t t t a a g t g a a g a t
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 t a c t a c a a c t g a a a g a a c a g c t a a a g g a a t c c g a a g t t g g c t g t t c c a a t t a t c t a a a a t t a t a g a t g a t a c a a t g c t a t
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 c g t t t t c c t t t a a t a c g a g a t g t a a t g a t t g a a g c a t c t g c t a t t g c a a a t a t g g c a g g c a a t g a g c t t g t g c a a a a a a t
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 a t c t t a t a a a a g t t a t g a c a a c a g g a t g g a g t g t t g g t a g g g t t a a t g g g t t g t c t g t a t c t t g g t a t g g t g a t t t t g a g
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c t a c c t a t t g t t a c a t t g a g t c t t t g g g c a a g c t c a t t a c c a a t a a t a a t a c c g t c t g g a g t c c c t a a a a c t t t a g g g a t
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a a a t a a g a c c t t t t a c t c c a t g a g g a g a g a t a t c a t a c a t t c t g c a t a a a t a a a g g g a g t a g c a c c t a t t a t c g c a g a a
g t t t g t t g a a g t t a t t t a g g a t a a t a a g a g c a t t t t g g g a c a g c a t a g a a g t a g t t g a c a g c t g a g t a a a a c t t g t a g g
t t c t c t a t a g g t g a a t c a a a g t t t c c t g t a a t a a t a a t a t g t g c a t t a g c t c c a a g a a t t t g t c a c g g a t a t c t a t a g
t a a a c c c a t t a t a a c c c c t a a t a c a a c t a c a a g a g a g g c a a c a c c a a t a g c a a c t c c t a a a a t t g a c a t t a a t g a a a t a
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c g t a a t a g a g g g a a a g g a t a a c c t c t g t a t g g a a g g a g a g t c t g t a a g a a g c a t a a c g a g t c g a t c a a t t c c a a t a c c
t t c c c t g c t g c t g g t g g c a t t c c a t a t t c t a a t g c a c g a a g a t a a t c t t c a t c c a t g g g a c a t g c t t c t t c g t c t c c a c
g t g c t t t c t c a a g a a c t t g t t c t t c a a a a c g c a g a c g t t g a t c a a t a g g a t c a t t a a g t t c t g a a a a t g c a t t a g c a a t t
t c t t t t c c t g c a a t a a a a a g c t c a a a a c g a t c t g t t a c t t c t g g g t t a t c t t t a t t t t t t t t g g a g a g t g g a g a g a t a t c
a g t a g g a t a g t g a t a g a t a a a t g t g g g t t g a a t c a g t t t g t t t t c t a c g t c a a g g t c a a a g a g t t t a g c t t g a a g t t t t c
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g g a g a a t g c c c a c c a a t t t t t t c a a g a g a c t c a t g a a a t g t a t a t t t t t g c c a t g t c c c a g g t g t a a a a t c g a t t g t a t t
t c c t t g g t a a g a t a t a g t c a t a g t a c c a c a g a t t t t t t t g t a a g g t a t g c a a a c a t t t c t t c t g t a a g t t c c a t a a g a t
c t a g a t a t g t t g c a t a g g c c c a g t a a a a t t c a c a c a t g g t a a a t t c t g g a t t a t g t t g g a t a g a g a t t c c t t c a t t a c g g
a a g c t a c g a t t t a a t t c a a a t a g t t t t t c a a a a c c a c c a a c a a g a a g c c g c t t t a a a t a g a g t t c a g g a g c a a t g c g c a t
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t t c t g g t a a a g a c g g a a g g a c t t a g c t a a t a a t g t g a t a g t g g a g c a g t t g a g a g t t a a t t c t c c c a t t t t t g t a c g g a
a a a g t t t t c c a t t a a c a c c a a c a a t g t c a c c a a t a t c a a a c t t t t t g a a t g t a c t a a a t g c t t c t t c t c c c a t a t t t t c a
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a a t a c g t c c a g c a c a a g c a a a a a t t c g t c t a g t g a t t c a a g t t c a g a t g c a c t a t a g g c t t c a t a t t c a g c a c g a a g c a
t a c c a g c a t a a t g c t c t t t a a c g a a c t c a t c t g g g t a g a g a g g a a t t c c t g a g t c t a a a a g c t c a c a g g a t t t t a c t a c a
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a c t g t a t g g t t t t g t t t a g a t a a a c a c c a a c t t a a g t t a a g t a g c g t t c c c c g g t a g c t c a a t a g g c a g a g c g g g t g a c t
g t t a a t c a c t a g g t t g c g g t t c a a g t c c g t c c c g g g a g c c a a a a t t a g g t a t t a t g a a g g g t g t c a a a g t g t a a t a a t
c c t t t t g g t a c c t t t t c c t c t c a a t g t c c a g c c a t g t t t g g t t g c a t c c c a a a g t t t g t a g g t a t a t c t c t a g a c a t g g
c c a t g c t a t g a t c c a t t a t a a t a t t c a c a t g g a c a a c t g t t t g t g g t t a c a g a a t t t t t g t c c a c a t a g g t a t t g c a a a a
t t c a a a g a g a t g t a g g g a g t t g a c g a t g c c c a t c a c c g a t a t c t a c a t t c a c a g t t t g a a t c c t a a t a c t a g c c c t g t a a
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a g a a t t a t t c a a a g a t c a a a g c g g a g t t t t a g a t a t a g c t g g t g g t a c a g c a c a c c t c c c t g t a a t g a a g c a a g c t g c t a
a a a a t a a a t g a t g g t g a a t c c t g c c a t c a a a a t t a c t g t t a c a g g t g g a g g a t c t g g t g t a g g c g t a a a g a a g t t a g c a
g a a g g a c t t a t t a g c a t a g g t a a t a c a g g t c g c c c t t t g a a a g a g t t t g a a g t t g a a c a a t a t g g a c t t g t a a g t t t t c c
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cat t g t a a t g t g g c t a t c t t t g t a g c a g c a t t t g t a a g g a t c c c a g c t t g g a t t a t a g t a c t a t a a a a c g a a t c t g a t a
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 a c a t t c c c t a c a g t c t c a c g t a a g g t t g g a t t a g t t t g a t a a c t a t t a a g a t t a a a t g c c c a a g c a a g a c c t t t a g c a a c
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 a t c g a c g t g a a c a a g a a c t t t t a t c t t t a c a g c a a c a g a t g c a g t c t c g t t t g g a t g a a t t g c a t g c t c t t g a a g g a a a a
 a t t c a g a a g a t g t t a g a t g a g g c t a a t a a t g t t a a a g a t c a a a a c t a a c a c a t c t t a t a g a t g t a t a c t c t a a t a t g a a
 g c c a a a c a g g c a g c t g a t g t t t t a g c t a c g c t g a t c c a a a a a t t g c a g t c a a a a t a t t g t c t g g t a t g c g t g g c c g t c
 a a g c a g g a g a a g t t t t a a c a t a t a t g g c a c c a g a g c c a g c a g c g a a a c t c t c t g a a a t g t t a a g t c g a a c c c a a c t t c c t
 a a t t g a t g g t a t a a a a a g a a a g a g t a c c a t g c c a c g t t t g a a a t t t a c a t t a g c t t a t g t a g g t a c a g c a t a t c a t g g t
 t g g c a a a c a c a a c g t c g a a a a a g c c t t c c a g a g t t a c c g a c t a t t c a a t c t a c a t t a g a a a a g g t t a t t g c a t c t a t t a t 10
 t g g a a a c c a g t t c g t g t a t g t g g t g c t g g a c g t a c a g a t g c t g g t g t t c a t g c t g a a g g t c a a g t t g c t c a c g t a g a t a
 t t c c a g a a t c a a a a t t g a a g c t t g a t t g g c a g c t a g t a c t t a a t g c a a g t c t a c c t a a a a a t a t c c g t g t t g t a c a t t c t
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 a t a t a c t c c c c t g t t c t a t a t c c g t t t g t a t g g t c t t g t g g t a g a t t a g a t c t t g a a g c a a t g g a t a a a g c a a g c a c a t
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 c t t t a c a g a g a g c c c t c a c a g t t t t t t c a t t g a a t g a a a g t c a t g a a g t g a c a t g g t t t t t t a a a g c a g a t g g t t t t t
 a a a g c a a a t g g t a a g a a a t a a a t g g g a c t t c t t g t a c t a g t t g g t c g t a g g a a a t a c a a c c t g a a a a g a t a c c t t a t a
 t t t t g g a g g c a a a a g a c a g a a g a c a t a g t g c a c c t a c t g c t c c t g c t c a t g g g t t g a c c t t g a a a a a g t t t t t t a t t c t
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 a t a g t t t g t t a g a a a a t a a a t c t a g a g a a a g t c t t g a t t t t t a t a g c a c g t t g t g t a g t t t t a a t a a a a a t a a g t t c a g
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 a a g a g t g c a g g t g c a g a g t t t g t c t t g c c a t g g g t t g t g g a t a c c t t t t t c g t g c t g t t a c a a a t a t t a a a a t a c a t t
 t t c a a a t g t a g a a t a a a a g c c a t t a t t g a a g c a c a t a a g g a t t t t a a a t t a t a c c t g c c c a t a c t c g t c t g t c t t a t c
 t t a t g t t a a g a g t a a a t g a t g c a t g c g a t c t t t c t t c t g t a c a c a a t a g g t a t g g t g t t a g t a g a t c a a g t c t t g a a g c t
 a a a t a a a g c g t c t g a t g a t a c t c a a g c t g c a g c a c t a a t g g t t t g g g c t t c t g c t t t t g g g t a a g t c g t a a t t g t t c
 c g c a g a t a a c a t g g a t g a g t a t a t t a c t t c t t a t t a g t a c a t a c t a a g t a t t a a c g t a a g c t t a a a a a a a t a t t a t a t a g
 t t a g t g a t a t t a a t t t t t a t a a t a a c c a c t t g t t a t a a t t t a t a a t a a c a g t g g t t t t t t a t t a a c t a a c a a g t t a t t t
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 t t a t a a t g c a t g a a g a g a a t t g t a t a a a c t g t a a a g c t t g t g a a a a t g t t t g t a g a a c t a c a c a t g a t a c a g c t c c a g g a
 t t a t g g t t a g g g a a a c t g c t t t a t a c a a c g c c a g a a g g t a a a a t g g a a g c a c a a g t a a a g t t t a g a g c t t g t c c t c a g t g
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 t a g a t a a a t g c a c a g g a t g t g g a t t a t g t c t a a t a g c a t g c c c c c a t g a t c t t c t t t g g a a a g a t c c t a g g a c a g g g a a a
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 a g g t t g a a a t t g g c t a a c t t t t g a t a a a g a a g t t a t t g t a g a a g a t g a a a c a g t t a g g t t t c c a t a g g t a g a a a a t a t g t
 a a a a a t a t a t c a c g t a a a g c t t g g g g c c a a g g a c g g a t a g a a a t a c c t g t t a t t t g a c g g t a a c g t t c a c a g t t t a a c a
 c a g a a t a g g c a g g g c g t t t t g c a a t g t t t t t c c c c c a c t c a t t a g t g g a a a t a c c t t g t a t t g t a c a a g a t a a g t t t g c t
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 t t c t a c t a g a g a t a t a g a g g c t t c t g c t a g a t c c g g t g t a t a g g t t g g a g a g c c a a t t t g a t c a t g t a c a a c a t g t a g a a
 a g t t t t t a g t t t t t g c t a g t t c t a a g a t t g t t t g t a t a a a a t t t t t t c g t c c t g g c c c a a a t a g c c a a g a t g t t c t a a t a
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t c t t t a t c a a a a a t t a c t a t c a c c t t t t a g t a a a g g t t g t t g t c g t t t t a c c t t c t t g t t c t g a g t a t g c g a t a g c t t
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t t g c t a a g c c t c t t t t a a c a g c a c t t a c a t t t t t t a t g a a t a t a c a g g a a t t g g g g a g t a g c t a t t a t t g t c c t t a c a
t t a t g t a t t a a a a t a g t t t t t t g g c c a t t a t c a c a a a a g a g t t a c a a c t c t a t g g a g c a a a t g a a a a a a c t t c a a c c a a t
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a a g t a a a t c c t g c t g g a g g t t g t t t g c c t a t t t t g c t g c a a a t a c c t g t a t t t a t t g g t t t a t a c c a a g c a t t g t t a a c
t c t a t a g a g c t t c g t c a t g c a a c t t t t a t t t a t t a c t t g c c t t t t a c c c a t c t t g t t t g g c t a g c a g a t c t t t c a g c t g c
t g a t c c t t t t a t a t a a c a c c a t t a t t g a t g g g t g c t a g c a t g t t t t t a c a g c a g a a g t t g a c t c c t g c a t c a g g t g a t c
c t a c t c a a c a g a a a a t a a t g a t g g t t a t g c c a a t t a t t t t t a c a g t t a t g t t t c t t a a t t t c c c a g c t g g a c t t g t t a t t
t a t t g g c t a t t t a a t a a t c t t c t t t c c a t t g g t c a a c a g t g g t g g a t g c t t c g t a a g g c a t a a t c t t t g a g g a g a a a g a g
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a a c a a g a g a a c g t c t t g a a a t a g a a c t t a t c c a a g a t g c a a a g a a t g g t a t a t t t g g t c t t g t a g g t g c a a g a a a a g c a c
t t a t t c g a g c a a g a c t t g c t c a a a t g c a g t c t t c g g t a g a c a c a t t a a a g c a g a a a a a a a t a t c a t c a t t a t c a t t g a g t
a a g a a a a c a a a a a a c a a a a t a g a a a a t t a a c c a t c a t c a a a t a g a c c a a g t t g g g a a t g t g g g a g a a a t t t c t a c a c a
g c a a t t a a a a t c a t c t t a t a a t c a a t c a t t a a a t a a t a c a g t t g t c a g a g a a g a a t t t c c a c a g g t t g a t a a t a a a a t a g
a g a g a g a a a a g g a t a a t g a g t t t a g t c a g c t t t t a g a t t t a t c t a t a g a a a a t a a a g g t a g g t t g g g t c c g g a a g t t g c a
a c a c t a g a t g t c a a t g a a g a a t t a t t t a a t g a t a a t t a t g a t g g t a c c a c a a a g a a t t t t a g t g a a t t a g a t c a a g a t a a
a c t a a t t a c t g a a g c a a c t a a t g t t g t a c a a a a g c t t a t c a t c c c t a t a c t t g g a a a t g t t c c t a t a g a a g t t a c t a t t c
t t a a t a a t a g a t t a g a t g t t c a t g t t g a t t g t g g t g a a t a t t c a g g a c t t a t g a t t g g t c g t g g t g g t c a a a c a t t a g c t
t c a t t a c a g t a t t t a t c t t c t c g t a t t t t a a g t a g a a t a a t g t c a a g t t c t a t a c g a a t a c a g t t t a a t a t t g g t g a t t a
t c g t g a g c a g c a a c a t g a a a g a c t t c g t c a t t t a g c g t t a t c t t t a g c t g a g c g a g t g a g a a a t t c t g g t c g t t c a t g c t
c t a c c c g t c c t a t g a g t t c t t a t c a c a g a a g a a t t a t c c a t c t a a c a t t g c a a a a c t a t c c a g a t a t t c a a a c a c g c a g t
t c t g g a g a t g g g a t a t t a a a a a g g a t a a t t a t t c a a c g t c g t c g t c a a g a a a g a c g t t a a t a t c t t t t g t t t a a g c a t a g
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a g g a a c t g g t g g a a t a g g a a t t a t t c g t a t a a g t g g t c c a a a g t c a a a a g a a c g t c t t a c a g a a t t a t t t c a t t c a g t t t
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g c t a a a t g g a t a c a a t c t t g g a a t g c t t c t a c a g a g t t a g t t t t t c a a a c t a a a c c a g t a a a a a a a c a t g g c a t t t t t t
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t a t c c c t a a a t a a a t c g t t a t t a t t t c g t t t g t t a g a a a c a t t t t t a a a a t t c g t g a g t t g c a a c a a g a a g a c g g t a c
a a t c t a t t g g a a a t c t t t a t t a c a t c t t a t t c g a c a t c c a t a t c t t c g t t t t c t t a a a a t a g a t g g t t t t g a a t t g t a t a
g t t t a t t a c a t a a g c t a g a c a a t g g a t a g t t a a t g g t c a g a a a t a t a t t g a t t t a a a c a t g t t t t t t a g g g a g g t t g a g
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a a t c g t a t g g c a c a t a c t g t a t t a t c a t g g g a t t t a c t c c a a t c a a t g g t t g t a g c t t t g a t t c a t g a t g a a a g a g t t c c
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t t t g g g a a g a a g a c a a a g c a t t g g t t c a c a a a t a a c t c c a g g a g a c t a t a t a t t a a a t a t a g c t a a a c c a g a a g t t t c t
c c t c c a c t c a g g a g g c g t a g a c a t a t t a t t a a g a c t c c t g c a a t t c a a c g a c a a t t a a a t a g t a t a t t g a g t c a t c c t g t
t t c a g c t a c a c a g t t a g a t a c t t a t t t a a t g t g t c c a t t a c g t t t c t a t t t t g a a a g a g t t g c t a t g g t t c g t c c a g t g g
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g c t t a t a a a c t c t t t a c c t c c t g a a a g t t c t a t g a t g c t t a g t c t t a g t g g a c c t g a a a a a t t g g t c c g t t t t t t a t c t a
g g c a a c c a g a t a a a a c a a a a a t t a t a t a t c t t g a g a a a t a c t t t c a a g c a a c t c t a c a a a t a a a t g g t a a t a c t c g t g t t
c t t g a a g g a a t t t t a g a t a g a g t t g a t a a a a g g g g a a a t g a a g g a g t t a t t a t t t t t g a c t a t a a a a c t g g t c g t a t t a a
a a a t a a c t c t g a t a a g t t g t g g c a g g a t g a g a g t a t t t g g t c a a a c c t t g a a t c t t t t g a t t t a a c t c t t g t a t a g a a c
a t c c a g a a a a a g c t g a t g a g c t t c t t t t t a c t c t t t c a g a a a a a t t t c a a c t a t a c a g t t g c t t t a c t a t a t a t a t c t t
t a t a g a g a t g c t a c a g g t g a a g a a t t c a a g a t g c t g c a t t t a t t t c t c t a g g g g a g g a t g g t g c t g a a t a t t g g t t a a t
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 ct t t t g a c a a a g g a a a t t t c c a a a c t c a a g c t c a t g g t t g t t a t a a a a g g a a a a g c t g a a t g t c c a c c t t c t g a t g c t a
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 aatacacacata t c t a a t g g t a c a g a t g c a a a t a a g a a t t a g a c a t t a t t g t t g t a g a a t a g t a g t a a a c g a a g t t g t
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 t t t t a t a a a a t a a t t a g t a t a a c t t a a t t a c a t a t t a t a c g c t a t t a a g c a a t t a c c t a t a t c t c t a a t t a a t a a t a a 30
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t t t t t t t t a t a t t t g c t a t a t a a t t t t g g g a a a t a t g t a g g t g c g a a a a a g g g a t a g a g g c a c g t c g a t c a a t t c c a a
t t t t a t c a a g t a c c a a c g a g t a a t a g g a c t t t t c a t t c c a a t a a g t t g t a a t t g a t a a g g t a t c c a c t t t t a a g t t t t
g c t a a a a c g g a g c a t g c g c a a g a a g c c a g t c t c t a a a g g g a g g a c g t c t t g t t c t g t a a t a t t c g g c a c g a g c t a a c a t
a t t t a g a g a a g a g a t t t t t a c a t t t g a a g g g c a g c t t a t a t c a c a a c a t t t a c a a t t a g a a c a a t a a g a t a g t c c t t c t a
t c t c t t t t g t t g t t g a g t c t a a a t c g t t c a g c t g a t g g t c c t g t g a g t t t t g g a c c t t t a a a t t t t t t g t a g c t g c t
a t t a c a g g a c a a t t g a t a g t a c a t a t a g a g c a a g t t a t a c a a c t a t c a a t a g a t t c a a g a g g a t t c a t a a c a t t t a c c t t
t a t a c a t t t a g a g a a g c a a a g t a t g c t g t a g a t a t t g c t a c a c c a t t c c c a g a c t t t t c a t a g g c a g a g t c a t a t c c a t t
a a g t g t a t t t c c a a t a a a a a g a c a t t a t c a c a a a t a g g a t t t c c a t c a g a g t c a g t t g g a c g a a g g a a g g a a t c a a c a g
t t g g t c c a a t c a t a c t a a a t a a a t g t g a t t t t t t a t t t t a g g a t a a a g t t c t t t a t t t g c c c a g t c t g g t g a t g a g g g a
t t a g c t g g a a g a t c a a t g t t a a a g a t a g g t t c c c a a g c a c g a t t a t g c t t t g t a a g a a t a c c a t t a c t t a t t a t c c c t c c
t g t a g c a a t a a t a a a g t a g t t g c t t c a t a t t t a c g a a t g t t g c t a t t t t g a g t t g t t a t t a c a g a a a t a c a g t g g t t a t
c c t t t a c t t c t g c a c t t g t a a c a g c a g c a t t a t c a a t a a t t g t t a c a t g a t a t t t t t a a g t a t a t a a c g c a a t a g t a t g
t t t a g t c g a t a a c c t g t a a t g g t a g g a g g t a a a a c a t c a c a t t c t c g a a t a a g a c a g t t a c t t t t t g t t c a a g t t t a t g
a a g t a a a t g t g g t a a g a a a g t t g t t c c a a g a a t a g g a g g a a g a a t t a t a a g g t c t g a c t g a t t t c c t t g t t g c t t t a t t c
c t t g a a c a a g c c a t t t t a a t c c a t t t t c t g t t t c t a a a t a t t g t g c a c a t t g a a a g t a g a t a t a t t t c t c t c t g a t t c t
g g a a a a t g a a g t t t t g c t t g t g t a a a t g t t t t g t t a g c a a a a t a t t t t t a g a g g a t a a c c c t t t g a t g a t c a a c t c a g g
g t a a a a g t c t t t c a t t c c t t c t a t t c c c a g t a t a c a a a t a t t t t t a t a t c a g g t a t g a t t g a c a t a t c c a t a g a t t c t g
t a a c c a t c c a t g t t g g c t t t a t t g t g c c a g c a g c t g t g a c t a c a t a a g t a t t t t t t t g a c t c c t t g t t t t a t a t a t a a c a
t t t t c t t c t c c c a c t a a c t c a c t a a a a t t t t t t a a t g c a t t t c t t a c a g t c a a t t c t c c t a t t a g t t g a t a t g g a t g t c t
t t t a g g t a g g a a t g t a a c t g c t t c a a a g g a t t a c t g a c t g g c t t a c c a t t a g g a a g g t a t c c a a g a a c a t c a a t t g t t c
c a c t a c c t a t t g t g a t a g t t c c a t t t c c t t t t g t g a t a a g a a t a c a t t t t t t g c c t t t c c g t g c a g c a a a a g c a g c a g c a
g t c a t a c c a g a a a g t c c a c c a c t a c t a c a a t a a g a t c g a c t t t t c t a t t c a t g a t t t t c c t g c t c a a t a t t t a g a g t a g
c a c t a t a g a t t t g t c t a a a t a g t t c a a c t t c a c g t a a g g a c t c t c c c c a t a a a g a t g g a t a a a t g c c a a c c c a t t t t t t
t g t t g g a a a g t t t g t a g t a a a t c a g t g a t t g g t t c t t t g c t a g a g a g t a a g t t a a a t g t a g a a a g t t t c c t a t a g c a c g
t a g a g c a c a a a a a g t t c c t t g a c a t g t t c c c a t c c c c a t t c g t g t t c t g c g a g a g a t a t c t c c t a g t a g a t a a g a t g a g g
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t t t a t a g c a g t a g a g a c t t c a t t t a t a g a g t t a c c t a a g c g g g a g a g t g c t g g t t c a a a a c c t t g t a t a g g a a a a t a t t t
t a t t t t t t a t g t a a t g t a g g a t c t a c t t c t g t t a t a a g t g g t t c t t t t g c t g t a t t a c a t g g a a c a t t a t t g t t g a a g t
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g a t a g c c c t t c a t t t t t a t g a t c g a t t a t a c g a a a a c t t c t t g a g g c a t a g a g t t c t t t a g g t g a t t t a t a c a t a c t a t a
t a a t g g c c g t g t c c c t g c a a a a g a t c g t a a t a t t c t g t a t t g a t g a a t t t t a g g g a a t a a t a c a c t g c c t a t a t t t a a t a
a t t c t a g g a t a t c a g a c t g c t c a g g g a t t a t a t c a t c t g g t c t a t t g g t g t t t t t a g a t g t t g t t c c a a g a a t t g t t g t a
g a t t c a t g a g g t a c a a a a a t a t c a c c a t c a g a a g g t g g a t g a a g c c t a t t g a t a a t t t t t t t a g a a a g t c g a t g a t t a a a
g a c a a t a a g t g c a c c t t t a t t t g g a g t t a a g t g a a g t t c a a t t c c t g c t t t t g c a g c g a c a t c a c c a c a c c a g c t c c c t g
c a g c a t t g a t a a c a a a g t t a c a a g t a a g a t g t g t t a t t c t t t t g t c c a a a a g t c t t c t a t a g t a a c a c c t g t a a c a a c a
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t g t t a t a t t t a a a g t a a a t t t t t g t a a a t t c t t c t c t g t c a g a c t c t t g a c a c c t t c a c t g g a t a t g g c a a a c a g t a a a t
 a g g g g a a a g t a t c a g t a g g g g a a a g a t g g a g a t t g t a a g c a a c g g a a t t a t t g g a g a g a g t a c c a c t t t a a a a g a g g t c
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 c t a a g g g a a a g a g g a c g t g a t a t t t t a t t a c t c a c a g a a a g t t t t c t t a c t c g t t t t g t g c t a g a a a c a a c g t c c t a t
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a g t t g a a a a a c g t c g a c t t g a t g g a g a a g t g t g a a t c a a t a a a t g t g t t a t a a t t t a a t a t a a c g a t a c t t t t t t a c c a
 g g t a t g g t t t t g t g a a g t t t t t t a t t t a c t c a t g g t t g t t c c a a t t t t t t t g a t t a c t g g a g g a a t g a t c t t a t t t a c t
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 t a a t c a a g g t a a a a a a g c t t c t c g t a t t a g t a c a c c c a a t t a g a a a t t c c t c t t t c a a c a c c t g c a a a a g a t c t t t c a c
 g t a t t g g a g c t t c t c c t t c c c c a g a a a g t t t a g t a t c a g a t t t a t c g t t a g a t g g c t c a a a g c t c c a t a t a a a t t t a a g a

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g a t g c a g c a t t t g g c t a t a t a c a a c c t c t a c a a a t c c t a a t c a g t t a a t t a t t g a t g t t t t t t c a g a t c c t c t a g g a a a
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g t a a a t a g c a t t c a t t c a a a a t t a a a t t t c a a a g a c c a g a t g c t t g g c c t a a a g a a a a a g c t t t a a g t a c a t t g g a t a a
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 a t g a a g a g a a a c c a g t t t c a g a g c c a g t g g t t g t a t a t g t t g a t g a a a a g g t a a c c c t g t t g g g a a a c c a c c t g a t a c a
 a c c g c t a t a t t g a a g a a g c a a a a a a a a a t a t g a g a g c a g g a c a a g t g c a a a a a g c t a a a g a t t t a c t a g c t a c t t t a a a
 a g g c c a t g c a c t a g t c c a a g a a c a g c a t g a a g a g g t a t t a t a t c t a t t t a g t g a a c t t a a t g a a a a a a t t t a t a a a g a t a
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 a a g a a a a t t t c c t c a g a g t g a a t t t a t a c c a g a a g c c t a t t t a g c a t t a g g a a a a g a t c a a t t t t c a a a g g g a g a g t a t g
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c t a t t g g a c a t a c t a t a a t t t a g t t c c a g a a g c a a a a g a t a g c c a t g a t a c a t t g t t t a a a a t t g g t a c c a g t t a t t t
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 t g g g g c a a c t g g g g c a a c t g g t g c a g c t g a t g t a a c t g g a a c a g c a g c a c c t a a a t t t g c a g t a g a t c c t a c a a a g a a t c 10
 c a a c c c a a t g t t t c g t t a t g c t a t g t t a g a a t t a g t t a c t g c t a g g a a t a t a c g t g a a t c a g c a a c a t c t c t a a t g a a t
 a g t a t a g c a g a t a c a c a g c g t g a a c a a a a a g c t g c a a g t a g t t a c c t t g a t c a g t t t c g a a a g c a t c a a a g t g a t g t t a g
 c c a a g g t c a t g g t a g t g g t a g t c a g g g a a g t g g g a g c g g a t a c a a c a g t g g c a a a t t g a t t g g t t a a a a t c c c a t a a t a
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 g c t t a c a t a g a t a a t a t a g g c t c a a g t a c a c a g c a a a a a a t g g t t c a a g c t c a a g a t g c a c t a g g a c a g t a t a a c t c t c a
 a g t t c a a g g a g c c a c a t c a a g t a t t a c t a a t g a t a t t g a a t t a a g t a g g t c t g t a a a c a c t a c a c a a c c t t t c t a a t t g t
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 a t a t a c a a c a t g t t a t a t t c c t a t g t a a a t a a t a a a a a t g g t t t g g a t g c a a g g t g c a t t g g a a c a g t a t a c a g t a a a 20
 g t t c a a t a a g t a a c a g t a a a t a t a t t a g t a t t a g c g g a c a a a g t a a c a c t a a t t g a a t a g c a a t c a g t c t a t a t t a t t a
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 caccaatftggcgaagttctatfttagcatgatattctcttataagatctfttataaggtcacggaaatcaatgcggtta
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 ttgctftacgaaatgatggaatggaacagftaaaggatcaatggagttaggaagactftgtaataatcttacaactftgtgta
 aggcttatccccctgctctagttctacaacaactftgttctcttctataatgaaaggatcttcaaaaaaaagatatctft
 tttcccatgtggtctaaaactgttatfaagatcacgtttcatggcctaaaactcatfttatataatagtaattttaaga
 taagttttgttctfttttccggttatftacacatctgtgtcaatcatagttgtgagatftagggtagttgttaataaaaa
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 aagtgaaagtttagagatcctataatftatgtgtaataatcagtttcatggggctftactftggatftaacctaaatftag
 aagctctactfttaagttgactcactaagaataaaaatftataataaactataaataaataatagttttatagttcatftagg
 ataagftaaactataggtaacagaaataaataagttatftaaaaaacactftgtcaataaggatgaatcaggtatfttagtc
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 cctftgctaccaatftaaaatgactatftcattatcaactatftttatftaaatftagatgaatftagtttaaggatgatagtc
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 ttttatftagtttatftatagttacatctatactftatftctagataaaaatcactaccaactftatgggtagttfaatftttt
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 a

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aaaaggaacagttttttatcctataatftgaagtagttgttttttagtcagactftttttgtctcatfttttttccggg
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 ctgactfttatgtacttctftaaaaaaggtgtgataaaagttccatctgtttgccatccaataaaccaaatftatcctgctaa
 tftctgtaagaagtaagctcctaaatccaagttcttgaacaacagcagctaaaccaccactgttgggggtataagtttaa
 aagataagcttactftttaaactftttataagttgttttagtatcaccatagataaggataaaaagtgcttataacctcta
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tggaaagaagacagcacacaacataatTTTTCTTgaacttaaataaaacttcaaattgatggaaatagtagtactacatcttctt
ccccttctatTGGTcaaagtctTTTTATGATATATAACAGGTCTTCAAGGACTAGGATATACTAAAGAAGAAAGTCT
GtagttataaaagtcCGTTTTGCAACATGAACCAGATTTAGATGTTGGTAGTGTCTCTAGAAGATGCTGTGAAACAGCTGGT
AAAGGGGTAACAATGCCTGAAATAATGCAGTCTTCTTACCCTGATGAGACACTTTATAGAGAAAAAGATGATAGTATTCG
CCCTCTCGACTCGATGATTTATGGTCAAGAAGAGTTACGTGAAAATCTTAAAGTGTFTTTAAATGCTGCTCGTGATC
GTGGTCAGGCTATGGATCATAcattTTTTATGGAAATCCAGGGCTTGGAAAACAACCCTAGCTCAAATTTATGCAGCA
GAACtaggggtaaacctTTTTGTACTCTGGTCTGTCTTGGAGCTAGTGGAGATCTTGCAGCAATACTAACAATCT
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GTAGGAGCTACAACAGTATGGTCTTATATCTTCTCTTTGCGTGATCGTTTTGGAATTTATAGCCGACTTGAATTTA
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GGCTCAGCAACTGTAGATGAAGAGCTGTAAATCATGCATTACAGAAACTTGATGTGGATGAAAAAGGTTTAGATCAGAT
GGATCGAAAACCTCTTACTGTCTTATGAGCTTTTGTGGAGGTCCTGTAGGAATAAAAACATTAGCAGTTGCATGTT
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CGTATGGCTACGGTGAAGGCTATAAGCATTTAAATTAACGGATTAATCTTATGGAGCATATATGCCTGGAGTTACCC
CTAGGGTTGAATTTATCTTATACACCAGAACCCTGTCTAGTATTTATGCATCATTTAGACAGTGTATCATGCTGGA
TTTTGTTGGAGATATGTTGGAAGAACTCTTGATGGAGAAATACCAAAGAGAAACAAGCTAGTTTTATCCATTCATTAAT
TGAATCAGGCCATACAAGTCTTATGAACATGTAAGTTTTACGTTTGTCTATAGTGGTGTTCGAAGAGCACTTACACATC
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GCTGAAGGCTTTGCTTGAATCTGGTAAAAGAACAGCTCTCTCTATGAAGATGCTCGGTTTTGTTTTACCACAAGCAGCTG
CAACAAATATGTTATGACAATGAATGTCTGTGATTTAAACTTTTTGAGCATAGATGTTGTTTTCTGAGCTCAATGG
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GTGTGAAAGACTTCAATATGCCCTGAAGGAGAAAAATATACATGTGGACTATATCCAGTGCCTAATATAATTTATATA
ACAAGATATATAAATAAGCTCTTATAAAAAGTATAAGAGCTTATTTTTTTTTTAATAACTTTTAAAAGTATAATAGT
AGTAG

【 0 1 2 9 】

GLIMMERおよびARTEMISを使用することによりゲノム内の潜在的コード配列(CDS)を予
想し、結果を比較しARTEMISにおいて手動で確認した。表14、15、16および17(参照によ
り本明細書に組み入れる添付のコンパクトディスク上に含有されている)は、それぞれ遺
伝的エレメント1、2、3および4のローソニア・イントラセルラリス(L. intracellularis
)配列のアノテーションを記載している。表18、19、20および21(参照により本明細書に
組み入れる添付のコンパクトディスク上に含有されている)は、それぞれ遺伝的エレメン
ト1、2、3および4の各推定CDSのヌクレオチド配列を記載している。表22、23、24および2
5(参照により本明細書に組み入れる添付のコンパクトディスク上に含有されている)は
、それぞれ遺伝的エレメント1、2、3および4の各推定CDSによりコードされる推定アミノ
酸配列を記載している。

【 0 1 3 0 】

表 14

FT	CDS	280..1359	
FT		/note="partial hit(72-327)	IGI:RPJ00003 DNA
FT		integration/recombination/inversion protein	[Proteus
FT		mirabilis]	Length = 307 core = 76.6 bits (187), Expe
ct =			
FT		5e-13"	
FT		/label=contig1.31	
FT		/gene="LAWA001"	
FT		/blastp_file="blastp/contig1.31.blastp"	
FT	CDS	complement(1564..1920)	

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FT          /note="unknown"
FT          /label=contig1.02c
FT          /gene="LAWA002"
FT          /blastp_file="blastp/contig1.02c.blastp"
FT          /colour=2
FT  CDS     complement(1914..2264)
FT          /note="unknown"
FT          /label=contig1.03c
FT          /gene="LAWA003"
FT          /blastp_file="blastp/contig1.03c.blastp"
FT          /colour=2
FT  CDS     2560..2889
FT          /note="unknown"
FT          /label=contig1.04
FT          /gene="LAWA004"
FT          /blastp_file="blastp/contig1.04.blastp"
FT          /colour=2
FT  CDS     complement(3335..5296)
FT          /note="unknown"
FT          /label=contig1.05c
FT          /gene="LAWA005"
FT          /blastp_file="blastp/contig1.05c.blastp"
FT          /colour=2
FT  CDS     complement(5817..6476)
FT          /note="unknown"
FT          /label=contig1.06c
FT          /gene="LAWA006"
FT          /blastp_file="blastp/contig1.06c.blastp"
FT          /colour=2
FT  CDS     complement(6841..7245)
FT          /note="unknown"
FT          /label=contig1.07c
FT          /gene="LAWA007"
FT          /blastp_file="blastp/contig1.07c.blastp"
FT          /colour=2
FT  CDS     complement(7296..8276)
FT          /note="closest hit IGI:RCAU04218 Mevalonate kinase (EC
FT          2.7.1.36)          [Chloroflexus aurantiacus J-10 (JGI)] Le
ngth =
FT          345 Score = 255 bits (652), Expect = 5e-67"
FT          /note="Sterol biosynthesis"
FT          /label=contig1.08c
FT          /gene="mvaK1"
FT          /blastp_file="blastp/contig1.08c.blastp"
FT  CDS     complement(8304..9590)
FT          /note="partial hit(4-237) IGI:RBE00992 Mannose-1-phosphate
FT          guanyltransferase (EC2.7.7.13)          [Bacillus
FT          stearothermophilus 10]          Length = 389 Score = 138 bits
FT          (347), Expect = 2e-31"
FT          /note="Fructose and mannose metabolism"

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FT          /label=contig1.09c
FT          /gene="LAWA009"
FT          /blastp_file="blastp/contig1.09c.blastp"
FT  CDS     complement(9603..10622)
FT          /note="closest hit IGI:RSSU00045
FT          Beta-1,3-N-acetylglucosaminyltransferase (EC 2.4.1.-)
FT          [Streptococcus suis]      Length = 334 Score = 124 bits
FT          (310), Expect = 2e-27"
FT          /note="Fructose and mannose metabolism,N-Glycans
FT          biosynthesis,Glycerolipid metabolism"
FT          /label=contig1.10c
FT          /gene="LAWA010"
FT          /blastp_file="blastp/contig1.10c.blastp"
FT  CDS     complement(10908..11360)
FT          /note="unknown"
FT          /label=contig1.11c
FT          /gene="LAWA011"
FT          /blastp_file="blastp/contig1.11c.blastp"
FT          /colour=2
FT  CDS     complement(11381..12091)
FT          /note="unknown"
FT          /label=contig1.12c
FT          /gene="LAWA012"
FT          /blastp_file="blastp/contig1.12c.blastp"
FT          /colour=2
FT  CDS     complement(12124..12882)
FT          /note="unknown"
FT          /label=contig1.13c
FT          /gene="LAWA013"
FT          /blastp_file="blastp/contig1.13c.blastp"
FT          /colour=2
FT  CDS     complement(13079..13909)
FT          /note="unknown"
FT          /label=contig1.14c
FT          /gene="LAWA014"
FT          /blastp_file="blastp/contig1.14c.blastp"
FT          /colour=2
FT  CDS     complement(13950..15080)
FT          /note="partial hit(5-304) GI:RCB03284 Hypothetical
FT          Protein [Clostridium botulinum ATCC-3502]      Length =
435
FT          Score = 176 bits (446), Expect = 5e-43"
FT          /label=contig1.15c
FT          /gene="LAWA015"
FT          /blastp_file="blastp/contig1.15c.blastp"
FT          /colour=12
FT  CDS     complement(15288..16061)
FT          /note="unknown"
FT          /label=contig1.16c
FT          /gene="LAWA016"

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FT          /blastp_file="blastp/contig1.16c.blastp"
FT          /colour=2
FT  CDS     complement(16055..17518)
FT          /note="closest hit IGI:RGME02366 MAGNESIUM-PROTOPORPHYRIN
FT          IX MONOMETHYL ESTER OXIDATIVE CYCLASE [Geobacter
FT          metallireducens (JGI)] Length = 475 Score = 260 bits
FT          (664), Expect = 4e-68"
FT          /label=contig1.17c
FT          /gene="bchE"
FT          /blastp_file="blastp/contig1.17c.blastp"
FT  CDS     complement(17553..17906)
FT          /note="unknown"
FT          /label=contig1.18c
FT          /gene="LAWA018"
FT          /blastp_file="blastp/contig1.18c.blastp"
FT          /colour=2
FT  CDS     complement(17912..18493)
FT          /note="closest hit IGI:RRPA04289 Phosphoheptose isomerase
FT          (EC 5.-.-.-) [Rhodopseudomonas palustris CGA009
FT          (JGI)] Length = 227 Score = 104 bits (260), Expect =
FT          6e-22"
FT          /label=contig1.19c
FT          /gene="gmhA"
FT          /blastp_file="blastp/contig1.19c.blastp"
FT  CDS     complement(18514..18888)
FT          /note="unknown"
FT          /label=contig1.20c
FT          /gene="LAWA020"
FT          /blastp_file="blastp/contig1.20c.blastp"
FT          /colour=2
FT  CDS     complement(18943..19275)
FT          /note="unknown"
FT          /label=contig1.21c
FT          /gene="LAWA021"
FT          /blastp_file="blastp/contig1.21c.blastp"
FT          /colour=2
FT  CDS     complement(19278..19784)
FT          /note="partial hit(1-162) IGI:RCGL00402 Dolichol-phosphate
FT          mannosyltransferase (EC 2.4.1.83) [Corynebacterium
FT          glutamicum ATCC-13032] Length = 253 Score = 166 bits
FT          (421), Expect = 1e-40"
FT          /note="N-Glycans biosynthesis"
FT          /label=contig1.22c
FT          /gene="LAWA022"
FT          /blastp_file="blastp/contig1.22c.blastp"
FT  CDS     complement(20042..21061)
FT          /note="closest hit IGI:RBAT00621 UDP-glucose 4-epimerase
FT          (EC 5.1.3.2) [Bacillus anthracis A2012] Length = 3
38
FT          Score = 338 bits (868), Expect = 5e-92"
50

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FT          /note="Galactose metabolism, Nucleotide sugars metabolism"
FT          /label=contig1.23c
FT          /gene="gale"
FT          /blastp_file="blastp/contig1.23c.blastp"
FT  CDS     complement(21140..21898)
FT          /note="closest hit IGI:RST00003 Glycosyltransferase
FT          involved in cell wall biogenesis (EC
FT          2.4.-.-) [Streptococcus pyogenes SF370-M1]          Length =
231
FT          Score = 133 bits (335), Expect = 2e-30"          10
FT          /label=contig1.24c
FT          /gene="LAWA024"
FT          /blastp_file="blastp/contig1.24c.blastp"
FT  CDS     complement(21988..22320)
FT          /note="closest hit IGI:RGME00146 Hypothetical
FT          Protein [Geobacter metallireducens (JGI)]          Length =
108
FT          Score = 86.3 bits (212), Expect = 7e-17"
FT          /label=contig1.25c
FT          /gene="LAWA025"          20
FT          /blastp_file="blastp/contig1.25c.blastp"
FT          /colour=12
FT  CDS     complement(22310..22588)
FT          /note="closest hit IGI:RDHA05093 Hypothetical
FT          Protein [Desulfitobacterium halfniense DCB-2 (JGI)]
Length
FT          = 87 Score = 60.1 bits (144), Expect = 6e-09"
FT          /label=contig1.26c
FT          /gene="LAWA026"
FT          /blastp_file="blastp/contig1.26c.blastp"          30
FT          /colour=12
FT  CDS     complement(23098..24147)
FT          /note="unknown"
FT          /label=contig1.27c
FT          /gene="LAWA027"
FT          /blastp_file="blastp/contig1.27c.blastp"
FT          /colour=2
FT  CDS     24353..25753
FT          /note="closest hit IGI:RCA00764 hypothetical
FT          protein [Clostridium acetobutylicum ATCC-824D]          L 40
length =
FT          456 Score = 169 bits (429), Expect = 6e-41"
FT          /label=contig1.28
FT          /gene="LAWA028"
FT          /blastp_file="blastp/contig1.28.blastp"
FT          /colour=12
FT  CDS     25951..26709
FT          /note="closest hit IGI:RTDE02327 ATPase, Para
FT          FAMILY [Treponema denticola 35405]          Length = 251 Sco
re =

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FT          233 bits (594), Expect = 2e-60"
FT          /label=contig1.29
FT          /gene="LAWA029"
FT          /blastp_file="blastp/contig1.29.blastp"
【 0 1 3 1 】
表 15
FT  CDS      404..691
FT          /note="closest hit IGI:RXY00553 TRANSCRIPTIONAL
FT          REPRESSOR, CopG FAMILY [Xylella fastidiosa oleander]
FT          Length = 92 Score = 87.4 bits (215), Expect = 3e-17"          10
FT          /label=cintig2.18c
FT          /gene="LAWB001"
FT          /blastp_file="blastp/cintig2.18c.blastp"
FT  CDS      complement(2232..2513)
FT          /note="closest hit IGI:RSAR04011 hypothetical
FT          protein [Sphingomonas aromaticivorans F199] Length =
105
FT          Score = 46.2 bits (108), Expect = 6e-05"
FT          /label=cintig2.17
FT          /gene="LAWB002"          20
FT          /blastp_file="blastp/cintig2.17.blastp"
FT  CDS      2785..3822
FT          /note="unknown"
FT          /label=cintig2.16c
FT          /gene="LAWB003"
FT          /blastp_file="blastp/cintig2.16c.blastp"
FT  CDS      complement(5055..7874)
FT          /note="unknown"
FT          /label=cintig2.15
FT          /gene="LAWB004"          30
FT          /blastp_file="blastp/cintig2.15.blastp"
FT  CDS      complement(8334..9338)
FT          /note="closest hit IGI:RHD05722 hypothetical protein
FT          [Bacillus halodurans C-125] Length = 325 Score = 135
FT          bits (340), Expect = 7e-31"
FT          /label=cintig2.14
FT          /gene="LAWB005"
FT          /blastp_file="blastp/cintig2.14.blastp"
FT  CDS      10436..12607
FT          /note="unknown"          40
FT          /label=cintig2.13c
FT          /gene="LAWB006"
FT          /blastp_file="blastp/cintig2.13c.blastp"
FT  CDS      complement(12772..14652)
FT          /note="closest hit IGI:RBPA03853 ASPARAGINE SYNTHETASE
FT          (GLUTAMINE-HYDROLYZING) (EC6.3.5.4) [Bordetella
FT          parapertussis 12822] Length = 624 Score = 727 bits
FT          (1876), Expect = 0.0"
FT          /note="Alanine and aspartate metabolism,Nitrogen
FT          metabolism"          50

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FT          /label=cintig2.12
FT          /gene="asnB"
FT          /blastp_file="blastp/cintig2.12.blastp"
FT  CDS     complement(14668..15459)
FT          /note="closest hit IGI:RBPA03851 hypothetical protein
FT          [Bordetella parapertussis 12822] Length = 239 Score = 99.0
FT          bits (245), Expect = 5e-20"
FT          /label=cintig2.11
FT          /gene="LAWB008"
FT          /blastp_file="blastp/cintig2.11.blastp"
FT  CDS     complement(15453..16469)
FT          /note="unknown"
FT          /label=cintig2.10
FT          /gene="LAWB009"
FT          /blastp_file="blastp/cintig2.10.blastp"
FT  CDS     complement(16482..17606)
FT          /note="closest hit IGI:RBY08576 PEROSAMINE SYNTHETASE
FT          [Bordetella bronchiseptica RB50] Length = 386 Score = 199
FT          bits (506), Expect = 4e-50"
FT          /label=cintig2.09
FT          /gene="LAWB010"
FT          /blastp_file="blastp/cintig2.09.blastp"
FT  CDS     complement(17627..18526)
FT          /note="closest hit IGI:RMMA09208 Coenzyme PQQ synthesis
FT          protein E [Magnetospirillum magnetotacticum MS-1]
FT          Length
FT          = 346 Score = 79.7 bits (195), Expect = 3e-14"
FT          /label=cintig2.08
FT          /gene="pqqE"
FT          /blastp_file="blastp/cintig2.08.blastp"
FT  CDS     complement(18588..19238)
FT          /note="closest hit IGI:RCB03693 hypothetical protein
FT          [Clostridium botulinum] Length = 221 Score = 113 bits
FT          (283), Expect = 1e-24"
FT          /label=cintig2.07
FT          /gene="LAWB012"
FT          /blastp_file="blastp/cintig2.07.blastp"
FT  CDS     19368..20597
FT          /note="unknwon"
FT          /label=cintig2.06c
FT          /gene="LAWB013"
FT          /blastp_file="blastp/cintig2.06c.blastp"
FT  CDS     20757..21587
FT          /note="unknown"
FT          /label=cintig2.05c
FT          /gene="LAWB014"
FT          /blastp_file="blastp/cintig2.05c.blastp"
FT  CDS     21675..22562
FT          /note="partial hit(64-181) IGI:RP000913 Probable
FT          delta(24)-sterol C-methyltransferase (EC 2.1.1.41)

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FT          [Pyrococcus abyssii]          Length = 227 Score = 49.3 bits
FT          (116), Expect = 5e-05"
FT          /label=cintig2.04c
FT          /gene="LAWB015"
FT          /blastp_file="blastp/cintig2.04c.blastp"
FT  CDS     22569..23621
FT          /note="closest hit IGI:RP000133 Pleiotropic regulatory
FT          protein [Pyrococcus abyssii] Length = 366 Score = 169
FT          bits (429), Expect = 3e-41"
FT          /label=cintig2.03c
FT          /gene="LAWB016"
FT          /blastp_file="blastp/cintig2.03c.blastp"
FT  CDS     23628..24695
FT          /note="unknown"
FT          /label=cintig2.02c
FT          /gene="LAWB017"
FT          /blastp_file="blastp/cintig2.02c.blastp"
FT  CDS     24903..26174
FT          /note="unknown"
FT          /label=cintig2.26c
FT          /gene="LAWB018"
FT          /blastp_file="blastp/cintig2.26c.blastp"
FT  CDS     complement(26181..26819)
FT          /note="unknown"
FT          /label=cintig2.25
FT          /gene="LAWB019"
FT          /blastp_file="blastp/cintig2.25.blastp"
FT  CDS     complement(27548..28714)
FT          /note="partial hit(70-384) IGI:RCB01480 hypothetical
FT          protein [Clostridium botulinum] Length = 375 Score = 121
FT          bits (304), Expect = 1e-26"
FT          /label=cintig2.24
FT          /gene="LAWB020"
FT          /blastp_file="blastp/cintig2.24.blastp"
FT  CDS     31301..31633
FT          /note="unknown"
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FT          /gene="LAWB021"
FT          /blastp_file="blastp/cintig2.23c.blastp"
FT  CDS     33665..36469
FT          /note="unknown"
FT          /label=cintig2.22c
FT          /gene="LAWB022"
FT          /blastp_file="blastp/cintig2.22c.blastp"
FT  CDS     36874..38025
FT          /note="partial hit(97-369) IGI:RMMA07208 Transposase
FT          [Magnetospirillum magnetotacticum MS-1] Length = 394
FT          Score = 81.6 bits (200), Expect = 1e-14"
FT          /label=cintig2.21c
FT          /gene="LAWB023"

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FT /blastp_file="blastp/cintig2.21c.blastp"
 FT CDS 38667..39422
 FT /note="closest hit IGI:REF00914 Chromosome partitioning
 FT protein parA [Enterococcus faecalis] Length = 2
 60 Score
 FT = 188 bits (478), Expect = 4e-47"
 FT /label=cintig2.20c
 FT /gene="parA"
 FT /blastp_file="blastp/cintig2.20c.blastp"
【 0 1 3 2 】 10
 表 16
 FT CDS 525..1610
 FT /note="partial hit(83-359) IGI:RLM001954 DNA
 FT integration/recombination/inversion protein [Listeria
 FT monocytogenes EGD-e] Length = 297 Score = 97.8 bits
 FT (242), Expect = 2e-19"
 FT /label=contig3.52c
 FT /gene="LAWC001"
 FT /blastp_file="blastp/contig3.52c.blastp"
 FT CDS 2657..3580 20
 FT /note="unknown"
 FT /label=contig3.49c
 FT /gene="LAWC002"
 FT /blastp_file="blastp/contig3.49c.blastp"
 FT CDS 3754..4872
 FT /note="closest hit GEN:CAC07479 AX009427 GI:9996720
 FT product = epsG [Lactobacillus delbrueckii subsp.
 FT bulgaricus] Length = 375 Score = 118 bits (295), Exp
 ect
 FT = 2e-25" 30
 FT /label=contig3.48c
 FT /gene="epsG"
 FT /blastp_file="blastp/contig3.48c.blastp"
 FT CDS 5115..5657
 FT /note="closest hit IGI:RE003480 dTDP-4-dehydrorhamnose
 FT 3,5-epimerase (EC 5.1.3.13) [Erwinia carotovora
 FT atroseptica] Length = 178 Score = 224 bits (571), Exp
 ect
 FT = 5e-58"
 FT /note="Nucleotide sugars metabolism" 40
 FT /label=contig3.47c
 FT /gene="rfbC"
 FT /blastp_file="blastp/contig3.47c.blastp"
 FT CDS 5841..6644
 FT /note="closest hit GEN:BAA82536 AB030032 GI:5545321 ABC
 FT transporter [Actinobacillus actinomycetemcomitans] Le
 ngth
 FT = 264 Score = 186 bits (471), Expect = 4e-46"
 FT /label=contig3.46c
 FT /gene="LAWC005" 50

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FT          /blastp_file="blastp/contig3.46c.blastp"
FT  CDS     6833..7720
FT          /note="partial hit(10-153) IGI:RHD07537 Putative
FT          N-acetylgalactosaminyl-diphosphoundecaprenol
FT          glucuronosyltransferase (EC 2.4.1.-)          [Bacillus halodu
rans
FT          C-125]      Length = 257 Score = 103 bits (256), Expect =
FT          4e-21"
FT          /label=contig3.45c
FT          /gene="LAWC006"                                10
FT          /blastp_file="blastp/contig3.45c.blastp"
FT  CDS     7836..10205
FT          /note="closest hit IGI:RML003948 GLYCOSYL TRANSFERASE (EC
FT          2.4.1.-)  [Mesorhizobium loti MAFF303099]      Length =
794
FT          Score = 513 bits (1320), Expect = e-144"
FT          /label=contig3.44c
FT          /gene="LAWC007"
FT          /blastp_file="blastp/contig3.44c.blastp"
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FT          /gene="LAWC008"
FT          /blastp_file="blastp/contig3.43c.blastp"
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FT          /note="unknown"
FT          /label=contig3.42
FT          /gene="LAWC009"
FT          /blastp_file="blastp/contig3.42.blastp"
FT  CDS     complement(14573..15277)                    30
FT          /note="closest hit IGI:RLP00853 Mannose-1-phosphate
FT          guanyltransferase (EC 2.7.7.13)  [Legionella pneumophila]
FT          Length = 220 Score = 102 bits (254), Expect = 4e-21"
FT          /note="Fructose and mannose metabolism"
FT          /label=contig3.41
FT          /gene="LAWC010"
FT          /blastp_file="blastp/contig3.41.blastp"
FT  CDS     complement(15277..16257)
FT          /note="partial hit(1-269) IGI:RCAU04218 Mevalonate kinase
FT          (EC 2.7.1.36)          [Chloroflexus aurantiacus J-10 (JGI)] Le  40
ngth
FT          = 345 Score = 177 bits (450), Expect = 1e-43"
FT          /note="Sterol biosynthesis"
FT          /label=contig3.40
FT          /gene="mvaK1"
FT          /blastp_file="blastp/contig3.40.blastp"
FT  CDS     complement(16567..17556)
FT          /note="closest hit IGI:RMMA09154 Hypothetical
FT          protein  [Magnetospirillum magnetotacticum MS-1 (JGI)]
FT          Length = 362 Score = 155 bits (391), Expect = 1e-36"  50

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FT          /label=contig3.39
FT          /gene="LAWC012"
FT          /blastp_file="blastp/contig3.39.blastp"
FT  CDS     complement(17553..18434)
FT          /note="closest hit IGI:RGME01545 Glucose 1-dehydrogenase
FT          II (EC 1.1.1.47) [Geobacter metallireducens (JGI)] Length
FT          = 284 Score = 129 bits (323), Expect = 6e-29"
FT          /note="Pentose phosphate pathway"
FT          /label=contig3.38
FT          /gene="LAWC013"
FT          /blastp_file="blastp/contig3.38.blastp"
FT  CDS     complement(18568..19872)
FT          /note="closest hit IGI:RCHU02792 UDP-glucose
FT          6-dehydrogenase (EC 1.1.1.22) [Cytophaga hutchinsonii
FT          ATCC-33406 (JGI)] Length = 440 Score = 227 bits (5
FT          78),
FT          Expect = 3e-58"
FT          /note="Pentose and glucuronate interconversions,Starch and
FT          sucrose metabolism,Nucleotide sugars metabolism"
FT          /label=contig3.37
FT          /gene="ugd"
FT          /blastp_file="blastp/contig3.37.blastp"
FT  CDS     complement(19973..20956)
FT          /note="closest hit GI:RGME02862 Hypothetical Protein
FT          [Geobacter metallireducens (JGI)] Length = 336 Scor
FT          e =
FT          77.4 bits (189), Expect = 3e-13"
FT          /label=contig3.36
FT          /gene="LAWC015"
FT          /blastp_file="blastp/contig3.36.blastp"
FT  CDS     complement(20934..21653)
FT          /note="closest hit IGI:RSPY00656 Transaldolase (EC
FT          2.2.1.2) [Streptococcus pyogenes M5] Length = 243 Sco
FT          re =
FT          259 bits (662), Expect = 2e-68"
FT          /note="Pentose phosphate pathway"
FT          /label=contig3.35
FT          /gene="tal"
FT          /blastp_file="blastp/contig3.35.blastp"
FT  CDS     complement(21738..22343)
FT          /note="closest hit IGI:RCHU01322 Histidinol-phosphatase
FT          (EC 3.1.3.15) [Cytophaga hutchinsonii ATCC-33406 (JGI)]
FT          Length = 172 Score = 90.9 bits (224), Expect = 1e-17"
FT          /note="Histidine metabolism"
FT          /label=contig3.34
FT          /gene="hisJ"
FT          /blastp_file="blastp/contig3.34.blastp"
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FT          /note="unknown"
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FT          /gene="LAWC018"
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FT          /blastp_file="blastp/contig3.31.blastp"
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FT          /note="unknown"
FT          /label=contig3.30
FT          /gene="LAWC021"
FT          /blastp_file="blastp/contig3.30.blastp"
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FT          /note="unknown"
FT          /label=contig3.29
FT          /gene="LAWC022"
FT          /blastp_file="blastp/contig3.29.blastp"
FT  CDS     complement(30157..31122)
FT          /note="closest hit IGI:RMBA03535 UDP-glucose 4-epimerase
FT          (EC 5.1.3.2) [Methanosarcina barkeri fusaro (JGI)] Len
gth
FT          = 319 Score = 265 bits (677), Expect = 6e-70"
FT          /note="Galactose metabolism,Nucleotide sugars metabolism"
FT          /label=contig3.28
FT          /gene="gale"
FT          /blastp_file="blastp/contig3.28.blastp"
FT  CDS     complement(31168..31902)
FT          /note="closest hit IGI:RMC002774 Hypothetical
FT          protein [Magnetococcus MC-1 (JGI)] Length = 244 Scor
e =
FT          142 bits (358), Expect = 4e-33"
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FT          /gene="LAWC024"
FT          /blastp_file="blastp/contig3.27.blastp"
FT  CDS     complement(32380..32919)
FT          /note="unknown"
FT          /label=contig3.26
FT          /gene="LAWC025"
FT          /blastp_file="blastp/contig3.26.blastp"
FT  CDS     complement(32919..33764)
FT          /note="weak hit IGI:RYP02516 Phage tail protein [Yersin
ia
FT          pestis C092] Length = 259 Score = 52.8 bits (125), Exp
ect
FT          = 5e-06"

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FT          /label=contig3.25
FT          /gene="LAWC026"
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FT  CDS     34205..35827
FT          /note="unknown"
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FT          /gene="LAWC028"
FT          /blastp_file="blastp/contig3.23c.blastp"
FT  CDS     37950..39563
FT          /note="unknown"
FT          /label=contig3.22c
FT          /gene="LAWC029"
FT          /blastp_file="blastp/contig3.22c.blastp"
FT  CDS     39662..41038
FT          /note="closest hit IGI:RRPA02504 Membrane-bound
FT          0-acyltransferase [Rhodopseudomonas palustris CGA00
9
FT          (JGI)] Length = 477 Score = 357 bits (916), Expect =
FT          2e-97"
FT          /label=contig3.21c
FT          /gene="LAWC030"
FT          /blastp_file="blastp/contig3.21c.blastp"
FT  CDS     41380..41661
FT          /note="unknown"
FT          /label=contig3.20c
FT          /gene="LAWC031"
FT          /blastp_file="blastp/contig3.20c.blastp"
FT  CDS     complement(41854..42834)
FT          /note="partial hit(7-326) IGI:RNM01802 hypothetical
FT          protein [Neisseria meningitidis ser. A strain Z2491]
FT          Length = 539 Score = 378 bits (970), Expect = e-104"
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FT          /gene="LAWC032"
FT          /blastp_file="blastp/contig3.19.blastp"
FT  CDS     complement(42884..43714)
FT          /note="unknown"
FT          /label=contig3.18
FT          /gene="LAWC033"
FT          /blastp_file="blastp/contig3.18.blastp"
FT  CDS     complement(43711..44217)
FT          /note="closest hit IGI:RNM01803 hypothetical protein
FT          [Neisseria meningitidis ser. A strain Z2491] Length =
168
FT          Score = 114 bits (285), Expect = 5e-25"
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FT          /note="unknown"
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FT          /gene="LAWC035"
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FT  CDS     complement(45243..45860)
FT          /note="closest hit IGI:RBY08223 Soluble lytic murein
FT          transglycosylase (EC 3.2.1.-) [Bordetella bronchiseptic  10
a
FT          RB50]      Length = 189 Score = 218 bits (554), Expect =
FT          5e-56"
FT          /note="N-Glycans biosynthesis, Nucleotide sugars
FT          metabolism,Aminosugars metabolism, Glycosaminoglycan
FT          degradation "
FT          /label=contig3.15
FT          /gene="slt"
FT          /blastp_file="blastp/contig3.15.blastp"
FT  CDS     46792..51615 20
FT          /note="unknown"
FT          /label=contig3.14c
FT          /gene="LAWC037"
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FT          /gene="LAWC038"
FT          /blastp_file="blastp/artfile_Contig3.result.seq.00017.out"
FT  CDS     complement(53512..55578) 30
FT          /note="unknown"
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FT          /gene="LAWC039"
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FT          /note="unknown"
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FT          /gene="LAWC040"
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FT          /gene="LAWC041"
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FT  CDS     complement(65206..67194) 50

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FT		/gene="LAWC043"	
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FT		/label=contig3.95	
FT		/gene="LAWC062"	
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FT	CDS	114721..115545	50

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FT          /note="closest hit IGI:RRR03638 Chromosome partitioning
FT          protein parA      [Rhodospirillum rubrum (JGI)] Length = 2
94
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FT          /note="unknown"
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FT          /gene="LAWC065"
FT          /blastp_file="blastp/contig3.92.blastp"
FT  CDS     121983..123122
FT          /note="closest hit IGI:RNM01798 Mu-like prophage FluMu I
FT          protein      [Neisseria meningitidis ser. A strain Z2491]
FT          Length = 351 Score = 154 bits (390), Expect = 2e-36"
FT          /label=contig3.91c
FT          /gene="LAWC066"
FT          /blastp_file="blastp/contig3.91c.blastp"
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FT          /note="closest hit IGI:RNM01797 Major head subunit
FT          [Neisseria meningitidis ser. A strain Z2491] Length =
300
FT          Score = 231 bits (588), Expect = 1e-59"
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FT          /gene="LAWC067"
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FT  CDS     124084..124533
FT          /note="closest hit IGI:RBY09345 Mu-like prophage FluMu
FT          protein gp36      [Bordetella bronchiseptica RB50] Le
ngth =
FT          152 Score = 62.4 bits (150), Expect = 2e-09"
FT          /label=contig3.89c
FT          /gene="LAWC068"
FT          /blastp_file="blastp/contig3.89c.blastp"
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FT          /note="unknown"
FT          /label=contig3.88c
FT          /gene="LAWC069"
FT          /blastp_file="blastp/contig3.88c.blastp"
FT  CDS     125278..126693
FT          /note="closest hit IGI:RBY09342 sheath protein
FT          gpL      [Bordetella bronchiseptica RB50] Length =
475 Score =
FT          441 bits (1134), Expect = e-122"

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FT          /label=contig3.87c
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FT  CDS     126956..127345
FT          /note="closest hit IGI:RBY09341 Hypothetical
FT          Protein [Bordetella bronchiseptica RB50]          Length =
122
FT          Score = 125 bits (313), Expect = 1e-28"
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FT          /gene="LAWC071"                                     10
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FT          /gene="LAWC073"                                     20
FT          /blastp_file="blastp/contig3.84c.blastp"
FT  CDS     129105..130370
FT          /note="closest hit IGI:RBY09338 hypothetical protein
FT          [Bordetella bronchiseptica RB50] Length = 419 Score = 117
FT          bits (293), Expect = 3e-25"
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la
FT          bronchiseptica RB50] Length = 367 Score = 268 bits
FT          (684), Expect = 1e-70"
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FT          /gene="LAWC075"
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FT          /note="closest hit IGI:RNM01784 Mu-like prophage FluMu
FT          protein gp45 [Neisseria meningitidis ser. A strain Z24
91]
FT          Length = 209 Score = 93.6 bits (231), Expect = 2e-18"
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FT  CDS     complement(132327..133022)
FT          /note="closest hit IGI:RCQ00967 Hypothetical Membrane
FT          Spanning Protein [Chlamydomphila pneumoniae CWL029] Length
FT          = 230 Score = 88.6 bits (218), Expect = 6e-17"
FT          /label=contig3.80
FT          /gene="LAWC077"                                     50

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FT          /blastp_file="blastp/contig3.80.blastp"
FT  CDS     complement(133350..133736)
FT          /note="closest hit IGI:RTM02340 Translation initiation
FT          inhibitor          [Thermotoga maritima MSB8]          Length = 1
28 Score
FT          = 68.9 bits (167), Expect = 2e-11"
FT          /label=contig3.79
FT          /gene="LAWC078"
FT          /blastp_file="blastp/contig3.79.blastp"
FT  CDS     complement(134013..135005)          10
FT          /note="closest hit IGI:RAN05820 Hypothetical
FT          protein          [Anabaena sp. PCC7120]          Length = 335 Score = 11
9
FT          bits (297), Expect = 7e-26"
FT          /label=contig3.78
FT          /gene="LAWC079"
FT          /blastp_file="blastp/contig3.78.blastp"
FT  CDS     complement(135091..136032)
FT          /note="closest hit IGI:RAT61056 Hypothetical
FT          Protein          [Arabidopsis thaliana]          Length = 320 Scor  20
e = 422
FT          bits (1086), Expect = e-117"
FT          /label=contig3.77
FT          /gene="LAWC080"
FT          /blastp_file="blastp/contig3.77.blastp"
FT  CDS     complement(136395..137753)
FT          /note="closest hit IGI:RBE00400 Replicative DNA helicase
FT          (EC 3.6.1.-)          [Bacillus stearothermophilus 10]          Le
ngth =
FT          454 Score = 390 bits (1001), Expect = e-107"          30
FT          /note="Starch and sucrose metabolism,Folate biosynthesis"
FT          /label=contig3.76
FT          /gene="recQ"
FT          /blastp_file="blastp/contig3.76.blastp"
FT  CDS     138575..139735
FT          /note="closest hit IGI:RGME03539 GDP-mannose 4,6
FT          dehydratase (EC 4.2.1.47)          [Geobacter metallireducen
s
FT          (JGI)]          Length = 372 Score = 549 bits (1414), Expect =
FT          e-155"          40
FT          /note="Fructose and mannose metabolism"
FT          /label=contig3.75c
FT          /gene="gmd"
FT          /blastp_file="blastp/contig3.75c.blastp"
FT  CDS     140126..140452
FT          /note="unknown"
FT          /label=contig3.74c
FT          /gene="LAWC083"
FT          /blastp_file="blastp/contig3.74c.blastp"
FT  CDS     140609..140983          50

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FT          /note="unknown"
FT          /label=contig3.73c
FT          /gene="LAWC084"
FT          /blastp_file="blastp/contig3.73c.blastp"
FT  CDS     complement(141084..142049)
FT          /note="closest hit IGI:RAN04474 GLYCOSYL TRANSFERASE (EC
FT          2.4.1.-) [Anabaena sp.PCC7120] Length = 318 Score = 131
FT          bits (330), Expect = 1e-29"
FT          /label=contig3.72
FT          /gene="LAWC085"
FT          /blastp_file="blastp/contig3.72.blastp"
FT  CDS     complement(142046..143107)
FT          /note="unknown"
FT          /label=contig3.71
FT          /gene="LAWC086"
FT          /blastp_file="blastp/contig3.71.blastp"
FT  CDS     143397..143747
FT          /note="closest hit IGI:RNM00124 hypothetical protein
FT          [Neisseria meningitidis ser. A strain Z2491] Length =
115
FT          Score = 126 bits (316), Expect = 6e-29"
FT          /label=contig3.70c
FT          /gene="LAWC087"
FT          /blastp_file="blastp/contig3.70c.blastp"
FT  CDS     144107..144823
FT          /note=" IGI:RNM00123 Phage-like element PBSX protein xkd
T
FT          [Neisseria meningitidis ser. A strain Z2491] Length =
FT          351"
FT          /label=contig3.69c
FT          /gene="LAWC088"
FT          /blastp_file="blastp/contig3.69c.blastp"
FT  CDS     144828..145394
FT          /note="closest hit IGI:RNM00122 hypothetical protein
FT          [Neisseria meningitidis ser. A strain Z2491] Length =
186
FT          Score = 104 bits (259), Expect = 7e-22"
FT          /label=contig3.68c
FT          /gene="LAWC089"
FT          /blastp_file="blastp/contig3.68c.blastp"
FT  CDS     complement(146282..147724)
FT          /note="closest hit IGI:RE001127 Di-/tripeptide transporter
FT          [Erwinia carotovora atroseptica] Length = 514 Score = 338
FT          bits (866), Expect = 1e-91"
FT          /label=contig3.67
FT          /gene="LAWC090"
FT          /blastp_file="blastp/contig3.67.blastp"
FT  CDS     148401..174641
FT          /note="unknown"
FT          /label=contig3.66c

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FT          /gene="LAWC091"
FT          /blastp_file="blastp/contig3.66c.blastp"
FT  CDS     174997..176478
FT          /note="closest hit IGI:RYE03947 Hypothetical protein PQAA
FT          [Yersinia enterocolitica 8081]      Length = 512 Score = 488
FT          bits (1256), Expect = e-137"
FT          /label=contig3.65c
FT          /gene="LAWC092"
FT          /blastp_file="blastp/contig3.65c.blastp"
FT  CDS     complement(176743..178116)          10
FT          /note="closest hit GEN:AAA64651 U10927 GI:506708 type 1
FT          capsule synthesis gene; CapL      [Staphylococcus aureus]
FT          Length = 424 Score = 429 bits (1103), Expect = e-119"
FT          /label=contig3.64
FT          /gene="LAWC093"
FT          /blastp_file="blastp/contig3.64.blastp"
FT  CDS     complement(178467..179024)
FT          /note="closest hit IGI:RBY00077 Acetyltransferase (EC
FT          2.3.1.-) [Bordetella bronchiseptica RB50]      Length =
191
FT          Score = 208 bits (530), Expect = 3e-53"          20
FT          /label=contig3.63
FT          /gene="LAWC094"
FT          /blastp_file="blastp/contig3.63.blastp"
FT  CDS     complement(179021..180190)
FT          /note="closest hit GEN:AAM27800 AF498416 GI:20560054
FT          ORF_9; similar to DegT/DnrJ/EryC1/StrS family [Pseudomonas
FT          aeruginosa]      Length = 359 Score = 331 bits (849), Ex
pect
FT          = 1e-89"          30
FT          /label=contig3.62
FT          /gene="LAWC095"
FT          /blastp_file="blastp/contig3.62.blastp"
FT  CDS     complement(180177..180551)
FT          /note="unknown"
FT          /label=contig3.61
FT          /gene="LAWC096"
FT          /blastp_file="blastp/contig3.61.blastp"
FT  CDS     complement(180716..181768)
FT          /note="closest hit GEN:CAD21031 AJ427964 GI:18307418          40
FT          putative oxidoreductase [Bordetella avium]      Length = 3
48
FT          Score = 437 bits (1125), Expect = e-122"
FT          /label=contig3.60
FT          /gene="LAWC097"
FT          /blastp_file="blastp/contig3.60.blastp"
FT  CDS     complement(182091..183431)
FT          /note="partial hit(31-377) IGI:RCA00581 Methyl-accepting
FT          chemotaxis protein      [Clostridium acetobutylicum ATCC-
824D]          50

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FT          Length = 569 Score = 97.4 bits (241), Expect = 4e-19"
FT          /label=contig3.59
FT          /gene="LAWC098"
FT          /blastp_file="blastp/contig3.59.blastp"
FT  CDS     complement(184429..185472)
FT          /note="unknown"
FT          /label=contig3.58
FT          /gene="LAWC099"
FT          /blastp_file="blastp/contig3.58.blastp"
FT  CDS     186166..186576                                10
FT          /note="unknown"
FT          /label=contig3.57c
FT          /gene="LAWC100"
FT          /blastp_file="blastp/contig3.57c.blastp"
FT  CDS     186732..187613
FT          /note="closest hit IGI:RHD05838 Transporter,
FT          Drug/Metabolite Exporter family [Bacillus halodurans
FT          C-125] Length = 304 Score = 132 bits (332), Expect =
FT          6e-30"
FT          /label=contig3.56c                                20
FT          /gene="LAWC101"
FT          /blastp_file="blastp/contig3.56c.blastp"
FT  CDS     188379..189776
FT          /note="closest hit IGI:RYP02698 Cytochrome c551 peroxidase
FT          (EC 1.11.1.5) [Yersinia pestis C092] Length = 4
48 Score
FT          = 425 bits (1092), Expect = e-118"
FT          /label=contig3.55c
FT          /gene="yhjA"
FT          /blastp_file="blastp/contig3.55c.blastp"          30
FT  CDS     complement(190321..192417)
FT          /note="partial hit(196-698) IGI:RGME01058 Protein pi
IJ
FT          [Geobacter metallireducens (JGI)] Length = 544 Scor
e =
FT          146 bits (368), Expect = 1e-33"
FT          /label=contig3.54
FT          /gene="pilJ"
FT          /blastp_file="blastp/contig3.54.blastp"
FT  CDS     complement(193810..194466)                    40
FT          /note="unknown"
FT          /label=contig3.53
FT          /gene="LAWC104"
FT          /blastp_file="blastp/contig3.53.blastp"
【 0 1 3 3 】
表 17
FT  CDS     358..1794
FT          /note="closest hit IGI:RCK01204 Chromosomal replication
FT          initiator protein dnaA [Prochlorococcus marinus MED4
FT          (JGI)] Length = 463 Score = 224 bits (571), Expect = 50

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FT          2e-57"
FT          /label=contig5.720c
FT          /gene="dnaA"
FT          /blastp_file="blastp/contig5.720c.blastp"
FT  CDS     complement(1827..2906)
FT          /note="closest hit IGI:RGME01156 Bacterial Peptide Chain
FT          Release Factor 1 (RF-1) [Geobacter metallireducens
FT          (JGI)] Length = 356Score = 374 bits (961), Expect =
FT          e-103"
FT          /label=contig5.719                                10
FT          /gene="LAW0002"
FT          /blastp_file="blastp/contig5.719.blastp"
FT  CDS     3122..3436
FT          /note="unknown"
FT          /label=contig5.718c
FT          /gene="LAW0003"
FT          /blastp_file="blastp/contig5.718c.blastp"
FT  CDS     3454..4209
FT          /note="closest hit IGI:RCPE01883 Hemolysin [Clostridium
FT          perfringens 13] Length = 271 Score = 202 bits (515),    20
FT          Expect = 3e-51"
FT          /label=contig5.717c
FT          /gene="hly"
FT          /blastp_file="blastp/contig5.717c.blastp"
FT  CDS     complement(4337..4879)
FT          /note="closest hit IGI:RECS02355 Superoxide dismutase
FT          [Cu-Zn] (EC 1.15.1.1) [Escherichia coli 0157:H7
FT          Sakai] Length = 173 Score = 186 bits (472), Expect =
FT          1e-46"
FT          /label=contig5.716                                30
FT          /gene="sodC"
FT          /blastp_file="blastp/contig5.716.blastp"
FT  CDS     4945..5214
FT          /note="unknown"
FT          /label=contig5.715c
FT          /gene="LAW0006"
FT          /blastp_file="blastp/contig5.715c.blastp"
FT  CDS     5549..7147
FT          /note="closest hit IGI:RQP00408 ADP,ATP carrier
FT          protein [Chlamydomonas reinhardtii] Length = 515Scor    40
FT          e =
FT          394 bits (1012), Expect = e-108"
FT          /label=contig5.714c
FT          /gene="t1c"
FT          /blastp_file="blastp/contig5.714c.blastp"
FT  CDS     complement(7665..7904)
FT          /note="unknown"
FT          /label=contig5.713
FT          /gene="LAW0008"
FT          /blastp_file="blastp/contig5.713.blastp"                                50

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FT   CDS           complement(8001..8735)
FT               /note="unknown"
FT               /label=contig5.712
FT               /gene="LAW0009"
FT               /blastp_file="blastp/contig5.712.blastp"
FT   CDS           complement(8623..8928)
FT               /note="unknown"
FT               /label=contig5.711
FT               /gene="LAW0010"
FT               /blastp_file="blastp/contig5.711.blastp"
FT   CDS           complement(9617..10576)
FT               /note="partial hit(55-199) IGI:RDHA05029 DNA polymerase
FT               III, delta' subunit (EC 2.7.7.7) [Desulfitobacterium
FT               halfniense DCB-2 (JGI)] Length = 295 Score = 76.3 bits
FT               (186), Expect = 5e-13"
FT               /note="Purine metabolism,Pyrimidine metabolism,DNA
FT               polymerase"
FT               /label=contig5.710
FT               /gene="polB"
FT               /blastp_file="blastp/contig5.710.blastp"
FT   CDS           complement(10536..13571)
FT               /note="unknown"
FT               /label=contig5.709
FT               /gene="LAW0012"
FT               /blastp_file="blastp/contig5.709.blastp"
FT   CDS           complement(14779..15576)
FT               /note="partial hit(70-260) GEN:AAG30826 AF286536
FT               GI:11120074 putative N-acylhomoserine lactone
FT               synthase [Pseudomonas fluorescens] Length = 259 Sco
re =
FT               99.0 bits (245), Expect = 6e-20"
FT               /label=contig5.708
FT               /gene="LAW0013"
FT               /blastp_file="blastp/contig5.708.blastp"
FT   CDS           complement(15573..16805)
FT               /note="closest hit IGI:RBX00632 ATPase associated with
FT               chromosome architecture /replication [Bacteroides
FT               fragilis NCTC-9343] Length = 423 Score = 299 bits (
765),
FT               Expect = 5e-80"
FT               /label=contig5.707
FT               /gene="LAW0014"
FT               /blastp_file="blastp/contig5.707.blastp"
FT   CDS           complement(16842..17369)
FT               /note="closest hit IGI:RCTH00535 URACIL
FT               PHOSPHORIBOSYLTRANSFERASE (EC 2.4.2.9) /PYRIMIDINE OPERON
FT               REGULATORY PROTEIN PYRR [Clostridium thermocellum
FT               ATCC-27405 (JGI)] Length = 186 Score = 139 bits (349),
FT               Expect = 2e-32"
FT               /note="Pyrimidine metabolism"

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FT          /label=contig5.706
FT          /gene="upp"
FT          /blastp_file="blastp/contig5.706.blastp"
FT  CDS     17612..18394
FT          /note="closest hit IGI:RTM02060 hypothetical
FT          protein      [Thermotoga maritima MSB8]      Length = 222 Sco
re =
FT          81.3 bits (199), Expect = 1e-14"
FT          /label=contig5.705c
FT          /gene="LAW0016"
FT          /blastp_file="blastp/contig5.705c.blastp"
FT  CDS     complement(18406..19131)
FT          /note="closest hit IGI:RDR03055 Ubiquinone/menaquinone
FT          biosynthesis methyltransferaseUBIE (EC
FT          2.1.1.-)   [Deinococcus radiodurans R1]      Length = 241Scor
e =
FT          137 bits (346), Expect = 9e-32"
FT          /note="Ubiquinone biosynthesis "
FT          /label=contig5.704
FT          /gene="ubiE"
FT          /blastp_file="blastp/contig5.704.blastp"
FT  CDS     complement(19389..20660)
FT          /note="closest hit IGI:RDR03848 Proton/sodium-glutamate
FT          symport protein   [Deinococcus radiodurans R1]      Length =
431
FT          Score = 315 bits (808), Expect = 6e-85"
FT          /label=contig5.703
FT          /gene="glpP"
FT          /blastp_file="blastp/contig5.703.blastp"
FT  CDS     complement(20974..21483)
FT          /note="closest hit IGI:RAA00895 Glycerol-3-phosphate
FT          cytidyltransferase (EC2.7.7.39)      [Aquifex aeolicus
FT          VF5]      Length = 157 Score = 157 bits (398), Expect = 4
e-38"
FT          /note="Glycerolipid metabolism"
FT          /label=contig5.702
FT          /gene="tagD"
FT          /blastp_file="blastp/contig5.702.blastp"
FT  CDS     complement(21519..22526)
FT          /note="closest hit IGI:RGME03670 Tryptophanyl-tRNA
FT          synthetase (EC 6.1.1.2)      [Geobacter metallireducens
FT          (JGI)]      Length = 328 Score = 364 bits (935), Expect =
FT          e-100"
FT          /note="Tryptophan metabolism,Aminoacyl-tRNA biosynthesis"
FT          /label=contig5.701
FT          /gene="trpS"
FT          /blastp_file="blastp/contig5.701.blastp"
FT  CDS     complement(22529..23203)
FT          /note="closest hit IGI:RNE00546 Membrane
FT          metalloprotease   [Nitrosomonas europaea ATCC-25978
50

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FT          (JGI)]      Length = 225 Score = 149 bits (377), Expect =
FT          2e-35"
FT          /label=contig5.700
FT          /gene="LAW0021"
FT          /blastp_file="blastp/contig5.700.blastp"
FT  CDS     complement(23206..24402)
FT          /note="closest hit IGI:RNE00048 Tyrosyl-tRNA synthetase
FT          (EC 6.1.1.1) [Nitrosomonas europaea ATCC-25978
FT          (JGI)]      Length = 409 Score = 430 bits (1105), Expect =
FT          e-119"
FT
FT          /note="Phenylalanine, tyrosine and tryptophan
FT          biosynthesis,Aminoacyl-tRNA biosynthesis"
FT          /label=contig5.699
FT          /gene="tyrS"
FT          /blastp_file="blastp/contig5.699.blastp"
FT  CDS     complement(24563..25084)
FT          /note="partial hit(54-172) IGI:RAN00834
FT          06-methylguanine-DNA methyltransferase (EC
FT          2.1.1.63) [Anabaena sp. PCC7120] Length = 178 Score = 82.
8
FT          bits (203), Expect = 2e-15"
FT          /label=contig5.698
FT          /gene="ogt"
FT          /blastp_file="blastp/contig5.698.blastp"
FT  CDS     complement(25145..26224)
FT          /note="closest hit IGI:RGME01608
FT          1-hydroxy-2-methyl-2-(E)-butenyl 4-diphosphate synthase
FT          [Geobacter metallireducens (JGI)] Length = 355Score = 407
FT          bits (1045), Expect = e-112"
FT          /label=contig5.696
FT          /gene="gcpE"
FT          /blastp_file="blastp/contig5.696.blastp"
FT  CDS     complement(26307..29891)
FT          /note="partial hit(152-652,828-1069) IGI:RTER02756
FT          Phosphoenolpyruvate synthase (EC2.7.9.2) [Trichodesmium
FT          erythraeum IMS101 (JGI)] Length = 825 Score = 232 bits
FT          (592), Expect = 2e-59"
FT          /note="Pyruvate metabolism,Reductive carboxylate cycle"
FT          /label=contig5.695
FT          /gene="ppsA"
FT          /blastp_file="blastp/contig5.695.blastp"
FT  CDS     complement(30148..31131)
FT          /note="partial hit(110-312) IGI:RPF01251
FT          Biotin--[acetyl-CoA-carboxylase]synthetase
FT          (EC6.3.4.15) [Pyrococcus furiosus] Length = 235 Sco
re =
FT          71.6 bits (174), Expect = 1e-11"
FT          /label=contig5.694
FT          /gene="birA"
FT          /blastp_file="blastp/contig5.694.blastp"

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FT    CDS                complement(31207..32184)
FT                                /note="closest hit IGI:RVP00039 Flagellar motor switch
FT                                protein fliM      [Vibrio parahaemolyticus]      Length =
348 Score
FT                                = 234 bits (598), Expect = 9e-61"
FT                                /note="Bacterial chemotaxis,Flagellar assembly"
FT                                /label=contig5.693
FT                                /gene="fliM"
FT                                /blastp_file="blastp/contig5.693.blastp"
FT    CDS                32258..32746                                10
FT                                /note="unknown"
FT                                /label=contig5.692c
FT                                /gene="LAW0028"
FT                                /blastp_file="blastp/contig5.692c.blastp"
FT    CDS                complement(32974..34476)
FT                                /note="unknown"
FT                                /label=contig5.691
FT                                /gene="LAW0029"
FT                                /blastp_file="blastp/contig5.691.blastp"
FT    CDS                complement(34646..35818)                                20
FT                                /note="unknown"
FT                                /label=contig5.690
FT                                /gene="LAW0030"
FT                                /blastp_file="blastp/contig5.690.blastp"
FT    CDS                complement(35907..36365)
FT                                /note="unknown"
FT                                /label=contig5.689
FT                                /gene="LAW0031"
FT                                /blastp_file="blastp/contig5.689.blastp"
FT    CDS                complement(36644..37960)                                30
FT                                /note="unknown"
FT                                /label=contig5.688
FT                                /gene="LAW0032"
FT                                /blastp_file="blastp/contig5.688.blastp"
FT    CDS                complement(38434..40854)
FT                                /note="partial hit(53-686) IGI:RGME02304 Organic solvent
FT                                tolerance protein [Geobacter metallireducens (JGI)]
Length
FT                                = 697 Score = 172 bits (435), Expect = 2e-41"
FT                                /label=contig5.687                                40
FT                                /gene="ostA"
FT                                /blastp_file="blastp/contig5.687.blastp"
FT    CDS                40989..42131
FT                                /note="closest hit IGI:RPA07389 Alanine racemase (EC
FT                                5.1.1.1) [Pseudomonas aeruginosa PA01] Length = 357 Sco
re
FT                                = 180 bits (456), Expect = 3e-44"
FT                                /note="Alanine and aspartate metabolism,D-Alanine
FT                                metabolism"
FT                                /label=contig5.686c                                50

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FT          /gene="alr"
FT          /blastp_file="blastp/contig5.686c.blastp"
FT  CDS     complement(42140..42592)
FT          /note="closest hit IGI:RGME02335 Ferric uptake regulation
FT          protein [Geobacter metallireducens (JGI)]          Length =
  191
FT          Score = 137 bits (346), Expect = 3e-32"
FT          /label=contig5.685
FT          /gene="fur"
FT          /blastp_file="blastp/contig5.685.blastp"          10
FT  CDS     complement(42906..43955)
FT          /note="closest hit IGI:RFNP00495 ADP-heptose:LPS
FT          heptosyltransferase II[EC:2.4.1.-] [Fusobacterium
FT          nucleatum polymorphum ATCC-10953] Length = 342Score = 94.4
FT          bits (233), Expect = 2e-18"
FT          /note="Lipopolysaccharide biosynthesis"
FT          /label=contig5.683
FT          /gene="rfaF"
FT          /blastp_file="blastp/contig5.683.blastp"
FT  CDS     complement(44293..44535)          20
FT          /note="unknown"
FT          /label=contig5.682
FT          /gene="LAW0037"
FT          /blastp_file="blastp/contig5.682.blastp"
FT  CDS     44534..45043
FT          /note="closest hit GEN:AAF69991 AF250878 GI:7800395
FT          putative partition protein [Salmonella typhi]          Length =
  171
FT          Score = 89.0 bits (219), Expect = 2e-17"
FT          /label=contig5.681c          30
FT          /gene="LAW0038"
FT          /blastp_file="blastp/contig5.681c.blastp"
FT  CDS     45343..45816
FT          /note="unknown"
FT          /label=contig5.680c
FT          /gene="LAW0039"
FT          /blastp_file="blastp/contig5.680c.blastp"
FT  CDS     45849..47372
FT          /note="unknown"
FT          /label=contig5.679c          40
FT          /gene="LAW0040"
FT          /blastp_file="blastp/contig5.679c.blastp"
FT  CDS     47683..49611
FT          /note="unknown"
FT          /label=contig5.678c
FT          /gene="LAW0041"
FT          /blastp_file="blastp/contig5.678c.blastp"
FT  CDS     49861..50334
FT          /note="unknown"
FT          /label=contig5.677c          50

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FT          /gene="LAW0042"
FT          /blastp_file="blastp/contig5.677c.blastp"
FT  CDS     50406..53108
FT          /note="unknown"
FT          /label=contig5.676c
FT          /gene="LAW0043"
FT          /blastp_file="blastp/contig5.676c.blastp"
FT  CDS     complement(53869..55779)
FT          /note="closest hit IGI:RGME01055 Phosphoglycerol
FT          transferase MdoB and related proteins, alkaline          10
FT          phosphatase
FT          superfamily[EC:2.7.8.20] [Geobactermetallireducens
FT          (JGI)] Length = 633 Score = 448 bits (1152), Expect =
FT          e-124"
FT          /note="Glycerolipid metabolism"
FT          /label=contig5.675
FT          /gene="mdoB"
FT          /blastp_file="blastp/contig5.675.blastp"
FT  CDS     56748..59387
FT          /note="unknown"          20
FT          /label=contig5.674c
FT          /gene="LAW0045"
FT          /blastp_file="blastp/contig5.674c.blastp"
FT  CDS     60142..60534
FT          /note="unknown"
FT          /label=contig5.673c
FT          /gene="LAW0046"
FT          /blastp_file="blastp/contig5.673c.blastp"
FT  CDS     complement(61583..62695)
FT          /note="closest hit IGI:RMC001261 PROTEIN TRANSLOCASE          30
FT          SUBUNIT SECF [Magnetococcus MC-1(JGI)] Length =
311 Score
FT          = 190 bits (483), Expect = 2e-47"
FT          /note="Protein export"
FT          /label=contig5.672
FT          /gene="secF"
FT          /blastp_file="blastp/contig5.672.blastp"
FT  CDS     complement(62698..64281)
FT          /note="closest hit IGI:RGME00411 PROTEIN TRANSLOCASE          40
FT          SUBUNIT SECD [Geobacter metallireducens (JGI)]
Length =
FT          533 Score = 394 bits (1012), Expect = e-108"
FT          /note="Protein export"
FT          /label=contig5.671
FT          /gene="secD"
FT          /blastp_file="blastp/contig5.671.blastp"
FT  CDS     complement(64432..64770)
FT          /note="partial hit(1-69) IGI:RRR02068 Protein translocase
FT          subunit YajC [Rhodospirillum rubrum (JGI)] Length =

```

FT Score = 68.6 bits (166), Expect = 2e-11"
 FT /note="Protein export"
 FT /label=contig5.670
 FT /gene="yajC"
 FT /blastp_file="blastp/contig5.670.blastp"
 FT CDS complement(65816..69043)
 FT /note="unknown"
 FT /label=contig5.669
 FT /gene="LAW0050"
 FT /blastp_file="blastp/contig5.669.blastp" 10
 FT CDS complement(69095..72304)
 FT /note="closest hit IGI:RBX00451 PUTATIVE DNA HELICASE II
 FT HOMOLOG (EC 3.6.1.-) [Bacteroides fragilis
 FT NCTC-9343] Length = 1057 Score = 234 bits (598), Expect =
 FT 4e-60"
 FT /note="Starch and sucrose metabolism,Folate biosynthesis"
 FT /label=contig5.668
 FT /gene="uvrD"
 FT /blastp_file="blastp/contig5.668.blastp"
 FT CDS complement(72270..73637) 20
 FT /note="closest hit IGI:RTDE01935 Pyrophosphate--fructose
 FT 6-phosphate1-phosphotransferase (EC 2.7.1.90) [Trepone
 ma
 FT denticola35405] Length = 442 Score = 386 bits (991),
 FT Expect = e-106"
 FT /note="Fructose and mannose metabolism"
 FT /label=contig5.667
 FT /gene="pfp"
 FT /blastp_file="blastp/contig5.667.blastp"
 FT CDS 74229..74561 30
 FT /note="unknown"
 FT /label=contig5.666c
 FT /gene="LAW0053"
 FT /blastp_file="blastp/contig5.666c.blastp"
 FT CDS complement(74909..75781)
 FT /note="partial hit(48-278) IGI:RLM000241 23S rRNA Gm2251
 FT methyltransferase (EC 2.1.1.-) [Listeria monocytogenes
 FT EGD-e] Length = 251 Score = 128 bits (322), Expect =
 FT 8e-29"
 FT /label=contig5.665 40
 FT /gene="LAW0054"
 FT /blastp_file="blastp/contig5.665.blastp"
 FT CDS 75939..77606
 FT /note="closest hit GEN:AAG05201 AE004607 GI:9947796
 FT membrane-bound lytic mureintransglycosylase D
 FT precursor [Pseudomonas aeruginosa] Length = 534 Sc
 ore =
 FT 197 bits (500), Expect = 4e-49"
 FT /note="N-Glycans biosynthesis, Nucleotide sugars
 FT metabolism, Aminosugars metabolism, Glycosaminoglycan 50

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FT          degradation"
FT          /label=contig5.664c
FT          /gene="mltD"
FT          /blastp_file="blastp/contig5.664c.blastp"
FT  CDS     complement(77677..78435)
FT          /note="closest hit IGI:RAG07660 ABC transporter permease
FT          protein [Archaeoglobus fulgidus DSM4304]          Length =
244
FT          Score = 194 bits (494), Expect = 7e-49"
FT          /label=contig5.663                                10
FT          /gene="LAW0056"
FT          /blastp_file="blastp/contig5.663.blastp"
FT  CDS     complement(78432..79178)
FT          /note="closest hit IGI:RAG07586 ABC transporter
FT          ATP-binding protein [Archaeoglobus fulgidus
FT          DSM4304] Length = 243 Score = 199 bits (507), Expect =
FT          2e-50"
FT          /label=contig5.662
FT          /gene="LAW0057"
FT          /blastp_file="blastp/contig5.662.blastp"          20
FT  CDS     complement(79175..80086)
FT          /note="closest hit IGI:RAG47640 ABC transporter
FT          substrate-binding protein [Archaeoglobus fulgidus
FT          DSM4304] Length = 296 Score = 137 bits (346), Expect =
FT          1e-31"
FT          /label=contig5.661
FT          /gene="LAW0058"
FT          /blastp_file="blastp/contig5.661.blastp"
FT  CDS     80428..80937
FT          /note="closest hit GEN:BAC09207 AP005374 GI:22295380          30
FT          ORF_ID:t111655 hypothetical protein [Thermosynechococ
cus
FT          elongatus BP-1] Length = 182 Score = 153 bits (386),
FT          Expect = 1e-36"
FT          /label=contig5.660c
FT          /gene="LAW0059"
FT          /blastp_file="blastp/contig5.660c.blastp"
FT  CDS     81700..82470
FT          /note="partial hit(10-256) IGI:RBPS04691
FT          Glycerol-3-phosphate regulon repressor [Burkholderia          40
FT          pseudomallei K96243] Length = 310 Score = 236 bits (
602),
FT          Expect = 2e-61"
FT          /label=contig5.659c
FT          /gene="glpR"
FT          /blastp_file="blastp/contig5.659c.blastp"
FT  CDS     complement(82557..82877)
FT          /note="unknown"
FT          /label=contig5.658
FT          /gene="LAW0061"                                50

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FT          /blastp_file="blastp/contig5.658.blastp"
FT  CDS      complement(83393..84085)
FT          /note="closest hit IGI:RPPE00656 Nicotinate-nucleotide
FT          adenylyltransferase (EC2.7.7.18) [Pediococcus pentosaceus
FT          (JGI)]      Length = 214 Score = 99.8 bits (247), Expect =
FT          3e-20"
FT          /note="Nicotinate and nicotinamide metabolism "
FT          /label=contig5.657
FT          /gene="ybeN"
FT          /blastp_file="blastp/contig5.657.blastp"
FT  CDS      84629..85216
FT          /note="unknown"
FT          /label=contig5.656c
FT          /gene="LAW0063"
FT          /blastp_file="blastp/contig5.656c.blastp"
FT  CDS      85844..86242
FT          /note="closest hit GEN:AAC44878 U61146 GI:1421774
FT          nodulation competitiveness determinant [Rhizobium
FT          etli]      Length = 143 Score = 75.5 bits (184), Expect =
FT          1e-13"
FT          /label=contig5.655c
FT          /gene="LAW0064"
FT          /blastp_file="blastp/contig5.655c.blastp"
FT  CDS      complement(86420..87169)
FT          /note="unknown"
FT          /label=contig5.654
FT          /gene="LAW0065"
FT          /blastp_file="blastp/contig5.654.blastp"
FT  CDS      complement(87173..89860)
FT          /note="partial hit(426-895)      IGI:RGME01169 Cell divis
ion
FT          protein ftsK      [Geobacter metallireducens(JGI)]
Length = 729
FT          Score = 444 bits (1141), Expect = e-123"
FT          /label=contig5.653
FT          /gene="ftsK"
FT          /blastp_file="blastp/contig5.653.blastp"
FT  CDS      complement(89937..90494)
FT          /note="closest hit IGI:RTHT01188 Protein Translation
FT          Elongation Factor P (EF-P)      [Thermoanaerobacter
FT          tengcongensis MB4T]      Length = 185 Score = 177 bits (
450),
FT          Expect = 5e-44"
FT          /label=contig5.652
FT          /gene="LAW0067"
FT          /blastp_file="blastp/contig5.652.blastp"
FT  CDS      90801..91409
FT          /note="closest hit IGI:RBS02813 GTP-binding
FT          protein [Bacillus subtilis 168] Length = 195 Score = 13
7

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10

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FT          bits (344), Expect = 1e-31"
FT          /label=contig5.651c
FT          /gene="LAW0068"
FT          /blastp_file="blastp/contig5.651c.blastp"
FT  CDS     92957..93616
FT          /note="unknown"
FT          /label=contig5.650c
FT          /gene="LAW0069"
FT          /blastp_file="blastp/contig5.650c.blastp"
FT  CDS     93731..94156                                10
FT          /note="unknown"
FT          /label=contig5.649c
FT          /gene="LAW0070"
FT          /blastp_file="blastp/contig5.649c.blastp"
FT  CDS     94285..94833
FT          /note="unknown"
FT          /label=contig5.648c
FT          /gene="LAW0071"
FT          /blastp_file="blastp/contig5.648c.blastp"
FT  CDS     94921..95379                                20
FT          /note="unknown"
FT          /label=contig5.647c
FT          /gene="LAW0072"
FT          /blastp_file="blastp/contig5.647c.blastp"
FT  CDS     95597..96073
FT          /note="no hit"
FT          /label=contig5.646c
FT          /gene="LAW0073"
FT          /blastp_file="blastp/contig5.646c.blastp"
FT  CDS     complement(97539..97961)                    30
FT          /note="unknown"
FT          /label=contig5.645
FT          /gene="LAW0074"
FT          /blastp_file="blastp/contig5.645.blastp"
FT  CDS     98193..98996
FT          /note="closest hit IGI:RML003002 Icc
FT          protein [Mesorhizobium loti MAFF303099] Length = 305 Sco
re
FT          = 194 bits (494), Expect = 8e-49"
FT          /label=contig5.644c                                40
FT          /gene="icc"
FT          /blastp_file="blastp/contig5.644c.blastp"
FT  CDS     99014..100063
FT          /note="closest hit IGI:RBY08724 ABC transporter
FT          ATP-binding protein [Bordetella bronchiseptica
FT          RB50] Length = 346 Score = 368 bits (945), Expect =
FT          e-101"
FT          /label=contig5.643c
FT          /gene="LAW0076"
FT          /blastp_file="blastp/contig5.643c.blastp"                    50

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FT   CDS           100196..101491
FT               /note="closest hit IGI:RBY09052
FT               Glycerol-3-phosphate-binding protein      [Bordetella
FT               bronchiseptica RB50]      Length = 430 Score = 463 bits
FT               (1191), Expect = e-129"
FT               /label=contig5.642c
FT               /gene="ugpB"
FT               /blastp_file="blastp/contig5.642c.blastp"
FT   CDS           101554..102441
FT               /note="closest hit IGI:RBY09051 SN-glycerol-3-phosphate      10
FT               transport system permeaseprotein ugpA      [Bordetella
FT               bronchiseptica RB50]      Length = 291 Score = 356 bits (
FT               913),
FT               Expect = 2e-97"
FT               /note="ABC transporters, prokaryotic"
FT               /label=contig5.641c
FT               /gene="ugpA"
FT               /blastp_file="blastp/contig5.641c.blastp"
FT   CDS           102438..103274
FT               /note="closest hit IGI:RBY09050 ABC transporter permease      20
FT               protein [Bordetellabronchiseptica RB50] Length = 266
FT               Score = 322 bits (824), Expect = 5e-87"
FT               /label=contig5.640c
FT               /gene="LAW0079"
FT               /blastp_file="blastp/contig5.640c.blastp"
FT   CDS           complement(103384..104913)
FT               /note="unknown"
FT               /label=contig5.639
FT               /gene="LAW0080"
FT               /blastp_file="blastp/contig5.639.blastp"      30
FT   CDS           105205..106146
FT               /note="closest hit IGI:RDHA04749 Cell division
FT               inhibitor [Desulfitobacterium halfniense DCB-2
FT               (JGI)]      Length = 302 Score = 171 bits (433), Expect =
FT               1e-41"
FT               /label=contig5.638c
FT               /gene="LAW0081"
FT               /blastp_file="blastp/contig5.638c.blastp"
FT   CDS           complement(106189..107283)
FT               /note="unknown"      40
FT               /label=contig5.637
FT               /gene="LAW0082"
FT               /blastp_file="blastp/contig5.637.blastp"
FT   CDS           complement(107298..108380)
FT               /note="closest hit IGI:RBCE07370 Polysialic acid capsule
FT               expression protein kpsF      [Burkholderia cepacia
FT               J2315]      Length = 327 Score = 255 bits (652), Expect =
FT               6e-67"
FT               /label=contig5.634
FT               /gene="kpsF"      50

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FT          /blastp_file="blastp/contig5.634.blastp"
FT  CDS     complement(110475..111206)
FT          /note="unknown"
FT          /label=contig5.632
FT          /gene="LAW0084"
FT          /blastp_file="blastp/contig5.632.blastp"
FT  CDS     complement(111603..112004)
FT          /note="closest hit IGI:RGME02980 DnaK suppressor protein
FT          homolog [Geobacter metallireducens (JGI)]      Length =
118                                               10
FT          Score = 106 bits (264), Expect = 6e-23"
FT          /label=contig5.631
FT          /gene="dnaK"
FT          /blastp_file="blastp/contig5.631.blastp"
FT  CDS     complement(112674..113177)
FT          /note="unknown"
FT          /label=contig5.630
FT          /gene="LAW0086"
FT          /blastp_file="blastp/contig5.630.blastp"
FT  CDS     complement(113180..114442)                20
FT          /note="closest hit IGI:RMJ10911 Acetylornithine
FT          aminotransferase (EC 2.6.1.11) [Methanococcus jannaschi
FT          i
FT          DSM 2661] Length = 398 Score = 351 bits (900), Expect =
FT          1e-95"
FT          /note="Urea cycle and metabolism of amino groups"
FT          /label=contig5.629
FT          /gene="argD"
FT          /blastp_file="blastp/contig5.629.blastp"
FT  CDS     complement(114414..114896)                30
FT          /note="closest hit IGI:RDHA05365 Deoxyuridine
FT          5'-triphosphate nucleotidohydrolase (EC
FT          3.6.1.23) [Desulfitobacterium halfniense DCB-2
FT          (JGI)] Length = 151 Score = 123 bits (308), Expect =
FT          1e-27"
FT          /note="Pyrimidine metabolism"
FT          /label=contig5.628
FT          /gene="dut"
FT          /blastp_file="blastp/contig5.628.blastp"
FT  CDS     115144..115653                            40
FT          /note="closest hit IGI:RNG01295 GTP cyclohydrolase I (EC
FT          3.5.4.16) [Neisseria gonorrhoeae FA 1090] Length = 157
FT          Score = 125 bits (314), Expect = 2e-28"
FT          /note="Folate biosynthesis"
FT          /label=contig5.627c
FT          /gene="foIE"
FT          /blastp_file="blastp/contig5.627c.blastp"
FT  CDS     115673..116482
FT          /note="closest hit IGI:RDS00021 Bvg accessory factor
FT          [Desulfovibrio vulgaris] Length = 212 Score = 218 bits    50

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FT (555), Expect = 8e-56"
 FT /label=contig5.626c
 FT /gene="LAW0090"
 FT /blastp_file="blastp/contig5.626c.blastp"
 FT CDS 116596..117897
 FT /note="closest hit GEN:BAB07786 AB046715 GI:9695277
 FT enolase [Desulfovibrio vulgaris] Length = 434 Score = 675
 FT bits (1741), Expect = 0.0"
 FT /note="Glycolysis / Gluconeogenesis, Phenylalanine, 10
 FT tyrosine and tryptophan biosynthesis"
 FT /label=contig5.625c
 FT /gene="eno"
 FT /blastp_file="blastp/contig5.625c.blastp"
 FT CDS complement(117911..118954)
 FT /note="closest hit IGI:RFNP00495 ADP-heptose:LPS
 FT heptosyltransferase II[EC:2.4.1.-] [Fusobacterium
 FT nucleatum polymorphum ATCC-10953] Length = 342 Score =
 FT 89.7 bits (221), Expect = 5e-17"
 FT /note="Lipopolysaccharide biosynthesis" 20
 FT /label=contig5.624
 FT /gene="rfaF/rfaQ"
 FT /blastp_file="blastp/contig5.624.blastp"
 FT CDS 119487..120482
 FT /note="unknown"
 FT /label=contig5.623c
 FT /gene="LAW0093"
 FT /blastp_file="blastp/contig5.623c.blastp"
 FT CDS 120488..121714
 FT /note="partial hit(4-394) IGI:RFUG00464 30
 FT 6-phosphofructo-2-kinase (EC 2.7.1.105)
 FT Fructose-2,6-bisphosphatase (EC 3.1.3.46) [Takifugu
 FT rubripes (JGI)] Length = 608 Score = 201 bits (511),
 FT Expect = 2e-50 Fructose and mannose metabolism"
 FT /label=contig5.622c
 FT /gene="pfk"
 FT /blastp_file="blastp/contig5.622c.blastp"
 FT CDS complement(121739..123019)
 FT /note="unknown"
 FT /label=contig5.621 40
 FT /gene="LAW0095"
 FT /blastp_file="blastp/contig5.621.blastp"
 FT CDS complement(123089..123490)
 FT /note="unknown"
 FT /label=contig5.620
 FT /gene="LAW0096"
 FT /blastp_file="blastp/contig5.620.blastp"
 FT CDS complement(124343..125278)
 FT /note="partial hit(117-311) IGI:RBAT05194 Magnesium
 and 50

FT cobalt transport protein corA [Bacillus anthracis
 FT A2012] Length = 316 Score = 91.3 bits (225), Expect =
 FT 2e-17"
 FT /label=contig5.619
 FT /gene="corA"
 FT /blastp_file="blastp/contig5.619.blastp"
 FT CDS 125579..126076
 FT /note="unknown"
 FT /label=contig5.618c
 FT /gene="LAW0098" 10
 FT /blastp_file="blastp/contig5.618c.blastp"
 FT CDS complement(126080..127141)
 FT /note="closest hit IGI:RGME03036
 FT N-acetyl-gamma-glutamyl-phosphate reductase (EC1.2.1.38)
 FT [Geobacter metallireducens (JGI)] Length = 357 Score = 313
 FT bits (801), Expect = 3e-84 Urea cycle and metabolism of
 FT amino groups"
 FT /label=contig5.617
 FT /gene="argC"
 FT /blastp_file="blastp/contig5.617.blastp" 20
 FT CDS complement(127145..127495)
 FT /note="unknown"
 FT /label=contig5.616
 FT /gene="LAW0100"
 FT /blastp_file="blastp/contig5.616.blastp"
 FT CDS complement(127796..128161)
 FT /note="closest hit IGI:RHI07970 Diacylglycerol kinase (EC
 FT 2.7.1.107) [Haemophilus influenzae KW20] Length =
 FT 118)Score = 75.5 bits (184), Expect = 1e-13 Glycerol
 FT lipid 30
 FT metabolism"
 FT /label=contig5.615
 FT /gene="dgkA"
 FT /blastp_file="blastp/contig5.615.blastp"
 FT CDS complement(128189..130795)
 FT /note="closest hit GEN:CAA46900 X66105 GI:48166
 FT DNA-directed DNA polymerase(EC 2.7.7.7) [Thermus
 FT thermophilus] Length = 831 Score = 480 bits (1236),
 FT Expect = e-134 Purine metabolism,Pyrimidine metabolism,
 FT DNA 40
 FT polymerase"
 FT /label=contig5.614
 FT /gene="polB"
 FT /blastp_file="blastp/contig5.614.blastp"
 FT CDS 131168..132442
 FT /note="unknown"
 FT /label=contig5.613c
 FT /gene="LAW0103"
 FT /blastp_file="blastp/contig5.613c.blastp"
 FT CDS 132452..133093 50

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FT          /note="unknown"
FT          /label=contig5.612c
FT          /gene="LAW0104"
FT          /blastp_file="blastp/contig5.612c.blastp"
FT  CDS     133237..134181
FT          /note="unknown"
FT          /label=contig5.611c
FT          /gene="LAW0105"
FT          /blastp_file="blastp/contig5.611c.blastp"
FT  CDS     complement(134353..136017)          10
FT          /note="closest hit IGI:RMAC01958 Acetolactate synthase (EC
FT          4.1.3.18)          [Methanosarcina acetivorans C2A]          Le
ngth = 583
FT          Score = 676 bits (1744), Expect = 0.0          Valine, leucine
and
FT          isoleucine,biosynthesis, Butanoate metabolism,C5-Branched
FT          dibasic acid,Pantothenate and CoA biosynthesis"
FT          /label=contig5.610
FT          /gene="ilv"
FT          /blastp_file="blastp/contig5.610.blastp"          20
FT  CDS     complement(136036..136965)
FT          /note="closest hit IGI:R00E00441 Oxalate/formate
FT          antiporter          [Oenococcus oeni PSU-1(JGI)]          Length =
316
FT          Score = 171 bits (433), Expect = 1e-41"
FT          /label=contig5.609
FT          /gene="LAW0107"
FT          /blastp_file="blastp/contig5.609.blastp"
FT  CDS     complement(137267..138253)
FT          /note="closest hit IGI:RDHA04682 Dihydrodipicolinate          30
FT          synthase (EC4.2.1.52)          [Desulfitobacterium halfniense
FT          DCB-2 (JGI)]          Length = 296 Score = 197 bits (502), Ex
pect
FT          = 1e-49          Lysine biosynthesis"
FT          /label=contig5.608
FT          /gene="dapA"
FT          /blastp_file="blastp/contig5.608.blastp"
FT  CDS     138738..139481
FT          /note="unknown"
FT          /label=contig5.607c          40
FT          /gene="LAW0109"
FT          /blastp_file="blastp/contig5.607c.blastp"
FT  CDS     139486..140751
FT          /note="partial hit(26-312)          IGI:RPFL00296 Smf protein
FT          [Pseudomonas fluorescens SBW25]          Length = 364 Score = 22
5
FT          bits (573), Expect = 1e-57"
FT          /label=contig5.606c
FT          /gene="smf"
FT          /blastp_file="blastp/contig5.606c.blastp"          50

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FT   CDS           140818..141759
FT               /note="partial hit(24-183) IGI:RCGL02490 DNA
FT               integration/recombination/inversion protein
FT               [Corynebacterium glutamicum ATCC-13032]   Length = 315
FT               Score = 155 bits (392), Expect = 3e-37"
FT               /label=contig5.605c
FT               /gene="LAW0111"
FT               /blastp_file="blastp/contig5.605c.blastp"
FT   CDS           complement(141824..142765)
FT               /note="unknown"
FT               /label=contig5.604
FT               /gene="LAW0112"
FT               /blastp_file="blastp/contig5.604.blastp"
FT   CDS           complement(142958..144319)
FT               /note="closest hit IGI:RTHT01504 GTP-binding protein
FT               [Thermoanaerobacter tengcongensis MB4T]   Length = 439
FT               Score = 301 bits (772), Expect = 1e-80"
FT               /label=contig5.603
FT               /gene="LAW0113"
FT               /blastp_file="blastp/contig5.603.blastp"
FT   CDS           complement(144414..145688)
FT               /note="closest hit IGI:RTHT00024 Seryl-tRNA synthetase (EC
FT               6.1.1.11) [Thermoanaerobacter tengcongensis MB4T] Length =
FT               425 Score = 477 bits (1227), Expect = e-133"
FT               /note="Glycine, serine and threonine
FT               metabolism,Aminoacyl-tRNA biosynthesis"
FT               /label=contig5.602
FT               /gene="serS"
FT               /blastp_file="blastp/contig5.602.blastp"
FT   CDS           145952..146530
FT               /note="unknown"
FT               /label=contig5.601c
FT               /gene="LAW0115"
FT               /blastp_file="blastp/contig5.601c.blastp"
FT   CDS           146548..147627
FT               /note="unknown"
FT               /label=contig5.600c
FT               /gene="LAW0116"
FT               /blastp_file="blastp/contig5.600c.blastp"
FT   CDS           147699..149210
FT               /note="closest hit IGI:RDHA04772 Uroporphyrin-III
FT               C-methyltransferase (EC 2.1.1.107) /UROPORPHYRINOGEN-III
FT               SYNTHASE (EC 4.2.1.75) [Desulfitobacterium halfniense
FT               DCB-2 (JGI)]           Length = 504 Score = 452 bits (1162), E
xpect
FT               = e-126"
FT               /note="Porphyrin and chlorophyll metabolism"
FT               /label=contig5.599c
FT               /gene="cysG"
FT               /blastp_file="blastp/contig5.599c.blastp"

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FT   CDS           149239..149922
FT               /note="closest hit IGI:RMMZ01134 Phosphoribosylglycinamide
FT               formyltransferase (EC2.1.2.2) [Methanosarcina mazei Go1
FT               (IG-31)] Length = 202 Score = 190 bits (482), Expect =
FT               1e-47"
FT               /note="Purine metabolism,One carbon pool by folate "
FT               /label=contig5.598c
FT               /gene="purN"
FT               /blastp_file="blastp/contig5.598c.blastp"
FT   CDS           complement(149998..150498) 10
FT               /note="closest hit IGI:RCAU04134 Peptide methionine
FT               sulfoxide reductase (EC1.8.4.6) [Chloroflexus aurantiacu
FT               s
FT               J-10 (JGI)] Length = 181 Score = 192 bits (489), Ex
FT               pect =
FT               1e-48"
FT               /label=contig5.597
FT               /gene="msrA"
FT               /blastp_file="blastp/contig5.597.blastp"
FT   CDS           complement(150473..150880) 20
FT               /note="partial hit(3-116) IGI:RCJ01607 Transcriptional
FT               regulator [Campylobacter jejuniNCTC-11168] Le
FT               ngth = 119
FT               Score = 173 bits (438), Expect = 4e-43"
FT               /label=contig5.596
FT               /gene="LAW0120"
FT               /blastp_file="blastp/contig5.596.blastp"
FT   CDS           complement(150925..151581)
FT               /note="closest hit IGI:RPQ02597 PROLINE DIPEPTIDASE
FT               PEPQ[EC:3.4.13.9] [Mannheimia haemolytica] L 30
FT               ength = 203
FT               Score = 147 bits (370), Expect = 1e-34"
FT               /label=contig5.595
FT               /gene="pepQ"
FT               /blastp_file="blastp/contig5.595.blastp"
FT   CDS           152230..152988
FT               /note="unknown"
FT               /label=contig5.594c
FT               /gene="LAW0122"
FT               /blastp_file="blastp/contig5.594c.blastp" 40
FT   CDS           complement(153127..153696)
FT               /note="closest hit IGI:RMAC00513 Galactoside
FT               O-acetyltransferase (EC 2.3.1.18) [Methanosarcina
FT               acetivorans C2A] Length = 199 Score = 281 bits (718),
FT               Expect = 4e-75"
FT               /label=contig5.593
FT               /gene="lacA"
FT               /blastp_file="blastp/contig5.593.blastp"
FT   CDS           154211..155119
FT               /note="closest hit IGI:RBU12218 Curved DNA-binding protein 50

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FT [Burkholderia fungorumLB400] Length = 315 Score = 18
 2
 FT bits (462), Expect = 5e-45"
 FT /label=contig5.592c
 FT /gene="cbpA"
 FT /blastp_file="blastp/contig5.592c.blastp"
 FT CDS 155138..155449
 FT /note="unknown"
 FT /label=contig5.591c
 FT /gene="LAW0125" 10
 FT /blastp_file="blastp/contig5.591c.blastp"
 FT CDS 155540..158173
 FT /note="closest hit IGI:RBE04390 ClpB protein(heat shock
 FT protein) [Bacillus stearothermophilus 10] Length = 864
 FT Score = 961 bits (2485), Expect = 0.0"
 FT /label=contig5.590c
 FT /gene="clpB"
 FT /blastp_file="blastp/contig5.590c.blastp"
 FT CDS complement(158235..158993)
 FT /note="closest hit IGI:RAG50406 Glutamine transport 20
 FT ATP-binding protein glnQ [Archaeoglobus fulgidus
 FT DSM4304] Length = 242 Score = 302 bits (774), Expect =
 FT 2e-81"
 FT /note="ABC transporters, prokaryotic"
 FT /label=contig5.589
 FT /gene="glnQ"
 FT /blastp_file="blastp/contig5.589.blastp"
 FT CDS complement(158962..159747)
 FT /note="closest hit IGI:RAG48385 Glutamine transport system 30
 FT permease protein glnP [Archaeoglobus fulgidus
 FT DSM4304] Length = 224 Score = 177 bits (450), Expect =
 FT 9e-44"
 FT /note="ABC transporters, prokaryotic "
 FT /label=contig5.588
 FT /gene="glnP"
 FT /blastp_file="blastp/contig5.588.blastp"
 FT CDS complement(159798..160547)
 FT /note="closest hit IGI:RMMZ01392 Glutamine-binding protein 40
 FT [Methanosarcina mazei Go1 (IG-31)] Length = 284 Score =
 FT 136 bits (342), Expect = 3e-31"
 FT /label=contig5.587
 FT /gene="LAW0129"
 FT /blastp_file="blastp/contig5.587.blastp"
 FT CDS 160881..161474
 FT /note="partial hit(1-137) IGI:RCAU04219
 FT Histidinol-phosphatase (EC 3.1.3.15) [Chloroflexus
 FT aurantiacus J-10 (JGI)] Length = 228 core = 66.6 bits
 FT (161), Expect = 5e-11"
 FT /note="Histidine metabolism"
 FT /label=contig5.586c 50

FT /gene="hisJ"
 FT /blastp_file="blastp/contig5.586c.blastp"
 FT CDS 161575..162882
 FT /note="closest hit IGI:RLM001550 FOLYLPOLYGLUTAMATE
 FT SYNTHASE (EC 6.3.2.17) /DIHYDROFOLATE SYNTHASE (EC
 FT 6.3.2.12) [Listeriamonocytogenes EGD-e] Length =
 429
 FT Score = 183 bits (465), Expect = 4e-45"
 FT /note="Folate biosynthesis"
 FT /label=contig5.585c 10
 FT /gene="folC"
 FT /blastp_file="blastp/contig5.585c.blastp"
 FT CDS 162904..164340
 FT /note="closest hit GEN:CAA75098 Y14815 GI:2440048
 FT selenocysteine synthase[EC:2.9.1.1] [Desulfomicrobium
 FT baculatum] Length = 465 Score = 459 bits (1182), Ex
 pect
 FT = e-128"
 FT /note="Selenoamino acid metabolism"
 FT /label=contig5.584c 20
 FT /gene="selA"
 FT /blastp_file="blastp/contig5.584c.blastp"
 FT CDS 164510..164863
 FT /note="unknown"
 FT /label=contig5.583c
 FT /gene="LAW0133"
 FT /blastp_file="blastp/contig5.583c.blastp"
 FT CDS 164954..166084
 FT /note="partial hit(20-363) IGI:RTHT01317 Hypothetical
 FT Protein [Thermoanaerobacter tengcongensis MB4T] Length = 30
 FT 454 Score = 94.7 bits (234), Expect = 2e-18"
 FT /label=contig5.582c
 FT /gene="LAW0134"
 FT /blastp_file="blastp/contig5.582c.blastp"
 FT CDS 166090..167793
 FT /note="closest hit IGI:RCA01334 hypothetical protein
 FT [Clostridium acetobutylicum ATCC-824D] Length = 527 Scor
 e
 FT = 120 bits (300), Expect = 7e-26"
 FT /label=contig5.581c 40
 FT /gene="LAW0135"
 FT /blastp_file="blastp/contig5.581c.blastp"
 FT CDS 169098..169745
 FT /note="closest hit IGI:RPA01059 Hydrolase (HAD
 FT superfamily) [Pseudomonas aeruginosaPA01] Length = 1
 92
 FT Score = 189 bits (481), Expect = 2e-47"
 FT /label=contig5.580c
 FT /gene="LAW0136"
 FT /blastp_file="blastp/contig5.580c.blastp" 50

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FT   CDS           complement(170015..170803)
FT           /note="closest hit IGI:RBX04076 Hypothetical Protei
n
FT           [Bacteroides fragilis NCTC-9343] Length = 237 Score = 183
FT           bits (464), Expect = 2e-45"
FT           /label=contig5.579
FT           /gene="LAW0137"
FT           /blastp_file="blastp/contig5.579.blastp"
FT   CDS           complement(171157..171543)
FT           /note="unknown"
FT           /label=contig5.578
FT           /gene="LAW0138"
FT           /blastp_file="blastp/contig5.578.blastp"
FT   CDS           complement(171577..172059)
FT           /note="unknown"
FT           /label=contig5.577
FT           /gene="LAW0139"
FT           /blastp_file="blastp/contig5.577.blastp"
FT   CDS           complement(172266..173522)
FT           /note="unknown"
FT           /label=contig5.576
FT           /gene="LAW0140"
FT           /blastp_file="blastp/contig5.576.blastp"
FT   CDS           173721..174680
FT           /note="partial hit(68-285) IGI:RSX00073
FT           Chitooligosaccharide deacetylase (EC3.5.1.-) [Streptomyces
FT           coelicolor A3(2)] Length = 289 Score = 94.0 bits (232),
FT           Expect = 2e-18"
FT           /note="Arginine and proline metabolism, Nicotinate and
FT           nicotinamide metabolism, Pantothenate and CoA
FT           biosynthesis"
FT           /label=contig5.575c
FT           /gene="nodB"
FT           /blastp_file="blastp/contig5.575c.blastp"
FT   CDS           178242..179129
FT           /note="unknown"
FT           /label=contig5.574c
FT           /gene="LAW0142"
FT           /blastp_file="blastp/contig5.574c.blastp"
FT   CDS           complement(180054..180455)
FT           /note="unknown"
FT           /label=contig5.572
FT           /gene="LAW0143"
FT           /blastp_file="blastp/contig5.572.blastp"
FT   CDS           complement(180718..181446)
FT           /note="closest hit IGI:RMBA01337 METHYLTRANSFERASE (EC
FT           2.1.1.-) [Methanosarcina barkeri fusaro (JGI)] Length =
FT           250 Score = 182 bits (463), Expect = 3e-45"
FT           /label=contig5.571
FT           /gene="LAW0144"

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FT          /blastp_file="blastp/contig5.571.blastp"
FT  CDS     182088..183926
FT          /note="closest hit IGI:RTHT00821 GTP-binding protein
FT          TypA/BipA homolog [Thermoanaerobacter tengcongensis
FT          MB4T]          Length = 606 Score = 632 bits (1631), Expect =
FT          e-180"
FT          /label=contig5.570c
FT          /gene="typA/bipA"
FT          /blastp_file="blastp/contig5.570c.blastp"
FT  CDS     complement(183980..185080)          10
FT          /note="closest hit IGI:RCJ01903 GTP-binding protein
FT          [Campylobacter jejuni NCTC-11168] Length = 367 Score = 468
FT          bits (1204), Expect = e-131"
FT          /label=contig5.569
FT          /gene="LAW0146"
FT          /blastp_file="blastp/contig5.569.blastp"
FT  CDS     185352..185810
FT          /note="unknown"
FT          /label=contig5.568c
FT          /gene="LAW0147"          20
FT          /blastp_file="blastp/contig5.568c.blastp"
FT  CDS     complement(185906..188398)
FT          /note="closest hit IGI:RGME01401 ATP-dependent protease La
FT          (EC 3.4.21.53) [Geobacter metallireducens (JGI)] Le
FT          ngth
FT          = 823 Score = 887 bits (2293), Expect = 0.0"
FT          /label=contig5.567
FT          /gene="lon"
FT          /blastp_file="blastp/contig5.567.blastp"
FT  CDS     complement(188436..189116)          30
FT          /note="closest hit IGI:RCTH00632 DNA repair protein radC
FT          [Clostridium thermocellum ATCC-27405 (JGI)] Length =
224
FT          Score = 145 bits (365), Expect = 5e-34"
FT          /label=contig5.566
FT          /gene="radC"
FT          /blastp_file="blastp/contig5.566.blastp"
FT  CDS     complement(189211..190188)
FT          /note="unknown"
FT          /label=contig5.565          40
FT          /gene="LAW0150"
FT          /blastp_file="blastp/contig5.565.blastp"
FT  CDS     complement(190209..190736)
FT          /note="unknown"
FT          /label=contig5.564
FT          /gene="LAW0151"
FT          /blastp_file="blastp/contig5.564.blastp"
FT  CDS     complement(190747..193254)
FT          /note="closest hit IGI:RGME00558 Leucyl-tRNA synthetase
FT          (EC 6.1.1.4) [Geobacter metallireducens (JGI)] Le 50

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ngth =
FT      824 Score = 956 bits (2472), Expect = 0.0"
FT      /note="Valine, leucine and isoleucine biosynthesis,
FT      Aminoacyl-tRNA biosynthesis"
FT      /label=contig5.563
FT      /gene="leuS"
FT      /blastp_file="blastp/contig5.563.blastp"
FT  CDS  complement(193265..193750)
FT      /note="partial hit(9-143) IGI:RLIN01394 N utilization
FT      substance protein B [Listeria innocua Clp11262] Le 10
ngth
FT      = 128 Score = 99.8 bits (247), Expect = 1e-20"
FT      /label=contig5.562
FT      /gene="nusB"
FT      /blastp_file="blastp/contig5.562.blastp"
FT  CDS  complement(193760..194233)
FT      /note="closest hit IGI:RMC001438
FT      6,7-dimethyl-8-ribityllumazine synthase
FT      (EC2.5.1.9) [Magnetococcus MC-1 (JGI)] Length =
156 Score 20
FT      = 203 bits (517), Expect = 5e-52"
FT      /note="Riboflavin metabolism"
FT      /label=contig5.561
FT      /gene="ribH"
FT      /blastp_file="blastp/contig5.561.blastp"
FT  CDS  complement(194320..195588)
FT      /note="closest hit IGI:RGME02958 Riboflavin biosynthesis
FT      protein RIBA[EC:3.5.4.25] [Geobacter metallireducen
s
FT      (JGI)] Length = 400 Score = 527 bits (1357), Expect = 30
FT      e-148"
FT      /note="Riboflavin metabolism"
FT      /label=contig5.560
FT      /gene="ribA"
FT      /blastp_file="blastp/contig5.560.blastp"
FT  CDS  complement(195573..196238)
FT      /note="closest hit IGI:RGME02957 Riboflavin synthase alpha
FT      chain (EC 2.5.1.9) [Geobacter metallireducens (JGI)]
FT      Length = 216 Score = 164 bits (416), Expect = 6e-40"
FT      /note="Riboflavin metabolism" 40
FT      /label=contig5.559
FT      /gene="ribE"
FT      /blastp_file="blastp/contig5.559.blastp"
FT  CDS  complement(196242..197390)
FT      /note="closest hit IGI:RHIN01986
FT      DIAMINOHYDROXYPHOSPHORIBOSYLAMINOPYRIMIDINE DEAMINASE (EC
FT      3.5.4.26) / 5-AMINO-6-(5-PHOSPHORIBOSYLAMINO)URACIL
FT      REDUCTASE (EC 1.1.1.193) [Haemophilus influenzae
FT      86-028NP] Length = 372"
FT      /note="Riboflavin metabolism " 50

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FT          /label=contig5.558
FT          /gene="ribD"
FT          /blastp_file="blastp/contig5.558.blastp"
FT  CDS     complement(197356..197853)
FT          /note="closest hit IGI:RGME02954 ComE operon protein
FT          2[EC:3.5.4.12]    [Geobacter metallireducens(JGI)]      Le
length =
FT          164 Score = 167 bits (422), Expect = 6e-41"
FT          /note="Type II secretion system,Pyrimidine metabolism"
FT          /label=contig5.557
FT          /gene="comEB"
FT          /blastp_file="blastp/contig5.557.blastp"
FT  CDS     complement(197926..199164)
FT          /note="closest hit IGI:RGME03503 Serine
FT          hydroxymethyltransferase (EC 2.1.2.1)    [Geobacter
FT          metallireducens (JGI)]    Length = 415 Score = 547 bits
FT          (1410), Expect = e-155"
FT          /note="Glycine, serine and threonine metabolism , Lysine
FT          degradation, Cyanoamino acid metabolism, One carbon pool
FT          by folate, Methane metabolism"
FT          /label=contig5.556
FT          /gene="glyA"
FT          /blastp_file="blastp/contig5.556.blastp"
FT  CDS     complement(199233..200483)
FT          /note="closest hit IGI:RBS01135
FT          3-oxoacyl-[acyl-carrier-protein] synthase (EC2.3.1.41)
FT          [Bacillus subtilis 168]    Length = 413 Score = 436 bits
FT          (1121), Expect = e-121"
FT          /note="Fatty acid biosynthesis,"
FT          /label=contig5.555
FT          /gene="fabF/fabB"
FT          /blastp_file="blastp/contig5.555.blastp"
FT  CDS     complement(200903..201646)
FT          /note="closest hit IGI:RDF03026 3-oxoacyl-[acyl-carrier
FT          protein] reductase (EC1.1.1.100) [Clostridium difficile
FT          630]    Length = 249 Score = 265 bits (678), Expect = 3
FT          e-70"
FT          /note="Fatty acid biosynthesis (path 1)"
FT          /label=contig5.554
FT          /gene="fabG"
FT          /blastp_file="blastp/contig5.554.blastp"
FT  CDS     complement(201755..202759)
FT          /note="closest hit IGI:RXCA00997
FT          3-oxoacyl-[acyl-carrier-protein] synthase III
FT          (EC2.3.1.41)    [Xanthomonas campestris ATCC-33913]    L
length =
FT          325 Score = 259 bits (663), Expect = 3e-68"
FT          /note="Fatty acid biosynthesis (path 1)"
FT          /label=contig5.553
FT          /gene="fabH"

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FT          /blastp_file="blastp/contig5.553.blastp"
FT   CDS    complement(202841..203884)
FT          /note="closest hit IGI:RGME03511 PLSX PROTEIN      [Geobacte
r
FT          metallireducens(JGI)]      Length = 350 Score = 288 bits
FT          (738), Expect = 6e-77"
FT          /label=contig5.552
FT          /gene="plsX"
FT          /blastp_file="blastp/contig5.552.blastp"
FT   CDS    complement(204107..204643)          10
FT          /note="closest hit IGI:RCPE01785 Hypothetical Protein
FT          [Clostridium perfringens13]      Length = 164 Score = 84.
0 bits
FT          (206), Expect = 9e-16"
FT          /label=contig5.551
FT          /gene="LAW0164"
FT          /blastp_file="blastp/contig5.551.blastp"
FT   CDS    complement(204755..205846)
FT          /note="closest hit IGI:RLIN01795 A/G-specific adenine DNA
FT          glycosylase (EC3.2.2.-)      [Listeria innocua          20
FT          Clip11262] Length = 365 Score = 241 bits (615), Expect =
FT          1e-62"
FT          /label=contig5.550
FT          /gene="mutY"
FT          /blastp_file="blastp/contig5.550.blastp"
FT   CDS    205977..206483
FT          /note="closest hit IGI:RYE04508 Peptidyl-prolyl cis-trans
FT          isomerase B (EC 5.2.1.8)      [Yersinia enterocolitica
FT          8081]      Length = 164 Score = 214 bits (545), Expect =
FT          4e-55"          30
FT          /label=contig5.549c
FT          /gene="ppiB"
FT          /blastp_file="blastp/contig5.549c.blastp"
FT   CDS    complement(206826..207434)
FT          /note="partial hit(31-193) IGI:RBCE08267 Peptidyl-prolyl
FT          cis-trans isomerase (EC 5.2.1.8) [Burkholderia cepacia
FT          J2315]      Length = 163 Score = 199 bits (505), Expect =
FT          2e-50"
FT          /label=contig5.548
FT          /gene="LAW0167"          40
FT          /blastp_file="blastp/contig5.548.blastp"
FT   CDS    complement(207522..210743)
FT          /note="partial hit(395-1073)      IGI:RCTH00428 SWF/SNF fa
mily
FT          helicase [Clostridium thermocellumATCC-27405 (JGI)]
Length
FT          = 1087 Score = 457 bits (1176), Expect = e-127"
FT          /label=contig5.547
FT          /gene="LAW0168"
FT          /blastp_file="blastp/contig5.547.blastp"          50

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FT    CDS                211599..213256
FT                                /note="closest hit IGI:RGME03589 Oligopeptide-binding
FT                                protein oppA      [Geobacter metallireducens (JGI)]      L
length =
FT                                538 Score = 552 bits (1422), Expect = e-156"
FT                                /note="ABC transporters, prokaryotic"
FT                                /label=contig5.546c
FT                                /gene="oppA"
FT                                /blastp_file="blastp/contig5.546c.blastp"
FT    CDS                213386..215581                                10
FT                                /note="closest hit IGI:RTHT01108 GTP pyrophosphokinase (EC
FT                                2.7.6.5)      [Thermoanaerobacter tengcongensis MB4T]      L
length =
FT                                718 Score = 639 bits (1647), Expect = 0.0"
FT                                /note="Purine metabolism"
FT                                /label=contig5.545c
FT                                /gene="relA"
FT                                /blastp_file="blastp/contig5.545c.blastp"
FT    CDS                complement(215599..216006)
FT                                /note="unknown"                                20
FT                                /label=contig5.544
FT                                /gene="LAW0171"
FT                                /blastp_file="blastp/contig5.544.blastp"
FT    CDS                complement(216601..217899)
FT                                /note="closest hit GEN:CAD42341 AX464448 GI:21899254
FT                                unnamed protein product      [Lawsonia intracellularis] Length
FT                                = 475 Score = 298 bits (763), Expect = 1e-79"
FT                                /label=contig5.543
FT                                /gene="LAW0172"
FT                                /blastp_file="blastp/contig5.543.blastp"                                30
FT    CDS                218703..219869
FT                                /note="partial hit(186-382)      IGI:REC04513 Prophage DL
P12
FT                                integrase [Escherichia coliK12] Length = 387 Score = 100
FT                                bits (248), Expect = 5e-20"
FT                                /label=contig5.542c
FT                                /gene="LAW0173"
FT                                /blastp_file="blastp/contig5.542c.blastp"
FT    CDS                219859..220869                                40
FT                                /note="unknown"
FT                                /label=contig5.541c
FT                                /gene="LAW0174"
FT                                /blastp_file="blastp/contig5.541c.blastp"
FT    CDS                221210..222874
FT                                /note="unknown"
FT                                /label=contig5.540c
FT                                /gene="LAW0175"
FT                                /blastp_file="blastp/contig5.540c.blastp"
FT    CDS                222965..223357
FT                                /note="unknown"                                50

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FT          /label=contig5.539c
FT          /gene="LAW0176"
FT          /blastp_file="blastp/contig5.539c.blastp"
FT  CDS     223987..224532
FT          /note="unknown"
FT          /label=contig5.538c
FT          /gene="LAW0177"
FT          /blastp_file="blastp/contig5.538c.blastp"
FT  CDS     224690..225184
FT          /note="unknown"
FT          /label=contig5.537c
FT          /gene="LAW0178"
FT          /blastp_file="blastp/contig5.537c.blastp"
FT  CDS     complement(225939..227858)
FT          /note="closest hit GEN:AAL09826 AY049983 GI:18479218
FT          ribosomal protection tetracycline resistance protein
FT          [Arcanobacterium pyogenes] Length = 639 Score = 1175 bits
FT          (3040), Expect = 0.0"
FT          /label=contig5.536
FT          /gene="tetW"
FT          /blastp_file="blastp/contig5.536.blastp"
FT  CDS     228343..229257
FT          /note="unknown"
FT          /label=contig5.535c
FT          /gene="LAW0180"
FT          /blastp_file="blastp/contig5.535c.blastp"
FT  CDS     229471..230256
FT          /note="closest hit IGI:RMC000445 Extracellular
FT          deoxyribonuclease (EC3.1.21.-) [Magnetococcus MC-1 (JGI)
]
FT          Length = 243 Score = 179 bits (453), Expect = 4e-44"
FT          /label=contig5.533c
FT          /gene="LAW0181"
FT          /blastp_file="blastp/contig5.533c.blastp"
FT  CDS     230232..231092
FT          /note="unknown"
FT          /label=contig5.532c
FT          /gene="LAW0182"
FT          /blastp_file="blastp/contig5.532c.blastp"
FT  CDS     231161..232363
FT          /note="no hit"
FT          /label=contig5.531c
FT          /gene="LAW0183"
FT          /blastp_file="blastp/contig5.531c.blastp"
FT  CDS     232347..232721
FT          /note="unknown"
FT          /label=contig5.529c
FT          /gene="LAW0184"
FT          /blastp_file="blastp/contig5.529c.blastp"
FT  CDS     232791..233741

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FT          /note="closest hit GEN:AAM08012 AY090559 GI:20095146
FT          hypothetical protein          [Providencia rettgeri]          Le
ngth = 358
FT          Score = 265 bits (676), Expect = 8e-70"
FT          /label=contig5.526c
FT          /gene="LAW0185"
FT          /blastp_file="blastp/contig5.526c.blastp"
FT    CDS   233745..234740
FT          /note="closest hit GEN:AAL59707 AY055428 GI:21885301
FT          hypothetical protein          [Vibrio cholerae]          Length = 10
317 Score
FT          = 211 bits (537), Expect = 1e-53"
FT          /label=contig5.521c
FT          /gene="LAW0186"
FT          /blastp_file="blastp/contig5.521c.blastp"
FT    CDS   234755..236347
FT          /note="closest hit GEN:AAM08006 AY090559 GI:20095140
FT          hypothetical protein          [Providencia rettgeri] Length =
551
FT          Score = 194 bits (492), Expect = 3e-48"          20
FT          /label=contig5.518c
FT          /gene="LAW0187"
FT          /blastp_file="blastp/contig5.518c.blastp"
FT    CDS   236969..238876
FT          /note="closest hit IGI:RMMA08043 Cell division protein
FT          ftsH (EC3.4.24.-)          [Magnetospirillum magnetotacticum
MS-1
FT          (JGI)]          Length = 639 Score = 686 bits (1770), Expect =
FT          0.0"
FT          /label=contig5.517c          30
FT          /gene="ftsH"
FT          /blastp_file="blastp/contig5.517c.blastp"
FT    CDS   238888..239775
FT          /note="closest hit IGI:RCY53977 Dihydropteroate synthase
FT          (EC 2.5.1.15)          [Synechocystis sp. PCC6803]          Length =
289
FT          Score = 193 bits (490), Expect = 3e-48"
FT          /note="Folate biosynthesis "
FT          /label=contig5.516c
FT          /gene="folP"          40
FT          /blastp_file="blastp/contig5.516c.blastp"
FT    CDS   239839..240579
FT          /note="partial hit(57-246) IGI:RAA00378 Hypothetical
FT          Membrane Spanning Protein          [Aquifex aeolicus VF5] L
ength =
FT          256Score = 147 bits (371), Expect = 1e-34"
FT          /label=contig5.515c
FT          /gene="LAW0190"
FT          /blastp_file="blastp/contig5.515c.blastp"
FT    CDS   240772..241494          50

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FT          /note="unknown"
FT          /label=contig5.514c
FT          /gene="LAW0191"
FT          /blastp_file="blastp/contig5.514c.blastp"
FT  CDS     241522..242877
FT          /note="closest hit IGI:RGME03251 Phosphoglucosamine mutase
FT          (EC 5.4.2.10) [Geobacter metallireducens (JGI)] L
length =
FT          451 Score = 439 bits (1129), Expect = e-122"
FT          /label=contig5.513c 10
FT          /gene="LAW0192"
FT          /blastp_file="blastp/contig5.513c.blastp"
FT  CDS     242878..243798
FT          /note="closest hit IGI:RCTH01724 UTP--glucose-1-phosphate
FT          uridylyltransferase (EC2.7.7.9) [Clostridium thermocellum
FT          ATCC-27405 (JGI)] Length = 316 Score = 275 bits (7
02),
FT          Expect = 7e-73"
FT          /note="entose and glucuronate interconversions, Galactose
FT          metabolism, Starch and sucrose metabolism , Nucleotide 20
FT          sugars metabolism"
FT          /label=contig5.512c
FT          /gene="galU"
FT          /blastp_file="blastp/contig5.512c.blastp"
FT  CDS     243833..246211
FT          /note="partial hit(184-792) IGI:RTHT01409 Primosomal
FT          protein N' [Thermoanaerobacte tengcongensis MB4T]
Length
FT          = 732 Score = 387 bits (994), Expect = e-106"
FT          /label=contig5.511c 30
FT          /gene="priA"
FT          /blastp_file="blastp/contig5.511c.blastp"
FT  CDS     247238..247885
FT          /note="closest hit IGI:REF01713 potential RNA adenine
FT          demethylase/ATP-dependent RNA helicase [Enterococcus
FT          faecalis] Length = 187 Score = 122 bits (307), Expect =
FT          3e-27"
FT          /label=contig5.510c
FT          /gene="LAW0195"
FT          /blastp_file="blastp/contig5.510c.blastp" 40
FT  CDS     247882..249495
FT          /note="closest hit IGI:RBX01349 INTEGRAL MEMBRANE PROTEIN
FT          WITH TRKA DOMAINS [Bacteroides fragilis NCTC-9343]
Length
FT          = 532 Score = 201 bits (510), Expect = 3e-50"
FT          /label=contig5.509c
FT          /gene="LAW0196"
FT          /blastp_file="blastp/contig5.509c.blastp"
FT  CDS     complement(249535..250242)
FT          /note="unknown" 50

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FT          /label=contig5.507
FT          /gene="LAW0197"
FT          /blastp_file="blastp/contig5.507.blastp"
FT  CDS     complement(250367..250963)
FT          /note="closest hit GEN:AAL94733 AE010565 GI:19714032
FT          Hypothetical membrane-spanning protein    [Fusobacterium
FT          nucleatum subsp. nucleatum AT 25586]        Length = 194 Scor
e =
FT          133 bits (334), Expect = 2e-30"
FT          /label=contig5.506                                10
FT          /gene="LAW0198"
FT          /blastp_file="blastp/contig5.506.blastp"
FT  CDS     complement(250984..253005)
FT          /note="closest hit GEN:BAC08203 AP005371 GI:22294373
FT          ribonuclease II    [Thermosynechococcus elongatus BP-1]
FT          Length = 674 Score = 126 bits (316), Expect = 1e-27"
FT          /label=contig5.505
FT          /gene="LAW0199"
FT          /blastp_file="blastp/contig5.505.blastp"
FT  CDS     complement(253065..254339)                        20
FT          /note="partial hit(45-424) IGI:RNE02011
FT          PHOSPHORIBOSYLAMINOIMIDAZOLECARBOXAMIDE FORMYL TRANSFERASE
FT          (EC 2.1.2.3) / IMP CYCLOHYDROLASE (EC 3.5.4.10)
FT          [Nitrosomonas europaea ATCC-25978 (JGI)] Length = 520
FT          Score = 197 bits (501), Expect = 2e-49"
FT          /note="Purine metabolism,One carbon pool by folate "
FT          /label=contig5.504
FT          /gene="purH"
FT          /blastp_file="blastp/contig5.504.blastp"
FT  CDS     254566..254889                                    30
FT          /note="unknown"
FT          /label=contig5.503c
FT          /gene="LAW0201"
FT          /blastp_file="blastp/contig5.503c.blastp"
FT  CDS     255142..256428
FT          /note="closest hit IGI:RMC000527 Adenylosuccinate
FT          synthetase (EC 6.3.4.4)    [Magnetococcus MC-1 (JGI)]
Length
FT          = 442 Score = 449 bits (1156), Expect = e-125"
FT          /note="Purine metabolism,Alanine and aspartate metabolism"  40
FT          /label=contig5.502c
FT          /gene="purA"
FT          /blastp_file="blastp/contig5.502c.blastp"
FT  CDS     256593..257651
FT          /note="closest hit IGI:RRC000439 tRNA
FT          (5-methylaminomethyl-2-thiouridylate) -methyltransferase
FT          (EC 2.1.1.61)    [Rickettsia conorii Malish 7] Length = 3
70
FT          Score = 194 bits (492), Expect = 2e-48"
FT          /label=contig5.501c                                50

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FT          /gene="trmU"
FT          /blastp_file="blastp/contig5.501c.blastp"
FT  CDS     257733..258917
FT          /note="closest hit IGI:RMBA02364 metallo cofactor
FT          biosynthesis protein (moaA / nifB /pqqE family)
FT          [Methanosarcina barkeri fusaro (JGI)]      Length = 399 Sco
re =
FT          562 bits (1448), Expect = e-159"
FT          /label=contig5.500c
FT          /gene="LAW0204"                                10
FT          /blastp_file="blastp/contig5.500c.blastp"
FT  CDS     259031..260029
FT          /note="closest hit IGI:RHD06924 Delta-aminolevulinic acid
FT          dehydratase (EC 4.2.1.24)      [Bacillus halodurans C-12
5]
FT          Length = 328 Score = 348 bits (894), Expect = 4e-95"
FT          /note="Porphyrin and chlorophyll metabolism"
FT          /label=contig5.499c
FT          /gene="hemB"
FT          /blastp_file="blastp/contig5.499c.blastp"      20
FT  CDS     260014..261327
FT          /note="partial hit(71-410) IGI:RMAC00573 metallo cofactor
FT          biosynthesis protein (moaA / nifB /pqqE family)
FT          [Methanosarcina acetivorans C2A] Length = 349 Score = 407
FT          bits (1045), Expect = e-112"
FT          /label=contig5.498c
FT          /gene="LAW0206"
FT          /blastp_file="blastp/contig5.498c.blastp"
FT  CDS     261332..261784
FT          /note="closest hit IGI:RCA00465 NIRD PROTEIN[EC:1.7.1.4]      30
FT          [Clostridium acetobutylicum ATCC-824D]      Length = 150 Sco
re
FT          = 118 bits (295), Expect = 3e-26"
FT          /note="Nitrogen metabolism "
FT          /label=contig5.497c
FT          /gene="nirD"
FT          /blastp_file="blastp/contig5.497c.blastp"
FT  CDS     261947..262936
FT          /note="unknown"
FT          /label=contig5.496c                                40
FT          /gene="LAW0208"
FT          /blastp_file="blastp/contig5.496c.blastp"
FT  CDS     263206..263820
FT          /note="unknown"
FT          /label=contig5.495c
FT          /gene="LAW0209"
FT          /blastp_file="blastp/contig5.495c.blastp"
FT  CDS     complement(264303..264875)
FT          /note="partial hit(8-117) IGI:RGME01573 Flagellar protein
FT          fliS      [Geobacter metallireducens (JGI)]      Length = 50

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140 Score

FT = 81.6 bits (200), Expect = 5e-15"
 FT /note="Flagellar assembly"
 FT /label=contig5.494
 FT /gene="fliS"
 FT /blastp_file="blastp/contig5.494.blastp"
 FT CDS complement(264907..266991)
 FT /note="partial hit(152-618) IGI:RRS004225 Flagellar
 FT hook-associated protein 2 [Ralstonia solanacearum]
 Length 10
 FT = 685 Score = 75.1 bits (183), Expect = 3e-12"
 FT /note="Flagellar assembly"
 FT /label=contig5.493
 FT /gene="fliD"
 FT /blastp_file="blastp/contig5.493.blastp"
 FT CDS 267658..269586
 FT /note="closest hit IGI:RTHT01596 Threonyl-tRNA synthetase
 FT (EC 6.1.1.3) [Thermoanaerobacter tengcongensis MB4T]
 FT Length = 644 Score = 711 bits (1835), Expect = 0.0"
 FT /note="serine and threonine metabolism, Aminoacyl-tRNA 20
 FT biosynthesis"
 FT /label=contig5.492c
 FT /gene="thrS"
 FT /blastp_file="blastp/contig5.492c.blastp"
 FT CDS 269654..270130
 FT /note="closest hit IGI:RRS001725 Bacterial Protein
 FT Translation Initiation Factor 3 (IF-3) [Ralstonia
 FT solanacearum] Length = 183 Score = 159 bits (401), Ex
 pect
 FT = 2e-38" 30
 FT /label=contig5.491c
 FT /gene="LAW0213"
 FT /blastp_file="blastp/contig5.491c.blastp"
 FT CDS 270500..270853
 FT /note="closest hit IGI:RTHT01575 LSU ribosomal protein
 FT L20P [Thermoanaerobacter tengcongensis MB4T] Le
 ngth =
 FT 119 Score = 138 bits (348), Expect = 1e-32"
 FT /note="Ribosome"
 FT /label=contig5.490c 40
 FT /gene="rplT"
 FT /blastp_file="blastp/contig5.490c.blastp"
 FT CDS 270937..271974
 FT /note="closest hit IGI:RGME02832 Phenylalanyl-tRNA
 FT synthetase alpha chain (EC6.1.1.20) [Geobacter
 FT metallireducens (JGI)] Length = 338 Score = 380 bits
 FT (977), Expect = e-104"
 FT /note="Phenylalanine, tyrosine and tryptophan
 FT biosynthesis,Aminoacyl-tRNA biosynthesis"
 FT /label=contig5.489c 50

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FT          /gene="pheS"
FT          /blastp_file="blastp/contig5.489c.blastp"
FT  CDS     272014..274425
FT          /note="closest hit IGI:RGME02831 Phenylalanyl-tRNA
FT          synthetase beta chain (EC6.1.1.20) [Geobacter
FT          metallireducens (JGI)] Length = 801 Score = 452 bits
FT          (1162), Expect = e-125"
FT          /note="Phenylalanine, tyrosine and tryptophan
FT          biosynthesis, Aminoacyl-tRNA biosynthesis"
FT          /label=contig5.488c 10
FT          /gene="pheT"
FT          /blastp_file="blastp/contig5.488c.blastp"
FT  CDS     274466..274882
FT          /note="closest hit IGI:RGME02828 Transcriptional
FT          regulator, MerR family [Geobacter metallireducens
FT          (JGI)] Length = 149 Score = 87.0 bits (214), Expect =
FT          4e-17"
FT          /label=contig5.487c
FT          /gene="LAW0217"
FT          /blastp_file="blastp/contig5.487c.blastp" 20
FT  CDS     275097..275564
FT          /note="partial hit(1-141) IGI:RGME02501 Ribulose-phosphate
FT          3-epimerase (EC5.1.3.1) [Geobacter metallireducens
FT          (JGI)] Length = 225 Score = 152 bits (385), Expect =
FT          1e-36"
FT          /note="Pentose phosphate pathway,Pentose and glucuronate
FT          interconversions,Carbon fixation"
FT          /label=contig5.486c
FT          /gene="rpe"
FT          /blastp_file="blastp/contig5.486c.blastp" 30
FT  CDS     275627..277594
FT          /note="closest hit IGI:RAB00998 Transketolase (EC
FT          2.2.1.1) [Actinobacillus actinomycetemcomitans
FT          HK1651] Length = 665 Score = 809 bits (2089), Expect =
FT          0.0"
FT          /note="Pentose phosphate pathway,Carbon fixation"
FT          /label=contig5.485c
FT          /gene="tkt"
FT          /blastp_file="blastp/contig5.485c.blastp"
FT  CDS     277821..278945 40
FT          /note="partial hit(1-177) IGI:RST00877 tRNA (Guanin
FT          e-N1)
FT          -methyltransferase (EC 2.1.1.31) [Streptococcus pyogenes
FT          SF370-M1] Length = 243 Score = 159 bits (402), Exp
FT          ect =
FT          6e-38"
FT          /label=contig5.484c
FT          /gene="trmD"
FT          /blastp_file="blastp/contig5.484c.blastp"
FT  CDS     278981..279328 50

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FT          /note="closest hit IGI:RGME02177 LSU ribosomal protein
FT          L19P          [Geobacter metallireducens(JGI)]          Length =
118 Score
FT          = 97.4 bits (241), Expect = 3e-20"
FT          /note="Ribosome"
FT          /label=contig5.483c
FT          /gene="rplS"
FT          /blastp_file="blastp/contig5.483c.blastp"
FT  CDS     279395..280069
FT          /note="closest hit IGI:RGME02177 LSU ribosomal protein          10
FT          L19P          [Geobacter metallireducens(JGI)]          Length =
118 Score
FT          = 97.4 bits (241), Expect = 3e-20"
FT          /note="Ribosome"
FT          /label=contig5.482c
FT          /gene="rplS"
FT          /blastp_file="blastp/contig5.482c.blastp"
FT  CDS     280089..280487
FT          /note="closest hit IGI:RCL00030 Endonuclease (EC 3.1.-.-)
FT          [Chlorobium tepidum]          Length = 129 Score = 72.0 bits (  20
175),
FT          Expect = 1e-12"
FT          /label=contig5.481c
FT          /gene="LAW0223"
FT          /blastp_file="blastp/contig5.481c.blastp"
FT  CDS     280429..281259
FT          /note="closest hit IGI:RAN05092 CORRIN/PORPHYRIN
FT          METHYLTRANSFERASE (EC 2.1.1.-) [Anabaena sp. PCC7120]
FT          Length = 285 Score = 188 bits (478), Expect = 6e-47"
FT          /label=contig5.480c          30
FT          /gene="LAW0224"
FT          /blastp_file="blastp/contig5.480c.blastp"
FT  CDS     281262..281729
FT          /note="closest hit IGI:RNPU02035 SsrA-binding protein
FT          [Nostoc punctiforme ATCC-29133(JGI)]          Length = 155 Sco
re =
FT          154 bits (389), Expect = 4e-37"
FT          /label=contig5.479c
FT          /gene="smpB"
FT          /blastp_file="blastp/contig5.479c.blastp"          40
FT  CDS     281750..283432
FT          /note="closest hit IGI:RGME00322 ABC transporter
FT          ATP-binding protein yjjK [Geobacter metallireducens
FT          (JGI)]          Length = 587 Score = 709 bits (1829), Expect =
FT          0.0"
FT          /label=contig5.478c
FT          /gene="yjjK"
FT          /blastp_file="blastp/contig5.478c.blastp"
FT  CDS     complement(283562..284482)
FT          /note="closest hit IGI:RPG01457          50

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FT Malonyl-CoA-[acyl-carrier-protein] transacylase (EC
 FT 2.3.1.39) [Porphyromonas gingivalis] Length =
 293 Score =
 FT 154 bits (389), Expect = 1e-36"
 FT /note="Fatty acid biosynthesis (path 1)"
 FT /label=contig5.477
 FT /gene="fabD"
 FT /blastp_file="blastp/contig5.477.blastp"
 FT CDS complement(284607..285644)
 FT /note="closest hit IGI:RCGL01220 GlpX protein 10
 FT [Corynebacterium glutamicum ATCC-13032] Length = 342 Sco
 re
 FT = 358 bits (920), Expect = 5e-98"
 FT /label=contig5.476
 FT /gene="glpX"
 FT /blastp_file="blastp/contig5.476.blastp"
 FT CDS 285821..287473
 FT /note="closest hit IGI:RLP02713 Arginyl-tRNA synthetase
 FT (EC 6.1.1.19) [Legionella pneumophila] Length =
 589 Score 20
 FT = 465 bits (1196), Expect = e-130"
 FT /note="Arginine and proline metabolism,Aminoacyl-tRNA
 FT biosynthesis"
 FT /label=contig5.475c
 FT /gene="argS"
 FT /blastp_file="blastp/contig5.475c.blastp"
 FT CDS 287480..288256
 FT /note="unknown"
 FT /label=contig5.474c
 FT /gene="LAW0230" 30
 FT /blastp_file="blastp/contig5.474c.blastp"
 FT CDS 288273..289073
 FT /note="closest hit IGI:RGME00015 TOLUENE TOLERANCE PROTEIN
 FT TTG2B [Geobacter metallireducens (JGI)] Length =
 300
 FT Score = 232 bits (591), Expect = 4e-60"
 FT /label=contig5.473c
 FT /gene="LAW0231"
 FT /blastp_file="blastp/contig5.473c.blastp"
 FT CDS 289086..289916 40
 FT /note="closest hit IGI:RMMA08993 Transporter
 FT [Magnetospirillum magnetotacticum MS-1(JGI)] Length =
 280
 FT Score = 184 bits (466), Expect = 1e-45"
 FT /label=contig5.472c
 FT /gene="LAW0232"
 FT /blastp_file="blastp/contig5.472c.blastp"
 FT CDS 289932..290375
 FT /note="closest hit IGI:RGME00017 Hypothetical
 FT protein [Geobacter metallireducens (JGI)] Length = 50

150

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FT          Score = 159 bits (402), Expect = 6e-39"
FT          /label=contig5.471c
FT          /gene="LAW0233"
FT          /blastp_file="blastp/contig5.471c.blastp"
FT  CDS     290380..291030
FT          /note="closest hit IGI:RGME00019 TOLUENE TOLERANCE PROTEIN
FT          TTG2D      [Geobacter metallireducens (JGI)]      Length =
200
FT          Score = 120 bits (302), Expect = 1e-26"
FT          /label=contig5.470c
FT          /gene="LAW0234"
FT          /blastp_file="blastp/contig5.470c.blastp"
FT  CDS     291031..291927
FT          /note="partial hit(68-286) IGI:RMMA06420 Lipoprotein
FT          [Magnetospirillum magnetotacticum MS-1(JGI)]      Length =
260
FT          Score = 154 bits (389), Expect = 1e-36"
FT          /label=contig5.469c
FT          /gene="LAW0235"
FT          /blastp_file="blastp/contig5.469c.blastp"
FT  CDS     complement(292398..295079)
FT          /note="closest hit IGI:RCTH02531 DNA mismatch repair
FT          protein mutS      [Clostridiumthermocellum ATCC-27405
FT          (JGI)]      Length = 870 Score = 629 bits (1621), Expect =
FT          e-179"
FT          /label=contig5.468
FT          /gene="mutS"
FT          /blastp_file="blastp/contig5.468.blastp"
FT  CDS     complement(295534..296034)
FT          /note="closest hit IGI:RGME01312 Hypothetic
FT          Protein      [Geobacter metallireducens (JGI)]      Length =
163
FT          Score = 168 bits (425), Expect = 3e-41"
FT          /label=contig5.467
FT          /gene="LAW0237"
FT          /blastp_file="blastp/contig5.467.blastp"
FT  CDS     complement(296154..297827)
FT          /note="partial hit(20-546) IGI:RGME03722 tRNA
FT          nucleotidyltransferase (EC 2.7.7.25)      [Geobacter
FT          metallireducens (JGI)]      Length = 880 Score = 254 bits
FT          (650), Expect = 2e-66"
FT          /label=contig5.466
FT          /gene="cca"
FT          /blastp_file="blastp/contig5.466.blastp"
FT  CDS     complement(297994..298914)
FT          /note="closest hit IGI:RBE04239 DNA
FT          integration/recombination/inversion protein      [Bacillu
FT          s
FT          stearothermophilus 10]      Length = 298 Score = 225 bits
50

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FT          (574), Expect = 5e-58"
FT          /label=contig5.465
FT          /gene="LAW0239"
FT          /blastp_file="blastp/contig5.465.blastp"
FT  CDS     299096..299647
FT          /note="closest hit IGI:RTHT02191
FT          2-amino-4-hydroxy-6-hydroxymethyl dihydropteridine
FT          pyrophosphokinase (EC
FT          2.7.6.3) [Thermoanaerobacter tengcongensis MB4T] Length =
FT          166 Score = 113 bits (282), Expect = 1e-24"          10
FT          /note="Folate biosynthesis "
FT          /label=contig5.464c
FT          /gene="folk"
FT          /blastp_file="blastp/contig5.464c.blastp"
FT  CDS     300171..302201
FT          /note="closest hit IGI:RTHT01833 Excinuclease ABC subunit
FT          B [Thermoanaerobacter tengcongensis MB4T] Le
ngth = 662
FT          Score = 786 bits (2029), Expect = 0.0"
FT          /label=contig5.462c          20
FT          /gene="uvrB"
FT          /blastp_file="blastp/contig5.462c.blastp"
FT  CDS     302221..304269
FT          /note="closest hit IGI:RVC04804 NAD-DEPENDENT DNA LIGASE
FT          (EC 6.5.1.2) [Vibrio cholerae El Tor N16961] Length =
669
FT          Score = 486 bits (1250), Expect = e-136"
FT          /label=contig5.461c
FT          /gene="lig"
FT          /blastp_file="blastp/contig5.461c.blastp"          30
FT  CDS     304286..305062
FT          /note="closest hit IGI:RGME01662 Dihydrodipicolinate
FT          reductase (EC 1.3.1.26) [Geobacter metallireducens
FT          (JGI)] Length = 273 Score = 220 bits (560), Expect =
FT          2e-56"
FT          /note="Lysine biosynthesis"
FT          /label=contig5.460c
FT          /gene="dapB"
FT          /blastp_file="blastp/contig5.460c.blastp"
FT  CDS     305063..306640          40
FT          /note="closest hit IGI:RAN02432 NH(3)-dependent NAD(+)
FT          synthetase (EC 6.3.5.1) [Anabaena sp. PCC7120] Length =
FT          566 Score = 338 bits (868), Expect = 9e-92"
FT          /note="Glutamate metabolism, Nicotinate and nicotinamide
FT          metabolism"
FT          /label=contig5.459c
FT          /gene="nadE"
FT          /blastp_file="blastp/contig5.459c.blastp"
FT  CDS     complement(306735..307415)
FT          /note="closest hit IGI:RGME02230 HYDROGENASE          50

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FT      EXPRESSION/FORMATION PROTEIN HYPB [Geobacter
FT      metallireducens (JGI)]      Length = 244 Score = 238 bits
FT      (606), Expect = 6e-62"
FT      /label=contig5.458
FT      /gene="hypB"
FT      /blastp_file="blastp/contig5.458.blastp"
FT      CDS      complement(307426..307782)
FT      /note="closest hit IGI:RHT00116 HYDROGENASE
FT      EXPRESSION/FORMATION PROTEIN HYPB [Thermoanaerobact
er      10
FT      tengcongensis MB4T]      Length = 114 Score = 80.9 bits (1
98),
FT      Expect = 3e-15"
FT      /label=contig5.457
FT      /gene="hypA"
FT      /blastp_file="blastp/contig5.457.blastp"
FT      CDS      308027..308794
FT      /note="unknown"
FT      /label=contig5.456c
FT      /gene="LAW0247"      20
FT      /blastp_file="blastp/contig5.456c.blastp"
FT      CDS      308869..309519
FT      /note="unknown"
FT      /label=contig5.455c
FT      /gene="LAW0248"
FT      /blastp_file="blastp/contig5.455c.blastp"
FT      CDS      complement(309567..311150)
FT      /note="closest hit IGI:RFNP01752 DNA repair protein recN
FT      [Fusobacterium nucleatum polymorphum ATCC-10953] Length =
FT      558 Score = 230 bits (587), Expect = 3e-59"      30
FT      /label=contig5.454
FT      /gene="recN"
FT      /blastp_file="blastp/contig5.454.blastp"
FT      CDS      complement(311205..312023)
FT      /note="closest hit IGI:RGME03585 Oligopeptide transport
FT      system permease protein oppC [Geobacter metallireducen
s
FT      (JGI)]      Length = 262 Score = 308 bits (788), Expect =
FT      7e-83"
FT      /note="ABC transporters, prokaryotic"      40
FT      /label=contig5.453
FT      /gene="oppC"
FT      /blastp_file="blastp/contig5.453.blastp"
FT      CDS      complement(312032..313036)
FT      /note="partial hit(2-442) IGI:RGME03588 Oligopeptide
FT      transport system permease protein oppB [Geobacter
FT      metallireducens (JGI)]      Length = 333 Score = 276 bits
FT      (706), Expect = 2e-73"
FT      /note="ABC transporters, prokaryotic "
FT      /label=contig5.452      50

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FT          /gene="oppB"
FT          /blastp_file="blastp/contig5.452.blastp"
FT  CDS     complement(313191..313712)
FT          /note="unknown"
FT          /label=contig5.451
FT          /gene="LAW0252"
FT          /blastp_file="blastp/contig5.451.blastp"
FT  CDS     complement(313725..314339)
FT          /note="unknown"
FT          /label=contig5.450
FT          /gene="LAW0253"
FT          /blastp_file="blastp/contig5.450.blastp"
FT  CDS     314561..315688
FT          /note="unknown"
FT          /label=contig5.449c
FT          /gene="LAW0254"
FT          /blastp_file="blastp/contig5.449c.blastp"
FT  CDS     complement(315691..316236)
FT          /note="unknown"
FT          /label=contig5.448
FT          /gene="LAW0255"
FT          /blastp_file="blastp/contig5.448.blastp"
FT  CDS     complement(316238..317029)
FT          /note="closest hit IGI:RMMZ02119 Conserved hypothetical
FT          protein [Methanosarcina mazei Go1 (IG-31)]      Length =
262
FT          Score = 124 bits (312), Expect = 9e-28"
FT          /label=contig5.447
FT          /gene="LAW0256"
FT          /blastp_file="blastp/contig5.447.blastp"
FT  CDS     317243..320752
FT          /note="closest hit IGI:RGME03611 DNA polymerase III alpha
FT          subunit (EC 2.7.7.7) [Geobacter metallireducens
FT          (JGI)]      Length = 1155 Score = 1072 bits (2771), Expect =
FT          0.0"
FT          /note="Purine metabolism,Pyrimidine metabolism, DNA
FT          polymerase "
FT          /label=contig5.446c
FT          /gene="dnaE"
FT          /blastp_file="blastp/contig5.446c.blastp"
FT  CDS     320772..321152
FT          /note="closest hit IGI:RGME01334 Vacuolar ATP synthase
FT          proteolipid subunit (EC3.6.3.14) [Geobacter
FT          metallireducens (JGI)]      Length = 122 Score = 98.6 bits
FT          (244), Expect = 1e-20"
FT          /note="Oxidative phosphorylation,ATP synthesis"
FT          /label=contig5.445c
FT          /gene="atpC"
FT          /blastp_file="blastp/contig5.445c.blastp"
FT  CDS     complement(321305..321553)

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FT          /note="unknown"
FT          /label=contig5.444
FT          /gene="LAW0259"
FT          /blastp_file="blastp/contig5.444.blastp"
FT  CDS     321744..323993
FT          /note="closest hit IGI:RGME00035 Nitrogen regulation
FT          protein ntrY (EC 2.7.3.-) [Geobacter metallireducens
FT          (JGI)] Length = 694 Score = 382 bits (982), Expect =
FT          e-105"
FT          /label=contig5.443c 10
FT          /gene="ntrY"
FT          /blastp_file="blastp/contig5.443c.blastp"
FT  CDS     complement(324064..325572)
FT          /note="closest hit IGI:RECS02098 Glutamate decarboxy
FT          lase
FT          (EC 4.1.1.15) [Escherichia coli 0157:H7 Sakai] Le
FT          ngth =
FT          466 Score = 558 bits (1438), Expect = e-158"
FT          /note="Glutamate metabolism,Alanine and aspartate
FT          metabolism,beta-Alanine metabolism,Taurine and hypotaurine 20
FT          metabolism, Butanoate metabolism"
FT          /label=contig5.442
FT          /gene="gad"
FT          /blastp_file="blastp/contig5.442.blastp"
FT  CDS     complement(325627..327084)
FT          /note="closest hit IGI:RBU14765
FT          Glutamate/gamma-aminobutyrate antiporter [Burkholderia
FT          fungorum LB400] Length = 518 Score = 410 bits (1055),
FT          Expect = e-113"
FT          /label=contig5.441 30
FT          /gene="LAW0262"
FT          /blastp_file="blastp/contig5.441.blastp"
FT  CDS     327353..328624
FT          /note="closest hit IGI:REC00469 Amino acid permease
FT          [Escherichia coli K12] Length = 430 Score = 279 bits
FT          (714), Expect = 5e-74"
FT          /label=contig5.440c
FT          /gene="LAW0263"
FT          /blastp_file="blastp/contig5.440c.blastp"
FT  CDS     328991..330241 40
FT          /note="closest hit IGI:RRR03647 Transcription termination
FT          factor rho [Rhodospirillum rubrum (JGI)] Length = 448
FT          Score = 577 bits (1487), Expect = e-163"
FT          /label=contig5.439c
FT          /gene="rho"
FT          /blastp_file="blastp/contig5.439c.blastp"
FT  CDS     complement(330371..331534)
FT          /note="closest hit IGI:RNPU01808 Cysteine desulphydrase
FT          (EC 4.4.1.-) / Selenocysteine lyase (EC 4.4.1.16) [
FT          Nostoc 50

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FT          punctiforme ATCC-2913 JGI]          Length = 402 Score = 47
4 bits
FT          (1221), Expect = e-133"
FT          /note="Selenoamino acid metabolism "
FT          /label=contig5.438
FT          /gene="LAW0265"
FT          /blastp_file="blastp/contig5.438.blastp"
FT  CDS     complement(331531..332373)
FT          /note="closest hit IGI:RGME01734 IscU protein      [Geobacte
r
10
FT          metallireducens(JGI)]          Length = 286 Score = 285 bits
FT          (729), Expect = 5e-76"
FT          /label=contig5.437
FT          /gene="iscU"
FT          /blastp_file="blastp/contig5.437.blastp"
FT  CDS     complement(333321..333689)
FT          /note="unknown"
FT          /label=contig5.436
FT          /gene="LAW0267"
FT          /blastp_file="blastp/contig5.436.blastp"
20
FT  CDS     complement(333806..334312)
FT          /note="closest hit IGI:RMMA06300 Crossover junction
FT          endodeoxyribonuclease ruvC (EC 3.1.22.4) [Magnetospirillum
FT          magnetotacticum MS-1 (JGI)]          Length = 166 Score = 13
5 bits
FT          (341), Expect = 2e-31"
FT          /label=contig5.435
FT          /gene="ruvC"
FT          /blastp_file="blastp/contig5.435.blastp"
FT  CDS     complement(334384..335124)
30
FT          /note="closest hit IGI:RGME00073 Protein yebC      [Geobacte
r
FT          metallireducens(JGI)]          Length = 288 Score = 227 bits
FT          (579), Expect = 9e-59"
FT          /label=contig5.434
FT          /gene="yebC"
FT          /blastp_file="blastp/contig5.434.blastp"
FT  CDS     complement(335173..335775)
FT          /note="closest hit IGI:RBUC00358 23S rRNA m(2)U 2552
FT          methyltransferase (EC 2.1.1.-)      [Buchnera aphidicola
40
FT          strain AP] Length = 206 Score = 133 bits (334), Expect =
FT          2e-30"
FT          /note="Ubiquinone biosynthesis,Androgen and estrogen
FT          metabolism,Histidine metabolism,Tyrosine
FT          metabolism,Tryptophan metabolism,Aminophosphonate
FT          metabolism,Selenoamino acid metabolism, Nitrobenzene
FT          degradation"
FT          /label=contig5.433
FT          /gene="ygcA"
FT          /blastp_file="blastp/contig5.433.blastp"
50

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FT   CDS           335866..337446
FT               /note="unknown"
FT               /label=contig5.432c
FT               /gene="LAW0271"
FT               /blastp_file="blastp/contig5.432c.blastp"
FT   CDS           337458..338414
FT               /note="unknown"
FT               /label=contig5.431c
FT               /gene="LAW0272"
FT               /blastp_file="blastp/contig5.431c.blastp"
FT   CDS           338687..339097
FT               /note="closest hit SWP:DESR_DESVH P20418 Desulfoferrodoxin
FT               (Dfx)          Length = 125 Score = 158 bits (399), Ex
pect =
FT               1e-38"
FT               /label=contig5.430c
FT               /gene="LAW0273"
FT               /blastp_file="blastp/contig5.430c.blastp"
FT   CDS           339468..340676
FT               /note="closest hit GEN:AAG34792 AF218053 GI:11385418
FT               rubredoxin-oxygen oxidoreductase [Desulfovibrio
FT               gigas]      Length = 402 Score = 367 bits (943), Expect =
FT               e-100"
FT               /label=contig5.429c
FT               /gene="LAW0274"
FT               /blastp_file="blastp/contig5.429c.blastp"
FT   CDS           340816..342117
FT               /note="closest hit IGI:RGME00326 Cytochrome d ubiquinol
FT               oxidase subunit I (EC1.10.3.-) [Geobacter metallireducen
s
FT               (JGI)]      Length = 450 Score = 447 bits (1151), Expect =
FT               e-124"
FT               /note="Oxidative phosphorylation"
FT               /label=contig5.428c
FT               /gene="cyoB"
FT               /blastp_file="blastp/contig5.428c.blastp"
FT   CDS           342150..343178
FT               /note="closest hit IGI:RGME00325 Cytochrome d ubiquinol
FT               oxidase subunit II (EC1.10.3.-) [Geobacter
FT               metallireducens (JGI)]      Length = 342 Score = 331 bits
FT               (849), Expect = 8e-90"
FT               /note="Oxidative phosphorylation"
FT               /label=contig5.427c
FT               /gene="cyoA"
FT               /blastp_file="blastp/contig5.427c.blastp"
FT   CDS           complement(343350..343829)
FT               /note="unknown"
FT               /label=contig5.426
FT               /gene="LAW0277"
FT               /blastp_file="blastp/contig5.426.blastp"

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FT CDS 344241..347804
 FT /note="closest hit GEN:CAA70873 Y09702 GI:1770208
 FT pyruvate-ferredoxin oxidoreductase
 FT [EC:1.2.7.1] [Desulfovibrio africanus] Length =
 1232
 FT Score = 1503 bits (3892), Expect = 0.0"
 FT /note="Pyruvate metabolism,Propanoate metabolism,Reductive
 FT carboxylate cycle (CO2 fixation)"
 FT /label=contig5.425c
 FT /gene="ydbK" 10
 FT /blastp_file="blastp/contig5.425c.blastp"
 FT CDS 347892..350012
 FT /note="closest hit IGI:RCY50857 Phosphate
 FT acetyltransferase (EC 2.3.1.8) [Synechocystis sp. PCC68
 03]
 FT Length = 697 Score = 565 bits (1456), Expect = e-160"
 FT /note="Taurine and hypotaurine metabolism,Pyruvate
 FT metabolism"
 FT /label=contig5.424c
 FT /gene="pta" 20
 FT /blastp_file="blastp/contig5.424c.blastp"
 FT CDS 350112..351326
 FT /note="closest hit IGI:RCPE01786 Acetate kinase (EC
 FT 2.7.2.1) [Clostridium perfringens 13] Length = 398 Scor
 e
 FT = 371 bits (953), Expect = e-102"
 FT /note="Pyruvate metabolism,Propanoate metabolism"
 FT /label=contig5.423c
 FT /gene="ackA" 30
 FT /blastp_file="blastp/contig5.423c.blastp"
 FT CDS complement(351351..352262)
 FT /note="closest hit IGI:RGME02514 tRNA
 FT delta(2)-isopentenylpyrophosphate transferase(EC 2.5.1.8)
 FT [Geobacter metallireducens (JGI)] Length = 309 Score = 185
 FT bits (469), Expect = 7e-46"
 FT /label=contig5.422
 FT /gene="miaA"
 FT /blastp_file="blastp/contig5.422.blastp"
 FT CDS complement(352309..352827)
 FT /note="partial hit(1-120) IGI:RHD06477 Phosphopantetheine 40
 FT adenylyltransferase (EC 2.7.7.3) [Bacillus halodurans
 FT C-125] Length = 165 Score = 115 bits (288), Expect =
 FT 1e-25"
 FT /note="Pantothenate and CoA biosynthesis "
 FT /label=contig5.421
 FT /gene="kdtB"
 FT /blastp_file="blastp/contig5.421.blastp"
 FT CDS complement(352803..353375)
 FT /note="closest hit IGI:RVC04030 METHYLTRANSFERASE (EC
 FT 2.1.1.-) [Vibrio cholerae El Tor N16961] Length = 50

199

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FT          Score = 114 bits (284), Expect = 9e-25"
FT          /label=contig5.420
FT          /gene="LAW0283"
FT          /blastp_file="blastp/contig5.420.blastp"
FT  CDS     complement(353516..355117)
FT          /note="closest hit IGI:RHT00661 CLEAVAGE AND
FT          POLYADENYLATION SPECIFICITY FACTOR, 100KD SUBUNIT
FT          [Thermoanaerobacter tengcongensis MB4T] Length = 541
FT          Score = 405 bits (1042), Expect = e-112"
FT          /label=contig5.419
FT          /gene="LAW0284"
FT          /blastp_file="blastp/contig5.419.blastp"
FT  CDS     complement(355243..356610)
FT          /note="partial hit(109-429) GEN:AAL20855 AE008786
FT          GI:16420477 putative cell wall-associated hydrolase
FT          [Salmonella typhimurium LT2] Score = 162 bits (411),
FT          Expect = 7e-39"
FT          /label=contig5.418
FT          /gene="LAW0285"
FT          /blastp_file="blastp/contig5.418.blastp"
FT  CDS     complement(356715..358055)
FT          /note="closest hit IGI:RHX00081 CBS domains [Helicob
acter
FT          pylori J99] Length = 457 Score = 176 bits (447), Ex
pect =
FT          5e-43"
FT          /label=contig5.417
FT          /gene="LAW0286"
FT          /blastp_file="blastp/contig5.417.blastp"
FT  CDS     complement(358069..360267)
FT          /note="closest hit IGI:RCTH00038 Exodeoxyribonuclease V
FT          alpha chain (EC 3.1.11.5) [Clostridium thermocellum
FT          ATCC-27405 (JGI)] Length = 716 Score = 599 bits (1544),
FT          Expect = e-170"
FT          /label=contig5.416
FT          /gene="recD"
FT          /blastp_file="blastp/contig5.416.blastp"
FT  CDS     361133..362386
FT          /note="unknown"
FT          /label=contig5.415c
FT          /gene="LAW0288"
FT          /blastp_file="blastp/contig5.415c.blastp"
FT  CDS     complement(362504..363340)
FT          /note="closest hit IGI:RDHA01873 Pirin [Desulfitobacterium
FT          halfniense DCB-2(JGI)] Length = 288 Score = 274 bits
FT          (701), Expect = 8e-73"
FT          /label=contig5.414
FT          /gene="LAW0289"
FT          /blastp_file="blastp/contig5.414.blastp"

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FT   CDS           complement(363544..364893)
FT               /note="unknown"
FT               /label=contig5.413
FT               /gene="LAW0290"
FT               /blastp_file="blastp/contig5.413.blastp"
FT   CDS           complement(365970..367550)
FT               /note="closest hit GI:RC001268 Hypothetical
FT               Protein [Caulobacter crescentus]          Length = 504   Sc
ore = 278
FT               bits (711), Expect = 1e-73"                10
FT               /label=contig5.412
FT               /gene="LAW0291"
FT               /blastp_file="blastp/contig5.412.blastp"
FT   CDS           367971..368636
FT               /note="closest hit IGI:RSDU02564 D-alanyl-D-alanine
FT               dipeptidase (EC 3.4.13.-) [Salmonella dublin]   Length =
FT               256 Score = 194 bits (493), Expect = 7e-49"
FT               /label=contig5.411c
FT               /gene="LAW0292"
FT               /blastp_file="blastp/contig5.411c.blastp"    20
FT   CDS           complement(369577..370143)
FT               /note="closest hit GEN:CAA10330 AJ131242 GI:3929904
FT               fumarate hydratase B, beta subunit          [Wolinella
FT               succinogenes]          Length = 185 Score = 196 bits (499), Ex
pect
FT               = 1e-49"
FT               /note="Citrate cycle (TCA cycle),Reductive carboxylate
FT               cycle"
FT               /label=contig5.410
FT               /gene="fumB"                                  30
FT               /blastp_file="blastp/contig5.410.blastp"
FT   CDS           complement(370169..371014)
FT               /note="closest hit GEN:CAA10329 AJ131242 GI:3929903
FT               fumarate hydratase B, alpha subunit          [Wolinella
FT               succinogenes]          Length = 281 Score = 318 bits (815), Ex
pect
FT               = 5e-86"
FT               /note="Citrate cycle (TCA cycle),Reductive carboxylate
FT               cycle"
FT               /label=contig5.409                            40
FT               /gene="fumA"
FT               /blastp_file="blastp/contig5.409.blastp"
FT   CDS           complement(371279..371884)
FT               /note="unknown"
FT               /label=contig5.408
FT               /gene="LAW0295"
FT               /blastp_file="blastp/contig5.408.blastp"
FT   CDS           complement(372325..373374)
FT               /note="closest hit IGI:RVK01258
FT               Phosphoribosylformylglycinamide cyclo-ligase (EC
FT               50

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FT          6.3.3.1)  [Pasteurella multocida Pm70]      Length = 345 Sco
re =
FT          362 bits (929), Expect = 4e-99"
FT          /note="Purine metabolism"
FT          /label=contig5.407
FT          /gene="purM"
FT          /blastp_file="blastp/contig5.407.blastp"
FT  CDS     373444..373821
FT          /note="unknown"
FT          /label=contig5.406c                          10
FT          /gene="LAW0297"
FT          /blastp_file="blastp/contig5.406c.blastp"
FT  CDS     373843..374799
FT          /note="unknown"
FT          /label=contig5.405c
FT          /gene="LAW0298"
FT          /blastp_file="blastp/contig5.405c.blastp"
FT  CDS     complement(375220..377307)
FT          /note="closest hit IGI:RGME02018 Glycyl-tRNA synthetase
FT          beta chain (EC6.1.1.14)  [Geobacter metallireducens (JGI)  20
]
FT          Length = 686 Score = 424 bits (1091), Expect = e-117"
FT          /note="Glycine, serine and threonine metabolism,
FT          Aminoacyl-tRNA biosynthesis "
FT          /label=contig5.404
FT          /gene="glyS"
FT          /blastp_file="blastp/contig5.404.blastp"
FT  CDS     complement(377313..378197)
FT          /note="closest hit IGI:RGME02017 Glycyl-tRNA synthetase
FT          alpha chain (EC 6.1.1.14)  [Geobacter metallireducen  30
s
FT          (JGI)] Length = 291 Score = 430 bits (1106), Expect =
FT          e-119"
FT          /note="serine and threonine metabolism, Aminoacyl-tRNA
FT          biosynthesis "
FT          /label=contig5.403
FT          /gene="glyQ"
FT          /blastp_file="blastp/contig5.403.blastp"
FT  CDS     complement(378253..379002)
FT          /note="weak hit IGI:RTFU01705 DNA repair protein recO  40
FT          [Thermomonospora fusca (JGI)] Length = 243 Score = 61.
6
FT          bits (148), Expect = 9e-09"
FT          /label=contig5.402
FT          /gene="recO"
FT          /blastp_file="blastp/contig5.402.blastp"
FT  CDS     complement(379007..380026)
FT          /note="unknown"
FT          /label=contig5.401
FT          /gene="LAW0302"                          50

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FT          /blastp_file="blastp/contig5.401.blastp"
FT  CDS     complement(380045..380971)
FT          /note="closest hit IGI:RGME01476 Peptidyl-prolyl cis-trans
FT          isomerase (EC 5.2.1.8) [Geobacter metallireducens
FT          (JGI)] Length = 333 Score = 105 bits (262), Expect =
FT          8e-22"
FT          /label=contig5.400
FT          /gene="ppi"
FT          /blastp_file="blastp/contig5.400.blastp"
FT  CDS     complement(381141..382058) 10
FT          /note="unknown"
FT          /label=contig5.399
FT          /gene="LAW0304"
FT          /blastp_file="blastp/contig5.399.blastp"
FT  CDS     complement(382096..385563)
FT          /note="closest hit IGI:RGME01474 Transcription-repair
FT          coupling factor [Geobacter metallireducens (JGI)] Le
ngth
FT          = 1179 Score = 640 bits (1652), Expect = 0.0"
FT          /label=contig5.398 20
FT          /gene="LAW0305"
FT          /blastp_file="blastp/contig5.398.blastp"
FT  CDS     complement(385645..387228)
FT          /note="partial hit(8-324) IGI:RNPU04788 Transporter
FT          [Nostoc punctiforme ATCC-29133 (JGI)] Length = 317 Scor
e
FT          = 181 bits (458), Expect = 3e-44"
FT          /label=contig5.397
FT          /gene="LAW0306"
FT          /blastp_file="blastp/contig5.397.blastp" 30
FT  CDS     387513..387986
FT          /note="closest hit IGI:RML002154 Transcription elongation
FT          factor greA [Mesorhizobium loti MAFF303099] Le
ngth = 157
FT          Score = 150 bits (380), Expect = 4e-36"
FT          /label=contig5.396c
FT          /gene="greA"
FT          /blastp_file="blastp/contig5.396c.blastp"
FT  CDS     388048..389358
FT          /note="closest hit IGI:RQP00277 Fe-S OXIDOREDUCTASE 40
FT          (1.8.-.-) [Chlamydomonas reinhardtii AR39] Le
ngth = 421
FT          Score = 216 bits (551), Expect = 4e-55"
FT          /label=contig5.395c
FT          /gene="LAW0308"
FT          /blastp_file="blastp/contig5.395c.blastp"
FT  CDS     389463..390344
FT          /note="closest hit IGI:RCB01506 Protein yicC [Clostrid
ium
FT          botulinum ATCC-3502] Length = 295 Score = 151 bits ( 50

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382),
FT          Expect = 9e-36"
FT          /label=contig5.394c
FT          /gene="yicC"
FT          /blastp_file="blastp/contig5.394c.blastp"
FT  CDS     390597..391235
FT          /note="closest hit IGI:RGME02432 Guanylate kinase (EC
FT          2.7.4.8) [Geobacter metallireducens (JGI)]          Length =
203
FT          Score = 160 bits (406), Expect = 8e-39"          10
FT          /note="Purine metabolism"
FT          /label=contig5.393c
FT          /gene="gmk"
FT          /blastp_file="blastp/contig5.393c.blastp"
FT  CDS     391242..391931
FT          /note="closest hit IGI:RPFL05045 Orotidine 5'-phosphate
FT          decarboxylase (EC 4.1.1.23) [Pseudomonas fluorescens
FT          SBW25]          Length = 232 Score = 180 bits (456), Expect =
FT          1e-44"
FT          /note="Pyrimidine metabolism"          20
FT          /label=contig5.392c
FT          /gene="pyrF"
FT          /blastp_file="blastp/contig5.392c.blastp"
FT  CDS     392001..392819
FT          /note="unknown"
FT          /label=contig5.391c
FT          /gene="LAW0312"
FT          /blastp_file="blastp/contig5.391c.blastp"
FT  CDS     392879..394585
FT          /note="closest hit IGI:RGME00408          30
FT          Single-stranded-DNA-specific exonuclease recJ (EC3.1.-.-)
FT          [Geobacter metallireducens (JGI)]          Length = 583 Scor
e =
FT          310 bits (793), Expect = 5e-83"
FT          /label=contig5.390c
FT          /gene="recJ"
FT          /blastp_file="blastp/contig5.390c.blastp"
FT  CDS     complement(394647..395873)
FT          /note="closest hit IGI:RCTH01883 Xaa-Pro aminopeptidase
FT          (EC 3.4.11.9) [Clostridium thermocellum ATCC-27405 (JGI  40
)]
FT          Length = 397 Score = 255 bits (652), Expect = 7e-67"
FT          /label=contig5.389
FT          /gene="pepP"
FT          /blastp_file="blastp/contig5.389.blastp"
FT  CDS     396014..396430
FT          /note="closest hit IGI:RDR02199 Hypothetical Cytosolic
FT          Protein [Deinococcus radiodurans R1]          Length = 142 Scor
e =
FT          93.2 bits (230), Expect = 5e-19"          50

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FT          /label=contig5.388c
FT          /gene="LAW0315"
FT          /blastp_file="blastp/contig5.388c.blastp"
FT  CDS     396615..397526
FT          /note="unknown"
FT          /label=contig5.387c
FT          /gene="LAW0316"
FT          /blastp_file="blastp/contig5.387c.blastp"
FT  CDS     397583..398272
FT          /note="closest hit IGI:RSX15333 Adenylate kinase (EC          10
FT          2.7.4.3) [Streptomyces coelicolor A3(2)]          Length =
217
FT          Score = 152 bits (383), Expect = 4e-36"
FT          /note="Purine metabolism"
FT          /label=contig5.386c
FT          /gene="LAW0317"
FT          /blastp_file="blastp/contig5.386c.blastp"
FT  CDS     complement(398358..399626)
FT          /note="unknown"
FT          /label=contig5.385          20
FT          /gene="LAW0318"
FT          /blastp_file="blastp/contig5.385.blastp"
FT  CDS     complement(399629..400849)
FT          /note="unknown"
FT          /label=contig5.384
FT          /gene="LAW0319"
FT          /blastp_file="blastp/contig5.384.blastp"
FT  CDS     401285..401962
FT          /note="closest hit IGI:RAA00190 PRECORRIN-2 OXIDASE (EC
FT          1.-.-.-) / FERROCHELATASE (EC4.99.1.-) [Aquifex aeolicus  30
FT          VF5]          Length = 187 Score = 116 bits (290), Expect =
FT          3e-25"
FT          /note="Porphyrin and chlorophyll metabolism"
FT          /label=contig5.383c
FT          /gene="cysG"
FT          /blastp_file="blastp/contig5.383c.blastp"
FT  CDS     401949..402839
FT          /note="closest hit IGI:RGME01380 Protein resC          [Geobacte
r
FT          metallireducens(JGI)]          Length = 271 Score = 123 bits  40
FT          (308), Expect = 3e-27"
FT          /label=contig5.382c
FT          /gene="resC"
FT          /blastp_file="blastp/contig5.382c.blastp"
FT  CDS     402814..404079
FT          /note="closest hit GEN:BAA97586 AB045134 GI:14149098
FT          glutamyl-tRNA reductase          [Desulfovibrio vulgaris]          L
length =
FT          435 Score = 445 bits (1144), Expect = e-124"
FT          /note="Porphyrin and chlorophyll metabolism"          50

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FT          /label=contig5.381c
FT          /gene="hemA"
FT          /blastp_file="blastp/contig5.381c.blastp"
FT  CDS     404208..405515
FT          /note="partial hit(38-331) IGI:RSAX01037 Cell division
FT          protein ftsY      [Staphylococcus aureus EMRSA-16 Strain
FT          252]      Length = 416 Score = 263 bits (672), Expect = 2
e-69"
FT          /label=contig5.380c
FT          /gene="LAW0323"
FT          /blastp_file="blastp/contig5.380c.blastp"
FT  CDS     405585..406238
FT          /note="closest hit IGI:RHD05352 Thiamin-phosphate
FT          pyrophosphorylase (EC 2.5.1.3)      [Bacillus halodurans C-1
25]
FT          Length = 211 Score = 181 bits (458), Expect = 8e-45"
FT          /note="Thiamine metabolism "
FT          /label=contig5.379c
FT          /gene="thiE"
FT          /blastp_file="blastp/contig5.379c.blastp"
FT  CDS     complement(406369..407796)
FT          /note="closest hit IGI:RDHA04368 Glutamate synthase
FT          [NADPH] small chain (EC 1.4.1.13)      [Desulfitobacteri
um
FT          halfniense DCB-2 (JGI)]      Length = 463 Score = 411 bits
FT          (1057), Expect = e-114"
FT          /note="Glutamate metabolism, Nitrogen metabolism"
FT          /label=contig5.378
FT          /gene="gltD"
FT          /blastp_file="blastp/contig5.378.blastp"
FT  CDS     408049..408975
FT          /note="unknown"
FT          /label=contig5.377c
FT          /gene="LAW0326"
FT          /blastp_file="blastp/contig5.377c.blastp"
FT  CDS     complement(409616..410542)
FT          /note="unknown"
FT          /label=contig5.375
FT          /gene="LAW0327"
FT          /blastp_file="blastp/contig5.375.blastp"
FT  CDS     complement(410586..411035)
FT          /note="unknown"
FT          /label=contig5.374
FT          /gene="LAW0328"
FT          /blastp_file="blastp/contig5.374.blastp"
FT  CDS     411409..413466
FT          /note="closest hit IGI:RCHU03504 Glycogen debranching
FT          enzyme[EC:3.2.1.-]      [Cytophaga hutchinsonii ATCC-3340
6
FT          (JGI)]      Length = 661 Score = 384 bits (985), Expect =

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FT          e-105"
FT          /label=contig5.373c
FT          /gene="glgX"
FT          /blastp_file="blastp/contig5.373c.blastp"
FT  CDS     413485..414825
FT          /note="closest hit IGI:RBX01688
FT          N-acetylglucosaminyl-phosphatidylinositol biosynthetic
FT          protein [Bacteroides fragilis NCTC-9343]          Length = 4
24
FT          Score = 322 bits (824), Expect = 9e-87"          10
FT          /label=contig5.372c
FT          /gene="LAW0330"
FT          /blastp_file="blastp/contig5.372c.blastp"
FT  CDS     414828..416114
FT          /note="closest hit IGI:RMAC04052 Alpha-amylase (EC
FT          3.2.1.1) [Methanosarcina acetivorans C2A]          Length =
396
FT          Score = 365 bits (937), Expect = e-100"
FT          /note="Starch and sucrose metabolism "
FT          /label=contig5.371c          20
FT          /gene="amyA"
FT          /blastp_file="blastp/contig5.371c.blastp"
FT  CDS     416124..420386
FT          /note="partial hit(574-1420)          IGI:RCTH01812 Glycogen
FT          phosphorylase (EC 2.4.1.1)          [Clostridium thermocellum
FT          ATCC-27405 (JGI)]          Length = 855 Score = 629 bits (1
623),
FT          Expect = e-179 "
FT          /note="Starch and sucrose metabolism "
FT          /label=contig5.370c          30
FT          /gene="glgP"
FT          /blastp_file="blastp/contig5.370c.blastp"
FT  CDS     complement(420460..421350)
FT          /note="closest hit IGI:RGME01652 Acetylglutamate kinase
FT          (EC 2.7.2.8)          [Geobacter metallireducens (JGI)]          L
length =
FT          308 Score = 281 bits (720), Expect = 5e-75"
FT          /note="Urea cycle and metabolism of amino groups"
FT          /label=contig5.369
FT          /gene="argB"          40
FT          /blastp_file="blastp/contig5.369.blastp"
FT  CDS     complement(421371..422672)
FT          /note="closest hit IGI:RAA00897 ATP-dependent hsl protease
FT          ATP-binding subunit hslU [Aquifex aeolicus VF5] Length =
FT          450 Score = 471 bits (1212), Expect = e-132"
FT          /label=contig5.368
FT          /gene="hslU"
FT          /blastp_file="blastp/contig5.368.blastp"
FT  CDS     complement(422757..423464)
FT          /note="closest hit IGI:RTM02193 Branched-chain amino acid          50

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FT          transport ATP-binding protein livF          [Thermotoga marit
ima
FT          MSB8]          Length = 239 Score = 275 bits (702), Expect =
FT          5e-73"
FT          /note="ABC transporters, prokaryotic"
FT          /label=contig5.367
FT          /gene="livF"
FT          /blastp_file="blastp/contig5.367.blastp"
FT  CDS      complement(423517..424278)
FT          /note="partial hit(3-250)  IGI:RCAU04627 Branched-chain      10
FT          amino acid transport ATP-binding protein livG
FT          [Chloroflexus aurantiacus J-10 (JGI)]          Length = 260 Scor
e
FT          = 263 bits (671), Expect = 2e-69"
FT          /note="ABC transporters, prokaryotic"
FT          /label=contig5.366
FT          /gene="livG"
FT          /blastp_file="blastp/contig5.366.blastp"
FT  CDS      complement(424288..425274)
FT          /note="partial hit(5-300)  IGI:RAV04546 Branched-chain      20
FT          amino acid transport system permease protein livM
FT          [Azotobacter vinelandii (JGI)]          Length = 397 Score = 215
FT          bits (548), Expect = 6e-55"
FT          /note="ABC transporters, prokaryotic"
FT          /label=contig5.365
FT          /gene="livM"
FT          /blastp_file="blastp/contig5.365.blastp"
FT  CDS      complement(425271..426173)
FT          /note="closest hit IGI:RMN00791 Branched-chain amino acid
FT          transport system permease protein livH  [Streptococcus      30
FT          mutans UA159]          Length = 289 Score = 181 bits (459),
FT          Expect = 9e-45"
FT          /note="ABC transporters, prokaryotic "
FT          /label=contig5.364
FT          /gene="livH"
FT          /blastp_file="blastp/contig5.364.blastp"
FT  CDS      complement(426224..427348)
FT          /note="closest hit IGI:RPA03204 Leucine-, isoleucine-,
FT          valine-, threonine-, and alanine-binding protein
FT          [Pseudomonas aeruginosa PA01]          Length = 373 Score = 191  40
FT          bits (485), Expect = 1e-47"
FT          /label=contig5.363
FT          /gene="LAW0339"
FT          /blastp_file="blastp/contig5.363.blastp"
FT  CDS      427714..428691
FT          /note="unknown"
FT          /label=contig5.362c
FT          /gene="LAW0340"
FT          /blastp_file="blastp/contig5.362c.blastp"
FT  CDS      428956..429660      50

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FT          /note="unknown"
FT          /label=contig5.361c
FT          /gene="LAW0341"
FT          /blastp_file="blastp/contig5.361c.blastp"
FT  CDS     429818..430519
FT          /note="partial hit(1-176)  IGI:RCAU02662 3-isopropylmalate
FT          dehydrogenase (EC 1.1.1.85)      [Chloroflexus aurantiacus
FT          J-10 (JGI)]      Length = 288 Score = 183 bits (465), Ex
pect =
FT          1e-45"
FT          /note="Valine, leucine and isoleucine biosynthesis"
FT          /label=contig5.360c
FT          /gene="leuB"
FT          /blastp_file="blastp/contig5.360c.blastp"
FT  CDS     430612..431100
FT          /note="closest hit IGI:RHS002234 Cytosine deaminase (EC
FT          3.5.4.1)  [Haemophilus somnus2336]      Length = 166 Scor
e =
FT          127 bits (320), Expect = 4e-29"
FT          /note="Pyrimidine metabolism"
FT          /label=contig5.359c
FT          /gene="codA"
FT          /blastp_file="blastp/contig5.359c.blastp"
FT  CDS     431319..431606
FT          /note="closest hit IGI:RLP02702 Hypothetical Protein
FT          [Legionella pneumophila]  Length = 93 Score = 114 bits
FT          (284), Expect = 4e-25"
FT          /label=contig5.358c
FT          /gene="LAW0344"
FT          /blastp_file="blastp/contig5.358c.blastp"
FT  CDS     431805..432596
FT          /note="unknown"
FT          /label=contig5.357c
FT          /gene="LAW0345"
FT          /blastp_file="blastp/contig5.357c.blastp"
FT  CDS     complement(433193..434617)
FT          /note="closest hit IGI:RGME01707 PROTEASE DO (EC
FT          3.4.21.-)  [Geobacter metallireducens (JGI)]      Length =
485
FT          Score = 349 bits (896), Expect = 4e-95"
FT          /label=contig5.356
FT          /gene="htrA"
FT          /blastp_file="blastp/contig5.356.blastp"
FT  CDS     complement(434818..437232)
FT          /note="closest hit IGI:RGME03398 Flagellar hook protein
FT          flgE      [Geobacter metallireducens (JGI)]      Length = 4
19
FT          Score = 520 bits (1338), Expect = e-146"
FT          /note="Flagellar assembly"
FT          /label=contig5.355

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FT          /gene="flgE"
FT          /blastp_file="blastp/contig5.355.blastp"
FT   CDS    complement(437383..438891)
FT          /note="closest hit IGI:RGME03398 Flagellar hook protein
FT          flgE          [Geobacter metallireducens (JGI)]          Length =
419 Score
FT          = 249 bits (635), Expect = 9e-65"
FT          /note="Flagellar assembly"
FT          /label=contig5.354
FT          /gene="flgE"
FT          /blastp_file="blastp/contig5.354.blastp"
FT   CDS    439256..440152
FT          /note="closest hit IGI:RGME01815
FT          Phosphoribosylaminoimidazole-succinocarboxamide synthase
FT          (EC 6.3.2.6)          [Geobacter metallireducens (JGI)]
Length =
FT          296 Score = 306 bits (783), Expect = 2e-82"
FT          /note="Purine metabolism"
FT          /label=contig5.353c
FT          /gene="purC"
FT          /blastp_file="blastp/contig5.353c.blastp"
FT   CDS    440193..440957
FT          /note="closest hit IGI:RCJ00650
FT          ENOYL-[ACYL-CARRIER-PROTEIN] REDUCTASE (fabL) (NADPH)(EC
FT          1.3.1.9)          [Campylobacter jejuni NCTC-11168]          Length =
274
FT          Score = 296 bits (758), Expect = 2e-79"
FT          /note="Fatty acid biosynthesis (path 1)"
FT          /label=contig5.352c
FT          /gene="fabI"
FT          /blastp_file="blastp/contig5.352c.blastp"
FT   CDS    441137..442456
FT          /note="partial hit(1-409) IGI:RBX03729 NADP-dependent
FT          malic enzyme (EC 1.1.1.40)          [Bacteroides fragilis
FT          NCTC-9343]          Length = 762 Score = 409 bits (1051), E
xpect
FT          = e-113"
FT          /note="Pyruvate metabolism,Carbon fixation"
FT          /label=contig5.351c
FT          /gene="maeB"
FT          /blastp_file="blastp/contig5.351c.blastp"
FT   CDS    442654..442971
FT          /note="unknown"
FT          /label=contig5.350c
FT          /gene="LAW0352"
FT          /blastp_file="blastp/contig5.350c.blastp"
FT   CDS    443247..443768
FT          /note="closest hit GEN:AAM73348 AE012962 GI:21648171
FT          ribosomal protein L9          [Chlorobium tepidum TLS]          Le
ngth =

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FT          152 Score = 131 bits (330), Expect = 3e-30"
FT          /note="Ribosome"
FT          /label=contig5.349c
FT          /gene="rplI"
FT          /blastp_file="blastp/contig5.349c.blastp"
FT  CDS     443830..445194
FT          /note="closest hit IGI:RGME03362 Replicative DNA helicase
FT          (EC 3.6.1.-) [Geobacter metallireducens (JGI)] L
length =
FT          456 Score = 405 bits (1040), Expect = e-112" 10
FT          /note="Starch and sucrose metabolism, Folate biosynthesis
FT          "
FT          /label=contig5.348c
FT          /gene="recQ"
FT          /blastp_file="blastp/contig5.348c.blastp"
FT  CDS     complement(445449..446039)
FT          /note="closest hit GEN:BAB17605 AB045130 GI:11079208 tRNA
FT          (Gm18) methyltransferase [EC:2.1.1.34] [Thermus
FT          thermophilus] Length = 194 Score = 129 bits (325),
FT          Expect = 2e-29" 20
FT          /label=contig5.347
FT          /gene="LAW0355"
FT          /blastp_file="blastp/contig5.347.blastp"
FT  CDS     complement(446089..448086)
FT          /note="closest hit IGI:RPQ02311 ABC transporter
FT          ATP-binding protein [Mannheimia haemolytica] Le
length =
FT          643 Score = 300 bits (768), Expect = 5e-80"
FT          /label=contig5.346
FT          /gene="LAW0356" 30
FT          /blastp_file="blastp/contig5.346.blastp"
FT  CDS     complement(448090..448959)
FT          /note="closest hit IGI:RTHT00438 Protein-L-isoaspartate
FT          O-methyltransferase (EC2.1.1.77) [Thermoanaerobacter
FT          tengcongensis MB4T] Length = 263 Score = 180 bits (4
56),
FT          Expect = 2e-44"
FT          /label=contig5.345
FT          /gene="pcm"
FT          /blastp_file="blastp/contig5.345.blastp" 40
FT  CDS     449124..451136
FT          /note="unknown"
FT          /label=contig5.344c
FT          /gene="LAW0358"
FT          /blastp_file="blastp/contig5.344c.blastp"
FT  CDS     complement(451158..452531)
FT          /note="closest hit IGI:RCPE01288 MG2+ TRANSPORTER MGTE
FT          [Clostridium perfringens 13] Length = 445 Score = 281
FT          bits (718), Expect = 2e-74"
FT          /label=contig5.343 50

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FT          /gene="mgtE"
FT          /blastp_file="blastp/contig5.343.blastp"
FT   CDS    452761..453651
FT          /note="closest hit IGI:RCA02133 Nicotinate-nucleotide
FT          pyrophosphorylase [carboxylating] (EC 2.4.2.19)
FT          [Clostridium acetobutylicum ATCC-824D]      Length = 279 Scor
e
FT          = 172 bits (437), Expect = 4e-42"
FT          /note="Nicotinate and nicotinamide metabolism"
FT          /label=contig5.342c                                10
FT          /gene="nadC"
FT          /blastp_file="blastp/contig5.342c.blastp"
FT   CDS    453648..454703
FT          /note="closest hit IGI:RSX13112 Quinolinate synthetase A
FT          (EC 4.1.99.-)      [Streptomyces coelicolor A3(2)]      Le
ngth =
FT          362 Score = 252 bits (644), Expect = 5e-66"
FT          /note="Valine, leucine and isoleucine degradation,
FT          Nicotinate and nicotinamide metabolism "
FT          /label=contig5.341c                                20
FT          /gene="LAW0361"
FT          /blastp_file="blastp/contig5.341c.blastp"
FT   CDS    454752..456335
FT          /note="closest hit IGI:RPU01309 L-aspartate oxidase (EC
FT          1.4.3.16)      [Pseudomonas fluorescens Pf0-1 (JGI)]      Le
ngth =
FT          538 Score = 314 bits (805), Expect = 1e-84"
FT          /note="Alanine and aspartate metabolism"
FT          /label=contig5.340c                                30
FT          /gene="nadB"
FT          /blastp_file="blastp/contig5.340c.blastp"
FT   CDS    complement(456390..456695)
FT          /note="closest hit IGI:RGME02939 INTEGRAL MEMBRANE
FT          PROTEIN, YGGT FAMILY      [Geobacter metallireducens (JGI)]
FT          Length = 105 Score = 86.7 bits (213), Expect = 6e-17"
FT          /label=contig5.339
FT          /gene="LAW0363"
FT          /blastp_file="blastp/contig5.339.blastp"
FT   CDS    complement(456801..457475)
FT          /note="closest hit IGI:RGME01793 Phosphoglycolate
FT          phosphatase (EC 3.1.3.18)      [Geobacter metallireducen
s
FT          (JGI)]      Length = 206 Score = 92.4 bits (228), Expect =
FT          4e-18"
FT          /note="Glyoxylate and dicarboxylate metabolism "
FT          /label=contig5.338
FT          /gene="gph"
FT          /blastp_file="blastp/contig5.338.blastp"
FT   CDS    complement(457964..458686)
FT          /note="unknown"                                50

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FT          /label=contig5.337
FT          /gene="LAW0365"
FT          /blastp_file="blastp/contig5.337.blastp"
FT  CDS     complement(458692..459618)
FT          /note="closest hit IGI:RHT02055 Thioredoxin reductase (EC
FT          1.6.4.5) [Thermoanaerobacter tengcongensis MB4T]          L
length =
FT          305  Score = 240 bits (613), Expect = 2e-62"
FT          /label=contig5.336
FT          /gene="trxB"
FT          /blastp_file="blastp/contig5.336.blastp"
FT  CDS     complement(459615..459938)
FT          /note="closest hit IGI:RREU02828 Thioredoxin(EC 1.6.4.5)
FT          [Ralstonia eutropha CH34 (JGI)]      Length = 108 Score = 12
5
FT          bits (315), Expect = 9e-29"
FT          /label=contig5.335
FT          /gene="trxA"
FT          /blastp_file="blastp/contig5.335.blastp"
FT  CDS     complement(460064..461131)
FT          /note="closest hit IGI:RGME03014 O-sialoglycoprotein
FT          endopeptidase (EC 3.4.24.57) [Geobacter metallireducen
s
FT          (JGI)]      Length = 322  Score = 175 bits (444), Expect =
FT          6e-43"
FT          /label=contig5.334
FT          /gene="ygdD"
FT          /blastp_file="blastp/contig5.334.blastp"
FT  CDS     complement(461235..462242)
FT          /note="closest hit GEN:AAM71604 AE012813 GI:21646278
FT          fructose-1,6-bisphosphatase [EC:3.1.3.11] [Chlorobium
FT          tepidum TLS]      Length = 333 Score = 318 bits (816), Exp
ect
FT          = 5e-86"
FT          /note="Glycolysis / Gluconeogenesis,Pentose phosphate
FT          pathway,Fructose and mannose metabolism, Carbon fixation"
FT          /label=contig5.333
FT          /gene="fbp"
FT          /blastp_file="blastp/contig5.333.blastp"
FT  CDS     complement(462356..463225)
FT          /note="unknown"
FT          /label=contig5.332
FT          /gene="LAW0370"
FT          /blastp_file="blastp/contig5.332.blastp"
FT  CDS     complement(463255..464136)
FT          /note="unknown"
FT          /label=contig5.331
FT          /gene="LAW0371"
FT          /blastp_file="blastp/contig5.331.blastp"
FT  CDS     complement(464159..464470)

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FT          /note="unknown"
FT          /label=contig5.330
FT          /gene="LAW0372"
FT          /blastp_file="blastp/contig5.330.blastp"
FT  CDS     complement(464482..465042)
FT          /note="closest hit IGI:RCPE01735
FT          CDP-diacylglycerol--glycerol-3-phosphate
FT          3-phosphatidyltransferase (EC 2.7.8.5) [Clostridium
FT          perfringens 13] Length = 199 Score = 149 bits (376),
FT          Expect = 2e-35" 10
FT          /note="Glycerolipid metabolism"
FT          /label=contig5.329
FT          /gene="pgsA"
FT          /blastp_file="blastp/contig5.329.blastp"
FT  CDS     complement(465190..466008)
FT          /note="closest hit IGI:RMJ01514 MRP-family
FT          nucleotide-binding protein [Methanococcus jannaschii
DSM
FT          2661] Length = 290 Score = 211 bits (537), Expect =
FT          8e-54" 20
FT          /label=contig5.328
FT          /gene="LAW0374"
FT          /blastp_file="blastp/contig5.328.blastp"
FT  CDS     complement(466089..466769)
FT          /note="closest hit IGI:RGME02826 Protein-L-isoaspartate
FT          O-methyltransferase (EC2.1.1.77) [Geobacter
FT          metallireducens (JGI)] Length = 216 Score = 187 bits
FT          (474), Expect = 1e-46"
FT          /label=contig5.327
FT          /gene="pcm" 30
FT          /blastp_file="blastp/contig5.327.blastp"
FT  CDS     467194..468507
FT          /note="closest hit IGI:RAA00659 ENDOPEPTIDASE, FAMILY
FT          M23/M37 [Aquifex aeolicus VF5] Length = 425 Score
= 242
FT          bits (618), Expect = 7e-63"
FT          /label=contig5.326c
FT          /gene="LAW0376"
FT          /blastp_file="blastp/contig5.326c.blastp"
FT  CDS     468756..469631 40
FT          /note="closest hit IGI:RGME03571 SSU ribosomal protein S2P
FT          [Geobacter metallireducens(JGI)] Length = 251 Score = 305
FT          bits (780), Expect = 6e-82"
FT          /note="Ribosome"
FT          /label=contig5.325c
FT          /gene="rpsB"
FT          /blastp_file="blastp/contig5.325c.blastp"
FT  CDS     469657..470541
FT          /note="closest hit IGI:RCA03331 Protein Translation
FT          Elongation Factor Ts (EF-Ts) [Clostridium acetobutylic 50

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um
FT          ATCC-824D]          Length = 306 Score = 257 bits (656), Exp
ect =
FT          1e-67"
FT          /label=contig5.324c
FT          /gene="tsf"
FT          /blastp_file="blastp/contig5.324c.blastp"
FT  CDS     470643..471623
FT          /note="closest hit IGI:RRR00496 UDP-glucose 4-epimerase
FT          (EC 5.1.3.2) [Rhodospirillum rubrum (JGI)] Length = 3 10
77
FT          Score = 341 bits (875), Expect = 6e-93"
FT          /note="Galactose metabolism, Nucleotide sugars metabolism"
FT          /label=contig5.323c
FT          /gene="gale"
FT          /blastp_file="blastp/contig5.323c.blastp"
FT  CDS     471627..472781
FT          /note="closest hit IGI:RRR00498 Pleiotropic regulatory
FT          protein [Rhodospirillum rubrum (JGI)] Length = 376 Score
FT          = 307 bits (786), Expect = 2e-82" 20
FT          /label=contig5.322c
FT          /gene="LAW0380"
FT          /blastp_file="blastp/contig5.322c.blastp"
FT  CDS     472788..473591
FT          /note="closest hit IGI:RHIN02296 Beta 1,4
FT          glucosyltransferase [Haemophilus influenzae 86-028NP]
FT          Length = 254 Score = 132 bits (333), Expect = 2e-30"
FT          /label=contig5.321c
FT          /gene="lgtF"
FT          /blastp_file="blastp/contig5.321c.blastp" 30
FT  CDS     473612..474328
FT          /note="closest hit IGI:RGME03569 Uridylate kinase (EC
FT          2.7.4.-) [Geobacter metallireducens (JGI)] Length =
239
FT          Score = 290 bits (741), Expect = 1e-77"
FT          /label=contig5.320c
FT          /gene="pyrH"
FT          /blastp_file="blastp/contig5.320c.blastp"
FT  CDS     474332..474898
FT          /note="closest hit IGI:RBAT04842 Ribosome Recycling Factor 40
FT          (RRF) [Bacillus anthracis A2012] Length = 185 Score
=
FT          213 bits (542), Expect = 1e-54"
FT          /label=contig5.319c
FT          /gene="rrf"
FT          /blastp_file="blastp/contig5.319c.blastp"
FT  CDS     474934..475656
FT          /note="closest hit IGI:RCPE01757 Undecaprenyl
FT          pyrophosphate synthetase (EC 2.5.1.31) [Clostridium
FT          perfringens 13] Length = 261 Score = 229 bits (585), 50

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FT          Expect = 2e-59"
FT          /label=contig5.318c
FT          /gene="yaeS"
FT          /blastp_file="blastp/contig5.318c.blastp"
FT  CDS     475653..476450
FT          /note="partial hit(85-258) IGI:RHD06312 Phosphatidate
FT          cytidylyltransferase (EC 2.7.7.41)          [Bacillus halodur
ans
FT          C-125] Length = 264 Score = 126 bits (317), Expect =
FT          3e-28"                                     10
FT          /note="Glycerolipid metabolism"
FT          /label=contig5.317c
FT          /gene="cdsA"
FT          /blastp_file="blastp/contig5.317c.blastp"
FT  CDS     476513..477721
FT          /note="partial hit(1-180) IGI:RCL00146 1-deoxy-D-xylulose
FT          5-phosphate reductoisomerase (EC1.1.1.267)    [Chlorobi
um
FT          tepidum] Length = 382 Score = 189 bits (480), Expect =
FT          2e-47"                                     20
FT          /label=contig5.316c
FT          /gene="dxr"
FT          /blastp_file="blastp/contig5.316c.blastp"
FT  CDS     477721..478845
FT          /note="closest hit IGI:RGME03563 Membrane metalloprotease
FT          [Geobacter metallireducens (JGI)]          Length = 355 Scor
e =
FT          251 bits (641), Expect = 1e-65"
FT          /label=contig5.313c
FT          /gene="LAW0387"                             30
FT          /blastp_file="blastp/contig5.313c.blastp"
FT  CDS     478842..479636
FT          /note="unknown"
FT          /label=contig5.312c
FT          /gene="LAW0388"
FT          /blastp_file="blastp/contig5.312c.blastp"
FT  CDS     480542..481426
FT          /note="closest hit GEN:AAC05696 AF051375 GI:2961233 HaeIII
FT          DNA modification methyltransferase          [Haemophilus
FT          influenzae biotype aegyptius]          Length = 330 Score = 132 40
FT          bits (332), Expect = 5e-30"
FT          /label=contig5.311c
FT          /gene="LAW0389"
FT          /blastp_file="blastp/contig5.311c.blastp"
FT  CDS     complement(481800..483527)
FT          /note="closest hit IGI:RGME01607 Prolyl-tRNA synthetase
FT          (EC 6.1.1.15)          [Geobacter metallireducens (JGI)]    Le
ngth =
FT          570 Score = 605 bits (1560), Expect = e-172"
FT          /note="Arginine and proline metabolism,Aminoacyl-tRNA          50

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FT          biosynthesis"
FT          /label=contig5.310
FT          /gene="proS"
FT          /blastp_file="blastp/contig5.310.blastp"
FT  CDS     complement(483648..484544)
FT          /note="closest hit IGI:RGME03442 Fe-S OXIDOREDUCTASE
FT          (1.8.-.-)          [Geobacter metallireducens (JGI)]          Le
length = 310
FT          Score = 197 bits (501), Expect = 1e-49"
FT          /label=contig5.309          10
FT          /gene="LAW0391"
FT          /blastp_file="blastp/contig5.309.blastp"
FT  CDS     484633..485673
FT          /note="closest hit IGI:RGME01813 Rod shape-determining
FT          protein mreB          [Geobacter metallireducens (JGI)]          Le
length =
FT          347 Score = 394 bits (1012), Expect = e-109"
FT          /label=contig5.308c
FT          /gene="mreB"
FT          /blastp_file="blastp/contig5.308c.blastp"          20
FT  CDS     485787..486668
FT          /note="closest hit IGI:RGME01805 Rod shape-determining
FT          protein mreC          [Geobacter metallireducens (JGI)]          Le
length =
FT          273 Score = 94.4 bits (233), Expect = 2e-18"
FT          /label=contig5.306c
FT          /gene="mreC"
FT          /blastp_file="blastp/contig5.306c.blastp"
FT  CDS     486665..487135
FT          /note="unknown"          30
FT          /label=contig5.304c
FT          /gene="LAW0394"
FT          /blastp_file="blastp/contig5.304c.blastp"
FT  CDS     487119..488912
FT          /note="closest hit IGI:RCM002786 Cell elongation specific
FT          D,D-transpeptidase          [Magnetococcus MC-1 (JGI)]          Le
length =
FT          609 Score = 375 bits (962), Expect = e-102"
FT          /label=contig5.303c
FT          /gene="LAW0395"          40
FT          /blastp_file="blastp/contig5.303c.blastp"
FT  CDS     488937..490052
FT          /note="closest hit IGI:RGME01802 Rod shape-determining
FT          protein rodA          [Geobacter metallireducens (JGI)]          Le
length =
FT          366 Score = 278 bits (712), Expect = 7e-74"
FT          /label=contig5.302c
FT          /gene="rodA"
FT          /blastp_file="blastp/contig5.302c.blastp"
FT  CDS     490077..490424          50

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FT          /note="unknown"
FT          /label=contig5.301c
FT          /gene="LAW0397"
FT          /blastp_file="blastp/contig5.301c.blastp"
FT  CDS     490519..490941
FT          /note="unknown"
FT          /label=contig5.300c
FT          /gene="LAW0398"
FT          /blastp_file="blastp/contig5.300c.blastp"
FT  CDS     490959..491537                                10
FT          /note="closest hit GEN:BAA83609 AB022018 GI:5811564
FT          F1F0-ATPase b subunit[EC:3.6.3.14] [Desulfovibrio
FT          vulgaris]          Length = 192 reblast for score"
FT          /note="Oxidative phosphorylation, ATP synthesis"
FT          /label=contig5.299c
FT          /gene="atpF"
FT          /blastp_file="blastp/contig5.299c.blastp"
FT  CDS     491534..492100
FT          /note="closest hit IGI:RDS00004 ATP synthase delta chain
FT          (EC 3.6.3.14)      [Desulfovibrio vulgaris]          Length = 1    20
72
FT          Score = 118 bits (296), Expect = 4e-26"
FT          /note="Oxidative phosphorylation,ATP synthesis"
FT          /label=contig5.298c
FT          /gene="atpE"
FT          /blastp_file="blastp/contig5.298c.blastp"
FT  CDS     492090..493610
FT          /note="closest hit IGI:RDS00005 ATP synthase alpha chain
FT          (EC 3.6.3.14)      [Desulfovibrio vulgaris]          Length = 4
88
FT          Score = 731 bits (1887), Expect = 0.0"
FT          /note="Oxidative phosphorylation, ATP synthesis"
FT          /label=contig5.297c
FT          /gene="atpD"
FT          /blastp_file="blastp/contig5.297c.blastp"
FT  CDS     493615..494484
FT          /note="closest hit IGI:RGME00665 ATP synthase gamma chain
FT          (EC 3.6.3.14)      [Geobacter metallireducens (JGI)]          Le
ngth =
FT          287 Score = 221 bits (564), Expect = 7e-57"
FT          /note="Oxidative phosphorylation,ATP synthesis"
FT          /label=contig5.296c
FT          /gene="atpC"
FT          /blastp_file="blastp/contig5.296c.blastp"
FT  CDS     494508..495923
FT          /note="closest hit IGI:RDS00088 ATP synthase B chain (EC
FT          3.6.3.14)          [Desulfovibrio vulgaris]          Length = 4
71 Score =
FT          744 bits (1922), Expect = 0.0"
FT          /note="Oxidative phosphorylation, ATP synthesis"                                50

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FT          /label=contig5.295c
FT          /gene="atpB"
FT          /blastp_file="blastp/contig5.295c.blastp"
FT  CDS     495934..496335
FT          /note="closest hit IGI:RDS00008 ATP synthase epsilon chain
FT          (EC 3.6.3.14) [Desulfovibrio vulgaris] Length =
134 Score  = 132 bits (331), Expect = 1e-30"
FT          /note="Oxidative phosphorylation,ATP synthesis"
FT          /label=contig5.294c 10
FT          /gene="atpA"
FT          /blastp_file="blastp/contig5.294c.blastp"
FT  CDS     496471..497913
FT          /note="closest hit IGI:RMC003715 Exodeoxyribonuclease VII
FT          large subunit (EC3.1.11.6) [Magnetococcus MC-1
FT          (JGI)] Length = 448 Score = 226 bits (575), Expect =
FT          7e-58"
FT          /label=contig5.293c
FT          /gene="xseA"
FT          /blastp_file="blastp/contig5.293c.blastp" 20
FT  CDS     497938..498807
FT          /note="partial hit(71-283) IGI:RAV02421 Membrane proteins
FT          related to metalloendopeptidases [Azotobacter vinelandii
FT          (JGI)] Length = 274 Score = 147 bits (372), Expect =
FT          1e-34"
FT          /label=contig5.292c
FT          /gene="LAW0406"
FT          /blastp_file="blastp/contig5.292c.blastp"
FT  CDS     499089..499991
FT          /note="closest hit IGI:RGME00331 Dimethylallyltransferase 30
FT          (EC 2.5.1.1) /Geranyltranstransferase (EC 2.5.1.10)
FT          [Geobacter metallireducens (JGI)] Length = 297 Scor
e =
FT          257 bits (657), Expect = 1e-67"
FT          /note="Terpenoid biosynthesis,Sterol biosynthesis"
FT          /label=contig5.291c
FT          /gene="LAW0407"
FT          /blastp_file="blastp/contig5.291c.blastp"
FT  CDS     500065..501978
FT          /note="closest hit IGI:RGME00330 1-deoxy-D-xylulose 40
FT          5-phosphate synthase (EC4.1.3.7) [Geobacter
FT          metallireducens (JGI)] Length = 625 Score = 625 bits
FT          (1613), Expect = e-178"
FT          /label=contig5.290c
FT          /gene="dsx"
FT          /blastp_file="blastp/contig5.290c.blastp"
FT  CDS     complement(502001..503026)
FT          /note="unknown"
FT          /label=contig5.289
FT          /gene="LAW0409" 50

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FT          /blastp_file="blastp/contig5.289.blastp"
FT  CDS     complement(504438..505217)
FT          /note="closest hit IGI:RXCA02494 Tryptophan synthase alpha
FT          chain (EC 4.2.1.20)          [Xanthomonas campestris ATCC-3391
3]
FT          Length = 272 Score = 186 bits (471), Expect = 3e-46"
FT          /note="Phenylalanine, tyrosine and tryptophan
FT          biosynthesis"
FT          /label=contig5.287
FT          /gene="trpA"
FT          /blastp_file="blastp/contig5.287.blastp"
FT  CDS     complement(505228..506397)
FT          /note="closest hit IGI:RDHA05107 Tryptophan synthase beta
FT          chain (EC 4.2.1.20)          [Desulfitobacterium halfniense DC
B-2
FT          (JGI)] Length = 399 Score = 491 bits (1265), Expect =
FT          e-138"
FT          /note="Phenylalanine, tyrosine and tryptophan biosynthesis
FT          "
FT          /label=contig5.286
FT          /gene="trpB"
FT          /blastp_file="blastp/contig5.286.blastp"
FT  CDS     complement(506387..507004)
FT          /note="closest hit IGI:RTM01442
FT          N-(5'-phosphoribosyl)anthranilate isomerase (EC5.3.1.24)
FT          [Thermotoga maritima MSB8]          Length = 205 Score = 108
bits
FT          (271), Expect = 3e-23"
FT          /note="Phenylalanine, tyrosine and tryptophan
FT          biosynthesis"
FT          /label=contig5.285
FT          /gene="trpC_1"
FT          /blastp_file="blastp/contig5.285.blastp"
FT  CDS     complement(506982..507704)
FT          /note="closest hit IGI:RRS003150 Indole-3-glycerol
FT          phosphate synthase (EC 4.1.1.48) [Ralstonia solanacearum]
FT          Length = 269 Score = 157 bits (397), Expect = 1e-37"
FT          /note="Phenylalanine, tyrosine and tryptophan
FT          biosynthesis"
FT          /label=contig5.284
FT          /gene="trpC_2"
FT          /blastp_file="blastp/contig5.284.blastp"
FT  CDS     complement(507758..508744)
FT          /note="closest hit IGI:RLME01738 Anthranilate
FT          phosphoribosyltransferase (EC 2.4.2.18) [Leuconostoc
FT          mesenteroides ATCC-8293 (JGI)] Length = 341 Score = 249
FT          bits (636), Expect = 4e-65"
FT          /note="Phenylalanine, tyrosine and tryptophan
FT          biosynthesis"
FT          /label=contig5.283

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FT          /gene="trpD"
FT          /blastp_file="blastp/contig5.283.blastp"
FT  CDS     complement(508741..509877)
FT          /note="closest hit IGI:RML000529 L-kynurenine hydrolase
FT          (EC 3.7.1.3)      [Mesorhizobium loti MAFF303099]      Le
ngth =
FT          403 Score = 298 bits (764), Expect = 6e-80"
FT          /note="Tryptophan metabolism"
FT          /label=contig5.282
FT          /gene="LAW0415"                                     10
FT          /blastp_file="blastp/contig5.282.blastp"
FT  CDS     complement(509880..510698)
FT          /note="closest hit IGI:RML000530 ABC transporter permease
FT          protein      [Mesorhizobium loti MAFF303099]      Length = 3
07
FT          Score = 216 bits (549), Expect = 3e-55"
FT          /label=contig5.281
FT          /gene="LAW0416"
FT          /blastp_file="blastp/contig5.281.blastp"
FT  CDS     complement(510688..511422)                         20
FT          /note="closest hit GEN:AAL94163 AE010511 GI:19713354 ABC
FT          transporter ATP-binding protein      [Fusobacterium nucleatum
FT          subsp. nucleatum ATCC 25586]      Length = 258 Score = 17
9
FT          bits (453), Expect = 4e-44"
FT          /label=contig5.280
FT          /gene="LAW0417"
FT          /blastp_file="blastp/contig5.280.blastp"
FT  CDS     complement(511426..512397)                         30
FT          /note="closest hit IGI:RML000532 ABC transporter
FT          substrate-binding protein [Mesorhizobium loti MAFF303099]
FT          Length = 310 Score = 190 bits (483), Expect = 1e-47"
FT          /label=contig5.279
FT          /gene="LAW0418"
FT          /blastp_file="blastp/contig5.279.blastp"
FT  CDS     514084..514919
FT          /note="IGI:RMAA05505 8-amino-7-oxononanoate synthase (EC"
FT          /label=contig5.278c
FT          /gene="LAW0419"
FT          /blastp_file="blastp/contig5.278c.blastp"           40
FT  CDS     complement(514967..515935)
FT          /note="closest hit IGI:RBAP00280 Biotin synthase (EC
FT          2.8.1.6)      [Buchnera aphidicola strain SG]      Length =
342
FT          Score = 373 bits (957), Expect = e-102"
FT          /note="Biotin metabolism"
FT          /label=contig5.277
FT          /gene="bioB"
FT          /blastp_file="blastp/contig5.277.blastp"
FT  CDS     515952..517097                                     50

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FT          /note="closest hit IGI:RMMA05505 8-amino-7-oxononanoate
FT          synthase (EC 2.3.1.47) [Magnetospirillum magnetotacticum
FT          MS-1 (JGI)]          Length = 386 Score = 253 bits (646), Exp
ect
FT          = 3e-66"
FT          /note="Biotin metabolism"
FT          /label=contig5.276c
FT          /gene="bioF"
FT          /blastp_file="blastp/contig5.276c.blastp"
FT  CDS     517094..517732                                     10
FT          /note="unknown"
FT          /label=contig5.275c
FT          /gene="LAW0422"
FT          /blastp_file="blastp/contig5.275c.blastp"
FT  CDS     517094..517732
FT          /note="unknown"
FT          /label=contig5.275c
FT          /gene="LAW0423"
FT          /blastp_file="blastp/contig5.275c.blastp"
FT  CDS     517752..518495                                     20
FT          /note="closest hit IGI:RBAT05226 Biotin synthesis protein
FT          bioC [Bacillus anthracis A2012]          Length = 269 Score
= 101
FT          bits (251), Expect = 1e-20"
FT          /label=contig5.274c
FT          /gene="bioC"
FT          /blastp_file="blastp/contig5.274c.blastp"
FT  CDS     518495..519106
FT          /note="closest hit IGI:RCK00429 Dethiobiotin synthetase
FT          (EC 6.3.3.3) [Prochlorococcus marinus MED4 (JGI)] L 30
ength
FT          = 220 Score = 158 bits (400), Expect = 4e-38"
FT          /note="Biotin metabolism"
FT          /label=contig5.273c
FT          /gene="bioD"
FT          /blastp_file="blastp/contig5.273c.blastp"
FT  CDS     519110..520387
FT          /note="closest hit IGI:RMMA06970
FT          Adenosylmethionine-8-amino-7-oxononanoate aminotransferase
FT          (EC 2.6.1.62) [Magnetospirillum magnetotacticum MS-1 40
FT          (JGI)]          Length = 439 Score = 384 bits (985), Expect =
FT          e-105"
FT          /note="Biotin metabolism"
FT          /label=contig5.272c
FT          /gene="bioA"
FT          /blastp_file="blastp/contig5.272c.blastp"
FT  CDS     complement(520457..521032)
FT          /note="closest hit IGI:RC003831 Hypothetical
FT          Protein [Caulobacter crescentus]          Length = 169 Sco
re = 131

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FT          bits (330), Expect = 4e-30"
FT          /label=contig5.271
FT          /gene="LAW0427"
FT          /blastp_file="blastp/contig5.271.blastp"
FT  CDS     522545..523912
FT          /note="closest hit IGI:RBX02543 Sodium/proline
FT          symporter [Bacteroides fragilis NCTC-9343]          Length =
455
FT          Score = 329 bits (843), Expect = 6e-89"
FT          /label=contig5.270c                                10
FT          /gene="putP"
FT          /blastp_file="blastp/contig5.270c.blastp"
FT  CDS     complement(524004..525074)
FT          /note="closest hit IGI:RGME00542 Oxygen-independent
FT          coproporphyrinogen III oxidase (EC1.-.-.-)          [Geobacte
r
FT          metallireducens (JGI)]          Length = 346 Score = 165 bits
FT          (418), Expect = 6e-40"
FT          /label=contig5.269
FT          /gene="hemN"                                       20
FT          /blastp_file="blastp/contig5.269.blastp"
FT  CDS     525142..525582
FT          /note="unknown"
FT          /label=contig5.268c
FT          /gene="LAW0430"
FT          /blastp_file="blastp/contig5.268c.blastp"
FT  CDS     525657..525947
FT          /note="closest hit IGI:RGME01437 Integration host factor
FT          alpha-subunit          [Geobacter metallireducens (JGI)]          Le
ngth =                                30
FT          112 Score = 68.2 bits (165), Expect = 2e-11"
FT          /label=contig5.267c
FT          /gene="himA"
FT          /blastp_file="blastp/contig5.267c.blastp"
FT  CDS     complement(526092..526742)
FT          /note="unknown"
FT          /label=contig5.266
FT          /gene="LAW0432"
FT          /blastp_file="blastp/contig5.266.blastp"
FT  CDS     complement(527009..528847)                                40
FT          /note="partial hit(234-604)          IGI:RQT00884 Thiol:disul
fide
FT          interchange protein DsbD [Chlamydia trachomatis MoPn]
FT          Length = 692 Score = 175 bits (443), Expect = 2e-42"
FT          /label=contig5.265
FT          /gene="dsbD"
FT          /blastp_file="blastp/contig5.265.blastp"
FT  CDS     complement(529148..530338)
FT          /note="unknown"
FT          /label=contig5.264                                50

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FT          /gene="LAW0434"
FT          /blastp_file="blastp/contig5.264.blastp"
FT  CDS     530484..531716
FT          /note="closest hit IGI:RCTH03145 Aspartate
FT          aminotransferase (EC 2.6.1.1) [Clostridium thermocellum
FT          ATCC-27405 (JGI)] Length = 412 Score = 511 bits (1
315),
FT          Expect = e-144"
FT          /note="Glutamate metabolism,Alanine and aspartate
FT          metabolism,Cysteine metabolism,Arginine and proline      10
FT          metabolism,Tyrosine metabolism,Phenylalanine
FT          metabolism,Phenylalanine, tyrosine and tryptophan
FT          biosynthesis,Carbon fixation, Alkaloid biosynthesis I"
FT          /label=contig5.262c
FT          /gene="aspC"
FT          /blastp_file="blastp/contig5.262c.blastp"
FT  CDS     complement(531796..532644)
FT          /note="unknown"
FT          /label=contig5.261
FT          /gene="LAW0436"      20
FT          /blastp_file="blastp/contig5.261.blastp"
FT  CDS     complement(532566..533117)
FT          /note="unknown"
FT          /label=contig5.260
FT          /gene="LAW0437"
FT          /blastp_file="blastp/contig5.260.blastp"
FT  CDS     complement(533368..534693)
FT          /note="closest hit IGI:RYP02687 Periplasmic
FT          phosphoanhydride phosphohydrolase (EC3.1.3.2) / 6-phytase
FT          (EC 3.1.3.26) [Yersinia pestis C092] Length = 4  30
41 Score
FT          = 155 bits (392), Expect = 1e-36"
FT          /note="Inositol phosphate metabolism,Riboflavin
FT          metabolism"
FT          /label=contig5.259
FT          /gene="LAW0438"
FT          /blastp_file="blastp/contig5.259.blastp"
FT  CDS     535099..536355
FT          /note="closest hit IGI:REC00937 HYDROGENASE-1 SMALL CHAIN
FT          (EC 1.18.99.1) [Escherichia coli K12] Length = 3  40
72 Score
FT          = 461 bits (1187), Expect = e-129"
FT          /note="Methane metabolism, Glyoxylate and dicarboxylate
FT          metabolism"
FT          /label=contig5.258c
FT          /gene="hyaA"
FT          /blastp_file="blastp/contig5.258c.blastp"
FT  CDS     536370..538178
FT          /note="closest hit IGI:REC00938 Hydrogenase-1 large chain
FT          (EC 1.18.99.1) [Escherichia coli K12] Length = 5  50

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97 Score

FT = 835 bits (2157), Expect = 0.0"
 FT /note="Methane metabolism, Glyoxylate and dicarboxylate
 FT metabolism"
 FT /label=contig5.257c
 FT /gene="hyaB"
 FT /blastp_file="blastp/contig5.257c.blastp"
 FT CDS 538288..538992
 FT /note="closest hit IGI:RECS01130 Probable
 FT Ni/Fe-hydrogenase 1 B-type cytochrome subunit [Escherichia 10
 FT coli 0157:H7 Sakai] Length = 235 Score = 173 bits (4
 39),
 FT Expect = 8e-43"
 FT /label=contig5.256c
 FT /gene="hyaC"
 FT /blastp_file="blastp/contig5.256c.blastp"
 FT CDS 538995..539531
 FT /note="closest hit IGI:RECS01131 Hydrogenase 1 maturation
 FT protease (EC 3.4.24.-) [Escherichia coli 0157:H7 Sakai]
 FT Length = 195 Score = 164 bits (416), Expect = 4e-40" 20
 FT /label=contig5.255c
 FT /gene="hyaD"
 FT /blastp_file="blastp/contig5.255c.blastp"
 FT CDS 540291..540695
 FT /note="unknown"
 FT /label=contig5.254c
 FT /gene="LAW0443"
 FT /blastp_file="blastp/contig5.254c.blastp"
 FT CDS 540700..541770
 FT /note="partial hit(90-335) GEN:BAB72025 AB074285 30
 FT GI:16945747 capsular polysaccharide biosynthesis protein
 FT [Photobacterium damsela subsp. piscicida] Length =
 290
 FT Score = 94.4 bits (233), Expect = 2e-18"
 FT /label=contig5.253c
 FT /gene="LAW0444"
 FT /blastp_file="blastp/contig5.253c.blastp"
 FT CDS complement(541891..542361)
 FT /note="closest hit IGI:RCA03001 D-Tyr-tRNATyr deacylase
 FT [Clostridium acetobutylicum ATCC-824D] Length = 149 Scor 40
 e
 FT = 108 bits (271), Expect = 2e-23"
 FT /label=contig5.252
 FT /gene="dtd"
 FT /blastp_file="blastp/contig5.252.blastp"
 FT CDS complement(542402..543601)
 FT /note="closest hit IGI:RATU01518 2-C-methyl-D-erythritol
 FT 4-phosphate cytidyltransferase (EC 2.7.7.60) /
 FT 2-C-methyl-D-erythritol 2,4-cyclodiphosphate synthase (EC
 FT 4.6.1.12) [Agrobacterium tumefaciens C58] 50

Length = 400

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FT          Score = 194 bits (493), Expect = 2e-48"
FT          /label=contig5.251
FT          /gene="LAW0446"
FT          /blastp_file="blastp/contig5.251.blastp"
FT  CDS     543696..543989
FT          /note="unknown"
FT          /label=contig5.250c
FT          /gene="LAW0447"
FT          /blastp_file="blastp/contig5.250c.blastp"
FT  CDS     complement(544048..544812)
FT          /note="unknown"
FT          /label=contig5.249
FT          /gene="LAW0448"
FT          /blastp_file="blastp/contig5.249.blastp"
FT  CDS     complement(544847..545644)
FT          /note="unknown"
FT          /label=contig5.248
FT          /gene="LAW0449"
FT          /blastp_file="blastp/contig5.248.blastp"
FT  CDS     complement(545767..546591)
FT          /note="closest hit IGI:RGME00336
FT          Phosphoribosylformylglycinamide synthase (EC6.3.5.3)
FT          [Geobacter metallireducens (JGI)]          Length = 275 Score
e =
FT          227 bits (578), Expect = 2e-58"
FT          /note="Purine metabolism"
FT          /label=contig5.247
FT          /gene="purL"
FT          /blastp_file="blastp/contig5.247.blastp"
FT  CDS     546832..548484
FT          /note="closest hit IGI:RGME02904 CTP synthase (EC 6.3.4.2)
FT          [Geobacter metallireducens (JGI)]          Length = 538 Score
e =
FT          613 bits (1582), Expect = e-174"
FT          /note="Pyrimidine metabolism"
FT          /label=contig5.246c
FT          /gene="pyrG"
FT          /blastp_file="blastp/contig5.246c.blastp"
FT  CDS     548515..549321
FT          /note="closest hit IGI:RGME02905
FT          2-dehydro-3-deoxyphosphooctonate aldolase (EC 4.1.2.16)
FT          [Geobacter metallireducens (JGI)]          Length = 272 Score
e =
FT          257 bits (656), Expect = 7e-68"
FT          /note="Lipopolysaccharide biosynthesis"
FT          /label=contig5.244c
FT          /gene="kdsA"
FT          /blastp_file="blastp/contig5.244c.blastp"
FT  CDS     549318..549929

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FT          /note="closest hit IGI:RAA00826
FT          N-ACYLNEURAMINATE-9-PHOSPHATASE (EC 3.1.3.29)      [Aquifex
FT          aeolicus VF5]      Length = 163 Score = 154 bits (388),
FT          Expect = 9e-37"
FT          /note="Aminosugars metabolism "
FT          /label=contig5.243c
FT          /gene="LAW0453"
FT          /blastp_file="blastp/contig5.243c.blastp"
FT  CDS     550004..550549
FT          /note="unknown"                                     10
FT          /label=contig5.242c
FT          /gene="LAW0454"
FT          /blastp_file="blastp/contig5.242c.blastp"
FT  CDS     550649..551218
FT          /note="unknown"
FT          /label=contig5.241c
FT          /gene="LAW0455"
FT          /blastp_file="blastp/contig5.241c.blastp"
FT  CDS     551218..551940
FT          /note="closest hit GEN:AAL94891 AE010580 GI:19714222 ABC      20
FT          transporter ATP-binding protein [Fusobacterium nucleatum
FT          subsp. nucleatum ATCC 25586]      Length = 241 Score = 251
FT          bits (641), Expect = 6e-66"
FT          /label=contig5.240c
FT          /gene="LAW0456"
FT          /blastp_file="blastp/contig5.240c.blastp"
FT  CDS     552086..553507
FT          /note="closest hit IGI:RGME02912 RNA polymerase sigma-54
FT          factor rpoN      [Geobacter metallireducens (JGI)]      Le
ngth =                                           30
FT          483 Score = 387 bits (995), Expect = e-106"
FT          /label=contig5.239c
FT          /gene="rpoN"
FT          /blastp_file="blastp/contig5.239c.blastp"
FT  CDS     553542..554078
FT          /note="closest hit IGI:RGME02913 PROBABLE SIGMA(54)
FT          MODULATION PROTEIN / SSU ribosomal protein S30P [Geobacter
FT          metallireducens (JGI)]      Length = 181 Score = 126 bits
FT          (316), Expect = 2e-28"
FT          /label=contig5.238c                                     40
FT          /gene="LAW0458"
FT          /blastp_file="blastp/contig5.238c.blastp"
FT  CDS     554113..555078
FT          /note="closes tiht IGI:RTHT01708 ATP-binding protein
FT          (contains P-loop) [Thermoanaerobacter tengcongensis MB4T]
FT          Length = 284 Score = 204 bits (520), Expect = 1e-51"
FT          /label=contig5.237c
FT          /gene="LAW0459"
FT          /blastp_file="blastp/contig5.237c.blastp"
FT  CDS     555553..556104                                     50

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FT          /note="unknown"
FT          /label=contig5.236c
FT          /gene="LAW0460"
FT          /blastp_file="blastp/contig5.236c.blastp"
FT  CDS     complement(556323..557819)
FT          /note="closest hit GEN:CAD42341 AX464448 GI:21899254
FT          unnamed protein product [Lawsonia intracellularis] Length
FT          = 475 Score = 973 bits (2515), Expect = 0.0"
FT          /label=contig5.235
FT          /gene="LAW0461"
FT          /blastp_file="blastp/contig5.235.blastp"
FT  CDS     complement(557976..559373)
FT          /note="closest hit IGI:RGME02099 Glutamyl-tRNA synthetase
FT          (EC 6.1.1.17) [Geobacter metallireducens (JGI)] Le
ngth =
FT          495 Score = 421 bits (1081), Expect = e-116"
FT          /note="Glutamate metabolism,Porphyrin and chlorophyll
FT          metabolism, Aminoacyl-tRNA biosynthesis"
FT          /label=contig5.233
FT          /gene="gltX"
FT          /blastp_file="blastp/contig5.233.blastp"
FT  CDS     complement(559477..560727)
FT          /note="unknown"
FT          /label=contig5.232
FT          /gene="LAW0463"
FT          /blastp_file="blastp/contig5.232.blastp"
FT  CDS     complement(560781..562121)
FT          /note="closest hit IGI:RXAX03298 Phosphoglycerate kinase
FT          (EC 2.7.2.3) [Xanthomonas axonopodis citri 306] Le
ngth =
FT          391 Score = 419 bits (1076), Expect = e-116"
FT          /note="Glycolysis / Gluconeogenesis,Carbon fixation"
FT          /label=contig5.231
FT          /gene="pgk"
FT          /blastp_file="blastp/contig5.231.blastp"
FT  CDS     562525..563409
FT          /note="closest hit IGI:RCL01279 hypothetical protein
FT          [Chlorobium tepidum] Length = 288 Score = 156 bits (
394) ,
FT          Expect = 4e-37"
FT          /label=contig5.230c
FT          /gene="LAW0465"
FT          /blastp_file="blastp/contig5.230c.blastp"
FT  CDS     complement(563439..564431)
FT          /note="closest hit IGI:RRLE03193 UDP-glucose 4-epimerase
FT          (EC 5.1.3.2) [Rhizobium leguminosarum biovar viciae]
FT          Length = 329 Score = 299 bits (765), Expect = 3e-80"
FT          /note="Galactose metabolism,Nucleotide sugars metabolism"
FT          /label=contig5.229
FT          /gene="galE"

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FT          /blastp_file="blastp/contig5.229.blastp"
FT  CDS     complement(564532..565308)
FT          /note="closest hit IGI:RREU03615 Carbonic anhydrase (EC
FT          4.2.1.1) [Ralstonia eutropha CH34 (JGI)]          Length =
244
FT          Score = 184 bits (467), Expect = 1e-45"
FT          /note="Nitrogen metabolism"
FT          /label=contig5.228
FT          /gene="cynT"
FT          /blastp_file="blastp/contig5.228.blastp"          10
FT  CDS     566233..567591
FT          /note="closest hit IGI:RNE01915 O-antigen export system
FT          ATP-binding protein [Nitrosomonas europaeaATCC-25978
FT          (JGI)]          Length = 451 Score = 324 bits (830), Expect =
FT          1e-87"
FT          /label=contig5.227c
FT          /gene="rfbB"
FT          /blastp_file="blastp/contig5.227c.blastp"
FT  CDS     567584..569458          20
FT          /note="unknown"
FT          /label=contig5.225c
FT          /gene="LAW0469"
FT          /blastp_file="blastp/contig5.225c.blastp"
FT  CDS     569852..570466
FT          /note="partial hit(52-207) IGI:RTHT01837 Cell wall
FT          endopeptidase, family M23/M37 [Thermoanaerobacter
FT          tengcongensis MB4T]          Length = 389 Score = 124 bits (3
10),
FT          Expect = 1e-27"
FT          /label=contig5.224c          30
FT          /gene="LAW0470"
FT          /blastp_file="blastp/contig5.224c.blastp"
FT  CDS     570504..571607
FT          /note="closest hit GEN:AAL94737 AE010566 GI:19714038
FT          polysaccharide deacetylase [Fusobacterium nucleatum
FT          subsp. nucleatum ATCC 25586]          Length = 351 Score = 120
FT          bits (301), Expect = 3e-26"
FT          /label=contig5.223c
FT          /gene="LAW0471"
FT          /blastp_file="blastp/contig5.223c.blastp"          40
FT  CDS     complement(571638..572678)
FT          /note="partial hit(152-327)          IGI:RVC04483 Membrane pr
otein
FT          [Vibrio cholerae El Tor N16961]          Length = 361 Score = 106
FT          bits (264), Expect = 5e-22"
FT          /label=contig5.222
FT          /gene="LAW0472"
FT          /blastp_file="blastp/contig5.222.blastp"
FT  CDS     complement(573983..577249)
FT          /note="closest hit GEN:CAD31540 AL672113 GI:20803963          50

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FT          PUTATIVE DNA METHYLASE PROTEIN    [Mesorhizobium loti]
FT          Length = 1048 Score = 367 bits (941), Expect = e-100"
FT          /label=contig5.220
FT          /gene="LAW0473"
FT          /blastp_file="blastp/contig5.220.blastp"
FT  CDS     complement(579345..579749)
FT          /note="    IGI:RECS02034 Tellurite resistance protein tehA
FT          [Escherichia coli 0157:H7 Sakai] Length = 330"
FT          /label=contig5.217
FT          /gene="LAW0474"
FT          /blastp_file="blastp/contig5.217.blastp"
FT  CDS     complement(579945..580343)
FT          /note="    Tellurite resistance protein TehA"
FT          /label=contig5.216
FT          /gene="LAW0475"
FT          /blastp_file="blastp/contig5.216.blastp"
FT  CDS     581215..583965
FT          /note="closest hit IGI:RNE02025 Ribonucleoside-diphosphate
FT          reductase alpha chain (EC1.17.4.1)    [Nitrosomonas eur
opaea
FT          ATCC-25978 (JGI)]          Length = 955 Score = 1209 bits (3
129),
FT          Expect = 0.0"
FT          /note="Purine metabolism,Pyrimidine metabolism"
FT          /label=contig5.215c
FT          /gene="nrdA"
FT          /blastp_file="blastp/contig5.215c.blastp"
FT  CDS     584106..585107
FT          /note="closest hit IGI:RREU03108
FT          Ribonucleoside-diphosphate reductase beta chain
FT          (EC1.17.4.1)    [Ralstonia eutropha CH34 (JGI)]    Le
ngth =
FT          395 Score = 279 bits (713), Expect = 5e-74"
FT          /note="Purine metabolism,Pyrimidine metabolism"
FT          /label=contig5.214c
FT          /gene="nrdB"
FT          /blastp_file="blastp/contig5.214c.blastp"
FT  CDS     complement(585484..586632)
FT          /note="closest hit IGI:RTH01614 Atrazine chlorohydrolase
FT          (EC 3.8.1.8)    Methanobacterium thermoautotrophicum] L
ngth
FT          = 427 Score = 285 bits (728), Expect = 1e-75"
FT          /note="3-Chloroacrylic acid degradation ,Atrazine
FT          degradation"
FT          /label=contig5.213
FT          /gene="LAW0478"
FT          /blastp_file="blastp/contig5.213.blastp"
FT  CDS     587222..588658
FT          /note="closest hit IGI:RBX02147 Membrane-bound
FT          0-acyltransferase    [Bacteroides fragilis NCTC-9343]

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Length

FT = 495 Score = 292 bits (748), Expect = 4e-78"
 FT /label=contig5.212c
 FT /gene="LAW0479"
 FT /blastp_file="blastp/contig5.212c.blastp"
 FT CDS 588676..590637
 FT /note="unknown"
 FT /label=contig5.211c
 FT /gene="LAW0480"
 FT /blastp_file="blastp/contig5.211c.blastp" 10
 FT CDS 590701..591078
 FT /note="GI:21110080 chemotaxis protein [Xanthomonas"
 FT /label=contig5.210c
 FT /gene="LAW0481"
 FT /blastp_file="blastp/contig5.210c.blastp"
 FT CDS 591277..592125
 FT /note="closest hit IGI:RNE01654 Chemotaxis motA protein
 FT [Nitrosomonas europae ATCC-25978 (JGI)] Length = 267
 FT Score = 202 bits (515), Expect = 3e-51"
 FT /note="Bacterial chemotaxis,Flagellar assembly" 20
 FT /label=contig5.209c
 FT /gene="motA"
 FT /blastp_file="blastp/contig5.209c.blastp"
 FT CDS 592170..592883
 FT /note="partial hit(3-221) IGI:RE004531 Chemotaxis motB
 FT protein [Erwinia carotovora atroseptica] Length = 3
 51
 FT Score = 98.2 bits (243), Expect = 8e-20"
 FT /note="Bacterial chemotaxis,Flagellar assembly"
 FT /label=contig5.208c 30
 FT /gene="motB"
 FT /blastp_file="blastp/contig5.208c.blastp"
 FT CDS complement(592910..594616)
 FT /note="unknown"
 FT /label=contig5.207
 FT /gene="LAW0484"
 FT /blastp_file="blastp/contig5.207.blastp"
 FT CDS complement(594907..596061)
 FT /note="closest hit IGI:RTER04011 Tetracycline resistance
 FT protein [Trichodesmium erythraeum IMS101 (JGI)] Le 40
 ngth =
 FT 405 Score = 145 bits (365), Expect = 1e-33"
 FT /label=contig5.206
 FT /gene="LAW0485"
 FT /blastp_file="blastp/contig5.206.blastp"
 FT CDS 596408..597160
 FT /note="closest hit IGI:RBI00053 Chemotaxis motA protein
 FT [Bacillus megaterium] Length = 267 Score = 181 bits
 FT (459), Expect = 8e-45"
 FT /note="Bacterial chemotaxis,Flagellar assembly" 50

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FT          /label=contig5.205c
FT          /gene="motA"
FT          /blastp_file="blastp/contig5.205c.blastp"
FT  CDS     597267..597887
FT          /note="partial hit(5-197)  IGI:RGME03347 Chemotaxis motB
FT          protein    [Geobacter metallireducens (JGI)]      Length =
305
FT          Score = 99.8 bits (247), Expect = 3e-20"
FT          /note="Bacterial chemotaxis, Flagellar assembly"
FT          /label=contig5.204c                                10
FT          /gene="motB"
FT          /blastp_file="blastp/contig5.204c.blastp"
FT  CDS     598269..599687
FT          /note="closest hit IGI:RCK00226 Biotin carboxylase (EC
FT          6.3.4.14)  [Prochlorococcus marinus MED4 (JGI)]  Length =
FT          449 Score = 248 bits (633), Expect = 1e-64"
FT          /note="Fatty acid biosynthesis (path 1)"
FT          /label=contig5.203c
FT          /gene="accC"
FT          /blastp_file="blastp/contig5.203c.blastp"          20
FT  CDS     599700..601946
FT          /note="unknown"
FT          /label=contig5.202c
FT          /gene="LAW0489"
FT          /blastp_file="blastp/contig5.202c.blastp"
FT  CDS     601994..602644
FT          /note="unknown"
FT          /label=contig5.201c
FT          /gene="LAW0490"
FT          /blastp_file="blastp/contig5.201c.blastp"          30
FT  CDS     602649..602993
FT          /note="unknown"
FT          /label=contig5.200c
FT          /gene="LAW0491"
FT          /blastp_file="blastp/contig5.200c.blastp"
FT  CDS     603031..603486
FT          /note="unknown"
FT          /label=contig5.199c
FT          /gene="LAW0492"
FT          /blastp_file="blastp/contig5.199c.blastp"          40
FT  CDS     complement(603604..605301)
FT          /note="closest hit IGI:RCTH01872 GlutaminyI-tRNA
FT          synthetase (EC 6.1.1.18)  [Clostridium thermocellum
FT          ATCC-27405 (JGI)]      Length = 567 Score = 684 bits (1
764),
FT          Expect = 0.0"
FT          /note="Glutamate metabolism,Aminoacyl-tRNA biosynthesis"
FT          /label=contig5.198
FT          /gene="glnS"
FT          /blastp_file="blastp/contig5.198.blastp"          50

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FT   CDS           complement(605340..605717)
FT               /note="unknown"
FT               /label=contig5.197
FT               /gene="LAW0494"
FT               /blastp_file="blastp/contig5.197.blastp"
FT   CDS           605999..607135
FT               /note="unknown"
FT               /label=contig5.196c
FT               /gene="LAW0495"
FT               /blastp_file="blastp/contig5.196c.blastp"
FT   CDS           607449..608588
FT               /note="closest hit IGI:RTM00447 Leucine-, isoleucine-,
FT               valine-, threonine-, and alanine-binding protein
FT               [Thermotoga maritima MSB8]          Length = 370 Score = 263
bits
FT               (672), Expect = 3e-69"
FT               /label=contig5.195c
FT               /gene="LAW0496"
FT               /blastp_file="blastp/contig5.195c.blastp"
FT   CDS           608669..609562
FT               /note="closest hit IGI:RTM00448 Branched-chain amino acid
FT               transport system permease protein livH [Thermotoga
FT               maritima MSB8]          Length = 299 Score = 201 bits (511),
FT               Expect = 7e-51"
FT               /note="ABC transporters, prokaryotic"
FT               /label=contig5.194c
FT               /gene="livH"
FT               /blastp_file="blastp/contig5.194c.blastp"
FT   CDS           609559..610602
FT               /note="closest hit IGI:RTM02195 Branched-chain amino acid
FT               transport system permease protein livM [Thermotoga
FT               maritima MSB8]          Length = 359 Score = 233 bits (595),
FT               Expect = 2e-60"
FT               /note="ABC transporters, prokaryotic"
FT               /label=contig5.193c
FT               /gene="livM"
FT               /blastp_file="blastp/contig5.193c.blastp"
FT   CDS           610599..611405
FT               /note="closest hit IGI:RTM02196 Branched-chain amino acid
FT               transport ATP-binding protein livG [Thermotoga marit
FT               ima
FT               MSB8]          Length = 284 Score = 282 bits (721), Expect =
FT               4e-75"
FT               /note="ABC transporters, prokaryotic "
FT               /label=contig5.192c
FT               /gene="livG"
FT               /blastp_file="blastp/contig5.192c.blastp"
FT   CDS           611398..612120
FT               /note="closest hit IGI:RTM02193 Branched-chain amino acid
FT               transport ATP-binding protein livF [Thermotoga marit
FT               ima

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ima
FT      MSB8]      Length = 239 Score = 283 bits (723), Expect =
FT      2e-75"
FT      /note="ABC transporters, prokaryotic"
FT      /label=contig5.191c
FT      /gene="livF"
FT      /blastp_file="blastp/contig5.191c.blastp"
FT      CDS      612389..614464
FT      /note="closest hit IGI:RRR00012 Inorganic pyrophosphatase
FT      (EC 3.6.1.1)      [Rhodospirillum rubrum (JGI)] Length = 7 10
02
FT      Score = 748 bits (1931), Expect = 0.0"
FT      /note="Oxidative phosphorylation"
FT      /label=contig5.190c
FT      /gene="ppa"
FT      /blastp_file="blastp/contig5.190c.blastp"
FT      CDS      complement(614756..615940)
FT      /note="closest hit IGI:RNE02401 4-amino-4-deoxychorismate
FT      lyase (EC 4.-.-.-) [Nitrosomonas europaea ATCC-25978
FT      (JGI)] Length = 343 Score = 188 bits (477), Expect = 20
FT      1e-46"
FT      /label=contig5.189
FT      /gene="pabC"
FT      /blastp_file="blastp/contig5.189.blastp"
FT      CDS      complement(615937..616365)
FT      /note="closest hit IGI:RNE01545 DNA
FT      integration/recombination/inversion protein      [Nitrosom
onas
FT      europaea ATCC-25978 (JGI)] Length = 152 Score = 75.9
bits 30
FT      (185), Expect = 9e-14"
FT      /label=contig5.187
FT      /gene="LAW0503"
FT      /blastp_file="blastp/contig5.187.blastp"
FT      CDS      617036..617818
FT      /note="closest hit IGI:RCPE01659 Thiazole biosynthesis
FT      protein thiG      [Clostridium perfringens 13] Length = 2
62
FT      Score = 264 bits (675), Expect = 5e-70"
FT      /label=contig5.186c 40
FT      /gene="thiG"
FT      /blastp_file="blastp/contig5.186c.blastp"
FT      CDS      617868..618959
FT      /note="closest hit IGI:RCTH02177 ThiH protein      [Clostri
dium
FT      thermocellum ATCC-27405 (JGI)] Length = 369 Score = 288
FT      bits (737), Expect = 7e-77"
FT      /label=contig5.185c
FT      /gene="thiH"
FT      /blastp_file="blastp/contig5.185c.blastp" 50

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FT   CDS           618969..619589
FT               /note="closest hit IGI:RCTH02176 ThiF protein [Clostridium
FT               thermocellum ATCC-27405(JGI)]      Length = 214 Score = 130
FT               bits (328), Expect = 8e-30"
FT               /label=contig5.184c
FT               /gene="thiF"
FT               /blastp_file="blastp/contig5.184c.blastp"
FT   CDS           complement(619631..620785)
FT               /note="unknown"
FT               /label=contig5.183                               10
FT               /gene="LAW0507"
FT               /blastp_file="blastp/contig5.183.blastp"
FT   CDS           complement(620873..622246)
FT               /note="closest hit IGI:RECS02372 Na+ driven multidrug
FT               efflux pump      [Escherichia coli 0157:H7 Sakai]      Le
FT               ngth =
FT               457 Score = 390 bits (1002), Expect = e-107"
FT               /label=contig5.182
FT               /gene="LAW0508"
FT               /blastp_file="blastp/contig5.182.blastp"           20
FT   CDS           complement(622366..623799)
FT               /note="closest hit IGI:RCB02595 Carbon starvation protein
FT               A      [Clostridium botulinum ATCC-3502]      Length = 4
FT               86 Score =
FT               471 bits (1213), Expect = e-132"
FT               /label=contig5.181
FT               /gene="LAW0509"
FT               /blastp_file="blastp/contig5.181.blastp"
FT   CDS           624527..625507
FT               /note="closest hit IGI:RHSM00311 Tellurium resistance      30
FT               protein terC      [Haemophilus somnus 129PT (JGI)]      L
FT               ength =
FT               334 Score = 244 bits (624), Expect = 9e-64"
FT               /label=contig5.180c
FT               /gene="terC"
FT               /blastp_file="blastp/contig5.180c.blastp"
FT   CDS           complement(625603..626085)
FT               /note="closest hit GEN:BAC08294 AP005371 GI:22294464
FT               ORF_ID:tlr0743 hypothetical protein      [Thermosynechococ
FT               cus
FT               elongatus BP-1]      Length = 180 Score = 161 bits (407),
FT               Expect = 3e-39"
FT               /label=contig5.179
FT               /gene="LAW0511"
FT               /blastp_file="blastp/contig5.179.blastp"
FT   CDS           complement(626142..627587)
FT               /note="closest hit GEN:BAB03211 AB046360 GI:9309329
FT               putative glycosyltransferase      [Actinobacillus
FT               actinomycetemcomitans]      Length = 472 Score = 228 bits
FT               (582), Expect = 9e-59"                               50

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FT          /label=contig5.177
FT          /gene="LAW0512"
FT          /blastp_file="blastp/contig5.177.blastp"
FT  CDS     complement(627646..628749)
FT          /note="closest hit IGI:RRPA01161 GLYCOSYLTRANSFERASE (EC
FT          2.4.1.-) [Rhodopseudomonas palustris CGA009 (JGI)] Length
FT          = 372 Score = 390 bits (1001), Expect = e-107"
FT          /note="Fructose and mannose metabolism,N-Glycan
FT          biosynthesis,O-Glycans biosynthesis, Chondroitin / Heparan
FT          sulfate biosynthesis, Keratan sulfate biosynthesis,
FT          Glycerolipid metabolism"
FT          /label=contig5.176
FT          /gene="LAW0513"
FT          /blastp_file="blastp/contig5.176.blastp"
FT  CDS     628999..630420
FT          /note="closest hit IGI:RBPS02333 Hypothetical Protein
FT          [Burkholderia pseudomallei K96243] Length = 471 Scor
e =
FT          459 bits (1181), Expect = e-128"
FT          /label=contig5.175c
FT          /gene="LAW0514"
FT          /blastp_file="blastp/contig5.175c.blastp"
FT  CDS     630795..631769
FT          /note="closest hit IGI:RGME02325 Octaprenyl-diphosphate
FT          synthase (EC 2.5.1.-) [Geobacter metallireducens (JGI)
FT          ]
FT          Length = 324 Score = 160 bits (406), Expect = 1e-38"
FT          /label=contig5.174c
FT          /gene="ispB"
FT          /blastp_file="blastp/contig5.174c.blastp"
FT  CDS     631796..634774
FT          /note="closest hit IGI:RGME00337
FT          Phosphoribosylformylglycinamide synthase (EC6.3.5.3)
FT          [Geobacter metallireducens (JGI)] Length = 996 Scor
e =
FT          995 bits (2572), Expect = 0.0"
FT          /note="Purine metabolism"
FT          /label=contig5.173c
FT          /gene="purL"
FT          /blastp_file="blastp/contig5.173c.blastp"
FT  CDS     complement(634857..636629)
FT          /note="closest hit IGI:RGME01141 RNA polymerase sigma
FT          factor rpoD [Geobacter metallireducens (JGI)] Le
ngth =
FT          582 Score = 520 bits (1339), Expect = e-146"
FT          /label=contig5.172
FT          /gene="rpoD"
FT          /blastp_file="blastp/contig5.172.blastp"
FT  CDS     complement(636619..638349)
FT          /note="closest hit IGI:RCTH01328 DNA primase (EC 2.7.7.-)

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FT          [Clostridium thermocellum ATCC-27405 (JGI)]          Length =
600
FT          Score = 272 bits (695), Expect = 1e-71"
FT          /label=contig5.171
FT          /gene="dnaG"
FT          /blastp_file="blastp/contig5.171.blastp"
FT  CDS     complement(638759..639226)
FT          /note="closest hit IGI:RDF04088 Hypothetical protein
FT          [Clostridium difficile 630]          Length = 150  Score = 11
7                                                  10
FT          bits (294), Expect = 4e-26"
FT          /label=contig5.170
FT          /gene="LAW0519"
FT          /blastp_file="blastp/contig5.170.blastp"
FT  CDS     639808..640170
FT          /note="unknown"
FT          /label=contig5.169c
FT          /gene="LAW0520"
FT          /blastp_file="blastp/contig5.169c.blastp"
FT  CDS     complement(640294..641109)          20
FT          /note="closest hit IGI:RPA04764 Dimethyladenosine
FT          transferase (EC 2.1.1.-) [Pseudomonas aeruginosa PA01]
FT          Length = 268  Score = 145 bits (365), Expect = 7e-34"
FT          /label=contig5.168
FT          /gene="ksgA"
FT          /blastp_file="blastp/contig5.168.blastp"
FT  CDS     641246..642406
FT          /note="closest hit          IGI:RTER01149 Hypothetical
FT          Protein [Trichodesmium erythraeum IMS101 (JGI)] Length =
FT          392  Score = 202 bits (513), Expect = 8e-51"          30
FT          /label=contig5.167c
FT          /gene="LAW0522"
FT          /blastp_file="blastp/contig5.167c.blastp"
FT  CDS     complement(642466..642885)
FT          /note="unknown"
FT          /label=contig5.166
FT          /gene="LAW0523"
FT          /blastp_file="blastp/contig5.166.blastp"
FT  CDS     complement(642894..643238)
FT          /note="unknown"          40
FT          /label=contig5.165
FT          /gene="LAW0524"
FT          /blastp_file="blastp/contig5.165.blastp"
FT  CDS     complement(643246..643974)
FT          /note="unknown"
FT          /label=contig5.163
FT          /gene="LAW0525"
FT          /blastp_file="blastp/contig5.163.blastp"
FT  CDS     complement(644060..644440)
FT          /note="closest hit IGI:RPU02243 Chemotaxis protein cheY          50

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FT          [Pseudomonas fluorescens Pf0-1(JGI)]          Length = 127 Scor
e =
FT          170 bits (431), Expect = 3e-42"
FT          /note="Bacterial chemotaxis"
FT          /label=contig5.162
FT          /gene="cheY"
FT          /blastp_file="blastp/contig5.162.blastp"
FT  CDS     complement(644468..645307)
FT          /note="closest hit IGI:RMC002816 RNA polymerase sigma
FT          factor flagellar operon FliA          [Magnetococcus MC-1 (JGI)]  10
]
FT          Length = 260 reblast for score"
FT          /label=contig5.161
FT          /gene="fliA"
FT          /blastp_file="blastp/contig5.161.blastp"
FT  CDS     complement(645210..646025)
FT          /note="closest hit IGI:RGME01553 Flagellar synthesis
FT          regulator fleN          [Geobacter metallireducens (JGI)]          Le
ngth
FT          = 311 Score = 232 bits (591), Expect = 4e-60"          20
FT          /label=contig5.160
FT          /gene="fleN"
FT          /blastp_file="blastp/contig5.160.blastp"
FT  CDS     complement(646068..647129)
FT          /note="closest hit IGI:RLP03029 Flagellar biosynthesis
FT          protein flhF          [Legionella pneumophila]          Length =
379 Score
FT          = 90.9 bits (224), Expect = 2e-17"
FT          /label=contig5.159
FT          /gene="flhF"          30
FT          /blastp_file="blastp/contig5.159.blastp"
FT  CDS     complement(647129..649219)
FT          /note="closest hit GI:RMC002819 Flagellar biosynthetic
FT          protein flhA          [Magnetococcus MC-1 (JGI)]          Length = 6
98
FT          Score = 555 bits (1429), Expect = e-156"
FT          /note="Flagellar assembly, Type III secretion system"
FT          /label=contig5.158
FT          /gene="LAW0530"
FT          /blastp_file="blastp/contig5.158.blastp"          40
FT  CDS     complement(649308..650381)
FT          /note="closest hit IGI:RHD06329 Flagellar biosynthetic
FT          protein flhB          [Bacillus halodurans C-125]          Length = 3
63
FT          Score = 231 bits (590), Expect = 9e-60"
FT          /note="Flagellar assembly, Type III secretion system"
FT          /label=contig5.157
FT          /gene="flhB"
FT          /blastp_file="blastp/contig5.157.blastp"
FT  CDS     complement(650434..651222)          50

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FT          /note="closest hit IGI:RPU00266 Flagellar biosynthetic
FT          protein fliR          [Pseudomonas fluorescens Pf0-1 (JGI)] Len
gth
FT          = 261 Score = 102 bits (254), Expect = 3e-21"
FT          /note="Flagellar assembly, Type III secretion system"
FT          /label=contig5.156
FT          /gene="fliR"
FT          /blastp_file="blastp/contig5.156.blastp"
FT  CDS     651739..652329
FT          /note="unknown"
FT          /label=contig5.155c
FT          /gene="LAW0533"
FT          /blastp_file="blastp/contig5.155c.blastp"
FT  CDS     652326..653648
FT          /note="closest hit IGI:RGME03715 N utilization substance
FT          protein A          [Geobacter metallireducens (JGI)]      Le
ngth = 381
FT          Score = 371 bits (952), Expect = e-101"
FT          /label=contig5.154c
FT          /gene="nusA"
FT          /blastp_file="blastp/contig5.154c.blastp"
FT  CDS     653879..656764
FT          /note="closest hit IGI:RGME03713 Bacterial Protein
FT          Translation Initiation Factor 2 (IF-2) [Geobacter
FT          metallireducens (JGI)]      Length = 884 Score = 741 bits
FT          (1912), Expect = 0.0"
FT          /label=contig5.152c
FT          /gene="infB"
FT          /blastp_file="blastp/contig5.152c.blastp"
FT  CDS     657048..658046
FT          /note="closest hit IGI:RDHA05369 MGPA PROTEIN
FT          [Desulfitobacterium halfniense DCB-2 (JGI)]      Length =
316
FT          Score = 167 bits (422), Expect = 2e-40"
FT          /label=contig5.150c
FT          /gene="mgpa"
FT          /blastp_file="blastp/contig5.150c.blastp"
FT  CDS     complement(658119..658769)
FT          /note="closest hit IGI:RPA01222 TYPEIII SECRETION INNER
FT          MEMBRANE PROTEIN SCTR [Pseudomonas aeruginosa
FT          PA01]      Length = 217 Score = 213 bits (543), Expect =
40
FT          1e-54"
FT          /note="Type III secretion system"
FT          /label=contig5.149
FT          /gene="SctR"
FT          /blastp_file="blastp/contig5.149.blastp"
FT  CDS     complement(658794..659876)
FT          /note="unknown"
FT          /label=contig5.148
FT          /gene="LAW0538"

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FT          /blastp_file="blastp/contig5.148.blastp"
FT  CDS     complement(659919..660416)
FT          /note="unknown"
FT          /label=contig5.147
FT          /gene="LAW0539"
FT          /blastp_file="blastp/contig5.147.blastp"
FT  CDS     complement(660438..661754)
FT          /note="closest hit IGI:RBP00871 TYPEIII SECRETION
FT          CYTOPLASMIC PROTEIN SCTN [Bordetella pertussis Tohama I]
FT          Length = 444 Score = 580 bits (1494), Expect = e-164"          10
FT          /note="Type III secretion system"
FT          /label=contig5.146
FT          /gene="sctN"
FT          /blastp_file="blastp/contig5.146.blastp"
FT  CDS     complement(661775..662389)
FT          /note="closest hit IGI:RBY00007 TYPEIII SECRETION
FT          CYTOPLASMIC PROTEIN SCTL [Bordetella bronchiseptica RB50]
FT          Length = 212 Score = 115 bits (289), Expect = 3e-25"
FT          /note="Type III secretion system "
FT          /label=contig5.145          20
FT          /gene="sctL"
FT          /blastp_file="blastp/contig5.145.blastp"
FT  CDS     complement(662368..663072)
FT          /note="unknown"
FT          /label=contig5.144
FT          /gene="LAW0542"
FT          /blastp_file="blastp/contig5.144.blastp"
FT  CDS     complement(663072..663944)
FT          /note="closest hit GEN:AAK60404 AY034152 GI:14388183
FT          nodulation protein NoIT [Sinorhizobium fredii]          Le 30
FT          ngth =
FT          289 Score = 134 bits (337), Expect = 1e-30"
FT          /note="Type III secretion system "
FT          /label=contig5.143
FT          /gene="noIT"
FT          /blastp_file="blastp/contig5.143.blastp"
FT  CDS     complement(663958..664335)
FT          /note="unknown"
FT          /label=contig5.142
FT          /gene="LAW0544"          40
FT          /blastp_file="blastp/contig5.142.blastp"
FT  CDS     complement(665261..665557)
FT          /note="unknown"
FT          /label=contig5.140
FT          /gene="LAW0545"
FT          /blastp_file="blastp/contig5.140.blastp"
FT  CDS     665820..666182
FT          /note="unknown"
FT          /label=contig5.139c
FT          /gene="LAW0546"          50

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FT          /blastp_file="blastp/contig5.139c.blastp"
FT  CDS     666388..666729
FT          /note="unknown"
FT          /label=contig5.138c
FT          /gene="LAW0547"
FT          /blastp_file="blastp/contig5.138c.blastp"
FT  CDS     666726..668828
FT          /note="closest hit IGI:RBY11018 TYPEIII SECRETION INNER
FT          MEMBRANE PROTEIN SCTV      [Bordetella bronchiseptica RB50]
FT          Length = 706 Score = 652 bits (1682), Expect = 0.0"          10
FT          /note="Type III secretion system"
FT          /label=contig5.137c
FT          /gene="yscV"
FT          /blastp_file="blastp/contig5.137c.blastp"
FT  CDS     668846..669106
FT          /note="closest hit IGI:RPA04845 TYPEIII SECRETION INNER
FT          MEMBRANE PROTEIN SCTS      [Pseudomonas aeruginosa PA01]
FT          Length = 88 Score = 94.4 bits (233), Expect = 3e-19"
FT          /note="Type III secretion system"
FT          /label=contig5.136c          20
FT          /gene="yscS"
FT          /blastp_file="blastp/contig5.136c.blastp"
FT  CDS     669154..669969
FT          /note="closest hit IGI:RYE00292 TYPEIII SECRETION INNER
FT          MEMBRANE PROTEIN SCTT      [Yersinia enterocolitica 8081]
FT          Length = 261 Score = 141 bits (355), Expect = 9e-33"
FT          /note="Type III secretion system "
FT          /label=contig5.135c
FT          /gene="yscT"
FT          /blastp_file="blastp/contig5.135c.blastp"          30
FT  CDS     669966..671048
FT          /note="closest hit IGI:RYP03073 TYPEIII SECRETION INNER
FT          MEMBRANE PROTEIN SCTU      [Yersinia pestis C092]          Le
ngth =
FT          354 Score = 249 bits (637), Expect = 3e-65"
FT          /note="Type III secretion system"
FT          /label=contig5.133c
FT          /gene="yscU"
FT          /blastp_file="blastp/contig5.133c.blastp"
FT  CDS     677116..681264          40
FT          /note="unknown"
FT          /label=contig5.124c
FT          /gene="LAW0552"
FT          /blastp_file="blastp/contig5.124c.blastp"
FT  CDS     681626..682891
FT          /note="closest hit IGI:RTH01007 Diaminopimelate
FT          decarboxylase (EC 4.1.1.20)      [Methanobacterium
FT          thermoautotrophicum]          Length = 428 Score = 281 bits
FT          (719), Expect = 1e-74"
FT          /note="Lysine biosynthesis"          50

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FT          /label=contig5.123c
FT          /gene="lysA"
FT          /blastp_file="blastp/contig5.123c.blastp"
FT  CDS     682917..684095
FT          /note="unknown"
FT          /label=contig5.122c
FT          /gene="LAW0554"
FT          /blastp_file="blastp/contig5.122c.blastp"
FT  CDS     684290..685045
FT          /note="unknown"
FT          /label=contig5.121c
FT          /gene="LAW0555"
FT          /blastp_file="blastp/contig5.121c.blastp"
FT  CDS     685227..686414
FT          /note="closest hit IGI:RTER04011 Tetracycline resistance
FT          protein [Trichodesmium erythraeum IMS101 (JGI)]           Le
length =
FT          405 Score = 156 bits (394), Expect = 5e-37"
FT          /label=contig5.119c
FT          /gene="LAW0556"
FT          /blastp_file="blastp/contig5.119c.blastp"
FT  CDS     686543..687343
FT          /note="closest hit IGI:RYP03511 Bacitracin resistance
FT          protein (Putative undecaprenol kinase) (EC 2.7.1.66)
FT          [Yersinia pestis C092] Length = 272 Score = 246 bits
FT          (627), Expect = 3e-64"
FT          /note="Peptidoglycan biosynthesis"
FT          /label=contig5.118c
FT          /gene="bacA"
FT          /blastp_file="blastp/contig5.118c.blastp"
FT  CDS     complement(687407..688678)
FT          /note="closest hit IGI:RCJ01121 Hydrolase (HAD
FT          superfamily) [Campylobacter jejuni NCTC-11168]           Le
length =
FT          408 Score = 221 bits (564), Expect = 1e-56"
FT          /label=contig5.117
FT          /gene="LAW0558"
FT          /blastp_file="blastp/contig5.117.blastp"
FT  CDS     688844..689278
FT          /note="closest hit IGI:RNE03250 LSU ribosomal protein L13P
FT          [Nitrosomonas europaea ATCC-25978 (JGI)] Length = 144
FT          Score = 185 bits (469), Expect = 1e-46"
FT          /note="Ribosome"
FT          /label=contig5.116c
FT          /gene="rplM"
FT          /blastp_file="blastp/contig5.116c.blastp"
FT  CDS     689297..689689
FT          /note="closest hit IGI:RHD04169 SSU ribosomal protein S9P
FT          [Bacillus halodurans C-125] Length = 130 Score = 158
FT          bits (400), Expect = 1e-38"

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FT          /note="Ribosome"
FT          /label=contig5.115c
FT          /gene="LAW0560"
FT          /blastp_file="blastp/contig5.115c.blastp"
FT  CDS     689868..691523
FT          /note="closest hit IGI:RTHT01160 Zn-dependent hydrolase
FT          (EC 3.-.-.-) [Thermoanaerobacter tengcongensis MB4T]
FT          Length = 554 Score = 382 bits (980), Expect = e-105"
FT          /label=contig5.114c
FT          /gene="LAW0561"
FT          /blastp_file="blastp/contig5.114c.blastp"
FT  CDS     691765..692793
FT          /note="unknown"
FT          /label=contig5.112c
FT          /gene="LAW0562"
FT          /blastp_file="blastp/contig5.112c.blastp"
FT  CDS     complement(693085..693444)
FT          /note="unknown"
FT          /label=contig5.111
FT          /gene="LAW0563"
FT          /blastp_file="blastp/contig5.111.blastp"
FT  CDS     693561..694052
FT          /note="closest hit IGI:RECS00471
FT          Phosphatidylglycerophosphatase A (EC 3.1.3.27)
FT          [Escherichia coli O157:H7 Sakai] Length = 171 Score =
FT          79.3 bits (194), Expect = 2e-14"
FT          /note="Glycerolipid metabolism"
FT          /label=contig5.109c
FT          /gene="pgpA"
FT          /blastp_file="blastp/contig5.109c.blastp"
FT  CDS     694166..694642
FT          /note="unknown"
FT          /label=contig5.108c
FT          /gene="LAW0565"
FT          /blastp_file="blastp/contig5.108c.blastp"
FT  CDS     complement(694775..696847)
FT          /note="closest hit IGI:RRR03308 Flagellar hook protein
FT          flgE [Rhodospirillum rubrum(JGI)] Length = 679 Score
FT          =
FT          195 bits (495), Expect = 2e-48"
FT          /note="Flagellar assembly"
FT          /label=contig5.107
FT          /gene="flgE"
FT          /blastp_file="blastp/contig5.107.blastp"
FT  CDS     complement(696931..697770)
FT          /note="closest hit IGI:RGME03400 Basal-body rod
FT          modification protein flgD [Geobacter metallireducen
FT          s
FT          (JGI)] Length = 203 Score = 114 bits (286), Expect =
FT          1e-24"

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FT          /note="Flagellar assembly"
FT          /label=contig5.106
FT          /gene="LAW0567"
FT          /blastp_file="blastp/contig5.106.blastp"
FT  CDS     complement(697783..699609)
FT          /note="unknown"
FT          /label=contig5.105
FT          /gene="LAW0568"
FT          /blastp_file="blastp/contig5.105.blastp"
FT  CDS     complement(699820..701229)          10
FT          /note="unknown"
FT          /label=contig5.103
FT          /gene="LAW0569"
FT          /blastp_file="blastp/contig5.103.blastp"
FT  CDS     701958..702842
FT          /note="closest hit IGI:RCA01701 Flagellin      [Clostrid
ium
FT          acetobutylicum ATCC-824D] Length = 275 Score = 183 bits
FT          (464), Expect = 3e-45"
FT          /note="Flagellar assembly"          20
FT          /label=contig5.102c
FT          /gene="fliC"
FT          /blastp_file="blastp/contig5.102c.blastp"
FT  CDS     complement(703046..703747)
FT          /note="closest hit IGI:RCJ00956 Ribonuclease III (EC
FT          3.1.26.3)          [Campylobacter jejuni NCTC-11168]      Le
ngth = 224
FT          Score = 161 bits (408), Expect = 6e-39"
FT          /label=contig5.101
FT          /gene="rnc"          30
FT          /blastp_file="blastp/contig5.101.blastp"
FT  CDS     703881..704216
FT          /note="unknown"
FT          /label=contig5.100c
FT          /gene="LAW0572"
FT          /blastp_file="blastp/contig5.100c.blastp"
FT  CDS     complement(704639..705160)
FT          /note="unknown"
FT          /label=contig5.99
FT          /gene="LAW0573"          40
FT          /blastp_file="blastp/contig5.99.blastp"
FT  CDS     complement(705170..705403)
FT          /note="closest hit IGI:RGME02182 RNA binding
FT          protein      [Geobacter metallireducens (JGI)]      Length =
76
FT          Score = 77.0 bits (188), Expect = 5e-14"
FT          /label=contig5.98
FT          /gene="LAW0574"
FT          /blastp_file="blastp/contig5.98.blastp"
FT  CDS     complement(705860..707374)          50

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FT          /note="closest hit IGI:RBS01598 SIGNAL RECOGNITION
FT          PARTICLE, SUBUNIT FFH/SRP54          [Bacillus subtilis 168]
Length
FT          = 446 Score = 443 bits (1140), Expect = e-123"
FT          /label=contig5.97
FT          /gene="LAW0575"
FT          /blastp_file="blastp/contig5.97.blastp"
FT  CDS     complement(707511..708923)
FT          /note="closest hit IGI:RBS00802 tRNA (Uracil-5-)
FT          -methyltransferase (EC2.1.1.35)      [Bacillus subtilis 168]    10
FT          Length = 466 Score = 251 bits (641), Expect = 2e-65"
FT          /label=contig5.96
FT          /gene="trmA"
FT          /blastp_file="blastp/contig5.96.blastp"
FT  CDS     complement(708959..709837)
FT          /note="closest hit GI:3132255
FT          glucose-1-phosphate-thymidyltransferase      [Actinoba
cillus
FT          actinomycetemcomitans]      Length = 290 Score = 368 bits
FT          (944), Expect = e-101"      20
FT          /label=contig5.95
FT          /gene="LAW0577"
FT          /blastp_file="blastp/contig5.95.blastp"
FT  CDS     709985..710578
FT          /note="partial hit(22-210) IGI:R00E00677
FT          PHOSPHORIBOSYLAMINOIMIDAZOLECARBOXAMIDE FORMYLTRANSFERASE
FT          (EC 2.1.2.3) / IMP CYCLOHYDROLASE (EC3.5.4.10) [Oenococcus
FT          oeni PSU-1 (JGI)]      Length = 509 Score = 181 bits (4
58),
FT          Expect = 8e-45"      30
FT          /note="Purine metabolism, One carbon pool by folate"
FT          /label=contig5.94c
FT          /gene="purH"
FT          /blastp_file="blastp/contig5.94c.blastp"
FT  CDS     710794..711201
FT          /note="closest hit IGI:RYP00980 Mutator mutT protein
FT          (7,8-dihydro-8-oxoguanine-triphosphatase) (EC 3.6.1.-)
FT          [Yersinia pestis C092]      Length = 128 Score = 92.0 bits
FT          (227), Expect = 1e-18"
FT          /note="Starch and sucrose metabolism,Folate biosynthesis"    40
FT          /label=contig5.93c
FT          /gene="mutT"
FT          /blastp_file="blastp/contig5.93c.blastp"
FT  CDS     complement(711302..712312)
FT          /note="closest hit IGI:RGME02429 CAPI protein      [Geobacte
r
FT          metallireducens(JGI)]      Length = 336 Score = 449 bits
FT          (1155), Expect = e-125"
FT          /label=contig5.92
FT          /gene="LAW0580"      50

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FT          /blastp_file="blastp/contig5.92.blastp"
FT  CDS     complement(712325..713056)
FT          /note="unknown"
FT          /label=contig5.91
FT          /gene="LAW0581"
FT          /blastp_file="blastp/contig5.91.blastp"
FT  CDS     complement(713038..714246)
FT          /note="closest hit IGI:RCL00389
FT          PHOSPHOPANTOTHENATE--CYSTEINE LIGASE (EC 6.3.2.5) /
FT          PHOSPHOPANTOTHENOYL CYSTEINE DECARBOXYLASE (EC 4.1.1.36)      10
FT          [Chlorobium tepidum]      Length = 406 Score = 234 bits
FT          (596), Expect = 2e-60"
FT          /note="Pantothenate and CoA biosynthesis"
FT          /label=contig5.90
FT          /gene="LAW0582"
FT          /blastp_file="blastp/contig5.90.blastp"
FT  CDS     complement(714243..714791)
FT          /note="unknown"
FT          /label=contig5.89
FT          /gene="LAW0583"      20
FT          /blastp_file="blastp/contig5.89.blastp"
FT  CDS     715334..715945
FT          /note="unknown"
FT          /label=contig5.88c
FT          /gene="LAW0584"
FT          /blastp_file="blastp/contig5.88c.blastp"
FT  CDS     716001..717314
FT          /note="closest hit IGI:RMAC02363 Phosphoesterase
FT          [Methanosarcina acetivorans C2A] Length = 443 Score = 218
FT          bits (556), Expect = 1e-55"      30
FT          /label=contig5.87c
FT          /gene="LAW0585"
FT          /blastp_file="blastp/contig5.87c.blastp"
FT  CDS     717314..721276
FT          /note="closest hit IGI:RMAC02362 Hypothetical Membrane
FT          Associated Protein [Methanosarcina acetivorans C2A] Length
FT          = 1300 Score = 315 bits (806), Expect = 4e-84"
FT          /label=contig5.86c
FT          /gene="LAW0586"
FT          /blastp_file="blastp/contig5.86c.blastp"      40
FT  CDS     complement(721314..721958)
FT          /note="unknown"
FT          /label=contig5.85
FT          /gene="LAW0587"
FT          /blastp_file="blastp/contig5.85.blastp"
FT  CDS     complement(722079..723026)
FT          /note="partial hit(69-307) IGI:RNE01710 Sec-independent
FT          protein translocase protein tatC [Nitrosomonas europaea
FT          ATCC-25978 (JGI)]      Length = 258 Score = 190 bits (4
82),

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FT          Expect = 3e-47"
FT          /note="Protein export "
FT          /label=contig5.84
FT          /gene="tatC"
FT          /blastp_file="blastp/contig5.84.blastp"
FT  CDS     complement(723056..723421)
FT          /note="unknown"
FT          /label=contig5.83
FT          /gene="LAW0589"
FT          /blastp_file="blastp/contig5.83.blastp"
FT  CDS     complement(723704..725245)
FT          /note="closest hit IGI:RHT00537 GMP synthase
FT          [glutamine-hydrolyzing] (EC 6.3.5.2)      [Thermoanaerobact
er
FT          tengcongensis MB4T]          Length = 512 Score = 591 bits
FT          (1523), Expect = e-168"
FT          /note="Purine metabolism, Glutamate metabolism"
FT          /label=contig5.82
FT          /gene="guaA"
FT          /blastp_file="blastp/contig5.82.blastp"
FT  CDS     complement(725358..726833)
FT          /note="closest hit IGI:RHT00536 Inosine-5'-monophosphate
FT          dehydrogenase (EC 1.1.1.205)      [Thermoanaerobacter
FT          tengcongensis MB4T]          Length = 484 Score = 595 bits
FT          (1533), Expect = e-169"
FT          /note="Purine metabolism"
FT          /label=contig5.81
FT          /gene="guaB"
FT          /blastp_file="blastp/contig5.81.blastp"
FT  CDS     727151..727738
FT          /note="closest hit IGI:RAN02029 Maltose
FT          0-acetyltransferase (EC 2.3.1.79)      [Anabaena sp. PCC
7120]
FT          Length = 192 Score = 165 bits (417), Expect = 4e-40"
FT          /label=contig5.80c
FT          /gene="maa"
FT          /blastp_file="blastp/contig5.80c.blastp"
FT  CDS     727939..729378
FT          /note="closest hit IGI:RGME02499 Cardiolipin synthetase
FT          (EC 2.7.8.-)      [Geobacter metallireducens (JGI)]      Le 40
ngth =
FT          483 Score = 296 bits (759), Expect = 3e-79"
FT          /note="Glycerolipid metabolism,Aminophosphonate
FT          metabolism"
FT          /label=contig5.79c
FT          /gene="cls"
FT          /blastp_file="blastp/contig5.79c.blastp"
FT  CDS     complement(729401..731842)
FT          /note="closest hit IGI:RGME02866 Exoribonuclease II (EC
FT          3.1.13.1)      [Geobacter metallireducens (JGI)]      Le 50

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ngth = 759
FT          Score = 368 bits (944), Expect = e-100"
FT          /label=contig5.77
FT          /gene="rnb"
FT          /blastp_file="blastp/contig5.77.blastp"
FT  CDS     complement(731866..733320)
FT          /note="partial hit(1-325) IGI:RHIN00950
FT          Tetraacyldisaccharide 4'-kinase (EC2.7.1.130) [Haemophilus
FT          influenzae 86-028NP] Length = 333 Score = 131 bits
FT          (330), Expect = 2e-29" 10
FT          /note="Lipopolysaccharide biosynthesis "
FT          /label=contig5.76
FT          /gene="lpxK"
FT          /blastp_file="blastp/contig5.76.blastp"
FT  CDS     complement(733491..734009)
FT          /note="closest hit IGI:RBE01449 Thiol peroxidase (EC
FT          1.11.1.-) [Bacillus stearothermophilus 10] Le
ngth = 166
FT          Score = 209 bits (531), Expect = 2e-53"
FT          /label=contig5.75 20
FT          /gene="tpx"
FT          /blastp_file="blastp/contig5.75.blastp"
FT  CDS     734850..737261
FT          /note="unknown"
FT          /label=contig5.74c
FT          /gene="LAW0597"
FT          /blastp_file="blastp/contig5.74c.blastp"
FT  CDS     complement(737302..739368)
FT          /note="closest hit IGI:RP001766 Lead, cadmium, zinc and
FT          mercury transporting ATPase (EC 3.6.3.-) [Pyrococcus
FT          abyssii] Length = 689 Score = 534 bits (1376), Expect =
FT          e-150" 30
FT          /label=contig5.73
FT          /gene="zntA"
FT          /blastp_file="blastp/contig5.73.blastp"
FT  CDS     complement(739657..741138)
FT          /note="closest hit IGI:RECS04130 Sodium/pantothenate
FT          symporter [Escherichia coli 0157:H7 Sakai] Le
ngth = 48
FT          Score = 471 bits (1212), Expect = e-131" 40
FT          /label=contig5.72
FT          /gene="panF"
FT          /blastp_file="blastp/contig5.72.blastp"
FT  CDS     complement(741141..741506)
FT          /note="closest hit GEN:AAL94882 AE010579 GI:19714211
FT          Integral membrane protein [Fusobacterium nucleatum
FT          subsp.
FT          nucleatum ATCC 25586] Length = 104 Score = 81.6 bits
FT          (200), Expect = 2e-15"
FT          /label=contig5.71 50

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FT          /gene="LAW0600"
FT          /blastp_file="blastp/contig5.71.blastp"
FT   CDS    742192..743511
FT          /note="partial hit(15-425) IGI:REF01886 Chloride channel
FT          protein [Enterococcus faecalis] Length = 525 Score = 19
6
FT          bits (499), Expect = 4e-49"
FT          /label=contig5.70c
FT          /gene="LAW0601"
FT          /blastp_file="blastp/contig5.70c.blastp"
FT   CDS    743611..744357
FT          /note="closest hit GEN:AAM08233 AF410854 GI:19919303
FT          Hypothetical Protein [Legionella pneumophila] L
length =
FT          243 Score = 196 bits (499), Expect = 4e-49"
FT          /label=contig5.69c
FT          /gene="LAW0602"
FT          /blastp_file="blastp/contig5.69c.blastp"
FT   CDS    744711..746285
FT          /note="unknown"
FT          /label=contig5.68c
FT          /gene="LAW0603"
FT          /blastp_file="blastp/contig5.68c.blastp"
FT   CDS    746343..747425
FT          /note="partial hit(175-355) IGI:RCY09709 Two-compone
nt
FT          response regulator [Synechocystis sp. PCC6803] Le
length =
FT          470 Score = 138 bits (347), Expect = 1e-31"
FT          /label=contig5.67c
FT          /gene="LAW0604"
FT          /blastp_file="blastp/contig5.67c.blastp"
FT   CDS    complement(747467..748333)
FT          /note="closest hit IGI:RTM00574 hypothetical protein
FT          [Thermotoga maritima MSB8] Length = 284 Score = 228
bits
FT          (581), Expect = 7e-59"
FT          /label=contig5.66
FT          /gene="LAW0605"
FT          /blastp_file="blastp/contig5.66.blastp"
FT   CDS    complement(748457..749158)
FT          /note="closest hit IGI:RTH02365 Transcriptional
FT          regulator, GntR family [Thermoanaerobacter tengcongensis
FT          MB4T] Length = 225 Score = 84.7 bits (208), Expect =
FT          9e-16"
FT          /label=contig5.65
FT          /gene="LAW0606"
FT          /blastp_file="blastp/contig5.65.blastp"
FT   CDS    complement(749754..751250)
FT          /note="closest hit IGI:RPU00767 Zinc metalloprotease (EC 50

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FT          3.4.24.-)          [Pseudomonas fluorescens Pf0-1 (JGI)] Le
ngth =
FT          477 Score = 162 bits (409), Expect = 1e-38"
FT          /label=contig5.64
FT          /gene="LAW0607"
FT          /blastp_file="blastp/contig5.64.blastp"
FT  CDS     complement(751382..752839)
FT          /note="closest hit IGI:RGME02491 CysteinyI-tRNA synthetase
FT          (EC 6.1.1.16)          [Geobacter metallireducens (JGI)]      Le
ngth =
FT          485 Score = 459 bits (1180), Expect = e-128"
FT          /note="Cysteine metabolism,Aminoacyl-tRNA biosynthesis"
FT          /label=contig5.63
FT          /gene="cysS"
FT          /blastp_file="blastp/contig5.63.blastp"
FT  CDS     complement(752940..753368)
FT          /note="closest hit IGI:RCA01320 Ribose 5-phosphate
FT          isomerase (EC 5.3.1.6)    [Clostridium acetobutylicum
FT          ATCC-824D]          Length = 152 Score = 158 bits (400), Exp
ect =
FT          1e-38"
FT          /note="Pentose phosphate pathway,Carbon fixation"
FT          /label=contig5.62
FT          /gene="rpiB"
FT          /blastp_file="blastp/contig5.62.blastp"
FT  CDS     complement(753377..753721)
FT          /note="unknown"
FT          /label=contig5.61
FT          /gene="LAW0610"
FT          /blastp_file="blastp/contig5.61.blastp"
FT  CDS     complement(753798..754583)
FT          /note="unknown"
FT          /label=contig5.60
FT          /gene="LAW0611"
FT          /blastp_file="blastp/contig5.60.blastp"
FT  CDS     complement(754591..756312)
FT          /note="closest hit IGI:RGME03590 TETRATRICOPEPTIDE REPEAT
FT          FAMILY PROTEIN    [Geobacter metallireducens (JGI)]      L
ength
FT          = 592 Score = 138 bits (348), Expect = 2e-31"
FT          /label=contig5.59
FT          /gene="LAW0612"
FT          /blastp_file="blastp/contig5.59.blastp"
FT  CDS     complement(756332..757489)
FT          /note="partial hit(104-372)          IGI:RGME03528 RNA polyme
rase
FT          sigma-B factor    [Geobacter metallireducens (JGI)]      Le
ngth
FT          = 279 Score = 214 bits (546), Expect = 1e-54"
FT          /label=contig5.58

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FT          /gene="sigB"
FT          /blastp_file="blastp/contig5.58.blastp"
FT  CDS     758603..759070
FT          /note="closest hit GEN:AAM72257 AE012866 GI:21646984
FT          thiol:disulfide interchange protein, thioredoxin family
FT          [Chlorobium tepidum TLS] Length = 185 Score = 88.2 bits
FT          (217), Expect = 3e-17"
FT          /label=contig5.57c
FT          /gene="LAW0614"
FT          /blastp_file="blastp/contig5.57c.blastp"
FT  CDS     759733..760479
FT          /note="unknown"
FT          /label=contig5.56c
FT          /gene="LAW0615"
FT          /blastp_file="blastp/contig5.56c.blastp"
FT  CDS     760506..761837
FT          /note="closest hit IGI:RSAR02808 DNA repair protein RadA
FT          [Sphingomonas aromaticivorans F199 (JGI)] Length =
455
FT          Score = 347 bits (891), Expect = 1e-94"
FT          /label=contig5.55c
FT          /gene="radA"
FT          /blastp_file="blastp/contig5.55c.blastp"
FT  CDS     761962..762291
FT          /note="closest hit IGI:RMC001130 Protein yljA
FT          [Magnetococcus MC-1 (JGI)] Length = 113 Score = 107
bits
FT          (266), Expect = 4e-23"
FT          /label=contig5.54c
FT          /gene="yljA"
FT          /blastp_file="blastp/contig5.54c.blastp"
FT  CDS     762288..764534
FT          /note="closest hit IGI:RRR01927 ClpA homolog protein
FT          [Rhodospirillum rubrum (JGI)] Length = 804 Score = 727
FT          bits (1877), Expect = 0.0"
FT          /label=contig5.53c
FT          /gene="LAW0618"
FT          /blastp_file="blastp/contig5.53c.blastp"
FT  CDS     764629..765315
FT          /note="closest hit IGI:RLP03044
FT          Leucyl/phenylalanyl-tRNA--protein transferase (EC2.3.2.-)
FT          [Legionella pneumophila] Length = 222 Score = 234 bits
FT          (596), Expect = 9e-61"
FT          /note="Prostaglandin and leukotriene metabolism "
FT          /label=contig5.52c
FT          /gene="aat"
FT          /blastp_file="blastp/contig5.52c.blastp"
FT  CDS     complement(765529..766827)
FT          /note="closest hit IGI:RHT01040 Histone deacetylase clr3
FT          [Thermoanaerobacter tengcongensis MB4T] Length = 435

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FT          Score = 502 bits (1292), Expect = e-141"
FT          /label=contig5.51
FT          /gene="clr3"
FT          /blastp_file="blastp/contig5.51.blastp"
FT  CDS     complement(767002..767973)
FT          /note="closest hit GEN:AAM72488 AE012886 GI:21647235
FT          ADP-L-glycero-D-mannoheptose-6-epimerase [Chlorobium
FT          tepidum TLS]          Length = 332 Score = 344 bits (883), Exp
ect
FT          = 8e-94"
FT          /label=contig5.50
FT          /gene="LAW0621"
FT          /blastp_file="blastp/contig5.50.blastp"
FT  CDS     complement(768129..769223)
FT          /note="closest hit GEN:AAC07816 AE000771 GI:2984292
FT          GTP-binding protein          [Aquifex aeolicus]          Length = 3
43
FT          Score = 309 bits (792), Expect = 3e-83"
FT          /label=contig5.49
FT          /gene="LAW0622"
FT          /blastp_file="blastp/contig5.49.blastp"
FT  CDS     complement(769665..769973)
FT          /note="closest hit GEN:AAC36498 U45241 GI:3599922 L21 50S
FT          ribosomal binding protein homolog          [Lawsonia
FT          intracellularis] Length = 102 Score = 206 bits (525),
FT          Expect = 4e-53"
FT          /note="Ribosome"
FT          /label=contig5.48
FT          /gene="rplU"
FT          /blastp_file="blastp/contig5.48.blastp"
FT  CDS     770472..770777
FT          /note="closest hit GEN:AAC36499 U45241 GI:3599923
FT          GroES/HSP10 homolog          [Lawsonia intracellularis]          Le
ngth =
FT          101 Score = 202 bits (514), Expect = 7e-52"
FT          /label=contig5.47c
FT          /gene="LAW0624"
FT          /blastp_file="blastp/contig5.47c.blastp"
FT  CDS     770925..772571
FT          /note="closest hit GEN:AAC36500 U45241 GI:3599924
FT          GroEL/HSP60 homolog          [Lawsonia intracellularis]          Le
ngth =
FT          548 Score = 969 bits (2506), Expect = 0.0"
FT          /label=contig5.46c
FT          /gene="LAW0625"
FT          /blastp_file="blastp/contig5.46c.blastp"
FT  CDS     772698..773579
FT          /note="closest hit GEN:AAC36501 U45241 GI:3599925 orfx;
FT          similar to Escherichia coli possible protoporphyrinogen
FT          oxidase (hemK)          [Lawsonia intracellularis]          Length = 2  50

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93
 FT Score = 585 bits (1509), Expect = e-166"
 FT /label=contig5.45c
 FT /gene="LAW0626"
 FT /blastp_file="blastp/contig5.45c.blastp"
 FT CDS 773705..774619
 FT /note="closest hit GI:RBPS04213
 FT UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine
 FT deacetylase (EC 3.5.1.-) [Burkholderia pseudomallei
 FT K96243] Length = 315 Score = 224 bits (571), Expect = 10
 FT 1e-57"
 FT /note="Lipopolysaccharide biosynthesis"
 FT /label=contig5.43c
 FT /gene="lpxC"
 FT /blastp_file="blastp/contig5.43c.blastp"
 FT CDS 774694..776640
 FT /note="closest hit IGI:RSSU01621 DNA mismatch repair
 FT protein mutL [Streptococcus suis] Length = 646 Score
 =
 FT 242 bits (617), Expect = 1e-62" 20
 FT /label=contig5.41c
 FT /gene="mutL"
 FT /blastp_file="blastp/contig5.41c.blastp"
 FT CDS complement(776669..778213)
 FT /note="unknown"
 FT /label=contig5.40
 FT /gene="LAW0629"
 FT /blastp_file="blastp/contig5.40.blastp"
 FT CDS complement(778307..780802)
 FT /note="closest hit GI:RGME01779 PROTEIN TRANSLOCASE 30
 FT SUBUNIT SECA [Geobacter metallireducens (JGI)] Le
 ngth =
 FT 925 Score = 818 bits (2112), Expect = 0.0"
 FT /note="Protein export"
 FT /label=contig5.39
 FT /gene="secA"
 FT /blastp_file="blastp/contig5.39.blastp"
 FT CDS complement(780948..781964)
 FT /note="closest hit IGI:RLP02025 Hydrogenase
 FT expression/formation protein hypE [Legionella 40
 FT pneumophila] Length = 352 Score = 306 bits (785), Exp
 ect
 FT = 2e-82"
 FT /label=contig5.38
 FT /gene="hypE"
 FT /blastp_file="blastp/contig5.38.blastp"
 FT CDS complement(782118..783515)
 FT /note="closest hit GEN:AAM05065 AE010839 GI:19915535
 FT efflux pump antibiotic resistance protein [Methanos
 arcina 50

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FT          acetivorans str. C2A]          Length = 502 Score = 253 bits
FT          (645), Expect = 5e-66"
FT          /label=contig5.37
FT          /gene="LAW0632"
FT          /blastp_file="blastp/contig5.37.blastp"
FT  CDS      complement(783773..784090)
FT          /note="closest hit IGI:RVP00080 Negative regulator of
FT          flagellin synthesis FlgM [Vibrio parahaemolyticus] Length
FT          = 105 Score = 45.1 bits (105), Expect = 2e-04"
FT          /note="Flagellar assembly"
FT          /label=contig5.36
FT          /gene="flgM"
FT          /blastp_file="blastp/contig5.36.blastp"
FT  CDS      complement(784118..784528)
FT          /note="unknown"
FT          /label=contig5.35
FT          /gene="LAW0634"
FT          /blastp_file="blastp/contig5.35.blastp"
FT  CDS      784911..786176
FT          /note="partial hit(1-274) IGI:RBY11549 Coenzyme F390
FT          Synthetase / Phenylacetate-coenzyme A ligase (EC 6.2.1.30)
FT          [Bordetella bronchiseptica RB50] Length = 421 Score = 165
FT          bits (418), Expect = 5e-40"
FT          /note="Tyrosine metabolism,Phenylalanine metabolism"
FT          /label=contig5.34c
FT          /gene="paaK"
FT          /blastp_file="blastp/contig5.34c.blastp"
FT  CDS      complement(787082..787888)
FT          /note="closest hit IGI:RCB02918 Zinc uptake
FT          transporter [Clostridium botulinum ATCC-3502]
FT          length =
FT          269 Score = 202 bits (513), Expect = 4e-51"
FT          /label=contig5.32
FT          /gene="LAW0636"
FT          /blastp_file="blastp/contig5.32.blastp"
FT  CDS      complement(787956..788795)
FT          /note="closest hit IGI:RBAT05723 Formamidopyrimidine-DNA
FT          glycosylase (EC 3.2.2.23) [Bacillus anthracis
FT          A2012] Length = 276 Score = 183 bits (464), Expect =
FT          2e-45"
FT          /label=contig5.31
FT          /gene="mutM"
FT          /blastp_file="blastp/contig5.31.blastp"
FT  CDS      complement(788870..789181)
FT          /note="unknown"
FT          /label=contig5.30
FT          /gene="LAW0638"
FT          /blastp_file="blastp/contig5.30.blastp"
FT  CDS      complement(789827..790615)
FT          /note="closest hit IGI:RGME03390 Flagellar biosynthetic

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L 30

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FT          protein fliP          [Geobacter metallireducens (JGI)]          Le
ngth =
FT          250 Score = 229 bits (585), Expect = 2e-59"
FT          /note="Flagellar assembly,Type III secretion system"
FT          /label=contig5.29
FT          /gene="fliP"
FT          /blastp_file="blastp/contig5.29.blastp"
FT  CDS     complement(790596..791090)
FT          /note="unknown"
FT          /label=contig5.28
FT          /gene="LAW0640"
FT          /blastp_file="blastp/contig5.28.blastp"
FT  CDS     complement(791116..791610)
FT          /note="closest hit IGI:RBU09218 Flagellar motor switch
FT          protein fliN          [Burkholderia fungorum LB400] Length = 1
54
FT          Score = 119 bits (298), Expect = 7e-27"
FT          /note="Bacterial chemotaxis, Flagellar assembly,Type III
FT          secretion system"
FT          /label=contig5.27
FT          /gene="fliN"
FT          /blastp_file="blastp/contig5.27.blastp"
FT  CDS     complement(791623..792192)
FT          /note="partial hit(101-189)          IGI:RAA00780 Flagellar p
rotein
FT          fliL          [Aquifex aeolicus VF5]          Length = 161 Score
= 79.7
FT          bits (195), Expect = 2e-14"
FT          /label=contig5.26
FT          /gene="fliL"
FT          /blastp_file="blastp/contig5.26.blastp"
FT  CDS     complement(792334..793035)
FT          /note="closest hit IGI:RPU01629 Hypothetical Cytosolic
FT          Protein [Pseudomonas fluorescens Pf0-1 (JGI)] Length =
FT          228 Score = 167 bits (424), Expect = 8e-41"
FT          /label=contig5.25
FT          /gene="LAW0643"
FT          /blastp_file="blastp/contig5.25.blastp"
FT  CDS     complement(793032..794006)
FT          /note="closest hit IGI:RLGA01367 GTP binding protein
FT          [Lactobacillus gasserii ATCC-33323(JGI)] Length = 303
FT          Score = 225 bits (573), Expect = 7e-58"
FT          /label=contig5.24
FT          /gene="LAW0644"
FT          /blastp_file="blastp/contig5.24.blastp"
FT  CDS     complement(794233..795093)
FT          /note="closest hit IGI:RGME00906 Probable protease htpX
FT          homolog (EC 3.4.24.-)          [Geobacter metallireducens (JGI)
]
FT          Length = 287 Score = 250 bits (639), Expect = 1e-65"

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FT          /label=contig5.23
FT          /gene="htpX"
FT          /blastp_file="blastp/contig5.23.blastp"
FT  CDS     795375..797069
FT          /note="closest hit IGI:RTHT01039 N-methylhydantoinase
FT          (ATP-hydrolyzing) (EC 3.5.2.14) [Thermoanaerobacter
FT          tengcongensis MB4T]          Length = 558 Score = 308 bits (
790),
FT          Expect = 1e-82"
FT          /note="Urea cycle and metabolism of amino groups"          10
FT          /label=contig5.22c
FT          /gene="LAW0646"
FT          /blastp_file="blastp/contig5.22c.blastp"
FT  CDS     complement(797066..798295)
FT          /note="closest hit IGI:RMC002954 Hypothetical
FT          protein [Magnetococcus MC-1 (JGI)]          Length = 393 Scor
e =
FT          275 bits (702), Expect = 1e-72"
FT          /label=contig5.21
FT          /gene="LAW0647"          20
FT          /blastp_file="blastp/contig5.21.blastp"
FT  CDS     799057..801705
FT          /note="closest hit IGI:RGME01774 Valyl-tRNA synthetase (EC
FT          6.1.1.9) [Geobacter metallireducens (JGI)]          Length =
895
FT          Score = 879 bits (2270), Expect = 0.0"
FT          /note="Valine, leucine and isoleucine
FT          biosynthesis,Aminoacyl-tRNA biosynthesis"
FT          /label=contig5.20c
FT          /gene="vals"          30
FT          /blastp_file="blastp/contig5.20c.blastp"
FT  CDS     802639..805194
FT          /note="unknown"
FT          /label=contig5.19c
FT          /gene="LAW0649"
FT          /blastp_file="blastp/contig5.19c.blastp"
FT  CDS     806068..808959
FT          /note="closest hit GEN:AAL67002 AY074305 GI:18377704
FT          putative hydrogenase protein [Arabidopsis thaliana]
FT          Length = 1080 Score = 794 bits (2051), Expect = 0.0"          40
FT          /label=contig5.17c
FT          /gene="LAW0650"
FT          /blastp_file="blastp/contig5.17c.blastp"
FT  CDS     809068..810786
FT          /note="closest hit IGI:RDHA05722 NADH dehydrogenase (EC
FT          1.6.99.3) [Desulfitobacterium halfniense DCB-2 (JGI
)]
FT          Length = 564 Score = 337 bits (865), Expect = 2e-91"
FT          /label=contig5.16c
FT          /gene="nadh"          50

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FT          /blastp_file="blastp/contig5.16c.blastp"
FT  CDS     complement(810827..811642)
FT          /note="closest hit IGI:RLP02764 DNA adenine methylase (EC
FT          2.1.1.72)          [Legionella pneumophila]          Length = 2
78 Score =
FT          255 bits (651), Expect = 5e-67"
FT          /label=contig5.15
FT          /gene="LAW0652"
FT          /blastp_file="blastp/contig5.15.blastp"
FT  CDS     complement(811686..812498)          10
FT          /note="closest hit IGI:RPG00668 Zinc metalloprotease (EC
FT          3.4.24.-)          [Porphyromonas gingivalis]          Length = 2
65 Score
FT          = 177 bits (448), Expect = 2e-43"
FT          /label=contig5.14
FT          /gene="LAW0653"
FT          /blastp_file="blastp/contig5.14.blastp"
FT  CDS     812614..814878
FT          /note="closest hit IGI:RNG01109 DNA topoisomerase I (EC
FT          5.99.1.2) [Neisseria gonorrhoeae FA 1090]          Length = 20
823
FT          Score = 639 bits (1648), Expect = 0.0"
FT          /label=contig5.13c
FT          /gene="topA"
FT          /blastp_file="blastp/contig5.13c.blastp"
FT  CDS     814978..815604
FT          /note="closest hit IGI:RBAT05380 Hydroxyacylglutathione
FT          hydrolase (EC 3.1.2.6) [Bacillus anthracis A2012]
Length =
FT          238 Score = 141 bits (355), Expect = 6e-33"          30
FT          /note="Pyruvate metabolism"
FT          /label=contig5.12c
FT          /gene="gloB"
FT          /blastp_file="blastp/contig5.12c.blastp"
FT  CDS     815668..816861
FT          /note="closest hit IGI:RSAR00991 Argininosuccinate
FT          synthase (EC 6.3.4.5) [Sphingomonas aromaticivorans F19
9
FT          (JGI)] Length = 404 Score = 452 bits (1164), Expect =
FT          e-126"          40
FT          /note="Arginine and proline metabolism,Alanine and
FT          aspartate metabolism,Urea cycle and metabolism of amino
FT          groups"
FT          /label=contig5.11c
FT          /gene="argG"
FT          /blastp_file="blastp/contig5.11c.blastp"
FT  CDS     816949..818331
FT          /note="closest hit IGI:RBAT05773 Argininosuccinate lyase
FT          (EC 4.3.2.1) [Bacillus anthracis A2012] Length = 4
62

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FT          Score = 463 bits (1191), Expect = e-129"
FT          /note="Alanine and aspartate metabolism, Arginine and
FT          proline metabolism,Urea cycle and metabolism of amino
FT          groups "
FT          /label=contig5.10c
FT          /gene="argH"
FT          /blastp_file="blastp/contig5.10c.blastp"
FT  CDS     818505..819497
FT          /note="closest hit IGI:RCB01806 Putative tRNA
FT          (5-methylaminomethyl-2-thiouridylate) -methyltransferase    10
FT          (EC 2.1.1.61) /Fibronectin/fibrinogen-binding protein
FT          [Clostridium botulinum ATCC-3502] Length = 326 Score = 166
FT          bits (420), Expect = 4e-40"
FT          /label=contig5.09c
FT          /gene="trmU"
FT          /blastp_file="blastp/contig5.09c.blastp"
FT  CDS     819913..820452
FT          /note="unknown"
FT          /label=contig5.08c
FT          /gene="LAW0659"    20
FT          /blastp_file="blastp/contig5.08c.blastp"
FT  CDS     complement(820449..820991)
FT          /note="closest hit GEN:AAK60120 AF321851 GI:14326006
FT          bacterioferritin [Desulfovibrio desulfuricans] Length =
FT          179 Score = 189 bits (480), Expect = 1e-47"
FT          /label=contig5.07
FT          /gene="bfr"
FT          /blastp_file="blastp/contig5.07.blastp"
FT  CDS     821433..823262
FT          /note="closest hit IGI:RGME02248    30
FT          Glucosamine--fructose-6-phosphate aminotransferase
FT          [isomerizing] (EC 2.6.1.16) [Geobacter
FT          metallireducens(JGI)] Length = 609 Score = 492 bits
FT          (1267), Expect = e-138"
FT          /note="Glutamate metabolism,Aminosugars metabolism "
FT          /label=contig5.06c
FT          /gene="glmS"
FT          /blastp_file="blastp/contig5.06c.blastp"
FT  CDS     823446..826448
FT          /note="unknown"    40
FT          /label=contig5.05c
FT          /gene="LAW0662"
FT          /blastp_file="blastp/contig5.05c.blastp"
FT  CDS     828562..828969
FT          /note="unknown"
FT          /label=contig5.04c
FT          /gene="LAW0663"
FT          /blastp_file="blastp/contig5.04c.blastp"
FT  CDS     829283..830440
FT          /note="unknown"    50

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FT          /label=contig5.03c
FT          /gene="LAW0664"
FT          /blastp_file="blastp/contig5.03c.blastp"
FT  CDS     complement(830885..831484)
FT          /note="unknown"
FT          /label=contig5.02
FT          /gene="LAW0665"
FT          /blastp_file="blastp/contig5.02.blastp"
FT  CDS     complement(831665..832279)
FT          /note="unknown"
FT          /label=contig5.01
FT          /gene="LAW0666"
FT          /blastp_file="blastp/contig5.01.blastp"
FT  CDS     complement(833929..835044)
FT          /note="unknown"
FT          /label=contig4.481
FT          /gene="LAW0667"
FT          /blastp_file="blastp/contig4.481.blastp"
FT  CDS     complement(835309..836481)
FT          /note="unknown"
FT          /label=contig4.480
FT          /gene="LAW0668"
FT          /blastp_file="blastp/contig4.480.blastp"
FT  CDS     complement(836694..837119)
FT          /note="unknown"
FT          /note=" "
FT          /label=contig4.479
FT          /gene="LAW0669"
FT          /blastp_file="blastp/contig4.479.blastp"
FT  CDS     839619..841052
FT          /note="closest hit GEN:AAM71958 AE012843 GI:21646662
FT          adenosylhomocysteinase[EC:3.3.1.1] [Chlorobium tepidum
FT          TLS]          Length = 471 Score = 649 bits (1675), Expect =
0.0"
FT          /note="Methionine metabolism,Selenoamino acid metabolism"
FT          /label=contig4.478c
FT          /gene="ahcY"
FT          /blastp_file="blastp/contig4.478c.blastp"
FT  CDS     841336..842244
FT          /note="closest hit IGI:RNE01974 D-3-phosphoglycerate
FT          dehydrogenase (EC 1.1.1.95)          [Nitrosomonas europaea
FT          ATCC-25978 (JGI)] Length = 311 Score = 171 bits (433),
FT          Expect = 1e-41"
FT          /note="Glycine, serine and threonine metabolism "
FT          /label=contig4.477c
FT          /gene="serA"
FT          /blastp_file="blastp/contig4.477c.blastp"
FT  CDS     842275..844410
FT          /note="closest hit IGI:RSM02368 ATP-dependent DNA helicase
FT          pcrA (EC 3.6.1.-)          [Sinorhizobium meliloti 1021] L

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ength =
FT          689 Score = 311 bits (797), Expect = 2e-83"
FT          /note="Starch and sucrose metabolism, Folate biosynthesis"
FT          /label=contig4.476c
FT          /gene="pcrA"
FT          /blastp_file="blastp/contig4.476c.blastp"
FT  CDS     844426..845448
FT          /note="closest hit GEN:AAL56593 AF449411 GI:18030054
FT          thiamin-monophosphate kinase-like protein[EC:2.7.4.16]
FT          [Myxococcus xanthus]          Length = 315 Score = 149 bits ( 10
375),
FT          Expect = 7e-35"
FT          /note="Thiamine metabolism "
FT          /label=contig4.475c
FT          /gene="thiL"
FT          /blastp_file="blastp/contig4.475c.blastp"
FT  CDS     complement(845474..846838)
FT          /note="closest hit IGI:RHT00676 PHOSPHOGLUCOMUTASE (EC
FT          5.4.2.2) / PHOSPHOMANNOMUTASE(EC 5.4.2.8)
FT          [Thermoanaerobacter tengcongensis MB4T]          Length = 455 Sco 20
re
FT          = 366 bits (940), Expect = e-100"
FT          /note="Glycolysis / Gluconeogenesis,Pentose phosphate
FT          pathway,Fructose and mannose metabolism, Galactose
FT          metabolism,Starch and sucrose metabolis,Streptomycin
FT          biosynthesis,Erythromycin biosynthesis, Aminosugars
FT          metabolism"
FT          /label=contig4.474
FT          /gene="pgm/manB"
FT          /blastp_file="blastp/contig4.474.blastp"          30
FT  CDS     847108..848259
FT          /note="closest hit IGI:RRR02775 HfIK protein
FT          [Rhodospirillum rubrum (JGI)]          Length = 407 Score = 24
6
FT          bits (627), Expect = 5e-64"
FT          /label=contig4.473c
FT          /gene="hfIK"
FT          /blastp_file="blastp/contig4.473c.blastp"
FT  CDS     848260..849111
FT          /note="closest hit IGI:RRR02776 HfIC protein (EC 3.4.-.-) 40
FT          [Rhodospirillum rubrum(JGI)]          Length = 278 Score = 224
FT          bits (571), Expect = 1e-57"
FT          /note="Lysine degradation,Biotin metabolism"
FT          /label=contig4.472c
FT          /gene="hfIC"
FT          /blastp_file="blastp/contig4.472c.blastp"
FT  CDS     849077..849838
FT          /note="unknown"
FT          /label=contig4.471c
FT          /gene="LAW0677"          50

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FT          /blastp_file="blastp/contig4.471c.blastp"
FT   CDS    complement(849897..851219)
FT          /note="closest hit IGI:RAA01594 Fe-S OXIDOREDUCTASE
FT          (1.8.-.-)          [Aquifex aeolicus VF5]          Length = 4
32 Score =
FT          298 bits (764), Expect = 8e-80"
FT          /label=contig4.470
FT          /gene="LAW0678"
FT          /blastp_file="blastp/contig4.470.blastp"
FT   CDS    851253..852002          10
FT          /note="partial hit(942-241) IGI:RAB00496
FT          Nucleoside-triphosphatase (EC 3.6.1.15) [Actinobacillus
FT          actinomycetemcomitans HK1651]          Length = 226 Score = 16
1
FT          bits (408), Expect = 6e-39"
FT          /note="Purine metabolism, Thiamine metabolism "
FT          /label=contig4.469c
FT          /gene="LAW0679"
FT          /blastp_file="blastp/contig4.469c.blastp"
FT   CDS    852068..853144          20
FT          /note="closest hit IGI:RLP03274 Florfenicol resistance
FT          protein [Legionella pneumophila]          Length = 386 Scor
e = 285
FT          bits (730), Expect = 5e-76"
FT          /label=contig4.468c
FT          /gene="LAW0680"
FT          /blastp_file="blastp/contig4.468c.blastp"
FT   CDS    complement(853157..854476)
FT          /note="partial hit(21-378) IGI:RXFZ00109
FT          3-deoxy-D-manno-octulosonic-acid transferase (EC 2.-.-.-) 30
FT          [Xylella fastidiosa temecula]          Length = 448 Score = 15
2
FT          bits (383), Expect = 1e-35"
FT          /note="Lipopolysaccharide biosynthesis"
FT          /label=contig4.467
FT          /gene="kdtA"
FT          /blastp_file="blastp/contig4.467.blastp"
FT   CDS    complement(854481..855389)
FT          /note="closest hit IGI:RPA01748 D-alanine--D-alanine
FT          ligase (EC 6.3.2.4)          [Pseudomonas aeruginosa PA01] L 40
length
FT          = 346 Score = 181 bits (459), Expect = 1e-44"
FT          /note="D-Alanine metabolism,Peptidoglycan biosynthesis "
FT          /label=contig4.466
FT          /gene="ddIA"
FT          /blastp_file="blastp/contig4.466.blastp"
FT   CDS    complement(855346..855987)
FT          /note="unknown"
FT          /label=contig4.465
FT          /gene="LAW0683"          50

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FT          /blastp_file="blastp/contig4.465.blastp"
FT  CDS     complement(856632..857084)
FT          /note="closest hit IGI:RCB01383 Acetyltransferase (EC
FT          2.3.1.-) [Clostridium botulinum ATCC-3502]          Length =
154
FT          Score = 159 bits (403), Expect = 8e-39"
FT          /note="Valine, leucine and isoleucine degradation,Lysine
FT          biosynthesis, Lysine degradation, Histidine metabolism,
FT          Tyrosine metabolism, Phenylalanine metabolism, D-Arginine
FT          and D-ornithine metabolism, Aminosugars          10
FT          metabolism,Glycerolipid metabolism, Benzoate degradation
FT          via CoA ligation, Ethylbenzene degradation, Butanoate
FT          metabolism"
FT          /label=contig4.464
FT          /gene="LAW0684"
FT          /blastp_file="blastp/contig4.464.blastp"
FT  CDS     complement(858662..859786)
FT          /note="closest hit IGI:RGME03469 Chaperone protein dnaJ
FT          [Geobacter metallireducens(JGI)]          Length = 372 Score = 302
FT          bits (774), Expect = 4e-81"          20
FT          /label=contig4.463
FT          /gene="dnaJ"
FT          /blastp_file="blastp/contig4.463.blastp"
FT  CDS     complement(860201..861736)
FT          /note="partial hit(79-510) IGI:RGME00617 Cytosol
FT          aminopeptidase (EC 3.4.11.1)          [Geobacter metallireducen
FT          s
FT          (JGI)]          Length = 512 Score = 312 bits (800), Expect =
FT          6e-84"
FT          /label=contig4.462          30
FT          /gene="pepA"
FT          /blastp_file="blastp/contig4.462.blastp"
FT  CDS     complement(861756..863153)
FT          /note="closest hit IGI:RGME00036 Two-component response
FT          regulator          [Geobacter metallireducens (JGI)]          L
FT          length = 477
FT          Score = 423 bits (1088), Expect = e-117"
FT          /label=contig4.461
FT          /gene="LAW0687"
FT          /blastp_file="blastp/contig4.461.blastp"          40
FT  CDS     863417..865222
FT          /note="closest hit IGI:RRR01937 Outer membrane protein
FT          [Rhodospirillum rubrum (JGI)]          Length = 610 Score = 336
FT          bits (861), Expect = 7e-91"
FT          /label=contig4.460c
FT          /gene="LAW0688"
FT          /blastp_file="blastp/contig4.460c.blastp"
FT  CDS     865222..869370
FT          /note="partial hit(470-1382)          IGI:RML001396 Gramicidin
S

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FT      biosynthesis grsT protein (EC 3.1.2.-)      [Mesorhizobium l
oti
FT      MAFF303099]                                Length = 1170 Score = 161 bits
(407), Expect
FT      = 7e-38"
FT      /note="Benzoate degradation via CoA ligation"
FT      /label=contig4.459c
FT      /gene="grsT"
FT      /blastp_file="blastp/contig4.459c.blastp"
FT      CDS      complement(869436..869954)          10
FT      /note="unknown"
FT      /label=contig4.458
FT      /gene="LAW0690"
FT      /blastp_file="blastp/contig4.458.blastp"
FT      CDS      complement(870411..870899)
FT      /note="partial hit(56-161) IGI:RGME00249
FT      Peptidoglycan-associated lipoprotein precursor      [Geobacte
r
FT      metallireducens (JGI)]      Length = 194 Score = 116 bits
FT      (290), Expect = 1e-25"          20
FT      /label=contig4.457
FT      /gene="pal"
FT      /blastp_file="blastp/contig4.457.blastp"
FT      CDS      complement(871045..872403)
FT      /note="closest hit IGI:RBY08822 ToIB protein      [Bordetel
la
FT      bronchiseptica RB50]      Length = 438 Score = 114 bits (
284),
FT      Expect = 4e-24"
FT      /label=contig4.456          30
FT      /gene="toIB"
FT      /blastp_file="blastp/contig4.456.blastp"
FT      CDS      complement(872867..873820)
FT      /note="unknown"
FT      /label=contig4.455
FT      /gene="LAW0693"
FT      /blastp_file="blastp/contig4.455.blastp"
FT      CDS      complement(873921..874355)
FT      /note="closest hit IGI:RCL00702 Biopolymer transport exbD
FT      protein [Chlorobium tepidum]      Length = 139 Score = 104
FT      bits (259), Expect = 4e-22"    40
FT      /label=contig4.454
FT      /gene="exbD"
FT      /blastp_file="blastp/contig4.454.blastp"
FT      CDS      complement(874438..875115)
FT      /note="closest hit IGI:RGME03475 ToIQ protein      [Geobacte
r
FT      metallireducens (JGI)]      Length = 224 Score = 130 bits
FT      (328), Expect = 1e-29"
FT      /label=contig4.453          50

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FT          /gene="tolQ"
FT          /blastp_file="blastp/contig4.453.blastp"
FT  CDS     875739..876314
FT          /note="closest hit IGI:RDS00083 Rubrerythrin
FT          [Desulfovibrio vulgaris] Length = 191 Score = 268 bits
FT          (684), Expect = 4e-71"
FT          /label=contig4.452c
FT          /gene="rubY"
FT          /blastp_file="blastp/contig4.452c.blastp"
FT  CDS     876328..876531                                10
FT          /note="closest hit GEN:AAK60121 AF321851 GI:14326007
FT          rubredoxin-2 [Desulfovibrio desulfuricans] Length =
62
FT          Score = 103 bits (257), Expect = 5e-22"
FT          /label=contig4.451c
FT          /gene="rubA"
FT          /blastp_file="blastp/contig4.451c.blastp"
FT  CDS     876635..877663
FT          /note="closest hit IGI:RFNP00495 ADP-heptose:LPS
FT          heptosyltransferase II[EC:2.4.1.-] [Fusobacterium      20
FT          nucleatum polymorphum ATCC-10953] Length = 342 Score = 182
FT          bits (461), Expect = 8e-45"
FT          /note="Lipopolysaccharide biosynthesis "
FT          /label=contig4.450c
FT          /gene="rfaF"
FT          /blastp_file="blastp/contig4.450c.blastp"
FT  CDS     877710..878720
FT          /note="unknown"
FT          /label=contig4.449c
FT          /gene="LAW0699"                                30
FT          /blastp_file="blastp/contig4.449c.blastp"
FT  CDS     complement(878912..879499)
FT          /note="unknown"
FT          /label=contig4.448
FT          /gene="LAW0700"
FT          /blastp_file="blastp/contig4.448.blastp"
FT  CDS     complement(879685..881550)
FT          /note="closest hit IGI:RGME01384 Excinuclease ABC subunit
FT          C [Geobacter metallireducens(JGI)] Length =
650 Score =                                40
FT          330 bits (846), Expect = 4e-89"
FT          /label=contig4.447
FT          /gene="uvrC"
FT          /blastp_file="blastp/contig4.447.blastp"
FT  CDS     complement(881559..882254)
FT          /note="closest hit IGI:RHT00835 Septum formation protein
FT          Maf [Thermoanaerobacter tengcongensis MB4T] Length =
207
FT          Score = 119 bits (299), Expect = 2e-26"
FT          /label=contig4.446                                50

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FT          /gene="maf"
FT          /blastp_file="blastp/contig4.446.blastp"
FT  CDS     882513..883592
FT          /note="partial hit(41-333) IGI:RMBA02775
FT          Exopolyphosphatase-related proteins      [Methanosarcina
FT          barkeri fusaro (JGI)]      Length = 364 Score = 135 bits
FT          (339), Expect = 1e-30"
FT          /label=contig4.445c
FT          /gene="LAW0703"
FT          /blastp_file="blastp/contig4.445c.blastp"
FT  CDS     complement(883675..885042)
FT          /note="closest hit IGI:RTER00612 Asparaginyl-tRNA
FT          synthetase (EC 6.1.1.22) [Trichodesmium erythraeum IMS101
FT          (JGI)]      Length = 463 Score = 501 bits (1289), Expect =
FT          e-140"
FT          /note="Alanine and aspartate metabolism,Aminoacyl-tRNA
FT          biosynthesis"
FT          /label=contig4.444
FT          /gene="asnS"
FT          /blastp_file="blastp/contig4.444.blastp"
FT  CDS     complement(885106..885795)
FT          /note="closest hit IGI:RREU02228 Alkaline phosphatase like
FT          protein [Ralstonia eutropha CH34 (JGI)] Length = 219
FT          Score = 181 bits (459), Expect = 7e-45"
FT          /label=contig4.443
FT          /gene="LAW0705"
FT          /blastp_file="blastp/contig4.443.blastp"
FT  CDS     complement(885880..889188)
FT          /note="closest hit IGI:RGME01390 FARNESYL CYSTEINE
FT          CARBOXYL METHYLTRANSFERASE [EC:2.1.1.100] [Geobacter
FT          metallireducens (JGI)]      Length = 1075 Score = 426 bits
FT          (1096), Expect = e-118"
FT          /label=contig4.442
FT          /gene="LAW0706"
FT          /blastp_file="blastp/contig4.442.blastp"
FT  CDS     complement(889587..891977)
FT          /note="closest hit IGI:RCY33021 Hydrogenase maturation
FT          protein hypF      [Synechocystis sp.PCC6803]      Length =
782
FT          Score = 504 bits (1299), Expect = e-141"
FT          /label=contig4.441
FT          /gene="hypF"
FT          /blastp_file="blastp/contig4.441.blastp"
FT  CDS     892189..893016
FT          /note="partial hit(60-256) IGI:RNPU05591 Outer membrane
FT          protein [Nostoc punctiforme ATCC-29133(JGI)]      Length =
259
FT          Score = 107 bits (267), Expect = 2e-22"
FT          /label=contig4.440c
FT          /gene="LAW0708"

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FT          /blastp_file="blastp/contig4.440c.blastp"
FT  CDS     893127..894170
FT          /note="closest hit IGI:RTHT01294 Riboflavin kinase (EC
FT          2.7.1.26) / FMN adenylyltransferase (EC 2.7.7.2)
FT          [Thermoanaerobacter tengcongensis MB4T]      Length = 316 Sco
re
FT          = 197 bits (500), Expect = 2e-49"
FT          /note="Riboflavin metabolism"
FT          /label=contig4.439c
FT          /gene="ribF"                                     10
FT          /blastp_file="blastp/contig4.439c.blastp"
FT  CDS     894199..895080
FT          /note="closest hit IGI:RGME01568 Flagellin      [Geobacte
r
FT          metallireducens (JGI)]      Length = 326 Score = 226 bits
FT          (577), Expect = 2e-58"
FT          /note="Flagellar assembly"
FT          /label=contig4.438c
FT          /gene="fliC"
FT          /blastp_file="blastp/contig4.438c.blastp"      20
FT  CDS     complement(895227..895730)
FT          /note="unknown"
FT          /label=contig4.437
FT          /gene="LAW0711"
FT          /blastp_file="blastp/contig4.437.blastp"
FT  CDS     complement(896405..897349)
FT          /note="closest hit IGI:RGME01845 Dihydroorotate
FT          dehydrogenase (EC 1.3.3.1)      [Geobacter metallireducen
s
FT          (JGI)]      Length = 307 Score = 300 bits (769), Expect = 30
FT          1e-80"
FT          /note="Pyrimidine metabolism"
FT          /label=contig4.436
FT          /gene="pyrD"
FT          /blastp_file="blastp/contig4.436.blastp"
FT  CDS     complement(897346..898152)
FT          /note="partial hit(35-271) IGI:RTHT01425 Dihydroorotate
FT          dehydrogenase electron transfer subunit
FT          [Thermoanaerobacter tengcongensis MB4T]      Length = 247 Sco
re                                     40
FT          = 124 bits (311), Expect = 1e-27"
FT          /label=contig4.435
FT          /gene="pyrDII"
FT          /blastp_file="blastp/contig4.435.blastp"
FT  CDS     898390..899574
FT          /note="closest hit GEN:BAC09463 AP005375 GI:22295637
FT          ORF_ID:t111911 arginine biosynthesis bifunctional protein
FT          ArgJ includes glutamate n-acetyltransferase and amino-acid
FT          acetyltransferase[EC:2.3.1.35 2.3.1.1]
FT          [Thermosynechococcus elongatus BP-1]      Length = 419 Sco  50

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re =
FT          271 bits (692), Expect = 2e-71"
FT          /note="Urea cycle and metabolism of amino groups"
FT          /label=contig4.434c
FT          /gene="argJ"
FT          /blastp_file="blastp/contig4.434c.blastp"
FT  CDS     899739..900704
FT          /note="closest hit IGI:RBAP00336 Ribosomal large subunit
FT          pseudouridine synthase D (EC 4.2.1.70) [Buchnera
FT          aphidicola strain SG] Length = 314 Score = 123 bits 10
FT          (309), Expect = 3e-27"
FT          /note="Pyrimidine metabolism"
FT          /label=contig4.433c
FT          /gene="rluD"
FT          /blastp_file="blastp/contig4.433c.blastp"
FT  CDS     900834..901616
FT          /note="closest hit IGI:RTM01767 Glutamine-binding protein
FT          [Thermotoga maritima MSB8] Length = 246 Score = 115
bits
FT          (289), Expect = 4e-25" 20
FT          /label=contig4.432c
FT          /gene="gln"
FT          /blastp_file="blastp/contig4.432c.blastp"
FT  CDS     901672..902370
FT          /note="closest hit IGI:RTM01768 Glutamine transport system
FT          permease protein glnP [Thermotoga maritima MSB8] Le
ngth
FT          = 216 Score = 115 bits (287), Expect = 6e-25"
FT          /note="ABC transporters, prokaryotic"
FT          /label=contig4.431c 30
FT          /gene="glnP"
FT          /blastp_file="blastp/contig4.431c.blastp"
FT  CDS     902381..903256
FT          /note="partial hit(8-248) IGI:RCB01631 Glutamine transport
FT          ATP-binding protein glnQ [Clostridium botulinum
FT          ATCC-3502] Length = 240 Score = 229 bits (585), Expect =
FT          3e-59"
FT          /note="ABC transporters, prokaryotic"
FT          /label=contig4.430c
FT          /gene="glnQ" 40
FT          /blastp_file="blastp/contig4.430c.blastp"
FT  CDS     903258..903944
FT          /note="closest hit IGI:RBCE02325 Cystine transport system
FT          permease protein [Burkholderia cepacia J2315] Length =
226
FT          Score = 163 bits (412), Expect = 2e-39"
FT          /label=contig4.429c
FT          /gene="LAW0719"
FT          /blastp_file="blastp/contig4.429c.blastp"
FT  CDS     903994..905814 50

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FT          /note="closest hit IGI:RGME00757 GTP-binding protein lepA
FT          [Geobacter metallireducens(JGI)]   Length = 629 Score = 774
FT          bits (1999), Expect = 0.0"
FT          /label=contig4.428c
FT          /gene="lepA"
FT          /blastp_file="blastp/contig4.428c.blastp"
FT  CDS     complement(905910..906278)
FT          /note="unknown"
FT          /label=contig4.427
FT          /gene="LAW0721"
FT          /blastp_file="blastp/contig4.427.blastp"
FT  CDS     complement(906849..908045)
FT          /note="unknown"
FT          /label=contig4.426
FT          /gene="LAW0722"
FT          /blastp_file="blastp/contig4.426.blastp"
FT  CDS     complement(908182..909393)
FT          /note="partial hit(62-403) IGI:RMC003559 MEMBRANE-BOUND
FT          LYTIC MUREIN TRANSGLYCOSYLASE A (EC3.2.1.-) [Magnetococcus
FT          MC-1 (JGI)]           Length = 437 Score = 162 bits (410), Ex  20
pect =
FT          9e-39"
FT          /note=" N-Glycans biosynthesis, Nucleotide sugars
FT          metabolism,Aminosugars metabolism, Glycosaminoglycan
FT          degradation"
FT          /label=contig4.425
FT          /gene="mltA"
FT          /blastp_file="blastp/contig4.425.blastp"
FT  CDS     909409..909858
FT          /note="closest hit IGI:RHT01689 ESTERASE (EC 3.-.-.-)
FT          [Thermoanaerobacter tengcongensis MB4T]   Length = 138
FT          Score = 103 bits (256), Expect = 1e-21"
FT          /label=contig4.424c
FT          /gene="LAW0724"
FT          /blastp_file="blastp/contig4.424c.blastp"
FT  CDS     complement(910107..910928)
FT          /note="closest hit IGI:RHT02413 Histidinol-phosphatase
FT          (EC 3.1.3.15)           [Thermoanaerobacter tengcongensis
FT          MB4T]           Length = 272 Score = 121 bits (304), Expect =
FT          9e-27"
FT          /note="Histidine metabolism"
FT          /label=contig4.423
FT          /gene="hisB"
FT          /blastp_file="blastp/contig4.423.blastp"
FT  CDS     complement(911020..912234)
FT          /note="closest hit IGI:RNE03787 S-adenosylmethionine
FT          synthetase (EC 2.5.1.6)   [Nitrosomonas europaea ATCC-2597
8
FT          (JGI)]           Length = 387 Score = 451 bits (1161), Expect =
FT          e-126"

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FT          /note="Methionine metabolism,Selenoamino acid metabolism"
FT          /label=contig4.422
FT          /gene="metK"
FT          /blastp_file="blastp/contig4.422.blastp"
FT  CDS     912401..912991
FT          /note="unknown"
FT          /label=contig4.421c
FT          /gene="LAW0727"
FT          /blastp_file="blastp/contig4.421c.blastp"
FT  CDS     912997..913881
FT          /note="closest hit IGI:RAA00654 LytB protein      [Aquifex
FT          aeolicus VF5]      Length = 289 Score = 163 bits (412), Ex
pect
FT          = 3e-39"
FT          /label=contig4.420c
FT          /gene="lytB"
FT          /blastp_file="blastp/contig4.420c.blastp"
FT  CDS     913946..914896
FT          /note="closest hit      IGI:RVC05408 Chemotaxis protein c
heV
FT          (EC 2.7.3.-)      [Vibrio cholerae El Tor N16961] Length =
328
FT          Score = 246 bits (628), Expect = 3e-64"
FT          /label=contig4.419c
FT          /gene="cheV"
FT          /blastp_file="blastp/contig4.419c.blastp"
FT  CDS     complement(914956..916287)
FT          /note="closest hit      IGI:RGME02815 UDP-glucose
FT          6-dehydrogenase (EC 1.1.1.22)      [Geobacter metallireducen
s
FT          (JGI)]      Length = 450 Score = 494 bits (1273), Expect =
FT          e-139"
FT          /note="Pentose and glucuronate interconversions,Starch and
FT          sucrose metabolism,Nucleotide sugars metabolism"
FT          /label=contig4.418
FT          /gene="ugd"
FT          /blastp_file="blastp/contig4.418.blastp"
FT  CDS     916424..916801
FT          /note="closest hit IGI:RBUC00238 Holo-[acyl-carrier
FT          protein] synthase (EC 2.7.8.7)      [Buchnera aphidicola
FT          strain AP] Length = 126 Score = 75.9 bits (185), Expect =
FT          9e-14"
FT          /note="Pantothenate and CoA biosynthesis"
FT          /label=contig4.417c
FT          /gene="acpS"
FT          /blastp_file="blastp/contig4.417c.blastp"
FT  CDS     916828..917361
FT          /note="closest hit IGI:RLIN01315 ATP-dependent protease
FT          hslV (EC 3.4.25.-)      [Listeria innocua Clp11262] Le
ngth =

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FT          179 Score = 197 bits (500), Expect = 7e-50"
FT          /label=contig4.416c
FT          /gene="hslV"
FT          /blastp_file="blastp/contig4.416c.blastp"
FT  CDS     917632..918429
FT          /note="closest hit IGI:RVC07539 Amino acid-binding protein
FT          [Vibrio cholerae El Tor N16961] Length = 278 Score = 19
5
FT          bits (495), Expect = 6e-49"
FT          /label=contig4.415c
FT          /gene="LAW0733"
FT          /blastp_file="blastp/contig4.415c.blastp"
FT  CDS     918588..919070
FT          /note="unknown"
FT          /label=contig4.414c
FT          /gene="LAW0734"
FT          /blastp_file="blastp/contig4.414c.blastp"
FT  CDS     919170..920087
FT          /note="closest hit IGI:RBX03877
FT          4-diphosphocytidyl-2-C-methyl-D-erythritol kinase (EC
FT          2.7.1.148) [Bacteroides fragilis NCTC-9343] L
length = 274
FT          Score = 100 bits (249), Expect = 3e-20"
FT          /label=contig4.413c
FT          /gene="ychB"
FT          /blastp_file="blastp/contig4.413c.blastp"
FT  CDS     920202..921167
FT          /note="closest hit IGI:RGME03485 Ribose-phosphate
FT          pyrophosphokinase (EC 2.7.6.1) [Geobacter metallireduce
ns
FT          (JGI)] Length = 320 Score = 321 bits (822), Expect =
FT          1e-86"
FT          /note="Purine metabolism/Pentose phosphate pathway "
FT          /label=contig4.412c
FT          /gene="prsA"
FT          /blastp_file="blastp/contig4.412c.blastp"
FT  CDS     921211..921804
FT          /note="closest hit IGI:RHD04113 LSU ribosomal protein L25P
FT          [Bacillus halodurans C-125] Length = 215 Score = 97.
8 bits
FT          (242), Expect = 8e-20"
FT          /note="Translation; Ribosome"
FT          /label=contig4.411c
FT          /gene="LAW0737"
FT          /blastp_file="blastp/contig4.411c.blastp"
FT  CDS     921880..922485
FT          /note="closest hit IGI:RTER00077 Peptidyl-tRNA hydrolase
FT          (EC 3.1.1.29) [Trichodesmiumerythraeum IMS101
FT          (JGI)] Length = 219 Score = 145 bits (365), Expect =
FT          4e-34"

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FT          /label=contig4.410c
FT          /gene="LAW0738"
FT          /blastp_file="blastp/contig4.410c.blastp"
FT  CDS     922741..923433
FT          /note="unknown"
FT          /label=contig4.409c
FT          /gene="LAW0739"
FT          /blastp_file="blastp/contig4.409c.blastp"
FT  CDS     923583..924377
FT          /note="closest hit IGI:RMC002419 Flagellar basal-body rod      10
FT          protein flgF      [Magnetococcus MC-1 (JGI)]      Length =
269
FT          Score = 146 bits (369), Expect = 3e-34"
FT          /note="Flagellar assembly"
FT          /label=contig4.408c
FT          /gene="flgF"
FT          /blastp_file="blastp/contig4.408c.blastp"
FT  CDS     924392..925177
FT          /note="closest hit IGI:RMC002420 Flagellar basal-body rod
FT          protein flgG      [Magnetococcus MC-1 (JGI)]      Length =    20
263
FT          Score = 287 bits (734), Expect = 1e-76"
FT          /note="Flagellar assembly"
FT          /label=contig4.407c
FT          /gene="flgG"
FT          /blastp_file="blastp/contig4.407c.blastp"
FT  CDS     925203..926186
FT          /note="unknown/likely flagellar protein"
FT          /label=contig4.406c
FT          /gene="LAW0742"
FT          /blastp_file="blastp/contig4.406c.blastp"
FT  CDS     926204..926896
FT          /note="closest hit IGI:RGME01558 Flagellar L-ring protein
FT          flgH      [Geobacter metallireducens (JGI)]      Length =
244 Score
FT          = 121 bits (304), Expect = 7e-27"
FT          /note="Flagellar assembly"
FT          /label=contig4.405c
FT          /gene="flgG"
FT          /blastp_file="blastp/contig4.405c.blastp"
FT  CDS     926942..928081
FT          /note="closest hit IGI:RGME01559 Flagellar P-ring protein
FT          flgl      [Geobacter metallireducens (JGI)]      Length =
365 Score
FT          = 356 bits (913), Expect = 3e-97"
FT          /note="Flagellar assembly"
FT          /label=contig4.404c
FT          /gene="flgl"
FT          /blastp_file="blastp/contig4.404c.blastp"
FT  CDS     928086..928769

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FT          /note="weak partial hit(24-146)          IGI:RECS01459 FI
agellar
FT          protein flgJ[EC:3.2.1.-] [Escherichia coli
FT          0157:H7Sakai]          Length = 313 Score = 65.9 bits (159), Ex
pect
FT          = 5e-10"
FT          /label=contig4.403c
FT          /gene="flgJ"
FT          /blastp_file="blastp/contig4.403c.blastp"
FT  CDS     928976..929506          10
FT          /note="unknown"
FT          /label=contig4.402c
FT          /gene="LAW0746"
FT          /blastp_file="blastp/contig4.402c.blastp"
FT  CDS     929506..931623
FT          /note="closest hit IGI:RCJ00756 Flagellar hook-associated
FT          protein 1flgK          [Campylobacter jejuni NCTC-11168]
Length =
FT          608 Score = 165 bits (418), Expect = 2e-39 "
FT          /note="Flagellar assembly"          20
FT          /label=contig4.401c
FT          /gene="flgK"
FT          /blastp_file="blastp/contig4.401c.blastp"
FT  CDS     931633..933210
FT          /note="possibly missing stop codon IGI:RPU04513 Flagellar
FT          hook-associated protein 3 flgL          [Pseudomonas fluorescens
FT          Pf0-1 (JGI)]"
FT          /note="Flagellar assembly"
FT          /label=contig4.400c
FT          /gene="flgL"          30
FT          /blastp_file="blastp/contig4.400c.blastp"
FT  CDS     933304..933993
FT          /note="unknown"
FT          /label=contig4.399c
FT          /gene="LAW0749"
FT          /blastp_file="blastp/contig4.399c.blastp"
FT  CDS     934221..935801
FT          /note="closest hit IGI:RCTH01142 putative sugar kinase
FT          [Clostridium thermocellum ATCC-27405 (JGI)]          Length =
517          40
FT          Score = 153 bits (386), Expect = 7e-36"
FT          /label=contig4.398c
FT          /gene="LAW0750"
FT          /blastp_file="blastp/contig4.398c.blastp"
FT  CDS     complement(935839..937368)
FT          /note="closest hit IGI:RCHU02866 MG(2+) CHELATASE FAMILY
FT          PROTEIN          [Cytophaga hutchinsonii ATCC-33406 (JGI)]          L
ength
FT          = 512 Score = 433 bits (1114), Expect = e-120"
FT          /label=contig4.397          50

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FT          /gene="LAW0751"
FT          /blastp_file="blastp/contig4.397.blastp"
FT  CDS     complement(937365..939059)
FT          /note="closest hit IGI:RQP00839 Sulfate
FT          transporter          [Chlamydophila pneumoniae AR39] Length =
565
FT          Score = 407 bits (1046), Expect = e-112"
FT          /label=contig4.396
FT          /gene="LAW0752"
FT          /blastp_file="blastp/contig4.396.blastp"
FT  CDS     complement(939166..939858)
FT          /note="closest hit IGI:RTY04857 Glutamine transport system
FT          permease protein glnP          [Salmonella typhi CT18] Length =
219
FT          Score = 194 bits (494), Expect = 6e-49"
FT          /note="ABC transporters, prokaryotic "
FT          /label=contig4.395
FT          /gene="glnP"
FT          /blastp_file="blastp/contig4.395.blastp"
FT  CDS     complement(939981..940730)
FT          /note="closest hit IGI:RBY08953 Glutamine-binding protein
FT          [Bordetella bronchiseptica RB50] Length = 250 Score = 238
FT          bits (608), Expect = 4e-62"
FT          /label=contig4.394
FT          /gene="glnH"
FT          /blastp_file="blastp/contig4.394.blastp"
FT  CDS     complement(941271..942995)
FT          /note="closest hit IGI:RGME00396 SSU ribosomal protein S1P
FT          [Geobacter metallireducens (JGI)]          Length = 586 Scor
e =
FT          514 bits (1323), Expect = e-144"
FT          /note="Translation; Ribosome"
FT          /label=contig4.393
FT          /gene="lytB"
FT          /blastp_file="blastp/contig4.393.blastp"
FT  CDS     complement(943310..943795)
FT          /note="closest hit IGI:RHI07545 Ribonuclease H (EC
FT          3.1.26.4)          [Haemophilus influenzae KW20] Length =
154
FT          Score = 186 bits (472), Expect = 1e-46"
FT          /label=contig4.392
FT          /gene="rnh"
FT          /blastp_file="blastp/contig4.392.blastp"
FT  CDS     complement(943971..944864)
FT          /note="closest hit IGI:RTM00033 1,4-dihydroxy-2-naphthoate
FT          octaprenyltransferase (EC 2.5.1.-)          [Thermotoga marit
ima
FT          MSB8]          Length = 289 Score = 113 bits (283), Expect =
FT          3e-24"
FT          /note="Ubiquinone biosynthesis"

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FT          /label=contig4.391
FT          /gene="menA"
FT          /blastp_file="blastp/contig4.391.blastp"
FT  CDS     complement(944976..945602)
FT          /note="closest hit          IGI:RTM00036 Transporter          [T
hermotoga
FT          maritima MSB8]          Length = 208 Score = 96.7 bits (239),
FT          Expect = 2e-19"
FT          /label=contig4.390
FT          /gene="LAW0758"          10
FT          /blastp_file="blastp/contig4.390.blastp"
FT  CDS     complement(945599..946513)
FT          /note="closest hit IGI:RCAU04761
FT          1,4-dihydroxy-2-naphthoate octaprenyltransferase
FT          (EC2.5.1.-)          [Chloroflexus aurantiacus J-10 (JGI)]  L
ength
FT          = 301 Score = 105 bits (262), Expect = 9e-22"
FT          /note="Ubiquinone biosynthesis"
FT          /label=contig4.389
FT          /gene="menA"          20
FT          /blastp_file="blastp/contig4.389.blastp"
FT  CDS     complement(946612..947238)
FT          /note="partial hit(3-189) IGI:RGME00540 Thymidylate kinase
FT          (EC 2.7.4.9)          [Geobacter metallireducens (JGI)]  L
ength =
FT          262 Score = 146 bits (368), Expect = 2e-34"
FT          /note="Pyrimidine metabolism"
FT          /label=contig4.388
FT          /gene="tmk"          30
FT          /blastp_file="blastp/contig4.388.blastp"
FT  CDS     complement(947223..948281)
FT          /note="closest hit IGI:RGME01973 cmp-binding-factor 1
FT          [Geobacter metallireducens(JGI)] Length = 384 Score = 176
FT          bits (447), Expect = 3e-43"
FT          /label=contig4.387
FT          /gene="cbf1"
FT          /blastp_file="blastp/contig4.387.blastp"
FT  CDS     948405..949160
FT          /note="closest hit IGI:RAN04047 Survival protein
FT          SurE[EC:3.1.3.2] [Anabaena sp. PCC7120] Length = 265 Sco  40
re
FT          = 169 bits (428), Expect = 3e-41"
FT          /note="gamma-Hexachlorocyclohexane degradation "
FT          /label=contig4.386c
FT          /gene="surE"
FT          /blastp_file="blastp/contig4.386c.blastp"
FT  CDS     949353..950276
FT          /note="closest hit IGI:RCB02977 Fructose-bisphosphate
FT          aldolase (EC 4.1.2.13) [Clostridium botulinum
FT          ATCC-3502] Length = 308 Score = 373 bits (957), Expect = 50

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FT          e-102"
FT          /note="Glycolysis / Gluconeogenesis,Pentose phosphate
FT          pathway,Fructose and mannose metabolism"
FT          /label=contig4.385c
FT          /gene="fba"
FT          /blastp_file="blastp/contig4.385c.blastp"
FT  CDS     950386..951387
FT          /note="closest hit IGI:RDF02154 Glyceraldehyde 3-phosphate
FT          dehydrogenase (EC1.2.1.12)          [Clostridium difficile
FT          630]          Length = 338 Score = 358 bits (920), Expect = 4  10
e-98"
FT          /note="Glycolysis / Gluconeogenesis,D-Arginine and
FT          D-ornithine metabolism"
FT          /label=contig4.384c
FT          /gene="gapA"
FT          /blastp_file="blastp/contig4.384c.blastp"
FT  CDS     complement(951412..952311)
FT          /note="closest hit IGI:RTHT01406 putative
FT          nucleotide-binding protein [Thermoanaerobacter
FT          tengcongensis MB4T]          Length = 250 Score = 168 bits (  20
426),
FT          Expect = 7e-41"
FT          /label=contig4.383
FT          /gene="LAW0765"
FT          /blastp_file="blastp/contig4.383.blastp"
FT  CDS     complement(952368..953336)
FT          /note="closest hit IGI:RPFL00293 Methionyl-tRNA
FT          formyltransferase (EC 2.1.2.9)    [Pseudomonas fluorescens
FT          SBW25]          Length = 317 Score = 227 bits (578), Expect =
FT          2e-58"          30
FT          /note="Aminoacyl-tRNA biosynthesis,Methionine
FT          metabolism,One carbon pool by folate"
FT          /label=contig4.382
FT          /gene="fmt"
FT          /blastp_file="blastp/contig4.382.blastp"
FT  CDS     complement(953333..953848)
FT          /note="closest hit IGI:RGME00475 Polypeptide deformylase
FT          (EC 3.5.1.31)          [Geobacter metallireducens (JGI)]          L
ength =
FT          167 Score = 148 bits (373), Expect = 4e-35"          40
FT          /note="Methionine metabolism,Glyoxylate and dicarboxylate
FT          metabolism"
FT          /label=contig4.381
FT          /gene="def"
FT          /blastp_file="blastp/contig4.381.blastp"
FT  CDS     954008..955000
FT          /note="closest hit IGI:RDF03712 Nitrogen regulation
FT          protein NIFR3          [Clostridium difficile 630]          Length =
322
FT          Score = 193 bits (490), Expect = 3e-48"          50

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FT          /label=contig4.380c
FT          /gene="nifr3"
FT          /blastp_file="blastp/contig4.380c.blastp"
FT  CDS     complement(955017..955769)
FT          /note="closest hit IGI:RGME03322 Hypothetical Cytosolic
FT          Protein [Geobacter metallireducens (JGI)] Length =
266
FT          Score = 95.9 bits (237), Expect = 5e-19"
FT          /label=contig4.379
FT          /gene="LAW0769" 10
FT          /blastp_file="blastp/contig4.379.blastp"
FT  CDS     complement(955760..956341)
FT          /note="closest hit IGI:RHD05338 5-formyltetrahydrofolate
FT          cyclo-ligase (EC 6.3.3.2) [Bacillus halodurans
FT          C-125] Length = 186 Score = 89.0 bits (219), Expect =
FT          4e-17"
FT          /note="One carbon pool by folate "
FT          /label=contig4.378
FT          /gene="LAW0770"
FT          /blastp_file="blastp/contig4.378.blastp" 20
FT  CDS     957340..959340
FT          /note="partial hit(176-653) IGI:RGME03339 Ribonuclea
se E
FT          (EC 3.1.4.-) [Geobacter metallireducens (JGI)] L
length =
FT          828 Score = 348 bits (892), Expect = 2e-94"
FT          /note="Aminosugars metabolism"
FT          /label=contig4.377c
FT          /gene="rne"
FT          /blastp_file="blastp/contig4.377c.blastp" 30
FT  CDS     959344..959937
FT          /note="closest hit IGI:RGME00061 DNA
FT          integration/recombination/inversion protein [Geobacte
r
FT          metallireducens (JGI)] Length = 180 Score = 169 bits
FT          (429), Expect = 2e-41"
FT          /label=contig4.376c
FT          /gene="LAW0772"
FT          /blastp_file="blastp/contig4.376c.blastp"
FT  CDS     complement(959970..961946) 40
FT          /note="partial hit(1-655) IGI:RGME00853
FT          Glutathione-regulated potassium-efflux system protein kefC
FT          [Geobacter metallireducens (JGI)] Length = 762 Score = 480
FT          bits (1236), Expect = e-134"
FT          /label=contig4.375
FT          /gene="kefC"
FT          /blastp_file="blastp/contig4.375.blastp"
FT  CDS     962215..963630
FT          /note="closest hit IGI:RAV04980 Trk system potassium
FT          uptake protein trkA [Azotobacter vinelandii (JGI)] L 50

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ength
FT          = 457 Score = 291 bits (745), Expect = 1e-77"
FT          /label=contig4.374c
FT          /gene="trkA"
FT          /blastp_file="blastp/contig4.374c.blastp"
FT  CDS     963721..965187
FT          /note="closest hit IGI:RMBA01916 Trk system potassium
FT          uptake protein trkH [Methanosarcina barkeri fusaro
FT          (JGI)] Length = 476 Score = 345 bits (884), Expect =
FT          1e-93"
FT          /label=contig4.373c
FT          /gene="trkH"
FT          /blastp_file="blastp/contig4.373c.blastp"
FT  CDS     965279..965941
FT          /note="partial hit(22-215) IGI:RRS002250
FT          Phosphatidylserine decarboxylase (EC4.1.1.65) [Ralstoni
a
FT          solanacearum] Length = 260 Score = 192 bits (488), Ex
pect
FT          = 3e-48"
FT          /note="Glycerolipid metabolism,Glycine, serine and
FT          threonine metabolism "
FT          /label=contig4.372c
FT          /gene="psd"
FT          /blastp_file="blastp/contig4.372c.blastp"
FT  CDS     966003..966752
FT          /note="closest hit IGI:RGME03555
FT          CDP-diacylglycerol--serine O-phosphatidyltransferase (EC
FT          2.7.8.8) [Geobacter metallireducens (JGI)] Length =
259
FT          Score = 181 bits (460), Expect = 6e-45"
FT          /label=contig4.371c
FT          /gene="LAW0777"
FT          /blastp_file="blastp/contig4.371c.blastp"
FT  CDS     complement(966810..967460)
FT          /note="closest hit IGI:RNPU01186 Endonuclease III (EC
FT          4.2.99.18) [Nostoc punctiforme ATCC-29133 (JGI)] L
ength =
FT          229 Score = 225 bits (574), Expect = 3e-58"
FT          /label=contig4.370
FT          /gene="nth"
FT          /blastp_file="blastp/contig4.370.blastp"
FT  CDS     967580..967900
FT          /note="closest hit IGI:RTH00430 DIVALENT CATION TOLERANCE
FT          PROTEIN [Methanobacterium thermoautotrophicum] Length =
FT          105 Score = 94.7 bits (234), Expect = 2e-19"
FT          /label=contig4.369c
FT          /gene="cutA"
FT          /blastp_file="blastp/contig4.369c.blastp"
FT  CDS     967901..968842

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FT          /note="closest hit IGI:RNE02267 1-phosphofructokinase (EC
FT          2.7.1.56)          [Nitrosomonas europaea ATCC-25978 (JGI)]
          Length
FT          = 311 Score = 214 bits (544), Expect = 2e-54"
FT          /note="Fructose and mannose metabolism"
FT          /label=contig4.368c
FT          /gene="fruK"
FT          /blastp_file="blastp/contig4.368c.blastp"
FT  CDS     969129..970853
FT          /note="unknown"
FT          /label=contig4.367c
FT          /gene="LAW0781"
FT          /blastp_file="blastp/contig4.367c.blastp"
FT  CDS     970873..971706
FT          /note="closest hit IGI:RBCE06417 PHOSPHOMETHYLPYRIMIDINE
FT          KINASE (EC 2.7.4.7) / HYDROXYMETHYLPYRIMIDINE KINASE (EC
FT          2.7.1.49) [Burkholderia cepacia J2315]      Length = 269 Sco
re
FT          = 174 bits (441), Expect = 2e-42"
FT          /note="Thiamine metabolism"
FT          /label=contig4.366c
FT          /gene="thiD"
FT          /blastp_file="blastp/contig4.366c.blastp"
FT  CDS     complement(972160..972975)
FT          /note="unknown"
FT          /label=contig4.365
FT          /gene="LAW0783"
FT          /blastp_file="blastp/contig4.365.blastp"
FT  CDS     complement(973029..975491)
FT          /note="closest hit IGI:RBAT00665 DNA gyrase subunit A (EC
FT          5.99.1.3)          [Bacillus anthracis A2012]      Length =
824 Score =
FT          795 bits (2053), Expect = 0.0"
FT          /label=contig4.364
FT          /gene="gyrA"
FT          /blastp_file="blastp/contig4.364.blastp"
FT  CDS     complement(975610..978009)
FT          /note="closest hit IGI:RGME01494 DNA gyrase subunit B (EC
FT          5.99.1.3)          [Geobacter metallireducens (JGI)]      L
length = 795
FT          Score = 715 bits (1845), Expect = 0.0"
FT          /label=contig4.363
FT          /gene="gyrB"
FT          /blastp_file="blastp/contig4.363.blastp"
FT  CDS     complement(978042..979193)
FT          /note="closest hit IGI:RMMA06612 DNA polymerase III, beta
FT          chain (EC2.7.7.7) [Magnetospirillum magnetotacticum MS-1
FT          (JGI)]      Length = 372 Score = 124 bits (312), Expect =
FT          2e-27"
FT          /note="DNA polymerase,Pyrimidine metabolism,Purine

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FT metabolism "
 FT /label=contig4.362
 FT /gene="dnaN"
 FT /blastp_file="blastp/contig4.362.blastp"
 FT CDS complement(979314..980636)
 FT /note="closest hit IGI:RNPU03026 Chromosomal replication
 FT initiator protein dnaA [Nostoc punctiforme ATCC-29133
 FT (JGI)] Length = 459 Score = 149 bits (377), Expect =
 FT 6e-35"
 FT /label=contig4.361 10
 FT /gene="dnaA"
 FT /blastp_file="blastp/contig4.361.blastp"
 FT CDS 980888..982222
 FT /note="partial hit(85-421) IGI:RPU05296 Cell wall
 FT endopeptidase, family M23/M37 [Pseudomonas fluorescens
 FT Pf0-1 (JGI)] Length = 471 Score = 223 bits (568), Ex
 pect
 FT = 4e-57"
 FT /label=contig4.360c
 FT /gene="LAW0788" 20
 FT /blastp_file="blastp/contig4.360c.blastp"
 FT CDS 982255..983355
 FT /note="closest hit IGI:RCB02292 S-adenosylmethionine:tRNA
 FT ribosyltransferase-isomerase (EC 5.-.-.-) [Clostrid
 ium
 FT botulinum ATCC-3502] Length = 344 Score = 273 bits (
 698),
 FT Expect = 3e-72"
 FT /label=contig4.359c
 FT /gene="queA" 30
 FT /blastp_file="blastp/contig4.359c.blastp"
 FT CDS 984330..985391
 FT /note="closest hit IGI:RGME03534 Ketoisovalerate
 FT oxidoreductase subunit vorB [EC:1.2.7.-] [Geobacter
 FT metallireducens (JGI)] Length = 305 Score = 304 bits
 FT (778), Expect = 1e-81"
 FT /label=contig4.358c
 FT /gene="vorB"
 FT /blastp_file="blastp/contig4.358c.blastp"
 FT CDS 985391..986194 40
 FT /note="closest hit IGI:RBX00593 Pyruvate synthase subunit
 FT porB (EC 1.2.7.1) [Bacteroides fragilis NCTC-9343]
 Length
 FT = 253 Score = 274 bits (700), Expect = 1e-72"
 FT /note="Pyruvate metabolism,Propanoate metabolism,Butanoate
 FT metabolism,Reductive carboxylate cycle (CO2 fixation)"
 FT /label=contig4.357c
 FT /gene="porB"
 FT /blastp_file="blastp/contig4.357c.blastp"
 FT CDS 986196..986738 50

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FT          /note="closest hit IGI:RTM02684 Pyruvate synthase subunit
FT          porB (EC 1.2.7.1) [Thermotoga maritima MSB8]      Length =
194
FT          Score = 159 bits (403), Expect = 1e-38"
FT          /note="Pyruvate metabolism,Propanoate metabolism,Butanoate
FT          metabolism,Reductive carboxylate cycle (CO2 fixation)"
FT          /label=contig4.356c
FT          /gene="porB"
FT          /blastp_file="blastp/contig4.356c.blastp"
FT  CDS     987288..988580                                     10
FT          /note="closest hit IGI:RGME03545 Trigger factor, ppiase
FT          (EC 5.2.1.8) [Geobacter metallireducens (JGI)]      L
length =
FT          434 Score = 178 bits (451), Expect = 2e-43"
FT          /label=contig4.355c
FT          /gene="LAW0793"
FT          /blastp_file="blastp/contig4.355c.blastp"
FT  CDS     988737..989366
FT          /note="closest hit IGI:RTHT00577 ATP-dependent Clp
FT          protease proteolytic subunit (EC 3.4.21.92)         20
FT          [Thermoanaerobacter tengcongensis MB4T]      Length = 198 Sco
re
FT          = 253 bits (647), Expect = 9e-67"
FT          /label=contig4.354c
FT          /gene="clpP"
FT          /blastp_file="blastp/contig4.354c.blastp"
FT  CDS     989642..990895
FT          /note="closest hit IGI:RGME03543 ATP-dependent clp
FT          protease ATP-binding subunit clpX [Geobacter
FT          metallireducens (JGI)]      Length = 417 Score = 487 bits    30
FT          (1253), Expect = e-136"
FT          /label=contig4.353c
FT          /gene="clpX"
FT          /blastp_file="blastp/contig4.353c.blastp"
FT  CDS     990983..993436
FT          /note="closest hit IGI:RRPA02364 ATP-dependent protease La
FT          (EC3.4.21.53) [Rhodopseudomonas palustris CGA009
FT          (JGI)]      Length = 810 Score = 826 bits (2133), Expect =
FT          0.0"
FT          /label=contig4.352c                                     40
FT          /gene="lon"
FT          /blastp_file="blastp/contig4.352c.blastp"
FT  CDS     complement(993461..993847)
FT          /note="unknown"
FT          /label=contig4.351
FT          /gene="LAW0797"
FT          /blastp_file="blastp/contig4.351.blastp"
FT  CDS     994282..995271
FT          /note="unknown"
FT          /label=contig4.350c                                     50

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FT          /gene="LAW0798"
FT          /blastp_file="blastp/contig4.350c.blastp"
FT  CDS     complement(995278..995916)
FT          /note="closest hit IGI:RREU02299 Thioredoxin-like
FT          oxidoreductases [Ralstonia eutrophaCH34 (JGI)] Length =
FT          211 Score = 216 bits (550), Expect = 2e-55"
FT          /label=contig4.349
FT          /gene="LAW0799"
FT          /blastp_file="blastp/contig4.349.blastp"
FT  CDS     complement(995965..996681) 10
FT          /note="closest hit IGI:RBY06714 Aluminum resistance
FT          protein [Bordetella bronchisepticaRB50] Length = 244
FT          Score = 285 bits (730), Expect = 3e-76"
FT          /label=contig4.348
FT          /gene="LAW0800"
FT          /blastp_file="blastp/contig4.348.blastp"
FT  CDS     996842..998215
FT          /note="closest hit IGI:RHS001126 Bifunctional glmU
FT          protein[EC:2.7.7.23] [Haemophilus somnus 2336]
Length = 20
FT          460 Score = 310 bits (795), Expect = 2e-83"
FT          /label=contig4.347c
FT          /gene="glmU"
FT          /blastp_file="blastp/contig4.347c.blastp"
FT  CDS     999188..1000750
FT          /note="closest hit IGI:RGME02924 hydrolase (HD
FT          superfamily) [Geobacter metallireducens(JGI)] L
length =
FT          520 Score = 503 bits (1295), Expect = e-141"
FT          /label=contig4.346c 30
FT          /gene="LAW0802"
FT          /blastp_file="blastp/contig4.346c.blastp"
FT  CDS     1000833..1001591
FT          /note="unknown"
FT          /label=contig4.345c
FT          /gene="LAW0803"
FT          /blastp_file="blastp/contig4.345c.blastp"
FT  CDS     complement(1001682..1002140)
FT          /note="closest hit IGI:RVC07512 Permease [Vibrio cholerae
FT          El Tor N16961 Length = 155 Score = 150 bits (378), Ex 40
pect
FT          = 7e-36"
FT          /label=contig4.344
FT          /gene="LAW0804"
FT          /blastp_file="blastp/contig4.344.blastp"
FT  CDS     complement(1002133..1002810)
FT          /note="closest hit IGI:RECS05288 hypothetical protein
FT          [Escherichia coli O157:H7 Sakai] Length = 231 Score = 164
FT          bits (414), Expect = 1e-39"
FT          /label=contig4.343 50

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FT          /gene="LAW0805"
FT          /blastp_file="blastp/contig4.343.blastp"
FT  CDS     complement(1002865..1003953)
FT          /note="closest hit IGI:RBX03391 O-succinylbenzoic
FT          acid--CoA ligase (EC6.2.1.26) [Bacteroides fragilis
FT          NCTC-9343] Length = 328 Score = 318 bits (815), Expect =
FT          8e-86"
FT          /note="Ubiquinon biosynthesis "
FT          /label=contig4.342
FT          /gene="menE"
FT          /blastp_file="blastp/contig4.342.blastp"
FT  CDS     complement(1004052..1004873)
FT          /note="closest hit IGI:RBX03389 Naphthoate synthase (EC
FT          4.1.3.36) [Bacteroides fragilis NCTC-9343]
FT          length = 274
FT          Score = 441 bits (1134), Expect = e-123"
FT          /note="Ubiquinone biosynthesis "
FT          /label=contig4.341
FT          /gene="menB"
FT          /blastp_file="blastp/contig4.341.blastp"
FT  CDS     complement(1004883..1005317)
FT          /note="closest hit IGI:RYE02559 ComA operon protein 2
FT          [Yersinia enterocolitica 8081] Length = 140 Score = 94.7
FT          bits (234), Expect = 3e-19"
FT          /label=contig4.340
FT          /gene="comA"
FT          /blastp_file="blastp/contig4.340.blastp"
FT  CDS     complement(1005673..1006062)
FT          /note="unknown"
FT          /label=contig4.339
FT          /gene="LAW0809"
FT          /blastp_file="blastp/contig4.339.blastp"
FT  CDS     1006385..1007098
FT          /note="closest hit IGI:RYP03327 Integral membrane protein
FT          [Yersinia pestis C092] Length = 236 Score = 204 bits
FT          (518), Expect = 1e-51"
FT          /label=contig4.338c
FT          /gene="LAW0810"
FT          /blastp_file="blastp/contig4.338c.blastp"
FT  CDS     complement(1007157..1008167)
FT          /note="closest hit IGI:RGME03426 Low-affinity inorganic
FT          phosphate transporter [Geobacter metallireducens
FT          (JGI)] Length = 333 Score = 282 bits (721), Expect =
FT          5e-75"
FT          /label=contig4.337
FT          /gene="pit"
FT          /blastp_file="blastp/contig4.337.blastp"
FT  CDS     complement(1008160..1008795)
FT          /note="unknown"
FT          /label=contig4.336

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FT          /gene="LAW0812"
FT          /blastp_file="blastp/contig4.336.blastp"
FT  CDS     1010184..1011809
FT          /note="partial hit(19-309) IGI:RNPU04888 Ribosomal large
FT          subunit pseudouridine synthase D (EC4.2.1.70) [Nostoc
FT          punctiforme ATCC-29133 (JGI)] Length = 345 Score = 22
0
FT          bits (561), Expect = 4e-56"
FT          /note="Pyrimidine metabolism"
FT          /label=contig4.335c 10
FT          /gene="rluD"
FT          /blastp_file="blastp/contig4.335c.blastp"
FT  CDS     1012019..1012804
FT          /note="closest hit GI:RGME00671 Sporulation initiation
FT          inhibitor protein soj [Geobacter metallireducens
FT          (JGI)] Length = 258 Score = 272 bits (696), Expect =
FT          3e-72"
FT          /label=contig4.334c
FT          /gene="soj"
FT          /blastp_file="blastp/contig4.334c.blastp" 20
FT  CDS     1012884..1013843
FT          /note="closest hit IGI:R00E00123 Stage 0 sporulation
FT          protein J [Oenococcus oeni PSU-1 (JGI)] Length =
29 Score
FT          = 197 bits (502), Expect = 1e-49"
FT          /label=contig4.333c
FT          /gene="spo0J"
FT          /blastp_file="blastp/contig4.333c.blastp"
FT  CDS     1013959..1014996
FT          /note="closest hit IGI:RFNP00071 ADP-heptose synthase (EC 30
FT          2.7.-.-) [Fusobacterium nucleatum polymorphum
FT          ATCC-10953] Length = 326 Score = 208 bits (529), Ex
pect =
FT          1e-52"
FT          /note="Lipopolysaccharide biosynthesis"
FT          /label=contig4.332c
FT          /gene="LAW0816"
FT          /blastp_file="blastp/contig4.332c.blastp"
FT  CDS     complement(1015004..1016197)
FT          /note="closest hit IGI:RHT00891 Oxygen-independent 40
FT          coproporphyrinogen III oxidase (EC1.-.-.-)
FT          [Thermoanaerobacter tengcongensis MB4T] Length = 375 Sco
re
FT          = 246 bits (629), Expect = 3e-64"
FT          /label=contig4.331
FT          /gene="hemN"
FT          /blastp_file="blastp/contig4.331.blastp"
FT  CDS     1016534..1017481
FT          /note="closest hit IGI:RDHA05097 Aspartate
FT          carbamoyltransferase (EC 2.1.3.2) [Desulfitobacteri 50

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um
FT      halfniense DCB-2 (JGI)]      Length = 312 Score = 278 bits
FT      (712), Expect = 6e-74"
FT      /note="Pyrimidine metabolism,Alanine and aspartate
FT      metabolism"
FT      /label=contig4.330c
FT      /gene="pyrB"
FT      /blastp_file="blastp/contig4.330c.blastp"
FT      CDS      1017493..1018764
FT      /note="closest hit IGI:RGME00762 Dihydroorotase (EC      10
FT      3.5.2.3) [Geobacter metallireducens (JGI)]      Length =
424
FT      Score = 346 bits (887), Expect = 4e-94"
FT      /note="Pyrimidine metabolism"
FT      /label=contig4.329c
FT      /gene="pyrC"
FT      /blastp_file="blastp/contig4.329c.blastp"
FT      CDS      complement(1018869..1019642)
FT      /note="closest hit IGI:RTH00204 Fumarylacetoacetate
FT      hydrolase family protein [Methanobacterium      20
FT      thermoautotrophicum]      Length = 260 Score = 192 bits (
489),
FT      Expect = 3e-48"
FT      /label=contig4.328
FT      /gene="LAW0820"
FT      /blastp_file="blastp/contig4.328.blastp"
FT      CDS      1019930..1021303
FT      /note="closest hit IGI:RATU00355 MIAB PROTEIN
FT      [Agrobacterium tumefaciens C58]      Length = 467 Score = 32
2
FT      bits (825), Expect = 8e-87"
FT      /label=contig4.327c
FT      /gene="miaB"
FT      /blastp_file="blastp/contig4.327c.blastp"
FT      CDS      1021458..1022141
FT      /note="closest hit      IGI:RMMZ02021 PHP family
FT      phosphoesterase (EC 3.1.-.-)      [Methanosarcina mazei Go
1
FT      (IG-31)]      Length = 214 Score = 79.3 bits (194), Expect =
FT      4e-14"      40
FT      /label=contig4.326c
FT      /gene="LAW0822"
FT      /blastp_file="blastp/contig4.326c.blastp"
FT      CDS      1022176..1023267
FT      /note="closest hit IGI:RTH01187 Xaa-Pro dipeptidase (EC
FT      3.4.13.9)      [Thermoanaerobacter tengcongensis MB4T] L
length
FT      = 355 Score = 216 bits (551), Expect = 3e-55"
FT      /label=contig4.325c
FT      /gene="pepQ"      50

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FT          /blastp_file="blastp/contig4.325c.blastp"
FT  CDS     1023291..1024349
FT          /note="partial hit(75-347) GEN:AAM71473 AE012802
FT          GI:21646136 glycosyl transferase [Chlorobium tepidum
FT          TLS]          Length = 335 Score = 109 bits (273), Expect = 5
e-23"
FT          /label=contig4.324c
FT          /gene="LAW0824"
FT          /blastp_file="blastp/contig4.324c.blastp"
FT  CDS     1024378..1025664                                10
FT          /note="unknown"
FT          /label=contig4.323c
FT          /gene="LAW0825"
FT          /blastp_file="blastp/contig4.323c.blastp"
FT  CDS     complement(1025679..1025888)
FT          /note="closest hit SWP:RL28_THEMA Q9WY96 50S ribosomal
FT          protein L28.          [unknown]          Length = 70 Score = 58.5
bits
FT          (140), Expect = 2e-08"
FT          /note="Translation; Ribosome"                                20
FT          /label=contig4.322
FT          /gene="rpmB"
FT          /blastp_file="blastp/contig4.322.blastp"
FT  CDS     1026067..1028082
FT          /note="unknown"
FT          /label=contig4.321c
FT          /gene="LAW0827"
FT          /blastp_file="blastp/contig4.321c.blastp"
FT  CDS     complement(1028105..1029172)
FT          /note="closest hit IGI:RGME01498 Glycerol-3-phosphate
FT          dehydrogenase [NAD(P)+] (EC1.1.1.94)          [Geobacter
FT          metallireducens (JGI)]          Length = 377 Score = 255 bits
FT          (651), Expect = 8e-67"
FT          /note="Glycerolipid metabolism"
FT          /label=contig4.320
FT          /gene="gpsA"
FT          /blastp_file="blastp/contig4.320.blastp"
FT  CDS     1029763..1030869
FT          /note="closest hit IGI:RHS000307 Spermidine/putrescine
FT          transport ATP-binding protein potA          [Haemophilus somn
us
FT          2336]          Length = 372 Score = 388 bits (997), Expect =
FT          e-107"
FT          /note="ABC transporters"
FT          /label=contig4.319c
FT          /gene="potA"
FT          /blastp_file="blastp/contig4.319c.blastp"
FT  CDS     1030856..1031740
FT          /note="closest hit IGI:RXP03463 Spermidine/putrescine
FT          transport system permease protein potB          [Salmonella
FT          50

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FT          paratyphi] Length = 287 Score = 260 bits (664), Expect =
FT          2e-68"
FT          /note="ABC transporters"
FT          /label=contig4.318c
FT          /gene="potB"
FT          /blastp_file="blastp/contig4.318c.blastp"
FT  CDS     1031740..1032516
FT          /note="closest hit IGI:RVC05249 Spermidine/putrescine
FT          transport system permease protein potC [Vibrio cholerae
FT          El Tor N16961] Length = 256 Score = 235 bits (599), 10
FT          Expect = 5e-61"
FT          /note="ABC transporters"
FT          /label=contig4.317c
FT          /gene="potC"
FT          /blastp_file="blastp/contig4.317c.blastp"
FT  CDS     1032574..1033626
FT          /note="closest hit IGI:RAB00917
FT          Spermidine/putrescine-binding protein [Actinobacillus
FT          actinomycetemcomitans HK1651] Length = 348 Score = 32
8 20
FT          bits (841), Expect = 7e-89"
FT          /label=contig4.316c
FT          /gene="potD"
FT          /blastp_file="blastp/contig4.316c.blastp"
FT  CDS     complement(1033802..1035070)
FT          /note="partial hit(8-417) GEN:CAB84566 AL162755 GI:7379990
FT          hypothetical protein NMA1314 [Neisseria meningitidis
FT          Z2491] Length = 522 Score = 345 bits (886), Expect =
FT          6e-94"
FT          /label=contig4.315 30
FT          /gene="LAW0833"
FT          /blastp_file="blastp/contig4.315.blastp"
FT  CDS     complement(1035090..1035533)
FT          /note="closest hit IGI:RNM00408 DNA transposition protein
FT          [Neisseria meningitidis ser.A strain Z2491] Length =
148
FT          Score = 75.5 bits (184), Expect = 3e-13"
FT          /label=contig4.314
FT          /gene="LAW0834"
FT          /blastp_file="blastp/contig4.314.blastp" 40
FT  CDS     complement(1035578..1036222)
FT          /note="closest hit IGI:RDU01309 Hypothetical Protein
FT          [Haemophilus ducreyi] Length = 205 Score = 168 bits
FT          (425), Expect = 5e-41"
FT          /label=contig4.313
FT          /gene="LAW0835"
FT          /blastp_file="blastp/contig4.313.blastp"
FT  CDS     1036458..1037198
FT          /note="closest hit GEN:CAA36500 X52258 GI:579180 putative
FT          repressor [BacteriophageD3112] Length = 240 Sco 50

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re = 76.6

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FT          bits (187), Expect = 3e-13"
FT          /label=contig4.312c
FT          /gene="LAW0836"
FT          /blastp_file="blastp/contig4.312c.blastp"
FT  CDS     1037498..1040206
FT          /note="unknown"
FT          /label=contig4.311c
FT          /gene="LAW0837"
FT          /blastp_file="blastp/contig4.311c.blastp"
FT  CDS     complement(1040246..1041496)
FT          /note="closest hit IGI:RMC001315 UDP-N-acetylglucosamine
FT          1-carboxyvinyltransferase (EC 2.5.1.7) [Magnetococcus
FT          MC-1 (JGI)]          Length = 419 Score = 377 bits (967), Ex
pect =
FT          e-103"
FT          /note="Aminosugars metabolism"
FT          /label=contig4.310
FT          /gene="murA"
FT          /blastp_file="blastp/contig4.310.blastp"
FT  CDS     complement(1041779..1042558)
FT          /note="closest hit IGI:RTH01586 Exodeoxyribonuclease III
FT          (EC 3.1.11.2) [Methanobacterium
FT          thermoautotrophicum]          Length = 257 Score = 271 bits (
693),
FT          Expect = 6e-72"
FT          /label=contig4.309
FT          /gene="xthA"
FT          /blastp_file="blastp/contig4.309.blastp"
FT  CDS     complement(1042878..1043369)
FT          /note="unknown"
FT          /label=contig4.308
FT          /gene="LAW0840"
FT          /blastp_file="blastp/contig4.308.blastp"
FT  CDS     complement(1043947..1044681)
FT          /note="partial hit(1-197) GEN:CAD21163 AJ428069
FT          GI:18307546 putative invasins [Salmonella enterica IIIb
FT          50:k:z]          Length = 239 Score = 107 bits (266), Expect =
FT          2e-22"
FT          /label=contig4.307
FT          /gene="LAW0841"
FT          /blastp_file="blastp/contig4.307.blastp"
FT  CDS     1045546..1047813
FT          /note="closest hit IGI:RECS02438 Catalase (EC 1.11.1.6)
FT          [Escherichia coli O157:H7 Sakai]          Length = 753 Score = 930
FT          bits (2403), Expect = 0.0"
FT          /note="Methane metabolism ,Tryptophan metabolism"
FT          /label=contig4.306c
FT          /gene="katE"
FT          /blastp_file="blastp/contig4.306c.blastp"

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FT    CDS          1048872..1050629
FT                                     /note="partial hit(212-585)          IGI:RDS00019 Methyl-acce
pting
FT    chemotaxis protein          [Desulfovibrio vulgaris]          L
length = 959
FT    Score = 140 bits (353), Expect = 5e-32"
FT    /label=contig4.305c
FT    /gene="tsr"
FT    /blastp_file="blastp/contig4.305c.blastp"
FT    CDS          complement(1050746..1052017)          10
FT    /note="unknown"
FT    /label=contig4.304
FT    /gene="LAW0844"
FT    /blastp_file="blastp/contig4.304.blastp"
FT    CDS          1052160..1053803
FT    /note="unknown"
FT    /label=contig4.303c
FT    /gene="LAW0845"
FT    /blastp_file="blastp/contig4.303c.blastp"
FT    CDS          1053988..1055109          20
FT    /note="partial hit(4-313)  GEN:AAD37768 AF146532 GI:5006987
FT    putative glucosyl transferase          [Klebsiella
FT    pneumoniae]          Length = 375 Score = 99.8 bits (247), Ex
pect =
FT    6e-20"
FT    /label=contig4.302c
FT    /gene="LAW0846"
FT    /blastp_file="blastp/contig4.302c.blastp"
FT    CDS          1055274..1056068          30
FT    /note="unknown"
FT    /label=contig4.301c
FT    /gene="LAW0847"
FT    /blastp_file="blastp/contig4.301c.blastp"
FT    CDS          complement(1056140..1057477)
FT    /note="closest hit IGI:RAA01479 Glucose inhibited division
FT    protein A          [Aquifex aeolicus VF5]  Length = 44 Score
= 418
FT    bits (1074), Expect = e-116"
FT    /label=contig4.300
FT    /gene="gidA"          40
FT    /blastp_file="blastp/contig4.300.blastp"
FT    CDS          complement(1057662..1058297)
FT    /note="partial hit(25-198) IGI:RAG36191 hypothetical
FT    protein          [Archaeoglobus fulgidus DSM4304]          Length =
173
FT    Score = 86.3 bits (212), Expect = 3e-16"
FT    /label=contig4.299
FT    /gene="LAW0849"
FT    /blastp_file="blastp/contig4.299.blastp"
FT    CDS          complement(1058349..1059566)          50

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FT          /note="closest hit IGI:RTY04367 NAD(FAD)-utilizing
FT          dehydrogenases [Salmonella typhiCT18]          Length = 4
00 Score
FT          = 271 bits (694), Expect = 9e-72"
FT          /label=contig4.298
FT          /gene="LAW0850"
FT          /blastp_file="blastp/contig4.298.blastp"
FT  CDS     1059742..1060068
FT          /note="erroneous stop codon          GI:2633107 similar to
FT          NAD(P)H-flavin oxidoreductase"          10
FT          /label=contig4.297c
FT          /gene="LAW0851"
FT          /blastp_file="blastp/contig4.297c.blastp"
FT  CDS     1060120..1060419
FT          /note="erroneous stop codon          (IGI:RDU00946 NADPH-flav
in
FT          oxidoreductase (EC 1.6.99.-)          [Haemophilus ducreyi]  L
ength
FT          = 220"
FT          /label=contig4.296c          20
FT          /gene="LAW0852"
FT          /blastp_file="blastp/contig4.296c.blastp"
FT  CDS     complement(1060422..1060829)
FT          /note="unknown"
FT          /label=contig4.295
FT          /gene="LAW0853"
FT          /blastp_file="blastp/contig4.295.blastp"
FT  CDS     complement(1062640..1063959)
FT          /note="closest hit          IGI:RCB03235 Flagellum-specific A
TP          30
FT          synthase (EC 3.6.3.14)          [Clostridium botulinum
FT          ATCC-3502] Length = 441 Score = 447 bits (1151), Expect =
FT          e-124"
FT          /note="Flagellar assembly,Type III secretion system "
FT          /label=contig4.294
FT          /gene="fliI"
FT          /blastp_file="blastp/contig4.294.blastp"
FT  CDS     complement(1063984..1065429)
FT          /note="unknown/probable flagellar protein"
FT          /label=contig4.293          40
FT          /gene="LAW0855"
FT          /blastp_file="blastp/contig4.293.blastp"
FT  CDS     complement(1065476..1066471)
FT          /note="closest hit          IGI:RCTH01341 Flagellar motor swi
tch
FT          protein fliG          [Clostridium thermocellum ATCC-27405
FT          (JGI)] Length = 355 Score = 257 bits (656), Expect =
FT          2e-67"
FT          /note="Bacterial chemotaxis,Flagellar assembly"
FT          /label=contig4.292          50

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FT          /gene="fliG"
FT          /blastp_file="blastp/contig4.292.blastp"
FT   CDS    complement(1066878..1068542)
FT          /note="partial hit(23-414) IGI:RGME03407 Flagellar M-ring
FT          protein fliF      [Geobacter metallireducens (JGI)]      L
length =
FT          527 Score = 300 bits (769), Expect = 3e-80"
FT          /note="Flagellar assembly,Type III secretion system"
FT          /label=contig4.291
FT          /gene="fliF"      10
FT          /blastp_file="blastp/contig4.291.blastp"
FT   CDS    complement(1068655..1069002)
FT          /note="partial hit(37-113) IGI:RCTH01343 Flagellar
FT          hook-basal body complex protein fliE      [Clostridium
FT          thermocellum ATCC-27405 (JGI)]      `Length = 104 Score = 72
.8
FT          bits (177), Expect = 8e-13"
FT          /note="Flagellar assembly"
FT          /label=contig4.290
FT          /gene="fliE"      20
FT          /blastp_file="blastp/contig4.290.blastp"
FT   CDS    complement(1069051..1069491)
FT          /note="closest hit      IGI:RGME03409 Flagellar basal-bod
y rod
FT          protein flgC      [Geobacter metallireducens (JGI)]      L
length =
FT          147 Score = 137 bits (344), Expect = 6e-32"
FT          /note="Flagellar assembly"
FT          /note="Flagellar assembly"
FT          /label=contig4.289      30
FT          /gene="flgC"
FT          /blastp_file="blastp/contig4.289.blastp"
FT   CDS    complement(1069494..1069907)
FT          /note="closest hit IGI:RMC002267 Flagellar basal-body rod
FT          protein flgB      [Magnetococcus MC-1 (JGI)]      Length =
137
FT          Score = 71.2 bits (173), Expect = 2e-12"
FT          /note="Flagellar assembly"
FT          /label=contig4.288
FT          /gene="flgB"      40
FT          /blastp_file="blastp/contig4.288.blastp"
FT   CDS    complement(1070196..1070954)
FT          /note="closest hit      IGI:RCTH02328 Cobalt transport
FT          ATP-binding protein cbi0      [Clostridium thermocellum
FT          ATCC-27405 (JGI)]      Length = 254 Score = 157 bits (396),
FT          Expect = 2e-37"
FT          /label=contig4.287
FT          /gene="cbi0"
FT          /blastp_file="blastp/contig4.287.blastp"
FT   CDS    complement(1070963..1071709)      50

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FT          /note="unknown"
FT          /label=contig4.286
FT          /gene="LAW0862"
FT          /blastp_file="blastp/contig4.286.blastp"
FT  CDS     complement(1071699..1072334)
FT          /note="closest hit          IGI:RMMA08483 probable cobalt
FT          transport protein CbiM protein  [Magnetospirillum
FT          magnetotacticum MS-1(JGI)]          Length = 199 Score = 117
bits
FT          (292), Expect = 2e-25"          10
FT          /label=contig4.285
FT          /gene="cbiM"
FT          /blastp_file="blastp/contig4.285.blastp"
FT  CDS     complement(1072321..1072818)
FT          /note="unknown"
FT          /label=contig4.284
FT          /gene="LAW0864"
FT          /blastp_file="blastp/contig4.284.blastp"
FT  CDS     complement(1073007..1074569)
FT          /note="partial hit(9-412)  IGI:RC AU01641 Virulence factor    20
FT          mviN          [Chloroflexus aurantiacus J-10(JGI)]  Length = 5
26
FT          Score = 164 bits (414), Expect = 4e-39"
FT          /label=contig4.283
FT          /gene="mviN"
FT          /blastp_file="blastp/contig4.283.blastp"
FT  CDS     complement(1074655..1076736)
FT          /note="closest hit          IGI:RGME00310 Hypothetical Protei
n
FT          [Geobacter metallireducens (JGI)]  Length = 718 Score = 146    30
FT          bits (369), Expect = 1e-33"
FT          /label=contig4.282
FT          /gene="LAW0866"
FT          /blastp_file="blastp/contig4.282.blastp"
FT  CDS     complement(1077738..1078598)
FT          /note="closest hit IGI:RMMA07718 Glutamate racemase (EC
FT          5.1.1.3) [Magnetospirillum magnetotacticum MS-1
FT          (JGI)]          Length = 273 Score = 242 bits (618), Expect =
FT          4e-63"
FT          /note="Glutamate metabolism,D-Glutamine and D-glutamate    40
FT          metabolism"
FT          /label=contig4.281
FT          /gene="murl"
FT          /blastp_file="blastp/contig4.281.blastp"
FT  CDS     complement(1078883..1079695)
FT          /note="closest hit          IGI:RHD05497 Ribosomal large subu
nit
FT          pseudouridine synthase B (EC4.2.1.70)          [Bacillus
FT          halodurans C-125]  Length = 242 Score = 181 bits (460),
FT          Expect = 7e-45"          50

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FT          /note="Pyrimidine metabolism"
FT          /label=contig4.280
FT          /gene="rluB"
FT          /blastp_file="blastp/contig4.280.blastp"
FT  CDS     1079867..1081684
FT          /note="closest hit          IGI:RGME02408 Multidrug resistanc
e ABC
FT          transporter ATP-binding and permease protein          [Geobacte
r
FT          metallireducens (JGI)]          Length = 571  Score = 420 bits  10
FT          (1079), Expect = e-116"
FT          /label=contig4.279c
FT          /gene="LAW0869"
FT          /blastp_file="blastp/contig4.279c.blastp"
FT  CDS     1081659..1082303
FT          /note="partial hit(28-197) IGI:RMMA08821 Hypothetical
FT          lipoprotein          [Magnetospirillum magnetotacticum MS-1
FT          (JGI)]          Length = 236 Score = 100 bits (250), Expect =
FT          1e-20"
FT          /label=contig4.278c          20
FT          /gene="LAW0870"
FT          /blastp_file="blastp/contig4.278c.blastp"
FT  CDS     1082307..1083191
FT          /note="partial hit(187-290)          IGI:RCL00386 Lipid A
FT          biosynthesis lauroyl acyltransferase (EC 2.3.1.-)
FT          [Chlorobium tepidum]          Length = 295 Score = 76.3 bits (
186),
FT          Expect = 5e-13"
FT          /note="Lipopolysaccharide biosynthesis "
FT          /label=contig4.277c          30
FT          /gene="htrB"
FT          /blastp_file="blastp/contig4.277c.blastp"
FT  CDS     complement(1083991..1085361)
FT          /note="closest hit IGI:RMMZ02523 Hypothetical Cytosolic
FT          Protein          [Methanosarcina mazeiGo1 (IG-31)]          Length =
453
FT          Score = 531 bits (1368), Expect = e-150"
FT          /label=contig4.276
FT          /gene="LAW0872"
FT          /blastp_file="blastp/contig4.276.blastp"          40
FT  CDS     complement(1085499..1086062)
FT          /note="unknown"
FT          /label=contig4.275
FT          /gene="LAW0873"
FT          /blastp_file="blastp/contig4.275.blastp"
FT  CDS     1086267..1088042
FT          /note="closest hit          IGI:RCE17831 Methylene tetrahydrof
olate
FT          dehydrogenase (NADP+) (EC1.5.1.5) /
FT          Methenyl tetrahydrofolate cyclohydrolase (EC3.5.4.9) /          50

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FT          Formate--tetrahydrofolate ligase (EC
FT          6.3.4.3) [Caenorhabditis elegans]          Length = 640 Sco
re = 471
FT          bits (1213), Expect = e-131"
FT          /note="Glyoxylate and dicarboxylate metabolism,One carbon
FT          pool by folate, Folate biosynthesis"
FT          /label=contig4.274c
FT          /gene="LAW0874"
FT          /blastp_file="blastp/contig4.274c.blastp"
FT  CDS     1088081..1088974                               10
FT          /note="closest hit IGI:RBS02426 Methylenetetrahydrofolate
FT          dehydrogenase (NADP+) (EC1.5.1.5) /
FT          Methenyltetrahydrofolate cyclohydrolase
FT          (EC3.5.4.9) [Bacillus subtilis 168] Length = 283 Sco
re =
FT          260 bits (665), Expect = 2e-68"
FT          /label=contig4.273c
FT          /gene="LAW0875"
FT          /blastp_file="blastp/contig4.273c.blastp"
FT  CDS     complement(1088986..1090329)                   20
FT          /note="closest hit IGI:RNPU05613 16S rRNA m(5)C 967
FT          methyltransferase (EC 2.1.1.-) [Nostoc punctiforme
FT          ATCC-29133 (JGI)] Length = 487 Score = 179 bits (455),
FT          Expect = 5e-44"
FT          /note="Ubiquinone biosynthesis, Androgen and estrogen
FT          metabolism, Histidine metabolism, Tyrosine metabolism,
FT          Tryptophan metabolism,minophosphonate metabolism,
FT          Selenoamino acid metabolism,Nitrobenzene degradation "
FT          /label=contig4.272
FT          /gene="LAW0876"                               30
FT          /blastp_file="blastp/contig4.272.blastp"
FT  CDS     complement(1090388..1091761)
FT          /note="closest hit IGI:RTDE00866 Acetoacetate metabo
lism
FT          regulatory protein atoC [Treponema denticola 35405]
Length
FT          = 473 Score = 397 bits (1021), Expect = e-109"
FT          /note="Signal Transduction;Two-component system"
FT          /label=contig4.271
FT          /gene="atoC"                                   40
FT          /blastp_file="blastp/contig4.271.blastp"
FT  CDS     complement(1091827..1093269)
FT          /note="partial hit(239-480) IGI:RGME00119 Sensor pro
tein
FT          atoS (EC 2.7.3.-) [Geobacter metallireducens
FT          (JGI)] Length = 451 Score = 149 bits (376), Expect =
FT          9e-35"
FT          /note="Signal Transduction; Two-component system"
FT          /label=contig4.270
FT          /gene="atoS"                                   50

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FT          /blastp_file="blastp/contig4.270.blastp"
FT  CDS     complement(1093271..1094605)
FT          /note="partial hit(68-430) IGI:RTM02055
FT          Glucose-6-phosphate isomerase (EC 5.3.1.9)          [Thermoto
ga
FT          maritima MSB8]          ength = 448 Score = 208 bits (529), Exp
ect
FT          = 1e-52"
FT          /note="Glycolysis / Gluconeogenesis,Pentose phosphate
FT          pathway,Starch and sucrose metabolism"          10
FT          /label=contig4.269
FT          /gene="pgi"
FT          /blastp_file="blastp/contig4.269.blastp"
FT  CDS     1095072..1095860
FT          /note="closest hit          IGI:RGME00875 Sugar fermentation
FT          stimulation protein A          [Geobacter metallireducens
FT          (JGI)]          Length = 255 Score = 152 bits (384), Expect =
FT          4e-36"
FT          /note=""
FT          /label=contig4.268c          20
FT          /gene="sfsA"
FT          /blastp_file="blastp/contig4.268c.blastp"
FT  CDS     complement(1095872..1096972)
FT          /note="partial hit(50-366) IGI:RGME03573 Hypothetical
FT          Protein          [Geobacter metallireducens (JGI)]          Length =
367
FT          Score = 104 bits (260), Expect = 2e-21"
FT          /label=contig4.267
FT          /gene="LAW0881"
FT          /blastp_file="blastp/contig4.267.blastp"          30
FT  CDS     complement(1096969..1098123)
FT          /note="closest hit IGI:RGME03572 Transporter          [Geobacte
r
FT          metallireducens (JGI)]          Length = 395 Score = 184 bits
FT          (468), Expect = 1e-45"
FT          /label=contig4.266
FT          /gene="LAW0882"
FT          /blastp_file="blastp/contig4.266.blastp"
FT  CDS     complement(1098346..1099038)
FT          /note="closest hit IGI:RMPX01764 METAL DEPENDENT HYDROLASE          40
FT          (EC 3.-.-.-)          [Methanopyrus kandleri AV19]          Length =
240
FT          Score = 184 bits (466), Expect = 1e-45"
FT          /label=contig4.265
FT          /gene="LAW0883"
FT          /blastp_file="blastp/contig4.265.blastp"
FT  CDS     complement(1099356..1101281)
FT          /note="closest hit          GEN:CAA68184 X99911 GI:1487950
FT          selenocysteine-specific elongation factor
FT          [Desulfomicrobium baculatum]          Length = 634 Score = 59          50

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FT          bits (1530), Expect = e-168"
FT          /label=contig4.264
FT          /gene="selB"
FT          /blastp_file="blastp/contig4.264.blastp"
FT  CDS      complement(1101390..1102847)
FT          /note="closest hit          IGI:RLIN01864 Glutamyl-tRNA(Gln)
FT          amidotransferase subunit A (EC6.3.5.-) [Listeria innocua
FT          Clip11262] Length = 483 Score = 437 bits (1124), Expect =
FT          e-121"
FT
FT          /note="Glutamate metabolism,Alanine and aspartate
FT          metabolism"
FT          /label=contig4.263
FT          /gene="LAW0885"
FT          /blastp_file="blastp/contig4.263.blastp"
FT  CDS      complement(1102873..1103156)
FT          /note="closest hit          IGI:RPPE00355 Glutamyl-tRNA(Gln)
FT          amidotransferase subunit C (EC6.3.5.-) [Pediococcus
FT          pentosaceus (JGI)] Length = 104 Score = 57.0 bits (136),
FT          Expect = 5e-08"
FT
FT          /note="Glutamate metabolism,Alanine and aspartate
FT          metabolism"
FT          /label=contig4.262
FT          /gene="LAW0886"
FT          /blastp_file="blastp/contig4.262.blastp"
FT  CDS      complement(1103384..1103869)
FT          /note="unknown"
FT          /label=contig4.260
FT          /gene="LAW0887"
FT          /blastp_file="blastp/contig4.260.blastp"
FT  CDS      1104132..1104584
FT          /note="closest hit          IGI:RGME01976 Universal stress pr
otein
FT          family [Geobacter metallireducens (JGI)] Length =
149
FT          Score = 97.1 bits (240), Expect = 7e-20"
FT          /label=contig4.259c
FT          /gene="LAW0888"
FT          /blastp_file="blastp/contig4.259c.blastp"
FT  CDS      complement(1105139..1105771)
FT          /note="partial hit(7-204) IGI:RTM01616 SUA5 protein
FT          [Thermotoga maritima MSB8] Length = 335 Score = 110 bits
FT          (274), Expect = 2e-23"
FT          /label=contig4.258
FT          /gene="LAW0889"
FT          /blastp_file="blastp/contig4.258.blastp"
FT  CDS      complement(1106149..1110171)
FT          /note="unknown"
FT          /label=contig4.257
FT          /gene="LAW0890"

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FT          /blastp_file="blastp/contig4.257.blastp"
FT  CDS     1111143..1111616
FT          /note="closest hit          IGI:RPG01277 Hypothetical Cytosol
ic
FT          Protein [Porphyromonas gingivalis]          Length = 157 Scor
e =
FT          112 bits (281), Expect = 1e-24"
FT          /label=contig4.256c
FT          /gene="LAW0891"
FT          /blastp_file="blastp/contig4.256c.blastp"          10
FT  CDS     1111705..1113402
FT          /note="closest hit          IGI:RGME02388 Apolipoprotein
FT          N-acyltransferase (EC 2.3.1.-) [Geobacter metallireducen
s
FT          (JGI)]          Length = 521 Score = 176 bits (447), Expect =
FT          6e-43"
FT          /note="Valine, leucine and isoleucine degradation, Lysine
FT          biosynthesis, Lysine degradation, Histidine metabolism,
FT          Tyrosine metabolism, Phenylalanine metabolism, D-Arginine
FT          and D-ornithine metabolism, Aminosugars metabolism          20
FT          , Glycerolipid metabolism, Benzoate degradation via CoA
FT          ligation , Ethylbenzene degradation, Butanoate metabolism"
FT          /label=contig4.255c
FT          /gene="Int"
FT          /blastp_file="blastp/contig4.255c.blastp"
FT  CDS     1113451..1114539
FT          /note="closest hit          GEN:CAB15546 Z99122 GI:2636055 pe
ptide
FT          chain release factor 2 [Bacillus subtilis]          Length =
366          30
FT          Score = 328 bits (842), Expect = 6e-89"
FT          /label=contig4.254c
FT          /gene="LAW0893"
FT          /blastp_file="blastp/contig4.254c.blastp"
FT  CDS     1114982..1115257
FT          /note="partial hit(1-93) IGI:RGME00830 Integration host
FT          factor beta-subunit [Geobacter metallireducens
FT          (JGI)]          Length = 133 Score = 102 bits (254), Expect =
FT          1e-21"
FT          /label=contig4.253c          40
FT          /gene="himD"
FT          /blastp_file="blastp/contig4.253c.blastp"
FT  CDS     1115585..1116430
FT          /note="closest hit          IGI:RAA00753 Diaminopimelate epim
erase
FT          (EC 5.1.1.7) [Aquifex aeolicus VF5]          Length = 279 Sco
re =
FT          175 bits (443), Expect = 7e-43"
FT          /note="Lysine biosynthesis"
FT          /label=contig4.252c          50

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FT          /gene="dapF"
FT          /blastp_file="blastp/contig4.252c.blastp"
FT  CDS     1116477..1117382
FT          /note="closest hit          IGI:RGME01661 Dihydrodipicolinate
FT          synthase (EC 4.2.1.52)      [Geobacter metallireducens
FT          (JGI)]          Length = 306 Score = 298 bits (764), Expect =
FT          5e-80"
FT          /note="Lysine biosynthesis"
FT          /label=contig4.251c
FT          /gene="dapA"
FT          /blastp_file="blastp/contig4.251c.blastp"
FT  CDS     1117584..1118747
FT          /note="closest hit          IGI:REC04455 Protein araJ precurs
or
FT          [Escherichia coli K12]      Length = 394 Score = 340 bits
FT          (872), Expect = 2e-92"
FT          /label=contig4.250c
FT          /gene="araJ"
FT          /blastp_file="blastp/contig4.250c.blastp"
FT  CDS     1118929..1119711
FT          /note="closest hit          IGI:RBS00039 SEC-INDEPENDENT PROT
EIN
FT          TATD (EC 3.1.21.-)          [Bacillus subtilis 168] Length =
255
FT          Score = 167 bits (422), Expect = 2e-40"
FT          /label=contig4.249c
FT          /gene="tatD"
FT          /blastp_file="blastp/contig4.249c.blastp"
FT  CDS     complement(1119740..1120381)
FT          /note="unknown"
FT          /label=contig4.248
FT          /gene="LAW0899"
FT          /blastp_file="blastp/contig4.248.blastp"
FT  CDS     1120638..1121039
FT          /note="unknown"
FT          /label=contig4.247c
FT          /gene="LAW0900"
FT          /blastp_file="blastp/contig4.247c.blastp"
FT  CDS     1121253..1121570
FT          /note="closest hit          GEN:CAC36215 AJ277293 GI:13560127 40
FT          dissimilatory sulfite reductase subunit C
FT          [Thermodesulforhabdus norvegica] Length = 106 Score = 174
FT          bits (442), Expect = 2e-43"
FT          /label=contig4.246c
FT          /gene="dsr"
FT          /blastp_file="blastp/contig4.246c.blastp"
FT  CDS     1121916..1122938
FT          /note="possible missing stop codon(241)  GEN:CAD42340
FT          AX464446 GI:21899252 unnamed protein product      [Lawsonia
FT          intracellularis] Length = 218 Score = 434 bits (1116), 50

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FT          Expect = e-121"
FT          /label=contig4.245c
FT          /gene="LAW0902"
FT          /blastp_file="blastp/contig4.245c.blastp"
FT  CDS     1122971..1123441
FT          /note="unknown"
FT          /label=contig4.244c
FT          /gene="LAW0903"
FT          /blastp_file="blastp/contig4.244c.blastp"
FT  CDS     complement(1123545..1127711) 10
FT          /note="closest hit          IGI:RRR03014 DNA-directed RNA
FT          polymerase beta' chain (EC 2.7.7.6)          [Rhodospirillum
FT          rubrum (JGI)]          Length = 1424 Score = 1605 bits (4155),
FT          Expect = 0.0"
FT          /note="Purine metabolism,Pyrimidine metabolism,RNA
FT          polymerase"
FT          /label=contig4.243
FT          /gene="rpoB"
FT          /blastp_file="blastp/contig4.243.blastp"
FT  CDS     complement(1127787..1131908) 20
FT          /note="closest hit          IGI:RGME03050 DNA-directed RNA
FT          polymerase beta chain (EC 2.7.7.6)          [Geobacter
FT          metallireducens (JGI)]          Length = 1378 Score = 1558 bits
FT          (4034), Expect = 0.0"
FT          /note="RNA polymerase,Purine metabolism,Pyrimidine
FT          metabolism"
FT          /label=contig4.242
FT          /gene="rpoB"
FT          /blastp_file="blastp/contig4.242.blastp"
FT  CDS     complement(1132246..1133538) 30
FT          /note="closest hit          IGI:RDHA04771 Glutamate-1-semiald
ehyde
FT          2,1-aminomutase (EC 5.4.3.8)          [Desulfitobacterium
FT          halfniense DCB-2 (JGI)]          Length = 430 Score = 410 bits
FT          (1055), Expect = e-113"
FT          /note="Porphyrin and chlorophyll metabolism"
FT          /label=contig4.241
FT          /gene="hemL"
FT          /blastp_file="blastp/contig4.241.blastp"
FT  CDS     complement(1133538..1134038) 40
FT          /note="closest hit          IGI:RMMZ04167 NIRH protein
FT          [Methanosarcina mazei Go1(IG-31)]          Length = 158 Score = 122
FT          bits (307), Expect = 1e-27"
FT          /label=contig4.240
FT          /gene="nirH"
FT          /blastp_file="blastp/contig4.240.blastp"
FT  CDS     1134626..1135717
FT          /note="closest hit          IGI:RDHA03857 Hydrogenase
FT          expression/formation protein hypD          [Desulfitobacteri
um

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FT      halfniense DCB-2 (JGI)]      Length = 367 Score = 329 bits
FT      (844), Expect = 3e-89"
FT      /label=contig4.239c
FT      /gene="hypD"
FT      /blastp_file="blastp/contig4.239c.blastp"
FT      CDS      complement(1136500..1137279)
FT      /note="closest hit      IGI:RPA01091 Prolipoprotein
FT      diacylglyceryl transferase (EC 2.4.99.-) [Pseudomonas
FT      aeruginosa PA01]      Length = 266 Score = 292 bits (748),
FT      Expect = 3e-78"      10
FT      /note="O-Glycans biosynthesis,Globoside
FT      metabolism,Ganglioside biosynthesis"
FT      /label=contig4.238
FT      /gene="lgt"
FT      /blastp_file="blastp/contig4.238.blastp"
FT      CDS      complement(1137481..1138158)
FT      /note="closest hit      IGI:RVK01663 Cytidylate kinase (E
C
FT      2.7.4.14)      [Pasteurella multocida Pm70]      Length =
227 Score      20
FT      = 130 bits (326), Expect = 2e-29"
FT      /note="Pyrimidine metabolism"
FT      /label=contig4.237
FT      /gene="cmk"
FT      /blastp_file="blastp/contig4.237.blastp"
FT      CDS      complement(1138388..1139284)
FT      /note="closest hit      IGI:RAG20569 Hypothetical Membran
e
FT      Spanning Protein [Archaeoglobus fulgidus DSM4304] Length
FT      = 274 Score = 146 bits (368), Expect = 4e-34"      30
FT      /label=contig4.236
FT      /gene="LAW0911"
FT      /blastp_file="blastp/contig4.236.blastp"
FT      CDS      1139678..1141579
FT      /note="closest hit IGI:RGME03470 Chaperone protein dnaK
FT      [Geobacter metallireducens(JGI)]      Length = 638 Score = 848
FT      bits (2192), Expect = 0.0"
FT      /label=contig4.235c
FT      /gene="dnaK"
FT      /blastp_file="blastp/contig4.235c.blastp"      40
FT      CDS      complement(1141712..1143127)
FT      /note="closest hit      GEN:CAA05764 AJ002933 GI:2644959
FT      aspartate ammonia-lyase      [Wolinella succinogenes]      L
ength =
FT      471 Score = 535 bits (1379), Expect = e-151"
FT      /note="Alanine and aspartate metabolism,Nitrogen
FT      metabolism"
FT      /label=contig4.234
FT      /gene="aspA"
FT      /blastp_file="blastp/contig4.234.blastp"      50

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FT   CDS           complement(1143320..1144207)
FT               /note="closest hit IGI:RMC001218 D-alanyl-D-alanine
FT               carboxypeptidase (EC 3.4.16.4) [Magnetococcus MC-1
FT               (JGI)] Length = 290 Score = 262 bits (669), Expect =
FT               5e-69"
FT               /label=contig4.233
FT               /gene="dacC"
FT               /blastp_file="blastp/contig4.233.blastp"
FT   CDS           1144573..1145496
FT               /note="closest hit IGI:RMC001799 Branched-chain amin 10
o
FT               acid aminotransferase (EC2.6.1.42) [Magnetococcus MC
-1
FT               (JGI)] Length = 305 Score = 347 bits (889), Expect =
FT               2e-94"
FT               /note="leucine and isoleucine degradation, leucine and
FT               isoleucine biosynthesis,Pantothenate and CoA biosynthesis"
FT               /label=contig4.232c
FT               /gene="livE"
FT               /blastp_file="blastp/contig4.232c.blastp" 20
FT   CDS           1145527..1147251
FT               /note="partial hit(10-462) IGI:RNX01443 DNA polymerase III
FT               subunit gamma/tau (EC 2.7.7.7) [Neisseria meningitidis
FT               ser. B strain MC58] Length = 704 Score = 274 bits (
700),
FT               Expect = 3e-72"
FT               /note="Purine metabolism ,Pyrimidine metabolism,DNA
FT               polymerase "
FT               /label=contig4.231c
FT               /gene="dnaX" 30
FT               /blastp_file="blastp/contig4.231c.blastp"
FT   CDS           1147270..1147581
FT               /note="closest hit IGI:RTHT00036 Hypothetical
FT               Transcriptional Regulatory Protein [Thermoanaerobact
er
FT               tengcongensis MB4T] Length = 111 Score = 101 bits (
252),
FT               Expect = 2e-21"
FT               /label=contig4.230c
FT               /gene="LAW0917" 40
FT               /blastp_file="blastp/contig4.230c.blastp"
FT   CDS           1147646..1148257
FT               /note="closest hit IGI:RCK00518 Recombination protei
n
FT               recR [Prochlorococcus marinus MED4 (JGI)] Length =
199
FT               Score = 154 bits (389), Expect = 7e-37"
FT               /label=contig4.229c
FT               /gene="recR"
FT               /blastp_file="blastp/contig4.229c.blastp" 50

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FT   CDS           complement(1148418..1149008)
FT               /note="unknown"
FT               /label=contig4.228
FT               /gene="LAW0919"
FT               /blastp_file="blastp/contig4.228.blastp"
FT   CDS           complement(1149173..1150072)
FT               /note="partial hit(189-317)          IGI:RTHT00781 Cell wall
FT               endopeptidase, family M23/M37        [Thermoanaerobacter
FT               tengcongensis MB4T]          Length = 301 Score = 141 bits (
355),
FT               Expect = 1e-32"
FT               /label=contig4.227
FT               /gene="LAW0920"
FT               /blastp_file="blastp/contig4.227.blastp"
FT   CDS           1150886..1152172
FT               /note="closest hit          IGI:RMMA08333
FT               Phosphoribosylamine--glycine ligase (EC
FT               6.3.4.13) [Magnetospirillum magnetotacticum MS-1
FT               (JGI)]          Length = 424 Score = 418 bits (1074), Expect =
FT               e-116"
FT               /note="Purine metabolism"
FT               /label=contig4.226c
FT               /gene="purD"
FT               /blastp_file="blastp/contig4.226c.blastp"
FT   CDS           1152159..1152674
FT               /note="closest hit I          GI:RYS05995
FT               Phosphoribosylaminoimidazole carboxylase catalytic subunit
FT               (EC 4.1.1.21) [Yersinia pseudotuberculosis] Length =
174
FT               Score = 130 bits (327), Expect = 7e-30"
FT               /note="Purine metabolism"
FT               /label=contig4.225c
FT               /gene="purK"
FT               /blastp_file="blastp/contig4.225c.blastp"
FT   CDS           1152735..1153367
FT               /note="closest hit          IGI:RGME00758 Signal peptidase I
(EC
FT               3.4.21.89)          [Geobacter metallireducens (JGI)]          L
length = 226
FT               Score = 198 bits (504), Expect = 4e-50"
FT               /note="Protein export"
FT               /label=contig4.224c
FT               /gene="lepB"
FT               /blastp_file="blastp/contig4.224c.blastp"
FT   CDS           complement(1153381..1153701)
FT               /note="partial hit(20-90) IGI:RTY02880 Quaternary ammonium
FT               compound-resistance protein          [Salmonella typhi
FT               CT18]          Length = 109 Score = 70.5 bits (171), Expect =
FT               4e-12"
FT               /label=contig4.223

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FT          /gene="qacE"
FT          /blastp_file="blastp/contig4.223.blastp"
FT  CDS     complement(1153732..1154109)
FT          /note="closest hit          IGI:RPA02668 Quaternary ammonium
FT          compound-resistance protein          [Pseudomonas aeruginosa
FT          PA01]          Length = 122 Score = 98.6 bits (244), Expect =
FT          1e-20"
FT          /label=contig4.222
FT          /gene="qacE"
FT          /blastp_file="blastp/contig4.222.blastp"
FT  CDS     complement(1154151..1156142)
FT          /note="partial hit(115-589)          IGI:RPFL05927 Phosphogly
cerol
FT          transferase MdoB and related proteins, alkaline
FT          phosphatase superfamily          [Pseudomonas fluorescens
FT          SBW25]          Length = 573 Score = 308 bits (790), Expect =
FT          1e-82"
FT          /note="Glycerolipid metabolism"
FT          /label=contig4.221
FT          /gene="mdoB"
FT          /blastp_file="blastp/contig4.221.blastp"
FT  CDS     complement(1156205..1157719)
FT          /note="closest hit          IGI:RNE01241 Virulence factor mvi
N
FT          [Nitrosomonas europaea ATCC-25978 (JGI)]          Length = 509
FT          Score = 168 bits (425), Expect = 2e-40"
FT          /label=contig4.220
FT          /gene="mviN"
FT          /blastp_file="blastp/contig4.220.blastp"
FT  CDS     1157845..1158960
FT          /note="closest hit          IGI:RTHT01097 Queuine
FT          tRNA-ribosyltransferase (EC2.4.2.29)          [Thermoanaerobact
er
FT          tengcongensis MB4T]          Length = 375 Score = 426 bits (
1096),
FT          Expect = e-118"
FT          /label=contig4.219c
FT          /gene="tgt"
FT          /blastp_file="blastp/contig4.219c.blastp"
FT  CDS     complement(1159064..1160209)
FT          /note="weak partial hit(10-154)          IGI:RECS04493
FT          Glycosyltransferase involved in cell wall biogenesis(EC
FT          2.4.-.-) [Escherichia coli 0157:H7 Sakai] Length = 338
FT          Score = 95.9 bits (237), Expect = 8e-19"
FT          /label=contig4.218
FT          /gene="LAW0929"
FT          /blastp_file="blastp/contig4.218.blastp"
FT  CDS     complement(1160320..1160706)
FT          /note="closest hit          PIR:R5DV7 A02769 ribosomal protei
n

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FT          L7/L12 - [Desulfovibrio vulgaris(strain Miyazaki)]
Length
FT          = 126 Score = 161 bits (408), Expect = 1e-39"
FT          /note="Ribosome"
FT          /label=contig4.217
FT          /gene="rplL"
FT          /blastp_file="blastp/contig4.217.blastp"
FT  CDS     complement(1160754..1161272)
FT          /note="closest hit          IGI:RTH02128 LSU ribosomal prote
in
FT          L10P          [Thermoanaerobacter tengcongensis MB4T] Length =
177
FT          Score = 126 bits (316), Expect = 2e-28"
FT          /note="Ribosome"
FT          /label=contig4.216
FT          /gene="rplJ"
FT          /blastp_file="blastp/contig4.216.blastp"
FT  CDS     complement(1161433..1162140)
FT          /note="closest hit          IGI:RGME03047 LSU ribosomal prote
in
FT          L1P          [Geobacter metallireducens(JGI)]          Length =
234 Score =
FT          243 bits (621), Expect = 1e-63"
FT          /note="Ribosome"
FT          /label=contig4.215
FT          /gene="rplA"
FT          /blastp_file="blastp/contig4.215.blastp"
FT  CDS     complement(1162245..1162667)
FT          /note="closest hit          GEN:AAM71399 AE012794 GI:21646054
FT          ribosomal protein L11          [Chlorobium tepidum TLS]          L 30
length =
FT          141 Score = 201 bits (512), Expect = 2e-51"
FT          /note="Ribosome"
FT          /label=contig4.214
FT          /gene="rplK"
FT          /blastp_file="blastp/contig4.214.blastp"
FT  CDS     complement(1162747..1163331)
FT          /note="closest hit          IGI:RMC000319 Transcription
FT          antitermination protein nusG          [Magnetococcus MC-1
FT          (JGI)]          Length = 176 Score = 204 bits (518), Expect =
FT          7e-52"
FT          /label=contig4.213
FT          /gene="nusG"
FT          /blastp_file="blastp/contig4.213.blastp"
FT  CDS     complement(1163863..1165056)
FT          /note="closest hit          PIR:A54536 A54536 translation
FT          elongation factor EF-Tu -          [Flexistipes
FT          sinuarabici]          Length = 396 Score = 535 bits (1379),
FT          Expect = e-151"
FT          /label=contig4.212

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FT          /gene="tufA"
FT          /blastp_file="blastp/contig4.212.blastp"
FT  CDS     complement(1165638..1168367)
FT          /note="closest hit          IGI:RXFA00816 ZINC PROTEASE (EC
FT          3.4.99.-)          [Xylella fastidiosa CVC]          Length =
990]Score =
FT          187 bits (476), Expect = 5e-46"
FT          /label=contig4.211
FT          /gene="pqqL"
FT          /blastp_file="blastp/contig4.211.blastp"          10
FT  CDS     1168519..1169796
FT          /note="closest hit  IGI:RGME02563 Thiamine biosynthesis
FT          protein thiC          [Geobacter metallireducens (JGI)]
Length =
FT          436 Score = 392 bits (1006), Expect = e-108"
FT          /label=contig4.210c
FT          /gene="thiC"
FT          /blastp_file="blastp/contig4.210c.blastp"
FT  CDS     complement(1169954..1171351)
FT          /note="closest hit          IGI:RGME00335          20
FT          Amidophosphoribosyltransferase (EC 2.4.2.14)          [Geobact
er
FT          metallireducens (JGI)]          Length = 540 Score = 447 bits
FT          (1149), Expect = e-124"
FT          /note="Purine metabolism,Glutamate metabolism"
FT          /label=contig4.209
FT          /gene="purF"
FT          /blastp_file="blastp/contig4.209.blastp"
FT  CDS     complement(1171427..1174657)
FT          /note="closest hit          IGI:RMC002797 Carbamoyl-phosphate  30
FT          synthase large chain (EC 6.3.5.5)          [Magnetococcus MC
-1
FT          (JGI)]          Length = 1074 Score = 1206 bits (3119), Expect =
FT          0.0"
FT          /note="Pyrimidine metabolism,Glutamate metabolism"
FT          /label=contig4.208
FT          /gene="carB"
FT          /blastp_file="blastp/contig4.208.blastp"
FT  CDS     1174801..1175283
FT          /note="closest hit          IGI:RGME01737 ADP-ribose          40
FT          pyrophosphatase (EC 3.6.1.13)          [Geobacter metallireducen
s
FT          (JGI)]          Length = 150 Score = 142 bits (359), Expect =
FT          1e-33"
FT          /note="Purine metabolism"
FT          /label=contig4.207c
FT          /gene="yqiE"
FT          /blastp_file="blastp/contig4.207c.blastp"
FT  CDS     1175531..1176382
FT          /note="closest hit          IGI:RBY10936 Magnesium and cobalt  50

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FT          efflux protein corC          [Bordetella bronchiseptica
FT          RB50]          Length = 300 Score = 202 bits (514), Expect =
FT          4e-51"
FT          /label=contig4.206c
FT          /gene="corC"
FT          /blastp_file="blastp/contig4.206c.blastp"
FT  CDS     1176552..1176923
FT          /note="closest hit          IGI:RRR03012 SSU ribosomal protei
n
FT          S12P          [Rhodospirillum rubrum (JGI)] Length = 123 Sco 10
re =
FT          211 bits (537), Expect = 1e-54"
FT          /note="Ribosome"
FT          /label=contig4.205c
FT          /gene="rpsL"
FT          /blastp_file="blastp/contig4.205c.blastp"
FT  CDS     1177061..1177531
FT          /note="closest hit          IGI:RTHT02122 SSU ribosomal prote
in
FT          S7P          [Thermoanaerobacter tengcongensis MB4T]          20
Length = 156
FT          Score = 228 bits (580), Expect = 3e-59"
FT          /note="Ribosome"
FT          /label=contig4.204c
FT          /gene="rpsG"
FT          /blastp_file="blastp/contig4.204c.blastp"
FT  CDS     1177547..1179622
FT          /note="closest hit IGI:RGME00027 Protein Translation
FT          Elongation Factor G (EF-G) [Geobacter metallireducens
FT          (JGI)]          Length = 692 Score = 890 bits (2299), Expect = 30
FT          0.0"
FT          /label=contig4.203c
FT          /gene="fusA"
FT          /blastp_file="blastp/contig4.203c.blastp"
FT  CDS     complement(1179650..1180744)
FT          /note="unknown"
FT          /label=contig4.202
FT          /gene="LAW0945"
FT          /blastp_file="blastp/contig4.202.blastp"
FT  CDS     1181886..1183754          40
FT          /note="closest hit IGI:RYE04421 Glucose inhibited
FT          division protein A [Yersinia enterocolitica 8081] Length
FT          = 629 Score = 643 bits (1658), Expect = 0.0"
FT          /label=contig4.201c
FT          /gene="gidA"
FT          /blastp_file="blastp/contig4.201c.blastp"
FT  CDS     1184004..1184525
FT          /note="partial hit(55-171) IGI:RBY09883
FT          INVASION-ASSOCIATED PROTEIN, P60 [Bordetella
FT          bronchiseptica RB50]          Length = 222 Score = 90.9 bits ( 50

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224),
FT          Expect = 6e-18"
FT          /label=contig4.200c
FT          /gene="LAW0947"
FT          /blastp_file="blastp/contig4.200c.blastp"
FT  CDS     complement(1184566..1185660)
FT          /note="weak partial hit (56-352)IGI:RGME02620
FT          Hypothetical Protien [Geobacter metallireducens
FT          (JGI)] Length = 380 Score = 99.0 bits (245), Expect =
FT          9e-20"
FT          /label=contig4.199
FT          /gene="LAW0948"
FT          /blastp_file="blastp/contig4.199.blastp"
FT  CDS     complement(1185825..1186151)
FT          /note="unknown"
FT          /label=contig4.198
FT          /gene="LAW0949"
FT          /blastp_file="blastp/contig4.198.blastp"
FT  CDS     complement(1186164..1187114)
FT          /note="unknown"
FT          /label=contig4.197
FT          /gene="LAW0950"
FT          /blastp_file="blastp/contig4.197.blastp"
FT  CDS     complement(1187315..1188358)
FT          /note="closest hit IGI:RGME01136 Aspartate-semialdehyde
FT          dehydrogenase (EC 1.2.1.11) [Geobacter metallireduce
FT          ns
FT          (JGI)] Length = 339 Score = 392 bits (1006), Expect =
FT          e-108"
FT          /note="Glycine, serine and threonine metabolism, Lysine
FT          biosynthesis"
FT          /label=contig4.196
FT          /gene="asd"
FT          /blastp_file="blastp/contig4.196.blastp"
FT  CDS     complement(1189061..1189645)
FT          /note="unknown"
FT          /label=contig4.195
FT          /gene="LAW0952"
FT          /blastp_file="blastp/contig4.195.blastp"
FT  CDS     complement(1189772..1190455)
FT          /note="closest hit IGI:RMMZ00406 Heme exporter prote
FT          in C
FT          [Methanosarcina mazei Go1(IG-31)] Length = 237 Score = 154
FT          bits (389), Expect = 9e-37"
FT          /note="ABC transporters, prokaryotic"
FT          /label=contig4.194
FT          /gene="ccmC"
FT          /blastp_file="blastp/contig4.194.blastp"
FT  CDS     complement(1190503..1191180)
FT          /note="unknown"

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FT          /label=contig4.193
FT          /gene="LAW0954"
FT          /blastp_file="blastp/contig4.193.blastp"
FT  CDS     complement(1191225..1191860)
FT          /note="closest hit          IGI:RMMZ00404 ABC transporter
FT          ATP-binding protein          [Methanosarcina mazei Go1
FT          (IG-31)] Length = 237 Score = 114 bits (285), Expect =
FT          1e-24"
FT          /label=contig4.192
FT          /gene="ccmA/ccmB"
FT          /blastp_file="blastp/contig4.192.blastp"
FT  CDS     complement(1191823..1193829)
FT          /note="closest hit          IGI:RHSM00083 Cytochrome c-type
FT          biogenesis protein ccmF      [Haemophilus somnus 129PT
FT          (JGI)] Length = 649 Score = 259 bits (663), Expect =
FT          7e-68"
FT          /label=contig4.191
FT          /gene="ccmF"
FT          /blastp_file="blastp/contig4.191.blastp"
FT  CDS     complement(1193968..1194384)
FT          /note="weak hit IGI:RMMA09068 Cytochrome c-type
FT          biogenesis protein          [Magnetospirillum magnetotacticum
MS-1
FT          (JGI)] Length = 146 Score = 57.8 bits (138), Expect =
FT          2e-08"
FT          /label=contig4.190
FT          /gene="b2503"
FT          /blastp_file="blastp/contig4.190.blastp"
FT  CDS     complement(1194473..1195519)
FT          /note="closest hit IGI:RNPU02621 Hemolysin          [Nostoc
FT          punctiforme ATCC-29133 (JGI)] Length = 346 Score = 18
3
FT          bits (465), Expect = 3e-45"
FT          /label=contig4.189
FT          /gene="yhdP"
FT          /blastp_file="blastp/contig4.189.blastp"
FT  CDS     1196267..1196584
FT          /note="closest hit IGI:RSM05564 SSU ribosomal protein
FT          S10P          [Sinorhizobium meliloti 1021] Length = 102 Scor
e =
FT          148 bits (374), Expect = 1e-35"
FT          /note="Ribosome"
FT          /label=contig4.188c
FT          /gene="rpsJ"
FT          /blastp_file="blastp/contig4.188c.blastp"
FT  CDS     1196606..1197238
FT          /note="closest hit          IGI:RTT00212 LSU ribosomal protei
n L3P
FT          [Thermus thermophilus] Length = 206 Score = 214 bits
FT          (546), Expect = 5e-55"

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FT          /note="Ribosome"
FT          /label=contig4.187c
FT          /gene="rplC"
FT          /blastp_file="blastp/contig4.187c.blastp"
FT  CDS     1197254..1197874
FT          /note="closest hit  IGI:RTHT02117 LSU ribosomal protein
FT          L1E (= L4P)          [Thermoanaerobacter tengcongensis
FT          MB4T]          Length = 206 Score = 188 bits (477), Expect =
FT          5e-47"
FT          /note="Ribosome"
FT          /label=contig4.186c
FT          /gene="rplD"
FT          /blastp_file="blastp/contig4.186c.blastp"
FT  CDS     1197889..1198176
FT          /note="closest hit          IGI:RFNP01453 LSU ribosomal prote
in
FT          L23P          [Fusobacterium nucleatum polymorphum
FT          ATCC-10953]          Length = 95 Score = 75.5 bits (184), Exp
ect =
FT          1e-13"
FT          /note="Ribosome"
FT          /label=contig4.185c
FT          /gene="rplW"
FT          /blastp_file="blastp/contig4.185c.blastp"
FT  CDS     1198179..1199009
FT          /note="closest hit  IGI:RGME00199 LSU ribosomal protein
FT          L2P          [Geobacter metallireducens(JGI)]          Length = 2
74 Score
FT          = 367 bits (941), Expect = e-100"
FT          /note="Ribosome"
FT          /label=contig4.184c
FT          /gene="rplB"
FT          /blastp_file="blastp/contig4.184c.blastp"
FT  CDS     1199018..1199299
FT          /note="closest hit          IGI:RGME00198 SSU ribosomal prote
in
FT          S19P          [Geobacter metallireducens(JGI)]          Length = 9
3 Score
FT          = 147 bits (370), Expect = 4e-35"
FT          /note="Ribosome"
FT          /label=contig4.183c
FT          /gene="rpsS"
FT          /blastp_file="blastp/contig4.183c.blastp"
FT  CDS     1199312..1199650
FT          /note="closest hit          IGI:REFA01156 LSU ribosomal prote
in
FT          L22P          [Enterococcus faecium D0]          Length = 115 Scor
e = 131
FT          bits (329), Expect = 2e-30"
FT          /note="Ribosome"

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FT          /label=contig4.182c
FT          /gene="rplV"
FT          /blastp_file="blastp/contig4.182c.blastp"
FT  CDS     1199654..1200295
FT          /note="closest hit          IGI:RGME00196 SSU ribosomal prote
in
FT          S3P          [Geobacter metallireducens(JGI)]          Length
= 211  Score
FT          = 286 bits (731), Expect = 2e-76"
FT          /note="Ribosome"          10
FT          /label=contig4.181c
FT          /gene="rpsC"
FT          /blastp_file="blastp/contig4.181c.blastp"
FT  CDS     1200295..1200708
FT          /note="closest hit  IGI:RHP00704 LSU ribosomal protein
FT          L16P          [Helicobacter pylori 26695]          Length = 141 Scor
e = 173
FT          bits (439), Expect = 3e-43"
FT          /note="Ribosome"
FT          /label=contig4.180c          20
FT          /gene="rplP"
FT          /blastp_file="blastp/contig4.180c.blastp"
FT  CDS     1200896..1201162
FT          /note="closest hit          IGI:RCTH03227 SSU ribosomal prote
in
FT          S17P          [Clostridium thermocellum ATCC-27405 (JGI)]
Length =
FT          85  Score = 95.9 bits (237), Expect = 9e-20"
FT          /note="Ribosome"
FT          /label=contig4.179c          30
FT          /gene="rpsQ"
FT          /blastp_file="blastp/contig4.179c.blastp"
FT  CDS     1201178..1201546
FT          /note="closest hit          IGI:RMC000461 LSU ribosomal prote
in
FT          L14P          [Magnetococcus MC-1 (JGI)]          Length = 122 Scor
e = 192
FT          bits (489), Expect = 5e-49"
FT          /note="Ribosome"
FT          /label=contig4.178c          40
FT          /gene="rplN"
FT          /blastp_file="blastp/contig4.178c.blastp"
FT  CDS     1201555..1201875
FT          /note="closest hit          IGI:RTM02628 LSU ribosomal protei
n
FT          L24P          [Thermotoga maritima MSB8]          Length = 105 Sco
re = 122
FT          bits (306), Expect = 9e-28"
FT          /note="Ribosome"
FT          /label=contig4.177c          50

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FT          /gene="rplX"
FT          /blastp_file="blastp/contig4.177c.blastp"
FT  CDS     1201885..1202424
FT          /note="closest hit          IGI:RGME00190 LSU ribosomal prote
in
FT          L5P          [Geobacter metallireducens(JGI)]          Length = 1
79 Score
FT          = 236 bits (602), Expect = 1e-61"
FT          /label=contig4.176c
FT          /gene="rplE"
FT          /blastp_file="blastp/contig4.176c.blastp"
FT  CDS     1202656..1203036
FT          /note="closest hit          IGI:RFNP01441 SSU ribosomal prote
in
FT          S8P          [Fusobacterium nucleatum polymorphum
FT          ATCC-10953]          Length = 132 Score = 132 bits (331), Ex
pect =
FT          1e-30"
FT          /note="Ribosome"
FT          /label=contig4.175c
FT          /gene="rpsH"
FT          /blastp_file="blastp/contig4.175c.blastp"
FT  CDS     1203044..1203589
FT          /note="closest hit          IGI:RSX11037 LSU ribosomal protei
n
FT          L6P          [Streptomyces coelicolor A3(2)]          Length =
179 Score =
FT          174 bits (440), Expect = 8e-43"
FT          /note="Ribosome"
FT          /label=contig4.174c
FT          /gene="rplF"
FT          /blastp_file="blastp/contig4.174c.blastp"
FT  CDS     1203602..1203964
FT          /note="closest hit          IGI:RSPY01901 LSU ribosomal prote
in
FT          L18P         [Streptococcus pyogenesM5]          Length = 121 Scor
e = 107
FT          bits (266), Expect = 4e-23"
FT          /note="Ribosome"
FT          /label=contig4.173c
FT          /gene="rplR"
FT          /blastp_file="blastp/contig4.173c.blastp"
FT  CDS     1203989..1204480
FT          /note="closest hit          IGI:RDHA04109 SSU ribosomal prote
in
FT          S5P          [Desulfitobacterium halfniense DCB-2 (JGI)]   Le
ngth =
FT          166 Score = 204 bits (519), Expect = 4e-52"
FT          /note="Ribosome"
FT          /label=contig4.172c

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FT          /gene="rpsE"
FT          /blastp_file="blastp/contig4.172c.blastp"
FT   CDS    1204661..1205110
FT          /note="closest hit IGI:RTHT02100 LSU ribosomal protein
FT          L15P [Thermoanaerobacter tengcongensis MB4T] Length =
147
FT          Score = 143 bits (360), Expect = 7e-34"
FT          /note="Ribosome"
FT          /label=contig4.171c
FT          /gene="rpl0"
FT          /blastp_file="blastp/contig4.171c.blastp"
FT   CDS    1205122..1206429
FT          /note="closest hit GI:RGME00181 PROTEIN TRANSLOCASE
FT          SUBUNIT SECY [Geobacter metallireducens (JGI)]
Length =
FT          435 Score = 442 bits (1136), Expect = e-123"
FT          /note="Protein export"
FT          /label=contig4.170c
FT          /gene="secY"
FT          /blastp_file="blastp/contig4.170c.blastp"
FT   CDS    1206433..1207203
FT          /note="closest hit IGI:RGME00179 Methionine
FT          aminopeptidase (EC 3.4.11.18) [Geobacter metallireduc
FT          ens
FT          (JGI)] Length = 248 Score = 251 bits (640), Expect =
FT          8e-66"
FT          /label=contig4.169c
FT          /gene="map"
FT          /blastp_file="blastp/contig4.169c.blastp"
FT   CDS    1207425..1207793
FT          /note="closest hit IGI:RGME00178 SSU ribosomal prote
FT          in
FT          S13P [Geobacter metallireducens(JGI)] Length =
122 Score
FT          = 164 bits (414), Expect = 3e-40"
FT          /note="Ribosome"
FT          /label=contig4.168c
FT          /gene="rpsM"
FT          /blastp_file="blastp/contig4.168c.blastp"
FT   CDS    1207850..1208239
FT          /note="partial hit (28-142)IGI:RGME00176 SSU ribosomal
FT          protein S11P [Geobacter metallireducens (JGI)]
Length =
FT          131 Score = 169 bits (427), Expect = 7e-42"
FT          /note="Ribosome"
FT          /label=contig4.167c
FT          /gene="rpsK"
FT          /blastp_file="blastp/contig4.167c.blastp"
FT   CDS    1208262..1208888
FT          /note="closest hit IGI:RGME00174 SSU ribosomal prote 50

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in
FT          S4P          [Geobacter metallireducens(JGI)]          Length =
208 Score =
FT          275 bits (704), Expect = 2e-73"
FT          /note="Ribosome"
FT          /label=contig4.166c
FT          /gene="rpsD"
FT          /blastp_file="blastp/contig4.166c.blastp"
FT  CDS     1208901..1209944
FT          /note="closest hit  IGI:RGME00171 DNA-directed RNA          10
FT          polymerase alpha chain (EC 2.7.7.6)          [Geobacter
FT          metallireducens (JGI)          Length = 340 Score = 357 bits
FT          (915), Expect = 2e-97"
FT          /note="Purine metabolism,Pyrimidine metabolism,RNA
FT          polymerase"
FT          /label=contig4.165c
FT          /gene="rpoA"
FT          /blastp_file="blastp/contig4.165c.blastp"
FT  CDS     1209934..1210314
FT          /note="closest hit  IGI:RTT00039 LSU ribosomal protein          20
FT          L17P          [Thermus thermophilus] Length = 118 Score = 127
FT          bits (318), Expect = 3e-29"
FT          /note="Ribosome"
FT          /label=contig4.164c
FT          /gene="rplQ"
FT          /blastp_file="blastp/contig4.164c.blastp"
FT  CDS     1210609..1212024
FT          /note="closest hit          IGI:RXCA00622 Xanthan biosynthesi
s
FT          protein xanB          [Xanthomonas campestris ATCC-33913]          30
Length
FT          = 467 Score = 447 bits (1151),Expect = e-124, next
FT          closest hit GEN:AAA21139 L27632 GI:441139 GDP-manno
FT          pyrophosphorylase [Escherichia coli]          Length = 471 Sco
re =
FT          447 bits (1150), Expect = e-124"
FT          /label=contig4.163c
FT          /gene="xanB"
FT          /blastp_file="blastp/contig4.163c.blastp"
FT  CDS     1212317..1213618          40
FT          /note="closest hit          IGI:RVC06709 NA+/H+ ANTIPORTER NH
AC
FT          [Vibrio cholerae El Tor N16961]          Length = 447 Score = 42
6
FT          bits (1096), Expect = e-118"
FT          /label=contig4.162c
FT          /gene="vc0389"
FT          /blastp_file="blastp/contig4.162c.blastp"
FT  CDS     1213908..1215167
FT          /note="closest hit          IGI:RGME00308 Histidyl-tRNA synth          50

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FT (EC 6.1.1.21) [Geobactermetallireducens (JGI)] Le
 ngth =
 FT 413 Score = 385 bits (990), Expect = e-106"
 FT /note="Histidine metabolism,Aminoacyl-tRNA biosynthesis"
 FT /label=contig4.161c
 FT /gene="hisS"
 FT /blastp_file="blastp/contig4.161c.blastp"
 FT CDS 1215195..1216994
 FT /note="closest hit IGI:RTHT01141 Aspartyl-tRNA synth 10
 etase
 FT (EC 6.1.1.12) Thermoanaerobacter tengcongensis
 FT MB4T] Length = 592 Score = 641 bits (1653), Expect =
 0.0"
 FT /note="Alanine and aspartate metabolism,Aminoacyl-tRNA
 FT biosynthesis"
 FT /label=contig4.160c
 FT /gene="aspS"
 FT /blastp_file="blastp/contig4.160c.blastp"
 FT CDS 1217085..1218077 20
 FT /note="closest hit IGI:RHD07521 Dipeptide transport
 FT ATP-binding protein dppF [Bacillus halodurans
 FT C-125] Length = 322 Score = 285 bits (729), Expect =
 FT 6e-76"
 FT /note="ABC transporters, prokaryotic "
 FT /label=contig4.159c
 FT /gene="dppF"
 FT /blastp_file="blastp/contig4.159c.blastp"
 FT CDS 1218216..1218980
 FT /note="closest hit GEN:BAC10585 AB090267 GI:22450195 30
 FT 3-deoxy-manno-octulosonate cytidyltransferase
 FT [Desulfovibrio vulgaris] Length = 270 Score = 257 bits
 FT (657), Expect = 9e-68"
 FT /label=contig4.158c
 FT /gene="LAW0989"
 FT /blastp_file="blastp/contig4.158c.blastp"
 FT CDS 1218980..1220110
 FT /note="closest hit GEN:BAC10584 AB090267 GI:22450194
 FT carbamoyl phosphate synthetase small subunit [Desulfo
 vibrio 40
 FT vulgaris] Length = 376 Score = 534 bits (1376), Expect =
 FT e-151"
 FT /note="Pyrimidine metabolism,Glutamate metabolism"
 FT /label=contig4.157c
 FT /gene="carA"
 FT /blastp_file="blastp/contig4.157c.blastp"
 FT CDS 1220290..1221117
 FT /note="closest hit GEN:BAC10583 AB090267 GI:22450193
 FT GluNAc transferase [Desulfovibrio vulgaris] L
 ength = 271

FT Score = 269 bits (687), Expect = 4e-71"
 FT /label=contig4.156c
 FT /gene="LAW0991"
 FT /blastp_file="blastp/contig4.156c.blastp"
 FT CDS complement(1221162..1221821)
 FT /note="unknown"
 FT /label=contig4.155
 FT /gene="LAW0992"
 FT /blastp_file="blastp/contig4.155.blastp"
 FT CDS 1222274..1223455 10
 FT /note="closest hit IGI:RAV02873 Acriflavin resistanc
 e
 FT periplasmic protein [Azotobacter vinelandii (JGI)] L
 length
 FT = 427 Score = 208 bits (530), Expect = 1e-52"
 FT /label=contig4.154c
 FT /gene="acrA"
 FT /blastp_file="blastp/contig4.154c.blastp"
 FT CDS 1223455..1226604 20
 FT /note="closest hit IGI:RBV01652 Acriflavin resistance
 FT plasma membrane protein [Brucella abortus] Length =
 1051
 FT Score = 992 bits (2565), Expect = 0.0"
 FT /label=contig4.153c
 FT /gene="acrB"
 FT /blastp_file="blastp/contig4.153c.blastp"
 FT CDS 1226608..1227987
 FT /note="closest hit IGI:RBU12795 OUTER MEMBRANE PROTE
 IN
 FT OPRM [Burkholderia fungorum LB400] Length = 486 Scor 30
 e =
 FT 296 bits (758), Expect = 4e-79"
 FT /label=contig4.152c
 FT /gene="oprM"
 FT /blastp_file="blastp/contig4.152c.blastp"
 FT CDS 1228358..1228783
 FT /note="unknown"
 FT /label=contig4.151c
 FT /gene="LAW0996"
 FT /blastp_file="blastp/contig4.151c.blastp" 40
 FT CDS 1228824..1230155
 FT /note="closest hit IGI:RDHA05306 Adenylosuccinate ly
 ase
 FT (EC 4.3.2.2) [Desulfitobacterium halfniense DCB-2
 FT (JGI)] Length = 431 Score = 456 bits (1174), Expect =
 FT e-127"
 FT /note="Purine metabolism, Alanine and aspartate
 FT metabolism"
 FT /label=contig4.150c
 FT /gene="purB" 50


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FT          /blastp_file="blastp/contig4.150c.blastp"
FT  CDS     1230186..1230749
FT          /note="closest hit          IGI:RGME00334 Orotate
FT          phosphoribosyltransferase (EC 2.4.2.10) [Geobacter
FT          metallireducens (JGI)]          Length = 182 Score = 162 bits
FT          (411), Expect = 2e-39"
FT          /note="Pyrimidine metabolism"
FT          /label=contig4.149c
FT          /gene="pyrE"
FT          /blastp_file="blastp/contig4.149c.blastp"
FT  CDS     1231102..1232007
FT          /note="unknown"
FT          /label=contig4.148c
FT          /gene="LAW0999"
FT          /blastp_file="blastp/contig4.148c.blastp"
FT  CDS     1232004..1232939
FT          /note="unknown"
FT          /label=contig4.147c
FT          /gene="LAW1000"
FT          /blastp_file="blastp/contig4.147c.blastp"
FT  CDS     1233552..1234028
FT          /note="closest hit          GEN:CAC87645 AJ316232 GI:18073935
FT          cytochrome c nitrite reductase small subunit
FT          [Desulfovibrio desulfuricans]          Length = 134 Score = 16
4
FT          bits (416), Expect = 3e-40"
FT          /label=contig4.146c
FT          /gene="napC"
FT          /blastp_file="blastp/contig4.146c.blastp"
FT  CDS     1234021..1235574
FT          /note="closest hit          GEN:CAC87646 AJ316232 GI:18073936
FT          cytochrome c nitrite reductase catalytic subunit
FT          [Desulfovibrio desulfuricans]          Length = 514 Score = 67
0
FT          bits (1729), Expect = 0.0"
FT          /label=contig4.145c
FT          /gene="nrfA"
FT          /blastp_file="blastp/contig4.145c.blastp"
FT  CDS     complement(1235666..1236898)
FT          /note="closest match          IGI:RGME03257 Aspartokinase (EC
FT          2.7.2.4) [Geobacter metallireducens(JGI)] Length = 405
FT          Score = 403 bits (1036), Expect = e-111"
FT          /note="Glycine, serine and threonine metabolism,Lysine
FT          biosynthesis"
FT          /label=contig4.144
FT          /gene="lysC"
FT          /blastp_file="blastp/contig4.144.blastp"
FT  CDS     complement(1236903..1237505)
FT          /note="unknown"
FT          /label=contig4.143

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FT          /gene="LAW1004"
FT          /blastp_file="blastp/contig4.143.blastp"
FT  CDS     1237651..1238547
FT          /note="closest hit  IGI:RCA03196 tRNA pseudouridine
FT          synthase B (EC 4.2.1.70)  [Clostridium acetobutylicum
FT          ATCC-824D] Length = 289 Score = 174 bits (442), Expect =
FT          1e-42"
FT          /note="Pyrimidine metabolism"
FT          /label=contig4.142c
FT          /gene="truB"
FT          /blastp_file="blastp/contig4.142c.blastp"
FT  CDS     1239053..1241263
FT          /note="close hit  IGI:RGME03705 Polyrribonucleotide
FT          nucleotidyltransferase (EC2.7.7.8)  [Geobacter
FT          metallireducens (JGI)] Length = 697 Score = 646 bits
FT          (1667), Expect = 0.0"
FT          /note="Purine metabolism,Pyrimidine metabolism"
FT          /label=contig4.140c
FT          /gene="pnpA"
FT          /blastp_file="blastp/contig4.140c.blastp"
FT  CDS     complement(1241379..1242812)
FT          /note="closest hit  IGI:RTHT00561 Glutamyl-tRNA(Gln)
FT          amidotransferase subunit B (EC6.3.5.-) [Thermoanaerobacter
FT          tengcongensis MB4T] Length = 475 Score = 463 bits (
FT          1192),
FT          Expect = e-129"
FT          /note="Glutamate metabolism,Alanine and aspartate
FT          metabolism"
FT          /label=contig4.139
FT          /gene="gatB"
FT          /blastp_file="blastp/contig4.139.blastp"
FT  CDS     complement(1242831..1243469)
FT          /note="partial hit(55-223)  IGI:RLP02188 Hypothetical
FT          Protein  [Legionella pneumophila] Length = 196 Sco
FT          re =
FT          137 bits (345), Expect = 1e-31"
FT          /label=contig4.138
FT          /gene="LAW1008"
FT          /blastp_file="blastp/contig4.138.blastp"
FT  CDS     complement(1244106..1244963)
FT          /note="closest hit  IGI:RGME01789 ATP-NAD kinase (EC
FT          2.7.1.23)  [Geobacter metallireducens (JGI)] L
FT          ength = 283
FT          Score = 138 bits (348), Expect = 8e-32"
FT          /note="Nicotinate and nicotinamide metabolism "
FT          /label=contig4.137
FT          /gene="yfbB"
FT          /blastp_file="blastp/contig4.137.blastp"
FT  CDS     1245221..1245856
FT          /note="closest hit  GEN:AAK27851 AF324836 GI:13491144  50

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FT sedoheptulose 7-phosphate isomerase [Aneurinibacillus
 FT thermoaerophilus] Length = 198 Score = 181 bits (460),
 FT Expect = 5e-45"
 FT /note="Lipopolysaccharide biosynthesis"
 FT /label=contig4.136c
 FT /gene="gmhA"
 FT /blastp_file="blastp/contig4.136c.blastp"
 FT CDS 1246200..1247129
 FT /note="closest hit GEN:AAK00605 AF221100 GI:12655813
 FT porphobilinogen deaminase [Selenomonas ruminantium subsp. 10
 FT ruminantium] Length = 313 Score = 283 bits (725), Ex
 FT pect
 FT = 2e-75"
 FT /note="Porphyrin and chlorophyll metabolism"
 FT /label=contig4.135c
 FT /gene="hemC"
 FT /blastp_file="blastp/contig4.135c.blastp"
 FT CDS 1247217..1249670
 FT /note="closest hit IGI:RTHT01648 ATP-dependent prote
 FT ase 20
 FT La (EC 3.4.21.53) [Thermoanaerobacter tengcongensis
 FT MB4T] Length = 769 Score = 487 bits (1253), Expect =
 FT e-136"
 FT /label=contig4.134c
 FT /gene="lon"
 FT /blastp_file="blastp/contig4.134c.blastp"
 FT CDS complement(1249691..1250893)
 FT /note="weak partial hit (921-306) IGI:RPU01339 Nitrite
 FT extrusion protein [Pseudomonas fluorescensPf0-1
 FT (JGI)] Length = 403 Score = 58.9 bits (141), Expect = 30
 FT 1e-07"
 FT /label=contig4.133
 FT /gene="nar"
 FT /blastp_file="blastp/contig4.133.blastp"
 FT CDS 1251229..1251711
 FT /note="partial hit (62-154) IGI:RAV03166 iojap protein
 FT family [Azotobacter vinelandii (JGI)] Length = 1
 FT 17 Score
 FT = 82.0 bits (201), Expect = 3e-15"
 FT /label=contig4.132c 40
 FT /gene="LAW1014"
 FT /blastp_file="blastp/contig4.132c.blastp"
 FT CDS 1251726..1253258
 FT /note="closest hit IGI:RMMZ02289 Phosphoglycerate mu
 FT tase
 FT (EC 5.4.2.1) [Methanosarcina mazei Go1 (IG-31)] L
 FT length =
 FT 521 Score = 490 bits (1262), Expect = e-137"
 FT /note="Glycolysis / Gluconeogenesis"
 FT /label=contig4.131c 50

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FT          /gene="gmpA"
FT          /blastp_file="blastp/contig4.131c.blastp"
FT  CDS     complement(1253603..1253965)
FT          /note="unknown"
FT          /label=contig4.130
FT          /gene="LAW1016"
FT          /blastp_file="blastp/contig4.130.blastp"
FT  CDS     complement(1253967..1254572)
FT          /note="weak partial hit(94-201)      IGI:RCTH01526 Hypothetic
al
FT          Protein      [Clostridium thermocellum ATCC-27405 (JGI)] Leng
th
FT          = 122 Score = 48.9 bits (115), Expect = 4e-05"
FT          /label=contig4.129
FT          /gene="LAW1017"
FT          /blastp_file="blastp/contig4.129.blastp"
FT  CDS     complement(1254631..1256223)
FT          /note="closest hit      IGI:RFNP00497 LIPOPOLYSACCHARIDE CORE
FT          BIOSYNTHESIS PROTEIN RFAQ      [Fusobacterium nucleatum
FT          polymorphum ATCC-10953]      Length = 335 Score = 73.2 bits      20
FT          (178), Expect = 9e-12"
FT          /label=contig4.128
FT          /gene="rfaQ"
FT          /blastp_file="blastp/contig4.128.blastp"
FT  CDS     complement(1256500..1257321)
FT          /note="closest hit      IGI:RGME02403
FT          Acyl-[acyl-carrier-protein]-UDP-N-acetylglucosamine0-acylt
ransferase
FT          (EC 2.3.1.129)      [Geobacter metallireducens (JGI)]      L
ength =
FT          286 Score = 222 bits (565), Expect = 5e-57"
FT          /note="Lipopolysaccharide biosynthesis"
FT          /label=contig4.127
FT          /gene="lpxA"
FT          /blastp_file="blastp/contig4.127.blastp"
FT  CDS     complement(1257321..1257782)
FT          /note="closest hit      IGI:RPU01158
FT          (3R)-hydroxymyristoyl-[acyl carrier protein]dehydratase
FT          (EC 4.2.1.-)      [Pseudomonas fluorescens Pf0-1(JGI)]      L
ength
FT          = 146 Score = 159 bits (403), Expect = 9e-39"
FT          /label=contig4.126
FT          /gene="fabZ"
FT          /blastp_file="blastp/contig4.126.blastp"
FT  CDS     complement(1257792..1258817)
FT          /note="closest hit      IGI:RGME02400
FT          UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase
FT          (EC 2.3.1.-)      [Geobacter metallireducens (JGI)]      L
ength =
FT          345 Score = 233 bits (594), Expect = 3e-60"

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FT          /note="Lipopolysaccharide biosynthesis"
FT          /label=contig4.125
FT          /gene="lpxD"
FT          /blastp_file="blastp/contig4.125.blastp"
FT  CDS     complement(1258821..1259381)
FT          /note="closest hit IGI:RREU00264 periplasmic protein
FT          [Ralstonia eutropha CH34 (JGI)]      Length = 171 Score = 72.
0
FT          bits (175), Expect = 4e-12"
FT          /label=contig4.124                                10
FT          /gene="LAW1022"
FT          /blastp_file="blastp/contig4.124.blastp"
FT  CDS     complement(1259526..1261328)
FT          /note="partial hit(229-604)          IGI:RGME02821
FT          N-acetylmuramoyl-L-alanine amidase amiC precursor
FT          (EC3.5.1.28)          [Geobacter metallireducens (JGI)]      L
length =
FT          393 Score = 164 bits (414), Expect = 5e-39"
FT          /note="Peptidoglycan biosynthesis "
FT          /label=contig4.123                                20
FT          /gene="amiA"
FT          /blastp_file="blastp/contig4.123.blastp"
FT  CDS     complement(1261471..1264125)
FT          /note="partial hit(169-901)          IGI:RGME02398 Hypothetic
al
FT          Protein          [Geobacter metallireducens (JGI)]      Length =
752
FT          Score = 407 bits (1045), Expect = e-112"
FT          /label=contig4.122
FT          /gene="LAW1024"                                    30
FT          /blastp_file="blastp/contig4.122.blastp"
FT  CDS     complement(1264118..1264825)
FT          /note="closest hit IGI:RGME02397 Lipoprotein releasing
FT          system ATP-binding protein loID          [Geobacter metallireduce
ns
FT          (JGI)]      Length = 225 Score = 204 bits (519), Expect =
FT          8e-52"
FT          /label=contig4.121
FT          /gene="loID"
FT          /blastp_file="blastp/contig4.121.blastp"          40
FT  CDS     complement(1264828..1266111)
FT          /note="closest hit          IGI:RGME02396 Lipoprotein releasi
ng
FT          system transmembrane protein loIC          [Geobacter
FT          metallireducens (JGI)]      Length = 423 Score = 303 bits
FT          (777), Expect = 3e-81"
FT          /label=contig4.120
FT          /gene="loIC"
FT          /blastp_file="blastp/contig4.120.blastp"
FT  CDS     complement(1266111..1267484)                                50

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FT          /note="closest hit          IGI:RGME02395 Lysyl-tRNA syntheta
se
FT          (EC 6.1.1.6)          [Geobacter metallireducens (JGI)]          L
length =
FT          485 Score = 526 bits (1354), Expect = e-148"
FT          /note="Lysine biosynthesis,Aminoacyl-tRNA biosynthesis"
FT          /label=contig4.119
FT          /gene="lysU"
FT          /blastp_file="blastp/contig4.119.blastp"
FT  CDS     1268376..1269200          10
FT          /note="closest hit          IGI:RTH01686 Phosphate-binding pr
otein
FT          [Methanobacterium thermoautotrophicum]          Length = 271 Sco
re
FT          = 171 bits (432), Expect = 1e-41"
FT          /label=contig4.118c
FT          /gene="LAW1028"
FT          /blastp_file="blastp/contig4.118c.blastp"
FT  CDS     1269253..1270083
FT          /note="closest match          GEN:AAB86199 AE000929 GI:262286  20
0
FT          phosphate transporter permease PstC          [Methanothermobac
ter
FT          thermautotrophicus str. Delta H] Length = 291 Score = 137
FT          bits (344), Expect = 2e-31"
FT          /note="ABC transporters, prokaryotic "
FT          /label=contig4.117c
FT          /gene="pstC"
FT          /blastp_file="blastp/contig4.117c.blastp"
FT  CDS     1270080..1270970          30
FT          /note="closest hit          IGI:RMBA03575 Phosphate transport
FT          system permease protein pstA          [Methanosarcina barkeri
FT          fusaro (JGI)]          Length = 307 Score = 93.6 bits (231), Ex
pect
FT          = 3e-18"
FT          /note="ABC transporters, prokaryotic "
FT          /label=contig4.116c
FT          /gene="pstA"
FT          /blastp_file="blastp/contig4.116c.blastp"
FT  CDS     1270961..1271734          40
FT          /note="closest hit          IGI:RSS02966 Phosphate transport
FT          ATP-binding protein pstB          [Sulfolobus solfataricus
FT          P2]          Length = 257 Score = 167 bits (424), Expect = 9
e-41"
FT          /note="ABC transporters, prokaryotic "
FT          /label=contig4.115c
FT          /gene="pstB"
FT          /blastp_file="blastp/contig4.115c.blastp"
FT  CDS     complement(1271838..1272293)
FT          /note="partial hit(2-133)          IGI:RCT00040 hypothetical  50

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FT          protein    [Chlamydia trachomatis D/UW-3/Cx]          Length =
  167
FT          Score = 65.1 bits (157), Expect = 3e-10"
FT          /label=contig4.114
FT          /gene="LAW1032"
FT          /blastp_file="blastp/contig4.114.blastp"
FT  CDS     complement(1272481..1273890)
FT          /note="unknown"
FT          /label=contig4.113
FT          /gene="LAW1033"                                10
FT          /blastp_file="blastp/contig4.113.blastp"
FT  CDS     complement(1274250..1275641)
FT          /note="unknown"
FT          /label=contig4.112
FT          /gene="LAW1034"
FT          /blastp_file="blastp/contig4.112.blastp"
FT  CDS     complement(1276286..1277317)
FT          /note="unknown"
FT          /label=contig4.111
FT          /gene="LAW1035"                                20
FT          /blastp_file="blastp/contig4.111.blastp"
FT  CDS     complement(1277447..1278403)
FT          /note="unknown"
FT          /label=contig4.110
FT          /gene="LAW1036"
FT          /blastp_file="blastp/contig4.110.blastp"
FT  CDS     complement(1278568..1279566)
FT          /note="unknown"
FT          /label=contig4.109
FT          /gene="LAW1037"                                30
FT          /blastp_file="blastp/contig4.109.blastp"
FT  CDS     complement(1279875..1280561)
FT          /note="unknown"
FT          /label=contig4.108
FT          /gene="LAW1038"
FT          /blastp_file="blastp/contig4.108.blastp"
FT  CDS     complement(1281061..1282206)
FT          /note="unknown"
FT          /label=contig4.107
FT          /gene="LAW1039"                                40
FT          /blastp_file="blastp/contig4.107.blastp"
FT  CDS     complement(1282447..1283466)
FT          /note="unknown"
FT          /label=contig4.106
FT          /gene="LAW1040"
FT          /blastp_file="blastp/contig4.106.blastp"
FT  CDS     complement(1283628..1284554)
FT          /note="unknown"
FT          /label=contig4.105
FT          /gene="LAW1041"                                50

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FT          /blastp_file="blastp/contig4.105.blastp"
FT   CDS    complement(1285000..1286004)
FT          /note="unknown"
FT          /label=contig4.104
FT          /gene="LAW1042"
FT          /blastp_file="blastp/contig4.104.blastp"
FT   CDS    complement(1286368..1287339)
FT          /note="closest hit          IGI:RGME03170 Glycerate dehydroge
nase
FT          (EC 1.1.1.29)          [Geobacter metallireducens (JGI)]          L   10
length =
FT          330  Score = 286 bits (733), Expect = 2e-76"
FT          /note="Glycine, serine and threonine metabolism,Glyoxylate
FT          and dicarboxylate metabolism "
FT          /label=contig4.103
FT          /gene="hprA"
FT          /blastp_file="blastp/contig4.103.blastp"
FT   CDS    complement(1287421..1288035)
FT          /note="unknown"
FT          /label=contig4.102
FT          /gene="LAW1044"
FT          /blastp_file="blastp/contig4.102.blastp"
FT   CDS    complement(1288038..1288997)
FT          /note="closest hit  IGI:RREU04331 Paraquat-inducible
FT          protein B          [Ralstonia eutropha CH34(JGI)]  Length =
348
FT          Score = 101 bits (251), Expect = 2e-20"
FT          /label=contig4.101
FT          /gene="pqiB"
FT          /blastp_file="blastp/contig4.101.blastp"
FT   CDS    complement(1288994..1289782)
FT          /note="closest hit          IGI:RRR02467 Transporter
FT          [Rhodospirillum rubrum (JGI)]          Length = 264 Score = 21
6
FT          bits (550), Expect = 2e-55"
FT          /label=contig4.100
FT          /gene="LAW1046"
FT          /blastp_file="blastp/contig4.100.blastp"
FT   CDS    complement(1289790..1290950)
FT          /note="closest hit          IGI:RRR02468 TOLUENE TOLERANCE PR   40
OTEIN
FT          TTG2B          [Rhodospirillum rubrum(JGI)]  Length = 386 Sco
re =
FT          180 bits (456), Expect = 3e-44"
FT          /label=contig4.99
FT          /gene="ttg2B"
FT          /blastp_file="blastp/contig4.99.blastp"
FT   CDS    complement(1291103..1291672)
FT          /note="closest hit          IGI:RSAX02441 GrpE protein
FT          [Staphylococcus aureus EMRSA-16 Strain 252]          Length   50

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= 208

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FT          Score = 114 bits (285), Expect = 7e-25"
FT          /label=contig4.98
FT          /gene="grpE"
FT          /blastp_file="blastp/contig4.98.blastp"
FT  CDS     1292388..1293122
FT          /note="unknown"
FT          /label=contig4.97c
FT          /gene="LAW1049"
FT          /blastp_file="blastp/contig4.97c.blastp"
FT  CDS     1293526..1294392
FT          /note="closest hit          IGI:RTHT01274 PHP domain containi
ng
FT          protein (TRPH)          [Thermoanaerobacter tengcongensis
FT          MB4T]          Length = 308 Score = 155 bits (393), Expect =
FT          4e-37"
FT          /label=contig4.96c
FT          /gene="LAW1050"
FT          /blastp_file="blastp/contig4.96c.blastp"
FT  CDS     1294652..1297465
FT          /note="closest hit          IGI:RGME01185 Isoleucyl-tRNA
FT          synthetase (EC 6.1.1.5)          [Geobacter metallireducens
FT          (JGI)]          Length = 923 Score = 964 bits (2493), Expect =
FT          0.0"
FT          /note="Valine, leucine and isoleucine
FT          biosynthesis,Aminoacyl-tRNA biosynthesis"
FT          /label=contig4.95c
FT          /gene="ileS"
FT          /blastp_file="blastp/contig4.95c.blastp"
FT  CDS     1297490..1297984
FT          /note="closest hit          IGI:RBPS02988 Lipoprotein signal
FT          peptidase (EC 3.4.23.36)          [Burkholderia pseudomallei
FT          K96243]          Length = 166 Score = 119 bits (297), Expect =
FT          2e-26"
FT          /note="Protein export"
FT          /label=contig4.94c
FT          /gene="lsp"
FT          /blastp_file="blastp/contig4.94c.blastp"
FT  CDS     1298127..1299044
FT          /note="partial hit(58-323)          GEN:AAM71879 AE012837
FT          GI:21646577 conserved hypothetical protein          [Chlorobi
um
FT          tepidum TLS]          Length = 262 Score = 95.9 bits (237), Ex
pect
FT          = 7e-19"
FT          /label=contig4.93c
FT          /gene="LAW1053"
FT          /blastp_file="blastp/contig4.93c.blastp"
FT  CDS     1299149..1299931
FT          /note="weak partial hit(77-267)          GEN:AAL08571 AF417007

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FT          GI:15808966 chemotaxis protein    [Pseudomonas syringae pv.
FT          syringae] Length = 261 Score = 60.8 bits (146), Expect =
FT          2e-08"
FT          /label=contig4.92c
FT          /gene="cheZ"
FT          /blastp_file="blastp/contig4.92c.blastp"
FT  CDS     1300313..1301428
FT          /note="closest hit          IGI:RMC000391 Lipid-A-disaccharid
e
FT          synthase (EC 2.4.1.182)    Magnetococcus MC-1 (JGI)]          e   10
ngth =
FT          388 Score = 206 bits (523), Expect = 5e-52"
FT          /note="Lipopolysaccharide biosynthesis"
FT          /label=contig4.91c
FT          /gene="lpxB"
FT          /blastp_file="blastp/contig4.91c.blastp"
FT  CDS     1301682..1302152
FT          /note="unknown"
FT          /label=contig4.90c
FT          /gene="LAW1056"
FT          /blastp_file="blastp/contig4.90c.blastp"
FT  CDS     1302188..1302889
FT          /note="closest hit  IGI:RGME00615 ATP synthase A chain (EC
FT          3.6.3.14)    [Geobacter metallireducens (JGI)]          Length =
229
FT          Score = 188 bits (478), Expect = 5e-47"
FT          /note="Oxidative phosphorylation,ATP synthesis"
FT          /label=contig4.89c
FT          /gene="atpA"
FT          /blastp_file="blastp/contig4.89c.blastp"
FT  CDS     1302949..1303296
FT          /note="closest hit          GEN:CAA49871 X70431 GI:49215 ATP
FT          synthase (c)          [Synechococcus sp.]          Length = 82 Score
= 67.0
FT          bits (162), Expect = 4e-11"
FT          /note="Oxidative phosphorylation,ATP synthesis"
FT          /label=contig4.88c
FT          /gene="atpC"
FT          /blastp_file="blastp/contig4.88c.blastp"
FT  CDS     1303342..1303977
FT          /note="closest hit          IGI:RTFU00390 AT-rich DNA-binding
FT          protein    [Thermomonospora fusca(JGI)]          Length = 230 Scor
e =
FT          171 bits (432), Expect = 8e-42"
FT          /label=contig4.87c
FT          /gene="LAW1059"
FT          /blastp_file="blastp/contig4.87c.blastp"
FT  CDS     1304124..1304564
FT          /note="no hit"
FT          /label=contig4.86c

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FT          /gene="LAW1060"
FT          /blastp_file="blastp/contig4.86c.blastp"
FT  CDS     1304581..1305333
FT          /note="no hit"
FT          /label=contig4.85c
FT          /gene="LAW1061"
FT          /blastp_file="blastp/contig4.85c.blastp"
FT  CDS     1305357..1306130
FT          /note="closest hit          IGI:RMC001166 tRNA pseudouridine
FT          synthase A (EC 4.2.1.70)    [Magnetococcus MC-1(JGI)]          L   10
length
FT          = 264 Score = 159 bits (402), Expect = 3e-38"
FT          /note="Pyrimidine metabolism"
FT          /label=contig4.84c
FT          /gene="truA"
FT          /blastp_file="blastp/contig4.84c.blastp"
FT  CDS     1306382..1306804
FT          /note="no hit"
FT          /label=contig4.83c
FT          /gene="LAW1063"
FT          /blastp_file="blastp/contig4.83c.blastp"
FT  CDS     1307072..1307548
FT          /note="closest hit          IGI:RAA01025 Formate dehydrogenas
e,
FT          cytochrome B556 subunit (EC1.2.1.2)          [Aquifex aeolicus
FT          VF5]          Length = 165 Score = 112 bits (280), Expect = 2
e-24"
FT          /label=contig4.82c
FT          /gene="fdhF"
FT          /blastp_file="blastp/contig4.82c.blastp"
FT  CDS     complement(1307621..1308496)
FT          /note="closest hit          IGI:RGME02306 dTDP-4-dehydrorhamn
ose
FT          reductase (EC 1.1.1.133)    [Geobacter metallireducens
FT          (JGI)]          Length = 302 Score = 199 bits (507), Expect =
FT          3e-50"
FT          /note="Nucleotide sugars metabolism"
FT          /label=contig4.81
FT          /gene="rfbD"
FT          /blastp_file="blastp/contig4.81.blastp"
FT  CDS     complement(1308493..1309512)
FT          /note="closest hit          GI:16357461 dTDP-glucose
FT          4,6-dehydratase    [Aneurinibacillus thermoaerophilus]
Length
FT          = 341 Score = 395 bits (1014), Expect = e-109"
FT          /note="Nucleotide sugars metabolism,Erythromycin
FT          biosynthesis"
FT          /label=contig4.80
FT          /gene="rfbB"
FT          /blastp_file="blastp/contig4.80.blastp"

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FT   CDS           1309801..1310592
FT               /note="no hit"
FT               /label=contig4.79c
FT               /gene="LAW1067"
FT               /blastp_file="blastp/contig4.79c.blastp"
FT   CDS           1310656..1311624
FT               /note="no hit"
FT               /label=contig4.78c
FT               /gene="LAW1068"
FT               /blastp_file="blastp/contig4.78c.blastp"
FT               /blastp_file="blastp/contig4.78c.blastp"
FT   CDS           1312240..1312479
FT               /note="partial hit(1-44)  IGI:RSAN02667 Ribonuclease P
FT               protein component (EC 3.1.26.5)  [Staphylococcus aureus
FT               N315]      Length = 118"
FT               /note=""
FT               /label=contig4.77c
FT               /gene="rnpA"
FT               /blastp_file="blastp/contig4.77c.blastp"
FT   CDS           1312833..1314431
FT               /note="closest hit          IGI:RHI09398 60 kDa inner membran
e
FT               protein YIDC          [Haemophilus influenzae KW20]  Length =
541
FT               Score = 276 bits (706), Expect = 6e-73"
FT               /note="Protein export"
FT               /label=contig4.76c
FT               /gene="yidC"
FT               /blastp_file="blastp/contig4.76c.blastp"
FT   CDS           1314455..1315468
FT               /note="weak partial hit(227-322)  IGI:RCAU00254 Jag
FT               protein          [Chloroflexus aurantiacus J-10 (JGI)]  Length
=
FT               110 Score = 79.7 bits (195), Expect = 5e-14"
FT               /label=contig4.75c
FT               /gene="jag"
FT               /blastp_file="blastp/contig4.75c.blastp"
FT   CDS           1315534..1316913
FT               /note="closest hit  IGI:RFNP01860 THIOPHENE AND FURAN
FT               OXIDATION PROTEIN THDF          [Fusobacterium nucleatum
FT               polymorphum ATCC-10953]  Length = 455 Score = 263 bits
FT               (671), Expect = 5e-69"
FT               /label=contig4.74c
FT               /gene="thdF"
FT               /blastp_file="blastp/contig4.74c.blastp"
FT   CDS           1316917..1317513
FT               /note="closest hit  IGI:RPG00708 Ribonuclease D (EC
FT               3.1.26.3)  [Porphyromonas gingivalis]  Length = 200 Sco
re =
FT               104 bits (260), Expect = 6e-22"
FT               /label=contig4.73c

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FT          /gene="rncS"
FT          /blastp_file="blastp/contig4.73c.blastp"
FT  CDS     1317595..1320534
FT          /note="no hit"
FT          /label=contig4.72c
FT          /gene="LAW1074"
FT          /blastp_file="blastp/contig4.72c.blastp"
FT  CDS     1320591..1321721
FT          /note="closest hit  IGI:RCB02465 2-nitropropane
FT          dioxygenase (EC 1.13.11.32)          [Clostridium botulinum      10
FT          ATCC-3502] Length = 352 Score = 341 bits (875), Expect =
FT          9e-93"
FT          /note="Nitrogen metabolism"
FT          /label=contig4.71c
FT          /gene="ncd2"
FT          /blastp_file="blastp/contig4.71c.blastp"
FT  CDS     complement(1321808..1322791)
FT          /note="closest hit  IGI:RTER02879 Glucokinase (EC 2.7.1.2)
FT          [Trichodesmium erythraeum IMS101 (JGI)]      Length = 351 Sco
re          20
FT          = 85.9 bits (211), Expect = 7e-16"
FT          /note="Glycolysis / Gluconeogenesis,Fructose and mannose
FT          metabolism,Galactose metabolism, Starch and sucrose,
FT          Erythromycin biosynthesis "
FT          /label=contig4.70
FT          /gene="glk"
FT          /blastp_file="blastp/contig4.70.blastp"
FT  CDS     complement(1322933..1323712)
FT          /note="partial hit(33-210) IGI:RCJ02444 hypothetical
FT          protein  [Campylobacter jejuni NCTC-11168]      Length = 2   30
34
FT          Score = 121 bits (303), Expect = 1e-26"
FT          /label=contig4.69
FT          /gene="LAW1077"
FT          /blastp_file="blastp/contig4.69.blastp"
FT  CDS     1324889..1326631
FT          /note="closest hit  GEN:AAL27373 AF426171 GI:16611830
FT          HydH          [Yersinia pestis]      Length = 607 Score = 23
5 bits
FT          (600), Expect = 1e-60"          40
FT          /note="Signal Transduction; Two-component system"
FT          /label=contig4.68c
FT          /gene="HydH"
FT          /blastp_file="blastp/contig4.68c.blastp"
FT  CDS     1326651..1328066
FT          /note="closest hit          IGI:REC03894 Two-component respon
se
FT          regulator hydG      [Escherichia coli K12] Length = 441 Scor
e
FT          = 464 bits (1193), Expect = e-129"          50

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FT          /note="Signal Transduction; Two-component system"
FT          /label=contig4.67c
FT          /gene="hydG"
FT          /blastp_file="blastp/contig4.67c.blastp"
FT  CDS     1328199..1328615
FT          /note="no hit"
FT          /label=contig4.66c
FT          /gene="LAW1080"
FT          /blastp_file="blastp/contig4.66c.blastp"
FT  CDS     complement(1328645..1329628)          10
FT          /note="closest hit          IGI:RCPE02351 Oligopeptide transp
ort
FT          ATP-binding protein oppD [Clostridium perfringens
FT          13]          Length = 325 Score = 305 bits (781), Expect = 6
e-82"
FT          /note="ABC transporters, prokaryotic"
FT          /label=contig4.65
FT          /gene="oppD"
FT          /blastp_file="blastp/contig4.65.blastp"
FT  CDS     1330153..1330491          20
FT          /note="partial hit(43-112) IGI:RMBA00945 Ferrous iron
FT          transport protein A          [Methanosarcina barkeri fusaro
FT          (JGI)]          Length = 82 Score = 69.7 bits (169), Expect =
FT          7e-12"
FT          /label=contig4.64c
FT          /gene="feoA"
FT          /blastp_file="blastp/contig4.64c.blastp"
FT  CDS     1330619..1332820
FT          /note="partial hit(10-731) IGI:RPG00359 Ferrous iron
FT          transport protein B          [Porphyromonas gingivalis]          L  30
length =
FT          818 Score = 439 bits (1130), Expect = e-122"
FT          /label=contig4.63c
FT          /gene="feoB"
FT          /blastp_file="blastp/contig4.63c.blastp"
FT  CDS     complement(1332824..1334038)
FT          /note="no hit"
FT          /label=contig4.62
FT          /gene="LAW1084"
FT          /blastp_file="blastp/contig4.62.blastp"          40
FT  CDS     complement(1334050..1335303)
FT          /note="no hit"
FT          /label=contig4.61
FT          /gene="LAW1085"
FT          /blastp_file="blastp/contig4.61.blastp"
FT  CDS     complement(1335296..1336924)
FT          /note="closest hit          IGI:RCAU03118 Anaerobic
FT          glycerol-3-phosphate dehydrogenase subunitA (EC
FT          1.1.99.5) [Chloroflexus aurantiacus J-10 (JGI)]          Length =
FT          589 Score = 345 bits (884), Expect = 1e-93"          50

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FT          /note="Glycerolipid metabolism"
FT          /label=contig4.60
FT          /gene="glpA"
FT          /blastp_file="blastp/contig4.60.blastp"
FT  CDS     complement(1337223..1337819)
FT          /note="no hit"
FT          /label=contig4.59
FT          /gene="LAW1087"
FT          /blastp_file="blastp/contig4.59.blastp"
FT  CDS     complement(1337816..1338124)          10
FT          /note="no hit"
FT          /label=contig4.58
FT          /gene="LAW1088"
FT          /blastp_file="blastp/contig4.58.blastp"
FT  CDS     1338433..1339086
FT          /note="no hit"
FT          /label=contig4.57c
FT          /gene="LAW1089"
FT          /blastp_file="blastp/contig4.57c.blastp"
FT  CDS     1339149..1339568          20
FT          /note="closest hit          IGI:RGME01022 Putative nickel
FT          responsive regulator          [Geobacter metallireducens
FT          (JGI)]          Length = 139 Score = 139 bits (351), Expect =
FT          5e-33"
FT          /label=contig4.56c
FT          /gene="LAW1090"
FT          /blastp_file="blastp/contig4.56c.blastp"
FT  CDS     1339592..1340368
FT          /note="closest hit          IGI:RGME01459 Hypothetical Cytoso
lic          30
FT          Protein          [Geobacter metallireducens (JGI)]          Length =
261
FT          Score = 226 bits (576), Expect = 2e-58"
FT          /label=contig4.55c
FT          /gene="LAW1091"
FT          /blastp_file="blastp/contig4.55c.blastp"
FT  CDS     1340557..1341606
FT          /note="partial hit(8-346) IGI:RGME02996 Two-component
FT          response regulator [Geobacter metallireducens
FT          (JGI)]          Length = 469 Score = 323 bits (827), Expect = 40
FT          3e-87"
FT          /label=contig4.54c
FT          /gene="LAW1092"
FT          /blastp_file="blastp/contig4.54c.blastp"
FT  CDS     1341663..1344893
FT          /note="unknown"
FT          /label=contig4.53c
FT          /gene="LAW1093"
FT          /blastp_file="blastp/contig4.53c.blastp"
FT  CDS     complement(1344921..1345964)          50

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FT          /note="partial hit(155-340)          IGI:RCA00242 Two-compone
nt
FT          response regulator [Clostridium acetobutylicum
FT          ATCC-824D] Length = 351 Score = 90.5 bits (223), Expect =
FT          3e-17"
FT          /label=contig4.52
FT          /gene="LAW1094"
FT          /blastp_file="blastp/contig4.52.blastp"
FT  CDS      complement(1345968..1347383)
FT          /note="closest hit          IGI:RAN02182 Pyruvate kinase (EC    10
FT          2.7.1.40) [Anabaena sp. PCC7120] Length = 476 Score = 325
FT          bits (833), Expect = 9e-88"
FT          /note="Glycolysis / Gluconeogenesis,Purine
FT          metabolism,Pyruvate metabolism, Carbon fixation"
FT          /label=contig4.51
FT          /gene="pykF"
FT          /blastp_file="blastp/contig4.51.blastp"
FT  CDS      1347589..1348038
FT          /note="closest hit  IGI:RBS01514 MRAZ PROTEIN [Bacillus
FT          subtilis 168]          Length = 143 Score = 103 bits (257), Ex    20
pect
FT          = 6e-22"
FT          /label=contig4.50c
FT          /gene="mraZ"
FT          /blastp_file="blastp/contig4.50c.blastp"
FT  CDS      1348109..1349047
FT          /note="closest hit          IGI:RDF01166 METHYLTRANSFERASE (E
C
FT          2.1.1.-) [Clostridium difficile 630]          Length = 318 Sco
re =    30
FT          261 bits (668), Expect = 7e-69"
FT          /label=contig4.49c
FT          /gene="LAW1097"
FT          /blastp_file="blastp/contig4.49c.blastp"
FT  CDS      1349553..1351634
FT          /note="partial hit(34-580) IGI:RNE01385 Division specific
FT          D,D-transpeptidase / Cell division protein ftsI
FT          [Nitrosomonas europaea ATCC-25978 (JGI)] Length = 580"
FT          /label=contig4.47c
FT          /gene="ftsI"          40
FT          /blastp_file="blastp/contig4.47c.blastp"
FT  CDS      1351636..1353084
FT          /note="closest hit IGI:RAA00661
FT          UDP-N-acetylmuramoylalanyl-D-glutamate--2,6-diaminopimelate
FT          ligase (EC 6.3.2.13)          [Aquifex aeolicus VF5] Length =
469
FT          Score = 350 bits (897), Expect = 3e-95"
FT          /note="Lysine biosynthesis,Peptidoglycan biosynthesis"
FT          /label=contig4.46c
FT          /gene="murE"          50

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FT          /blastp_file="blastp/contig4.46c.blastp"
FT   CDS    1353075..1354469
FT          /note="closest hit          IGI:RSAY00326
FT          UDP-N-acetylmuramoylalanine-D-glutamyl-lysine--D-alanyl-D-a
lanine
FT          ligase (EC 6.3.2.10)          [Staphylococcus aureus MSSA Str
ain
FT          476]          Length = 452 Score = 196 bits (498), Expect =
FT          6e-49"
FT          /note="Peptidoglycan biosynthesis"          10
FT          /label=contig4.45c
FT          /gene="murF"
FT          /blastp_file="blastp/contig4.45c.blastp"
FT   CDS    1354469..1355545
FT          /note="closest hit IGI:RGME01532
FT          Phospho-N-acetylmuramoyl-pentapeptide-transferase
FT          (E2.7.8.13)          [Geobacter metallireducens (JGI)]
Length =
FT          358 Score = 347 bits (891), Expect = 1e-94"
FT          /note="Peptidoglycan biosynthesis"          20
FT          /label=contig4.44c
FT          /gene="mraY"
FT          /blastp_file="blastp/contig4.44c.blastp"
FT   CDS    1355559..1356881
FT          /note="closest hit IGI:RDF04070
FT          UDP-N-acetylmuramoylalanine--D-glutamate ligase
FT          (EC6.3.2.9)          [Clostridium difficile 630] Length =
451
FT          Score = 219 bits (558), Expect = 6e-56"
FT          /note="Peptidoglycan biosynthesis,D-Glutamine and          30
FT          D-glutamate metabolism "
FT          /label=contig4.43c
FT          /gene="murD"
FT          /blastp_file="blastp/contig4.43c.blastp"
FT   CDS    1356868..1358016
FT          /note="closest hit          IGI:RGME01534 Stage V sporulation
FT          protein E [Geobacter metallireducens (JGI)] Length =
375
FT          Score = 233 bits (593), Expect = 4e-60"
FT          /label=contig4.42c          40
FT          /gene="spoVE"
FT          /blastp_file="blastp/contig4.42c.blastp"
FT   CDS    1358021..1359112
FT          /note="closest
FT          hit          IGI:RGME01535UDP-N-acetylglucosamine--N-acetylmur
FT          amyI-(Pentapeptide)
FT          pyrophosphoryl-undecaprenol N-acetylglucosamine
FT          transferase (EC 2.4.1.-) [Geobacter
FT          metallireducens(JGI)] Length = 364 Score = 233 bits
FT          (593), Expect = 4e-60"          50

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FT          /note="Peptidoglycan biosynthesis"
FT          /label=contig4.41c
FT          /gene="murG"
FT          /blastp_file="blastp/contig4.41c.blastp"
FT  CDS     1359109..1360470
FT          /note="closest hit  IGI:RGME01536
FT          UDP-N-acetylmuramate--alanine ligase (EC
FT          6.3.2.8)  [Geobacter metallireducens (JGI)]          Length =
461
FT          Score = 406 bits (1043), Expect = e-112"          10
FT          /note="D-Glutamine and D-glutamate metabolism,
FT          Peptidoglycan biosynthesis"
FT          /label=contig4.40c
FT          /gene="murC"
FT          /blastp_file="blastp/contig4.40c.blastp"
FT  CDS     1360502..1361392
FT          /note="unknown"
FT          /label=contig4.39c
FT          /gene="LAW1106"
FT          /blastp_file="blastp/contig4.39c.blastp"          20
FT  CDS     1361386..1362213
FT          /note="partial hit(64-226)          IGI:RDF01158 Cell divisio
n
FT          protein ftsQ          [Clostridium difficile 630]  Length =
246
FT          Score = 60.8 bits (146), Expect = 2e-08"
FT          /label=contig4.38c
FT          /gene="ftsQ"
FT          /blastp_file="blastp/contig4.38c.blastp"
FT  CDS     1362407..1363639          30
FT          /note="closest hit          IGI:RGME01539 Cell division prote
in
FT          ftsA          [Geobacter metallireducens(JGI)]          Length =
411 Score
FT          = 537 bits (1383), Expect = e-151"
FT          /label=contig4.37c
FT          /gene="ftsA"
FT          /blastp_file="blastp/contig4.37c.blastp"
FT  CDS     1363691..1365073
FT          /note="partial hit (25-325)          IGI:RTH01524 Cell divis  40
ion
FT          protein ftsZ          [Thermoanaerobacter tengcongensis
FT          MB4T]          Length = 357 Score = 295 bits (754), Expect =
FT          1e-78"
FT          /note="Signal Transduction, Two-component system "
FT          /label=contig4.36c
FT          /gene="ftsZ"
FT          /blastp_file="blastp/contig4.36c.blastp"
FT  CDS     1365182..1365661
FT          /note="closest hit  IGI:RNPU04726 hypothetical protein          50

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FT          [Nostoc punctiformeATCC-29133(JGI)]          Length = 154 Sc
ore =
FT          171 bits (433), Expect = 3e-42"
FT          /label=contig4.35c
FT          /gene="LAW1110"
FT          /blastp_file="blastp/contig4.35c.blastp"
FT  CDS     complement(1365658..1366440)
FT          /note="unknown"
FT          /label=contig4.34
FT          /gene="LAW1111"          10
FT          /blastp_file="blastp/contig4.34.blastp"
FT  CDS     complement(1366446..1367042)
FT          /note="unknown"
FT          /label=contig4.33
FT          /gene="LAW1112"
FT          /blastp_file="blastp/contig4.33.blastp"
FT  CDS     complement(1367118..1368020)
FT          /note="closest hit      IGI:RGME01654 Ornithine
FT          carbamoyltransferase (EC 2.1.3.3) [Geobacter
FT          metallireducens (JGI)]      Length = 303 Score = 291 bits    20
FT          (745), Expect = 7e-78"
FT          /note="Urea cycle and metabolism of amino groups, Arginine
FT          and proline metabolism"
FT          /label=contig4.32
FT          /gene="argF"
FT          /blastp_file="blastp/contig4.32.blastp"
FT  CDS     complement(1368164..1370053)
FT          /note="unknown"
FT          /label=contig4.31
FT          /gene="LAW1114"          30
FT          /blastp_file="blastp/contig4.31.blastp"
FT  CDS     complement(1370349..1371827)
FT          /note="closest hit IGI:RMMA07434 Transcriptional
FT          regulatory protein flbD      [Magnetospirillum magnetotacticu
m
FT          MS-1 (JGI)]          Length = 457  Score = 318 bits (815), E
xpect
FT          = 1e-85"
FT          /label=contig4.30
FT          /gene="flbD"          40
FT          /blastp_file="blastp/contig4.30.blastp"
FT  CDS     1372257..1373870
FT          /note="closest hit  IGI:RDF02863 Prismane protein
FT          [Clostridium difficile 630]      Length = 530 Score = 48
6 bits
FT          (1251), Expect = e-136"
FT          /label=contig4.29c
FT          /gene="priS"
FT          /blastp_file="blastp/contig4.29c.blastp"
FT  CDS     1374180..1375139          50

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FT          /note="closest hit          IGI:RVC05408 Chemotaxis protein c
heV
FT          (EC 2.7.3.-)          [Vibrio choleraeEI Tor N16961] Length =
328
FT          Score = 199 bits (505), Expect = 5e-50"
FT          /label=contig4.28c
FT          /gene="cheV"
FT          /blastp_file="blastp/contig4.28c.blastp"
FT  CDS     1375188..1375997
FT          /note="closest hit  IGI:RMC000389 hypothetical protein          10
FT          [Magnetococcus MC-1 (JGI)]          Length = 278 Score = 171
bits
FT          (433), Expect = 9e-42"
FT          /label=contig4.27c
FT          /gene="LAW1118"
FT          /blastp_file="blastp/contig4.27c.blastp"
FT  CDS     complement(1376132..1377148)
FT          /note="closest hit  NRL:2GD1R 2GD1R
FT          glyceraldehyde-3-phosphate dehydrogenase (EC1.2.1.12)
FT          chain R  Bacillus stearothermophilus (strain NCA          20
FT          1503)          Length = 334 Score = 380 bits (977), Expect =
FT          e-104"
FT          /note="Glycolysis / Gluconeogenesis, D-Arginine and
FT          D-ornithine metabolism"
FT          /label=contig4.26
FT          /gene="gapB"
FT          /blastp_file="blastp/contig4.26.blastp"
FT  CDS     complement(1377471..1378307)
FT          /note="closest hit          IGI:RECS00436 Pyrroline-5-carboxy
late          30
FT          reductase (EC 1.5.1.2)          [Escherichia coli 0157:H7
FT          Sakai]          Length = 269 Score = 164 bits (415), Expect =
FT          1e-39"
FT          /label=contig4.25
FT          /gene="proC"
FT          /blastp_file="blastp/contig4.25.blastp"
FT  CDS     complement(1378307..1378723)
FT          /note="closest hit          IGI:RQT00787 Nucleoside diphospha
te
FT          kinase(EC 2.7.4.6) [Chlamydia trachomatis MoPn]          Length          40
=
FT          141 Score = 160 bits (406), Expect = 2e-39"
FT          /note="Purine metabolism,Pyrimidine metabolism"
FT          /label=contig4.24
FT          /gene="ndk"
FT          /blastp_file="blastp/contig4.24.blastp"
FT  CDS     complement(1378753..1380090)
FT          /note="unknown"
FT          /label=contig4.23
FT          /gene="LAW1122"          50

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FT          /blastp_file="blastp/contig4.23.blastp"
FT  CDS     complement(1380396..1381724)
FT          /note="Partial hit          (39-389)IGI:RPA07001 Tail-specific
c
FT          protease(EC 3.4.21.-)      [Pseudomonas aeruginosa
FT          PA01]          Length = 436 Score = 320 bits (820), Expect =
FT          3e-86"
FT          /label=contig4.22
FT          /gene="prc"
FT          /blastp_file="blastp/contig4.22.blastp"
FT  CDS     complement(1381792..1382472)
FT          /note="closest hit IGI:RMJ15132 Endonuclease III (EC
FT          4.2.99.18) [Methanococcus jannaschii DSM 2661]          Length
=
FT          220 Score = 197 bits (500), Expect = 1e-49"
FT          /label=contig4.21
FT          /gene="nth"
FT          /blastp_file="blastp/contig4.21.blastp"
FT  CDS     complement(1382916..1385270)
FT          /note="closest hit IGI:REF01200 Copper-exporting
FT          ATPase(EC 3.6.3.4) [Enterococcus faecalis] Length = 828
FT          Score = 623 bits (1606), Expect = e-177"
FT          /label=contig4.20
FT          /gene="copA"
FT          /blastp_file="blastp/contig4.20.blastp"
FT  CDS     1385472..1385933
FT          /note="closest hit          IGI:RPMA01537 23S rRNA
FT          methyltransferase (EC 2.1.1.-)      Prochlorococcus marinus
FT          MIT9313 (JGI)]          Length = 166 Score = 150 bits (378),
FT          Expect = 6e-36"
FT          /label=contig4.19c
FT          /gene="LAW1126"
FT          /blastp_file="blastp/contig4.19c.blastp"
FT  CDS     1385991..1387358
FT          /note="unknown"
FT          /label=contig4.18c
FT          /gene="LAW1127"
FT          /blastp_file="blastp/contig4.18c.blastp"
FT  CDS     1387436..1388335
FT          /note="partial hit (106-292)          GEN:AAL94483 AE010540
FT          GI:19713732 Hypothetical protein      [Fusobacterium nucleatu
m
FT          subsp. nucleatum ATCC 25586]          Length = 290 Score = 14
0
FT          bits (352), Expect = 3e-32"
FT          /label=contig4.17c
FT          /gene="LAW1128"
FT          /blastp_file="blastp/contig4.17c.blastp"
FT  CDS     1388490..1389227
FT          /note="closest hit IGI:RNG01687 Glutamine transport

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FT ATP-binding protein glnQ [Neisseria gonorrhoeae FA
 FT 1090] Length = 245 Score = 305 bits (781), Expect =
 FT 3e-82"
 FT /label=contig4.16c
 FT /gene="glnQ"
 FT /blastp_file="blastp/contig4.16c.blastp"
 FT CDS 1389244..1390113
 FT /note="closest hit IGI:RDHA03009 Probable
 FT methyltransferase (EC 2.1.1.-) [Desulfitobacterium
 FT halfniense DCB-2 (JGI)] Length = 312 Score = 140 bits 10
 FT (352), Expect = 3e-32"
 FT /label=contig4.15c
 FT /gene="LAW1130"
 FT /blastp_file="blastp/contig4.15c.blastp"
 FT CDS complement(1390148..1390486)
 FT /note="partial hit (27-112) IGI:RBB00678 PROTEIN
 FT TRANSLOCASE SUBUNIT SECG [Borrelia burgdorferi] Length =
 FT 125 Score = 48.1 bits (113), Expect = 2e-05"
 FT /note="Protein export"
 FT /label=contig4.14 20
 FT /gene="secG"
 FT /blastp_file="blastp/contig4.14.blastp"
 FT CDS complement(1390582..1391340)
 FT /note="closest hit IGI:RAA01219 Triosephosphate isomerase
 FT (EC 5.3.1.1) [Aquifex aeolicus VF5] Length = 247 Sco
 re =
 FT 219 bits (559), Expect = 2e-56"
 FT /note="Glycolysis / Gluconeogenesis, Inositol
 FT metabolism, Fructose and mannose metabolism, Glycerolipid
 FT metabolism, Carbon fixation" 30
 FT /label=contig4.13
 FT /gene="tpiA"
 FT /blastp_file="blastp/contig4.13.blastp"
 FT CDS complement(1391360..1391830)
 FT /note="closest hit IGI:RDHA03687
 FT Ribosomal-protein-alanine acetyltransferase (EC
 FT 2.3.1.128) [Desulfitobacterium halfniense DCB-2] Length
 FT = 147 Score = 87.0 bits (214), Expect = 9e-17"
 FT /label=contig4.12
 FT /gene="rimJ" 40
 FT /blastp_file="blastp/contig4.12.blastp"
 FT CDS 1391831..1392370
 FT /note="unknown"
 FT /label=contig4.11c
 FT /gene="LAW1134"
 FT /blastp_file="blastp/contig4.11c.blastp"
 FT CDS complement(1392420..1393421)
 FT /note="closest hit IGI:RAA01589 Rod shape-determining
 FT protein mreB [Aquifex aeolicus VF5] Length = 341 Scor
 e =

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FT          298 bits (764), Expect = 4e-80"
FT          /label=contig4.10
FT          /gene="mreB"
FT          /blastp_file="blastp/contig4.10.blastp"
FT  CDS     complement(1393424..1394458)
FT          /note="unknown"
FT          /label=contig4.09
FT          /gene="LAW1136"
FT          /blastp_file="blastp/contig4.09.blastp"
FT  CDS     1394777..1395850                                10
FT          /note="closest hit  IGI:RP000600 Protein-glutamate
FT          methylesterase(EC 3.1.1.61)          [Pyrococcus abyssii]    L
length =
FT          368 Score = 288 bits (736), Expect = 8e-77"
FT          /note="Bacterial chemotaxis"
FT          /label=contig4.08c
FT          /gene="cheB"
FT          /blastp_file="blastp/contig4.08c.blastp"
FT  CDS     1395874..1397826
FT          /note="partial hit(1-650)  IGI:RNPU01345 Phycocyanin          20
FT          alpha-subunit phycocyanobilin lyase and related proteins,
FT          CpcE/NblB family      [Nostoc punctiforme ATCC 29133]
Length
FT          = 932 Score = 192 bits (489), Expect = 7e-48"
FT          /label=contig4.07c
FT          /gene="LAW1138"
FT          /blastp_file="blastp/contig4.07c.blastp"
FT  CDS     1397826..1398701
FT          /note="closest hit  IGI:RAG35779 PILI CHEMOTAXIS PROTEIN
FT          METHYLTRANSFERASE CHER HOMOLOG PILK(EC 2.1.1.80)          30
FT          [Archaeoglobus fulgidus DSM4304]   Length = 270 Score = 178
FT          bits (452), Expect = 5e-44"
FT          /note="Bacterial chemotaxis"
FT          /label=contig4.06c
FT          /gene="cheR"
FT          /blastp_file="blastp/contig4.06c.blastp"
FT  CDS     1398717..1399487
FT          /note="closest hit          IGI:RRC000092 SOJ PROTEIN
[Rickettsia
FT          conorii Malish 7]   Length = 255 Score = 157 bits (397),    40
FT          Expect = 1e-37"
FT          /label=contig4.05c
FT          /gene="soj"
FT          /blastp_file="blastp/contig4.05c.blastp"
FT  CDS     1399691..1400161
FT          /note="closest hit  IGI:RTP00160 Chemotaxis protein
FT          cheW          [Treponema pallidum]   Length = 170 Score = 70.
9 bits
FT          (172), Expect = 9e-12"
FT          /note="Bacterial chemotaxis"                                50

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FT          /label=contig4.04c
FT          /gene="cheW"
FT          /blastp_file="blastp/contig4.04c.blastp"
FT  CDS     1400172..1400540
FT          /note="closest hit          IGI:RSM00045 Chemotaxis protein
FT          cheY          [Sinorhizobium meliloti 1021] Length = 121,Score
e =
FT          110 bits (275), Expect = 5e-24"
FT          /note="Bacterial chemotaxis"
FT          /label=contig4.03c          10
FT          /gene="cheY"
FT          /blastp_file="blastp/contig4.03c.blastp"
FT  CDS     1400564..1401208
FT          /note="partial hit(19-201) IGI:RHX00980 PILI CHEMOTAXIS
FT          PROTEIN CHEA HOMOLOG PILL (EC 2.7.3.-) [Helicobacter
FT          pylori J99]          Length = 815 Score = 105 bits (263), Ex
pect
FT          = 2e-22"
FT          /note="Bacterial chemotaxis"
FT          /label=contig4.02c          20
FT          /gene="cheA_1"
FT          /blastp_file="blastp/contig4.02c.blastp"
FT  CDS     1401396..1403609
FT          /note="partial hit (385-737)          IGI:RDHA05215 PILI CHEMO
TAXIS
FT          PROTEIN CHEA HOMOLOG PILL (EC2.7.3.-)          [Desulfitobacte
rium
FT          halfniense DCB-2] Length = 729 Expect = e-101"
FT          /note="Bacterial chemotaxis"
FT          /note="Bacterial chemotaxis"          30
FT          /label=contig4.01c
FT          /gene="cheA_2"
FT          /blastp_file="blastp/contig4.01c.blastp"
FT  CDS     1405089..1405409
FT          /note="closest hit IGI:RTER03129 Pullulanase (EC 3.2.1.41)
FT          [Trichodesmium erythraeum IMS101 (JGI)] Length = 104
FT          Score = 117 bits (293), Expect = 3e-26"
FT          /label=contig5.127
FT          /gene="amyX"
FT          /blastp_file="blastp/contig5.127.blastp"          40
FT  CDS     complement(1406085..1406462)
FT          /note="unknown"
FT          /label=contig5.129c
FT          /gene="LAW1146"
FT          /blastp_file="blastp/contig5.129c.blastp"
FT  CDS     complement(1407181..1407675)
FT          /note="unknown"
FT          /label=contig5.130c
FT          /gene="LAW1147"
FT          /blastp_file="blastp/contig5.130c.blastp"          50

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FT   CDS           complement(1407750..1408049)
FT               /note="unknown"
FT               /label=contig5.131c
FT               /gene="LAW1148"
FT               /blastp_file="blastp/contig5.131c.blastp"
FT   CDS           complement(1408082..1408363)
FT               /note="unknown"
FT               /label=contig5.132c
FT               /gene="LAW1149"
FT               /blastp_file="blastp/contig5.132c.blastp"
FT               /blastp_file="blastp/contig5.132c.blastp"
FT   CDS           complement(1409027..1411030)
FT               /note="closest hit lcfG protein [Xanthomonas axonopodis
FT               pv. citri str. 306]          Length = 693 Score = 167 bits (
423),
FT               Expect = 6e-40"
FT               /label=contig5.762
FT               /gene="LAW1150"
FT   CDS           complement(1411391..1412671)
FT               /note="partial hit(85-413) IGI:RGME02979 Transcriptional
FT               regulator [Geobacter metallireducens(JGI)]          Length =
459
FT               Score = 219 bits (559), Expect = 4e-56"
FT               /label=contig5.761
FT               /gene="LAW1151"
FT               /blastp_file="blastp/contig5.761.blastp"
FT   CDS           complement(1412680..1413048)
FT               /note="unknown"
FT               /label=contig5.760
FT               /gene="LAW1152"
FT               /blastp_file="blastp/contig5.760.blastp"
FT   CDS           complement(1413348..1414544)
FT               /note="unknown"
FT               /label=contig5.759
FT               /gene="LAW1153"
FT               /blastp_file="blastp/contig5.759.blastp"
FT   CDS           1415356..1416042
FT               /note="unknown"
FT               /label=contig5.758c
FT               /gene="LAW1154"
FT               /blastp_file="blastp/contig5.758c.blastp"
FT   CDS           1416504..1417094
FT               /note="unknown"
FT               /label=contig5.757c
FT               /gene="LAW1155"
FT               /blastp_file="blastp/contig5.757c.blastp"
FT   CDS           1418018..1418524
FT               /note="unknown"
FT               /label=contig5.756c
FT               /gene="LAW1156"
FT               /blastp_file="blastp/contig5.756c.blastp"

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FT   CDS           1419132..1419671
FT               /note="closest hit IGI:RPA02276 Low calcium response locus
FT               protein H          [Pseudomonas aeruginosa PA01]   Length =
167
FT               Score = 85.5 bits (210), Expect = 3e-16"
FT               /label=contig5.754c
FT               /gene="LAW1157"
FT               /blastp_file="blastp/contig5.754c.blastp"
FT   CDS           1419668..1420858
FT               /note="unknown"                                     10
FT               /label=contig5.752c
FT               /gene="LAW1158"
FT               /blastp_file="blastp/contig5.752c.blastp"
FT   CDS           1420906..1421703
FT               /note="unknown"
FT               /label=contig5.751c
FT               /gene="LAW1159"
FT               /blastp_file="blastp/contig5.751c.blastp"
FT   CDS           1422992..1424743
FT               /note="closest hit IGI:RYE04024 TYPEIII SECRETION OUTER      20
FT               MEMBRANE PROTEIN SCTC    [Yersinia enterocolitica
FT               8081]   Length = 607 Score = 254 bits (648), Expect =
FT               3e-66"
FT               /note="Type III secretion system "
FT               /label=contig5.750c
FT               /gene="YscC"
FT               /blastp_file="blastp/contig5.750c.blastp"
FT   CDS           1424743..1426164
FT               /note="unknown"                                     30
FT               /label=contig5.749c
FT               /gene="LAW1161"
FT               /blastp_file="blastp/contig5.749c.blastp"
FT   CDS           1426377..1426856
FT               /note="unknown"
FT               /label=contig5.748c
FT               /gene="LAW1162"
FT               /blastp_file="blastp/contig5.748c.blastp"
FT   CDS           1426865..1427701
FT               /note="closest hit IGI:RBP00874 TYPEIII SECRETION
FT               CYTOPLASMIC MEMBRANE PROTEIN SCTJ [Bordetella pertussis      40
FT               Tohama I]   Length = 274 Score = 148 bits (374), Expect =
FT               7e-35"
FT               /note="Type III secretion system"
FT               /label=contig5.747c
FT               /gene="YscJ"
FT               /blastp_file="blastp/contig5.747c.blastp"
FT   CDS           1427698..1428378
FT               /note="closest hit GEN:AAD16845 AF102990 GI:4324368 YscL
FT               [Yersinia enterocolitica]   Length = 223 Score = 74.3 bits
FT               (181), Expect = 1e-12"                                     50

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FT          /note="Type III secretion system"
FT          /label=contig5.746c
FT          /gene="YscL"
FT          /blastp_file="blastp/contig5.746c.blastp"
FT  CDS     1428350..1429231
FT          /note="unknown"
FT          /label=contig5.745c
FT          /gene="LAW1165"
FT          /blastp_file="blastp/contig5.745c.blastp"
FT  CDS     1429285..1430391          10
FT          /note="unknown"
FT          /label=contig5.744c
FT          /gene="LAW1166"
FT          /blastp_file="blastp/contig5.744c.blastp"
FT  CDS     1430468..1430806
FT          /note="closest hit IGI:RQT00146 Anti-sigma F factor
FT          antagonist          [Chlamydia trachomatis MoPn]          Length =
110
FT          Score = 78.6 bits (192), Expect = 2e-14"
FT          /label=contig5.743c          20
FT          /gene="LAW1167"
FT          /blastp_file="blastp/contig5.743c.blastp"
FT  CDS     1430820..1431263
FT          /note="partial hit(29-131) IGI:RCQ00616 RsbW
FT          [Chlamydomonas reinhardtii CWL029]          Length = 144 Score =
FT          72.0 bits (175), Expect = 1e-12"
FT          /label=contig5.741c
FT          /gene="rsbW"
FT          /blastp_file="blastp/contig5.741c.blastp"
FT  CDS     1431313..1432011          30
FT          /note="unknown"
FT          /label=contig5.740c
FT          /gene="LAW1169"
FT          /blastp_file="blastp/contig5.740c.blastp"
FT  CDS     1432180..1432665
FT          /note="closest hit IGI:RDHA05222 Chemotaxis protein cheW
FT          [Desulfitobacterium hafniense DCB-2 (JGI)]          Length =
153
FT          Score = 118 bits (295), Expect = 3e-26"
FT          /note="Bacterial chemotaxis"          40
FT          /label=contig5.739c
FT          /gene="cheW"
FT          /blastp_file="blastp/contig5.739c.blastp"
FT  CDS     complement(1432770..1434458)
FT          /note="closest hit IGI:RSM07152 5'-nucleotidase (EC
FT          3.1.3.5) [Sinorhizobium meliloti 1021]          Length = 624
FT          Score = 270 bits (690), Expect = 4e-71"
FT          /note="Purine metabolism,Pyrimidine metabolism,Nicotinate
FT          and nicotinamide metabolism"
FT          /label=contig5.738          50

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FT          /gene="LAW1171"
FT          /blastp_file="blastp/contig5.738.blastp"
FT  CDS     1434763..1435746
FT          /note="unknown"
FT          /label=contig5.737c
FT          /gene="LAW1172"
FT          /blastp_file="blastp/contig5.737c.blastp"
FT  CDS     1435746..1438211
FT          /note="partial hit(548-812)          IGI:RSM05123 MECHANOSENS
ITIVE                                             10
FT          ION CHANNEL          [Sinorhizobium meliloti1021]      Length =
800
FT          Score = 187 bits (475), Expect = 6e-46"
FT          /label=contig5.736c
FT          /gene="LAW1173"
FT          /blastp_file="blastp/contig5.736c.blastp"
FT  CDS     1438532..1439695
FT          /note="closest hit IGI:RVC04316 Membrane-bound lytic
FT          murein transglycosylase C precursor (EC 3.2.1.-) [Vibrio
FT          cholerae El Tor N16961]      Length = 396 Score = 128 bits    20
FT          (322), Expect = 1e-28"
FT          /note=" N-Glycans biosynthesis,Nucleotide sugars
FT          metabolism,aminosugars metabolism, Glycosaminoglycan
FT          degradation"
FT          /label=contig5.735c
FT          /gene="mItd"
FT          /blastp_file="blastp/contig5.735c.blastp"
FT  CDS     1439752..1440264
FT          /note="unknown"
FT          /label=contig5.734c          30
FT          /gene="LAW1175"
FT          /blastp_file="blastp/contig5.734c.blastp"
FT  CDS     complement(1440333..1441112)
FT          /note="closest hit IGI:RMAC02742
FT          Ferredoxin [Methanosarcina acetivorans C2A]          Length =
275
FT          Score = 168 bits (425), Expect = 7e-41"
FT          /label=contig5.733
FT          /gene="LAW1176"
FT          /blastp_file="blastp/contig5.733.blastp"          40
FT  CDS     complement(1441109..1443982)
FT          /note="closest hit IGI:RGME02221 Excinuclease ABC subunit
FT          A [Geobacter metallireducens(JGI)]          Length = 952 Sco
re =
FT          939 bits (2428), Expect = 0.0"
FT          /label=contig5.732
FT          /gene="LAW1177"
FT          /blastp_file="blastp/contig5.732.blastp"
FT  CDS     complement(1444320..1445030)
FT          /note="unknown"          50

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FT          /label=contig5.731
FT          /gene="LAW1178"
FT          /blastp_file="blastp/contig5.731.blastp"
FT  CDS     complement(1445008..1445748)
FT          /note="partial hit(1-233)  IGI:RTH00216 Cobalt transport
FT          ATP-binding protein cbi0 [Methanobacterium
FT          thermoautotrophicum]          Length = 311Score = 95.9 bits (2
37),
FT          Expect = 5e-19"
FT          /label=contig5.730                                10
FT          /gene="cbi0"
FT          /blastp_file="blastp/contig5.730.blastp"
FT  CDS     complement(1445735..1446292)
FT          /note="closest hit IGI:RMBA03015 BIOY PROTEIN
FT          [Methanosarcina barkeri fusaro (JGI)]          Length = 187 Sco
re =
FT          123 bits (308), Expect = 1e-27"
FT          /label=contig5.729
FT          /gene="bioY"
FT          /blastp_file="blastp/contig5.729.blastp"        20
FT  CDS     complement(1446330..1448984)
FT          /note="closest hit IGI:RGME01650 Alanyl-tRNA synthetase
FT          (EC 6.1.1.7)          [Geobacter metallireducens (JGI)]    L
ength =
FT          899 Score = 847 bits (2188), Expect = 0.0"
FT          /note="Alanine and aspartate metabolism,Aminoacyl-tRNA
FT          biosynthesis"
FT          /label=contig5.728
FT          /gene="alaS"
FT          /blastp_file="blastp/contig5.728.blastp"        30
FT  CDS     complement(1449016..1450083)
FT          /note="closest hit IGI:RRS000600 RecA protein      [Ralston
ia
FT          solanacearum]          Length = 375 Score = 379 bits (973), Ex
pect
FT          = e-104"
FT          /label=contig5.727
FT          /gene="recA"
FT          /blastp_file="blastp/contig5.727.blastp"
FT  CDS     complement(1450184..1452139)                    40
FT          /note="closest hit IGI:RTT00231 Methionyl-tRNA synthetase
FT          (EC 6.1.1.10) / PROTEIN SECRETION CHAPERONIN CSAA [Thermus
FT          thermophilus]          Length = 616 Score = 565 bits (1457),
FT          Expect = e-160"
FT          /note="Methionine metabolism,Selenoamino acid metabolism
FT          ,Aminoacyl-tRNA biosynthesis"
FT          /label=contig5.726
FT          /gene="metG"
FT          /blastp_file="blastp/contig5.726.blastp"
FT  CDS     complement(1452273..1453223)                    50

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FT          /note="closest hit IGI:RHD04091 Tpl protein      [Bacillus
FT          halodurans C-125] Length = 275 Score = 226 bits (575),
FT          Expect = 4e-58"
FT          /label=contig5.725
FT          /gene="LAW1184"
FT          /blastp_file="blastp/contig5.725.blastp"
FT  CDS      complement(1454268..1454885)
FT          /note="unknown"
FT          /label=contig5.724
FT          /gene="LAW1185"
FT          /blastp_file="blastp/contig5.724.blastp"
FT  CDS      1455153..1455752
FT          /note="closest hit IGI:RNMF02365 Holliday junction DNA
FT          helicase ruvA      [Neisseri meningitidis ser. C strain
FT          FAM18] Length = 204 Score = 117 bits (292), Expect =
FT          1e-25"
FT          /label=contig5.723c
FT          /gene="ruvA"
FT          /blastp_file="blastp/contig5.723c.blastp"
FT  CDS      1455725..1456750
FT          /note="closest hit IGI:RGME00070 Holliday junction DNA
FT          helicase ruvB      [Geobactermetallireducens (JGI)]
FT          length =
FT          338 Score = 409 bits (1052), Expect = e-113"
FT          /label=contig5.722c
FT          /gene="ruvB"
FT          /blastp_file="blastp/contig5.722c.blastp"
FT  CDS      1456767..1457489
FT          /note="closest hit IGI:RDHA03031 Thy1
FT          protein      [Desulfitobacterium halfniense DCB-2(JGI)]
FT          Length
FT          = 234 Score = 201 bits (510), Expect = 9e-51"
FT          /note="Ubiquinone biosynthesis,Androgen and estrogen
FT          metabolism,Histidine metabolism, Tyrosine metabolism,
FT          Tryptophan metabolism, Aminophosphonate metabolism,
FT          Selenoamino acid metabolism, Nitrobenzene degradation"
FT          /label=contig5.721c
FT          /gene="thyA"
FT          /blastp_file="blastp/contig5.721c.blastp"

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【 0 1 3 4 】

表 18

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>LAWA001 280:1359 forward MW:41585
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t t t g g t a c t a t a c a a a a t t t a t a c t a t t a t t t t t a t t t t a a c a a g c t g g t t a t a t a
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g a a t a t g g a c a a t c c c a a t a t g g g g t a t t g c a t g t a t a g g g c t a t a t g g t c t g a c a t t a
c t t a g t g c a a c a t a t a t t g t a t c t a t c t t t a a a c a g g g a a a t a a a a a c t t t a t a c a g t g t
a t t t t g t t a t g t t t t t t a c t a t t a g t a t g c t g t c g c t t t c a a a c t t a a g a t c c t c a a a t
t t t g a g a g a a t g g g t t t t g a c a g a c t a t g g t a c c c a c a t a t t t a t g a a a a g t a c t t t c a
a c t a t t g a t a a a a a t c t c a c t t c a g g t c a a a c a a t t a t a g c c c c t t a t g a t c t t t c a t g t
t g g t t a a c g a c a t t t a a g a a a g a t a t c a t g t c c t t a c a a a t a g a t a c t t a g t t g c a c t a
g a t g a a t a c a t t a a g t t a t a c g a t c c t a a t a t t g c t g c t t t t c t t a a t t t a g a a a a t c c t
a c a a a a g a a g a a c a g a t c t t c t t t a t a a a t t g g g t a a a a g a t g t c t c a c c t a a t g c t a t a
g t a a t a a a a a c t c t c a a a g a c t t t a t a a c a a c t t a a c t t t g c t a g g a t a t g a a c g t a t c
c t a a t a g a t c c t a c a g g a g a t t t a t t t t t a a a a t t a a a t a g

>LAWA006 5817:6476 reverse MW:26434

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t t t t a t c a a a t a a g a a c t t a t a t t g a t c c a t t a g g t a a a g a g g t a t a t a a a g a t a t t a t t
c g t a c a a t a c t a a a a a t g a t t g g a t g t c t a t a t g t t a t a g g t a t c c c a t g g g a a t a c t t
c a t t a t a g t t t a t c c c c a c t t t a t t t a t t a c a a t t t c a a a g g c a c t a a a g a a c a a g g a
t t t t c t g a c a t a c c t c t t t c a t g g t t t t a t a g a a t a c a a g a t t g g a c a t a t a c t a g a a t g
g a g a t g t a t g c a a a a a c a c a a c t t t a t a t t a t t g g c a a a t a g c t t g g t g t a t c t t t a t a
c t t t c t t t a c t c a t a c t a t c t t t t c t t t t g t t a a a a g a a a a a c a t a t t t t t g c a a a a
g a a t c t g c t a t a t t t t t g c t a t c a c a c c g c t a t c a a c a g c a a t a a t t t t t c a t g t a a t
a a t c c t a t a t t t a t c c a c t t a c g a t a t a c a g t t a c t t g g t a t a c t t c t t t t t t a t c t t a
t t a a t g t g t t t a g t t a t a c c g a a t a t t t a t a g c a a a a t a a t t c t g a a a t a g a a a a t a a

>LAWA007 6841:7245 reverse MW:15483

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c c c t c c t a t g g g g a t t c a g a a g a t t a t a t c t t a c g a a g t a a t c c a t t a g t c a t a c a t a a t
a t t c g a c c a t t t a c t t t a c c t t t a t t a a t t t g t t t t t c t c a a g a a a t a g g a g g t a a a c a
t a t t t t c c t c c t a t t t t g t t t a g t a t t c a a a c a a c t c t t a c t t t c a t a a g t a t a t g g t t t
a t t t c t g g t g c a t t a t t a c c a a a t g t t t c a a a a a a a a g t c g t g g a a t t a t t a c t a t c t t a
g t a g g a c a a a c c c a c t t a t c a t g c a t t t t a a t c a t t c t a t t g t a

>mvaK1 7296:8276 reverse MW:36410

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c t t t c c a t a t a c c c a t a t t t c c a t c a a a a t g g a t a t t t a c t t a a a t a t a c a c g t a a t g a a
c a t g t c t c a a c t a t t a a g a a a t c c a a c a c c c t a t c c t g c a t c a a g t t t t t a a a g a t t t t
a a t g t a a a g g g a g t a g a t t t t a a c t c a t g t g c t g a t a t c c c a t c a g g a a c t g g a c t a g g c
t c t t c t t c a g c a t t t a c t g t t g g t c t t g c t c t t c t t t g t a a t a c t t a t a c a g a a g g a c g a
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c g a c t a c a a a a a a a t c t t t t a c t t t t t t a c a c a g g a a c c a c t c g t g c a g c a a t g g a a a t t
c t t g c t g a g c a a a a a g a c a a t a c c g t g a a t a a a g t a c a a a t a g t a a g a t t c t t t c c c a g
a t g g t t a a c c t t g c t t t t g a a t t a c g t a a a g c a c t a t t a a c a a t a a t a t c a a t a t g a t g
g g a g a a a t c t t c a t g a a a a t t g g g a g c t t a a a c g g c a a c t g g c t t c a g g a g t a a c a a a t
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 g g g t t t c t g a t g a a t g c t a t a a a g c a g c a c a t g g a t t t a g t t t t g a g a a g a c a a a a c a g
 a a t a t t g t c c g g c t a c t g a c a g a g t t a a g a a g a t g t g g t t t g t c g g a g a a g c c t t c t t
 g t a t t c a t a t a t a t a t a t a a c t t t g a g c a g c t t a a g g a c g c a g a a g c c t t t g c t a a t
 g a a c a t g g a a t g a t t t t a c a t g a t t a c t t a g c a t a t g t t g t a g a t t a t a g a g t t t t a a a
 g a t t t t c t t t c a g g t a a a a t g a t c t a a a t a c a a a g g a a a g g a t t t c a a a a g a t c t t t t t
 c t t c a t g a t g a a a a c a g t t a a a t a a a a t t c t t a a t t c t t c t c c t t c a a a t t a t t g g t g t
 g a a c a t g a a c g a g t t c t t a t g c t c g a t g a a a a t g c a a a t g t t g t t g t t t g c t g t g t g g t t
 a a t c a a t t t g t t g a a c a t g c a t t a t t a g g a t c a a t a t t g a t t a t t c t t t a a a g g a t c t c
 a t a g a a t t a a g a a a a a c c a a a a g c c t g t a t t g a a t g t a a c a a t a t a a g a t g g a t t a t
 t t t a t t c t g t t a t a a t a a a t a t c g t g c t t c g g a t a t t a a c a g a t t a t a t g g t g a a a a
 a t c c t t t c g t a t t g g c c a t a t t c a a a a a g t t a t c t c g t a a g a t t g a a c g t c t a t t g t t
 a g a g c a t a c c t t t t g c t a t a a g t a a a t g g g g a t a t t t t g g t t a t t a t g c g a a t a a c c t t
 a t t g a c t t a a a g a g g g t a t a t a g a t c t c t t g t c c a a a a a a a t a g a a a a t a a
 >LAWA016 15288:16061 reverse MW:30362

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a t g t a a a a g a a g a t t g t c c c a a t a a t a c c a a a a a a t a t a t a a t t c a t t t t a t t c t c a a
 c a t t c a t g g g a t a a a a g a g a t a g c c t t g c t g c t a g g t a t a t t t t a t a c c t t t t a a a a a a
 t t g t a t g t a a t t t g a t g t g t c c c a a a t c a a a a g t a t t g t t g a t g t t g g t t g t g g t g a t
 g g g t c a a a g a c a t a c a a t t t a a t a a a a t t t t t c c t a a t g c t a a a a t a a a g g g t g t t g a t
 t t t t c a a a g a a g g t a t t a a t a t g c c t c c c g t t t g t a t g g g a g g g g g g g g g g a a g a t
 c c t g a g c a a g t a a c a t t t g a a t a t t g t g a c a t t a a t a g t a g t t a t a t c t a a c a a c a c c a
 t a t g a c c t a c t t g t t t c t t t t a t g t t c t t g a g c a t a t a c a a g t a t g g g a g t c t g t t a t a
 g a t t a t g g g t t c a a t c t a a t a t a a a a t a t a t c a t t a t a t t g t a c c a a t a g g g a a a a t g
 t a t a a a a t g a t t a a g a g a a c a t t t t a g a c a t t t t a a a a a a t a t g a a a t a a a g a a t a t
 a t g t a g c t t c t g g a t a t a a a c t a c t c a a t g c t t t t a t t g g g g a t t c c c a t t t t a t t a t
 c c t a t t a c a a a a a t a g c a a t t g a g t t a c a a c g t g g a c a a t c c a t a a t a c t a t g g c a a a a
 a a g c c t t c t t t c t t t t t a a a a a g a g t a t a c g a t a t a a t g t a t t t t t t a t a c a a a a t g t
 t g t t c a a a a a a a a t g g t g g t g a c t t t a t t g g a t t t t t g a a a a a a t t t c t t a a
 >bchE 16055:17518 reverse MW:56137

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g t g a a a a t c t t t t t t t a a a t c c t c c g t t t a a a g g t c g g t t t t c t c g t a c a t c a c g t a g t
 c c a g c t a t a a c a a a a g g g g a a c a c t t t a t t a t c c a t t t t g g t t a g c a t a t g c t g t c g g t
 g t a g c a g a g c a a a a t g g g c a t g a t g t a a g a t t t a t a g a t g c t c c t g c t g a t a a t t t a g a a
 t t a c a a g a t a t t t t t a c t t t a c t a g a a g a t t t t a t c c c a g a t a t a g c t g t a t t g g a t a c t
 a g t a c t g c t t c t a t t t a t a g t g a t g t t a a a g t a g g a g a t g a a a t c a a a a g a c g t t t c c c t
 c a t t g t t t t g t t a t t c t t g t t g g g a c a c a t c c t t c a g c a c t g c c a g a g g a t a c a c t t a a t
 c t t t c g a a a a g t a t t g a t g c a g t a a c t a t t g g a g a g t a t g a t t t t a c a a t t c g t g a t a t a
 g c a c a t g c t t t a g a c a a a a g t t g t c t t t a c a t a a t g t c c c t g g t c t a g t t t t t c g t c a t
 a a t g a a g a a t a t a t a a a a a c a g c t g a a a g a g a a a a g a t t g a a g a t c t t g a t t c c c t t c c t
 t t t g t t a c g t c t g t t t a t a a a a a a t a t t t a a a t t a c a a a a a t a t t t t t t t g c a g c t g c a
 a a a t a c c c t a t g g t t a t g a t t a t c a c a g g t a g g g g c t g t c c a t t t a a a t g c t t c t t t t g t
 t t a t a c c t c a a g t a t t t c a c a g t c g a c g t t a t c g a c c t c g t t c t c c t g a a a a t a t t g t a
 g c t g a a t t t a a a t a t a t t a a a g a a a a t t t c c c t g a t c t t a a a g a g a t t g g a a t t g a a g a t
 g a t t g t t t t a c t g t t a a t a c t g c a a g a g t a a g g a a a a t t t g t c a g t t a c t t a t t g a a g a a
 a a a c t t a a t a t g a c a t g g t a t t g t a a t g t c c g t g g a g a t g t a g a t t a t g a a a c a c t t t t t
 c t a t g a a a a a g g c a g g t t g t c g t t t a g t a a c t g t t g g t t t t g a a a g t g g a g t t c a g t c t
 g c a c t t g a t c a a a t g c a t a a a a a c g a a a a g a t c a a a a a t a t t a c c a g t t t g c t a a a g a t
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 c t a g a a g t a c a a a a a g a a a a t a t c g t t t t g c t c t t a a a a t a a c t g t g a t t c t a t g c a a
 t t t t a t c c a c t a t a t g t t t a t c c a g g g a c a g a a g c a t a t a c t t g g g c a a a a g a a a a t g g t

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tattgaagacagaggat t t t t t c t c a a t g g c t t a c a g a a g a t g g t a g t c a t a a t t g t g t g
a t a g a t a c t g a t a t a t t t a c a g g t c a a g a a t t g g t t g a t t t a t g t a a t c a g a a t c t g c g t
a a a t a t c a t t t a c g a c c a g c a t a t a t t t t g a t g a a c t t a a c a a g c a a t c c a t g a c c t
g a a g a a g g a t t a c g t a g t a t a a a g t c a g g a a t t a t c t t t a t a a a a a g a t a c t a a g t t t a
a a a g a a a g a g a g a t a a a t g t t a a

>LAWA018 17553:17906 reverse MW:13012

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a c a c t t t t g a t g a g a t a t g g a g g a a a a a t t t a g a c t t t a c a c a g g g g a t t t g c t a t a t a
g t a a c c a g c g g t t a c t t a t g g a t t t t a g g a t g a t t c t a a g t t g g a t a g c a g g t g t a t t t
t t t g c t t t a t t a t a c a a a a t a t g g t a t t a c t g a a a g t t t t c t t t a t a c g t t c c t t t a
g t a t a t t t a a t g a t t a t t g g t g g c g g a t t a t t t t t t t a c a t g a a c a c t a t c a a t t a c t
a g a g g a g t t g g a g t t c t t t t g t t t t a t t g g t c t t a t t t t c t t t t a a a a t a g

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>gmhA 17912:18493 reverse MW:21380

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g t g a g t a t t t c t g g a g g t a a c t c c c t t c a t t a g a a g a t g g t t t t a t a c a t t g g g t a c a a
a a a c a g a a g a a t t a c g t a a t a c t a a c a g g a c a g t c t t t t t a t a g g c a a t g g c g c t t c t
g c g t c t a t g g c t a g t c a t t t t t c a g c t g a t t t a a c t a a g a a t g c t c a a a t a a a t a c a a a a
g t t t t t a c a g a c t t a t c g c t t t t a a c a g c t a t t g g a a a t g a t t a g g g t t c g a a t a t g t t
t t t t c a g t g c c t t t t g c a c g a g a t g t t t g t t c t g g g g a t a t g c t t g t t g t a a t t a g t t g t
t c t g g t g a a t c a c c t a a t g t t g t t a a t a c a a t c c g t c t a g c a c a a t c t a t g c a a g a a a a a
c a a a t t t t t g t g t a a g t t t a a c t g g t a a c a t t t t a g t a a t a c t g t t c g a c a a c t c g g a
g a t t t a a a t t t t a t g t t c c a c a a a t g c a t a t g g a g a a t g t g a g t c t t g t c a t g c a a t t
a t t c t t c a t c a t t g g a t g g a t t c t a t c c a g g t c a a a t c t t a g

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>LAWA020 18514:18888 reverse MW:14822

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t t t t c g t t a a t t a a a a a t g g t a t g t t a c g t g a a c g t t a c g c a t t a t t a t g g t t c t g t a t a
a c a a t a a g t a t t t t t t g t a t t c c t t t t c t t t a t a a t a t t g c g g a a t g g t a t g g a t a c a t
a t t t c t t t t c c t c c c c a a c a g t t a c t t t a a t a a t g t t t a c t c t t t t t a t t t a t g c t t
a t t t g t c t t c a g c t t t c t g t a a g t g t t t c c c a t g g t t g g a g a c a t a a a a a g c t t c t t a t g
c a a g a a g t t a c t t t t t t a a a a t t g c g t a t t c a a g a a c t t g a g g a t t c t t t a a a a g a a a a
g a t g a a c a t g t g t a a

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>LAWA021 18943:19275 reverse MW:12735

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a a a a c t a t a c a t c a t t a t t a t c t t a t t t t a t g a t g a t a t g t c t t t g t t a g g a a t g t t t
t t t g t g g t a g a g c c t g a a g t a a c a a c t g t t g t t g c t a a a g c t g t t g g t a t t g g a c g t g g t
a c a g a c t t a t t a t a t a c t t t t t g t t a t a a t a a a t t t t t a t t a c t a t t a t t a a t t c a t
g c a a a g t t t t c t a g a t a t g a t g t t a t c a t t a c t g a a c t a g t a a g a c g a c a a a g c a g t a t a
t t a a t a a a t a a a g t a t a g c a a a a t a t a t a a

>LAWA022 19278:19784 reverse MW:18878

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g c a g a t a t t g t t a t t a c t t t t g a t g c g g a t g g a c a a c a t c g a a t t g a a g a t g c a t t a a a a
a t g g t t g a a g t t a t t g c t g c t g a c c a a g c t g a t a t a g t t t g t g g a a g t a g a t t t t t a g g t
a c t a a a t c t t t t a a t a t g c c a t t g t c g a a a a a a t a t g g c t a c g a t t a g c a a c a a t a t t t
g t t a g g a t g a c t a c a g g g g t a a a a g t t a c a g a t g c a c a t a a t g g a c t a a g a g c a c t a t c a
a a a a a g c a t t a a a a g t g a t t c a a t a a a g c a a a c a g a a t g t c t c a t g c c t c t g a a a t t
a t t a a t a a t a t a a a g a a c a t c g t c t t a g a t a t a a a g a a a t t c c t g t a a c t a t t t t a t a t
a c a g a a t a t g c c a t t t c a a a g g g g c a a a a g t t a a a a a t t c t t t t a a t a t a g t a a a a g a a
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>gale 20042:21061 reverse MW:38079

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>LAWA028 24353:25753 forward MW:53709

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>LAWA029 25951:26709 forward MW:27778

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表 19

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>LAWB019 26181:26819 reverse MW:24769

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>LAWB020 27548:28714 reverse MW:43492

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>LAWC045 68531:69295 reverse MW:28893

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 t t g g g t a t g c a a t g c g t t t t g a c a g g c g t t t c t a t a c a a g t c c c c c a a a a g t t g c g a a g a
 c t g g c g t t a a a a g c t t a t g a a a a a a t t c c a c a a a t g t a c t t g t c t c t t c a a g g t a a t a a a

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g t a t c c t c a c c a t c t a t t g c c a a t t a t g g a a a c t a t t a a a a g c a a c a a a a a a t t t g c t
 a a c c a g a a g c a a a a a c a c a t t c c t t a c t a t g t a t t t g c a t t t a c a g a t g a t t a t a a g g c a
 a a t c t g g a a c g t a a a g t a c g t t c a g g t c a a g c t g g t a t a a t t g c t g a g t t a t g c a a t g g a
 g t a c a c t t t g g t t t g a c a t a t a g t c g t c a c a a t g a t g a a a a a a a g a a t a t a c a g g g a t g
 c a a c t a g g t a a a g g t a g a g g t t c t g t t a a g c a a a g t c a g a g a t a g a a a g t a t a g c a g c a
 g t g t t a c a t t t a a t g c a g a t c g t c c a g g a a t t a c a g g a c a t t t t g c a a g t t g c t a t g g a
 t g g g a a c a g t a a a g a a t a a g c g a t t t t t a c c c a t g c a g g t a g a g a a a c a t c c t c a a g t
 g g a a g t c c a g c t a t a a g t a t a g c t g g a g g g t t g g t t c a a a t t g g t a t a a t t t a t a t a t a
 t c a a a g a g t t g t t c a g t a a c g c c a t a t g t t g a a g g a g t g t t a t c g a t a g c a a a g t g g a a g

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c c t t a c a a t g a a a a a g a g g a g a t c t t c c a t g t a a a c t g a g c g a a a g c a g t g a g a g t a t a
 t t t g a g a a a a g t a t a g g a t t g c g a a g t g a c t g g a g g g t t t c a g a g a g t t c t a t t t t g c a a
 a c a t g g a t a t c a g g c a t c t c a g g g t c t c a a a c a t c a t c g a a t g t a a g t t t a c a a c c g c t t
 g t a g c a c c t a t g a a g a g g t a t g a a g t t t c t g t c c c a a t g a g a a a t a a g a a c t a c c t a a g a
 g c a g a g t g t g g a g c a a c c t a c g t a t c a a a g a t t a c a g a t a g t c t t t t a c g g g a g c a a c a
 a t g t g t t t c t t t t g t a a a a a g a c a a a a g c t a c a t a a t c a a c a a a t a a a t a c a t a t g t a
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>LAWC053 89091:91199 reverse MW:76285

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>LAWC054 91646:93478 reverse MW:68008

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 acagaagc t c t a t c a g c a g t c a t t g t t g c a a a t a c a a a t a a t g c a g g c t t t a c a g g t c a g
 c t a a t t a g t t c t t a t g g t t g g g t a a g g t t a a g a a t a t a c g t t c a t t c a c c c a t g c t a a t
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 g a g a c a a g g a a c a a g t a a t a g a g a a a g t a t a g g t t t a a g a a g t c a t t g g c a a g c a a c a
 a g t a t g t c t c a a a t a c a g a t t t g g a t a g c a g g c g t g t c a g g a t a t a t t g a a c a a a t a g c
 a t a a a a t g t g a g c c a a t a c a g a a a c a t g c c t c a a g a t a t a a a g t a t c a g t g c c t a a a a t
 g a a a g t a g t t a c a a a a g g a c a g a g t t a g g g a t a t c a t a t a c a g c a a a t t t a a c a a a t a a t
 c t g g a g t t t g g t a t a a a t a g t g t g a t a c g t t t t g a a a a t t c c a a a a a t t t g g a g g c c a a
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>LAWC055 94015:95874 reverse MW:69028

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 a a t g t a t g t t a c g a g c c t a t a a t a g t c a t c c t t t a t t g t t t t t a c a a a t a a t g t t t c a a
 g t t a t a c a a a a a a t a a a a g g t a a t t a t a g g a a g a t a g c t g t c a a t g c t a t t a t t c c a t t t
 t g t a t a t t t t t t g t g t t a c t g a a g c a g t c g g t a t g a a t a a c a a t a a t g a a c a t a g c c c t
 t c t c c a g t t a a t g a a a g a a c a c c a c t a c t a c a g t c a t c a c a t a g t g t t c a a a g a g t t g g a
 g t g a a c c c t a g a g g g g a a g g g t g t t g t g c t a g g a t g a a g c g t a g a t g t g g a a g a t g t t c a
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 g g t g t t a c t a g t t g t a t t g c t a c a a a a a a g t t a g a g a g t g a a c t a t a t t g g g c a t t a a a a
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 t g t a c g t t a g c a g c a g c a g t t t c t g c t a c a t c t a t t g g a t g t a t g a a g t g t t a t c a a a c t
 a c c t g t a a t c a t a g a a c a g a a a a t a c a g a t g g a g a g c a g a g c t c a g a t a g t g a a g a t g a a
 a a t g a a a c t a g t t c t c a g a t a g c a t t a c g t g t a a t t a c a a c t c a a c c a a g c t c t a t a g g t
 a t t t c a a a t c c t g c t g t a a t a a c a a g a c a a c c a g a c t c t a g a g a t a c a g c t t c t t c t t a c
 t a t a g t g g g t t t c t t t c g g a g t t t a a t c c t a a a a g c c a t a t a c g t t c a t t a c t a g g g a t g
 c a g t c t g c a t t a t t g g a t a t a t c t g a a c a g a c a g a a g t g c t t t a a g g c a a g t g g t g t t a
 a a a a c a c a t g a a c a t a t g c t t a t g t c g g a a t g a t g t a c c a a c a a g a a g g a t a t g t t t a t
 t c a a a a g g t c a a a a g t t t c a a t a t c c g t c a t g t g t a g c t a a a g t a a c t g a t a g t c t a t t c
 t t a a a a a g a t a t g t t c a t c a t t t t g t t a c a t t t g a t a g t t a t g a g a c t a a t t t t g a g c a t
 a g a t t a g g t t c t g g t c a a g c a g g g a t a g t t g t g g a t a t g a c a t c a g g t g t a t a t c t a g g a
 t t a g t g t a t a g g c g c c a t a a t a a t c a t g g g g a a a t g t a t a g t g g t a t c c c a a a t a a t t c t
 t g g a c a g a g a t g a t a a a a g t t a g g a c a a a t a c a g a g a g c t t a t c a a c t g g c c t a g c t t t t
 a a t a t a g g g a g a a c a g g t a t t a c a g g a c a t c t t g t a a g t t g t t a t g g a t g g g g t a a a g c a
 a a g a a t a t a c g t t c a t t t a t g c a t g g c a c t a t g g a a g t a t g t t c a a a a g g c t c t c c a g a t
 a t a c g t a t a g c a g g a g g g t a g t a c a a t t g g g g t a t a a c c t t t c t g t a t c a a a a c a a g t a
 a g a t t t a c t c c a t a t a t a g a g a c a a c a t g t t c a g t t g t a c a g t g t g g c c c t t a t a a a g a a
 t c a t t a a g t c t t t t t c t t g t g a a c t g a c t a a a a a t a a a g a a c a a g t a a t a g a a a a a a g t
 a t a g g t a t a t g t a g t t a c t g g a a c c a t c a g a t a t g t t a c a g g t a c a a t t a t g g a t a g c t
 g c t g t t t c a g g c t a t c g t g a t g t g a a g a g g t t a a g c t g t a a c a t a g t t a a c t c a c g t c t a
 a a c a a g a g a t t t c a g t c c c t t t a a a a c a g a c a a g a t a t a a a a a a c a g a t g t t g g a t t a
 t c a t a t t t a a t a a a t a t t a c a c c t a g g t t t t g t t t g g a a a t g a a t g g t a t g a t g t c t t t t
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 >LAWC056 96167:97960 reverse MW:66046

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 g a a g g t a t a g a a a g g t t a a t g g g t a a c t a t a g g t a t a t t t a a a c a a c a a g a g t t t t a t

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>LAWC057 99530:101632 reverse MW:80729

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cat t t t c c t t t g t a t c g t a c a t t t t t t a c t g t a g a a g g a t a t a a g a c a a a c t t a g a a t a t
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 g g g a t a g g t t c t t c a a a a g c t a a a a c a g a a t t a g a a g c t a t t t c a g c a a t g a t g g t t t g g
 a a t c c a a a t a a a a a a g g t a t t a c t g g t c a t a t a g t t a g c t t t t a t g g a t g g g g a a g t a t a
 a a g a a t a c a c g t t c g t t t a c c c a t a t g g a t g g t g a g t t g c a t g t t a a a g g t a a c c c a g a a
 g c a t a t t g a t g g g a g g a t t g t t a c a g g t a g g a t a t a c t a t t t t t c a a a g c a a t a c c t t a
 t c c g t c a c g c c a t a t a t a g a a c t t a t g g c t t c a a c t g t t g g t t g g a a t g c a t t t a a a g a a
 t t t t c a g g a t t g c t g c c a t g t g a a g t a a g t a g g a a t a c t g a a c g t a a g g t g g a a a a a a g g
 a t a g g g a t a c g t a g t c a t t g g a a g a c a a c a a c a c t t c t c a g c t a c a a a c a t g g a t g t c a
 g c t g t t t t a g g a a c a c a g c a t a c a a a t a g t a t a a g t a g t a a g c c a a t t a t a g c t c t a a c g
 g a t a a a t a t a a a g c a t c t g t c c c a g g g t a t a a a g a a a c t a t a c a a g a t t t g a a t g t g g t
 t t t g t g t a t t c a a t g a a g t t g t c t g a a a g g c t g g a g a t g a a t c t a t c t g g c t t a a c t c a t
 a t c a t g a a t a c a a a a g a t a c a c a g a a c a g a a t a t a a a c c t t c a a t g g a c t t a t t t t t a t
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>LAWC058 102038:105190 reverse MW:112152

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 c a t a t g t a t a t g t a t g a a a c t t a t t g t a t t a a g a g t t t a a c a t g g g a t a t g t a t g g a t t t
 t a t a g t t g g c t a g t t c a a t a t a g c a t a a a a g t t t t t t c t a g a a a t a a a g t g t t t a t c a t t
 t t t t c c t c t t t t t a t g t g t a t a t t g a c a g c t g g a g a a g c c t t c t c a t t t t c t a g t a t t
 a a a a g g g g t t a t a a t t c t c c c t c c c c a c c c c t c c a t c a t t a g t a g a t t t a t c g t t a g g a
 g a t t c t c a g g a t c t t g g c t c a g a c t c t t c a t c a t c a g g t t c a t t g t t a g g a a g t t t t c a g
 g a t c t t a g t t c a g a a t c a a g t t t t g a t g a t g g c c a t a a t c c t t c c c c a c c c c t c c a t c a
 t t a g t a g a t t t a t c g t t a g g a g a t t c t c a g g a t c t t g g c t c a g a c t c t t c a t c a t c a g g t
 t c a t t g t t a g g a a g t t t t c a g g a t c t t a g t t c a g a a t c a a g t t t t g a t g a t g g c c a t a a t
 c c t t c c c c a c c c c t c c a t c a t t a g t a g a t t t a t c g t t a g g a g a t t c t c a g g a t c t t g g t
 t c a g a c t c t t c a t c a t c a g g t t c a t t g t t a g g a a g t t t t c a g g a t c t t a g t t c a g a a t c a
 a g t t t t g a t g a t g g c c a t a a t c c t t c c c c a c c c c t c c a t c a t t a g t a g a t t t a t c g t t a
 g g a g a t t c t c a g g a t c t t g g c t c a g a c t c t t c a t c a t c a g g t t c a t t g t t a g g a a g t t t t
 c a g g a t c t t a g t t c a g a a t c a a g t t t t g a t g a t g g c c a t a a t c c t t c c c c a c c c c t c c a
 t c a t t a g t a g a t t t a t c g t t a g g a g a t t c t c a g g a t c t t g g c t c a g a c t c t t c a t c a t c a
 g g t t c a t t g t t a g g a a g t t t t c a g g a t c t t a g t t c a g a a t c a a g t t t t g a t g a t g g c c a t
 a a t c c t t c c c c a c c c c t c c a t c a t t a g t a g a t t t a t c g t t a g g a g a t t c t c a g g a t c t t
 g g c t c a g a c t c t t c a t c a t c a g g t t c a t t g t t a g g a a g t t t t c a g g a t c t t a g t t c a g a a
 t c a a g t t t t g a t g a t g g c c a t a a t c c t t c c c c a c c c c t c c a t c a t t a g t a g a t t t a t c g
 t t a g g a g a t t c t c a g g a t c t t g g t t c a g a c t c t t c a t c a t c a g g t t c a t t g t t a g g a a g t
 t t t c a g g a t c t t a g t t c a g a a t c a a g t t t t g a t g a t g g c c a t a a t c c t t c c c c a c c c c t
 c c a t c a t t a g t a g a t t t a t c g t t a g g a g a t t c t c a g g a t c t t g g c t c a g a c t c t t c a t c a
 t c a g g t t c a t t g t t a g g a a g t t t t c a g g a t c t t a g t t c a g a a t c a a g t t t t g a t g a t g g c
 c a t a a t c c t t c c c c a c c c c t c c a t c a t t a g t a g a t t t a t c g t t a g g a g a t t c t c a g g a t
 c t t g g t t c a g a t t t a t c g t t a g g g g a t t c t c a g t a t c t t g g t t c a g a c t c t c c a t c g t c a
 g a t t t a t c g t t a g g g g a t t c t c a g t a t c t t g g t t c a g a c t c t c c a t a t a g t a g c g a t t c t
 g g t g a g g a a g a t a a t t c c t c t t t t t c t t a t a c t c a t g a t g g g a t a a g c c g t c g t c c t t g t
 a t a t a t c a g a g t t t g a t g g a g t a a a t a g t a g t a c a a g t a g t a t a g a t a c a g t g g t a g t t
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 a g t a g a t c a a g t g a g g g a t c a t c a a g t g a a a g a a t c a t t c t a c t a t a a c a c a g a c a c a a

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t t c c c t a t g a a t a a t a a g a a a a g g a c g a a g a g a t a t t a t t g t a a g a a t t t a a g g c a
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 t c t t c a g g t c c a t g g g g t g a a t c a t a t a t a c a g g g c c a a a g t t g a g t a t a g a a g a a g a g
 g a t g c t c t t a t g g c t c t a t t a g c t a t t a t t g a g a t g g g a a g t t a g a t c g g a c a c c a a c t
 c g t a a a a c t c a a a g a c a a a t g a t g a t g a t a t g g a g c a g c t t g t g g a t g a t c t c c c a c c a
 g c t a a a c t t t c g c c a g a c a a a c a g c a a c a t t g a t t g g t a a t a g t a a g a a t a c a c t t c c t
 c t t t c a t t t a c a t a t a g a g g t c c t g t t c t t c c t a t t t t a c g t c t t a t g g g t c a t a a g c g g
 c c a g g a g c a a a t c a t t a t g a g a a g c t t a t t a c c a g c t t a a a g a g t t t a g c c t t a g g a t c g
 a t g c a g c t t t t g t a c g t g a a a a g g t g a a g a c c t c c a a t a t g a t c t t t c t c a a a t t a t t
 t c t a a c t t a c g t c t t c g a c c a a a a g a t a g a g a a a t t t c t g t c a c t g t a a a t c c t t t t t t c
 t a t c a a a t g t a t t t g g c g a a t a g t c t t a c a t g g a t c a a t a t t a c a a a g c g t t t c c a a a t t
 a g g g g t a g t a t t g c t a a g g c a a t g t a t c g t t t t t g t c a g t c t c a t a g a g a t a a t c c t g t c
 t t t c g t g g t a a t a t t a t g a c a t t a g c t t t a g c g t t g a a t a t g g a t c c t c a t g t t c c t t t a
 a a g a g a c a c g t c g a c a g a t t c g a g a g g c t a t t g c a g a g c t t g t t g a a a a a a g g t t c t t
 g a a t c t a c a a g t c t t c t t t c a c g t a c a a a c c t t g t a t t a t t a a a t a g a a c a g c a g a a g c a
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>parA 114721:115545 forward MW:29853

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 g c t g t a a a t g t t g c t t a c t g t c t t a c a a a c g t a a a c g t c g t g t c c t t g t t g t a g a c t g t
 g a t c c t c a g g g a a a t g c a t c a c t t a c a c t a g g a a c a a t c t c a c c c t a t g a a c a a c c a c g a
 a c t g t g g c t a a c c t t t t t a c a g g t c t t t c t t t c t c t a c a g c t g c a g t a a g c t c a a a a t a t
 g a a a a t t a g a t a t t a t c c c t g c a a a t c t t a a c g t a t a t g c a a c a g t a g g a a c g c t a t c t
 a a t t c t a t c a a a c g a t t t t t t g g c t t t c g a c a a g c a t t g g a t g a a g c a g c a c t t a a a g a a
 t a c g a c t a t a t t a t c c t t g a c t g c c c a c c a a c t a t t g a g g g g a c a c t t c t c a c a a a t g c a
 c t t g t t a t c a c c g a c t a t g t g a t c a t t c c t g t a g g t g t c g a a g a c a c a t a t g c a t t a t c t
 g g t g t a a g c c a t c t t a t t a a a g t a g c t g a g a c a c t t c g t g c a g a t a c a g a a t c a a a t c t t
 g c a a t t a t g g g t g t c t t a c t a a c a a t g t t g a t g g a c g a a a t a a t g c t g c a a a a a c t a t c
 a g a a g t g t g c a a t t g g a a c a t t t g g c g a a g a t a t g g t t t t c a a a c a a c a a t t c c c c g a
 a a t a c a a c a c t a a a c a a a g c t g t c a t g a g t a a t c g a g c a g t a t g t g a c t a t g a t g a c a g t
 t g c t c a t c a t g c a g a a g c t a c a g a g a a t t g a c a c a a g a a a t t g a a g t t c g a c t a a a a a a t
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>LAWC064 115557:117053 forward MW:55695

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 t c t a c a c a a c t a a a a a a a t c g c t c t a t t c c t a a a a a c a t a a a a a t a c c a t a c a a c t a
 g t a a c a g a t a c g a a a c a a t t g a c a a a a a a a g t a t c t a a c a a a a a a g a c a a a c g c a a c a g
 a c t t c c c a a a a g c a g c c t g c a a a c c a a a a g a t g g c c a a a t a g c t c c t a c t c a a a a a g a g
 c c a t c t a t c a a t g t a t c c a t a t c a a t t t c t c c g g a a g a a c a a t c a a c c a a c a g t a t a g a t
 c a a a c t g t a c t a t a c a g c c a t c a a c t g t c a t c a a t t g a c a c t a c t g a t t c t a g t c a g c t g
 c t a c a g t c t a a a a c a a t c a a c a a a a t a t a g t a a t a a t c t a t t a g c a g a t c c a g a a a g t
 g t t g a t a t a c c c t c t a c t a a a c t a t c a a c a a c a g t c a t c g a t c a g t c a t c a g a c a g t c a t
 c a c a a a c a t t a g t a g a c a c a a t a a t t t a a t g g c a g c t a a t g a c a g c c c a t t a t c t g t a
 c t c c c a t c t g a a t c c c t a c a a t a t a c c a g c c t t c a a a g a g c a t g c t t t t t g a a a c g g a t
 a t a t t a c a a g a a a a t a t a t c t c a t c a a g a t a t t c c t t c a c c t g a a g a c a a c c a t a t c a a t
 a c t t c t t t a t a g g t a c a c c t a c t a c a t c t a c t c a g c c a t t a a t a g a t a a t g a t a g t t t a
 a a a c a g a c a a t g a c a g c t t g t g a c a c a a a a a a c a a t c a c a a t c t a t c c c t t g g g t c a t
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>LAWC080 135091:136032 reverse MW:35326

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>LAWC084 140609:140983 forward MW:13988

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表21

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>LAW0010 8623:8928 reverse MW:11617

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>po1B 9617:10576 reverse MW:35965

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>LAW0039 45343:45816 forward MW:17446

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>LAW0040 45849:47372 forward MW:55692

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>ugpB 100196:101491 forward MW:48585

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 a t a a a t g c a a c t a t t a a t g c a t t t c g t a t g a t c g a t c a t c t t t t t a t a t t g a c a a a a g g t
 g g t c c t a a t a a t g c c a g t a g t t g t t a t t a t a t a t c t a t g a a g t a a g t t t t c a a t t t
 t g g g a t a c a g g t a t g g a t c a g t g c t a a c a g t a a c t t t a c t t a t a a t c c t t g g c t t t a t a
 g c a t t a t t c c a a t t t g g t a t t t t a g a a c g a a a g g t t c a t t a t c a a t g a

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>LAW0079 102438:103274 forward MW:31491

atgaaaaataaataaataatccataatgaacctcaggggataacataat t t t t t t a g a a t t g g c a
 g g g g c t g g t t a c t t g c t g t t a t t t g g g c a t t a c c t t t a g t a t a t g c t a t t t g g a c t g c a
 t t t c a t c c a a t g g c a t a t t c t a c a a a c t t t t c a c t a t c t g c t c c a a t t a c a t t a g a a a a t

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t t t a a a c t a g c a t g g c a a g c t g c t c c a t t t g c a c a a t a t t t t g t a a a t a c a t t a t t g c t a
 g t g a c a t t g g t t a t t a c t t c t c a a c t t a t t t t t t g t a c t c t t g c t g c t t t t g c a t t a g t t
 c g t t t t g a a t t t a g a g g t a a a g a g a t a t t t t t t t g g a t t a t t c t t a t a c a a t t g a t g a t t
 a t g c c t g a t g t t c t t a t t g t t g a a a c t a t a a g a c a a t a a g t t c t a t g g g a c t g t t g g a t
 a c g a c t t t a g c t a t t g c a t t t c c t t a t t t a g c a a c a g g t t t t g g a a t t t t t t g t t g c g t
 c a a g c a t t t a a a a t t g t t c c a a a g a a c t t g a t g a t g c a g c a g c t a t t g a a g g t g c a a a t
 a t a t t c c a a a t c t t a t g g t a t g t t t a t g t t c c a t t a g c a a a g c c t a c g t a t a t t g c t t a t
 g c a t t a g t c t c a a t g a g t t a t c a g t g g a a t a a t t t c c t t t g g c c a t t g a t t g t t a c a a a t
 t c t g t t t c t t c t a g g a c a t t a a c t g t a g g t c t t c a a a t t t t t c a t c t a t a g a g c a a g g t
 g t t a a t t g g t c t a t t a t t g c a g c t g c a g t t c t t a t a a c a c t a t a c c t c t t t t a t t a g c t
 t t a t t a c t t t t t c a g a a g c a g t t t a t g c a g t c t t t t a t g a g a g c t g g a a t a a a a t a a

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>LAW0080 103384:104913 reverse MW:57371

a t g a t a t t g g a a t a t a c t a t g a a t a c t c a a t a t g c t a t a a a t a c a t c t g t a g t t c g t t c c
 t t t g c a t c a a a g t g c t t t a c a a t t c t t t c t a g c c t t a c a t t g t a a g c t t a c t t a t c c t a
 t t t g c t c t t c a a a a t a t c t t a c t c c t t a t a a a g t a c g t a c c t t a t c t t c t t c a a t a t t a t
 g a c c a a a t c a t t c t a a a g t t t g g t a t a g c t a c t t a t t c t g a t t c t a t g a t t c c t t t a a c t
 c c c t g g c t a t a c c t c a c t g c a a t c t c a c c a a t c a a t t t a a c t t c c t t t t t a a t g a t a a c a
 a a c a t g t c a c t g t c t g c t a t t g t t c t t a t t t t t a c a t g g c t a c t a g c t a t t a t t a c t a a g
 c a a a a a a a a a a t g t a c c a t t t a t t g c t g g a c t t c t t c t t t t a t c a a c a a t g a t a a c g c t a
 c t g a t g c c a t a t a t c a c t c c t g a c t c a a t a c t t t t t g c t g c t a t t g t c c t g t t a g c a a t t
 a t a t g t c t t t a t a a a g g a t g g a t g a a a t c c a g t g c t c c a t t t t g g c t t a c t a t a g g a t t c
 t t a c t a a c a g g t t g t g c a g g a t t a a c a g g t g g t t t a g t a g g t t t t t t a t a c c a c t c a t t
 t c a a g c c t t a t t t t t c t t a t t t g g a g t g g a a a t c t t c g a c g a g c t g g t t g t t a t g a c g g a
 g c a t t a g c a t t t g g a c t t a t g c t t g t t a t g t t a t t a g g a t g g g g a a g t a t t a t a a g t t c a
 g t g g a g a a t g g a a g a g a a c t a c t t a a a t t a t t a c a a c t t a t c a a a t t a t t a a c c c a a c t
 c a a a c a a t t t t c a t a t t c a a a c t a a a g a c t t t t t g t t t t c t a c t g c a a t g a t a t g c c t t
 a t a t g g t t a c c a t g g a c a c t t a t t a t t t t c t t t t a c c c t g g t c a c a c t t t t t t a g t a t t
 c c t c g t a a a c t g a t a g c a t a t a g a t t a t c c t t c c c t g g t c a t a g t t g g a t a t g g a t t a a t
 a c c c t t a t t a c a g t a c t a t g c a t t a t a t t t a t a a g t t c a t c t g a t c t a c t c t c t a t t a t a
 a g t c t t t a t t c t t t a a t c g c t a t c t t a a c a g c t c a a t g t a t a a t c t c a c t t a c a g a a c a a
 a a a a g t c t a t t c t t a t a t t t a g g t a t a a g t a g t t a t t t t t t g g t a a t t g g t t t a t t a t t t
 c t a t t t a t a t c a c t t t a t c c t a t a a t t c a a a c t t g g c t t c c a c g a g g a t t t g a a a c a g a c
 c t c c c t a a a a t t a t t g a g t c t t t c t t t t t t g a t a a a c t a g g a a t t g t t a t a a c t t c a a c t
 a t t t c t a t a t t g t c a t t t t t c a t a c t a t g g a a a t t t a c t a a t a a a a g a t c t c c t a c t g g t
 a g c c t t a t a g t t g t t g t a t t a t g t a c a a c a c t t c t t g c t a t t a t a t t a t c a t a t t a t a c a
 a c t c c t a c a a g t c c a a a t g a a a t g a c t c t t t t t a t g c a g c t a c a g c a t t c a t c a a c c c c a
 g c c a c a c a a a a t c g t g t t c c t a t a g a t a g t c t t c c c g a c t c a a c a g a t a g t a a t g a a g a t
 a c a g c a g a a g a a a a t t a t c a t g a t t t a t a a

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>LAW0081 105205:106146 forward MW:34524

a t g c g t g t a g t t g t a t t a g g t g g t t c a g g a t t t a t t g g t a g t t c a c t t a t a a a a a c a t t a
 g a a g g a a g a g a t c a t a g t a t t a t a g t t t c a a c a c g t g a t t c a t c a g a t a t t t c t a t t a g t
 c c a t c t t c a a a t g t a t c t t a t g t t g t g t g g a a t g g t a t t g a t a g a g a a c c t t g t t t c a a a
 a t g t t t g a t g g t g c a g a t g t a a t a a a a c c t t a t a g g t g a g a a c g t t g c a t c a a a g c g a
 t g g t c a g a g a a t t g g a a g a a a a a a t t g t a a c t a g t c g g a t t c a a g t a g g c a a a a c a a t t
 g t a a g t g t a c t a g a a g a g t t a a a a a g t t t t c c a t c t g t t t t t a t a c a a g c t t c a g c t a t a
 g g a t a c t a t g g a t a c t g g a a a a a t t t g a t a c t g c t c c t c a a t g t a c a g a a a g c t c t c t t
 c c a g g a a a t g g t t t t c t t g c t c a a a c a g t a a t a c a a t g g g a g g c a t c t a c t t c a g c t c t t
 g a t a c a t t g g g t a t t c g t a g a t g t a t t a t t c g t a c a g c a c c t g t t c t t g g t a t g a a t g g t
 g g t a t a t t a a a a a a g a t g t t a c c t g g t t t t t a t t t t g g g c t a g g a a g t a t t t t t g g a t c a
 g g t a g t c a a c c t t t c c c t t g g a t t c a t a t a a a t g a c g a a a t a g c a g c a a t t a t g t t t t t a

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atagataataaagaggcatgtggagtttttaatttagtagcaccagaacagttaaatatg
aaacat t tgcacagtgcc tggaaagg t ttaaacgacctgtat t t t c a t a t t c c t
gaat t a t t a t t a c g t t t a a c a t t a g g a g a a t g g c t g a a g a g c t c c t a c t t t c t g g a c a a
c g t g c a t a c c c t g a a g c c t a t t a g a a a g g g a t t a c t t t t a g g c a t g g c c t a c t t t t a
c c t g c g c t a a a g g a c t t a t t g g a t a a c c a t t t a g c a a t g t g a

>LAW0082 106189:107283 reverse MW:41948

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agccgaccatgg t g g t t t c t t g t a t g g g g c a t g c t t g t t g c t a t g c t a c c a g a t a t a g a t
a t t c t t t t g t t a g c t c t g c a a t a g a c t a c a t t a a a g t t c a t c g a g g g a t c a c a c a c t c t
t t a g c t g g c g c t t g g g g c c t t g c t t t t a t a t g t a c a a t c c c a t t a g t t g t a c t t a c t g c a
t t a c g t c c c c a a c c c a a t g a a c t t c c t c c a c c t a a a c a a a t t t c a t g g a c a c t t a t t g a a
g c a t g g t t t t t a c t t a t g c t a t t c t a a t a t t a c a t a t t t g g c t t g a t g t t a t g a a c t c t
t a t g g c a c a c a a a t t t t c t t c c a t t t a g c g a a t a t a g a g t t c g a c t a a a c t c t c t t t t c
a t a g t t g a t t a c t t c t t a t a c t c c c t t t a a t t a t t g g a c t t t t t t t a g g a g a a c a a t
a g a t t c a t t a t g g t g t t a t t a t t a c t a t g g a c a a t t a t c t a t c c t c t t a c c a a t a t a g t a
a t a a g a c t a g g t c t t g a g a c a t a t c t t a c c a t a g t t a t c t a g c a a a a a t a c a t t t c a a
a c a c a a a a a g a a a t a a c a c t a c c a a g a c a t a a c a c a g a a g a a c a t a t t a t a g c a g t c c a c
c t t a t t c c t g a t g c a t t t a c a c c a t t t c a c t g g a a a c t t a t t c t t g a t a a a g g t g a a c a c
t g g a a t g t c t c a g g t t a t a a t a g t t t t a c t t c t c c c c a t c t a a a t t a c t t c t t t t a a a
a a g c c t c c a g a a g t a c t t t g g g a t a t g t t a a a a g a a a a a g t a g t a t a t t t c g t a c t t a t
g a a c a a t t t g t a g t t t t c c t g t t t t a a c t g a a a g t t a t g a a c a c a a a c a g g a a a a g t c
t a t a t a t t t a g t g a t c t a a g g t t g g a t c t a c t a t c c c a t t t a t t a a c g a c t t g c a g g t a
a a a c g a g a a g g t g a a g a a c t t g c a t t t a g a a t c a t g g c a c a t a t a a a c c a t g c a g g a g a a
c t c t c a t c t g t t c g t t t t a t t a c a g g t t t t g g t g c t g g c g g t g a t a c a g g a t g g g t a g a t
c c c c t t c c t g a t t a a

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>kpsF 107298:108380 reverse MW:38813

t t g c c t a t t c t t c a t t t a a t c a a a t a c a t t t a c a a a a c t g t t a g g a a a c t a t g a c t g c t
a t c c a t t c a t a t t c a a a a a a t a t a c a g a g t c t a c t c a a a c t t c t c c a g a a t a c t t a c t c
a a a c t a g c a c a c g a a g t a t t a a c c a t t g a a a t g g a t g g a a t t g a a c a a t a c g t g a a c g t
c t a g g g a a t a c a t t t g t t g a a g c t c t a t t a c t t c t t t c a t c t t g t a a a g g a a g a g t t a t t
g t a a c a g g c g t t g g g a a a t c a g g c c t a g t a g g c a g a a a a t t g c t g c t a c t t t t t c c t c c
a c a g g g a c t c c t g c t t t t t t a t g c a c c c a g t t g a g g t g c a c a t g g a g a t a t t g g a a g t
c t t a a a a g t t c t g a t c t a t t t t a t c t a t t t c c a a c t c t g g a g a a a c t c c a g a a c t t a a t
g c t a t t g t a c c a a c a a t t a a t c a t t t g g t a c t c c a a t g a t t g c t c t t a c c t c t g t a t t a
a a t t c a a c c t g g c a a a a g c t g c c a a t g t t g t a c t a c a t a c t g a a g t a c c t a a a g a a g c t
t g t c c a c a t g g a t t a g c a c c a a c a g c c t c a a c g a c t g c a g t c c t t g c a t t g g g a g a t g c c
a t t g c t g t t t g c c t t a t g t c a c t a a a a t c a t t t a c a g a a a a g a t t t t t t a c g t t a t c a c
c c t g g c g g a a t g c t t g g t c a a c g t c t t a c a c t a a g t g t t a c a g a g g t c a t g c g c a c t g a t
g g a c t a c c t a c t g t c c a t c t a g g c a c a t c t c a a t g t a a c g c a t t g a a a a c t c t t g a c a a a
g g t g g t c t t g g a g t t g t g t t a a t a a t a g a t a a a a a a a t a c a g t a t g t g g t a t c a t t a c a
g a c g g a g a t g t a a g a c g t t c t a t t t g t t a t a a t a g g t t g a a g c a a g a t g c a c c t g t t g a a
c a a a t a a t g a c a c c t a g g c c t a a a t g t g g t a a a c c a a a g a t a c t a t t g c a a t a c t c c t t
g a t a t a t g g a a c a a a a a g c t a t t a c a g t t c t t c c t a t a g t t g a c g a t a a c t a t a a a c t c
c t t g g g a t t g t c c a t a t a c a c g a c c t t c t t g g a a a g g a a c a a t c a t c t t t t c t g a t c g t
t a a

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>LAW0084 110475:111206 reverse MW:29007

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a t a t a t g a t c g g t t a g g a a a c t a t a a a a c t t a t a t a a a a a c c c a a a a g a a t t a t t a t g g
a a a t a t a a a g c a a g g t a t a g a g c t a a t t a c t t t a t a t c t a a a c c a g a a a t a c t a g c t c t c
c a c a a a a a g t t c a a g a t c t t t t c a c g g a c a a a c a t a t g c a a a a t t c a g a c t t t a a a

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>dnaK 111603:112004 reverse MW:15185

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>LAW0086 112674:113177 reverse MW:19252

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>argD 113180:114442 reverse MW:46817

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>dut 114414:114896 reverse MW:17336

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 taa

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>foIE 115144:115653 forward MW:19446

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>LAW0090 115673:116482 forward MW:29248

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a a c c g a g t t g a t g a t g t t g t a c t t t t t a a c c a c t t c t g g c t g a t c a a a t a a g t a g t a t t
a t a g a c t t a c a g t t a a g g a g t t t a a a a a a c g c c t a g a g t c a c a g a a a g t t a c a t t a g a a
t t a a c a c a t t c a g c a c a t t t a t a t c t a g c t g a g a a t g g a t a t g a t c c t c a t t a t g g a g c a
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a t g a t t g t c g t c a c t c a t g a a a t g g g t t t g c t c g t g a a g t g g c t g a t c a t g t t a t t t t t
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 a t g g g g g a a g t a t t t c g a g c a g g t a t t c t t a c t g t t c c t a a a g g a c a a g a a g a a g c c g c a
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>LAW0129 159798:160547 reverse MW:27351

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 a a a g t a a t g g a t t t t a g t a a c c a t a c t a t a a t g t t c a t c a a g c t a t t g t a g t c c c t a a t
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>hisJ 160881:161474 forward MW:21973

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 t a t c g t t t t c c t g a g a a g g a t g t g c t c c t a t g g a a g t a a c a a a a a t a a a t c t a c a t g t
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>fo1C 161575:162882 forward MW:48119

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 c c a t a t a a a g t t g t t c a a a t a g t t g g g a c a a a t g g a a a a g g t t c t a c a g c t a c t t t c c t t
 g c a t c t t t a g c a a a a t c t c a t g g t t t a a a g g t t g g a a t a t a t a c t t c t c c a c a t t t t g t g
 a c a c c t c g a g a a c g t a t t t g t a t t a a t g g t g a a a t g c t t t c a c c a g a g g t a t g g a t t a c t
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 g g a g g g c a a c a t g a t g c a a c a c a g c t g t t c c t g c a g a t t t g g t a t g t t a t a c a c c a a t t
 g a t c t t g a c c a t g a a c a a t t c c t t g g a t c a a c a g t t g a a g c a a t t g c a a a a g a a a a a t c a
 c a a g c a a t g c g t t t t a g a a a c c t g t t c t t t c a a g t t t t c a g c a g c c t g a a g t a a t g a g c
 a t a c t t t g t g c t a t g g c t a a a g a a a a a a a t t g c t c t t t t c a g t c t c t a g a a c a a a t t a g t
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>seIA 162904:164340 forward MW:52163

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 ca at ca t c t t c t t c a c a g a t g a a a t t c a t c a a a a g t t a g a a g a g g t t g t t c a g c a a c a t
 a a t c a g t t a t c a a a a t a t a g a a a t a c t a t a t g g a a a c t g t t a c a a c t t g a t g a g g c t a a a
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>LAW0135 166090:167793 forward MW:66327

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 a g c c a t t t t a t t a c a g c a t t g c a a a a g c a g a a a t g t c t t c a a a a g t a t t a c c a g t t c t c
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 c a a a g a a t c a a t t g g a t t g c t c a t c c a a t a t c g a a g a g g t a t t t t c t g c t c t a a c a c a t
 t g g c a a a t a c a g c a t g g t c g t t t a c c t c t t t a c c c t t t a g t g c a t c c a t t t t a c t t t a g a
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t t t t g g t c t a a g g c t a t c g a c c a c g t t t t t c t a c a g c a g a g c c a c g t c t t c t a t t a a t t
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 g a t a a a g a g g g t a t t t t a g t a g a t c t t c t t g c t a a g c t a g a g t t a c c a a t g g c t t c t t g g
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 a a g c c t t t a t c a t c a g t t t t t c c t a c t c a t c t t t c t t t t g t t g g g a a c t c t a t g g t t t a t
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a a t a t a g c t a g t g a t t t t a t a t a t t c a g a t a a a c g t t c t a t a c a a c a a t t t t t a a a g g a a
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>LAW0136 169098:169745 forward MW:24505

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 g a t t t a g a c a a a a a g t c g g a g a c t g a a c g t a g a g g c a t g t g t g a a c t g t g c a c g g g t t t a
 c c g g a a a g t a t c t a t a c g g a a a t g t t g g c t t t a t g g g a t g a a t a t g a a t a g c g g a a a c t
 c t g g a g g c a a a a a t g t t c a a g g g g c t t g a t a a g c t g g a a a c a a t c a t g c a g c a c a a c c a g

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>LAW0142 178242:179129 forward MW:33547

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>LAW0144 180718:181446 reverse MW:28029

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>typA/bipA 182088:183926 forward MW:68194

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>LAW0147 185352:185810 forward MW:15370

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>lon 185906:188398 reverse MW:91805

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>comEB 197356:197853 reverse MW:18316

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>fabH 201755:202759 reverse MW:36232

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c c t g g a c g t a c t g a a g a a t t t t a a a a c t t t t g c t c a a g g a a a t c t c a a g t a t t g a t t
g g t a c t c a a a t g c t t t c a a a a g g a c a t c a t t t t c c a a a t g t a a c t c t t g t t a t t g t t g t c
a a t g c a g a t a t a g g a c t t a a t a t t c c t g a c t a t a g a g c a g c t g a a a a a c a t t c c a g c t g
c t t a c a c a g t c a g c a g g a a g a g c t g g a c g t g g t g a g a a a g c a g g a c a a g t a c t a a t c c a a
a c a c a t g a t a c c t c t c a t t a t t g c t g g a a a t t a t a c a a c a c a t g a t t a t c t a g g t t t t
t a t a a g t a t g a a a t g c t c t t c g t c a a a a a t g g c t a t a t c c t c c t t t t a t c a a c t t a g c a
t t a a t a c g c t t a t c g t a c c t a t t g a a t g g a a a g a a g g a a a a t t g g a t a a a a a a a g t c
c a g t c a t t g t t a c a a g a g t g g g c t a a t a a g t t a a a t g t a t c t g t t c g t g g g c c t g c a t t a
t c t c c t a t t c c t a t c c t g a g a g g a c g t a a c a g a t t t c a a t g c t t a t t a a a a g t a a c a a t
t g g c a a c a t a t t c g t a c a a t a t t t t a t a a a a t t c a a a c a a c t g c t t t a c c a c a a a a a c t t
c g t g t a g t a c t t g a t a t t g a t c c t a t t g a t a t g c t t t a a

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>LAW0195 247238:247885 forward MW:24398

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t a t g a t a c a t g c t t c t t a g c a c a a c t t g c t g g a a c a c a a g g t a t a g t a t t a g c c t t t g a t
a t c c a a c a a g a g g c t a t a a c g a a t a c a t a t c a a a g g c t t a t a t c t t t a c a t t t g g a a c a a
c a a g t t a c a c t c a t a a a a a g t g g a c a t g a a c g c t t a t a t g c t g a a c a t t a a a c t t t t t t
c a a a a a a a t a c t c a t t t a g t a g a g t t c t a c c a t t t t a a t a a t c a a a t a g a t a t t t g t t c t
g g t g t g a t g t t t a a t c t t g g g t t c t t c c t a a a a g t g a t a a a a a a t t g t t a c a c a a c c t
a c t a c t a c a a t a a t g g c a t t a a a t a a t g c a t t a a a t g t a t t a g c t c c t g g a g g a a t t a t a
a c t a t t c a t t g t t a t a c a g g a c a c t t a g g a g g a g t a g a a g a a g t g a a g c t g t t t t a t a t
t g g a g t g a a c a a c t t t c t t t a a a t a a a t g g g a t a t a c a a t c t a t a a c a a a t t t t t a a a
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>LAW0196 247882:249495 forward MW:58410

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t t a a t a t t t c t t t a t g c c a t a g g a a c a g a t g c a g g a c c a a g t t t t t t a a g t g c a t t g a a a
g g a a a a g g t c t t c a a t t t t c c a t g g t t g c t t t a t g t t t t a c t a t t a c a g c t g t t a t a a c t
g t t g t a a t c t c t g g t t c a t g g t t t g a t a t t g a t c c t g c t g g a a t g g c t g g t a t t t a t g c a
g g a g c t a t g g t t t c c t c t c c t g c c t t a g c t g g t a t a t t a g a c t c t g t a t c a c c t t a t c a g
t c t g t t a t a a t a a c a c a g c c t a t a g t t t g t t a t a t c c t g t t g g t a t c t t a g c a a g t a t t
t t a t a t a c a c a a t g g a t t a t t g c a t t t g a t a a g t c a g a t a c c a g a a a a g c t g a a g a g a a
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c c t c g a t c t g t c t c t t c a g t t c g t g a a a t t c c a t a a t c t t t t t a a t g t a a g a a t c a c a c a t
a t t a t t c c t g c a g g a a g a a a a g t t g t a g c t c c a g c a t c a g c a t t a t t a a a a a t t t g t c c t
g g a g a t a a a a t a c g t c t t t t a g g t t c t g a a a a t g c g t t a a a a a g a g t a g a a a c c t t t t t a
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g a t a c t c t a t g t t t g a a c a t g t t c a t a g a a a t g a a a t t g a t a t t c c a c t t a c a c c a a g a
a c a c g t t t a t a t a t g g g g g a t a t c t t a c a t c t t a g t g g g a t c c a a g a c a a a t t g a g a c a
t t a a g a a g a t t a t t a g g c g a t g a t c c a a g a c a a c t a c a a a t t g c t g a t g t t a t g c c t g t t
a t g c t t g t t a t t a g t c t t g g a t g g c t a t t a g g c a a t a t c c c t a t c c c t c t g t a c g a a g g c
a a a a c a t t t a t g g t a a g c a g t t c a g c a g g a g t a t t g c t t a c a g c a a t t t t t t a t c c a a t

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>LAW0199 250984:253005 reverse MW:78643

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t c a g a a g a t t c t c c a t a t g c t g a a c a a c t g a a g t t a g c t t t t c a t g t a g c a c a a a c c t a t
c a a a a a t a t c g t c t t a a c a t g g t g c t g t t a t a g t a g a a c g t t c a g a a c c a t a t c t t t c t
c t a a t a g t t g a a g a g a a t g a g a c a a a a g t a g t a t t a a c a g a a g a g t t t g c t a c t c c t a a a
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g t a c t t g a t g t a g t t c c c a a a a a g c a t g c t g g c a t c g g a g a a a a a t a t t a t g c a c c a t c a
a c g t c a c c a t t a a g a c g a t a t c c a g a t a t g g t t a a t c a a g c a c a a a t t c t t c a t g t a t t a
c a a c a t g a a a a a t a t a a a t g g t c t t t a a a a g a g t t a g a g a t a a t g c t a c c t t a t a t t a c t
t c t c g t c t t g a a t a t a c a a a c c a a a t a c a g c g g t t t c g a c a a a g a t a t t g g a a g t t g g t a
t a t a t t c t t c a a c a a g a t a a g a a t a c a t g g t g g c c a g c t a t t g t t a c t g a g g t a a c a g a a
c a t t a c a t t g t t g t t a a t t t g c c a a g a g a g c a a c t t a c t c t t c g g g c t c g t c g a a a a c t t
t t t a c a g c t g t t c c t g a a a t a g g a c a g t c t a t t t a t a t t c g t a t a g g t a a t a t t c a a c c a
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>purH 253065:254339 reverse MW:46347

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a c t a t t a g t t t t g g a g a t a a a a t a c t t a c a t a t a c a a a a a a a c a t g g a a t a t c a a t g g g
g a a a t a a a a g g a t t g c g c t a t g g a g a t a a t c c a g a t c a g c c a g c a g c a c t t t a t g a a t t t
a c t t c t g g t g a g t t a a c t a t a g g t g a t a c g a t t t g g c g t a c a t c t g g a g g t a t t a t t t c t
t c a c t t a c t g a t g c t g a a t t g a t a c a a t c t g g t a a c a t c c a g g a a a a a c a a a c c t t a c a
g a t a t a g a t a a t g g a t g t a a c a t t c t t c a a t a c t t a g c a a g t c g t c c t g c t g c a g t t a t a
t t a a a g c a t a a t a a t c c t t g t g g a g t a g c a t g g t c a a a a a a a a g t a t t g g g a a t g c a t t a
g a a a a a g c t t t t t g g t g t g a t a g a a t t g c a g c t t t t g g t g g t g c a a t t g t t g t t a a c c g t
c c c t t g a t c a t g a c t c g g c t a a c c t t a t t t t t a a g c a t t a t t t t g a g g t c a t t g c a g c a
c c t g a t t a t g a a c c a g g t g t g c t a g a a t t a c t t a c a c a a a a a a a a a a t t t g c g t a t c t t a
a a a c t t c c t g g t c t a a a t t c t t t a g a t c a a c t c a c a c a t t c t c a c t a t c t t g a t a t c a a a
a g t c t t t g t g a t g g t g g a c t g a t t c t t c a a g a a t c t t t t c t t a a t c g t g t a c g a t c t a c t
g c a t c t t t t t a c c t g c a a c a g c t a c c t c t a a g g a t g g g g t t a c a a t a t c t g c t a a a c a a
c c a a c a g a t g a a c a g a t t g a a g a t c t t c t c t t t g c t t g g t c a g t t g a a g c a g g a g t a a g t
t c a a a c t c a g t t a t a t t t g c a c a t g a t g g t g c a a c a g t g g c t a t t g g t a c a g g a g a g c a a
g a t a g g g t t g g t t g t a t a g a g t t a g c t a t t t t c a a a g c a t a t g c a a a a t a t g c a g a c a a a
t t a a c c t a c c a a a a t t a c g g a t t a a g t c t t t a t g a g c t t c g t g a a c a a g c t g c t a a c g a t
a a a a c t t c a t t a g a a a a g c t t g a a a a a a t a a a a a a g a a c a a a t g a t g t t t g c g g a g g a
t t a a a a g g a t c t g t t a t g g t t t c t g a t g g t t t t t t c c c a t t t c g t g a t g g t g t t g a t t t a
t g t a t t a a c c a a g g a g t a a c a g c t a t c g c a c a a c c t g g a g g a t c a t t a a a t g a c t a t g a a
g t t a t t a a a g c a g t c a a t g a a t c t t c t c c t c a a g t t g c t a t g g t t t t c a c t g g a c a a c g c
t c a t t t a a a c a t t a g

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>LAW0201 254566:254889 forward MW:12567

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a t g g c a c t t t g g g a a a a a t a t g c t a a t a t t g t a t c t c a g t t t g a a c c t a c a a a a c g t t g g
g a a g a a g c a a c c t t a a t t t t t c t t t a a t t c a a g c a a a g c a t a t g a a g a a t c a a c t g t t t
a a c t a t a a t t g g g c a g a a c a a g t t c g t c c t t c t a c a t c a t c t c a t g a a g t t c c t a t t t c t
g t a a t g c t t g a g a c a a a a a t a a a c c c a t g a a g t t a a g c a a g c a a a a a t a a t t c c t t t t
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>purA 255142:256428 forward MW:47566

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g a t t a t t a a c a c g t g a c a c a g a t t a t g t t g t t c g a t t t c a a g g t g g t a a c a a t g c t g g t
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>LAW0298 373843:374799 forward MW:36745

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>LAW0318 398358:399626 reverse MW:49244

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 a c a g a a a t g a a g c a g a t t t a g t t t t g t g t c t t g c a c a g g c a c c a g t a a c t c g a c a a a t a
 c t a a a a c g c t t t a a a a g a g a t a a t a t c c t c a c t g c a a t g t g g t t t g t t g a a g a c t t t a g g
 t t a t t t a c g t a t t g g a g a a a t t t g c t c c t t a t t a t g a t t t t t c t t t g t a a t c c a g a a a
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>LAW0319 399629:400849 reverse MW:45588

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>LAW0339 426224:427348 reverse MW:41169

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at t g a t a g t g t t g a a a g g a t t a c a g g t a g g t c a g t t c c a t a t a g a c t g g g c c a g c g t a g a
g a a g g t g a t c c t c c a t g t t t a a t c t c a a g t a a t c a a a a a g c a g c c t c c t t a c t t g g a t g g
a g g c c a c a a t a t t c a a a t a t t g a t c a a a t a t t g c a a g t g c a t g g a a t t g g c a c t c c a c
t t t t g t a a c a c c a c t t t t t a t a c a a t a g g t a g

>cynT 564532:565308 reverse MW:29198

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t t t a t a c c a c c a a a t t t t g c t a a t g c a c a a a a a g c a t a a a a g g t a a g t c t a t g g a g g a a
t c t c t t a a c a a t g t a g a a g c a g t a a a a a t a t t a g a a g a a g g t t t t c g t c g t t t t c a a a a g
c t t c a c t t t t g t a a t c c t g a c t c a c c a t a t a a a a a g a a t t g a g t g a a g g a c a a c a c c t
a g a g t t c t t t t a t t t c t t g t a g t g a c t c a a g g g t g a t c c t g c t a t t c t t a c a g a a g c t
a a g c c t g g a g a t t t a t t t g t a g t t c g t a a t a t a t c t a a t t t g g t c c c t c c a t g t a c t a a a
g a g g a t g g a a g t t a t c a t g g t g t c a c t t c t g c a a t c g a g t a t g c t g t a g a g c a c t t g c a t
g t a g a t a c a a t t a t t a t t a t g g g a c a t g c a a a a t g t g g a g g a a t t c a t a g t t t a t t g t t a
c c a g g a a g c t a t a c t g g a a a a g t t t c a t t g a t a g a t g g a t g a g t a t t g c t a a g c c t g c t
a a g a t a c t t g c t g a g a a g a a t t t c c t a a t g c t c c t t t t g a a g t t a g a c a a a a g c a t g t
g a a c a g t t t a g t g t t g t a a a t t c t a t g a a t a a t a t t t t g a c a t t c c c a t g g g t t a a a g a g
g c t g t a a a a a a t c a a a c c t c a a a g t t t a t g g t t g g t a t t t t g a t a t t g t a t c a g g t g a g
t t a t t a c a a t a t g a t c c t a t a a g a a a g a g t t t t t g t t t t a g t t c c t t c t t g c t a a

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>rfbB 566233:567591 forward MW:50580

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c c a c t a t a t a c c a a a a a c a g g a t c a t c t t c t t g a a c t t t t t g a t c c t t t t a g a a a c a g
c g t c a t a c a c t t t t t c a t g c a c t t a a t t c t a t c t c a t t t t c a a t t t a t a a a a a t g a a a g t
a t t g g t a t a a t g g g t a t t a a t g g t t c a g g c a a t c a a c t c t t t t a a a a c t a t t a a c a g g t
g t a c t t a c a c c t c t t c c g g g g a a a t a t c c g t a a a a g g a a a g t a t c t g c t t t a c t a g a a
c t t g g t g c a g g t t t t c a t c c g g a a a g a a c a g g t c t t g a a a a t a t c t a t t t t c a a g g a g c a
c t t c a t g g a c a a c a a a a c a a g a g a t a g a c t c t t a c c t t g c a g a a a t t a t c c a g t t t g c t
g a t a t t g g a g a g t a t a t c c a t c a a c c t g t a a a a c t t t a c t c a a g t g g a a t g t t t a t a c g a
t t a g c a t t t g c t a c t g c t a t t c a a g g t a a c c c a g a t a t c t t g a t t a t a g a t g a a g c a t t a
g c t g t a g g a g a t g t a c g t t t c c a a c g t t t a t g c t t t c a a c g t a t t g a a g a a t t a a a a c a a
c a a g g g g t a a c t t t c a t t t t t g t t t c a c a c t c t a g c g a t c a a a t t g t a g c a c a c t g t a g t
a g a g c a t t a c t a c t t g g a a c g g t c a a c t c a t t a t g g a t g g a g a a c c a c g c a a t g t a g t t
a a t c g c t a t a t g g a t a t t t t a t t t a a t c g t a a t g a t a a a t t a a g c a a c a a t a a a a g c a
a a t g t t a c t c t c c c t g a g a g c a t a a g c a c c g t t a c a g a a a a c c a a c t g a g c t t a c t a c t
a a t t a t g a c c t a a a a g a t a a a g a a a a c t t a a c g a c c c t t a c t c a t t a c a t c c c t g g t a t
a a t c c t t a t g a a t a c c g a t g g g g a g a t g g t c g t g c a a c t a t t t c a g a t a t t c a t a t t a c c
t c a t c t g g a a a t a t a a a t a a t g t t c a g c c t g g t g a c t a c t t a t c t a t t c a a c t a a a a c a
g t a t t t c a c a c a t c c a t t a t t a g a c c t a t t t t t g g g t g t a c c a t a a a a a c a c a t g a t g g t
a t t a t t g t a t a t g g c t c a a a t a c a g a g c t a a c a g g t t c t g a a a t a t t a t a t g a c c a t g t t
t c t g c t g g a t c c a t a a c a t t t g t t a c t t t t a c t a t g c a t t g c a a t t t a g c a c c a g g a g a c
t a c t t t t t c t c a t t t g g t g t t g c t g t a a t g g a a a a g a t a c t g t a c c t c t t g a t a g a c g g
t a t g a c t c t c t t c t t t t a a c t g t g c a t g g c c c t g c a a a c t t t t t t g g t c t t a g t a a t t t a
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>LAW0469 567584:569458 forward MW:70906

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g a c a c t c c a a a a a t a t t t a a t t a t t c t g a t g g a g a t g a a a t a g a a g a t a g g t t g t a t a c c
a t a c t a a a a c a a g t g g a a g a t a a a a g t a t c c t c t c t g a t g a a c t a c a a a c t t t c c a a a a a
g a t t g g g c c a c t a c c t a t c a t t t a t c t g c c t c c a g a g c c a a c t t a t t a c g c c c a a t t g a a
a a a a c a t t g t t a a a a g a t g c c a c t g t a t t a g a g t t a g g t t g t g g t t g t g g a g g a a t a a c t
c g c t a c c t t g c a g a a c a t g t g c a c a t g t a t g c t c t g t a g a a g g a a g t c a a c g t c g t g c a
t c a a t t a c t g c g t t a c g c t g c c a a g a c t t a a c t a a t a a a c t a t c a t a t c t g a c t c t a t t

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>LAW0470 569852:570466 forward MW:22820

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>LAW0471 570504:571607 forward MW:42836

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>LAW0472 571638:572678 reverse MW:37354

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>LAW0473 573983:577249 reverse MW:123357

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>LAW0474 579345:579749 reverse MW:14672

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>LAW0475 579945:580343 reverse MW:14774

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>nrdA 581215:583965 forward MW:103679

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a a t a c a c a a a a g c t g t a a c a a a a g g a t a t g c t a t t g g c t c t g c a g g a c t t g c a g c c c t t
g t g c t t t t g c a t g c t a t a c t g a a g a a c t a g g t c g a t t t t t c c c t t c t c t t a a t a t a c a c
t t c a g c t t a c a a g a t c c a t a t g t c c t c a t t g g t t t a c t t a t a g g a g g a c t a c t a c c a t a t
c t t t t t g g t t c t c t a g g a a t g a t g g c t g t t g g a a g a g c a g g t g c t g a a g t t g t g t t g a g
g t a c g t c g t c a a t t t a g t t c a a t t c c a g g a a t t a t g g a a g g t a c a g g a a a g c c a g a c t a t
a g t t c t g c t g t t g a t a t g c t t a c a a a a g c a g c t a t t a a g a a a t g a t t t t g c c c t c t a t t
c t a c c t g t a t t t g c a c c t a t c a t t a t t t a t t g c a t t a t t a t t g g a t t g g a g g a c a a a a t
g c t g c g c t c t c t a c a c t a g g a g c a a t g t t a a t g g g a a c t a t t g t t a c t g g g t t a t t t g t a
g c a a t a t c t a t g a c a t c a g g t g g a g g t g c a t g g g a t a a t g c a a a a a a a t a t a t t g a g g a t
g g a c a c c a t g g t g g t a a a g g t t c t g a g g c a c a t a a a g c t g c t g t a a c a g g t g a t a c t g t t
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>pabC 614756:615940 reverse MW:44242

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t t a t g g c t t a a g c t a t t a t t a a t t a t t t t g t t a t a t t t a t t t g t g t t a t t g g a t t t a t t
g g a t a t c a a a t t t t t t c t t t t t t a g a t a c g c c t g g t t c t a c t c c t g g t a a g g a g a t a g a a
a t a g c t a t t c c t c c a g g a a c a a a g t t t c a t g t a c t g t c t t t a t a t c t t c a a g a t a t a g g t
g c a a t t a c a g a c g t a a a t a a g t t t g a a a t a c t t g c t a a a t g g a a g g g a a t g a g t g a t a a a
g t a a a g a g t g g t c g a t t c c t t a t t a a t a c a g g a t g g a c g c c a c a a g c t c t t c t t g a t t a c
c t t g t a a c t g g t t c t c c a c t t c t t a a t a g a a t a a c t a t t c c a g a a g g a c t t c c t t g g t g g
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t c a c a t g t t t t t a g t a c a a a t t t g g a c a g t c a t a a t a g a a t g g t t a a a a t a t a c c a a c t t
c c t t t a a g a a a a g g a g a t a c t g g t t c a t t a a t t c a t g g a g g t g t a g c t c c t t c t a a a g t t
c a a g a a g a t c t t t t g c c t c t a a a a g a a a c a g t a c c a c c a t c t t a a

>LAW0503 615937:616365 reverse MW:16270

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c t a a g t t t g g g a t a t t t a t t g c a t t a t g c t c t a t a t a t t a t t c t t a c a c t t c g t t a t
g a a a t a g c a g g a a t c t a t a a t a t g a t g t t g a a g t a t a a a a g t a g c a a c t t c t t t a a t g
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a a a g g a t a t a a a g a t a c a a a g a c a g t g t t c t a t a t a a c a c t t t t t g c t t a t t g g t t t t t
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>LAW0509 622366:623799 reverse MW:51956

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a t t a t t a t t c c t g c t t t t a c a a t t a c a g a g t t a a c a a a a t c t t t t c a a a t a g g t t t t t t a
c t t t a c t t a c c a t t t g t t g c a a t a g a t c t t g t t g t a t c a a a t a t t t t g c t t g c a a t g g g c
a t g a t g a t g g t t t c a c c a a t g a c t a t c t c t t t g c c t t t c a a a t t a t t g c t t t t g t t a c a
t t a g a t g g c t g g t t a a a a a t t a g t c a a g g t t t a a t g t t a a g c t a t a g a t a g

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>LAW0538 658794:659876 reverse MW:40777

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g g t g a a c a a a g t g c a t t g t t c a c t t a g g g c a a c c t t c t t t a t a t g t t g c t g a a a a a g t c
t t t c t a c g a t t c c a a t g t g a a a a t g a t t t g a t a c a a a t a g c a t t a g a a g a t t t a a g t a t t
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a t t t t a c c t a t a c t a g a a g c t t t a t t t g c c c c a t t a a a g c a t a a g t t a c a g a a t a t a t t a
c a t g t a c c t g t a a t a t t t t t a g g t t t t t c t a t g a a c c a t t a g t a g a t t a t c a g t t t g g a
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a t g a a t t t t a a t g g a g t t a t t g g t a t t c g t a t a t t a g a a t t t t c a a c a a c t a t t g a t g a a
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>LAW0539 659919:660416 reverse MW:19496

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c a a t c t a a t c t t g t a g g a t t t g g g a a t a t t c t t g a a t g t t g t c g t c a t a c t g a a g t g g a a
c a t t t a g t t t t t g c t t c t t c a a g t t c t g t t t a t g g a c t c a a c a c g t t a a t g c c a t t t t c a
g t a c a t c a g g g t a c t a a t c a t c c t a t a a g t t t a t a c g g a g c c t c a a a a a a g c t a a t g a a
c t t a t g g c t c a t g c t t a t a g t c a t t t a t a t a a t c t a c c a t c a a c a g g a t t a c g c t t t t t
a c t g t a t a c g g t c c a t g g g a a g a c c a g a t a t g g c t t t g t t c c t t t t t a c a a a g g c a a t t
c t t t c t g g t g a a c c t a t t a g t g t a t t t a a t g a a g g a a g a a t g a g g a g a g a t t t t a c a t a t
a t t g a t g a c a t t a t t g a g g g a g t t a t t c g a g t g a t g a a a a a a c t c c t a a g a t a a a t g a g
a a t t g g a a t a g t c a t t c t c c a g a t c c t t c t t c a a g t a a g g c t c c t t g g a a g a t a t a c a a t
a t c g g t a a t a a t a a t a c t g t c c a g t t g a g t g a g t t t a t a g a a g t a c t t g a a g t a g a g t t a
g g t a a g a a a g c t a t a a a g g a a t a c t t a c c t a t g c a a c c t g g t g a t g t t g a a g c a a c a t g g
g c a g a t a t a g a t g a t c t t a a a c a t g a t g t a g a t t t t t c t c c g a a t a c t c c t a t a g a a t a t
g g a a t t a a g a a g t t t g t a g a g t g g t a t a a g t c g t a t t a c c t c a t a g c a t a g

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>LAW0581 712325:713056 reverse MW:28128

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a a t a a t a a a t t t c a a t c a c c t t c t t t t g a g a a a g a a a a t t a a a a g a t a a t a g t a a t a c t
a t c c c a t c a t t t c a g c c c a a c t c a t c t g a t g c a g t g a a a g t a a g g c a t c a t c a a g t t a c a
c a t a c a a a a a a t a g t g t a c c a t t a c t c c c g t t a g a t a a g t g g c c g t t g c t t g g a a a g a t
a t t t t g a g t a g g a c t c c a a g a a t c c a t t t a t a c t t t g g a c a t a t g a a g a g t t a g g g t a t
g a c t t g g g g g a g a g g c a a a t c c a g a t c g t c g a a g a t t a t t a c a t c g a c t c a t t a a a g a t
t t g t c t t t a g c t a a a g g a g c c a t g c a t t t t g g c c t t t a t g t t t a t t c c c t g a t c a t g c a
a c c t c c t t t g a a a a t a t g c a a a t g t t t a t g a g t g g t g t a c a g c a t c t t a a g c c a a a t t g g
g t a t t t t t a t g a c a g g t a t t a c t c c a a a t c a a c t a g g a t t a c c t a a c t t t t c t c t t t t t
g t t c c t c a a a t a t g c t g g g g t a g a t a t a t g g t a a c t a c a c a c a t a t a g a t g a g t t a a t a
g g g a a t g a a a t g t a t t a c a g t c a a c t t c t a a g t t t t t a a a a a a c a t a t t c a a a g t t t a
c a t a c t c t a t a g

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>LAW0582 713038:714246 reverse MW:43975

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c t t t c t g t t a g t g t c a c a c t a a c a c c t g c a g c c t g t a a c t t t t a a a t c c a t t a g c t t t t
t c t t c t g t t g g a g c a g a t c c t g t t t a c a c a a c g a t g t t t g a t g a t a t t c g t c a t c c a t a c
t c a c a t c t t g a a c c t g g g a a a c a g c a c a a g c t t t a t t a t t g c t c c t g c t t c a g c t t c a
a c t a t a t c a a g g t t g g c a t a t g g a c a g g c a g a t g a a t t a c t t g c a t g t c a a g c t t t a g c a
t t t t c t g g t c a g c c t a t t a t t g c t c c t g c a a t g a a t c c a a a t a t g t g g a a c c a t c c t t c a
a c a c a g c a a a a t a t a a a a a t t c t t c a a g a t c g a g g g t g a t t g t t a t t g a a c c a g a g c a a
g g g c g t g t g c a t g t g g a g a t g a a g g t c a a g g t c g c c t g g c a g a t c t t a g a g a t a t t t a t
c t t a t a g g c c t t a a g t c t a t a a c a c c a c a a g a t t t t g c a g g a t t a c g t a t a c t t a t t a c a
c t a g g t c c t a c a c g a g a a c c c t g g g a t g g a t t g a g a t t t t g g a g t a a t c c t g c a a c a g g t
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t g t g g g c c a g g c t c c a t g g t t a c c t t t a g g a a t t c a c c g t t a t t c t g t t a c t a c a g c t
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>LAW0583 714243:714791 reverse MW:20375

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>LAW0584 715334:715945 forward MW:23312

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t t c a a c a a a t g g a t c a t a t t g c a t t g t t a a c c a a g a g a t g a t a a a a t c c a a a t a a a
 c t t g a a c a t c a a c a a a c g a a a a a a t g c t t t t g t t c t c c c a c t a a a a c a c c t t t g t c a a
 c a g t t a g g c t a t a c t c c a a c a g t g a t g a c t g g a t t a c a g t t c t t g a t c a a c t c c t t a a a
 g a t g c a c c a a t g c c a c a t t a a t a t c t a a t g a a a g a a a c a c t t g a g a a c a a a a a g c
 g a a t a t g a a a a t g a a g t a a a a t a t a c t c a a c t c a t c c t c g a t g a c g c a a c c a a t c t g t c
 t a t a g a c t a c t c c a a c t t g c c a a t g t a g a t g a t a c a g a g a c t t t c t t t c a a c a c g a t a t c
 a t t a a c a a a a c a a g a a g a g c t t t a t a a g c a g c a a g a a a a t t g a a g c t a t t c t a a g a
 t t a g c t g c t a a a g a t a t t t c t t c c t a c a a a t c c t a t c c t g a t t t c a a t a t g t t t t a c a a
 t c a t t t t c t g a a a t a g a a a a a a a g a t t t a g a a g t a g a a c t g a a t g a a g t t t c a t c a c g a
 c t t a t t g a t a a t a a a a a a a g t a t a g a t a a t t t t t c t a a t c a a g c a c g c a c a c t t g a a a t a
 c g t t t a g a a a a t c t t a t t t c a t c t g a t a c t c t a t a t c a a a t g a a a g t a a a a c a a g c t t c t
 a t a g t a c a t t c t a t g c a a a a c a t t g c a a a a a a t g g a g t t g t t a t g c g c t a g c a a a a c a g
 c t t t t a a t t g a a g c a a a g t c t c a c t t t g a a c a g g a a c g t c a g c c t g a a a t t a t a c g t a t t
 g c a t c c c a t a t t t t t a g t a c t a t t a c t g g a g g g a a a t g g a t a g g c a t c a a c t c t t c a t t a
 g a a g a a a t g t c a c t t a g t a t a t t a c c a c c t c a t g g a g a a c c t a t a a a g c c a g a g c t t c t t
 a g t a g g g g a a c c c a a g a a c a a c t t t a c t t g g c a c t a c g t c t t g c a c a t a t c c a t a a t c a t
 g c c a t c c a a g c a a g t c c a t t a c c t a t t a t t a t g g a t g a t a t t c t a g t c a a c t t t g a t c c t
 g a a a g a g c a a a a c a t a c a a t t a g t a c c t t t g t a g a a t t a a c a a a c t c t t c t c a a g a a c t t
 c a t a t g g g g c a t c a g c t t c t t t t t t t a c a t g t c a c c c t c a t a t t g c a a a a c a a c t t c t t
 g a a a c a a t c c c t g a a a g t a a c t t a t a c t a t a t a g a a a a c a a a a a a a t t a c t c t t g c a t c t
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>LAW0587 721314:721958 reverse MW:23467

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 t g t g g g c a a c a a c t t g t a g a a a t t c c t g a a g t a t t a c c t a a g g t a a c a a t t g g t g t t g t a
 g g a c c t a t a c a g c c t a t g g g a a c a a c a g a t c t t t t a g c t g g t t a t a t a c c a g a a g a t c g t
 g g t t t g c t a c a g a g g a a a a c c t t a t a g a a c t t c g c t c t t t g a t t a t a g a t a c g t a a g a
 g c a a a a c t a a a c g t g a a t a t g a a t t t a t t c c a g c a g c t g a t g g t g c a g a t c c t a c a a t t
 a c a c g t a t g g c t g g a g t t a a t a g t g c a c t a g a a t a t t g g g t g c t g t a g g a a a c a a c t a
 g g t g t a g a g t t t t t g a t t a t a c c t t a t g t t t t a a g t t g g c a t c c t a g a g a g g a a g t a g t
 g c a g g t g t g a c a t c t t c t g c t g a g t t g a c t a t a g a t t t t t t c t t a t a g a t a c a a a a g g a
 g a a g g a g c a t t a c t a g g a a g a t c t c a c t a t a g c g a g a a g c a a g t a g g a c t t g c a a g t a a t
 c t t t a a c a c t t a a t a a a t t t a t c a a a c g t g g t g g t a a g t g g g t t a c t a c a g a g g a g c t t
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>tatC 722079:723026 reverse MW:35162

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 c c t c c a g t a a a t a a t a c a t c g c t c a t a a t a a c t g c a a g t g g a a a t g g a g g a a c a a t a a t
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 g t a t t t a t c a c a t g t t a t a g t a t a t c a g a t a t a c t a t t t c a t t a t c t t g c t c t c c c a t t a
 a t a a c t g t a a t g c c a g c a g a c a c a a a a t t g a t t t t t a c t a g t g t c c c t g a g g g t t t t t t
 g t a t a t c t t a a g a t a g c t t t t g t t g c a g c a c t g t t t a t t a c t a g t c c t t a t a t t t t t t a c
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cg t c g g a a a a a a a a t a a t c c t c t a t a t g t g g g a g a t c c t g g c a c a g g a a a a a c a g c t a t t
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c t t a t c t t t t c t t t a g a t a t g g g a g c a c t g c t t g c t g g a g c t c g t t a c c g t g g a g a c t t t
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a t a g a t g a g a t a c a t a c c a t t a t a g g t g c a g g c t c g a c a a a t g g a a g t g c t g t g g a t g c t
g c t a a c t t a c t a a a c c a a t a t t a a c a a g t g g t a a g t t a c g c t g t a t t g g c t c a a c t a c a
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a t t g a t a t t c a t g a a c c a t c t c a a g a t g a c t g t a t t g c t a t a c t t a a g g a t t a c a a t c a
c g t t a t g a a a a g c a t c a t a a a g t g a a a t a t a c a c c a g c a g c g t t a c a t a c a g c t g t a a a a
c t a t c c g c c a g a c a t a t t a c a g a t c g g a t g c t a c c a g a c a a a g c t a t t g a t g t c c t t g a t
g a a g c a g g t g c a g c c g t a c a c t t a c g a g c a g g c a a t a a a t c a a a a g t a t t a g t t a c t a g a
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a a a g a a a a a g a t a g a t t a a a a a a t c t t a a a a a a g a t t t a t c t t c a c a t a t t t a t g g t c a a
a a t g a a g c t a t c g a t a a a g t a a c t a a a g c t a t t t c c g c t c a a g a g c a g g a c t c a a t a g a
g g a a a c c g t c c t t c a g g a t c c t t t t a t t t t a t g g a c c t a c a g g t g t a g g a a a a c a g a a
t t a g c t a a a c a a a t t g c a g a a a a c t t a a t a t t g c t t t t c t t a g a t t g a t a t g a g t g a g
t a c a t g g a a a a c a t t c t g t t g c t c g a c t c a t t g g t t c t c c t c c a g g t t a t g t a g g t t t t
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a c t t c a a a t g c t g g c g c a a g g g a a t g g g a a t a c a a a t a t g g g a t t t g t a t c a g a t g a t
a c a a a t a c a a t a t c t c a t a a a g g a c g c a a a g c a g t a g a a a g t g t t t t a g t c c t g a a t t t
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a t t g t t g a a a a a a t a t a a a a g a a c t t a c a a a a g g t c t t g c a g a a a a c g t g t t t c t g t c
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c t t t t t g g a a a a t t a g t c a a a g g t g g a c g t g t t a c t g t a a a a c c a c c a c t t g a a g a a g a c
a g t a a g c t t g t t g t t a t g c t t g a a t a a

>aat 764629:765315 forward MW:25747

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a a t g g a c t a c t g g c t t a t g g a g g t g a t c t t t c c c c t c a a c g g t t a t t a t c t g c a t a t a c a
a a a g g a a t t t t c c c c t g g t a t g a c a a t a a c t c a c c a t t c t c t g g t g g t c t c c t g a t c c t
c g a t g t a t t t t a c t a c c t g a a a a c t t t c g a a t t c c t a a g a c t a t a c a g c g t g a a c t t a a a
a a a t g t a c t t t t t c t g t t a c a a t a a a t a a c g c c t t c a c a g a a g t c a t t a c a g c t t g t g c a
a c t c t a c c t a g a c a a a a c a a a a a g g c a c a t g g a t t a c a c a a g a t a t g a a g a t g g c a t a t
a t c c a a c t a c a t a a a c t a g g a t t t t c t c a t t c t a t a g a a g t t t g g g a t a a t t c t a c t c t t
g t a g g a g g a t t a t a t g g t g t a g c a t t a g g g a a a g c a t t t t t t g g t g a a t c a a t g t t t c a c
a t t g c t c c a c a t g c c t c a a a a c t t g c g t t a g t a t g g c t t g c a c a a t a c c t g t g g t c a t a t
a a t t t t g a t t t t a t c g a c t g t c a a a t g c c t a c t a c a c a t a t a a t g a g a t a t g g c g c a a c a
c t c a t t t c t c g t a a t g a a t t t c t t a c t c g a c t g a c a a t t g c t g t t a c t a c t g g a a c a a g t
c a g g c t t c c a c a a a a g a a g c c c t a t a a

>clr3 765529:766827 reverse MW:48330

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a t t a g t c c a a c t c a t c c t g a g c g t g a a g a g c g a t t g t t g t a t a c a c a a g a t c a a c t c t a t
g a a g a g g g a a t a t t g a t a t t c c t g g t a t a c a a g a a t a t c a a c c t a g t c t c t c a a c a t a t
t g t g a t a t a g a a a g t g t t c a t t t t t g t t t g c c a a a t g t a g g a g c a g t t t g t t c a a a t t c t
c a c t t a g c t t c a g c t g g a g g a g c t a t t c a t g c t a g t a a a t t g g t a c t g a c a g g a g a g g t t
g a a c g a g c t t t t g c t a t t a t a c g t c c t c c a g g t c a t c a t g c t a t g a g g g t a a c a t a t g g t
a a t a g a g g t t t c t g t a a t a t t a a t a t t g a a g c a g t a a t g g t t g a a c a t a t a c g g c a g a c a
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gata t t t a t t g g a a t g a t c c t a a t g t c c t t t t a t t t c a t t a c a t c a a g a t g g t c g t a c a
a c t t a t c c a g g g a c a g g g t t t t a g a a g a g g t a g g a g g a c c t g c a g c a c t g g g a a a a a c c
g t g a a c a t c c c t c t t c c t c c a g g a a c a g g g a a t g a g g g g t a t t t a t a t g c t a t g g a g c a t
g t t g t g t t a c c t a t t t t a g a t g a a t t t c a g c c t g a t a t t a t t a a c t c a g c t g g t c a g
g a t a a c c a c t a t a c a g a t c c t t t g a c a a a t a t g t a t c t t a c a g c t g a a g g g t a t g c a t g t
a t g a c c c a a a t g t t g a a c c a g a t a t t g c t g t a t t a g a a g g t g g t a t t c c a t a c a g g g t
g c t t t g c c t t a t g t g a a t t t a g g t a t t t g t c t t g c a t t g g c a g g g t t a c c t t t t t c t t a t
t t a c a a g a a c c t g a t c t t g a t a a a g t a g a t a t t t g t c a a c c t a a a a g a g t t a c a g a a a c a
a t a a a a a a g g t g t g t g a a c a a g c t c t g a g t c a g t a t t t t t a t c c a c c a g t a a a a c c t t a t
g a t g g c c a a c a a g a t g g t t g t t g g t g g g t t c g a a a t a g g a c t a t a t a t t a t g a c a c a g a t

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>LAW0621 767002:767973 reverse MW:37361

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a a t c t t g t t a a c c g t c g a t t t a a g a c t a c a t a c a t a g a g a t g a g t t c c g t c a t t t g a t t
c a g a a a g g t a a a g c t c c a g a a g a t a t t a g a g c a a t a t t t c a t a t g g g t g c c t g c t c t t c a
a c a a c a g a a c g a a a t g c t g a t t t t t g a t g g a a a a t a a t t t t c a t t a t a c t c a a a t g g t t
t g t c g t t a t g c a c t g g a g a a t g g a g c a a g g t t t a t t a a t g c t a g t a g t g c t g c t a c a t a t
g g g g a t g g t t c t a a a g g t t t t c t g a t a a t t t g c t t a c t a c t t t g g c g c t t a a c c a c t t
a a c a t g t a t g g c t a t t c a a a a c a g c t a t t t g a t c t t t g g g c a t a t c g t g a g g g c t t a c t t
a a t c a g a t t g t a a a c c t t a a a t t t t t a a c g t t t a t g g t c c a a a t g a a t a t c a t a a g g g t
g a t a t g a g a a g t g t t g t t t g t a a g t c t t a t g a g c a a a t a a c a a c c t c t t c t t t t t c a g c
c t g t t a a g t c a g a t c a t c c a g a t t a t g c c g a t g g t g g a c a a a t g a g a g a t t t t g t t t a t
g t t a a a g a t t g c g t a a a g g t a a t g t a t t g g t t g t t t g a a c a t c a t g a a g t a a a t g g t a t t
t t t a a t g t t g g t t c t g g g a c t g c a c g a a c a t g g a a t g a t c t t c t c a a t g c t g t a t t t a t c
g c t a t g a a t a a a a g c c t g a t a t t c g t t a t g t c g a t a t g c c t g a t c a a c t g a a a g g g a a a
t a c c a a t a t t t t a c t c a g g c a g a t a t g a a t t g g c t c c a g a a a g t t g g g t g t g a t g t g t c c
t t c c a t a g t c t t g a a g a a g g g a t t a t g g a t t a t g t c c a a c a t t a t t t a a t g g c t g a a g a t
c g t t a t t t a t a a

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>LAW0622 768129:769223 reverse MW:40445

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g t t t c a t t t a g a c g c g a a a a g t t t a t a c c t a a a g g t g g a c c t a a t g g a g g g g a t g g a g g a
g a t g g a g g t a a t a t a a t t t t t a a a g c t g a t t c a c g t t t g t t a a c c c t t t a t g a t t t t c g t
g t g c a a c g t c a c t a t a g a g c t c a a a a t g g a g a a g g t g g t a a a g g g a g c c a g c g t c a t g g t
a a a a a a g g g g a a g a t t t g a t t c t t c a t t t a c c t g t a g g t a c a a t t a t t t t t g a g c a a c t a
t t a g a t a a a g a a t a t t t t t t a g t t g a t c t t g a t a g a c c a g g a g t t g a a t t c t t a a t t g c a
a g a g g t g g t c g a g g a g g a a a a g g a a a t g a g c a t t t t a a a t c a t c a a c a a t g c g a a c a c c t
c g a t t t g c a c a a a a g g g c g a a a t g g g g g a g g a g a g t a t c t c a g g t t a g a g t t g a a a a t t
t t a g c t g a t g c a g g a a t t a t a g g g c t a c c t a a t g c a g g t a a a t c t a c a t t a a t a t c a a a a
c t t t c t g c t g c a c a a c c t a a a a t a g c t g c t t a t c c t t t t a c a a c a c t t a a c c c t a a t c t t
g g a g t a a t g a t c g a t a a t c t t g a t c c a g a t a a a a g g c t t g t c c t t g c t g a t a t c c c a g g a
t t a a t t g a g g g t g c a t g t a a g g g a c a a g g c c t t g g t c a t c a a t t t c t t a a a c a t a t t g a g
a g a a c a c g t t t t t t a a t t c a t g t t t t a a g t a g t g a a g a t a t t g a t g a g g a t a a c c c a t g g
t t a g g a t t c g a c a t c g t a a a t g a a g a g t t a a a a g a a t t t g a t c a t a c t t t a a t g c a a c g t
a c c c a a t t a t t g g t t g t t a a t a a a a t t g a t g t a t t a c a a c c t g a a a a a t t a t c a c a c a t a
a a c a a g t t g c a g a a t c t a g t g g a a g a t a a t a t a t t t t a t t t c a g c a g a a a c a g g t g a a
g g t a t a g a g c t c c t t g t g g a t g c a a t a t g g a a g t t a c a a t c t t a t a g a t t a a a c g c a c c t

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 c c t c a t c a a g t a g a g c a a g t c a t g g c t c g a t t g a a g a t a t t a a c g t t g g c a g a t t g a a
 g t t a t t a a t c c t g a t g g a a t c g a t g a a a t g a t t c t t t a t a t t g a a g c a a a t a a t t t t c a t
 c a g g a a g a a g a a c t t c t t c a t c t c t t t a g a g a a c g c a t c a a a t t a c g c c c a g a a c t a a g a
 a t a c t a g t t c c t g g g a c a t t a c c t c c a c a t a t t a a c c a a t t g a a g a t a a a c g a g a g t g g
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>LAW0636 787082:787888 reverse MW:28117

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 c g t a c t c t g a c t t a a t g c t t g g c t t t g c t g g a g g c a t t a t g a t t g c t g c c t c t t a t t g g
 t c a c t t t t a g a a c c t g c a c t a g a a a t g t c t g a g t a t c t t g g g a a a t g g t c a t t a g t g c c t
 g t t g g t t c a g g a g t a a t t t a g g t g c t g c t t t c c t t c g a t t a c t t g a t t a t a t t c t c c c a
 c a c a t t c a t a t t g t a g a a g g t g t t c t a g a t g g c a g a a a a g t a a g t t a c c a c g t a g t a c a
 t t g c t t g t t c t t g c t a t t a c a t t a c a t a a t a t t c c t g a a g g g t t a g c t g t a g g t g t t g t t
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 t t a g g t a t t g g a t t a c a a a a t a t t c c t g a a g g t c t t g c a g t c t c t g g a c c a t t a t t a a g a
 g a a g g c t a t t c a c g t a a a a a a g c t t t t c t t t t t g g t t t a t t t t c c g g t a t t g t t g a a c c t
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>mutM 787956:788795 reverse MW:31228

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 g a t g t a c t t a t t g g g g c t a t a t t t g g a a a c c t t t t a g g a g a g g a a g c t c c t t c t t a t t
 c c t t a g t t a t t a a a g a t a g t c a t g t t t a t a c g t t a t g t a t t c a t t t a a a g a t g a c a g g a
 c g t a t t c t t g t g t a t c c t c a a g a t a g a t g t c c a a c c a c a c a t a c a c g a g t t a g t t t t t c c
 c t t g a t g a t g g t a a t a c t a t t t t t t t g a a g a t a t a a g a a a a t t t g g a t a t g t c c g t a t c
 t t a t c g a c a a c t g a a g a a c c a g t a t g g c c a t t t t g g a a t a c g t t a g g t c c a g a a c c g t t a
 g a g a t a g a t g t t t c a a c g t t t a t a g a a c g t t t t c g g g g t a g g a g a g g t a a t a t t a a a t c a
 t t a t t a c t g a a t c a a a g a g t a a t t g c t g g a t g t g g a a a t a t t t a t g c a g a t g a a a g t c t t
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 a c a c t t a t c a t g c a t t g c a a g a a g t t t t a t t a g a a g c t a t t g c a a g t t g t g g t a g t t c t
 a t t a a a g a t t a c a g g g c a g c t g a t g g c a a t g t t g g t g c t t t t c a a a a t t c a c t t a a t g t a
 t a t g g a c g t t t t g g g a a g c c t t g t g t a g t t t g t a a a a a a g a t t t g g a a g g a a c a c g t a t a
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>LAW0638 788870:789181 reverse MW:11585

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 t t a c c t c t t c a t c a t c g t g a t a t a g a t g g t g a a c t t g c t a t a t a t a t t a t t g a g g g a g a a
 g g t g t t t t c t t a a a g a a g a t g g a a c a t t c c c t g c t a a a a a a g g t g a a a t t t t g a t t g g t
 a a t a t t a g g a a c c a c a t g g g t t a a g a g c a c a t a c a g a t a t g a t t g c t a t t g c a g c t g t t
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>fliP 789827:790615 reverse MW:29367

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>LAW0644 793032:794006 reverse MW:36384

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a t a t t t g a a c a c t a t a c a a c a c c a g t t a t c t c a a a a g g c c a t a t g c t a t c a g g c a g t t t a
a a t t t c c c a c g t c g t a t t a c a a c a g c a t a c t g g a a t g c t g c t g t a t g g a a t a t c c a t a a t
a a a t t t a t a a c t t c g a t t g a a c t t g t a c t t a a a a a a t t t t c t a t t a a t g c t c c a a c t t t t
t t a c t g a a a g c a g a t g g t g g a t c c a t t c c t t t a g c a c t a t c a c g t t c t a t c c c t a t a g a g
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g a a a c a t g t c t c c t t t t a g a t a t a g g t g g a a c a a c a c a g a t a t t t c t a t c a t a g t a a a a
g g t a a c c a a t a t t a t c a a c a t c a g g g c t a a t t a t c c a a a a a a a c c t a c a t t g a t a a g a
g c a t t a g c a t c t t a c t c t a t a c c t c t t g g a g g a g a t t c t t t a g t a a a t a t t c a a c t a a t g
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a t t a c t a a a t c t t a t g a t g g t a t t t c c t t a c t t t c t a a a a a a t a a a t a t a a t t c c a c a a
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c t t c t c a a t g a a a t a a c a g t a a g c c t a t a c a t a c a a t t g a a g c a c t t c t t g a a a a c c a t
a a t g t a c a a c c a a c a c t a t g c a t a g t t a c a g g a g a c c t g c t a g t a g t a t t a a a c c a t t a
t t a a a t a c t a t a c t a a a t c t a c c t a t a a t a a c a c c a a c t a a g t a t a c t t t a g t c a c a a a t
g c t a t t g g a g c a g c a c t g a c a a a c c a a c a g c t g t a t t a g a a c t t t a t g c a a a t a c a g a a
a g a c a a g t t t g t t t a g t a c c a t c c c t c a a c a c c c a a t a t c c t a t t c c t a a t t c t t a c t c a
c t c a a a g a a g c t t g t c a t g a c g c a t c t a a c a t t c t g a a a a a a t a c c t t c a a g a t a t t a c a
a a t a c a a c a a c t t c c c c a a t a a t a g a t a t t a t t g a a g c a c a a g a a t t t t c a a c a c t a g a t
a t g g t t g g t a a a a a a g g a a a g a t a t c a g a g t a g t c t g c c a a g t a a g a c c t g a a c t t g a a
t t c t c t t t g a a t t a a

>LAW0647 797066:798295 reverse MW:46174

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c a g g g a t t a g t t g t t g a t c c t a a g a t t g t a t t t t t t a g t g g t g g g a c a g c t c t t a g a g a a
g t a g c a t c g t g t c t t a c a c a g t a c a c a a g a a t g c t a c a t a t c t t a t t a c a c c a t t t g a t
t c t g g t g g g a g t t c t g c a g t a t t a c g t c a a g c t t t t t c t a t g c c t g c t g t g g g g g a t t t a
c g t t c a a g a t t g a t a t c t c t a g c a g a t a g a a c t t c t c c a g a a t a t a a a g a a a a g a t t t t t
t t a t t t g a a t a c a g g t t a c c a a a c a a g c a t c a t c a a a g g c a t t a t t a g a t g a a a t g t g t
c a a c t g a g g g a t g g t a a c c a t c c a a t g a t g t a t c a t t t t t c a a a t g t c a c t t t a c a a t t t
g t a a a g g a a g a a a t t c g t t t t t t c t t a c a c a a t t a c c a g a a g g t t t t g a t t t a t c t g g a
g c a a g t a t a g g t a a c a t t c t t t t g a c a t c a a g g t a t t t a c a a g a a a c a g a g a t c t t t t t
g c a g c a g t g a c a t t t t t t t c t c a c t g g t t a g g g a g t a a a g g t g t t g t t a g a c c t c t t a t a
g a t g c t a a t a t a c a t t t a t g t g t a c a g t t a g a a a c g g t g a a a t t t a t a t a g g t c a a c a t
c g t t t t a c a g g a a a g a a g a t a g c c a a g t t t c t t c a c c a a t a c g t a a a a t a t g g t t t t c a
a a a t c a c t g g a c a a a g t a g a a t t a g c t g t t c t t a a g g c a g a t a c g t t t a t t t g t g a a t a t
a t t c a t t c t g c t g a c t t g a t t t g t t t t c c t a t g g g a a g t t t t t t t c t t c t g t g g t t g c a
a a c t t a c t g c c t g t g g g g a t t g c t g a a g c a a t a t g t a a t a c c t g t t g t c c a a a a g t t t t t
a t t c c t a a t c t t a a t a a t g a t c c a g a g t t a t t t g g t c t t t c t t t a a a g a a c a a a t a c a a
t a t c t a g g a t a t a t c t t a a g a a g c g g t g a a g c a a a c a g a a t a t t t a t c c a g a t a t a a t a
c t t g t a g a t a g a a a t a c a a a t a a c t a t c c a g g a g g t a t t c c t t a t a a a t g g c t t a t a a g a
a a t g g t a t a g a a t t g a t t t c t a c a g a g t t g a t a a c t a a a a c t t a t g c t c c t t a t t t t g a c
c c a c a a a a a a t t t g c c a a a c t t t a a t a c a g a t t c t g a a t a g a a a c g t t t a t a a c a t a a c t
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t g t a t a g t c a t t c c t c c c c a a a t g t g a c t g g a a t t t t a c a t a t a g g t c a t g c a t t a a a c
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t t c g c c c a a c a g c a a c c t a a t g a g g a t c a a c t t g t a g g t g g a g a t a t t a a t a t a a a t c t a
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 c t g g t t g g t g c c t a t g t t g g c c t t a t g c a t g a a g c c a c a g g c c t t t a t g g t a c a g t a t c c
 g g a c a g t t t g c a a c t a a c c g t a c a a a a c a a a a t g t a c a g g c t t t g a t g a a a c c t a t a a c
 t g g a a a g a a a a t g t a c c a c a g a a g c t a t t g a a a t t g g t t g g a a a t g g a g c a t t g a t g a g
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 c t t c t a g a a a a c t t t g a a g t t c a c c t t g a t a t t t t t g g t g a t c t t g g c a a t g a t a a a g g t
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 a a a t a t g g c g a c a t a a t g g t a c c a a t g c t g a a a t c c t t t c t a t c t c t a a c a a t g a t g a g
 a a t a a a t g t t t t g g t g t t a c a t t t a g a a c a c c t c c t c a t g a t t c a a c a g g a g t a g c t c a t
 a t t c t t g a a c a t t c t g t a t t a t g t g g t t c a a a a a a t a t c c t a t a a a a g a a c c a t t t g t a
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 t g t t a t c c t a t t g c a a g t g c a a a t t t g c a a g a c t t t t a t a a c c t c a t a g a t g t a t a t t t a
 g a t g c t g t t t t t t c c c c c t g a t t a c t a a a t c a a t t t t t c a a c a a g a a g g a t g g c a t a t a
 g a g a t a g a a g a t a c a a a a a a a c c t c t t a c a t a c a a a g g t g t t g t a t t t a a c g a g a t g a a a
 g g t g t a t a t t c t t c a c c t g a t g c t a t a c t t a t g g a a a a t c a c a a c a a t c t c t t t t c c c c
 a a t a t g c t c t a t a g c c t t g a c t c a g g g g g a g a t c c c a a a a t t a t a c c t c a a c t t a c a t a t
 g a a a a a t t t a t a g a g t t c a t a g c t c t c a c t a t c a t c c a a t g c a c g g t t c t t t t t c
 t g g g g a g a c g a c c c t g a a g a a g a g c g g c t t a t g c g a t t a c t a c c t a t t c t g t c a c a a t t c
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 t t a a a a g t c c c t t a t g c t a c t g g c g a a c a a t c t g a g a a a g g a c a t a t t a c t t t t a a t t g g

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c t t t a t g t c c t a c a c a g a a g c t g a t g a a t t t t a c t a c t t g a g a t a c t t g a a c a t a t c
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 a a a a a c a a t t t a c a g a g t t t g c t g a a g t a a t g g c a g a a g t a g c a a a a a c t g g c t c t g t a
 t g t a t c c t t g g t g g c t c t g c a g c c a c t g a t a t t g c a c a c a a a a a t a a t t g g g t t a t t c a t
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a t g t c t a a g c g t g t g a t t a t c a t t g g t g c t a t t g c t g c t g g g c c c a a a g c t g c t a g t c g c
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 c g t t c t a c t g c c t a t g g t g t a t t a a g a a c a c c t g a a t a c t t c c a c a a a a a g g g a t t a c g
 a c a t a c a a t a g g a c a c a a g c a a t a t c c a t t g a t c g a a a a c a c a a a t t g t a c t t t t a a a g
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 t a c c c a g g t c a a a t t a g a g t t a c g g t a a t t c g a g a a c a t c g t g c t g t t g g g t a t g c a a a a
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>LAW0803 1000833:1001591 forward MW:28929

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>LAW0804 1001682:1002140 reverse MW:16375

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>LAW0805 1002133:1002810 reverse MW:24523

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>menE 1002865:1003953 reverse MW:40697

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a g t a a a t a a

>menB 1004052:1004873 reverse MW:30375

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a a g g a a t a g c a a a a a t a a c t a t a a a t a g a g a g c g t t a t c g t a a t g c a t t c a c t c c t a c a
a c a a c a t t t g a a a t c a g t a a t g c a t t a t t a t a t t g c c g a g a a t g c c a a g a t a t t g c t g t t
g t t a t a a t a a c a g g t t c a g g t g a t a a a g c c t t c t g t a g c g g a g g a g a t a t g a a t g t t a a a
g g t c g t g g t g g a t a t a t t g a t g a a a a t g g t g t c c c a c g c c t t a a c a t a t t a g a t g t a c a g
a a c a a a a t t c g c t t t c t a c c t a a a c c a g t t a t t g c t a t g g t t a a t g g t t a t g c a a t a g g a
g g g g g c a t g t a t t a c a t a t t g t a t g t g a t c t a a c a a t t g c a t c t g a a a a t g c a a t a t t t
g g t c a a a c a g g a c c t c g t g t g g g g a g c t t t g a t g c t g g a c t t g g c t c a t c a t a t c t a g c a
c g t a t t g t a g g a c a a a a a a a g t a c g a g a a a t t g g t t t t a t g c c g t c a a t a t a c t g c a
c a g g a a g c t c t t a c g a t g g g t c t t g t a a a t a a g g t t g t a c c a c t a a a a g a t c t t g a a a a a
g a a a c c g t a g c a t g g t c a g a a a t a a t a a t g c a a c a t a g c c c a t t a g c a t t a a g a a t g a t t
a a a g c t g g t c t a a a t g c t g a g c t t g a t g g a c a a a t t g g a a t t c a a g a a c t t g c t g g t g a t
g c g a c t a t g c t t t a c t a t c t a a c a g a t g a a g c a c a a g a a g g t a g t a a t g c t t t c t t a g a a
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>comA 1004883:1005317 reverse MW:15649

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c c t g t g a c a a a t c a t a c a t c t c a a c c a t t t g g t t a c t t a a g t g g a g g t g c a t c c c t t g c a
t t a g c a g a a a g t a t t g c a g g t c a t g g c t c a t a t t t a t a t g t c t t g a a a a t g a a t t c c c a
t g t g g a a t t c a a g t a g t g g g a a c c a t a t t a a a a a t g t t c c t a t t g g t a a a c t t g t t a a a
g g g a a a g g a c a a a t t a t a c a t a a a g g a a a t a c c a c a c a t c t a t g g c a t a t a g a t a t t g t a
a a t g a g g a a g a g a g a t a g t t t c a a c a g c a c g t g t t g t a a c c a t a t t a t a a a a a g t a a c
t c a a a t a a a g g t t a g

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>LAW0809 1005673:1006062 reverse MW:14421

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a a a g t t t c c c c a a c a a a t g c t a a t c a a t g g g a a g a a a a t c t t t t a c a a g a a g a g a c c c t t
a a a a a t g g t g a t a a a g c a a t g g t t g a a a t c a g t a g a a c a g a a a a t g c t g a a g c a t g g g a t
a t t a c t g t a a c a g a t a a a a a t g g g a a t g a a t c t a g t t g g a t t g g g t t a c c a t t a g a t a a g
g c a g g g g a t g t t a c a c t t c t t c c t g a t g g a c a a t a c c t t a c a g a t a a a g a t a t g a c t a t a
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>LAW0810 1006385:1007098 forward MW:25708

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t c a c g t t t a t c t t c t a c t g c a g c a a c a t t g t t a t t t a t t t t a t a t a g c t t g t t a a t g g g g
g c t t t t t a t c c t c t g t t t t a g t t g t t t a t a c a g g a a c a t c t g t t g t a c a a g c t t t t g t t
a c a a c t g c a g g a a c t t t t g c t g c a a t g a g t a t t t a t g g t a c a g t a a c t a a g c g t g a c t t a
a c a a g t a t g g g a a g t t t t t g a c t a t g g g g t t a a t t g g t t t a a t t a t a g c t a t g g t t g t t
a a t a t a t t t t t a a a a a g t c c a a t g a t g g a a t t t a t t a t a g t g c c a t t g g t g t a t t g a t t
t t t a c a g g t c t t a c a g c c t a t g a t a c a c a a a a a a t t c g t a c a t t t g g t g a g a a t g c c c c t
t t a a a t g a t t c t t a g c t a t a c g a c g t g g g g c t c t t t a g g a g c t t t a a c a c t t t a t c t t
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>pit 1007157:1008167 reverse MW:35686

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>LAW0812 1008160:1008795 reverse MW:24401

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>rluD 1010184:1011809 forward MW:61716

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>soj 1012019:1012804 forward MW:28842

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>spoJ 1012884:1013843 forward MW:35682

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>LAW0816 1013959:1014996 forward MW:37095

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>hemN 1015004:1016197 reverse MW:46094

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 a a a a a t c a a t t t t t t g t a a a t c g t g a t t g g c c a c t a g g t g c a g c c t c t a g t a c t a t t c t a
 a c a a t t t t g c t a t t t a t t t t a c t t a c t t c a c c a t a t t a c a a c a c a g t c t t t c t c t a t a
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>potC 1031740:1032516 forward MW:29125

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 t c t t t a a g t g t a g c a g c a t t g t c a g c t a g t t t t t c g a c t t t t t a g g t g t t c t t a c a g c a
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>potD 1032574:1033626 forward MW:39901

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>LAW0833 1033802:1035070 reverse MW:47202

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>LAW0834 1035090:1035533 reverse MW:16620

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>LAW0835 1035578:1036222 reverse MW:24810

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>LAW0836 1036458:1037198 forward MW:27407

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>LAW0837 1037498:1040206 forward MW:103769

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 g t t t t t g a a c g t a a g a g g g a t c a a t t g a t t g c a g a g g c a c g t g g a c a g c g t g a g a a a a t a
 c a a c a c a t a a g g c t t a a c a t a t t a a t g a a g c t a a a a a g a a a a c a a a a a t c t a t t g a a
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>murA 1040246:1041496 reverse MW:44746

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>xthA 1041779:1042558 reverse MW:30185

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>LAW0841 1043947:1044681 reverse MW:26715

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>fliF 1066878:1068542 reverse MW:61994

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>aspA 1141712:1143127 reverse MW:51841

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 c a a t c c t g g g g t g t t g g t g g a c a t g g g a t c c t c g t c t t a c a a c t g c a t t a g t c c t c t g g
 t t t c t t t a c a g t g c t t a t c t a g t a t t a a g a c a g t t a g a t a t t c c t c a a g a g c g a c g t t c t
 t t a c t a t g c t c t g t c t t a g g t a t c a t t g c a t t t t t a g a c g t t c c t t t a g t c t t t c t t t c t
 g c t a g a a t c t g g c g c t c t a t t c a t c c c a c a g t t t t t g c c t c t a a t a a t g g a g g a c t a g a t
 t c a g a a a t g a a a c t t a c g c t t a t t g c a t g t a t t a t a t g t t t t g g a t t c t t c t g g t t a t g c
 a t t a t t a g t a t a c g a g g g a a c a a t a t a t a c a a a a a g a a c g a c t t g c t g c t c t t a c t a g t
 a c a c a a a t t t g g a a a g g a a a a t g a

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>LAW0954 1190503:1191180 reverse MW:24341

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 a t a g g g g t c a t a c a g g c a t t a c t t c t g g g a t t a t t a c t c a t t t t t a t t t t t a g t t t a t c a
 a a c c a t t a g a t g a a a a t a t a a c a g c t c a a g c a g c a g c t a c c a t c t t c t g g t t a g c t t c t
 a t c t t t t g c c a g g t t c t t a c a t t t a a t a t t c t c t a t c a t a t t g a a a a a a a a g t g a t a c a
 t g g t c a g g a c t g t t a c t t a c a c c a t g t c c t g t t c a a g c t a t t g g t t a g g a a a a g c t t t a
 a c a g g g t t t a t t a t c a t t t c t g t t g c t c a a c t t a t t t t t a t t c c t g c a a t t g t t g t t t t t
 c t t a a t c a a g a a c c t g g a a t a t g t t g g g c a a a t c a c t a c t c a t t a t a t t t c t t a t t a a t
 a t a g g t c t t g t a t c t a t a g g t t c a c t a a t a g g g g g c t t a t c t c a a g g g c a a t c t a c c c a a
 g a g t c t c t c a t t t c c a t t a t t t t a t t t c c a c t t g t a g t t c c t c t c t t c t t g c a g g t a t t
 c a t a c a t g t a c t g a t g c a c t c t c t t c a g a g t c t a c a g a a g c t a t g t a t t c a t g g a t g c a t
 a t t g t t a t a g c t t t t g a t g c t a t t t t t g c t g c a t c a g c c c t t g c t c t c t t c c c a g t t a t a
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>ccmA/ccmB 1191225:1191860 reverse MW:24189

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 a a a a g t a c a t t a c t c a a g a t c a t g g c a g g g c t t c t a a a a c c a a c g t c a g g a g a a t t a t a
 t t t a a c t g t a g c t t a g a a g a a t t g g t a t c t t g g g c a t a c t c c a t t t a t t t a t c a a g a t
 c t t t c a g c c t a t g a a a a t c t t c t c t t t t g g g g g c g g c t t t a t a a a a a a c g t c t t g a t a a a
 a a c a a a t a g c a a c t g c t a t t g a c a a a t g a a a c t t a c t c g t t t c a t c t a t g a a c g t a c a
 a g a a c a t t t t c a c g t g g c a t g t t a c a a c g g c t t a a c t t t g c a c g a g t g c t g a t g t t a a a a
 c c t a a g c t t c t a t t a t t a g a t g a a c c t g a a t c t g g g c t t g a c a c c a a t c t c t t t c a a t a
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 a a t c t t a t t a a g a a t g a a a a g g t a g a t c a a c a t a t t a t a c t t a a a a c a a a a a g a t t g a a
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>ccmF 1191823:1193829 reverse MW:74944

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 a g c c t t a c a c t t g c a g a a a t t a c t t c t a t a a g t a t t a c a a t a t t g c t t t c c a t t g c t t c a
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 a a a c c t a t a g a t g g a a a t g g c c t t a a t c c c t t a c t c c a a a a t c c a g g c a t g a t t t t t c a t
 c c a c c t t t a t t a t t t t t a g g a t a t g g t t g g t t t a c t a t c c c t g g c t g c c t t g c t c t t g c a
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c g t g t a g t a a a c a c t a a c c a t a c t t c t c a g g g t g t t g a t a c a g t a g a a g a t t t a g a a a t t
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>carA 1218980:1220110 forward MW:41736

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c t t a c t g a t c c a t c t t a c t a t g g a c a a a t g g t a t g t a t g a c a t g g c c t c t a a t a g g t a a t
t a t g g t a t t a a t a a g a a g a t a t g g a g t c t g a a a a a a t t c a t g t a t c t g c a t t a a t t g t t
a a a g a g t g t t g t a g a a c c c t t c a a a c t g g a g g t c t g a a c a t c t t t a c c t a a a t t t t t a
c a a g a a t a t a a c a t a g c t g g g a t t g a a g g t a t t g a t a c t a g a g c a c t g a c a a g a c a c a t t
c g g a t a a a c g g a g c a a t g a g g g g t a t t a t t t c t a c c t c g a t a a c a g a c c c t a a t g a t c t t
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t t t t c t t t a g a g c a a g t a a a a g c a t c a g g g g c t a a a g c t a t a t t t t t a t c t a a t g g t c c t
g g c g a t c c t g g a a c a c t t a t a g a t g a g a t t c a a a t t a t t c g t g a a t t a a t g g a g t a t t a t
c c t a t t g c a g g a a t t t g t c t t g g t c a t c a a t t a t t a g g g c a t g c t g t t g g c g g t a c t a c a
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a g t a t t a t g g a g c a t c c a a a g g t g c g t g a a a t t t t c c t c t a a c t a t t a t a t a t a c a a a a
g g t c a a g a g c g c c a a t t a t t g a g c g a t g t t t a t g a g t t g t t a a c a g t t g t a g a t t c a a c t
a t t c a g g a t g c t g c a a a a g a a g c a t t a a a a g a t t t t g a a a c a c g c a g a g a g a g a t t g t t t
a a t g a g g g g c a g a a g c a g c t t g a a a a a g g a a a t a t t t t a g a a g c t a g a g a a g c t t t t a g t
a a c t t g c t a a a g a a t t t a a a g a t g a t c c a g a a t t a a t g g g c c a g a t t g g t a a a a t g t a t
c t t a a a t a t g a g t a t t a t g a a g a t g c a a t t a t a t a c t t a g a g a c a g c g t t a a c t a t t a a t
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>LAW0992 1221162:1221821 reverse MW:25361

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a g a a a a g c t t t a a t a c t t c t t g c a c t t a a t a t t c c t g c t a t g t t c c a g c c a t t a c c t a t t
a t a c a a c c a c t t a c t a c a c c t t t a g a g a t c a t c t c t t c t a t a t g t t t a g t c a t a g g g t g c
t t t a t a c t t t g t a t g a t g a t a t t t c t t c a a t a t a c t g a g g t t a t a a t a g g g c t t a t t a t t
t t a c t t c t a c c a a t a t t c a t a t a c t a t t g t t t t c t t t c t a c t a a t c a a c a t a t t t c a a t c
a t t g c t a c t a t a a g t t t t t g g t c a a c a t t a a c t t c a t t a t t t a t a t t t t t c t a c t t a g g
a a a a a a a g t a a c c a a t t a g t a t t a a t t c t t t t a a t c g g c a t t a t t g g t t g g a t g g t t g g g
g t a t c t c c a c a a a c a t t a t t a t g g t c a t t c t t t a c t g t a t t a c c c t a c a c t c t t g c t g g a
a t t a t g g g t a a a t a t g a t g t a t a c c g t a g t a a a g t a t t a c a t g a a a c a t t c t a c t g g t a g

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>acrA 1222274:1223455 forward MW:42739

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>pstB 1270961:1271734 forward MW:28966

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t c a g g t a a g a c a a c t t t a t t a c g t a g t a t a a a t c g g c t a a a t g a a g a a t t t g a t g g t t g t
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a t t c a g a a g a a c t t t a c a t t a t c a a a g t t a c g t c a g a a a a t t g g g a t g g t a t t t c a a a c t
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g c t a g t g a a t a c c c t a t t a t t a t g g t t t c a c a t a a t a t c a c a c a a a t t t g t a g a t t a g c t
c a c g a a a t g t t a t t c t t g a g t a t g g a c a a t t a t t a a t a a a t t a a c a g a a a a a g c c t a c
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>LAW1032 1271838:1272293 reverse MW:17029

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t t a c c a g a t g g a a g t a g t t a t a c a t t t a t g c t c a a g t t t c a c c t g t a c c t c c t c c a g g a
a g a c g t g a a a a a c t c t t t a c a c g a c t t c t a a c a g g c a a t c t t t t g g a g g a g a a a c a c t t
g g t t c t a c c c t a g g c t a t g a c a t a a c c a a g a g t c c a t t g t t a t g c a t a t t g c t c t a g c t
g t t g a a a a a a a c t c t t t c t c t g a c t t t c a a a c c a c t t t a g a a c g t t t t c t t g a t c g t c t a
a a g t t t t g g c g t g a a g a a t g c c a a g a t a t t g t t c t t g g t t c a g g c a a t a g a g a c a a c g c t
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>LAW1033 1272481:1273890 reverse MW:52690

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g c c t a a t t a g c c t a g g g a t g a c t g a a t t a g c a a g a c t t g c a t t a a g g g c g t a t a g a a c a
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a t c g t a c a a t t t c t t t t a a c a a a a t t t a a t t c a g a a a t a g a a g g t g t t c t a a c t g g t c c a
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a a t a t t a t t a t t c a g a a a a a g t t a t a g a t a a g t g t a t t g a a a c t g g c c t t a a a g c a g t c
t t a a a t g c a c t t a a t g c a a c a c c c c a a g a a g t a a t g g c t c t c c c a c g c c a a a c t a t t t t a
a c t a a a c t t t a t a c t g c a g c a g a t a a t a t a g a a a a a a c t g c t a a t c a a a a a a a c g g a a c a
c c t a c t g a a a t c c c t g c t t g t g t t t a t g a a a a a t t c t t t c a c a a t t a t c a g a t t c g t t t
t a t a g t a c t a t a a t c c a a g c t g g g a t c c t t a c a a a t g c t g c t a c a a a a g a t a g c c a c a t t
a c a a t g a t a c t t c t t g a a a a a t c a a t g c a t a t a g t t t c t a a t a g t a a c a t a t c t c c a t t a
a t a g a a a a a a t a a c a c a a t c a c c a g a a g a t a t t a a a g a a a a g a a a c g t a c a g c t a t t c a g
c t t t c t a g a c t t c t c t g t g a c c a a g c a c g c a c t g t a t t t a a t a a t g a g t g g g a t a t a t a c
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c c t c a a t t a c a a g a t a c a a c c g t a c g a g a c a a t t a t c t g t t c t t g c t a a a g a a a t a g a t
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a c t c g t t t a a t g g c a c a a t c a a a c t t t c t t t c a a a a a c a c t a a t t a t g a t a t t g a g c t t c
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>LAW1034 1274250:1275641 reverse MW:52418

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>LAW1040 1282447:1283466 reverse MW:38428

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>LAW1041 1283628:1284554 reverse MW:34495

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>pqiB 1288038:1288997 reverse MW:35283

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>t t g 2B 1289790:1290950 reverse MW:41738
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>lsp 1297490:1297984 forward MW:19083

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>rffB 1308493:1309512 reverse MW:38195

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 a a a t t t a t a c a a a t t c c a c a g a c g a a g t a t a t g g c t c t c t t g g a a t t a a t g g a a a a t t t
 t c a g a a a a a c a c c a t t a t c c c c t a a t a g t c c t t a c t c t g c a t c t a a a g c a a g t g c t g a t
 a t g c t t g t t c a t g c a g c a t a t a a a a c a t a t g g a a t a a a t a c c a t t a t c a c t c g t t g t t c a
 a a t a a c t a t g g t c c c t a t c a a t t c c c a g a a a a c t t a t t c c a c t t a t g a t t c a t c g a g c a
 c t t a t g g a t g a a t c t c t a c c t a t t t a t g g a g a t g g a c t a c a a g t c a g a g a c t g g a t t c a t
 g t a g a a g a t c a t t g c c g a g g g a t a t t a c t t g t t c t g g a g a a g g a a g a c c a g g a a a t a t a
 t a t a a c t t t g g t g g c t c t g c a g a c a a a c c a a t c t t g c t g t a g t a a a g a a a t t t t a c a t
 c t t c t t a a t a a a c c a a a c t c t c t t a t t c a t c a t g t t a a a g a t c g c c c t g g t c a t g a t c g a
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 t t t a a t a a a g g g c t t g c t g c a a c a g t a a a c t g g t a t c t c t c t c a t a g a g a t t g g g t a c a a
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 >LAW1067 1309801:1310592 forward MW:29837

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>LAW1068 1310656:1311624 forward MW:36534

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>LAW1074 1317595:1320534 forward MW:113188

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g g a a g t t g t g t t a t t g c t g c t g t a t c t g a c t c a g a t a a a t t g a t g c a c t t a a a c g c t t c
a g c c a a g t t t t a g a c a t t g t t g a a c g c t a t t a t g t t a a g a a g t t c c a c g c a a a g a a c t t
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c a a g c a a t t a g t g t c a c a g a t g t c t t c c t t a a a g a a g g a a c a a t t g t t t c t a t t a g a g g g
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c t t g g a g a t c a t a a a c g t g c t t t a a t c g t t g g c g a a c g c a c a t t t g g t a a a g g t t c t g t c
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a a t c a a a a a t c t g a a c a a a c a a a a a a g a a c c t t t a c c a g a a g t t a a a g a a t t t t t a a a t
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>nth 1381792:1382472 reverse MW:25812

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c c a a t c c t g a a g c t a a t a t a a a a a a g c t t a t t c a a g a a g t c a t t t c t g a a a c a g a a a a a
a c t g g t t t t a t t g c t a a c t a c t t a g c a g a a g a t c t t g c t g a a c a a a a a a c a t g g a t t c t t
c a a c a a g a a t c c a t c t c t c a t t a c t t a g a g g a a c t c a a a c a a c g c c t t a t t a t a g a a t t c
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>cheR 1397826:1398701 forward MW:33560

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>cheA_2 1401396:1403609 forward MW:79637

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>LAW1154 1415356:1416042 forward MW:25403

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>LAW1155 1416504:1417094 forward MW:21496

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>LAW1156 1418018:1418524 forward MW:18237

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>LAW1159 1420906:1421703 forward MW:27903

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>YscC 1422992:1424743 forward MW:64652

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 c g t t t t c t a t t a c a t t a g a t a a a g g t c t t a t a t t a c t t g a a g c t g a a c t t a a t g c t c t t
 a a g a a a a a a a t a c t a a a g a a c t t c c t g g a g a t a t t g c a t t t a a a c t t t a t g a t a c c t a t
 g g t t t c c c a c t t g a t a t t a t t a a c g a t a t t g c a t c a a a a a a c a t t t t g c t g t c g a t g a a
 g c t a a c t t t c a a c a c t t a a t g c a a g a c a a a a a g a a c g a g c t a g a a g c c a a t g g a a a g g a
 t c t g g a g a a a a a c g t a t t g a a g c t t g c t t t c a a a c a c t t c t t g a a g a t g g t a t g c a a t c a
 g a a t t c a t t g g a t a t g a a a a t c t t t c a g g a a c a g g a a g a a t t g t t g c g t t a c t t g a t a t a
 g a t g g t c t t c c t a t t g a a g a a c t c c c t a c a a a a a g t t c t g g c t a t g t t a t a a c a g a t a t g
 a c c c c t t t t a t g g g a c a t c a g g a g a c a a a c t g g t g a t a t a g g t a t a c t c a g t a c a a t a
 a c a g g t a a a a c a c a a g t t g t t g a t a c a t t a a a a c c a g c a a c a a a t c t t a t t g t a c a t g t t
 g t t a c t g t c a c a t c t g g a a c t a t c t t a c t t g a t c a a g a a g c a c t a t t a g t a g t t t c a g a a
 t c t g a a c g t c t a g a t a c t g c a a g a a c c a t a c a t g c a c t c a t a t a c t g c a a t c a g t t t t a
 c a a a a a a t a c t t g g t g a c c a t g t t a g a c a a g c t g g c t c t c t g t t a g t c c a a c a c g c c t a
 c g t t t g a c t t t a c a c a t a t a g c c c c c t c a c t g a a g a a g a a t t c a t g c t a t a g a a c t a
 c a a g t a a a c a c t a t t a t t a t g g c t a a c t t a c c t c t t a g a g t t g a g t t t a t g g a t c a a c a a
 t c a g c t c t t g a a a a a g g t g c a a t g g c t c t a t t t g a a g a a a a t a t g g a a c a t t g t a c g t
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 c t a a c a t c c a c a g g a c a a g c a g g c t g t t t t a t t a t t g t a t c t g a g a c a g g t a t a g c t g c a
 g g a g t t c g t c g t a t t g a a g c a a t t a c a g g t a g a a a t a c c c t t g c t t a t a t t a a g a a t a c
 c a a a a a g a g c t t t c c a c a a c t g c g g c t a t t c t t a a a c a a a a c c a g a a a a a g t t g t t g a a
 a a a g t t a c a t c a a t t c t c t c t g a a a a t a a a a c t t a c a a a a a c t g t a g a c a c a t t a g a g
 t c t a g c t c t c t a t c t a a t c a a g g a a a c a t c t t t t a g a t a a c c t c a c t a g a a t a a a t a a c
 a t a g a t g t a c t a a c t g c a a a t t t a a a a a t t t c a g t c t t a a a g c t t t a c g a g a t a t a a t g
 g a t g a t a t c g t t c a a a a c t t t c t t c t g g a a t a g t c t g t c t t g c a t c a a c a g a g g g a a c a
 a a a g t a c a c t t a t t g c t c t a t g t c t c a a a a g a t c t t c a c c a t a a c t t c a c t g c c t c a g a a
 c t t a t a a a a a a a t t g t a g t a c c a t c c a t g g c g c a g g a g g a g g a c g g c c t g a t c a a g c a
 c a a g c a g g a g g a c a a a t c c a t c t g g t c t c t c t g a a a c c t t t g a a c t t t t a a a a a t a t a
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>recA 1449016:1450083 reverse MW:38309

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 t t a a c a c t a c a t a t t a t a g c t g a a t g t c a a a a a t t a g g t g g t a c a g c t g c t t t c a t t g a t
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>metG 1450184:1452139 reverse MW:74969

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>LAW1185 1454268:1454885 reverse MW:23229

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>thyA 1456767:1457489 forward MW:27421

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【 0 1 3 8 】

表 22

>LAWA001 280:1359 forward MW:41585

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 EITRLIAVSPPHLVRIILGAAFGLRVGPSELFLTWDKIDLKSGVVRISTSKKNPRFPW
 REVPIKDELKPPFFSTWFEEDTKNLSYVITYKGKPIRSIHSSWSKALKNAGITRRIRPYD
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>LAWA002 1564:1920 reverse MW:13253

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>LAWA003 1914:2264 reverse MW:13200

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>LAWA004 2560:2889 forward MW:12852

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>LAWA005 3335:5296 reverse MW:76636

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 TIDKNLTSGQTI IAPYDLSCWLTTFKKRYHVL TNRYLVALDEYIKLYDPNIAAFLNLENP
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>LAWA006 5817:6476 reverse MW:26434

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 RTILKNDWMSICYRYPMGILHYSLSPLYLYNFKGTKEQGFSDIPLSWFYRIQDWTYTRM
 EMYAKNTTLYYWQIAWCIFILSLLILSFLLLKRKNIFLQKESAIFFAITPLSTAIIFSCN
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>LAWA007 6841:7245 reverse MW:15483

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>mvaK1 7296:8276 reverse MW:36410

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GEILHENWELKRQLASGVITNEKIDNWKYKALDAGAIGGKLLGAGGGGFLFYVQEEHNHR
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>LAWA009 8304:9590 reverse MW:47999

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HPSLYGTIVVHPNDHPHSDI IKVDLNNITIGFFPKPHPKNFFYQNI VNAGVYILDPLIF
NHIPSDSYSDFGKDFPYIVQQESGNLFSAYKTAEYIKDMGTKERLKQVSYDVICGKVTK
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>LAWA010 9603:10622 reverse MW:39177

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>LAWA011 10908:11360 reverse MW:17475

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>LAWA012 11381:12091 reverse MW:27367

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LFKSLQKKYPKAKFIGVEVRQSCVDNMVKQGFDCRLITDEFFSIDEKFDVIYGTSVLHHI
SRPFDFITYLYNDLLKPSNGGEGDKIITFVNEAHRYDLVSI LHTTLVRTWKYEKQLFKIS
KNKIKNALQALTNEYVIDSNPPVCI TGFKSLDNIYRKMKLHHISFLGNLSFMIKKV

>LAWA013 12124:12882 reverse MW:29589

MNMTITDYNKNFYETKWTEGAIHYLTHSFMFRYHTDRIVSILQKYCNHIYIYEIADYGGC
IGIHTVTLANFFPNAYVHGFDLAENGIEVANKVHNKKNLTFRVGDITKDNFGMFDLISAF
EVLEHVDDWQSLLTSLVAKTNKYLLLSFPTGKMRSYEKLI GHVRNFKKKEVESFLET LGV
KPIITTYAGFPLISPLYRDICKWFPVAYNNAQKNVMSTRMKILHQVAYFFVRYFTTKKYF
GDHFYGLFQKEI

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>LAWA014 13079:13909 reverse MW:32654

LLYLFINNYLNFIKYVILDSGNRNVKEMIDNKMIIAERWKPETLQYMKKSFIHRYQSFLI
NYILTHYKNALNIYIYRIADCGCGLGLHTVTLAKCFPNAQVYGFDFSEGGIAIANKYNKR
SNLSFHTKDVTFNEDFGTDFLISAFEVLEHIEDWKLLEKFNNSRKYLLFSFPVGRMRKY
EKMGGHLRNFKRKEVESFLET LGVKPLLVLVYAGFPFFSPIYREACGWSNTYEKAYNIM
SRKVELLHHVMYFLASCCSTKKYFGDQFIGLFEKAN

>LAWA015 13950:15080 reverse MW:43973

MKPYSNLIFEVTPRCNAICYCPTGRANLFHEPSNQTPLTPEFLHKTLYMLNEGI INKN
TIVDLFNKGEPFLHPNLSIDFVDMNSLGLHYTLSSNGSVRASFNDDTLLKNLDRIIF SMP
GFSDECYKAAHGFSFEKTKQNI VRLLTELRRCGFVGEALLVFHIIYINFEQLKDAEAFAN
EHGMILHDYLAYVVDYRVFKDFLSGKIDLNTKERISKDLFLHDEKQLNKILNSSPSNYWC
EHERVLMLENANVVCCVVNQFVEHALLGSI FDYSLKDLIELKKKPKACIECKQYKMDY
FYSVINKYRASDINRLYGEKILSYWPYSKSLSRKIERLIVRAYLFAISKWGYFGYYANNL
IDLKRVYRSLVQKNRK

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>LAWA016 15288:16061 reverse MW:30362

MLKEDCPNNNQKIYNSFYQSWSDKRDSLAARYILYLLKLLCNFDVSQIKSIVDVGCGD
GSKTYNLIKIFPNAKIKGVDFSKEGINYASRLYGRGGGEDPEQVTFEYCDINSSYYLTTP

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YDLLVSFYVLEHIQVWESVIDYVWQSNIKYIIIFVPIGKMYKNDLREHFRHFKKYEIKEY
MLASGYKLLNAFYWGFPFYYPITKIAIELQRGTIHNTMAKKPSFFLKRVDIMYFFYTKC
CSKKIGGDFIGFFEKIS

>bchE 16055:17518 reverse MW:56137

VKIFFLNPPFKGRFSRTRSSPAITKGGTLYYPFWLAYAVGVAEQNGHDVRFIDAPADNLE
LQDIFTLLEDFIPDIAVLDTSTASISYSDVKVGDEIKRRFPKCFVILVGTGPSALPEDTLN
LSKSIDAVTIGEYDFTIRDIAHALEQKLSLHNVPGLVFRHNEEYIKTAEREKIEDLDSLP
FVTSVYKKYLNKYNYFFAAAKYPMVMIITGRGCPFKCFFCLYPQVFHSRRYRPRSPENIV
AEFKYIKENFPDLKEIGIEDDCFTVNTARVRKICQLLIEEKLNTWYCNVRGDVDYETLF
LMKKAGCRLVTVGFESGVQSALDQMHKNEKIKNYQFAKDAQKAGIMVHGCIMAGTPGDS
LEVQKENYRFALKINCDSMQFYPLYVYPGTEAYTWAKENGYLKTEDFSQWLTEDGSHNCV
IDTDIFTGQELVDLCNQNLKRYHLRPAYILMKLKQAIHDPEEGLRSIKSGIIFIKKILSL
KRKRDKC

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>LAWA018 17553:17906 reverse MW:13012

MMNINIKLYLLLNGLIAATGTLLMRYGGKNLDFQTGGICYIVTSGYLWILGMILSWIAGVF
FALLLTGYGITESFSLYVPLVYLMIGGGFLFHETLSITRGVGVLFVFIGLIFLLK

>gmhA 17912:18493 reverse MW:21380

MQISWNNYVQRISKLLTSVEVISGGNSLSLEDGFHWWQKTEELRNTNRTVFFINGAS
ASMASHFSADLTAKNAQINTKVFTDLSLLTAIGNDLGFEYVFSVPFARDVCSGDMLVVISC
SGESPNNVNTIRLAQSMQEKQIFCVSLTGKHFSTVRQLGDLNFYVPTNAYGECESCHAI
ILHHWMSIQVKS

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>LAWA020 18514:18888 reverse MW:14822

MPLLHITIVFLLGIIFFFTLFLSLIKNGMLRERYALLWFCITISIFCIPFLYNIAEWLWIH
ISFPSPTVTLIMFTLFLFMLICLQLSVSVSHGWRHKKLLMQEVTFLKLRIQELEDLKRK
DEHV

>LAWA021 18943:19275 reverse MW:12735

MSFILFICMFFVFLCSIAIRKNYTSLLSYFMMILSLLGMFFVVEPEVTTVVAKAVGIGRG
TDLLLYFFVVIINFLLLLLIHAKFSRYDVIITELVRRQSSILINNKYSKNI

>LAWA022 19278:19784 reverse MW:18878

MNLGQGAALQTGFNFALKEGADIVITFDADGQHRIEDALKMVEVIAADQADIVCGSRFLG
TKSFNMPLSKKIWLRLATIFVRMTTGKVTDAHNGLRALSCKALKVISIKQNRMSHASEI
INNIAKHLRYKEIPVTILYTEYAIKSGQKLKNSFNIVKELFIWSLNK

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>gaIE 20042:21061 reverse MW:38079

MKKILVTGGLGYLGSVMVIELIYNGYTVVCVDNLHNSSEDIVYFIESIVKEKIEFVKANV
EDTSMMEVLFSKYTFDAVIHFAGYKSAESLKIPLYEQNNYNSTLTILRLCLKYNSTFI
FSSSATVYVIPQYLPLTEEHPLAAINPYGKTKLHIEQIFDVANAYPMFNAFILRYFNPV
GGGGKGFILGEHSKNAPTVMPIICQVAAGIQKEIYIFGDDYETIDGTGVRDYIHVTDLI
AGHMAALKKAEENKTGCHIYNLGTGKISVLELIHTFEKVNNISVPYCVVARRSGDVASC
YADPTKAFRELNWKAQKGLEDMVYDSWLWQKNLLSKYIV

>LAWA024 21140:21898 reverse MW:28128

MEAIDIQSLSNIIYLYEIIRETLLVIPPAYKEEKHIGCIVRKLKLGFDVLVNDASPDAT
AKKAEAKAIVLSHPFNMGVAVALQTGYKYALLNGYKIIINLDGDGQHNPDSSILLLHTL
VTNNADIVIGSRFLNVGDYTMQPFRLIGKNFFSFLIKILTQKITDPTSGYRALSHHALS
LWASEKFADEYPDADMLILSYRNSCKIEVGVAMYQNTTQDSIHSGVIRPIYYIIRMCIG
VVMFIGGTKIS

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>LAWA025 21988:22320 reverse MW:12863

MSNNAFDVLLTSEAEDDLFEIFLYIMHTDSLEQAKIARIKLEKKIVSLSSMPERKYPTE
LLQLGISTIRELVHPWRIFYRIKDDHVEVAAIFDGRNLEDILLNRLVM

>LAWA026 22310:22588 reverse MW:10334

MKLSQDIKPISYIKANSKAVLEQVNI SGPMIITQNGEASAVLMGIKDYEQLKNNIVLLKV

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LLLRFKSADEGNLKPVKEVFKDLDKRIADYVE

>LAWA027 23098:24147 reverse MW:39828

MNANIELTPEEEKELACINPQLLEELKSGSPIGKAWIASIRRMELGEEAQKQATAIRKE
VTSSAPEQNSLMTWCGYPTDLTRCSPFFPMNPKELGNREFLRDFIITSANWGEITYTGPK
LSTYEEDTLMALLAILNGVSHHRKPTVEVEGKTYTYKGPALPLLKLLGYTKPSKKDYNRL
IRGLKLLTVAGVELTLGGKTKAGKRREPKRYMTSMLSAVWDDDKKELAVTVNPFYFYE
AYYAKTITMIDVLKRVGLKGSIAKALYRFVQSHKKDLVFTGHFLTLADALNMDREQPLWK
TRQMLKLALAEILKHQLLTKSRFVEQDIILIEREQTTFPEKQKYIEE

>LAWA028 24353:25753 forward MW:53709

MFTYNCKIFSSPTKFFILNFFFVGVIFLFLIPPFQAPDEQVHFPRVFELSCGKILLSKGE
KVGGSNLPTSQAFTSIRGDI PFHKEHKFDYKTYHHLTTPINERETTFITFSTQLYSPF
QYLPQVLGVRVGKIFNISICILYYLGRLFSLCIGVLLYLSIKYMPFNKWALVMLCLSPM
SLFLAVSHSSDPMIFACSFLLIAIVLRSMYDTSFRLSVSITGLLLLCIATLATSFKGFSYF
PILLIVLLMPTIVFSDKRVGYIFKLMLFAIGIALALFWNLKTKFIFDELSDSNAIFTNNI
HMLCSYEYIQLVLRFTIILAHRLYLSFFTLGWLDTPLPNIMCYCWGVLLILLTVFSSSSI
SAYIPLLTRILFFFISLVISIGIVTSMYLGCGTTGENVINGIQGRYFFPISMLVLLTFSN
LFLITEHKVFQKIKYTIFDRWYVVQLFLIVFLMTTVYVVVFQRYYS

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>LAWA029 25951:26709 forward MW:27778

MAKIIAISNHKGGVGTSTVNIGAGISNGKKGKRVLLIDLDPQANLSQSLGVQHAEMTI
YGS�KGSYPLTPIEITQKLFIPSTLDLSGAEIELSSEAGREFLLQDLIEPLHDQYDFIF
IDCPPSLGLLTINALTASDEVYIPLQTQYLALHGLTKLLEVEIKIQKRLNKNLKGIVIL
TQFDARKTLDRDVANTI QEHFEDKVFKTKIRNTVVLAEAPSQGLDVFRYSPKSMGAEDYL
LLCKEILTKSKK

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>LAWB001 404:691 forward MW:10863

VKTLNNTTSVKLEDSVKTRIKNLAAIRKRTPHSIMVEAIEEYIDKAEKREAFRQEGINVY
NDYLNGLHLPVEEAI A WLNELANGNYVEPPKCHL

>LAWB002 2232:2513 reverse MW:10710

MAKKFFKSIGLVIRNYRKTAKLTQARLGEKLGKGNVIGEIERGEEHPSVEMLVKFSLHM
KVRPGELLDTIVEQEVESGNEDFPWITLYNEID

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>LAWB003 2785:3822 forward MW:39123

VNLDIELTPEEEEEELATINPKLLEELKTGSPIGKAWLASIQRRELNELALEQAKEIREE
VAKAAPEQNSLMTWCGYPTDITRCSPPFFPMGPKEISHRPYLENFIITSANWGEITYTGPK
LSTYEEDALMALLAILNSVSEYRQTTEVEGSKTYTYKGPMLPLLKLLGHERPGKANYNHL
LLALQRLMSAVVKLSISVGKTKSGKRKEPKIDMTTMLAHVHWDEEKKELSATINPFYFYE
SYYAGTVT MIDVLKRAGLKGSIAKALYRFVQSHRKNPVFTGHFLTLADALNMDRDQPSKK
TRQLLKTAILELIKHSILSPESRFIDQDIVKLERVQVMVCDKLV

>LAWB004 5055:7874 reverse MW:101335

MYNINKHQI IKILLFSLCVFFFTLTEKQKIYAADVFFEGRTETLINVNKPFDSEFFGGSD
STIGTLETGPTNLFTTVGAFRNSVFRIGGGRSSFNNPNTVKGNVTLTVYNTDVERIIG
AGISNRGLVTVTGSVNMKLENSVTRGIYGGVYTNQGHVLSINMHLKNVQTPLLIGSGV
SNGPNRITVNGDINIDVEDSRIQYVNITGEVDAGIKGNATLTVKKSTVELINSGRGNILG
NLKISIAДСNIRGLSPVDFGSSVYGDTSINVINSQINDITLIPRAGGMLVGPVTLDTSS
TIQNIQCGPVSQNNQLNLTNVTNTSNITNLNLGSVEGHTISTTATVTDSNITNLNVGTF
NGLGVTENASVINSGNITNLNVGTNVA AATTINSSATIDHGLIANLTLGSQGNRTMI
ATANVNGGTIGLLTMGSENFIPGTRPITELAILNMSGGLIERIIVGNANSSTINFTPGKR
SIVKTINGPELPLVNIQKGAMTQWGTKNMPFLDTRNLILSGTLITSNIQLADLSITNL
FVANGGTLVPRKIPGNQPVIQFLGGPQSLLVIHQPLKVNLSLSPKIGSSMVPLAFVSQ
SFSSPDLFVKQTRSGLIWSDFEFDPTTSIWYVNNIQASQDFYSFSIARETTNWL RQQHIW

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TLQNRSSKLLDNEHYGLWINVQGGHESLDTSIGSKAKMPWIMATAGYDYLQQLPRLDMKA
LYGLAFGASKGKSKWSSVNSTKND AELGMVSGYVGLIHNKTGLYSTLTLQLASSKLHTNS
TGFYRNFKWTETTPTEALELGWKYTFNNGIKMNPGRQLIFEQTSKHHFDLGIQNDKAILD
KSQKITSSLGITVEYKLPVTTINLYAGIERIKGQSGNFAISSQSLQMKFKHDNDTSVVR
ATIGTNIILLGEHFNHCDIFGDKGNDKIGGGQAGFTYKF

>LAWB005 8334:9338 reverse MW:38652

LGTVTIQTWVGECTFEHPILKKIEHNTLQRLKYVDQSGPITYFGYMPYFNRYEHSIGVL
ALLQKANAPLNEQVAGLLHDVSHTVFSHIADHLLYKSNLEKSYQDTIHLKFLKTMHVQKV
TEPYGIFLKDLDPDNPSYSALEQPLPNLCADR IQYLLHTGVI VEKISCNQAKMVIDNLKF
QDGIWFFLNKKPAKIGMLSLEFTQELYGAPWNFAFYEFTEILKEALKIKLITLSEIKY
GTDKNVLHLLLESSNNKFINKGMKHLKDVHNIKKEYPFGQGELNIKPKFRGVDPLIKVGEN
FVRLSAIDPNFKEKFEEVKKWCNTGYGIRFVITK

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>LAWB006 10436:12607 forward MW:80947

MIVNKLSIFIYNYTTKVRHYINCIYHTCVSYSQIFRSWLWYRRQLRIGLLFFLYLVSVYG
LSFSKSP EENEEAKGRQRVQAMELSFHNAISQEVNETVSSMEAELEEEESAYATELEIL
VDETVKTF FETTDIVTDDVVSVM LQGI DETASDLENSEVRARKNLEK LKQLTEHKKFLIG
QNKLR LSNHCCRLQEVI LENS DITHLEDAVKRRNRQLAHQEVM LKQLEE ICSRTQEKQLF
QEERNNSIMAEVASLEDLFYTQCSGEEDHDENTASTEGNYTQEGSFDDMPLEGEDEDI
TDQPQPLSLQENQGNQSSTIQEDQEGNSSQGGSVSGPHFMSSSGSNNSQGGASGGTSTLI
PGYNVHSQMSSLQGLQCVLLSAVEQVAENLKVLI LKAINVSKENKFNVASFNRYRTSKKNT
SSQKHFSANVPANKQGVDSRIVSSLDKFHVFAVMDSYLMNLESKVRSGQLGITNIFSDL
SIGLAYAHNNSSSKEHIGAMFGSVIGSAKAKMNTNALS AIFIWNTNKTGFSGCISYYGW
GQMKNARQYLHTEEIISSKGSPIMLGGGLIQLGYNCFISKSVMITPYIEYLFITTGWKE
YNEITGTLPSHISSTKEQLISKNIGIRSRINLMGNSQLQTWVTGAFGQRKLGITTAQPLK
STNSIYKAMVQKAKNKYVQGEGLSYEIVTNNCKIGLSGDVQFEKNRPLKNGNVRCCFFH
LTY

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>asnB 12772:14652 reverse MW:73156

MCGVCGIICLDGDKPSKEVLSHMLDAIRHRGPDKANVVVDGCIALGHCR LAIDLTDAAA
QPMSTSDKLFIVYNGEINYFEEIRRELIKLGHTFISRSDTEVILHAYIQWGAQCVTKFN
GMFV FVIYDVIRKQIF IARDRYG IKPLYTIIQNNFLFSSEAKAFLRYPQFCTKLDYEAL
LEYFTFQNILTDKTL LHNVI FPPGHYAILPLNTGQLTFSQYWDYCFDESKNIHSDKEYE
EELTYLIQQAVQRQLQSDVELGTYLSGGMDSGSIT ALASKRFPYIKSFTCGFDLHSISGL
ELAFDERNAAEAMSYLFKTEHYEMVLKSGDMERVFPR LAWHIEEPTGQSYPNFCIAHLV
SKFVKVVLAGTGSDELFGGYPWRYRALGKGENSFEKYIDRYYLFWQRLIPNRYLLSMF
KPIETHVRHVRTRDIFRNIFGDNNSPVTSHEESINRSLYFEAKTFLHGLLVVEDKLSMAH
SLETRLPFLDNDLVDFAMRLPVRCKIHR LNETLRINENESAKASRYKKTNDGKWL LRA
MERYVPTHIEAVKQGF SAPDASWFRGESIDFVHRYLFSQNVRLYEYFDRKVVHEL VTEH
LEGNANRR LFIWSLLSFEEWLHQYLP

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>LAWB008 14668:15459 reverse MW:30351

MLTDCFGNPIQTQNAIAITFDTDWAPDWCIALCFELCLQFDITATFFVTNTSPI LKKI AS
NDRFELGIHPNFLVNHNIKKDNTLFYQNILKSYLQIVPEAKSIRSHSLYRDSR L FVYIEE
QVPSICNEVSTFLPGHIGLQVPVIRFSPHGRSLLHFSCIWEDDIAILEPQRWLTP LFNSA
LPGVYIFNFHPIHIALNSCSPEQYSNLRKFYNI PDVTPEDCNKFANKTLFGVKDYFERLI
ESVINSFPFPFSPFR TINSISQNY

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>LAWB009 15453:16469 reverse MW:39114

MSLISLPEWFKKNTGCFLKNDILLSADRQKKYIMDDGVWKSTTNSNSNKQLQTSNIFSYK
WNQEKTYTSPALLKKTQEWLKSRYDIYIYLKAIQDHPIFLDAGCGAAFSTLELLGDCFH
QLNYIGVDISDAIT IARRRIQDAGYDGI FLQENLMDLPFKPESIDIIFSEGLVHHTDSTK
EAITKLTPLL RNGLFLFYVYAKKSPIREFSDDYLREQLHKLSPKQAWDALKPLTELGIQ
LGESNMELNLPNGIELLDVPAGKIKLQEFFYWYILKAFYAKELDFDAMQHINFDWYAPQN

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AHRQTPEQISQWCDELNLNLSMKTELSGITVVAKRQC

>LAWB010 16482:17606 reverse MW:41325

MFRIPLMKPYIPNSSKKNVLDVLSGVLTEGIYTRLEKAFTQYIGTSYAI GVTSC TTGL
ELVLRALHIGPGDEVI VPDYTYPATAFAPMLLGATAVIDISPNTMLIDYNAIKQAITAK
TKAII PVSLFGNPLNWDDELLC IKKEYPNINI IEDAACSLGSQFRNIKTGAWGDAAVFSMH
PRKNI TTGEGGMI TTNNKELAESIQSIKHFGMDISKKLKGETIFIQLGTNYKLSNIQSAI
GEGQIQLIDSILKQRATQVQLYKELLKSLPIEIPETTSHSTHAWQSFCIITPQRDQLLDH
MRKAGIEIQIGTYALHLQPVFQQHPLCKIKGEMNGSQKAFTHCCTLPLFHTMTVAEQKEV
ISILAENLSSSNLM

>ppqE 17627:18526 reverse MW:34707

LNLSSFPSRITLELTNYCNLSCKFCPRHMEQEFGIMDVALAHEL IKEMASYKPVTVVVF
FRGESLMHPQWDIILQYLMYENVGPIQLTTNATLLTHENTEKLLNVGLDFLSFSIDTIDP
KCYQEIRGMDYNIILNNILYFLQRQEERQVPIVVQVSAVKTEKNASDIQNFIDFWLPKVD
RVRIEEHSKDGKIGSLKQPTKIARKACHKVFEDMVIYWNGDVALCNHDWTRRVGTQHIA
NVRNKGIAVCWNSPTYNSIRQAHENINLSGVMPCESCDHWVVSYPENHIGQIFYKQPK

>LAWB012 18588:19238 reverse MW:22986

MDKTIILGARGNSIDILDTIKDINIRNSNLSCVGLDDSSMLQSTKVHNLPI LGKLKDA
IKFQHTFFVNSIGSPKNYTKQNIIRSSGLKDHQFLSIISPYAYVARSAIIGHGSTALVG
SVIAAETTIGNHVLILQNTIINHNTIIEDFVSLAAGVSIAGDCYIKQGAYIGTNACIRGG
ITIGEYALIGMGAVVTKDVKPGATVVG NPAKILHKI

>LAWB013 19368:20597 forward MW:46799

MFPSRKIFIGLEDIASI IENYTLGFNSLGFDFSVVNSQASICASPCDIVLKDHLPLRR
RMTMRQKQEYIQKRINLIRKVFKAIKECDIFLFIWSSFSPDYSDLPILKALGKKIIFVF
VGSDCRWR TAYNQDMLQHGLDILPPGFNDGEQQLKEITLRLIMAEKYADALFNTPSQAGL
ALRPYYNYLQYPLNAKKYESNNPQNKIPVILHAPSDRFKKGSDMIEAIFLQLQKDGLQFT
PRVVQGVPHNKAIEIYKEVDILAGQLGTVTGGKQERELMACRKYVVVSGLPEDYPQLLSP
DCPNVRSHSLRDMYALKMLIPNVSLREKIASCGPSYVRTYHDPSTACAKYLDAINGTTS
PDFIPRFLRDTFVPEKKYLPVYNTRIKLVQDCPWYKEYIEPGTRLGLVF

>LAWB014 20757:21587 forward MW:30806

VLGFSPHTLPGHEDNAIWNNTKLGQLAQRKYSTTAWETDFLEQLLPSLITSHNLCIDIPF
IDVGGCGDRITYLLHRVGFNKLVGIDLDEINVRNAASQTPSSSLNNIVFMTGDALSLPFK
HNTLQQIFISGLPSLSNVFLNIYPFLTDSSMGGGGILLCLTATALEAALIYALTRGDWKE
FIHIIETQTRAASWENKNIRYPITIVENVINEAKQAGFSLEAKYGIPIFASLVFGALCQQ
QTLNEDDKELLYNILY TIPSINLHFMRSLLIFRKQ

>LAWB015 21675:22562 forward MW:33516

MYSTLTWLKENTDTTFSYYTKSKEGAWISPYTLPGHEDNAIWNNTTLGKSVLNKYSTTSW
ETDFLEQLLPSLITSHKLCSDTPLIDLGCNGRVTYLLHRVGFNKLVGIDLDEMNVNYAA
SQIPASSLDDIIFMMGNTLHLPFKQQSLSQIFISALPFLTTVFSSIKPLIKQNGKLLYLT
STSLEAALTYALVRNDWEEFVRIMETQTRAAAWENKSI RYTTPIAEA IIMYAAAAGFSLE
AQYGIPIFASLIFGALCQQQTLNEDKKEFLYNKLHELASISNRFVRQHLLIFQKE

>LAWB016 22569:23621 forward MW:39261

VITHSKTSLSTDDITNVLATLLSGDISDNKERKNFEKAMAKYVGNAYS VATSSGTLALQL
ALRLMKIGGGDEILVPTFVDDILSAVHQVGAKAIPVDIDTTFNINPEDAVSRITKKT
AII LVHMFGLPNEMEKFNFPVPIEDCAHSLGATWNKKFVGTFGHISTFSFHGLKLLTC
GEGGMLMTNSQKIIQHHEILEPNFMTGGYKLDYHLSLILAKLGLSQLQSFPVSLKLRQE
MAIRYTKTLNLSQTFLPIIKTKNQISSCFRYVLRHKTQLFSTLEKMF INRGI IIRRPVK
NLLHRLGLKDNNDPIASEYFEHIFSI PFYPSLTKLEEKTVLHETKITLG

>LAWB017 23628:24695 forward MW:40316

MANILLTSVGNDAQAIIKALRIPEGNNDIDTLIGIDSNPHAYGLYMTDYSYIVSQRNSA
TSLLEELHHIINIHHINLVLP LSTEDQSFYAHYASKIEQWGCKVQHSPEKSITIAN NKHL

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LLPFLQEHGLEVPYFRIAHNCTELENLLYEFDAKHNPVIVIKRAFSTGACGVKIVIPSTDT
LERMFDRTNIIYISIDELLFWMDKINDTMPILQISEFLPDTKYSDVFLHNGKAI EACVRT
EEKRIYGTSLYGVTI EDEELYE IGLQAASSLLLEGTVNIELGKDRNKRAKII E INPRFPA
SIDHTVTAGCNMPLWVVAALGKPFKVNKPYYNVPYFRHWTFLSNKNIPLKIGRK

>LAWB018 24903:26174 forward MW:48610

LQKNATFSHKSGVYIFPFTKKNFLNPSEQHNI FLLCYLLKESIYDELI IDSKIYTEHIE
IALFLIECCNLYNKKCRIVDKELPNIVSDTNDTKQVQKMLMLPSEIA I LPLTGTCNVKCR
FCEQAYTKIPYRKMDFDIFCQTINAI PDKMFIKVGLTPFQEPLSTKVFNRYLEYALKIRP
EANI SFNTNGTFLTKEVSQWLVDIGLKTIVISLNMPDPVSYQNF I GKNLNFNKVVSNIETL
CCIKKQQNSRYPKVIVQYLKLPVVGQESVLQQRWGN I ADTVWFRNVAAPTSDPQKLA AF
KKINPQLPETSLLGEEALPCMSTMVTC AIDMFGYYLPCCTTLIERCNSGKRKFKFLEFGH
VTNMDVQTAWSSKKLQIRAWQLAGLIGSCNRCTSNQSNLVQLYSLKNGI IQNCYLRNIK
KYK

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>LAWB019 26181:26819 reverse MW:24769

MRNFELLSKMKPSNMYVQLGLIACKEVLDDIYPLIDVASYYGFNAVRIGFYIPPVHKFDY
TLPDDSWCDITKVIDLKKLLSYAKTKNIELQYISKNNSNASICFHPYIYIWLHLDSKGR
CITYCCYGEPNISIAEEELWDLK IWHNERVTLIRNTINNRFE LYKNKMCLGCRLVTRTL
PQQRNDALQSLGLDTSTTYLYGVGFPPLHLE

>LAWB020 27548:28714 reverse MW:43492

MFRKMPFIMAIMIIFIVLLSPIIPLYIKQLLYSISLSIKSII LFILPFIIFSLLFKASVI
LSRNATKVIIGIIVVFVCCSNFLSTFISHYIGIWIYSSDLAKLQFHNIDNLTTLWLLHLPN
IISNSDAMITGVILGIFASTFFPKKAEQLAVTIEIYIESFLNNFIFVPLFVVG FVIKMQ
HDGILELLTKEYALIFSLIAISQFTYIIICYLLLNKFSFIRVFNNIKRVFPAVISGFSTM
SSAASMPLLIMGLESNTKNKD VVRVAVPATINIHLIGDCFAIPILAYAILKGFGE EEP
SLVTYIVFIFYFILAKFSVAVPGGGIIVMLPLLESYLGFNSEMLSLITALYILFDPVITAA
NVLGNGAFAKLIDKMLSYMQKTKYQLSI

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>LAWB021 31301:31633 forward MW:12848

MDEKTGTMWSKVYGLGKVFIGLSVYLVVSVVTALFTNLILLNRMDERVQAI EYSYKQQD
KNFASDLRSYESWLKAITQKVDVLQPRVIQVEARVEYTHQCLEELKRLN

>LAWB022 33665:36469 forward MW:109041

MIHLFKDINKHFFTISLIYTYIYISIIHNKISIVNIAILSMFSILICYTNAFCINNTKE
SGGLIKHNVRAQIAERKKAKAEGRLEEFENLAKRAEEQQRVA AWKAKKREEKLSQ
TEEERKKSEAHKRGQLKRIERRQEVNKRIEIAIREGNEDEVRRTISQEEIQIKKERDLKY
KEEKKAKILIKNPPLTEFEKLRRAISETQTERHANDKILAKKEELIKIESADIVKEKI
KREKLQRIKQNRARWSSKNRETKRAELSEEERKKSEARSQGQKERQQQHK EIKKKLQKAL
KEGKLEEVKKEIELSKLERKKFLKNRQLIRNATKHAEQMAMWLSLPEDEKNRRMKISQR
CSEYHSSMKKIRKKSASAEESGCMEQFLEAFSEELQLKEETVKKKKIQKEQKKKKKKEK
QSKKQNI DTGQEPPEPLMEDEYCFLLGDLQPSFLPSEEILLEPDQTFLLDLETIDPSSLD
LQIFQEESTSTYREIAFSNSNSEGDNSNIPSLKDNALQQSEEIQCTETAISECNNTIKE
LDLIEGDSISSQQPKGKQSSLTASIVINQTHSNELQILSYIDGYNKKSQSSLSLQNL F
YSPKEQMLARLKT FVLQSSFMPSDVNYEYDSEDSTNTMLQYPTMLSNIVKNSCSNLKQY
NFFGYSKNNSKNLELKPYSYQIGIITNIKSGLSLSLAYNRDKDKISSFSHMIMESFCSPA
QSTISSDCLSSLIWDPSYSGFKGYIVSAYGWGQMKNIRYAIHNKKEICTKGETTVTIYG
SLYRLGYTFPLGKSI MFTPYIENSFVQIAWESYNEHFGVLPCKISSYKEKMYERNIGVHI
SWTDNDCSLLQAWTVINNRHISSKIEA IPLSSPKSFFYLSQIPKNKKEYTQKEIGISYK
RKII EEMAITFDSKFFYAKHNGKEVECSIHYIF

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>LAWB023 36874:38025 forward MW:43860

MPK ITRHKTRYPGVYIFQRRLDKHGVEKTFYILYRRCGEKKLIEEPVGRESSGMTAATA
NNIRGLRAIGKELSNVEKRKKEKEKQQNQKVTLQTIWDKYQLIYSEKKS LKQDISRVKYL
SDLMHKSPDILTNDIDTLRKKLTLTKSSKGGASLSPASIKHILVLLKRLINFGIQRNLC

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IKPQNLYIDMPKVDNQKTEILSKNQLKNLLLALDAEPNQSDVAFIRLALVTGMRKSALLA
LKWSDCDFENNIITLSGNYAKKGKTDYIPMNSAKSILLSIPKGNPDFIFATRNGTKRTT
YNQRLIKRIKEKAKLPKDFRPLHLRHNHFASRLASSGKVDLYTIQRLLTHETPAMTQRYA
HLHNDALKKAAAIIIDDEFTETLS

>parA 38667:39422 forward MW:27410

VKEIIAIIINQKGGVGKSTTALALGAGLINRGYSVLFIDLDAQGNLHTLGIQSTNLTSDV
LLAKRMSIKEVLQDTKKGTVIPASPTLAGADTVITDVGKEYRLKEALSDVLNDYDYAVID
TPPALGVLTINALTACSSIVIPAQADIYSLQGIHQLHQTISTVKQYCNSGLKVKGILLTR
YNTRSILSRDLTEIEQTAQKLDTKLFTSTIREAIIAIKESQVHQQDIYTYAPKSNVALDY
ENFVEEFLRRN

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>LAWC001 525:1610 forward MW:41661

MKNYFSSDTQGKLIGQISSDVPLLHTLQVEVEQTSWSPLSIKRILVHFRSSRQYERVIDYIN
IQEDLLPNERVILFFLHAVYDDSFATMELYARYITDLINYVQKDFHHITSQDVDAFIRYR
QLNGSKPATINTIIGALKSFFRHLVDAGILTLNPTAFLKKRRNDTKQNLPGHLSHLSSES
ELQRLFDGMIEQGASLRDQALMQVFLFTGIRAEAVRLKWSHIVTWQSRWYLDVFGKGSK
RRRVYLP IQALTVIQEYKLLGIELGLASNSKPLFAHLRRPNEHISRHGLYVLVKKWCKR
LLGRTDVSPHWFRHSCFTQLAHKGASLESIKALAGHESVETTMQYNEAAQLMQPAGILFE
K

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>LAWC002 2657:3580 forward MW:35019

MKILTHAQLEDEGFFFDGFRGWISSHHTLLNTKGEPDHTDKHTLENLEILCSYMNQEV
NILTEIQGVRSIFPEVKKSCLEAKQHNFVSVRYGDPQFMSAGGTLSSRVHFIEYVQQQV
AKGIYDYINEIYLFGIGGRKIYGLLNYPFLQPIAPLPTGENSSPLWSKKDVEQWYKDID
ELYKTLQRQTFNHVTLETPTVLCISAQLDITYLGQKHTKLLQMVNETYPRLQFVTIDGL
SISGIGESMLLIAKELHGKKTGEFVYSERLRTYPVIPGKEELTQKWSASTYGCVIHIPEA
IAYMRGL

>epsG 3754:4872 forward MW:42696

MSPRKLHVLHITSRADFGGGPEHVYQILRHSPGQWNNFVACPLDRPYAERYKNLLGINGI
CFIPHRKFSVKTLWDLRQFIKKNAIDLHSHGKGAGVYSRLLHVLTNIPCVHTYHGSNIN
SYSAVKSKLYRLYEQLMGNVTQRAIVVSPSEQEYVLQEKLIPTRERTYIPNGVVFPEKID
TEEKHERFQIISITRFDKYKNTFEVIPILHRLKEEQQIHQVQLVLIGDGPVKVLEERLK
SEDL SQYVIFTGNVLSAPYLQKANVYLSTSCWEGMPLGVLEAMSYGLPVVASDVKGNCD
AVEHEETGFLYPYNNAYEASKALICLMNSPKMKVQFSQAARERVRKFYSIQQMIIASLMLL
YDDIAKQQYLSL

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>rfbC 5115:5657 forward MW:20859

MEVEKTSLEGVLLIKPKVWEDSRGYFLETWNKQRYIEIGLQLPFVQDNHSSSTLHTLRGL
HFQQQYPQGKLVSVSLGEVFDVAVDLRINSPTFGSWFGVILSEKNHYQMWIPPGLAHGFC
VLSERAHFHYKCTEYYPQDESCICWNDPDIGIDWPVQHPNLSHKDKIAQSWADYVASIT

>LAWC005 5841:6644 forward MW:30984

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MVNIFFYLWHQRRNVLRVIGDFTQNYLSSYLGFIAWFLGPLVTLVLAIVFQVGFVRVPP
IDVSGVPFVWLACGMVPWLYIADGLTVGASSVTSYSFLVRKVGRFRLAILPIIRLAASG
IIHCVLVLFLLILLFYNISPSLYWLQFPVYLFLLYLLLGLVALFTSAISVFIPIIDLNLL
SIIINLGFWGTPILWHASMLPSSWHWIFLVNPAYYIVQGYRDTFLEQQWIWERPLEEHIF
FGLWLAIFLFLIGIYTFKRLRPHFADVL

>LAWC006 6833:7720 forward MW:34616

MTQYVSIITTSYNYAAYLADTIESVIAQTYPYWELIIVDDGSTDTSLEIKQYTEKDSRI
HLIQHPDGKNYGLPTTVYLGILHAQYDYIAFLESDDMWT PDSLQERLVVMNKTQADVFN
QCKPIGDVTSVSRDVHGYLSLIHETMSQLTPPFSLFTCYLTTTNLIPTFSCVLLKKAPLL
QCTFTPPRPSWLDYWLWSQLSIGSTFAYSPKPLTLWRHPSSYNTQNDQLFKKCWMPFYL

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SVCWNMTKQAFKQYPYQIHRYIIPFLYMVKTWSVHSPFISWLKPILQRFKRKRYSM

>LAWC007 7836:10205 forward MW:90810

MKYIRLIKKKFFIIYKKYGFQAAAIKTRQYFRKFLPSYAVSYFLPTIPYEPPYPIDPKVTT
DIKLIAYYLPQFHQFPENDEWWGKGFTWNTVCRSKPMFEGHIQPNYPHPDIGFYDLSNI
EVLRKQVAMAKQHGIYGFCHHYWFAGKRLMEKPVDMLLKHSELDIPFCLNWANENWTRR
WDGEDQKVLIAQTHSPEDDIAFMKDLLRYFKDPRYIRINNRVPLQLYHASLLPDLKATVK
RWEAVCKEHGEEKPYLMLVQSFRNIDPQDYDFDAAVQFPPHLPSSWNFPIDIGLKGHLKRF
KGRIRHYSMFAEAVVKDYTTKYTLPCVFPGWNTPRRLYFSSIFACSTPQAYRQWLTD
CTFASTTHEKDNRFVINAWNEWAEGAHLEPNKAYGYAYLNATSRVVENFAVPPSTAENN
PHKVLVVGHD AFLAGARLLLLETQWIKRNTNIDCRLLLLGDGVLLDEYMQSVPMVLC
DTLQLSKLEDFCGGIPDCILGNTAVSAQVYNMLSSWNPVIVSFVHELEAALQRFAGEQNI
ASMLKYSSYFITASEPVRQNLISTHGVNPQDCITIPAFLEPRLYPLSQKKKKQLRESLNL
PQNGCLFMGCGTRDWRKGFDFLIEVAITTLKNTSHELPIFCWVGKQEVPLHSSPLYKQL
KKDIHNNLIFIDEVENPGPYFQASDVFLPSREDPFPLVALMAALCQNPICFADAGGIP
SFVSNNSGIVVPYGDSSAMSKACIQLIKNKQLCEQLGIPGRKKVLLHYTTEVAVPRIITV
LQQAIIKICR

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>LAWC008 10465:11196 forward MW:28160

MSSNTSKKWPKVIPLTPEQEAISLDFYHYWLELLASKYNMLEKFNHGYVVKAAATPGFCH
TLEIGAGIGEHLYYENLSEEQTKNYVAVDVRESFIEKIRNIHPQIKVLCGDCQDRLPFED
GHFDRIIAIVHLEHLPLNPAIREIHRLCNKQSGSFSIVIPCEGLAYSFARMISTKRIF
KKRYNQSYDWFIKREHINTPSEIFEEIAPYFKKESTNYFPLFVPLAFCNLIIGATFSPII
HNN

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>LAWC009 11293:14562 reverse MW:125279

MTAYYKIVKLFPLPNRNDLFCLYLTAVTLSLYIILRVFKVQSFELSSFVGRIYGLAIS
EGIDTCKRQSLYFILLIFTLSFSGIVSVLSNIFSTFSKRFTHDVITFEKAALIGIASMM
CVTEILFLMYPYRLQFYTFVELTSLICGILLIRWFFVLTHQKKLSTLLTLKPSAFGFYF
LSLSVYLTIQFLLSHHKINTPVYIHWPLHTTFFILGWLISILDKKHLFLKCGAPLLIL
PIAIIITGEAQYLMLLNDWQVCSKILFLYLLVPLLLCYCIYQHTTIHKKLIRQNTLMKY
WYFPICLTTLTAMLFWHFQWTSRDLLHPANSITPAHGLIAFGQIPFIDIWPTRGLWDYFF
PTLFMLFGGQEATSSFIWNVMPNKVIANLIYAVFTRFVRPGYALLLVLLLYPFSLFTT
YDSLYYAMGLLPALFLPWVIKNFTFKRIVTLWAITAFTFFWMPSIGKATILGTWIVLIIA
SLRRPQHIRIVLPSFLLIFGTLIIYAVLVSLHGGNVFDNIEWIRGFALCEFMNQGR
IAFVDSITPLTIWYYVARPLLLIGICILFSWRILSHQHIKPKQWILGISVSMLFLLTRSLG
RHTLAAGYMPYSLFLLGLVPFLAPWKIRFYLPAWILFLGIILNIFQGERTTAIPNHLGL
PTMNWKKPVERLTYTDFKPLINILYSELGNETFLDFLNGHGLYAASGKRNPYLSIL
SLYNSDKGQKSLVKQLDQLFKKGELPLVIMEGPASDSRIDYLPLNSQLYRVTEFTYQNYE
PSVINIGGFELWAAKDSCLSTMLPVCDTVYDLHIPIVNVHDYITQNASITVRDNVLIKIVGG
PYDPFVYNLMSAAKIQPISVCLNKWCLFSIDITNSHMGTFQLFFNFDDKGYNENNSVTR
IPAFEKPMTFQAMLPIPHDAQTLTDLRLDCPDNTHMEVHSMKIAMLDRPNIPLTVSQIFE
TRQIPYLWAQYNKKHAITNQRLITLARNITLQKNITYDVPLPKYTSDSIAQYLDIFSITSP
VGGTITLYIKDTNDNVGQFSFNLKVSINKPVEYLVRISTLYAWIHKKTLISVNTVEPITI
HHVDVLMAD

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>LAWC010 14573:15277 reverse MW:26536

MLPVVILAGGLATRMHPHTKTLPKALLSIHQPFIEHQCLLAEKGIQDIVLCLGHLGEQ
VIEYVEKKNKYGLNIQWSMDGPHLLGTGGAIYNALPLLSEQFMVLYGDSYLDIDYKVIAD
AYQKSSQPALLTIYKNNNQFDTSNIQYENGCIIDYNKTHKTDKMQYIDYGLSCLHKKIFT
DWKNTTDFDLSDVYTFVLKNRAIVGYEVTQRFYIEIGSPHGLAALETYLSQKTCFI

>mvaK1 15277:16257 reverse MW:36230

MIIARSPLRISLGGGGTDLPSYYREHEGFLIAGAINKYVYVTIMYPFIEGISLKYSIDIEH
CSKAEEINHRIIREVLLMQELKTPQIEITTLADIPAGTGLGSSGSFTTALLKAIYMHRK

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LLPHDLAELACHIEIDRLGEPIGKQDQYIAAFGGGLTCFTFHKDDTVSAYPLQIPIEAQF
ELEERLLLFFFTGFSRSASNILADQHVRSSQKGDKEMIDNLHYVKDLGYRSKACLEAGDING
FGTIMNEHWQHKKQSRSGMSNSQIDEWYLLGMNNGAIGGKLVGAGGGGFLFVAEDKVRL
CKAMSQAGLSRVRFQFDYEGTKVVLS

>LAWC012 16567:17556 reverse MW:36915

MKIGIIGCGLIGHKRAQSIGDTHQLIACSDLYFERAEKLASMPHCHAYVSWQEVIANPS
IDIIIIISTLHDSLSNLTVEALQAGKHVLEKPAGRNLQELLSIQQAASGKLVRVGFNH
RYHKAVLKAHELQVQAGYTGELMFI RARYGHGGRIGYEKEWRADPHRSGGELLDDQGPLI
DLARWFLGDFTSISGSVQTCYWDMPVDDNAFMLLQTNKTAFLHVSCSEWKNLFSFEIY
GRQAKIDISGLGGSYGVKVTLYQMLPEMGPETTWEYPMPLDKSWATELQEFYEDIQHN
RTPAAGIPEAIAVHEVVEKLYKQSGYTFL

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>LAWC013 17553:18434 reverse MW:32453

MEGKLTEQSAIITGGNQLGLAIAKAFVQEGANICICARNKQQLVVAVDELKTLRISDKQ
QIISLAIDVSI PAEVESLIQQAIAKFKQVHILVNNAGIYGPMGPIDTVDWEQWKTIEIN
LYGSVLP CRM L LPHFRQHKYGI IQISGGGATNMPRIEAYAASKSAVVRTMESIAQECI
ADNITVNCVAPGLLNTRLLDEVLANGPERAGEQFYQMLKAKETNKTTSFDFATELCIFL
ASKASNGITGR LISAVWDNYYAWPDHIEELQQSDLYTLRRITGRERSITWGDK

>ugd 18568:19872 reverse MW:47946

MNIAIIGLWHLGCVYASGCAAVGHTVTAWDPDEKTLEQLSQGIPPILEEGLEEQIKQGIS
TGKLCFKSTYEEAVQNADVWITFDTPVDADDNADCTFVTHITKLLPVCKQDAVVLISS
QLPVGSIKQLEQTANDLQRQDLHFACSPENLR LGQAVKLFANPDRVICGVRSPKVQTILS
TLWEPITSRIEWMGVESAEMTKHAINTFLATSIAFANELAVLCEHTGADAKEVERGLKTD
IRIGE KAYLGPMAFSGGTLARDLQFLSSIYKNKKQEEVSSVLTGVQKSNHHKLWVIHK
LNELLGRVKDKHIALWGLTYKPGDTLRRSIALEYATHLIQAGAKVSAHDPVSVLPDIY
IYNRHISLKPSPQEVIENTDALVVCTCWDIFYKEQVTPGFFSSMKTPLVIDPTRFLHPILK
KDSIRYVAIGLSS

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>LAWC015 19973:20956 reverse MW:37036

MQQISLSKRQYSFLAKVTVWLISILCFIYAIYNVNIQMWTAIKQYSMTSIVLLFLFSII
ICIVNGLRKYFLFNKQLSLSQSISQAFFGLGNNIFPAKAGEFIHAFYIARVTGKPSTEV
FPVIFMERFADINLLA ILSLFMLSIFEPSKWTILLTCSAIAFIWLGILLLSYKSSWIFFM
LRYIPWEYPRNIANHLCSALHSNLLLHWMIRLFIITLIVWVISIGYYYFAFTIVAKLDT
IINTMCASFILCFGAIIPSSPGSLGVFEASAVFALGLFGVPHSEALAI GLVCHFFMFFVP
VAGMVIIMSINKQVKQIVLTAEQELKT

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>tal 20934:21653 reverse MW:26254

MPQAMD LQVKLFMDGANIDKMRDALENNPLIKGFTTNPTLMRKAGVTDYVSFAKKALTVV
QGLPISFEVFSDDLESMEREARIIAGWGKNANVKIPITNTKGESCCPLIQKLSSEGIIVN
ITAVMNLKQVQAVADVLTDPVPAIVSVFAGRIADTGRNPIPYMEASLKI LKDLPEAKLLW
ASPREVLNIYQAAEIGCHIIATPELIDKLSLANKDLEQYSLETVEMFYKDAHAANFSI

>hisJ 21738:22343 reverse MW:22383

VGIRQVKPAVFFDRDGVLTANVYYPQWDEWEAPMHVEDITILPGVIEALSLLKEANI PFF
LISNQGAYAKGKTSLENLLAVKNTFNYYLLEHGIFMESFYSYTHPKGITPGFSGPSLER
KPGTYFLHLAAATYSIDLSSQSWIGDRD TDILCGQHAGLKTIL IADSSLDKDKSLNPNH
VVSVVKDAVTYILNQMEFSVL

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>LAWC018 22325:22924 reverse MW:21409

MKTYSSSTYLQQTIDIASQLDPAHIEDIATKLRQIRDGGGRLFFIGVGGGAGHASHAVNDF
RKICGF EAYAPTDNISELTARINDDGWSSSFASWLRGSR LRS GDALFVFSVGGGNKEKNI
SANIVA ALELAKEVGASIFGIVGRDGGYTAMVADACVIPIVGENEVTQHT EAFQAVVWH
LLVGHPL LKAQEMKWESVK

>LAWC019 23114:26398 reverse MW:126608

MPSSYLSGLSKFFPFPEKRND SFCVFI TAI A IALLSTFLFYTSQSFELMAFPDR IHGGGI

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FNGHNAFKRPTLYFTLLGIFFIIFSCIVSLLSII IQQFTDLYKRDVILFEKHTLISVSSI
 LIISIPMVLINELYEIQYDLFKALTGVFLIVTLRWLLCINERYTISEKLRLTPAAFGE
 FFLFSGIYLSSKALRYPLDGLLNTRMGYLHNILYFFLLGWIVSILDKKHRFLKSCTPLLL
 LPLTFIIASETQYILLTHGYEVSLQSILFYFTIVLCAITVFLFTTKKHISISYNKVMKY
 WYFPLCIITLTVFMLWQPSLNIDDDLLHPANSFEPAAQLIQFGKIPFVDTWITRGLRDSL
 PCTLFMLLAGEQHTVDSFIWFQVFSYLYLII LYCTFTKIVRPAYAFFLFFFAQVLVEY
 SGWYNSLMLLPLIFLPWAMRNITFIRSACIWLLAATVFIWMPSAGKSTILGLWLVFFIKG
 LQDIKVI FRKVI PAFFT VFGMLGVIYISFLLLKDG NVLDRI TE IHGVT CLEYGAHAYEA I
 TKPSLTVVWYIYIVTPLFFASICWLF IWRSLSLQSISSIHWMYLG MATSMLFLFTRSIGRH
 CLEENAYLMVFTFILIGLLPLIRPFKQRIYLPAWLFI PAII ILLTYNNFVVISPEALKIP
 LVSWNKETLERVYTDNYKPIVQLFQQLKEKETFIELLNHGGLYTYTHKKNPFYLPNIS
 LYATDNAQKVLVKNLEQQFNEGKIPLAIVASPFWGGCIDGMPSTANHYRIAEFIYKHYP
 YRNILGFEIWAAGSRFEKEALPILQSPAEMIPINAKGTYGKNSNITVTDNLSINYG
 PYLPMVSPSVINMMTATNMDPIDISSYKVTFELELTVVPGWLQIFFSFDNQPYTERYS
 CKMLIPTYTEKTTVTLDHVLPNNVKKLTDIQLIFPDYTFINLSSFKLQLFKEYLIQPLCV
 SQTHNVKCGAHLWANYDPYHAAYNKSLVTLNNVTLKPNETHYVSI PQYKTDQHAEYLSF
 RITSPSGGQIKGTIKDKNNHSGIFFFTLKKNTEPEDYLIRVSNQYAWKNKKDFSFTSHSQ
 EDIHIEYINILEGD

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>LAWC020 26718:28187 reverse MW:56205

LVYIFFPTLVLLPLIRPFKQKIFFPTWLTIPVTVILLSGDFVILLPEALKIPLVNWTK
 NLQRVHYIAEYRPIVEFLQSQLKNNETFVDVTNGHGLYAYTNKENPLFSLVNVYVTDKV
 QKILVQQLQEQFDKGFPLAIVSSPFWGSNIDGLNTTMLYYHVAEFYQHYVPYKNIHGF
 EVWAAKESRFSQETSQVEVEEQVTVDVPIVTVQGGYFGHNANVTNNNTIHDYGPYLPV
 KPSIINLMTATNMSPIEIAPYKTCCELEITNVLQGTQLQSFSFDHQPYTSESSCYIFIP
 AYKEKTKVQLTKILPEGAKAITDIRITAPDHTYMDIYSFSMTLLNTYPCTLLIVTQIDQH
 NYGPYLWANYDPYHGLSNNTVLATFTKDIKIHPSETYHIVIPSYIKDDIAEYLHFRILSP
 NNGYLGVNVQDIDNHSGEFRFALKESTEPIDYLLRISQYAWKNKQFSLTSHSIYPIHI
 ESICAIKGD

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>LAWC021 28160:28957 reverse MW:30867

MIFAGENYAVSSLIWFDILWSITYIILLYAIFTKVVRIYACLLTLLFSQLTFNNMACYN
 SLILLPPLFLPWAMQQLTFYRIAWIWFLSASVFLWMP SAGKASILGLWLVFCIRGLQNIK
 ILLYKVI PAFAIVFGILGVSFYLLVFLRGWNIFDRISEIEAFTFLEFGAHTLSTIAPKIS
 IEALSYYVIMPLFFAGICYIFAWRKL SFKTIPLVHWMYLG IASSMLFLVTRTMGRHCLVQ
 SMLNTCIGQYELLNNQRWFIFFFLH

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>LAWC022 29190:29798 reverse MW:23490

MVKHFLENYQSDTILFEKHALTALSIEILSIFFILINKPCYEVQYHVFNGLFFGILFIL
 MFRWLLSTIGYSSFVIRCKLTPVTFGFFLLTAIHLFLKVYKYP LDTPIDIRIGYPHIGIM
 ITFILGWIIISLFDKRHQLVKIGAPLLLLPLTILIASSETQYIGLLRGYQWSLKTLLFLFTG
 SLLGFVIYIYTTALTEEKKINL

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>gaIE 30157:31122 reverse MW:35612

MHYIITGVAGFIGSTLAEKLLSIGHQVTGIDNFSTGKHTFLNKAKQHERFTLIEGDLDDT
 KALS KAFATGEQVIHLSANADVRFGEVHPSKDLEQNAIATHNVLEAMRLHNIKRIAFAST
 GSVYGEASIIPTPEDAPFPIQTSLYAASKLSGEGFIEAYCESFDFIGHIFRFVSILGPRY
 THGHVDFDCNQLRKDPSKLTVLGNGTQRKSYLHVDDCIDAMLLAIEKAPTDTKVHIYNLG
 VDSYCTVKDSIGWICSSLGVTPTVQFGEGRGWIGDNPFIYLATEKIRSLGWTPKYTIEE
 SVKTTVSWLMENTWVFDNKEK

>LAWC024 31168:31902 reverse MW:28834

MEKLSIIMPAYEEAATIQEVIDGVLLKPLVNLKKELIIVESNSTDGTREVVLQYKEHPQV
 KVILLEEQAKGKGHAVRGLQVATGDYILIQDADTEYDLDDYPKLLQLLIDKKADFLVLSR
 HSQERRSWKIRRFKRERFSQYYFNGHLLFTFLFNITYQQKLKDPFTMYKVFRRSCIQG

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LTFTANRFDWEIVGKLCRKGYPLEIPVHYHSRSLNEGKKVHIFKDPLLWIIACFKYR
FCKL

>LAWC025 32380:32919 reverse MW:20566

METVYQYDYQGFFVSETYAYQGLPHNCTKVKPKIQSNFIPQWNGSTWKQVEDHRQKKDGR
DRII EGTGTPYWLPGDTPKPEPCYMETEPGLPKNAILTRPEPDPAILLKEAKEQVFLDID
TAYNETLMNVILAPTPESSGKSIEEIRTI LSTQRAEFELQLQQATTVEEVKSIHIVYSL

>LAWC026 32919:33764 reverse MW:31039

MFRIDTPDATPNNRFTEGDPTIPIEATTVSADWLNVSQEELI AVLEHAEIEPNKQSTIQL
RDAIDKLEQRLSIATSMKPGLVQPDGEPVQITDEGVISIPITLSEFKDFFEKTTPKQWA
VRDGSILPDADTAYPDLWNYLRKEKNTWKCKSQADWTALSTAAGGIGGVPPFFVLDEAAKT
IKLPDTRTDHIYGNVGD SIGKWENDAMRNITAWFYNNIIDFSNCGGIFYASGHGTVIQTF
NPSGYANHQINLDASRAVPTAAQFRPRRIGLLPCVYVGGIH

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>LAWC027 34205:35827 forward MW:62477

MNIIYGCVSFLFITFLSLPFLLTVCGIQIRGMDNRENRLVLEKPALNKTSLQKWPSVLDP
WFQDGLAFRSHCVGLYLTIIWEEWLSAPVKSAAATGKNGELFPI LSTAPVLQYYLGLKPIDP
HEYIHFQLAHAGMYIFLKSIGIPYFLVTIPDKPTLYPEYLPFWTRWCKGESVHKQKVKAI
QEIGIPWIDLPLILHEKKYEHALYNKKFDPGHMNGYGMIECHQYLIEALGKYFPALLSTA
SKPAYRVYETKRYNTAFSSEWLSSIELLQIERFQSKEIPNLIKKEPQTFWEPQLIINNRP
LSPLDIVFSGDSYFLCSCQYAPSHRIWPGDLPLLAYYSKQFLKMNIIQYLTIPFLKQLFDT
GYKPDVVEALAERNIGTPSRARKDSSLRTFGDIYLKTPYIFLTPEYIKNITNKEDSNDI
TIYIYNNITIFLKASANPYIELPSLVTANGRAAVVANIFSPIQTYFGVYYTPKDIGFVQE
SSINWVKVEPGENLVHLYISTHPYQEISIRFHLGFDHNEYRILPIPDEIKQMFKVSDSI

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>LAWC028 36171:37394 forward MW:48142

MQVIQSIFIFIFLLFSTMPFCLSLDLSPKTVTLRENRLVTENPSLKDTPFQKWPKVLDP
RFQDCLAFRSHYVALYLKIIWEEWLSAPVGEYATGYENDVFYVTSKKNYLGVTPI TPEKYA
YFKLAHAGLYAFFKTKNIPYVFITIPDKTSLYPELLPFWAHWCKGESWYDQFTKAIKEIG
IPWIDLFPFIFKEKKATYKVNKNYDTMNMNAYGVETCYQIEGKRLQFPELMPTSRNEFYT
VSWDKIVISKFIKENVPVFQLLHTDRFQPIEIPGLVNFEANYWHKPRLNKPLSPLTVW
LVTDSYFLLSGHQUEREYVFRGDIPLLAYHTKNLFTTHVQYFLSPFFQELLKKGYPDIL
IETLVERNWTMDRAKEDPFIRIAGDIYLHTPGYLLTPPLIDNYIYI

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>LAWC029 37950:39563 forward MW:62404

MKILQSCFTLLFLLFLSIPFTLTICDCAPEPIDNQENRVLAWPPKQNSLRNWPKRDP
WFKDYLAFRTHFLCLYHWIWRGFLGSLNLDYAIFNGELFPTLNGATVLQNYLGLYPYTK
EQITNFKLLHAGIYARFKSEGIPIVVPVDPKTNVPEYLPFWASWAKGLSYYDELIIQAI
QEIRIPYIDMLSILESRKSEHQLYNKRFDTAHWNGWALEIAYQAMGNFLTNI DTGFEPRP
SGEIEIYFGRPYPRLYTRERVPLMNVYSHNLHVEHLPELSKENPCWADPQLIVNDKAKL
PYTLWFVSDSYFLFAFDNYQPWIGGISPLAHTKKFLRMHFNTFTQPFIEKSFGTSYSPD
IVIRTFVERLPRDLMQDIDPVLKIYGD IHLGTSGYILTPNNLHKVVAESNCCITKEIDQE
EQGIIII DSSSDIPLFTLAPVIAGKDGRVMFATYKSPIKTARLYYTPKSIGTLNKEDF
VSIELEEGENI IYMSFDTEPGQEMVLYFEPGCHPGAYKVLPMPKG IQHVQHTYSRES

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>LAWC030 39662:41038 forward MW:52944

MLWCNTFLLIASIIFYAWGEPKFV IWLIVSMIFNFHMALLIAPTNSRSMRIFGLSTGLIL
NLLLLGYFKYLTFFMESGFALLEIFFEPSINSSQLKTIALPLGISFYTFQAMSYLIDVYR
NEVPVSRNIINFGCYLTMFPQLVAGPIVRYISIQKELEHRELSQRISSGIGRFIIGLSK
KLLIADTLGRVSEQAFAIPTDHLSPLAAWAGICYTLQIYYDFSGYSDMAIGLGHIFGFT
FPENFNYPYISKSIKEFWRRWHITLSTWFRDYLIPLGGNRHGLGRTVINLLIVFTLCGL
WHGSNWFIVWGLYHGCLVFERFFPKFPSIFPTFLQHVYAVLVVTLGWIFFKATSLTHA
KEYFYALISGNPPGIQANHVLQLFSTDVYLAIIIGILGSIPIFPFLKNKWEHLLIKQKT
SIAISLEGLRFFMLFLLFFLCIMPLFGSTYNPFIYFRF

>LAWC031 41380:41661 forward MW:10513

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MDREL I K K V L G L I I K N F R E E Q G L S R Y I V A K E S G L D S S W L R R L E D G K S G I R T E T L I L I A R G
 L K L P A A T I I T K I E Q A L E N P D A W L A N Y R T T S D S I
 >LAWC032 41854:42834 reverse MW:37615
 L Q A W L Q K T V L N L G S A D D S M D V L Y I G T I L H Y D S V L A R T L T K S L W Q K K V F K A I L Q W P D R M D L
 W D Q W E V I L S E Q G E K E A W R F W E V H Q E E M L Q G S K V S W P S M R P L Y L L M K R R A E D H A A F D S E Y Q
 N D P L C G D D A P F A Q C I Y Y W S T P S D S W T F F G V C D P S L G K H G A G R D P S A L L V G G F C Q K S M T L H
 V I E A S I R K R H P D R I I E D I I A L H R Q Y K P V L W G V E A V Q F Q E F F A H V L V Q R A E K S G L A L P V K A
 I T H N S D K L L R I E S L Q P H M V Q K H I L L H P S Q Q E L I H Q L R H F P K A D H D D G P D A L E M L W E I A C S
 S V S I K D G F I P V S S S S Y S E Q T M Y D S W R

>LAWC033 42884:43714 reverse MW:31271
 V K L S E K A F S N A I G S L A N T L A R Q I E T T C H E F E I T T N A T K K R I E R V Q Y D F S F F R K T Y F P H Y V
 H R I Q P T Q N R Q P I S S V E Q N K I F Q N T I S S D S S L E S L G I I K Q N V Q V I D K Q L S V V S V D N I P H R L
 D N I C P I S I N S G S T T N H H R Q L F M D H D S V L H R W L D E T L P G I L N N P K G Q W L A I A A P R G E A K S T
 M V S L F F V I W A I I T Y K K H Y I L L I A D T I E Q S V S L L E A I K V E L T S N P R L Q Q D F P E S T G E G S V W
 N E G T I I T C S N V K V Q A L S A G K R M R G L R H G A H R P D F Y S

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>LAWC034 43711:44217 reverse MW:19262
 M S A Y A P E T K E A I R N E Y I T S R K T L A E V A S S F N V A L S T A A R W K G E A K K L S D D W D I L R E H F F L
 V G S G M E N I T R Q M F I E Y V L Q H K K I L E E I Q E D M D I S T S T K V H M L A K L S S S L S K T V E A S R H A L
 P K T D R L A T A L D V M R K L V Q F T Q H R Y P Q H A L Y L L E I L E P F G N I L I T E Y G Q

>LAWC035 44528:45232 reverse MW:26110
 V I I G L I G L F I S G Y E R G K S I T T N K Y K A I V A K L E S E Y A K N D Q A R Y Q A I A E A E Q Q A R I R L Q Q Q
 T E H I R S L M K E L G E V R K T L T K E R N E F K G K I N E V S K R A D S Y C L G L P S E W V S T Y N Q V L G L T S S
 S N N T R G K N A H T R G S A S D T G T A G T T N A R I Q Q N Q L A Y S S S L I Q Q H T S K Q N N Q S N V L E K E S F I
 K Q S S N N T L P A S S S Q T N E S I V T P K D L L S H I Q D Y G L Y C R R I E T Q L H A I G E L L E A Q Q

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>slt 45243:45860 reverse MW:23436
 M L K V C C I I L L L L C G S K E C L G E I P Y A A Q R H R N V L I R V A R E V W G M D A P V A L F A A Q I H T E S L W
 H E N A V S P V G A Q G L A Q F M P E T A A W L P T V A P E T G E P L P F N P A W S L R A L V T Y D L W L W E R V D A I
 Y Q C D Q M A F M L S A Y N G G L G W V Q K D K R M A K D N G L D P N R Y W D C V E R I N A G R R K S A F Q E N R K Y P
 K V I L H T Y Q K K Y E D A G W G R G V E C D Y R

>LAWC037 46792:51615 forward MW:176844
 M K I K N K I I F I S I V I I S M S I M L L I L S K Y S I T K L Y S I D S Y I T K N E Y T K L Y Y F L D K K F F Y D A E
 Y V K K Q A N D N K L L K M Y K G G D D R S I L S K K Y I A L L E T H E S T F E Q D I N S Q V N S V Y M C P L K K N L
 N E T P C S L P T A E I G N K K N D S E E N H P T V E Q I D D I L Q E T E I E Q T N D T L S K A S P A T N P K F A T Q K
 Q Q V V S I L P S K H I S L L K K I I K P S Q H S S K N R P S S V A K A I I G I P G L P L Y A V N L Y G Q R G D A P S G
 G D K K P S G T E G N N S S S D D E E K E E K N H S H Y D S E I N E Q D K H T D K G E K S D L V G A V G G T S D N F T N
 L D G N K S D G S N G F E V L D L P S H N H S E P W Q K L I V V D D E S S H E S H T E N S T Q K N E S D N N A E P K P L
 K D L Y E L G E H Y P P M F N Q P K Q D M S M G I I G P G D D L I R P L I N F C E P Q F Q H Y K Y I H H H H S H H Q H
 R Y H H Q Q Q H H H H P L H H H Y K I G I P L L S P N K N K P G P L M N E L P G R H L Q T K N P S I D N G G N N E Q
 Q K F D P Y K R P S N N S I E D S K K E N S H H S N S S K Q S S L G L S W E K D F G Q S S N R G K N K H L E E Q N D G E
 H S N S S N V S I A P L M S H S S T G Q Q N T S V E N N Q H S N G E Q N P P S V G C E H R G P M S T S N H S S S C F V
 Q L N K S G S D F N N E S N Q P S G P K K E I V Q S I N S S P E S E H T P S N N S S N S S F E K Y L H L C Y S S V G N E
 A S H S S G E S S K N N G N T Q E E H T L M P H N N S P P V S Q S F Y P K N D N E S E N E A S S E Y S S S E F S F E K E
 R N F D H F S S E N G N S L D G F E V V E H G P G N S A E V S P F K P T V Q T G F K G T P S P T R T G L L L P P S S S D
 D S K S L E G S L K S G G D S N N D E S S D W S S S N S F D L T S E N K K I F L V Q T G G H P H R P P K N D T K Q P H
 S E P S E N P N G E D G G I Q Q N E P S Y G E N V L C F T K S S G S N H S H P S H R D H Y N E H E Q N P P D E T E D H S
 A H H Q S Q S S L N D K S K S S S K S R S S S I G S N S G S S I I L L N G S S S G D S L L E Y P G P E D D E G D C L G R
 E C K R K R N S D S N S E S D Y S C S F E R L G N S S A S W I L R N H G G S H S S T K S N S S S S S I I I L E E S S S
 E H Y N N R D S S Y T D S N Q G N N F N S Y E E D T G H Q S E D G G N K S S S S S I Q I L S T S N D S I D W P N S R
 N N S E S E Y D G V N D G I A W P G S A N N S G D E H N S D D G I D W P N P R N N S E P E H D S D D G I A W P G S A N
 N S E D E H N S D D E I D W P N P R N N S E S E H D G S D D G I A W P G S A N N S E N G D D G S K S D S D S H P E G E S

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NNNDTDGGNRSGNDELSDGYSNSSSGSNGENSSSLQYRRPVMLGAMPPARATPRRGNPSGAN
 VRQVLSKTPKNLQATQAKRPP ISSLDSYRNACKALTQA IHA IAQSSQQAMRSLALATTTG
 YPDTTKRFR IFGSASTKKPYPKKHQPYAVTVGVI ANPFSA INLGVAYTYTQHTTKDFHIS
 NTDALFEGSAAGKLQTNHISLITAWNPEGYGLTGFLYAYGTGDATLIRKFAYDNLAFTA
 KGKTRTHTDGGTARIGYRFKVTETIAVTPYGELAAVRARWNNYSENKKGFPANISSTKEL
 VREERLGIETRQIVDNCQIYAWGAYISSKKKNGVIEALLTIDDHTENMTVSKYSRKQS
 MGEIGAAIAIKPTEHFGISFNTERSIRTKSNSKVGLDSQYIGTSIWYAF

>LAWC038 52068:53210 forward MW:43135

LVYKDQHMHLFVTHDIDSGGAARSL SILVQQLVKRHKISITFISPEPEKPTALLYQQL
 GVSLEYLFPWGWLPVSFIGCEPNI EHHQELCSRQRKYLPEVKHIGETADVICFNSYAPTSL
 APYFPGKRKVL IARE I IDTSDYHNYKCKTSMKQYINFAIAIGPQESSQLQSMGIPHSIV
 YNSSSHIPYFEPFSSFPPTFRGMFAQFIPTKGLDILLAYADQAVILKERNVHLHLFGIN
 LNMPSKSTQAI SDFIQSYKLTDFIHLLEGVNNVEQHMAAMHCMIRPDRTGSPWGRDIEA
 MSIGRPTIASGEEDVFVKNRGTGYLFPKPKVILGKILALLSEEPTVLEIMGKNAFEFAK
 DHFNPEINSTHIEHILLEEI

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>LAWC039 53512:55578 reverse MW:77099

MYIFYMYKNKVFLQNKVIHRWDTITNSFTVGI LLCCFFCMYTQQVACAEDPDLYAEPEDLM
 TEELLAQHALAAAAIVQGNQENPEVEQEEFSLLEDLLVALPNLDSTLDDSLASGGHPTS
 SGEDVGGEGASGIFSQEEGATGGSHLLGLLWDDYEKGPSQEWPEHVQTTTNEVTSLQKS
 LESLNNVHQSTVRNRTL SRMSVAAGNIWLTTVISSLQTELSDLMATSRPLRGIFIQKRLV
 EIQEQKVNQEKLEELHEVLEEHPQAQRVIAQAEIFLQHLAKLLEKLEALLEIEPSDSS
 VEQGRPPGSPPPPGGGAI GFSFPIQTRFLLSYNIQGEISSLQGMQCLLSDTSEQVSTILR
 MLVLRSKSFNAPAAYPKKRAKQIYKNKSYLSLQNNKSSLSSTTYRSQPLLKSFYVSTQ
 WDSYTSNLEYTLRAANVGFLVPTDMLNVGLTYQHKNHISKEYYGMQKGSFGAAKAITS
 TDSLAAVVAWNTGAVGFTGYLSGCCGWNMKNTRMVTHAGIKTYSKGSPIKTLHGGLIRL
 GYNFQIVDGMLLTPYVESMFVSSGWSPEYEEITGLFPAKISGNNEKVVEKVMGLSHSWAIT
 DNMHVQTVWVRSIKKHRMKELRSQVGISRQYTLIPKRHNQYIRSEVGLSYENKLETF
 IRLDSLWRFQKKNCKEQQTGFFFQYSV

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>LAWC040 55962:57749 reverse MW:68817

MEQILKFFLYFYILFSKFIYEVNRIYIDLQKIVLIQFFYCKKYTTIFYKTFIIVFICSC
 VYIFIIYKYTFATDSTYSNNTYESQDEILSEMSMQLELSALEYVEQQYIQQQEQLIQQQ
 LLQQMLSLYGQLGDLENQAMSLKVQQQLSEQYRTLLHIPIVEQSAETIEQALSITHQQE
 QLEEQVNSTQSQIEVLQEQLIQTLYQLGMIAPPGGNAGQEEDGFNIQGGGGAGGIATFTH
 GYGYLQDQFRSLQGLQYVLFDTSSHVSHALRDIVSKIQMSSNFSKVNTIYLPQDLRRHKF
 HRNTKVVEKKEKLHYFLYPIFSCNLFTSLEEYNIYLDKQHSTQVGIVVNPINPVTMGFS
 YNYKDLNKNYKIVETDTSINKVNTKSNITKFLATVAWNTDGGGFTGFFSSCYGWGHIKTI
 RSNFNSGTSFKGNSEATIYGALVRLGYNRIVEDILLTPYVEGVMSIVERKPYEEQRGYL
 LSKINNNKEVQLERIGITSFWKCTYNSALQTLWLGFLNTCKINKLTSRSLSYGPFYLCSL
 SVPSVRKTSFWKEIGMSYDIQLSDRTHINISGNHRLEADKQPGNSSIRMHLQYNF

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>LAWC041 60308:62806 reverse MW:92046

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 NSDSSVEQQSEESSSSSEEEEEGNPGSDSRNQFLLWEQETSNVKEQVFPLQEESSSSKEF
 IDKAVQTGEDSSQSSSQSSSSTSSAALGTSEMFFLSESEEVQEVITSSEEQMQQEV
 ISNLKKKVKKLKEKLQQRKRHQQMDKLTCAVRQVQFLQSMVKMAHQIQKVEIEKLE
 AQQVAALFQEALLGQEAQSQSSTSRSSVIISPHEENKSPCSPLSREDEGSDDSMPPLE
 GEEGDIWRDEYVSQEQRSQFFLQQQQQSSSLSEVSQTGVVGSRRGLPTIQEEDDGSSC
 SSI EGYLSSPTPSVLI AEEGSGSDLEESVKSPSEHPSGVSDSTLEEGEVIGEEVQGPLTT
 KRPAPESSSSDSSDESLSPVVKRLKQSSSSPPKSPGSPSSRGDMSSMLIPGYNHESQYGS
 LKGLQCVLFGAVEQMSANLKTLLVKTSLYQAETKDKKTSSLIAKESKKACMSLCGKERSV
 KKVMSDSSNLLSFLNTCHFFGYTDSYLANQENKVSSGKVGLLMNPISNVSIGLTYNRHKN

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HGKEYHGAQLGTSFGSAKANMELDGFSAVVAWNSEEKGLTGYSLGGCHNWGQMKNTRQVMQ
AGKEMRTKGSQPDVQLSGVLGQLGYTFPLSKKVSCVPYIEATHIVVKWNQYREDSGSLPCV
ISGYTEKFQEKTI GLRSTSMKITDKAILQTTWVAGGTVQHTTSNITSMPLASPLLLYKTSVP
GNKKKSFYSECGLTYEMNVTDFCKVDLHGSLRFKKDQKLDAGQMRLHFQYLF

>LAWC042 63033:65108 reverse MW:79870

MSTTMSILKNCILYFLHTSNKIFLYRYIHKKYYIFFLAQLLSMLYTCSSIAKVNEKSVSS
TRITHQEQQNIASEFIIQAQEQYINIKNLLNMNFLYFDELQTSYLESLTTQNSMIDLXLNT
ISREGEDSFNYEEIQRMKVNQQRLTGQLTYILQSITSRMQELQANIVAIEEMQLIVGQQE
GISEIIALNNDHLQRI LNSQQFIYNSIFNEHMLRFRIMLVEKIEQARQQGHPLPPFPNK
EIRMGNSILQEVILKDPKKRESSLRKRCLTDLSSSSDEEAKLSPQQLVQRQIGQSSDY
DASSEASDEESQYPYQSSRSVYLFPRNIQSSKDRTSSLVAIYKKVLQLEPLLGVQYVFHD
MLARFPIELKQLATTITNNLSKLSNHIDEKFFNTLERTSTGRICKDKGVTVIPNIPUSD
KRMQSMGLMMKDCPFCISTRPQTRKRSYVSNTISNITLGLGYDHNKYNSKIHNIGLSSIA
AKVQIKGLLATLSWGKNKCGLTGCVMGAHYWGQMHTIQSMPFNITKKKSI PVRFSGVLAQ
LGYKIPLGSEHSLMPYIGSSYVVGTSNSYKELSPFFYLSDKHKESVYDHYIGLCLYSKI
KDFSSIQFWFEKNYRQQNLI LNISSLLQSKPLYKSYLQGYKKNDIYSETGISFEYTIND
VLTIHARNCFTLHNMKNIFYIQTQCNFLYTF

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>LAWC043 65206:67194 reverse MW:75396

VYTYIHTINSKFFSIKKNYFRLITII FILLFLCYKNSYSEDIGKRDTYDEFNWCMKQLQ
SISTSLNNLIQYMYEAHIRVDTSDAILRMTESYIETFTIVQNDIFNMLINESSMVRRLQ
TATNDIKNGIDVSKHIHSLNNLLSNTYKYEVIKINQIKQNQQKYIHDRHNVITNLLALEES
VTEKLQSTQQLILSMVMTIPQYVRIPYLLEAIQQRLSNAQHQPQLEAALDDLKSKISSC
AGGHIKNVELVQELQSNLEKALMLLLESENGLRSVILKGDQGPKPPPPSGGASASMANF
SLGEGSAAFVSGYDILGNVSSLQELQCFGNAITQVSSILKMWSLRNTFCIHETKCNIPH
FFHSDIFRKKEKKISDLSLPQLSLLSHLSAPYHMFSSVEGYKKNLEYKPHAIQAGVIVFP
VTGLQLGVSDFLENRMLKVRHNSFGSAKAKTTTNI LSLAASWNAEQTGLMGQAIGCYGW
GYMPNTRYVVPVGEKISVNSKPDIELNGGLFQLGYNIIQISSPIRLTPYVEGMLVTLGWKN
YKEHYGVSSNISNYKEALWERSVGLRGYWNINPQSNIQAWISKIFGRSNTTKLKATSL
FSIPVYKMTLPVLEKRFIKNELGMSYSMKLSDKMCMSLNSIFNYTNTLHTQNIQCSFQY
VY

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>LAWC044 67446:68417 reverse MW:36371

MLSLKTMAISLQKQYARELNTIVTSPKLRFCCKTAEQPVSSSQPSLDVFI PFQGFSSTD
KYSSNGEDKLCSAQIGFVMCPTTEKFTMGVGYDYVHEIPRKYKEDSTLVTKRSTIHFSS
IFSWNTNGVGFTHITGCCGWDINNTYFIHGRGKASSKGMPRINLSGGLLQIGYNFPI
SNVMTITPYIEGMLTTVAWNAYHESIGPVRCKVSDYRETSCEKSVGLRHSYTPSSKTQLQ
LWIIAGVLGQYNIKGLHSDTLFSDYSYHTTVPLKRKNYEHAELGINYEYVYVSDLCTIGLYS
IIIFSHIQKPTDKTMRVSLQYMY

>LAWC045 68531:69295 reverse MW:28893

MKYQKFLKMKNNLLESSNQQAQEILSIQESLSARMDDDLKGLGETSRQCTETLRRLEEQT
EIQGIRSTILSARQMKPKDLKILQSAYKTIKLVYSQKDRARIHRQILLQLQRVNFHQF
QVRDSEHLAVDQLELIGSTLERVEEETLNFSIQPPQPYTNSVLQQQVTLINQKSVAVWNG
IEKRKRLRSCLQALYTVVENKASQVEEKNKQLEEIVAECYLIVTGNSSHQTSRPPSPPPS
SPGGGLAHLKGLL

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>LAWC046 70371:72761 reverse MW:89664

MYKFIIFYIICIIYETIAIYLLLSFISYFNRVFLKKEVKILDTTKVKKYARIGTFIFLYV
IISSQVSLSHNARIGYEDKNSDRKSKLILHNKLQVNEFDELRSDIVVTMTPLNIYTSTQE
NKITTI EANLLRLEVIQRTQPVLVDVDESSLRDIYLLLDEAEGCNREVERCLKIWETASE
HTKVLHRQTRERLSNAVIECQPLPTNNEGKVVSVPPEIVAS IENKVLHTANQQRRTARKM
EVAISRHNKKNIFLGNKQKLLRYRIEVLKARVEGNPDPIPIILTPQVLELPLLPDPPSP
PPLPQQTFQFPDFGDPLPEPLSPLGDDPPQNVLNQEPQPGPSSEIVSTLQPSPSVEDLSS

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SGVTLEECQEELSSSDEEILDDECLTSGDESSTSDGESQRSSPPTKRRKLHTPPPSDRGS
 PPGSSSMLMPYYTYGQVSSLQGLQSTLMSLEDQLATQLRLSIRSINVLGVCCCKDDNQLQ
 PHTFQSKKQTKIKGGIGRSHSTDNEIRPTSVNNSLFFSQQWHVIASMDSRISNLETTISS
 RQAGVFTTPIDGLCLSLLYSNNKKKTQNFYGVVLDSDVDSAKAQIETDNILATVTWNKEH
 QGFSGHLAGCYGWGITNIRTIHFFDNESVSKGISSIHMSGGF IQLGYNVLLGKNYFLIP
 YVEYMLAVAWDPYEEHTGLIPCKVSGHKVHVCEKSIGLRNQWKITDNSQLQFWGSHIFT
 NHNTGEIASKPLSLSDYRNKISIPGYKKQYIHREAGISYESNVMDTLSELYSKLRVTKS
 IKDVTSYTSFTIRYVY

>LAWC047 73376:75901 reverse MW:96832

MIYIYITICYSYTLTVLFLFQKLLKTYIFVAGVIFLCTAKHDHAIAMDRLSGIPQRD
 QVETDSSSSEGEQGGATGIDMGFYNTLDSIEFAAEVTGRNHSEECNYRYENRRYRKKK
 EREEEIQEKKRCEMIEKQCREVTHYQNVKQKVESFIAYPSLVAEQKCWMDTYKEEALDR
 LNNVSQERHEKERSIEEKQQILRSQEIINQLIAEGQSEFFNIFEQSESRLRPVFRTR
 FQLRVRREELNAYFNRMDFLYGSDAFLQEIIDEEEEAECLEEREERVALDALEQLRVELE
 HNLVQQHQEMQRRIPDNLNHRREELILQELTWSYTEVLSNAFIAYDTHCQTLQAQSRPP
 FFPYLEEAMRQKRKAEIVASVDMALLSLDDSREDESSERGEIHDVSWFGGNALLDETL
 GEVEEIEHSESSKSDVSQKSTACTEGESEASSTQQSEQSISLEQRYLLQGAPRQPSKG
 GASDSSLSFIPGFSFGGQISSLQSMQYILCDVSEKVESTELKSLVQHARQQYDKDNECCL
 TNLISRKRYSSVPQYDVTQHTYNISSPYRVFGGVDSSYSKNLEHKIRSSQAGVMFTPHNGY
 TVKLLYDRHKKDVQEHSGQLGTAIGSVKSYIDTDGLSTIFSWYPCGSGFTGHLAGYYGW
 GQLKNTRFFTHADNQCASKGSTDIDLNGGMIQIGYIFLLSKKLAIPYIESILSRVGHWS
 YKETIGVLPCTISSHKEVCLEKSI GLFCQWNI SASTQLQCWGIRTSGTSNVDKVTSPQTR
 GPNTYTI VVPNYKKKYMRTTELGLSYSSKLTDFFTIVLNSNAQFNSNKRHIQNATVHLRYT
 Y

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>LAWC048 77795:79972 reverse MW:80828

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 RSPEIYRPFTLYTKKNAQDWVQEKSRERNIKEAAEIERNCRLVLEKRGYVEEGVKKETVA
 KVSLEECEFSVDVIDDSEDESESEEQPISSRVTQIDNRYLTRIHHPPLRDDSRLPWN
 DSTPSSTTGQKEEETTATTSEAGSHSLPDNVLDQSGEGSSQATASDQEVEVTHQESPEV
 GPQEDSQQQQQQQVQTPGNQAQTSQSGETQPQAEGGSDHDYSTE GARPKLRGKDTSRG
 GPGGKATFIPGYSLEGHISSLYGMQAILLDVSEQVAFTLKGALQVQNNAMVKDDVLQLN
 DSSASIKKKKQIGMQALQQESAFQELMPYQVIGFTDTKDTNLECKLGSSQVGLLVTPKDG
 LSVGLAYNRYKDTGKEYQGISFSAGSGSAKSKAELDGLSMLVAVNPRGQFTGHVVGYYG
 WGEKKNERSFTHDGAQVTSKGTPIGLSGLIQLGYTIPITKQVSFTPYVECMVSNVTWN
 GYKENSGLPCEVSSNREKVFESIGLRSRWDVTERSCIQSWVAGVSSYRSTNKVHVKPL
 IAAYSKYEASIPSHGRQSTKAELGMSYKSKVTRNVEIGLQGAQLDKSNKRPQHVN
 FQYMF

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>LAWC049 79999:80688 reverse MW:27645

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 QDKPNPSKKS IKKSQQESSPSSDEEKLQGATGSIKDRAFVRPKSWFDKIKDRDFANFLQS
 LDMGGELEEEELKRREEEAIREAWLEREEYRREQVRAEVQEEERLREGERRLREERRN
 DQVRQLKLVRRWVNGHNNRKAALSGEKMSPKQAFMEKKRMKILINN

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>LAWC050 81658:83723 reverse MW:74828

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 AIGSIVGSSVAVGGVAGASAGCVLGAAGVSTIGAAYGCMGASTARDSECSARAENNI
 AAVVTQQPKPLFKEYVDQSRMNGRSVTSSTSSLETVSSLKSTCSSSSSSISSDTSSNSSF
 QKYLKLCFVSSSSSSSEEEIEEEEEVWIPRGECLLSESECHGKSESHNPQGSQKGTAGN
 KQDSSGNSQSDQKTKGSPSGGSDVFLVPERETCFFIPGYSHEGQVNSLLGLQGVLLGS

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AEKVIITLRLALQHTNKHTTGQSLEIDSRPRSQIASSDISSYVQLQNPCSLRYFSIVA
DNYESNLECKSRSAQLGLTMNPTPYVHVGLMYHRQNKYFSSKEVQLDSACGIAKAKTKV
EGLAGIVTLNPDKAGFTGQFASYYGWGNTKNHRSIGYIGRELEAKGRSKIHLSGGLVQLG
YNLPLANNWFLTPYIENIFSVVTWNGYKEVPSPFACISKNKEQLWQNSIGMRAIGKIGN
NSQLQMWTAYSTGYHKIAELTSMFLCAPMKKYQAVVPGIDRKSQAQVEVGIHQAKITTTL
ISYLNVIKIGKKKLDNSHLTSLAYHY

>LAWC051 84342:86378 reverse MW:75687

MLLKRYRIIKIYCIIIYIKYIYLLNKYKKYSLIYKNTYQYNIYYNKKYLTLYIYCLF
LFIFLRDIHAMNRENEEFNLYHRTLGNTEQHSEEETPCTVVDIKGVSISADVYEDYIKKH
SLVVIDEANKSINDYCPCKTCCKNKQTYAVAAAQGGCCGAISIAVGYGVGKLIELCTPT
VAPTEMIFTVPTPLATAMTSGHTLTTVASSIEGITQTTAITMGCCGLTCCLLGSIFGYLT
NKVEEKNERIHTAQRLEYMVLNRQFLSDEDEGYELVDFSHRQQVVTNQPQRINSPVNNN
SEQGEGSSRRSSEGTVYEEIFFLPGYNRGGQISSLLSMQYILAGPSAQVSSTLKMALKA
HRIPSDAAASLQLGKKSQKLQGNRVLKADLQFQNNPQGISICRMFAFTDKYECNLEKKI
RSGRAGLVAELFPGMTAGLAYTRHNEGRKSFEGIQLGTGSGSVTSKTESEALSAVIALNS
EGGGVTGHIASYHGWGKMKTSRSFIHAGSKISAKGKPNIYLNGLIQVGYNISLSKTTIL
TPYIEGMMSMVNWDAYTERSGLLPCKISRSEYVAERSVGLCHHWKPTSGFQIQSWIACI
SGERRTDGVSCRPLVPIKKEYESI SVQERKYVHIEFGASYSMSVDTLQLGIDGMIHLD
KVHKIKEKSMSLSMLYLH

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>LAWC052 86569:88623 reverse MW:74536

MNNIISLCNIIYIYVTISCIIVCYLLASKLHKKYICYDKQQKRAYYKVLTVGFSSFLFF
SVLAEPFAMNNGEGGEQIPLSEISLSGGQSLEGGATGGDGVTSVSPESIPDALYCMFLDE
HGNQDIVTTNSSSIQSNCNRNICSIGMTRCLITNLIAGACGGLGVGLGGVIAEFTDPSMM
LAATSGGGLACYFFSMLAAYYYGGIIVSKEKRENLEAIDRRMQSLIEESISRGRRRSILV
GHQQQPVTTPQPSVAAGPSAHLRGVIVTEQPVAVGASASVGASSTRGSILRSSQRGDQGTE
GLQNRSRWGEQDTPDIYEDVWTYAVELIPGYSYEGQVGSLLGMQCVLTGVSIVQPQKLRR
LALKAYEKIPQMYLSLQGNKVSSPSIANYGKLLKATKNFANQKQKHIPYYVFAFTDDYKA
NLERKVRSGQAGIIAELCNGVHFGLTYSRHNDEKKEYTGMQLGKGRGSVKAKSEIESIAA
VVTFNADRPGITGHFASCYGWGTVKNKRFFTHAGRETSSSGSPAISIAAGGLVQIGYNLYI
SKSCSVTPYVEGVLSIAKWKPYNEKRGDLPCKLSESSSEIFEKSIGLRSDWRVSESSILQ
TWISGISGSQTSSNVSLQPLVAPMKRYEVSVPMRNKNYLRAECGATYVSKITDSLFTGAT
MLFSFVKRQKLHNQQINTYVQYVF

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>LAWC053 89091:91199 reverse MW:76285

VIIYIYIKCIFYFFIRKSQQRNTGYNKQLRNNFYKKVFTGVFSFFFFSVLGEPPFAMNNGE
NDGRQHSLLRRNSLGQPYDSECSGNGSGGEEPTSDPQSEALFAAFLNAHGGDTLADVSSSF
SCPCFGPTKRCKSVFEKWCCMFTCISSSIGSLVGGGVGCCIELVSKLGNIAPTAIPTTI
TTTGFSVSAAPIAYGLAGICVCGPLGICGYCTRQGNLDRINRMVRLRVLSAIRSNIR
EEQGPYVAFNVRQSVTTPRQPRVGSSTGSPVVTSPPRGSMSSVGGSYTPVEQQRGEE
GSSSEGSDEESGDEHIYETIGGGTGGGGGDEEPIYEEIGFYTTNLIPGYSYEGQVSSLLG
MQCVLTGVSIVQPQKLRRLLALKAYEKIPEMYLSTRGNKASSSSVPSYGQLLKVVKDPAKQ
KQSHIPYHVFAFTDDYKANLECKVRSSQTGVAELCTGVHFGLIYSRHNDEKKEYTGMQL
DVGRGSVKAKSEIESIAAVVTFNADRPGITGHFASCYGWGTVKNKRFFTHAGRETSSSGS
PAISITGGLVQIGYNLYISKSCLVTPYVEGVLSVATCEPYNEKRGVLPCKLSESNESIFG
KSIGLRSNWKLSEDTVLQMWISGISGTQTSSNISLQPLVAPMKRYEVSVPMRNENYL RTE
CGATYILKITDSLSTGATMLCSFTKEQKLYNQQLSACIQYVY

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>LAWC054 91646:93478 reverse MW:68008

MYNSYIIFIFIFCSTYEVVAMHNSEKGLSNTPSLSISSFLKRNWEKAKVTGGVVGSSV
GITTLTTGFTLSAIGAVSRGLGTSSRVACLSLGLATAGSCVLGILSKKEELQIKLERQK
EKQRGDQAVNLQNVKMIQLLDDIEKRKDEDPNRDREQIERIQLVAAELRNASFFIRESG
FDLGIWDENEDWYIQGGVYKMVPPPGKFWDPYEYDPVFEEESATSQEEYTGKYTSEVV

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PQLKPVRIVSCPASIPGYSEASHMSSLIGIQQALFSTSEQISTMLKLLGLKAQENVCTPE
TQLEGSFYSKIQKFQGPVKHIEETQIKTLGLSIFNIFANIDSYKTNLEHKVRSGQAGVL
IDVISGLSCGLTYDCHKGDTREYKGI LLEKGSGEVKTCTDTEALSAVIVANTNNAGFTGQ
LISSYGWGVKNIRSFTHANREVNTKGLPNIRFAGELIQVGVNVLVSKHVITSYVETVF
SLVKWVPYKEVSGPLPCKLSENKEQVIEKSIGLRSHWQATSMSQIQIWIAGVSGYIETNS
IKCEPIQKHASRYKVSVPKNESSYKRTELGISYTANLTNNLEFGINSVIRFENSKKFGGQ
QMILSLRYVY

>LAWC055 94015:95874 reverse MW:69028

MNTILFNLYNFYIKIVHSIKCMLRAYNSHPLLFLQIMFQVIQKIKGNRYKIAVNAIIPF
CIIFFCVTEAVGMNNNEHSPSPVNERTPLLQSSHSVQRVGVNPRGEGCCARMKRRRCGRCS
EGMCSCAIIAESAICGAASGVTSIATKKLESELYWALKITCTQLPSPTYAGLVGCGAG
CTLAAAVSATSIGCMKCYQTTCNHRTENTDGEQSSDSENETSSQIALRVITTPSSIG
ISNPAVITRQPDSRDASSYYSGLSEFNPKSHIRSLGMSALLDISEQTASALRQVVL
KTHEHMLMSEMMYQQEGYVYSGQKQFQYPSVAKVTDLSLFLKRYVHHFVTFDSYETNFEH
RLGSGQAGIVVDMTSGVYLGLVYRRHNNHGEMYSGIPNNSWTEMIKVRTNTESLSTGLAF
NIGRTGITGHLVSCYGWGKAKNIRSFMHGTMEVCSKSPDIRIAGGLVQLGYNLSVSKQV
RFTPYIETTCSVVQCGPYKESLSLFSCELTKNKEQVIEKSIGICSYWKPSDMLQVQLWIA
AVSGYRDVKRLSCNIVNSRLKQESVPLKQTRYKKTDVGLSYLINITPRFCLEMNGMMSF
ENIKKSKEKQLKLFITYNY

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>LAWC056 96167:97960 reverse MW:66046

MIKEYFIYTYKIIYIYNMLKEGIERLMGNYRIFKQQEFYKNCIKNILRKSVAVTILPF
FLLVTSVNAFAMPGFSRNGFNPLTNSDSESSTPSISSSMFRNMCRRGNPCPYLTVGCI
IGGVLGTVAGVLFNSMFTFPSSSERVAVVTGTIGGCFVGFCAGLGIYYCSKRSSCVHEN
PTPEDGIPFYITLGDNTREANLCECSGSECEPLLAPSQRPFQSHQTDSHRSGNRTSSCF
LPGYNRDQQTSSLLGMQCILASSEHVLMLNKALTLKAHEYSQESMGNMEDNYFPLQKKW
LSGPSRGIISTFKNYKPSFISYRVFASMDNYQSNLEFKVRSGSAGVVTELFPGISVGLAY
NRHTDTRKEYGGIQLNTGSGIVQSRSKTEALSVALNPETKGFTHIASYWGKMQNN
RSVTHGYSETTSKGPDMSLTGLVGQVGYNIPIAKSVTLTPYVEYMYTMVKWDAYQELSG
ILPCEISGNKEQIIEKSIGLRSHWEVTSQSGLQTVVAGISGSHKKSGLHSRPLATSMPSY
KAAVPVKKQYTRTEVGLSYVNIIDMLEIGCNGILRFKQAKKIDSQYLALQAQYRY

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>LAWC057 99530:101632 reverse MW:80729

LKKLMQQTICIQVMKVFFFLYILLVDSVEISLAMHKQVGLDLRFRSSFSSNQCCWLSI
PNMYSILRNSVEKDLQIWEERQCCANMKWLRSQINFFHKEILILESQITYWREQQRYW
NSSSGRAWRNSFLFWQDRAHGDYKRRFYKERCTFSEDCRKNWIASGFCWHCEIDAKA
EVKKLQKSIEQTQKKI VMLESCRQQLNNAKGYLERKKTWKQRFCLWTAADQRALGMFQ
QQSDDEDDLTHVDSSSDEDSNSSSDEYESCDEEFFDAVEDLSTAGLQDESEAPARGIVLS
TQGNKEGAKDSTTDGGQSSSEVKYSSLKLMGQSACKVKADFI PGYNLGGHISLIGMQGI
LLDISDQVSIILKTLPLKAYEFSDEIDNFSLNRKNALVFLTGRKRLHRLYPTFSKKEKV
HFPLYRTFFFTVEGYKTNLEYKTRLGQAGI I IDSCSDMCI GLSYHQAEMKKYGEVRLGS
GIGSSKAKTELEAISAMMVWNPKNKGITGHIVSFYGWGSIKNTRSFTHMDGELHVKNPE
AYLMGGLLQVGYTIFQSNLTSVTPYIELMASTVGWNAFKEFSGLLPCEVSRNTERKVEKR
IGIRSHWKTNTSQLQWMSAVLGTQHTNSISSKPIIALTDKYKASVPGYKRYTRFECG
FVYSMKLSERLEMNLSGLTHIMNTKRYTEQINLQWTFY

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>LAWC058 102038:105190 reverse MW:112152

MLTIFIYFILIFLFFCRRYTHMYMYETCYIKSLTWDMYGFYSWLQYSIKVFSRNKVFII
FSSFLCVYLTAGEAFSISIKRGNPSPPPSLVDLSLGDSDLGSDSSSSGSLGSGFQ
DLSSSESSFDDGHNPSPPPPSLVDLSLGDSDLGSDSSSSGSLGSGFQDLSSSESSFDDGHN
PSPPPPSLVDLSLGDSDLGSDSSSSGSLGSGFQDLSSSESSFDDGHNPSPPPPSLVDLSL
GSDSDLGSDSSSSGSLGSGFQDLSSSESSFDDGHNPSPPPPSLVDLSLGDSDLGSDSSSS
GSLGSGFQDLSSSESSFDDGHNPSPPPPSLVDLSLGDSDLGSDSSSSGSLGSGFQDLSSSE

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SSFDDGHNPSPPPPSLVDLSLGDSDLGSDSSSSGSLGSGFQDLSSSESSFDDGHNPSPPP
 PSLVDLSLGDSDLGSDSSSSGSLGSGFQDLSSSESSFDDGHNPSPPPPSLVDLSLGDSD
 LGSDLSLGDSDQYLGSDSPSSDLSDGSDQYLGSDSPYSSDSGEEDNSSFSYTHDGI SRRPC
 ILSEFDGVNSSTSSIDTVVVTQPKGFSENHACLDTVKAVCVGATAGGAI GCGIDWIC SCL
 GISSNVGLYSACGTCGCSVGAGVGCVICCVGHYWKELYKKDRLLCLASPNSVLGKCDSDHTD
 SRSSEGSSEKNHSTITQTQQCSNTEKNKLLGVDKTTAFLLPGYNYKQVCSLFGIQHML
 LDTSKRISTTVKMLGMKACSSNITANEHTRFGSHFRRLASKKSKHIFSGITNNIPYRITT
 SLDSYCSNMEYKAASGQMGVLFDLWPTLTAGFIYGRHNDRVQKTNGMQGDLKSSSVSTRK
 KLDSLSAVVAWNTKKNFIGHIVTYYGWGTVTNIRSVPHADCMVKTGTSEIQSIAGLIQ
 LGYNLQLSSEIVCIPYVEYMFSSIRCAGYQEYTGILPSKFTRNNEQTQEKSIGLRSQYKV
 SQNSQLQGWISYVSGQYHFAEFKSTLLGIPNIRYSVSI PSYKKEYSGTEIGMIHESKLT S
 RCTIGAHMIIHLYHNSVYNMYTGAQIRYHY

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>LAWC059 105648:107375 reverse MW:64199

MLFKLFWITISNVKKIIQCFSFILIYICFCVEDVFAMYNNEECGVSNAQSVLENPAVAHPN
 TSPEFFIITEDFEKTEEEENTGCCPTISSEMYSECPNPFCHPLEFYGTMRSSFSEGCHA
 QCSSFETVLTSGCIVFQWVGNLISSLFSEEDSSTGECQREKSCYEEGNFVSTPVI TPNP
 LGQQGSSSRCSGSKIFSSSSGPIKESVFISSGYNYQQRNALASMRHVLLDVSTQLSMT
 LRDVLVKGQYERLNTGEAYALTYNRGARLTRKPKVKMKYFSTSGSSMRHFNVFQALKLYQ
 ANGSIDSQKYSIEDKISPEQVGCIVDITSNVSLGIVYGHQKGVKEYKGNVSSALGILGT
 TLDVDSFSTMVMFDLKVGMGSLSTCYGWGKAKNIRRF SRGGKEVHTKGSSSISSVGG L
 IHIGYPIDIRHGVSMPYIEYMVSMVQRGGYQEKLGLLPCSFTDDMKI IHEKRIGLCSNW
 KPTPLTCLQIWIAGTSGMQKTKGVYSTLSVIPNQYMYTVSFPVQKEQYLQAEFGLSYQTA
 LTETAHFYVNGTSYIKKVQKNYGGQHVFQRLRYTF

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>LAWC060 108008:109867 reverse MW:67786

MKNYSLTMWNIYKIIYIYTVVVISKLYFYFKSNYQYGRFLYFPIQLLSTVKRFLIVATL
 VCFCILFYSNESFSMNGSEERQPLLSSTSTSSSTSSSSSGANGYYSYPSYSQPQSTY
 PEVSAAEAGTACGCGSGAIGYSMLAVMNPMSSSLCPAGWVLSVGGACVAGVSLACYL
 CGYNRWMGWEDHSTNSIRTTGGEGSTTMYGSTGTHQHREPESPDGSPSVSFPVTVHQPA
 SPGSPVVSQPGRGRSSSYLTAEASLLGQMSSLHSMQCLLSNGSEQVLTTLRMLLLKNYS
 DSSKSQDFSFCKNYINKDKGVVSVKRKRGSLSSTIDVPSFLPYRFFSSIKPQDIHCRK
 VCSGQIGVLLDFSPGLTCGFAYDSNKKESKEYKGIQLGSTIGSVKSKMETEGLSAIVALN
 PANAGVTGHLVSSYNWGVKNTRKIIHKGQEIITKGSPKVNLLGGLVQLGYNFFLLNQVT
 LVPYVECMFSSVSWSSYKEQYSPGACKFGKNKEQILEKSI GLRSDIGVSMNSSMQLWVAG
 ISGYSKTNSLISSSYLSSYRHNLSYAKKYQYIRTELGVSYDGTFSNDVSVLSGLFRL
 NKWSKVDNQNI VAQVQYTY

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>LAWC061 110667:111209 reverse MW:21654

LTTIPLAYLSYIHNPSTNIATSLCSLQERQAQLLIFKQDITTIKKCLETVTVGNPLTI
 ELPGFPPEEKNEDEERQRRIEKEQIREEINRREEESKEMEDKNKEYQENNI RIEQPMVEV
 DNVQKEHRQHEGEYLHIRRQNYLRLCNVLDLEYLIHQVESKQRQKTLLYDIHDELQYSILQ

>LAWC062 112870:114228 reverse MW:50924

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VRLEMAKKEESPLALQKKSTKNSQISASSLHLSQVELEALRSYNTILAVQYESCQEHTT
 ELPPLEAVIRNWKASGCPTLADIGRTPVEAPQSMLSVAAEQRETTKAVATIVKKTPE
 QGNLLVWCGYPTISRVSPFFPMNNKEKGRDIIVKNLKASIQDKSKIVESSCYLINELV
 SSGPWGEI IYTGPKLSIEEEDALMALLAIEMGKLDRTPTRKTQRQNDDDMEQLVDDLPP
 AKLSPEQTATLIGNSKNTLPLSFTYRGPVLPILRLMGHKRPGANHYEKLITSLKSLALGS
 MQLFVREKGEDLQYDLSQIISNLRLRPKDREISVTVNPFFYQMYLANSLTWINITKRFQI
 RGSIAKAMYRFCQSHRDNPVFRGNIMTLALALNMDPHVPLKETRRQIREAIAELVEKKVL
 ESTSLLSRTNLVLLNRTAEALPSKKRISSQHK

>parA 114721:115545 forward MW:29853

MLAKVIAFANHKGVGKTASAVNVAYCLTKRKRRLVVDLQVGNASLTLGTISPYEQPR

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TVANLFTGLSFSTAAVSSKYENLDIIPANLNVYATVGTLSNSIKRFFGFRQALDEAALKE
YDYIILDCPPTIEGTLTNALVITDYVIIPVGVEDTYALSGVSHLIKVAETLRADTESNL
AIMGVLLTMFDGRNNAAKTIRSVAIIGTFGEDMVFQTTIPRNTTLNKAVMSNRAVCDYDSS
CSSCRSYRELTQIEVRLKNPHALITDTHPLESE

>LAWC064 115557:117053 forward MW:55695

MAKNQLDDFAATLTAQLKDAEQMRNMRTPPEHPQNEQIDSTTTKKNRSIPKHKHNTIQL
VTDTKQLTKKVSNNKEQTQOTSQKQPAKPKDGQIAPTQKEPSINVSISISPEEQSTNSID
QTVLYSHQLSSIDTTDSSQLLQSKNNQKYSNNLLADPESVDIPSTKLSTTVIDQSSDSH
QOTLVDNNNLMAANDSPLSVLPSESLQYTQPSKSMFETDILQENISHQDIPSPEDNHIN
TSFIGTPTTSTQPLIDNDSLKQMTACDTKKQSQSIIPWGHFSSDALSTVQINTATIGGAR
QIVLDALTQLKQEFSHVTINLKRLATVLGLSYGTVRNTISRLVREGVIYTTQIRTGDAHG
VYIEFADGSSLLPSVTVTQPTYAQHIPSHPSTSQQTSTIHTNPIDVDSDMLSMLWPYA
FAAGLKRILHEHLRKAQFIQQFDDAHVACYLRYLNWKIEKEAQDENQATAILQQWIQTMQ
QQGKYPRPTDYDEPEGLE

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>LAWC065 117559:120978 reverse MW:120688

MKNLISQYIMNLSDTFQQLIRNICIYKAQTFNTILHTVYDKKIHKIFRIPKHIKLTKTLL
QQTIAIILLLPFFCLFCGSSSELLAMNNGNGKSPKPLCLKLGPDGGTHHSGGSSGGSSPITS
QPQSSGFGSSSSPSVSSGSSSVEVTRGLSSPQECCPPCDKNSLDACLKGACIGAGLIGAG
MIPFGAMTSCACPATGSVGAGTCLGGSVAGAALGTACSLCKTHGCQQDSPYVTCDKDMVK
VTGLGISAGLLGAGVGLVTSAAATGAPCPDMAAACGIGAGIGAAIGGPLSSCLYATSAMC
CQSSSRITSNISEHQSSRLAQHHLTSSTSHLPITTQPQSFSGQATDPHMTNEDIDRGTCP
SPCCTMTDYTVRVCTYPDPCDFHAGWATFGSCLGTLFGSLGAYLLGADVSTTASFVSSGS
LCTCGLLGMGYCKKYGNQHLREDGHTTREINDTEECKTCKSICEKMALGAAVGTGAGC
IAGTCAGGIMSHWDLKSMIESAAAGAGSGCCTGSLCGFLWWFLGELERDGFDCCLKKHG
IKSKKEGQPIEQPQRQPVSSEFSTEDKQCIKEVCCGATSSGLCNCCIGGASSAMAHGC
GSSAAVTAITSGATGCATGAACALLTHCLKHHKPKKWKIQQAMHSLVTCVAAPVTSQPQ
PREENDNDDERPGPSSGGHGLGFGPEDYPLLSANQQNNSDTSDDDDNDDKRQQNSGSSSQ
HDGGSNDGSPSDEQSKKSKGKGGKGGKGGKQNGEQQQPTALTRGPLGGMGRHGYKCY
DTFIPGYNRAGQISSLQSMQSIILGSSSEQVLYSLRLLALKAYTNTSYEDDSLQLMTRFTS
KRHILSGPHQKNTQNTLSAFKSYAMFGIDNYTANLERKCRGGRIGIITNLMPNVRLGL
AYNRNKEVAKEHIGMRFGTASGSVKAQTTTDSL SAVISWNTDKFGFTGHLASCYGWGKVK
TNRYFTHGDSEVGAKGKPDISLGGGLFQLGYNLPITKRFSFTPIEYMISTVSWSSYSEK
TGPLPCKISQNKEYVMEQSIGLRNQWKVTTNSQLQSWVSAISGKRTLEGIHKLPIAQID
RYKASIPTYKKRYVRTELGLSYEANIIDTINIGINTSVRLEKTKRFEGQQINTYIQYTY

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>LAWC066 121983:123122 forward MW:42190

MNRTLVSMLAEVPVDSIEDEQGLIHVFPLGSFTARDGPPGTLGVPATSWQLTSLGAQEV
RRWETRKTPLVIDYEHQTYETKNGQPAPAAGWITRLLRENGMFAGVEWTSRAKEYIRA
GEYKISPTFLFDATTGEVLELCSAALTNPALDGMPEVKAKHTTILPLKPKYSHTGSN
PLQEKGGALHLAMEFCEKGETDLFKENVSSLEASATAFLEEIKKTQGGQKRSKKNRSVST
KSNIQEASSDRFSELMGLYHEAQKEVVSLEKERIKEYECKEESLKLEQCIKALSDGRLQ
HSCEAWARACAVSYPEVLRALFLEASTSMAALVSMQTRQGSHISQSGYGQSALLSTEEHV
RSQLGMSVETFIKHKKECQ

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>LAWC067 123218:124081 forward MW:31558

LAATHVPSSSASNTYGLGQFPKLEWIGNRVFQDIAEHEYTVANKLYEATVSIPLTAIE
DDELGVYKPLYLEMGYAAAVHPDELVFKLLAEGHTTKCSDGHNFFDTAHVIYENEDGSGA
ETTVSNLSLPTVSGVKNVVVVDPVAPWFLLDVSRPLRPLLFQERSLPELQVITNPENEH
VFTTDSIPFGVRYRCNAGYGFQMAVRSTEPLNAESFERALMIRSFTADGGRPLGLGRG
GKEGLVLLVPSVHLSSARKVIVAERLDNGSSNIWYDSATIIDCPWLG

>LAWC068 124084:124533 forward MW:16758

MYVQYKDLQTFGEAEMLALCGDEDGNIDMPRLTEVINQASSEADSYLGKRYIVPVEPVP

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PVLRFIVGDMVRYRLTSAEALETSLIVQRYQQAIAWLIKVSQGEIVLPLPTVNSEEQMVV
IDAGTRLWKVTGARYKKAQETPLPARLTI

>LAWC069 124556:125200 forward MW:23953

MLSQIEDAMITCITKAQLPYLRFVGSYGGEFDGEVPHVVRSLPGIWLAFKGESAPVAVDV
THERYKVEARLLLLVAARGIRNEADSRHSTKIHVGTYQMLADMRSIFAFRDLGINSVECL
VPGETTSLFNGKTKQQGLSVFAQEWIVPYGFYVREPGKRQLDEPYSGYLMPEGTMIGNTQ
VPYLPPLQRLKLCYYIGGEEEEACDQALLEKGRTL

>LAWC070 125278:126693 forward MW:49810

MASPNIQFDAIPVNI RKP GK YFEFNTRLAVRTLPGNPQSLLIIAQQTGTEPCEPRRIFDA
DTAGLLFGFGSQIHSMVLAAMHANPYLDLTVLPLADPESGLAATAVVTSPGEAQSAGVVS
ITIAGKTVSMALAKDDTPSDCAVTLAQAVNLVEELPVVASVTESGVLTLTAKNKGTCGNG
ITVSVQSSVPGMKCTLTPMSGGQGEPDFQAALAKVFSGDYTIYCVGTTQSEHLKALSDHL
ASMGAPELRGAI G VYAFAGTLEDAITLAESTNSGRLTGAVLPGTPSLSYEVAASYAATI
ASEEDPARPLNGLTLKGIIPSPISQRLSRTQQEVALKSGVTPLEVGTGEVVSIVRAISTY
TKNSEGSPDSALLDITIRTLDYLRKAIRERMSLRFPREKLSTRTLPKVRSEVLDVLRKM
EELEILEEVASNAEGVIVERDIEDPNRLNARIPADVINGLHIFAGRIDLIL

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>LAWC071 126956:127345 forward MW:13921

MALQQYVGAII LEVDGQVECTAFSPTITTGRI PVRTMNRNGKIAGYASGVM EYELKVEV
PVVSDNQIRWDGVTGAKLVIYPAKDV TNAAGQGR IAYTGCVVTSVGEAYKVEGEARTIS
LFATDMIEE

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>LAWC072 127347:127670 forward MW:11804

MEISGQLEIGYQDDQGC FHKFTF MRLATLEDIEKAI EAAGIGASTARIRRYEWARTLTQL
GSFKDEAITPEMLATLASTEFGILEDAQETLRGKLKAVSNASKNTEC

>LAWC073 127923:128792 forward MW:33051

MKNTNALDITLMDENQKEDAKLHPGSALDI ERVVAKQYFPLPIEDYSDVPFERIENTQP
SDFGDATIH NKYNKQVKEASFINTETYSRVSSLSSEPLRN VVPRFSFDFSTSM DGSYIK
ESRLSPYKEYPQLAPTPLLYNEVSMVQATTENTNSQHPLFTEQQCQLPQVTTSPQIALV
MPHEELDYPV I SKNSSMIGNNIDYTTLKSSFFSQEDRIVDKYTS DRDKENFI PFLSQTQN
TNTLFEDIEQSSNTDALEQQIHLMTTIEIDGQVLGEFFERYISNQLRT

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>LAWC074 129105:130370 forward MW:46409

MGWNTDLLDAQFRGIPFYVQSITDKGSKSLVVHEYPYRSGGAVEDMGSSARTIPIRAIFW
GENYLSNLQKLEALEQP GP GELIHPVFGSVTVV IKTWQIDHTAQHPDYAEVVFEAIVSA
LDTNFFTHTTQRTQAEQSSLTAKNAATV LLEHSSQH VTRHIQTNFTSPRVQSQTMLLMD
ILDFYDPSGDVPRSTTIFVLHPEAYLAELLAVQKAI LEHIPVSSVMKGFYVSDCFPKIT
PSCGMKTFEYNEKYPTGVGNCSVQWTSNGSPGVHPQVPSLAIPPNSTIEKYVVQDEIASG
CDVSMSSQHI I AIGIILHVILSQTALAILTASQLFLDECTTPTLPLQLDITVGNIRARI
QDCLVAVRKNVPTQDVHGFSEPLRTAAEA IQSLGTIALNIRPPLITYTVQHEESLHLFIS
T

>LAWC075 130491:131522 forward MW:37600

MNTVTTIR DVCPTLCVAGHMRDWLRYSDSGFFTPADGWSVSLGLPDGKLPSWLALWAE
VELAFDGI VALTGRIDHIRHSVNTKGHSLELAGRDKAGILLDCSAPIFVTQQITLPELIA
TVVRPLGIDTIDVDLSTLLFQKSTVEPGMTAWEA IQDAASANGLWPWFPTDGT LKIARP
DYSKAPVACLNLRCSGVGNVLELSVTYDISKQYSTVTALSQSQNEISQAIPILKSVAT
DSDTPSRPLVLRKGHIDNTQFLTNIAENI IHEGKLC SVTVMKVQGHFVEPGVLWEPGQR
VTIFSEPHEIDETFFLTKRTFIGGRFGTFTLLKLQQDNVWLST

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>LAWC076 131586:132182 forward MW:21419

MSFYDAVNKQINKALVAVRLPFRARLTKLQTKTPLQLVQGEGLS QEQLQSVELLQQFGFT
SGVPI DSQLIVLP IGGKT VHSV IATENTAFRVHVEHGETAIYNQWGAKVVLKKEKIVEI
DCEQLQIKATKGITMQTESFSL SASEAKMKTNLHVEGDVSLSGKLESDGDQVAAGISLLQ
HTHGGVESGGSNTQPPSK

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>LAWC077 132327:133022 reverse MW:26037

MTKAEKVYTGLCGLFSILIVLSNLTYQKFVALPILPFHTFEISVGAILYPLTFLLTDLIT
EFYSKERANFCVKFAIIINIVVAGILMFMSLTATEWSKLDNDTFHNVFGFYVAFIGSI
LACYISQAFDII FYLWIRKITKGKYLWLRSSGSTSISLLIDTSIVISVMSLFGILPPEQI
LPLIGNSYSWKLFFTVSMIPVFYGLVGMRFLLTGKKIRIQTDP ISTTTSI

>LAWC078 133350:133736 reverse MW:14468

MINAISAITPVRPIDPYPQNILTNECIYLCELPRDPSTNTIPETIEEQTQQVMKNI EASL
AASGLGFHHVTKVSI TLVNPSNYKLVKRIYDHFFLGYNPECFHAASMLREHSQIEVEVV
AVKTNDPM

>LAWC079 134013:135005 reverse MW:38307

MCIIYFVIPRHHQAKWSNQLKKAAGCECSIEEIAPELTSGVDVWLLQTWIILSHLSDTKG
YTFKIVEHGMPDAISIFHYDHAKPCYGLFNCYPVVQADRPKVPYSGIRIIQNPAIPQTQ
RVHYIPLWIQPLIPRNPLRGTTERISIPGSAQYLPPAIHSPAFIQRKLDINIKLHVMN
AGNWMDSNTDLILAWRPKVSKEYVLNTPKPPSKLFNAWHANTPALLGAEPAYQALRKHDPD
YFEVQSTNDIIQYIQRMKQHPEEYTRILNHYKIQANTFTRQHIIDKWFSLFNIAQQAQKI
STKATLKKLSSYAYRKTYNQLLKHIIWDD

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>LAWC080 135091:136032 reverse MW:35326

MKKNACIYIAGHRGLVGSALVQTLQSAGYTNLITRTKEELDLRNQAAVESFFATERPEYV
FFSAAKVGGIQANNIYPATFISDNLIQTNIQTAYTYGVKKFLFLGSSCIYPRDCPQPI
KEEYLLTGPLEPTNEWYAIKAIAGIKLCQAYRKQYGFDAISIMPTNLYGPRDNFHLTESH
VLPALLRRFHEAMVNNLPYVTIWGTGTPRREFLYVEDVASACLLMEKYSELEPINVGYG
EDCTIYSLSKTIADVVGFKGEIVTDPSKPDGTPQKWLDISKIKSLGWKPTISLYEGIKKT
YNWYLQHIINNNI

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>recQ 136395:137753 reverse MW:50354

MAKTKERLQKATQDLTLRVPPHSLEAEQAVLAGLLLRKSIAPQMAIDLQAEDFYFPQHQI
LFFTAITLYSQNPIDLVTLAQKLRDKNQLEAIGGASYLSELVQLGVSAANAEFYAKIVH
EKAIQRSLIEAGSSIVTSGFDTTQELSTLLDKAEQSIMNVSARKNVGVFKPVHSLINDLL
NTAMQPATHGVTGLPTGYKALDQITRGLQPSDLIIIAARPAMGKTALALNLAMRAAITQK
ATVGI FSLEMSDKQLIQRMASLWGKIPYDNLCSGRLSPEEGERLFQTTELLNNAPLYINE
TPALTMLELRSQARRLKI EHNLDLIVVDYLQLLRSRPRKADSRELEISDISRSLKALAKEL
NIPVVALSQLNRRLEERADKRPLLSDLRESGAI EQDSDLVMFIYRDEVYNKKEDNPKKGI
AELIIGKHRNGRTGTVELSFLPRYTA FEELSK

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>gmd 138575:139735 forward MW:43877

MVGYFMKRALITGITGQDGAFLAEFLIRKGYEVHGIKRRSSLFNTDRIDHLYQDPQVENR
KLILHYGDLTDATNLIRVIQEVQPELYNLAQSHVKVSFESPEYTANVDGLGALRLLLEA
IRILNLIDKTRYQASTSELYGLAQEIPQTEKTPFYPRSPYACAKLYAYWITVNYREAYG
MYACNGILFNHESPLRGETFVTRKITRGLARIALGLMSTLYLGNLDALRDWGHSDYIQM
QWLMLQQDKPEDYVIATGRQISVREFVNI AANELGITLSWKGGSGVDEQAI IETIDATKLA
QMLRRPVSEAPLKVGQVI IKIDPRQFRPTEVDSLIGDASKAQQKLGWKPMISFESMVTEM
LQEDISLATRDAVCKIAGFKAFNHDE

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>LAWC083 140126:140452 forward MW:12482

MNNNFSKNLGLIRAIRTKHKDEIVLDRLAELSGLTKRYIQMIERGERNITVINLFPLAN
ALDIPIIQLIEYLNYLEHGLPDFLLEVLPIKKVGRPKKNKIRNTMS

>LAWC084 140609:140983 forward MW:13988

MHCNVKFNKVCARRWFSICVILTVLLFLALVIFSPRQLPVIHYKFALCLLAGLAGYWL
DRVLFPPFANPSGYLCEWKEHINGCQTGRADYPIVIEYQKSFCTAMLRQAAIVVGTMLAV
SLGL

>LAWC085 141084:142049 reverse MW:36877

MSPTSPIISIIPTYNMEPWITDIH SVLKQSFSNFECI IIDDGSTDNTVPTIQIHDPR
LHILQQTNQGVSAARNTGLSHAKGQYIAFLDGDDLWDSQFLQIMLNALQTSPGSKLSWCN

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TVMFMDVTYKKKPQPWGD IHKTGNIWWDFLQHTYFTMGAFVETQLIKHIGVFDTTLLVG
EDRDFILRILAYLYSKSSSFTQVIHIPIPLKYRIHTRNSVKKYASQALQDEWYMKKH
EHPTIPEHIKKKSYSNLAFKLAVIAAFGTKNISSALSWYGKAIKHPWNLNLYLLPLKCC
LLSLMPQLKVNIPGSLKNYLQ

>LAWC086 142046:143107 reverse MW:40247

MTYSSSPEISIIVLTYNQHASYTIPCIESLLQTTNNCEIILVDNGSTDGTVEWMQQLSY
PHLTVIDNKKNLGYAAGNNVGLKKAKGEFII LLNNDTLLPPGWLEPLIEPLKHNKKLGLI
GPVTRNIGSPQQIVLPGYLNTNRRSSKKPIKPNDSWEEAAIAYMNHQKGTLYTTMLCF
FCVAISRQC IETVGLLDEQFQKGNFEDDDYCIRVKQHGFQIAYTDASFVWHYEGEGLSQL
PSRELSSIWFKNQYFKEKHGYLSLIADRANCLNSIQKALEELNTETHFDHIIERCLA
HLPYLHDILTQLERLEKESRTIKGTLLRMAKHVDAAYFGSFFKSMLYNFQTKQ

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>LAWC087 143397:143747 forward MW:13227

MDAELDVRTGDYTSHQINTLANAVYIRLMTPLGTWWQDITLGSRLHELEREKDVQRVRI
AKQYAEALAPLLKEKRAKHIVVSAEIP TAGQCTLYINVEDATGRPYTFSHTMRVS

>LAWC088 144107:144823 forward MW:25077

VLTSETASHGEQLQVMQVVACQAQKPGIIPSCQDVLAKLVAPPIGIDTNVLLTITGGSNV
ETDASLLARLLDYMRDPPGGGTALDYKRWAMEVPGVSKAYVYPLRRIGTVDIVITGENG
TPSTEVI TMAQSHIDTMRPVARS AVVFAATPFIVNMEIGLTLGSETLQTI LPVVKDAL
QHVVNDYEPGSGVVLSHLIAALTSVPGVSDAVIISPESNITANPVKIPILGEVRLRGL

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>LAWC089 144828:145394 forward MW:21595

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GSQVGEKLTNTDWLYAFTVHASGNISKFRFRSGSKTGEQLSVWGNELLESVIEKYKPAHS
VAFFAYTD

>LAWC090 146282:147724 reverse MW:52497

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YTFMFIGGWIGDKIIGTQRTLLAGAITLLCGYLILFIGTNGITMALSII IAGNTLFKAN
PSTLIAKIFPYEHPKAESAFTLYYMSINLGSFISMLIVPYLYTAFGFHMAFGSSVIGLTL
AILAFI IKRKWLVLGDSPPGFEP LSLGDIVLLSIVIGISGISMVLLSHLYIAYTMLYCA
AIIVLLMIFREIKLSNSQERKKLIVCLFLIVEAVGFYILYQQMPTSLNLFVIRCTDHMIL
DFPIEPAAFQSLNPVWIIAASPIMAYIFSHSAKYVSLPSKFAAGMFCCALAFSLGVAAS
YTQSCGIIISGNWVVI TYFFLSIGELLISGLGLAMIAKLAPQRSTGFMMGAWFISQALAT
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>LAWC091 148401:174641 forward MW:994379

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CAPLTYGPPAMSYIPIPNMGVRRSYSSPDINCNERKNEHEKSGSLSVPVLEKCIYDK
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LKQYEEKLQALQSQQASQRLEALNNGTDMYTLFSQQYNEEQDCHREKEKKLELLMLHKQ
ERDIFFIPVSDSTEKGTVEGRQEDYSDINKDRRHSTPSIPVTALNIFIEDSSKSTPGRLE
HQDSYSNINSEPKSLSSDLVYNNRDVSSIPLSLINPDEEATVEVSASESLTETS IQVG
PFPSKTSLLKYFNRMNEEGFGSIQKYRRDDL YLPGCAVYQTAKKEHKRKHSGIRLPWLK
RFNLSSKTKTDLQDES LQESSPPKSLREDGIYPLLQHKRPSVYYTKEVGAGDDTPHSLK
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SEPGYCI MRDPFESTSCYYPGSDAKSESSEQGFYSSNLETENNTFLFNRVSPPEELQYG
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NIEDAESSESDLERKHQAKKKRLNKKLKKLLVENYTI GRNHRQSVEETTTKIDKRHAQER
CHWTTKKGPFSSQCLMLQTEELWAFYNEKEKEREKIEAEKKENLKKYKQEKAAKQSYLGWL
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 VPQDFTDSQSQGTNSSWMFLRLDFSDNGEGTDNMFPDPLPREVQGASFTDATSEDQDV
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SSTE SSSSSSSSSSDVSSVFETSSDEGPDCVDGVYGA VGGEEPEKKKGNGYHKKKFKKV
 KKKLHNVALNQK LKKLKD KLQQL EKEYHKS I ADCQNR YQDV KCNLLMAQAEEL I GKSREE
 QDTLCKKNSEK I KKI EDGYRRQYEQ LTESY YTKKQVVLNKL SAVMEK KALLKQKI QEYDS
 VDGKHRVSKGYKKKASKLKKESKLEKELEALKEQQT KELQDFDQKSDACRQQ I LFFQKE
 EVNS I KDAGGDL CALQNKHTEEDCKVEEL FTSQKELL I KEHESQRNEKEKRKKELEKQQQ
 ATREKDTPTCYEHG I DN I VKLLEEE IESLEKELEEELEEKQEEEWKAFELQTEACRKQVLF
 LQKAKPKDSAREGG EEDRRAFESMVASQQE LLLKEQERQRTEKL I RLTEAKEKRKQHKKK
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 FFDH HKG I LEQCLLQNLSETVCLLGRDESSSDEGSFDLEGFYSPDRCMGRVGEPI FTFVG
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 QFQ I LCKNQEEKVRKEQELQKAKEDHKKKKEKKKEKKEKKEKE I SKLQQQH I KAREQF
 LQSYKNCKEKMEMLDQEELL I VEASGGDVEAKVKELQAQAE I FFK I QKDQYKLLFHRREQ
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 EGSF I FFTQLSSEQTRDQYGSDDENGFYHTV I VQGE GEPKGDEAPPPPFY SFVSGDSG
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 FTQSSSEQTRDQYGSDDENGFYHTV I VQGE GEPKGDEAPPPV KLRVPPSLTADLEDVG
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 L I LLLKDELQHL LSLFEQ TLEERQALAAVDAMDEQTELEQQS I EESENKKKEEPRRKSS
 LLER I FKRKQEGDEPSKKGKENHHENQKRLEEEPLVGLK RPKRTSTTSR LSLTLT S I GE
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 KGED I TKLQEKHHEEASVQHPLLF SQAMSVLREQQKVERENL I VSSGSDTTS DTS DLEE
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 ER I WEKSMGLRTRWS I TDD I QWRVWSKV I SGQRKSKELTATLKAPFVPWETSTPDKKKT
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>LAWC092 174997:176478 forward MW:56422

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 TSPKAPTDFTEPVLEE I ARSTKTVV I ALSDIPNQYLTYRGDWRFLKEDES I AMSWSSFLQ
 DPESRYTRPLYVPMVA AVSQAMTLAEKELQALKIKHF I VSGVSKRGWTTWLSA I ADSRVD
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 LI PFVNRVQKGI STPVLDI STEMTERVQYVTVRFSEVPEK I VLWKAANPESRDFRYACRV
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>LAWC093 176743:178116 reverse MW:51276

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 DISKRRIHELLRKYDRTGEISSEVL DNTKASFSYNQTDI HQADI I I I AVPTPIDTYRNP
 FTPLIKATQMVARHMRQGCVVVYESTVYPGATEE I C I PLLEEVSGLSYLTDFTVGYSPER
 INPGDTIHTLENI VKVVS GSKATTDLLTALYGTFI QAGI HKTSSLKVAEAAKVI ENTQR
 DLNIALMNELA I I FDKLDI DTLEVLEAAGTKWNFLPFRPGLVGGHC I GVDPPYLTRKAE
 VGYHPQVILAGRRINDEMGYIAETCVKLLIKKNVLI NKARVGI LGLTFKEDVSDLRNTK
 VIDIVNELEEFVGTPLVHDPLVDAEDALKEYQIVIEEFSVFKQLDAL I LAVPHKIYHLHQ
 PQELLSCFKNINS AVLMDIKGRLNPSDFTEDVLFWRL

>LAWC094 178467:179024 reverse MW:20065

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MITIHPTSIVDENVTIGNGTTIWHFESHILPFTIIGKSCNIGQNVSIGPHVQIGNGCKIQN
NVSIRYRGTLEDYVFCGSPMVFTNVFNPRAFIPRMEQARPTLVKYGATLGANCTIICGIT
IGRFAFIGAGSVVTKDVPDHALTYGNPAKQQGWICQCCEKLPVNLHCITCGNAYFETTQG
LLPHQ

>LAWC095 179021:180190 reverse MW:42788

MEFIDLASQQKRIRTVIESRIQALLDHGKYIMGPEVKELEGQLAAFTGSKHCISCASGTD
ALLMALMAHEIDAGDAIFVPAFTFFATAEMPALLGATVVFVDIDPFTFTMCPNQLKKA
ILAVKHQDPSIYPLPVTALETETPRVIPVDLFGQAADYTRILNIAKQFNLYSIEDAAQSF
GATYKQDSTCNLGCDAVTSFFPAKPLGCGYDGGAIFTNNDKLAGILKSIRVHGKQGHKY
ENVRIGVNGRLDTLQAAILLAKLDVFPNELCTRQTVATWYTKELTGVKDITLPHIAPGNF
SVFAQFSIRIGSDMRDIAAIYLAEKDIPTNIYYPKPLHIQPAFADQYEAEDMPISTTCS
HDILSLPFHPYMTQDDVKLVCNTLKEVLS

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>LAWC096 180177:180551 reverse MW:14213

MTYLAREMYMEHNQLLSLHSTSSKEKTIICLGRQQNKSIYPINLCIAQEKRSSTIATYLS
TISIHRQCITRLSPFNPLTIFVDTIFSQKKNYPITNYRFSIKCSLKANSSRHVKATSKGIS
NGIY

>LAWC097 180716:181768 reverse MW:39200

MKQPIVGRKIKIAIIGCGRIAGNHIDAINHHKEDIELVAVCDSYAESRNNYSKKYNVPGY
ENLEQLFANTECDIVAICTPSGLHAHQTVSANAGKHMTEKPMATRWDGLHMVQACDE
AGVYLFVIKQNRNLPTLQLLKRAIDENRFGHINMVHINVFWRPQDYNSAKWRGTWEMD
GGALMNQASHYVDLFEWLIGPIADVQAM IATLGRNIEVEDSAVLNVRWRNGALGSMVSM
LTYPKNLEGSITILGDTGSVRIGGVAVNEIQLWNFAEPKEYDDLVTSVSYQTNSVYGFH
PLYQQNIIDVLRGKAEPETDGREGLKSLEVLIAAYKSARDRITVSLPLEY

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>LAWC098 182091:183431 reverse MW:50053

MSLCFSFLLLSASLMVTSCLLIYIPPSKIMLMGISTYLMISFILIGVVIQKCLRPINKL
IQDINKSLSKTKIPSLNYYTCKNEMHILKQTTFELIKQFQNLKHELSTKETQKQHEIEL
STIISSSKINEQKMAAKITHLETLPDKAVNVTKHAQEILCNLTAYLSKCTESVKMQIVKN
TPSSISIEDLFTTINQNELECTVTKIQNSYKNSEQDIKNTTHAINSIEHVNINISLQNI
ILLHKRINDILLKLTLLDRVTNQTNLLAINLAVEAGKMGTPGKGFSIANEVKKLSQQSM
STIKKIEQTLYNIQTQTEHITSVIKKINKYNTTHVNYALTSGKITLNFITTIQNTLKELS
SLSDTIKEIAKTRVPLNTTNEEPDSTLKDCALSNTYTTLCELADVLKELDSTLHNTSKHN
ASKSEPI TNHTVLP IPIATNNMHIAE

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>LAWC099 184429:185472 reverse MW:39856

MNKIDKNNTVPQTEVMATSKIHPSSNKSQRHPLEKNIHQKQKISIEFRSSTGLPLEAPL
EISSISLVYRGAILECHLTENHNTDLLSSKMHCFDNKLSVDILKYGMLFTNGTISFNV
PYRHLNLSIIHYRSQKPVKVDVLVIQNTQEYFYGELAVLKISSWEESHAFNKNPI
HISTSNTQPELLIDNISCINEHNENTLLIHTNEKFCFVIDYTLTNKNLFEQIKLFI
LLKENTTAHSHITLQDLKFNPFSPIGKIITPVNFPILPGEYTVTLSSKKGYYQSKLPFEK
GIPTEGLYLTLYNNISIKVVEQSLEYSSHMAYSLENNEWSIFAYN

>LAWC100 186166:186576 forward MW:15938

MIALTTYFFILQLILFVLSIIAVKSNIIVKGNLLIMLSATLLATIPLHYIGPRIARLYS
NEVKIDTMEFFIFTILFAGLIHLISFLFKYIFKKFYKPTNDTLLSFIANLYPVYAAAL
FAIILFFWRKHDWFPK

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>LAWC101 186732:187613 forward MW:31893

MVETVRSSLYFILGSLCLGVIATIQVLPENISPLLIGAMRITGGAVTLLWGI
FTHGLPTARYWPIIPTVCAALGLIAFQMTFFAGIDKAGISLGTSIPIGIVLLVSGLSAKLFYREK
VSLQWIIYITILALIGLGCIIATSSRWHTNKEAIIITASIAGIGYALFLVSSKVLVRFHRAE
SVMTVLFTISAIVLFPDIFFEPFSWPGKGSTVLLSLIQFAIITTVIAFSLIGMGLKNITL
SVSSTLSVACTFMAVFLGIFFLVHLSMQLIFGLILLVCITMLVRRERRNPF

>yhjA 188379:189776 forward MW:52657

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MRSVNLLAFLCVSITFFGLLNSSFSYGSQEQLAQKELKQLQDKVVSILEEKCLSCHSYNA
 ELPFYTKIPGIKQIEKDFKDLRASDLNQDFIEASKKGIIDEATVAKLEWVIENHTMPP
 AKFTAVHWGSRVSKEDEKIILEWVRKYRNTYYATGLASPERSNEPIQIPDTPYNKQKA
 ALGEKLFNDRRLSHDNTIRCASCHVTSEGMADGKQFATGINKQKGHVNAPTVYNAIFNTR
 QFWDGRAANLQEASQPPLNPIEMGSTSWDEILGKLANDKKLTFEFLAVYPDGWTEKNVT
 DAIAEYERLFIPTNSPFDRWLKGGDTALTSELRGYKLFKAYRCATCHVKGSMGGQSFEY
 MDLKKDYFADRGYVEGVDDNGRMAFTHDPRDLHRFKVPLNRNIEMTAPYLHDGTVTSLDE
 AVRIMGIYLVGMDIPKSDRDSIVLFLRRTLGGFNGQKVLGTPVPQ

>piIJ 190321:192417 reverse MW:76776

MKLGYSISAGFAIGMIMVVLGIIYVSQELGPSSKTMEVIDKETSQIEIASNMLTRYQEA
 IYYMRGFYASRKQEDYDRICKELNKAREYLSQAKKFASTSTSNQYLEKDINEIGKIFTDY
 DVAVKNLYSKSMDFNEESSKGTNVIHNVFQQYSQIVSIMNKQYANDDNALLYSELGTLM
 MQLYLLRGDYSSALREQDIDNLKKSTQIDELMNKLSIFKNRFRAEDMRNGLQTLRSIG
 VYNQLLKNLVSMTQESKVDLDYRRQLADALGEKLMKLTNDNLSKIQTEATYVNTLQRAN
 GLIFIITGILLITIVVSFIVTRSITKPVTTTLFAQNVAAAGHLDQHLKITSTDEIGQLG
 IALNTMVDSLKAKILEATQQSEAAKRKEEEARVATAKAEALKRAEQGRHEGMVTAAGRL
 EDIANVISSASTELSAQIEESGRGANEQAARVKETATSMEEMSTTVVEVAKNASETSDIS
 SQTRQKADGADIVRKVIQSIVTVHNQSRELKSDMAVLGDHAQSIDQIMGVSDIADQTN
 LLALNAAIEAARAGEAGRGFAVVADEVKLAEKTMVSTTDVGNAIKAIQESATQSMSQVD
 SAVQNIIEIATTLASQSGLALDEIVHMVDATADQVRAIATASEEQSASTEEINQSISEINH
 IATETARAMDEASQAVSDLAKQAQSLASLIHEMKNPIS

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>LAWC104 193810:194466 reverse MW:25585

MSRVSLIHGIDYNLPLSFLSNISFNIRKRIFKRLKSYIDFSSLEHVLDIGVTSYKDNAES
 NFFEKLFPEYKIVALSKQNASWLEKEYSGLKFVYGDGCKLPFNDNTFDLVFSSAVIEHT
 GCTSQQQSFINECYRVAKKYVFLTTPNRWHPLEFHLLPLIHWLPKPLHRKLLNLLGYKE
 LSQEQHLNLLSTKELKNLCNQLQHIYIYKSKILRLSF

【 0 1 4 1 】

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>dnaA 358:1794 forward MW:53685

MSYMNTTWEKVCDSLQKRLSPGTFKVIAPLVASEHDGQLFLYAPSLFVMNWIQERLFVD
 ITEAVSEVSGGTMKVQIEVKSSVPDKPQVSLTDYNNKQHIPYNGFPNTKVISRSHISSQ
 TEQLPLPVSLVKAPFSSRSRWYSFDSFVVGPCNNLAHAAQNMIKDTASVDTLFLSSGPG
 LGKTHLTQAVGQALCNISNRANPKVEYLTAEEFCSCFVQSLRTKNVDSFKGRFRDLDLFL
 LEDIHFLQGKEKMQDELLATIRSLQGRGSRVLTSSFPAPKELKNVDNRLVSRFCGFLAG
 IEKPNAEARRRILIEKAKVHAVVLSEAVADFLAMKLVGDIRQLESSISNLVLKAKLLDCM
 ISMDMAKDVI AQYTQDDPFMNI DSIIHAVSGSFGQLAEKLYSRSRKQDFVVARNTIFYLA
 RKHTDMSLQIEIGDRFHRRHSTVLKGIASIEREIQRKSPTGRQIANTLNLLERTNIHLN

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>LAW0002 1827:2906 reverse MW:40842

MFAKLENLEQKFIIECSLAQPNIFNDQEQYRKLTKTHSDLKPIVTTFFQQFKKLQQQLSE
 NKELISDIDPDIQEMALEEIKKLELELTHLEYELKILLPKDPLDEKNILLEIRAGTGGE
 EAALFAADLFRMYCRYAEKMHKVEIMSQSDSDTGGFKEIALIQGDNVYSRLKFESGTH
 RVQRVPTTESQGRIH TSAATVAVLPEAEDVDIEIRPEELRFDVFRSSGPGGQSVNTTDSA
 VRVTHIPTGIVVTCQDEKSQHKNAKALKVLSSRLLQIKQEQQEIEQADARRALVGSGR
 SERIRTYNFPQGRVTDHRINLTLYSLIKVMEGEIQEFIDALSTHAQTEALKMQATQIAS

>LAW0003 3122:3436 forward MW:12434

LFIVLSIFFTEAINSTSCINKTLFSCKKRMARGTNFNLHIFTFGRKGFYTKATSTSNSCF
 INLRMNIFFHRVHLSDFEQIYIYFVMTSKLIFMCIYITIIFYK

>hly 3454:4209 forward MW:27875

MAKHKVRADELVFLQGLAESREQAKRLIMAGKVTLTNNSTTIPLRLEKPGHKYPLESICS
 LIGVERFVSRGAYKLLTALDFFKIDVKSCICLDAGASTGGFTDCLLQHGASKVYVIDVGK

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GQLHEKLYTNEQVINIEGVNLRTASKDLIPEEVDILTIDVSFISLTLILPSCIRWLKASG
IIIALIKPQFELYPDKIKKGVVKETSLQYEAVEKIIHFCQSELGLIFIGVPSVIKGPKG
NQEYLIYLKKR

>sodC 4337:4879 reverse MW:18826

MKIKLFFVTSIVTISLLTSITSVVLACSVTSEVHMIDDNGIKQSIGTVTFTDTDKGLQIK
TDLKGLPAGEHGFHIEGGSCGPAEHDGHLTAGLQAHGHYDPDKTGKHEGPLGNGHKGD
PRLVVKADGIAKETLLAPRLTVKEIKGRTVMIHAGGDNYSDKPLPLGGGGARIACGVIPN

>LAW0006 4945:5214 forward MW:11310

LYKKREVSQKYYLFIILLKFFEKLFSSYLLIFIDKLRKRTDLFYILTTFERFILWLEIVFS
IMYNYLMIHYTLFYFPYILDLHVIHFIL

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>t1c 5549:7147 forward MW:59154

MSDKGKTGGSMPEEDFTGWRAILWPVYNFELKKFLPMGLMMLCILFIYRLVRDIKDTLMV
SQATGGGAETLGLFLKWGVTPSAIFLMIIFVKLANKLSKANLFYTVSFFLGGFFVLFGLV
IYPLTEYFHMSYETISHLQTTMPRLYWVWPIIGNWSYAFYILSELWGSVVLSALFWQFA
NEITKISEAKRFYSLFGFVGNFGLLASGIIICANIAKNSAVDGTIDVFGESLKYQMLA
VLFFGLLLLLLYRWMNKNVLTDPKLYTPGAGSKKSKPKLGLIESTKCILTSRYLLMISA
LVIGYGISINLVEGVWKGQIKLLYPDPNDFNVLGKALTTGFVTIIMLIGANILRRFS
WRTAALITPILMATSIVFFGVI IYENKMGLDATLWGFVLLAVVGLMQNAFSKGVKY
SLFDATKQMAIPLDPELVKVGAAVEILAGRLGKSGGAAIQSIMLLIIGGNVTLASQVE
FLGSAVLVVVAFWIIISVFGLSKQFETLQSEQQAAEEANSKENKEVKDGELCTN

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>LAW0008 7665:7904 reverse MW:9388

MENFLQSANEGYFIAMMDKDYIFAIPFEKLTNIVPYLNHKIEDKHLRYHLALYNDNDF
VLNPLKSKVMSLEEFKLS

>LAW0009 8001:8735 reverse MW:28331

LIIQALYYKILQMNLEDDLIMSKMVFIEVKKNAIGFDGIWKIDGSRDIIIEVKTTDYNN
IRLDQVFSYKKQCITTNVNSQDAMVLFVVGRRDSSNSLEAQIRGSRYAWDARLISIEALLS
LVFIKEKTQDINTLEKIRALIEPIEYTRLDRLVDVVFLSIEDAEKSVENEIIQQEFNNSQ
SDTDLINEPCQQAETTSNPIDTVLKKERITNRTPIELIEEKRQAITILAKNKNTIFIK
YRRT

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>LAW0010 8623:8928 reverse MW:11617

MALLNLYEGNSSNVLSMSIKQIVTMAGDGNLKDNNNTSLELRQFLSKIQTKYFSLYIKDC
LESSFDNSGFVLQDITNELGRRLLGYNVKNGLYRGKKKRYWF

>po1B 9617:10576 reverse MW:35965

LLFSIRHIIHLWNNHFTMSTAKQKINSIDLPTQQQATEAFTLATAQTQHNVRILLNNIASN
PPQALIEGGTLDERFSIALWYAARLNCIYGTPCLTCPTCLQIGAKLFHDLFLLHGAEGS
IKIDDIRKLRTVFGEPAHNGKVVILAEAQHLRTEANALLKSLEEPHPQTCCLLLV
REQLLPTLVSRSWITLPWTSVMTSSSELIEEWEEKLTTFLITGKNWFNFTTNKNVVEA
SLVQHIISLIRKTI VLSLKKQRKNQLVECLSILSPVDFLNLQDILSQSESALHIMVNPTL
VLNRLVTHIYLAYHNALQL

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>LAW0012 10536:13571 reverse MW:116727

MIPSIFFDRQDRELLRMINDTLDNIHSDIKQOPTIDINLHPHGI LELTTTREFRVAHAVI
NLLTNIIEKGKAKDRLYALQALHDEVLHSARTTFRYNTGRVLIQIMKDIVRSRHDESHQLK
LVHDFRRTAEGNPNI VRKMLTKHLLLEMPKWNQLTMDHHVHDSNTKGRKNATHLIMDAW
VKGIRKLTVVVYNYVEPIAREVLQAASIVGIIVRIGIEFQIPFHNRFIRVVWAPRGFSD
PESFLTFLAEKPVYELMEKQKQVSQWQQNVLTVLNIWNTKYRLELANELEI IPEIQPQ
EFLAFVGGQTSLLHLTECIHKQLPLLYEKTSALKKEMLIATPEQVEQITHHIIHKMMI
TIESISERWITPDNNPEIANLFTPDHPTQLPELLKLSYVSSLRSGYRITLQLAK
LTAEDVLELLWDCKGMITHLELFLNKEWQQGHLIHLAAINELQLAINDPNI LRLKQLLVS
MIRRELLNTEASYKRYKFIIVILRNLPILQAPYKISPLRSRIGTDSTSNLNLRHGMGLA
APQTLPASSRRVLAKKQLFNPMILPVHVPLAFQKTWIVTTNTEGINYKILSFLRKLPLGR

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MLGRQKKEEWQALANIKIKPYGNI IAMGGIGSLPDNGIYLRKIDKKKQTN SWPNITYLNT
 KCANLLKIIIGFVPATLAFLYTQEWWVLAWFGSTIWFVITGIRNIAQA ILGGGSFSKTSL
 LRWKNFISWSR ICDSL MYTGLSVLLELI IHDLILQKTFGFTLSNHYI IVFTVIA ICNSL
 YIAGHNI LRGFPEA IIGNLFRSIFAVPLSILYNDILIESLLFNIANPLAVLQPGAAI I
 SKSASDTVAGVIEGFADKNNYRLRSWDYKTKLEHFFN WYTKLELRFPDL DILFLLSKPY
 ELFKITSKEAPELQRESIINALDFMYFWMYQPYAQTFRSILNTMTREEKIILAKGQNVL
 LLVQEVSQFLIDGYMGKNFARALS FYLTSHETYINSIVTA IQHKTYNITL E

>LAW0013 14779:15576 reverse MW:29979

MIKSLTPFSQSSYKTPQKSIPKFIQQFPNIGYLPILWIITKGGIKAYFKKYTSESWVQSS
 KEVFSVLEKVGCFNIEGLEHIHNNNSPCIIIGNHMSTLETFLPSIIQPYKPVTFIVKK
 SLISYPFFGKILSSRNPIIKRQNPRVDFSKVLEEGSNHLNSGTSLIIFPQSTRSHTFLP
 EKFN SIGVKLARRTGVPVIPLALKTD AWGEGKLIKDFGPINPQKTIHFSFGAPIYVSGTG
 KNEHEKII LFIKEKIN EWNKLDNLS

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>LAW0014 15573:16805 reverse MW:46579

MSLTPLSEKLRPNLDTFIGQNHLRLQYIISAPRLPSLLFFGPPGCGKSTLALLLAYK
 KSTNILRISAPETGIQQLRQKLT DIDILILDEIHRFSKAQQDFLPLESGKLTMLATTT
 ENPSFSVTKQLLSRLNVLQRQLGYNELKELVKKGTFLNILLPDDVINFLATTAHG DAR
 TLFNLI EYISILPEEKRVLEYIKINLPEILERHDKDGD SHYEYASALIKSIRG SNPDAAL
 YYLACLLEGGEDPRFICRRLIISASEDIGLADPQALS LAVSCQQA VEFVGMPEGFIPLSE
 TVVYLALARKSNSTYAAYSNAAREVRLHGAQPVPLHLRNPSTQLKQWGYGREYKYPHNY
 PNAWVEQEYFPSTISNRSFYYPKEQGE EPKLNMWHNH IKKYSIPEESPK

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>upp 16842:17369 reverse MW:20007

MDRKII FTINQFETAIVNLSQELIDNYITFDNIFIGIQRRG VILANRLQKVIVEKTKQS
 PLIGTLDINFYRDDWTRQLHPIIGESFIPTILDDKT VILIDDVIYTGRTIRAALEALNN
 YGRPTHVKLLTLIDRGGRELPIQPDYIGYTTNITSQHTINVLVKEIDGEDAVLLE

>LAW0016 17612:18394 forward MW:29966

MIAKKNTSFGIEELPWSNYKTFYLAHEHWQEPYILNKKESHLLHVLRIQIGTEIHVLDG
 RGREGLFSVKEVIKDRVLSYINDWMHPEPTRKV VLAAGWTKAARRGWLF EKAAELEAWA
 IWFWKAERSQFPLSEAKKESWQQQIIAGAKQCNNPWFPSLQLFPNGIEELIYNVDTIGCD
 FRHVLVENTCGPAQPLTLDMLKQTGLTICVLGPEGGFTHKEILKLKEASFLSLTLGDRVL
 RWETAAILCLGLHWWKKVYS

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>ubiE 18406:19131 reverse MW:27316

MSQNPHIETTQHDRSINSMFGRISRWYDPMNRI LSGGLDIYWRHCLVEAMEPGKTGRILD
 LAAGTLDVAIALHNRYEQLHISAVDLCFSMLYQGMKKLHRANITRVWPITADAKLLPFPD
 SCIDGVTLAFGIRNIVPRTKAFSEIARVLLPGGRMAILEFGTGKQRIWMGLYNYLTKIL
 PFIGKLSSDPSAYLYLKQSIMDFPHPELLEDEIRAAGFHQAYYTPLSSGIVHLYIGEKAN
 K

>glpP 19389:20660 reverse MW:44799

MTSAKSKISLPVQMIIGFFLIGIMAGIFLSEETS NYLRPLGQLFITLIRMVVVPLVLATI
 VAGAAGIHDINKLGRVATKTLIYFATTAIAITIGLIFANFFQPGVGFNLSIATTQSDMV
 EPPSVIQTIIINIVPLNPIEALANGNMLQVIFFAVMFGFALSSLGEVGKPLLSFELIGDT
 MVRMTNIVMMYAPIGVFGLISYTI STHGVDVLLPLSKFMLIAYLASIAHVLLCYVPLIKA
 TGLPVMVAVFKRLMEPTFIGFTTCSSAAVLPTNLQAVRSLGASKGISSFSIPLGNTINMDG
 TAIYMGVAAIFASEIYGIPLGF EKQLMVVLTGLLASIGTAGVPGAGLIMITLVFTQVGIP
 LEAVTLIAGIDRILDMIRTA VNTFGDAVGALV VSKLEGDLGTEPFDETCEVSALSTGTET
 YEN

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>tagD 20974:21483 reverse MW:19044

MYNQILTHPKIVTLTNLLPKLEYLKSNGKKIIFTNGCYDILHPGHLDLLTRAKTYGDILV
 LGLNTDNSVKRLGKDPDRPFNPFHIRAFVLAHLELIDFIIGFEEDTPLQLIEAIQPNVLV
 KGGDWCVEQIIGKEFVERNNGLVLSL PFLLEGHSTSGLVQKIRNKKSNT

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>trpS 21519:22526 reverse MW:38447

LRRPSLMHQSMPLRTVSGMRPTGRLHLGHYFGA I KSWLSMQQE I EALFFVADWHALTSDY
ANTTHLKEYIYDLVIDWLASGIDPHQSI IFQQSKVPQHAELNLLLGMITPLSWLERNPTY
KEQQQEITTKDLGNFGFLGYPVLM AAD I LLYRPQLVPVGGDQLPHLELTREIARRFNNLY
GTIFAEPKAKLTPTAKCPGLDGRKMSKSYGNAIFLNSFDEVTHKVKKMYTDPARLRKSD
PGNPDVCNLFYPYHQLLTPYIQDEIREGCVTATLGCVECKILLQSLKEFLNPFHERRAT
YENKNYIDDLLTDGNQRATIKAEDTMNLVREAIYK

>LAW0021 22529:23203 reverse MW:25364

MFEFDITNAIKRIAVAFVPLVLGIILHEVAHGWWAQRGRDPTAAMLGRITLNPTHHIDPL
GLMVFTITSLTSPFIFGWAKPVPINPRNFYDLRKTMLVSVFAGPAANFLLAFTFGLLLRI
FLEFFPAYEWQQSSVWYFFLMFSSGIIINFTLAWLNLLPIPLDGSKILWAILPNELGY
KYMLAERYGFVIFIALLLTGLLYILYPLINLSLILCTLLFGLN

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>tyrS 23206:24402 reverse MW:45374

MVSI DDQLQLIKRGYVELINEESLRKKLSNEKPLVVKAGFDPTAPDLHLGHTVLIHKLRH
FQQLGHNVTFLIGDFTGLIGDPSGRSTTRPALTVEQVQANAETYKKQIFKILDPLKTNVV
FNSKWLMSSVDFIRLASHYTLARMLERDDFSNRYKENTPIALHELLYPLMQGYDSVAL
KSDIELGGTDQKFNLLVGRTLMSHYNIEPQCILTMPLLEGLDGVKMSKSYGNYVGIDEQ
PYVQFSKVMISDEL MWRYE L I STSSLSEVEK L KQNVKEGHLHPKKVKEQLAVDIVTQY
HGKEKAYEALQEFTAVFVNGALPDDTPEFICNYGETSKPPAFLTDSKLCTSRSEAKRLIK
QGS LTVNDKRYHDVELPLEPGDYIIKLGKKRFLRLQVQ

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>ogt 24563:25084 reverse MW:19452

MLLSSQHEVIQEYISGEILTLTIYSVNNLINQIDIDLKPNFNPTTTIGKQVKNLLLSYE
QGKLVQWDLPLNWN SIPKNSFQKKVLLTTLTIKYGTTISYRDLAALAGNPRAARAVGNI
MSKNPWPLVVPCHRVI GINNHLTGFKGKKGLSIKAWLLHREGHLISNNKSIIS

>gcpE 25145:26224 reverse MW:38658

MNIRKKTRKIYIGNIAIGGDAPIIVQSMTNTDTRDIEATLKQINQLHAVGCEIVRLAVPD
ANA AKALKA I HDASPLPLIADIHF DYRLALTALESGIEGLRINPGNIGERKKVVTVDAA
KAHKASIRIGVNSGSVEKHLIDKFGGPVPEAMVESALNHIKILEDEKFYEIKVSIKSSSV
LDTIAAYRMLSKSCDYPLHLGVTEAGSLIRGTVKSSVGLGILLSEGIGDTLRISLTEDPV
EEVPVAWEILRALGLRRRGP EIIACPSCGRAEIDLIRLTKDVEACL VNEKTPLKIAVMGC
VVNGPGEAKEADIGIAGGRDKGIIFAKGKVI RSVHGQDKLLNVFMEEVNKVI AEYNTTQ

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>ppsA 26307:29891 reverse MW:133713

MSKKT LSTH HDSINSVETIRKQLVLTGSDIITIGEDAELLVGGKNYNTALLGQIKEIKTP
QFRAISSLA FHQILDETKVCAALIRSKVEEHYTHINWNNPEVVQDHEFLPKFVRNIASII
QYELDGN TNKLP LIRLRTFIEHVVDGFASSQENIDQLRKRSILVQCAILSVPLPPQVIEA
VKIAYKEICNEAEENNPVAVRSSAAGEDSRKKAFAGLQD TYLNMVGEDAVVLAYHWDCA
SAYNLRSMIYRREAILDALTKSESTGDEQFAIQAKQEWAIENTSLSVCIMRMINPVVSGT
AFSADTATGCRGTRNDLVSIDVSYGLGEAIVGGMVT PDKMYVYQKDDANEVIRFMGNK
TLKIIYDEKGGTKKIPVSERESIMWALSPTQAEQIAKGVRAISKAYKDIIMDTEFCIDTK
GTIWFVQARPETRW NDELMLYPNTIFMHRCEVDPQAAATAKIVLEGNGASRGAGQGVRF
LNSALELNKIQKGDILAAERTDPMVPGMRVASAILADVGGDTSHAAITSRELGIPAIIIG
IQNSAALKALDGLVTV DGRGHVYHGLLPLYQTGGEININELPKTKTKVGLVLADIGQS
LFLSRLRNVPDFEVGLLRAEFMLGNVGVHPSALEAFDNGSLESIIQKKIDELEVHLRKT I
QEHLCLGLVNLDLHLREHVGHISGYTEELERLHKRNDPHNPEAVIATYRQIKELEKRLDE
LTELAASSLDTLKVSSDLSEHVKIIMGYQKQLLSLNDESPQLKKRRIDLEKEIETYTADI
AQNPVQKTI SQIEQLRKEV SERCGINKKIKELQSIPLAIGSLIRSCGHKTGREHYIQT L
SQGLALF SMAFYGKPIIYRTTDFKTNEYRNLLGGILFEDFEDNPMLGYRGVARDIHDWEI
DAFKAARSLYGAKNLQMLPFVRTIEQARSMSYLSVHNLRSGEDNLQIFLMSELPSNA
ILARQFIQEFDGFSIGSNDMTQMVLATDRDNQSLSHIYDEEDPAVVWAILVTIFTGQKYG
KKVGF CGQGVANSAILRGIVTISGITSASVVPD TYYQTKQEIADIEASNISLSELGQWLT

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KQHKNNLKKLLEEHGYNLFNTNPTNQDIQLWYNKNI STLCTQLQKNLTTSQAPKIAKTLK
 EFRTL FHKAVIYATWPWEETVNDALYQAGFRSFEEQKVALEQQRKHIMNTISYK
 >birA 30148:31131 reverse MW:36555
 MLKSINGTLRIVHIQSSKEKNNQNI I IHNPLIPELLLRDNSPTFIHKNLHGLKNTSIPC
 MEASLSCPSLSSSKTIYLPVVYLHTTSSSLDIAYTLYKENLLPIWGSIVTSQTAGRG
 QLGRTWCSPIGNVYATVRLPQCELFSTKAAI IASTFFIHALNKIGFHVFLKWPNDIVVF
 ANKQWCKVGGILLEERDDILLAGVGINMNKNSNEYTIREDSLQPSNLPHPPLFSGYGS I
 LPLWLSLVSQVYLCYKEHRDVNQKTSWVKLAEQYLCLKNCSVVIKDGLEHGHYKGI IAG
 IHDNGGLILSTSKQKKIFLSGSLYPLL

>fliM 31207:32184 reverse MW:36453
 MNKILAQDEVDALLRGLSGGIESETDIPEDDSGIVPFDLANQDRIRGRMPVLEIVNDR
 FARLCTNALSNAIRKRVELNPISIDMTKFGDFMRSLPVPTSINIFKMDPLRGNAIIVVDS
 RLVFALVENVFGGIGSQPKIEGREFTRIEQVIVDRIKIALDNMEESWRPVHDKLELIR
 SEINPQFAAIVPPSDVVIIVINFEVELDSSIGSMTICIPYATIEPIRSKLHASFQTERLEI
 DHAWVGRKERLLETVELKVRMGNTQITGNQLLRLKIGDVLVLDTDVEDLLECTVAGVT
 KYWGIAGTVKSNKAYQIIKEEPPHC

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>LAW0028 32258:32746 forward MW:18763
 VHPQLTSFQHSQIIIGQVLLIILCRLVFFFYKVEDKEFFMLSKINILFFLLVISFLSI
 HTSSVAVESEKSTYSQDQTSNKVYNKQYSGNSSTKVYHNKECRYFDCTACTIGFDSKEE
 AEKAGYTPCRLCENKKPSQLSQETEKHNHQSLENDTKKEQNSQ

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>LAW0029 32974:34476 reverse MW:56692
 VDTIMLIRNSTELFTAMLDRTIILGDEGELQTKKTLGSRLKQPAPARVAPELTAKQSEA
 VQLSMAKLVYEARSSFGANLPYMPPLGGKSYEETLHKARLTGNKMIEFVAEKELKDE
 PKAIRQGVIPYLQALWQEEHPEGPIDIYEIQTIVKDI TELKDPGKPLSQLAYGFILGP
 TELQEHMLYLEQKIGRAIELTWDDKHQHEFDENGIYDIFTRDAPRDRPYFQNVKLSYEKY
 SNEDALEKYKEMLIKEFPERSIAAVVVICMSQTIMADFSAMIMNVNTPFPLNPYCEKNSQ
 DISRIMTLVTSNTDPLPEETLDEELDEDLKVQEIPLRGAEGGGQLQELPREEKPTAFTTS
 EQVELAEAEESSEEEPTSSVTRKPLSLREQLIKTARTRTSRTMLFNQEGYVLIIRNF
 GISLRDTTTTGFYQQVGSTSFMLQIPKQDFPLAVGAKPVVQVDMQVERKTPFVGHALQK
 GFIGQVIPGPVLMSEELKKK

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>LAW0030 34646:35818 reverse MW:44194
 MLINNSKELFGYMDEGYSLVLDKEGELHTQTWAGYSYDLARAAIVASRFVQTSQDDLLLA
 MATLVEKDAISKHGPNLREPLFCGRSFEDLKTSARKIVGKAMIRHCVTNELHDQPRPV
 QDGVKIYQLSLWKNKHPEGDSCYPTIKTFVEEQIKTLKESPGHALGHLACNYHLTSDDELG
 PHMKYIGENIQTAIKETCCEEKNDNFNEGITYTVFNKDCVRETPFLGGWRFGHNEYDNET
 LVSLYQDKIKEEFPDISMRRVVCVMSQTI SPVITEVIRGMGTPYPLCPFIPSNLEMPE
 NFLMNVSNPEPPSPDNPRRIVMQTPSNVLFKYSYDIQVTSTVTGESQKLGNLQLSVQLPKD
 QFPLPLGAKPKLQVTDINLQRKKGIEVRIS

>LAW0031 35907:36365 reverse MW:16822
 MLQNIILMLNTIAHDQGLNTVIAPGEYSGALTIGGFNINIGLLESRKIILFQAPIGIIPE
 KNQLKLFKLLTANLFIETSGATLGLDYNNGLITLQVAWPFENLTYSSLTDLIGNVILL
 TGEWIEKINKFNHEDNDCTSSKEFDVQKMLAV

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>LAW0032 36644:37960 reverse MW:49427
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 MANIVNSDSIVNAGPRNIQEPLHSTSRTEEIAATSQEILCSAMITYILEKKFGTENPQV
 QKSISEYIQKEWAEDNSTVPIISYPAVNSFISRLVGIYVTKILYNKPEPIRKGVISFLTS
 SWEKENSQSQPKQESIEQYVTQIDHWQRDPLGQTIANLAYGYTIDSEALTEHMQFFKQ
 GILEAIDETWKEDKLTNYSDDGIFNLFTVDAPRDRPSIQGERVFLQSDLPNAKDIYVKMI
 KEEFPEFSMAAIVTTIMTQKSLPNLSCMVSGIKTYCPLNPYIPNNKDDNDMPDVVPLIE
 NSDSIQPRMTLTHNNEEIIHCNYGIKLCCLDLQQTVGNVQVDIVIPKGQFPLPISNI

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PNIQVKNMQVNRPVGFVA

>ostA 38434:40854 reverse MW:93569

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TLSNNTIIEAKGNIILTKGQDVFKADFARYYQKTGWFLKGHVTVKMDENEINADEAEFN
LNTKTGWLNNGNIFISSSHVYFSGARITKHYGDYYTFNNVKVTTCDGPHPAWSISAKEAI
VEVDGYAQLYDSTFKIKNIDVMYSPIFTIPAKQTRQSGFLNPNYGISQRRGIYYTQPYFL
NIDQSSDLTFYAGLMTKIGPLGTVRYRSHKFTNQKTWFAASGIDHKNNIVTPGKDPVYPS
SQLVRNNHQRYWVRGMADGFIGNSTWCYISNLDYVSDQDYLREFDQGITGFSHSRSEMFQ
MFGRIQEDDQSRLNALLIRKDWQRIGVVGNIRYEQDPTLGHGNHPTSQSELTQRIPQID
MFLYQGKLFQPLSLEGAHLSAYMYRAKGTGKWRTELYPKVTLPIDLKYGSVITTVGLR
ETYQQTGIKSHTSPVAPHVPDKTTPRQTGQHRSLFNLQLESSTQAHRIWRLKDKKTINLH
SQSIGKTFCTALKHTIQPRICYFIPREGQEKPNFYTLSDRILPQNDLTYSIVNILTCKN
VTISVDNNNNNDNSVTPTLITSYYDLLYWNLSTGYDFEERRKQYVEKYPKRPIKDIYS
ELELYILSWLTYSKTFISPYNGNITRHDHNIIFKSDRFSWKTGLSFRDQYNYREHLQY
RDENNIIMSSRLRLQNSFSIQLLPNVSVTLEDFRNLRELGTFGKNSQLVEVTYLAQCY
RIIGRYRYDGYDRSYTVLIEIPGLFE

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>a1r 40989:42131 forward MW:41432

MYSSSVCIKIHLERLRYNLRILRSRYPNVMPVIKANAYGHGIRVVANVLRDEGVQHMAVG
SITEGFLLRQEGHQAFLLALLGPFSEEDARIAVHNITPVIHNIESLQSVHYSRVHQGG
TAVPVAIKIDTGMGRGLGFSSNDYISLIDLLRHTPEVNPILLLSHLVAPEISSLDNVTHNQ
VEQFARAYKAIKEAFPTIKTSLTNSPGLLAWPNYIGDFSRPGIALYGGNPFYGTSRVSLG
KGFLPVMEEAPVVAINTVSAGSSIGYGCTYYAKEDIRVAVIGAGYADGYSRFSNKGWV
VIKGRYRIVGRVCMQMLMVDITNSHKSISIGDKAFLLGGGSLAIKPEELAEWWGTIPH
EVCCSLGSSIGAQQKQLVII

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>fur 42140:42592 reverse MW:17469

MSKKLPGIESILRSFSEHLLNKGLRNTHQRQIIRTFLLSTTGHLTTEEIYHIKKEDPSL
GQATVYRTMKLLCEANLAREVRFSDGIARYEHFNEHHDHLICDTCGINFEFIDPTIEKLQ
QKYAKQYGFILKSHQLYLYGICPTCQNVSL

>rfaF 42906:43955 reverse MW:40120

MDKNELYSTTIKSIKTNWVIVIRLSALGDVLLTTGVIHYWYTHFNWKFTIITQEGLTSIFE
NNPAVQNIIALTKEQLLPKHIISTARSLANHHKNYGLIDLHGTLKTRLISLLWRGPIYRY
SKMSFERRFLLLTKNRLKKRLNKWTPQRYIYALNLTLPPTDQLTPIILLHKKEEDKVK
NYFTFLESPEQKVVAIHPYATHINKAWNTNSWYNIIEHLTSEKIPWFIIGQGTPLKNIPP
QHDFTNKTSIRETCALLKRAAVLVTGDSGPMHLATAIKTPVIALFGPTTKDWGFFPPEDA
NIILEANIPCRPCSLHGDKKCPIQKRCMEELTPIQVMNAIKKILARQPS

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>LAW0037 44293:44535 reverse MW:9094

MKKFHSTQFGVMLRTRLRQQRGLSQQTLAEFADVERNYIYYLEKGLSDPTLGVLIIGLANGL
GLNFSEFAEKIETVISIRKL

>LAW0038 44534:45043 forward MW:20019

MLIIFRLTFRLFVLTIFSILIPFFFLCIIARAESFIKVIDGDSLKLYKTGNKKILRLYGI
DSPELSQPFGLLAKRATEFLVEHGNIVVKNMGYDIYGRTLAIYLEDGLTLQEHLRLKGL
AWVYPKYCSDVMCNWYEELEEFSTRKNKFGWLWSSKRAIPPWKWRKLR

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>LAW0039 45343:45816 forward MW:17446

MVATDVIKDLGQELNIPGLEFDQNLVCSFSVHNGNLDMTIETNETGDLVYVCGYLGIMPD
DNNAAAVALFAQANSTLSSMNRGVLALDYNGERLLFSKLYNVSHWEPNECIESILQLI
EDAEEWKHRLYQPDFGLSELTKGGINKTENNNNSFLKV

>LAW0040 45849:47372 forward MW:55692

FYLEAIFNIEHNGIIGENTMRVGSRPDPNVPTNVEQNSDIDSDNTSSSTCCVSTHSVN
EGAQQHSDSTPLTDRASQGRKWDPSIDFNRLGAQLITSVQSFFTIRDRVSSFITNMKDS
GPWARSRGSYDFHRDDDTISTTSSDSYTTVSDINSSEDTASLNSFHSVSSHSSSEKTFPV

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YTQEQLQQFAQEGVTNLVHSRPHYVSNGPS IKFPDQLGGHGDVGFLLQGTNIVFKQNLTAQE
AKTYKLLNDLKNWLQDPQPSS INIPESLKG ISRSEMKQLLDNKDLLSSLPFLAMAEGE
GSAAVA IKNVNMVQSEEGSFNKVSSKGV IDVKLGCKTMSLAELKAHYPNKTKG I SLFRKI
VTNGVLPMLRGTTSRGYEVI PQAQGMKRLFMAKQASDNLMQNLSARLTAQQAVNLAKQVT
DLTRAMRILPITFVGGSSMLIALPDASSTNSMPQVGLVDFGHPVFSTEVTVEGPITEQVYG
ELKDNIMEAIGKLQSQIEEISYQASRH

>LAW0041 47683:49611 forward MW:68753

MESNMKVGPSDPGINRVQIEEQPSTESISSSSSGSSSG IRTREQSSNLDQRRMTSSNLRM
SLRLNPVVSDKVLKFFGLRSASGSYSPSTSSSSSSSSATRSSRYSSTDSLSSRSTIGSNI
TFSESDSEYYSTIEEDSESIYESVSSSSSSDIYTYDSNSNSSSVSNSTQSQAPELPPRPN
VLQSEAPEPPLRPTSTSSQHSIQSQDSVGSDDVFWSESEPESELYADKEQVGEYAGPIRS
SLEEPIVLESNYISFGSDGVVYSDFAPMPQVTSKSSQSDSVSTPPPVS PREQVAGSLGVG
SRSKLSSTNNVASSLFDPNMQR IARQAIDKTIHGNFGSPNGPKVDFPYQVGGYSKTYIA
GTDLI IQQHVNPTQEVEYTFMSQVGEWLKDPQGGPENAPEVLSGLTYPQLSVIHSYRDRL
LGS LPIPVAMGGTSDNSAVVLLNPNKQPDGSGGVMNLGSGFESTDVKVGPI LVSKSELSAH
YSKQAGGLGWARKVVTGRIGPGMRGATIRGYDMKLGKNERGFSRLQTAVGNSDDAFPKRL
GGLTSNQLKNLEKTM EGLQQA AHFLPVTFVGSTLQFVLPNPGDTTTPRVMLGDIGHPIF
KDEATGDGPISPRIYDKYKSNFTSGMDSIKETISNIVKSKIE

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>LAW0042 49861:50334 forward MW:17192

MVSTDVIDALGHLLNIPGLSFNEDLLCLLSVNNDNVDVTIETNESGDLLYVCAHLGTMPD
DDNAAAAIALLFAQANAVLTAMNKGVLVLDYNGQGLMLVKLYEMKHWELEDCLSEILQLF
NDAGEWKNRLLYLPDFGLGGMDFDLTSSSGSDQFMRV

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>LAW0043 50406:53108 forward MW:87567

MTKVGGSNPFSTLASMVGFSKSSSSSSSSSKVAELKSKFEALGTLTAKASPRPANGTQDTNR
LSDRLFRGHYTPANTASRVGGHLQRVDDNKSSSSAANVAKRAAAHSSFASSNPGLQGAS
GSSSGGTGGSITDQVKSRGITARNFSDSNNSIGSGSSSGSILDQVRSQGITARGSSISS
GNASGTSNVNDGTSSRDYGANVRNTRERFEAGPQGAQGESPGVKDAKEATKGVSVSNLRG
IFEGRGGADNNQVGRSSGGVSGASGSGGAQGTGGTSGLGAQGTGSGGLDGGGVSGAAG
GTSGASGAGGARGTADGITSPGAREAQETIKNAGVSVRDLAGRFSGAQGTSGASGAAGAS
GASGAGGAAGAAGGGGLDRGGVSGSAGGTSGTSGAGGARGTADGITSPGAREAQETIKNA
GVSVRDLAGRFSGAQGTSGASGASGAAGVAGMPAGSGDVVDGLRRGGEDTVDFGRNQGS
GPI PSSADFDVDPGPIGGIQGAGGASGAAGAAGASGAAGASGAAEPLPTNGTDQQIAEVVVR
NAENGHFDGIDFSTQPGGVESNTGSI PGTDLIVQRDITPGEQGVYNNLSEMGSWMDSPNA
SPTNAPESLTDHSLVTLTLLNKEGLQDTPFPLAVGEGTVVTKLDPDIDTSKIKIPLE
IVFGSGSMYGGSIGGGSSTISSMSDDGSSSIGSTTRKNRAGEISRIAMNQSPGAGSGG
QTVVGGGLGSGSSNINISGGRGGIVYGMPNVNVVAGDGLNRLQLGSGINPLALLQERMVN
FSAAQLEHLHGQLTGMMAMMEAMPVAFEGASVQMTLPEPGDTQTMPSIRLSGFGEPRLR
ENIQPGQPPTQEAFDALRNGPLNGVSELMSQVQEMITVRSEGSISLSRSSSLSDLSEI

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>mdoB 53869:55779 reverse MW:72273

MKYIRC IYLGLLFFIYESINQIVRVLLIHVGTS AIDSFYSIPLILSVGFINDVFPFILI
TLPLAICVLLTGSRVVGKITQQILFFVFSLYTAVFLFTGAAEYLFWDELHCRFNFI AIDY
LIYTTEVVKNIIESYPIIPIILIGILLCSLGVSWILLRPIAKKINNIPVPSVRWFFSVWII
LASITTIYSPPTFSNNALSQELSKNGIWSLFSAFRNNQLDYRQFYVIDKKLAFELLHHE
LIEPNSVFFNDNSMEWRRYIHSNSPEKHLNIVITIVESLGSVSLGDRTPHLNDLSKKCLY
FTNMKATGTRTVRGLEAII LSLPPTPGASIVRRPNHNLNFTGT LFRQRGYDTVFIYGGY
GYFDNMNEFFSGNGFRIDRSTIPDEYKFTTNAW GICDEDLFD AVIDEADIA YTSNKPFY
HVALTTSNHRPFTYPDGRVDVPSGTSRTGAIKYTDYAIHRFLKEAKKPWFSDTIFIIVA
DH TAGSAGKTVLPPDNYDIPCFIYSPAHIKSQKIDTLCCQLDIAPT LFSLLNWNYS SFF
GKNILTLSKNDGRAWIGTYQLLGYL TEKELVILEPLKNPIIESFLSSYTTATNKSNSILI
QQAIAVYQTAQELFTQGKLENMLSTPDEIILSTSQ

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>LAW0045 56748:59387 forward MW:95183

MVKLNNVINFNKKLAKVNVTSLSMLLFNFIAIFFLLIQSDAYAVIFSNSQPRIFTDVNTPA
ETYFGGFDMRDRSPINSGPSTMTFTTHNLAQNLILAASGGSMGTAARGSVVNGDATITM
HNTVCNFLYGGGYSEGPDVVVTGTANISVYNSQLIDIFGGGFDNGGHNGHTSVGAVKILV
DHSVQVQLTGSASSVGI ESQGRYAVFGDVDIAVVNGSDVTTLTGTSTSSAHIKGNLSILV
ENSHITDLCVDHALLDGNLFVRIGPGALVDRLFLSTENLPKGSSLFEIDGGRVDGLFVG
PYAGTLNDAKVLKNGYVNLNLDPSRTPAGVIKNLDFMEGGTIAWLNLPQQGVSHNVT
LHLDGGTVENLRFGNFPGANFDGII SFAKAEVKGGTIEIEPLRRGVLNSSLIFIPGGLS
RVHTVENGRGLGLSNVTVQEGARTVWGLPGNRFTIEADDFDLGGTII LPSTDSTIELVVN
NHLIASGGMFEINDADRSRVTPLVVFTGNPGSSVNIIDPLSVNLDLPLSFLGTSGIVLAQ
ATPNLADPKLFEPPIIHKGLMWGDIVFDATSNTWFINNIRESKDYGYLSVQGASNWRQQ
HMITTRRSANALLHKHDGLWVDIQAGHEKIGTNYGNSKMPWVMASAGYDYRKNINDNIA
MLYGFALGIGDGHQKWTLVSKMKNRITMGLLDGYLGFSSYNPIGLYGLVALQGSVSKIKTK
SPGFFVNENWTEVPTESELELGHYAFNEFFTITPRAQMI LEQTPKHSIEFCCRKNKEKI
KLHRNTTVTTVAGILANYNIEWLDIHGSVDWIKGVAGTYKAHSELFNKTFKDKNNNSVLR
ASLGCDYI IRENMSIGITAFGDMINNKGIGGQANFSYKF

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>LAW0046 60142:60534 forward MW:15397

VASNLDEVKCNQLRYRFVTQDSIIAILMDGIWYMFPPKDTGKKMEEKAFMEVNLKEIDP
TLLPELRKLCGRFDLQKTLETVHELKFNLIKLLLVNNLEEPQENFVIYITKEFGIKAQ
QKAIELYRLC

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>secF 61583:62695 reverse MW:41024

VAMTIELFQRQTHINFVAKRHLAYIISIIFILIGIRTIIVNGGVRYGVDFAGGIAVQLQF
SQPIEDEHIKEALTKLNLPLGTIIQQFGEDNKAYLVRFSSEFNSMTIKSDISTILHTYSP
SNPVTIQRLEVVGPVKVADLRNSALEAIFYAILLITIIYISGRFEHRWIIAAGITGVLAAA
MYCMNLFDFSMVTKVVIALILTILLCWKLKLNLFALGAI VGLLHDVLTIVGLLTLMGKEFD
LNVIAALLTLVGYSLNDTIIIVYDRIRENLEQEQKQKNYLPLSNIINLSINQTLGRTIMTSF
TTFVTAFLSLFII LGGTVIHDFALTMIIIGIIIGTFSSIFVASPILLIFGDTQQYIQHTTPI
YTRPGENGIV

>secD 62698:64281 reverse MW:57639

MKSLPWRITISLFIILSIIYVLPSPIDNSIIGKYLPDTKINLGLDLKGGIHLTLGVD
VNTAVSNALVLTGQDLRSTASKNGLTILKTKITPDGQLEFLLPRKEQENDLEELIVKSYP
QLVLSKPTTIDGSLKYYAHFTQQAKIS IENMALEQAIRTIRNRIDQFGVSEPDIRKQDNF
RIQIQLPGLTDSTRAIHLIGQTAHLTFHIVRDDLQQNTPLPSGVRLFPQVIFYPDGTSRE
ILIPLEPVMGTGENISDARNFDDKNNKAYVALSFNSQGAKMFERITAENIKRMAIVL
DGKIYSAPTIQERISGGKASISGNFTMAEAQDLSIILRAGSLPAPVTILEERSVGPSSLGE
ESIEKMLAAIVGGFAVLIIIMPLYYGLSGLLADVMLLFTMTLLLAGLAAFGATLTLPGIA
GIVLTIGMSVDANVLIFERIREELKKGLMPLKAVIAGFDRASISIMDSNVTTIIAAAILY
QFGTGPVRGFAVTLISGLIIASMFTAIFVSYTCFLLWLRKSKKKTLSV

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>yajC 64432:64770 reverse MW:12347

MISIAHAFGTPDPSSGEPNSVFMQFIPLIIMLAIFYFLLIRPQQKRTKQHKAMLQALKKG
DHILSTGGLIGRIVDIDGDTITDGLGHTTVQINRAYVVGLVDQKGSALTKEEK

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>LAW0050 65816:69043 reverse MW:119100

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KKNSKTTGYAIPKQVSHLLQLITDSKLFIENGSITFQNNDYCFKIIGINGKIGVSKTLTS
SLKLTADEI IWEIMNTVSNNSSTAQKSI EKVQLHIEDMPYKINTALLHDTSPLYDLFTNT
KKTTFKVSGAIPPTNTANNITFDFTTKLEKDNSDKLTMHGQLHIEGTLPNGNTSIPILLS
VPFTTSSSEDMTHFPPLLIIKNSKLLFDKTHIDLHGTIKNYDTLSNLFFDGTMDVKNFSFP
YWFTFARQLPNGIQHALNQLSGEIKFTLSPQQVNAQKIIHSLDTTFQNGTVNNFLSPT
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QADHVTCWKFDGYQFICNIQPKPQGTQIHTNCKNFYDGSLSLSSLLSNRHTIQLAIENIQ
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 FSQLHLTCDISIGQPSKGNKSSSTIPYKKGWSAEISSARWNGSITMDGLIQFSTTDWLSIKA
 ENIPSKVVCVSGVQAVAYGGISFDIDNSFLSFSNFQGEIHPKTALSGTIKTSSTSNTR
 QWEGSLVTMTQNLRLNLLSKLGYEPKNISPTMLQYCKLQGDIFISPATIRLTNIQIGILDNT
 LIKFSNLGLQTNPPSWTGDIDLSSLNLDKYLLSINQNKLKKSQELWPIELLNKVNISTL
 TLAELIYRKVPYTNVVVPIISLNQGTLSITPITASLCDGKTEASFKACPLSTNGNSAQIDF
 HYISKGVDMIKLSKKRQQEYLISGLGTFVINIQSIAKSSIDFLKNLQGKWRIFIQNGYFK
 RNTTTTQQNFSNIGATGNIINGIITNNNFAITGPGMVITGSGKIDLPEWNLDYELITIDME
 GFPIAIPIKYTGSIDNPKRTINAACLILSTIGSLGRDTIGLIQDIFSAPLKLLLP

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>uvrD 69095:72304 reverse MW:122783

MKKMNIQKSSYEEYFPLLRIASAGSGKTYELTYSFLLNKSINDNNTNSSYNKYEHS
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 TIDSLHTIVHSTALELHLPDFQPIFSTEEALTPLLDSILKKTQHNERLYIILKEACSD
 ILFHTKHNNFMIGSTLREKVLISLPLINGEQEITSPQEITAHLTIKIQSVKKIATELAS
 CIKNEQLSIHNSFKKALEACQIGTQHTIPPKSTMLRKPNTDCILKSSKNTPSHHTISLY
 NTLQSLITYLDTTGVLKNSQKTIPIYVKLAKELYNLLPEFFCKQRIILAELIPSLAQQAV
 SGHYGISEIFCKLGTNLQHILIDEFQDTSHEQWAVIQPFVVEALS YGGSLTWGDKVAI
 YGWRGGDTTLFEKVLSDPELQSIASVQKESLPINWRSAYHIVNTNNTLFTKLSHDNIVQ
 SIFSKILPNEIAPTINKTILSEQVPLVTQSFADAEQSIAPNKKEGYVYIQRILNDEESDP
 DTVVHDLRINI IHDIQTRRSLGDIAILVRSNKRAMQVANWLMKNIIPVVTENSFLLIEHP
 IILQFIAILEFLDSPQNDLAFWRIINGGNLVQPLNIPQQKLEWICIRNRSQPLYLAFK
 ADFPDAWEHWILPFYDDSGLLSAYDAIQESIDRLKIKKRFPKEMSFIRRFLEIYIYASTK
 GYDSISNFLEYWKQHGHEKTPMPENIAAVRIMTIHKSGLQFPVIVIPWHDFPLKPNDS
 LIQTCVDGFNIIVKQSPAMPKEYYSSLLKNVCESLNLLYVAWTRAEELYALITSTKSKK
 ISFAEAINPILDYLSWDNNIYQLGEKTYTSNHTAMLSSNKNSTEIPYIYLETKDESTSSW
 RPMHWLPQLRIFRNPVNELGITSKRRGTFIHHCLQYLCISKNPNIDISLAIDYAIKRFPL
 PLPSSQYNIIVKDVLSILQWYTSLPKTRYWIQFGLAEQTLKNNNIYRVDLLVNNNGKEY
 SVIEYKTGETSLQHIQQLQKYLDI IKETTSLPVKGYIYLDLKRHTIE

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>pfp 72270:73637 reverse MW:49345

MTNTHYSSLSVTLLPIKTLGEEAIPSPLPYCDIKKNEYIHLCLNQEIQIEDLGSSPTLSLE
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 PKFNHTPIELTPDVVKNIHCFGGITLSSRGPQQPEEIVASLVHNNINILFVIGGDGSMK
 AANSITKEIHQHNLRISVIGIPKTIIDNDINIPKSFQFDTAVEKATEAIGCAHVEASGAK
 NGIGIVKLMGRESGIIAAQSALALKEANFVLIPEVQFTLHGNGLLPALEKRLSERSHAV
 IIVAEGAGQHLLDSQDETDPGPNVLADISTLLKNSIKDYFSKKDIPILKLIDPSYIIR
 SVPANANDRVYCGFLGQYAVHAAMAGKTNMVVANIMDNYVHIPLNMVIKRRKLNTKSGL
 WRVLESTGQGRLTGMLPHCNPLTNEENEHTKVI I

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>LAW0053 74229:74561 forward MW:12792

MSNTDNYIMIKKTNNLNKLLWSILLCFLLVWVVLTFGIGIPYYGVQPSNLLESGLYKPKV
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>LAW0054 74909:75781 reverse MW:32616

MKEITNLKNNKQHNKKHRQLPYTKQLTKMQHPNFSEYSLDFLSTISILSGIKPVLDLIEK
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 FIELEDLFDKVPDAPLPLIVVFDQIQDPGNAGTIIRTLYSLGGAGVIPKHNGVFLGQDA
 RRAAVGCLERLPISKAINLSRAIETANEKGFHIYGTSEKDSKNVFEAELKFPALLILGS
 EKSGIRLQLKKRCHTILHIPMVRDVNSLVAQAGGIIISCFARCQNNFTV

>mltD 75939:77606 forward MW:63237

VYQVITVIFILRSRAMRIKVSHYMLLLLLLLNFGLILEGCGNKKLSGSDRFVSTRYSRCK
 EEKTGTVYLPADDGTPLNKTEFNAFNSKGFDRNIDSKDMRDILLHFKKYVRHERKTVEI

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NVQRASRYLHHI IKTFRQEGLPDELAYLAF IESGYNPCARSCTGASGVWQFTCATGKYYG
 MSKNSWVDKRRDPYESTRAAAQYLKRLHQ IFNDWHLA ITAYNAGEGRVSRALAASGAKSF
 FELRRRNKCIPEKNRLSEEKQYLPKFLA ICKI IRNLKQLGFEP IELSKSQKMVELKAKP
 GTNLKTLSRHLGMSWDEFFAHNAAYLKHTTTPGVHSTIYVPHHKVRMAHAFLNKKSKSKT
 YMADRGRYRVVRGDTISSIAKKTGVS IADLKDANPHYGSLRVGTILTIPSSSKMVANYVE
 PEIYQEKTVDTKNSQNTKVQFHTVKKGDTLFSIAKYYGITQDCLVTANNLSHTDISVGQ
 QLYIPIEKISPMAMLKKDPEQVQPKRIVQYVQVQGGDSLWSIARKFNVPPIDLLSLNNLSR
 QSKLRPGDYVQVAIN

>LAW0056 77677:78435 reverse MW:27835

MKTTFKYLLAIVIIIVLWKIGSIIIGENILPNPTKVL IYFYNSLKTCLFLTHAGISILRI
 SVAMALAWFTAFFPGLLGTKHLVDTIFSPIIFLTYPIPKIVLLPIFLTLFGLGESPIL
 LITLTTGYQIL IATRASALNIDKKYRDSFRSIGGTPSQELQHV IIPATLPNALVALKISS
 GTATAVLFMVESFATQSGGLGFLIMDGWGRGNMLQMYTGILAMSLLGMGLHEFFNAIERYL
 CRWNHLHSGLAT

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>LAW0057 78432:79178 reverse MW:28235

MSFHGISVNVINKIYNNTLILHNSLFKIPAGETLSIIGPSGCGKTTLLYILSGLEKATSG
 DVSLYSKKIAFILQDYGLFPWKTVEENILLPLLLQSTPIKEQKKALKEILEELQLVGLEK
 RYPIQLSGGQRQVAIGRALVTKPDILFMDEPFCSLDAITRERLQNTLFKIWQHRKITFV
 LVTHDIIIEATFLGKYIMVLTPTPSPSMYWIENSTFNTRHCRTHETFFKITSKLQQLIPI
 PSCDKENI

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>LAW0058 79175:80086 reverse MW:33283

MIIIRIFLFLIMSQTQAQSAINIGTLPAASSIILHVAIDEGLFADQGLEVNLPFRST
 VELSSAMRAGMLDGHFTDIVTVLLQNETGVPQQIVATVARSTTQHRNFGIAVSQKSSIQS
 PNDLKNTPIAISKATIEFLASRLQKAHLPTSCPLTDINRIALRTQLLMSNKIEAALL
 VEPLLSLAESNGSKVILDDKGLNLVFAVIALRKEVLSDNIAQSFRNALLEAAKRINANPD
 TYRTLMMVNDLLPQDVVMTFAMPFFDIEKEPLNSAD IETFANWMISSKLLQTSPSYEEI
 VLQ

>LAW0059 80428:80937 forward MW:17744

VQTLIVVTYDTELKAEVRLDFLKMKEYLVALEDAVVVVRKPDGKIKLHQMYNLTAGGA
 VSGGFWGTILGIFLNLPLGLAVGASAGAIAGALSDVGISDDFMKNLAKQLTPGSSALFV
 LVNSNITDKVLDALHGTGGV I IQSSL SHADEAKLQEALNGMSSNDDSSN

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>gI pR 81700:82470 forward MW:28286

VIMINKTTKRHKALQEFLAARGYATIEDLARHFDVTPQTVRKDIRNLASDGKQVRFHGG
 GMPLGSENIYDERKSI CSEEKNRIARLLANHIPDGASLFINIGTTTEEAARALLEHKNL
 RILTNLSLVAAICARNSSFDVLVACGTVRHKDHGIVGASAERFMSEFRMDYGIIGISGID
 ESGNLLDYDYREVAVARTII EYSRVVFLATDSSKFGRPAMVRVGGLSNVKAIFTDGPLEE
 KWRQLVLESSGTELFIA

>LAW0061 82557:82877 reverse MW:11863

MKIDNAPSVQSMMLGRSQKNTNSSTFSSQLKEQVDTSTNNITIQQTTPNIKGNISLPDVN
 IISREATPFLSKEEVDFFEKMMQKNINLQGGYKTYSTQSSINIKT

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>ybeN 83393:84085 reverse MW:26705

MKLSIMNQKLIGILGGTFNPVHSAHINIALAAIKYMHLEQIQFIPCMVPPHKTTKNVIFP
 QLRVDLLQAAIQGNPLLSINTIESILPQPSYTNMNLNYWKKLHTLHQPLFILSDEDFAML
 DTWYNGLELPSITNFLIIPRSTNKKQSFSSTLKRFWNCTTI IQDRHNKMVSYASIFKNLY
 CFFLNTPIMDIRSSNIRSAWKGGVYLNHTMPTPVTKMLEYHQNILKKLWK

>LAW0063 84629:85216 forward MW:21649

LSFIIIRHSKI IIAFFLILLSIVI IAGVWSWYSSREEIKAQAALGQILINSVSTEQFDTLI
 KFEKTAPTALQKGIILQLAFWAVQLEQYQKAAEEYGI LYNKDPKGAIGILSGLNQADLLQ
 RTGNWKEALNVLLSLEEVASNPILTG IYESQAICAEHIGEKNIAISAYKKLIDELNITGV
 DATYYENKLTILSNS

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>LAW0064 85844:86242 forward MW:15437

MDDFLKEALDIVKAQASVRVMAEDEIISMVRRLLSSGIKVVSEGDCIQEEQAPTELQMDPR
KSVKEKSITCLECGRTFKILTRKHLRSHGLDANEYREKWGLKKDTPLVCKSLQRERRNKM
KDMKLWEKRRKS

>LAW0065 86420:87169 reverse MW:29161

LKNIINTIIFPKQRNKKMSQKFSMLQLILFFLTFIFYSYITDSYAESIPIVKELQQSYQS
IKNFSATFTQELTHQESGSKETRIGKLFFKKPLLVRWETNTPHEELLINTNAVWDYLPD
ENLVYKYSTDIVKDDSTSIIQVITGQVRLDKNFSIENNENNNNELIFLKLYPKEPTTQMV
EAFLOWINKKSLLIHKVQSIDFYGNTNTITFINITPNTHIDNNIFQFTPPKDVTIENLQDS
STPERPLFN

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>ftsK 87173:89860 reverse MW:100519

MIYSGKENKSTRNLSLQQSRPNETPPEDNNQKLARELFGFLIFWGLLVLLSLLSHDQR
DPSLNHVVSNFSAHNQAGIFGAYISGLLVDIFGFSIVWPAIFIAWGAGCITTWLTIPW
WRWLGFFILSFCLISFGAAWNFGIGDVRGGGIGMTIYKQSSIIFGTIGSTLIWFLFFI
SLEFAFGIAWLNILHRLQNIKKNKIEKYDISLKTICSICLNYNWLCFIQNYFPFKKQEEY
IDIIPLYEIHNP TLQPAYPYDSSLLHNTLAHQYTG IATLSSYRSERIQYSHTSNNQLWNI
PHSLQETLKKSHKKSIIISTTYNEFTSPDITPLTLEDDTFEDTHIDIDKLENLDTIDITTH
PLITSPTTNKYEEQIQHTSSNNLPKLLSFSETSSIPTSTALRQTTNLVKHKLPLPSLSL
LHSSSTENDILPSQLTLKEKSKKVMDCLSDFNIQGELVRVTPGPVITLFEIRPAPGVRVSR
IANLSDDLARSLMAEAVRIQAPVPGSDTVGIEIPNENRSLVSFKTLIQSKAFKNSSSPLS
MALGKDIIEGKSTVKDLATMPHILVAGTTGAGKSVCLNTILLSFLYNATPTDLKLILIDPK
RVELAMYTQLPHLIHPVVTEPALAKVALEWAVYEMDRRYNCLARLGVKHFNEFNKLLSI
GNNKPEEFADLTYPYLVVIVIDELADLMMTAGKEVEGSIVRLAQLARAAGIHLIVATQRP
SVDVVTGLIKANFPSRIAFQVANKYDSRTILDATGAEQLLKGKDMFKPNGGKIQR LHGA
FVTDEEVTAVTEYWRKQAPVYEVDFSNWNNPLNINNTTTSNTNTKTPFSSSDEESLYAE
AITFVQEQGRMSISLLQRRFRIGFNKAARFVERMEEEGILPPTIRGNRSRTIRSN

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>LAW0067 89937:90494 reverse MW:21197

MYSTTDFRKGKIEIDGVPYDIDFQHFKPGKGGAMVRTKLRNILNGRVIDNTFRSGEKV
ERNPLESRMQFLYHEGSELI FMDLTNYEQLHMSQEDVTNGKSEFLKDGQQCRVLLYNEKP
IDIDIPLTLILEVIETETAIKGDTVSNVTKPAKLETGVVIQVPIFINIGERIKVDTRTKE
YIGRE

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>LAW0068 90801:91409 forward MW:23289

MMTQYKLQLEATNFTKQLQQLDILEQNNILQIALAGRSNVGKSSLINALAGRKQLAKT
SGTPGKTRSINFYAVYPNTFMLVDLPGYGYAQCSKIERQHWAMLIEYYLKNCSKLKAFVL
LIDCRIPPQKLDYELAEFATSYCIPLIPVLTIKDKKLV EQNKRQKEWRALLNNTQPLL
SSKNMKGVQQLWERIQYTIDSY

>LAW0069 92957:93616 forward MW:22873

MRIESDGSWRQVPPNNSSTSSVESSQGAQTNQTEETSGRRSSSSFWGRLCSRCSSGLSR
VGAAISSMFSSLVSSIRLSQYITRDKTASGVSSGLAPRVSSHGIGGQDGSTRHTTNSP
RDSAPPDFSPPPPINKRHGGPDSDPIDVPHGVGSTSPSLLPHGKPDTPIDYDTPRNF
IVGAPIPMPQSGGNRSQEPIDYTPKKPGESSSSSSSSSS

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>LAW0070 93731:94156 forward MW:16686

MKIYNEPTWYDGIKKENELIEKEKPLEDISSYWEFCNIELGIVARVIVGIFTLGLSEAVF
KCMRMKAKKSEIYGPIVKGVSWYENGKKRVDNNSHSEEQAQSQPQRNRSRRNRQLG
SRAPNRYGLMYRNGMPTRFWV

>LAW0071 94285:94833 forward MW:18995

VMRVDAGQRINQALMADTTQATSTNETSEAQNTEKTEGSKGSSKLCGMNCKKGLKLAGRI
ALAVLTLGISEGVRKGI EAYQARQVKSEGARMGKLWETGKPSFPEKSGIHNPSATDDNDK
NLWTSSSQKNSGGVNSFGKESPPSSGSSGSHFVFDSPQKPSSGITAETTLKTNSGGAT
GE

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>LAW0072 94921:95379 forward MW:16102

MPITITLNAPRPQDFEDNTSVNRDRNTENTRQTQETSSKSATSSSASSFLHGLCSNCRQL
GGAMARVGSSVLASATLTVRNLGVRVNSYAATQVRSGISRLADLISLRDSQSGPRGPEI
TVSYNKDQDKVTFHDPYNRGGFSSSGSSGVS

>LAW0073 95597:96073 forward MW:16605

MPPIDPAIAAKISAAMNQGLDYANRNSNDSSASSTSSASSTSSLSSSSPLYTANCKQG
LKMAARVGLAVISLGFSELMKGISLYKSRQATQNPQPRVVNVFESQPPLEISRRSSTDS
TSSSGSVSSRTQLIFEQSSHMPSTGITAEMSLTRGSND

>LAW0074 97539:97961 reverse MW:15815

MEITMSYITILIPALLIVLIWLILQSKTLANIHDHLAITDNDLEILLTKVSAVTLIDVR
SSQEFNVGHLTGAINIPLKFLKKSIDTLETTKPIILIGNNSKKLQKVAILLQKRRPDLT
QYIKGTLVHTLDNNIIKWD

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>icc 98193:98996 forward MW:29922

MQSIIKFHISDTHISAQGLVYDNNPRVKLQTCIDEIKRDHLDA AFLILTG DVTNDGSM
ECFSFLQEVLS ELPMPWYLVGMGNHDLKQSLFTA IPEYPRDPNGFVQFTV DTPVGLC IILD
TTIANQSSGILCAARLDWLANELKQATKPVLLFFHPPFSLGIPSMDAIVHSLKNSEEFF
AVLKPYKDKIRHMFVGHHRPICGSWNGIPFSCAPSTAHQIALNFQSDKSVLGFKEPSGY
SIVLVNNDQLIVHFQECNKTPNIIKA

>LAW0076 99014:100063 forward MW:38438

LSAICLNNVCKYWDTSKAVDDINFKVESGNLLVLLGPSGCGKTTTLRLIAGLEKVTSGQI
IIDDCDVTYLPPSKRHLSMVFQSYALFPHLTVQENILFGLKVRKVPKQEKKRLDNAVAM
LNLYG LLGRKPSMLSGGQQRVALGRALVANASVCLMDEPLSNLDAQLRNDRKEIREIQ
QALKMTMVVYTHDQVEAMSIADQVILMNKGVIVQHAVPEDMYIKPQTI FAASF IGTPPMN
IINLSQKDGKLIISGSQDIFIPQVPEGATVIGVRPEHLQISSVGWPSIVLSNEYHGAVSL
VTCKVGSEKIIFIQHGNVTCSPGEIVYLSCSPEMHFFNGDTGNRITRH

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>ugpB 100196:101491 forward MW:48585

MVRQFIHKIYYIGFVLSFIIIVPTFAIALDKVHLTFCFPVAVSGPITKIIDMTAEFMRT
YPDIVIKPIYTGTYKDTITKVLTA MHGGEPPHVAVLLACDIYSLIDENAI IAYEDLPGGA
ELSHDYFPVFMKNSQAQKGTWGI PFQRSTIVMFWNKEAFTKAGLNPTAPPQTWQELIDIS
KKLVNRDSSGKVTQWGISIPTTGYAYWMFQALCIQNGLELANSEGTKVYFNDPRAVEALQ
FLVDLSYKYGVMEKGTIEWSTIPRDFLEGKTAMMWT TGNLTNIQENTTFDYGVSM LPKH
IRLGSPTGGNFYILKKTTEAERDAALKFVKWMTDKERAAQWSIDTGYVLRPDACQ TEN
MKRYIKEFPYLDVALEQLKYGVAELSTHANQRVTKVLEDAIQSAVTGKT PSLALEEAQK
DAERILLRYSN

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>ugpA 101554:102441 forward MW:33553

MILLRHYIISQVNAWLLLLPAFIIIFVFSLLPITSTIINSFFMNGDGGAVSKFVGI DNYL
YLLEDKVF RKALWNNFIFVMSVIPCSMILALIMALWVNTKLAGRSLLRLAYFVPTILPMI
AVANIWLFFFTPYGLIEQIRSF FGLSGINWLGSESTALFCVIVVG IWKDAGFFMIFYLA
ALQHIPP SLGEEAILEGASRFYLRRI VVPLLMP TTFILINATINAFRMIDHLFILT KG
GPNNASMLLLYYIYEVSFQFWD TGYGSVLTVTLLIILGFIALFQFGILERKVHYQ

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>LAW0079 102438:103274 forward MW:31491

MKNKYNPYEPQGITYFLELAGAWLLAVI WALPLVYAIWTA FHMPAYSTNFSL SAPITLEN
FKLAWQAAPFAQYFVNTLLLVTLVITSQLIFCTLA AFALVRF EFRGKEIFFWII LIQLMI
MPDVLIVENYKTISSMGLD TTLAIAFPYLATGFGIFLLRQAFKIVPKELDDAAAIEGAN
IFQILWYVYVPLAKPTYIAYALVMSYQWNNFLWPLIVTNSVSSRTLT VGLQIFSSIEQG
VNWSIIAAAVLITTIPLLLALLLFQKQFMQSFMRAGIK

>LAW0080 103384:104913 reverse MW:57371

MILEYTMNTQYAINTSVVRSFASKCFTILSSLNIVSLLILFALQNILLIKYVPYLLQYY
DQIILKFGIATYSDSMIPLTPWLYLTAISPINLTSFLMITNMSLSAIVLIFTWLLAIITK
QKKNVPIAGLLLLSTMITLLMPYITPDSILFAAIVLLAICLYKGMKSSAPFWLTIGF

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LLTGCAGLTGGLVGGFFIPLISSLI FLI WSGNLRRAGCYDGALAFGLMLVMLLGWGSIISS
 VENGRELLKFITTYQIINPTQTI FHIQTKDFLFSTAMICLIWLPWTLIIFLLPWSHFFSI
 PRKLIAYRLSFPGHSWIWINTLITVLCIIFISSDLSIISLYSLIAILTAQCIISLTEQ
 KSLFLYLGISSYFLVIGLLFLFISLYPIIQTWLPGRGFETDLPKIESFFFDKLGIVITST
 ISILSFFILWKFTNKRSP TGS LI VVVLCTLLAIILSYTTPTSPNEMTLFMQLQHSSTP
 ATTNRVPIDSLPDSTDSNEDTAEENYHDL

>LAW0081 105205:106146 forward MW:34524

MRVVVLGGSGFIGSSLIK TLEGRDHSIIVSTRDSSDISISPSSNVSYVVWNGIDREPCFK
 MFDGADVIIINLIGENVASKRWS ENWKEKIVTSRIQVGKTI VSVLEELKSFPSVFIQASAI
 GYYGYWKNFDTAPQCTESSLPNGFLAQTVIQWEASTSALDTLGI RRCIIRTAPVLGMNG
 GILKKMLPGFYFGLGSIFGSGSQFPWIHINDEIAAIMFLIDNKEACGVFNLVAPEQLNM
 KHFAQCLGKVLKRPVFIHIPELLLR LTLGEMAEELLSGQRAYPEALLEKGFTFRHGLLL
 PALKDLLDNHLAM

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>LAW0082 106189:107283 reverse MW:41948

MDPLTHALTGATIVYTFPKESRPWWFLVWGMLVAMPLDIDILFVSSAIDYIKVHRGITHS
 LAGAWGLAFICTIPLVVL TLRPQPNELPPPKQISWTLIEAWFFTYAILILHIWLDVMNS
 YGTQIFL PFSEYRVLNSLFI VDLLLILPLIIGLFFRRNNRFIMVLLLLWTIIYPLTNIV
 IRLGLETYLTHSYLAKNTFQTQKEITLPRHNTEEHI IAVHLIPDAFTPFHWKLILDKGEH
 WNVSGYNSFTSPPSKFTSFKKPPEVLWMLKEKSSIFRTYEQFVVPVLTESYETQTGKV
 YIFSDLRFGSTIPFINDLQVKREGEELAFRIMAHINHAGELSSVRFITGFGAGGDTGWVD
 PLPD

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>kpsF 107298:108380 reverse MW:38813

LPILHLIKYIYKTVRKTMTA IHSYSKKYTESTQTSPEYLLKLAHEVLTIEMDGIETIRER
 LGNTFVEALLLLSSCKGRVIVTGVGKSGLVGRKIAATFSSTGTPAFFMHPVEGAHGDIGS
 LKSSDLILSISNSGETPELNAIVPTIKSFGTPMIALTSVLNSTLAKAANVVLHTEVPKEA
 CPHGLAPTASTTAVLALGDAI AVCLMSLKSFTTEKDFLRYHPGGMLGQRLT LSVTEVMRTD
 GLPTVHLGTSQCNAKLTLDKGG LGVVLIDKKN TVCGIITDGDVRRSICYNRLKQDAPVE
 QIMTPRPKCGKPQDTIAILLDIMEQKAITVLP IVDNYKLLGIVHIHDLLGKGTIIFSDR

>LAW0084 110475:111206 reverse MW:29007

MLFQSDIKKYFTNTAHRKR IYDR LGNYKTYIKNPKELLWKYKARYRANYFISKPEILAL
 QQKVQDLFHGQTYAKYSDFKRYFIINLRR IYRLGLHKSSPVRILDIGSGAGFFCWLCKQY
 GHDVYALDIPGVAIFDYLI PAFNIPRTYCSIQPNISIPKMDQSFHLIVAF AICFHELEGN
 QRWRNRNWLYFLNDIKKNFAHPGTKMHLFFNDHPHGDFEQVKS YVISSNYTIKVGHK TLE
 FNF

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>dnaK 111603:112004 reverse MW:15185

MKKVKLSCQEVYTLEQKDIEYFRALLTTMLEEAQHKG DSTLEDLTDGNEIFADPADRASA
 ESDRAFTLRIRDERRLIRKIQSALQRIDDGTYGVCEDCGDDIGTPRLKARPVTKLCINC
 KSRQEEGESIRGE

>LAW0086 112674:113177 reverse MW:19252

MLSDSIKNWQNYELGPIWNELMLWINQKVNSSLPDGIYTVAGCNINIFPMTSRMEGSCLY
 ESHRTMCDLHIVLKGKEYFWRNPINNLELEGLFNIDKDIGFYKPTTNTDGLSRITLTTGI
 WVLVFPWEAHLPDMSIDEHSITLKKLVAKIPFTHLTISAKKVTHGYF

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>argD 113180:114442 reverse MW:46817

LVLDIQEKTNSSKGVFMQLSYNESIMLHEKLLCHTYGRYPIHVVEAHGSIILDANGNK
 FIDLLSGLAVTSLGHCNEEIAEVI EKQARKLIHTSNLLYHDEQLELAERLLSMGHFTKVF
 FNSNGAEANETSFKLTRYMQHIKCKNAFEIISLEGSFHGRTLTTVAATGQPSLKEGFAP
 MPNGFKQVPWN DLVALEEAITPSTA AVLIEIIQEGGVRPMDSDYIIGIEKLCRKH DLLL
 IVDEIQTGLCRTGQY WAFQHFPIKPDILSCAKALANGLPISAILTTDEIAQAFVVGSHGT
 TFGGGPLISAVATKTIEMQRDNLHKRAEKLGNIFIQRLKNIANRHPTKIQEVRGMGLMI
 GIVLPCPGKPLWEKLLQKGFLNLTQNNILRLLPALTIDEHYLETFAQTLEDTLEKYIQE

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>dut 114414:114896 reverse MW:17336

MSAFLHSEVSIRFMYLRDAKKIYTTSGIAYETPASVGLDLRACIEETSILTILPGERETIP
CGIAIEPLEKNIAGFVYSRSLGAIHGLTVAQGVGVIDPDYRGEIIVVLLNTAKNPVHVN
RGDRIAQLVFQPAFQVSLVETQQLDNTRSRSFGFGHTGKN

>foIE 115144:115653 forward MW:19446

MTEITHSGDQTTHLKI LGKGSIGHQGGPPSSSLETFGNLYPHRPYVITIAFPEYTSLCPV
TGQPDFGTIVVEYIPHERCIESKSFKLYLIAFRNHQTFMETVTNTILEDMTVLDPLWCR
VKGLFEPRGATHLHVFAEHIKEVEEKEKQEALHTVIFNWKQYLPHSWK

>LAW0090 115673:116482 forward MW:29248

MENYGLFIDVGNSTVKIGIGVIDRLLISYTLSTNNSLSGDTLGIQLLQCNHAEQVINKD
ITISSCMMSSVPTMDTLLQYACERFLLCKPHIINQDFIIPLDNHYEEQCEVGADRLVAA
YAARRLFPDSKSVVSDYGTATTFDCVTDNTYLGGLICPGIKSSLQALYTNNTAKLPSIIL
NTASKVPIIGKNTKTSLTHGFLFGFATMTEGIYSKLINVLDGPNVTFVATGGFARDMANVV
CCFDAVCPDLILDGLHLLWIDCLSKSYSL

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>eno 116596:117897 forward MW:46859

MTAIASIWAREILDSRGNPTVEVEVTLDSGYIGRAAVPSGASTGTREALELRDGDQRYN
GKGVLLKVVAVNGPISEAVIGIDALRQVQVDNTLIDLGDNDKSKLGANAILGVSLATAR
AAAEAVGLPLYQYIGGTNAKVLVPLMNVINGGAHAPNNLDIQEFMIMPVGAETFRDALR
MGAEIFHTLKTILSADGHVTSVGDEGGFAPHLKSHDEAFQYLVKALIEEAGYNPGSEVMLA
IDVAASEFYKDKRYFLTEYKTPLNSEEMIEWLKGFSTRYPLISIEDGLAENDWDGWRELT
VELGNDIQLVGDDIFVTNPIMLSQGVVEEGIGNSILIKVNQIGTLTETLDTIELAKQSAYT
TIVSHRSGETEDSFIADLAVGINAGQIKTGSLRSRDLAKYNQLLRIEEEELEDSAIYYGP
VFSESNHSCCDHT

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>rfaF/rfaQ 117911:118954 reverse MW:39831

MNSLSSISPKKILVCQLRQLGDVILATPSIELLKRRYPNAELHLLTEKKCVPLENNPFI
DTVWSLDKKKLCSLFKEVQWYWKVTQTKFDLVIDFQQLPRCRWVVALSKAPIRISYTPPW
YTKLLYTHSIKPLDGYSAMSKASILRLLGIEWNGEPPIYLTQEEKTLAKQRLTTLGLKS
KSHLITIDPTHKKNTRRWPITHYIELLKMLVNAKLNLYFLPLWGPGEYKEIQLLINTPEL
NNYILLPDNMLTLREMSACINEAILHIGNCSAPRHIAVAVDTPSFTILGSTSSAWTYPST
NHRHIQSNLHCQPCNKNTCNISTKCLKLVTPQAAQAILPFI RQLLT

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>LAW0093 119487:120482 forward MW:37337

MATNLFSIQKKFTLFLVLTLSFMYISFTIAKDSSSSSKEKNVSNKLYKKEQLTRLDEC
YTGGNGYQWDFDLNIPKWQLLEHGLWLGKFPVTKAGDVFEVVMLKINPQYYDFSLH
MASQTGKAFSLQDWSNTYELSAVINASMYLPDGVSTSTGYLRNHDHINNAHVGRKLGAFV
ASPYNSTLPNADLLDRSDNWEILLPQYKIVVQNYRVISANRQCLWSTKKVIHSAAVAR
DGKGYLFFIHTKYPISDLDFGNLLSLPIDIRIVMYVEGGSQAGLLINTSNFKQLWMGKH
PVSILSINNTSVPINNVIGIKKRKGIPLSK

>pfk 120488:121714 forward MW:46794

LTPMGNCTSKLYVIMVGLPARGKSTLAKRICSGLEQQGIQTAIFNNGELRRTLFGGESAC
PEFFNPQNKRTRFRDQILYQSMAGARGWLEQGGDVAIIDATNGTFVQRMNIMMTLQDRP
LLFVECVNEDPLLLSASIQRKTKLPEFTELSEDALESFKKRLAYYESEYTPLSNEPCWM
RVDVAVDNRI LAESPCNDLPYAAIRDIVVSRWVHDLFLVRHGETEYNLEGRIGGDPPLTE
KGQEAKQLADHFMSIDIPYIFTSTKIRSIQTAELLLASHNKTVCMELETFDEIDAGICE
GMRYLDIRKHMPHEYEARSTNKYSYIYPQGESYAMLKERVAQGLRRALFLAGEGTLMIIG
HQAINRTLLSLFLFHRPEDVPYTYIPQNQYYHITVTQKKLFEMIQYA

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>LAW0095 121739:123019 reverse MW:48760

MKNLLNQLEDNIHVFLARNEDVAVVDRRSLRSINVKSIQFMELGIKAASTLVSNYLNQL
SMPDLILCHEQLKIDITGKEFVELLQLHPVLKKIPLIMTITNISQHAENMYYSILKRPYS
SSDLLKSIQLAKEKTSIQHTVTSNTIAFETALEYFIKTHQSTKELSSSENSYTAGIKAIR
EKNWDEAITQLNYIVKHQPEHANALLALATAWKGGSKRKYRDI LDELLHIYVKNHQWEH

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AKTINQRLVQVNEGTSNPLYSEACEFLSKKNISDAAQALIAGRTPFQNELLYEQVARGCI
ANPNPQEIATTLQEYLKSIGEAPLAELLGKHLFQPVKKRILSLEHSAKKIISSSKNEEQF
SFFLDSANTQDKKQKHTNTQQTKNINEPENLKDRFKAPSFLKSMPKLQDAISILKFTYHM
FRDSKK

>LAW0096 123089:123490 reverse MW:15821
MINYYKFKQVYEYAIN GKHEEALKLLIELQQEFIEIHDENNKRLRLHLQDVQDTLFFSKNL
HFDRNSYWFHHTDGKKGPFCKHCYELRGILSYIDNHKELCSTCGASVKKNTDPTLIKKN
CKKIIPFPQNVN

>corA 124343:125278 reverse MW:36527
MKKIRYSSKHSIHKKIPIYEKIQWYDIAGSKNDLITFLDNLSISPEISEIAIENQPFPEA
TVFSTCAILRLPIRSEWSIPDCEYVTFILFPDRLVTLHQSQVSLLVQLRIQYQKNTMDED
VKSIPTLISYILDNLIDANIRCFTRARLTTEEFGEKVDLATVVIKEQDAVNVRRQVSQLL
SQFEDQFYALTNLETQHTKKAFLNELYDTLKDSIEAQGHLVRSLEHMLRDIQQFYQY
LMERKTEQRLRQLTVLSTVYMLPLTITSIYGMNFENMPGIGWEYGYFVLLGLMVLISGIL
IYFFYRKGWFQ

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>LAW0098 125579:126076 forward MW:18413
MADAIALGDHIESKCTRCHDVTGHIVILMIDDEITKVECRACGSIHKYPPVNQKSSLKK
IKESSPGSKKVQKETTTSVNVIPKASSKTKSQVNRELTEQQWQEAINTSYGIRKPYTM
TINLALGDIVDHPKFGGQVQELFPPDKAEILFREGIKLLKCSTN

>argC 126080:127141 reverse MW:39108
MGIQKIQAAIIGGTGYTGIELIRLLSLHPNIQPIFISREQCGKKLYEVHPFLSGMPYAE
TIFSPLDHKAIGKTCDAFLAVPHGTGMEIAPQLLEQGTKVIDLSADFRLLNPMYTSQWY
HLEHNASHLLSEAVYGIPELNEEFIKRANIVANPGCYPTSIILGLYPAIKHGLIKFENII
IDSKSGTSGAGRNTSTSSLLFCEIQNSFKAYNIGIHRHTPEIEQELSYIAKQPITVTFSP
HLLPTTRGILSTIYTQLALPISQDEVYRLYTNTWKDQPWIRIVPSSKLPETRNVCMTFC
DIGLVVDIRTQRLIIISAI DNLCRGASGQAIANANLMFNLPMTTGLIFCPLLP

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>LAW0100 127145:127495 reverse MW:13059
MYKPIITKEDEVHSTTKNINGTKNTQPSFTTTSNLLPKVTFSTFILSLASSALAQLGEVP
HPESGEIIQDLPMAKHTIEILSMLQEKTKECLDSDESRLIEGLLYELRMKYVMKKN

>dgkA 127796:128161 reverse MW:13868
MSFCLIKFCHLIHATKYSMLGLIQAFKSEQSFRHEVILGILFFLLWFQDKNALHCLITI
SGWLFVMIIELLNSAIEKIFDLITTDIKPIVKAGKDMASAAIFLAIVINIGLWIYLFPLP
F

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>poIB 128189:130795 reverse MW:97049
MNIKEFFSEDP IYLMGSAFIYRGFYANQSMQRSDFPTSALFNIGRIFLKI LREEQPKY
FVFVLDGPGTNFRHTLFPLYKAQRSPAPEALIKQIEPIKRLVISLGLCLTVASNSEADD
LASIAHRYRDNYPIVLIASDKDLKQCLDKNVLMWDPASKAEKITTLSFKEDEGLLPSQW
PDVQAIIGDSSDNIPGIPGIGLKTAKKIFQDFPSLESIKDNFSSLPLPVQKKFDGHLDM
FLYRQLTTLSTTECIDLQIDTIKVGPIVQETTLILREFELVSLEREFMAVVHQKKLIDP
KGIIESGTSSHGQLSLFGSSKPIKNIYCSTASDLPSVKGKIVALLTDKHEVTLAVENTEY
FYTGPLLPLTKALNQRSRHVVTPDLKSLLRNNGIWRTPNTHWIDLGLATYLLDPEERDYS
WPVKLVARWGSVFGLSAGNPGLIALKVWEQLRNKLTAKLLELMSLELPLIPVLADMEAV
GVVLDQNLKIFLVEVQNSLDHLETIYHEAGGSFNIRSAQQLGDILFNQLELPAKKTR
GGQASTSQEVLEKLSGQHPIDTILEYRKLEKLRSTYLEPLPRLIGKDGRVHTTFNQLAT
ATGRLSSSNPNLQNIPIRGS LGQMRSCFTASQGNLLISADYSQVELRVLAHYSKDPTLL
TAFLEGADIHTRTASLLYEKSQEEVTADERRNAKTINFGLIYGMGPQKLAQELNTTLNEA
KKFIQRYFEHLQAIKKFYDQVEHSAKEYGYVTIAGRRLLPDIHSENIQLQALARRQAI
NTIIQGSAADIIKIAMLTVHGDITLAKMDAQLILQVHDELVEAPEDNAKEVGKRIAMLM
SNVTPGGKPLIVPLVTQWSIGYDWGSAH

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>LAW0103 131168:132442 forward MW:48025

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MGNPIGSRNNGLNKKNKDEHFEDESSGNAKLWLALIFIIISAGVILLFWFVRGVSFQKDE
 VTTEDTQNMIVNNPSEAYEAMKEKLMKDIESSQSKEKEPMLEEVIEESISPPPPASTFNN
 YEQGSKHIFRDKDETGASERGFSTKSTHPVHTKRDKKDDTVVRIGFIDSLAAWMAKNYI
 PPSKSTMSG SINVTLQSLNMRYGVGMTGLSWKGEDPQAARSAILRYVFTPSMLDALYRLY
 VDRFMKALSEELSVRRHNKVLTIQQKQEFYRLYATQFRGIASSTLQGIATIPNFVQKVDDI
 KLAARKRVVDTNTKYINLVSCTDKCKELGNKVELQQLTKKVTAASKAYQQAII TREKMIKA
 LILSIKQHTTTRVLDDSNILFLANWVYRRVKSDPGNIDAVLQSSTLFLDLAKRFEMTSGI
 IRHE

>LAW0104 132452:133093 forward MW:24507

MKSWFVIFLGIILLLYPPFIGVGKQTPRNSLLKIQYAI DSHNFELFEEYVDINGLLNQQV
 EYFFCSLTTVKDTSKLPSLLYLLANTI QVPQYAAQVRS LFISELYLFIKYGISSGLFAGH
 ELLDEPTGLLTPYISKISLGRKELLFSNSEKVLAKMYKQRDIVVPIQIKDYGNRQYPV
 LLGMSFCNGMVKVTTIKNLPELCKKFEFEEYLHN

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>LAW0105 133237:134181 forward MW:36320

MNSSIRLICYIVCCFFILSKLSMAAVNYSLEILVQHRIVFQEGSDIALFGDKQILFTQD
 AQILCDDNAILD FECLLASYPG VITG IITDEEKRLWLVNGHKVLYDDGKKRIYSEALLN
 STVKDSMAQLYPLEPSRIPDVG IAPGRVRSYALLEAIYGNSREEVEKQLVGI RFKKREK
 ICFFSHSAKAAQSLKDVFTQLD TLLDKDPQVY EYIFPLSGGF AWRVIAGEKRLSPHSYGI
 AIDLHPKGIYWRLVKDREKYLQIQKEYPSELVGI FEQRGFIWGGKWYEYDFMHFEYRPE
 LIYKAKRSIHNNVM

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>ilv 134353:136017 reverse MW:61448

MDTNNIKTVSQLIECLEAEGVKYIFGLPGEENLHLVLACANSSIKFILVRHEQGASFMA
 DIYGRLTGKAGVCISTLGPGA INLLLG VADAQTDSTPLVAISAQVGLNRIYKESHQYVDL
 VSMFKPITKWADII LTPNSVPEMIRKAFELAQTERPGAVFIALPEDVEEMHIDTSLKPLL
 TRPQHTSYDPKMLEQAKELIVNAKNPVLVGHGAVRNKASEALQRFAEQLQIPVATTFM
 AKGILSDRNPLLLGVIGFMKHDYENFAFDKADLII SIGYELQEFTPSKINPNNKNIIHI
 HQIAEDEDIAYPITVAIQADISATLNMLCEQLPKNSHTPWKGIANI IQLHKEELEYGESA
 DDYPLKQQRVISEDIRKAMKDDDIVLVDTGAVKMMMARLYPTYLPLTCIISNGLSTMAFSL
 PGALAAKLACPDCKVLVVTGDGGFMMNSQEIETAI REKIPFVILIWEDKSYGLIKWKMDM
 EIGKHQFVDFTNPDFVTYAEAFGAKGYRITKAEDLLPILQKALNDSTVSVISCPVDYSEN
 MKLIEKLGELDLKL

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>LAW0107 136036:136965 reverse MW:33638

MLDTIIGALLPIVITLLLGVLGWHKDFNIEQATILNQMVMLYALPLTLFSSMVLIPKEQ
 LVSDWGLFFLICIAMIGGFLGVFLISRIVFKQDLGSAALQALAI SGPVFPVGVPLVGYL
 FGIESAVALAISSII MNLFQVPVSLVLLSISTLSESNKNFYKHILNALRQPVVWAPLLA
 LVFIVFNIQFPTSINDSLTLLGKATGGVALFASGIVLFAQRVTLNFPVVISVISRNIIIP
 FIVWLLAMLLQLPHEQTMESVLSMAIPTASITVILAVQYHTAEREMASILFISTTLSIIT
 MGLFIWLLK

>dapA 137267:138253 reverse MW:35948

LKYNFYDYDIIIIISYIILLNNTIKEDIMEECTLYGVFAPVPTPFYASGEIAWDKFIEN
 IKQFGKTTLDGILVLGSNGEAVSLSELEKIKLISLAREHFPLEKIVLAGVGCSEYSTLT
 LCKEASLAEVDGVVVINPTYRNTVSNPEVMLDYFLRVADQSTSPVLLYNI PRNTALNIP
 AWVVISASRHDNII GIKDSSGDI IQLSTIIHDSAPGFSVIAGSASFLLPTLYMGGCGGTM
 AYANIAPDYCKAIIKAFHEGEHNKAKKLQMDILELNAAITSGFGITGLKYALDCLGYYGG
 PCRSPLPSTLSDKDKSTMQQLMKKVGLL

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>LAW0109 138738:139481 forward MW:28461

LYYMEVFMRYLSIILCIVILCSGCSLWTRIKKAIKSNDTIQEEVLNEAEAGTIAEALSE
 LDADREKESSTYLNKISDKKTNIDPESVEKNTQHVKSVDPSPLDETIPKKKVQIDNNNN
 KLSQSSEQKMYKDALHLYELHKYNESITLFDQFMEKYPKSRLMPNALYWKGENLYAQQKF
 ADAIFMFKSVTATYPKHQKASDALLKVGMSYRALGDQDNATLHFRALYEDYPKSTAVQRA

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QKLGIKP

>smf 139486:140751 forward MW:46372

MEYFFGGVSLTKKLFHSSALGALDAVSRKEFWASLALKYTKGLGGRTYKLLTSFGSAFE
ALQQVKKWKQLGIPSDKSLGILSDSWRAGAKKEWEAVRGCYGTILLWTDPRYPNLLKEIS
DPPLFLYCLGDISLLENPCIAIVGTRKCSIEGIRVTRAFAGLATAGITVVSGMALGIDR
EAHLSSIDFPGKTIGVLGSGINISYPRQNSDVRELLVNKGLLISEYAPGTRPEPGFFPTR
NRIIISGLSLGVLIVEAALHSGSLITARLALEQNRSVYAIPGAIGSPFAEGCQDLIREGAR
PIFSVDDILHDLSESLKGFINQYNKQDI IYKEKKEGLEEQDIMLSLPASNDKTTVINKQS
QYKTFGKIERQIIDIRLEPKDIDQLCQLLQLPAAEISPIILILEIEGIIKRLPNTQYVL
A

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>LAW0111 140818:141759 forward MW:35423

MQLPAVTETFLSWLNLHKGFLATQDAYRRDISQFEVYLRTIGLTLEHPEHINKKHIIQQF
SASLYYKKLTRTSIARKLAALRSLFRYLLKTHHIKDNPAVGVHNPQHVKYPEILNVDQV
FLLKGANILKTSHTGLELAIHRNALLELLYGSGLRISEALCLNVSDIRTEDGFVRV
IGKGNKERLAPLSDTSIVALEEWLAIRHMOVATLGEQALFVGVGRKRLHRRQTIRILEELC
LQAGLPLTTAPHTLRHSFATHLLEGGANLRAVQELLGHARLSTTQRYTHITLDKLIQAYD
KAHPFSGTLRLKN

>LAW0112 141824:142765 reverse MW:34398

MFQKIVTCICLLLTVTVLVGLWHKAYARIGGGRSFGGKSFMRNPYSKPISSPMMRQQSN
ISQQIQGGSVANTASRFGGGLGIFGGLLAGTLIGSLLSGHGFSGGGFLDLI IAGLVYL
AYRLFFKRKITSNEASVTNSLYATQQPLTSEMPIPRSTTSGTGWESLKSQHTTYSADVS
NQAITTNIPIDFNEEEFLKGAKAAYVRLNAAWDNRDLEDIQQFTTPGFLNELQQQITENP
NPETTEIMLVNASVVDVKKIEDEELVSVYFNVLLKENQSQESPIEVREIWHFVRPASGEG
SWKLDGIQQVEHA

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>LAW0113 142958:144319 reverse MW:51022

MLPKIALVGRPNVKGSTLFRNLRIRKNRAITHDRPGVTRDRMEGLVQSIGHPSFILIDTGG
VILDSHYSTINI IDELHGFEKDFQQVQLAIEESQAICLIVNARDGLLPFDEHLALFLRK
TGKPIILLAVNKVDGIEKEDQIVAEFHILGLPMIAVSAEHGHNIRQLENELSLLLPNNENI
KDQSTAQAALKLAIIGRPNAGKSSINA IIGKNKLIVSNIAGTTRDSIDIPFIFNKTYL
FVDTAGIRRRTKITDPVERFSVNASIKSATKANITLYVIDATEGITAQDKRLDLLDTRK
IPFILLINKTDLIAKKQKTLLSKSFKEELQFCPHIPIILMVSAVTSSGLDQIIAMAEQVYL
ECSTRINTGVLNRAEEIITRHQPVVRRIRPKFFYLTAETSPTFFVFFVNDAEKISSET
YVRYLERSLRKIFNLHHAPIRIRLRSSHKKRNQ

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>serS 144414:145688 reverse MW:48112

VLLDLKLLQKKPEIVSTALIHRSPLNITSFEELDKRRELLSEVETLKAKRNQASIQVA
QMKRNGENTNTIIAELSELSSKIVVLDNMINQVKNELYDWMLAVPNIPHYSVPIGKDETD
NKEIYRWGEPIFDQPKHEWELGSLTQGLDFERASKITGSRFTILWKWAARLERSLINF
FLDFHLAQGRTEVLPPLIVNEKSMTNTGQLPKFADDFKLEGTDYFLIPTAEVPLTNIHS
DEIIDEYLLPLSYCAQTACFRSEAGSAGKDTKGLIRQHQFTKVEMVYFSDPDQSYDLLEQ
MRKSAETLLEQLELPYRTVVLTGDLGFSSSKTYDIEVWLPQGNTYKEISSCSNCESFQA
RRANIRFRASSGEKTQFVHTLNGSGLPIGRTIVAILENGQQKDGSVKLPKLVPMGGIE
CIEP

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>LAW0115 145952:146530 forward MW:20921

MGNSILQVVIKLSLFFFIIILLGCGPSNKVNL IYPKGEIVLPKSGAPRVVVVLFHGSNKLH
TIGTKTDGSHFMPTSPVTEWISRSLAEELSKQGLQVSYARDLAQAKMSNPNIIVTGTISE
VWVVEENPATFTAAIIGLKVSLSNNGVIYTENFNSSQERQSIPIGSQVEVLLSTTLKSL
ESI AKKIHSEIH

>LAW0116 146548:147627 forward MW:40558

MNEVSVGIEDGDSIACQKQWGYFSIITYILLFFLIFSPSITIAKEPILEVITYTIPYHAHL
VTEPVIQIAEAATKLHALEQTRSNFTSNLAVKLELRTREQQLALASAIYFVSIHERTVLD

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GPKLS IKAHVYPSSEKI LDDHIRQLLRQQDHLQLRLLAVNQLEQY INEGVELLNQAHLCS
 SADIRCKHDDSLVPKIKRTSNRIKALELFLVELNDFEHVWANPEKSVLTFSEATALDPDN
 SLLWLGVGECVLNRPYESIKAFQKVMIKNNIPARTLYMRGIAHLQMYLPGLAIKD ISQ
 ALQLEPEHPSWWRALGTAKLVAGDTVAMCADFYQACAMGDCEGLAEVREQNFCLVSPEF
 >cysG 147699:149210 forward MW:55187

MKVYLI GAGPGDPGLLTVKGKEILQQADVIMYDFLVNEILLNYAKPDAEIIYVGKKNSS
 YTSPQDEITQLLITKAKEGKIIARLKGDPYIFGRGAEAEALVLAGIPFEEIPGITSTI
 AAPAYAGIPLTHRDTSSVTFITGHEDPKIDSAHNWSALAHSAANTLVFVMGMKNLPEIS
 KNLIQAGLSPDTPAALIFWGTTAKHKSLASTVKNLPEEAKKNGFTNPSIIVIGKVTFHS
 TLNWFQKPLLGKSI VVTRAREQASSLARLLELGAEVIQFPTIDITPVTTETATIDQYVH
 KIKKEYDWIIFTSVNGVRRFFWERLIAFKLDARVFAGVSIVAIGPATAEAI REKGIQPDFVP
 EEYIAESIADGLVKLGKVKGRILLPRAQEAREVLPNKLREAGATVDIVPVYETRLAIK LQ
 DNILQLLEQGTLDICITFASSTVENFFEHIPITVLKRYR LPKFATIGPVTSNLTKKYGFE
 YDIQPTKYTIPDLVNAIADTYKG

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>purN 149239:149922 forward MW:25382

MSLKIAVFGSGNGGNFQAIQDHITKGTLNAEIKLLVCDKSDAYIERAKKENIPYFIVSY
 TKDKSREEIDKTI LDAVQEADVLDVLAGYMRLLSSVIVKVFHNRILNIHPSLLPAFPGV
 HGIHDAQTWGKFTGCTVHFVDEMMDNGSII IQACIPVVDGESLET LQQR IHEQEHR IYP
 QALQWMADNRLELCESSRMVKVKGDNHRGLAPLSYGVLINPPLEEGF

>msrA 149998:150498 reverse MW:18882

MVSKQKMSKEDAYFAGGCFWGI EDVFNQTPGVIDAVSGYMGGSTKNPTYEQVCTGQTGHA
 ETVHVHFDSMQVSYKDLVKLFFEIHDPYQNRQGPDIGTQYRSVIFYANELQKDIAEQII
 KQLKQTNLPIVTQLLPVSTFYPAEEYHQNFTEKTGRGGCHLRVKRF

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>LAW0120 150473:150880 reverse MW:15146

MKPLSDKEAWIILHKGTEPPFSGKYVNHKEEGTYICRQCGAVLFNSKDKFDSGCGWPSFD
 DTIPNAVKQLPDADGYRTEIVCSTCNGHLGHVFEGENFTQKNVRHCVNLSLLFEP SIEL
 SQKNHTNGEQTENE

>pepQ 150925:151581 reverse MW:24670

MSLSYFIPNINLTDIHRREMTVRQSRFIIISIAHTPTVETAKNFIEKLYEFSNASHHCWA
 FIAGAPEKTIYTGYS DAGEPHGTAGRPMNLIHKKIGEITAIITRYFGGIKLGKGLMR
 AYQQT IQLGLEELPLKKMAISTTLEVLSYEHISSFLHLLQQFHCIIINELFTSDVTYVI
 SIQNEYIQSFQNELTNLTS GTVLITQLLGKDIIDYSHS

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>LAW0122 152230:152988 forward MW:26896

MLGIFSMETTNWAAESLAVICGS AFLWGLGSSLLSPCHLGIVPILGSHAAGYSIFGSNTN
 PLRQVLLFTLGFLLTIPLIGLLIGFIGYGLHFHGGHYWTIPSGFLLLWLGWDMTRGHSCSH
 LSYLLGRIRTRLGLGVSSGALVLFAYGFLAGGCSAGFLVPIYALTL PSSICVYVVI AAC
 FGLGHTLPMTIAGGSVSLAKRFLGDKRCCDQNSKCESKTNEPHSGEAKFRKFVGIITIII
 GILFILHPFLES

>lacA 153127:153696 reverse MW:21106

MTEKEKARNGLLYDANTDPLLIEERLRCKELCYEYNQLHPIKMEERNI IKKLFGKTGEH
 FLIEQPLWCDYGYLIEIGENFYANHNCTILD TAKVTFGNNVFIGPNCGFYAAVHPLDVLQ
 RNKGLEYAYPITIGNNVWIGGNVIVLPGVTIGDNSTIGAGSIVSKDIPDGVLAFGNPCR V
 IKSIPATKN

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>cbpA 154211:155119 forward MW:33310

VAVEYKDYYKVLGVERNATKDMISKAYKKLAKKYHPDLNPGNTEAEEKFKNITEAYEVLK
 DDEKRKMYDQLGSNWKDGYFQNESGFDNFSFNFGGDAFGGSGFSDF FESLFGGGQRGRS
 SGFSGFSSRQHRGRDIEAEISISLEDALHGGERSFTLQTPDGPKTLKVNIPAGVREGAKL
 RLAGQGYSGSGGGATGDLYLHIRFLPHSQFHVNNNITYNVQIMPWEAVLGTKIRVPTLE
 GNVELSVPAGTSSGRKMRLRGKGLGSSNSRGALFVIIGIKTPTNLTDKQRKLWEELAANA
 EK

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>LAW0125 155138:155449 forward MW:12211

MDLLQDKKDLPSCSRFIVWSEFIELTGTTPERVFELIEIGWLEPVRTAENILLFQQRDVI
KLRKLERICMDFEIDTSLGSIIDLLERVDSLEKRVMLSSLY

>c1pB 155540:158173 forward MW:98504

MDVNLTKQKSQEALSEAQRLSAQYGHQEVDEHLALALTIQENGFVPRVLEQAKVHVKKV
ISALEEVKKRPSVRGPGSEMGIKISQRLSKVIANAELLAKRLGDEYVSVEHLFAECLN
EPESTGMGQVAKEIHLTSQRFIEVMLAVRGPVHRVTSPTPEDSYEALKKYGRDLVEAARKG
KLDPVIGRDAEIRRVIRILSRRTKNNPVLIGEAGVGKTAIVEGLAFRIVQGDVPEGLKDK
SIFALDMGSLIAGAKYRGEFEERLKAVLTEVEKSEGRIVLFDLDELHTIVGAGKADGAMDA
GNFLKPM LARGELHCIGATTLDYRKYIEKDPALERRFQPMVDEPSVQDTISILRGLKE
RFEVHHGVRISDSAIVEAVVLSDRYISDRQLPKAIDLIDEAAAMIRTEIDSLPSELDEV
NRKIMQLEIEREALRKESDSASHERLVRLEEELKVLQSTQSELKKQWETEKGSIDSLRNI
KEQIEQTRLAIDEATRNGELSKAAELKYSKLFELKQLEERESKADGPRLLKEEVRPDDV
ANIVARWTGIPVTRLLESEKEKLLRPLDTHLHERVIGQDEAVNVCNAVLRTRAGLSDPKR
PQGSFIFLGPTGVGKTELCKALAESLFDTEENMVRFDMSYEMKHSVARLIGAHPGYVGY
EEGGQLTNAVKKRKPYSVILFDEVEKAHPDVFNIFLQLLDDGRLTDNAGRTINFRNTIIM
TSNIGAYKLLGISPDGSFHEGVYESVMGDLKQHRPEFLNRVDDVLFKPLLADQISSI
IDLQLRSLKKRLESQKVTELETHSAHLYLAENGYDPHYGARPLKRYLQRVVETPLAKMI
SGKVHENQQIVIDYSESDSSLQYGVKSASEDINWVQV

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>gInQ 158235:158993 reverse MW:28239

LIIMTRRTMTEPIITIRNIWKFFGSLTAINDVSLEIIPGEKVIIGPSGSGKSTLLRSIN
RLETIDKGLIIVDGLDINSSENDINTIRQELGMVFQNFNLFPHKTVLQNTMAPIHLRKL
STHEAEEQALQLLKKVGLSDKINVYPSYLSGGQQQRVAIARALAMHPKIMLFDEPTSALD
PEMVTEVLEVMKTLAEEGMTMIVVTHEMGFAREVADHVI FMDKGQIVETGPPETIFTSPQ
HPRLQQFLKQIL

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>gInP 158962:159747 reverse MW:29207

MQNTSIRIEITDGASIPDPRERNIINAWNIAFFGSILLVLLCSFGSENYIDILAFPLDG
IFVTFEVTFLSIICTLPLGLLVGFGRLSKNRIINILTSTYVEVIRGIPLLVQLFYIYYAL
GHFSPVLSAIIAIFCYGAYMGEVFRAGILTVPKGQEEAARSLGFNKYQTMRYVILPQAL
RAILPPIGNECIAMKDTSLISIIAVADLLRRGREYAAVTFEYFETYTVIAIVYLIITLL
LSKGVSIMEGKLDHYDQENYD

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>LAW0129 159798:160547 reverse MW:27351

MLRTFGFLSILTILSIFSSTSIKDIYIVASDATWPPMENLDEHKKVVGYSDDYITAVAK
EAGINIEIRNTAWDGI FAALNADLIDIIASSVTITDKRKQKVMDFSKPYNVHQAIVVFN
GSPIKSIQDLNGKKVGGQIGTSGLIETLPKAKVKAIVKTYDEIGLALEDLSNGSLDAVIC
DEPVANYFIKQQPEYTDHITIAFITTEIEQYGFVAVKKGKELLEKINAGVKAVKEKIEA
ALIKKWIMH

>hisJ 160881:161474 forward MW:21973

MKKVWNIFFDRTDGLIEDKHYSNPRDLVLLPNVGLALEKLIKNGCHLFLVSNQSGVGRG
LFTETSVLACHKELTRLLAGYGVFFTDALWCVHAPSENCDCRKPGLMWKALSQKHRLTA
SETIMIGDKCDDISFGVKAFLASILVKTGKGEQEAIKCGYRFPEKGCAPMEVTKNKSTC
ILTTQSIMDAVSWILQE

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>foIC 161575:162882 forward MW:48119

MKFTSFDDVQNFLDNLGLFNIDLELTRMNQALTKLDFNSLPYKVVQIVGTNGKGSTATFL
ASLAKSHGLKVGIYTSPHFVTPRERICINGEMLSPEVWITLTERILDNTLSLTYFELLTV
LAIVAFSEFKVDLAILAAGLGGQHDATTAVPADLVCYTPIDLDEHQFLGSTVEAIAKEKS
QAMRFRKPVLLSSFQQPEVMSILCAMAKEKNCSFQSLEQISLVYDLFYPNLDGSQTKSEYL
TLGMAGKHQRVNAQLALAAWHVLSQNFQWDFNLNCIYKGLAHAFIPGRFQYVPPNPSLGC
LPTILDGAHNPHGLEACIAACKSIGIRPGAIIIFSCFADKNIKEMVELVQIFAEGIPLFIP
TIQVHERAMCSNELAKLFCQSVQPVQRLSIALQAIKNSDIEISEKRPVILGSLYLIGEF

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FTLYPHVLSSSIGMI

>seIA 162904:164340 forward MW:52163

VVSSMMLLRQLPSVDICLHAIFKEDTTLYTVPRLLLRELINTFLDKLREDVKSGNITD
SSFLTLDYILPQLLTFIKRHSSLNCKVINATGVI LHTNMGRSILPQEALQAIN TICSGY
SNLELNLKTGERGSRYSHVVGLLCKLTGAEAAIVVNNNAAVLLTDLTCKGKEVI IARG
QLVEIGGSFRIPDVMESGKTKLKEVGCTNRVHLKDYENAITVDTAAIMHVHTSNYRVIGF
HSEVSLKDLVMLSSKHNLICIEDLGSGSIFDFSQYGLLGEPTVQSVISAGVHIVTFSGDK
VLGGPQAGIILGKKETITQIALNPLNRALRIDKMTLIAESTLKLKLYLDKKQAVTRIPTLA
MITISPNNLEEKAKNILSNLKKICGEMIECSIVPGFSQVGGGAFPEYNLPTSLIYLHPTI
CSSEKLMQLLDVSPPI LGRIEKSAFCIDPRTIADTEIDLVTTAISQAIDAINI INNK

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>LAW0133 164510:164863 forward MW:13020

LSMAIKIIEHSPFCIVKIIDSLSIENAI AIQQELENIFVTSVTLGELVLDLSNVQNVDFS
GIGGVIAALFFARAKGITVILYRPTKHIQEIMWKMQTNNLFPLILSEEELI IHALNS

>LAW0134 164954:166084 forward MW:42369

MKMYLQHYFNPDFDYQLQPIVSVKGGADLYNLGYVQNVVKGQVIAEMIPLEAIENPIPR
FVLEQEKFPGPNTYIDPAYPHYLLSDVNGYVFYNGKISVKVNLNRSNVDFHTGNI AF
VGDVMVHKDVKAGFQLQANTI IINGMVEGGEVRSRDKMKIIGGARGGVS NRCLLSSGGSL
HVNFTKVELRSKRMIVERFCMQCKVYAEESFIVSGLVAGGI IQVSKHVIKEKLGNTS
GIPTHIFLGYNPFLLRKLESCDNLGILSEKITNYKTIIDQSSSSTDEIHQKLEEVVQQH
NQLSKYRNTIWKLLQLDEAKAFSCRLVVPGIVYPGVELSIGNASFSVKEELNNVCFRLHE
NEI IYESVPATLLPFF

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>LAW0135 166090:167793 forward MW:66327

MNKYIQYDENGDIIDII IQIDRSISMLGSGGKIREKKIASHFITALQKAEMSSKVLPLV
LGSGAGYALKEILENTTSPIAVIDKEFFLNDTQLKEKITDQRINWICSSNIEEVFSALTH
WQIQHGRPLYPVHPFYFRIDKPWYQKIKQYVAASTRDFWSKAIRPRFSTAEPRLLLI
TTRYFLLGVIEEACNRLGIPHQIITI IQEETGCVEFVEQLLTSVATFHPDFILTINHFGV
DKEGILVDLLAKLELPMASWFVDNPHLI IHEYGEVVPWTAIFTWDENTLHSLKEYGYPH
VFYLPGLTSQYRFRPRMPQDKPLSSVFPTHLSFVGNMVMYKVEEQIEKGNFPSILLQHYK
NIASDFIYSDKRSIQFLKETYPEYYKEYLKLDPVEQRLAYEAMLTWESTLQYRFSCVEQ
LLSFQPIVGDNGWYELLSNYKDNWSYCPSVNYNTLPSIYRFSDINFNSTSKQMKGAVN
QRVFDIPATGSFLITDWQQQMDTLFEPNKEVVYYREVGEIRELVQYYLTHPNQRKSIASA
ARQRVLAEHTWEHRLQTLLHMRQTYG

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>LAW0136 169098:169745 forward MW:24505

LKAMDYGDILPLEDMMSVQLNECIAFIQRAENLNKTLRSAHTSQGRQESAAEHSWRLCL
LILVFAKYFEHADVNKLLRLAVVHDLGEAVCGDIPAIAKPDLDKSETERRGMCELCTGL
PESIYTEMLALWDEYELAETLEAKIVKGLDKLETIMQHNQGNPPDFDYEFNLFYGGDAI
SVLPLLKQIRDVLDKNTRENVAIKNFFKH YDGGLL

>LAW0137 170015:170803 reverse MW:30163

MIYGTSYESLSLFSKLYVSTCLLSCAHILVDQCGRPVPKMKIMLVVWPITALWAGIFGIW
AYRVI SHRNVLNSNEDNIATSLKRRKDTLEITRQQEVNILDKNIMQNMDMSSTEHNLNWK
HI IKGTLHCGSGCTIADLIGPWFIRLLPFTLFGNMLYGEWALEYVLALIIGVFFQYAALA
SMTLHHGLSLWWRAFVRVDFSLTAWQIGMYGWMAIAIFLLIGPMSPTDPTFWFMMQIGMF
CGFITSPMNWWLMSIGIKKAM

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>LAW0138 171157:171543 reverse MW:14777

MKVHAVIIRSGILSINLFTIPLAVAHNFSDQFVETSITQSIKDGYNLKSNEETMSSL
TDEKNTDAEKYLEQHDKDLKAYQNEIKKADQNYMKARKEAQRNYMKNHSQLPMEEDIEKD
MEHIKSGL

>LAW0139 171577:172059 reverse MW:18640

MNNLPEKHENNEI I I KKNNTGDHNEIDSSHFKQLHTISEQALENIEKI I KKTKEVISH
ANEAMKETFDHLKEQLHHTSDHTKEQIEKASDKTKETLSDINI QIKYTI DSVKEQLHTSA

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EHTKKYIENTSDTTKKT IHNASKNTKQLFNNVKEKTKDIF

>LAW0140 172266:173522 reverse MW:47772

MIKVSIIIPVYNEWQLTKTCLISLAKYTNNVHVYVINNGSSDETNLACPTLGNILFGSNF
HYISFDTNHNFPGPACNTGAYAANTDYILFLNNDTEVSYGWLPLVEALDSDPYLAGVGS
LIYPDSTVQHLGVTITPDGNYVNHLNYSIPATIPLVHKKRKFKIITAACLLHRKNFIDI
GGFFNGYKNGLEDVELCLRLTEQGYMMCIPEVVIHKEKTPGRKNKEAYNTSLFFKRN
NISFLGDMDYFLQQDGYTVDITPSLWPYPTIHKSKQYDLLKSLSTPFNPLQCFDILLKEEP
FWKHGRHLLVNWLEKNNEVSMALTMIEELNLCKSLNIDELKYIITLCNRLGIDSHLFQQ
KINSLLKFI LNKS NFLGTLKRIQYILNKTGRYELLKYNQAAIQAQIIRNKIKTTSII

>nodB 173721:174680 forward MW:35895

MKYVVCLLCVILFYFCSAGTLYDLWGSPSYSSFPSSSRNALPNDASIPKNYIPICSLPP
LLNTIGTIRRDVPGDKKVALTFDMCELATKTTGYDTAIIINFLRLHQIPATLFLGGKWM
RTHSERAMQLIADPLFEIGNHAWTHGNFGIMSEAKMKEQVLWTQAQYEILRKQVIERIKL
KNFLLPTIPECMQLFRLPYGRCTGQALKLLAELGFYVIQWDVVAEVHNNNSIQGLEQYVV
KNVKSGSIIILFHANCVPISGAELLKKTVELLKRQGYQFVTVSTLLTMGKPQYTMGYFTS
PGDNLSLDTKFGIDGTGLK

>LAW0142 178242:179129 forward MW:33547

MEKLNVIYIVLLIFFPSILLAKEFDGEKIFFMKNQSPQQIILSIALLTKNKKIIFDGG
TKADSNHLLSSFINEHGKVS AWFLTHLHDDHTGALSEILLDDNITIDNIYYNFPPPEWVE
EHEPMYSSHLTMI VEPLKKMAYLNNQKKIQKGDFTSIDGVTITVLNDFDLSITRNGVNNT
SFVYDVM IAGKRMLVLGDLGEEGERLLAEYGNTLKADIVQMSHHGQRGVQKEVYTAISP
RICLWPTPLFLWENDCSYGSSGTWEINKVKTWMEEVGVRVHYVSGLQEDDIVIE

>LAW0143 180054:180455 reverse MW:15122

MPDILLNTIQHDTYIPLKLSLDELTELITLHKATQDLEMVKHQVKEAVKTLSDSSSNIDL
SIPNKETKKQESHKHTYVMDNDDIPSETRCYFPSLAVTCEQKLLKGENVDFKGLLFF
NACTSISTFTSLL

>LAW0144 180718:181446 reverse MW:28029

MKKYLFEAFDGLNRLAPGSTESTQQA I KLLPADFLPKKILDIGCGVGESTLLLAKHFSNA
EIIAIDNNQYINELESKATNNIKPKVMSMFEMDFEPESFDLIWSEGSIIYIAGFQTGLKD
WKKFLKNNGYFVCSEISWLDQYS DASKYFWNEAYPEIDTIENNLQKIQSAGYKVLGHFV
LPKSNWKENYAPLQKNLERMKTTYNDEKAQQVIALIQSEIDLYKENSDDYSYVFYIMK
KI

>typA/bipA 182088:183926 forward MW:68194

LSNNITNNLNRNIAIIAHVDHGKTTLVDALFRQSGIFREDQQVDDRMDRMDLERERGIT
IAAKNCAVTWQGIKINI IDTPGHADFGGEVERALSMADGAILLVDAEGLPQTRFVLKK
TLEAGLKIIVINKIDRKDARVQEVLINEIYDLFIDL DATDEQLEFPVLYAIGRNGVAMRT
LDDAQEGLVPLFETIIEVVP GPKYDPNEPFQMLVSDLSYSDYLGRLSVGKISHGVSVHSD
ALVCMNEEGVAIPLRVTKLQSYQGITLTDIESAEPGDIIVIAGLEDVSI GDTICTKNEIR
VLPRLNIDEPTVAMRFTINNSPLVGKEGKIVQSRKIRERLFKETLTNLAISVEEAERDS
FIVKGRGEFQLAILIETMRREGFELS VGRPEVILQEKDGERLEPVEHLYIDCDESFMGVV
TEKIAQRKGRMLNCVNNNGSGRVRLEFSIPSRGLIGYRDEF LDTKGTGIMNSLLSGYEPW
RGDFPSRFTGSIVSDRAGSAVAYALFNLEPRGELFIVSGDPVYEGMIGEHN RDNDIDVN
PIKEKLTNLR TSSKDEAIIILTPVKPMTLEKALHFVKEDELVEVTPISIRLRKAELSAQK
RHQIAGKKKTGK

>LAW0146 183980:185080 reverse MW:40668

MSLQIGIVGLPNVGKSTL FNALTKAQAQAANYPFCTIEPNKATVPVPDHRLEEIASIVS
PQKVIQTTVD FID IAGLVKGASKGEGLGNQFLAHIRECSVILQVVRCFDNENITHVEGNV
DPIRDIETIETELLADIQVTQRIERLQKIAKNNKDAKVAVEEMLLLLHLNSGNPAST
FNEKKNEKLSLWKEGLLTDKRIIYCANVDETNLIDGNNYLNSVKKIAEKNHTEMIVIC
AKIEEELQGLSDEEQAEILNSYHIKESGLIQI IQTGYNALGLISYFTAGEKEVRAWTIEK

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GWKAPQAAGVIHSDFERGFIRAEVMSISDFLQYKSETACRNAGVLRTEGKDYIVTDGDI I
HFLFNV

>LAW0147 185352:185810 forward MW:15370

MQRCLYI IICLVLSIGMISCANFSASSFGGKQIRSAHIVEFGKVSVKPVLEGNTPI LG
TITGGAVGGVLGSLIGGGSGRILSTVVGAGAGAVAGNIAERKITTQQGLEIEVKLDNGQI
ISIVQGADQSFSPGERVRVLRGSDGSARVSSI

>lon 185906:188398 reverse MW:91805

MTFDTNDDSI AKNSLAPYNQETEQQEEGAMKINAGTEDDVQPQEI PSSIPILPLRDVVV
FNYMIVPLFVGRERSIQAVESATTHGQHIFLCAQKDSQIENPTEEDLYSVGTVALILRLL
KMPDGRKALVQGISRARCLIHNEGYLTATVELLQEPQPTVKPTEQEALLRYAREQCE
KILALRGIPTGEMGVLSNVNEPGRDLADLIAANLRLKTEEAQEILQCLEPIDRLHLVITH
LTHEAEVATMQVKIQTSAREGMDKAQKDYFLREQLKAIKELGDAIDADEEIEEVSSALN
KAGLPAEVRKEVDKQLRRLSTMHADSAEAGVIRTYLDWIAELPWKKTSKDQLDIHKAKTI
LNEDHYGLVKIKDRILEYLSVRKLNPKSKGPI LCFAGPPGVGKTSLGRSIAKSLGRKFQR
ISLGGMHDEAIEIRGHRRTYIGAMPGRLIQAMKQAGTKNPVILLDEIDKLGNDFRGDPSSA
LLEALDPEQNHNFSDHYLNVPFDSLKVLFLCTANHLEHIPAALKDRLEIISLPGYTQKEK
LAIARKYILPKQLKENGLKENELIISDTCLEKIIREYTREAGLRNMEREIGSLCRKVARK
KAEGKKPPFRITTNQIEKFLGIPRFIDDDTEKTLPPGVALGLAWTPAGGEILYIEVSTVK
GKGNLLLTGQLGDVMKESAQAALS YARSKASSLNISPDKAKSMDIHIHIPAGATPKDGPS
AGVTLTTALISALTGKSVRGDLCMTGEITLRGRVLPVGGIKEKVLAVARGLGHVIIPTK
NTKDLEEIPQELKKKIKIHTVSHIDEVLPLAFSETPVVTKKKQTKQPTS

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>radC 188436:189116 reverse MW:25742

MPNDKPHHLGHRARLRKRLCNDPSEMAEYELLEFLGYVHLRKDTKPLAKKLLQQFGSIR
GALDAFPGELETIPQFGEALSAFWKLIREIFARYAETPVREKIQCTPKIVAEIAKARFT
GCPHEEVWIATVDTQNRILISWERLSKGTIGSSPLYPRDTIEIVLKRKASGFILVHNHPGG
SSNASSFDIEITRHLEHIAQSINLRLIDHIIIVTEKNCYSIRNDGLL

>LAW0150 189211:190188 reverse MW:37338

MIHQGFIFCICPDSTILQQQLEELVTAQYVSNKWEKSVYWGDEELPKKFWDNLTQLNFT
NKQIVVLRNAHLLPVDIWKNISSII SKPNQYLWLIFCLEAPWEKRQPKLPAHIQKLPCFI
FAQKQKWIWSSPGVDERNLKQFIKTQATSIGLTFEPHTLETLSNLLPTDAATIKSELLKI
KLSHSDSLPISTQQLNVI SHTANTFDIFIFLQKLESGNALQVWTSILHEQQKEEDPLFFI
LTMLQREAKTLWQLLMGETVTGYPNELSKKTQLAKYIGIKGITKMWDALYFAEVTVKSGE
GSSIQALETLISTLLPLFTKAQETS

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>LAW0151 190209:190736 reverse MW:20382

MYNKKITTTFYCIPLWFYISIFLTGCGYTWQQQEGYLSKRTILGDGKTLCMNNIEQSTL
YPWLPYMI RTQVRNDINARKLAIWVDSGSPDFTLTVRINSFQIRSAGEYKQHNLFTATV
NMELIIFDGKTNTEIWSSGPVIYSENYEHANEEQAIQEVIFMTTRRAIDQIQPF

>leuS 190747:193254 reverse MW:96316

MIMHSNYDPNIEKKWQRYWEEQHAYACDIDPNKKKYVLEMWPYPSGNIHMGHVRNYSI
GDVIARIKRMQGYNVLHPMGWDAFGLPAELAAIKHHTQPADWYTNINEMRAQLKRLGYS
YDWQREIATCDPDYYQWEQLFFVDCFEKGLVYRKKAPQNWCPSCNTVLANEQVIEGSCWR
CDTSIIQKELTQWFLKIDYAEELDDLTTLKYSWPDRVITMQENWLGKSTGVEISFPIE
SSQDFITIFTRPDTIFGATAIILAPEHPILETLLNDTPQKEKLYNVI EKMRNMDRLERQ
SNLLTKEGIFIDRYCINPCSGDKIPIWIGNFVLADYGTGAIMAVPAHDQRDFDFCKKYNL
PISIVIQPDELQINEHTIVEPWTGLGTLIHSGQFTGLTNKEAKEKITQYLEKIGKATRVV
SWRLRDWNI SRQRYWGTPIPIIYCKNCGVSVPKNELPVILPTNITINEDGSSPLPQESS
FIDCMCPQCGGIAKRETDMDTFVDSSWYFARFVDPKNTKQPFDTSI AKYWLNVDQYIGG
VEHA ILHLLYSRFFTKLLRDLGYLPSNINEPFAKLLTQGMV IKDGSKMSKSKGNI VDPNQ
MINIYGADTIRLFLFAAPPERDFWSDSGIEGSYRFLHRVWRLFIDVQPHIHTTHAGNS
TVIETTTALTKDVKRKEHITIKKVEDIENKYQFNTAIASIMEFVNTLYLSKNELILTVE

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GKNILSSAIATVLTLLSPMTPHICEELWSYLGHSTSISLEPWPKWDPQALLKDVTIVVQ
INGKVRNKFEVPMDSKEELEHIIFNDTKITQYLEGKTIQKHIIIPNKIINIVTT

>nusB 193265:193750 reverse MW:18786

MPANKKHSRRIDRTKAFQVLYSLHFTQINTIETLKEIFLNLPNPLEERNTGIITELDTQI
SFSWQLVEGVWRNVTRLDKIIISQFSQNWVRDLRGKIELTLLRIATFEMYYCPDVPPKVS
NEALELATCFGDEKARKFINGILDAIIKAIETEKINYIDKN

>ribH 193760:194233 reverse MW:16685

MGQLNVI EGHYDASGLRFAILASRFNDFVVDRLISGSIDCILRHGGTKENITIVRVAGAM
ELPLVCKKLSLTSKFDGIIILGAIIRGSTPHFDYVASEATKGVVNVSLQTDVPIGFGVLT
TDTIEQAIERAGSKAGNKGSDATLAVLESIRVIQKIS

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>ribA 194320:195588 reverse MW:46618

AWFLLKKKRDLNMSIYSVEDAIQDIRQGNMIIIVDDEDRENEGDLVIAAQHVTPHINFM
TKYARGLVCLPMESTLIDKLLPMSQVNNKFGTNTFTVSEARQGVTTGISAADRAHTA
LTAIDDNVQPEDIVTPGHMFPLRAQPGGVLRAGHTEGSVDLVQFAGLKPAAIICEILND
DGSARMSDLEIFASKYNLKITTISDIIRYKMKLGKLTVKQVARANLPSKFGTFEVIAYE
NGINSDTHLAIKGNVNNTEDDSPVLVRVHSECLTGDVLDLRCDCGGQLSAAALRQIERE
GRGVLVYMRQEGRIGLANKIKAYALQDKGYDTVEANQKLGFKPDLRDYGVGAQILVDLG
IKRMRILTNNPRKVIIGLEGYGHITERVPLEIASSRTNLSYLRTKQEKLGHLHLCTTCQ
RS

>ribE 195573:196238 reverse MW:24204

MFTGVTQCGNIYSINHYGKEVRITVEPLFPLKIIISTGESIANGTCLTVEQYTSTTFTV
YASLETLQRTNLGKLVVGNVSNLEQSI AVGERLNGHIVTGHIDCVATVQSI EKQKSNCI
KLIFPSKFSKEVSVKGSVTL DGI SLTVNCCGSGFLEVNIIPATWNITTSNWKVGVTHVNM
ETDIIAKYIYNMLNPIISSIHSNENKTTNITLDFLHKHGFY

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>ribD 196242:197390 reverse MW:41662

LSLQVNHPYDYAMKYAISI AEKGRWDTAPNPVVGSVLIQNGKIVAEGFHSLYGGPHAEVL
CINDAKNKHINLSDCTLITTEPCNHYGKTPPCTKAIIDNNIKHVIIGTKDPTTLASGGV
HTLTSAGITVEVGILEKECQALIADFITWQNTSRPYILLKLATTL D GKIATSTGHSKWIS
SEVSRQKVHKLRENVGKVGGA I LIGGNTLKDNPQLTCRNNNNNNKIQQPLAIIITSTLP
EQQDIYLFNSRPTETIIYTPQSGSTQQATTLRKKGVKIVTLKNWSPDLSAILTDITEHI
RSTQGCLYMLCEGGGKLGSSLLKANLVDELHIYLSPKILGDNNALPIVNGRNPLTIHDAI
SLKIHTMELSGSDIHLTFRPEM

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>comEB 197356:197853 reverse MW:18316

MSRLSWSDYFMGIAHLVAERSTCLRKKVGAIAVKERRILATGYNGAPSKLPHASEVGCLR
DQLGIPSGQRHEICRGLHAEQNIIIQAAIHAISLNNAEVYCTHQPLICSKMLINCNITT
IWYTIYPDELAKKMLNEAGVELIQLTSKQNNSTFEFTSESSI*LC

>glyA 197926:199164 reverse MW:44770

MDQIILQDPELAQAII LESGRQIDKLELIASENI ASTAVREAQSTILT NKYAEGYPGKRY
YGGCEYVDIAENLAIERAKALFHSEYANVQPHSGSQANMGAYFALIKPRDTILGMNLSHG
GHLTHGSPVNFSGRFLNIVSYGVNKETGLIDYEEVAKLAEKHKPQLIVAGASAYPRIIDF
SKFRSIADTIGAKLLVDMAHIAGLVATNLHPSPIPYAHITTTTTHTKTLRGPRGGMILSTE
DMGKVINSQIFPGIQGGPLMHVIAAKAVALGEASKASFVTYQKQVILNAKTLAKQLLDAG
FNLVSGGTDNHLIDL TNKKITGKDAEKALDQAGITVNKNTVPFETLSPFVTSGIRIGT
PALTRRGLCEQDMIKVANWIVTALNNINNETQLKEINKEVTFARQFPLFSW

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>fabF/fabB 199233:200483 reverse MW:44269

MSQKRVVVTGLSAITPLGNL KESWSKLLAGESGIAPITLFDASEYACKIAGEVKQFNPE
NYGILPKQSKRMDRFVQFAVASASELIKDSGLQITEANAYQVGIILGVGLGGLKTIEVFH
EKLQEVGPNRISPFMIPMLISNMAPGQVAIFTGAKGSNFVVT SACASGTHAIGLAYSEIQ
LGRCIACITGGVESTITKLCISGFSALKALSTKYNDMPTQASRPFDKNRDGFVAGEGTGY
LMLEELEHAKARGAKIYAEVIGFGTSDDASHMTAPGEDAEGMSFAMKQALKNAQIAPEKI

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THINAHGTSTFLNDMYETVAIKKTFGNHAYNIAICSNKSQIGHLLGAAGGIEAVFSVMSL
 YTGIVPGTINYTTDPNCDLNYMPNGPQELNPQYVLSNSFGFGGTNASLILKKFEC
 >fabG 200903:201646 reverse MW:26251
 MANLISTAIVTGGSRGIGKATASLAKAGYQVFITYVSKSEEAESVIKQIQSQGGKAKMF
 NLDVSNADDITRFFNTEVKEQVNLVSVLNNAGITKDTLLLRMKNEFDQVIDVNLRGAFI
 CMREAAKIMTKQRYGRIINVTSVVGGQSGNAGQVNYAAAKAGLIGITKSAAKELASRNITV
 NAVAPGFIATDMTATLSDDVQKAYQESIPLKRLGTPEDIAEAIFLFLVSPGAGYITGQILA
 VNGGMYC

>fabH 201755:202759 reverse MW:36232
 MNIPFTTNSLYIEGIGSYTPSTILTNE DLCQLVDTTNDWIVTRTG IKSRYILNDYENTSD
 AGYIAAKLALENAKITTD SISHLIVATCTPDFLCPNTACVISKKLGI VGPMAFDINAACS
 GF IYGLNIVQHIANPTACILLIGSDALSKRVNWKDRSTCILFGDGAGALVLKGGKTLST
 IAEVQD TVCYANGSYTSLTLVGGGTSKKNLGD TIDDTFFIKMEGQEVFKHAVRNLTEVC
 TTILQKHDL SFKDIDLFI PHQANQRIIEAAASRLSIPHEKTFITLDKYGNTSAASIPLAI
 ADAIKQQR IQSGMRVLLATFGGGFTWGAA I LN FY

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>plsX 202841:203884 reverse MW:37083
 MLNSHSITIAIDAMGGDYGPSVVVPGAVKAAQITGAKIILVGNTPEIEDQLALLQVKNTK
 IEIVHASDVANMDEKPSDILRRKNSSIQIACRLVKEGLANGIVSAGHSGASVACGMFII
 GRITGVERPALASILPTEKNPLILLDVGATVDCKPYHLFQFGLMGHTFACDLLNIQSPRV
 GILSIGEEEGKNTQVKEAYELLKMAKDINFTGNVEGRDLFTGNVDV TICDGFVGNVALK
 LSEGLSSSLSRVLRKELFSSGIFSKIGTFLAKNAFKNFSKLIDYAEYGGAPLLGLKGI
 FIVSHGSSNEKAICNATKMAVLFEQKETNKRLIDSIGLNEELTRFGHSC

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>LAW0164 204107:204643 reverse MW:19950
 MDSFWVKLDTSESKFVLDSPSIWENSIKQFNMDCKLVQPFSGIITVTLQENGCMVDGSI
 SGKIVMPCNRCTTDVLI TIQHTFRDVEPLPTLNIDGKEVINKDINENIIRQSNGIEEVNL
 AEILWEEFVLSLPSKPLCNIDCNGLCYSCGKDLNKETCNC SKDEGDPRLAAFKNIVIK
 >mutY 204755:205846 reverse MW:42206

VKEIQQALLNWFYKNKRALPWRETYLPYHVWIAEVMMQQTQMDRGVEYFLRWIKQFPDIA
 SVAYAPEEKLLSAWEGLGYRRVRHLQSAQVIMHKYNGTFPERYEDILELPGIGPYTAG
 AIASTAFNQDFPCIDGNVERVLSRIFDINTHIKKEPTKSKLYDLVKQLMPKKNARDFNQS
 VMELGALVCKKKPMCLICPVYSMCNSRINGTQLSRPVLAKKTPTRLKMTGILQC�QKI
 FIQQRLDNNIWGRLWEFPNGCIETGETPESAIIRNWNEQLGFSIQIENIITTIHNYTHY
 HITLYCFDICFSQNI TNLTVLNPTRLSASSYRWVSQKELQTIPLPSPHRKLATLFFN
 TKK

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>ppiB 205977:206483 forward MW:18796
 MANPIVLIETSFGDILVELFTEQAPVTVKNFLKYVNEGFYKNTIFHRVIDGFMIQGGGLN
 IKMEEKQTDAPIENEASGLKNIRGTIAMARTSEPHSATSQFFINTIDNDFLDYQSPDED
 GGYCVFGKVIIEGMNVVDKI QKTKTHQVGIHSDVPKDIVLITNISLFE

>LAW0167 206826:207434 reverse MW:22566
 MKKLIASFFTLSCILSFFFLKDVQSGELPKVLVKTNYGTFTIEVDTQKAPKTAGNLFYV
 KSGFYNKTI FHRVIDGFMIQGGGF TENMEEKPKIKKPIQNEAANGLLNKKYTIS MARTND
 PHSATTQFFINVEDNKALNYKAPTSGYGYTVFGQVISGQNIVDLIKQVPTHTVGMHNDV
 PIVPVIIESMVII PAEEKTKDK

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>LAW0168 207522:210743 reverse MW:124601
 MNFREENIARSLIQGFIKGSIPDYIRDVGQSI IQNNGVQKLTIRKEHDIWYIDSIVQEED
 FQNYSPQLIIFIEESRVSHTCNCHEAFMGVCKHIASVAIKLHNDLDKSTDLVEEPIKHN
 EWRQSRNFFSTSLPEVGRHYLIFRFYPEPTRLIVAFFRGRQNK TGLSSVHQETTLEQI
 LRNPDWCEQSPQLLVAQQIGHFLDYGHRVEIPEGLVSWFFWAIRHEYYLLWRDTNLPC
 TIVSTPLALKLPSLDDEGLRFYVLLQREGKMPFSLTEEDTEITFHGQMPLWVWNWQSFY
 PVQTSLSPTLIKELVANTPIVPQDNISEFLDRVWTRLPSSELYEPEEFLKIMEPIFQPAS

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YDPKFLFDEEGSLLTLEVQNTYETIHGEFTLPGPNPDFQTGSYIFEGHTFLIRRDQEEES
 ALITQLSEMHFQPRSNKLWFMEPEEAIAFLLDYPTLVENWRVYGEKALTRYKVRIAQPV
 ITAKVESNEKEKWFNLDIDVEYDGGHLPLERIWKAWVRGKRYVQLKDGSYTSLPETWLKQ
 LSHKLHALGFDPTKPPKHQFKQFEAPVLDITLDELPNSETDSFWNSLRNKIRSFKEITPI
 ETPKGLNATLRSYQLQGVSYLNFLSEYGFGGILADEMGLGKTIQTLSFIQHMVNRKYEGP
 NLIVVPTSVLPNWEREAKFVLDLRLTIYGTREGMFKKVVNSDLVITTYALLRRDLEE
 LEKHYFNTIILDEAQNINKPNTITAKSVRTIKARMRLCLSGTPIENNLFELWSLFEFLMP
 GFLGSQHAFQRGVVIKPIRDGDNETLEYLRTRVKPFI LRRTKSEVAKDLPPKIENITYCAM
 TDEQNELYTALTKKLRSQVLADIENTGIAKSQMSILDALLKLRQICCHPRLLKVDMPGFS
 IGSLASGKFEAFKDMIFDIVEGGHKVLVFSQFVQMLQLIKSWLQITDIPFCYLDGTSKDR
 LEQVDKFNNTPEIPVFLISLKAGGTGLNLTSADYVIHYDPWWNPAVESQATDRTHRIGQT
 RQVFSYKLIQNTVEEKILKLQEMKRGVAEAIIPGQDTWKSLEMLFEI

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>oppA 211599:213256 forward MW:63615

MDKIIHYKTKTLVHSIFFLLFLLTSLYLTIHVYVAQKLTEQNSDEDLSTEQPVHGGRIRL
 GTIAEPINLIPYLSTDGTSHEIADLLFVSALEYDKDLQVVPLAAKSYEVLNDGKLLRFIM
 REDVFWQDGVQLTVDDIEFTYKLMLEPNTPTAYAEDFLTIFEKKTGRFTFEVYEEKPYA
 RALMTWMSGILPKHILEGQDITKTPFARNPIGAGPYKLSWETGSRLILEASDSYFKGKP
 YISEVIYTVIPDSSTMFLELRAGNLDMMGLTPQQYLKQTKGPQWEKNWKKYRYLAFSYAY
 LGFNLNPKMFQDILTRQGISHAIDRQAIVDNVLLGEGVVSFGPYKPGTWVYNTHLKPIEY
 NPEKARQLFTQAGWKDTGNGVLQRDGRPFFTTILVNQGNEQRARVASIQSQLKEVGIIEV
 QIRTVWAAFLKEFIDKGRYDAVVLGWSITQDPDIYDVWHSSKAHEGGLNFMGYKNTELD
 ALLVEARTELDQAKRPLYDKIQEILHHDQPYCFLFVPSLPIIKSKFHGIKPAPAGIMY
 NLDQWWIPKKLQ

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>reIA 213386:215581 forward MW:82630

VIEAPTVGLPTPMQNVLRRLEANKATATERSLVQKAYVYAAAHEGQLRRLSGEPYLSHPL
 AVAEMLSEMGFDAYAIIAALLHDTVEDTKCSLEDIETEFKQVADIVNGVTKISMMSFES
 KEEQQAENFRKMIILAMSQDIRVPIVKLADRLHNMRTLNFQKPHKRQSI AQETMDIYAPLA
 NRLGLHRIKLELEDLSFKYLHPDIYTQISTWMHSNRVVERNLIERIISKIKAILHKNGLK
 GTVQGRVKHVYSIHKKMVEQHLTLDMSMDILAFRVIDTISDCYAVLGLLHSQWKPLHGR
 FKDYISMPKVNQYQSLHTTVMGPEGERIEIQIRTNEMHKLAEQGVASHWLYKERNHSVNL
 SDVPQFEWLREVLDRQKDEKDSLEFMQSLRLELFKDEVYVFTPAGDVKELPKGATPLDFA
 FLIHITEIGNHCVGSRVNGKLVPLYSVLKSGDVEIITDKNRYPSRDWLKIVKTAKARNRI
 QQYLRTEEKAAAISLGRELLEKEGRKLGISLTKAEKEGHLISLATHLSLGSVDELLASVG
 YARNTPRYTLKRLQTLMSDETSSYSKVIAPHKKKESVTLQNFSGVTVRGIDNMLVRFA
 KCCNPVPGDSIVGFI SRGRGVI VHTETCPNVQALES DRLVSVQWDGHETVPPARIYLVG
 INNVGLLADIALVFKAENVNVE SCIVQRLIDGRSEMDATIGVRDIAHLYQVIDKLRQLPN
 IVEVLRKTADE

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>LAW0171 215599:216006 reverse MW:14517

MNMFFFIMLFLGAILGEIIEYIAQSWGSKKYGSSTSGMWIGLLGAFIGA I LGLPFLFGLG
 AFIGALAGAWIGCYFMEILNGRSREEASRAAKGALIGRLLGIIKCGIGI I I LVMTYHAL
 FPTIVPSFTPPITNF

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>LAW0172 216601:217899 reverse MW:48971

MFWIDTSFSRSNSSDYFGANQRFTFQTTYEANENLKGVLRFRIINNDWVGKKNENDYSYGG
 SIGTNGKSIGVRYAYIDWIVPNTSINVRMGLQQFAFPGFVADSAILDSNATGITVNTPIN
 DTIGVTTWWIRPYEGKNKSTMDTVGLSIPCTYNGLSITPWGVYGRIGKNVFNLQKQFGQP
 DQLLFPFIWTPGTQLLKEHANIWWLGFTGMYKFEIPFSIAWDFNYGNQSSNTKKFNRS
 WYAALLAQYQFTGVTGPI LGWYTTGDKDNLNNGSKRMPTYDSNWTGTSMGFDGYWQDRGT
 GASIAGNDPTGTWGIAGQLMDISFIEKLNHLRLAWYQGTNNKEIAKQYALFAALPNSGL
 SRNGFLTPNGLYLTKKDSVLELNI NSFYKIYENLMVGLELNMHLKLDKKIWN SHDTKSN
 AYRFICTLRYTF

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>LAW0173 218703:219869 forward MW:44373

GWKKRRQRMAATKRNKTKYPGVFFREEKRIGASGSEKVVYVVFKNKNGKVIIEEKVGRQFID
DMTPAKASRIRSELIEGKRKTKKLAKKEEALAASLRKNIHGIVEEYAKGRPKNKNTDIDL
RYELHLKNIIFGHKFPEEITNDVRIKFDNLIQSGKSPQTVLNTLALLRILRFGEKNGFC
TLPDRSQLVFEMPKVDNIKTENLTETQLKALMEALDAETDQVMASCLRLALVTGMRKGA
LLEWTDLDFEQGIITLQGKSAKKGKTAYIPMSEAAKIILEKLPHTSRVFPNTKGEKRS
DFRSMPNRIKQKAQLPADFRPFHGLRHTYASHLASSGKVDLYTLQKLLTHSSPQMTQRYA
HLADEAMKRAARVADDILTSNMEKKDDD

>LAW0174 219859:220869 forward MW:39938

MTTDILQKALESSFNSFKSEYIKRNFYEYSQEDAVWLKENWNLPLMELNYDFDDIFSIL
FLNDLITYFHQLINNFEYHSFITTVYEQDFKMIINKYQKWKHVYINISQYKLSFADLCH
PFNIEEFIKNKIRDTQLHLPTFISTTTSTGFVGTSRIDGKWKFFVDFTKEDLNYEALLNL
FKEQLAIEFAYLSKKITPHIENVLTEIVKEDNRTETYENSRLSRLYGLAQWDHRLKYIDT
KGNNIGKFKCGLRKLNPYCESECKSDNKYFICKNREACKALKRQLQGTIQSIENKKS
VAMIETGCTMPKNAKKIFERYSMPDVTKIYPLAYLHI

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>LAW0175 221210:222874 forward MW:62220

MPYPQTFVSNTWNNASPDDLISYMEKQNHARSVISTSYKNYISDLKSKRVYDASERLRCT
YYSLPEQNGPMNYFAPRTPVPIYILGKVASDLACNTGFDQVGLYKMLLAYTLYATAGNWI
RCGSEWTEQAIINIATAPSGHRKSVISAFQCPEFNI FEKNFNKLRGSDEGSGDLSHTKL
KVAQRVAARITQKKIASSLVNLGSTPTDEDFEALVNEIAGEEQSRIAQFIEQPSLQFFTD
NVTAGFHRICYAQKGRLAIQSTEGGFLTRTSFLKGSLEPEMLKNSFSGEGFTLQNFIRSTY
RYEHPFVALFILTQPEQLSRFLYKSSAFEGDGLWARIVFHLAQSSTPNGEFSLGEARKSY
SDVISPIIQKEYNNSARHQIALSNEAYDMVKEYEKSLALDFQNGTFFMREALKKAHGLAC
RFAFAAHLWNQAEASSWPTTITADEMNLGVSLSKDSLAFHRFTIDPTCLRARIHARKLID
SLLCIDFNMQHDVLTGHITSRILQQRGTGLKADEVARNALALLQQCNLLSALDFGGNQLVAA
LRPDDFFQQPMGTFL

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>LAW0176 222965:223357 forward MW:14770

LTMRSTFYRHNRYKTDLYAPVLIPSPHRLSASHGTSSARREDNESEAIPEPIRDAIPRKR
TEGSPPLRGLTLHILFPTHKSRQTFADSQSVRRPPSSTVRTITKFRISAHKPPQDTLK
VVITPKAPRR

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>LAW0177 223987:224532 forward MW:21630

MNNKNYFHTINERIENLLINYISNHNKVLPVFFNVRYYPQHYPYQKKDISSLFDKVNTYY
FRLGYDPYYFWKREQNI SEHHHYHCLLFLNGNKIQRIMPVFKTVERFWASTLGIETALGL
VHYCLKDWKGDLTGNGTMLRRDDPELSYKLDLRFMAASYLAKTATSGFVNDGYRNFGC
SR
I

>LAW0178 224690:225184 forward MW:17768

MVDIAHQGLQSIDTIPLQFPSSDNGNTAIFKSTVTLKSGIVCSAIGDATPENVPACRN
AFIRMASTRATSRAIGLACNVGTLDSESETMNDQVIDVDYRDSSASSTVQTAHSPVSKQ
QLEYIHSLSDNAEQIAMEKFSKDLNSLTTEAHEVICREAREK

>tetW 225939:227858 reverse MW:71200

MNIINIGILAHVDAGKTTLTESLLYASGTISEPGSVEKGTTRTDTMFLERQRGITIQTAV
TSFQWHSCNVNIVDTPGHMDFLAEVYRSLAVLDGAILVLSAKDGVQAQTRVLFHALRKL
NIPTIIFINKIDQVGIDLESVYQSVRDKLSADIIKQTVSLSSKITLTENTS AEVWDSVIE
NNDPELLAKYIAGESISQKELAQEEQRRVQDASLLPVYHGSANGLGIQQLMDAVIGLFQS
TKEQGSAAALCGRVFKVEYTDGQRLVYLRLYSGLTLRLRDTVALAGREKLKITEMRIPSKG
EIVRTDTAHKGEIVILPSDSLRLNDILGDKTQLPREMWSDVPPMLRTTITPKTAEQRDR
LLDALQTQIADTDPLLHYEVDSTTHEIILSFLGRMQLEVVSALLTEKYKIETAVKEPTVIY
LERPLKVASHTIHIEVPPNPFWASIGLSVTPLPLGSGVKYESRVSLGYLNQSFQNAVMDG
IRYGLGQGLCGWNVTDCKICFEYGLYSPVSTPADFRSLAPIVLEQALKKSGTQLLEPYL
SFTLYAPQEYLSRAYHDAPKYCATIETAQIKKDEVVFTGEIPARCIQAYRTDLAFYTNGR

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SVCLTELKGYQATVGEPIIQPRRPN SRLDKVRHMFSKIP

>LAW0180 228343:229257 forward MW:33080

MKLPPFFVIVRLPLFLTLHPISAPFRPVPAGKLPVSCPPVPLGFQCSRNGSAVVARRR
QHVGSKKKKQGGKSYERDIKTVIPGTGEPVSRVTVYGSCERKA EYQSYPLVGRIGQLIHA
TGLAGRGKPCRQIRTLFQKGP GS AKLFQTL LGRGRKLLHIPCLFRRSGLGKSSGCGFGHG
LDMGKTPLNFGKHQIDMIFMLEGALHAFVLPVFHHEIGNGTEYPLAGKRAFAHGDAFVGP
SNVGYGYIETTIHEKTVQIQSLLPDPAGTERKTGCSVFLQFSVIQADAAQPCRFEIQHPR
LPKE

>LAW0181 229471:230256 forward MW:30525

MPEIFDASKFLEETMKKLLLLLSILFLTPSITLAEGNTFNDSFNKAKRILQDEVYDQV
TLYCGYEYDDQKRICLPDGFIAEKHQKRSYKIEWEHSVPAENFGRAFTEWREGHPLCVDN
KGKSFKGRKCAEKVNKTYRYMQSDMYNLFPAVGSVNAARSNKQYSELLGVQSAFGTCEAK
IDGNRFEPDRAGQVARAALYMDKEYKEYNLSRQRRRLF EAWSNMYPVDEWECTRAKRI
ESIQGNENIFVKNMCIEKGLW

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>LAW0182 230232:231092 forward MW:32052

VYRKGVMVNKRQYKYLYLSKSYKNRYILRQENREKYRLTVCTSLFYSSGIMTQSTDIT
KLSQAMLIVQQQLQPAIKDAKNPFIGNKYATLNSVMESCRSLLSSQGIWLTQLPCPAPVE
LGTGHIGLETRLIHAESGQWISSTAIPLTKNDPQGMGSAITYARRYSLCAILGIVTEDD
DGNAASITPKQAKTRIRPVEATQRQKVASDNSSSTNKILDTSNRPVSLHQNLPKIDGVSF
RTVQADDGRMCIVASGRTELEKELLRASGFKWDSQQKVVWKYDDAA

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>LAW0183 231161:232363 forward MW:45519

MESDTRSQKLEIITHGLDLYANRNTLTQLGNREEYIGMSDLGSYMTCPMAVLNKLHPQ
NTTYALKPLLTMRQGHWFEDGIADALKTLELPLVRQLEIAVTHNGTPIKAHLDFVLASTH
PRPTVRILEVKSCQKLPDCLYASYETQVYGGVGLLTRYWKEPVFSVREETGQYSFQDMTF
PEIARNFNNLNPYEWEGVDIEAWVLCSMTDAKVFGPYVSDAGMMDAVLGKAEFWSTI
HQVKDGTLDASSLKTTSGFNPLCEHCLWNADCPKFKGNDHPEFSPELEELETWKSERASL
DGKIKTRETSMKDWYANIFGTQDGWVQAGHWRFKASEIPGRRTLAKDSLAGELELFDHG
GMDDVDVPALLARHEKVSAPSTRLFYKTRKQEKNDGLQV

>LAW0184 232347:232721 forward MW:14293

MGYRSVDVGLALTQAAVQTLNEKMNALDKTSEAFAVITDFFAYADKHFEDTDSGSEVYLWE
HLKWYEEFPDVGFIHLLAELDWDDFLFIRIGEELEDIDTRGSFWDNPFDLGISRSIVIS
DPND

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>LAW0185 232791:233741 forward MW:34902

MSHPVQLDAGQIFSGKSSGTMIFGYDAPSEYTPSIDPNYLFHESSRDVIVWFLMQNPEPL
YICGPTSAGKSSLIRQIAARLNYPVFEATGHRLEFPDLVGHLSVQNGNMVFEDGPLTLA
MKIGGVFLFNEADLCSPATLAGLNTILDGSPLCIAENGGELVKPSPMFRFIVTANSNGNS
DETGLYQGVMRQNI AFMDRFLVEMGYPKAEVERDLLNRMFPEIPAEITEKMVDFANDVR
RNFMGNSSAHDALDVTLSTRTLIRWARLTIAFQPLSKQGISPIMYALDRALGFRASSTSR
AALHEMAQRIFPSISN

>LAW0186 233745:234740 forward MW:36537

MEKIMETPILNTPQLVDNIALALNLNITLWSARKKLTAEDFGGVELPPDDLASLGSKKIC
DPARLNVFTKLKARAFSLDKHGVRFLSGWAIPDDKAGDI IQGLCEIRDEFFTEKQNFLN
VYDAAIADWIARHPSWANIENSTVSREYVESRMGFSWQLYRVSPAAGLESDLAMTESGL
HEEVEGLGSTLFAEIAKDAEAIWKKVFEKGTEVTHKALSPLKTRNKLGLSFDPNVEP
AVSMIDTALGNMPKRGNLSGNALLTLQGLVCLLKDKEALIQQTQALLATPAEENVLDDLL
QGFQQEAPVLNLPPEHSYIPSSPRLDSLGLW

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>LAW0187 234755:236347 forward MW:58413

MSVTMKAMPLVASMLGNKLGKVVIGSSDTACTNGDTIFLPLPVDDGVLVPLVSGFID
HEAAHIRHTDLGVLNGKRLTPVEKYLWNAIEDWRVEHEIKRYPGCEHF IWLIRHFFLK
DTEEEKAGENDSPA FSVLN YVLLTLRSWDVPELVRNCELEANIMQKYWPGLRSSIDAIMR

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DIPARCRSTQDSLDF AQDILRLIEQEVQKEQKSTESPVVSPSITAQDNSEQTQQEPQTGG
EEQPLQDLLQATEEEMPTSMGKQLSDMISGQCSPQQHKGMSVAVTGKLLTAELPDALIME
AQAI SRALR TKLQGLLQSQILRRSSPSRHGKLCGHGLYRI AVHDPRLFMKTESVTGIDTA
VHILLDISGSM TSCIELAGAACYSVALALAAIPGISVGVSAFPADYKEDVAATVYPLLRH
GKRITNSFAAEAHGSTPMTEALWWVLGMLSTRPEHRKIVFVVTGYPDDPETAKETIAVA
KRMGIEVLGIGIDAPAIISMIPGSENITDIRELAPAMFRL LQQIMTEKGR

>ftsH 236969:238876 forward MW:70487

LNQFTRNLILWGLISLAMVIVFNLF SQPQSSQLQERMTYSEFLNQAQKGIADV I IQGDI I
KGKTEGKSFQLYAPSDPQLVSKLIEQHVDVRAEPIEDSPWYMTLLVSWFPM LLLIGVWV
FFMRQMQGGAGRAMSFGRSRARMLNQEQRVTFEDVAGVDEAKEELSEVVD FLSNPRKFT
RLGGRIPKGVLLVGGPPGTGKTLARAVAGEAGVPFFSISGSD FVEMFVGVGASVRDLFI
QGKKNAPCLIFIDEIDAVGRQRGAGLGGGHDEREQTLNQLLVEMDGFESNEGVI LIAATN
RPDVLDPALLRPRGRFDRQVVVPTPDVKGR LKILEVHTRRTPLDKDVNLEVIARGTPGFSG
AALENLVNEAALQAARDKNLIDMKDFEYAKDKVLMGKERRSLILSDEEKKITAYHEGGH
ALVARLLPKTDPVHKVTIIPRGRALGVTMQLPEADRHSYSKEYLLNNLMVLLAGRAAEEI
IFDTITTGAGNDIERATNMARKMVCEWGMSELIGPLSIGERGE EVFIGREWAHSRNFSED
TARIVDSEVKKLIEEAREKCQELLTNNLDTLHALATALLERETLTGDDIDLLIKGEELPP
FIPENSNT EIKKEDSNTETFILDAEQNPSPPKTE

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>foIP 238888:239775 forward MW:33512

VVWIKHMKSSQIISYDNHWIVKGGRQINPTPFCIIGILNITPDSFSDGGRYLITKDVIEH
TKQMLQSGAQVIDIGAESTRPF AEPIIEEVEKERLIPHFKILKEQFPDVI F SIDTYKAFT
AKAALELGADIINDVSGCTFEPNLLDILVEYKPGFVLC HTQGKPKTMQVNP SYKDIIEEL
LYFFESQMSLITKAGLPEDRIVLDPGICFGKKKEHTEIMKNIERLKVLRPLYIGLSRK
SFFKQFFDL DVHERDEATRIATALLAARGVRYHRVHDVAGCTQALKITEVFTPFL

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>LAW0190 239839:240579 forward MW:27765

MDFIPFSWRDLLDITLV TILYRVILLVKGTRALSALSGLLLLIL IYLGAQYLGLYTLGW
LLENLFGSLFLV I IILFHDDIRQALS RVGVHNFWKKKKEIAPSLIDNI IWACQHFAKRR I
GALIVFEREIP L TDMMQEGVMLDSILSKELLLTFYPMTALHDGAVI IRRGRIAAAGC I L
PLAQMDRQAFGTRHRAALGVTEVS DAFVIVVSEERGEISMVSRGKLVVVS DIEQLIESLR
DVLDYK

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>LAW0191 240772:241494 forward MW:26673

MLR L FSGRELSY TINLSGVTQGVNTIPLSSIQFPEL RAYQIIDVIPP R MV LQVDHVKEVE
LPVTLQLRSSLFSDAAYLEDVHIIPSHVKV R GASNIVSSMNTVIAEVSALLDDEGRV VQD
DAPLIAPQFVEVSPPTVNVCFKLGMRRSISLQRTVLLPEEKERLTTRPERVTIVVSV PQ
SLLNDPKYISQVHASVDTSILED SLGKDFDGVKRP I KVFLPAAARLIKVSPDIVTVFRRK

>LAW0192 241522:242877 forward MW:49633

VGKKLFGTDGLRGRVNIYPMTPEVALRLGLAAGTYRRKSHRSRVVIGKDTRISGYIFEN
ALTAGLLASGMDFLVG PLPTPAVSFLTANMRADFGVVISASHNPFYDNGIKLFDADGFK
IPDKAEHKISEMILDQSHTWDY PDPSSVGRAHKIKDALGRYIVYLKNTFPSTLSLEGLRI
VLDCANGANYKVAPLALAEELGAELIKIGTDPNGLNINHQCGLFPEYVAKKVIEMRADIG
LALDGDADRLIVVDEKGIILNGDQIMALCAQDLMRQNKLPGNILVATVMSNMALEVFMKE
KKGALIRSNVGD RYVMEAMRKHGAMFGGEQSGHLIFREYSNTGDGLLAALQILRIMKQYE
RPLSSLAGLLQLFPQRLINNVKQKRP IETMPTLLKTIQR IETAFSGRGRVLLRYSGTEP
LCRVMVEGESDSKVNTYAEELADIVAKSLAE

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>gaIU 242878:243798 forward MW:34300

LYLLTNNIFTIGALMNIRKVVVPVAGWGTRSLPASKNIPKEMLP IYNKPVVQYVVEEAML
AGVQDVI FVTNRD KSVIEDFFDYNPQLESILERSGKYELLKVIQNVAEMVNI MSVRQKRQ
LGLGHAVLCAKEIVRDEPFAVMVGDDLMFGENAGMDRLIQIAREQNKPVIGVREVPEDKI
NRYGII SGT EISTDVYDITEMIEKPTLGSTQSRLAIVGRYLLTPDIFEYLEKVTPGHGGE
IQLTDALAALAEKGM L AVKLGGLRFDAGDWVDYLSANVYFAMMDETLKDDLFNKL NQIL

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HISEKQ

>priA 243833:246211 forward MW:90304

MNEYCTITLLSPPYSLLTYTLPSWLPYTLWKPGLRVA ILLGKEMLRGTGI ILSLHTQKPEL
PHNVVLRPILWALEKIPIFSIEYIKMIQELALRHSIPSGKIFASILPMLRTHVQMKCT
YKNVLTNLQLKELKHKTEELHDIGTKW ISEENNDWLTSQTESMIVSEECILTVDPWPPI
RPSATRQRVILDFLFTNGVSVSKKELLQKLGKEYRTALTSLTRYGIIISIKQEILTDKDELA
NTIALLPPLIPFGYTLTEEQKEVVTLLKKEQLQKNQAKTFLLFGITGSGKTAIYLEIIQEC
IRNNQSVLVLAPEVALALKLQHEIKTVFPIIPCYLSHGYQSSQKEDLFRKIVKNQVAKV
IIGTRSALFLPLTNIIGSIIILDEEHDAFKQGERLIYHAKI AWFRAVQSNALLLGSATP
DIKTFHAVENNKISIVKLHSRVGGVLPITKIDSQQLESKDVTFARESLTTLKETLEVG
EQAVILLNRRGYAPIIYCITCRKSI RCPSCDVGMSYHKIQESLICHYCGKSI RFPCCPF
CKGTQFLPMGGQTEKVEEERAILPSDSMVLRLDYDTRRPRGRTEEILKTFAGGKSQVLI
GTQMLSKGHHFPNVTLVIVVNADIGLNIPDYRAAEKTFQLLTSAGRAGRGEKAGQVLIQ
THDTSHYCWKFIQQHDYLGIFYKIEIALRQKWLYPPFINLALIRLSYPIEWKEGKIWIKKV
QSLLQEWANKLNVSVRGPALSPIILRGRNRFQCLLKSNNWQHIRTIFYKIQTALPQKL
RVVLDIDPIDML

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>LAW0195 247238:247885 forward MW:24398

LKFITDFKKLDVLAHQAVTSALSTYQYHLP IFIDATAGNGYDTCFLAQLAGTQGI VLAFD
IQQEAITNTYQRLISLHLEQQVTLIKSGHERLYAETLNFFQKNTHLVEFYHFNNQIDICS
GVMFNLGFLPKSDKKIVTQPTTTIMALNNALNVLAPGGIITIHICYTGHLGGVEESEAVLY
WSEQLSLNKWDITIYKQIFKQKNNEQLVLIK RKQL

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>LAW0196 247882:249495 forward MW:58410

MNSFSQPWIFYLCASIAIGYALGRNLNYKGASLGSAAILFVGI AFGKMGASIPQDIGGIGL
LIFLYAIGTDAGPSFLSALKGKGLQFSMVALCFTITAVITVVISGSWFDIDPAGMAGIYA
GAMVSSPALAGILDSVSPYQSVIITTAYSLLYPVGI LASILYTQWIIAFDKSDTRKAE
LHQKSLFENPPIHIGCFEVYPRSVSSVREIHNLFNVRITHIIPAGRKVVAPASALLKICP
GDKIRLLGSENALKRVETFLHAKIANDTDFKEIHYYQLVVTKKEACGSRIMHLAAKCHM
DTLMFEHVHRNEIDIPLTPRTRLYMGDILHLSGDPRQIETLRLLGDDPRQLQIADVMPV
MLVIVSLGWLLGNIPILYEGKTFMVSSSAGVLLTAIFLSNIKKLGSIDFYLPSSLLLLR
ETGLALFFAATGVHTGASLNMGIILQSGNILLCGLITTILPMIVTWYFIKFLVHMNYLYA
IGSFAGARATASSFAIATAITKTPYVAAVYSIVFPVVTLLQIMSSKVVYTLGSLYLF

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>LAW0197 249535:250242 reverse MW:26849

MRYINYYYYYYYFLFFIIITQTICFAHNTDGSSILDHSITITTKEMQVSVHYPEIHSSK
IDQDIKGWAQQLVENFKTTNSEKELAI GPYELRADYSITKPSDKAISIIYITDFTGGAH
GNLEISVFNVDLTTEQPLDLIDIFDDVNSALKIMSEYSYKSLSETLGNMSDKEILSVGTA
PDLDNYSIALIPNGIRIFFQPYQVAPWSAGPQQVDMTLEELSKANPTKKIWNLS

>LAW0198 250367:250963 reverse MW:21950

MIIDLIIWIIITSYVIGSIPFGVLFANIFCGIDPRTLGSNGVATNITRICGRKLGFITLFF
DVLKGFPPVVIATYLSESPFMYTMTGLAAIIGHLYSCFLHFKGGKAVATSIGVLIPIAFW
QLLFAAILCTFFIWRSGFVSLGSLVLTSLPIILFITGKFAYIPLSLIIMALIFWSHKQN
IQRLIKGEEKVWKHSESI

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>LAW0199 250984:253005 reverse MW:78643

MQDKPEQLAWVLEEFQNKFKILLPNRKEINIQSSRILPWIGPNYRNIESKDIAIAHIEQH
KFKRKELESSFNSYELWEIAQGEIIQAPAKWFSELVTTSPDIDTIAACAHVLLKDNIFHK
FQSPNFEIYSKEIVDIRVKEQEKTIKQAFITDSIPFFRYLWELYTQKKVYSINTANVYT
QFEEQLRQIIMEQISNPEKADSQLWKKLVTLGLPDDPFLALYLAQAWGILQPHNIWFERI
DYDPTDNWQQPFQNTIDMLCKQSSLYTTSTLPLPFI SIDSETTKDKDDAFFIEPIDNGWK
VVVALACPALNWPFDPLDQAVRKRATS IYLPEASYNMLPNVLGIDKYSLHAQCTRPLI
ITCIVGYDGVVKSCTPSFESVSLAANLTYHECEYILEDNYSSESPYAEQLKLAHVHAQTY
QKYRLKHGAVIVERSEPYLSLIVEENETKVVLTEEFATPKSHLLVSEIMILINAAIAHWS

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YENNISLFYRTQDIIIPDQYKGIWKEPHDIAKVVVKVLAPSVLDVVPKHHAGIGEKYYAPS
TSPLRRYPDMVNQAQILHVLQHEKYKWSLKELEIMLPYITSRLEYTNQIQRFQRQYWKLV
YILQQDKNTWWPAIVTEVTEHYIVVNLPREQLTLRARRKLF TAVPEIGQSIYIRIGNIQP
LHNEIHILEIQQV

>purH 253065:254339 reverse MW:46347

MGLLKDMYHKVVEEHFPPTITISFGDKILTYTKKTWNINGEIKGLRYGDNPDQPAALYEF
TSGELTIGDTIWR TSGGISSLTDAELIQSGKHPGKTNLTDIDNGCNILQYLASRPAAVI
LKHNNPCGVAWSKKSIGNALEKAFWCDRIAAFGGAI VVNRPLDHDSANLIFKHYFEVIAA
PDYEPGVLELLTTKKNLRILKLPGLNSLDQLTHSHYLDIKSLCDGGLILQESFLNRVRS
ASFLPATATSKDGVTSIAKQPTDEQIEDLLFAWSVEAGVSSNSVIFAHDGATVAIGTGEQ
DRVGCIELAIFKAYAKYADKLTQNYGLSLEYELREQAANDKTSLEKLEKIKKETNDVCGG
LKGSVMVSDGFFPFRDGVLDL INQGVTAIAQPGGSLNDYEVIKAVNESSPQVAMVFTGQR
SFKH

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>LAW0201 254566:254889 forward MW:12567

MEQLLIK LARQLES LDEASLMALWEKYANIVSQFEPTKRWEEATLIFSLIQAKHMKNQFL
NYNWAEQVRPSTSSHEVPI SVMLETKNKPHEVKQAKIIPFKKLEKS

>purA 255142:256428 forward MW:47566

MPNVVVI GAQWGDEGKGI VDLLTRDTDYVVR FQGGNAGHTVIVDGKTYILHLIPSGIL
HKEKICIGNGVVLDPQIFIQELDTLLSQGIDVSPNRLKLSTKTHLIMPHYKLLDQVREN
ASTTQKIGTTGRGIGPCYEDKVSRI GIRTIDLTQPKLLYKKIELALKEKNTLFTQLYNTE
FVNAETIFNEVMETASRILPYLSDTSSILQDAFIKNKKVIFEGAQGVHLDIDHGTYPFVT
SSNTIAANASIGSGIALSSTEKIIGIVKAYTTRVGS GPPELYDNTGKFLQEKGHEYGA
TTGRPRRCGWQDLVMLKDSVRLNGFTELALTKLDVLSGLKKINICTSYAYQGESVTYPPQ
DEHILFNEIKPIYETMPGWEHSLESCTSWNQLPQCAKNYIERIEQVVGPITII SVGADR
NQT LFRDI

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>trmU 256593:257651 forward MW:39228

MNVAVAVSGGTD SLYTLATLREAFGNHHVFALHARFKEQITNDPVPALKEQCHNLNVPLH
VVDLHKEFNELIIRPFIKAYADGKTPNCPVHCNAKVKFGLLQKKAQELGANQIATGHYVS
LIDHDLYGKALKCGADSTKDQSYFLALTPREQLQTAIFPLGLTRKTEVRERLQKMGLEVP
LPKESQEICFPVNDYRKFLLQSSVDLLSEGRMVMLDGTLVGKHKGLWKYTEGQRRGLGV
SWSEPLYVAHKNHSCNELVLGTAKDILVDTCTAQDINFLVPQDNWPKELFVRTRYRQAV
PADIQFVTNTSSSKKITHFHSPQLPAAPGQLAAIFDKSGYVLAGGLITNDL

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>LAW0204 257733:258917 forward MW:44470

MIGISKLYCGQVESSDALRYGRHSGKLPSHLLQFSADKKPVVVWNTTRRCNLKCVHCYAT
ALDEEKGADPMSTEQKALIDDLAAYGAPVLLLSGGEPLVRNDLVELAAYATSQGMRAVI
STNGTLITKEKARELKHVNLSYVGISLDGAEVHNKFRGVPNTFKKTLEGIENCKAEGLK
VGLRFTINKRNVADLP IIFDLLRDLEIPRVCFYHLVYSGRGS DLIQEDLSHEETRATIDL
IMEKTRKLFEEGYPKEVLTVDNHADGPYVWMRLQKEDPKRAADV FELLQYNEGNSSGRGF
ACISWDGKVHADQFWRHHTFGNVLERPFSEIWDDPNI ELLHKMKNKKEHVKGRCSTCRFL
NICGGNFRARAEAYYGDVWAPDPACYLTDDEIKK

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>hemB 259031:260029 forward MW:37350

MNTIFFRGRRLRSIQVRDLIQETRLHSQDLIMPHYFVVDTDNSNFFQPIPSMPNQYQLSL
SNLEKKVDEAINHGLKSVILFGLPKKKS YATEAYNENGI IQQARTLKKKWP SLHVITD
VCLCEYTNHGHCGLLKVEDQCGHVKN DPTLELLTKVAISHAEAGADMIAPSDMMDGRIQA
LRSGLDHAGFIDIPIMS YAKYASAYYGP FREAAQSAPQVGRKSYQMDPANTNEALREV
QADISEGADIIMVKPAGPYQDIIRMYETFPVPIAAYQVS GEYALIKAAGEKGWINEQAV
IMESLIGIRRS GAKLIITYFTEDVLKKRWVDS

>LAW0206 260014:261327 forward MW:48691

VGRFMSLQAEKISLEGHLSRGKDMYKGPHEQLMGKTS DGS GHPHVNGAHPKSAHPGGMP
RTL PDGSPTCKLIAWEVTRSCNLACKHCRAEAHMDPYPGEFSTEEAKALIDTFPEVGNPI

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I IFTGGPEMMRADVYELMAYATSKGLRCVMSPNGTLITPETAHA I K KSGVQRCSISLDGY
 NAESHDSFRMVPGAFAEASLRGIQYLKDEGEVEFQINTTVTKSNLNDFKKIFKLCDELGASA
 WHIFLLVPMGRAAEIAEQSITAEYEEVLHWFYDFRKTTSMLKATCAPHYYRIMRQRAH
 EEGVPVNDTFGMDAMTRGCLGGTGFCFISYEGVQPCGYLTMDCGNVRETPFPEIWKKA
 KTFQQFRTQSEYKGCVCVCEYHKSCGGCRARAWSMGDHMGEEPLCTYQPKRYLKQKNSS
 QPIDHQGITPCARGHMG

>nirD 261332:261784 forward MW:17085

MDNIDKLLDI IQTGFP I VPRPYAE I GEKLG I TEAEALSRVRALKGKKI I RRLGANFQSS
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>LAW0208 261947:262936 forward MW:36419

MHYPFKNI IHLF I TLV I SVC I GCTS Y K I SEKYPY I DGAV I EYSNNVGNNAKAEK I DNGMF
 I PDGKGGSIWIPGSPNQPNEAF I QAQELRLKVRELASQLLDTQDSSSL I GL I ALPTS FV
 NLNNFSESSPLGRYMSEAMI YEFNRQGFPIKEYR I DTK I SMSESVGGEFSLQRNLPALSV
 KQQWAA I LVGTYLRENNAVF I NVRLVRAKDGMLRRTAQ I VLPQNALLSNM I SPPLSSG I L
 YIGPQENNTS I SKFNPTSSSQEQQLVKPSVKTQLAQDTQEMNNQLEQKDNNNNNNNKI
 TKQIQSNSLEESSKAT I SPPVPGMPNNL

>LAW0209 263206:263820 forward MW:22285

LNILHMLSGVI I MFRLLF I F I FS I TFLLPNKVLATTSGT I PTAAVT I SEQLDAQLLRRIG
 NNLYNKSS I S I VVTPAVLLEDLSKSSPLARQLAE I TKCLVQNGYSVTE I RKASK I I I DK
 TGPK I LTQDPSQLATTQVEAVAI L TGTYTVTKKNVRFN I KLLH I PTNDVLATASTT I P I T
 KEIYPLLVDKNTKPGTSPVTTKLQ

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>fliS 264303:264875 reverse MW:20365

M I KG TQAYVEAQFNTTQQGEVLLLLYDGA I KFLNQAKEK I LEKDFGAKG I L I SKALDVIS
 ELESSLNMNLGGE I AENLHNLVYLCTTRLLQANLKLD I KL I DSV I DVLAGLRSAYAE I LN
 TPEAKAAAAE I ASKLSVSQQSSGSPV I TRTQHPTGASKSLAQSAKYTQQ I TGTQAQVAA
 QHKAQEELNK

>fliD 264907:266991 reverse MW:74391

MADYLSGG I SFGG I GSGTDFQAM I DQLKK I EL I PKNRLVVSHEQWTKKYKA FEEL I KTVK
 DTEASLSKLSSVGA I LKKEGSVSN TSVASVKASSDASDGTHT I DVKQLATNT I LSNNH I F
 DSKTES I NNTGSPG I FAYEYK GELHEVEVPPGSDLEYLATL I NKDSNNPGVKANL I KTG D
 GYMFSLEGTETGANATLS I SNKTTLPDFKASVATSSALANGEDT I INTSGTTQQFSFEYN
 GRFTFTD I PSGTTAKELQTA I NENTKNTGVRATFEKHGSD I VLQLEGTVPNQVQVKTASP
 TDLGSFTSSGQAGWNKRDSQDA I FN I NGWDQELTSSSTNELTEV I PGLQ I TLLSEGKTQ I T
 IQTSTDEVKKQVEKAVES I NNVLSKI I QELTKATAEDKDDSKDTSSSSSK I PSYLQSPTKV
 KAGLFTGDTG I QMLSTRLKS I FSSNGLGFSPKQTQDGPGLFSSLAS I G I VVDADEGSET
 FGQLK I LDRET I GPDAPYTTLDEALKKDPQAVAD I LAGSSG I SDSTDFSYQDHI V GKTQA
 GTYDVKYSVDASGT I GDVY I GGVKASLSDPAKNI YTVTSGPATGLS I AVNNRTPG I NVES
 TVRVKQGKLSQ I QEALKAEVQQDPLKENTGPL I I MQDNKYDVMKNLETRI EKETQRVTSW
 ERMRLKFSRLDAVLAKYNQMMSANASSLGQLGA

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>thrS 267658:269586 forward MW:74076

MQSD I NKNHLTMT EGLTY I NESGLKEEESKN I VGYNINGS I I DLFTPLPT I TKEV I P I T I
 DSE DGLEMLRHSAAH I LAAAVKNLFPTVK I S I GPS I ENGFYYDFDAERPFTPEDFPA I EA
 EMQR I NES I PFERIE I SKAEALEFFSSLHENYKVE I INSLEDGNITLYR I GNFTDLCKG
 PHVPNTNF I KAFKLLSVAGAYWRGNENNQMLSR I YATAFPNKLLKTYLTQLEEAKRRDH
 RKLGKELNLF EFHEDI APGMVFWQPNGMLLRT I LEDFLRKEHLKRGYQLVQGPQLLRREL
 WEKSGHYTNYKENMYFTE I EEDVYGI KPMNCVSHMLLYKTHLSYREL PQR YFELGVVHR
 HEKSGVLHGLLRVRQFTQDDAH I ICMPEQLEEE I IQVITFVRDLMSLDFDFNYH I V I STRP
 EKSI GSDYAWELATSAL I QAVEK I NLPYS I NHGDGAFYGPKID I KVTD A I GREWQLSTIQ
 CDFTLPERFELEYVGQDGRHQPVMIHRA I FGS I ERF I G I LTHEYAGAFPTWLTP I QVKI

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LTVTDAQTPFAKHVYSQLQDVGIRVGLDIRNEKLGFKIREAQLAKIPYILVIGQKELELE
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>LAW0213 269654:270130 forward MW:18127

VRVIGPDGEQLGILDRNQAIAIAKEHGLDLVEVAATADPPVCRIMDYGKFKYEAQKKKQE
AKKRQTI VQIKEIKIRPKTDEHDFETKVRHIKRFLEEGDRVKVTVFFRGREIVHKDRGIV
ILERIILETKEVGKVEQEPKAEGRTLQMLLAPLPKKA

>rpIT 270500:270853 forward MW:13717

MRVKRGFSAHRRHKKYLEMAKGFRRGRSRLYRTAREAVERSLVYAYIGRKQRKREFRKLW
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>pheS 270937:271974 forward MW:39285

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FTSLGYTIATGPEVETEYHNFEALGIPSEHPARDMQDTFYISDSILLRTHTSSIQIRTML
KKQPPIAIIAPGRVYRRSDVTHTPMFHQIEGLVVDKNI SMSHLRGTLTAFKLTIFGAEI
KIRFRPSFFPFTEPSAEMDISCHPCNNTGYVKNICRICKGSGWIEILGCGMVHPKVFES
VGYDHNISGFAGLGVVERIAMLYHIEDLRIFFENDLRFLRQFM

>pheT 272014:274425 forward MW:90162

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SEKELEFTDDHSGILVLPPEELTVGTSLVNALNLDTEILKISITPNRGDCLSILGLAREIS
TAFGLPLFPQQPIHFLEVEPDFSKNWSVHVSSKKVCSSYLLRLVENISVQKSPLHIRHRL
HSMGIRPISNVVDITNYILLELGGPLHAFDKDLIEGNTTYISLAKEEELCTLDGKNHTL
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TSIPSNFCINTLTQLGFEIDTSNCNIWDITIPSWRKDIQHSVDLIEELLRFYGLNTIPEE
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GKKIGYIGCISQHIKKNCHTHKEIWITELDLETLAHLKNIKITFKPLPIYPSSYRDMTL
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LAYKKITEILSNQCNIRFNVLLE

>LAW0217 274466:274882 forward MW:16177

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LLYIKQLLNKSSTFSLSC

>rpe 275097:275564 forward MW:17129

MISSPERYISNFHTAGANLLVVHVEATIHQRVSEIHLRGMKAGVALNPSTSLSVLEYI
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DAGTDVFVCGSSFFVGESYSEKRYQFESVANSLTI

>tkt 275627:277594 forward MW:72763

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RLLATTFNREHFPIDHYTYVFGDGCLMEGISQEACSFAGTHHLGKLIVFYDNGISID
GKVNKWFDDTPARFNACGWHVIPNIDGHNAEAIDSAIILAKSITDKPTLICNTIIGYG
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YSKYCSTYPELSSELERRIQHILPECWNSLTTSYLQIEQNKIAIATR VASKNTLDI IAP
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YGGTFLVFSYAKAAIRLSAMMNQHV IWLLSHDSIGVGEDGPTHQPIEHISSLRLIPNLN
VWRPCDAVETTIAWEKSI ESQKTSITLSRQPLTYQSRTKEQISNIQYGGYILYEPTKSP
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>trmD 277821:278945 forward MW:41657

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QYTRPELYESISVPKVLLEGNHQKIKQWQRKQSLKVTFNTCPEMLNKANLSTSDMEFFCN
NIKELARLNLGRNLHCVLLHYPVMLGDQTI GATSLTNLDVHDIARCAKTYGLGSVTIVTP
LQDQQNILEKII THWTVGAGGKSNPDRAEAFKLVNIASDLQSSLDTIENYTGQSPLLIGT
TACKYGVLLPCDVKEMLLQPIALLFGTGHGLTPDTLNSCFGVLRPLRWIDNYNHLPVRS
AVAITLDRILGDFY

>rpIS 278981:279328 forward MW:13417

MDIFKKIEREQMRLDIPSFKSGDTIKVYFRIVEGEKERIQVFQGNVIRIHRGTTNATITV
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>rpIS 279395:280069 forward MW:24750

VFQKKLKQQQIVVKQSLPITPHELVDNLSLLTAGLDEVGRGCLAGPVVAGAVILPDTIS
IDGLADSKTISSNRRYILAKKIYETAISWIGVWPKEIDEINILQASLKAMAHAATVLK
TFPELLLIDGNKAI PQKFFIQFGWNFLPIQHSI IKGDASIPAI SAASII AKTFRDTLMSK
LDKRYPQYNFSKNKGYGSKTHREILQKIGPSP IHRMTFKGVTSH

>LAW0223 280089:280487 forward MW:15536

MKSCEIGQQGESAAALFLYNGMSILERNWRKGRFEIDLVCQDIKTLVFVEVRTRKAKGM
LLPEQTLTISKRCNIIHSAQLYLMDDKDW SMPCRFDVICIISKKTLELEHYKNVFEFYE
IMDSSNTSWQPW

>LAW0224 280429:281259 forward MW:30825

MSLNSTKLWIVATPLGNPGDLSIRAKSVLESVDIVLAEDTRRAGLLCQHNCNIVVKKFLSF
HDHNEEKLLKPLLTMLSSGKTLALISDAGMPIISDPGYCLVNACRKASIPVSVVPGPSAP
ITALVGSIGIIPHPFTFLGFLPRDFIEQEKFSSFIMLSHTLVFFERKNRLINTLKNAYTV
LGNREVCIARELTKLHEEFLFFNLGEEVTFKNLLGELTVIISPPKEKHITEHSILYKIIT
EEKKYGGTAREVAKRVQTRTMGWTTKQIYSIITSRS

>smpB 281262:281729 forward MW:17890

MSAKKNSHLVFENRKARHLYDLLDFLEAGIVLTGPEVKSLRSGHASFQDSYVDFKQGEY
IVGLHIPPYNNAGYVIQNPDRPRKLLLHRQELKMLASKVEQKGLTIVPLKLYFKNRKVKT
EIALAKGRKLYDHRNELKKRAEAMDIKRELAARHL

>yjjK 281750:283432 forward MW:62743

MSSEAEKIIYSMIHVSKRHGQREVLKDISLSYFYGAKIGVLGLNGSGKSSLLKILAGVDQ
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EEMDALIEKQKQVQELMDAKGAWDLDSKLEMAMDALRCPGDTPVSVLSSGERRRVALCR
LLLQLPDILLLDEPTNHLDAESVAWLEHFLQTFPGTVIAVTHDRYFLDNVAGWILELDRG
KGIPWKGNYSWLEQKEKRLAKEAKAEKERIKTLARELEWIRMSPKGRQSKSKARIHAYE
AMLNHESEKRAPDLEIYIPPGPRLGKTVIEARGTTKSFGRLLIEDAHFIIPSGAIVGII
GPNGAGKTTLFKMIAGLEKPDGTEFLIGDVTVLSYVDQNRESLLPGKTVYDIISGGQEVI
RLGNRDINARAYCSRFNFIGSDQQKSVDVLSGGERNRVHLANMLKSGANVILLDEPTNDL
DVNTMRALEDGLENFAGCVLVI SHDRWFLDRLATHILAFEGDSKVSFFEGNYSYEDDK
KRLGKAMEQPHRIKFRKLTR

>fabD 283562:284482 reverse MW:34011

MGRDIAESSKEMMSLWEKAESISKLPLRAVYVESNDTTLMSDTQYLQPALTVVNMSIWQQ
LSKHLVPGCVAGHSLGFEFSALAAKVLVSFESVLELVCLRGELMSNLEPSEQGAMIAILRL
SQTEVEECIVKDVSHNIQQSITIANYNTPVQFVVSGTREAIEATISFVKEKRGRAVLLPVS
GAFHSPLMEKASQKFSKLSKMNWSTPLYPIYTNSTGTPFVDTKSIYDSILNQMISPVHW
INVITNQWKDGTQRQWIEVGPKGVLSRMVTPILEEHISTIDNNISVHSIDSLKTLTCTFSN
NSLTLT

>gIpX 284607:285644 reverse MW:36844

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MYICFATVILSWRKMSS IETLERNLAFDLVRVTEAAAISAARWLGRGDKNAGDKAAVDA
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 AIAVVGAAAPAGSMYDPGPFYMQKLVVSQSAKNVIDLDAPVETNLKNIKALGKDIKDLT
 VFVLDKPRHKQLITDIRTAGARIQLHTDGDVAGALLAVDPRSEIDLMI GTGGTPEGVLSA
 CAIKGIGGGMIARLDPQTETEKQSLYNAGIDLSKLLVDDLVKADDVFFAATGISGGSFL
 HGVQFHGQGATTHSIAIRSKTGTVRHIQSSHNWEKLMKISSIGYN

>argS 285821:287473 forward MW:62128

MRAEQYLKTCLECTIKKLGYTWPKKAVIEIPQNTLHGDLATNIALVLANNIGINPKNIAE
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 EYVSANPTGPLHIGHGRGAAIGDTLARLLRFTGYNVTTTEYYINDAGRQMQLLGLSIWLR I
 KELSGIQVTWPEEYYKGTYYIEIAKALLEEQPDIISYTDIDGEQASFHGMNVILNGIKQ
 DLKTFKVEHEEWFSERTL IKTNAIEQTLKALECTGLTFEKEGALWFQSTVFGDDKDRVLR
 KSDKSLTYFALDIAYHYTKYNRGFDRIDILGADHHGYIARIKAAMQAFGHDPMTFDIIL
 IQLVSLLENGIQVAMSTRAGQFEKLIDVINEVGVDAARFMFLLRKSDAHLDFDLELVKQR
 TMNNPVVYVQYAYARICSIIRKAHDLGFTITDVNEVPLSNITTKDELNLLRLLDKFEDVI
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 ILGVTAPKNM

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>LAW0230 287480:288256 forward MW:29893

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 IDTNLQHSQIPSSHPHQDLKQKDISSETKNIQKNINTKEVQQITSQNDLMIYSFVQV
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 LKLKDTKIIISQEPTGRHR

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>LAW0231 288273:289073 forward MW:28535

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 AEIGVMRITDQIDALEVMDIPGIGYLVSPRIVASLISFPLLTAVFDVIGIIGGYLTGVCL
 LGVNEGAYFSSIESSTLSDINEGSIKALTFAILVILICCYKGYNAHRRRDGRGPEAVAN
 ATTSAVVVSCVLVLIADYVVTSAMLR

>LAW0232 289086:289916 forward MW:30513

MPHIRTAWDIRLEHLYLGYENKAILHNINTVIPGGKITFVLGESGCGKSTLLRHIIGLAK
 PISGKILYGGQDLFSLPTKQFRSIRRRFGVLFQDGALLGALTLAENVGLPLSENTNLPPT
 IIRETVIRTLISLVGLEKFADFFPNELSGGMKKRGLLARAIVTEPPI LFCDEPTSGLDPIN
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>LAW0233 289932:290375 forward MW:15641

MVISKEAAVGVFFVLIGLICLGYLTIKLGKMELFNSDGYSVFATFTSVSGLKPGAEVDIAG
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 KNGDEIMDTESSVDLESLSISKYIFGKV

>LAW0234 290380:291030 forward MW:24828

MSIQKTFFNFIFFFLILLIFSNQAVATGPTKTIETSVNDVINYLKDPSSYNSPQTHLQVRN
 KIENEVRKVDFDFSEFSLRTVGLNWNSTTSQQERFNNAFSDLLLATYLDKIDGYNGEKVT
 YTNELISSKGDRAEVQTVINLSDGRTIPVVYRMMSSKNTWVVYDVIENISLIKNYRAQF
 QDILMKNKPEELIQKVEARAKELHNAASVGNSKLGQ

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>LAW0235 291031:291927 forward MW:34195

MFSQQLRTYDFIIFIIIMIIHFFCLPAHAKHLPP IENKSSQSQELQSKPGCKPSTSSK
 IKLSDSDFEDYGIFEDYDELCDKPIKDPLEPWNRWFYFNDFYLRITKPLYKGYEVITP
 ESFRQGFKNVLYNLQTPIRLFNSLLQKIGQAWIELGKFMVNSTIGFGGFINITQKDKPL
 IPIDPDTADFGHTLAIWGFGEIYLWPIILGPSTIRDTFGTIGDAAVGPPFAWVKPIGIV
 PLEYGLTTELFLTFNKVNTVIDSYESITKSAIEPYVALRDAYVKYRRLNNGCICRVQP

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>mutS 292398:295079 reverse MW:101809

MNESSHRITPMLEQYLSIKSNYPDTLLFYRMGDFYELFFEDAETAARELQIALTARNPRA
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TSLDPKHTHTYLGAMYWDEEVNIGAFWCADVSTGLWTGIQVKKKSELWQWIQKILPKELLF
PEKYELPATAKLEIEIQFVPLPYKTHFEYPPQAVKRLLQAQGVADLEALGLEKHTILVQACG
ALVAYLEQTQLQDVNHLMPFKPLDIGKYVILDEITEKNLELFKRVNGKKGVGTLIHVLDH
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RGTSTFDGLALAWAVAEDLVCKDHDGVRTLFATHYHELTALEEKLTGVHTMTIAIRHWND
ELVFLYRILPGPADRSYGIEVARLAGVPQSVIQRAKIILTQLEQTHQQPRSLNLLPGVV
QNANEELSKQDVKVVVEHPVVTLLKEMNPETLTPLDALKSLVEWKLLYGTTTHAT

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>LAW0237 295534:296034 reverse MW:19185

MHIMQPLWAPWRSEYISRKKEKCVFCISDISVSDDEKYLILYRGINTFVMMNKFPYING
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>cca 296154:297827 reverse MW:63793

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QSNLSTTLFKLLSEVGKLGDFLHVNVYVVGGVVRDILLNNLSIVEKTDIDIVVEGESLSF
AEALAKKLGKVVGYTHNNLMTANVRYPFSEKECSIDIATARLEYAMPALPLVEPTSI
EQDLFRRDITINAMALQLNQYFGRLIDHFHGQKAIQNKSIDVIHLSFIEDPTRIIRAI
RFEQRYQFRISQQTEKYMHYALKCNVIEKIFGQRLLEHEFEMIFKENKPDACIIRMDELGV
LTAIDKRFSLTSKQKTLFYNISNILQWYHSLNLTENQPDIMIYLTAMCSSLSQEQI IAL
LQKIGVESAYQKKIALTLSMAQMDSTLCCLLHEKKIEKEGPVSTIFTLLSKLTLEVLLF
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HTKEDEL DYLC LRYNLS

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>LAW0239 297994:298914 reverse MW:35314

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IPLHSSAMKLLIHVYQKIRPMFTP IEFKFLNRSKGGLTRQAIWKI IKRYALLASINKSI
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SSEITT

>folk 299096:299647 forward MW:21300

LLKCMKKILKINSNMTNYKTSYISLGTNLGNLDDNLKEARIRLNTNKKIILNRI SPVYNT
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LLYEQETYNDKKLCLPHRMLQRAFLVPLYDINPALAFPNGQTLKEALKNISYRVEDNF
IYQ

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>uvrB 300171:302201 forward MW:77470

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DKLRHAATHALLTRRDVIIIASVSCIYGLGSPEYYARLIIPVEKGQQINMDEIITRLVDI
QYQRNDMDFHRATFRVRGDVLEIIPAYEHERALRLEFFGNEIEEIREIDPLTGEVLGNVG
KTVIYPASHYVSDRDNLIRAMTDIQKELCERLYDFQATNKLVEAQRLEKQTQLDLEMIQE
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TLVDFGFRLPSALDNRPLEFHEFLTRLNQVIYVSATPGPWELDRSQGIITEQIIRPTGLL
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IDTLERMAI I KSLRTGEFDVLVGINLLREGLD IPEVSLVA I LDADKEGFLRSTGSLIQTF
GRAARNVSGKVI L FADTMTKSMKAA I DETRRRRALQQEWNTKHNITPKTIKQSVVTPFDM
I SANTSSKKGCRKNKHSMDTKELFVITDKTSPEDITKYIKQLEYEMKEAAKELEFEKAAV
LRDRIKVTREQFLLMS

>lig 302221:304269 forward MW:76893

VSINSPQYSLPSKKEKQVRRELRFINHHNYLYTLDPEISDSEYDKAFQELLTLENTF
PSLKTNNSPTQKVGNNILKLEEQPHRQRMYSLDNVFSNDEWEGFLKRLANALPEVPFSF
WCDPKMDGLALEL IYEKGQLTSALTRGDG IGEVVTAVRTISNIPKRLKHSINAPELLE
IRGEVVISRADFKLNKEQEKKKKL FANPRNAASGSVRQLDPTITASRPLRFLAYGIGE
IQPSSLKWNTYHELM SYLKEYGFETPPKGKLCISSTEVSQSYTRLQAQRYSRYEIDGIV
MKLDDIQSQEKLGYTSRAPRFAIAWKFPATQVQTRLLQIHIQVGRGTGLTPVAELEPINV
GGATISRATLHNEDEIKNKDIRPGDMVIVQRAGDVIPEIVSPILSDRSKSKPFVFPKIC
PVCHEKVYRINNEVAWRCINLSCPAIRLQSI IYFVSKSGLNIQGGIGQRLIELLVTSGCIK
TPADLFTLTADLLTYKRMGAKLAAKTIQALSLAKQTMSLHRLICALGIRHVGEQTARIL
ASSFIDLALSSASLEDLQQLSEIGPEVASSIQAFFKNKANIQM INQFREMNIWPIQQVN
DTTTKGFFTGKLLFTGTLERPRAEMKRLAEEAGAI VMTGISHKLDYVIAGKNPGSKLNK
AQELHISILDEPTFLQKLLIVL

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>dapB 304286:305062 forward MW:28562

MDLSIIVIGASGRMGKTI IQVAQEQQI I IDAVIDRPTRLTSLASYN I ASDSEPKI F SRY
PQAVVIDFTTPETSISMAQVAQYGNPI I I GTTGFTLEQFDTLETAKTSRIFWSPNMSI
GINVLLKTL PQMAQILGNEYNIE IVEVHHNKKK DAPSGTAMRIAETLSTRHWDLEKVAC
YNREGIVGERPQEIQIGITIRGGDVGVHTIYFIGGERIEITHQADSRKNFAQGALKAA
EWI I KQKAGRLYTMMDI I

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>nadE 305063:306640 forward MW:58511

MNTNIALQLHTITGDI IANTQNILQQVSKAKKDGATVCITPELSLCGHPDLHEIPTIIS
TCINSLQQIAKECNGGPSI I VGS IETTPTNIYNTTFLIQNGQIHTLCKKPFTQFYPSIKK
EEYILINNNNNNGFCFTSINKQLFLIVTGYKTLIN YVCNKI IYQNEQLKKVEAILCP SSE
PFIASQIPHFFYELTSISDQLNKPLYFCNQAGEDKNYIFLGGQCINSQETKNNQSLLFQ
ENYIVVKNHSSVSLKDMFNSNKLLWEALIHGIQQYVKNKGFSDVVLGLSGGIDSSIVAA
LAVEALGEHRVHGI LMPSPWSSEGSITDAELLANNLDVKTYLLPIHTLIDSFTHSLSELF
IGYPPDVTEENIQSIRIGVLLMAISNKFGWMLSTGNKSERAVGYCTLYGDTCCGLAPIG
DLYKTEVYHLAQWYNQSKQKDI IPTSVLTKPPSAELRPGQLDQDSLPPYKELDFILQMLL
SKNPTNIDQELLNNPKLNDIKRLIQKNAFKRMQGPPLSVISNFPL

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>hypB 306735:307415 reverse MW:24993

MEIPVVRNVLEVNSKLAAMLKKQFAEHNILTLNI I SSPGAGKTSLLERTLSDLSSSEFRMA
VIEGDLQTDNDAKRVAATGVKAVQINTDGGCHLDSNMI MEALTSNLNEIDILFIENVGN
LVCPAEFDCGEDAIVAVLGVTEGDDKPEKYPLLFHRAGVLILNKIDLLPYVNF SIEKATQ
HARKLNEPLEI I SLSCRTGEGLVWYDWRDLSLRKKRSI I SNKTES

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>hypA 307426:307782 reverse MW:13467

MHEMSLVTGILSI IQEEMSKNGVNLQRVKVCYGELTNI V PDSLQFAFKIFTEGTSLEGA
ILEIEKIPMLRCSNCLSLFTPEDKQKIFFITCP SCKKEVAYNVETGREFYIQHLEVE

>LAW0247 308027:308794 forward MW:29237

VTKGTFLGVYASYSNKTATNTKKALKHYWFWEDSNGYLVQLLDNTYQPIAEPQTLPLEI
FKKNFINQPHILAAPITSLHPSSKNNTTEKITKYHKYKTTLNTSQVTKNNFNVKKDMI I
EQSEQVKHIDTQLRSEFTTALERWNSGDKLAPLKTFEGLSNVQEGIVPEHKHMFTDFGVN
LRKNSLPKLA I LHFKRAVELSPEDAHAFNLARICYELGNLNEAEQHLELALSISP NLNV
AIKFLGFIHDQKKYS

>LAW0248 308869:309519 forward MW:24322

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MLILACLAALEFIQDFPNSYQEDGQMVGTGIIISKIIGSNCDNSSTSDINNKKSIDRDKDTL
LSSSNRNTIQAGTPHQENNIKEDLQLTNKNEQTTPEEEEEESKFIWLTEAPSELKKGEKAI
TQTRLSIGKDISFRITADDAIKAQSMMLKNPDRFVLDLQGWGISLPPIPPTNPWLKKIR
LGTNNGNTRLVFDLQKKPSKTEIKQLDTNKIEIQIH

>recN 309567:311150 reverse MW:60811

MMFEYLRIQNLALIDDIELEFSSGMNVITGETGAGKSFILKAINFLMGDKLRVDMVRQ GK
ERAQIEALFVHPEKGELILRRELSAATGRSRFYLNKLT SQNTVKELQPKLLTHTSQHGQ
QKLLQPLYQEKIIDAWVEHPELFQKQDILIEEIKTLLKKKEKLIYRCQIEERRDLFESY
LYDINKVKPIPNEDEQLELLKEDIRSIAILKQKQMLILQLLQGEGLINHLSLIEKNLE
CFLSIDQSIMDSLPTIECRQQLNELAQKLQKLSLVTSEKNKNEIEEARLFELS QLKRK
LHRSLPEIFSFKEEIEDKLSFLDSCVLDLRQIEKQYTI L IKKLQVILEKIYELRKAANK
FCHALKAQLIDLGFSDYLNVIIDFIPYELFSGCVEHKAQILWAPNPGQPQLLERIASGG
ELSRFLLAVVSIQSSSEDEGMLIFDEIDAGIGGHTLFKVADKLVSLADKKQLLVITHWPQL
AVKASRHFLIVKDINENITFTRCKQLTDFEKQAELSRMAGLSLSKLD

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>oppC 311205:312023 reverse MW:29368

MRFVQQHIILLIGLIIVLFMVVIAVFAPLLAPYDPTLHLNAVLEPPSNTFLLGTDALGR
DVL S RLLYGARASLGVGFI AVGIAVVI G VFFGLIAGYFGGITDEIMRVVDTMLCFPSFF
LILAVIAFLEPSLTNIMIIIGLTSWMGVARLVRAETLSLRERDFIAAKLCGASTTRILL
IHILPNTLTPVFI SATLG IAGAILVESSLSFLGLGVQPPDPSWGNMLMEGKDTLEIAPWL
SFYPGLAILITILGYNLLGEGLRDTFDPRLAR

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>oppB 312032:313036 reverse MW:37152

MYQSTKSLILYFIKKILWILVVLWGITIVSFI VIHLAPGSPTDLQTTLNPMAGETTKQRL
ESLYGINRPIYVQYIDWLSRIIRFDFGTSMSADARPVIVKIFERLPLTVFMNVL SLAISL
MIAIPLGVL SAWKQDSLFDK LITILVFLGFAMPGFWLALLLMLWFGLDLQWFPISGITSL
DFSYLSLWGKIKDVASHLVLPIIVMTVGS IAGISRFMRASMLEVLRQDFILTAKAKGLST
WKVIFRHALRNALLPVI TLLGLSVPGLIGGSVIE SIFALPGLGQLFYTAVMARDYPLIM
GNLVLGAILTLLGNFLADV CYGIADPRIRQGAIR

>LAW0252 313191:313712 reverse MW:20064

MSEQYLGQGIDILLGQEFLTWLWF ISETKPMGFKDSKGQLFTFSMEQRVVVQGGEGESLE
TATVFGPYSPREARIGLQTGKKVTRALLRFEKDELSWQLTLKAENFSFGNFQTPKVS LD
SDEPDAVFLEKIYLIETCLHFIDICYKNFLHVRLSSEWEIEKKELISWIFKSE

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>LAW0253 313725:314339 reverse MW:23938

MGFLRSSCSFTRYKIEKVSSELWQK IPEKLQYAFQDIDDT SQERSWGWTNFDDMLDVN
WNISHPEKGEYLAFA LRLETRRIPPAVLKHLAIALQKEKKNLQLTGKKFLSQRKSELH
EQVRLRLFKHFLPIPAVFDVVWSTTTNIVYLSSTHIK LIDLFTTFFTLTDFLHLELQTPY
NLAVSLLDTSSIIQIDTLEPTKFV

>LAW0254 314561:315688 forward MW:42615

MRYHYSLSVILTILLTFSMVTSTLAIPRTEKDLQYIANNLTETPVKYGDIPSITQPEYIS
VNDANLTLEGRDPVFI VFI PGSQPRIYPQRIMVWHEVVNEYINGKSYVITYSPI SGMAA
YESTIEGMNLI FDTEGKLFNSTSVLIDRNTGSLWSQLIGMAFDGPLKKGGLRYIVSWWTT
WDKAKEMYPTALVLATPRGTNKP YGRDPYGSYVTHGNYDDERIVYPVVQD KKHQLHPK
TKVLGIEIEGLPLAIDEAYVKEKVVNFYFGPYALVALYDSRLDIVRVFNREVWDKQILF
TQNPQGLLDVDTNTIWN YDGI AIQGKLDASISEFFGINAFWFSWYAFNPESLLVPGST
VVPSSALIKNALFLE

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>LAW0255 315691:316236 reverse MW:21032

MFTFQQIFHSFIFSHI IALIDSSSVLIPTSKITIFDHTKWHLYETSTHC IKKYRKISSLI
KNNDSIELKEYQSIKRNLILFLFSFSQTAPEIHSELVDTLKTFSYAILVDYRVPERNLDI
PSFVINYGLFFCTAKKGF SFFQTFIKNAIEGIIYTYSLNSILRKTICAGSITILCIQNI
K

>LAW0256 316238:317029 reverse MW:30849

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MDTRK I TVHNLD I ASHKAYFESFVNQY I TVDSHYLLKLYEHTQHVL DNVKM I LQYEEFS
N I VSRGALLAALYHD I GRFPQF I KWRTFNDWES I NHATLSVQLLKKYGFLEEE I K I IQKV
CLSAMVLHNRKLLPKQLDNKIQLTAT I LRADAKLD I LRVVSSHMDGTSQKKEVTFLFKDE
PLKWNHKVMQD I LEGRTPSYLDL I YLNDFKM V I LSW I RELTFP I TKRLFASSSS I SVLLD
TLPNCNTFQNI RNLFTKMI EESL

>dnaE 317243:320752 forward MW:132225

MSNFVHLHCHSEYSLLDGA I RLDALCARTKEFGMPAAAVTDHG NLF AATHFY S I CKEYG I
KPI I GCEVYVTKDHADKLSKFSKARHHL I LLARNKEGYHNLV KLVTRGYLDGFHYKPRVD
KTL LKQFSSG I TALSACLAGELPRT I MGKNI FVEKGGTFDDA I S I AQEYAS I YPGQFYLE
VQANMLPEQQKVNEKLYELAEYTNLPLVATNDCHYLNADDVEAHD I LLCVQTQAKFNDDT
RMRFNATDLYYKSSEEMEKAFSHLPIA I ENT I KIAESCSVEMDFSKNLFPVYELPKGVTP
DDEFRR LAREGLQKRLEVYPNKKQLTTENYWKRL EQELDI I CKMGFPGYFL I VQDFINWA
KDNN I PVGPGRSATGSLVAWALRITNIDPLPYNLLFERFLNIER I SLPD I DVDFCEDKR
GDV I RYVMNKYGVNSVAQ I TTFGKMKAKAVVRD I GRVLDMSFKETDNI AKL I PDDLHMT I
LKAMEVEPKLQALYNEEPH I KRLLD I SMKLEGLVRHASTHAAGVVVSDKPMDEYLPYRG
KKGELVTQFDMKMVEKVLV KFDFLGLRTMTL I HTTLKT I KDQGK I PPNLDTLP LDDPKT
YELLSKGD TDGVFQVESSGMRQYLRMLKPNCFEDL I AMLALYRPGPLGSGMVDEF I KRKH
GTVTI EYPLPSLKDC LKDTYGV I VYQEVMQ I AQ I VAGYSLGEADLLRRAMGKNPEAMA
KERTRFVEGA I KNNVTES I ASD I FDLMEKFAEYGFNKSHSAAYAL I SYHTAYLKAHFTLE
FMAALLTSESGNQNK I LKYTAACKDMG I D I LKPD I QTSREF I VKDNS I VFGLCA I KNVG
DDA I EK I I TTRKKDGPFLSLLDMSFRVNLK KVTRRVLES L V KGGACDSFGCSRAGMLTAL
DK I I ARTYKK I KDEQSNQGSLLAFAPK I ESVSLPG I GFTCEEQNMPEWDEDEKLLYEKEA
LGFFLTSHPLQTYRQE I YRLGLQPLEEVREMNDK I T I KSA I I VNN I RE I LNKRGNRMAFV
RVEDLTASA E VTF FSEELQKSRELLSSNQPLLLTAT I DSRESTQNDT I DESDDTQLRS I K
LRA I SVESLSSACQNSELP I SYVVDKNRLTTS G I EELKAI LDKHKGQTEVHL I FSLDN I N
CQVRLGSSWNVSPSPAFQQDMYRWS I ASE

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>atpC 320772:321152 forward MW:14569

MSKPTWHLTVRSEFCAAHALRHYK GK CERLHGHN YG I K I I VGGHELTS DTELL I DFTELK
A I LKDVLEPLDHRYLNN I PPFQD I NPSAENLARY I WQNVKKRLPPNVYMVQATVAERNVQ
SATYME

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>LAW0259 321305:321553 reverse MW:8873

MPLYDF I C I QCGHPFEEVTHFES I SLSCPNCSSQNTQR I LSAANI KRVT I SDS DCKSHFS
PNS I GCGREGCGSRDFPCGAN

>ntrY 321744:323993 forward MW:85067

MKDEQKEEKDK I I YSTMKEKKRRHRLYEFLLAFAL I LLI LGGTWTQLAFYGVDSW I F I V
LLN I NS I FML I VLFVTR S I V KLI MERRR KVF GAQLRTRLVL I FVSLSL I PTV I MFLASN
KVVATSVDYWFTKKAESSLQAALDVGQSFYVAAAQRLRTHSES I LTT I KKDKL I WGGSG I
DTLLQDKQQEYGLTF I G I I NPQG I EQHWYGGEGTLS I WKK I RER I DWNHVASNNFSSLLW
ATDHADYVFGVLA I DNGRSGYL I TAES I GQGLLTKLDR I SNGFEEYTS LKQLKPLK I SF
LL I LG I LSM I I I FGSVWFGFRLSKE I TAP I LALADGTTR I AQGELDVRL I DEGQDELGLL
I KSFNRMAKDLQQGQTNLKKANELLAEQKDTLEERNKY I ETVLDN I TTGV I TLDVFGY I L
I ANKAACS I FNTSQHFLKGRCPANFLPPQYKNI FYSM I NQLQKHPDLHWKTQENFI LGDR
QWKLVI HAVA I TG I DG I QAYVVV I ED I TELEKMRMAAWREVARR I AHE I KNPLTPI KLS
GQR LDKKFGSQ I QDPVFQCTEL I VKQVERLQDMVQEFSSFAKLPEVKLSSGDIRPVITE
LLELF I HNHNE I KWNVY I PNTLPE I LMDASALHRALLNV I TNAVEALEYSQNI EKKC I EI
T I THDHTKGI I S I K I EDSG I GLAPNERER I FDPYFSRKKGGTGLGLA I VKA I IDDHKGT I
KVFGSYLGGNL I E I ELP I VTSHVDF TQS I

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>gad 324064:325572 reverse MW:57125

MATARKAVVKMPVGHGTKRGS MGNRTQKSSMSNGVVRHELLDDVFAEDDLSQTLPKYQM
PLYEHRPRDI YQAVHDELM DGNARQNLATFCQTWVDPE I HKLMDECVAKNMI DKDEYPQ

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TAELEMRCVNLADLWNSPDPTNTIGCSAIGSSEAAMLGGMALKWRWRAQRKKAGKSTDK
 PNLVCGPVQICWHKFARYWDIELREIPMEKNRLIMSPEEAIKRCDENTIGVVPTLGVTYT
 GQYEPVEEVSNALDALQKKKGGWDIPIHVDAASGGFLAPFIEPELVWDFRLPRVKSINSSG
 HKFGLAPLGMGWVWREKTDLPEDLIFWVNYLGSNIPTFAINFSRPGGQIVCQYNNLLRL
 GREGYRRIHQACYDTTDYLANELTKTGIFKILYGGKTGIPALTWTLKDEKKYFSLYDLS
 DRLRTRGWQVPAYSPANRTDLVVMRVLVRHGFDHDLADLLVNDIHRAIEHLKQNP RRKP
 LGSGQVTSYDHSGRSSIPQKKK

>LAW0262 325627:327084 reverse MW:52183

MERNsvkhvtvtTLALMTVAAVVSLRGLPMMAKEGLSMIFYILFSTVIFLLPAAMVSAEL
 GSAFSSKSGGVYAWVKAAGSRWGFTA IWLQWIQNVVWYPTVLGFASSCLAYFFMSPELS
 ASGTYTGIVTLIVYWCATVVALNGSKAVNSVAKYGVVWGTLPLGALIVL GALWIFQGN
 NALFIETITLSSGQTVVEHHHPVLFPHIVGLGSI AFLAGIVLLFAGVEVQAVQVDMENP
 SRQFPFAMLI AAIIFILFLLGSLAVAFVIPADQLSLTAGLMQAFQVLF AHYKLSILTPI
 LGLLMAFGSIGGVM SWVTGPSRGLLATAQQGEIPFLAKV NKHGSPVTILIIQAIIVSIL
 ACLYFIIDNVSVAFFVLSAMVTLYLV MYMLMFAAAIYLRITQPDLP RVYKIPGGIIGMF
 IVAGIGFLGVAFATIVGFFPPTNLPVGNPELYVTLVASGMIVF IGLPLIINSMKKLSWKE
 QRSQE

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>LAW0263 327353:328624 forward MW:45738

MNIWNVVSIGIGSMVGAGIFALLGQAILLVGKNAFISFILAGIISLLSGYSYAKLASRYP
 SSSGILEYYNKGFSKVISGGFSLLYLFTLAISISMVAKTFGLYLAVMISNNYQLSIPDS
 YLSDIFSTIIIIITIFLLNTNIAKEVGKAETTLVGIKVILSILVIAGLSTIDIDIINKP
 SSSSFSIGSVGLTFFAYAGFGMMTNASGEVKNPKKTI PRAIFIAILFVMFLYTTLC LVV
 LGNIPLEEIKKHADTAIAI AARPVLGNAGFFIISV VALLATASGINAMMFSGIRIAKGMA
 EKKQLPSIFLKKTKFIGNGTIGMTYSIIIGIIITNIFNLQSIANMASIIFLLCYLAVFIA
 NWKLRKETQSLKLLIVIGIVSMSAILLSFIYTI IQTTPMTSILLLIFLVFSFLLEYFLIK
 YVT

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>rho 328991:330241 forward MW:46649

MSLTELKTMNMPKLMELAEDYTIENASSMRKQELIFTLLQACASRGGIYGDGVLEILSD
 GYGFLRSPLSSYMPGDDIYVSPSQIRRFHLRKGDIVSGQIRPPKEGERYFALLKVKEIG
 YEVPD NAKHIVLFDNLTP IYPNQRLLMENS DKNYSCRVIDLMSP IGRGQRGLIVAPRTG
 KTILLQNIANSINANNPDVYLIVLLIDERPEEVTDMERTVNNAEVI SSTFDEPPQRHVQV
 CEMVLEKAKRLVERKKDVVILLDSITRLGRAYNAVTPSSGRVLSGGLDANALQRPKRFLG
 AARNIEGGGSLTIIATALIDTGSRMDEVIFEEFKGTGNMEIYLDRHLAEKRIFPAIDINR
 TGTRKEDLLLPEDVLRVWILRKLLAPMSSIDSMEFLLGKMRGTNSNEDFINAMSK

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>LAW0265 330371:331534 reverse MW:42717

MNTVIFYDNNATTQVAPEVVEVMPPFFSEYYGNASSMHTFGGAVGRYIQNAREQVASLIG
 AEPEEVFFTSCGTESDASAIWSA IQLHPEKRHIITTRVEHAAILSVCNNLESKGYKVTYL
 DVDNKGRLDLDEL RSSITHNTAIVSIMYANNETGTIFPIQQIAEIVKEKDVL FHTDAVQA
 VGKIPVDL KALNIDYLSLSGHKIHAPKIGAFYVKTGTRYRPYLRGGHQEFNRRAGTENV
 PYVIGLGKAAELAQDYLEKTN GDDIKVLRDNLEKQILTITD TVVNGDIDNRVPNTTNI SF
 RNI EGEAILLLMDQHGICASSGSACTSGSLEPSHVL RAMGVPFTYAHGSI RFSLSRYSTA
 DEVNIVVKELPAI IERLREISPFKIDT

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>iscU 331531:332373 reverse MW:30470

VMWEYTDTVKELFLRPKNAGELPDANAIGEVSLSGCDALKLFLKINENEVIEDASFLTF
 GCGSAIASSSILTEMLKGKTVEEASKITNKDIVAQLGGLPREKMHC SVMGEEALEAALKN
 WRGEATSGPHCHDEVIVCKCFGV SDEHIRKTVAENDLKT VDEVTDYTKAGGGCGDCLEDI
 QVILDELQGLLKKETT SKPVL TNVQRMQKILHLLDEEINPVLKTDGGSVELIDVNGPLVT
 VAMRGNCTGCKSRQITLSQFIEKILHEHVSDIIVEEVNA

>LAW0267 333321:333689 reverse MW:14389

MKIYALMICSLFFALCLLTTPVAIANNVQCDLTGRDWEKSSTNEKLSFLYGVSSVVVIEQ

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EIAHKEGRKPSLFVQKWIKTFKDDTWMNIQHKIDKWKYKEHPTQKNKDVLWVLRWYEFMAPN
TK

>ruvC 333806:334312 reverse MW:18053

VISVIGIDPGSRNTGWGIVHEVSGVLHLVCCGVIQPSCNGSFAERLAHIFQEISSIMKY
KPVEASVEQVFTAQNPLTALKLQGARGAAVVACANQGLLIKDYEATTIKKTLVGHGRATK
EQVSFMVGRSLGVKPDWPIDTSDALATAICHLTIRRFENRTARVAKTL

>yebC 334384:335124 reverse MW:26908

MAGHSKWANIQHRKGRQDAKRGKEFTKAAKEIIIAAKNGGDPGPNRLRAAIAAAKSINL
PKDKIEAARIKGTGQDSSGGDITEIMYEGYGGGVAVLIEVATDNRNRSVADLRHIMSKNG
GSMGESGSVSWMFERKGVFVEKTAYSEEELMEALAAGADDLHDEGDTWEIHTSMSDFN
TVREAFESDKLIMQSAELAMIPQNMISVDIETAKKVVKLLEALEDYDDVQVYSNVDIPD
EIMNEL

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>ygcA 335173:335775 reverse MW:22758

MKPYRDYYFLKAKHEKYPARSIIYKLEIDNRFCLFQKGMVLDLGASPGSWSLGAEEKVG
KTGRVVSQDIQITITIPLSNVSFQEDIFHRSDSFNNILIKEGPFHVIMSDMAPQTTGVK
ITDHSRSELELCLEALAIKCYLLQQGSFIVKIFMGADTIELVKEMRQHFERVTSFKPCSS
RTKSKEIFYVGLGFKRFTTS

>LAW0271 335866:337446 forward MW:60903

MSSLYCNITYNDRKVVDELGRKKTLASGKDDFVDFGNSIKQISFDNHPILLGGIGFPF
NAWQQLFINQEENKKIFWIESPLFEKQMPPEEWHKCI PAHWKISLKELLELHTFLKLSDC
RIYRYLPSYRLFSTFWGMVVGKQLLTHLNYAPSLSSSSIIILSGTEKELLYELNIACQQI
GFTPLYFPHQGTLSQLCQIVKEQQPSLFLSINLQGLDSEGYFFYLLQAAKIPVAIWLVDN
PWHVLSKLRSPWWKEATLFTTDHSFIYELHKHGAQNVYALPLAAWTKTLLPNSTNSTIHS
LNPLVFIGNASFPNKKKFFSGLQLPSSIIISQAKLQLNNNDPPHVHWWVKLAIKQYWPKD
KIRLAGLGAECSLLKRQLWLTIAAEKGLTLFGNPEWKYLLPPKTDVRSPIDYYKTVPHV
YNQAKYTLNVTSLLLPKGLTQRHFDVWMDGFLITDATPGLSLFPKELTEFIAIQSAKDL
HSCIERFEKDTTLRLHLMHAWKKHLIDFHLYSNRLQNILSLLQINI

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>LAW0272 337458:338414 forward MW:37433

MYKEKIVDVAINVFAKPYQTSLSILSLLRHSGSIDKIYFQFEPYGSKYDLYQPYIIADY
LKDQAICFQPQQWIALSSVDKNQLHNIYRHSIRYQYAWEHTNKKYLFIIHNDVFFFKDI
LTPLIQNIGSHFAIGQLGQCWNC PASHIQIVQESIPKLSACHQERYQLFRPTFIELKKLY
TVAKQKNIFVRPYLENSESIFQIQPWTLPSCRINEWACLVNMDICAPLTIPIGTVLPFGA
FYQCGPICLDTSVAWFKGMHEHNLTAKHMDVSKYMQHWIGTGKMTRIKYVKAENASYLL
KKYFPHFVDWCRTKNVIF

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>LAW0273 338687:339097 forward MW:15368

MLTEKNAMSKQFEIYKCEKCGNIVELLFASGTLSCCGQPMMLMDSNTSGAKEKHVPII
ENNGSGCKVTVSTVIHPMEEKHWIEWIEIVTIDGHHCKKFLNPGDEPIAYFNYPLEQIAY
AREYCNLHGLWEVSVN

>LAW0274 339468:340676 forward MW:45539

MKPVEITNDIYWIGAVDFNKRNFHGYSRSPQGTTYNSYLICDEKNVIFDVTDEEYSGVMF
CRLAKRPLVDKVDYIVINHTEKD HAGALSELVTHCKPEKIFTSNIGKKFLDAQFDREWP
IEIVSTGDSISIGKRTIQFLDTRMLHWPDSMVSYIPEEKLLISNDIFGQNLATSERFADQ
CDPSSVKKRTKEYFYNIILPFSTQVRKTLDNFKEIQLDIQIIAPDHGVIYRTAEDCDRVL
NLYREMAEQKLKQRAVIVFETMWGSTKKMAYAI GSGFDEENVPYSIIDIQKNHSDVMTA
LADASGIIIGSATHNNSYLPGIADLLHYMQGLRPKNLIGGGFGSYGWSGEAAKDIQAILS
SIGVETPSEPLRGTIFPKHQLLRDCFNFGKTI AQALKNKGQY

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>cyoB 340816:342117 forward MW:49227

MDVVMLSRLQFAVAVFFHFIFVPLTLGLTVILALMETKYVKTGEEVYKKMAKFWGKFLFI
NFTLGVVVTGITLEFQFGTNWSKYSEYVGDVFGSLLAIEATAAFFLESIFIAVWAFGWDKI
GKKMHLTAIWLVAFASNMSALWII LANGWMQHPVGYVLRNGRAELDDFMAVFLNYPYGWGQ

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FFHTIFASWMLSGFFVLGISAWHLRKNQMDFFKRSVNIAAPFTLIFAIIVALLGHQQGQ
SVAHHQPAKLAAMECHWETGSDVPMYLLVWPDVEEKRNIIQALPIPGLLSFLADNTTSAE
VVGLNSFPDDDLPPILPTFLSFRFMVATGLLFIILFAWLAWWYRDRLEYHPKLLKCLIIYLI
PLPYLSIMAGWAVAEIGRQPWIVYGLMRTKDAVSPIPESVWISLISFIVVYSFLGILDI
YLLAKYGRKGPQA

>cyoA 342150:343178 forward MW:38291

MLETIWFVLWGLLWAVYFVLDGFDLGMGSLMPFLAKTDTEKRIIYNAAGPYWDGNEVWLI
TAGGATFAAFPKEYAVMFSALYAPLLIILFALIFRAVAFEFRNKIDTPFWRSLWDLFLFL
GNFIPALLLGVAFANLFMGIPIIDRYGVYGNLLMLLNYPYILGGIFFVIMFCVHGALWLA
LKSEGILLHAKAVVTAKGLWFIILAALTI AFLVMTYYYYTNLYDNYEITPALLAFPVIAALS
IFIQLMLNKEKLLLAWICSALFILCVTFFGVLMYPSLIISSINPTYSVTIMNGASSPLT
LKIMLGVVIGCIPIVIAQAWVYYTFAHKVTSSESIHADDHAY

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>LAW0277 343350:343829 reverse MW:17428

MMMMNANRAKRKKKSKVKKDPILEKSKELFLGGKFPVTTDTVEGKRISKVLGLVCSRAY
DADDAFFGMASRALSKGAHAIVGYSENAFHPDGTRYFSCYGTAVMFAWEPNEKYGAALM
GRKGLEGLATELQLDKSSAVHTQLSVKTSATEPTSDEE

>ydbK 344241:347804 forward MW:131163

MAAKMKTMDGNAATTHIAYALSEVACVFPITPSSVMGETTDNWSAANKKNLMGQRVLVQE
LQSEAGAAGAVHGSVAGALTCTFTSSQGLLLMIPNMYKIAGELLPAVFHVAARIAAHA
LSIFGDQQDVMVRQTGFSLCSSSVQECMDLALVAHLSAIESRVPFCHFFDGFRTSHEV
QKINVIEYEEIQKIVNWEKIHIFRKNAMNEHPYQRGTAQNPDIYFQNRERSNPFYNAV
GIVIDSMQKVFSITGRQYQLFDYVGHPEADRIIAMGSACEAITEVINTLNNQGRLGLI
KVRLYRPFVSEHLLRAIPPTVESITVLDRTKEPGALGDPLYLDVCTAFMETRDVKPHPII
SGRYGLGSKDFTPAMIKAVYDNMLPNRNKHFVVGIKDDVTHTSLDISDNFDTVPPGTIQ
CKFFGFGSDGTGANKQAVKIIDGNTDKYVQAYFAYDSKKSFGFTASHLRFGDHPIRSTY
LVTQADYIACHHPAYVIQYDVLEGIKEGGIFVLNSSWNTIEDLERELPPPMKRTIARKKL
RFYNI DAVK IASEVGLGGRINMIMQTAFKLANIIPFEKAI ELLKQSIQETYKSKGEDVV
KINYTAVDNTVSALNEIQVPSTWADASTEVIIPRYKNVPEYIKTFVEPILTEKGDMLPVS
SFTPDGIVPLGTAAYEKRAIAIDIPEWIADNCIQCFQCSYVCPHACIRPVLATEEELIGA
PETFVTKDAIGKELKGLKMRIQVYPEDCVGCGSCADVCPSPKSLIMMPLETQRQEQUIN
LDFAQKHSILKDNLMRDTLKGSQLQQLLEFSGACAGCGETPYVKLLTQMFGERMFIAN
ATGCSTIWGGSAPTAPYCTNKDGHGPTWGNLSLFEDGAEYGLGISLAIQRRRAKLAELIKE
ALTI EGISTELTNALNGWLEHQEDVLSKFKGQDITLISNTPTNPIFAQILEREDLFTK
KSFWIIGGDGWAYDIGFGGLDHVIASGNDINILVLDTEVYSNTGGQSSKSTPLSAVAKFA
ASGKRRTTKDLGRMAMTYGYVYVASVSMGANKQQLLKAFAEAYKGPSIIAYAPCIEQ
GIRKGMGKSMEEKLAVDCGYWPLYRFNPELAKQKQPLILDSKAPDGNLRTFLAGENRY
AQLEKNDPETANKLHEELNKEYNDRYLLKQSELVTASEDPLLQR

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>pta 347892:350012 forward MW:77859

MANKLYITATEKRSGKSAVTLGMMQLLMRHIRSVAFFRPIIANIDPNKKDHDINLILTTF
NIAMPYEDTYACSFKEARTLIAEQSPVLEIKIQKYKHLEDNYDFILCEGTDYLSNDSA
FEFELNIDIAANLNMPLAVIVNGKNKSIDLISSTVTSSSEIFDKGQDIACLFINKTTLA
IPELENCKKAIISTAIGSQVPIAMFPNNSVLSRPTVSDIKRWMKAEVIYGEECLNNSVEDY
IITTMQPNFLDQLQQGLIITSADRSDIVLASLASRLSMTYPDIAGIILTGKFESSH
TRLINGWQSVVPIILTVSQNSYQAIMTLESELYGKINVSOTRKHIALAIFEQHADSNAIT
QRVIERTSKVS PKMFEFKLIEQARRHKMRIVLPEGTEDRILKAAEVLSQREVADITLLG
DIPTIHKKISDLGLSLHNVQLIQPNQNHAFENYVQTYELRKHKGITLDDARDWMNDTT
YFGTMMVYKNDVDGMVSGATNTTAHTVRPAFEIKTKPGASIVSSVFLMCMKDRILVFGD
CAVNPNTAEQLADIAISSAQTAVHFGIPVRVAMLSYSTGTSGKIDVDIVSEATKIAHE
KAPHLILDGPIQYDAAIDPDVAKTKAPTSVAVGKATVIFPDLNTGNNTYKAVQRAAGAI
AIGPILQGLKPKVNDLSRGCTVTDINTVTITAIQAQAEQGLITID

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>ackA 350112:351326 forward MW:44888

MKVLVINTGSSSFKYQLIDMPMEQVLVSGLVERIGEEVGMVHKIYPNTSQEKKYTTTQP
FSTHVEGMQAVVAELINPKHGILHSVKEIYAI GHRVVMGGETMKHPALINQHVKNIREC
AIFSPHLNLSHLAGIETAEEFLPGIPNVAVFDSEFHQTMPKVAYLYPLPYDIYDDYKIRR
YGFHGTSHRYVAQQTANFLNRPIKELNFITCHLGNGCSMTAIKNGKSIDTSMGLTPLDGL
MMGTRCGDIDPAIVPFLIEKTEKSAKDDELNMNKQSGLGKICGMNMDRDIHEACAQGNK
AQLALDMFIYRIKKYLGAYYAILGHLDGII FTAGIGENDTIVREKVCSGLENLGI FL DSS
RNNTHSSTLRLISTDNSPIPIFVVPTNEELEIAKLTIQLVSN TQ

>miaA 351351:352262 reverse MW:34857

MNYRKVICIVGPTGVGKSEIAFHLAKRYDGI IINADSRQLYKGVPIITAQPTFEERSLIP
HKLYACL DLHEKISAGRWATLAAEQ LDSVCHTKIPLL VGGTGLYL RALFDGIVTIPPIST
ELSLTMEKQAEKGISFLYNMLKVHDPLYANSIHPNDRQVRALTVFYETGKTFTWWHQ
QVTEAYPATVLRIGIKIPLIELAPLLEKRIDKMFVQGAIKEVITTYKRYFNKDVQNSGI
GYMELLGAIKGEYTFNEAKERWLKNTRSYAKRQLTWFNADKRIWFCPDQLEDIQKCVEN
WLS

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>kdtB 352309:352827 reverse MW:19547

MEDTKIRLAIYPGTFDPLTNGHISIIHRAKHLFDKII IAVAQDSGKKPLFSIEERVSMIN
TTFFSDHMVDVENFSGLLVDYVEKKNAKTILRGLRAVSDFEYEFQTSLMNRKLCPEIETI
FLISDYKWLYISSTVVKTVASLGGDVTDFVPENVLICLKTKYKQSKSNLVIT

>LAW0283 352803:353375 reverse MW:21665

MRIMTGSLRGRILKTI EGDGYRPATGKVREALFSMLTSRGI VWDQTYILDLFAGSGSLGF
EASIRGAAEVCFIENNPKAVQCLYKNI EKLR LFEQVSVVEQDVIQFLNQDSL FKYQLVF
IDPPYGGNRLETTISCVVEKGWIAPEGYIIAEVETTLRINFFQLHPQLELLSNRSYGQTR
LLIWKTQKYV

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>LAW0284 353516:355117 reverse MW:60463

MKITFLGAAKTVTGSCYLIEACGIMFTVD CGMFQGNSIEKRNFEIQHYHAKELQFILLT
HAHIDHSGLLPKIVKEGFHGR IYCTAPT KD LATLMLEDSAHINEMEAQWKNKKYARHGKI
EKEVLPLYTVEEAQNVSPLFTPVSYNTMFEPHPG IQVTYHDAGHILGAAFLELVIKEEGK
EVRLVFSGDLGRD SLLMHEPMT PPQADFLF IESTYGDRNHKIDQATFDELVDAIHYSWT
HNSKTIIPAFAVGRTQEILYCLYLLKQQRIPDIPIFLDSPLAIQTTKIFETYNSYLKFN
DHPSFKTILDGLSVKYTPSVKESKEINELKGS AIIISASGMCNAGR IKHHLFNNAWKTGV
SIVFVG YQAVGT LGRKIVDGAKTVRIFGEDVAIKAKVYTLGGFSAHAGQQQLLDWIGRM
YQPQMEVLLVHGEEKAQEVFSKLIQKQYGLTVYIPSYLEQLELTAESQKIVSESKNIQPV
EWSKLTDTIKNNFNINLKLKNI AQKPWETQICMYDRLVELNQEIESFLNYNK

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>LAW0285 355243:356610 reverse MW:51204

MIFRIIVIFLCSIMSFTFLSNGYVLSKPTEQC VSSYQPGMLKDL MVFPQSLKVYSDLLGE
VTLISGKKLEEKYNNFFKKRFFQPDSTEPIFPVHDAIIFSYPN TKSHATWWAENLLPWT
EKNWKAVEKNAARSTYPSKNYKGIITERTAVRAAPT VSPFFRNPSLAGEGFPFDYLMEAN
IHLGTPVVVTHISEDEAWVFIETPFVSGWVRDNNVAKVNSDIKQFLSLPQASIIYDGV
LKDASGVHGGAGFLGTVLPMVKLTGD TAML LVPVRDQYGN AHIITAETPKHNVLPMPQVL
TPKLLASIGESLIGQPYGWGGLFGRDCSEMSDLFIPFGVWLP RNSQQQVHERHFINLE
HVSKEKFYSVMKTQAI PFVTLIGFQGHVGLYLGMYNDTPVMLHDLWGVHTIDNGHKGRYI
LGRV IISL DLGNELCNLNKDETLFSRLEGISILN

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>LAW0286 356715:358055 reverse MW:50321

MRYKNYIAFCMISLFLCLTGCKTFNCVSPQLGTIKDLEVPQDLQVYSSVLPQDPLITKD
RMLDEYALFKKHFFQPWSKDKASVPASTVYSIFDRPNTKENIRWWAENLLPWTDIHWDEV
KKNAAISTYPSRKDKGILIQRTSVYAAAPTQSSFFLN PQTAGEGFPFN YLIESNLHAGTPV
FITHTSTNGDWVFIETDLVSGWVPEHTVALISDNISKWFSSLPQAAIHDNVALNGRSGR
HVTTGYLGTVLP IIKSTPTEL VLLAPLRDQHRRARITEVYVSKIHTTIIPHELTASFIAD
IGNPLLGQLYGWGGSFGHRDCSELMKDLFIPFGIWLPRNSQAQIHAWNYIDTTQLLEDEV

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YQLMKDKAIPFATLIGFKGHIGLYLGMYNNTPAMLHDVWGIRTIQSGSEGRHILGRIVIT
SLKPGAELCITDSLLFDKRTGISVLN

>recD 358069:360267 reverse MW:82517

MAQLDIEKQIVLQGILDRIVFHNSSENGYTVFRLKPENDDIDTVPVVGYLNNPQPGASIL
VSGQWVNNTRFGRQFQMFTEIRLPASVEGIKRYLSSGLIKGIGKKAESIVTEFGEETF
HILDTSPEELLKIKGITKKKLDQITECWQEHTTRELMLVFLQPYGISVTVYAVKIYKYYGQ
QSLNIVKENPYRLAMDIHGIGFLTADALATKLGFEKDNPLRAQAGILYTLLKCMDEGHVY
YPKEAFIELTSHNLGIDHQCIEDAIEHLKREERIVCEALDEHIGIYLNRYHHYESQIAFY
LQRILHSPKSVQFKNTDDTISQVINKLNITLAPEQMSAIVTSTTSKIMILTGPGTGKTT
VLNAIIQVFKENKAKILLAAPTGRAAKRMSEAIGMEARTIHRLLLEYSRNDGFI RNEDMP
LACGLLVVDEASMMDIMLTYHLLKAIPLGATVIFVGDYQLPSVGPVGNVLDLIIISQLLP
VVELTEVFRQAAESQIVCNAHLMNKGEVPCLESSKEALSDFYFIRQSDPKAADLIVDLV
KNHIPRRFKFDPINDIQVLTMPHKGTVGAASLNKRLQEELNPTSQFLQRGEKIYRLGDKV
MQIRNNYEKDVFNIGRITYIDMEEKSIVVNFDERLVSYPSEDELDELVAAYAISIHKSQ
GSEYPAVVIPLMTQHYVLLQRNLVYTGVTGRGNLVVFGESKALAIKINNKTQKRHTWL
SARLVNGMLQKL

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>LAW0288 361133:362386 forward MW:45853

VNNQYKKNIQKNIEYHSSAEKTQKISAKSTLPYPQKIADPPIHSFLQMTSVAIPLIVGG
LFLNNSRAEKNIHNLNRNDYVPKFNHFDYDYLQFAPGAAMLGLKLGLEGRSSWARMLFAD
AISIGLMLPTVEIKVHTKKRPTGSSHQSFPSGHTANAFMLATMLHKEYGETHRWYSI
LGYTAATATAIGRQLNNRHWLSDTMVGAGIGIMSTEGYLLTDLIFEDKGIIRPIREPKT
IDKNRKP SFLGLYAGINQMSGKTKIDSVEISTGTGANVIEGALFFNPYIGVGGKFSAN
LPILKDGKQLQKERYIDILSGYGGLYFSYPLTRRIGLGSKVLAGYNYRQSKSLPSSSIKI
GGKKGIGICTGASIHILANDSLSVSCFLDYNFISPLPKDKKLRATQTLGLSTNIAF

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>LAW0289 362504:363340 reverse MW:30868

VSHRTIKEIVTGYKSVDGAGVHLVCLVGLSLTVKNFDPFLMLDAFDSRNPEDYIKGFPMPH
HRGIEETFTYL IQGNVEHKDSLGNQGSILDGCCQWMTAGSGLHQEMPKATERFLGLQLWI
NLPRIYKMOVAPKYRDIRTREMIPKVEEDAGTVAVVTGKYKDVPGATKGEYVNIFFDLTLK
PDKVWQVATDPQHTVFAYIVEGECGFESALIPAKRAILFNPGKDLFIQTGLD GARVILVS
GKPIQEP IAWGGPIVMNTNDELQEAFFIELESFTFIKHS

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>LAW0290 363544:364893 reverse MW:52536

MDKNRLGSFLFFMEQSLNIKRILFIVLLLCEMAFLVGAYWPGAMSIDSVSQYEQAVTHTY
EDWHPPIMAWVWSCFIVLYKGPIMPMLLHFTFMFFGATALLCLMYSKKNRISWIWILPLL
PFIAGLSGLWKDIGMAYAFFFAFALFHLGHIHQRSYYSYLLFFLALCFFLYAFWVRDN
AIMASAPIVYVYLVITIGFPNWKKIYIFGVSCIIILICLFCIGRGINKYMLDAKSECPTMHK
IDEIAATSRIVGKNLFFKESTVHEFPVEELPIVHLDKGWKFYSIVQLTDNLLKENWYSVM
RNEPWAYLQAKLRLFNFSRFPKTPRCVSYFVMHKNNYGFTFEKGRASDILYSYVNTTK
NILPILFLPIFWIPLAGILFLYVLKRNDLLGIEVKMLSSSAVCYLYGYFIVTPTPDYRFI
YWIVLATTVATFLLLCDRYSYTSSEFSNI

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>LAW0291 365970:367550 reverse MW:60266

MKSDPVIILGAGPAGLTAALELLRSGKHKVIVELESQVGLLARTIVYKGNRMDIGGHRF
FSKSAQVMKWWLDILPLQGKSDKKDFPSSSQEYNRDEDVIHGPDPEKEDRVMLIRRRLSR
IFYLRKFFDYPISLKYSTIKKLGILRVVKMGIGYIRVCFPIKSEKNLEDFFINRFGREL
YKTFFRDYTQKVWGVPCSDISPEWGAQRIGKISIRVLRHAIRKIFQSDKTEQKNTDTS
LIEQFLYPKFGPGHLWETVAKEATALGATLLLNHKVVGLDIEDSQVTAVYIENCNNGEQS
RVDCSAVISSIPLKELVEMCKNAPSSVQEVSNGLVYRDFITVGLLVKNLRLRDDNDRESN
HSVPIKDNWIYIQESDVVIGRVQIFNNWSPYLVSDPQKVWLGLEYFANEGAHLWSMSSDA
FKQMAIQELISLGFITCLDVEDVTILRVKKAYPAYFGTYFRIAEVQKFLDSIANMYPIGR
NGMHRYNNMDHSMLAAMQAVKCLMDPSIDKSVLWNINIEKEYHETN

>LAW0292 367971:368636 forward MW:25557

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MNNFITYSQPTLPAGFVDVQKVIQSILVDLKYVGSDFVGRPIPGYNTNRVILSKEATVA
LANVQTEHQFGLSLLIYDAYRPTQAVDAFINWSNEPEDKKIKQKYPIILTKKEIFDQQY
IMKKSSHSRSTVDLTIVSFNNTNQNMFYTPLDMGGIFDFFGKESHPDFQNIPTQKKA
NRLFLRTIMTKYGFPTISNEWWHFTLANEPFETYNFPIE

>fumB 369577:370143 reverse MW:20316

MAEYRTITTPLIKEVTRSLHIGEHVLISGTIYTARDAAHKRMIE TLQKGEKLPVSL ENQI
LYYVGPSPAKPGHIIGSAGPTTGGRMDSYTPAMLQQGLTGMIGKGKRSKVLNELKTYGA
VYFAAIAGAGALISQHIKYTVIAYPELGP EALAAMEVKDFPVI VVGDTGKDFYVEGPR
EYLKHIAS

>fumA 370169:371014 reverse MW:30276

MKEIHVSVIEDTVAQLAIDACCKLPHVLT EFKNGIHNESSPLESCILQHLVNNAELAER
EMMPLCQDTGLAVIFTEIGQDVVITGGDFEEA INKGVKRGYISGYLRKSVVADPLFERKN
TGDNTPAIIHTRLVPGDTLMIRFGVKGAGAENKSKLMLIPADGIDGVKRFVLETVM EGG
ASACPPLVVGIGIGGDLEIAAICAKKAALRIDTHKNPQYAALEDELLQEINKMGLGPL
GFGGRMTACKVNI EFFATHIASLPVAVNLNCHSARHTEVWL

>LAW0295 371279:371884 reverse MW:22840

MLLIAVALCFFGMFLMFFYIVFSQDRIVRTLNRKYKEFYEQLSKIESAANAIFYSSNRPY
PVEDTFSMQQPQSSPKRNAPQPVVNQNI PSPTMPPNNLSMNNQNV PQAMALNNNNNNNR
NMQPAPQYQMMVMGNGQGHYQQDVS YAQSTPTGAHMGQIMMEDVFPLQEDM IAGGPETS
IPARQGEQRMDKSSMLELLQL

>purM 372325:373374 reverse MW:37864

MSLIRSQAYTNAGVINAGNALISNIKSFVSETNIQGVLSDLGGFGGLFKLNLTVQDNPV
LVSSTDGVTGKLFKFAFDNFKHDTVGI DLVAMCVNDILVQGARPLFFLDYFATSKLDVDKA
TQVIYIGISEGCKQARCALLGGETAELPGMYTEGEYDLAGFCVGI V DQSKI IDGSSIKVGD
TIIGLASSGIHSNGYSLVRQIINQCAIEPDNIIPGSRDTFKQVLLKPTFIYSDIICNLIK
DISIKGMVHITGGGFYDNI PRVLPQSVVANI QFSSWDIPPIFYWLQE QGSLSWSEMLQVF
NCGIGYVLIIPND SVTRAMN I LKSMEVSAWIGSIEKQNVGDEQVIITY

>LAW0297 373444:373821 forward MW:14115

MNKKKSLYLLF IGICYQFQIKRLLLLMTII IANTIFGFKYIICISHAYTITPPNNPSIFI
GTDIKGDKIIQVVTPISDMEQQPTPPLIIIPKVSVPWEPTVPIVKPLDTITPATPKVQSI
NPMKK

>LAW0298 373843:374799 forward MW:36745

MTKNPFI TRKKKIHYVNKKNLQSCNDKQKNLTNQDEL TDSYNFFPVQEEPSSDEELFLQH
IGQTQKIHNKKYVLPYHKEKISKNITINKNSRNKLTLDTKIDKTNNQKTISSNKSTIQTS
QSNILLPNDNLTENNTFLTAVKDQVPLSGKSRITTYCRPTKWTQTDITSLTTNKKPIKFN
IVKKEEQLEGHIEGFDKKLFTQLQSGLFRPKTTLDLHGFNIQAFYTVVKFLHTAYITGQ
QPALIIISGRGKNSPQGI PVLKEKLYEWWTQEPLKRVILAFCTAHARDGGTGAIYILLRQY
KKTWNIHWEQRPLDPDLL

>glyS 375220:377307 reverse MW:78113

MATFILEIGTEELPARFLELQSELGVRFLDSLQSMGYRPTEVSDYSTPRRLVVICIGLD
MIQPHCEEVVIGPPINIAFDKDGNP TKA AEGFAKNLGITIGSLSQISTDRGEYISGLKVK
GGIPTKEVLARLCP EII TALPLPKMRWGNPFTFIRPIRWIMALLDSDIVPFELAGIHS
NRNTVGLRNNV PPIEVPSSTDYMLLKEVGNVILDPNSRKDSILQLGNKEAQLIGGVN
WNERLLNEVIGLVEHPYPLLGTINSVFLNLPREVL LTSIETHQKSFGLDSQGNLLPYFL
TVLNMTPPDALVKQGW ERVLQARLEDARFFWNEDINSSFDEWQEKLTHLIFLDPLGSI A
QKEHRVSL LCEWIAKYIPTSN AEEARKAGSLSKVDLVSKMVEEFPELQGV MGGIYARHKG
ESES IATAIAEQYLPSPGPD TDVPVTDLGA ILSIADKIDTLVGCFCGGI IPTGTADPYGLR
RCALGIIIRILIEKEYPINLHQLYTRAQDNFVNVS WKLAPEDVLQKLHEFI IARLKNYFLA
LGYDTLVVEAIVSTQTSQLWSIKDRLDSFILLSQHEDFSQLVQTIKRVINIIKKQDKETE
IVLTGHWNP SLFKDTAEKVLAEKLMIAVNKFNQESQTASLPVFMMLLKLQPAINTFFDQV

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MIMSN DIEVRRNRLNLLKALLLYIESLADFSVLQI

>glyQ 377313:378197 reverse MW:33965

MYFQDIIFMLQKYWSSRGCVIAQPMDIECGAGTFNPATFLRVIGPEPWSVAYIEPSRRPT
DGRYGENPNRLQSYFQFQVVLKPSDDIEEYLGSLQILGIDSTLHDIRFVEDDWESPTL
GAWGLGWEIWL DGM E V T Q F T Y F Q Q V G G I D L E P I S V E L T Y G L E R L A M Y L Q E K D S V Y D L Q W N
EYVTYGQMYHQNEVEEQSSYNFDESVDVSMMLLKLKDFDNECRQLIKKGFVWPAYDYCLKCS
HTFNLLDARGAISTTERASYISKVRLASSIAKLYALQREKMGYPMLLKSGSEI

>recO 378253:379002 reverse MW:28269

MEWLDNAIILELGSFRESVDVWVKLLTSQHGVI SAFAFGGHRSRRRFCGCLGILNEIQVRV
QTSRNGRFLNLQEASLINGPIQLRTNKNRFGAFINCFLEVVGVSSDAAPPVYTLMKEL
FYFFEKNTQPYEIIPIFLRLRIASEQGYAIFSNCAKCGRLINNKGFFGISDGIIVCSIC
INYIKTPIAIGYESLELLKRVQLASPYDWKLSENTKSAAAQKYECTEIIINAFVEYHLGIT
WSKGRFLKV

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>LAW0302 379007:380026 reverse MW:38277

MENHIDNSQEVHSALKEIGSLLYQERVKKGYRLEDISIYLKISIH TLQAIIEGTIDSLPH
LVYTKGFI RSYAQFLDIPEYELTSIFYRIEHTKTNDEGEDYF KKKKFFSPYVWGSILT
FLCILAGSWLFYSSDITFSSFDVIAQMTDSGKKEVLPNQKKEENQSEGSLSLPQQSQEN
IKSNSSVVVTKIPENFQDHIVIKKELELSSKEDSSSLSAQLDEKSFQSTDMTNKSDKS
DVSDKSVVPEVPHMNKPGKKNIVVLKGLEDCVWHSTADKTETRQFYVQQGQLVALSFSKSL
VLKLG NAGGIELKYNGEKLPVGRSGQVKTITLPLVSQN

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>ppi 380045:380971 reverse MW:35286

LRFFIFLLLLFISILPVSAEQFINKTVA VVNGEITLFDLQAETAPEIFRQQLNPNNPAD
KAKVEQLEKAILEGMISNLI LTQEAERLHVNVGKDEVESEYHNFIAKSQLTPEEFQYQLE
LQHLTEDSFKERIRSSILRSRLGAMVGRKIVVTKEIEDYYQKNHDKLKNNNQLQLAIL
VYPPDINAKDWAARIKSGSVSFEEVVKVSVGPKAKEGGDLGSDIEDLNPEWLEQLSTM
KPGEVTS LIDINGLQGLKLINI IKGEPQTLET LTPYIEEILREP KLEERFKEYTDQLRK
RAVVDIRY

>LAW0304 381141:382058 reverse MW:36589

MFNWL YIFII FTLYCYVFPFSLYAVENFPSGVMAIVNGEPI TLQQVEALHDVSGN I LPLR
EKPEVHFLQEYQGD SLYTLIIYTLMSQELGKLGLKVTEQDVL LAENEIKQDYVGEDFEKS
LQEEYLDIETWRQLMKQRLTFQRFQHHILRPKFTLSSDEIEEYFKHYSEFFIPEKVEII
WYQEVENSQQRKAKHKDCDRNDIEQGD IIRVALDR LPAKMRQDLMIKPGEYTPRHKEGE
IYQYAF LRKRYPAHQADIEAYSRIELILLEQKMEQAYEDWLEQVIPQAKIKVCPQFQPN
IIYKE

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>LAW0305 382096:385563 reverse MW:131146

VEYKECLKQLLRQCNR IALQKAGLATQVKLSVDLIAHGAKVLLIARNRDELGTLHSLIS
VFTSEGGHNVLKSNNIFNNTWVTLSPFTSRSLSKEGWAERLAALYALRYGKVQGLILTID
NLLPKEVPLDFFDNQVIQLSVGEELSPDII LEQAITWGYDRVSMVSNPGEVSRRGDI FDI
MSPGYHYPLRLDFFGETLEEIRFFDPLTQRSGYIDNAIILPVYVRSRGT EYIATIESYW
NKLLKENVITENEHYSLFRLLEQKDFSLLPGCCYENATTIEQWVNKDKVWILPSLHEAED
ILTSMENSWNDR LKRESGFIQPLDLAIRNTLQVKELWCQSTIVHTESLDIDIDDQEEVVE
LPEKAISSFQMLFPTVAEQDRPWQHLIQA I K K W K Q D K Y Q L I L S F S S E R S R N K F L N L A E Q D
GVTPFLEYHPTQQGCF A I I S P F R V G V D L S W F N I L I L G E D V L Q P H T G K S R Q A P A E S F K G L S
RYDDLNP GDLLVHKNYGVARFGGLIRMDIGKISNDFLLLEYAGNDKLYLPVDRLSLTQRF
KSVNESFPQLDR LGSTSWQASKDKAKKSIEKVAEDI IEMYAWRKVAKGFTYPPVGDLYRE
FEASFGEETPDQARA IQDVLADMEKSEPMDR LVC GDVGF GKTEVALRAAFRAASEGRQV
ALLCPTTVLAEQHYTFRSRLSGFGINVGLLSRFVPLQKQKEIFKAASSGQIDVLVGT HK
LLSDSVSLPNLGLLILDEEQRFVGHKEK LKMKKNVDVLT LTATPI PRTLQLSMSGICE
LSV IETAPPERKPVATAI I K K N K E K L K E I L E R E L A R E G Q V F W V Y N R V Q G L E Q I V N F V K E L
VPEARVGV AHGQMPEKQLEENIHAFWHAELDILVCTAIE SGLDFPRANTLIVDQAHMFG

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LGQLYQLRGRVGRSDRQAYAVFV ISDLESLSSEQARERLRI ILELDYLGAGFQVAMEDLRI
RGAGN I LGEAQSGH I SRVGI ELYLEMLEEAVTKLKGEVTSYPETE TLGLTAHIPQNYI
SDSHERLRWYKALSSAQSVMARNE IELELRDRFGVLPNELKAF IAVLNFKQFLTESQVIK
AEIYEDKIKLVWPEKQTVVSFDKMLMFI SAQPKVKLSPPATLE I KLNTTLP IEDRL I SL
QEELS VVFSYDSIKQ

>LAW0306 385645:387228 reverse MW:59690

MLKD I VR I I KKMTH TMG I MLVAC I F I GAVYLLYREVSKYSFSELKMSVES I SYWSLFLSA
LLA I LNY I I LVGYDWLALKG I HKR LPLKKVALVSFVGQAVSYNFGALLGGST I RYRLYSS
WGFSPME I VKLVLM L A I TFWVGAFLAGL I FMFVPPA I PPELAVYFPTED I RPLGVVLF A
LAAGYLF I CKL I HKPVH I FGKEFSFPPFN I A I AQAVVASADLVAASACLYVLLPEDAG I S
FIQFLPTYLMAMVA VV LTHVPGGAGVLE I VVIHLTNTTPQA I LAALLCFRVIYYL I PL I I
AAAMYLMYEVNQQTQEN I KFLNKMGRY I R I HIPTITSV I IFTTG I MLCFMAVFPVRYNM
KLEMLLPVWMI ELGG I I TG VVS I FLFFF I S I GLKYKRKY I LYYTLVLLL I GCVSVLTSTL
NFF I TGFL I I L I VLL I C I KKYFY I KSS I WK I HFN I RW I ITSFC I V I CAAGLGFSLRH I DV
TNIRWLA FVYFKDGHKLI H I L FSECV I I G I LLLKY I Q I HYMKKVRKK

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>greA 387513:387986 forward MW:17572

MSIPI SQQGYQNLEKELDR LKKERPAV I QA I KEAREEGDLKENAGYDAARERQGMLEARI
NYIESRMAQFN I I D I T T LSGDKA I FGATVTVED I DSGERKEFTLLGPDEADYTKGS I SI Q
SPVGRALLGKKVGD E L T V D V P R G R I S Y E I I D I Q F K H Q

>LAW0308 388048:389358 forward MW:49089

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MNNTPWTF S I V TFGCKVNQYESQS I REAWSNLHGEEVATPQTAD I I LLNTCAITANA I TD
ARQL I NKLHREAPNSKI I LTGCATDLTNEALYKLPGVYTF I SQKNKTQLLSNLPLTQLNQ
DQLQTNNTNTPQFS I SNFNRSRP I VKVQDGC SHSCTYCI I PSTRGKPKSRSPKECLIE I Q
QLLNAGFRE I I LSG I NLRQYATQQGCKDFWELYSFLDKKLSPTWKG I ARLR I SSLDPAQ
LTQRGLD I LSN SHMGCQQLHLS I QSGSAE I LKKMHRSHYTPQYLLD TTKLST I WHKFGL
GADFI I GFPGETEKFHFQETVDL I KELPLTYGHI FPF SARPNT I AATLPNH I KSESQORA
ATIRQL I TQKEK I FHKQLLTMSTLH I APEGGKTGGVDEYYTHCHL TEPVETRQLLKVK P
LSLTKKGLLVE I LPPH

>yicC 389463:390344 forward MW:34044

MLRSM TGFGR CVVEDSDWTQTWE I KSVNSRYLDLKWRLPLIARSLEQKFEK I VRKYASRG
RVELNLT I QQI ESQATPLCFNESQALSMLNA I TELAK I RGDTFSPDYMQLLSVSSLWEKI
EDENDNN I EGRLEEGLI AALEDWNESRETEGS I LYK DLSQR I SKLKEWLSQ I EDQAPCIK
EERFLQLKER I SEALEKAGLLEETRFLQE I V I HTDKLDVTEELTRLSSHLDRLYE I L GK
GSDVGRRLDFTLQECFRE I STCGNK I QDAQ I SKVVVEFKNELEKCREQVQNLE

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>gmk 390597:391235 forward MW:24441

MTKESSVLN HKASGTALV I CAPSGTGKTTL I QR LRKEFP CFAYS I SCTTRPPRKNEEDGK
DYFF I SQEEFIARKNEKYFAEWAYVHGYFYGTPLAP I LT I LNNGQD I LFD I DVQGAQLY
LTLPYAKY I FLLPPTMVELEKRLRSRGT DRED I I QHRLLSATQE I RQAHWFDTW I VNEN I
DKAYDEL RATYLASKLSPKFQPTL I T S I LEGW

>pyrF 391242:391931 forward MW:25178

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MAKL I VALDYTYASEALAMAN I LKKHVEVVKVGL E L F T H E G P S I I Q L L K R M G F K V M L D L K
LFD I PNTVKGSVRSACLMDVDM L TLH I LGGEHMI KAALNEVQSS I QKKSHSPLLFGVT I L
TS I KQGELPGYNQDI ASMVLNLAAYGQQWGLHG I VCSGQELTK I KALYPSLSCLTPG I RM
SYSQKDDQHRVMTPEAVKAGSDFLV I GRPITQAEQPIKIVED I I SSIM

>LAW0312 392001:392819 forward MW:31419

MSEQQQAKR I RGVFSSQE I R K V G T G T T R K T V S K I F W F V E Q A E D G N I F I Q S I N T N Y V P T G
LPKSI TMEELLSKYSPEPEFYVQSVFPKMQLAESLNKADESREKGETFTA E FEYENALK
LDEENVRANFG I GLTYLSRGESEKADN I FERLVHLDAAFEEQHKHLFNEFG I NLRKNKMY
NQAVDYYTRALELTKADENLH I NMARALFEQKNYTAC I DQLFQALELSPENTTV I QFLT W
LDNKKLV PQSHQKKVTD I QS I TTKNSSKKDD

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>recJ 392879:394585 forward MW:63290

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VNIPVIEQLALEHPKALLITVDCGISDVKAIYRARELGFTVIISDHHLPTSLPPAHVIC
NPRIGENPCSYLAGVGI AFFLMAALNNKRAEQTGQRMDMRDVLDLVALGTLADMAMLSGQ
NRILVKNGLLKI AEAKRPGIAALKT VSGFTPLTHLGAGQVTFHLAPRINAAGRLGSPRIA
HEMLYTTSKDFAIEHATLLNKINEERRSEEEYIFNAALEQAQLENQRQGLVLHGSDWHQG
VLGIVASRITEAVHKPVLI LCTDGKMLKGSGRSIADFDLYHGLSQCADLFFERFGGHKQAA
GLTLPINHLHILKERFDTVVRNFFGDTPITPILHIDMELPFQKATNFNFKSLELLQPFG
IGNPEPIFSSPLRIRQCNTFGKHKEINMLVVEEISGISLQAKGWRLAKNISSSLQNSR
IQLAYTPSLNFYNGISSIELEIKDWVEL

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>pepP 394647:395873 reverse MW:45536

MITALEQFP ISEYQSRIQKCRDAMNQNFPQVGGMLVCSRLNIYYLTGTLGVLLWIPNDN
REPI LLLRKGLERAKVESPIKQIYQFKSYKEIRTI CEEAGSPLSSTIAIEKKAFTWTMAE
MFQQRVPGINCLSCDGI LEKLRSIKSEWERKKIRICGERHKRILEDILPQELSSGHSELE
IAHLIWKHC FEHGHQGMRLCNPNGEELFLGYVSVGESGNYPYFNGALTGRGIHPAVPFM
GDAGVIWKKHMLLAVDIGFMLEGYQTDKTQIFWSGPVSSIPDKIKRAQDCKSIYEKVFS
MLQPGVTPEEVWNAVKKESQSI ESPATFMGTGKDAVPFLGHGIGLTIDEYPVFAAGFKEP
LQEGMVIAIEPKISLPLGLTGVLEHTLEITATGVRSLTGTNLDIIPVE

>LAW0315 396014:396430 forward MW:15493

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MQHPSDSTLKDILSQSKTIAIIGAKDEPNTPVGRVGQYLKVGTVIPVHPIRKSVMGIP
AYTSITEIPVHIDIVDLFRAPEFCPIHAHEVISLLQPPQLFWMQSSIISPESVNI VQQYG
ITAIENLCIMAEHKRLFN

>LAW0316 396615:397526 forward MW:34963

MILDKYYKILHVDNSAFLDDIKRSYRKLAFALHPDLNPTIPHATAKFQQLNEAYVILLRA
YKSNTSKSHSKTTTKQSTTNATQQKNKERDKAYRKNKTEYIKSTSKTHSKNPHKNSIFE
ASIDENFDEKQKILQDILNDDFARNVFEDIFRTIQNKQTKSSNIQDSSTQNSSQNKKPSI
ITRLFQTI GQITHSFQKGQHPNTSSPNNVKVTYGGKDAPNTVKSWLKSQIDEEQTIELPA
TALRPGSRIRLNIRQGFSEKLVLDLTLPSDFTFNKQLYFKGMGKLGWRWQGDLYLRFIP
KRS

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>LAW0317 397583:398272 forward MW:25670

MNIIIFGPNNGSGKGTQGELIQKAFGITHIESGVI FREHISKGTELGKQAKSYIDKGELVP
DDITIPMILETLQIKGKSGWLLDGFPRNITQAQKLHEAMLKKGVKLDYVIEITLPREVAK
SRIIGRRICKTNNHPNNSIDSIKPDGNCRVCHGELIVRTDDQDEEAINKRHDIIYNT
KTGTL SAAHYFKNLSDQYETHYILVNGQNTIEEIRKTLLEDLGISSEVS

>LAW0318 398358:399626 reverse MW:49244

MKQQILRILVVLFPYGGSLPIGQYCTIALKDLGHCVEVFDSPSFWGSFTALKGLHIRNSK
LEELEASFLQNISQAIYVKATEIEADLVLC LAQAPVTRQILKRFKRDNILTAMWVDFDR
LFTYWRNFAPYYDFFVVIQKEPFLEELASVGVANSCYLPMAALPTFHHPMDLSPMDQKKY
GSDISFLGAGYPNRRVAFRQLTQFQFKIWGNDWDNDCFLRPNVQCDGKRISPEDAVKIYN
GTKININLHSYIKHKPFVSNPDFVNPRTFEIASCEAFQLVDQRQLLSELFSENEIATFTT
IEELKEKIQYFLARPEERFVIAERGRRRVLTEHTYQQRMRDLSYISEHAVDWPKERAIM
SLPDAVSTEYKEELKELFNKLKITTDNSFDDIIFAIRQESGVLSPIETSLLFLDEWRKLY
KK

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>LAW0319 399629:400849 reverse MW:45588

MKRYLVIQLARFGDIIQTARLIASLLREGEVHLCVDKTLVELAEA IYPKCIVHGI IAHYS
GVQQVIRDNYRVFNELHFLEFTEIYNLNYSGVNMAFATLFPSEKVRGYIVKDGQPVTEKW
IKMGRWTAQRKVSPLNLVDFWGM LAPNPVIPQDVNPVAKSGGKGLGIVLAGRQARRSLP
PEILAPLVRIFFEHTSGKKIYLLGSKTERSIGRTLMSYLP SKLIEKTENLAGKTNNWELV
EAVSDLDLVVTPDTGIMHLAARLGVPVCGMFLSSAWAWETGPYGEHGVWQAVIDCAPCI

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ESKPCNLNVKCLKAYSSPEFHKSIVGIKEQLSTTMACLESSFDELGLIWKNDRENTYVKS
VRMAQRALLMEYQGITIASSKEFPEIADGRLAMNLYSEADWMLPDR

>cysG 401285:401962 forward MW:25162

MQYYPLFIDLTSANCLIVGAGNVGRRKLYSLIKAHTKHILIVDPLPPGQELKALLKEKTV
CYKQRTFITEDILEKTLVFAATNDKKNQSIATYCNLKGILCNIADAPSKGTFIVPSIVE
KNGISIAISTNGNSPALSKKLRKDI TEWLGDRYTPIVTLLSRLRPLVLKTSNITLDNTTL
FNNILDSALSDAIQKNRLQCEEILKNTLPNHLQIHIMELLHELIV

>resC 401949:402839 forward MW:34127

MSWSELLPIIIIVHFYALGTITIVSGVLSQTKWLTRIAFWLIFLGVITHTALLILLWETPF
STFTQPVYMFILSWLIIFIALIIWIYCKYETLLLPMVPLALLIFLALLLRHTKMPLPPA
LPGITFAVHITAMFLSIGLTSLGFGASILFLLQEKSIIKKIPLIGFQKDIPALTILDKIN
ALSVMIGFPLFSIGILFGIVSARLTWGNLFVFDPKVEISLIAWCLYAWLFYQRFTHGWQG
RKPAIIAIWIFCICVFSLVVNFVTETYHNFYVEKMLRRYGTTYLSYRHEPSYSKY

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>hemA 402814:404079 forward MW:47439

MNHRTASIDVRECFALTEHCSKDDWAIPLIKGIQESLILSTCNRVEILAVGDSNTPEIIL
SAWAKVKTRSIEELVPHTYTYQGRSAISHLFCVASSLDSMVLGEPQILGQLKDAYKLATI
AGASKTILNRLHKAFSVAKRVRTETSIASNAVSIYAAVKLAKKIFGTMNQYKAMLIGA
GEMAELAAMHLMQAGIQQLKIVNRTYSAQELASQFRGEAIPFEKLVTYLAEVDIVISST
GAPQTIHFNDIKNILSKRKHYPMFLIDIAVPRDIDPNVHQLDNIYLYDIDDLKEIVEDN
IVQRQDEAIKAKHIIQDEIDSFCAWLQALILQPTIVDLRKRFSYAEELERTLKKIGPV
DRKTREALETMIDALIRKLTHDPI SYLKCAHRTIDTNHITLARQMFNLDKIPQTNKAVNE
D

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>LAW0323 404208:405515 forward MW:48347

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TLKGI THANEQLWERVTFLLVTLGVSENEARAFTQNFQQWSMDLGYTKLSDFRSELQYRL
SLTLELEDEESEQRLLTKIHTGLAKTREHLSQGLKTVFHHKLSNDFWDELEELFILS
DMGVETAEMLT SRLKIRATKANISIPEELSPLLANELEIILKISPRVLA INPPEVILLIG
VNGVGKTTTIAKLAYRMHLQGGKVVLLAAADTFRAAAIEQLEVWAQRIGIVFYTKGTGADP
AAVAWEAVEHAIQKQFDVVLIDTAGRLHTKTNLMDELSKIRNVI AKKHGPHARTILIID
ATTGQNALQQTKVFKESTGIDEIIVTKLDGTAKGGVAIAVSLQYGIPIITYVGLGEKMEDL
QPFNGEKFAKALLNI

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>thiE 405585:406238 forward MW:23779

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TIKKLTEEANACFIVNDHVDIAVLCNADGVHLGQDDLPVDKVRELIGKEKII GLSTHSPQ
QAQKAIEMGADYIGVGPLYPTKTKKDVCEPVTISYLDWVVSIIAIPFVAIGGIKQHNIQE
VIQHGA KCCALVSEILSAPNIPLRIQELRQAILLAHT

>gl tD 406369:407796 reverse MW:51246

MTILHKKVGGVLSSTGTPCLPVSNI CNFDEVAIGYTDEQAKIEASRCLQCKRPRCKQACP
AQVRIPEFIAALLSGDLKEAYRIIRTTNSLPAICGRVCPQDTQCEGSCVLKAKGNPVCIG
RLERYVADSI LNMEVGLYVGLNEYDAKPPVVTCKVACIGSGPASLTAAGYLIAQGI GVT
IFDPCYEHGGILTYGIPTFRLPNTVVSDEIKALRSMGVTFSTQGI GDTLTIQHLFDEGYK
AIFIGIGAGLSCQLGIPGEDISGVFLATKYLKDIIKVNQSDKERLLSVQNNYLGRSVTVFG
AGNVAMDASRTAIRLGAEKVHIIRRTKSEMPARDEEIA YAE EEGVNIMELVAPVAFHKD
KNNKLC SVTLQRMTLGE PDASGRRCAPIIKGELFEYTTDLAIIAIGSKPNQRLLLEKIQGL
KLTHEGYILTDEVGETSIPNVFAGGDIVTGAQTVVLAMDAGRKAAQAISKRLLEK

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>LAW0326 408049:408975 forward MW:35189

MNETFTVYLAPHGFLQELIDEINTNII CSKGHLILVKGSPKFAWAQNTWLSPRFIPISS
ITDGAKLLSIIQRNWWLHSENHRRATLIQQQLPYVS AKKLHFGEIPPQTPLGSWTLWEK
DIIILASPD CSSVFPDGVITFHENKIEPPSRAYLKLWEVFRFSFVPSYKELCIDLGASPG
GWTWVLAKLGSSVISIDKAPLASHISSLPNVEHYTGSGFRFTPLHIGNVDWIFSDMACYP

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NKLYNFIQPWIINKNCHTIICTLKLQGGKPSNSTLSCFKKIQSSYL IHL SYNKHELTWIIYS
TKYPLVML

>LAW0327 409616:410542 reverse MW:35084

MESYLAIEFLNKLTLSIGFPLFFLLASALLPIIVCFTIVFGIVKQSKLYIQCAYQLMYLG
VILTSIFVLI LLLVTGIYYSDIQHFLPIYQYIFWVTCSIFYLGFIQLICIVLWYRLIGS
PILYILLSFSLGICYSSFIIISIFLFGYIFSGDFVALERETDFSIIVGLIFPSLTSPLWL
IVFITHFIEAAAAAGIALVWLWIRRNKDNFGRDYVVAANWCGVWAAYGAWIFLISFIVF
MLYNNVVISLIVIGWPIATVSVGLGLISALIWTKIALSNNPMRHKLSMIFAIVFFVYSMTF
GSSVVF IQ

>LAW0328 410586:411035 reverse MW:17327

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MALQELAYMKEELLERVNAFMDRTFFDKVDLQCMGRQLVYKKQVNQRNIPRKLKIPRQH
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>gIgx 411409:413466 forward MW:78627

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FSTKLLTTTENPIILWNNVIRHQINSSEHSITTTLYNAGEQLFTTISKENSNIVAGYH
WFDSWGRDTCISLPLSFCCTNNIELGKKVIKTAIDSMRYGIIPNIFGGNDKSHAFNCIDT
SLWFIWAIQQFMLTEPQQQEWIYENCWSAIKSITAYRDPTISGCTIDESGLIAGTPIIT
QLTWM DASINGIPVTPRNGYPVEINALWYNALAFSGYLAKLYKEPFDYYPQLDTRQAF
KERFLTKGIYYYLGDVWNNLLDTSIRPNQLFAISLPPFIPLEKEYHADVLRTVTTTTLLTP
YGLRTLDPSPAYKIGCEGSQEERDKAYHQGTWVWPWLLGAYGDALLQSAAPPELALQQLL
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TWKNYLASYKEAPLYDTTTLTRYLK

>LAW0330 413485:414825 forward MW:50638

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SAADVCITQHKQLGYFTQQFQEIWKKNFSIRPIKATLHPYVSFSQTL SAYYSTQNHLTEH
NEFSTVSSACALPPCSGGYGPHLMEEVFRYSQAAAQIAMEEMYDVIHVHDWMTYPAGIIA
KKISNKPLIAHVHATEFDRCGDSPNQDILNIEKVGLERADHIAVSHYTRNLIMKKYHIP
GEKISVVHNAVLPASGNYTQKKRNSNKKYVFLGRVTHQKAPEHFINAAYLVSKKLQNV
CFIMAGSGDMLPSMIRKVASLRLGSRFHFTGFLHNQQVEHIYSLSNVYVMP SISEPFGIT
PLEAIRHGTPVVISKQSGVSEVLKSALQVDFWDIERLAHLICSLLTYPKLEK SIMGLAYN
ELQSI RWENSAQQLCH IYSKFNKNGQ

>amyA 414828:416114 forward MW:50621

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QYDQKFKISFISGTALEQFERYSPEVITTFQELADTGCVEFLTETYYHSLAFMFSPYEF
KEQVTLHQQR IKELFKITPHVFRNTELIYTNELAKCIENMGYIGILAEGADHILNWRSPN
YVYRPLGCNNLKL LLLKNYRLSDDIAFRFSNKDWIGYPLTAERFTQWINDSGGSNETINLF
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TERDLTAWTGNEMQQDAIERLYRLEPLVREYGCEQILNTWKRLQTSDFHYMCTKWFS DG
DVHKYFNPPSPYDAYINYMNILTDLESRITLQPNSTYSNQHTMKAHYNDVTPLLSPTT
CFNNLQNL

>gIgp 416124:420386 forward MW:160919

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GWDYIEPVMFGSACGEVINIAVKTLVEPVGGTAVAHFHEWMCGLLTIKQLAPDVGTVF
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ADEAEAF LGRRPDIITPNGLDLHIIADFSKDTSLTTTARQSILSRASQFIGQQLPN DTRI

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MIISGRYEFHNKGFDVFLDALGNVEQALRNSNKYVLALCTAIGGHTGVTKYALENHLESN
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 IHR LHMPYDDTVNALQSVILEYATCSSEKLMQHR IAVRKVSEEC SWEKFFPYI QSYHSA
 LAKANERIS IHEPQKQNTLVITGVSKTPNLRMLTA INQLPQKLGRLREVNNVWWTWQP
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 MNEGHS AFMILERIRNLMWFNLPNTAQECVRGNTVFTTHTPVDAGNERFDPSLMEKYF 10
 SDYAKSVNLTWNDFMSLGRFSTNDRNMFEMTLAIRNANKVNGVSR LHSQVSKHMWANNW
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 LILANPDR LHILNNPQKPTILVFAGKAHPADQQGIDLKQVINYTKDPRFYGKIFFIEN
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 EFNAERMLHQYLD DYYLPLAKNQVTFRGDNFAIPKQITKWKQGLEQRFATIKIRNVQIEG
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 >argB 420460:421350 reverse MW:32150 20
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 GIVFIDEIDKLASASQHRSSDISREGVQRDLLPIVEGSAVNTKYGLIKTDHILFIAAGAF
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 DIRANTELSRFIL
 >livF 422757:423464 reverse MW:25756
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 LFPRLYERKEQLAGT LSGGEQMLAIGRALMGQPRLLLLDEPSLGLAPLIVKSIFNAVQH
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 QRQEEQAAIERAISELEFVGLASYSIDQAKSLSYGNQRLLIARALASDPKLIILDEPAG
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 DPRVIQAYLGQDD
 >livM 424288:425274 reverse MW:36240
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 VRIALTNDICGITGGANGIFGISRPTIGDIVIRTTTQFYLIW GIVLLTMLLFSWLFSSR
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PLPRVYNIRNLLHKKHSDFGSPIAPRQN

>livH 425271:426173 reverse MW:32297

MIEFFQQIINGVAIGGIYALVALGYTMVYGVKLINFAGHELFTIGAYIGFTLLFSLGLS
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YGGNFVYPETFFPSLSLDFGVHISFMRLIIISISFFLMVTLYFFVNKTSIGMAIKAVA
IDQITARLMGINVNKIIISLVFFIGAGLGGIAGVMVGMYYGQISFTMGWLYGLKAFTAAIL
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>LAW0339 426224:427348 reverse MW:41169

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IATGSTS NR L TD K GL PL FF RT S PR D S D Q G I V A A D V I S Q K G Y K S I A I L H D N S S Y A K G L A Q E
TRRELEKKGSSVFFDALTPGEQDYTAILTKIQTTPDLIFFTGYPFPEAGLLLRQKSEM
NSVPIMGGDATNNTDLVKIAGKQAAKGYFFLSPPTAYDFNTPEAKAFFMEYKQYHKLPS
AIWPIFAGEAFNVIIEALKQKGDSPKSI AFYLKHTLKDFPGLTGPISFDEQGDRI GN FYK
VYYVDEQGTFILEK

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>LAW0340 427714:428691 forward MW:37112

MLIHCPQCHFRELNTSQIPDNV MATCPKCQTRFRFRNLDSEYVDPSSSNTIHL LQQA E
SKTFTNPPTNNTSISHSDTECLKNSSSEYNQNNYKNVLEK LK KY TLT N Q T R Q P T D G Y V D
LIPWEHPEKFDFFSSFYQTI VRVMFN PATFFGNISNATSSLLRPLFFYILVRLFQTLMDG
MWFMV SFQALEPSITESSLHDLSSIAQEMTIPMTLIMTPVTLALQLGIYVLLFYLMIRF
IQPEQTYFHTIFRVIAYSAAPTIVCIIPIIGSLVGSIWFSISCFIGCKYALKLSWTKTAL
ALIPLYLIAMAI GLQGA KQFIHIAG

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>LAW0341 428956:429660 forward MW:25949

MRIVVLLCVIQLCILGTACDLTSTGKALRNTIHINSYGQAEVILDNWNINTSQIQVYVYPQ
SPPVEPTKVLFPFRVTQQMENFLTVGNNISR I IWQNWLQNSIFSTLEFLQNGTAFRPDV
SLTIAKQKGANLVVGGYITDFIDGGLSGDTRVSI AIEIYDVSTGNLIWSLSQAGSIQAAS
VNDFIIFATKTRMPTNPSAAVINLLAEDMGKKIKEWTNPSFQEETWLMPEPLAF

>leuB 429818:430519 forward MW:26209

MEECSPIDLLSTKETWRLFRIISETVDGFEAMSKAGPCVSI FGSARAKPDNPLYKETEAI
SKLLVSAGFGIITGGG PGLME AANKAAFEAGGRSIGLHIHLPHEEGCNNYLTI RTEYRYF
FIRKLMFVKYAQAYVMPGGMGTIDEFSEAFVLTQTKRIHPFPIILYNSQFWNGLVDWMR
QTMSKEGFIEPSEIDALLNICDTPEEV LKI IQEKVPTAITHKKNKHKQLHSYP

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>codA 430612:431100 forward MW:17750

MCWGP IPTPPLGWTWDNL MDEALIEANQCTKKNEVPVGAIVHKNGKIGKGNAPITTS
DPTAHAEILALRTAGAVQQNYRLQDCFLIVTLEPCLMCVGAIQARIDGIVYGAAELNTG
SITSCIAGFDLPFNYPWHMGGIKATQCSQLLHNFFYKLRK

>LAW0344 431319:431606 forward MW:10961

VAKSAEITIEYEEAGQILVKELDKVILSKGAWTTILFRYQFDPETGGYGPEKYSIRRY
QKVAGEYRQKSKFNISSIEQAKKIIHEALTHWISES

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>LAW0345 431805:432596 forward MW:30380

MWNAEKVKQLAEWYVSPQGSFALEQEYKLFQNLISIWPRRDYTLNIGCGVGAFLEMFWD
YGFVDVTGLDNNLEVLSSNRLKNRAEFQLGALDDLPFEDEFNYASLVTILEYVEDPKK
ILAEAFRVASDGIIVGFTNKWSINHIIINSTLQLLHKKPKKDSQWVSPWQLIRLTKQLYPE
CRIYCRSTLLGPKRTWDVTSSWSKLNRIILSFPIGTYVGMRIEKRPKPTLTPLLLKAKEQ
AVNVYNALSPEATSTIQHNRTNK

>htrA 433193:434617 reverse MW:50479

MFCKLKVVICITLMFIITVVPTIAESALPNFVPLVKDASKAVVNISTEKKIPRGRTEFPM
EMFRGLPPGFERFFEQFEPKGPDSQIHKQRS LGTGFISSDGYIVTNNHVI EGADSVRVN
LEGTSGKEESLPAEVI GRDEETDLALLKVKSKDSL PYLIFGNSDTMEVGEWVLAIGNPFG

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LGHTVTAGILSAKGRDIHAGPFDNFLQTDASINPGNSGGPLINMSGQVVGINTAIMASGQ
 GIGFAIPSSMADRIIEQLKTNKKVSRGWIGVTIQDVDTNTAKALGLSQAKGALVGSVVP
 DPADKAGLKVGDIVTQADGKQIDSASSLLKAIATKPPFSVVKLVWRDGGKSKDISITLGE
 RKTSSSQKQSSPESLPGALGLSVRPLTQEESKSFVCLGIGLLVSVVEPNKPASEAGIRE
 QDIILSANLKLPLQSADDLANIICGDAKKKGVIMLQLQRNGQTFKTLSTEDSN

>flgE 434818:437232 reverse MW:89315

MKKFFLNIVIFCFGILLISIGLIGLYFWVSRDLPNITKLNDRPALVTTVLARDGTLIG
 YIYREKRFLIPLSEMSPFPLPKAFLAAEDAIFYEHEGVNPLAIRAFLINLQSGTTRQGG
 TITQQVIKRLLLSPERSYERKIKEAILAYRLEKYLKDEILTIYLNQTFGLGHSYGVEAA
 ARTYFAKHAKDLSLAECALLAGLPQAPSRYPYKDPEAAKIRQRYALRRLHDVWITQAE
 YEEALQEPLYFSSMKEGLGAESSWYMEEVRKQLVSFLSKENISQYGIVLPLYGEDALYEL
 GFTIQTAMDPQAQLVAYDVLNRNGLENFSKRQGWKGP I E H I S S T M I Q H Y L E N A T F T P E K L D
 GGAWAKAIVSKVSQEGAEVFLSSIYKGFVSVETMGWARKPNPEVRSAYCAPIKDARSVLN
 PGDIIWVSGVGPDSTHRYSSKTLDTSKPIPLALQQLPQIQGALISIEPNTGDVIAMIGGY
 EFGKSQFNRAVQAMRQPGSAFKPIVYSAALDHDYTSATMVLDAPIVEFMESGDIWRPGNY
 EKNFKGPMFLSNALALSRNLCTVRIAQSIGLPAVIERAKALGFNGNFPEFFSISLGAVEV
 TPIRLVNAYTAFANGGNLATPRFILSIKDSNNTVIYRQIEQHPVISPQNAYIMASLLKN
 VVNI GTARKAKVLERPLAGKTGTTNGEHDWF I G F T P Y L V T G V Y V G N D H P Q T L G K D G T G A
 VAALPIFTEYSKVVLKKYPESDFPVPDGI TFASIDTQTGNRATANSTNSVVLPPFYVGTVP
 EYFDSKDNEVNTIERGEDLLKQFF

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>flgE 437383:438891 reverse MW:53369

MMGSLFIGATGMKTHSTGLGTVSNNIANANTIGYKQQVVFQDLFSQDLAIGSTGSQGP
 QAGMGAQVGSVRTIFTQGAPEPNSVTDLAIGGKGFQVTLQDKVHYTRAGNFRFTQDGF
 LNDPSGFTLMGSRISNNPNIKKETLEPIQLDFNDPTVAKSPAKTSTALNAVNLGDSTDK
 TQSEANPYFALLESWKNGTPTISTSNYSYAQPMRVYDQQGNSHDITVYFDGAPSSTGSK
 TFEYLVAMNPSEDGSAASGTDSAGLLMSGTMTFSSNGELKNMTAFTPTGSATKDLNAWQP
 APLVNLPLQFSANFVGAGIQPLTLDGFIKQQMMWAGAPASAAAIGTDIGKLPMMPIQT
 SSGNSTARNGSSSTRYSQDGYPPQDLDVDTITSEGKLGKYSNSQVDFYNIPLARFTS
 EDGLRREGNNHYSATLDGGPEFGLPGTSNYGKLSVNQLETSNVDMREMVNMI I I Q R G F
 QMNSKSVTTADTMLQKALELKR

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>purC 439256:440152 forward MW:33804

MQVVTNTDLKEFPLYSRGKVRDIYSIDQNTLLIITDRMSAFDVLQEPVPYKGIILNQL
 TLFWMKKFQHLVPHNIIIESNVDFPNSLEPYKNLLEGRSVLVKKTPLPIECIVRGYISG
 SGWKDYLTNTSICGYPLPPGLKESEKLATALFTPSTKADLGQHDENISIIETTEHLLGKDT
 TTLVASLSLLMFNEASVWAEDRGI I I A D T K F E F G I L D G Q V I L I D E V L T P D S S R F W P T K N Y
 I P G K S Q P S F D K Q Y L R D W L E T Q L W N K T S P A P N L P K D V I Q T T Y D K Y H E A Y T I L T G E N I G I

>fabI 440193:440957 forward MW:27963

MLLKNKKCLILGIANNKSIAYGIASSFKEHGAKLAFNYVNDAIQKRVEPISQELNGDFIF
 QCDVSKDDEIKEAVKLVQKEWGHIDVLVHSAFANREDLTKRFIETSRDGFHLALDISTY
 SLITLCHAFEPLFVHGSSVLTMTYYGAQKVI PHYNVMGVAKAALESSVRYLSVELGEKNI
 RINAISAGPIKTLAASGISDFKKIFNHEEHSPLKRNVTIEDVGKSAVFLASDLSSGVTG
 EILFVDAGYNNLGI

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>maeB 441137:442456 forward MW:47731

MALVTKEEVLYQHSEPRPGKLEVFPIKPKCTQKDLSMAYSPGVAEACLAISEDKDTSF
 TDKANLVGII SNGSAVLGLGNIGPEAAKPVMEGKAILFKQFADIDCYDIEIKATEIDHIC
 EVIKALEPTFGAINLEDIKSPECFAIEERLKNEMNIPFHDDQHGTAISSAALLNALEI
 ANKKIEDIRMVISGAGAAAIGCGRFLKILGVTPENIAMFDSEGHINVSRTNLNQEKEFE
 TQKTYTTISEAIDGADCFIGCSVPGVITERMVETMAKTPII FACANPVPEIGYNEVKSIR
 PDAIMATGRSDFPNQVNNVLGPPFIFRGAIDTYATTINTEMKIAAAYAIAALAKESVPES
 ICMAYNVKNLKFDPDYIIPKALDLRLLEWVAPAVAQAAIASGVARKELDIANYALTLHKR

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LSAAHKRQELLLNSYGFYS

>LAW0352 442654:442971 forward MW:12493

MRKFETLLLLSPELSPDAREALLVKLVSIIEKNKGQFTVNHWGMRDLAYPVQKHMRGYV
LLEYTTYPNIIIEELERIIIRITNGIFKFMTIKLEEHIEEKQLEEVV

>rplI 443247:443768 forward MW:19458

MKVI LRSDVENLGR LGDIVTVKSGYGRNYLLPQGLAMLVTPGNMKVFELEFKKLQERMND
IRSKADELAKRISGLIVTVLMRAGDNDKLYGSVTTSIGHALAEQGIDIDRRRILLDAPI
RTLQGHTVRVRLHADVIAEFIVNVASEEKLYDDTPDRTEETEESTKELQEEHAE

>recQ 443830:445194 forward MW:50734

LLRRVPPHNVEAEQAVLGGIFLRNTVFHTLIDIVRAEDFYIPSHQILYTTFCELYRKSAP
IDLVSVA AFLNDQGLLEQVGGASYLAELAQTVVSGANA EYATIVRDKSLHRTLINACST
IITNCFDPSCNVDSLLDESEQTIFSISERTVGKAFKSSKDLISNVFQELEKRFERKEQVT
GITTYGYNRLDKL TAGLQPSDLIIVAARPSMGKTA FSLNMAMRSAIQQGTPVAIYSLEMSM
NQLMMRMLCAWGVLDLSHLRHGYLNSDEWSRLYHAADV LGQAPIFIDDTPALSPLELRAR
TRRLKIESDVGLVVIDYLQLMRGNKRTDSREQEISEISRLKSLAKEINIPVVALSQLNR
KLEDRTDKRPQLSDLRESGAI EQDADVIMFIYRDEVYHKQQDNAKKGTAEIIGKQRNGP
IGTATLAYLANYTAFEDLEPGLSASPSETYSNIA

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>LAW0355 445449:446039 reverse MW:21630

VGKNI TSERLAKIKHVLSLRQKNLTLVLANIHDPHNVSAIYRSADAFGIDTIHLYYTDTP
FPKLGSKSSASAKKVVKTIYHQSANKLIRMLKEDNYKVIAT SCTSQAQPLLSHNFTGSTA
IIMGNEHAGVPEL TGLVDSELYIPMYGMVQSFNVSVAAA IILAEASRQLSAGMYNTPT
YTETEFATNLSLWINK

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>LAW0356 446089:448086 reverse MW:75176

MKITI QNFSKSFGGQDIFSDFSLDIDSGIRLCVSGPNGCGKSTLLRIIAEVDIPDSGRVI
IPKGTRIGYVEQELAPSALDVSLLTWVLEVLDPDWHDFWATWEEAIQANDSKKLSLSLKH
TELETLYGYHPEYKAKEILSGLGFTDNMFDLPLSKLGGWRERAKLARVLVAGADVLLLD
EPTNHLDIESVEWLEEFLEREYKGI LIFVAHDRVFM DNVGTHILYLGGLKPVFRKLTFSQF
MVLREEIEEQKARETQRITDEIERKMEFVRRFGAKATKARQASSRQKMAKKLEQELEEYK
PEIKRKELKFIWPTPLKADKVI LSAAALSFSFPDGRQLWPSLTF SLLNGQRIALVGPNGC
GKSTLLKIIAGQLKSTGGSLTLGSGVRLGYYSQHQTEILNTSGTVLGEIRRLSDPKMTEE
ELMSVLGLFLLGQGYFDRTIQMLSGGEKARLVLASFLNKANFLVLDEPTNHLDLESREA
LVNALS NFSGTLLVVAHDRYLCSNVTDEAWALSSEGLTRYEQGFLQYDEARKQGLKQVTI
VETQDNQKNCLTQKNKNSVISYSRDELKSLKREQA KRNELYNTIKPKQIAYKRLEEEL
SILLEKQHNLEQLLATPAGHSGIETAKLLKQFSEVKDQTDRIIDKLEKLELEINALEQQ
RIAIS

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>pcm 448090:448959 reverse MW:32656

MPAYGDLVCIITPRGKSKLYRIEKNQDIHTQDGI LKVVDDIVHASYGTEIFTTLGTPCCI Q
RPTINDIIRNTKRQTQVLYPKDISYICIRLGVGPGR TVIEAGTGSGSLTMALSWFSGPTG
HVHTFEAREEFYTLAKHNLQWAGLGDNVTMHHQDI SEGFGQVTGADALFLDVRTPW EYLT
FIPKAVSPGASLAFFVPTTNQINELLLGLDNGPFDNIEICEILIRHWKPIIDRIRPEDRM
IAHTGFLIFARHQEHSSSWNKYKILGTRERKQEAARNKRMKADVQHIDE

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>LAW0358 449124:451136 forward MW:73309

VKKFFIILFVIIILLISGIAIFIYTNKDKITLAI SKAVESATGQPLYTDSIPSLSFPTP
GIELGKSSWGNPDTNEISVELIKCVFRFSLLKLFTGTIAIDEIFFEQPSIIIQKNAQNK
KIQSTAAVTSTNAINPQEDKKASFQLPEISSVTIKDGM LKFFDGRKQIILTGLQLTAK
NIYPQSTGKISIH TQALFQPENISFVTEGNVSIILDKN ILSIEHIKFIINPKTGLTVSTP
ITIEGNGRYLFDKNLLEKSDIQVKLDQFKINANGSLELNKLQGTAVINASGSLK KLASTL
GMMLITPETKIFENFSAQSKVQVNGQYIQLTDLKIMLDD SQVTGKLALNLPNKLSGNLSL
TTINLDQYLPISFAKHTPVTKNLIQTSSVTTAQHTIKNTQQQTISSSLPTLDLKL TADSI
IISKLHIEKLNSQLHGPNPSNYVLDPCTFIFYESPISVKGKGNLTASNPRYEATITGSHIN

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LTSLSDISKTAIIKKGTVDLSAEITTTGSNSIQLKQTLNGKATIEGKDINIQFGALPVQ
SPELTRISQQPFTELNGLKAVNGTINIEQFILKGTpvAAAANGSILLPNNTMKINVDIA
VKDTViplHIYGDLSNPSYRVDPARLLQGAITKILNKKEKIDFKLPLPQNAKESIQNTA
EKVFNKIFGR

>mgfE 451158:452531 reverse MW:50548

MKLSHKIRPHSLTRENISRlTDYTAVAISLNHLKNNKDFIHPADIAEYLETlSTEKQLSL
VQNLpVEEAAEALAElsEDVAGDILEHLDpADAAKIISEMSPDDATDVLDEIDKEHRDAL
LDNLVEKDAEELRKLlSFDpNTAGGIMNTEVSMFKQDITVDEAITQIRTTIEYKEIYYA
YVIDEESRLVGLSLRDLMLLkPGTVLQHALKHQDLIVAYYDTDKHDVAKEISHYNLMAI
PVIDYEGHLLGVATYDDIIDIIQDEASSDLGMVGAGQDETVDTPWYVSVFMRLPWLIVN
MLTSALSafVVYLFEGSIAHMAILAVLMPMVANQAGNTGQQALAVMIRQLATERFEVKRA
WLAVFREGKIGITSGlIMGLFVSVIVMwMTQNVVLGCVMGGalMTDMVAGSLAGGAIPLF
FRYIGRDPaQASSIFLTAITDSFGFFIFLGLATLFLl

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>nadC 452761:453651 forward MW:32810

MHCPTFSKYFQgKpYNLLITMLKLALeEDGIDFTSKGIFSSTEQIHTQIIAKEQTCVSGL
PVIPIIMQLSSlTHNDYVLNlLVDEGQEVpINTPIAEIIGPAFTILQTERTILNFISHLS
GITTTTKKYVNALKGSdIILLDRKTLpGLRYpDKYAVLCGGGMNHRcNLEELLlIKDNH
IDKAGSLTNAVKSLRNTYNPCPIEVECRNHSEVIEAVECQVNRIMLDNMSIDTLCSslM
VIPKSIQVEVSGGITLNNLKNIVTSQYKPHYVSVGCITNSASAADFSMRVIREKRV

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>LAW0361 453648:454703 forward MW:38735

MSRFLNKEEKSKHITSLKSSlGNQVSIlgHHYQEQGVIDHCDYTGDSLELAQRIAHLDSE
HIVFCGVYfMAESAALLAKEEQSVYLPEPAANCVMslMSPAYLIERLFKkLTASGRKLIP
VAYVnTEVDVKAIVGKYGGATCTSSSADKVLKwALNEGDGVFFLPDKNLAYNTAKNIGIP
KKNLHILDIRKKGDVADLEASKQADIIWpGLCAIHARFLMQHIHLARENYPNCTIVVHP
ECTPEVVKASDAVGSTSFIIYAKNAPDGSHIVIGTEINLVSRLKNEHKHRIKTTPLRAS
ACSHMAKCNpDKLYTTLHSIANNATPISIEQETKTFARAALERMMQIITV

>nadB 454752:456335 forward MW:58886

MNQHRYSQVLIIggGIAGVTTALVLADAGFEITLIVPSKELDGGNSQLAQGGIVFHSQD
DNKQLENDILNAGHQHNYLKAVRFLCKKGPEVVHRLIERIGIPFEIDKQKGTWSVTREG
GHSSARIHCADHTGKSI MEGLLKEIQKTSNIQILThRTAIDLITTHHAKLKEYRYNPE
NQCLGAYVfNEQTNEVETLLADWTVLATGGIGQIYLHTTnTEASIGSGIAMHRASVKLT
DLEIYQFHPTALYSCNKtQKFLITEALRGEGAKLTNTQgKAFMKKYDTRAE LAPRDIVAR
AIMEELLHTGECQCVYLDLSNVSHDITKRFPtIYNYCYQQGLSIKNSPIPVVPAAHYFCGG
ILTDtQGQTSLSRLFAVGECsCTGVHGANRLASTSlLEGLLWGySTGLHISRKKNKKNFL
STRINAIPNwECTGNEKNDDPALITQDWTsIRHIMWNYVGICRTGSRLKRAFEELRDLS
RHLHDFYKNTPISKPIIDLfHGSQTAYIITQKALLNTKSIgCHYRIN

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>LAW0363 456390:456695 reverse MW:11606

MFVFGNILLGIARVLDIILSLYFWIVIIAVLLTWVRPDPYNNIVRMFYALTEPVFYKVRK
FLPFTLVGGLDLSPiVVLIIIQLLQTIvVRSLFQYAGMLEG

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>gph 456801:457475 reverse MW:25061

MSYNNSLFNQVKNIFPQGIvGIIFDcDGIIDSKSINVGYFNKILQELGYPNMTKEEADY
VQMASVQDAMNFLIAHEDREKLKEVTQRFSYKNEVLPHLKIEPGLMNLHwLKSRGIQLG
INTNRVSKGINDVLLSLDLNGFFDPIITSDLFPAKPDPEGLLTILEIWNTepSKVAFIGD
SLTDEGAARAASIPLIAYCNTSLSASIHIEKFSdLYDALQGLYQ

>LAW0365 457964:458686 reverse MW:28409

MYIRYVVLVIMLVYLPgCGIIDYFAVPRPEQTAQELYENAKDAMEEKHYAQAAYEYKlK
DNYPLSPYtVEAERALGDALFFDEKYAEAVEAYKEFETLHPRHPDIPYVLYQIGMSNLKT
FISIDRPTTSIQEAYEYFQRVQETFPDSPYAEAAVNEMKACRLIMVEHELYIANVFWNMG
KYGPAWKRYTFILENFSDVPSVSEYTKERSLAAYFLYRKQESQAEREQIHGSWKRLFNL

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>trxB 458692:459618 reverse MW:33542

MKQYDSIVVGGGPAGLTAALYLCRSGLSVALIEM LAPGGQLLKTEEV TNYPGFPLGIKGW
ELADFFSAHL DGYTLTRYNDNVTSFIHTPGENKLT VGEKDIIGKSI ICTGASPKMLGLQ
RESELRGRGVS YCALCDGNFFRDQVVAVVGGGNTALEEALYLSRIVKKLYLIHRRDKFRA
NKHYQDKIMATTNKIKLILDSRITMLHGSELEALEVENVKTQVISKIEVSGLFIFIGYE
PKSDFLPSELALDASGFVLT DSEMRTNLPGVFAAGDIRSKQCRQVVTAVGDGATAATAAF
SYIEQLDV

>trxA 459615:459938 reverse MW:11643

MAAQVTDTNFDTIVLKS NKPVLVDFWAPWCGPCRAIGPIIDEIALEYASDIHVVKLVNDE
NTITPGQYGIKAIPTLILFKNGEVVEQLTGAVSKTSITMLKEKALS

>ygjD 460064:461131 reverse MW:38629

MLCLGIETSCDETAVALVENGKICIGSILGTQAPLHALFGGVPELASREHYRCLGPLYDK
LMEDAKVTLADLDVIAVTRGPGLL GALLVGLAFAGLALASGKTLIGINHLHAHLLVAAI
EEPIEYPALGLLVSGGHTHIYKIDAPDIFILLARTLDDAAGEACDKFAKMLGLPYPGGVI
IDKLAQQGIPDPYLFPRPYIHNSELD FSFGLKTSAA MYLKQYPQLIEEGQRYCSNNSKV
AIKEELYNVCSYLLA ISETLYIKMERALQYKTNEIKTIIVAGGLAANSFVRQAMHNLA I
NYNKKILLPEQKLCTDNAVMIAYYGELLA EKGYCHRLDSAIPRGQHIPDDMVKV

>fbp 461235:462242 reverse MW:36975

MSSEVTVTEHLLLQQQRAPQATGHFTSLFHDLILSAKISRSV NKAGLLDVLGGTGDINI
QGEKVQKLDEFADKVLLYRMERSG VLCAMASEEHAELIKVSAAFPRGDYILIFDPLDGSS
NIDVNI NVGTIFSI LRRKPGKTGDVELDEV LQPGSEQIAAGYFLYGTSTMLVYTAGQGVH
GFTLDPSVGEFLLSHTDIKIPDEGFIYSVNEGYWDYWDTPREAVMYFKQPS SKEKVRSA
RYVGS LVADFHRTLLYGGVFMYP SDNRKGMHGKLRYLCEASPLAFVAENAGGAATDGLY
RTL D YVPLSLHNRVPLVIGSKKDVEAVANIYAKYK

>LAW0370 462356:463225 reverse MW:32577

MSRNI FIVLCLGLTIIITGCGIQSVSN SWKRTKKFYGSYINKPACINYS DTDKLDEK DVI
LASRMMGIDTQLEALQRYLQNSDKPPSDESIIALLNTPWLSGVVLI EPNGELIAQEPEN
LLEKSDLAKII EAKPRGKMLRDIRAAVQETSIGPKVFFSVPVYVDSMDKALFV VYFDIEK
LSLYSPYSKALVIF SPEAVLWSGQFS FEDTPLAKENWESLLKNSVSGRVS NQNGEFFWLS
HFIGNQEIFVATPVSGKFF EETNQCFLVDLQENTEIEAQNTLLENSEN P

>LAW0371 463255:464136 reverse MW:32683

MTPKIEWFQEILEQEPSSRVFFPLAKLLFESGDVTKALET LRHGLEHHPDFLEARLFLIH
LLYSIGDMEGCSSESI LIANLFNQYPDFWAAWGGQSGAQVGGDFGLYMGLISALVLYPDLT
LKEFLSYGLKGLSERKSTEF SHYSNTKQSFASLQTSSQSSGIVQSSNDIVDIEEVGDSEE
LFFDRPEDMAVVSKSKDDSFVCTR SMAEVLAEQGDIVSAIKIYQELESQATNHEEIVSL
HARKVELSEMLAQARNASSFSSTTNSYNINHQA EVIAMLEALVTRLEKRAKG

>LAW0372 464159:464470 reverse MW:11971

VYSVSSRS AFLKLGVLSIAILLNII LVVRLVWGAHSLISYRELILQHKSITQELQKYDDT
IARLSHEIQLLHNSPSYIEKMIRQH LNFVKDNEILYLITIKKD

>pgsA 464482:465042 reverse MW:21095

MIWMKII LNLANSITLVRTV FVIPIIVLLYFEGPITCFLATLLFCIASVTDYLDGHIARK
ENMVT SFGKFLDPLADKLLICSI LIMFVKLDWVP AWVTIIIGRELAVTGLRAIAA DEGI
IIAADNYGKIKTILQMVAIVPLLHYS LFGIDFYKIGLFLLYIALILTVLSGVKYFYSFY
KNWQYK

>LAW0374 465190:466008 reverse MW:29626

MNIPLSPAMQDKQLKKNIDTIQHKLFI MSGKGGVGKSSVTVNLA VSLMQKGRVGI LDVD
LHGPSIPRLLGLSGHVEVDEQGRMIPVFYNDKLCVVSMDSFLEKEDTAIVWKGP KKVGA I
RQFLSGVYWG NLD FLLIDSPPGTGDEHMAVLNSIPDAK CIVVTT PQEISLADVRKALDFL
RQIKAPILGIVENMSGLSCPNCGHEIEIFK KGGVQLADKENLLLLGQISLDPLTVVAAD
CGKPVVCMEEHSEAKEKFLQLTEATLNALRLI

>pcm 466089:466769 reverse MW:25399

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MLRYHTSKNNFPLASDLRRQRERMVITQLEQRGITNSYVLTAMRNVHRHLFVPEALQSRA
YDDYPLPIGYGQTI SRPYIVAIMTSLLEPTPGLSVLEIGTGSGYQTA I LANIGLEVFSLE
RVRELYFQTKELFFLLGYRKIRTC LSDGTLGWEEHAPFDRI IVTAGGPN I PLPLLNQLGD
PGVMVIPVGQNPREQELMCITKKNNTVTSTVIGNVAFVDLVGDYGW

>LAW0376 467194:468507 forward MW:48767

MSKTKLLVITIGIASIILAAATYIFFKNTDPP I ISMIQPTQYISPRQPLTLTITSKYSPL
KLIQIIVKQNEYTKTLINQPI INGHLETVDIDFKKSGLQDGPVELIVKAQDSSYSNFGK
GNISNKTWDMNFDSPQPQITIHSPTPSLHKGSATAIAFTVSKPVAVIGVQLEEKFFPAFQ
QANGTYCYCFPPPIEFSPKTFNPKLFAQDLAGNKSYSVHVHSLERSFKIDTLTITDTFL
DKKMPNFEQNFPDQTQVERYIKVNSILRIENEKKLIEISKKTSPMMLWSGKFHTLPRAA
VKATFGENRXYMYQNQKIDQQFHMGLDLASTANAPIPAANDGIVVYTGDLGIYGNIVIID
HGLGLQTLYSHLSKITAKEGDVVKKGDLIGYTGMTGLAGGDHLHFGFLVGGIQVNPIDWL
DPKWIKNTIITRLNNNV

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> rpsB 468756:469631 forward MW:32820

MAYVSMKQMLETVGHFGHQTRRWPNKMPYIFGARNGIHIIDLQQTVKLYRAAHDKIVET
VAAGGSVLFVGTKRQAQEAIAATEATRAGQYVANRWMGGTLTNFSTIQKSIERLNRLETM
FSDGSVNRVYQKKEILTLNREMDKLELTLGGIKNMERLPQLIFIIDPHRENI AVKEGRKLG
IPIMAVTDTNCDPDLIDYIIPGNDDAIRAIKLFVTAMADACIEGEALQKDTKNKNLEEEEL
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>tsf 469657:470541 forward MW:32446

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MSISASMVKTLRERTGAGMMDCKQALEEANGDMEKAI DWLRQRGLSKASKAGRATTEGL
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NLSIRDLLNETIATIGENIVIGRSIKMELTPGKNGMIGHYVHTNGKIAVLVELATETKET
ASSPKFQELAKNIAMQIAATAPLALNSES LDPLKIDREREVYRQKALEEGKPENMIEKIV
EGAVKKYLKEVCLLDQPYIRDCKLSIAELIKKVSNEIGEPISIEFVRIQLGEE

>gaIE 470643:471623 forward MW:36785

MHTFSNAHVLTGGGLGFIGSNLAIRLVKEGAKVTI DSLMPMYGGTMYNIHDIADKVRIN
ISDIRDPYSIKALVKNQDILFNLAGQTSHIDSMIDPYTDLDINCKAQLSILEACKNNNPS
IRIIFAGTRQIYGI PQYLPVDEKHPVYPVDVNGINKIAGEWYHILYNNVYGIKTCSLRLT
NTIGPRMRIRDQRFTLGIWIKNVLCGKPIEVWGGEQLRDFLYVDDCIEALLLAKNENT
FGKVLNVGGKEPVSLQHVAELLIEVVGEGSYI IKEYPMDRKKIDIGNYYTDNTLISDILN
WKPTTSLRTALKKTIAYYKPI LNEYL

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>LAW0380 471627:472781 forward MW:42643

MTNTYSIPQANPSIYFQQYRETI IKKIEEVLNSGCYINGEQVELFEKQFAQYCNVXHAVG
VANGTDAIELTLRALNIGPGDLVFTVSHTAVATVAAIERTGALPVLVDITQNTYTMCPVS
LAETLAAAYKGYPGKPAAIIPVHLYGECADMNEILHVAGQLPVIEDCAQAHGAKYNNKN
AGSIGIAGTFSFYPTKNLGTLDGGCIVTSNTLLAEQIKALREYGWKQRYISNFPGINSR
LDELHASILNIFLPVLNKSNEIRRKIAKIYHAELQKLN IQLPLEKPDRTHIYHLYVIQV
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>igtF 472788:473591 forward MW:30799

MSSTKDIPHSKITPSITGLVLTYNGERLLEHCLTSLQFCNHILVVSDFSSDRTIEIAKSH
NVQFIQNKWNGPVAQFTYAFPLIKTEWIIITDQDEIC SQALQNTIITA IQNVSQNVCGFY
VPRRSWYYDRFLKYSGWYDPYLLRVFRKNGIYFSQQGVHEKIHPTHHTKKLIGDILHYPY
SSFYQHLEKINSYAQYGAEDLAKQKSGGICIAISHGLGRFIRIYILKKGFLDGKAGFIN
AIHGAYYAFK YIRINEGTWGAPYNHQ

>pyrH 473612:474328 forward MW:25996

MSQMTYKRVLKLSGESLAGRQLTGIDPDTVAVLCNELSSVIELGLQIALVIGGGNIFRG
LSASAKGMDRSSADYMGMLATVNLALAIQDTLEKKGHPTRVLSAIAMQEVCPEYVRRRAM
RHLEKGRV IICAAGTGNPYFTTDTAAALRCMELKCDALIKATRV DGVYDKDPLKFDDAEM

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FKHLTYEETLRRHIKIMDSTAITLAQENNIPIIIVCNMFNGSIKRAILGQNPQTVEGE

>rrf 474332:474898 forward MW:21614

MDTDKDKIFLDSQERMVKAITSLEKEFTKLRTGRASTSIVDTIKVDYYGTPTPINQLASI
AIPDSSSITIQPWDKTAFNPIEKAILKSELGLTPINDGKIIRITLPPLTEDRRKDLVKLA
RKYGEDTKIAIRNIRRDANEQLKRLEKNKFISEDELKGFTEDIQKMTDNYIKEVETHCKT
KEKEIEI

>yaeS 474934:475656 forward MW:27976

MSNPiPKHLPSHIAIIMDGNRWAKQRGMNRTEGHKQGALTAKSIVTTCRKIGIKYLTLY
TFSTENWGRPKDEIHFLFQLLVSFLKQEVHLLLEENDICLTVYGDLTkLPLLAKKALQHA
ARTKHCQSMTVNLAINYSGRTELLYAVKKMLTDRLNANDLNEEIFRNYLYSKQPPDLL
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>cdsA 475653:476450 forward MW:29162

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IPILLVPILWCTPLEQFFLICIVASDSAAYFVGLTYGNHKIWPKISPRKSIEGSAAGLI
ACIIISSILGVI TGKANILSFIILTSILGIVAQLGDFEFESALKRATHLKDSGTILPGHGG
ILDRSDSLLFVIPTYALLKSFIVYF

>dxr 476513:477721 forward MW:43861

MFTYITSLPSPEWEKSPRTISILGSTGSIGTNALDVIKSHKELFHIVALGGGKNVQLLA
KQAIQWKPDYLAVQDETSKEALIPLLPINYKPSIFVGGQGYVKLASLPEVTTVLSAQVGA
AGLHGTVAANKNGKVICLANKETLVLAKGLIKNLCLQSGAVILPVDSEHNAIFQALYTRN
PKTVQNIILTASGGPFRNKKEYEFLKNVTPEQAINHPNWKMGTKISVDSATMINKGLEIE
AHYLYGLPSEQIKIVVHPQSYVHSLVEFTDHSMAHLGTADMRMPIAHCLAWPNYLNQGV
EPFVLSKIGTLTFEEPDLDSFPCINLARDALVAGTSAQIILNAANEVAVDAFLKKQIGFM
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>LAW0387 477721:478845 forward MW:41274

MDFLQTFVVSQWNNALAVVVVLGALIFFHELGHFMMARILGIGVKTFSLGFPGKIFTIGKR
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GPVANILLAFFIYWGVSWVQGSTFLPIIGTITENSPAHEAGLLPGDIITRVDGMPVSQW
DQVAEYIAESQGNEVTITLSRDDKLEFRLTPEEKSRNTLFGKPPAWLIGISAQGDIE
RPLSFLAASVTGLKKTWFSISFTCESLLKLFQKVPLDSIGGPILIAQLVGQANAGIIP
LLLLTALISINLGVNLLPIILDGGHVVFLLLEMIFQRPISPFIKTVSMRIGIVLLLLSL
MVFATWNDIMRLVS

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>LAW0388 478842:479636 forward MW:29616

MRDLTLTLGISEQHLHIVFIKDEEIQYIKERSITSNGTEILGPLIESLEKAQFSLQQIS
RIACIAGPGSFTGLRLALTTAIAMRRALSIPLATLNYLHVIAASAWALPELQNISLLPSL
LRVITYARQKLLYIQDFLVTKTFPMPiAKPRISSIEASIQTKDPIILFMGSGIQYNYSFFA
EHALINPNILLFQKKISISPYALLQLVKNIPHEEWKHNDEPEPLYLRHCDVDNLSSISLK
QGKNPEDACSTFKKIIVTQPPLLV

>LAW0389 480542:481426 forward MW:33879

MAQSNVWSSNFTGTFLKSIADLLNENFQFPKANLVIGGFPCQDFSVAGKREGLKTQRG
SLYHMCMEVIQQVSPEAFIAENVYGLFYIPGVREKITSDFEQIGYTVFSFLLFSNEYGVP
QIRRRVFFIIGLKTEALKRKSINEIIPPETHQKFVSVGTIFKDLQEPEYTLDEKQIYK
SKFYGSQWEGNREVDLSLPSPTLRASGPEFRRLSKEHGGKHLDELKDGKIERRLTVREYA
RIQTFPDDFILMFKNNEEIIISMTSAYRLIGNAVPPLLAYHVSKRLELWDFIF

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>proS 481800:483527 reverse MW:64890

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EVRSYRQLPINVYQIQTKFRDEIRPRFGLMRAREFLMKDAYSFDQDNEGADISYHTMFDA
YKAIFTCMALDFRAVEADSGSIGGNFSHEFMV IADSGEDTIAFCRKCDWAANIEHAATLP

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PQTKALTLEKSMEEVVTGQHTIKAVSTFLTIPEQQIKTILYTDNKPVAVLVRGDREV
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KPKDHIHLHVDLARDVQNI TFADIRLITDADGCPSCGREIALTKGIEVGHVFKLGTKYSKS
MNAFFLDENGEEQLMVMGCYIGVSRVIAACIEQNNDKYGIFPPPLAPFEIMLINLDP
DESVMKASEIYQFFLSEGEVFLDDREERPGIKFNDADLLGFPIQVIIGAKSLANGIEE
VKNRKTGEKSSFSLERFFTFDFYSWRDVTYVVTWGLS

>LAW0391 483648:484544 reverse MW:33629

MNTWNNLAMHFRRRLGCRGQKIPLDVGSSCPNRERSNSNIGCVFCNVSGSGSGLGLSGMS
ITEQWNYWHKHSISNQYIRFIAYLQSFSTYGPLSKFSSILAQIKGLQDVAGISVGTRP
DCLTNKKLSLIVEMPLEKWWVEFGVQSLHDETLIKIKRGHSSKCSEQAIIQAANAGLQVC
AHVMFGLPGETPTHMLQIDRLNSLPIHGKIFHNHYVCKNTILEKEFNAGNYPLTEADY
SDLVVESLYRLRPDIVIHRVVADPLPEELVAPEWARYKSAVVRGIEKRFRARRSTHNI

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>mreB 484633:485673 forward MW:37260

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AKRMLGRTPGNIEAIRPMKDGVIADFEVTEAMLRHFISKVHNSRRLVRPRIMICVPTGIT
QVEKRAVKESAQSAGAREVYLIEEPMAAIIGAHLPIQEPTSNMVVDIGGGTTEVAVISLS
GIVYSRSVRVGGDKMDEAIIAHVKKRYNLLIGESSAEEKIKIGSAHPMDPEQQIEVRGR
DLVTGIPQNIITSEEVRKAISGQVDSIIQAVRIALEQTPELAADIVDRGIVLTGGGAL
LKGLDQRLREETSPLITVVEDPLSTVVVGTGLALDISFLREVCID

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>mreC 485787:486668 forward MW:32157

MPPKRLLLISALILLIYLGYSWNQRTHFLDITVTVNGLETSGYVIKSVLFFVQDAILD
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AGRMGSNAALATIVIDRGYLTGAIPGTPVITQDGI VGRVFRAGPTTSTVLLLIDPGSRIA
VVSQKNRVQGILVGGSGAMSPLEVRVSRNRSIEPGELLVTSGLDEAFPKGIPVAKISKVT
DSDMSPFQTVEATPLVPIILNIEELLLLQQPVYHNQNFSSIDDVQQTESVSVLK

>LAW0394 486665:487135 forward MW:17967

MKFRNTLWVWVLFIIISILLQKTFPGIDTLVIGLLISLEERSPLQTLWVLLTIIIIQEGCG
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>LAW0395 487119:488912 forward MW:67136

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RKVKPFEPILLFTDIPFEQVAKIESQLMHWPGLITVAHRSKRYYPQSHEFAHILGYVAEAN
EKELAMDKVLSLGDITGKQGLEYLEPRLRGEKGEYSVEVDVLGRALGKVLVKAPQHGED
IQLSLDAQLQKIVSLLDTHAACVIVIEPHTGRLQALVTTPAYDNNLFVRGLSQQNWEIL
RDNPRHPLQNRITQSTYPPASIWKLLMIGLFLEEGIAPSTHITCTGSVTLGDHIFRCWKK
HGHGSVDMKRSLTDSCDVYFYILGKGLIDKIENFAKACGFGSLTKIDLPEYKVLVPSR
SWKRSRFGDNWYKGETLNTSIGQGYTLTTPQLQIAVSVSSLINGGNLMKPLLLSEDKPQVL
GKIPFSEETLAFINNTMRLTVEKGTARVLRNDAAIIGGKTGTAQVVKLKMVGERRLKADE
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>rodA 488937:490052 forward MW:41240

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ELAKLAVLIMGARMSLDGAPLSWAQLIKMLIIGVIPAGLIALQPDLTALTVFAILGGMV
CYHGLQPHVLRICLIIIPLLIPLSWFFLHDYQKQRI VTFDPTKDPKRGSGYHI IQS
QIAIGSQFSGKGLFQGTQSQRFLPEKHTDFAIAVFGEEWGFLGCITLMGLFCLFLLGIF
NNTVKGAKDRFGSTLAAGIFMYFFWQFFVNI GMVGLMPPVVGIPLPFLSYGG
SATLVNFILIGLVLNI SMRRFVFKSY

>LAW0397 490077:490424 forward MW:12211

VSKEEINAFGLSGTTYQGNLIFQNAVRIDGSFKGEIQSEGSLIVGKEGSEI
EGTLDVGGELI

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LSGFFMGEVRATRKTIVHKTGRLQGTLVSPALIVEEGAIIDGQVVMQSPMPELSE

>LAW0398 490519:490941 forward MW:16420

VIELNITLLIQLINFLIALIGINYLVPPIRNSIYQRQQVFSSKEVYISELTHQVNKDLL
QYEFIIITKTKEEAISYYKHEQENTERLKNTMLNEAQEEAKKQTKETQITIMTEAQDAKQL
LEKEIVPFAHNIVTNLLKNV

>atpF 490959:491537 forward MW:22305

SLNTFFSFILSKDGIITIAGIILFSILIHFKDPYHPWINLLGRFGNLSIFLYILWRAAGK
KIIQFFSQKNNIIHKLQTLQKNEVEKNLAAIQQMALLNAKQEAIREESRIQAEKLN
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LIDNALTKVVLS

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>atpE 491534:492100 forward MW:21353

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QGVLLKLELIDAAQIKNFCLLAEKERLPLLTQIINSFKVLLDNAKNIVHGQLITAIT
LDEKKQSELLISLEKQTNRKLELLFQVNPDI LGGIVLHIGDKVFDASLRTQLECI RNTIK
KGETNHAY

>atpD 492090:493610 forward MW:55272

MHIKADEISTIIKEIQNYSQRIETTEVGTVLSVGDGIARVYGVQDVMSMELLEFPGNLL
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DAILAQKESGVHCFYVAIGQKASTVALVADTLRKHGAMEYTTIIAATASDPAPLQYISPY
SGCTMAEYYRDHGQHALIVYDDLKQAVAYRQMSLLLRPPGREAFPGDVFYLSRLLER
AAKLSDELGGGSLTALPIIETQAGDVSAYIPTNVISITDGGVYLEPNLFNAGVRPAINVG
LSVSRVGGAAQTKAMKQVSGTMRDLAQYRELAFAQFSSDLKQTKLERGARLVELL
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>atpC 493615:494484 forward MW:32537

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RKGRDAIKKTHYPILSDYSDKFTRDYQLASHISEKVIDGYLTVNMDEVVL IYGQFINAMR
QIVGFSTLLPIHPKPLDKEQLEKYSEYIYEPGVAI LSELLPKFVTTQIYRGFLDTDASE
NAARMTAMDNATRNCDELIGNLTRLYNKTRQASITSELIDIVSGAEALK

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>atpB 494508:495923 forward MW:51207

MSENIKIVQVIGAVVDVSFPNGKLPPILTALEIHNPNSIDAPKLICEVAQHLGDDIVRT
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PSFLDQNTSVEPLETGIVKVIDLLVPPFKGGKMGFLGGAGVGKTVILMEMINNIARQHGGI
SVFAGVGERTREGNDLYHEMKEAGVLEKAILVYGMNEPPGARSVALTALTCAEYFRDE
EHQDVLLFIDNIFRFIQAGSEVSALLGRMPSAVGYQPTLGTDLGSLEERITSTHNGSITS
VQAVVYPADDLTD PAPATTFSHLDGTLVLSRQIAELGIYPAVDPLDSTSRILEPNFVGEE
HYTVARGVQKILQKYKELQDIIA I LGMDELSDEDKLVVSRARRIQRFLSQPFHVAETFTG
TAGEYVKLEDTIKGFKGILAGEYDHLSESDFYMVGNIDSAVAKYEKRKESK

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>atpA 495934:496335 forward MW:14579

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MHRAIIRLNISL

>xseA 496471:497913 forward MW:55057

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VGEWYSALEKRKNELQQQGYFDLSRKQIIPHNPKKIVVITSPAGAAIQDFLRIAKERGTE
KYIRIYPVTVQGEESIHQIAQAHTENNSNWAIEVILIRGGGASQDLMVFNDQQLIDAIY
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FQLQKIQYVFNKLNTTLQWLSPLKKLERNELQLNSIYEKLN AIFNYKLLKNLDLIQYTQ
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 >LAW0406 497938:498807 forward MW:32377
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 WLNKSITVPFKKKGRHWEAQTLLPITVDMAKSEILAVRTSNNYIQQSIHIEPVHWPQYI
 SLGKKKQKFVTPSKKLVARLEHERKMIKEALSNI SCKQYWSKPFVRPVKGIITSPFGGQR
 IFNGKPCSYPHQVDLRGAI GTPIKAMAAGKVTLSADLYYFGKAVFIDHGQGIYTYLGHMS
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>LAW0407 499089:499991 forward MW:32545
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 LLTDAFTFMSTLNSIVPSNNILVAIHEIAQAAGSNGMVKGQSM DIEHTGVSDVSFNTLCI
 IHEYKTGALFRASCTTGAMLGANESA IYALKCYGEALGA AFQITDDILNVTADSITL GK
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 >dsx 500065:501978 forward MW:69548

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 NDNEMSI SKNVGALSFLSRNMERGWVRRVRHEIKDWLKSIP SIGDEVAEYASRTHRS LK
 TVFTPGILFEAFRFNYIGPVNGHDIESIEKHLAMAASIDDPVLLHVLTKKGKGYEPAEK
 NPASYHGLGAFDIQTGIPKSN SQNSPPTYTEVFGKTLCELAEKDKRIVTITAAMASGTGT
 SLFKAKFPHTFTDVGICEQHAVTFAAGLASQGYKPFVAIYSTFAQRAYDQIHDVCIQKL
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 IRYPKGNVGVVTLPNESTPLPFEGELLKEGHDAIIAIGSMVMPAYSAAQQLQEEKNLSI
 AVFDSRWISPLPQHQLIELANTFN NILLIEENALAGGFSSAVVELFADNQCLHGQRIQRI
 GIPNYFIDHGSQKELKQCLLLTVDG I KKM L LQMLQPE

>LAW0409 502001:503026 reverse MW:39208
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 RYCFLEQVRKEYGAQWIATGHHLNDLSEDI LLRLLRGTGWPGLAGMKAVDKKRYLLRPLL
 TTRRTLLV SFLSSQNI SWVEDNSNKDITFKRNRIRHTILPLFEEENPKFSNVAHMLWLSLA
 KEDEEFWDKMITDVFSKIEGSPEYFWIPRSELITLPKSLRLRVYIEAIRRLNIGQGRAST
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>trpA 504438:505217 reverse MW:27999
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 AA EAMGNGMNFGEVLKQVQVIRGMGCKTPIILFTYLNPI LAFGYDKFLHQAKAAGVNGV
 LIIDL PPEEGEDFYAMLQEVGLEIVLLVSPTTDLARLP IYITLQPSFIYYISRLSVTGIQ
 QDLSNTLEEEELYS LCKALPNTKIAVGFGISSIDQARYVSQIADGVIIGSKLVSILETSGV
 GVFEDKAREFADIIHGGKL

>trpB 505228:506397 reverse MW:42266
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 TIASLLGMECVVYMGAI DMERQH LNVVRMQILGAEVQAVHNGSQT LKDATSEAMRDWVSN
 IKDSYYVLGSALGPHYPTIVRDFQRIIGIEARKQLLEMIDELPDELVACVGGGSNSIGL
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 VAPFLPQSYIMLIVLSGRGDKDVETLATY

>trpC_1 506387:507004 reverse MW:22905
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GILIDYSQDEMLDALEFLDLIQIYQLHFKLPLDKKRIILALQASSKDELPESSILQEYGF
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GVEERPGIKNPLAIKEFLMRCKNVK

>trpC_2 506982:507704 reverse MW:26553

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ALSVLAE PDYFQGSISFIKDIRGAHLNSYILLKDFVLSKKQIAQG LLYGANAVLLIVAF L
NKDLLKELYDYSLDLGLTPIIEVHDGFELEQALQLSPQIGINNRNLQTLEISLDTAWN L
IKYIPNDCYAICESGIDNATQIREMMDIGFDGFLIGSSLMKYENPGVELQKLI SEVCNKS

>trpD 507758:508744 reverse MW:35587

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KITHDLEVV D I VGTGGDSKGT FN ISTAASFV I ASCGIMVAKHGGRSATS KVG SQDVI QAL
GIRIAQTVEESL KSLQQIN YTYLWAPLFNKELK KYGALRQKLG FPTIFN I LGPLL NPMRP
KRCVIGVYRRDLVQKVAEVLATQGVNHALVVHSD DGLDEFSSISNTHI IELNGTDI KEYS
LNPEDFGFSKAQLSDVRGGDAAKNATL ICDILSGTINGPKLDIVLLNAAAGLYVAGKSSS
IAEGILLTKDAIEQ GKVTLLNKMRGSI

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>LAW0415 508741:509877 reverse MW:42377

MLVDKFI LPECKVYMC GHS LGPSLKTTS DAVCSTLQDFASYGVSSWNKSGWIDLSYALGA
KIAALVGAKFDEVI VCDSTVLNLFKALKVAMSLQNGRNIILTDDNFPADLYIAQGISEV
KYIKSNEIYKNIDETVAVLM LTHVNYRDSSVLDMKTINEYAHKYGVLT VWDLSHSIGIVP
VDLEESSTDFAVGCTYKYLSGGPGSPAFIYANRMYHEHMQSPIQGWIGHNQPF SFEKEYT
SFGVRKFM SGTPAILSMKALEAALEIFDKEVIVKSYSIAKEYSNILIKSLKSHGIEVYAP
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>LAW0416 509880:510698 reverse MW:28847

MSIELLYTGVLQGLILAI IAFGIMIPFRFLNFPDLTAEGAYPLGGAVCASLMVANMPQIL
AMMAGIMAGGLLAVGTSQVALRLKVN SLLAGIILSTMAYSINLRIMGKPNIALFDMDGIH
FDFISLIVGMFCIVPFALFLHTDFGLRFR TVGSPKFAINH KISINKYTSLGLFIAGSM
FGLAGSLMVQMQFMDIGMGVGIHGLASLMIGESIVGNSTIPKQLAAPIIGSLIYQQI
QGVALSGLAPSDLKFFTGSIVLIVLAIQK GK

>LAW0417 510688:511422 reverse MW:27159

MINI I KVTKSFPGLFRPVINDISLYLERGDFCVFI GANCGKSTLLKLISSEYQADSGAI
KLSGDVAQVVQDVNLGTVPEMTLLENIALSEI I KPKLLFYKRYKDQILQK KELDGGLED
YINQPLKMLSGGQRQMIATLMAIISGRQILLLDEHTSALDPKMQTLLMEYTHQQAINHGL
TTIMITHKMDDAIKYG NR L IMLHQGKIVLDIHGAQKKAMTVQGLLTMFHQYEDQLLVSGG
GNVN

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>LAW0418 511426:512397 reverse MW:35122

MKNFFFYFIAVVI TLVIAFITYNNKVNKL PVVAIANYGPHTSLDAVIAGFKEQM QVEGF
TENQTI RYEIADVGF DHALIPQTIASLRAHHPKAMVVI STPIAQFAKGIKNLPLIYSSV
TDPVGVGLLQEYNKSDDNMTGSSDMQDLNSLLQFAKFLLPNAKSIGLLYATSDSNDTSLV
KMMQSAASEYDMSVVAIPVEQAREVPIRMQGFKGKVDLIYVGVSGPIQPTLPAIAVEAHK
MRIPVFNADIQAVRDGLVIAGLGV DYYAVGRNTGKLVSAI LHGEKISELVPIYPSAQDHH
GVINKKLAIELGIAIPSNIEIVE

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>LAW0419 514084:514919 forward MW:31123

MNMIKHCLILII FLVTTLHTHLYAHQANRTILITASTGAIGEAI STLLASEGYNLVIAGR
NSNKLITLQKKLQTKHKDISVQTVI IDFSNIESIETAVNQVQLHGIVLIGRPSLKKED
IPSKEEWNKAFNETFINPLEVLRHFNPKIADKSSIVIISGNTSKNYFPQFPNTN VIRVAW
VAEVKNLIYFFAKRHIRVNLVSPGII LTEHHKVIQKKAITHNISFKEQLTREVSSIPLK
TYGTTEDVAQLVSFLLSNKSKHLNGANITLDGGEATSY

>bioB 514967:515935 reverse MW:36479

MGLFFIMRNDWTFKEAKQIFNLPLLELLYKAQTIHRKYFDPNKIQISMLLNIKTGNCPEN

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CGYCSQSSHYKTDLQKEPLVDIDTLISEAKKAKELGSTRFCMGAAWRSPLDKDLKIVCQM
IEEVKKLGLETCTVLGFLKEHQIAMLKKAGLDFYNHMNTSPEFYEH IATHTTFDDRLAT
LKAVRKFGIKLCSGGIIGLGETIDDRISMLLLATLEEQPESVPINRFVKVAGTPLNPQS
DIDPFDFVRIIALTRILMPKSYIRLAAGREQMSDELQTLFCFMGGANSIFYGGRLTTDGP
QPEQDDLLFQKIGLEKVQTICH

>bioF 515952:517097 forward MW:42738

MYYRYKQYISHLHDTKKYRSLPVIHKNYKDI LDFSTNDYLQLAYHPNLINAAIMTGSTY
GVGSTGSRLLSGNNELFERLETTIAQDKHTETAMLFISGFQTNVSVLSALLDHHVLMKQP
LVFFDKLNHASLYQAVFLSKAELLRYHNNMEHLSSLLKKYKDDNRPKFIVTETLFGMDG
DIAPLTDIVSLSSQYQTFLYLDEAHATGLTG IHGYGLSTTVNLSHIPHIVMGTFSKALGC
SGGYIACKQLIKDYLINKATGF IYSTAGSPMVLGAAQEAWNLI RTLDNQRALHNSLSKEL
RDGCNQLGFNIGTSSSHI IPLILGSEEDASHVHKLLLEHHILTSYIRPPTVPPKTSRIRI
ALNVGHNKADIERLLQLLSTL

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>LAW0422 517094:517732 forward MW:24527

MKKYFIFCHGFGYNKNFWKPLLPFFTNEKCLVLDLGYGNSHLLTSDIRNKKLIGIGHSL
GLLKLQLSINFEYLIGLNSFINFLGNDTQLALTRKTELQRLTKHFLVSPLKTYNFHNR
CGVPIKKNILTTNFYTLIEDLTLSSLSTIPYNQKGLIIGSQNDPIVPPQLIYDNFKIY
PNMTIKIIPSGGHGLGFLYPQRIYQYIKDVLM

>LAW0423 517094:517732 forward MW:24527

MKKYFIFCHGFGYNKNFWKPLLPFFTNEKCLVLDLGYGNSHLLTSDIRNKKLIGIGHSL
GLLKLQLSINFEYLIGLNSFINFLGNDTQLALTRKTELQRLTKHFLVSPLKTYNFHNR
CGVPIKKNILTTNFYTLIEDLTLSSLSTIPYNQKGLIIGSQNDPIVPPQLIYDNFKIY
PNMTIKIIPSGGHGLGFLYPQRIYQYIKDVLM

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>bioC 517752:518495 forward MW:28462

MIKQKIQSSFDVASDITYDTVAHIQKESAYILVKNLHNTISTFYPKTILDLGTGTGYIPEI
LLSYYPYASFMLNDIAPKMINKVQQKFNKTSNISFYIGDMESI QIKPYDLIISNFAFQWI
EKLETMLKKLYNNSKVLAFSCLLDGTGFEWKQILQSYNIPSPLKQYPQPPLYKCSALG
STTHYLETKCFQLPFTGARSFVNYLKHLLGAAVSNKPLPTQKVKNLITNYNESFHVTYNVF
FGIMERK

>bioD 518495:519106 forward MW:22586

VQFFIIGTDTNVGKTIVSSWLCLHTAYDYFKMIQTGSINGTDSILKCLTYSKIHEKAYC
YKEPLSPHLAAKLEQDEININNIILPNASNLVIEGAGLLVPINQQYLLLDIISYLMPLV
ILVTHSRLGTINHTLLTLQALKSKGIEVVGVI VNGKPNQDNCDAITWYGKTTILAQFPFL
STITKTTLRNIPLTQELKQLFIV

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>bioA 519110:520387 forward MW:47892

MLSLTERDKKI IWHPFTQEKTADPVISISHAKGSYVFDENGTAYLDCISSWWVNLHGSH
PDIAQAIYEQALKLEHIIFAKFTHSPAVELCEQLTSILPLTLTKCFFSDNGSTSVEIALK
MAYQYWNKKHPEKTLFLSFEGAYHGDTFGTMSIGSSGFHNFSSFFFNVLRI PYPDTWD
GDNEIEKKEAHALHVLDKYLLEYKNTIAAIVIEPLIQAARGMRCRPAFLNSI IKKVRNA
GILVIFDEVMTGFGRTGTYFAFEKLDVIPDFLCLSKGLTGGFLPLALTITDEIYNAFLH
EEWKYALAHGHSFTANPLGCAAALASLKLLEKTTLAMQSIHQAHIDGISFLQKSCSNV
TKTRVLGTISAFELHDTTHIKQIESSFLANGLLRPLHNVIIYIIPPYSTNYKELMDAYNK
ICKIL

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>LAW0427 520457:521032 reverse MW:21521

MLKLFHTLLILFILIVHANAHDLIVYKDNICQATLDEKTYKCSIGKNGTSNCKVEGDKS
TPLGKFP LRVFFREDKIGNNIKTGLPSRKIKKNDGWCDPTS IQYNKFVDLTCFNNSIS
HEKLYRDDD VYDLIIVVGYNDSPIPSKGS AIFIHVAREGFLGTDGCI AFAQDDLVEILS
KLDKTSKVIIQ

>putP 522545:523912 forward MW:49889

MVEKQKRDSFTSKIGILAATLGSVGLGNIWKFP TVIGQNGGASFLLIYIIATIVAGLPI

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MIAEIAIGRSTRANAVEGFKKLSSGYWWLVGFAGTLSTVFLGFYTEVAGWIYAYIFKAA
 NGSINTTQPVVAGYIFQELLSNPWQTLWQWLVIILVATIVLRGASKGIEKAATILMPIL
 FILLIIICIRSIITLPNAIEGLRFLFMPDFSKIDGRVILLAMGLAFFKLSIGMGVMLTYGS
 YFKDDVNIPIYMATKVMLLDLVVSLLSGIAIFPVVFSFGFEPSSGPGLLFITIPAVFDSMP
 AGQIFGTGAFFILAAVASTGAMLSLFETPVAWAIDTFNLSRKNNTIIIMLFFIAFGAPVAL
 SENILKHITIFGMNFFQLYDFLSSNILMPLGGFFLCIFVGYVWNKQVMVHAISNGGTLHN
 QGLIKLLLFQCRYVTPVILIIIMLHGFNLFAYIFN

>hemN 524004:525074 reverse MW:39212

MYTNIKTYSFQLGVLGEKKYNRIPIFLPPFEGCPHRCIFCAQDKQTGLGYGGSKI SLSDN
 LANLFTRLKKEKNTFSSEKLLPEIAFYGGTFTLLPTASMQCLNMVKQCLAEGLSGARC
 STRPDAVSPAILTCLKAAGINLIELGVQSFSNIALSLVRRGYTQHIKEGCYNILSAGLR
 LGIQLLPGMPGSTAEVFLNDVEQSLEQNPACLRFPCLVVDGTQLADIWRKGLYQPWDIN
 TTVKILGKGLVRAWSKIPVIRLSLAPEDTLEASILAGPRHPALGSMIQGEALFHLIYEK
 VKQIGQSPSSVCLPSFCKGFFYGHAGMLKKHWASIGINSVNIQWSNTINYGKLIFL

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>LAW0430 525142:525582 forward MW:16536

MSMSNQTDICFCNIIQKKIPCVSIYNSDNFIALLDINPVNKGHTLIVPTQHVETMFDIDP
 SLGTDLLSIMQHIGPAIMKATNAEGVNVIQNNYVAAGQEVPHLHWHIIPRFIGDSRIRWE
 KGKYKNHQEMIDIATNINSIIYNDYS

>himA 525657:525947 forward MW:11008

MNNVLTKVDIIDAIYEKINNNKADIKNIVETLLSIMKQAIKTDNTLLISGFGKFEAYSKH
 TRKGRNPQTDEAITLPSRKVIVFRLSKKFRTELNKL

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>LAW0432 526092:526742 reverse MW:24674

LPISSLVPLTEIRQYCLQLGFSLSDQIESLRGYLCLLTKWNKVMNLVGFTTWKTCISNL
 IIDSFHLAIFIRSLSLPTDPLCWFDFGSGAGLPGIPLRIIWKEGSYWLVESREKRAIFLKT
 LLAQYPLTQTYVYCGRVEEFMLANCLSDVALIVSRAFMPWQALLKLEKKSFKGVIVLL
 LNDIPKNIDSCWYIQTTPYSIGGEKRFFVALKKAS

>dsbD 527009:528847 reverse MW:68452

MRQYRIIYLLLFYFIFCLSI SHPVAADITYSPLDVKFAYALDTGTSPETV I I KMVLTVDD
 NYYTYTHNEKEGLPTKVVLQNSSGTILQSRIFYPEGEIHEDVSSGISIKKVYSGEFPIFL
 QVQRDALTPESVQLSLLCSSKHCMNVNRTIPITLPNPLPSIDEVPWEDTYLLYTNPVV
 HTAESEHLIDSTEQTTDIAESLFPWDLHPRYFQSGLEPTRIELALLFGFLAGLILNIMPC
 VLPVLTCLKFSFILSHLGYKGEHCFRYVREQNLLFAAGILSWFVMLALGVEVLELAWGGFF
 QSVPVVYGLMLIVFIALLSLFGFFTLPIIDFKIETTSPRIQAYFTGVMTTLLATPCSGP
 LLGGVLGWAVLQPFYIIFIVFLATGLGMSLPYIIFAFKPQAIRFLPRPGAWCGTLEQLVG
 FFLGGTTIYLLSILPETMLIQAVTLLIAAFVWCWVGLGGLSVSSTQRVVVGVVVSCMI
 AMSVWWSFHPAEKAWLSYSDTKFRKELGLTPMLVEFTADWCPTCKLLEKTVLTTSFLEQ
 LVNEYGIKLIKVDLTKHSEAEALLRALGSVSIPTAIFPSGEKANQPLVLRDVYTSEQL
 EKALQLAIKSSE

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>LAW0434 529148:530338 reverse MW:44967

MLYFYIMAITTPKSLFYSTPECLRTIQVINVRWFNATAWYALELSRLLIKAGHKTLLVTL
 NNTETHYKAVEMGLSPIPLPLNTKCPFIFFKLIQSIYQKIKVFKPNIVNCHARGEAVFLWG
 ILRKKGNVALVRTRGDQRLPKRNIFNKLLYRSMTDAIITNTKMSSHITSLNVKESLID
 TIIGVDNQRFYFSELGRRIVRSKYGFTANHFVIGLLGRFDRVKGQKELINAIALLIQEG
 YTSIRLLLIGFPTTISKEEVEVWIKEAKIEPYVITGYVQSITDYLSAMDVGVIASLSSE
 TIARAALIEIACKRPLISTNVGMPDLLPLEALVEPGNILALKKVIQKAVNSSWRKWL
 DISSNRMKSQTSELFSETLESYSKALSNRFHAVYG

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>aspC 530484:531716 forward MW:45941

MAHTNKHYLDLPGSYFFTEINQRVNTYKKTHTPEKSIIRLSIGDVTRPLVPAVIKALHDAT
 DEMGQPSSFHGYGPEHGYEFLIGEIIANDYTSRNVHIEADEIFVSDGTKCDIANIQELFD
 PSDTVAIIDPVYPVYIDSNVMSGRLGKLINGIWSKLIYLPCTIENNFIPELPTQHPDIIY

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LCYPNNPTGTVLSKDQLTIWVNYAKKEGAIILFDAAYEAYITDPTIPHSIYEIDGAKEVA
IEFRSFSKTAGFTGLRCAYTVIPKELKANTREGNEQYLNMMWNRRTTKYNGCSYIVQKA
AAAIYTPGQKQIQESIQQYMKNALIIQNAITQMGITAVGGINAPYVWIKTPDNLSSWDF
FDLLLQONAGVVGTPGVGFGPHGEGYFRLTGFGSYEDTNKAIERIQKALLI

>LAW0436 531796:532644 reverse MW:31998

MSKVFQEFYQQYKEVQEIQKELEKPLGLIVDILGPCPKETCKKYGLPEGCTILDIPSSVF
FNKKKKLKF I GGLHFASVATECFLFMQGEWPRGNQTNLNI SYEQLEQLYPIYNTLSNIV
NRLPEMATSRGSLLLNAIADALTSSDVDSNINKAKLVIFSGHEGNIQSIAGLLNLQWKIH
GYPPNGTPPPGMLMFTLWETPNGNIVKIHVVCQELEAIVSPVGYPKFFKQQLKVI PYTS
SSYTNTQELECSEKQFRDWIDNVVDKNLLPKQKVLKSKRVL

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>LAW0437 532566:533117 reverse MW:21361

MYNFSLFLLLVGLILGTFQPIAAKEQDQERLIKMVLSRHGLRSPIVPNSLDEWTQKEW
PYWPVNNGYLTSRGSILISNLWEALREDPWLNELLPQDICNPPELIYVRANTAERTQATA
VAI LNGLAPGCGLKYFFLTLRIRILFLIQQQKEIILLICLKSFKNFINNIRKFKRYRKNL
KNL

>LAW0438 533368:534693 reverse MW:49866

MYNRVNFIIWLIATFFIVFFSIAEEVKAEERLIKMVLSRHGFRPPVETHEFLEEWSEKQ
WPYWPVKDGYLTQRGSVLISILWEGLHEDPMMKELFPRNICPDPQSIYVRSDTMERTQAT
AIAI LN GFASGDFQYRVLDTTEGDPLFTPLETGCCSLDFTKVIQEFNQYGGVQTLRKD
LEEPLKIVADVLYGCEATCKKYGLSSECSVLDIPDTIILNKHNGVHLTGGLGISALSAA
LFFLELGEWPKGNLSGINVSQDIVKKVFPLQTKIFNAIHRIPEMATVKASGILKITDAL
TNSD TDSDVNKAKLVIFVGHDTNIANIAGILSVDWDIPGYPSGATPPGGMLVFTLWETPN
GNIVKAHYICQSLETVTTPSIYPQKIYKQQLYSVPTTSSKVNKEPFEYSEKQFKEWVYR
LVKKDCIIKETRPLISKRTLY

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>hyaA 535099:536355 forward MW:45333

MNYPPETQYEALEKRGVSRDFLKFCFAAVYLGLGPTGHLDIANAMENKPRLPVVWING
LSCSCCTESFIRSAHPLASDIVLSMISLDYQDTIMAAAGHQAAEVFEETITEYKGRYILA
VEGNAPLADQGMACFQEGRPFLETLRGAEGASAVICWGTCASWGCVQAAHPNPRATPV
PKLIHDKPIIRIPGCPPIVEVMSNVVAYILTYERLPELDSQKRPAMFYGKTVHDQCVRRRA
HFDAGQFVESWDDPAASLYCYLYKMGCKGPTTYNACPVTRWNDGVSYP IESGHGICGSE
NDFWDRGSFYDRITTI PQFGTNTTANTVGLA AVGAVGAAAATHAAISTAVHLKRKANAKV
EEENAQPHTCCHSHQSTDNNTAHTCCSNSADEKTQNTTACCHSKNVMNSGNSNETTDS

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>hyaB 536370:538178 forward MW:67024

MSYQYSTQGYEVT DAGKRI VVDPITRIEGLRCEVNISSGIITNAVSSGTLFRGLEIIL
KNRDRDAWAF AERICGVCTGTHALTSIYAVENALQIEVPANANFIRNMMQLALWCHDHI
VHFYQLAGLDWIDVVSAAKGDPPKASELAQSISSWPMSSPGYFADIKKRLVDIIGSGQLG
IFKNGYWGHPAYKLPPEANMLVAHYIEALNMQKEVVKIHTIFGGKNPHPNWIVGGMPLA
LNLDKAGGADV INMERLEYVQR I INICKDFTSKVLMPDTIALGKFYPEWLSIGKGISHLS
ILSYGGFPTISNDFSND SLLVPNGAIINGNFNEVHPVDLFAEDEVREEVSHSWRYRPNDI
TSLHPFEGETIPEFSVGPNTKGTETDIKELDERARYSWIKTPRWKGHMMVEGGLPRVLI A
YYMKREETVTAVDEICRQLNVPVTHMCSTLGR I IARSHEAVWAAEKLQYFFDRLIANTKA
GDLTVANTTKWEPSTWPKEAKGAGFTEAPRGALGHVVV I KDTKIDRYQCVPPTTWNAAPR
SDSEQLGPYEAALMDTHLAEPEKPLELLRTIHSFDPCLACATHIIGPDGNEVLSVQCNTA
GC

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>hyaC 538288:538992 forward MW:27570

MEETPPPQKAKYIIELPVRIWHWSIVIC IATLILTGYIIGYPWHSIDGHPTYLFLMGYMR
IVHFSAGFILAIGIFLRLIYAFFGNNYSKQIFVPIPIWQKSWWHGLIGDFRWYLFIDKTPH
VHYDHNPLAQVGMFGCIFLIFMTFTGMGMFIMSSDNPLVHTFHVVLDVAYVWGGNGID
LHNWHRLGMLFIIAFIIHLYMVIREEIMGNTTLVSAMFNGFKLVRLIKQPKKN

>hyaD 538995:539531 forward MW:19760

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MESIIVLGLGNILYGDEGFGVRVAEQLYTRYDFPDNIEIIDAGTRGQALLQYVEKADRL
 ILDAVDFNMPPGKIIFKDNNEIPSYLTAHKMSLHQTSEIFGLASLQKLLPKEMVLLGV
 QPISLEYGTSLTPDVFHLLDKAVELALNQLLKNWITPQPAVTKKVFQAAGISLSNFNL
 >LAW0443 540291:540695 forward MW:15686
 MNFSNELNILKINKFCFRKRKKAYQHMQAIAVSLWRLALQNSFPSEYEIFGAYLCKKNS
 HIPINKQGILDOPYFQVLQSYIEILNTHGDSDFTEVSSHLINMLQLSKVNNDAIKLLAL
 TIRTMYNDFKLLI

>LAW0444 540700:541770 forward MW:40264
 MQILTITSSNRSRGTRQAIYQTQEFARGYNARLCLPHDSTFWELPKKEQNPLWIALPE
 NHSKQKIFIEKLLSETSPTVIHAFHNKAIKRIAWWGLSWKYKNVTCVAHRGVIYRPNPL
 PYLSPAIFAFIPNSKACAKALRWHCPRKKIYIVPNGLPAERFTPTISQEEALKHIGISYI
 PKFLFGFVGNKPKQGFIDILLEAFSKAHIAHAHLLTMGVKEEYWRPLCEQFHIAEQVHFL
 DHVEHISNYLQLCDAFIVPSRAMESSPNTLIEAMSMGLPIIATNAGGPELVKNGIIVP
 VADAKSMANALAHMLSNPAQREWSKQSRLLSQQYSITTRCDTLEGIYHKIGAWSN

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>dtd 541891:542361 reverse MW:17606
 MRLVIQRVHHSRLYIDSNLTTEIGVGLVVLIGFGLVDECSLPNNICLLFVEKLATLRI
 PNKEGKFAHSLEDINGELLVPQFTLYGDCHKRRPSFHAAAGKVAKQFFITFYEQLCI
 RLPQKVGKGVFGADMVYFENWGPVTILIDSEEYTS

>LAW0446 542402:543601 reverse MW:43819
 METWALILAAGQGSRLSTIGIAKQFFVWKGIPLYWQSVLQFMHCARIRGVVLFVFPSEVK
 DNEEKVVDRLAAQYDLRLPYIVISGGKLRQDSVKNALNTLPKNCSHVLIHDAARPFISPK
 LINNVIIEVLEAGAVGVVPGISVTDTIKQVIQGEVIVTRPREQLIAVQTPQGFHLKTIVEG
 HNRATLEKWTVDDASLLELCGHTVQVINGEINRKISFPQDLLYMVEQPKTTVPIVGYG
 YDVHKYVTEQINQPIRSMRLGGISIPNAPNVVAHSDGDVLLHALMDALLGCIGGGDIGL
 HFPDSDKRYDGINSAILLDHVLTKELESSIKIVHMDATIVAQLPKISQYREAIRSNLSRL
 LDLDLANVNIKATTEEGLGFTGECKGIKAIIVITAIRIS

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>LAW0447 543696:543989 forward MW:10673
 MGDCHSSRNIVTYILKQPTQEHWPQGPVPLFGLASNGACLARYITITGRLLLHRFTLTT
 IINNGLLSVALAEDHSSWVLPVLPYEARTFLSINP

>LAW0448 544048:544812 reverse MW:29691
 VSLYINQICQLVSLQHVDDAIYIVEEELIQAPKELETLAAKFESVDSQRTLVIKLEHLK
 EREKRIHHEIEDDEGRIKRSKGLMQVSNREYQAMAREMDNMRNLNRTREEERNTLLEE
 KQLQETTIAEIESLWTAIKEEELKAGLDEYLDKAKNRLAELESSRSTTTSDIPRPILE
 RYEFIRRRLSHPVIVPVTGVCGGCHIVPPQTYIELQGGHKIINCPNCQRLIYWSKHFS
 EEEIKQEPVEEIES

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>LAW0449 544847:545644 reverse MW:29450
 MNYNNIINIIEEVAPLSVAATWDNSGVQVASSQDEIFCLAVCLDPTPESVYKASELGANM
 ILSHHPLGLRPRFPTIIDNYSVLKLKLLSKNILLYSAHTSLDANLYGPASWLAEVLELHE
 CSVLESIHHTNGVSSQYGFGRIGHFSSPVPVENFCQRIYPLIGEAVPRLIGELPRQIYRV
 AFCPGAGAEYAAEAARQKADILITGDVKYHQALEFSLPVLVDVGHFCLEEMMRRFSQYLQ
 SVLLDVTVVVPTQDPLRSFCIKEN

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>purL 545767:546591 reverse MW:30093
 MAQVNALVITGYGTNSHNETAHAIRLAGADYVDIKHFSEVVAAEVFLDSYQLLVFPGGFL
 DGDDLGAQAQAQRWRYLSKNGVSLTSLKNFIKGGGLVLGICNGFQLLVKLGMLPSLD
 GKLFDRQVSLSHNDSARFEDRWVSLRVNQDSPCVFTRGLSEKNLLSMPVRHGEGKIVRE
 PSILQQLIDGQHIVLQYADPTTGEATQEYPYNPNGSPFAIAGLTDTSGRIFGLMPHPEAF
 HHRTNHPGWPRGEQITLGTIIFQNAVDFCRTIDK

>pyrG 546832:548484 forward MW:61424
 MKTKFIFITGGVLSSLGKGLSAASIGALLTSRGMVTVIQKLDPIINIDPGTMNPYQHGEV
 YVTDDGAEADLDLGHYERFLGTSLSQKNNSTSGAIYYKVISKERRGDYLGATVQVIPHIT

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DEIKSTILSLAKSSIDNNTPDIAIIEIGGTIGDIEGLPFLEAIRQLQTDLGRQNCLYIHL
 TLVPYLGTAGHEHKTPTQHSVKELRSIGIQPNIILCRCEKPIPDDIKAKISLFCDEKDA
 VFSAADINNIYELPLKFYTEGLDQKITSFLNLPTKQANLKPWEQLVNTINNPKGKVTITI
 VGKYVGLTEAYKSLHEALCHGGIANEITVDLQYVNSEIITEDNVNEIFKGVGDILVPGGF
 GSRGIEGKIESIRYARQKNIPFFGICLGMQCAVIEFARNVAGIEKANSEEFNPVAADKVI
 YLMKEWYDFRNNAI EYRDSLCDKGGTMRGSPCTLIKNTKAFKAYQTDSIEERHRHRYE
 FNNIYRDQFAEKGMIFSGTSPDNTLVEIIELLNHPWFIGCQFHPEFKSYPMKPHPLFKDF
 IHAACNHNKQ

>kdsA 548515:549321 forward MW:29289

MTTDDLYHSLVSKHFIFAGPCVLESKELACNSATIIAEQACNTGLLAVFKSSWDKANRTS
 NSSFRGPTFKEGMEWLYSVKKTGLPIVTDIHLPEQAALVAEVADI IQIPAFLCRQTDLL
 KEAAYTDCIINVKKGQFLAPWDMKAVRDKIFATGNKLLFTERTTGFYNNLVDFRSIP
 IMKELGVPVIFDATHSVQLPGGKGESSDQGRQYVSTLAYAAAATGVNGIFLECHPNPKA
 LCDGPNSWPLNQLGTLAQLSAIWSVVK

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>LAW0453 549318:549929 forward MW:22899

MSFNNNNNNNKIANKTLEHQYTHTSFQEQLKERAHSIRLLILDVDGVMTDGSLYEDTG
 LCMKRFNVLDGIGIRLAKEAGLSIAIVSGMDVPCVERRLKDLGISDYHPGINNKHAHIDK
 LRTQKNLQWSEIAYVGDDWVDLAPMTSVGLPIAVDNAVPEVKELALYITKRKGGDGAIRE
 VIDLLLIYQNKKEALLHTWMNLK

>LAW0454 550004:550549 forward MW:19937

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MDSLFTTEKKQAGNELLNINDSDPTSVDHLSLENSLGLALKGVNLSQGENGIELWRLKA
 SWARLSKDRESIQVDSPIVQYLLGDGLNNDAITVRADKGGKIVENQNTIILWENLLIAQDN
 KSI TGPYMYVDTKKRHIYFPNGAQTSPQATSAAGKVTWDLKSNISGKNGIKVTIHAKN
 I

>LAW0455 550649:551218 forward MW:21487

MKLYFVSQVLLLIGLIYTYNQPTLYAQP IKKGSGLGTVETKIFSELDYDLEKQKITFNKN
 VHVQRPDFQLTTDTLTIYLAPQKKSQKNEDLSTNPISSKISAGELKHIVAKRNVCIKGDK
 YTG TAGKVTYTEKTGILLLEDSPVLTDGENTITGDSIRYYIYENRSEVIRGKNKRVEATF
 MQYSNEKVK

>LAW0456 551218:551940 forward MW:27072

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MATLKGVELQKWYGNREVCGVSPVIHQNEIVGLLGPNGAGKTSFYMLTGI IKPSSGKI
 FFENQDISSWPLYQRRVGISYLPQESSVFRHLTVRQNLQIILEYTTYSKSKQKQKADAL
 LEDFGLTYLENSYAVHLSGGERRRLEIARALIRQPKFILLDEPFAGIDPLAIDHIQSI IQ
 LLREKNIGILISDHNVRETLNICDRAYLMVKGQVILTGTDDIINSKKARSMYLGESFCL

>rpoN 552086:553507 forward MW:54298

MGLELKQQLKLSQQLVMPQLQQAIRLLQLSRVELAETIQKELLENPFLEESQEEIASER
 QETRTEHDPSEAYDQDVSNTADWEDYLGEFASTPKQLQSREYELSEEMSSLEARYASRPT
 LESHLMWQLRLSTLTDEQKNLGEAIGNLSSSGYLQASLEEIANSEHTDIEKLPVLHAI
 QRFDPVGVAAQSPQECLLIQIEVLGYDRDPILEVELIQNHLDDEAHRYKPLLRKLHITME
 ELKEYIDI IQTLDPGASYGEGDPTYVSPDAFVYQVDNEFIILLNDEGLPNLHLNQAYE
 HILEESSDKDKEYFSEKIRSAAWLIKSLHQRQRTLYKVVESIVKYQQTFFKEGITKLRPL
 ILKDIADDIGMHESTVSRITTNKYIATPFGIFELKFFFNSALGVDDGSQVGSSESVAIK
 KCINEEDPKNPLSDERIGEILKEQLKVNIAARTRVAKYRMSMDIPSSRRKVHF

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>LAW0458 553542:554078 forward MW:20723

MNIVFTFKNFEPDHLRKYARRRLEKLTRFVGKKSLEIQLLMDVDKFRQKVEVQVVGEG
 LNISAAETTEDMYGSIDLAIKIESQIKKYTARYEQRRSGRNKNIDIFPFELIDEDGVR
 TITGREHFSPPKMDLDEAAMQLETSGFEFLVFLNAETDRVNVYHRKNGDFGLIDPVI

>LAW0459 554113:555078 forward MW:36732

MTLKKIIPNLQKTQNNNNNSISSPLLPHTVQEYFPVIVGMSGAGKSTALHVFEDLQLV
 TADGIPPSLVTSMIHTVQSSSLEHVQGLALGINQHRITMQELEHTFQEMRSQHIYFTLL

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YLEADMPTLIKRYAATRRPHPLEQYHIGLEHALEEEAKRLPIRQTADIVLDTTYSIHD
LRRFLQKSWNPYPEKIRSINIISFGFKYGVNEADLLFDRFLPNPYFVEELRPLSGM
DKKVATYVLNSASGIKFKKHLIRFLSFLPLYDAEGRYRITIALGCTGGKHSVAISELL
LHELTKKNYTVSIEHRHMELG

>LAW0460 555553:556104 forward MW:19950

MKKLILTFALLLVNITTFASEPFTLSSPQMNGTIATNQVNSFGCKGKNISPSLEWKN
PPEGTKSFAITMFDIDAPTGGWWWIVYNIPTSTSSLVLGAGNDPKKLPKGAQSINDF
GFIGFGGPPVGAALHHYIFTIYALNVETMDLPATMPAAIGFNIHMHMIDKATFTATY
SRK

>LAW0461 556323:557819 reverse MW:54899

MKKVLISAFLVGTLTASLSAEAIDFKAKGVWDFNFEWQQSSFMKGDGDQRFSPKQRLR
TQIDIVASESLKGVVFFELGKIWGRGVDGASIGTDGKNVIKLRYSYVDWVIPTDVQVR
MGLQPYVLPGFVAGSTILDADGAGVTVSAVFNLDYLGATAFWMRALHKNYDSNYGISKLPN
FKGTTLDVVGLTIPVTISDIKIAPWGMFAFAGKKSLLGESYGDIEDVRAGLLPAMPAGFG
YSWGAGNPFQDVFPNKKRGNAAWVGLSAELAGSSPLHIAVDGAYGRADLGLRNVVIGDF
LLDKIDLKRQGWYAALLAEYKFEYVTPGVIGWYASGDKVDNRGASKRIPTLVGNWSATSF
GYSGAYGIGKDSVFGNTIAGSWGVVVQLKDISFLENLTHVIRGARIQGTNNKDVPEHLGL
SYVTTIYDTRGGDNMLYLTKKDYAWEVDFDTEYKIYKDLVALELSYIRLELDKKNLWNLQ
REVDKNAYRAGLNMKYQF

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>gltX 557976:559373 reverse MW:53399

MKKVVTRFAPSPTGQLHIGGARTALFSWLLARHFDGIFHLRIEDTLERSKQEYTDITLE
SMSWLGLNWDGEIVYQSKRNERHYEVIDILLQTGHAYWCHCSIEQIEKMREEARQKGEKP
RYNGCCREKKSANPSGVVRLKVPASAGQVTFNDLVKQVTVQNTLDDMVLQRSDGTPY
QLAVVVDDHDMQVTHIRGDDHVSNTPKQILINYALGWEIPIFGHIPMILGSDRQKLSKR
HGARAVIEYQEDGFLPEAMLNLYLRLGWVSYGDQEIFTLQELISFFDGTNLHSAPAAFNIE
KLLWLNAHYLRRLPVSQIANLMLPFVRKEGFTHITKERIEAVLPLYVERADTLKELVYLM
KPVLISASDLTYKEDDIKIVTNESKEHLDRNLLEAEINFEPLYIEQLIHEYITSNNL
KFKEIGPILRLAVSGVLGGPSLQELIVVIGKKEVLARLDKLRFL

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>LAW0463 559477:560727 reverse MW:46841

MNISKARLNYSRGGKICKLDKVRNKQQQLFPQIISDLTPFTKQLEILPYILDKTLHLS
HSQRIALPDDIHNLSCLLTSERKGLYKSYWSNARFCSAYLWYFFPWNLIRLTSLSNLAL
PEPKSEVVIMDLGSGPLTLPVALWLSKPTWRNCKIKLICVDTAIQPMNIGLKLKQIAAQ
LKESFVWDVTLIRGNYTQVLKSISSPLHLIMSGNMLNELKGTNHLIRSRMEQMVMLINN
VLHSDGAALFVEPGTRLGGKLMSTLREVAIQDTFISIACTHTAFCLFNSTNNLWCHVL
FDVDAPQWLLNLSQAANLSKVVSFSFQLLRYRKNTLKLDDNTTSFLTGRVLSGGFPVLG
MGTAQYVCTKKGLALMSYTRGIPSGARVLCKPLPGNQRDIRSGALKVEWVSTLEKE

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>pgk 560781:562121 reverse MW:47854

MHMCSMSELNLQGGKQIVLREDLNVPLKDGVITSDKIRAAALPSIKFALERGAGVVILSHL
GRPEEGKPTKEASLAPVAARLSELLGMDVPLITDYLNQVTVSPGKCVLCENVRFLVGEKK
NSEELARKLAALGEIYIMDAFATAHRAQASTEGAIRFAKHACVGPLMAAELKAI RHILHR
PNHPLVAIIGGSKVSTKLQLIENLSRKVDRLIVGGGIANFLKAAGFEIGLSLYEPPELVS
TAAKIMRETHRHSVPFDHGGKLMANAYKQGFPELTLGAKVIEQVSQHMSPFDLGETTR
KEDSRGISSIPLPSDVVATELSEKATAIRKVVDDIKPDEKIFDIGPETAQRIAEYIMNA
GTVVWNGPVGVFEIDQFGLGTKIAHAVAETKAYTVVGGGDSIAALEKYGYLDKVDYVST
AGGAFLEMLEGKILPAVAALASASS

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>LAW0465 562525:563409 forward MW:33257

MDLHIITEPLIDLVDRAFFWQSPKTQKISSIIILVIFLCALASIELNREGYLPKNLSII
VPTNHFRASLAFTCILCIELIALVLSISQSLSISVGKQLEIMALILLRNFKELAYLSE
PINMDSAYHLYTICLAAITSLGIFICLGFYQHMPKLTKYIYNPRERLGYINAKKIVALF
LLCLLTVIAIRDYQHLITGKDVAFETVYTVLIFADILIVLVAQRFMPTFSAIFLHSSS

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VVATLIMRLSLSANSPWNAIGAMFSGLYILAVTWAITYFMKKPFSIRKNKHIVD

>gaIE 563439:564431 reverse MW:36730

MKVIVTGGAGYIGSHTCKELARQGYNP IVDNLSTGHKSLVQWGEFEYGDILDL SRLQSV
FHKHKPDGVIHFAAKSIVSESVSNPGYYFRNNVTGTLNLETIYNSKVKYIVVSGTCAVY
GQPEQMPIHEDMPKLPVTTYGVSKLVMESMLKSFEAAYGLSWVSLRYFNAAGCDLDGETG
EWHEPETHL IPL I LKTITSNTPLTIFGDNYPTEDGTCVRDYIHVCDLARAHLALNYLAK
GETSEAINLGTGSGFSVRQIIDSVERITGRSVPYRLGQRREGDPPCLISSNQKAASLLGW
RPQYSNIDQIIASAWNWSNFCNTTFYNNR

>cynT 564532:565308 reverse MW:29198

MKKVFIYSIHVVFWGCIVFFIPPNFANAQKSIKKGSMEESSLNVEAVKILEEGFRRFQK
LHFCNPDSPYKKEELSEGQQRVLVIFSCSDSRVDPAILTEAKPGDLFVVRNINSLVPPCTK
EDGSYHGVTSAYEYAVEHLHVDTIIMGHAKCGGIHSLLLPGSYTGKSFIDRWMSIAKPA
KILAEEKFPNAPFEVRQKACEQFSVNSMNNILTFPWVKEAVKSNLKVYGWYFDIVSGE
LLQYDPIKKEFFVLVPSC

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>rffB 566233:567591 forward MW:50580

MSNKSIDPIITVKQLCKSYPLYTKKQDHLLELDFPFRKQRHTLFHALNSISFSIYKNES
IGIMGINGSKSTLLKLLTGVLTPSSGEISVKGKVSALLELGAGFHPERTGLENIFYQGA
LHGQTKQEIDSYLAEIIQFADIGEYIHQPVKLYSSGMFIRLAFATAIQGNPDILIDEAL
AVGDVRFQRLCFQRIEELKQQGVTFIFVSHSSDQIVAHCSRALLLGNGQLIMDGEPRNVV
NRYMDILFNRNDKLSNTIKANVTLPEISITVTEKPTELTTNYDLKDKELNDPYSLHPWY
NPYEYRWGDGRATISDIHITSSGNINNVQPGDYLSIQLKTVFHTSIRPIFGCTIKTHDG
IIVYGSNTELTGSEILYDHVSAGSITFVTFTMHCNLAPGDYFFSFGVAVMEKDTVPLDRR
YDSLLLVHGPANFFGLSNLNMIRNSGIKHV

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>LAW0469 567584:569458 forward MW:70906

MYNVLSQLYNYQAELENIWQCDTPKIFNYSGDGEIEDRLYTIKQVEDKSILSDELQTFQK
DWATTYHLSASRANLLRPIEKTLLKDATVLELGC GCGGITRYLAETCAHVCSVEGSQRRR
SITALRCQDLTNITISDSIYDLSPKIGSFDIVTLIGVLEYARLFGGEYAETRLKKACS
FLKPGGALIIA IENKLGKYIAGIPEEHLGTSWTGVMDGYTSDGIVTFNRKELEDLLIQT
GFSQLQQF IPLPDYKLPPTVLHPEGIVAEKEFQRAPLIAASSRSFEKPLFNIQQVWKG
ICNTNMLANMADSLCFIAWKTYESDKTISWPKNILASHYGTFIQKQYAKETQFIRSDDG
IQVLRRLHIPGLQKPNAFSQLLEEEPIYK GELLIEKVRQLMVKYNWTIEQIAAVLQPF
SWLCSQCIPGTTDLPAELQDIAPFNVLDDKGA INPIDIEWTSIQSIPLLTMLVRTLSST
FIRIGQVAPPATNVPLKIIPLLHQTICILYKPI SMDSIHAAWEDTENKVTCYLGVDCPWE
TMIHAELSVIPNMPLSMIQSLKTDLCSLSEENKNLREELTSCYNSRSWKLTKPLRFFSNK
LHNYRAVIKNFFTFNMLLFIIITY

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>LAW0470 569852:570466 forward MW:22820

MPLFTRSYSTFWLTLNLVFLLLPACGTKEKSLQSNELLSQPIESQDNTTSKTELPKISLI
KPTQGGKHISSEFGMRSHPIKRRQLLHTGIDISGKRGDKIIASANGTVVFCGRRGSYGLTI
DLDIGNGVILRYAHLDRHLVKKGVEVYQQQCIKGLGRTGRATAPHLHFVVRVNNIPVDPM
QFIIPTHHWTKKPQPPSTTTKKEM

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>LAW0471 570504:571607 forward MW:42836

MTQSLPVLMYHISNYPSSISVSPHNFEKHCQGMAENGWRGITLQEAESFFLKGEKLPPK
SVLITFDGFLDNFVYAWPILKKYEHSGVIFTVTERILSEQIVRPTLFDVWDKISNKVL
YELVDMPKQTKLGLKKRQDVFLSWEECRIMEKSGVISIGAHSAHLSVFANNTWKDIYI
PSDQHRFTYKIDAPIVWGMPCFKEKSALHCKAFIPSNKTELITYHVPQQKQAYEYFQQ
PHNITSLKQKIQTLSNSLGSFETWGQQKRLISDFEQCKNTLEKELGHNVSFCWPWGE
SSIIAQRIGKNFGFSYFYKTSMGANPSKKYTA INRFKVRNKGWNWLRWRLEIYSRIMPAT
VYAKIRI

>LAW0472 571638:572678 reverse MW:37354

MTRILSLLSIGAWFLLLWFPVTTFLATSMACVSYPYFLKLTQKISRYWAIVIY TICLSL

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L I L L P L I I T I S L I V P Q A V A G L K I L D Q L R E P G F L Q S I N A D Q M L D S I D R W L K E I P G L E G G V K
Q L A S S I A G I V G S V T R S V L A G G L G I A G G A F H A V L T I F I F I M V T V L C I T N A E L L Y T M I R I T S
N F S Y E V L N R F I V T I R N A I F G V L V G I V L V S I I Q G F L C G I G F A V A N V P Q P A F W G L I T A F V A P
I P F V G T S L V W I P V C I W L W L Q G E T V A M V A M I I W C V I V V A G V D N L L R P F F L K T G I D A T L I A L
I L S I L C G L A A F G P V G I V A G P I L V A I A I Q A S K E S L Q A L Q I T D R S C N K

>LAW0473 573983:577249 reverse MW:123357

L I G T N L V Y L L I I L I F F Y P S P V S Q G S I E L P P I E A F I A K W A P S G G S E L G S S Q S F L L E L C D L
L E I S R P E S P R A T L V D N T Y L F E M P V I L T D K N G K I T T G R I D L Y K R G C F I W E S K Q G S Y K S T S Q
N K G L H R R G T A I R G T H A W D A A M I A A R I Q A E R Y A Y A L P A K E G H P P F I I V A D I G H T I Q V Y A D F
N D T G F Y A P Y P S A R E N T I L L E D L R K P E I R E R L R K I W T D P L S L N P S R E N E K V T Y Q L V L T L S D
L A Q S L E N E G H D P D V V A L F I M R L I F T L F A E D C G L L P F N S Y T Q L L A R L E K T P E Q F A S A T T D V
W K A M K T G G N S T A L G K Q V V C F H G H L F E D A E A L P L N K E Q L A I I Y K A A K A N W S G V E T S I F G T L
L E R A L S P K D R Y K L G A H Y T P A Y V E R L V I P T V V D P V R E D W E N V K L L A L S H V V K G S H K E A I Q
E I E V F H K R L S E T I V L D P S C G S G N F L A V S M N V L K D I E G E V V Q S L K D L G L S E N E I Q K K G Y S I
T P K Q F K G I E Y N P R A A F I S E L V V W I S Y L Q R H Y K V Y G N V Q P P E P I M D N I Q F I E C R D A I L T W D
S I K K G K D S L G N I Q E T Y I N P R P A D P W P K A D F I V G N P P F I G N N R I R S A L G D G Y V E A L R S A Y P
M L P K N I D Y V M Y W W H R S A L L L R E N K V R Q F G F I T T N S I K N P S N R K I V E S Y L E N K P Q L S I V M A
I P D H P W T G A K D A A R V R I A M T T C S L G D K Q G I L Y T S I H E K Q Q D G F V E V T F N S S Q G K I H A N L S
V D V D T T K L V P L K A N K G I A W S G V S I R G K H F I I T L D E A K K L G L G T I P G L E K Y I K P Y M K G R D L
A G I S K N T Y V I D L F G L S I N E V Q Q N Y P T I Y Q W I A T K V K P I R E K N R L A F R R N H W W L F G S Q G I G
L R N A I N N F K Q Y I A T P R T A G R R Y F A F I N K L V V P D D S L T V I A S D D P Y I L G I L S S K F H S V W L T
V T A T S R G L K P N T N D V Y N K I C F D T F P P Q A T E Q Q K N R I R S I A N M L D T H R K E R Q K Q Y P Y L T L
T H M Y A I M E K V Q H N V P L S S K E S K I S L Q G D I Y N L L R L H T E L D E A V A E A Y G W P K D I K T H E A L S
R L M E L Y N I Q A E E E K A G I I H W L I P E Y Q K Q Y D G L V S I S D Y S Q L T S M T K Q F L P L F D M N I E K H I
I K G N Q Y T N

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>LAW0474 579345:579749 reverse MW:14672

M G A L P N P L R P S I G I Q L A P P L V A C E A Y L F V N G G H T D I F S Q I L F G Y G L L Q L I F L L W L L L W T F
E Q P F S V S F W A F S F G V S A L S V S S L H F F I E N P E S V V G Q M A I P I F I F S N G V I A L L I L G T L L R I
I Q G K F L L S T P V A S K

>LAW0475 579945:580343 reverse MW:14774

I K E V I M L E P F S P I K T F P I P A A Y L G M V L G I S G M G T A W R I A A K I W Q I S T L W G E C L M L L A G V V
W L V L A I I Y I T K W I W Y R P A A L A E V N D P I Q C C Y I S L F P A T T M L I G A G I Y P Y F H T V A L W F V V V
G T I G Q L G F A A Y R S

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>nrdA 581215:583965 forward MW:103679

M E H P E V A F S L A A M Q V I R R N G D I V S F K S E K I A A A L T K A F I A V K G E Q S P L S S S L R D V V T H L T
E T V I S A L T H R F P D G G S I H I E D I Q D Q V E R A L M Q S G E H D V A R A Y V L Y R E K R A A M R N T S E K K A
V L H L V D K G E K K V L D H T W L M N I C H V A C K N L T S V S S I S I F N N T L K S L Y D G M S L A D V Y S S L I L
S A R T M I E Y E P E Y N K V T A R L L R L S L A Y E V L D Q S T E L M D L H Q L K I A T I S Y F P K F I E L G I N A G
L L D P R L S T F N Y S Y L A Q A L V P E R D E L F G Y I G I Q T L Y D R Y F L H I K K R R I E L P Q L F F M R V A M G
L A L N E K K K E D K A I E F Y N L L S N F D F M S S T P T L F N S G T I R P Q L S S C F L T T I N D D L E N I F Q S I
K E N A L L Q K Y A G G I G N D W T P V R A L G S P I K G T N G Q S Q G V I P F M K V A N D T A L A V N Q G G K R K G A
V C A Y L E T W H L D I E D F L D L R K N T G D D R R R T H M N T A N W V P D L F M K R V L E N S D W T L F S P N D V
P E L H E K F G L E F E K F Y T H Y E A K T L T G E I T L F K K V S A V Q L W R K M L T M L F E T G H P W I T F K D A C
N L R S P Q Q H I G V I H S S N L C T E I T L N T S K E E I A V C N L G S I N L S S H L I N G E V D Q N K L S Q T I A T
A L R M L D N V I D I N Y Y N S P K A S Y A N L Q H R P I G I G I M G F A D C L Y K L G I P Y A S H Q A V E F A D R S M
E I V C Y Y T Y W A S T E L A K E R G A Y S T F P G S L W D R K I L P L D S L D L L L K E R G G F L E V D R S S R L D W
D A L K D R I A K Y G M R N S N C V S L A P T A T I S N I I G V S Q G I E P A Y Q N L Y V K S N M S G E F T I V N E Y L
V N D L K K L N L W D E A M V A D L K Y F D G S V A Y I D R V P D S L K K L Y A T A F E I D P V W L I E A A S R R Q K W
I D Q A Q S L N L Y L D T P S G K K M D E I Y K L A W L R G L K T T Y Y L R S L G A S Q V E K V G T N S Q S V L K K D T
V L R A C S I D D P E C E A C Q

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>nrdB 584106:585107 forward MW:39046

MPVNASDKRIVNGKTDINQLLPFRYPWAWDFFLKANQNHWTPLI SMSQDVYDYNHTLTT
NERHVFDNVLAYLTTSDILAMRNIGLAVMEKMTAPELQIYQARQVYEEALHTWTYQHCIE
SLGLEQSEIYNRYRVVPEIYGKILLSNKRLEQVLRSDINLSKDNLHEFIMSYIFFAAIF
EGCWFYNGFSPIFSLQRRGLMKGTAEQFQYILRDEVLHCTFGITVIKGLIEEENITLDPT
AVRQLWDEVEAAE IAYANYILHEPIIGYNADLHIGQFRFIANRRSRQLGMKEPFPGAKNV
LPWLDEQSNLRKEKNFFETRVTETQYTGGLKWD

>LAW0478 585484:586632 reverse MW:42354

MLVMPGLINAHTHVAMTFFRGLADDLPLMEWLKSYIFPIERHLTPETVRWSSLLGYAEML
RTGTTACLDMYFFEDVVFEAAIKAGIRCTGGESIFVFPVSCDTAKTALEHTKKMAELYS
DNTRINVVVNPHSVYTTTPQVLSQIEVAEECSLPLHHLSETTTETQICLQKYGLRPVS
YCRDLGILTPRTTLAHVVDVNLEELTCLAEHGCVISHNPSSNMKLASGVSPPEMIKRNL
SVGLGTDGAASNCLNMFEMGRCALLHKVYWNPTALFAQTVLDMATLGGAAAIHQPKL
GVLAPGHPADLIALDMSMPNLQPMFNPISHLIYATTGMEVFLTMVEGELIYNGTFRFD
YDLSLSNEMKKVSHWVKEKLQLL

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>LAW0479 587222:588658 forward MW:54854

MNFVTLEFCIFFPIVLFILYLSCYHLGIYKGALLAGNIFFYAYAGLTFLPLLFTVILLNW
CTGKFLFSSKTTCSKKIITINILHILILAFFKYYEFILSLESIFSLGRSIPITLPMI
DIFFPVGLSFYTFQGLSYSIDQYRNPTSHPESEFINVSLFISFFPTILAGPIMRGHQFFPQ
LGKCNYSDELITGFALILSGLFKKVVLASYLSEHIVRDVFQSPGIYSSWTILTAVYGYS
IQIFCDFSGYSDLAIGIGALMGYRIPQNFNAPYLAYNLQIFWHRWHITLSQWLKDYLYIP
LGGNKKGNRYINLIITMFIGGLWHGSHLRFLIWGFLHIGLALVHFIKTVCASQTNVQYL
LNIPFIKTIHYIISWALTFFHVSFLWIFFRAEDVPCALEIKRIIFGQEGEGFPILVIP
VILTGLLIQVVGPIILTSFTKFKRLHWIIQTFVLAFIAGIILKMGPDGIMPFIYFQF

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>LAW0480 588676:590637 forward MW:73741

MVKQKKITSTQLTPSRSI IYIVTLFILLLLDTGRVIPILNRLSSDFPSISIAAQFIQKT
AEISKLTELSAFESTIKQVSLNTVIGEIPVHNSYPQKEGEEDTSHSHPEKFEEACKMQ
QDAVMDHTEPHLTNELSPPLTSTPNLEGNKSETLSTSPINTIDQSIPTNNNTILIGDS
MINEGLGPVLQKTLHNQYPFKVIREGKYSTGLSRPDYFNWPERLTLVFNKHHPKLILCL
GANDAQDIFDDKNHRYHPGSQEWWKIYTRAKHLLNIATSQGAYVIWAGLPI MGKVPYAT
RIQYVSECQKKACDETVNTQFIDTQSVL ATPQGKYTTYTQESNKHIRLRAKDKIHVTEAG
GRLLMNHLPYIKQSLETITVNNTKDNKQDLYTSNAENDIVIYIPSSIQQASIPCSVFIP
QNKSQEKYPVLLLLHGVGCTNEIWKQMTGDLLQQLATFHSIVI IAPDGGKNSWYVDSPLI
QTSQIESFINELKPTMLEQLPIDKWSIAGISMGGHGAITLGLRHPMLYTSMSAINGVL
NLMVHPHEWGIKNVLGELSDSQQLWESYSAYHLIDNISKEDVPPMLISINLTDPALDENR
CFFHKATKLNLP IQYSETSSDQYWDYCLYQLPIHIGFHAKKLHHHNELSQNND

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>LAW0481 590701:591078 forward MW:13882

MIKDKKLVIVIPSEFPGLAARLSPHFAYCETYTLTTIKNNVVLHVTTTRPNI IQESNVKR
AIQNIAELQTNILIVRIGLHPLAILQQGKIKIYYSKNLPTVSTVLSSFLQGMLIPYNQS
PHTSS

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>motA 591277:592125 forward MW:30780

MYIIIGYFIVIASIIGGYLMAKGNLALLFQPAELV IIGAALGAFFASQTKYSFTLVIKN
LSHIFGDPNSTKIKYLETLALLYGLFLKMNREGVISIESDIEKPESSPISKYPTIVKDT
KVVAFIADTLRVYLTGAPEDIDNLMESDMKITHEEELLPAHSISHMAESLPGMGIVA AV
LGVVITMGKINEPPEVLGHYIGAALVGTFIGILFCYGGFFGPMGSKLETSAAEEAHFYNSI
KEAVAAAIRGSTPMIAVEYGRRAIPNTFRPSFSEMEERLKTG

>motB 592170:592883 forward MW:25991

MSGSWKVAYADFTAMMAFFLLMWILAMTPPEVKEGLAAYFSSSDATFKTPDSSPISNNP
LINQIDKLDTRQLKINETEQSHYALANKLKKMLMADAIPQSATGISADDVGVLLRVNSNS
TFLPGTATLTPEGKKVMGTVLAVLREYNLYLVIRGHADIGEITKGSPFASNWELSGARAA

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AAAQYLVEHG I KASR I RSVGYADTRPLEPSSPEGSTKNRR I EFYFHRPEVMSYGVVY

>LAW0484 592910:594616 reverse MW:67173

MSFLWEKAFSQQGAFPWKDVCFSCKIDIDNLETFKHYLDFVQIKFCLLKEWSTQPQYPLI
EHRELLPSFEAELEKELPGFSMVAFARPLESFNEIFQYDILHSCDPLNSIPGKEEKEA
ELKCIAHNIQTFLTRLPKNNQDAFKQRFQHVDISSLDYYPAILPYLCHMDRAHVFDPL
GYYYLAGIFGSFPSDIDGEIKRYGLKIRKFQLGNNSLYEQNRLFVYQFLMELYGFPVASE
RR TSAALFSRRLHKMGEHF MVRVLGQSDRVITTIWNNGGNRLYPRVEKVALIRVEPGQKE
VIERLSKGSYFVDPKNYIAIIRIKYKQHRYNHDNVRQERALSVESQEI IHPLTGEILEDV
NIIKDTSTIILHLNDIVRGEYVGRIVYKRNELIENTETEEKRLKFLFAWLSKNQRRLVSY
SDEFFTSMVKILEGYLHAPNHKDLFEEYGDLYHEVMNKYAIRQARMVKHLEDIMSRNVK
GVRISYNKM LLEAVKILRELKFELVTYFDQITATVIHHIETILDDRYLRRTYIENPKKEL
TPAGYEIRKNYGRLVSLHDTFISIQSSR

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>LAW0485 594907:596061 reverse MW:42320

LIIKYKVLFFSISLLVVMGVTIPLPVLPAIAQRFMLTTEQVSWVTVAYTSPGIIMALIAGV
LADRLGRKAVLVPGLLFGIGGLLCAFSLNFTMLIFRVIQGMGGGVIQVLYATLPADMY
HKEDLPKIMGQISAVASIGIAIFPTVGGLLGEIVWHAPFWVSI LAFPVAWLSFYLPLVKG
SSSVKWKKYFIDTKEIITNQKALILFSLTFLSYCIYYGPVNTYFPMMAHIRFYVSPAIEIG
NIFII LAIGIGMSAFSLGWLNNHVQFNILLMAGFGYFLAQFSFIIMPSMKWMI VPLIFE
GLAQQITLPIVAERIAILAPTNNRAAVMAVNGSIFRFSQSVSPLIFGLAWTLGWGHPYI
LGVLF SILIISIVLFI VRKKFNTI

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>motA 596408:597160 forward MW:27082

MDIATLLGIVFGFTLVLAIFIGPVPKFIHVPSMIVFVGVSASILISFPFEDVRQAIS
AGVKAFSSKKTASDVVTMVKIAEISRREGTLALERIQTDNPLLKATQLIADNADPSL
IHDTVAIEIASLKRHKVGINVFQKLGYLGLAFGMIGTLIGLVQMLATMNDPSELGEGMA
VAILTTFYGSIIANLVFIPIADKCLKAKSLQEELILFII FEGAKSILENNPKLVYEKLS
FLPPKERIRA

>motB 597267:597887 forward MW:23071

MSSLDKEKFDSSFSAIRDTFGGDQKNIITTKQTIKESEVADFLKLREEMIAAQKNTFDAI
RSFITEHALGDNIKATFDNGIITLRLPDEVLFAPGSEQLTQQGEKALSQRDLFLKNREQ
SINIKGYTDNSSVSEGARFHNWELSRVAVNVLKLLQGGIEATRMTATGLGDLDPLAP
NDTPENRAQNRRVEFTLERKVTNPLQ

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>accC 598269:599687 forward MW:53384

VKKIRHKVLIANRGEIAVRIAQACRKLGLDFVCVYTAEDLASGHVLMKEFGTSQSPLYKI
ASYHDANEILSIADESGATAIHPGYGFFAEDFRFARRVTRTRNLIFIGPSWRVIRELGD
KINTKRLARSLKVPTVPGSDKPIYDEMEA EK IARILYSFQVQQG IQRPLVLVKASAGGGG
MGI EEVYDIDQFRAVYRRIRNYALRQFKDEGVLEQRICNF SHLEVQIIADQSGKKPVHF
GTRNCTIQSTGLQKRIEVAPGFYPTIKYNFNAKVLEDITNYSLTMAQKVGYNVGTWE
WIVTHKGNPFLMEVNTRIQVENGVSAR IAR IHGKDGVDL IAEQIRIALGEPLGYTQNDIS
FEGVGI EYRLIAEDPDCKFTPWVGCI DTFSWKDQPWLT MHTHVPTNKPYEIPVEFDPNLA
LAI IWGKDLAE AQQRGLKFLNQLSLKGKNQQGETLKSNIQFLKSNTERILQF

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>LAW0489 599700:601946 forward MW:84396

MDIEKQIYHLTERLNYLKDIFAGKHAKVIELLQGRLATFTNRTNGETQQDPSAEIGTLEE
LFTFMEHKLETKLTPMDKVRIVRHPQRICLHDI LENVYDNFTEIAGQQEHSIDPSMLIAR
ATITRRRGKKTYNQFIMVIGQEKGHEEFRNGGSVKPWGNSKALHYMKVAETEGIPIHTY
VFTPGSYP IEDTPGAAQQIAKNLYEMADLSVPIISI ISEGGSGGAEIALADKRLMLSHG
YYSVISPEGAAAIEGKLPGERATPELIEFCANQLHMTAKDNLSFGFIDGVIQEPDLGAR
PHHYDFFRKLQRQEVIRATDEVVLGVRGLGLFRRIALNRLGKEDINIDEMYVGNLNLKSC
ARLVSKRQKKFITLSKNSCLDQRPFNFHLLNDSIGTLVSKTRYFFYTKCQRKIRFVF
DEITSELHLVKSRLTAPLCRIRPPKRIIEEAVVHQLTTLSDWDDTESRKGRWSYISPRAT
EDRSISCPNAATHGCFDLWAPDLFGEFAGVCTSCGHHFMEYQWVAKNIFDENSIREFNT

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EIEAINPLKFTKFDEKLEIARKKTKLKSGCITFEATHGIKTIVAFVGSFRGGSVGAAGTKFVKAINRATKKRYPFLAYVHGTAIRIQEGTHGLAQMPRCTVAVRRYINAGGLYIVLYDTNSYAGPVASFLGCSPYQYAIRSSNIGFAGRGVIKETTGMDDIPPDYHNAYKALARGHIQGVWDRREAQANLKQLLLTVGGRNLYYR

>LAW0490 601994:602644 forward MW:24536

MLDITLLEHIKKSPYEEVTISSPHTGIVTFNTLNIGDKVNGPSGTWKEKSGTLLATLTERNSKPIYSQQKGYVATIHKELEGTFVQAKTPLLVI RHFLSKDEVLQLILQKALHIFSAPERAKYYFTQQVDAKIRTAGCKSMVYDGMELFIVSRMKRETPLHYSGPEGIIYATYFQHNENNVVGSPLIGICPQNQLQQIEDVILKVQTEWQEQE

>LAW0491 602649:602993 forward MW:13118

MGKILQIRVSAWYREEDVAITWPNLTELTPPYHGEKRGVLELVDSLENQLSFGDWP
TTIKNTLHQGIQNLVQTKKLELALADWKPKEANDLSNILEDQLTELNQKVLLP

>LAW0492 603031:603486 forward MW:17128

MLNKVMIIGRLGRDPEIRYQTGSPVCSLNIATDESYTDRDGNKVERTEWHRVSVFQRAA
ENCGQYLSKGSVLFVEGNLQTRKWQDQGGQDRYTEIKAQRVQFLDRKGADLGQGLYQQEQPVSSNTTQQNGFEDISPPSEASGMDDVPPF

>gInS 603604:605301 reverse MW:65553

MKKEDISHNVIIGKDFLRARI IQDIESGRFDKRVHTRFPPEPNGYLHIGHAKSICLNFGI
AKEFSGQCNLRFDDTNPKEEVEYVDSIREVVKWLGWDQWQREFYASDYFETLYSLAEQL
ISLGKAYVDSQSADIRETRGTLTPGIESPYRNRVVEENLDFRRMRAGEFPDGLHVLRAKIDMSSPNIVMRDPTLYIRHAEHRTGNDWCYIPMYDFTHCISDSLENITHSICTLEF
ENNRELYDWILTTLNMYHPQQIEFARLGLTYNVLSKRKLIQLVHEGHVDGWDDPRMPTIS
GLRRRGYTPESIQNFCSRIGVARSENLEVEYSLLEFCVREHLNATSPRVMGVLNPLKVVIE
NYPDDKIEWIDMPYSSDNTIPGSRKVPFTRELYIEQDDFREDPPSKFYRLYPGGEVRLRY
TYYITCTEVIKIDSEKGVIELRCTYDPNSKEVEKTDKKKVKGKIHWVSASHSIPVEVRLYE
HLFTLADPSTASEGTHISELINPDSKQIVTGFVEPSLKGSKPGEKVQFERVGYFCVDPDT
QGDRLVFNRTVTLKDSWAKIEKKDT

>LAW0494 605340:605717 reverse MW:14680

MKKWMVICFLVWFVSPVMAGSRFDDIDLNKDGYISWEEFQTVFPNLKKAFAIDAIDTNKDK
KISREEWERFQKSHEQNVQSEEGKKEMDNVKMHQRSPEELTDSEQPKTTSTKSHMKPLVQ
PPVTK

>LAW0495 605999:607135 forward MW:42509

MKIQYSSISKSSLRRVLHVTPSLSLGGTEKTAQLFATYLNKKYFNVAVWSPSSGPRADIL
KNAGIPVWINIPLEAVLYRFKPHIVHLHRAGWPEPKLMRAFRGTHWFHHGVKLPKIIETN
VFGRHDPSSHSGRIIDKTLFVSHFCAERFSNAYKEKVPSNRYNVLYNPVDVMFIAKHTTPP
EKKNFRNAVIGRLSRADKGKWSISFGLHIPTIISQIPDLQYIVGGIQEAYDFVTTQNL
SNNISFLPEITTELELANYLDKLSIFVHANDTGESFGLSIAEAMSAGLPVTHPCLNFKD
NAQTELVHGVGTGLIATTPKEYADFIIMLLKNPDI AQRMGIAGQKKAFLFDVSLLLTHKL
EHIYHNLCPNLAACAIPS

>LAW0496 607449:608588 forward MW:41157

MKFAVMFGTILTIILLYGAIIPSHASEPIKIGVYLPLTGQNAYGGQLELDGIKLAHDLNP
VVLNRPVQLFIVDNKSDKVEAANAVKRLIDQDKVCVIGSYGSSLSLAGGEVAEQAKIPV
IGTSCNPLVTQGGKYYFRACFIDPYQGAAVATYATKNLGVKKAATLTDVSSDYSVGLTA
FFKKAFFVHQGGEIVANLKYNAGDQDFTAQLMDLIAKKPDLLFVPSYFSEGAIIKQAKEL
GATFILMGADAMDNPDTLEIGGQSINGFLHTTTPYDIHMPHMSQEATKFTQAWRKTFPYK
DPNVNSALGYNCYNIVIDAIQRANSSNPEAITHALENTKNLPTALGILTINKHHDAMPV
GIIQYQNGKRVYLGEVTGE

>livH 608669:609562 forward MW:32660

MILNIFQHFNALTLGSLYGLIAIGYTMVYGILRFINFAHGDLLMLGAYCLFYGTTLFL
LPWKISIIAIFGVSLIGMLIDQVAYRPLRDAPRTSILISAIAVSFFIESSAVVLFSGLP

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RPVFQPEWLISPFISKIRILPLTLIVPIVSFFLVLALLWIIYKTKFGLAMRAISKDIET
TRLLGVPINRIIALTFALGSALAAASGIMWSLRYPIQINPYMGVFPGFKAFAIAAVLGGIGS
IQGALIGGLLLGFIEIMTVAFPLTSLGYRDAFAFIILILVLLIKPTGIFGEYVEEKI

>livM 609559:610602 forward MW:38240

MNSSTRNYIFNVLTIGVIVLFLLLWAESTFNGYQIQLLNLI AINTILALS LNLYGFTGMF
SLGHAGFMAIGAYISALLILPAEQKEIMWILEPIIWPFSVLETPFWFSILAGGLVSAFFG
LLIALSVLRLGGDYLA IATLGFSEIRVILINVASITNGSLG IKGIPSHTDLFVTYGWLF
LTLFFLIKLLQSNFGNIFKSI RDNEIAAKVMGINTLHYKTL SFTIGAFFAGIGGALLGNL
LTTIDPKMFTFLLTFNILMIVVAGGLGSITGSILGSI IITILLEWLRAVESPFNFGSYQI
PGIPGMRMVI FSLILLGIILYRREGIMGMKEISWTNITKFFSRKRDI

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>livG 610599:611405 forward MW:30293

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GFYTPHKGNIFFKGSITGLPPYKICQLGMARTFQNI RLFNETTLENIMLGCHVRRSSY
WWMPVIGVPSAIREEKIKGQAMELIQRFNLELYVNEKASSLPYGAQRRLIARALATYP
ELLLLDEPAAGMNPQESI ELMHLIKNIRDEFKLTILLIEHDMKLMVMGVCQYI WVLEYGQI
IAEGIPQKIRNDPKVIEAYLGGEETHYA

>livF 611398:612120 forward MW:26223

MLNISHLHIYYGGIHAVQGVTL SVPKGIITLIGANGAGKSSIRSISGLIKQVTGSIVY
TNDNISMPQQLLEHSPEDIVRLGISMSPEGRRILPHLTVLENLQLGAYIQKDANEIQKDI
KVVYSLFPRLQERSWQKGGT LSGGEQQMLALGRALMSRPSLLMLDEPSLGLAPRLVKELF
DII LQINAEGKTILLVEQNAFAALS IADYAYVLEVGNIVMEGNGQELLNPKVKEAYLGG

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>ppa 612389:614464 forward MW:72137

MFLSFSI VIACGLYALYYAYTTSKQVFSADIGTEEMQIAGAIQEGAQAYLNRQYRTIAI
VGI IITILLAIFFSFLVALGFVIGAFLSGLTGF IGMNVSVRANVRTTEAARSGLAPALNI
AFKAGAITGMLVVGLGLLGVALYYGLLSMFGVDQKSILEALVALSFGASLISIFARLGGG
IFTKGADVGADLVGKVEAGI PEDDPRNPAVIADNVGDVGD CAGMAADLFETYAVTVVAS
MLLAAIYFTGKLQSIMMYPLLIGGVCIGS IIGTKYVRLTKDNKIMKALYRGLIATGIT
SAIILITLVTTLLFWDVPTMSAQKSGFI INLLSCSFAGLIITALLVWVTEYTTSTVFRPV
RSIAYASTTGHTNI IQGLAIAMESTALPVLICAGIVFTYANAGLFGISIAATTMLALA
GMIVALDAYGPVTDNAGGIAEMSNLPSEVRTVTDALDAVGNTTKAVTKGYAIGSAGLAAL
VLFACYTEELGRFFPSLNIHFSLQDPYVLIGLLIGLLPYLFGSLGMMAVGRAGA EVVVE
VRRQFSSIPGIMEGTGKPDYSSAVDMLTKAAIKEMILPSILPVFAPII IYCI IYWIGGQN
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GDPYKDTAGPAINPMIKI INIVALLLLQALA

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>pabC 614756:615940 reverse MW:44242

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IAIPPGTKFHVLSLYLQDIGAITDVNKFEILAKWKGM SDKVKSGRFLINTGWTPQALLDY
LVTGSPLLNRIT IPEGLPWWEVGKRLEKAGFVR FEDFKTVIHDPEFLRYWGI PFHNAEGF
LFPD TYLLARPFKQNVESAKI IIVGRLIDTFWRKTAPLWPNGMRPSFRNASVIKQPLILAS
IIEKETHFPGERRKVS GYVTNR LAVGMPLYADPTVIYGLGENFDGKLRRSQLQDKNNPYN
TYVNKGLPPGPIASPLDSIRAALNPEEHNY YFVARGD GSHVFSTNLDSHNRMVKIYQL
PLRKGDTGSLIHGGVAPSKVQEDLLPLKETVPPS

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>LAW0503 615937:616365 reverse MW:16270

MKYVAIDYGTKYTGI AVSDSMGVFAFPKQSIIMTTQKEFFIKLVELIYVESPDALVVGLP
VLFDNSETLITRQVRNFIKRLKHKIMLPVFLMKEILSSYEAKLDLQSVGYRKNKIKSVLD
QQA AVRILQSFLDQSESERVQV

>thiG 617036:617818 forward MW:27658

MQDDTFQLGNVKLKSRFLGTGKYGNDAIIPDIKSSGAEVITVALRRVELDNKKENFLS
YIPRTIQLLPNTSGARNANEAIRIARMAQAAGCGNWIKIEVISDSRYLLPDGYDTAKATE
VLANDGFI VLPYMNPDLYVARDLANAGAAAIMPLGAPIGTNRGLMTKEMIQILIEEIKLP

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I IVDAGIGKPSQACEAMELGAAACLVNTA IATSDDPILMAKAFGNAIQAGREAWLAKTGP
VLTGKASASSPLTGFLDDSY

>thiH 617868:618959 forward MW:40931

MFNSVTESQVSHTLNLAERGLSLSIEHLLILLSPTATSFLKMASIAQEQTIRYFGKTIQ
LFTPLYLSNFCINNKYCSFSATNRIKR IQLTIEEIEKEAAAIAATGLRHILLTGDAPS
KATIAYLKEAIQCLNNYFPSVGEIYAI EKKEYELLECTGVDSMTLFQETYNEKRYMALH
TKGTKQNFRFRLEAQSRAASAGIRFITLGALLGLDHWWRDIFYVGLHANWLQNEYPGVDL
TISVPRIRPHEGYFSDYYPVSDKNLVQAIQAI RFLPTSGIILSTREKPSLRDRLISLSV
TKMSAGVSTAVGGHTDHHIAKDNIAQFEIADTRSVEQIITAIKAKGYQPIFKNWI KLSNA
PMH

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>thiF 618969:619589 forward MW:22250

MSTFHWNVMDEHLPESLQTKLSNATIGIAGAGGLGNSCAVLLTRTGIGHLVIVDHDIVS
VSNLNRQQYLPSHIGMPKVEALKEVLLNINPGLKLTIIYQQYMNPNNILTLFEDCQFVIEA
VDNAITKMLVETLITVDYTVISASGVAGWGGLPMTQKQLGKLLVVG DHTYGVSSINPP
LAPRVNMAASMADA ILCALLNTKND

>LAW0507 619631:620785 reverse MW:42089

MSIAKSPFILGGTSPEHAKVFKRTSGQKIDNESFSEMVGKTSEVTVETQENSKDTKGLNV
ISRLFANGLAMGEAQHQNMVMQSI LPQNQQHKNSVPLTQAVSGIPLHKENKGI PFSKG
IPLDAKRDIIFSARNIALNRKHGGMNTQQTISRKTELNTANITLNKTIQNETRIGQLSA
RFESGNEGISAIGYDRTGGTSYGKYQIASKPGSMDQFIKFLERENPNIAARLKSAGPADT
GSRDGMKMPQVWRSIAQEPELFE DLQKRFISESHYQPALKGIIKAAGYEVESSLSPAMHEVL
WSTAVQHGPSGAVRIFTQSANMVGISEGQSIGDQEEQLIKSIYELRGTLFGSSTAEIQA
SALRRMQDEKNLALAMLQPNTIV

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>LAW0508 620873:622246 reverse MW:51294

MKKQYYFRELKTQIQLTIPIVLAQIFMTAMGFVDMVMTGYVSAMDMAAVALGSSIWVPLI
LFFQGI LQALHPVISQWRGEGYTEHIGHVLRQGIWLATFLSLPLFFIAYILSFQMGKGLG
EEQLADLSGQYLRAIAWGTGPGFLYFVIRCYFEGMAFMRPSMIGGFI GLLFNVPLNYIFI
FGKCGLPALGGVGS GFATGIVYVWMFFVIFCYAMTLPDVRFLSFKNWVEWIDKKTQWQL
LRIGFPGALGVFFEVTSAIIALLVAPLGVTI IAGHEIALNFSALLFMIPFLAITATIR
TGYSIGRHSYEMLHCVSFVSLSLGLFIALCSIIFILTLRYEIIAGIYNNDVEVLKVATSLM
IFTAINQCFEALQAITMGI IKGKDKTKTVFYITLFAYWFFAIPVGYILGRTNWFVEPMGV
TGFWLALLGGLSLAGVLGLWRVTILEHKFYKKVSKGL

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>LAW0509 622366:623799 reverse MW:51956

MSSIVYFFLSLIALFLGYIIYGKVVVERIFGADYSRVTPVYKMF DGDYVVKMGPFKIFLIQ
LLNIIAGLGPVFGPI LGALYGPIALFWVVGSI FGGAVHDYFSGMMSLRYNKSVPDIVGY
NLGSTIRILMQVFSVLLILVGVVVFVAGPAGLLEKLTGIDAMFFVSIIFAYYFLAMILPI
DKLIGLIYPYFALLLVFMAIGLLVMLIVKGYPFYPSINLINQHPAGLPIWPMVFIT IACG
ALSGFHATQSPMMARCLPNERYGRPVFFGAMIAEGVIALI WVTLGMSFYENSSALAAALG
PEGNAALVVDEVSKVLLGTGGTLAILGVVILPITSGDTAFRSARLTIADAFGFDQASGK
NRLLLTIPIFAIGVALNFMSFGILWRYFGWANQTLAAIVLWAAAAYLLHRERFHWIATVP
AMFMTAVCVSYICFEENMGFGISYDLSNIIAITFSVLCGITLLTVGRKRQPDEPIDS

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>terC 624527:625507 forward MW:37137

MLGEYSITEIIIFLIIIVSCLWFDLHAHKS D KVISVKN AFLWSSIIWISLALLFAIYIGCM
FGLEKAQLFLTGYLLEESLSDNLFVIMAFASFSIKDEMQRVLYYGILGALVMRLLFV
AVGSSLVTLFGPYALASFGIFVLWTAWKMWKEQKKKHSEIIDYSKHWSVKIARWLMPVHP
QLDGHNFFIKVSEHNRLIWKATPLFLC LLVIEFSDVMFAFDSIPAI IAITQEPFLIYTSN
IFAILGLRSLYFLAAAKRYLRYLEKSIIVILAYIGFKMLLDVVGIIHISPLVSLGIVII
CLTIGILASLFIPTTTLSHNNTIHT

>LAW0511 625603:626085 reverse MW:18538

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IAGIVKVVKESYPDHTAQDPENDHYDPSATPENPRWYMDVQLVKVFHPTIPRNLLRLQH
 DLSGMELLKAGSRLSIQPVSQEHFNNIRLADEIQKANTN
 >LAW0512 626142:627587 reverse MW:55769
 MIKVKKFFLNFTTRRTLILVCSDCIALLSTVIAAYIRNIFTPVEFSQHWTLFLFLVAI
 FVNYMKELYDATPPPLPEEVKSLSLSVSLAYFCIAIYLFFFADLPSRLVYMASWMSLI
 VVPVIRCNVRQYFSRKSWWGIPTIFLGNGSILSLIQKYLKHPFGLTPMGYAYSINQTI
 EDKEDKTSBGYLKPSLMYLETEQKIKQFVSNHPRSCAFVLLSKDDIYHTKLEKVATTLFS
 SIIILVSEDFFKCGIPLWVRPLEIGSFLCLKVRQNLDPKLVVRCIDLILSIIIGIATF
 PLICFIAIWIWIRLESPGPIFFRQLRIGREGKPIWIVKFRMTVQNAEQVLQKTLDENEELRN
 EWKADQKLRYPDRITKVGKLLRRTSLDELPQIWNVLLGDMSLVGPRPIVEEEVARYGDAY
 ALYIKVRPGITGLWQVSGRNDLTYNQRVQTDWYYISNWSVWLDIVILARTIPVVVKRKG
 Y

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>LAW0513 627646:628749 reverse MW:41582
 MRIAIVHYWLI GMRGGEKVI ESLCRLYPQADIFTHCVDKDQLSPLLKNKIYTTFINSLP
 FATRYKYYLPLMPLALEQLDLRGYDLIISSSESGPAKGLIVHSSARHICYCHTPMRYLWD
 CYHTYLENKGIVTRTIIIRPIFHLYLRMWDISSAVHPDIILANSHTVAQRVQRCWGRSASVI
 YPPVELDLFKPTRDVGDDYLCFGQLVEYKRVDLAIKVASETGRKLI VAGDGDAYTKLKQL
 AGPSVIFIGKISMDERAKLLAGCRALLFPGEEDFGIVPIEAMASGRPVIAYSKGGASETV
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 ASKDNIQ

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>LAW0514 628999:630420 forward MW:52474
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 WHHNFGKISVFWGLAFLIPCAVIFGIPLTAYQLLHTIFLEYIPFIVLLLVLFTVAGGVRL
 KGHLIGKPIVNTGLLFIGTILASWMTTGAAMLLIRPLIRANEHRKYVIHSVIFFIFLVA
 NIGGSLTPLGDPPLFLGFLKGVHFFWTTTHLFPMTVILSILLTIYFILDLSILYKKEGSP
 LPQNI SDNPGQLGIEGKVNLI LLLCVVLTVLMSGVWNPDISINIYGISIALQDLSDIIL
 LLLTGISLKLTKKESRKLNGFSWEP IQEVAKLFIGIFISMIPAITILRAGEHGVLPVIE
 LVFKDGGQPVNSMFFWLTGILSSFLDNAPTYLVFFNTATGDATHLMGEWAKTLCAISAGSV
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>ispB 630795:631769 forward MW:36402
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 VATYGCQKCI LTI SQALYQTAHGEILEIYNQGEI WENKNIYLEIITGKTAWV IQAACKVG
 ALKAGATPQQVDVAALFGYNLGI AFQI IDDALDFLPSKDTGKPEGGDIREGKFTPLFFY
 LKTL SLEEKNI FIKKFQTHNFTDEEILTITRVIHEQNFDQKTRELANVYFQKALTNLELL
 TNVPKPEYKTI LIECLNYISTRTS

>purL 631796:634774 forward MW:109129
 MLHRISVGLLSHIDDTIGQKIIASSIYQTLSPVTTANLIKVFTIEG IQKEQVNQLITQNV
 LHDPILQYASLSPSESADWII EVRFRPGVTDNEGHTARDTSALALGIENHEILAVYTSN
 QYHLYGTLTEQQVHR IATELLSNTLIHCFEIKSRQNWKNPFGPAKTAKVTGIANDTVIT
 IPLSSMNDAMLLHASKERTLALSLEEMQVIQRWFMQPEVKKERVAGLTPDPTDVEIEML
 AQTWSEHCKHKIFAAQISYKDLEQNSQEVINSLYKTYIQNTTDIIRAQLGDKDFCLSVFK
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 CFASPFHREPLPPRLLHPRRIFEGVREGVEHGGNKSGIPTINGSIVFDDRFLGKPLVFCG
 TIGIIPCII NNKKGYEKKANVGDYIIMVGGRIKDG IHGATFSSEELHEQSPVTAVQIGD
 PITQRKMYDFILHVRDLGLYSAITDNGAGGLSSSIGEMAQDTGGCHIDLKALLKYDGLC
 PWEILLSEAQERMTIAVPKENIQKLSSIAKHMGEVIEISILGEFTNSGYFHATYGSKTAVYL
 NMEFLHHGVPQLTLNAQWEKPYYPNNR IESVGI DQSMFLHTMLGRLNICKEYVIRQYDH
 EVRGGSVIKPLMGVKQDAPMDAGVLRPILNSETGLVISHGICPKFSDYDTPYWMVANAIDE
 GIRNAVAVGADPDRMAGVDNFCWCDPIQSEKTPDGLYKLAQLVRACKALSTFCLHYGVPC

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ISGKDSMKNDYIGGGIKISIPPTLLFSVLGIIDDINKAITSDFKPGDHIYIVGDTACEL
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GGRIGCHVELDRIPTIENLSVTELLYSETASRLLLTVSPDNIAPFEQLMGGSAKYLGRVV
EHSQLIITNGNTI IIDTPVEQLAVSFKSTLNW

>rpod 634857:636629 reverse MW:67963

MGNNVKEIQQIRTLIAKGKAAGFVTFEEVNKAVPIDMNTPEQFEEIGIFDQLEIVIVDS
EKEGKKITVTSPETDGDSENCFDLVDTEADVDFSSRSTDPVRMYLREMGAVPLLRDGE
VVI AKKVETGEQDVLYALVEVPVAEELISVGEDLKLNR IKLKDVVKTIEEDDPSEDEMS
QRNRVILLLEEIRQIFKKRKRKVKYLKLECCCTLERRVAGIQKEILQFKEEIVTRLRDIKLE
KTLIDRIIETVEDYVRQMHCQRELSAYLLSTGKTQDEIKDLFTKLDARELSPRDAALLL
NMGVDELFSYKEMILGKIEILQRLQEKCCHNVVDLEEVLWRIKRGNAAMRAKQELIRSN
LRLVVSIAKKYTNRGLQFLDLIQEGNIGLMKAVDKFEYQRGYKFSTYATWWIRQAITRAI
ADQARTIRIPVHM IETINKLIRTSRYLVQEFGRDPTPEEIAERMDYPLDKVKKVLKIAKE
PISLETPIGDEEDSSLGDFIEDKKAVAPSEEVVNTKLSEQIASVLADLTPREEQVLRKRF
GIGEKSDHTLEEVGKLFNVTRERIRQIEAKALRKL RHPVRSQVLR SFYDS

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>dnaG 636619:638349 reverse MW:65242

MSQKNVQAIQEIKSRLNIVDIVRQYVKLHRNGSRWVAPCPFHQETKPSFSVSEEDGFFYC
FGCQASGDI FTFSYQINGLSFRETLEQLAEAGVILTRFSTFGNESQKVHTNRRQLLKIY
EFTTTTHFVNNLHSEIGKECREYMKKRGISDEISQYFRLGWSSSDWDTLVRALKRAGFHEQ
FGVEAALVGIASNGKFYDRFRGRLMFPISLSGNI IAFGGRIIGDEDTAKYINSSDSL
KKGDQLYGLQQRQSISSGKSILITEGYMDVITLHQYGYTNAVGVLTALTSEQVKRISG
FTSNIEILFDGDAPGRKAALRACEMFLTKGLNCKVVLFPPEGEDIDSVIKNYGKEFFEKLK
NDASEGLQFCIQSLKTRAPRDVIDWVKNFLKQVELPEIVSRFTSILSTGLGLAESELREY
VADIKHSIKKKVTQSAASHSLVQTTPRDKQILMFLVRYPHMLDKLKEQGAHLVNTTWA
KELWGKVEEYSEDNIMQYLNSEQKTFVWQCRTGDVPPLDNEEGEFEA IQTMLEALHMTVQ
SASVSAALKLGTSSFEADLKYLRLALQETLERTHGE

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>LAW0519 638759:639226 reverse MW:17924

MRAHMSLIEHIEKNYLSAYKSKDQIHLNVLRLKKTALKHLQVELKRPITDSELLNLIQRQ
VKQRQDAIEQFYAAGRDLVSKESAELDILKTYLPEQLTSEELEQVVDNTLNFLGVTKMS
DMGRVIQYILSQYNGKVS GKMVSEVVVKVFQAMFQ

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>LAW0520 639808:640170 forward MW:13182

MGYHVGEDYGLPHVTTYSTFYFTASFNAFPGRNFTTFDAGIVIISPVRGLRPLRALRDS
TESVANPVKVNPLSANTSSILINVAFNVRSAALVILTDAIWATRSFAVILLLLFRLI

>ksGA 640294:641109 reverse MW:31210

MDQTFRPPKSLGQHFLKDTAIA YRIVKLLDIHEGENIFEIGPGQALTRHIYGYNPGQLL
LVEKDSCWVDYHSSVKQNVSKVTIHHLDALKFSWETLCGSWKVISNLPYNVGSAL IWDI
VSRVQMSRAVFMVQKEVADRLCACPGTKSYGVLSVWVQSFQKVEWGFIVKPHSFYPQPK
VDSAIVTLYPKPREEQPKNSKTFAWIIKQCFQHRRKQMQSILRKIGFLNYYESLERIGIS
PSARPESLSNQLFQQLSQEFLLQLIDFPKKT

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>LAW0522 641246:642406 forward MW:44013

MHVIFINYGGYLGCSGVHIFLAQTLTQQGIRCTVYLPVTIKSKNYFGQADYPIFTHNDL
VAHSHGTGYFKDSIIHAWTPREVSRLTIYVVAQTHVPYFVHLEDNEITIMEQMFNKPFIQ
LQQEALKEPALFKDVQYCHPLYFQQFLNNATGVTCINKLEEHVPSHVPRMTFWPACEET
FFRLPEKIPESVYKELGFPLNTIFVVYPGNIHEYKKNHVSNLITAIIDYVNKKGHSIKILR
CGETAIPMEQLAPPHALAHIIDLGTPEAHKLHNYISLAHILVQPGCPGDFDDYRFPSKIP
LFLASGRPVILPNTNIGLNMTHGKNCLLLKTGSAEITKYLCLLIENPKIATSIGKQGKQ
FAYSTFSWEKSAKKLIQFYKCLPNL

>LAW0523 642466:642885 reverse MW:15844

MIFPLWII GVITIAETILVVMVFLFFLRRLRRSEAILAQLQSNQEHVLESYRNAALEQEL
VDSFSQRQEQLIILNKGLEERIRVLQKLIDQATSISRSPQFLREVILAGKKKGQTPAQIA

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RSTGLAVDEVELILSRMSN

>LAW0524 642894:643238 reverse MW:12792

MPIEPIAPLLFIQQMGPAKIIKDEATHPETSQTTFRQVVAEALSQQGSQVQGGIDGISLL
ISLDEEPHSNNKNSDKMLKEYKEKESAKEEVKEEDSEIFQDEVDHLGNFVNRKV

>LAW0525 643246:643974 reverse MW:27403

MLRDGVKGEDWMDTESPEEKQSNIKELQSSDTTQSKSQKVQLDIEDAPFLLDTEEEAVPL
KAPGEISHSLDTLASEEDQDSILRRKLRKQKIAVILSIFIVIAISWFLFFQDVPPV
EEPTLPEPTVVIVPSVEKITGPQEYKITFEPFTVAQPSGNSVKFLKATFVGVSKDEKVIK
ESKSKELVLRDAIYYYSNKTHGYLIDPKNTLVIKQDLLDIVNSYLISGKMEDILLENYI
VK

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>cheY 644060:644440 reverse MW:14613

MSYDLNMKVLVDDFSTMRRIKNI LRQLGFNNVVEADDGTTAWEMINKEKIDFVVS
DWNMPQMTGIELLRKVRASEQYSEL PFLMVTAEAQQENIEAVQAKVSNYIVKPFTAET
MKQKIDKIFD

>fliA 644468:645307 reverse MW:31615

#KRLQKQFKVGVYRWPLMAISNFSGKSSFSDNKPWEKLESGSVTWPDFS
DLQEAIVCHYAPKIRFLASRLKAKLPKNIELSDLISAGSLGLMEALGRFRPQLGIRFET
YAENRIKGAMLDLRKLDWFSRTLQRIRQIDGASWKIENEKGRPATEEELHEVTGLAIK
DIRIGLEALQNAFLSLDVIQDVAHHTSEKEGAPYEDTAATEIADRVSKLIDTLT
DREKLVLSLYSDELNMSEAASVMGITTEGRVSQLHSQALTRLRREFLNQYGVKVD

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>fliE 645210:646025 reverse MW:29714

MAKDFPLVFSVTSGKGGVGTNI AVNLAYCLAALGKKVLLLDADLGLANVDIML
GMSPEKNLFHFLHEGASLEEIVATGYGFSILPASSGVMMLNLSTGQKLDLLESV
DMLEKEIDYFIVDTGAGINDTVLYFNLAQERIVILTPEPTSLTDAYALIKVIN
HHHGVDNFRVLVNMADTKSAKEIYVRLHMACEQFLKISLDLIGIIPRDPNVRKAV
INQKPFCEAPESAASLAVKEVAETIQSWGVPVALDGNIKFFWKKFLFRQ

>fliH 646068:647129 reverse MW:39445

MQVKTFIGPSTQSVLAQVKAELGPSAIISSRDFQKDGQRQYEVTAGIDRPITSGG
NNSNNLNGESPQQGWDEWFRDWTKVKEHLYALMQPSIQWERLSSRQRTALEYLQ
REEVDDAVIMELYHRLSSVPGSSPFEALSEIVPIRWSAESWPERIQGITGPF
GAGKTTSALRMALLLRKTDPDIRIGFINADCERANSRLVLKHWAESEFGYFEASD
PESMEKVIEQNEDKDYLFIDFPGISNPKETLTMQLSALGLSSMEFVVHLALPPHY
ATLQNAFLSKYQSQHLSSIVWTKLDEAATYGSIVNVAMATGLPISALS
YGIGLSDTLSSAYESVLWKL VFKHQPLPGQV

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>LAW0530 647129:649219 reverse MW:75100

MASGPSINYSRFAKQGDIFLGAGVVVILLVMLVPLPTFLLDVMLSLNISLSIL
ILLTAMFMTSPLEFSIFPSLLLVTTLMLRALNVASTRILLNGDQGANAAAGN
VIRSF AEFVVGGSYVVGAVIFLILFNLKVVITAGTTRIAEVAARFTLDAMP
GKQMAIEADLNGLIDEEATRRENIRKEADFYGAMDGAGKFVQGDVTAGLFI
TLINLIGGILIAVVQKGM SWDSALMTFSLLSIGDGLVSTIPSIISIAAGL
IVSRAAAEAKMGEEYIAQLTYNSRVLKLTSVLFIFALVPGLPTIPFLFFS
ASLFI VSRIVGKNSDTTAQDKKKAKGSSAASEPANTPEEMQDLLPLD
TLELEVGYGLIPLVDEEQGNLLSIRSIRRFALDMGVIIPSLHLRDNLQ
LKPQYVLLIKGNQVATAEILIDHYLAMDPGNALHQIEG IETREPAFNLP
AIWISEM QREETMLAGYTVVDPSTVIATHLTEVLKRHLADFLGRQEVQ
GLDTLAKHSPKAVEELVPGILPLG SVQKVLQNLVRENVSIRDMLTIVEAL
GDYGGSVKNPDTLTEYVRERLGRSITKAYLSDGVLPVITLGSKTEQTLQEA
IRQVEGGSYLALNPSIAQQLIHNINMAIEGAVGTGQPVLLATPIVRP
HLAQLITRFLPNVPVISQGEIPPDTRLQAVGNVEID

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>fliH 649308:650381 reverse MW:40184

MSSDPSKTEKATPKRRQEARSEGSVPKSEEVTKALTTAAGMLGLAIYSGVM
GRHFETIFYYIFTESFRFEVTAQSVYALFIYVAQEA IAILLMPILLFIAVTAW
ISLRVQVGALWTTKVFKFKWSKFNIIKGLKGMFASQQLVRLRLSLVQVIVIG
IVPYMIKGEFSNFLPLYASP

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VADYMLNTGIVLVLYTLIPMTIIAVADLVYNRYSYEENLKMTKQEKDESKQQEGDPIVK
KQKQRKMMQMMTNRMMDVDPKADVVVTNPKHIAVALRYNALEAPAPLVLAIGVDRVAEKI
KEIARENPIPIRENVPLARALYKAVGVGEMPEELYKAVAAILASVWRLKKGKMPGPQ

>fliR 650434:651222 reverse MW:28643

MNLFNFDPSMFLSFLLTFLRISVVLFMPLPFFSIDGFNMLKASIALILTIVLWGRSLSG
TQMPAHPFDLVLLIISEVFLGIVLGLAVNFFFAGIQAGGELATQMGFTMITLADPLTGN
TTGFIAHFLYMVATLVFLALNGHLFLIKAFTYTFKMVPAGGLVVREILLSELLNMAGMIF
VFALHVAAPVMSALFLVEISLGLMARAAPQIHIMEVGFVPKIGVGFFFIGLLFTILSKET
YRFIAGLEGLFFNLLTVMGSGK

>LAW0533 651739:652329 forward MW:22286

MNSAAL IETITQLISPLITAQGLKLGWIELINIPQPIIKIFVDTIETNRLHENNI INSKS
EQITIEQCASLSRLIGLTLEVEELFPNKWTLEVSSPGLERSFFT IQQLSNYINHDI DVTL
KEQHPLWPNRKKFYGT LISITDNTFMLNLSLAHRKSDEPENVSINWQQVRKATLVHFFFQ
PNKKLGSTKGLNGGTT

>nusA 652326:653648 forward MW:49244

MNLELKKALDQISKDKGLDRDMLVDLTLEDAVRTSVIRRYGDNLDVEVSYNDDTGEIEVYQ
FKIVVEEVTDPITQLSITEAKTHDPSAQLDDEMGRFKVEDLGRIAAQSAKQVI IQRMRD
AEQEI IYEEYKDRIGEIVSGIVQRRDKGGWI INLGRTEALLPKDEQIPKEHYKRGDRVQG
LIIDVRKEGRGPQVIISRHRDYMAALFRREVPEVDDGTVQIMGVARDPGSRAKVTVLSR
ERDVDPVGACVGVGRSRIQNI VQELHGERIDIVIWSPEITTYARNALAPAIISRITVDET
ENLLEVTVPDDQLTSAIGRKGQNVKLAALKLGWKIDIFTETRYNESNAVGRGLEQVASVA
EIS IETLLHSLNTLEQINETSDEELIEKLGISESQVNDLRAAVNFLSTTATVDSNKKKK
EVEAEQAKDNENNPADTADY

>infB 653879:656764 forward MW:106237

MINDKIKVKDLAIELGVSTKDLLRVLRELEISAKSTISNISIEDLPKIRAQFNTPTNKE
EERRQIQPGVILRRKRQPPSTNQTDIKLNPVDTNVSESTIQTENLILENKNTLSPHIEET
TEKIPATTNEILYNSQIAKIVQYPTSPVKNKTLTTTPHQTKNHSEKDVLESHDSSNKNI
KQSSSQNTEKTNRKAASA IPEGSSAPSLPPVSEQIRRLHDEETENSSESSEKNVDIQK
EIPSTQVRVISKPNITQSHSWDANTRSSSGQRTETEKQSNTAPHTDSREHTGHNKR PVS
YQGQNRNRFIATPDTIPNVEHDGQNKKRHTSRRSTEFNHKFQYNNEDDDISRQNRGRKR
HKQKTTSQVTTQPIKLTKRKIRVEEAIRVADMAHQMGLKANEIKVLFNLGVMATINMSL
DIDTATLVAAEFGYEVEKIGFTEEDYLVATAPEQSESLKRRPPVVTIMGHVDHGKTSLLD
AIRKTNVTGGEAGGITQHIGAYHVTTKSGEIVFLDTPGHEAFTTMRARGAQVTDIVVLV
AADDGVMEQTREAVNHARAANVPMVAVNKMDKPEANPDRVLRLESDIGLVPEDWGGDTI
VTKVSASLDGIDELLELLALQTDILELKANPDKPARGHIVEAKLDKGRPIATVLIQEG
TLHQGDTFVCGVFSGRVRAMFNDQGGKVKDAGPSMPIEVQGFEGVPEAGEAFICLPDEKL
ARRIAESRAIKQREKELAKESRVLTLETFLSKTSNEKEAQVLNLVVKSDVQGSLEAILEAL
RKLSTAKVRINI IHGGSGAITESDILLASASDAIVIGFNVRPTAKVKEVAEQENVDIRFY
DIIYKLVEEIKSAMAGLLAPISREVLGQADVREIFNVPKIGTIAGSHVSDGKVLNRNAGV
RLLREGVVVYTGGIASLRRFKEDVREVQKGYECGISLENFNDIKLGDVIESFETVEEAAS
L

>mga 657048:658046 forward MW:36133

MANYPPSAEEIASLIQRYDRIVVTSHINPDGDAIGACGVVSYILKALGKRFI IYNATGIP
YHLEWVPLPTKVITKLM DIPFKPELFIILDCGDIWRLGRELSSCLLEYQSINIDHHIGNP
NFGTLANWVEPKAAATGQLVAAIAEVIGIPLTGELAQCLYLSIVTDTGSFAYSNTSPGVL
HLAAKIELGLNPSPIREQLDNQWPLAKFHLWGKLMQKI QLEYDGGIAISAVTLKTI TDF
GATKEDLEGFTEQIRKIKGVRVAALVREDPGESCKVSLRSSGTDNVQAVA IQFGGGGHFN
AAGATIHEPIETAVKQILEAIQKITFSTTDVD

>SctR 658119:658769 reverse MW:23898

MFGVDPLIIILGLGALGLAPFVIMMVTSYVKIVVVTSLIRNALGVQQVPPAIVMNGLAII

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LSIFIMAPVYMKMEDLYLKTALPSSPAALEVIKALYDATPPLREFLIRNADESTIRGLMV
TAKRIWPKDQHETISRNNLLIIIPAFTITELTKSFQIGFLLYLFPVAIDLVSNIILLAMG
MMMVSPMTISLPPFKLLLFVTLDGWLKISQGLMLSUR

>LAW0538 658794:659876 reverse MW:40777

MSNLGSQGD IQLFTPPLLSKLAMRLLNEVTTLTPPWIIPLGETSCIVHLGQPSLYVAEKV
FLRFQCENDLIQIALEDLSILWLHPALSSVRYDSPLSDVVIPLILEALFAPLKHKLQNIL
HVPVIFLGGFFYEPLVDYQFGCVITLIFDSTKLEENKSYTGLMRSNIPLRIYIPEGNSAKN
FLIYLQTLPKNNVMPALPLEMNI RVGYSLLTIKELMQLTPGDVLFYDYPILRNRLSLV
FLDKEIFCSVEGRHIVLWGWNGTTLFSQKSPVIWSSESTIRNKSEHPLEVPISFEIGKY
NTTLESELEHFIEGHTFTLELDIHSPVILSFEDKTIGTGVL MNFNGVIGIRILEFSTTIDE

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>LAW0539 659919:660416 reverse MW:19496

MSKYPLAPLLSVREHKEELAQQAVLRAENALVEARKDLQKAEEDCKNYEEWCQQEINRY
SEIIGSLVLFKELELLKVKTGILLDNVKEKYKLVDAKDYVEACIEAKERA IKNLTELK
QTAKLAEHKKLWEAEKILAQQREEVELEDFKMPEREEEQEDIDE

>sctN 660438:661754 reverse MW:47451

MALEYIASLLEEAVQNTSPVEVRGRVEQVIGTIIRAVVPGVKIGELCELRNPWDNWTLQA
EVLGFKHVALLTPLGDLQGISPSTEVIPTGMVHAIPVGRELLGRVLNGLGEPIDGKAPL
RLRYYYPVYADPPNPMLRRIIEKPIISLGLRVLDTGILTCGEGQRMGIFAAAGGGKSTLLSS
IIKGTADVCILALIGERGREVREFIEHDLGAEGLKRSVLVSTSDRSSMERLKSAYTAT
AIAEYFRDQGGKVVLLMDSVTRFGRALREIGLASGEPPTRRGFPPSVFSSLPKLMERAGN
SDKGSITALYTVLVEGDDMTEPIADETRSILDGHIILSRKLAANHYPAVDVLA SVSRVM
NAIVTKEHKENAGKLRKYLAKYAEVELLVQIGEYKAGNDPAADDAIKHNKGINAFLLQQL
DEKSTFEQTLQALKKAVA

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>sctL 661775:662389 reverse MW:22920

MGTYFRLTSSPELTERIPLLKADFFSSLISSSELSEAVTKRINELKLHAEVYKQKGD
GYEDGKNEGLRENKEHVLETVLLSVEFIEGIEDDLVQIVMNTVKKVLNEMDPAERIRIA
QRALKNVKSQKELVIRVSTADEKAITKKFSDTLKSTKGGFLNIVVDARLEPGSCLVET
GVVDASLDVQLKALES AFHSIKIY

>LAW0542 662368:663072 reverse MW:27096

MDKVFFLEI IINKPQLFEAIEFNCLLYNVMIQTAEMASFTDATPGFDNSFIQKLALR
GIALKKERLMETEYCFWDFMEETRRIALLEPETVRRRLQLVFGAAINADEIAKVLRRDEVL
QLQQILGQDLYQYSLLRGRYQVGAVRRFFLAQSHSIPLTTRIHW DGRMALEICASSWPSV
LQSIFFSQLNFVSTEDSAVLSQDYPSPVIKGVWDGLKKILLREVAPQWAPIFD

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>noIT 663072:663944 reverse MW:32154

MLLTDRIYKATDSNVYPLKKWDNILLFFIIFFSIIFISGCKLEVYKGLTEDQVNEMVAT
LIYRGIDVEKSPGGKEGFSLLVAEEQLISALEILKKNALPRENYVSLGEVFSGQGMISSQ
SEERARMAYASIQELANTFSRIDGVLTTTRVHVVPGYTDQAVDSKILPSMGIFIRHTPDSP
VVNMLPSIREVAAKSLPDLEYDRTSVMLLPVQEPLTIPSMGSSTFLGISLFPERGSFYFL
IGMGIIFLAIIFGIFFCIGLVLFQKDIPIAKKIDNDGSI SGEQTIKPEEQ

>LAW0544 663958:664335 reverse MW:13637

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MLSEYQVKRLLDTANTACHYGLVGVARKIYDGLALPKGFPPALIGQALSHIVIDEFSEA
EEILTKYLEKVPDDPDAQVFLGITYMFTGRGDQSSLLFEKVAATDGAASVFAVDLLEVMK
IQLQS

>LAW0545 665261:665557 reverse MW:11775

MAFTKKDLEAQERQYLELQELERLNKEYDERLEALGVTEEKLEEFVKQLPPEVIRTLEE
EKQKIQEKFS DIPVTKKKEEDISTKRKRIVSRRGVVKL

>LAW0546 665820:666182 forward MW:13772

MITHEIEEFGRRMGMSDLELSQDGI IAFEVEDLGS LHIEQDEENEELFIYLATPVPPYNN
DIPKKVLELCSYKHAHPFILHGGIHNDNVIFLSRISYRDVKASTIENTTQFLISITQKVL

>LAW0547 666388:666729 forward MW:12937

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MLLTSEQRQTLYLILGYLYIRMGLNDSAERLFKTI LSLFPEDKWSHRSLAVIAMRKGDSIS
CLAHYKAVAGEHSIVKHAPLLLLQAQALWNLGRYSESRTSIQNYIKIRGSRT

>yscV 666726:668828 forward MW:77389

MSLFAKAQSTVGVITRNDITMVLLLVTVIALMI IPLPTPLVDTLIGINMGLSFLIVMMC
MYVKTVLDFSVFPTMLLFTTLFRVGLNITTTRLILLQADAGEIIFIFGEFALGGNFVVG
VVFVILTIVQFLVIKGAERVAEVGARFTLDAMPKQMSIDADMRAVIDMEEAQRRAR
INQESQMYGAMDGAMKFKVKGDSIAGMI IAVVNI VGGTIGVTQHGMASDALHVGILT
GDGLVSQIPSLLSIAAGILITRTGDSAENVGSQIGEQIFNQPKALLMAGGVVFLIALVP
GFPKIQLFASATLAGIGYTLKIMTNPAPKNAKQSI AKTLEPTTSPSKSSTEQKESKE
EFSPTVPIILDISQQMSEELDYDSLDELITLRRVLYFDLGVPPG INLRISSKLHDLTY
SLMINEIPITKGTLEKGMVLARDTKENLAMLGVEPEEKEKFLPDVESLWVPDSSKALLER
AGITCMTHSRILAYHLSLVLSRHASNFLGMQETKYLLDKMEERAPDLVRETRLLPVQRI
AEIFQRLVQEQISIRDLRSILEALIEWSPKEKDTVMLTEYVRSALKRQISYMYSKGQNM
PAVLLDPNVEETIRKSVRQTSAGAFALDPETTQIFMASLKEFASETNLTYTQKPVLITS
MDIRRYVRRLEIGDYNNLPVVSQYELTPEISVQPVGRI RF

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>yscS 668846:669106 forward MW:9705

METTTMTYTAKALYLVLVLSMPPILVASLVGLFVSLIQAITQLQEQTAFGIKLLAVVLT
LFFMGGWLTGELYRYAEEIFNRFHIM

>yscT 669154:669969 forward MW:30513

MNYDQTIGALGVYDHFIAFLIGTPRLFMI IQVVPFMGNNIVTGQLRVVVVFSFYLLSPA
LVAQLPHIPEVDPSLLPRILAIVIKEGFIGFFLGYLGSVMFWMIESVGLFIDNQRGAAMA
AQTDP LSGSQTSP LGSFLFQCLVYIFFTSGAFITFLTLIYKTYEFWPPHEFIPMSWKMR
LPELIIKQVDWLMAYTMLLAGPIAVACLLTDVSLGLVNRFASQLNVYVLAMPKSAVA AFL
LIFYFKLLLEKATFLFKPFETVLFQIKSLIQ

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>yscU 669966:671048 forward MW:40411

MSGDSGDKTEPPTPKKLREAREQGDVAKSQDVAAAMTMFGASLYFIGMWQDVFSNLLNLI
ELPTKFIHLPFEEALPATISGIIASIAFSILIPIIATLMFLAVAADLMQIGVLFVKSAP
KLDNLNPKKWFVSKVFSIKNLGEFVKNILKVSVLTITVWII LSNYIKELFAIASGNIWSLW
YILGSVLRDLT LSVSMVFSVIACIDFMFQKWQYNKRQMMSKQEKQEYKDMEGDPLIKGK
RKQLHQEMAMQNPVNKVRKAKVVVNP IHYAIAIDYEKGR TLLPVILAKGEGLLAQR MVA
VAQEEGIPVMQNIPLAHS LFM DGI EDSYIPRNLIAPVAEVLRWVNSLNKNMIHKPISNDT

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>LAW0552 677116:681264 forward MW:155029

MRYFNFNHNLARQLIISP KFFLIICSF IYLTYL LLLPLVHANNDTNNLNNTDLTFSPEETS
TGIITDRVTPLLDWILDQSGQLTINQVLSPEVQRTFSSFLFTDLPKQEGTFWFRFVIDST
NRLSSSDFILDLSKRTPTQFPEPTQVWVVSMSGSKATLINPIKDNSYPIKYSGAEVLEVY
IKLPGAPGVGFTPVLWTKKSFSTFYASMHVAIFLLAITIAICLIRAFTEKQEWRIWAAL
YSGSILISTLWGLPPTPKGILTIWDIPGLLAPGIALFILPHIGRRLMNTRQVSPHIDIQL
LLLTLPLGLVLSILPLIPGYLWTLPYLSVWPLITILFLPTCLYARFCDLKQSKTFFTICAF
PSIGILPLAISINSMPQYIPIGLINLFPITLTL SAMLVALVPNPKPSSGAIRREHPSSN
IKIPSPNKQNKIQMKKEEEQRTTTTNL NIESLEQQLRAPLERIRKELSILNTSLQSTPL
QQHIESIENTAEGLSHIINDIPELFI SKTHTDKEIFDLNQIVLGIHDAVNND AESKNLAF
SWFIAPHLYQKYEGNPTQLTQVLYMLVESSIQATEKGLVQLRIQRPNSINPGELLITVS
DSGKGSPPITRSPLALIHAWELATSTGGSVTMKSEPTGTTISFSISLTAKQTTTSLSHQH
DESI TTTEQPTTQLSQIIIVDIVPSNRQLLTYLDEL PYNIFEAQDVTTVYNLYKQSPGA
VIFGPELSETIAIETIGAIRVFEGEHNFLPAPILAI CKTEAQKERLLRIGCTHVIIEPL
TRKTFRQTI LQLSPIS SHTQAIPSP LLESTSKIKQTAPTSSVNSKLIDTVNDSQIPCME
TPIQDIPISPHASLYSEDNTSEYTHEKKG IALLKTPDQIKTKKLSIKGEPTPISSTHQ
QRNDTSLTNNVSYKVEQYPLMSSSEWVGEPTPITKQKTSTNKTSARLSQHSSEWVGEPIP
IKRKKPPI TPKNDPLHNTVEWVGEPMPI TIAQQKSLTIEQQPIVNLTIEDEQLSSEKR
KIVEENYTTTIEKTL SAEPKPHEQLATITKEKIEHIEPIVTTNDIHKNNLLENGTSFNEK

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SVILQNSIEIPEDLSIYSPSLHIQNSPEKSFLLSSQSEPDNNSQCINNSSKEIDTIQEVPI
TSSDSAIIINQKDNKHHDNLLTATTTRQKKHNSRQKNSRHQKSSLSLLDMITIPTEENQE
TNHTQKALNTDSYLSMVGHPEIPEEHIITLTETVDTYKKDTLSVKKIDPDLFSVHHPTVE
IEDFTYPKEQSEQLSMMQLFSSTLNI VEENDLGTSHKELFQELDITLGLLQQA IQTKQSE
NLVSFSQVILSLSEQLKHLKTLTSLSDDAIQTSKEDIIEQLIKDIKAEVQHNQGDTTD
LL

>lysA 681626:682891 forward MW:47627

MQNI RSSYTDSINFFGKTSPEELIKIYGSPLYVYNESIIRQRCKEIKSLSSYPNFFVSYS
AKANTNPTLLSIIKDEGCLVDAMSPGEVYLHKKVGFKSDEILYVCNNISAEI IQYAI DNK
ILLSIDSLSQLETYGKLNPGGKIMVRINPGIGTGHHKKVITAGKETKFGINTEQFSDVKK
IVDTYQLMLVGINQHIGSLFLDPQNYLDSIAFLLQFIDNNPWIFEQLEIDFGGGFGIPY
KKYEEQPRDLKKMSEQFNKIMDWVASTGYKGRFYIEPGRYIIAESGILLGSVHVVKYN
GPIRYIGTDVGFNVLMPVLYDAYHEIEVYRKNGTPLQLIPQTVVGNICESGDI IANKR
PLPLIQEGDIIIGILDVGAYGFVMSSNYNQRPRPAEVL IQQNGEPKLIKRETIEDMNIQL
H

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>LAW0554 682917:684095 forward MW:44314

MPSFSFVLRCCLLFLMVLTSQTLVSQPLREEAEGNLPQHIEATLTNLEATSSTKQYPS
VSQLDITLQFVTSTNEQAHKILPATRDYGGKIFYKTTINIPLSTLIKYFLNPEIPGEALY
PTSIRRNWQEGSEILQNSNIFLAAPLPPQKPIFSRGTEYEEITPDISSGCYNYILKRL
FILYKFKSETAFITVSFMPKESSVGLRGGVIGKDTEWDYVYGPDIGTNLPLMTWAKTYLY
GSATINIFTQKPNSTTDIYIFKWTSAGWSGMNVVTHKHIRNGVIRFISGLKQIMESPYL
PSEQEIIKKHSELNTMSLNELQSALKPFASKLAAKSLKDSTLSKDNFQKILKNDVYPTTL
TKENAVAELLKRYMKQKINQTMEGKTTITSKK

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>LAW0555 684290:685045 forward MW:28576

MDPQHRVWIKTTLALTGAFYNIFPGRTISTQENLSIGFQLKTKFKPFHWTILLLDEHYMS
SPRIAAAIMPAQLAGVKNIIAVWTSKNNRLTAEKISPALLTTLELSGVNIALTLTHTETE
LLIHQLMKIGIGNLLYFLKEEDILHISTIPVLPFWKEYTSHRLVIEKDAGINTEILQWAH
PHSIIEQIATEPYSEDIPDALYCASSSSKNYTSYRIPRIFHNGLEAYWIHPTLSPASFLH
TTWDLSSLLEQD

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>LAW0556 685227:686414 forward MW:42630

MKPLHNIILIMSIALMGVMGVSIIILPVLPLLAHIFELTPTEVGLIITCFSLPSALFTPVA
GIIADLYGRKKILLGLALFALGGVGCALSTSFKGLLFCRAIQGLGAAPLGILYSTIIGD
LYNEEERPKMMGIAGATISIGTAIYPALGGFVGEIHWTLPFWFSLLSLPVAIIALIYPYP
YKGTKTSIKDYTKISGKLIFHSHSVGLLITFLCFSILYGPILTYFPLIANLLYQASPIQ
IGITFSIACLGTAIIAINLAQLSRTYSHKLLIIAAGCYFISQGLVILPLQSQNIWLLT
LPIFVLGIAQGISFPLVNSHITSLAPTSNRAIVMAINSTFMRLSQSISPIVFGIGWSFFG
WPGPFIFGLFTSIIILALLIMKVFSRCNPISPIFDN

>bacA 686543:687343 forward MW:29492

MMSWLTIGVILGLVQGITFLPVSSTGHLIIIVAKFLHFTGSKASVFEVAVQLGSIMAVVV
IYWNRFI GLIRPEKNKKFTGLYGIWLLFLTTLPPGIIGFLFHSYIKTLFTIPSVIAALTT
GSI FMLISEQLCRNISQRIVTLDELTPKTALGIGFFECLALWPGFSRSAATIMGGMLLGA
KRHLAAEYSFIAAVPVMFAATGYDLLKNWDLFTANDLPLFITGMICAFLAAWITIKVFIL
LISKISLRPFAYYRLLAFIVYLCIK

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>LAW0558 687407:688678 reverse MW:48944

MSSIRKSLQLIMFLGASMRWWDKLRPIELYEVDKQGHKMI IAWMLTLLNSRHASESEKI
ALQQTVIERGLFDYLFGLIVTDITPQIFHRICEHHIHKRQLTDWVLNKLKPIVEPLSRDF
WDRMVKYHYQTDRETELADKIIKAARLYASGWEFALI QPFNTFDEETKNISHFFISELFAL
KELTGVDL IQGEAFFIENPTALGHFARLSGQLRFQIRWSDTPRVPETSVLGHMFLVAGY
VYFCSLVIGCCPARCVNNFFAGLFHDLPELLTRDIITPVKRSVDQFSILLKEYELQELER
RIFVPLRKSGYIDLVHRLQYYLGLLGEDVTSEFQETIQDSSGVKRIKNFEELQLFNNKDE

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FDPKDGQLLKACDSLAAFLAHTSIYKGISSPVLHAAVARIHADFHNLTFGTLSFGTLLA
DFD

>rpIM 688844:689278 forward MW:16453

MKTFSPPKPEHISHQWFLVDAHNLKILGRLAAQIAHRLRGKHKPEFAPHIDNGDYIVVVNCE
QIKVTGNKQEQKKYRHSYVGGGLKETTLLKTLLEKKPAEVLHAVRGMPLKNRLGRAMLK
KLKVVYAGPEHQHIAQQPIPLSLPY

>LAW0560 689297:689689 forward MW:14816

MSTEFNYATGRRKTAVARTRLYPGNGTIKINGRPLENYFPRKSLQMIIRQPLVHTKLLDK
YDIKINVSGGGVSGQAEAVRHGISRALLEVNPRLSLLKPVGFLTRDARQKERKKYGLRA
ARAKYQYSKR

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>LAW0561 689868:691523 forward MW:61093

MKDEFLTITPLGGLEEIGLNCQLWETSKGVVLIDCGIMFPNEQHLGIDVIIPPIDPILHV
KNRLLGVVLTGHGHDHIGAI PWLVCFIPGLKIYGSFPFTLALVEHKLKERNLLSSAQLIAV
TPKTKLNLGNLYFQFISVSHSIPQSYALAVTTPVGKIIHSGDFKIDPTPSDGI GTDLQSI
KEFAGNDGIRLFLSDSTNADEQGHNLSEQYIKKNFYEIFSEAKGRIIVTLFASNIERIQT
VCDLVKVFNKLVVTGRSLINNIKAKELGFLNIPYKFFTDQNPDLSEQTVIITGSGQ
GEPLSALVRIISGEHRYLSIHEGDTVIMSSRVLPNSTLAVNRLINRIYRLGATVCLNGQK
AIHVSGHARQDELKILLTVVNPQYFVPIHGEYRQLFRHKELAMQHGIPSENI FILDDGEP
LTLLPTKVRKEKKIPLKSILIDGKIGDVS SVLRDRQLLGGDGVVVVSLTRDKGTGSVM
QGPSILSRGLIFEKKNLCLIEEAKQVVIILQSDLTLTQKLEKICTSLHSFFRNVI GR
EPIIIPIITEN

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>LAW0562 691765:692793 forward MW:38527

MSKNVHIDLKIGISFAISTGTFLILGLYILLSIQPIIDQFKITILETSDAISITRLLIT
MKEASINFRSYTVRADQSFDNFNTKNIHLFNNTALEHAQNLNDDSI SLKILNKNLPQVIAL
KKEYKEVGQKVYDLTEMFKQNTPKLAFLLSAFINDIEEFLKTEELVRNTGGKDAEAFKL
IVDLNQLIETSLLARGDFWRGVSNANSNAFETCLKILKGSISHMEAIKEANSVKEFTAPF
ESLIFSMKNLENIFVTIINNYELAQENIQNQDAIVQSILTLLNEILEENMDKIGIESKSA
VENLKLIRNIVLMLVAIGVIFTNTVGFIVAKKIGEKTYTPSK

>LAW0563 693085:693444 reverse MW:14009

MAYLPYEYFCYFVYDIELSYEEMSKEERLTFVQQLNSFDAIHLDFTPVGDGLQVQCS
FEDMNRKYNELCEALSNYTCDGINGKFLLSRDLNQLQGVVASDKTFQKYTFTIPPWN

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>pgpA 693561:694052 forward MW:18354

MGINELKRLCIIISYARLGIAGLSPIMPGSCGSLIAAILAPWLFIPFSTFTRILILIFIFW
TGSLVGTIIIEQLLQKKDPKEVVIDE LLGLWIVLLPFKNPGWIFIGLAFILFRIFDI IKIW
PVNASENWLPGGYGIMIDDVFAQLQALLIISILYWTGYLNQWL

>LAW0565 694166:694642 forward MW:17555

MALLRYYLTIGIIFITLLSSATATQPKTESPESILNKPEKSTKRNTTISIEFEGTDSIGS
KLSTRIKELMNASNLFTLTKEDSPKIRILLATMSEFSQRPSIGSVYSVVWLFQSSETTLK
HFLAKKIGVLTAEVDQVAAMIVEQTDTLAVRYGYLLP

>flgE 694775:696847 reverse MW:73490

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MSLTAGMWTGVSGLLSHGEKMNVI GNNIANVNTVGFKGQRMDFAFDIYQDGFSTAGITQI
GRGVGIGAVMGNFGQSFETTTEATDLAIGGRGFFKVKPQGSETSYTRAGNFRFNNDGY
LVDPHGYALQGWKIDNTEGPQRISGGVNPGTNTSQIMGTGEPTDIRLDTWTVAPLQTTNV
SFNVNLSDDKSGDKSQNVNSPFTSLFNIWNGKQPSEPNNPPMPESAYSQTSIKVYDEAG
GTHTLTVYFDQVSPKDYKGGSGESVWEYVVTMDPSEDNRQVSVGGNIVDIKDTKAAGML
MSGTLSFDSSGKLANQSAYSLSNGSRKPAVDPATGALINGNGFTIDRDGNAIPI LNIDNPA
ENFYPAEVSNNGFPMIVANFTGVPGKNTAGSVGDATFFTEIDFGLKATDLDN TWKNANE
PLSSLSYKKTHNPM DVAGGWTVGGYKTPAPSVTELGMAQILENPAGVMPQYYFGNP NYDN
TVPQSPPPYVYKNEASYQAAYKTALTAAGGTAADIKKEHWPNAASGILEANDPPNVKDLA
NMNGTPNRLSNAFTNYAGGSSTKSASQNGYGFGLMNYSVNAEGVLFVYSNGVQLPLYQ

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VALYDFNSKQGLRREGGNLFSQTRESGDPSSGAANTSGFGSINANTLEGSNVDISTEFVS
MIATQRGFQSNSKIVTTIDQMLETVVNMKR

>LAW0567 696931:697770 reverse MW:29746

MPTNGASGVSSATGIFSQQAGKSELGKEDFLKLLVTQFKYQDPLNPMEDKEFIAQLAQFS
ALEQQMSTNEKMESLLNLQTQQMISAASF IGKEVAARGYGVSVKGD TISNIQYAIN EEM
VKGYVNI FDASNQLITTVQLDSKAPG IHDFDWDGLLPNGSKVSDGVYTVNIAGQNSAGAP
VLVDTSVSGKVEAVTMYQGDQLLRLSDGRLVALSNVREVVQPKTVEPGDDTDSGDSEGE
SGGGDNNDPGETNGTEGSESGMQDLYQLLPTIKEKLSR

>LAW0568 697783:699609 reverse MW:66472

MQIFPISSDMLYKEASSLSRGNRDSFAFNQLFTKFFKNTPAEITPNLFYDSVDKNTSFF
STEAPYDNSAELRVDVSTLYPSSSIDDIRFTDSELQKVIDSLAAQGAATETVQNLLGSP
NGTAIGDVIQAVAYEAPVRLSESDMINIRSLANKLDSSGQLGERVLSDFRQGRSVQAWDR
LSKALSSYPNVKLSISHKEIVSLGKALGANSATLDALSFSFKGSKELSLTPDQLRNLLV
PLQQQMTNKIDAQSKLASQLEGALMPVIKEAKKRMDEEISAGTIESRRSEQSKILIQDTV
TKNGIANIQQQDVASETLNKIQQAEQTQDTVTKNGIANTQQQDVASETLNKIQQARQNTD
SAKFAGQFPQGTGDKENLFQGKNSGDGLFEKNGQDSKGLLSDNKGKGVTTTSSNPWESL
AQR LGVNQSVGTVIPLQQPIQQNAQLTAIDRLAARMFSQIEQGAFSALRNGTSKLELTLN
PLELGTVNVLLTTKNGEVSALLRPERAETTAALLQQMDSLRAELEQQGLKVAKVEVQTQL
KDEQNMHWQGMQDNSSQEQSERVRDLERLRMLGRVQGEDNGVEISLAHNMHNSMTAGN
TSRVDIIA

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>LAW0569 699820:701229 reverse MW:53035

MTQSPTLIIQLQRMGDLILSFHLCKRLLMLEPNHPLWVLAEPHFFKELITVAPQVFFDH
SMIPNLKLRNYRRVINLSHRDIAAQLTGVLTTTEEKIGIFNQEDFLYIAGDWRLYRSSIVN
NNRHNLFWSDLEALGLIPEQSFKEVIWPLRNIGSSGHI GLFVGASEAGKRPNAQFWGL
LARYLIRHNLYPIFLGGPNDRSLAQECIDIAQLNSSNNFAGKFNLSLVFSQKLDLFVT
PDTGPMHLAAWTGTPVLNLSMGNVNPWETAPASPGHIVVRPAMSCVGCWNCGRDFSCRS
LFTPGKIGRLIVHLIENSSLEKSFISGLHIYKTSRDERGLFTLVPLLPNIEHQRHLLGLF
WKEWFIAMLGMSDKLIPVSKLFFENAPHMCNPMQKTLLSLSKNVAKVLKKGSDIVPSKY
WFSVMPALRPATGYIDL LLLQNNKFSNKAWKKTGTLSSLIETFSFASQC

>fliC 701958:702842 forward MW:31019

MSLVINNNMMAANAARNL NESYSRLSQSTRRLSSGLRVGTAADDSAGLAIRELMRADIKT
FQQGARNANDAISLVQVADGALGVIDEKLIRMKELAEQAATGTYNSTQRLII ESEYQAMA
SEITRISVATEFNGIKLLDGSLSGPHKGTNLQQTGALRVHFGPGNSSAEDYIEISIH SAT
ASALGLGNGTTGPGATISTQAAAQAALDAINDAIVSKDNIRASLGTLQNRLEATITNLNT
QAENLQAAESRISDIDVSTEMTEFVRNQILTQSGVAMLSQANSLPKMASQLISG

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>rnc 703046:703747 reverse MW:26756

MDLKELQEDLGYFFKDEQLLITALTHSSWVNENDVTAEHNERLEFLGDAVLEICISEELF
KRHPEAREGELTRMRSNLVNTKMLVLLARELKLNQYLLLLARGEENQGGRRQNTLLADTME
AVFGAVFVDGDLFYARKVISKSYDNFWPKKSAALVKDFKTRLQEETQRHIKGLPKYILEG
MHGPEHEKIFEVCVELPDGQVFRASGTGLKRAEQEAARIALESLMHCQSVNDK

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>LAW0572 703881:704216 forward MW:12365

MSYTIRMVKLFTGELVLGKFDPEKNILKDVALLQVIPTQQGAQMMMLPYGYPFQEFSGT
IEAKFFIYEYKVPEDLETKYLEACTNLTSTAGVTLTGATPSGNPTGLIK

>LAW0573 704639:705160 reverse MW:19186

MSEQLVAVGVLSRPHGIKGEIRLIRYTDSDVFLGEVFLQKSNSLPKKAIEISSRIHQGV
ALVCFKGFSDRSAVEVLRGQTLVSRSLPEIESNESYLCDLLGFSVVL DNTDEVIGKLE
YVSFPGGQELWSIITPEGKEVLLPAIPEFVLEVDNAQLIRINPPKGLLELYK

>LAW0574 705170:705403 reverse MW:8501

MLKSFVEFVAKSLVDNPEEVQVCEVEGEQTSVLELRVAKEDLGKVI GRQGR TARAIR TLL
GAASSKAQKRTMLEILE

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>LAW0575 705860:707374 reverse MW:55287

MFESLSERLSSVLHAIGKRGQLTEDNIRDGLREVRLALLEADVNFNVVKKFIEHVKEKVV
GQAI EKHLTPAQQFIKVFHEELVNLLGGKSTKLDVTHFPLSVIMLVGLQGSGKTTSTGKL
ASLLQSQGLRPLYLPVDIYRPAIEQLQTLATQLNIPCFASNAAMKPLDIINAALHEAKE
KEYTVVLLDTAGRLHIDEPLMQELTDIKLVAHPQELFVADAMTGQDVVTVAEFVNKLS
LTGAILTKMDGDARGGAALSICSSTGVPVKYVGTGEKLSDFEVFHPDRIAGRILGMGDM
TLIEKAQSTFEDDELKAITEKIQKATFNFEFFSQIRRMKQLGSLSSLMKLI PGFGSAVS
KFRVAIPEDEFSYTEAIINSMTIKERRNPDLLNTRSRRQRIARGAGVTLNKVNQTIQKFDQ
MKQMMQRVSDNSLMKNAESGEGGFGLGSFFGEGGIGFSALPGIPGLFGRPVLRSTSIGG
VNGSGKSATKKKKKKKKHKNKRRK

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>trmA 707511:708923 reverse MW:53448

VNNNKKDMNYLQHQLVLDITSIVSDGRGLGRFENKVVFPHTVPGQKVLVNTSVHSKFL
EGEVKQIIKPSKYEREPICIHAIQCGGCTWQHIQYKHQIIWKKQIQDALERIGKVNNPV
ILDVIPSCEWRYRNKMVFAFAPSPCLSTVLLGLKRVDSEVIPVTDCLLQSKNTMKIVE
IVRHWRHEQTSLEKKILTLYFRFLIIRETITGDILVELIVNKKNTLIENKFDEQALGK
RLAQCLKGVEAIKGIILSRRTQVSDIAYSEYIIWHEGERFLEEQVGDIVLSRGNDNFFQI
NTKATEILYSKILSMAQLTGKELVWDLYTGVSIALFLAPFSLKVI GVESIAASINLANK
NRLSLGYTNCFSIQDDAFSIFRSQIQGITPDIVIVDPPRAGLDKKVIELLIRLAPRRCI
YVSCNPGTFARDIAMLSPHFVIQQTQPVDFPHTPHVETVSYLLYNNAFS

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>LAW0577 708959:709837 reverse MW:32733

MKGIILAGSGTRLYPIITRGVCKQLIPIDFKPMVYYPILMQAGIREICFITPPHHQQD
FINLFGDGSQGLQLTYIKQSFNGLAEAFILARNFIAGEPCCLVLGDNLFHGDKLYCML
EDCTGLEYGKVFAYRVKDPERYGIVSFDENNKVLTIEEKPNPKSHYAVTGLYFYDGDV
SNKAASLKPSARGELEITDLNNIYLQDSGLSVEIFGRGVAWLDGTGFESMHQAAAFVQAV
QERQGAKEVGCIEEIAWRKGYIDDVQLKLAEPMHKNEYGEYLFSLLEQNNER

>purH 709985:710578 forward MW:21726

MDLILIKRAILSVTQKDGLIELATFLHKNHVELVSTGGTLATLHSAGLPITAVSSVTGFP
EILGGRVKTIHPIHAGILADKNNSEHTNTLQQLGIQPFDLVCVNLIEFEKALMKKFNPY
EMVENIDIGGPCMLRAAAKNFHSVLVLPSPFTFYSEAIKELINSMYSSLTFRKKMAAESF
KITSQYDTIIATYLENN

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>mutT 710794:711201 forward MW:15681

MLHHNEYTNPLNVVCGILWRNERFLATQRPVNQSHAGYWEFPGGKVELGETLHIALKREL
KEELGTTIFSPTFYCKINHNYGVTPLLIHFFQITVFEGEPTPLEGQTLSWITPKEANNLQ
FLEADKFLLQQLQQR

>LAW0580 711302:712312 reverse MW:38051

MNVLVTGAAGFIGFHLCRRLLDEGHSVVGIDNLNDYYSVTLKKDRLALLMDEPNFTFSSI
DIVNLPNLQELFLQYRFSHVNLAAQAGVRYSIENPSSYIQSNLVGFGNILECCRHTEVE
HLVFASSSSVYGLNTLMPFSVHQGTNHPISLYGASKKANELMAHAYSHLYNLPSTGLRFF
TVYGPWGRPDMAFLFTKAILSGEPISVFNEGRMRDFTYIDDIIEGVIRVMKKT PKINE
NWNSSHSPDPSSSKAPWKIYNIGNNNTVQLSEFIEVLEVELGKKA IKEYLPMQPGDVEATW
ADIDDLKHDVDFSPNTPIEYGIKKFVEWYKSYLIA

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>LAW0581 712325:713056 reverse MW:28128

MDQVSLGVIGIFRPWRQAGITHLLIENEALISLLKSDQYNNKFQSPSFEKEKLDNSNT
IPSFQPNSSDAVKVRHHQVTHTKNSVPLLPDKWPFWDKILSRTPKNPFI LWTYEELGY
DLGGEANPDRRRLHRLIKDLSLAKGSHAFWPLCLFPDHATSFENMQMFMMSGVQHLKPNW
VIFMTGITPNQLGLPNFSLFVPQICWGRYMVTTQHIDELIGNEMYSSQLLSFLKKHIQSL
HTL

>LAW0582 713038:714246 reverse MW:43975

MIDKYLLFHCQELLQIHLGVCGSIAAYRAIDLVRWAKDVGLSVSVTLTPAACNPLNPLAF
SSVGADPVYTTMFDDIRHPYSHLEPGKTAQAFIIAPASASTISRLAYGQADELLACQALA

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FSGQP I IAPAMNPNMWNHPSTQQN I K I L Q D R G C I V I E P E Q G R V A C G D E G Q G R L A D L R D I Y
L I G L K S I T P Q D F A G L R I L I T L G P T R E P W D G L R F W S N P A T G I M G A S I A V A A W M R G A E V H A V
C G P G S P W L P L G I H R Y S V T T A L Q M F E V A E S I W P T S D I G I F V A A V A D F S P E K G P E G K F K K D E
A G D G F T L R F I R N T D I L Q K L S N N K A R N Q K V V G F A L E S E G L E Q A V Q N K L Y V K K A D M I V G N Y I
K D S V A S L S G S V F I L D R N G H E A R W E A M T K T D I A W R I L S W I K S L

>LAW0583 714243:714791 reverse MW:20375

M L R I Y F C V C L C I I T V G C S K F D F S S F S N P F S S S T A H V D D V Y Y G S F P D I C I P K S M S I D H N R T
L V S V G P D G E K I G L L T F E G R V D R S S L C S A M I H N M S R Q G W T L R G V I D G K R T I Q L Y E K S G R Y A
I L Y I Y N Q Q L T T A I E V W V L A R L D D G A Y Q L N L S R E T I I S Q D S P Y S S H G V I G D F E T E L G E K G L
N E

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>LAW0584 715334:715945 forward MW:23312

M D V Q K I K E Q L S R I K L Y Y S R N E T I R A L G V A V A G L K G I V K S S T P P P T E L R S L L R E G S Q L L L H
D A L I Q K Y L P A P I T Y Q P G Q E K Q L F T V L S E T Y K K I I E D Q E K E T Y L K T R E R K Q S L D Q A F N L G I
K L L E Q K K I S E A D K A F T E A L T Y Y K D E E R L F Y L I A K A L I K S H E P T R A F D Y I K K G L T F H P T N N
D L S K L Y D I A T R L K A G E T S A L D E L

>LAW0585 716001:717314 forward MW:49886

M Q N Y P L C F I H A S D L H L D T V F S G L S K D I P S N L A T I L H N S T F V A F N R L I Q L C I T H R P D F L L L
S G D I Y N E E D Y S I R A I L T L R D G C Y T L E K E G I Q V F I V H G N H D P Y S S R M K S I T W P K N V T I F D T
E V T N V P Y T A K D G T L L A R I Y G I S H A S N K E S K N L A L Q F H R T E D T C L H I A M L H C T V G S P Q H Y D
R Y A P C S T K N L I D A G M D Y W A L G H V H E Y Q E I S Q D P L I V Y P G C T Q G L H I H E Q G E K G C V L V T T K
Q Q G S K L T L Y K K F Y T L G P V L W H T L T I Q L G D T N Q P T L Q E D I S N T L S L D Y I E D T F H N A L N E L I
A T F T P G W Q M L I L R L S F T G C T S L D P L L R Y G N N L N D L L E R L R D V A S S S Q P V W I K D I Q L L T T S
P K Y Y H E L L E R E D L L G E V V R L S K S I N E L E N I E Q I H T T A L A P L F S H H K L R K I L N Y P N Q L E F K
Q L L T E A E R L C V E L L E N N

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>LAW0586 717314:721276 forward MW:152888

M R I H S F H I D S F G F F H N Q T I S N L S P K F S I F L G N N E A G K S T L L D F F R L T L M G Y P Q R K N N R I K
N Y L N G H G L Q G G S L V L D T N Y G N I H I T R R P N K G P V I I D Q H G T P I D I T L W E R L L S G I T P E V Y T
N I Y G F S L S E L Q S F E T L S T D N I R N A L Y G A S F G T G L Q S P S E V I K S L D N T M N E L F K P K G S T Q P
I A E H L H D W E E I N K Q L I E A E K E A A N Y D N Y A L E L K K I T L N L E S L H S K S K E L E Q Q Q Y H L K K R L
D I W H Q W E E W R L I Q T R L E H L P P I S A S F P Q D G A A R M E R A L E K K E H A A R E V T L A R T R L N N T L N
K I Q Q C H I N H D I L C I H K E L Q T I A E H K S T Y K T A L I D I P A L E A K L Q Q T K E S L N Q E L L I L G K N W
S I E K I N K I D R S I S V R E K L E R L S V E I E L T K E A Y D A A T A Y N N I C E E L E V A K Q E E I E K Q K I Y
E S L P S L Q T V L S D T N K D I L S R M L I Q I E E A E R Y L P E K K S R Y N S L Y E D F K N L L T Q F H L H P K Y N
K I E T L L K L L N E Q N S A I E M V N T I Q E K A L E E I Q A N N L L T Q T K Q K V D Q L K L H S K Q I E E Q I Q Q L
G D V D T K D I V S I Y S Q I N T L R T L L H I F S T E K I R A E E I E D Y Y Q L Q V A N N N F N K S S R S I V I G I
L S S L I G C G I F S I Q H L M N S N I L P I S Q N I I I L L P L W S G Y F F L S S G I V I I L K K L F Y N Y L P L T K
N S T I T K Q L H T R H E K A L S K T E L Q N K I Y T I C N E L R I E T P S L E N I E K L N Y Q I E Q K K E L Y D K K
E H L K Q E H N K Y Q K E I E S L Y Q Q I D V A K K E H E Q K L A D V I L A K N T W Y E Y V L E F G I Q F V P K P E Q V
T A F F A R V E T A C N L W S T I E L L N N D I A E L E S Y Y K N F K N F V N Q T L G E Y L S S I D C D S I P A L I N A
V K D I L T S H Q D D E L N S Y T Q A L E D L Q L A Q A H T K Y L I D Y L Q K L K I Q Y E H S K T K Y D K T C S A W S
N N L S N L M L D P N L A P D A I K N M F K Q M D H I A L L N Q E M I K I Q N K L E H Q Q N E K N A F V L P L K H L C Q
Q L G Y T P N S D D W I T V L D Q L L K D A T N A T L I S N E K K T L E E Q K S E Y E N E V K Y T Q L I L D D A N Q S V
Y R L L Q L A N V D D T E T F F Q H D I I K Q K Q E E L Y K Q Q E E I E A I L R L A A K D I S S Y K S Y P D F N M F L Q
S F S E I E K K D L E V E L N E V S S R L I D N K K S I D N F S N Q A R T L E I R L E N L I S S D T L Y Q M K V K Q A S
I V H S M Q N I A K K W S C Y A L A K Q L L I E A K S H F E Q E R Q P E I R I A S H I F S T I T G G K W I G I N S S L
E E M S L S I L P P H G E P I K P E L L S R G T Q E Q L Y L A L R L A H I H N H A I Q A S P L P I I M D D I L V N F D P
E R A K H T I S T F V E L T N S S Q E L H M G H Q L L F F T C H P H I A K Q L L E T I P E S N L Y Y I E N K K I T L A S

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>LAW0587 721314:721958 reverse MW:23467

M N K V I Q L G F I L M I T S S L L G A C G Q L V E I P E V L P K V T I G V V G P I Q P M G T T D L L A G Y I P E D R
G F A T E E N L I E L R S L I I D T L R A Q T K R E Y E F I P A A D G A D P T I T R M A G V N S A L E Y W V A V G K Q L

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GVEFLIIPYVLSWHPREGSSAGVTSSAELTIDFFLIDTKGEGALLGRSHYSEKQVGLASN
 LLTLNKFIKRGGKVVTEELAKEAIEKMIKEFRL
 >tatC 722079:723026 reverse MW:35162
 MSDSGAIKDTDSNMLLDSSQEKFVESMHGEQEAYLPGITPPVNNTSLIITASGNGGNNN
 GGGIPPTMSDDDEKPYGMPLLEHLSLRKRLTKCIIVIGVVFITCYSISDILFHYLALPL
 ITVMPADTKLIFTSVPEGFFVYLKIAFVAALFITSPYIFYQIWLFI SPGLYDEEKYILP
 LSICSAAFFLGGAAFCYFFVFPFVFFMSYSTDTIVAMP SLSNYLSFSLKMLVAFGLIF
 EMPLFAFFLGMNLI NAEMRSIRKYAILVVFIVAAILTPPDVFSQILMAIPMLILYELS
 IWVVALSAGHKEKRK

>LAW0589 723056:723421 reverse MW:13172
 MFGIGGTELLLILLVALLVLGPKSIPQIARTLGKALREFRQVSSEFQHTLNTEITFEEHE
 KKVKAGNTVSSVKNNVDNNETTISESPLSTSDLSTSFVSSNDKDDGKHS LNKEQA EKAS
 I

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>guaA 723704:725245 reverse MW:57314
 MQNKVIVIDYGSQFTQLIARRIRELGVYSEVYPCTVSKEVLASLQPSAII LSGGPASVGA
 SDAPQLDDIIFDFNVPILGICYGMLIAQCFFGILAYSQTREYGAEFILEGNSILWDGI
 SHKPF SRVWMSHGDTVEFPPNFTVIGRTNTLNVGAI ANEEKKVYAVQFHPEVSHSEGE
 QIIRNFLFKIVGIAPDWTMSSFIEKIITQAQKTIGDGNVVCALSGGVDSTVVALILNQA
 GKRLHCIFVDNGLLREGEKDEVISYLREHFDLNLIFVQAQDRFLKQLEGIQDPEEKRKII
 GHTFIDVFDEEARAIGKVDFLAQTLYSDIIESIPHRGSSVVIKSHHNVGGLPEKMSLKL
 IEPLKELFKDEVKVAVELGLPDSIIWRHPFPGPLAIRIIGEV TQERLTILRKADKIVE
 EELKSFGWYKRIWQGFALLPLKTVGVMGDGRYENVIALRCVDSRDAMTADWVRLPSQL
 LETISKRIINEVKGINRVVYDISSKPPSTIEWE

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>guaB 725358:726833 reverse MW:52827
 MNQDITNKIRYKALTFDDVLLIPAYSEVTPDKVNI SAWLTPSLLLSIPFISAAMDTVTES
 AMAISMARAGGIGIIHKNMSISRQKMEVEKVKKSENGMILDPVTVRPEDTVEHALELMQL
 YRVSGLPVVQDKTLIGIVTNRDVRFVEDLSNTFVHEVMTRENLVTPVGTTLDEAKHHLH
 MHRIEKLLVVNEAGQLAGLLTMKDIDKIQKYPNACKDDKGRLCVGAAGVGS DCEARAEA
 LLMAGVDVLVLD SAHGHSKNILHAVKVIKHSFPNCQLIAGNVATYEA AKSLLLAGADA I K
 VGI GPGSICTTRVVAGVGPQVTAVMECSKAAREMDRCCISDGGIKFSGDVVKALAVGAN
 TVMVGSLFAGTEESPGETILYQGRYKIYRGMGSI DAMKDGSSDRYFQDTNKKLVPEGIV
 GRVPYRGPVSDTIYQLVGG LSSGMGYCGASDLKTLFNTSQLV I ISSAGLRESHVHDV IIT
 KEAPNYRVDTP

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>maa 727151:727738 forward MW:21602
 MTELQKMLSGYEFESDNEIYERSLKAQRYIKTLNALEPERPEQQLSILKQLFNYSPTV
 RLQTPFFCSFGFNINIGNNTFIDMNCVFLDYNNITIGEGVLIGPCVNIYTI THPISVQER
 KRLAPNKNDAPLYNATANPVKIGDNVWIGGGSII LPGVVIGNNTIGAGSIVTKSIPSDV
 LAVGNPCRVLRLNHP

>cls 727939:729378 forward MW:53787
 MNFIFFSSIIVIYCLAIF TAAQALLHKKDSKSAFGWIAIIFMLPIPGIIFYWLFGIARVD
 SRASLLMGKAAAYKVLGGKDLHTGFFVKDPQGFIDSKTLPVNI AKLSMPGQKISDHVYVG
 GNNVYPLYNGEEVYPKMLEAISKATHRVYLSTFIFGND FVGTLFIKTINEAAIRGCEVKI
 LLDGIGSFFPIKSWREKLHPAIKLAYFLSPSLLPPKLSINLRNHRKILVCDSNIAFTGGM
 NISQHHLVTLKKS NRVDIHFYCAGPIAKQLEIAFLLDWSFTTGETARIPFDPIKKQGST
 LCRLIIDGPGSPHETIHDLFCAMSSSAQKNIRIMSPYFLPTPQLSEALASAVLRGVTVDI
 IIPLKNHYLLQWAMA HQAPQLVDKNIHLFLQPPPF AHTKLLLIDNDY TLMGSANLDPRS
 LNLNFELVVENFSTLTNLIIEFFDKKKSQSYQLTEHTKLP SLP IRLRNAASWLFSPYL

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>rnb 729401:731842 reverse MW:92565
 MKRSQHRSQKTKDNTLGQKTSKI QKHKPKSYITRQSVQPGSKINGLHILSLLYNSDHPLS
 SNEIITRLK I TKQKKQALELVNLV LQKQGQIVCTKGEKWAIASPMQKVI GTFVVRSGAA

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FVIVDQQNTQKPYSDIFIRPELQNGAWDGDKVQVIVYPTKHGKNFEGQVVQILERPRKEV
 IVRVSQKHEKGGVVCYPVDSKLNVLIVDTSKLPEKPIENELLVIPTPNTNGELLMGIA
 QYSLGVEEDVRVQEKVVKLNYPICEFPLHVLKEENVAKDLFIKSKAVFYNPYQKYDDI
 SQCSTAIRQDLRVIDFVTIDGEDAKDFDDAICVYPTDIGWDLWVAIADVSHFVRAGSLLD
 SEALARGNSYFPCSVESMLPEFLSNDFCSLKPKEERLVMATKISFDNDGKTKNVIFFPG
 VISSRARLTYEQVHLALEVKEISRLPGGIDTLSMLNNASELAKVLQANRIKRGSLFDLP
 ETRFLINKATRRVIGVIRQERFFSHQLIEELMLAVNEAVATFLHDKQIPFLYRIHPEPDI
 ERLEKLFRI LATTDLACQLSGSPDAKKLGGILEEAENTPQTFLISRMVLRSMMAKAYSPE
 PGEHFGLASPLYCHFTSPIRRYADLLVHRAVKFALGDTQKHIPFGQQLFSIAEQNSHER
 VAQEAEREITKRLSCLVLQDGEKIFEAVITGITDFAFFVELISMPIEGMVRLASLKDDW
 FEYNQDRQELLGVRTGKRFYLGQRLTVKVVSVNIRLEIEFELHMMQPTSGENIKKGRTK
 ARNYRQKEKVRSSNSSFRKRKKKSSSLHQKGQ

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>IpxK 731866:733320 reverse MW:55198

MDFIELQKNLGFILLPLSYLYTLVMRIRRAIGKIGLLGRDPYCPCISVGNISWGGTGKT
 PVIDWLLDWAEQKQLSVSVLTRGYKSDNSSTILPLYVKPHHKPKQVGDPELMLALEHPNA
 SILVDPNIRSGRYAVQVLKPDLLLLDDGFQQVGVKKTLDVLLSEEDLTKQWNRVIPAG
 SWREGSQALEDASAFLIKADKEKMQSLLPIIQNRLFHFGKPVFSFYLPVLLKGAGLSEA
 VTAKEFAGRSYILVTGVGNPNQVLHTVESYLGYSPEITHIFSDHHRYSFQDINRLLSFNL
 PIICTMKDFVKLQWLPVSELWGLQVKTVEFEGYLSKYSFPQWLAALWDEKHNNIVDSLGE
 DIEDYKGFNSSVTLFFEEQGEESIPPEYEQSIQDKAVSNDLIFDDESDVDEVSVIQNN
 NNVEVQHTDDHEEIDNMRTTIVILPESPQNLYHGSHVMDEATFSNKRERDILRNSDNDNS
 ERAT

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>tpx 733491:734009 reverse MW:18786

MVKERKDIITFLGNPLTMGNPVSIGEKAPDFTVLANDSLPRTLSDYANNILILSAVPSL
 DTGVCDIETQRFNSEAAKLGEKVRILTISCDLPFAQARWCGATGVSAVETLSDHRELSFG
 YAYGIAIKELRLLARAVFVVDNMGITYQEVPEMTHPENYTAIFEAVNTAS

>LAW0597 734850:737261 forward MW:91555

MSKNNKISIPLNNTYSLVRWDLKFEQQLCNSIKLILPFKNYAIYFPQHHLKPNPEWLPE
 EQKFLFPFQWYKDELLGVVMIRNPDPTLEMLLPVLPGLTTFLAQLLELHKKQALDFLTGL
 MTRQNFIQLLTEEIELIQSSLNNRYGGVEETTHYKSSIAVIRFNGLSKLTHEISYNF
 VENIIADLADIFIQSIPNHTIPARTGEYEFALLIPETNRSQCDTIASKILFCLNQYKKPS
 PLTDRIYISPHAGYAIYPQMDRTKKVTMDTHVNLILHKAGLAAETAYSRLFHGGKNIM
 GYGSLLYEGGECQILPLAQAVALNGREIGAYEGQHFSVWTTTHYHNPCKLKENHIPIYKG
 EIVLLEVKETSSIAEIVYLGDPQTQPFEGDMLLLDEEHSLLQEKSYSERQQKIKTHKLDP
 TTGLLQHFDFVTKFSESYRKYTQFSLAIHTANKTLNSTSQEQINHYIKEIAVKCHLLNN
 NLNDELFGGRFALNSLIFHNTQPESLYAHYALSTKISQELNITLSVGIAYWPFLTL
 QPLDILECCRKALEYALLPPPHVGFNSLAINISADKKHCRGDLFSAIEEYKLALLADK
 NNALARNSLGVCIASLGHYNEAQKHFKALQLLPTPEMISYNLGMTYQNLGDITSATQYF
 HNCLTLCPTHLYAAIRLGALAEANTNTQEAIKYQNQALSINKKHALPYRHLAMLAFKEGK
 KEKAREYLHQALLYNPHDTTTLMLMAKMYLDSGEDPEIAETLSRQCVAQRPDIKSNWIEF
 ARALEAQGKKKEANKAWLKANEL

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>zntA 737302:739368 reverse MW:74419

MTYTIHNLHCRGCAIRIEEQIQLSLPGISFASIDELTHHLVIEGSAPDLIELNKIAGEILP
 GYVYFEPYSTNAIDEEVSWPPSLWIASLFFIIGILFQEKLYKFSLSVVTDAIFFGIPYVLC
 GWSVLLQGLKCVLRKDFNEFTLMGGATLIAIALGDFSEAVGVMFFYRIGEYIQERTLIK
 SKKSI RALLATKPSIAHLVQKNHIQDVSPESLQPGANLLVRPGEKIPLDGIVESGTSQVD
 TSPLTGESVPTVVHVGVSQVFGGTINIMGSLIKATATYKDSSISRMLELVENAVARKAPT
 ERFITRFARYYTPLVLSAILVALPPLFGLGLTQEWIYRGLILIVISCPALLISIPLG
 YLGGIGAASRQGILVKGGSVFDALQKIKIVAFDKTGTLTARFEVTGILLNKVSREYLL
 QSAAMAVTYSSHPIVRPILDIVNQKPQVSGIALKEIPGKIVATYKETSLLVGNETLLRE

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HGFEP IIVDRPGS I IHVARDANYLGV I VVTDTLKSDAVEA I RCLKKYVNKV VMLTGDRPD
SAEG IAK I IQVDEYRAGLLPEDKVAV I ESFGP I EQTLFVGDG I NDAPVLAYS GVG VAMGK
LGAESA I EVADAV I LDDSPVRVVDL I RIARKTY I I VLQNI I LALG I KTV I IMGFG I AGLST
LWEAVFADVGVALLAVFNSTRAGKLKNF

>panF 739657:741138 reverse MW:53911

MQQY I I F I P I I I Y L G L T F F I A L L T N K H L T I T N S D T F I K E Y F I G S R S M G G F I L A M S I I A S Y
T S A S S F I G G P G A A Y E Y G L S W V L L A M I Q A P V A F L T L G I L G K R F A I M A R K V N A V T L V D F L R V
R Y Q S D I L V V F C C I G L L T F F M A A M L A Q F I G G A R L F Q T I T G F S Y E Y G L V I F V L T V T F Y T V V G
G F R A V V T T D A L Q G I V M A I S S I L I L C V V I Y N G G G I E N C I L T L K N I D P G L I T P T G P D G L L S P
T L M F S F W I L I G F G V L G L P Q T A Q K C M G Y K N S Y S M H K A M I I G T V V I G F M L L N I H L A G V F G R V
I I P D L S I G D F V M P S L I V K L L P E F W A G L F I A G P L A A I M S T V D T M L L L A S A V I V K D V Y I H Y K
W K G D I S S V S Q K H I K Q I S T G C T L L L G L L V F L A L D P P M L L V W I N L F A F G G L E V V F L W P I L F
G I Y W K K A N A T G A I C A I I T G M I T F W S I S I F N F S F G N V Y S I V P S L L L S G I A F I I G S Y Q G Q P T
S K E I L W L F W G E K E

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>LAW0600 741141:741506 reverse MW:14773

MQHRSKE I FSRNDKNHTYKQYKQSNYEAWLTSC I Y I F Y S I W W W L F A Y V I C N G N V L T Y S Y
I L G F P C W F F F S C L I G F P L L C C I L W F I I H Y F F K E V P L D T P I Q N Y D P N D I N S Q I Q S E H H P E L
L

>LAW0601 742192:743511 forward MW:48137

MLQRH I L V S P L Y K N T K L S F I T S V T H G L I I G V C V G S I I S L Y R L T H T V C L N F I L Q I L H Q W L N
Y V W V I P L W F C I L F I I S W I I G K L V A Y A P H I A G S G V P E V E L T L T G D L Q L P W G K I L I S K F I G G
W L A I L G G L S L G Q V G P S I Q M G G L I G D G F S R Y W L K Q Q S N F H I I G G I A A G V C A A C D A P I A G L L
L V F E Q I K Y P I T I R S L I I T I F S V I G A Q L V L T Y G F G I K R M F N F E S F L S P I L N E T P L L I A T G I
I I G I G G A L Y N T I L L W F R E R E S K Q K V V P N L F R A A P P L F C A G V L I F F L P E I T E G G E N L I R Q L
P S F S Y S L Y F L A I L L L F K V I F S A Y S T T G N I P G G I L M P I L S I G A T S G L I L G N M F A Q Q E V I G Y
M Q A K S Y L I Y G M A G F F A A T V R A P L T S I I L V T E I T G A L Q C I P G T F L V G F L S H F T A N L V Q S T P
I Y T S L K K L A Y L R L Y N N R N L

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>LAW0602 743611:744357 forward MW:28935

MKETLHNYTFTTGEKITV I V K K G S P R R K H I A I C I T S R G Q V V I T I P Y G V M Q K D A L Q I I N K K
E N W I K H H L I K T L N K P Q P S P L Y T T G E S H L Y L G K R Y S L I V L K E K S R L S L Q Q R I I L N K N E I
Q V T P F S N N S L T V K R L L F K W Y Y A E A Q Q Y I A K Q L Y L L L Q Q I P W L Q T V P T W K I K A M R C C W G S C
S P H G V I T I N T H L I K A P T I C I N Y V L L H E I A H L K E H N H S H N Y Y K L L T K L M P N W I N I K T Q L E N
I A P F V L M S

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>LAW0603 744711:746285 forward MW:59910

MVKEQSPSTVRTRC I K R I V D Q C S L W H H C I P I A F A F S L S S I G K S F L F T L P F W S N H W K P N S E
S F F I N K P Y G L W I T S I T I L L L G I L L H Y T N K L N N E N S L I H N F I K S F S H I I K Q V V P I K S H R I I
L W K K S P L Q P L F V T Y L I V I L L N I L F E Q F Q P Y F S D L F K E T M Y S I E L G V I V F T G L L C I S I F P P
V Y A C I T Y A L A I V C N I A F Y E C T L Y I D P S Y I H M F Q V I A P F L A L P L F I I G I P H L E P H Y N I T N P
K K V S R P T V N I S N H S L Q Y V A L S L I G L L S T F Q F L N A A T I D T F I F I N A Y L S E K Y S A T I F M L S
S Q L I A A I F A I W I I K S K D N A H L M L L L F I L G L L G I S T I L Y S I L I Q K T V P I A I L Q L A S G L I T M
F C I I T F S I L V H S Q K C M Y K I L A L S I F V M N I V G Y F S G Y A L W N I A I F L K N S S S S I I H I H I P I L
G I V S V L S I L L I Q S L Y Y H I M D I S Y L C Y I L S S H D N S M D V Y V Y Q D K L N T L T P R E K E I L S L V Q Q
G L K N I E I S N R L S I T E G T L R V H L R N T Y R K L N I Q G R Q S L K S L P H N L

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>LAW0604 746343:747425 forward MW:41614

MLHNSKI I F P T L S I R I Y Y F I F C I L S I V V G C T V F L L V K Q N A S D L F L Y N L L T I N T T I L K N K T
Y P Q H I F Q L N K N S N Q L F S E K N L F R N N Q N V P N L L Y S N T I H K F T E K N D T K D T F N L L L L C S I F F
F A I P Y I I F Y L F V I Y P F I N L C H T I E Y L S Y K N S N K K I F K T T I F E F K K I I S I V Q K N I I K Q Q E L
Y H K L Q I T K T E K K Y I Q R I N S I D Y T T G L L D K K C I N T Y L S K Y L G Y S V L T I L M I D I D H F K A Y N D
T F G H V A G D K C L A A V A R C I K N A L K R K E D I V F R Y G G E E F I A L L P N T A I S G A H I V A Q R I H N S L
T Q M K I P N T T S T V Y P F L T V S I G I N E V L P Y K H T T P I D A V H H A D I A L Y T A K H N G R S Q T A V H S N

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>LAW0605 747467:748333 reverse MW:31977

MRPETQAMLCRMRDNEATDSQIYRLLSKQTNLSLHNKKILEQMAQDEDNHSKIWNKYIGGS
PSISSIRVWIFTLGKIFGLVFINLLESREIAAIEAYQSISDEIPEAKDIMADEEKHES
QFAVLI ESEGLTYISSMVLGLNDALVELTGALAGFTFALHDNKVISMAGFITGVSATLSM
AASEYLARRSEKTNKHPLKAAIYTGVTYLITVTL LLPFIICSSPIIALIFCLITAGLI
LCFTYVSVIHRKPFLPSFQEMIIISFGVAGVSFVIGWLARVWFDVAL

>LAW0606 748457:749158 reverse MW:27330

MTVLAERNDNIEASAFIKSQKQDPLRERVYQYLTRVMSTGGVQHGQAINQDLICKELQVS
RAPLRDALIRLESEGVVTVARKGVYLTVPNEAFLRNAYQVINTLEIECLNEVFDFLTMD
HVKELEESNSKQKFLQONQATAYHEENMRFDIFLDLTENALLRRLHTSVANRLHLFCQ
SACFDDWENQRLSEHERFIAAIKKNRDDAINILKNEHWSFAQHKDFLERYV

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>LAW0607 749754:751250 reverse MW:55742

MKCHILIDWLRTVLTLLHNI FYKLLPFSYIKVVFSCCTIVLFSTSLILTPIYASGLFS
SMGLKEELELGKKNLLVRSQMAVVEDPEIVGYIQSIVDQLAASMPPQPFQKASVVLNN
SVNAFAIPGGYVFNVTGLIMMENESELV GALAHELAVTQRHIARRMERAQIVNVASIL
GALASVFLGGNTTGAVFAGSLAAGQTAMLNYSRSETEADQIGLQYLVKAGFKPQGMEE
AFEKIRRKQWASGASTPEYLSTHPDIGERINEIHSRVASLPQSIQARVENNKRFKRVRTL
IWARYGEPETAYWLF TKSGEKDCLALMGLGILAERKNKIKVAEDAFHKAVVCAPNDALIL
RETGMFYNRGDGTQS IQFLKALSLSKDVLAQFFYARALDDAGNSTEAQTYKQLLKI
LPEDA EVHYIYGRSLGQSGNVFEAYIHLAYSALYQNDIKKFTLWSEKARSLAKTSEQENQ
LKSLMKIHEERVEITTQE

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>cysS 751382:752839 reverse MW:55493

MHLYNTMEKKKEPLIPIISGKLGIVYCGITAYDFSHIGHARSAIVFDILVRLRLRYQGYDV
TFIRNFTDIDDKIINRANKEGRSSKEVAEEFINAFHEDMDRLGVLNADIEPKATDYIPEM
IECCQKLLLEADKAYITASGDVYFRVRSFPDYGKLSGRTPDELRI GVRIVPSEEKEDPLDF
VLWKAAPGEPESWESPWGRGRPGWHIECSAMSEKCWPLPLDIHGGGIDLIFPHHENEIAQ
TESIVNKPLAKIWMHNLVQVNSEKMSKSLGNFKIVRDILEAYLPETLRFLLKHYRSP
IDFSFEGMNETERSQKRVEYECIAEVDKALERKSWDSGGSSSILAELEDEQFSLFMSALED
DCNTAAGLGHLFNIHIVRRALDDKALYSTTDGKVVFEQFREIRKVDILLGVFGQKPN
FLQDLKTIRIRNKIDVNQVEELLSKRRQAREEKNFVQADEVRNTLASLGIEIRD TSEGG
VWDIL

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>rpiB 752940:753368 reverse MW:15625

VLKVYIASDHAGFSLKNTLIEQLQDNDYIVRDLGPMTSEPCDYPLYAQYVCEQVLDEIGS
FGILICGTGIGMSMAANRIKGI RAALCTSEFQARATRLHNNANILCLGERVIGKSIAIEI
VNIFLTTPFEGGRHLQR IASFD

>LAW0610 753377:753721 reverse MW:13413

MEFQIEWGKVQDLFCVMTGLWVLIYVRWFVGLDIFFLSLCIARLKKHKNKLEIQLSYFV
NTLTPVEQEKLKAELDLVSKDIIQLESKKS SAFSKNCTDVLQRRLLKAYCLVSS

>LAW0611 753798:754583 reverse MW:29656

MIILLRYVILLELGLLIISCSVQTKFPIASKDVHEIWYTYERYAEQQGKSTPYRIKGT
LLYHADKAIKRLSVI IWSNGNFPICLDGMAGMNTPVVRLHATQDKFIIYSIIDKEAKVFS
NTDKVFLELEKPLPFGFYDFVSLIRGQFYNVFGKQVQGVSPLSMSGNI IYTLGGKLSG
TLELSQSGLPVKWNSTVGWSLTITYDDQTKLPSKVI LFDNKNKIVFIVKGRETFLQNF
TNSQLQLILPEGVDVQYISYE

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>LAW0612 754591:756312 reverse MW:65504

MNVIQFVHNVLRQWPLVQLLLSIGLILFPLQACVAKNSQHNTIHWNLTPAQVTYGILLL
EQSIRIGDKSGVLEAMSILVKHSPAPQFFTD SAAWFLEKDPITARNILEGGIQLFPDEF
GFYLLLADCWLEEGYPKALESLQAYQLRHPKSDLVRQELAILYLKTENYKEAVDIFSSL
PKNYNAFIRYCYAQS LAALGRSSEAMS QKLAVQENPEFLEAWFETGKLEKTGN YSEA
IKVYLDLLDKDSGNQSVRLHLISTMLSLKKPDQALKYITESSENYSFCLTAVTLFLENKF

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YTQAE L L L K Q I K E R P E A A G D I N V I L Y I L G A I E Y E C Y K N Y D K A L T L L E E A S S K D K Y Y I N T L
L L R V Q I F Y S L N K I N Q A M Q L L H Q G Q E A A P L E Q E L W T T E V Q L L L N K K E Y N K A L I V I S K G L E L
F P E E K T L L F L K G V A I N G L G K K S E S E L E M E Q L I S R Y P D Y P E V L N F V G Y C L I E D K R D I D R A L
S L I K R A D S L I P N R A Y I V D S L A W A F F A K G E I K K A W V E I N R A V S L E D S N D P T I W E H Y G D I A Q
A I G K K K D A K I G W E K A I K L Q P Q D V E A I Q K K L Q G L

>sigB 756332:757489 reverse MW:44439

M N Y D I Q S P F L L D K S I S E Q S F C S K K R K N D D T Y K A S S S K V E Y E K I K R N S K E E S E I E D P D T E M
D D T L L S S S E D L L C D L I E D S E L D E M G F E T V V S S Q V T L S T T T A T R D S L Q L Y L R E V S R F P M L K
P E E E L R L A Q D V Q K K G C S K A A F R L I S S H L R L V V K I A M D F Q R R W M Q N V L D L I Q E G N V G L M R A
V N K F D P D K G I K F S Y Y A A F W I R A Y I L K F I M D N W R M V K I G T T Q A Q R K L F Y N L N R E R Q K L L A E
G F D P D T S S L A L R L G V G E E Q I I E M Q Q R L D A S D M S L D V T V G E E T G N A S R I D F L P A I N P G I E E
S L A G Q E I A I L L Q D R I K D I L P L L S E K E V Y I L H N R L L T D D P V T L R E I G E K Y S V T R E R V R Q L E
A R L L Q K L R T H L S R Q I G D F S E E W I G H

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>LAW0614 758603:759070 forward MW:17504

M Y T I R T I F L Y T L F I A L T H I S L A H A E E I K T I Q G K E L A Y F I S Q N K G K P I F I T V F A T W C P A C R
Q E M P G I I A T Q Q K Y S K E Q V T F I G I S L D D N V E N L Q N Y I K Q S K I T F P V Y I A G S T I P S M F S I T A
I P H N I I Y D K K G T L V M N K A G A L S A N E L N T M L N K Y I K

>LAW0615 759733:760479 forward MW:27986

M V M W I G V F F M I V T C P N C L T K F N F P D S Q G R P N T K L R C S V C K H I F P L I Q E E Q K L S F N T V N S S
K S S S G G E K K K K W S S T K L L L L F I L L T L T A G I Y A W Y T Y P Q L K D V V Q H F L F S E K K E E P T D L I
S L I A L R D V V Q Y N I N N E K L G N I S V I E G K V V N G F S D P R E L I R L E A S L Y D K N G K L L S K E Q L A
G T S V S L F Q L Q V L G E Q E L E R A L T N K I D I L A N N T N I P P K G E V P F M I V F Y N P P D N A A E F G V K V
I D A R L P P K

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>radA 760506:761837 forward MW:48348

M A K P R E V Y I C I E C G A Q F P Q W H G Q C L T C K T W N T L K I H N A P S T T A Q K I Y K K L K P I P I G R V E T
S T Y Q P F S T G I K V L D H I L G K G L V P S S A L L I G G E P G I G K S T L L L Q L A G A T A T L G K I V L Y V S G
E E S L P Q I K A R A E R L T V L H D N L L S M A T S Q V E D I L P L L N T S E A P D L L L I D S V Q T L T S S N A E G
L P G N V S Q V R A V A T E L V E A C K Q G K T T V I F I G H V T K D G T L A G P R L L E H L V D T V I S L E G D R R H
I F R L L R V I K N R F G P N Q E L L I F Q M A Q H G L E P V A D P S T Y F L G A R D P S L S G T A V V M T I D S Q R P
L A V E V Q A L V T K S Y L A I P R R T G L G F D V N R L H L I L A V L E K R L R L N F S N V D I Y V K I G G G I K L Q
E P G I D L A L V A A I L S S F Y D V P L P E R S V F W G E V D L N G Q I R P V G S H S I R L S Q A S K L G Y N P I F Y
P K H E Q S G L A T V M E L Q Q S L L K K K N

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>yIjA 761962:762291 forward MW:12562

M T Q S S Y N P I E Q E G S P E L L L Q E K I R R P K M Y Q V L L H N D N Y T T M E F V V S I L M K I F R K T M E Q A T
S I M L S V H R K G I G V A G Y T R E L A E T K V N T T H M L A R E A G F P L R C T L Q E V D E

>LAW0618 762288:764534 forward MW:83171

M I G K E M Q D V I N I A I T E V N K R H H E Y L T L E H L L Y G I V S E T T G Q K I I E S C G G N T E S I R A Q L E Q
F F S T Y L D T L D E A I P E S E I P Q T L A I Q R V L E N T I A H I H S S G R T Q I E V G D V L A A L L E E E E S W A
A Y C L K K Q G V T R I A V L E F I S Y G L P H S E L G N D D F V K K A E S S E E K N P L T K Y T I E L T Q K A R N G
E I D P L V G R D M E I S R T I E V L A R R K K N N P L Y V G D P G T G K T A I A E G L A L R I I S G N V P E E F T S S
L I F S L D M G A L L A G A R Y R G D F E G R I K S V L S E L S K Q P K A I L F I D E I H T I I G A G S T N G S A V D A
A N L L K P I L T S G K L R C I G S T T H E E F R N H F V K D R A L A R R F Q R I D I H E P S Q D D C I A I L K G L Q S
R Y E K H H K V K Y T P A A L H T A V K L S A R H I T D R M L P D K A I D V L D E A G A A V H L R A G N K S K V L V T R
Q D I E K V I S R M T G I P I K T V S G K E K D R L K N L K K D L S S H I Y G Q N E A I D K V T K A I F R S R A G L N R
G N R P S G S F L F Y G P T G V G K T E L A Q I A E K L N I A F L R F D M S E Y M E K H S V A R L I G S P P G Y V G F
E Q G G L L T E A V K K T P Y C V V L L D E I E K A H P D I Y N I L L Q V M D Y G T L T D N T G R K T D F H N V I L I M
T S N A G A R E M G I T N M G F V S D D T N T I S H K G R K A V E S V F S P E F R N R L D A I V P F N N L S P E L M N H
I V E K N I K E L T K G L A E K R V S V M L S S E A K K W L A Q K G Y D K K L G A R P L Q R L L R E S L E D Q L A E E I
L F G K L V K G G R V T V K P P L E E D S K L V V M L E

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>aat 764629:765315 forward MW:25747

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MLSALSNDPMYFPPLETAFDNGLLAYGGDLSPQRLLSAYTKGIFPWyDNNSPILWWSPDP
RCILLPENFRIPKTIQRELKKCTFSVTINNAFTEVITACATLPRTKQKGTWITQDMKMAY
IQLHKLGFSSHSIEVWDNSTLVGGLYGVALGKAFFGESMFHIAPHASKLALVWLAQYLWSY
NFDIDCQMPHTHIMRYGATLISRNEFLRRTIAVTTGTSQASTKEAL

>clr3 765529:766827 reverse MW:48330

MFPNVQHKLGVVFFPAFDWAISPTHPEREERLLYTQDQLYEEGIFDIPGIQEYQPSLSTY
CDIESVHFCLPNVGAVCNSHLSAGGAIHASKLVLTGEVERAFAIRPPGHHAMRVTYG
NRGFCNINIEAVMVEHIRQTYKKQKIAIVDTCCHGDTQDIYWNPNVLFISLHQDGR
TYPGTGFLEEVGGPAALGKTVNIPLPPGTGNEGYYAMEHVLPILDEFQPDIIINSAGQ
DNHYTDPLTNMYLTAEGYACMTQMLKPDIAVLEGGYSIQGALPYVNLGICLALAGLPFSY
LQEPDLDKVDICQPKRVTTETIKKVCEQALSQYFYPVKPYDGGQDGCWWVRNRTIYYDTD
MIHDTQYERIRLCKTCNGLTAIETKSTCLDEALCLLFRGACSSCCSEAESLKRQWVQTR
NSNILEINPNKS

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>LAW0621 767002:767973 reverse MW:37361

MYIVTGGSGFIGSAMIWLLNEVGIDDLVVDNLAISDKWHNLVNRFRKDYIHRDEFRHLI
QKQKAPEDIRAFHMGACSSSTERNADFLMENNPHYTQMVCRYALENGARFINASSAATY
GDGSKGFSNDLLTTLALKPLNMYGYSKQLFDLWAYREGLLNQIVNLKFFNVYGPNEYHKG
DMRSVVCKSYEQITSSFFSLFKSDHPDYADGGQMRDFVYVKDCVKVMYWLFEHHEVNGI
FNVGSGTARTWNDLLNAVFIAMNKKPDIRYVDMPDQLKGYQYFTQADMNWLQKVGCDVS
FHSLEEGIMDYVQHYLMAEDRYL

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>LAW0622 768129:769223 reverse MW:40445

MRFVDEVTISVSAGKGGNGCVSFRREKFIPKGGPNGDGGDGGNIIFKADSRLLTLYDFR
VQRHYRAQNGEGGKGSQRHGKKGEDLILHLPVGTIIFEQLLDKEYFLVDLDRPGVEFLIA
RGGRRGGKNEHFKSSTMRTPRFAQKGEEMEEKYLRLELKIADAGIIGLPNAGKSTLISK
LSAAQPKIAAYPFTTLNPNLGVMDNLDPPDKRLVLADIPGLIEGACKGQGLGHQFLKHIE
RTRFLIHVLSSEIDEDNPWLGFDIVNEELKEFDHTLMQRTQLLVVNKIDVLQPEKLSHI
KQVAESSGKIIYFISAETGEGIELLVDAIWKLQSYRLNAPFIHLKPIEHKSDEEFAIEVA
YTKE

>rplU 769665:769973 reverse MW:11517

MYAIEAGGKQFCVEEGSKIFVSKIDAEVGTIEFFDKIFMIGGSSPQIGTPYINNAKVIA
KVLEHGRDKKILVFKKWRRNDSRKLQGHRQDYTALKVTGIQL

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>LAW0624 770472:770777 forward MW:10942

MNLKPLNDRVLVKRLESEEKTAGGLYIPDTAKEKPSRGEVVAVGPGKHTDDGKLIPMAVK
AGDTVLFNKYAGTEVKLDGVEHLVMREDDILAVITGETGRK

>LAW0625 770925:772571 forward MW:58642

MASKEILFDAKAREKLSRGVDKLANAVKVTLGPKGRNVVIEKSFSGSPVITKDGVSVAKEI
ELEDKFENMGAQMVKEVASKTSDIAGDGTATVLAQAIYREGVKLVAAGRNPMAIKRGI
DKAVVAVTKELSDITKPTRDQKIEAQVGTISANSDTTIGNIIAEAMAKVGKEGVITVEEA
KGLETTLDVVEGMKFDGRGYLSPYFVTNPEKMCVCELDNPYILCNEKKITSMKDMLPILEQV
AKVNRPLLIIEADVEGEALATLVVNKLRGALQVVAVKAPGFGERRKAMLEDIAILTGGEA
IFEDRGIKLENVSLSSLGTAKRVVIDKENTTIVDGAGKSEDIKARVKQIRAQIEETSSDY
DREKLQERLAKLVGGVAVIHVGAAATEMKEKKDRVEDALNATRAAVEEGIVPGGGTAFV
RSIKVLDDIKPADDELALGLNIIRRSLEEPLRQIAANAGYEGSIVVEKVVREAKDGGGFNA
ASGEYEDLIKAGVIDPKKVTRIALQNAASVASLLLTTECAIAEKPEPKDMPPGGGMGG
MGGMDGMY

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>LAW0626 772698:773579 forward MW:33169

MIKYIDWIKQTTMMFKKAGIDSPKLSAELILSHVLNITRLQIIMTPFEPIPTNSYSTLND
IMLRRHLGEPYAYLTGKKEFFSREFKVTQATLIPRPETELLIEFVLNHINPTQQIYFADL
GTGSGCIAITLAAERKNWLGIAATDISSEALKIAKLNSLKNNTHSQLQLQSDFTQPLCLP
SSLDLYISNPPYISENELTSLPHEVISFEPKIALTPHKIHLDEINTVLHCYKKIITQAE

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ISLKPGGIIILEHGATQAEAILLLLLKNNIWTNVI SHTDLTNKNRFITAYKYKI

>IpxC 773705:774619 forward MW:33732

MQQTTIQRSITFSGIGVHSGQCLNVTLHPASENTGIVFEVITGDTRHTLIPSPSAVIATK
LATTIGNKNITISTVEHLLASIRGLEIDNIRICVEGAEIPI MDGSAKIFTNELLQAGIKY
LPATKKILQVIKPVFIKGEKIRALPYNGFKLDYTYNIHPIIGHQRLVLDVPTTFLS
IANARTYGF LKDV EQLKNGLAQGGSL ENAIVLDSTKVINPEGLRYPDEFVRHKALDFIG
DMAMMHLPLQGYFEIYCSGHQHNNQFLHKLQDENALALVTLEGEKTQNL YQNITPLYNDV
LALL

>mutL 774694:776640 forward MW:72863

MNASRSPILLPEALQNQIAAGEVVERPASIIKELVENS L DAKATDIEVIMENGGHTFIQ
VRDNGFGIPPAELRLALTRHATNKIKDLGDIWKIHSFGFRGEALPSIASVSSFKIESAYT
KESNNTEAAFLQIKHGKIEKEGPSSLYKGTIITVQDLFATV PARLKFLKSPVTEQKRAQE
IFSR LALTTNTMTLFSGARELLKFPAASHLHQRLKI IWPEELTSNLIPVDKTTTHDIRIH
GLTSPPTQTQLRSR D R V L L Y V N G R T L N D K L I L R A I F E A Y K G R L I S K E Y P Q A V L F I E I S P E L
IDVNVHPAKTEVRF RDEKSI FSAI STALKEA INKTI PSFSLQQTDTDIHPKGF WGEADQE
YIFPIKKN SNIHPTQTEVCTTQSTTTDSHGFS LQHMLQNTFVLEPDCQQSLSAKESTYTL
ASSYSSHPSDNSSLLPNLTSNSTDSNKENEISIKYIDK KMCIGPYHYLGQIGDTYLILED
IRKKNEQAEIILDQHAVHERILAEKFRNGSLINQSQQLVLP IQLKLHYSEQEELQEIAN
SLTSLGFI FSLKGDILHVESIPPLDRSQATIILRKALSRQENIEKLWISMACKAAIKA
GLPLPPDEAALLITQWISIEKRENC PHGRPCVLVWTIQDLDKLFKRRS

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>LAW0629 776669:778213 reverse MW:57068

MQSSLKIQFFLFLIGINVLSRTIIAMAAPTNPVAITLYPTGGW IQVVEELPVQDDKVYFE
LPAGAQLGSLLLSIEGQFIGSIETTPIASIDSPVVAKIRERYTKAVQEVALIRGKLA AVK
AKIALWSNPECPSRSIEEIKKFDSMMGSKIEELYVAESTIEPALKKALYELELLEKAI VD
AGGKN TYATAITAVIRPDKTNKKPNKQVIVQYGYMLSDCGWNP IYRFDALPEKGI VQVVQ
EAEIRQASGQDWRNADITLASVNI GSALVPPNLPDWKILPAPIQTYRQGQEVSP IADNAM
YLAKSSVIPVHAQEEPTFTTWSL GKVTVPAGMVMRFMLYKNDWDAKFFRLLRPSVQPHSY
LVANIDIPSSVDLIPGSAQFMVDGKVVGNGYFTLRSEENHIYFGVDP RVTAQMILDKS QS
GRDGF LDKKQSHSWSWNIKVCNDHTVPVKVVVEEPEPQSGDIGIIT TQSNPKPIIEDHM
YLWKMTLPAEGEIDIQHSVLMTAPGDMRIIEGRR

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>secA 778307:780802 reverse MW:94417

MFSFFIRKIFGSKNDRYLKSLSPI LDQINALESTMKALSDKEIPVQLATFKQQLQEGKRT
IDELLPEVFALVRETSFRVLGMRHFDVQLIGG I SLHRGKIAEMKTGEGKTLMATLPVVLN
ALEGKGVHVTVNDYLAQRDAEWMGALYSALGLTTGVLTSGLSDDARKEAYAADITYGTN
NEFGDFLDRDNM KFYPNQLVQRGHFFAII DEVD SILIDEARTPLIISGGSEQSTTMYTQI
DKIIRNLKPPQDFSID EKGVVILSDEGAVQVEKALGIDNMYDPSNIAIQHHVLQALKAH
YIFRRD VDYIVKDDQVVIVDEFTGRLMPGRRFSDGLHQALEAKEMVTVAENQTLASITF
QNYFRMYNKL AGMTGTADTEAVEFAQIYGLEVVVIPS NKPMIRKDHSDVIYRTRKEKFDA
IVKAIIE LHKKGQPVLVGTISIETSELISSMLRKNISHNVLNAKHHAQAEIIAQAGQV
GKVTIATNMAGRGTDIVLGD SVVELGGLHILGTERHESRRIDNQLRGRAGRQGDPGSSRF
YLSLEDDLMRLFGSDKLSGLMQRLGMEEGEPIENIMVSRAIESAQKRVEGHHFEIRKSL L
DYDNVMNQRTVIYTLRHNIMNDPEPMDIILEYLD ELLSDIYIELEDNDNNELNKS IHTQ
LYDIMNLSQVMSIDNTLPTKEQAKTLILSMFEKLSKAGEAYNDLLRYVLL EELDRCWKD
HLRNMDFLREGIGLRGYGQRDPKLEYKKEGFVLFQELLANIREGVFRTFTRLHLEKKEDN
FFQHEPINDLWYPASHEKETKFQVKKTD R VGRNDLCPGSGK KYKCCGVH

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>hypE 780948:781964 reverse MW:36112

MTNSLLLLDCGSGGRASQRLITGLFLKYFDNDILRTLNDAAIVSLSSPVAISTDSYTI TPL
FFPGNIGSLAIHGTINDVSM LGAKPLYITCAFILEEGLELDILERIVASMAEAAHTASI
KVITGDTKVVPRGCCDKIFINTTGIGEVLVDPAPSGSRAEPGDVIVSGSIGDHGLTVFG
QREGIDFLSQVESDSAPLNMVEQLIQEVRDIHVL RDPTRGGLATTLNEIASQSSVVCYI

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EESLMP IH DVVRSGCD I LGLDPLYLANEGKLLC I LPSEKEELALDVMRSFPQGSEARKIG
FVSDAGKTTRPGQVILHTVIGGYRLLNMLEGDQLPRIC

>LAW0632 782118:783515 reverse MW:51074

MINPRKTYSLKSVII AVATAQFIMPYMLAGVGPLLPVIGMHFNATAVELSLINAVYALS
L TIFHLIAGRISDILGLRRVFLIGLGLFTCTSGILPFSPNITFFFILRFIQAIGAALMNTS
GLSILTNCSPKDRLGQTLG IASIGIYLGLSLSPCLAGIMAKFFGWSYLFYLM IPIGLIAW
LLMKYTVKEEWYIDAEYFPDWTGSILYAISISTLSIGMIWILNGIWP I VFLSIGIIFFGS
FLKVELTEDHPILD I KFLIHNFHAFLYSIFALLINYSIFGLAFYFSLYLQLGYGLSVLTT
GLILSLQPFVQV I I SPIAGRLADAFGA I KIAIVGMIMCGVGLFLA I ILEIHSNIFEIAYI
QMILGLGAGLFASPNMTA I MSAVDSKHMSQAAGL I GMTRTFGLLSML I I SITMNIYFGG
EILTAKSMDKFTAAMD MNFW I FSLLNIVAI I FSIMTLKVKRK I S I

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>flgM 783773:784090 reverse MW:11622

MDIKDVNNNPYGMVTSQGD L I TKS NKVARGKTDATSGEPYPQEDKV I LSPKGLYVEVYR
EAMHS I D I REEKVAS I RAA I ESGNYK I NSKD I AQNMLGLESE I FG

>LAW0634 784118:784528 reverse MW:16053

MK I I SFQTRNMLKKYEQQLVTARRLERYQA I SL I EEPLSLSKI I KRK I L VRLVAKEFFK
NFL I TGYNSSVVQDVQKEL I EKFNK I CFQYPPESPEVV I LVKVNNEWEKVGSKLQTE I L
CLAWTM I LDKVNTTML

>paaK 784911:786176 forward MW:48539

MTRKDRTEGIYSRREVLDESERRQYYL I QLKELLSYAYRYSEDVKKRFDRAQFNVEKFKT
LSDLKH I P I LKKKEL I FLQSIGPRLGGLLTKD I GDLKR I FLSPGPIFDPEDRTEDYWGYT
EAFYSVGFRRPGDVVQVTFNYHLS PAGLMFEEPLR I LGCAS I PAGPSDAGTQLD I MQKLRV
SGYVGTASYLMHLTQKAEEKG I NLRKDLFQEVAFVTGERLSEKMRSQLEKKFD I I LRQGY
GTADVGC I GYECFHKTGLH I SNRCY I E I CHPDTG I TLKDGEVGE I VVTA FNKTYPL I RLA
TGDLSY I DRSPC I CRRSSPRLGS I VGRVDTTAR I KGMFVYPHQVEQVMARFEDIKRWQIE
VINPDG I DEMILY I EANNFHQEEELLHLFRER I KLRPELR I LVPGTLPPIKPIEDKREW
D

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>LAW0636 787082:787888 reverse MW:28117

M I I EQFFNTP I GMALLAG I VIWGFTTVGAAVVF I SKEFSRRTL D LMLGFAGG I M I AASYW
SLLEPALEMSEYLGKWSLVPVSGV I LGA AFLRLDY I LPHI HIVEGVLDGRKSKLPRST
LLVLA I TLHNIPEGLAVGVVFGAAGLGTPEATLSSA I SMLG I GLQNIPEGLAVSGPLLR
EGYSRKAFLFGLFSG I VEPIAV I I GALAVTTVTLLPFALAFAGAM I FVVVEEVVPE
YASNGDSSSM I I LGFVVMCFDVLG

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>mutM 787956:788795 reverse MW:31228

MPELPEVET I VRTLEPI I INGRMCLNYTVYNQDSVQGD I SLDVL I GA I FGKPFRRGKLLLI
PLVIKDSHVYTLC I H LKMTGR I LVYPQDRCP TTHTRVSFSLDDGNT I FFEDIKFGYVRI
LSTTEEPVWPFWNTLGPEPLE I DVSTF I ERFRGRRGNIKSLLLNQRVIAGCGNIYADESL
FRAQ I SPMATVSQLSMES I ATLYHALQEVLL E A I ASCGSS I KDYRAADGNVGFQNSLNV
YGRFGKPCVCKKDL E GTR I GGRMTVWCSSCQPINGSHE

>LAW0638 788870:789181 reverse MW:11585

MRTLNI I ENAEFND I SMKKQMVNKGSSFY I LNFNLKKGQELPLHHRD I DGELAIY I I EGE
GVFLKEDGTFPAKKGE I LIGN I REPHGLRAHTDM I A I AAVTPH

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>fliP 789827:790615 reverse MW:29367

MILKVPEKYSICI I CVI I FLSVNLFFPLSIQAEDIA I PNLQLT LSGGQTEPEKVSLLLE
I LFM LTVLSLAPA I MLTVTSFTR I I I VFHFLRQAMGIQQ I PPTQ I LASLA I FMTVI I MFP
VGKQ I ND TALQPYLDERLGFSEALTRAQAPLR TFLFKHTREKDLS I FYSIARMEQPKNKD
DVPT I LLSAAYV I SELKTGF I I GFLIY I PFLI VDMVSVSLLAMGMMMLPMMVSMFPKL
LLFVMIDGWNLL I GSLVNSFLL

>LAW0640 790596:791090 reverse MW:18299

MAWLYLISSLFST I AVVQENKGSNVDKFSKVDTVVDQAIHTANEVATHADATFSWGNFYQ

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AIGFMCLLLAGLWGAVWLVRRYGKFNFI PSPTALPRDALRMEAQLPLGAKKGLAVIKFLD
RRLDIGITEKNIILLKDTILYNERDAQGFEHLLNGAEQHSSESS

>fliN 791116:791610 reverse MW:18072

MATEEEELAAEWAASLEKTEEEESAKVEEEELADAWASALAETEQQAVQEEKEKGFSGSHAIE
ATFKDMTDIARTPRPEGSRRRELDIFLDIPLDVSAELGRTRLLINELLQLGQGSVVELNKL
AGEPLEVFNGLVARGEAVVINEKFGVRLTDIISPIERVKQLA

>fliL 791623:792192 reverse MW:20464

MPVDEL PENNDTGGKPKKRSGLKIFIIILLVLLLLLVITGASWWLFLRSDATFKHLLEGG
GNPGTSQEQSDNANKKEGGKSSPTDPKPLLPVSLPSVTVNLADPSGSKYLRI GMDVEL
SSEEAITNLLTQSARVRDAIIILLSSKTSDELVSAEGKVLLKNEVASRLNQILGEPRVVR
IYFTDFVIQ

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>LAW0643 792334:793035 reverse MW:26277

MISEEFLKERLEFLHDQIQQAVVSSGRDKKSVKLI AISKFHPVKTIVNVFNYGQKAFGEN
YVQEA IYKQSELSGLPIEWHFTGR LQTNKIKNVVGGFEYIHTIDS IKLAKLLSSRLPEDG
PSQKILLQVNI GDEPQKAGITVAELPFLAETILSLPKLKLCLMCLPPITHKGKVVSCYF
TKLRELDRLEVLDDITLPELSMGMSNDYIQA IKEGATLIRIGTSIFGHLNN

>LAW0644 793032:794006 reverse MW:36384

MNTQSSSNIGDKLKYRCGWVALIGPPNAGKSTLTNTFVGQKVAIVTSKPQTRNKIGGI
LTQDDMQVIFLDTPGICSEKNHVQGLGKMLQSAWQGLA IADSI VCVLDGGLYLKPPDL
MDRDI EPFVEVLRQEVRPIVIVVNKIDVFHDKSRMLPMLAKLGEYFPTAEIFPISARYKN
GTDKLLDTICLKLPEGEAIFPEDQLSTVPVRFMVAE IREKLFEQLYQEVYAVAVEVEK
WDEESRKNQVVIYAVIYVARASHKAMVIGQAGERIKSIGTMARKEIKALLGKKVHLELWV
KVRESWINDNQFLYELGFGTEEIG

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>htpX 794233:795093 reverse MW:30909

VTSQIKTFILLAVLSGLLIVIGGVLGGRTGLIIAFGLALLMNIWSYWYSDSFVIRMYNAE
PLSFDEAPMIHTMIEELAQSAGIPKPRIVVIPEDAPNAFATGRDPEHSVVAVTEGIIRIL
SPEELKGVLAHEVAHIANRDILIQTVASVIGSAIVSIANLLQFTAIFGFGQHNEGDGENSN
PLVVLAMALLAPIAATIIQFAISRSREYLADATGAKLTGKPLVLAGALEKLFNWNQQIPM
QQGNPSTSELFIVAPLFSGNMATLTFSTHPDIHDRVIRLRAMVQNHN

>LAW0646 795375:797069 forward MW:61403

MYIGLDMGGTHDAVIINNKTVVAEAKVPTNHKNFSSSIEQALTQLFFTSKISSSLVTRI
TFGSTLA INAVQNKQSPVGLLLGSGPGINPNWFTIGEHSFLTSAKLDHRGIEINPLQRG
PLQTCIN EWKKNGINTFACVSKFSIRNPKHENDMELVIQKIFEHYTTPVISKGHMLSGSL
NFRRI TTAYWNAAVWNIHNKFITSIELVLKFKSINAPTFLKADGGS IPLALSRSIPIE
AIHSGPSASIMGLIALYPTSETCLLLDIGGTTTDISIIVKGPILSTGLIIQKKPTLIR
ALASYSIPLGGDSLNIQLMDGIPHIVKGPLREGPAMAFDGEHPTFLDCLNILGYAQVGN
ITKSYDGISLLSKKYNIPQDIAQSVVYSAQQQLQEGISHLLNEINSKPIHTIEALLENH
NVQPTLCIVTGGPASSIKPLLNTILNLP IITPTKYTLVTNAIGAALTKPTAVLELYANTE
RQVCLVPSLNTQYPIPNYSYSLKEACHDASNILKKYLQDITNTTTSPIIDIIEAQEFSTLD
MVGKKGKDIRVVCQVRPELEFSLN

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>LAW0647 797066:798295 reverse MW:46174

MTKLSPLMKYQTLTYGLSIQQGLVVDPKIVFFSGGTALREVASCLTQYTKNATYLITPFD
SGGSSAVLRQAFSMPAVGDLRSRLISLADRTSPEYKEKIFLFEYRLPKQASSKALLDEMC
QLRDGNHPMMYHFSNVTLQFVKEEIRFFLTQLPEGFDLSGASIGNILLTSRYLQENRDLF
AAVTFSSHVLGSKGVVRPLIDANIHLVCVLENGEIYIGQHRFTGKKDSQVSSPIRKIWFS
KSLDKVELAVLKADTFICEYIHSADLICFPMGSSFFSSVVANLLPVGIAEAICNTCCPKVF
IPNLNNDPELFGLSLKEQIQYLYILRSGEAKQNIYPDIILVDRNTNYPGGIPYKWLIR
NGIELISTELITKTYAPYFDPQKICQTLIQILNRNVYNITQSTMNNSYC

>vals 799057:801705 forward MW:102513

MTDVTLPKAYEPKDIETYWRDHWERNNTFTPNLNEKGEPFCIVIPPNVTGILHIGHALN

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ITLQDILCRHARQQGKKVLWIPGTDHAGIATQHVVVERMLAKENVSREQLGREAFIQKVWQ
 WREKYGTHILEQLRRIGASVDWTRERFTMDDGLSQAVRKVFVELYKQGYIYKGYIVNWC
 TYCHTALSSDDEVEHRTEKGNLYYVRYKLEDGSDDLI IATTRPETIVADTGICINPKDKRY
 TNFIGKKA VVPIINRIVPIITDSYVDQNFGTGVLKVTPCHDVNDWMLGHRHNLAFIQAIN
 DKGIMTDEAGPYTGLSKEACRKQIVEDLQKHNLIKIEDIEHTVGYCYRSHTVIEPYVSE
 QWFVAATKMAPQARA AVPEQTKLFPKSWLKTYYNWLDNIRDWCISRQIWWGHRIPAWTCT
 SCNKLFVEETEPSSPCGSHNLIQETDVLDTWFSSAIWPFSTLGWPNKTPELAMFYPTSI
 LVTGFDILFFWVARMFGLHFMKDVPRHVYIHALIRDSEGRKMSKSLGNSIDPIQMI E
 KYGTDALRFTLTAFAMGRDIRLSEERIEGYRHF MNKLWNASRFALMNLPTDSVQLVSI E
 EITALLHKKWFLHRLEEVKIDVNDSIKNYRFNDMAQTLYKFFWNEFCDWYLEI IKIDFKEE
 GLHKTQAQYVWLWGLKELLILLHPIIPFITSEIWKALPGHTQELACEFPSTRSHCLSPN
 EANQMIFLQEVISAIRTIRAE LNISPSYKLSVLLRPIDSIQLSLLQKNSNLIITLAKLET
 LTIDSNQKAPGPSANHI IQHCEIIVFLSGAIDFNAEYKRLTKELNKIDTELQKITERLKN
 KNFIQNAPEIVQKEQARKDELLSSHQKIYVLMNQYLNNIDK

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>LAW0649 802639:805194 forward MW:91862

MAYLSISKNQCKSFLITLVTIFIMTIPQLAEAVEHFANGVPTVVQDVNVPADSYFGGAD
 SAVGPNPIASTHLTISTTQGFQNALEFVVGGLANGNGNPANINGDIVLIVENTNTQNS
 IIGGSMANAAPVTIGGSIFMTLRNVTAVDPIFGGSVDVRFFAQQPNEDQLVGGDININL
 ENVTTPEFYGLGYANGVIVPNVNLNRNFLVAVQGNITTNISNSNIATVMLGSHYDTTMAVG
 GNGTINVDNSTIGYLSASNSSDFVNPDLTNTVTFNIGPNNRIANIFASNNGVIPHFI VNM
 DGSGTEIQELTLGNVIRGGLVLTSELNLSQGTINNLITGNEYDRSGLRRTTVNVRGGTIG
 VLTSGGSDYSELNFI PGEISTILATNSIGNQDFASLSQVTIHQGAETLWGMRDEVFELQT
 NNLQLGGELFIPADGTGGVALITNHI IANSGVITPVNMSPERMTP IIGFLEPTGEVAQLT
 IYGPLTVNLSHSPEILGKIITQPIPIAVTNSDVFGTSKLFVEHNTKGLI WSDIIFNPQDK
 TWYLTNFRGSEDFYGLSAAREASNWLRQQHIWLSLQRRSNKLLDHGVDGLWMNVQGGYEKL
 DAAIGDAKMPWIMASLGYDFMHKLSDFYNL KALYGF GFATGKNKWNTINSTTNDIYMG
 LVGAYVGLMHEATGLYGTVSGGFATNRKTCTGFDETYNWKENVPTAEIEIGWKWSIDE
 FKINPRGQVIFEQLSKHHFSLSQEGDTAILDKEFLTTTVIGISGEYDLDLRSKI IKLQAS
 VDWIKGISGDFAAKSEVLNMFKDKNDTSTFRGTLGASAQ LLENFEVHLDIFGDLGNDKG
 IGGQVGATYRF

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>LAW0650 806068:808959 forward MW:109033

VNTHYTLIREVKIPEVSGIAKYWRHNGTNAEILSISNNDENKCFGVTFRTPPHDSTGVAH
 ILEHSVLGSKKYPIKEPFVELLKGSLQTFLNAFTFPDKTCYPIASANLQDFYNLIDVYL
 DAVFFPLITKSI FQEQGWHEI EEDTKKPLTYKGVVFNEMKGVYSSPDAILMEKSQQSLFP
 NMLYSLDSSGGDPKIIPQLTYEKFIEFHSSHYHPSNARFFFWDDEPEERLMRLLPILSQF
 TEKKIDSTIPLQSYLQKENVLKVPYATGEQSEKGHITFNWLLCPTTEADEILLLEILEHI
 LLGLPGSPLRKVLESGLGEDVTGVGFEKDLQQTYSVGLRSINPESSHKIEKLILQTLE
 DLSNNIPTPIIDAAINSIEFSLRENNSGKFPRGLTAMLRSLRTWLYDADPLIPLRWEKPL
 SDIKQRHANGEKIFEKAIRKWF IENKHKSIVTLIPDSKLAEQRENDEQKQLKQIKDSLSE
 LEVNQLIKDITLQENQQCPDTPALATIPSLTLKDLPPKNAVIPCIVENDKQITILKHP
 IDTSGIVYVECLFSLDAVPDDL LYLPLFGRCLTELGTHKHSFVELGVLLASKTGGIDIS
 PLITTTTRGTQLPVAKLCISGKATEDHITDLFSILEEILLETQFDLKD RFLQMALEERARI
 EQALIPAGHNVVITRLRSPYSIAGQISENIGGVSYLEALRNLTERRIHS DWHSIHTDLTKL
 QQIINKQHTIFNITASETL LLLKTLPLINQIEYKLPYVENNPILRTTKPLIGEILQVPS
 QVNYVGKGCNIYELGYKWNGSAHVITRHLRMAWLWDQVRVQGGAYGVFCTLDRMNGSLTQ
 VSYRDPNVERTIKAFDQSANYLKNLQLTDRELTRAIVGAI GDLDSYMLPDAKGMASLTRY
 LTDDQDEIRQHMREEILSTTKKQFTEFAEVMAEVAKTGSVCILGSSAATDIAQQNNVVIH
 QLL

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>nadh 809068:810786 forward MW:62597

MSKRVIIGAI AAGPKAASRLRRLEPTTEILMVDKNEYISFGACGIPYYISGEINSIDSL

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RSTAYGVLRTPEYFQQG I TTYNRTQA I S I DRKQQ I VLLKHLLTNKEYTVSYDKLVLT TG
 SKPKLPT I KGQHLKH I VT I SNTSLDSAQHI QTL CASKK I KHAV I IGGGFI GLEMAVSLAG
 KWK I KTS I I EVKPVMPGYVSPDFADMLCHDLTKNNVE I FTSEQVLQFKGKNDVNYL I T
 DKRK I ETDLV I FATGFLPETTLAQEAGLALDPKTGAILVNPYMQTSDPNIYAGGDCVAVP
 NP I TGEHSWFTLGLSLANRQGR I IGTNLAGGSDTFPGAVGNWC I KLFTLSACGAGLTLEKA
 KSLGFDA I SAS I EQADRSQSYPEHS I I SLEL I VD C SNRRVLG I QG I CSASDVVKAR I DA I
 TMLLQYGHPT I DD I SNAEMSYAPPFSSAMDP I NVVANVADN I LSGQLESVTSKTFTTMWN
 DRKNNT I FFDVTRPTTASKEKKEKYPNEWHT I PFEE I SSYLSELPKTQPIAL I CNTGLRA
 YETMSYLRGKGI T N T I DVLGGMYA I KKRGEEL

>LAW0652 810827:811642 reverse MW:31373

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MQLVKPFLKWPGGKFRLLDR I LYHLPQGERL I EPFVGS GAVFLNASFKEFC I YDSSPDL I
 GLFQVLQQEGEFF I K I CQTFFTTRYNNANTYYTLRT I FNHS I HPFERAVLFLYLNRHSFN
 GLVRYNSMGLFNVPFGRYNNPYFPKEMEAFLLKMKETS I TFAVCDFRDAFKNLYPGDVV
 YCDPPYLPLSNTSNFTTYSGTVFSYDDQKDLANLAYKASEQG I PVVLSNHDTPTVRELYS
 MAK I DCFSVQRF I SCNGKDRRAAPELMA I FT

>LAW0653 811686:812498 reverse MW:29983

MIHS I ILQGLFF I TAIL I TGCA I TPYTERSQLLL I PTCVEE I LGSELTSSLLEKEK I EKD
 SKFSKKVNE I GKRIAAVLPKSEYEWRFYT I DDDTVNAFAVPGGSVFVYRGI LQVAKTEEQ
 LAA I MGHE I THV I LRHGSERMSQALLLQ I GGEVGAAT I DKY GKSSYAE I FRQVYGTASTV
 GILLPYSREHEYEADHVG I LLMADAGYDPQESIQLWKNFSLLDKKS I PEFLSTHPVNENR
 I LALEK I MPEA I IRFEKSGGKPGPTPLGKL

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>topA 812614:814878 forward MW:85348

MGNL I I VESPAKVKT I KKF LGSYVQSSVGH I RDLPKKN I GVDESKNFSPHYE I I PGK
 EK I VQGLRETAAKVDTVYLAPDPDREGEA I AWHVAEL I KDKNSN I QR I QFNE I TSKAVQE
 ALSHPQKLNKNLFDAAQARR I LDRLVGYK I SPLLWKKVKQG I SAGRVQSVALR I LIVERDE
 ERYTF I PEEYWL FKANLEGSNPPPFKVELWKVNNKKP I I PDAVTA AALEQQ I KDKPF I VD
 S I EEKERQRSPKPPF I TSTLQQAANQRLGYTAKRTMNI AQRLYEGLELGDKGTTAL I TYM
 RTDSVRI ANEAKLAAATL I EQKFGKEYLAKGGNGRNFKGKAG I QDAHEA I RP I DVT I LPE
 DVKPYLAPDQYQ I YRL I WSRF I ASQMSVAQFHDT I I TINCENSQWRTKGERLLFPGFLAA
 FPNTKEEEDTNLPVLHKGE I LKHLSL I KEQKFTQPPPQFTEASLVRELEELG I GRPSTYA
 S I I STLQDRDYVRLEDKHF I ATDLGRVVCMLLQDYFKNLMDVTFTA HMEELLDKVAEGKQ
 DWVELLQNFSETFNPTLEEATKAMSQVKTGLETD I NCPDCKKPLV I KFGKSGQFLACSGY
 PQCKFTSNYLRDDKQ I IHLQEKVQPELQK I G I CPKCNKDLVLK KARTGSRF I ACSGYPEC
 NYTEAFSTNVPCPEGCKGMLVEKSSKKGKVFYACNTYPTCDYA I WNWPI QKSCPTCSFP
 I LVEK I TKAKGKHLACPEKNCRYTCELEESDIET

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>gloB 814978:815604 forward MW:23110

MS I FT I PLGMLETNCY I I QKGKNALV I DPGGTSPEDLS I I TTFITQNKLS I QA I LCTHLH
 YDH I FSTAMLHKQTNVPVFASTKDDFLLKTQAKGG I GKLACPK I E I FQHEDLTEGLHTFN
 TFSCEVINTPGHTPGGVCLYFKEMNTLFTGDTL FYHTVGRTDLPGSNTNDLFTSLHKK I F
 VLPKYT I VYPGHGPKTS I EEEELTNNPY I

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>argG 815668:816861 forward MW:44380

VSNRIKKVVLAYSGLDTSV I LKWL I ATYNCEV I AVTADLGQNFHD I EEA I V T GASK
 AYVVDLRNEFAKNF I FPLRASA I YEGRYLLGTA I ARPL I TKLL I DIARAEEDA I AHGA
 TGKGNQVRFELAAAALAPDIHV I APWREWDL I SRTALTTFAEKHN I PI STSHKRYSKDQ
 NMLHCS I EGSELENPWEEPH I ESYTMTVP I EHTPDSPEY I T I DFEKGDPIA I NGQQM I PA
 DIMFTLND I AGRHG I GR I DMVESRFLG I KSRGVYETPGGT I I HIAHQDLEG I TLDHMTLL
 TRNQL I PSYADA I YNGFWFSPEREA I IQAFMDKAQERVGTGVK LKLYKGMAYPI GRKSSNS
 LYSSQLATFEEDTSYNHNDATGFIK LKSLR I RGYQKS

>argH 816949:818331 forward MW:51989

MPK KKLWGGRFHEKTASPVEQYTS I SYDKKMYAQDIAGSKAHASMLGRQGI LTSEEVLL

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LLNGLDSIQKEIETDTPFWKIELEDVHMNIESRLTDLIGTVGEKLHTGRSRNDQVALDFR
 LRVSDNISLWKRQLELIGIFVAKAEYKDTILPGFTHLQPAQPVSQAQHLLAYAWMFKR
 DVQRVYECNQVRVRSPLGAAALSGTTYNDPFFIANELHMYGVFDNSMDAVSDRDFVIEA
 LFCASVIMMHLRFCEELIWSNPAFGFVQLPDAYATGSSIMPQKKNPDVAEIMRGKVGR
 VYGALYNMLTILKALPLTYNRDLQEDKEPFFDTNTTIQSSLSIMADMLAAITFNKNKMAS
 ALSDGYLNATELADYLVTKGLSFREAHHTTGSIVALAEQQKIPLEELSLQDFQSIDKIE
 SDVFHVLDYHVSIEERRKSTGGTGYHSIEKQIEKLSWLTQ

>trmU 818505:819497 forward MW:37553

MEQGLNVRCLHMISPFFGKPNKVQHWESLYNLT IETIDISEKYIEMLQQRPRYGFQKVLN
 PCIDCKMLMMNIAYNRMLELGASFIISGEVIGQRPMQRKEALNLSNRVNIQNI LLRPL
 CAQHLSPDPEHSGLVDRTKLLAFFGRGRKEQLQLANSMG IQEIPTPAGGCKLAEKENAR
 RYWLVLTKLKNPTVQDFNLANVGRQYWYNNYWL IGRNKEDNQKLEVLASQNDTLITLKD
 IPGPTGLARNTTLWDSKILYEAAASLVASYSQVAIKKEMPIELQLTSQTESICLTVIPSR
 GLFTKECFQFEDVKQAIKNEFHPSIATAVS

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>LAW0659 819913:820452 forward MW:21102

MKYSITPTCISFIGISDFKKDFIGKLFQYINWAYLNTNHIIEAYYGMAIKDIIYNNKNE
 SFLTIESNISSLNKRTIIFTGNTCSYKMETMQYLQHIGPVVYIYTPFLKILPYLNQLK
 RKDMLISPSITTNFEAFFYERDTLYSYWSTHIINDNQPIQKIIINILLNLFYNSQVKTN

>bfr 820449:820991 reverse MW:20535

MAKKTIKEQRISKVIDALNYARSMELHAISQYMNQHYNLDNSDYQQFASNVKLI AIDEMR
 HAEMFAERIKELDGEPTSDLAEKVTKGQKVRIVFSYDTDLETKTIDEYNRLLNICRENGD
 SISAFLFENILEEEQSHLNYFSNTDGHIKTLGDTYLSKIAGTKLIEIPSKGFVSEESKAS
 >gImS 821433:823262 forward MW:67559

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MCGIIAYAGHRPAIPVIEGLRHLEYRGYDSAGIGFIQGETLYHVKAKGKLNALAKKST
 YSPMLSTVIGHTRWATHGSPSECNAPHPVNEECGIAIVHNGI IENFHELKHTLSEKQYQ
 FKSETDTEVLTHLIAEGCKQYSSLIESFAWALRQAKGTYAVALISENNPSMVLAARMSAP
 LILGVGTGEYFIASDIPSFNLTREVVFLDNEIISITDNSWQVNDLFTLNPVKKSIQTI
 SWDKHSAQKNGYKHFMLKEIFEQPQVIEECLSERINQETDHIYFPELDNLP I PTRIIVVA
 CGSSYHAGI WGRNILERWAKIPTLPEIASEFRYQELITSPGELIIVISQSGETADTLAAL
 KLAKEKGCKVIALCNVIGSTIAREADATIYQAGPELSVASTKAVCSQMILLALLALYYS
 QRKKTLDIQLQQNILSDLKQLPQILQQSLPTIQDKANELAKCYSTSSSFFLGRGEAYPL
 ALEGALKKELSYIHAEGYASGEMKHGPIALIDKNFPTVVI ALYNNLFSKQSQSNIAEIQ
 RNPVVIILTNAPLHSNTYENHLWTIPNAGFFT NFVTL SALQLFSYEMAGYLGKDQDQPR
 NLAKSVTVE

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>LAW0662 823446:826448 forward MW:108899

MSYCTNFYIIFSLLKLRISITHIYFFYTI VHLFLFIHPSYAIIDLGTGGTNSQACAI
 SPDGLTVVGFSTYLGTKHAFKYKLGFMFDLGTGGKNSTAIASCEFGSIIIGNSDIPGN
 NHHAFVYTDHGLYDLGTGGKDSTAKAISHDGKVIIGSSMTENGDVQAFIQKMTTFV
 NDQIFFTPQGNLNLGTLGGPFSYATDLSYDGRVIVGSSSTPLGEVHAFKHTPLLGMFDL
 GTLGGTFSIAESVSLDGDIVGSSSTNQTTHAFKYTPLLGMYDLGTGGTYSKAIKVSG
 LGNVVIGESSICNGNIHAFKYSDSTGMVNLGTLGGNQSQAIGLSYYGTIVVGNHTFQNK
 MHGFIHTDQGTILDIGTLGGEESFITGISLDGQICGYSNTSNGAIHAFIHRNTIADIPP
 RPQSVIRLQQPLSSPDYTPPDSFSIITSNPSTPTSETSSLSNHTSPPSSPSTSTPLTSYC
 HHPSSFFYKLTNITPLSSNDTSMVMASPPASPSTSTPLTSYCRHFPSSFYKLTNITPLSS
 NDTSTVITSPPVHSSNKSYLSTPNSDNSLKNNDCLSPQSSANSSPICGPDSILQRLQAVA
 TKLEIFQQQQQTSSSSNPDQIDGTLQHSSYVSSPQQPSRNSATYHSSNTESPDTSGNFTP
 PEEEEEEQQQIIQRLGATNPQLNQANSQVSTQTTSSSQVTPETEVIHHLFNPRKLV DV
 HNTSLALELDAQAQSNILANNYEEINQALNSDCNTFGPYGFCLNVGNRYLSTKDSKVSQS
 IGMVNVAFKFTPYLRIGLALDKALTKYNNQYKIKCSEPLTTLVCVYEQSTQSTGIKFKIT
 GTQRISDVKIARILLPYTEEGKGTMMKSFGEAQAGYGFMLSSNWSLQPIVGVQHINIT

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RKKYQEFPPVQFPITYNQAGIQITNVETAALLEGKVTNWFTIDFTGSIKHIHQNNKSYT
GTIPYLGFEFKLPFNTKKKNTMLLELVQHLYLILNKLYVYK

>LAW0663 828562:828969 forward MW:15787

MSSQYFQQIMEDFFKELGIESYKQPELTYVLTAAQDFGEIIIAEQPTQWVTLAQIGEKPF
DSSILWYQDILIENSLDKATPKPSLGLIGKTLIQNAQLPLEYTLQLLKQWIEFFLKIA
VENQKRFIVNWKENV

>LAW0664 829283:830440 forward MW:43526

MYPITSPHNTSQTYNIPNWTINNEETKLARLQNALEQKYHIGLSLMKTCFSRTPSLIVG
SIVGAGVGSLSLPLSLPSATIAGGITTVGIHAYNTLKENNNSKQIINLITSSIVYDIVH
NNNKLQKVCLEPFSQIKGDFYRTLRFSDIETEASNGICHGLSFLWIREMIINANDPSS
MKESLQQLKTINSFPPNEPNSITIHRELYTNDGFGYFKLLPECEACTPKFHFCREKETYG
TIASEDRPEKNPITFGKTLIKSLLESELSFNQKYATITLSLSCSNWLEKHSCAVSIETPP
LKNEEREDIDNSSQPVIINYFDPNYGQFQLKTSISEAPQTFSEFFQYFNSIAYPFVKNKY
SCEIIFKPHKNAKNRIPQNALRLTL

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>LAW0665 830885:831484 reverse MW:21986

MKLFNNGPRVTFDENSSNGSYPHEDDVTHEERINTKYDPNAIPGKSILKQTTGDRGVR
FDQSSNSTYVYSPGSDVRTTYDPDAVPGKSILKKTSSFLSRMVTSIQSSLGRVGAAIHH
GVQYVVNGVKGLCSYRTRQVQSEGSSLNPGEGQHHQPELKQEPYVNYLDVSGTQQQSNK
TSVQDNSKAHHPLPSIPQE

>LAW0666 831665:832279 reverse MW:22077

MKIQFKHSSSHNSGVEENGNATGTSSSVKNKSLEPTKKESSILSKLRASWSNTLQRVKHS
TMKMI GARTHQALKDYDAKKDTTGTSEGKVSSTPRIVPRHENTSGPFTSNPVDSPDTIY
ATVVHPSTPLAQRPLPIPENNPSSSEPIYAELDFTLGPNSPGMKMPVIYENLKSVPSPGH
VTEPIYAEIKTTSISTSGNKGKNN

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>LAW0667 833929:835044 reverse MW:40410

MAPAPGFGANNIQGGDSRQLLEKVKDFLNLVYQDKDKKPTQPQSGYVIANQGSVKGL
SYVIHGAIQEVQNSMRVLALNMNTARLTSEKPFRIFGSLSGQASSQRNSGASTQAGVMYA
IPMFPKLWVGTAISQGRERKKEYQGVDAKAYGGAKAKTETNQASVIAAWNVAEPGLMGY
VEGTFGWGETKNRTRVFTHAGERITTKGAAHTSTNGGIARVGYNIEITPMMMLTPYAEVSI
ATARWDSYKESGRILPAKISATREHVIEHRAGLKVDWHISDVCKIQAWGAAILGERNNTG
VTAKPISLYSVSISSGKDKSRYKQLEVGSNIDFKITHNCGVGVNVGIRTKDGEKDKSIKP
QCMGIHFWYDF

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>LAW0668 835309:836481 reverse MW:43098

VRAPFASASPSSLVSSSVI STATLSSVVSSSVVKTQEVDPKPLTKSSSSKMSVKIDSTS
NISTTTTTTTTTTTTTQDSSIKQAPLVPQKPQRLSIPLTTSVKLTTSNNSDNDWDGDDGW
DAPHPESSAVEHGMKQDFLEQQSLFSSVLNGTYSRNTISERGERDQSSASPSASSYQNG
RLVDSSSSCPLSLHQEGEPGDSFDTAKAKLEVFMQKRHEPPQPTKKPIGPRDEPNNAFK
EAQSKLGAFFFFKEEGWNAQSLKEPLKPTGRQSEDYKKNRAAMELLFAGVIAQHQDIQDYQ
RDRLSSPSSLSSSCLVENYEQGRQKWLKLEDLEKGERVYEGMYGFFQISNQNEELRAKL
FAIHKKNESLKSELESLEDMWHRGLV

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>LAW0669 836694:837119 reverse MW:16142

LTTFFYLLCLLCGKSKVFASDRESSDRQHVKQVKQPLHHSKHKSHQPSGKEIQKKVEKIEE
AKKLEDLRSQQVSTHETKEGLNASFQTVKQAQTVLGLILESELKEMLGKYFSSVSSSERD
EDLSSHTISKQKGTDPHKIKK

>ahcY 839619:841052 forward MW:53322

MIQTSPIPVNLSPYKIADISLADFGKKEMQLSEREMGLMTLIQRYKEKKPLKGLKITG
SLHMTIQTALLIKTLYYLGANIRWASCNIFSTQDHAAAAIADLNYASVFAWKGETLEEYW
WCIEALTWPDGSGPDLIIDGGDATLIHKGVEIEKNPELLKQSHSDKEIKIIMDRLKV
MYNTSPHWTAKNIRGVSEETTTGVHRLYQLAEENKLLFPAINVNDSVTKSKFDNLYG
CRESLADGIKRATDIMIAGKVVVIAGYGDVKGCAQSMRFGGARVITEIDPICALQAAM

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EGFEVMTMEQAAAEGDIFVTATGNLHVITHNHMNMKDEAICNIGHFDNEIEMSWLENN
SECKKVNIKPQVDKWLPNGRSMIVLAEGRLVNLGCATGHSSFVMSTSFTNQVLAQLELA
HNKLENKVYILPKKLDEEVARLHLERLGVTLTTLTQEADYIDVPIEGPYKSEHYRY

>serA 841336:842244 forward MW:33081

MRVAIISSSFARYDKKPLELLSQAGIEYILNEQGYHLTDEELIQIDGCAGIIVGSEPLP
KKVLETNPRLKTIAACGKHLNDIDVEYAQEKNI IYNPPKGYAIAVAEFTVGLILSLIRQ
IPYQDKEVRSGVWHKRIGNLLHGKRVGI IGLGQVGKAVAERLLPFGVDIAYNDPNVYSTT
FQKFDLQKIDWSNIITIHCSKPIKAGPILDLGRLSLMQPGSYIINVAHGGLIDEKALCG
LLTAGHLAGAALDVFQKEPYDGLLKNINNTILTPHIGAYAKESKIIMETDAVTNIIDTLK
NS

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>pcrA 842275:844410 forward MW:81072

MFDSTLNSAQLEAVTAPDGPVLVIAGAGSGKTRTIYRLAWLAEQGI PPSSMLLLTFTR
KASQEMLHRATMLLNYSLGDVNGGTFHSIAFSTLRQYKPSWATGKVTIIDAQDTLTSLQH
CKEELKIAKGRSFPKLTVAALLSRARKEITFKELIQKDSPLISHIDSLTTLVERYT
TYKKQQNLLDYDDLLEFELLKGDSEKNIPPLAPLFQERYQYIMVDEYQDTNRVQARLV
RLLSGNTNNTMAVGDDAQSIYAFRGATVNNILEFPNLPFGTKIRLEENYRSTQPI LDTA
NAILKESQEGFHKLFTNRIGGEKVRIRLSDLTQANLIANRIKELLSIYPPKEIAILF
RAGYQSYHLEIALAKHTIRFRKYGGKYTEAAHIKDMMAFIRLIVNPLDMPSFLRIA AFS
KGVGPKTAQKIYQIAAQGNFLELQKVCNKYPDLLSDMTLLDEIRQQPLEPTEILTKVFEH
YQPKLIVHFPEDWPRRQQGLEELIHIA SAYTDLEQFIADLSLETPEEELNEEESIVLSTI
HSAKLEWDAVILDLVEDRFP SRHSLIRSED FEEERLMYVACTRAKKQLELSVPTTLY
NKQYGCNEPAIPSPFVQQLPSIVIEEWQEGYSGNIYKKITIPTNQPDSKTC SQIPASNNT
YNKEELSY SFCRHKIFGRGKIEYLLPDKCRVNFPGFGLKVI LKDYLTIED

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>thiL 844426:845448 forward MW:37003

MNQYSSLVSEEHILSCINKYFPDQSHFITAGRGDDCAILSVTSPLCISTDMFIENIHFRH
SYFSPEDIGWKALAVNLSDIAACGAQPIGFTVGLALPLNTSIDILEGIYSGMSRLAKQFN
LPLGGDLSQASELSICITILGETHAPLLRAQAQPGDIIFIIGQVGLAHTGLQLLEQQGT
KAIELYPKSCMAHLRPFLIHEGLALSMAKSWSQQTNTPHRLALIDNSDGLAQDIPRLL
GKKGADITIPALDHEIQFIESHYTENEYSPDLHAVIGGEDYSLIGTCSPNFGAKLNMV
ISNLTIGSVTDSEPI LFNGQQMQGFDHFRGNYINPSNKL

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>pgm/manB 845474:846838 reverse MW:49978

MGTSNVFRAYDIRGIVDVFDFLDWVEKLGKVI GTYFVSQGISSAVVGYDCRKSSVDYNNA
LVKGLLSTGVDVISIGMIPTPVLYFAVKYLNHRHGGVMITASHNPSQYNGFKIWAGESTIY
GDEIQSIHKLFEVGSFASGQGVLSFHDIPSYMAAVEAWCKLLRPVKVVVDGGNGVGGTI
CADILKRIGAEVTCLYCEPDGNFPHHPDPVVEENMKDLANKVKAHADLIGLDGDADR
LGIIDSNRLLFGDELLSIYARELLVHKPGSIVIGDVKCSNRLFDDIQKHGGNPVMSATG
HSIIKARMRELNAPLAGEMSGHMFSDGWYGFDDAIYGAARLVSLFSAQEKPMSELPGW
PSFATREINIPCKDTIKFAVVEKVKNYFKSYETIEIDGARINFPYGWGLVRASNTQPVL
VTRFEADTEEHLMSIRKEVETPLMQWINEAKENV

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>hfiK 847108:848259 forward MW:43138

LLSIMNWDWEKLQEKRRQNWGQGRTPKDSGNNTPPPNGSDPNPEQLFGNFFKQFRLKPN
SGKVKWIILILISLWLLSGIYI VNPDEQGVVLQFGKYNRTVDAGPHYALPYPIETVYKPK
VTQVRRVEVGFIRSTSLGGTFQGGATRTLPEEASMLTGDENIVNVQFSVQYQINNPVEYLF
NVTNPTAVIKSAAEAAMREVIGNSMIDSALTDGKLQIQNEATELLQEILDYKVGIVHLA
VQLQDVHPPKEVSDSFKDVASAREDKSRIINEAEAYRNELIPKARGLATEIENKAQAYKE
TRIRNAKGETAKFQALLLEYNQAKEITKRMYLEAMEGILSQPGIEKIILDNKVAGKALP
LLPLSQGLSEYSVPKDKIKENK

>hfiC 848260:849111 forward MW:32419

MQHKISILVSVLVIILIISSQSIFIVNETEKALVLQLGDPVDRIFGPGLHFKIPFIQKVI
FFDARILDYDARAAEALTSKKTIVLDNYARWRIVNPLEFYRTVRTIPGAQARLDDVVYS

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QLRAQVGSHTLTEVVVSQNRSNIMSDVTRRTSDIMKEYGIEVIDVRIKRTDLPSENQRAIF
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>LAW0677 849077:849838 forward MW:29206

MMIYSFAPFKNNMRQTLRENAMTFQEVYDRVRFATNTKTQAEANILEIRQSSISDAKR
RDSVPPWEYIKLFEKFGLNPDWIKQGVGPMYLRTEQGYIPRELPLTGVQETPMHYGDPIS
KSVLHTVFSMRCNYIENSNSLPILQPTGKIALPQPYTGANILVFQTESDAFLPLVRRYTY
LGINTDFTHPQSGEYAVFMPYEGIALKRLFLSTQKNGFCLCTDQNDSHESFLPAQECPI
RILGRLAWVFQTF

>LAW0678 849897:851219 reverse MW:49631

MNSHSPSLRCHAISLGCCKNRVDTERRLLGSLGIPLTFIDYPNNADVFVINTCSFIHTAVQ
ESVNTILQLVADVEELSEKPFIIIVAGCFVGRYGEKILKKDIPVDLWLDNKEIESWNEQI
LLALNIKSTFLVTDRITTTGKSYAWLKISDGCQHSCSFCTIPSIIRGSLHSYSIDELVKES
RHILDQGVKELVLVAQDVTAWGRDLPNNYGLKTLLDHLLVLDGLKRLRLMYLYPTGLTKD
FLLYLKSVGEPFVVPYFDVPIQHAHPDILSCMGRPFKPNRKYIDNIRSVFPEAVLRTSVI
TGFPGETEGHHVYLSKFIIEIKFQHLGIFSVAEAGTPAAVMPNQVGEKVKQRKAELME
IQLKISEKWLKNFVGKRLSLIVDNVHPEWPELYTGRAWFQAPEVDGMVYISGPNIKPGEL
IADIMESHSYDLVALADSY

>LAW0679 851253:852002 forward MW:27807

MLRSLYGDKNYLIYLANDIKGISMDSSFNLPQAPDIKTTEKNNIPTVILATRNTGKIQEL
KDMLCNFKLHILCLEDPEIPEIEETGKTFEENALIKAKVVSQYTGLIAIADDSGLEVDI
LNGAPGIYSSRYAEDIPNIHNLTIDQHNISKLLSILTNVPLTQRTAKLCTTIVAYNTNGK
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LWPTLYNEI

>LAW0680 852068:853144 forward MW:40003

MINLLNITYPEFESLIVTTLQEKTARAMQIWQWVWQKQITDIESMTNLPQKIRASLTALI
KINLPEIVTIQQSSDGTKKFLLRLSDGAL IETVLIPSIDKAGNIRITQCLSSQVGCMSGC
TFCSTATMGFIRNLTAGEIVSQVLLAKLHLNDNKPKPIIRNIVFMGMGEPLLNLTETLR
ALHILHSEKGLNFSARRITVSTCGIKKGIQALSENGLAFLALSLHASNQELRSTIMPKAA
KWDLKEIDTLKNYSKKREKITFEYLLGGINDSPEHAKELAKLITDIKGLNLIYPNP
AQQQPYLKPTEENILKFQKVLWSKGIVTILRKSQGDINAACGQLKTTYLSQSSSTIY

>kdtA 853157:854476 reverse MW:50216

VNSFDVFSKGYTFLWRLARPFLQQHKRLHENFSQRLVPTNWAEPATIIWISSSSGGEAYLV
RSLLLEHLPIQDSTLHILLTTWTPQGRILEETKSILESSRSDLSIQVQYVPLDEPALMEK
ALIQVSPQLVVLIEAEIWPGLLAFACNKRNI PVLVLNVRVREKSLRGYDWFVFFPEFWRA
IAPKYVAAISSADAARFTALFGEYCVGVVPIKFDRAICTLSQSDSSKNVLTEILPDKPI
ILLASVREEEEAALLVPVIAKLYSRHGKDTCIIVAPRHESRVKEWIKKLNFGITTLRSV
LTPYKEELYQTSIPVIIWDTFGELDKLYNLAQAVFVGGSLVPLGGQNFLEPLSVGKIPCV
GKYLDNFSWVFEPLNVEHEDFSFFIRICHTPFELIEQLERQLQHPEPKEEISRFNTWLE
SRKGGADKASLIISMLEQ

>ddIA 854481:855389 reverse MW:33239

MNILLLAGGWSSEREVSLQSAELITSAMIEYGHVTCLDPLYDFDKIVEVAEKQDVAFIL
LHGSPGEDGILQALLERVGCPYQGASPAGSLLALHKAALKALFRREGLLTPKSVFLPLKP
EVTWEPGLNYPFVKSNI GGSSVNVHLVTNYEELFIAMEALFNAGEEVLLLEEAIIGQEV
CGVIDDQALPPILIRSQKFFDYNNKYAKNGAEEICPAPLEPHVLKHIQEYALRAHNTLN
LQGCSRADFILRDDELLFLLEVNTIPGMSATSLVPREAAAMGLTFPELVEKLIQLAIRDH
RK

>LAW0683 855346:855987 reverse MW:24604

LCQTVENLKYMINSNVIPTLYYDIDSNFVPSDKDCITLWDKYGVFDNIRQHSVVANFAE
ALAKQAVKVGTYNIKSCRAGLLHDIKSYTVHYGGSHAQLGASWVISSTGNRYRLGQVV

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LNHVEWKWSLPKCLIHPLFIVMYSKRVQHNIPVSLNRYTDLILRYGKTEDSRKAIYRS
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>LAW0684 856632:857084 reverse MW:17661

MKIRQYKSIDLEQITRLFYETVHAVNIKDYTEQQLNVWATGNINFKKWDTSFLLKHLTYAA
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FENWGYKIIRLQEVEKQGVFFKNYIMRKEL

>dnaJ 858662:859786 reverse MW:40707

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QFIIPCPVCHGEGSTIPHLCPCKGKGVTTQSKELTVHIPAGIASGTRLRLRGEPEPGTH
GGPSGDLHIAVTVEDSKIYQRQGDLYFYCDISFPQASLGCTLSIPGLDDETLLEKVPKG
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KKVARKLGQAIGMK

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>pepA 860201:861736 reverse MW:56098

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RSFERFDYNLERIIEEVICAIGLALYRFVDCSKQEDLKELPEDPQWIGVLFRTVADETI
CNAARRGEVHATAVNLARTLDNTPANIMTPIQMSKKSIEIAKKYNMKCEVMDRASIISAG
MGAFASVAEGSSQEPQFIILEYAPLGHENDDPLVFGKGITFDTGGISIKPSAKMEEMKC
DMSGAGAILGLFEALGQLKPQVKVIGLLACAENMPDGKATRPGDVVVTLSHKTVEIVNTD
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>LAW0687 861756:863153 reverse MW:52720

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VRLRRENKLLRTVLPPEESEFIGQSPVILKFKSLLSQVAPTDAAVLLTGENGTKELAAQA
LHKGSSRYQKPFIAVNCAIPEELIESELFGEKGAFTGADASRAGRFELAHKGTFLFDE
IGDMSLKTQAKILRILQEQCFEKIGSVRTIKVDVRIAATNKNLEDAISDGTFRQDLYR
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LNFVERMVIYSGKKVCLTDLPEMHTKRSIDPSKKQFNISQEISSIITSSDIDFKQAKI
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>LAW0688 863417:865222 forward MW:67920

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VQYKINTIHIQYLDSELAYPLSLEEFNLKGNPALAVNILSSVSSLMQYIHNNGYPLAK
IKKTQYIINRMDYTFDIDLVI RQGPLLHMGKVQPQHNLNISTIFLNKIATWKEGRVWNA
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RGTWEHRNVFGNGELFRITAPISRDDQKIMANFQKPAFGRPNQSLISEAQLKKENTKSYK
QQLASIALGIERQFNRRWFGSSLSVDTGFMDRDSIKKIFTLFGIPLSITRDSSKDPLN
PIQGTKATLNVTPYIGKYKKILTLRSRFDFFSYIDVLKTGKILANKIAIGSLLGKDIE
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DGGNIYEKFKPDFKKS IYWGVLGLRYYTSFAPIRLDIATPLQDRSHNKHFLYISIGQA
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>grsT 865222:869370 forward MW:150890

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LHLHLSIYPEHNRILHSLLAEYGSWLLTSESIEVSNEQLKGNILLKYNGEATHQLPIKK
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 LSIPNRFFVRSSMFESWGGNLTINKVITSPVITGALTSIRGNFNLLGKQFSLAKSTISF
 SGSVPPNPLLNISLTYSSPSITAIGIIKGTTSNPNITFSSTPPLPQDEIVSQVLFKSSQ
 SLSRIQAIQLAQELANLTGFNTGSMNFLTNIHQTLGLDILSLGTTSNRKANTSNSNDQIE
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>LAW0690 869436:869954 reverse MW:19230
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 IVKEFAKKTQELREKILAKRLELQAMAQSSKPDORSVIQELSREIAKMHTELSSEYEKMYE
 KLSSEVGI RGHYIYGSLMHRHGMGYGMGGYNNMEPDSGAPMTPLKSGR GK

>pal 870411:870899 reverse MW:18200
 MEVFRRYGIVLVLLVLSAGFGCCKKSVDVEQSLATECIAAPAINAAETITDGIIFYD
 FDKYDIKPEYRDMQKKAELLKEYPCIRVRIEGNCDARGTQEYNLALGERRARAAYEYLV
 MLGVNPSQLEIISFGKERPAVEGTGPAVWAKNRRDDFRIIAK

>toIB 871045:872403 reverse MW:49870
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 GWPKGDHSDSSVELRLYETYSKFVFGTAYSGVVKSEISNIADKFCADLMKTLTGSGDFF
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 H ALGVWDRLTNKIQRIRFPNTVIGPVFMPDNKVAVSLSTGKYPDIFLLDHTFQKEKVL
 EESPAINVSPSFDAGTKMAFCSNRLSNPQIFMKDFSSGQVSRVSRQGCYNTEPTMSPD
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>LAW0693 872867:873820 reverse MW:34117
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 NERIEQKIPTEKILDTPKAKQELAKKVEKMMPKGEPAKKIVKKTEPIGGSASLKDALLDA
 KKKTNIQKSQKVPNTSVTNALAGFKQTSTVGGGGGVSDGNGGGGGLHDIYAGLVMMSSV
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>exbD 873921:874355 reverse MW:15902
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>toIQ 874438:875115 reverse MW:24459
 VNRMDLSIISLIAQATVVGQVLLIILLMSVLSWAMMFQKWIAIRLAMKKTVLGSERFHD

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ARELRNAVHSIGRDMVSPLYVVAHEGVTEFNRSKEAGNSEEV IVENVRRALRQGVSTEMT
RLSSSLSFLATTANTAPFIGLFGTIWGI MHTFHSIGAMKSASLATVAPGISEALIATAFG
LAVAI PATVGYNIFVVGKLG DLESKLVNFAGMFLNRVHRELNANKT

>rubY 875739:876314 forward MW:21614

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KAYFEVLHNPW

>rubA 876328:876531 forward MW:7615

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>rfaF 876635:877663 forward MW:38725

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IKRKLGS LDEIERLLDLSNLP IKKSNIQYWPNI VLTQDAQQANTFWRKYILGPVLGIN
PGSVWPTKRWLPERFAAILHRAIKKNIHVLLFGGPGEEQLASEIISLSGMTGHPLLHNL
GTLTLQELAAFIKKLNCYLTNDSGPMHIAWSQHTPVTAIFGPTVKCLGFSPRGEHSTVIE
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>LAW0699 877710:878720 forward MW:37807

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>LAW0700 878912:879499 reverse MW:22062

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SIVAREFFNHIMLAA

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>uvrC 879685:881550 reverse MW:70328

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PLKNDYRIYSTTEDNSPFIKGDY AALASWAKRRIQSGPPWADLVLDGGKGQINAVQRV
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>maf 881559:882254 reverse MW:25506

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>LAW0703 882513:883592 forward MW:41246

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FPSKATYSDIRPEYGATSTIFTEYLRLSLHIRPGRRLATALQYGI RTDTGTFRKFTDADI
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 VGDFFTKVYGLKWT AICGVYKEQVVIVFRGDESIDLGFASERFSSLGSAGGHRAMARAE
 FPLKLVEGKNLEVFIFRKLSERLHSHKKKNSKKESENNEELSTKEEHKHPSEPLNTNQTS
 >asnS 883675:885042 reverse MW:51647

MLPSTIVEILCSKTAQADVHVGWIRTRRNAKGFVLELNDGSLKNIQCI INEGSAAWD
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 SNDSQSSDNFFGKECSLTVSGQLEAECLAMGLGKVYTFGPTFRAENSNTPRHAAEFWMVE
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>LAW0705 885106:885795 reverse MW:25693
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 LNKDQLIKAHNFYEKHGGKAVIFARFIP IIRTVVPFVAGVTYMNPSRFLFYNI VGAAIWW
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>LAW0706 885880:889188 reverse MW:123145

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 FDSIEKLCRKLESIGNLRSDGRPILGLDCRNLEIVLEVDERGTVVPAHIWTPWFSLFGS
 KSGFNSLDECFGLDAPHIFALETGLSSDPEMNRLWSHL DGCALISNSDAHSGDKIGREAN
 LFEGLPSYDGFNALRFSTGRFPSIPNNVQYKGTVEFFPDEGKYLDGHRACGVVVEPKE
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>hypF 889587:891977 reverse MW:89290

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EGQAAIRLEHQQDMSCNESLTISIVEKDSIYELDTTVFLKELIELLQKISVSI LARRFH
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>LAW0708 892189:893016 forward MW:31369

MLFSFRFITYPLITIFILYTCNALASNNDSMITSSENFESQLRLLLHNHPVLVDVLRH
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YCSQASKTVQQLIDYKDNVYIFKHFPLKGHTISQAAIYFIAASFQSNEKAWALYDLL
FQKRDELLQNGEQLKQAVKEVGLDIKKLMSDLNKAEVNNILGQDIKDAALQDISGTPYF
IVNNLILRGALPPELFTAEINMALKNTKEVSTSPK

>ribF 893127:894170 forward MW:38841

MIIKCDIDTIALPKNFLKEKKTITLGNFDGVHLGHQALLKTIYLTAKKQQSISTVITFE
PHPQAVLIGESPSLLTTKKEKLLIKSMGIDLIFQLNFTSTLANMTTEQFVQSILLERLH
MEGIVLGHDFSMGKERLGTQHVLSLTKGTMGFTVTHQPVFTFKEQPVSSSLIREAIEGA
IEKANLLLGRCYSIDGTIHHGKKRGRMLGFPTANLALSSNLIPSTGVYATLVTLASNQDN
TFYIPVQHQKNTFLAVTNIGINPTFGDSIPKIETHLLNFHNDLYEQHMTINFLKKLREEA
IFSNISLITQIKDDISQTKIFKNMLWPQSLSLEDPVDRMDATLKT

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>fliC 894199:895080 forward MW:31034

MSLVINNNLMAVNAQRNLSKSYGELSSSVRKLSSGLRVGTAADDSAGLAIRELMRSDIAT
TQQGIRNANDAISMIQTADGALGVIDEKLIRMKELAEQAATGTYNSTQRMIDSEYQAMA
SEITRIANATEFNGIKLLDGSLSGNHDGKKINSTGAVRIHFGTSNSSAEDYYDIKIGGST
ASALGLGNTVKGAGATVSTQAAAQNALKAIDNAIVSKDKIRAHLGGLQNRLEATVDNLSI
QENLQAAESRISDIDVSQEMTQFVRNQILTQTGVAMLSQANSLPRMAQQLIG

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>LAW0711 895227:895730 reverse MW:19095

MNLLYQLNILDVLVILCIIFFILKGLNRGLLQELAGIIFIIISLWTAYMLYIKFGNMLLS
YIGSQKWSYFLAYIAIFFSVMIISSIMSGLLQKHLGWKSGGWINWLGGGVIGALKAFVFC
MIIIAVFEYTADSKPFVLESKIVTFVKKHDTFFREFIKHSIGNERSI

>pyrD 896405:897349 reverse MW:33081

VRITMDNYTVSLTTTSSIPLVLKNPVLTASGTFGYGAEFIYGDLSQLGGIIVKGLSLKP
RKGNPLPRIAETPCGMLNTIGLQNDGVELFIQKKLPRLPWKETPVIANLYATSVEEFSEL
TAILAAEEGVAALEVNVSCPNVKSQGGTFFGQDPSLAAKVTEAVCKNAGSKPVMVKLSPNV
TDITIIAKAVESAGADAISCINTLTGMAVDIRKRKSLSTVIGGLSGPGIKPIALRCVWE
VCKAVNIPVIGGITSARDVLEFILVGAHAVQIGTMNFIQPDIAFRIAEALPIICNELG
IKNFDSFRGSLQVE

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>pyrDII 897346:898152 reverse MW:30029

MASANFYNLAVIDNIPFGLAGMQGHFFALRLELPDWKGWAPGQFVMIRPQSWNLEIPWAR
PFSICRVTKHEELVIFQVSGKGTERRMAYLRSGNMVHLWGPLGNRFSTEEKPTLILAGGIG
IAPFIGYIDSHPNPKNLYMMFHKYPNDCYPIENLSEKVNFFSFQENTLQDREVFLEQVS
TQVKNYAACNGLILVCGPTPFLKFVQSIALENNVRTQLSLESQMACGVGACLGCVVQTTD
KWPVKNMAGMPVPTCTNGPVFWADQITL

>argJ 898390:899574 forward MW:42590

MYNMPKGFRAFATARAGFRRAYCNDTALVVSETPAVAAGFTLHKFPAAPVQIGKERLSNN
LTMRAILINSGQANACTGYEGLKNCRHTLELLSNAIGFNSQNILPASTGVIGVQFNMALW
EKVIPVLIERLGKDGPEFAKAIMTTDAFPKFTHKVQLSQGTINIVAMAKGAGMICPQM
ATMLAVILCDADIQVECWRELISHTVNITFNRITVDGDTSTNDTVYALSNGCSGISITNN
ESLNLQEGELTSILSELAYMLVQDGEKATKVGHIYVTGALSDDAETVARTVGNSQLVKT
ALFGQDANWGRIIAAIGRSHATFDPLAVCVKLCGVTVFLNGQPTKDNFDDILKEPLQKD
ILIEIQLGHGPGMYKLLTSDLTHDYITCNSAYRS

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>riuD 899739:900704 forward MW:36955

LYIELIMQPIIVSSNEAGQKLFQLTRRLTVPKSILHRWIRTGQTRINGKRVTPFTIVNF
KDKIRIPPFAYEYKKKDLTSLIHNQYDISPISHTTSPLPPVIAHSPEFIIFYKPAGLA

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VHGGTGQTDLSLAHRLSQHYAHSTFMPTPVHRLDKDTSGLLLVAKTYNSLRYFSELFASHS
TQLTKEYLAWVVGICPWTQPI CLEDILTKKQKQDNYSRLNSYQNKLQQTSAQKASLTVRC
IKQYKDKSLLL IKLHTGRTHQIRIQLSIHGFP IIGDKKYGNTIRSHNLKLHAFRLSFPGY
TFTILPSWDDKWQVTQEDIPN

>gln 900834:901616 forward MW:30088

LGLFMKYMLSLWINILFCFFFI VNP IYAEKKEHYING IDAHYPPFSF IDEHGDPTGFDVE
ALNWIANKLGFTVEHRPISWDG IIPALLAKKIDMICSGMSISPEREKNILFTRPYWITQK
ILIVHKDSKLTPEEIFYGENI IIVGVQCGTNEATFLEKELKNKGYKYKLRYYDSSPLVIKD
LLNGRINAAMVMDCLPVDNAIKHNKA IKKLYI IDYSDAFGVAVRKENTQLAKRI EDGFLLL
QADPFWETLKQKYLPLREN

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>glnP 901672:902370 forward MW:25827

MLNISSELLHSINIIIEALPNIFQGSVLT IITVLLALFIGLILGIPMAILQVYGGPYIRY
SIQIYCWFFRGPVILLLLFLFYGLFELLQLNFSAVTTSCIVLGIASSSYQTQIIRSAIQ
MIPSGQLKAAKALGMTSTQAILV IILPQALRLSIPGWSNEYSILLKDSAICFVLGTPEIM
AQTQFVASRTEYHLLLYIVAGILYFLITLIGVSLRRLEQYLYLPGYTASLH

>glnQ 902381:903256 forward MW:32026

MIDSTYPILYVKNITKSFNNKLI LNNISVNIKGD IKVLI GPSGAGKSTFLQCLNCLILP
DSGGIYLYGDKIDLSNHYSLELRKKVGMIFQDFNLF DHLTTEENISIALRKVANYSYKA
ARERALEELAQVGLIDKANLYPAQLSGGQKQRLA IARALAMEPNVMLLDEPTSALDPKLT
CEVLTVIQKLANNGMTMVI TTHQMDFACIATDILFMEHGEIVEQGSQCQLLSPEAQRTR
NGFFKSFISPLQSNLSIEKPSISMLLSGDLSHDLTNSGTESISFPEKNEN

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>LAW0719 903258:903944 forward MW:25421

MLLDITFITQTVVPTLNKGLLVSI ALIIPSAIIGFLLGVCIGIIRVFGKRWLQRLGNIFT
LIFRGVPLTVQLMILYFGLPNINIYFEPYIAAVIGFTLCTGAYQSEYIRGALLSIKKGQL
QAAYALGFTRLKAILFIIIPQATRYALPGCGNELVYLIKYSSLAYLITCIELTGEAKILV
SQTVKPMEIYFIAAIYYLSFVSIATWILKKLETLYAIPGFGKKHIDYL

>lepA 903994:905814 forward MW:67906

MKDLLMPIQENIRNFSIAAHIDHGKSTLADRILEYTNLVSDREKRDQYLDKMELEMERGI
TIKAQTVRIPYITADGKTYILNLI DTPGHVDFNYEVSRLSACEGSLLVIDTTQGVEAQT
LANVYLALEHNHEVIPILNKIDLPSADIEKVKAIEETIGLDCSTAISSAKTGLGVDSV
LEAIVQQLPAPKGD PNNPLKALIFDSWYDAYQGVVVLFRIMDGTIKKNDI IKLFSTESY
EITRLGVFSPEAIDIPQLSAGEVGF LCGNIKTLGDAKVGDITLLHNPCTKAIPGFKEIQ
PVVFCGLYPSSESDYDILKAALEKLQLNDAAFSWEPETSQALGFGFRGFLGLLHMEIQ
ERLEREFQVELIATAPSVIYKVETTDGKIQEIDNPSKLPGLKIVHLYEPYVHIDIHVPS
EFVGNVLKLCEEKRGIQKNIAYPAQQRVIITYELPFSEIVFDFDRLKSATKGYASMDYE
VIDYRISNLVRLDILLNGEPVDALAVIVHRDKAYHYGRSLAIKLLKTI PRQMFEVAIQAA
IGQKVIARESISALRKNVTAKCYGGDITRKRKLLKQKEGKKRMKRMGNVELPQEAFLAA
LQMGDD

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>LAW0721 905910:906278 reverse MW:13309

MRNPVFLDSILVGLWNITSFFIPTPLLTMATILGGTAALCALFCIGMILTAQLSSSEGFV
AGWFIQHLPVHILKLAIQPLITYCCFTLLGLNSKLVGVIVLIVAMPKGI IAYIIAEKYYV
YT

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>LAW0722 906849:908045 reverse MW:44446

MAKDATLESDDIIDLVDI VQSSDKSESQDSEKVD FDSQLSDILSNDDPISLEDIPDLDE
LFAEESSEVKEENNSQQVDIDSEDLLDNLGEEKVETNVLSKIDSDPEDLDALLDNLFSEE
EKEPIKNQKESNASLNLGQLEFSTNEDKTNFLEKALDGLDDLLMEEDLDSTVDISP
KKIVDVVEQEESPQLIEDIKTLPDVVVVEDVTNVEHILSDKDKGEVEAILDAVKDPAFLA
NEKNLLDNNNSVPQSLSAVSSEEIQISSNDSRVMETA AKKVQSSDTTLEVSSVLPVSTNT
VIDELNVRIQQLENESQALKQRVSALELI IMAHESEVEELQDSNVMRFNSIDEKIDNSLQ
MDILVKEVVDRLQPEIDKFAAEAAVRVIREEIELLLKK

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>mltA 908182:909393 reverse MW:45630

MGRYLVRWRYLSIIICFLGIVGCSNSLMESMSSNGLSYTNLRPFYNIKEQQSATAIAKTF
SPRKQNLRSWKELRPALEATHQYLSKKDLEQVAIAHGDIATWGQLFNTVNRLETLLDQL
DEHPEVLSKDFQWIGLTEDINFLGYYEPMFKASYKPSKEYRYPLYKTTPDLHQLNLGLFK
KELVGSIIYRQTEKGIPIYYSRYEIDDKGVKKGKGLEVAWLKDPLDSYFLHIQGSGLLV
FEDGSSIHIGFAGSNGQEYHSLASYLETQGIIPQGNKNIELIRNWIQENPLRMSELLYN
NRYVFFKLYKDGPIGSSGYILSPWISMSVDRSVFPLGAIIFDLSNNASTNEFTKETCGI
GIAQDSGGVKGKKIDIFCGSGQQAYQESISLSGMGNAWILLAK

>LAW0724 909409:909858 forward MW:17104

MQHTPSHTICYSHRVSYGETDAMGYLYHAEYLHIFEIGRTEFLRSLGISYAEIESRGIRL
PVCHATCHYRHPAHYDEVLNVHIKINEIKKASLTFSYSVINKHSNKLLTNGTTRLACTNI
NGQLIKIPEWLINIFYGSLLMIPNSHNCS

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>hisB 910107:910928 reverse MW:31469

LLADIHMHTSASHGKNTVEEMYYAAKDKGIDIQGFSEHAPRPHKYSYPIEYNKHLSYNFP
QYIENVSHIKKCGFEHKKVLLGVEIDWLPSESLFMDSVISMYNFDYIIGGVHFLGWSGFD
FTIEDWRNLSLSQCYMHYKNYFSSLKEMVCSKLMHVVAHFDLIKIFTPSIFRTWINSAG
QKIVLELLIAIRDSGMSLEVSSAGLRKFCKEIYPCLEIKMAKAQGVSIKSSDAHCKNT
IGFAFNQLFYTKSVGYCAYRIFEKGAKVITF

>metK 911020:912234 reverse MW:44334

LIQFFACIFRGEDMTIEKGRYFFTSSESVTEGHPDKVADQISDAVLDTLLEQDPHSRVACE
ALVSTGMAIIAGEITTINGYADLLSVVRRTIQSIGYNSSEMGFWDQTCVAVLSTIDKQSLDI
AQGIDRAKPEEQGAGDQGMFACRETPTLMPAPIYWAHQLSQKLTKVRKDGEVSFFRP
DGKTQISFEYNGVPPVIRNNVVVSTQHAPSVSQSDLEAVKSKVIRPVLEPTGMFDEKEC
EIIYINTTGRFVGGPMGDCGLTGRKIIQDTYGGSGHHGGGAFSGKDASKVDRSGAYMARY
IAKNVVGTLAQRCEVQIAYCIGVAKPVSVLVSSLGTSIPDEVLTAVLEVFDRPYFI
TKRLDLLRPIYSKTSCYGHFRELPEFTWEQLDAVKDLQTALKI

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>LAW0727 912401:912991 forward MW:22669

MIKKPVYQGGIDVFCAYAAAINSIRIAQGINLINARKLLHEALLNVAKDLELFQKVLQK
TDYVFWVDNILEQESKRGSIIVKKAFFHATEKLDNHITSDDVWCSIINWLSNGEKRSCLF
QFIRYLPTKGLFLQHWTCGYNLLYNNTLLLAFDSSLEPDSLQYIYKKELGTTFKNLHDEV
IIKPYTLRLVEPILIS

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>lytB 912997:913881 forward MW:32704

LIIVKEKYMQUIRAKTAGTCWVDLALRKLQSIIENKEKANTRFVYGLIHNPPQVIVEY
KAQGVICVDSIEEVVAGDVTIIRAHGPIIYEEQQLTDIGINLIDATCPKVKKTQLAIANA
TNSETILLLLFGEANHPVKGKLSYSQGPFFHVFDTKQFVEDFDNSQNKTVLASQTTQDEI
TFKEIQEILHQKGIQPVILNTICDATYKRQRELLSITEQVNTMVVGGFTSGNTRRLVEL
SKAKGIKTFHIETVDALYGNNELDQNDIIGLTGGASTPKQLIDKVEDFLSNNLS

>cheV 913946:914896 forward MW:35865

MSQTGILLESNTNELEIVEFFLDEDDNGEVYRGYYGVNVAKVLEIRMPKVTELPDTQD
ESILGAFNLRSHVPLVDLGHWLGKLAKTDEPKKIVTEFNDVTTSMVSGVNRIRHRIS
WDEVPPNDYVSQVSKTTITGIITIEDRIVFILDLEKIVAELNPALSLRLDEAVTWGSEI
RYRALIADDSNLIREMLKDLMQKANFEVEAVNNGREAWERLTELKNRATEENKNITDYVQ
AVITDIEMPSMDGLNLCKRIKEDPQLRKLPLVFLFSSIIDTKLRHKGIDVGADDQISKPEV
THLAKRVYALIAERQS

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>ugd 914956:916287 reverse MW:48568

MHICVIGTGYVGLVSAACFAEMGNHVYCVDINPAVIEGLCHGKIHIFEPGLSDLVKNRNTS
EGRLYFTTDLSTGIKDAEVAFIAVGTPSTEEGTCDTSYVEHVASSLGQCMSSPLIIVNKS
TVPVGTADKIRILVKEALKTRGIELSFDVSNPEFLKEGDAIADFMKPDRIVGTDSESS
AHLHLKLYAPFARNREKLIVMSVRSaelTKYAANCMLATKISFINEMALLCEKLGADIRE
VRKGIADHRIGYHFYIPGVGYGGSCFPKDIKALIHANQIGIDSKLLEAVEVVNDRQKH

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SMAVKIQEYFSGQSGIKGKTLALWGLAFKANTDDVRESPIAIAIINNLTAGGMYIRAFDPV
AYDTAKAVLHDNMLVSI EADPYTICNNSDALLIVTEWNQFRNPDFEKIKTLLNMPVIFDG
RNLYSPSFMRCGFTYYCIGYGK

>acpS 916424:916801 forward MW:13473

MAIIGLGMDLVEILRIKKTFFSTFGDVFLYKIFTSIEYNNFLLKPSIASLAARFAAKEAAS
KALGTGFSDGITFKNIEISSLPNGKQLHFQGNKKAISLGVNNIMITLTHSHNTAGAV
VILET

>hsIV 916828:917361 forward MW:19290

MEIRGTTILAVRHKGHVALAGDGQVTLGQSVVMKHTAKKVRMYKNQVIAGFAGTTADAF
TLFERFDNYLEETNGNLVRAAVELAKEWRKDKYLRLEAMLLVVDKDHTFVLSGTGDVIE
PDDGIAAIGSGGLYAVAAARALVAHSELSAAEIARESMRITAEICVFTNLNLTLET

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>LAW0733 917632:918429 forward MW:29774

MKKLLIVLLAIIVCSYSYTHAKMEPLIEGVIKRGVLRVGFAPFLPWI IQNKDGEYVGFDI
DIAKRLAQDLGVTLQLVPTRWTEIIPSLANKFDI IISGATITLERNLQVNFSPYHQTD
IEVLANAKKVKGMKFPQDFNKPEVIVAIRNGSTVITPAKQLLPKASFRLFDDEVASIKDV
ESGQSHILLASAPLPAIQAINSGNLI RLDTLPI THQSVGFAIKKGDPSLNI LNNWIKF
IENEGWLSERKNYWFNSLKWKNEVI

>LAW0734 918588:919070 forward MW:17858

MKWFTHKAIAIAGALALEASPPGLFATLVGSI LPDLADRTFAMGNKQQWRR IHRQTSHWM
GWYLLLMILGLMNFPLKHFALSPIANQLFSEIMLWVGFGGITHVLLDSLTPMGIPMWPFG
SKKRIGLSLISTGSGVGLVFLIISISCIISQYNWSKMLS

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>yChB 919170:920087 forward MW:34202

MIYSHLSSTSCITTTGCKVNLNLYITGILPNGWHKIDSIFLPLSEPHDELHIEITNHNQG
LHLSCNILDIELENNILTKTYTLFTKATHFTPSISIYLKKGIPYGAGLGGSSDAAALLT
WLQKNSPLPLSPSKLLKLAEEIGADVPPFLKNKPCRATGIGEKLEEISLSNLNISGNTLF
IICPNLKI STPYAYKMWDYNNKQIATSSRYNNLTKKYSWDRSSPSTHLSDYLMKNDF
EPVIFSEYTELSVFEQQLQFGARAAVLSGSGSSIYGLFKEYNQTSIMTEFYKKNILTF
SLLQ

>prsA 920202:921167 forward MW:34453

MAIKPKAFSFMYGELKILSGTANLPLAHAICNNLGCPLTPSLCETFSDGETRIEINSSVR
GGDVFVIQPTCDPVNYNLMQLCLMLDALKRASATRITAVIPYYGYARQDRKVNPRAPISA
KLVADFLSTAGANRIVTVDLHAGQIQGFFNCPVDNLFASKALLEPFFSMKDEIVVVSPDA
GGVERARAFAKKIEAPLAIIDKRRDNPNQAIATSVIGDVKNRIAILVDDIIDTAGTITAA
AELLRLRAGAREVNATATHGVLSGPAIENLNRVFTKVLVTDTIPIQDKNKECKSIHVIVS
AGLLATAIYNIHNSSSVSVLF

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>LAW0737 921211:921804 forward MW:22054

MDNLKTLVVQKRLDLGKGNRRLLHKKNLIPGIFYTSSGKNIPQLPELPFTKIFSEVGR
TVFNLKIESDKENITHPVIIWELQYYPVKNRFMHVDLYGVELNPKIKIVVPLEFTGTAKG
TKVGGKLETYREQLTIANPLDIPSKITLDISDLDIGKSIYVADLKLPEGVKTSYDTNYA
IVSVIMPGGNTATEQEG

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>LAW0738 921880:922485 forward MW:22454

MSIKGIIAGLGNPGGQYKTRHNIGFMVINKLITITSASKLSGKKFYCELWKTITIDNY
LLAKPQTYMNLSGEAIHPLVEWYNITKDNLLVIHDELDLPIGKMKLQGGGTAGHNLKS
IHNLGTKDFYRLRIGIGRSPLPSENTVNWVLGHLSMKELTLLNNLFPTIFDALSFFIKD
EKETAIRMINSFTLSETVNLS

>LAW0739 922741:923433 forward MW:26589

MKNSWPLIISISFIIILITGCATKTICIIDQQEFSVMYRHLAPLLWNKNVVDNNGYYQE
NKKLSPKIGEYLFQHLPVNLTSPTTKTNLVTFQAQSNPYTKITITHYGFSFQDNKRKI
KLIQAQTDWFNKGNNDWII LYHVHSSNISTNYLLI LPHPKESLPIEPQLIAICDELNNTCT
IINDNSTNIQNFGTSYFEVEPEIYSIISPPKKQNIQENKETTIVTINQLKQ

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>flgF 923583:924377 forward MW:29045

MQQAKFSGLFAALSAEHRMNF IANLANVNTAGYKQDKLAFKDTMIQFAHDQIREPIATV
RSKPLFPEPNAARVRI AVSNTDFAQQSMQFTGNPLDFAITGENGFFRIQSPQGNLTRN
GSFVLDATGQLVTKQGWVPLGDGGPIT IPEGTKKISITPDGRIFADDAEVGTIQFVSLDD
VKKLEKVGANLYRPKEGLE IIEGNANETGAI INQGFLESSNVNVVEEMVKMIEVNRQFDA
YQKVMQTSDSL DREAYSKVGR TSR

>flgG 924392:925177 forward MW:28125

MMRSLWTAATGMVAQQLNIDVISNNLANTNTSGFKKSRAEFEDLMYQTMKIAGSATDGDN
RIPVGIQVGMGVRPTAVHKFFQTQDFQNTGNPLDMAIEGEGFFQVLVGDQLMYTRAGAFK
LNQDGTLV TANGYPLQPEFTVPPDAKSVAI SERGRIT ALDANGQEI AAGEI PLYS FVNPA
GLDAKGRNLYIPT EASGEAVEGV PGEENLGTIAQGFLEMSNVEVDEMVMQIVGQRAYEM
NSKAIQTS DNMLQTAVQLKRS

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>LAW0742 925203:926186 forward MW:36599

MKYIRLLLFTHCIAFIFHITIAHNCAANSLGSDWRIHIKEASVVHGMVTLADI AKVYGT
PPPVGWEKISSIPLWESPEKPGVPMKINRVLEKALKETLGEASFFSVIPSNVAIQKGGE
ILYENQLQDLTQKAIKNVYPM LASHGELSDYRIPAYIFIPQKQYVEVVLPTISPKRSL
QFVLKIDIGTVLRQYTGTVLLSVWQPVPVSGKPLNRGDYVNPEDVTWINKNIAFLRDDIW
DGKGGPWQIKRSIGIGQPIYQSDLEPLAVVRKGDIIKLNYNKGSIRLSVNVEALENGTHG
SFIQVRNLQSKKIVHATV VDSNTVEIR

>flgG 926204:926896 forward MW:24842

MKKLLFTSGCILILTGC SAPNKTPVVAPPITPPPAYVEPEDSYNPGSLYSSAESDGLFA
DTRARRVGDIVMVKI VENNTAKNKADTTADKKTANTYGIDAFFGRQYIGGGSTKIPVGSV
AFDTTSESGTTSTGETKREGAINGTIAARVLRVMPGGLEIEGVRETRVNNETQYIVITG
LIRPMDIEPDNSIMSNRISDAKIAYYGQGV LSEKQKPGWFTRFMDTLWPF

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>flgI 926942:928081 forward MW:39928

MLSSIIRPTKNCLLHFIRSSYLTLFIAVFHNPAQSVRIKDIATFSGVRNNQLIGYGLV
IGLAGTGDKRDSPTASSMTNMLERMGVAVDANKIKPKNVAAMVTANMPVSARPGTELD
VTVSSVGDAKSLQGGVLLQTP LKGV DGVYALAQGSLIIGGYS AEGTAASVQKNSTTVGS
IPGGGIVEKGI PFDNTQQNLTLNMNSNDFSTTMQVVNRLNATMGGNFASAI DAGTVRID
IPPAYKGNLVPLIASIENLEINPESVAKVVVDEKTGTIVL GREVRLSRVAVAHGNLQVVI
QESAQVSQPGPFSQQT VITPETNLTLQEETKRLNLLEGASLQELVDGLNAIGATPRDMI
SILRALKAAGSLHAQLEVL

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>flgJ 928086:928769 forward MW:25214

MINPIDPSLAQNSAEQNLKEIKRKADKEIQNLDPNAAA AKEKKLREAAEGFEAIFIQQM
WQSMRASLPKEGIMHSREEQFWQGM YDQELGKSMASAGGIGLADMMMAQLSKLENASEV
TAESMHRTPLDIKPVPLIEEKAPQELKPTNKKLEHIYNGELSQHNSSIKNNTKPSTTTNT
LTPVEEALNEFSKQIKTPSSTPTENITSSDSNTKPPII SNVTIPKN

>LAW0746 928976:929506 forward MW:20214

MPCITLLNKNSFLIYRRLMYMIHGS LDRQKKGLALLQELLNEEFSLLM DRKTEEIMAL
EFSIHSLLRQLAGEKIFIQKRLNGGKLLDYAELLSDPEQTKAIKQLWQNI DTLEQDCSRQ
ASLNAELSLALLDQSKNLLSFLHKNVQPQETLSTYGRSGTYNHHSRPEGTLLSGRL

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>flgK 929506:931623 forward MW:76737

MSINTLFGIGKSAIAGNQ TALNVTGNNIANVNTQGYSRQSVRFEDRYGLNQTPGMLGQGV
HTAEIYRNFNRFVEDAYLNRFSQNTRWDEQSAIMNSIESIFNESNRTGISSLLGEFFKGW
QNLSLRPEDAATREAVLSTAKNLTQLINDAKSSLQKTQQEMDLYIQQSVNKVNELVDAIK
NINKQISATYIPGQQNPQLLDQRDQLVRELANLVDIEVKDKGGGNFDIQLKSGQPLLEG
QIGYTLSVGGQRVENYLKQDSKYTGTITSSGSDSHEYSFEIINPPSGGAPGSMRVSLDGG
KTWLRNEDGSELNVIPTTPGETIKVKNLEISFDQDPSQLVSGDRFDVIPKTGLYWSPT
RPPINITPQTLNDGTENTGRLTGGKLTAYFSTRDYNAGRYIDKLDALANSIVWEVNRHS
QGAGEQKMTYSLGSSQVNR TDVPLGTSQSGLAYGNRLTTGNLSFQIYDENGKPLPVGTTP

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NGIPESLDLDPGTPGVQNFDPDSIHSLEDLVNAIHNPNNYGEFMKASIVNGSLQLTSRPGT
SFAAKTDTTGLLAALGINTFFQGS DATDMAIKPDVIQNTNFINAGKVNANGEVSTGDNSI
AKELADLATKEVTISTGWETTHQTLGAYYGALVGLVGS DTRTAKFNADYNKTL SNELEQQ
ALSITGVNLDEEMTQLIKFQHSYATAAKLITTADQMLQTLLSLKQ

>figL 931633:933210 forward MW:56830

MRVTHQSMYSGMISQMNKSLSDYMETNIQGGTMKRINRPSDDPAGTARILSYRGSIGGIE
QFKTNTDTAMGWLSLADETLNQVSTVVTKIKELAEQAATDITYTPDQREAI GFQLRQLMGT
LINLSNNQFEGKHFISGQDYNKSSFLEGLTVTSGDPNVNPNPPMQVTGTLEKTGLIRFEK
DETIPPAADLNYQWSTDGKWTQATIPAGGREITIGGAVVTPAPATTNVTAFDPDKPL
GDTNGSLLYVRPTAIYQGS DNNKPIVDRYGTVPMPPLNTNTVGTFS DNVVVKFPNGVDL
STPGSFDYSYSTDGKWTAGNSEVIVSPGPPSTSTARLILPGGYMDIGSADTTSPNNTI
PPDGQLILRPQRTDLSFEIMEGQNI TVTNVGKDFGGIYSTNGSSNLEPMFGQNDGRNLF
ETVGNLIAYTETNNQEGIANALKDLELAQKNILTQAARIGGKENRLEITKEALDTNKYDQ
TQRLSGVEDADLTELVSR LAQQMAYSTILKSSSMIMQLNLTKYI

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>LAW0749 933304:933993 forward MW:25881

MELSMILTRRAGESLYLDDNIRITILGVQKQVKIGLDVPPEMNIYREEVYQRVKEENT
LATTINNDLIAAAQLTNKEEIIDTRLGQQTIEPEKIINFPQGLIGFENKQKFILLQIQ
PASPFILQSIDNPKLGLLVADPYSFIKHYTVQLNDTEKILQSEVHNLAIVTMTIPKG
KPDLARLNLTGPILINYDTKIGLQVPQTNLETTSHVYLYHPGEEPILNK

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>LAW0750 934221:935801 forward MW:56766

MFLPLPTPHEMSLWDKESINIGVPETVLMENSSREALHVLKKTFGS IENKYILILMGS GK
NGGDAVCLARHLHDAKANVVLHTRSF IHYKGTTRQYLKLAKHCGILFSLAESWITKYNK
TPWGEPIIIDGLIGTGLSSNLQLELELVNTVNKLSKKSFILALDIPSGLSGLTGKQP
TAITADITVTFEAAKPGILPEASNYVGLHICSIGIPLCVRKKNPPSYQMINQKSKLPL
PKPQPMWYKGNAGHLLIIGSSNSEGILTGAPCLTALAALRTGAGLVTIAAPYKLCNEIK
ANYPDIMMLPLGTPETYEWGPDIEQILSKLHKYNCIVIGPGIGRTIGTTQFIAKLLSTP
SRIPKVIDADAIIALADETTILKLNHTDILTPHPGEAATLLKTNTTLIQKNRFDAIHQL
TSLSSSTWILKGAGTMIASPQSPTTIFPQAIPNLAIGGSGDVLSGCIGTLLIHYHEQPHI
AACLATQLHLEAGAILSKQFLYRGNTALDIANAIPNAYINLMKTY S

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>LAW0751 935839:937368 reverse MW:55320

MTVRLACGALEGVDAFRVDLEVDFLRQGLPSFVMVGLAEGAVREAKERVFAALRSCGFTL
PPARITVNLAPANRRKGGSGYDLPLAIGLLVASNNLPVEVISGWFMGGELSLTGTLPKIP
GILPLALLARKEKAKGIIIVASENAEASVVAELSTFGARTLSEVIDFLLGKISLPIVKPV
EPDLPEVESILDFADVKGQEHAKRAIEIAAAGAHNLLFVGPPGSGKTM LAKRIPTILPKL
DFEESLEVTKIYSVAGLLNQQGLIQKRPFRAPHHTISEIALIGGGVSPRPGEVSLAHRGV
LFLDEFPEYAKSTLEVLRQPLEEGKVTISRSMFSVVPADCMLVAAMNPCPCGYSTDPNH
SCICTASQIQRYRARLSGPLDRIDLHITVPTVSYEELRSLTSHRCSSQLLENILRAREI
QSVRYKSF SNCR TNADLSGRLL EEF CQIGPDGQNF LKEAMQKLALSARAYTRILRISRTI
ADLAGVKQVLVKHLAEAINCRVLDREFLN

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>LAW0752 937365:939059 reverse MW:62227

MDIYKQKALDKIPFVPSLFKTLAQQYSYKMLFKDFSAGCNIAVIALPLSLAFS IASGLTP
EKGLYSSIVASLIMAFLSGSNFQICGPTGALV I IFTIISRYGYDGLIITTIISGTILIF
CGITRLGFLIKYIPYPVTIGFTLGIALLIFSSQVKDFGLPMAETPPEFFDKWHLYLRNA
LSFSPSTLFTSFFTLV I I SVRFYIPRFPAPVMGVI FTTVIVWLFDLPVETIGSRFGTLP
SDIPSFVLPLDFSIERLRILLPDAFTMALLIAIESLLSCVVADSMTGKRHNSNMELIAQG
VGNIGSVLFGMPATGSI GRMTNIRSGAYSPISSIFHAIFLFGF ILYLMPAIELIPLSA
FAGVLVVVAYDMSDLMTVRRMFYGP TADWALMLLTFILTVVLDLTTAVYVGVILASLFFM
GRMGEITQLQVTKEYQSHEIVQDIPVEKDKLPKGVHIFSI NGPLFFGVADRLQK LLEAM
ETTPKVFILYLHNMPTIDMTA IHTLESFIEKRRSGCKIFLADIHPATRSTLDRAGI IHAV
GKENIFPTLQSAVEESTKFVEDTA

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>gInP 939166:939858 reverse MW:25466

MSFDFQPQVMLETAPLLLEGVELTLIITIGGLFLGLALGILVGLINTPRFPFLRTLAVIY
VEIIRGTPLIVLVMFLYFALPLALDIHIPPNWAGVIAIGVNSGAYIAEIVRGSIISSHGH
QMEAAARSTGLTHAQAMLYIWPQAFRRMIPPLTNQCIISLKDTSLLVIVGVGELTRQGQE
IISVNFRAFEVWLTVAIFYLIMTLSISALLKYLERRLVLPGRLLQYAGKQY

>gInH 939981:940730 reverse MW:27742

MKYKIFVFI LGLFFTNTFGFFANAKGLVVAHDTNLMPPFEFKDKEGNFVGFDI ELWEHIAE
IANIPYTFQPMDFNGIIPGLQTGSIDIAISGMTITPERAKVILFSQPYYESGLMILVRAG
EESISKLEDLVGKTGVKGTGTSSVDFMKSFGKQKRSKLFPTNDGMFFDLMTGGVDAVVFD
APVLQYFASSAGKGVKLVGPKYKQPYGIAFRKNSEELVQKVNTALNELKRNGIYTELY
KKWFGLPPE

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>lytB 941271:942995 reverse MW:65040

METEETMENNGTDLDFNFESALEDYLSTDFGDLEEGTIVKGEIVRIDDDNVLDVNFKSE
GQIPTIEFQNTDGNITAKVGDKIDVFVVRKNEQEGTIILSF EKAKRMQLFDQLEDLQEK
GIIKGRIVRRIKGGYITIDLRGVEAFLPGSHVDRPVPDMDMLVNQEYEFVRLKINRRRSN
VIVSRRVLLLEEERDSKRQDLLQTI SEGQVVVGKVKVNT EYGVFVDLGGDLGLLHITDMSW
KRIRHPREMVNLGQELELKVLSFDKENQKVS LGLKQLVPDPWQDITERFPETSHHVGVKVT
NLVDYGVFVELESVEGLVHISEMSWTRKLRHPSQMVHQGDEVEVILGIDQDKKRISLG
MKQVKPNPWELVGEKYPEGTILEGVVKNITEFGMFIGIEDGIDGLIHVSDISWTKKVRHP
NELFKVGDIVQAKVLTVDQENEKFTLGIKQLTEDPWSNAPSVYPVGGIVKGIITNITDFG
LFVEVEEGIEGLVHVSELSSKKIKSPSEIYKDGEEQAKI IHVSAEERRLGLSIKQLKED
EEHRKSREYSRTGPDSSGQSLGDLKMKLEEPTEN

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>rnh 943310:943795 reverse MW:18665

VRSNYLKSVEVFTDGSCLGNPGAGGWAAILRYGDYEQEISGGFSYTTNRMEMIAAIYAL
EKLKESCLVMLYTD SQYLRAVEKQWL VFW EKNNWKTASKKPVKNQDLWKRLQRQLERHN
VIFTWVRGHS GHFENERCDNLARMEASRSNLPKDCGFINEG

>menA 943971:944864 reverse MW:33268

MLYQWIIASRPWTFTAFTPIALGTSLAISDGYHFDLFLFILALLGGIFLQAGANFLNTY
GDYMSGVDTIDSAITCPQIVTGILPAYKMKYVIGMLTTAIIIGLFLIFLCGWPVVFVGF
IGFLGAASYTTGWSPIKYKGLGPIFVFFLMGPFMVLPAYYIQTYSNMNIFVSIPIAFL
VTAIMHANDLRDIEYDNASGIKTIALWLGFKRSLLLYKVICIMAFVVLVCLVALRILPTV
ALLPLVLFPLLIRKFQRIKYPDITVEIKNLVKWTAGFHFLFGLFFIIGILLSPFVYV

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>LAW0758 944976:945602 reverse MW:23479

MKNHTPSGLQVFLVLLAVIFWAI VFGTTYINFWLGMSCSSMVLAFFSFLLGSPFHYSKF
SWKVCLLGIGSIFILYSIFYLGDMIATKLLPFAQAQVADIYSIREQSNSVLIGFILLFIT
SPAEEIFWRGFFQRWAMTRFGDLGGWLLAGVSYAGVHIWSMNSMLIFSAAIAGLFWGLIF
WRTSNLIPCIVSHSLWTLMVFLFPILG

>menA 945599:946513 reverse MW:33278

MLYTWIIATRPSFTAALIPISLGTALAWSGTVKTPGVPFHFFCFLILLSGLLLQAGTN
LLNTYGDFISGVDTLDSAVTCPQLVRGILLPEKVKQVGIALLVLSVILGLILYLLSGWPI
LLFGVIGLIGSATYTTGSSPYKYKGLGPIFVFFLMGPCMVLPAYYVQADVLTWSSFFASL
PISFLVTAIMHANDLRDIQHDKLANISTVAIWLELKSSLVLYRILCLGAFVSLIFVVAFG
LVPITGILPLALTPYLNKLRRLRASEIDNELIVLEGWTAQFHFLFGVFYVVGVLWGII
QVIL

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>tmk 946612:947238 reverse MW:23295

VFITIEGIEGSGKTTLINRLSEYFSSRGEDVIVTREP GGCELGGLLRSLVLSSELGLTAE
SELFLFLADRAQHVSECIQPAIMNGKTVFCRDYADSTIVYQGYGRGMNIGKLWEFNEVAI
KGIWPQKTLLLDIDVEKALERACIRNEALGLNIVEGRFESEPMDFHNRIRDGFLHWAGR
PDRITILNADTTPELDFQQSVSVLREIV

>cbf1 947223:948281 reverse MW:39686

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MDGMQSSNKSFNKNQWIKDVTLSSEEVASLFLIAASSQQQAKNGPFWRLELKDVTGTIEAR
 IWSPMSLEYPKIPTGIIAYVKGRAESYREQLQINI IELHI IDEDELLTIDIGMFLPASVR
 NSQDMFSELEAICNKEFTHKPWHRFVFSILNDPEVKPKLLVAPAAKGVHHAWVGGLLEHI
 LSVVKVSLICDHYNCLDRQTLLAGAFHDIGKLWELSGGLDNNYTDEGRIGHINISLE
 KFQSYLIQSGLEEGLAMHFHKLVLSSHGLYEFASPRLPQTAEAFALHYIDNLDAKIAQSI
 AALQDISSGETGWSSYQKTLERQLYQATKTPLESNKLEDQSIKQKVSQCSLL

>surE 948405:949160 forward MW:27343

MNILLTNDGIIHASGLRAIYNELVKLGHNVFPFAPTVERSGASNSVSLNVPLTTQDVYDG
 DFKGTAINGTPVDCVKVGLAKLHENPPDLIISGINAGHNVGTDILYSGTVAAMEGCVAG
 IPSIAFSRPREEVDPTQSYAEHAANLLKKIDFSLVPKGQILNINYPSSISIKKTLGKIVCA
 MSTQGWEHKLHKKKDDNGKPYWFISPYIPYSHGISQTDVFFLLEGWITITPLMFNMTAQT
 TLSNLEQHSFT

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>fba 949353:950276 forward MW:33510

MPLTGPKVMFEKAYKEGYAIGAFNVNMEIIQGIILMAATEERAPVILQVSAGARNYAGKN
 YIVKLEIAGVLDTDIPIVLHLDHGADFAICKTCIDDGFTSVMIDGSHLPFEENIALTKQV
 VDYAHAHGVVVEAELGRLAGVEDDVSSEHSVYTPDQAVEFVQRSGCDSLAIAGTSHGA
 YKFKGKPELDFARLETIGNLLPDFPLVLHGASSVSQQYVDMCNKYGGKIAGSAGVPEEFL
 RKAASLAVCKINIDTDIRLAMTASIRKFFVEHPEEFDPRSYLKLARQAVKDMVQHKIKYV
 LGCANTI

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>gapA 950386:951387 forward MW:36099

MSVRIGLNGFGRIGRYLIRLMANQSYMPVVAINARADNASLAHLFKYDSIHGPFKGSISY
 DDDGLIINGHHINVSRRKKGWEIWKDMDVNLVVESTGAIKTRDGLEAHIQTGAAKVIIST
 ASKDTDALIIMGVNDSYLPKDHILSAGSCTTNCLAPVVKVLDVFGIEHGVMTTIHSY
 TMSQRILDGSQKDLRRARAATLSLIPTTTGAAKAIGLVIPELEGKIDGMAIRVPTPNVSL
 VDFTCELKQPVTVDINNTLKNAAEGKLNILGYCDEPLVSDYTGDIHGGVVDALSTSV
 ISSKLAKILVWYDNEAGFTNQLLRLINLVEKSM

>LAW0765 951412:952311 reverse MW:33714

MINRDVLSQYIATDEAELKIFVGGFFVGISALLICIMLFSWLWVFTIGSNNQPATVSLFVI
 LFCFLLVSPISWISVELLLHFYMGWTVMSPLKRSIVIRFALPMVELFVRVIKGPIEPVR
 RSFIAINLLLLLAKLSYEPHDVVLAPHCSQASRCKLRLTYNNDNCARCGKCPIGSLE
 LRDESGVKVLSATGGTMARRIIEKVRPKMIVGACERDLVEGIHDIPSFFPVYGFLENECP
 NGPCIDTLINVSRLRKVLKKFIPSLHFSNEEKSETTPLKKWIPPSEYTNIVAQSEKIIQ

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>fmt 952368:953336 reverse MW:35502

MILQNKPLRIVFMGTPEFAAIIILQKIVASGKVDIIASYCQPDRPVGRGHKVQFSAVKILS
 NSLRIPVYQPVNFKSEYEIEKLYALKPDLLVVAAYGLILPQSVLDIPAISPLNVHASLLP
 CYRGAAPIQRALMNDKKTGVTIRMEKGLDTGAMFTHEEIPINMEDTAATMHEKLAQLG
 GKLLINIFEQIIQGTLSDPTPQDDIQATYAPKLTKSDGCIYWDMPAENVHAVVRGVTPWP
 GAQTSFKLVNRNPNILFQPGEIGSNELFKYNEGDSPLPGSILGLKGNAIAIACKDVPYL
 IYTLRPEGRKTMATAKDFWNGYL

>def 953333:953848 reverse MW:19124

MSLKILQYPDISLQKISLEVQDITQDIHNLAKQMVQTMVDANGIGLAAPQVGYLLRLIVV
 DVSGPEQKSSLLVLIINPKITPVIDSGFIEGEEGCLSPDYRSKVKRHAKVLLDAIDLDSN
 PVSFEAEGLLSVCLQHEIDHLDGKLFIDRVSYLKRKLYDGRLKRLKLLKNAI

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>nifr3 954008:955000 forward MW:37079

MLYNQPLPFSPETPWLAPIAGWSDLPFRLLCREHGAAVCYTEMI SAKGLIYNNPGTESLL
 KTI PEDNPLIVQLCGSEASCMKDALTILLEKGYKWFDCNMGCSVPKITRTGSGASMMKNI
 DNSIKIAEAMIHTVNKKSIGFKLRLGWDEKHETWPI LAKLLEEAGAGWITLHPRTAQQGF
 TGTANWEKLELQKQVKIPVIASGDLLTASHGVDCIKKTHVDTVMYARGALKDPNIFTKH
 NQILKKGQITTTNSNSLFSMIMRHSYLACKYSSYDTALLKMRTIVPRYIRHLKGAKQLRL
 NII SCRTWSSFEDILQQFLKKEQVASCNEN

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>LAW0769 955017:955769 reverse MW:28323

MDLVGIPFIFPGVSGVRCLFQTPCLDKTKEGTYPNDLGNHFPADIEKKTFGRRRIMKQAN
ISQLIEVEQVHGDVLLFESEPTFYKGNASGVTQQADGISTTKKGVGLLIRTADCQPILLA
HKSGHYIAA IHVGRGNRIEFPQTAVKNFCSYYKVEPSEVLVVRGSPSLPAYAKFTSFKE
EWDEDFDPWFSIETETMDLWELTCFQLKSVGILSKNIFSLDLCTYLLPELFFSYRRDSKC
GRQGS LIWIE

>LAW0770 955760:956341 reverse MW:21859

MYMLDKDFVRNSCI IRRQALSSEEVHSASRI IAAKLFNDDVWRRARSVALYSSIKNEVST
ESLLRQAWQEGKQVLLPRCILSGEPELEFALCRGWEELVVGPFGILEPDYKRCIAVSGKN
LPELII VPAVGLTSFGARLGYGKGYDKLLSKSGWDRIVRVALIYQSQIVEFNPSISDVP
MHGYITELGFIWI

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>rne 957340:959340 forward MW:75706

MSEKHEYFQTEKSISSNRHNSNNKPHAQYIQLTLKKDTMTQLEETIPVMAEHSNQKTASP
TTHNHSIINEIETQDTQQTLESQPIVTHSLTLQQT SQATPEHSEQTSTNSWSENNISKKI
PHNVYQASTKKLKRSRSKNKNRTTKNSTLPVPTTNHLPALISKNSGLEQNSPEINKKML
ISVIPGEQVEVAISSDQGLFEYFIEMNHAKIRGNIYKGVINNI DANLQAAFINYGNTKN
GFLQIDEVHPEYYLQPHEPTKLKYPPIQKVLKAGQELVQVVKEPTGNKGAFLLTWSL
AGRFLVLTGQEQIGISRKVEDEEERTLRELIKGLDPGSGLGAIVRTVSI GTSKTTLQK
DLSFLKRVWREIRKKATTEKSPCLIEEPLATRAVRDYLADDITEIWVDDPETKQAIQE
VTTLLFPRKTKLVHLYQNNNEPLWEHFKNKQIIQVHSREVIMPSSGRLVFDQTEALMAI
DINSGRIAGKTNFESMAYRTNMEAAATIAQQLRLRDIGGQIVIDFIEMKEPAHCRDVEKE
LQLAMKADRARHDVGMSSFGLLQVVRQRI GSSAISISQETCPYCQGTGQRRNIEWQAIQ
TLREIHKKMQQTVTAGKHEYIHTLDQELGLYLLNKNRNLIALEQEFGIHLDIRISLLKQ
IENSDL

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>LAW0772 959344:959937 forward MW:22976

MKKVLIHLCCGPCSIPIQILQDKGYKVSIFYANPNIHPLSEYLRRESTEEVANKMGIT
MFWQDDIYNVSNWLETVYQKGIADNKGGLRCLYCYDSRLKLTQKTAQAHGFDAFTTSLFY
SRHQRHILKAGEKIEQESPNVQFLYQDFRSGWQKIDTAKEWGLYRQNYCACIFSETE
RFQKLNKLSNVTTPSY

>kefC 959970:961946 reverse MW:71634

MEIPFLKDLVYIFCLSIGVLLICLRLKVPDIVGFLLTGVLGSPSALGLVENVHAVELLSE
IGVVLLLFITIGMELSGEELARLKKPVFVGGTIQVVLTTGVMCGIAMLFGRTFPQSILIGY
LATLSSTAIVLSILQQRGESEAPHRLALSVLIFQDLAIVPMMLSIPLLAGQGEADPISF
LLSAGRLVILGGGWFLAYRVVPLMRQVMRTSRFLMTSLGFCLAVAVGTAYLGLSL
ALGAFLAGLLLAESEYSMSVVEGILPFDKDVFTSLFFI AVGMLLDVHFFIDHIGSVIALAV
ILITIKVLLAIPAMTFLGYPLRVAIMAAMSLGQIGEFVFLAKSGVDHGFLDAIGYQNFL
AASILTMVLTPLGISIAPKTARFIGKFFNHDSQEKPLLTHQGELQDHLIIVGFGLGGKY
LARTARETGIPYVILEMNPDTVRRLRDQEP IYHGDASHPLVLKHFGVEKARILVVVISDS
AATRGITAAARKLNPSLHLIVRTRFLGEVPYLHELGANDVIPEDFETSIEIFTRVLGYL
IPROTIEKVVHSIRSENYEMVRDLNFHGANLPSLTEELLSGLEVTACKVEAGSDMENKKL
LHTDLRRKHGVTIVGIRRKENIIASPGPDEELLAGDTVFLFGTSFGISQSIELFRAQV

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>trkA 962215:963630 forward MW:52061

MLFSPIRHKIENLKIIVGAGEVGFHIAQRLSEEHKQVIVIDTSQEALRRVQENLDVQTI
HGSGSSPSTLKTAGIETTNI FLAVTDSDEINITATLFAYALSPHIINLARIRNEEYASYP
ELIEKGPLNISMLVNPEEEVVRTIERLLMLPGAVEYGEFDGGRIRLVGIRVIDGPLIDQQ
LYHFRDIVNNDGIMVAASRQKKLIPSGIDTIQKDDIVYFIYKSKNQKELLRVLNKS HG
IINVACIIGGGNIGVRLAKAFEQRDIKVKLIDNNEARCKKLADRLNSTLVLYGDGTDKSL
LEEEHIDQADAFIAVTSNEEVNIIACLLAKSLGVKEVVARVNKHAYLPLIEATGINHIVS
PRLSAVNSILHYIRQGGVLTSTLVGGEAAEIEVLVPETSNLLKKPISKLNPHGALLLT
ILRENKSFIPSGQTIIEPGDRIVII CLREIMNRVEQLLTEPPLEESTSVTL

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>trkH 963721:965187 forward MW:53765

MQLRSVFFIIGVLLICIGTSIIFPLLSIYNDGVAKDLALSLSVVIISGFLAFICHQN
NPIILSNQEGFAVVGLCWIIASIIAGSLPYVYIGIPFTDAVFETASGFTTTGATILTDIEA
IPKSIILLWRSRSLTHWLGGMGIILLSLAVLPLLVGGMQLYKAEVPGSPDKLTPHMQDTAM
LLWKVYIGIMTLFQIILLYLAGMDLFDAINQTFSTVSTGGFSTKNNSIAAFPTPIQWII
LFMFASGINFTLHYKLLLGLLPHYTHDTEFNLYTLLLIIGAITIGVLLIFYHIYPSNTLS
QIEQIVRASVFQLVSICTTTGFITEDYSKWPQLAQQILLFFMFMGACAGSTAGGLKTMRI
IVIAKVAYQEIFRLLHPSIRFAKLGDKTIQKDVLSGIIIGFLILYLFIILLINTLALMALN
YDLITSFSATLTCLSNVGPGLGSGVGPVDNFHLDNIAKWFLIFCMLLRLEIYAILILFI
PEFWKALK

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>psd 965279:965941 forward MW:24613

MKGILMGKTNLGDQEGFPYIAIFAFSSIFAIIIGWLLAVLCLIGTIFCGHFFRDPERI
IPTEANIAVSPADGKIIRIEPRQDISGESHTCISIFMNICNVHVNRSPIKQIEAIQYV
QGHFLNASLDKAAKENEHCSYLLRDQDGKQWVVVQIAGLIARRIVCRTKEGDILNRGERF
GIIRFGSRVDLYLPEEYTPVNLGNKVIAGETILAKKNQE

>LAW0777 966003:966752 forward MW:27683

MQEKKITPKGVYILPNIIFTLASLFLAFIGMIQVIGNKFHICALIILGSAVLDGLDGKIAR
LTNTSSEFGVQLDSLVDLVAFGVTPAFLAWKFGLEQFGKLGICISFLFIACALRLARFN
ISTSILCKKFFVGLPCPTGGCSLALFILFTPYLPNFFNKILPHILLTLTIFLSLLMVSRI
RYFSFKEYGFLKTHTFSSMVTALLLFVLLLSEPAVMGFILCIYLLSGPIYTYIFLPKRS
YPLGKIDLL

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>nth 966810:967460 reverse MW:24365

MIKENTIKKQRAACVLSLLKKRYPTFETHLVASNPWELLIATILSAQCTDARVNQVTPIL
FTRWPDPSALALAMLEEVEQVIRTTGFYKSKAKHIIETAKRIMYNYNGVVPQTMDELITL
PGVARKTANVVLWGGFGINVGIAVDTHVKRISYRLGLTANKDPSLVEKDLMNLFQSEWG
AINHRMVWFGRHVCKAKNPLCTLCEMNTFCPHNGIK

>cutA 967580:967900 forward MW:12018

LVILVYITAPNENEAEYLATMLVKQKVAACVNIIPKVQSVYLWGNSIHKDNEVILLVKT
ESHFNKIKEIVCSIHSYDTPCIIALPILGENKFLAWVEDTVKEEH

>fruK 967901:968842 forward MW:34864

MIYIAGSLAYDKIMNFPKGFEHILADKLHVLNVCFLINGLIEKRGGTAGNIAYTLSLMN
EKSYILSSVGTDFENYEKFLSSKLPLDGIKIPDTLTAVAYITTDQSNNQITGFYPAAM
NFPCLYDLPQLNKMHDWAIISPTNIEDMQKLPTIFYEKQIKYIFDPGQQLPVLSKDDLLN
AITGSSILVTNDYEFEMICKKTDKTRAE LRSLTGAITTLGDQGALIHDTKEISIGI
AVPNKIMDPTGAGDAFRAGLLKGLIHNLDIVESAYLGSTAASFCIENSGTQEHTFTYTT
FSERYKKAFFNEYPTLSW

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>LAW0781 969129:970853 forward MW:64390

VIKKDILYQDITLDRNNNNNKEKKIAITNSHQIYNKNNVLTNLLSLDKEIITLLAKRAHL
LSKLPKTGLSAHEKQLRISWEKSVTMSKDPQFTRQLFTLIQGIEVPEAIEQISAFCLS
PKNKPVNIVLPPIPCFRRTQLNIAMAVCSNSEGLQHVLLNDPIIECIKAFNQLGASLHW
EESGCIICSNPNFTRKHYYKSIQIDTVIHIGNDTLSLYLLIFFIATCPARVKFIGKNSLK
LADFSPLRKFPLMIGSRLINIPGQDGLPIRIESSAILPSEIIPITDLPVDAVIALFIAA
TRWDKELLIDIKEHPNVTYILDKIIPLFEQWQIPFQKIIFNKQVTAISITPNKITFPENP
MIGTYVPGTATLLALPAFVGGVTLLKRQYQQHTDICLLIEVLTQFGLNITETADTICCTG
RQIGLTSSSLNIKTLPKELFPLILTLLCIPLLKSETNLLPELPDYVDESILDSYLAQLGL
VRMGSKVKLISPTQTPWTSPTSOTWGLAISLAFLRPQIKLSNPGCVEAIYPNYWKIYNKL
PTGDYTMQSSKKYSPTPVELSETKKVNRRIITE

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>thiD 970873:971706 forward MW:29803

MKGSSPSNPPCILTIIAGSDSGGGAGIQADLKTIAILGGFGLSVITALTAQNGLGVTGIHT
PDPSFIELQLNTIYKGGFFVNVLKTGMLFSVPIIEIVKNIKKQQTAVIDPVCVSQSGYQ

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LLEHTA IDALRTHILPLAMLVTPNKPEAELLTEMQIESEKDIYIAGKRLIDMGAKAVLIK
GGHFYKNNLVTNYVDWYIEKNSTNPIPLSQPAIKTKNNHGTGCTLSAAIATYIGLGLLELK
KAILQAQTYLNYCLKFSYTPGKIGPPNHTAWLNRKL

>LAW0783 972160:972975 reverse MW:31653

MILTYWGNIFDHFFLGIFSFIFSCCGCESNTSLNNLTEAYQYIEKKEWSAAERYLELYL
HEEERLDRFEAWNKLLEVGGYLYNDSWIMISCLEEMYSEFEDQPEQIKSVLWRLALAYD
RIRNYNKSMEYWEKLFIQPGLSVEQQANILRKLASSSVKIHFRDIANNYLKNCLELPLSS
TNRLECLLDRADVASSMGLFDEGASYALLVLESDEASIELKKGAGFILADIKEQQGNIQK
AIELFKSIREYYPNAMVVDQRLQLLQAKNKH

>gyrA 973029:975491 reverse MW:91736

MSQTEHHISIEQEMRKSYLEYSLSVIGRAIPDVRDGLKPVHRRILFAQQELGNSYTRPP
KKCARIVGDVIGKYHPHGDSAVYDALVRMAQDFSMRDPLEEGQGNFGSIDGDAPAAMRYT
EVRMSRLASEFLSDIDKETVDFRPNYDNSLEEPIVLPTKVPNLLNGSSGIAVGMATNIP
PHNLGELCNALLKIIDDVDVIDNLLNIHGPDPFTGGFIYVGGGLYDAYTKGRGTVKVR
GKVEIEERKKGASIVIREIPFGLNKSSLVEKIAILVNERKIDGIADLRDESDRKGIRVV
IELKKGVIPEIINALYKFTPLETSFGINMLAVVDNRPQLLTIKSALTYFLDHRREVI
RTRFELNKAEARLHILIGLIHALDHIDEVVNLISSSTPAEAKIRLIERFSLSEIQAQSI
LDMRLQRLTGLEREKLEEMHELQTKIAWYESILGDTKILWGVIRDEVTGIKEMYTT
PRRTEVIRETLTNIIEIEDLIPDDVVITLSRRGYIKRTNLAIIYQQRRGGKGVAGLHTSEDDF
VQEFITTTNHQFLLLFTNKGRMHQLKVHQPVEGSRTAKGTHIANIVPLEKEEWVTTILTV
REFSDNKFFLFATRKG MVKRSSASYARSRTGLLAVGLREDELIMVKEVTNNDFIVLA
TAEGFAIRFSCEDVRNMGRGAAGVKGIALRPGDSVVACLILQEKQDTPAIMTVSNLGYGK
RTSIDLYRVQTRGGKGIINFKVTQKTGLVIGAKPVSDDNALVLLTSTNKIIRMSVDEVRS
AGRATMGVRLVKLDDGAYVVGFDTVDGTVDDSCDDATINT

>gyrB 975610:978009 reverse MW:89473

MASNSEIIPKDYTADSITILEGLQAVRMRPAMYIGSTDTRGLHHLVYEVIDNSIDEAMAG
FCTRIDVVLHLDNSITVRDNGRGIIPVDIHPKEGVPVAVQVMTKLHAGGKFDNDTYKVSGG
LHGVLSCVNALSEQLEVTILRGGYRWKQKYSRGPVPLENLQRIGESDNHGTTIRFKADEE
IFETTEYSYETLKRFEELAYLNKGLEIHCTDERTSETHLFAEGGIHQFVKDINTGESI
LHSIISRESIVEGVMIDFALQYNAGYKENTLTFANNIRTKEGGTHLAGFKALTRAINGY
IKGQPDLSKKLKGQTLSGDDVREGLTAVLSVKLPNPQFEGQTKTKLGNSEIAGIVGGAVY
TSLDITYFQENPKDIRCIDKAIDAARAREARRAKELVRRKGALFDNALPGKLADCQSKN
PAESELFIVEGDSAGGSAKQGRNPNIQAILPLRGKILNIERTFRDKMLANKEIKALITAM
GAGIGEEDTDYQKLRYYKIVIMTDADVDGAHIRTLLTFFFRNYVGLIERGHLYIAQPPL
YRVHNSKSEKFIKDDPSLNDLFLHRVSSELEIQTESGKLLKGSDIITTMKQIESISQRTK
DAELAGISENLFMLLITSPKKLTSVLSLEEIQLYLNTSGYNITVENESHEDGDRIFTI
FENKNGHKTRIPADFFASKIYSSTWDVMSLLTMCGGINFIVFHSGTSHTINDLFKLYQF
TLDEARKGINIQRYKGLGEMNPEQLWVTTMDPQNRRTLLQVTINDAEANETFEQLMGERV
EPRREFIERNALNVRDLDI

>dnaN 978042:979193 reverse MW:43623

MLLYINKEHIDGLQKVANIIPARSGAAYLRTLWMKAEHSTLTIMATDANIEFIGNYEAD
IKETGLVGVNGRNLIDLIRRLPAKELCLRFDSTSGTLILEQERRTYKMPINDPIWFQPLT
LFPSEESVWVSADFFQEVIDRVSFCSIDDEGSDAISCLYIQPSNDNYINVCGLNGHQFAL
TRFINNELSEKIPSEGILIPKKYITELRKWLGETEIEIAITEKRFFARTIDSKETISVPR
AIFTYDPDYAFLTRLTGDNMSFLKLQRKDCLESIDRISIFNTEGDRCTYFDIKENELIS
AQQQDTGSANEYLDVITYGNINKIAFPTKSLMEIFNHFESPTITLAMSSVEGPCGITGDE
DKDYTVIIMPMPKIVEQNYYTEEV

>dnaA 979314:980636 reverse MW:51231

MKEQLRRSLLASQKNFCSNEELQSWFDPLTIKHSNPPIYVTFPHRFFGSWFANTFQKI
FEETSYELWGYGVNFYDEVTTKEPLYPIKQNKSTQPTNISQHFDFNFIINGKHSWIIISI

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IENILCSVSENI LKNTSEEITQLLVLFVGKQTTGKTHLLRAIANELSKIPSCSFKYTTTDE
LAFSLNKEPLFLFREHIQSHHII LIDDFQRVSSYPELQLELTILLDYYKDNKKILII SGT
DHPLTWNVSKEIYSRLEVGLWGELPEPDLDIRFRIAQQLSKEKKYILPKEQLLIISQHCH
SLRCLSGILHRTIAHKTLLNRELSEKELITLIKQTGEITSISPQLIIMLVGECYGFSSAND
IISERQQQLVLRQVAMYLCRELLGYSYPAIGRFLFGGRDHTTVLHSVKKIALLQDNDRV
IHTMIHEL IQKCKNVKNDER

>LAW0788 980888:982222 forward MW:50457

LQKYVVKTYSTGAIFFIFFLLLIGGYFFFLKHKEIFYSHGKTNEKIFLEERSTSYSFLNS
KDNNTIIKKKQDAQQVHIVSGVVKKGQNSFEIIGTHVSPENFYKIVKASEQAHSLLKLRV
GQPYTLFKSSSNGSLIRFEYEINQTKKLVIESNNSEFKAYLQPIAYDCQLSCISGVIHSN
LFDSDIIATGESPLLALSMDVILSFEINFIRDLRVGDSFTILVEKLFKDNVFKGYGKILGV
TFYNNGSCYEGYRFIDDNGVEQYNAEGKSLKRVFLKVPLDFKRISSEKYSLNRVHPYICD
VRPHLGIDYAAPFGTPVKSIGNGVIMKAGWGNFGKMOVIVKHKNIESMYSHLSGFSSNL
KVGTKVKQGVIGYVGSTGLSTGPHLDFRIREKGQYINPEKIFNPRMGVSPHQLEKYKD
FIVEIKSYM DGNRNPEEYTPDSFL

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>queA 982255:983355 forward MW:41540

VSSITESDFLLSSYMFSLPKTQIAQYPYERGKSRLVLTCKNSTIHTDFSKIEHYLPNN
SLLIANNRVPFARIFCSYDKRNI EVFLLTPI SFLEIQAKSSDEHYGAWSTAI GECLIRP
AKRVNIGSKLYLQEQLEIEVLKKEDFGRHIVKLCWKGSLSNIFFSYGDIPHPPIHQSNK
VQDKERYQTVYSRLDKLGSVAAPTAGLHFSETIRNKLQKNGISWAEITLHVGYGTFSPVR
CNDIRKHI MHSEFVEVPETTVAIKKARFEGRPIFAIGTTVVRALEGVSTICGSLQPYTG
FINIFISPGYKFSYVDGLVTNFHLPGSTLLMLVSAFTKRSIMINTYNKAIELGYRFFSYG
DAMLII

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>vorB 984330:985391 forward MW:38513

MEQKRILIKGNEAVAYAAVAAGCQCYFGYPITPQSEIPEMLSHLLPESGGDFVQAESEIA
AVNMLLGAGACGVRAMTSSSSPGISLMQECISYMGSEIPGVIINMTRGGPGLGSDASQ
ADYFQSTKGGAHGGARTFVLPAPSTCQECYDMTIKAFSLAFIYRNPVILGDAMVAQVKEP
VVCWKPEKKLEDNADSWRLNNGKGRSSRLLRSLNLKEGGLAEHNNLLRKYLSMQQDIEA
EEFYIEDAKLVVVAFGSIGRIVRSAINTLREQGYKVGLFRPLTLFPYPSSMLES LAKQKG
NFFVIEQNGGQMVEDVRLAIRHYTDANVHLVPVGVSIGAEDLLQPISEFFRI

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>porB 985391:986194 forward MW:28769

MSVVP I E I E E P S Y I I T E E N A F P I S P L L K E E I T H Y C A G C H H G I A H R L I T E V L S E M A L A G E T
I G I A S I G C S S F I Y D Y I D I D W V E A P H G R A S A V A T G V K R A L P D K I V F T Y Q G D G D L G A I G L C E
S I H A A N R G E H I S V L F I N N T V Y G M T G G Q M G P T T L V G Q K T T T S P K G R N A S K E G A P L R V A E I M
A G L D G V A F S A R C S L H S M K H V L A A K K A I R K A F D I Q Y K G I G Y S F V E M L A G C P T N W R I D P R A A
N K Y I A D A M I P V F P L G T F K D I V E D N K R G

>porB 986196:986738 forward MW:19010

MVSYHNVV I A G F G G Q G V M L I G N L L A Q A G M E A G R N V T Y F P V Y G A E M R G G T A N C T V V I S E E L
V G S P V V I S P L S T I I M N Q P S L D K F Q H R I C A D G V Q I V N T S M I E K E A I D P S K K T V C V P A N E L A
D K I G N I K G A N M V A L G A F L K A T G C L S L D V V I S A L E R V I S S H Y H H L I P S N I A A L E A G Y T F Y A

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>LAW0793 987288:988580 forward MW:48998

MEFVLESISPTKKKLTISLTPDEVNTALDSVIAQYKKDLSLPGFRKGVKVPNSVVFKKFSE
EITNKATEETLKIYIKEIFQKEHIKPLCNLLTEDTDFIRNESFSSTLTFEVLPEITFPNY
EGLEVHQDVVKVTDEEVAELLKNIQLAMAELVDVKEDRSPQNGDVVDVDYKGFENGSPVT
DVSGEHFVLT LGQRQALED FEQLVKTAKVGEEKVGINVFP RDYAHKGLAGKSIDFH IKLN
SIKTSILPELDADFAKKAGYEDIDKLREAAKVQLEIKKKQNAKSNAMKKLINGLLEQVTF
DVPETMLETRIERILGDHNI RSQQT VQVQTGEERSESEEE LYNNAKVEALAVLRPQIFLM
ALAEKEKLVVMEQEVEALYNMAIRARQDYNKFRDAYYRSGLVYELQDHLLAEKAMELIY
NKANVVEVEQ

>clipP 988737:989366 forward MW:23466

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MDDIFNMTVPIVVENNGRNERAYDIYSRLLKDRIVLLGTEVNDQVASLICAQLLFLESQD
PEKEIYLYINSPGGSVTAGLAIYDTMNYITPNVATVCMGRAASMGALLLAAGEKNMRYAL
PNSQVMIHQPLGGYQGQATDIDIHAREILRMRQLNEILMEQTGQSLEKVAQDTERDYFM
TAEDAKAYGLIDKVLVSRKDLIDIEHEKTE

>c1pX 989642:990895 forward MW:46164

MSRNDEKNPQLLCSFCGKGEYEVKQLIAGDGVHICDACIASCNEILVRQELETVEEQLLT
PQEIKERLDEYVIGQEEAKKILAVAVHNHYKRVFYAEKISSEHGDVELEKSNVLLVGPSSG
SGKTLAKTLAKILRVFPAIADATTLTEAGYVGEDVENILVQLLQNADYDLDTASKGIY
IDEIDKISRSDGPSITRDVSGEGVQALLKIEGTEANIPKGGKRKHPQQEFIRMNTSN
ILFIVGGAFIGLDKIVEQIRGGSMGFGAKVSGKKERPLGQLLEQVHPNDLVQFGLIPEF
VGRIPVLTHVDDLSEEDLVRVLEPKNALTRQYQKLFELDNVTLRFTSDALKAIAHKAIE
RKTGARGLRNVMESIMLDIMYKLPSMVGKCEVINDVVINTNGEPLYIYDSEVQVAL

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>lon 990983:993436 forward MW:92145

MHTLGDEHKQTLDDVEYVELPLMPLREVVMFPHSIIPLFVGREASIKAEHAVTNYDRKIC
LVVQREPEVEKPSLESLYPIGVVSRILQFLRLPDGTIKVLFEGLYRVHWEHLDSEKSIES
FHKVMVAVKESTASFLESEALVRATHEALEEYTKNNKKTQEALAAISGLRDPGRLADA
IMPHLKVDYIEKQSVLEQLDPVARLEKVEYELLSGETVSTIERRIKSRVKTQMERNHREY
YLSEQIKAIQKEMGRDDDPQAEALADLEKLFKFNMPYAREKGLSELKCLKHMSPSAAEY
AVVRNYVDWVYELPWNEVKETEIDISNARQILDRDHYGLEKPKQRILEYLAVQKLTGSCK
GTILCLVGPVGGKTSLARVAKATEREYVRLSLGGVRDEAERGHRRTYVGAMPGKLIT
ALKRVKYNNPLFCLDEIDKMSADFRGDPASALLEVLDPENSTFNDHYLDLDYDLSQIFF
ITTANSLQGIAPPLKDRMEIIESSYLEVEKKHIVKDFLLPRQVIKHGLKPENIRISENA
LTEVIRSYTREAGVRNLEREIAALCRKVAIKLVEKNDMDKTSITRQNLGSLLGVKYRI
NESEKTPKIGVVNGLAYTSVGGVLLNVESVIMPGKGNVSTTGKLGEMIESARAALSIVR
SRSDMFLRPFDFHSEVDIHIHFPEGATPKDGPSAGIAITTSLSVALLGIPVRHDVAMTGE
VTLRGRVLPVIGGLREKLLAASRAEVTTVIVPRENEKDLKEVPEEILKALHIQFVEHIDEV
LPLALISESEDI FSEIHTDEPFITSLRRHTVEITTAQ

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>LAW0797 993461:993847 reverse MW:14902

MFKEKITTMSQALNVLRLDDNTSLGKLVCSGIQQLIKLAEPMDKTIKNCNPFKQHFHT
LNNLPLCDEGHWLELFEDLAYFFKQYYTSFPDSYIPIECQVMKYFESCGEWTPQDGKLI
SIGYWATS

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>LAW0798 994282:995271 forward MW:36148

MGENKTHGILILPFILSILGILFCFWNLLAPSTVPCISSGCNLYQGGFEGGLTFWWFGIL
GFGLLAILAVIGRAKLGFIAGVGLCIDIIIFITMVMTLPCMCMFVGLLLALTYFFFRK
RVFLAESDSEVENNRSLILICWWFFFLNIIILVIKGAAPPWALPVGDTSSSSSVAIYFS
PSCTACQKLIMNLAESEVQKSSWYPVAEKSSDIAVIAKLEQLLKSCKFTLAEAFSLSIST
QPLTTLEKLSPNHLLQLKLWINRSHVLKDGDRMPLLEFRGTPAMLLSSIKTNHLPVVG
KDDMLSLEFDKVGICGEGDAPNSQSCTE

>LAW0799 995278:995916 reverse MW:24462

MSFYIKELFYTIQEGEVQTRPAVFCRFSGCNLWSGKEKDRAIAKQFCDDTDFLNADFGI
LDSEEQLVANILQTFPQNNYTHPSYKPYVVFTGGEPQLNQVIINLLHKYHIEIAIETN
GTIPLPKHIDWITVSPKEGNELVTTVGNELKLVWPQQNCDPEKYLTLEFDNFILQPKDDK
NLSNNIQICIEYCMKHPYWKLGQSHKWIGIR

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>LAW0800 995965:996681 reverse MW:26889

MYHLNQAALLLFSGGQDSGTCLGWALSNSFSHIIITIGFSYQQRHSVEMQCRTNIRNKISKL
SKIWEQRLGEDYIFSLDIFSQGETAITSELEIVFDKQGLPNTFVPGRNIFFLTIAAFA
WRNSIRHLIIGTCETDFSGYPDCQDNSIKATQLALSGLGEDITIHTPLMWLTKAQTWEL
ALHLGGSKFVDLIRNETHSCYLNHTTSHEWGYGCGTTPACKLRKNGWETFLMKKRAN

>gImU 996842:998215 forward MW:50601

MDQDACTHSAALILAAGKGTMCNPKPKVLHTLLGEPLLFHVISALRPLFGSNIWVVIH

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GSSLIQSICSDLNFIYQEKQLGTANAVSIALPVLQQSRIRKRLMVIINGDMPLITSDLLE
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 YFSLEVVVKCLPMIKNENKSQEYYFTDIELAVENGYLVDSIYFEEDWHFLGVNTPKDLS
 YVESIQQAFIEKLLQSGVIIHSPESVRISPFATIEPGVEIYGPCEIYGASYIASGSIY
 SHSWIKNTTISHDVCISYFCHLDTVIIKDKCSIGPYARLRPGCHLEEQVCIGNFVEIKKT
 QLGKHVKINHLSYIGDAIVGDESNIGAGTITCNYDGENKHHTFIGKKAFIGSNTALVAPL
 TIGEKSILGAGSVIIRDVPENMVS IARGKQKNFSKRK

>LAW0802 999188:1000750 forward MW:58605

MSFILVLCVSSLVFVGGGTGIFLYKKVSKKYIGDAKELAIRIVEEARKEGQAQKKEILLQ
 GQNEIFNQKKEFEFDFKQREKELSIKDKKLQVQSERLEERLERAEEKEHEILKVEKELSI
 KERNLLTLEEQLKSRIDEQEQLQKISGLTVEEAKQSLFEEVKNSRHSASAKMMRLIEAE
 AVETANRKAKEIIANA IQRYAGDYVSEHTVTAVTLPSSEDMKGRIGREGRNIRALESATG
 VDFIIDDPETVVLSAYSPMRRQVAKMALERLIQDGRIPARIEEIVRKCEEDLAIQVRE
 IGEQATFDIGVYGIHPELIRILGQLNYRTSYTQNVLRHSIEVASLCGMMAAELGVDIKKA
 KRAGLLHDIGKAVDHEVEGSHAIIAGELAKKFNETEEIVHAI EAHHEEKGKPETALAILV
 QASDCLSGARPGARLELLESYVKRLEHLENIAGEFEGVSKAYA IQAGREVRVMVDADSIG
 DDQTYLLCKDIAGRIEESLTPGQIRVTVIREHRAVGYAK

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>LAW0803 1000833:1001591 forward MW:28929

MRCRTLMRIATIIILHYGNPKLTEKVYRALCEKTSQSDIVESSIFVFDNASQVPPYNAWKR
 SSSNLYWAGALSYCFLLVKEMGFTHLWFLNNDITFIGNGSYLAKAYASIQRIERATGKLV
 GIWSPSLMYSYHPQMCNRKDFSYSQVKLIDGVAALYNLTCLDSIGGIDALDNLGYGVD
 LWISIRSDRKGWLLVVDHSMVIRHIQHGSAKNIKGF IETA AFSEEVFRKRLGIEWKQOI
 ESMKEQYSSFTF

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>LAW0804 1001682:1002140 reverse MW:16375

MVKQINIDVFIAGLRKQWQGMNLLPNVIMAFVLIQALNIGLLKIIGELFAPIMSIFS
 LPGEAMTVLLTSWLSAVGGVGVAASLCTEGILNSTHISILIPGIFLMGGQLQYMGRILAV
 AGIEPSHYKVLFLISIMNAAMGMLTMKYIIH

>LAW0805 1002133:1002810 reverse MW:24523

MEKNTHIPQIDQSKKIKISSYIILILVILFFSGYFSKFQNWLGIMDFSRFIGKFGTIGDS
 TPTTFVGLGGSGACQGFLFSLSLIPGIMLALGIVELAEHLGALYAAQHLLTPLMKPLFGL
 PGISGLALISLHSSDSASVMTRELYDKGFISNNERTIFGAFQFSAGAAVTNYLTTGLAL
 FPFLSVKI IIPLCVILFYKVVGMNVI RLYLILVTQKNVTIEQTHG

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>menE 1002865:1003953 reverse MW:40697

MFEFNIERQSILINGEKFSKTNILKNNKNEKIQSELFQFLKEWFNQSITIQVSTSGSTGK
 PKTLHVKKTCMLQSAYLTC SFLGLKPNDTALLCMPLKYIGAKMVVRSLLAGLNLLYVTP
 SSRPLKQIKSSPTFAAMTPMQVCTTLEYKKDTTYLKNIKHLIGGGSIDTSLSKKLADFP
 HAVWSTYGMTETLSHIALRKLNGVNASEWYTPFKSIKVSLSPGTLVITAPNICKKPLVT
 NDIAEVNECGNFRIGRKDNIINSGGIKIQIELVENLLKFFILQPFIIITSIPDHKFGELV
 VILVEKKVCDYLAICKANLPLYWCPKHVIQVQKLPKTDTDKVNRAKAKELAYKIFSQQFN
 SK

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>menB 1004052:1004873 reverse MW:30375

MSNYAWESITTYKEILFQYYKGI AKITINRERYRNAFTPTTTFEISNALLYCRECQDIAV
 VIITGSGDKAFCSGDMNVKGRGGYIDENGVPRLNILDVQKQIRFLPKPVIAMVNGYAIG
 GGHVLHIVCDLTIASENAIFGQTGPRVGSFDAGLGSSYLARIVGQKKVREIWFLCRQYTA
 QEALTMGLVNKVVPLKDLEKETVAWSEIIMQHSPLALRMIKAGLNAELDGQIGIQELAGD
 ATMLYYLTDEAQEGSNAFLEKRPNFKQYPKLP

>comA 1004883:1005317 reverse MW:15649

MKNSQQHNIITYNTKYKNSLIGHLGILFHESKLGTVIASMPVTNHTSQPFYLSGGASLA
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 NEEEEIVSTARVVNHIKSNNSKG

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>LAW0809 1005673:1006062 reverse MW:14421

MKRLVIVLSIVCVLSAAESVFALNKKLDIMNGSQMDIYTLKVSPNANQWEENLLQEETL
KNGDKAMVEISRTENAEAWDITVTDKNGNESSWIGLPLDKAGDVTLLPDGQYLTDKDMTI
DNMCKVMKK

>LAW0810 1006385:1007098 forward MW:25708

LEVKMEILRDGTKGVASSVTSIFMRYVYWWMTIGLLVTAGSAFYVANSBALLQTLFSNTL
SLVILAI AVIALPLVLSTMISRLSSTAATLLF ILYSLLMGAFSSVLVYVTGTSVVQAFV
TTAGTFAAMS IYGTVTKRDLTSMGSFLTMGL IGL I I AMVVNIFLKSPMMEFI I SAIGVLI
FTGLTAYDTQKIRTFGENAPLNDSLAI RRGALLGALTLYLDFINFLMMLRLMGDRR

>pit 1007157:1008167 reverse MW:35686

MFEIPLLLILIIIIALIFDFTNGAHCANAIATVISTKALTPQTAVLMAAVLNLLGAFLG
TEVASTLGKGI VNTDEVSGNQILVLAALSGAITWNFITWYYPSSSSHALIGGLIGSSI
ISAGFTSLN ILSILQKIILPLFLAPLLGFFTGFSFMTLLSFLFAKTHRKKLTKKFTHLQI
LSAAFMATSHALNDAQTMGVITLALFIFNKIESITVPFWVKVCAIAMAAGTAVGGWKI
IKTMGNSIFKLEPVHGFAAETSASAVITIASILGAPISTHTITACIFGVGSTKRLSAVR
WFVAITLVKAWMITIPASAIIGIAFFYFFSFIGLSN

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>LAW0812 1008160:1008795 reverse MW:24401

MLARFMPQSVPFELLAKQGTILQKQIHQLIIINEQAKNNHPIEIQTLQNTKEEISQLYN
TITEHLSRTFITPIDKEDIHAINLGQLYLSCCYELGTLFFYCRIPNSIPSSLELLIANE
QNMIDDILSMIKELPKKTDISSNLREIREKKENGAILLVMGLKKIQDFNFTDISTTKELF
ILSKYYDKLALAMEQTLNLADILEKTMIKYV

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>riuD 1010184:1011809 forward MW:61716

VGANNFFFIVSEVTLVRLDQFLYNNLCTHGVSRERLKKVIVSGGCKIDDKVCFSPSTRLK
VGMHIFIQLEPVVSALLPEEGFLEILFSDEHLAIINKPPGLTVHPAPSCQESTLVHRLK
YFPKLEIQQGLRPGIVHRIDKDTSGLLC IALTEDTRLKLSKIFLDRKINKEYLALVHGVP
SMEGYIAVPLGRDPKTKVKVAVNPKGKPAHTEWRVLRGKNDVYSILALTIQTGRTHQIR
VHMKHIGHPLVGDKLYAGGHVNKTFQCNRQMLHAWKLSFEHPITGKMNFLCPPPKDFLD
TVSILLEQEP I RIVITGVAGSGKTTVLKYFEQHSDI I IWSADKAVEKLYSPGGEVWSILQE
RYGDRFVPDKNRSVDKLRLLSALNGETEPLLDIRDLNYIVHPIMLEQLSKFWGEAFYKKY
KYAIAEVPLWFEVDHII SQLVKENRVSSNIRPNFVIGVSCPENIREKRLKEARCWSTAHK
TTIDNWQFHQDMKLKCDYIVDNSGSEVQLKNNIQDIMMLIEAKVTSFQDDFLQLQKII
T

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>soj 1012019:1012804 forward MW:28842

MARVIAIANQGGVGGKTTTAINLAASLAIMEKRVLLVDCDPQANTTSGLGFSVNMLSHSL
YSVLFQTKPVECAIMSTVSSFLFLLPSGTELVAEELELVDKIGREYYLSELLAPLEKKFE
YIILDCPPSLGLITLNLCAAKEILVPLQCEFFALEGIVKLLQTHDQVKKRLNPKLSLLG
IVLTMYDGRNKVTRVQVEVIRCFPNHICETVIPRNIRLSEAPSHGKSILHYDIKSKGAE
AYLELAREIVMRKVKTDLVLSI

>spoJ 1012884:1013843 forward MW:35682

MATQERGLGRGLDILFGNTSPEVEQDHIIKHSKDGLVLPSTKLP IAILRPSSSQPRKSF
DKNALEELVLSIKNQGVVQPI LVRPYREQSSIRYEVAGERRWRAAKLAGLVDVPVYIKE
LNDEDVLTIALIENLQREDLNPIEEALAIESLRKKLSLSQDELAHRLGRSRSIAANTLRL
LHLTPEVQEGLCNHTISSGHARALLALSDMELQQVLYKAI CCNQLSVRDVETSVTYWKKN
GVLPPSISGITKDTVVKVQKERSERLKNVVNTRFNLHPKVTISGSECMGRITIPYDSQE
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>LAW0816 1013959:1014996 forward MW:37095

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GGAGNVARSI AALGGKVTIIGAVGQDQSGEKI QDLLSTRGILSSIITFANRQTTVKTRVM
AHRQQMIRLDHEESTSYNSKELAMVLSNFEKYVSQHEI I ILSDYNKGLVSKEFMLGFQDI
LLAKNPNAKVLIDPRPCNIMYYALCKNIFALTPNTKETGECAGGMATSSQPELLAAGHTI

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MKLLSTKHLLTTLGDSGMALFLSPKKIWHIPTVGRDVFVDVTGAGDTV IATFGLALSAGLD
PLISA I LANYAAGVVVSQVGTATVSPDELEEA ITSLPQPKLAFWN

>hemN 1015004:1016197 reverse MW:46094

MLLYIH IPFCKTRCYCSFFSKPLDTSS IDGQQKLQTYFVTLKNELSYWGNKLQKPTIET
IFFGGGTPSLLSPQYIYKILEHISQYYRLTSKIEITLEANPESLTTLSLIKEYLMAGINR
VSLGFQAINNKQLHHLGRTHNI IDAIQSYNMLRDALCTNINIDLWGLPNQTVQKWLTTI
KYVAELKPNHISSYNLTLEPGTIFNKQYVNKKLTLPSEEEQITMFFQTKTYLEEKGLLQY
EISNFAQPGYQCKHNNGYWEQKDYLGVGPSATSTLNHYRWTNPADLSLWLLVEKKKEPP
KEYIDNKTQVLELFMLRLRRTTKGLNINEYNTIAKNNFIDSYKNLIFKLEKEQLIKIDSNY
LKLTPLGQLVSNIIKEFFVMYQLILNTKKSIVANSI

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>pyrB 1016534:1017481 forward MW:34882

MQEKNVFNWLHKDLLDIDQLSQTDFNINLNTASSLDETNSRVIKKLPTLRGKNIILFFAE
PSTRTKVSFEIAGKRLSADTIGVNASSSSIQKGESLKDTALTQAMSPDIVLRHSSSGA
ALFLADLLECSVINAGDGWHAHPTQALLDVFSLWKVWGNHFGKEVLIVGDTAHSRVCRS
NVTLLNLMGVKVRCLSPRTLLPSGVEHWPVEIYTDLHQAI CGVDAVICLRVQLERHKKSF
FPSIEEYAKRFCLTPKHLMSAKTEAKVLHPGPFLRGVDLASSLIETPQSLIFDQVSAGIA
IRMAILFLFLTCNDL

>pyrC 1017493:1018764 forward MW:46506

MSSLFLYNAYYDGKLVSLVDRDGIITLKEGEQNSTSSPIDLHPVDAKQKHLFSPFIDVH
THLREPGYEWKETIATGLAAAAHGGFGSVLCMANTNPVND SATVTCKILESGKYAFPNGP
YVYPIGAATIGLKGEQLSPMHELAEAGCIAISNDGLPIKNTLFRRILEYASDLGLIVID
HCEDPYLACDTHMNEGFIGKLGSLGQPDIAETLQAIRSI LLAEYLNVPVHIAHVSAKRT
VEAISWGKSRGVKTAETCPHYLLDERAVIGYNTNAKVNPLRTQEDIMALREAIKTGI
IDMLATDHAPHAAYEKEVPFDKAPNGFTGFDAIPVMYSLVREGVLSSEDLIRLWSNPA
GVFNLPINNFKPGDPANFFLFDPELEWTVSKENLYSKSWNTPWLGETLKGRVVMHWINGV
KVV

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>LAW0820 1018869:1019642 reverse MW:28309

MRIIRVQYNEFSFYAALGAENTIQC LHSPLGLNEPIPLSKIKVLPLVSPTKII CIDINYH
EKAQELQQPIPTNPTFFFKPPSSIVGNGQPI LLPTNIGRVVSEALCIVIGQTCYKVTPE
AASNYIFGYTCANDITAKDIQQQEYTTSHAKAYNTFCVGPW IETDVPNIENLQIRNSIN
SELGQVSTTADMIFPPELISFLSNIMTLNPGDLILTGT PKGSLISDGDIVQTSIENVG
ILINPIEEYLPMETIVQ

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>miaB 1019930:1021303 forward MW:51515

MLQRNFHIIITFGCQMNTNDSFWLSCSLQKKGQFQEVSL EDASIIINTCSVREKPEQKVYS
ILGKIRHATKNNPDSFVVIAGCVAQQLGATFFEFKFPQVRLVSGSDGIAMAPDAIERLYAE
PDLKLNLTDFSEYPEREYAFSKLTLSNNNTLALMAYVNI MQGCDNYCTYCVPYTRGKQ
KRSRVQAVEECQQLIDSGVKEIVLLGQNVNAYGLDKDKNSPANGVNFAMLVHTIASLPG
LERLRFSAHPKEFSELIDLFGEFSTLCPRLHPLQSGSDKILRRMGRKYSMDEYISII
TKLKKVRPDIALSTDFIVGFPGETEEDFLQTLQSINTIKFMSSFSFCYSDRPGTRSSTFS
NKVDHEVKIKRLEQLQATQLEHSTSWLKS RVGVETTLLLEKVS RKAEDNNSWQGRDPWG
NVNVNVL PQSTNISNTLLPVR I IASKKHSLVAEPLII

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>LAW0822 1021458:1022141 forward MW:24488

MIDFHI EVSCLGKGLLPSEALAFASFGFNSVGLVIKSDAISYKYELPLLINTIQSLLY
TELNVFPGVVFAHVPELLKDVVCSARELGAQLILAQGEFSFLGYSLSTAI GTNFAIINS
GIDILTCPLGISSEDA AFATEKGISIELTGGYPCNLFNGHIVSMFSLFNFNLTI SCGITK
KSCFSSPEITRNFFQGI AFGAGLDKKSFDYIHCESRKT VQRLLLSTK

>pepQ 1022176:1023267 forward MW:40936

LDILLPFKRREQLHKVMSERKLDGLLVYHAANRY YLSGFELHNPQCNE SAGCLII LANG
KDWLCTDSRYTEAAKRLWDEDFIYSYGHNIPEQLG LLINKILPKGSCIGFESKVL SVNFF
EAFVEQLQDITPVSADGIVEDLRVIKDEQEVRLMEQSC LLNHQLLTWVPSILRPGESEAS

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VSWEI ELFFRKHGANELAFPSIVASGGNAALPHAIPSSDTQIESEELVLVDVGARLYDYC
SDQTRTFWVGDNPSKRFFQTLALVQEAQHRAIKAIQPGVLAKDVYNTVYFFFIEYGVKA
FKHNLGHGVGLEVHEAPSLGPRSETILKPGMIVTEPGLYYPEWGGVRWEHMLVLTEDGA
KVF

>LAW0824 1023291:1024349 forward MW:39896

MRIAFINATKRWGGVKTWMLFAKIFSKKGHHVYIYGRQEAFITSAQKEVGHGQLVSFGL
DLNPKSILYFWREFRLHQIDIVIVNIEKDLSTAGIAAKLSGIPVIQRIGLPHDIPYRLKT
RLIHTFINPSFLCPCHEYIASGFKKSLSYIPQVQKVIIMNGRKATSEFLKVHSPLKFICTQ
QLEPNKCHSVLLEAFARVKGSEFEHIWGTGSEEKTLKQMASELGLTGQVFFHGFSDNIIN
KLEKGDIFLLASVSEGLPNTLIEAMSVGLLPVRLVGGVDEVLTPELRDWWLPYEASSED

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>LAW0825 1024378:1025664 forward MW:48864

MKIFFCNWRGLESNSSRLRSVLIFFSLSILLFPLGQALRVILPILCLPIIILLYIQDWN
NSTLRILPFRWLFIIIFIASFIIQLVTSEWLAASWASVKPNLLRGIVLAFVGMVVRSEKD
LRWLIIFAVTFFYEGLDGVWQVLTGFDYIKHTAIMSGRLTGSGLTYRVGNMAIIALPA
FGIWTLLPMKNNRLRIVAVAVLLSPGLFVLWGSFTRIGYLALLGALYILWICIWTKFSLL
KVI VPPMLLLVLSMFGIARLSWETMLNDPRIELWIRAEVKGHEHLWLTGSSTFILALQ
KQGIILQSVPSMDLGHPHNIYIQFFIDGGLIGFTSYILFFVIITLWTLFHIRRGVQKEIQ
GLFPGCYWQLLSFIWAGWVAYLITGFCGHDFYRTWWLSTAATLLGILIGGCQWGKKDSK
ELDSVSLV

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>rpmB 1025679:1025888 reverse MW:7805

MAKQCEICGKKPLVGNVSHSNIKTKRVFNPQLQHMRNQFPDGRIKTITICTRCIRSGHV
TKPSIHKGS

>LAW0827 1026067:1028082 forward MW:75575

MKIKLLQKICIIILFLINYSLSIGCSSTKIVVPEGNSSDLEKTQDIKSIEDQDRNISAQA
EEAWKNNMLEAQRLYRIVVTQSNLTAFERNSAWERLIKSSIANNHFHIALEFLTQWKLS
DPTANMQPVWQDSWGI AVLKSSRVQAISHAQVWEDASLPIPLRGIAGGVLMILSPKENK
TLIASKLSELYKSHDHANCMMLLEQLRFTLLSNSSEELLALEFLTGPERDFMYPWSIIIL
DVLRRWPSKTNRTAELLGKINYPGVFSDSSLLASAIHVAEPKSLLDHTNILFSPGCYA
LVLPMSGPYSSIGWNIAGANAQAEEELISAGVDVEVVIINSEAVGWLEKLEQLPQKCIIV
GGPLQAEIYAAIREKNILSNKIFFTFLPSIGEGDEGITAWRFFSSPEDQILALLRFSHEL
DITMCGVLYPEDGYGRKMTLFLVLAEQSGISVMTTGYNPHDTSSWSKLLANVTKTRMIG
KVPVPSTPFQAVFLPDSWKNIEVLLPYLFFQGEDRLVLMGTNLWEQGLSHGEKNFIRNMD
LAVFPGSWNKSTPNATAAMLIERFTMDNQEEPDFWVGLGYDFIRFSSALNIHEVNWQASQ
VNKSIEKAQQMDWSIAPIYWENGAQQKLFYPTSSGGKLLNTNLFKKRLDAIKKRHLK
RVSAAREVSK

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>gpsA 1028105:1029172 reverse MW:38290

MSNPQSI VVLGGGSWGTAVAHLLATGGHKVHLVLRSQLADYINMHHENNIYLPGFSIHP
AIHAVTGKISFLTKEPAHVLAKATIVILSVPCQLRPVLQELEPLLTKNCILVNTAKGIE
VETLKTVEQMILDEMAHRVSHYAVLSGSPFAEEVMCEKPTAVVLACRNEQLGEHLREIFS
TPWFRTYSSTDVTGVELGGATKNVIAIAAGVSDGLGFGINTRVALMTRGLAETTRLGKAL
GASPLTFSGLSGLGDLFLTCSGELSRNRQVGLRLGKGELLKNITNSMMIAEGIKTTYAV
NTLASKLNVDMPI TKAVYNVLEGVISPHEAVQKLLCRQLRNESLDETQPIWTDIP

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>potA 1029763:1030869 forward MW:41304

MTGKGCIIELKNVSKIFEDTCALDNINLQIANGEFLLTLLGSPGCGKTTILRIISGFETPD
VGEIL IAGVNVSGFPERRQVNTVFQHYALFPHMTVRDNVAFGLRMQKCPREKVNELVFE
ALRMVHLENFADRRPSQLSGGQQRVAIARAVVNKPLLLLLDEPFSA LDHKL RQIMQLEI
KHLQRKLGITFVFTHDQEEAFAMSDRVVMMNQGRIEQIGTPQCIYEPPVNLFFVARFVGE
INNLAGTILSCNDEGIYEAANIAEVFPLRTPHRFSPGEAVNVLLRPEDIRIYLLDEEVLK
VPHLRGRIEETVYKGATVDIIIALDVGGTLRVAEFFNEDDAEISYNEGERVAVTWVDGWE

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VVLPHEMA

>potB 1030856:1031740 forward MW:33263

MKWLKGFLVVIAPTVIWLGLFALLPNVGLLVVTFLTRGDQEFVIPVLTFSNYARLFEPS
FLKILWDSIWLALMSTLFCLLVGYPFAYRNARSKAKIKPWLLLLIIIPFWTNSLIRTYAL
VLILKANGLLSTVLIWLGIIINPISFMYSDFAVFIGITYTFLPFMVLPYTTIEKLDPRL
LDAAKDLGAGGFRAFWHITLPLTPGIVAGSMFVFLPSLGAFYIPEILGGSKDILVGTFI
KNQFFVNRDWPLGAASSTILTILLFILLILHHITTQSFSIKNRAENDPRFRPV

>potC 1031740:1032516 forward MW:29125

MKRLGLIWLWIVYIFLYLPIIVVIGYSFNIAKYTSDWKGFLLQWYSQLMNNTPLIDAGIN
SLSVAALSASFSTFLGLVTALAIRRYRFPGRKILYGSIVLTVSPDIVMGISLLIFFIFF
HIPLGFLSLFIAHTTSLPFVVLTVLTRLMEFDEQLVEAARDLGANESQAFRYVILPLIM
PAIVAGWLLAFTLSMDDVLISFFVTGPTFEILPLKIYSMVRLGVKPEINALSAIMFCITV
VFVFIAWLLLPKTRHTGN

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>potD 1032574:1033626 forward MW:39901

MEKYTMKKYVSLALILVISCCPLFANDKDTLNVTWSEYIPSDVLADFTKETGIKVVVST
FESNEAMYAKLKLGGKGYDIVMPSSYFIERLYKDNLLARLDKSKIIGLNNLAPESLGHS
FDPHNDYSIPYMWGALGLLFNKKVVDPTVITSFNDLNRPEFKGRVLLSDDMRDTFGVALK
VRGYSVNTTNPDEIKAGYEWLQQLKPEIRVFDITATKQAFIGEEVLAGISWNGDAFIAMK
ENPNLQFIFPKEGFIWIDNFSILNQSENKENAYAFINFLRPEIAKRCVEEFFYTPNI
AGRKLLDPIYQENPIIFPNDGVMSKGEISNIGNAINIYTSYWEKLMKSH

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>LAW0833 1033802:1035070 reverse MW:47202

MKLFQFIKNKKNPETVSGMLQTTTSDTAQSLLTLEQWGNISFGLTPGRLRSILQAADEG
NITEQHQLFSDMEDRCEHLAAEISKRKRAILTLDWEIVPARKDNPTAIKIADAIREQFNS
IYSIEDLLDMADAIHGFSIAIEIEWEYDGHIIHPKAFHHRPQSWFQMLPQKNVLRNRN
KDPEGDPLWPLGWVIRTHRSRSGWLPRAGLFRVVAWAYLVRSYALEASINYVQIHGLPFR
IGKYHIGSSSSDKRALLRALQTLGKDAAGIIPSGMEIIFQSPTNTSHDLPQQLVTRCELG
MSKAILGGTLTTQADGQTSTNALGKVHNEVRRDLMVTDALQISSTISKQLIMPMAALNCK
VEDTTLLPSFRFDTRAAVEVGIYADALPKLSPIMDISAQWAHDKLKI PKALSKDDILGSH
IR

>LAW0834 1035090:1035533 reverse MW:16620

MKKLLSDTELDLKAPEAVQFLINLIGEDGTFSLIQHYGGSTLRIPRGDTIVGRTKIDLL
AQKIGKQEVHNI VQTFGGTCIYIPNCKLLTAKQHAKIIQDRDKLAAKGISERQLVSDLA
RRYKLSDRHIWRILKKSYPAAAFKNC

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>LAW0835 1035578:1036222 reverse MW:24810

MPQLLDKSTVKTMSLPKDRYMKNTQGHFILKEHIKPIDIERNFVMQCVNKVKKIQKQLK
ELKKELTDLNTFIQQTAKQYKVDMMGGVKGNI TLMSFDGNYQIKKQMVVERISFDEGLQVA
KAIIDECIRIWSQSSPGE LRAVIEHAFKIDKEGKINTNAI LALRRLNIKDPRWEQAMQAI
VDSIHLVETKSYIRIYERMPDGKLNISLEMSSL

>LAW0836 1036458:1037198 forward MW:27407

MDIQKIGEKLKALRGQESRDSFSAHFGIHRNTLAAWESGERLPSLEFLSLLAQQKLSVA
EILGEAGVVSTKGLSSPQKVQEQEADTTVNSEYKLERERACSQFSWKGNDFTLIPLVKAVL
SAGGGSFETTDKIEGHYAFRNDFLYYRGNPKTMKLFVVDGDSMEPRVSDGDIALIDQQQV
APRAGKIYAVRLEDVIYLVKVLNTQPGKILSSYNTDYTPIEFDTRGDMADCFSIIGRAVV
IGRELD

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>LAW0837 1037498:1040206 forward MW:103769

MALLSELIQRLPLVKNTHMSSQGFLWICWDGELDNAVPQALQDYGGMSVVIDRSQALWF
FFSSDVFLALAKLTVWSKFHPLPISVQVFPKLLLSVRREISLSIDPSLATQEVLPQSL
EIVVHPKAKEIAGIIPGITYTSLKELQGMASVKWENLEADPRLPYMSSQGWYVLIHPVGN
PLDKLFQSGWKTMYEAEIKI IQANKFKYNLHNNYLMLSIDNLRQLRIWVRDILKCIDSAK
VQGTYWPCVCISIDKKGLNFTNDLPTKVGIKWDNLI PDVPYITYRNAFLLGEGFKITDLN

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FSSSHVSMDSWCVELTEDSSSFVSEVIPILMPEKLVSGENTGCFYCGSKNHDNSQCVTRG
 MSLSTQNIWNDLAEMSVEVMSEGFQLIEQELNGDDVIVGYENILFKDNTLEQRLLKAIFE
 TNLPLQVRSIRNIWLATGREFPKSGDVFSSKNNVKDDSLAWGLLERFKKIQASELLSFEK
 DVLSASRNAPRDFRLRTLGLFIAVEKGDLSRAQLLWKEAESLASTGLHQVWHMFLQARLL
 EIQGRFSEAIEIYQNVLRRLYPSWLD AEYRQIVCHVKMGFAEQVQTKIFQLIEQDSSFFNR
 FFIDPELDRGYLSILSELLVALEEKRRLASDEKIKAEKLLIELDEWFPKDHA IANTFRQK
 LKLVINNLSLNTYVAFLSIIQMRPIIENDITKQIKYEIKNLKQIFKIYLKQLEKIRDEAA
 WFPFPNIIIEFNKNFNECANIFNWAFTSNFNDAEVFKKARGYAPLLQEYLEGLTQRLKFL
 RIVRDVTLFILILGKTFWFIEVIGLLLCATSVPLIAVFGSKVGLGWLSTLIEEQWGLQR
 VLLLISSVAIGISAIHTTLVFERKRDQLIAEARGQREKIQHIRLKHINEAKKEKQKSIE
 KI

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>murA 1040246:1041496 reverse MW:44746

MDKLIIEGGYPLKGTVTVSGSKNAALPILIASILANKKVTLHNVPQLRDIRTTIKLLEIL
 GCTIQQTEQCIELTPGTLQHEAPYELVCTMRASILVLGPLLAKLGKAKVAMPGGCAIGAR
 PIDLHIKALEKMGAKFTLKDGYLIGDCTKLKGTTHIYLDFTVGGTENLLIAASIAEGETI
 LENAQAQPEIEDLARFLIACGAIKIGHGTNVIHIQGVPSLNGCTYSIMPDRIEAGTFLTA
 AAITKGELLISGCPYKELEAIINKFMQMGHIEKRECGIYVAPIKTLKATDVTRPFPGF
 PTDMQAQIMALMSIAYGTSTVNETIFENRFMHVQELARMGANIRLNHTAIVTGKELKG
 APVMASDLRASASLVLAGLAAKGITTIQRTHLDRGYEFIEKKLNAV GASIQRTNE

>xthA 1041779:1042558 reverse MW:30185

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MPSLLRLTSWNINGFRAIIKKPHWNWFHENQSDIIALQETKVDPSQLQDNLQKPEGWLSY
 WSASIKKKGYSGVAVFSKPKPLAVTAELPNPTFQGEGRLLHLEYPSFHFMIYFPNGTQG
 DHRLSYKLGYYDSFLNYAEEARKTKPIVVCDFNTAHRPIDLARP KANEETSGFLPIERT
 WMDRFIAAGYIDTFRYVHGDIPNNYSWWSYQQRARERNVGRIDYFFVSIELMPTIRDAW
 IEMDIQGS DHCPVGLTLEI

>LAW0840 1042878:1043369 reverse MW:18374

MTRLFLSILSLSLLIYTPYAFGEMSLSFLGSTSTYTGLEQHEESRTLLSDKLWKSIVSHK
 QTFSSYSPKNSNPFISKDKKISNKKEAAIKEARIKPSNSIKKQELSKDISIQKEAQLKLN
 GQPETPKEYSNQASINSTKKEPTTLTRKPSILEPITSIKPSLI

>LAW0841 1043947:1044681 reverse MW:26715

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MRKLWILLSACLLSISPTIASAEQTGLYIAPKFIWGFAPVDIKTTGTIGIVNVQTI SDSV
 SHKKTESLPGGALAVGYDFNHMFQTPIRTELEFSFFKMDIKHNGQKTDITLGALLVNGY
 FDIKTDSPFTPYIGVGLGIAGVKTKSNAIIDSLGYDIKVKLDDKTKKNFAWMATVGTSYE
 ISETFALDLGYRFAGFGKGETKSWNKSQIVDLLPLGPVTATANASLKTKEIFMHQIILSA
 RLTF

>katE 1045546:1047813 forward MW:85218

MGNNNNDNGISVNSLPFRDGS AEPHYSNTIPQSKYKISQRPTPPGVEPMTSGSFKTPDN
 TTEKIKAMDSVRVNGHDMAITTNLGVKIANNQNTLRAGVRGPSLLEDFHLHEKLAHFHRE
 RIPERVVHARGSGAYGYFQVYKSMRQYTKAAFLQDPGVKTPVFRFSTVQGFRGSPDAR
 DLRGWATKFYQTQEGNFDLVGNNTAVFFIQDAIKFPDFVHAVKPEPHNEVPQGQSAHDFW
 DYVSLQPETLHNVWAMSDRGI PRSYRMMEGFGIHTFRLINEQDKSCFVRFHWPVYGTS
 SLLWDEAQILTGRDPDFHRKDLWQAI EAGDYPEYELGLQIPEEDEHKFDIIDLATKLI
 PEALVPIELVGKMLNRNPDNFFAETEQA AFCPANIVPGIDFSDDPLLQGRIFS YFDTQL
 HRLGGPNFNEIPINRPICPVTNQRDGNHRMQIDSTVANYEPNTVSGNWPREVQPSEHGG
 GFTTYKSKVEGTVKVRERSPSFFDYYSQPRLFWLSQTAPEQKHIIDAFSFELSKVMRPYIR
 ERIVDLLSYIDRDLAKGVATNLGLTLSQEQLSYDLPKPVNGLTSDPSLSLYAKNKQNIKS
 RRVALLVADGVSKESIETISNMLHKEGVYPQFFAPHMGSIKTEEGNEITVDGTIEGNPSV
 VVDAVIVPQGKQSLNLLNDGNAYYLCQAYKHLKPIGLPGNTKEMLSYIGLSENDIDEG
 LVLAPDSPKMI GKFIDAMKQHRIWSRESKITSFSA

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>tsr 1048872:1050629 forward MW:64201

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MRWKDISIFKKLLIGFSIVILAGVIGLANDYFEVTRIRNITDQVLLAVNYRKA ILNAEVA
 HLTWVNKVANYLIERGKNELHVELNDHLCTFGKLLYGEQRKEIEERIPETKSLFLFIEGP
 HNRLHQSVIGITAAMGEGKINEASQIFQNVTLKELDLIRTTLNKLVVVFARSTVLEDSL
 INTIHFAVLLCVAVMLIGLLLLSLFLGRSIVRPIWKLVAYAHEVSEGNLKDPTLNQK
 DEVGQLAGTLGIMVNKLKKTIEEANMKADEAYRKEEEANAARVNTESA IQEVKKKQQLQ
 DVTVQLKGVVDVLSASKEMSTQIETSERGAILQAKRINETATAMSEMSSSVLEARNAN
 VAAELSAEARTRAEESGIMNNAVESIYEVQKHSMLKEDMQILTQHAQNIHQIMSVISD
 IADQTNLLALNAAIEAARAGEAGRGFAVVADEVKLAEKTITSTADVGKAIGAIQHSVEK
 NMGQVDKTVQSIESTDLSTKAGELLRNIQEMVESTASQVRSIATASEKQSATSEESS
 IEEVNQVAKETASAMVSLNKAMVDLAAQSRGLQELIRKLEQETIG

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>LAW0844 1050746:1052017 reverse MW:47284

MSINKSSHRSFRICYPNEISLVENLLSEQGFI FEPDPFLYLARKI IYEPFPLGKSLAAF
 FGLIYIQDRSSMLPVLALQANVGD IILDMCASPGSKTTLLSQLVGNGLIVGNDPTKSRL
 LTLRNNLGRNCFNTVTCSWPAEKLPMPPDATWGKILLDPPCSGWGTIKKNPQVTKIWQGE
 RINPLIILQKKLLTEATRLLIPGGKIVYSTCTTNIDENEAQIQFAITNLGLKLIPLLEPL
 GFSVIKPISPSYEGVIRLPNTHDSQGGFIAQLKPKGNTTKIDTTNEKIDISSYPHYSLD
 TLGPFGIDITKLPQGNLVDNFNSLHFIPHAALTYLPYTLYWQGP IIGKTSKTNILPSPRL
 RLLQSTTDLAYCLHIDNVQKLEKITQGGSIMTDFKQKEVPLFWKELPLGRLKVKNGRVFW
 SEK

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>LAW0845 1052160:1053803 forward MW:61339

MHQKSCLVALC IMF IIMVQVLQANAASYVVLFPKVNAPPSYTYLEKAIPSM LTSRLYWE
 RFQIPDANA IKAGKVEDIKEMDKAR IATGADYL IWGQVNI VGDEATLDVQVCDIEGSIW
 RKSNTKVDNLIT ALQDTADAINSELFRATTKPSSKATI VAQMNSGLIKGKGNENQSYL
 NPEFRYQGSNLSRGRSQALPFASVGI VVGDFIGDNKNEVA ILSYKVIHYRWEERLALL
 GEYKFRSLQSLHIRAFDVDHGVQE IIVSCFDPSYAKPYSF ILSFKNRVFKELATNLPF
 YLNVVKLPPDFSPMLIGQKSDNSRIFSPSGVYIEKHGRNYIMGNRLSLPKEANIFNFSW
 LPSDSLKDEEAKLVLTNNERLVVYNTKGR LFMTEEVYGGSSVGI DEPSNMPGLGKSKE
 LIPSKYFIPGRMIPINLDSMGKWE LLVSKPISVAAKFFENYRSFAEGEIQALTWDGLGLG
 LVWNTRRIKGTITDFALADMNDGKLDLVSVNSHTGILGLEKRKTIIVFYPLEVDKQGI
 PKAVEDN

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>LAW0846 1053988:1055109 forward MW:42281

MASIALMLPRFGLYGGVEQFAYRLAEALAEHSVDFICARAEASPPLGVRV IIVGRLGWF
 KWLKIAWFACAIEQVRKKS YDLVIGLGKTWNQDIVRIGGGPQSKFWSLSEQAWSPGFHR
 YSKKFRRYVNPASWLNFIIEKHQIYSQSTL ICVSETVRQWVLEAYPSIQSPEVIYNLPDF
 SRFTPTTYEQRVVARAKFDLDMGHIAIATATS NFMLKGTRSLIKAMKLLPLNFKLFIAGG
 RDISSYKLVHLLKVQDRVFMGKVEDMLSLYRAIDL FALPTYDACSNAVLEARACGLK
 VLSSKYDGS SFLPQHWINNPNNSQEIANKLLSMSQEP PPSMYIPSTIKAGLSSWVNF
 IEFMLQKKS LMKM

>LAW0847 1055274:1056068 forward MW:29486

MKLKIFFVVTILLTSFYTATAHEFLIKSDKDNVVKEEKITIDVVETHVFIKPEELPVLKD
 VLLSFIQGGKSSETIKLESISKENLLRGIIDPTTSEDIVVFAKRLPQYWSETTEGILEGD
 REILEAQGKKVLSVGSYEKYALLFIPGEDSKTISNYVVPGEHPPLFLAPMFNPYAVKVGQ
 KIKFMVTSEGKPVANASISATYDGFSDKENVYAITTKTCKKGLVQISPDSPLWLITTEV
 KDKLVDSIADEKSIRSTTLFWVTP

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>gidA 1056140:1057477 reverse MW:49746

MNIHNIAIIGGGLSGCECALTLAKFGFSVTLFEQKPLFSPAHNTPLLAELVCSNSLRSN
 ELTTGIGLLKQELRELSPLMAIADTCRVPAGKALAVDRELFKQVTQLIESHPKIHLIR
 EEVSSLSTSFLEKYDR IIVATGPLASPNISNSLSTLIGDKYLYFYDAIPIV TADSIDMS
 IAFWGSRYEEQEGDYLNCPMSYEEYQIFYSSLLKGEKVTNSKVEKEIHFEGMPIEALA
 ERGEKTL LFGPFKPVGLINPHTGLRPYAVLQLRPENLNKSMNLVGCQTKLTYPAQDTIF

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RLVPGLSNVEFVRFSGSMHRNTYINSPKILTDQLALRNFPCIHLAGQITGVEGYVESIACG
LWVSILLLALSCKDKKILRPPKTCALGGLLEHISCPSKQFQPSNIHFGLVPEPTEKIKKKE
RKEWYAQRARIDFYHWNELIHIM

>LAW0849 1057662:1058297 reverse MW:24569

MNNYNYTSLNSDTIKNI VQFFFEAGMLRYIPRSGYPFLGTGKENVAEHSYRTAIIIGYILA
KECGANPEHTSLLCLFHDPEVRIGDLNYINHIIYVKANTRKALKDSISGINIGESILSLW
DEYSNCQTLEAIFAHADADQLDALNLKVEQNLGNPYAKNWLENLFSRLKSSLAKELYHVI
LISDHTDWWYKQKNRWWETRELKDDSHKK

>LAW0850 1058349:1059566 reverse MW:44917

MTNNLSPKYDYEHDYDVVILGAGASGLMCGLTVAQKGLSCIIIDHSPTIARKLCLAGGGK
GNITNLNLSPKWWYVGENPIFCQDVLLQYSPHDIIDLLKYNIPWEIRSHDQVFCVKVAH
FVKCLIDECKKNNVQFLLKNSIQKVSANPKSFVIKTSTQLLKTSNLVLALGSQAWPATGA
TDLGIHIAKQCCHTIIPTRPILVPFILQKNSPLQDLAGISLNVSTITIGADNKKRTFHYPL
LFTHKGISGPAALQASCFWEKQGTITINFLPHISLIDYMHSFSNTKQTVKSLLKNFFPTR
FIDNFIPINLQSQKVAEISKKNRIWLSNKLHAYVESPLETEGIIKAEAMAGGVNTYEVNP
HTLESNIIPGLYFSGEILDITGLLGGYNLHWAWASGYVVGKTIQR

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>LAW0851 1059742:1060068 forward MW:12294

MNPTSEALMAAWEFRYACKEFDPVKKISEEDFHIILEGGRLSPSSFGFEPWEFLVVQNVE
LRSVIRAFSWGGQTQIPTASHLVIILARKPETMGPNSSYVRKTIMEDT

>LAW0852 1060120:1060419 forward MW:11242

LKHDFNLLGNERACFEWVARQCYIPLANMMTAAAFGLIDSCAIEGFIKADLEKLLSDKGY
IDPNEFGAACIVTFGYRKESPPFLKTRRPEKEVVHWIN

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>LAW0853 1060422:1060829 reverse MW:15058

VSVILAKYIGNFQVECLHVSSGTKIITDPPLNNYQSSSFSSMDLFVTSITTCIITAMHI
HALLHNIKLIKLEAETKIVTHEPKRIKTIEIILNISTINITEKDKIALETIAKDCPLCH
SLHPALELLILFHWS

>flii 1062640:1063959 reverse MW:47686

MGLTPKECQKLLKESNPLRVYGVKVNKVVGLVAEGTGLKSPLGAVCHMLSGNDEHGEAIAA
EVVGFREGNLLFMPYGEIRGIIQPGSLIRNTSLPPVFPVGKEILGHAFNAFGEPLSGGNPI
IPEKLIPLYSNPPSPLERPRIKDPLDVGVRAINSMITLGKQVRGIMAGSGVGKSTLMGM
MARYTSADVNVIGLIGERGREVVEFMEKELGPEGMTRSVLIATSDQSPLVRMRAAYAAT
AVAEYFRDQGDVLLMDSVTRFAMAAREIGLAVGEPPTTKGYTPTVFAQLPKLLERTGR
SNTGTITGIYTVLVDGDDFNEPIADAVRSILDGHIVLTRDLADQDHFPADVLRISRLR
SDICTPEVQDGRIVGRYMATFRKAEDMINIGAYIQGSNEEDKAITMHGPIESFLKQNI
SDRSTLEDSFRLLHDLAHR

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>LAW0855 1063984:1065429 reverse MW:54394

MNNKFKSTDEKNHPKNLNTGTVMGPPSPDKESSLKQVIGTHEQEVWNRRTVSEYMTRVR
ERATIHVQAMLDKARANAETIRKTAKQWAEKTKKESDKLHKQAQQALKEAERIREADHI
RELAHEEGYRLGIEQAQEEIKEQIKSIHMTAASILKTIERQYTVIFDNWRSDLVKLLHTA
TEVATDWILSKEHTAILDSVLNKAVQQLEERQRVTRVNPNNKNTIIDLITNIKNQFPEL
KNWEIKIDVTMGENDVIVESRSGMVDSNSQLRKEEVRAILQQLIIPESIDIVAQAQSIAD
IADITGITALSKEAAILQHTPVQNDSSSEKTPSSKETLSPNDKKPISPAEIDLINPPSEEV
EFTFPELEGIELPPDIPQYEINKELSSGLSSTDESTITNPSLSTSLTDSFTSDISTDNNS
ILTSHTDINDNIERDIFSELPKNLQMEEFSSAMVEQGSNHELNMNTPSQVTLTNFTPS
E

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>fliG 1065476:1066471 reverse MW:36771

MELTGTQKAAVLLLVLGDKFTAIEVFKRMERREIAAISKAVIDLDTVSKDTEVDLRTFHQ
DLVTGKDLIGGQDSLKRMLMKNLDGETAKYIMDSLNVESGPAPFKELEKVSPLLSQLML
RNEHPQTLALILGHLSPEQAASLLIMLPAGVRAEVLIRLAKLESVPEDMLVEVDRVLQSQ
LIAMGSKEGKKVGGVQSVAEILNAVDRATEEEVLAEIEEDSAQMAEDIRNLMFVVFEDIK

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LDDRSIREVLKETSNEELTLALRGASDELKEYIFRNMSEGANMVREELEFMGPTKLSDV
EQAQQNIVKIVRRLEGEKVTINHGSGDVFL

>fliF 1066878:1068542 reverse MW:61994

MQNFI SQI IARITEFWNNSNLTKQLF IGGS AVFVTLIFIGLMFWINRTDYKVLVSNLGP
DANHI IKT LQADKVS YQLADNGKTI LVPASSVYDLRIKIAGEGGMVGSIGFEIFDAVNV
GQTD FVQRIN YQRALQGELSRTISEFPNVESARVHLVIPQRSLEEEQQKPSASVVLK
NPSRKMDQKEVQGMVNMLVMAVEGLDKEHVSITDSL GKPLYFPNEDNLAGLSVTQREYKL
KVEQGLERRIDELLIPLMGQGVIAKVNVDLDFNQKTIRREIYDPNSSVIRSEQRSEETN
RGQSNLESGSPD VNF RGDGPN GASTQEGTRET RTTNYEINREEQNI VGEVQGINRMTVA
VVVDGTYVKEPNGEYK FVPRSQEELNRI RLLVSHAIGFDRARGDTIEVSSIPFDEADLPI
EPPAAEVI AKYAERLGKPLL NALLAFLFLMLVVRPVLALIRPKVESEAIVEGLEGLPSA
EEQLALYETQEEAAKAAAMEAVRIASEEEEEEFESLKHLEDIKNYTLQLAENNI EQSILVL
RGWMKDDTKTAISS

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>fliE 1068655:1069002 reverse MW:12833

MGKTMSIQSTGLKAYTNVMSDFKVKQDTFKEKSAAIPQSKPVEKSFADTFKDSL SNVNE
M QTTKSQMIQSFASGETQNVHELMITLQKAGLA INMTSAVRNKVLEAYKELSRLQF

>fliG 1069051:1069491 reverse MW:16157

MDFMTAFDIGASALSADRTTINVTAMLANAKTTRTPEGGPYRRKTVIRAATDVDEPFSK
QMQSALDRELKGVRI LNVLPDNRPPKQIYEPGHPDADENGMVSYPDINVVEEMANLMTAS
RNYEANSTTIDTVKNMYMRALDIGR

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>fliB 1069494:1069907 reverse MW:15639

MKSLYEPHVNLVAKVMDMLQRQNVIMSNIANVNTPRYRPTIEFEDQLQKALGLDMRGR
MSRTEENHLPVFNPEGFNAEWDKAIKPTVVHGEDRVNLDKEMANMAKNSLQYNALTQVI
KGNLDGVKNIIMEGSKV

>cbi0 1070196:1070954 reverse MW:28105

MLLKVENILFKYNLHNSFILPTSYNLNYISFSLDNNEKVALIGANGSGKSTLLLT IAGC
LKPLAGTVQIMNNDITGSPKKAGKYTSLLFQHPDVQLLFPVREEFLFALTQSSIYQKNK
EMLIEAIAKQYDCFHLLDFPPQRLSLGEKQRVALAVLLISHPQLLLLDEPTAALDPKSRK
NFIHLLQQIDTA ILIATHDLDMALHFANRVLILSKGEIKADGPSAELLSNEQLLKKYDLE
LPLSLQSCMSLT

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>LAW0862 1070963:1071709 reverse MW:27958

MKFDLYGKPNHPLLDILT PRAGLFCAIIL IIGTILNHSLISIGILFSMAVIALWSKSIK
KVL SILLP INIFIIIVWITFPLTIYDPTPITIFPHFSISLVGIKLAFILTLKTNATALFL
ISFVTNPNPHEFGKTLQSLKISNKLIVLFILFYQHICLLHKDIISALQSLSLRAPKLGIP
KLKAYAYLVGTLLVHNIDRANNIRMVLLQKNSPIMYNSNSYPKTTYKD ISVCILILLMTV
TVTYFFNT

>cbiM 1071699:1072334 reverse MW:22730

MHISEGVLSVPVLAGGWTCTIILLV ISLRRITYSCLPTMAVFSSIFFLTSLIRVPIGPTS
AHFALLGLLGLILGWGTFPAICISLMLQAILFQFGGIVALGVNCIVMGLPALLIALIFRQ
KLHCQSPNKIKLFSFIAGFGAIFLATCLLYLALILSNQQFKYVALTLLTANVPLAILEGI
ITILAI VFLQKVAPELLSSTNCTTNNYCNEV

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>LAW0864 1072321:1072818 reverse MW:18666

MKYFFLIIFLLLC SFVHEALAHGVSGQIIT TQQPIGVEFLYSTGEPVYAKIEVYSPENK
NIEYQNARTDKFGRFAFIPNTQGTWTIIMSDNVGHRAELPITLTEDDILTQTSTTVSSLN
STTQVCPIMAMPLWLRALLGVSLLFNIFIGLFIIFKYRKSCHAHK

>mviN 1073007:1074569 reverse MW:57574

MWLTTSYKMGMAALIMAGSVILSRVMGLIRDKVISWEFGATSEADYFAAFVIPDFINYL
LAGGYISITLIPLLSKSFQEDEQNGWKFFSTV FYWATIAISVTTFI AFFFAYDLAKITAP
GFTASNQERLGFFLRIILPGQIFFISGACISALLYIRKQFLVPALMPIIYNSCIILGGLI
SSSNGMEGFCWGLIGAALGAFLLPFGVGLINGIHFYFSLRHPLMKHFLWLALPLMLGQS

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IIILDEQLIRIFGSLAGEGAVSLLNYARRIMLVPGVVAQSVASFPFLATLAAKNNNT
 KFNETLNKALKGSLIIALPITGWMIGIALPTLGIIFEGGRFSHIQTVLTAPLLQIMLFSV
 PFWVVQQVIGRAFARQNTLTPALIGTFSTVIFIPFFSIAVKSWGSIQIASLTAISIITY
 TFLISYKWKYKTFGITAFGLKTIILMRSCFIVIPSGLSAWIITTLTSSFLTSFSPFILYLL
 TIAINTITFSIFYFILAFYFFPPISNIIQNYFKKLVTQLT

>LAW0866 1074655:1076736 reverse MW:77516

MILPGQKVTIGVIVRPIKGFNRKGGYNIANYWYRQNVYFQAWSKDAAVHPIISGTPYFSS
 WLRGKLYHQFIQCIIQTSNINQQSITTQKSTTLHIPPEKSFIPALLFGDRFFLSHTLNAV
 TCYTGLAHSLSLALSGQHLAVISIASITIIIIILIKILPCFFLSLPRYKAIPLFSLPFALLYL
 WIGGAPPSLLRATIMLFIWSIYLIQNKPICFLDIAIIALICLILFDPQGIYHIGIQLSFL
 AVLSISFFNPLLQKCKWKAHKRISTTITSEILYSTITTSIKIIIFTIGTTLIVQICTLPL
 CLYVFGYIPIWFPLNIWLPILGIFVLPLAFVSLFCSLQCTSIGILCINLAQIPCEILI
 RLLLSLKNTEIISPIWLPRPSWTMLLGCYLILLSIGIKLGRGTTPAKRILIAGMILVV
 TPLFFILSKDNSNKIRLRIMDVGGQQAILEWGNKRALIDAGGFYSNRLDTRDILAPI
 LSTTHSLHLDFFAISHPHRDHIKGFLLANVFNVDQVYSAILPAIDSPKGNASPLLLQLD
 TILKNKRIPRKALIRGEQIPLSNDIYLEVLSPPKGVIPKGNTGLILRLVAKNHGLAFLPG
 DAEHNDLKELLKTNLEVQSEVLVPHHGSKSSFLPELYKKIHPTVAVASTGTLNTNDFPS
 TKVHNALLQYDIPLRTTAEEGELTFEWDLDKLH

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>murI 1077738:1078598 reverse MW:31406

MNKSSPIGLFDSGVGGLTVLQALQNLMPNENYLYLGDARLPYGTKSPKTVLHYAIQSAS
 TLIERQIKLLIIACNTATAAALPLLQETFPPIPIIGVIEPSAQIACKTSLKGHVAVIATE
 STIQGKCYEETILRYRPEILVESKACPLFVPIVEEGWFSGPIVESIIHYLSSLFFNRSI
 KDQPDCLVLGCTHYPLLSETIQKIIGNDITIVDSTVATAKLVQACIQHNMVNPNTNLIG
 STIFLTDDKVRFARIGSLFLNTSIQEDKIEVVDLHMTNVQPNYLS

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>rIuB 1078883:1079695 reverse MW:31056

MQTKQKQIPQLLRNHTQSSTTTSIRINKALANAGVCSRRNVDKYILNGEVTINGKSVTQP
 GIYIHPDKDIIALHGRRVDIQLKNKYYYLSMYKPIKVISSVKDPQNRRLTVLDFIPFPWK
 NYRLYPVGRLDFFSEGLLLITNDGELTQRLTHPRYHISKVYHVLIRERILNTTLKNI SKG
 ITLSDGTKLPPAKVRVLSSITETNTTWLEITLQQGINRQIRRMCKELGLTILKLIRVKQG
 NINLSNLQPGEVRPLKNDEIKLLKKNVQLI

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>LAW0869 1079867:1081684 forward MW:67674

MIKKLFPFFFLKNQNQEKQTIIRVLQYFYPYKWAVITAFIASGIVSLSTAGIAWLIKPAL
 DDIFIRKDVIAIYIPIIFIIILTLKIGIRYVQNWCMSSYSSFGVLEKLRQELFHKIRLP
 LSFYETSQTGSLMSYVINDVGMIRQSLPAIIQAVRQFLTIGGLLYVVFTQNFSLACWALI
 VLPAAFPFVMSVALRRYGRRAEIIAKTSSLLQELLSGIRTIKAFATEKEEIERFDIE
 NSYISKLSLRQSTISELSSPVMELIGSIGVAIAIWIYGGTEVLEDKMTPGTFFSFVAALIM
 LYEPVKALSANMSLQNALAGAERIFSILDDSKLHIETGGSVLCGKEFYELTFDHVTTRY
 DSVSEPALNDVSLTVRTGEKIALVGPAGKSTFVSLIPRFYNPQAGSIFFNRRLLTEYD
 LVSLRQAMAIVSQEPFLFNMSIRDNIAYGQPLEVRDNIKIQAATAVAFADEFIDLLPDG
 YNTKVGGERGVKLSGGQQRITIIARALLKDPSELLILDEATSSLDSESERMVQGALENLMRN
 RTSLIIAHLSTILESDRIIVFEDGKIVSSGKHKELLGSCELYTRLYMMQFRTGEFQDAP
 IEKGC

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>LAW0870 1081659:1082303 forward MW:24278

MRLSKKVVKPLCKILEWPLYGLYCLWCGTLQYNAINRQSVDSRTDAGLPVILCLWHDEL
 PLIYFRGKLIKIIIVVSKSKDGDILANVIQRIGLETARGSSSRGGSEALRNVIKRMKDGFC
 ACITVDGPKGPRHKVKKGVIFLAQQTNAPIVPIRIFMEKSKKISSWDRFQLPIPFSKIHV
 ICGDAYVSPSLTTQEELTDQCRLLLEERLNNRL

>htrB 1082307:1083191 forward MW:33225

MGDISTLTSITYKYFPLLFHKLGLSKLRLIASILSTLSWWCLPFRRGLALRAIEKHLDVD
 LPTAKRLAKESFTENFLSFLESMLIPSGFECSSLIQAQDLLKKIQMLQRPVATTAHL

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GAWELLAGLLGDFSTVTPSAVVVRNYKNTFIHEITTKLRSSRGAIVLGHRQATRSILRIL
HKNGTVAFLVDHNTSQKEAIFLPFLGELAAINIGPALLAIRSKALVLPFLVRENNKYIF
WVDDPLDTCLLKGNTEKVVETVASFYTEAVEKAILRTPNQWFMHNRWKTRPSI

>LAW0872 1083991:1085361 reverse MW:47440

MITGHEIISTLNMIQENLDIRITITIGINLFDCAHDFDIFAYRVSSKIIRYATELVPIC
KQVEEHFGIPIINKRISVSPIGVLGASFSTEQFIKTCQLIDETAESVGVDFIGGYSALIE
KGMTPGEKNLIESLPEALAVTNRVCSSINVASSLAGINMDAVALMGQKILDVASATSTAN
GIGCAKLVVFSNIPQDIPFMAGAYLIGEPDVVINVGVSQPGVIKKAIDRALSTCDTCTF
TELYDIIKQTAYKITRVGEIVGKEVASRLKIPFGIVDLSLAPTPSIGDSVGEIFQSMGLS
SIGAPGSTAALAMLNDAIKKGGAFASSQLGGLSSAFIPVSEDASIAAAVQSNILSLEKLE
AMTSVCSVGLDMIAIPGDTPASTISGIIADEMAIGVINKKTTAVRIIPVPGKKVGEKAFF
GGLLGEATITPVPKGNATTFIKHGGCIPAPLSSLRN

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>LAW0873 1085499:1086062 reverse MW:21220

MNKSVISIIGMDSPGVIYTVSDTLLKLNCFMFTVSQTVIKNQFAAIFIIKPDRLDNHII
HQQLSNTFLQKNMDLHITIHPPHDP IPLHLSTNNSKFIVTVKGKDSINLITILSKVITQY
KINIEKLVVDTDQRSQTSFVSCEITLSSLINKDALYNDLKLQLPHSSNITIQHSQIFEA
MHRIPIL

>LAW0874 1086267:1088042 forward MW:64251

MSLSPLNYADWEIAQAAEKHMKTVDLGLDGLDHKEIFPYGHYMGKVVDYKSVLSRLEQS
SDGKYIDVTAITPTPLGEGKSTTTIGLVQGLAKRGRSSAAIRQPSGGPTMGVKGSAAGG
GLSQCIPLTQYSLGFTGDINAVMNAHNLSMVALTSRMQHERNYSDEKLYALSNMKRLDID
PTNIPMGVWVDFCCQSLRNIIIGIDGVSGKSDGYMMRSHFDIAVSSEVMAILAIAKDLKD
FRQRISKIIVAYDKQKAITTADLEVDMGAMTAWMVEAINPNLIQSIEGQPIFVHAGPFAN
IAIGQSSVIADRLGLKLSEYHVTESGFGVDIGYEKFWNLKCHYSGLTPDAAVIVTTVRAL
KSHGGAPIIPGRPLPKEYTEENGVYVEVGSANLIHHINTVKKSGVPPVVCINAFTTDTTP
SEIAKIRQLCELVGARVAVSKHWEYGGDGALELADAVIDACNEEKNFLPLYDWSLPLKER
IEKIAFEVYGAEGVEFSEEAIYKLNKLQADNNSDGLGVCMVKTHLSLSDDPKQKGVDPHW
KLHVRDIMFFGGAGFVVIAGSITLMPGTGSNPSFRRIDVDTDTGKVKGIF

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>LAW0875 1088081:1088974 forward MW:31901

MAADIINGMEIRESILEELRGEVANLKRDNVVPGLVTILVGNHPASLSYVTLKIKTAIE
LGFHEIQDNQSETITEELIGI IKKYNEPLIHGILVQLPLPSHINEGKVLHAIDPNKDV
DGFHPMNLGRLVIGGNAITFLPCTPAGIQELLIRSSVETLGAEVVIGRSNIVGRPISIM
LTQKGVGGDATVTLVHTKSKNIVRHCQQADIVIAAVGVPNFVKAEWIKPGATVIDVGVNR
IGFNEDTGKPIILSGDVDFVNSQVAGKITPVPGGVGPMTIAMLMRNTVRSAFFHLSL

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>LAW0876 1088986:1090329 reverse MW:51068

MIKSPEKKYTNRKKTKTAREIATIALQKIKEGQPIQVLLNILLTYPLSKQDIALVTELV
YGYLRLEIRIVWILEQFLKKSEHLPYEVKLIIGLATYELLFLDKIPPYATIHTAVSTIKS
KFGKILAGVANASLQIFRKSKHNDGPKYNTFYKQRLPEDIHYSIWYSIPLWIIKLWIS
NYGTQKTLKLAASSLQRPYFCIRVNPIDNWRRELYENLCQNGGPIGRSGIYFKPNRKP
ELQYYLEQGYISIQGAGSQIVMDALDIQTWKIPIWDACAGRGGKTSLLLEWGIPIFAASD
ISLSKLQGLIAETKRLKLLTPSIFCSSSTQPALKNVLCSQLKTILLDVPCSGLGLTSRHP
DIKKFRTPKDVDKLIQLQKKILNTAWEFLLPQGELIYITCTVNPSENEQQVIQFLKDYPQ
ASLKKQWEGIPDRFGTDIMFGAIIQKK

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>atoC 1090388:1091761 reverse MW:51794

MPEHILLIDDEKNYLLVLETLLKDEGYQVTALNDPETALAFLEESEVDIIVTDMKMPKIS
GQEVLEYVKQRWPHIPIIMTAFGSIENAVATMRYGAFNYITKPFANDELLLSIKNAEEL
AKIHRQYRILHESLEERFGKHQIIGRSNAIKDMMKLVTRAAPSRATVLITGESGTGKELV
ARAIHFSSPRSQPFI SVNCMALSPITLLESELFGHEKGSFTGAVAMRRGRFEQANKGTLF
LDEVGELTPELQVKLLRVLQERKFERVGGTEELDIDIRIVTATNQNLQSMVQNGTFREDL
YYRLNVVHIPLPPLRERREDIPLLVAHFIEKIASENDIKSKNFTDEALNYLTGYEWPNGI

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RQLQNVIERCLVLPNDIISIDDLPSEIKDEEAQFKSAVDLLPVEIDLAATLEKIEATLI
RRALARTNFTQVKAELLGLSKSLLQYKLLKYNITGH

>atoS 1091827:1093269 reverse MW:53988

VSQKPAIKTKLPFGLTRFLSWISLVLILISSIVLALFIGNSARHTLLLRQQYALLIVGN
LNHQIYRRFTLPTFLTFGRIALRQPIQYKQLDEVILSTIHGLHINSLRIYGMKIVTYSI
NKDELGGDGHIPPTAEPAIETISPSFEILSTLSLLSAMFTLKLPPNSFILRTIFPLTIPF
TGNEETQPSESI VTGLLEITQDITDDYGYIRFQWLILATCLSSSIILFILLQFFIVKAE
RILSERMTKNHRLEMELHQNEKLASMGRITASIAHEIRNPLGIIRSSAELLRRAVDINP
DNKQILTAIYDESCRLSQTVDNFDLYARPKIPKQELLNLSVLEQVLGFLQGEATKRHIT
ISKDISSELQLYGDTSLLYRALYNILINAFQSINKDGFHINGEKNKDGFIELTFKDSGA
GFPQDQIQHVTSPFYTTKDNGTGLGLPIANSIIQSHHGKLIKNDNSGGALIQUILLPTSK

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>pgj 1093271:1094605 reverse MW:50212

MYIINWNHAWEGRLTQSLQSPLEIEYITRLNQDLSDDILPFISMSYQEKLKQINHITP
LLHKFKYMVVLGIGGSALGAKALQKAFAPQDRPNHSGNWLWIMDNIDSESMNALLTSLN
PKKTLVVTISKSGETIETMAQYFLIKTWLQTTLKDSWQKHCLFITDPDSGFLRQEAQKEN
IQTLVPVKNLGGRYSVLSAVGLIPSAFLGIEWEELNLANQIMLPLRHVTIQSLQKHPAW
TIAKWCYTLLKNGYTQLIFFNYIATWSMFGQWFIQLWAESLGKSGQGSMPLSAIGVTDQH
STQQMFLDGPDKGCILLSTKNYIPGPVFPPTIPENWSWLKHRQLNELIEAEKIGTAAAL
VTHDVPLLQLQFDNTNCYAAGELMGLLMTTTLFTGWLLHINPLDQPAVELGKRLARVKLG
DNHYPKEAAILQSFLNTTSLEDPT

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>sfsA 1095072:1095860 forward MW:29366

MEKTIYFPKGCVIGRFVKRYKRFFVNVLDGEEVVAHTNNTGSMLGLLNSGTPVLLSPA
LNPTRKLQWTELELVWTGGTYPDENKLPSFPNKEGGVTPFHSGLGFVWGVNTLIPHKFFKL
AFEAGLFPWTKGYSICNTETKIGMSRLDICLHGNGVPRLLWVECKNVTLVENNVALFPDAV
SLRGLKHLQELKKIIDSGERAATFYCVQRKDGKFFGPAASIDPQYTEMFWKVKKRGVEIY
PYHIDITTKGLSLGPILPLLSE

>LAW0881 1095872:1096972 reverse MW:41753

MSLLFRYLKNNTKILLTLTIGIGVYILTDLFRERLDFIEAHTSTKIILTYFIYKTPFA
IAQILPFI FLISTVIQLCIMA KKKELIALQAGGISFTRIASIIIIASLFWGTIQFIFSEY
IGTACGRKSLQIQWEYVHNQHKSKTILKDIWFTDKNWI VSINTLKPDDTSGSFSAYLLDK
NGLTIEKIIWALSFSIHNNWILKKVAVSEPALYSQEMLQELTLTFNQSSETLKFIQNNN
APQQLSFWELRETIHKLERSGSNVELLKTSWHTKLSYFSLVVMALLATTIVAWKNNIYI
AIAFSLLYTFIYNALNTIGISLGNKGIISPIIGAWIANLVIMSVTIWKLFFITPIKNFLL
KIHSA

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>LAW0882 1096969:1098123 reverse MW:44087

MIPLLQRQIFRETYIFFLVVGALLTLIIINRAIQMRDLFIGLKEILDVLI LFSYMVPL
FLILVIPACMLGVFLTFLRMNLDELIALKASGISIYQMLPAPLAFSFFCTLLTLWISL
FWIAWGMEQFKTLLDIARTKVKISIQPGVFNFPGFVLFARQVDPLSGELHQILLED
SQKDRHLVILAPTGTIETNPTKGELIFNLNNGNIYTM SLNKTSFSLFSDQYLVRIPLTLL
KNINFNELRPKEMSWERLIKEYNITNTMQYQNKISVELHWRWAYPAACIALTIFALPLAI
MFEGIHRQFGLILALIMFFIYYGLMSFGFSTGESGTIPPAIGLWLPNILLFLLGLYGIYL
TSREKTANIVYLIPNILRKIKGIR

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>LAW0883 1098346:1099038 reverse MW:25600

MNTTIWHGHSNFQINANGISVLIDPFFTNNPRCTKNWNEIQKPDIVLITHDSDHLGDA
IAICKSTGALCGCIVGTADKLIQQGMPQHLIGEIGFNIGGTIERKGVRI TMTQSFHTSE
SGSPAGYIITMPNNFTLYHPGDTGIFQTMKTFGKLYNLHLSLLPIGGFFTMDSYQAAYAA
KMLKCKMVIPMHWGTFPVLEQTPERFKNYLKAMAPECKYIAMEPNTSKEL

>seIB 1099356:1101281 reverse MW:71623

MSIVIGTAGHIDHGKTSLVQILTGINCIDLSEEKRRGITIDLGFAYYVSPTGEKLSIIDV
PGHEKFIKNMVAGASGIDVVMLVIAADEGVMPQTKEHIEICSLLGIKHGFIVLTKTDIVD

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KEWLEVIKEDIKFLKNTFLHNTPI LQVSSTTGEGIKNLKTHLNHYLSIPHSKQKTDIFR
 LPIDRVFTIKGHGTVVGTIASGSIATGEAITILPSNKKTKVKQIQYHGNIVETAYAGQR
 TAINLHGINTSEVKRGDILAHPTLVLSTRWLSLTCLPSSPRPLKHCSEVHLHHGTQEI
 LAQLYFFNKNSLAPGETILCEIRLKKPLVGFIDGHVVRTFSPLQTVAGGSIVNPIASPI
 SRHTITDHTIDTLLSLPSATEEELVKKQIEFLDATGIYLTTLISVTNIEHNRLLSILTSF
 IERGIICFDKENYGYLSVNTMKTLEQCLVAITNFHKKNPQKQIEQGTFFTNKIWGK
 ILPHKLIGFIINQLIQGNLTSEGNIYLPSTISLSFEQQHLYDNILKLYIEAGYTPPK
 LSNILTTLNSTIKQATPIITLLLERKALTHITEDMYYSTQAIKKLKSILQNWFNHSHKELD
 IATFKELSGGLPRKYSIPLLEYFDKEKLTIRIGDKRQLRNP

>LAW0885 1101390:1102847 reverse MW:52760

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MTSDIHLSLAQIHNLLISREKSVEEVTQACLDRIIATEPTINAFITICAEELSEAKKLD
 QSTPDPKKPLWGIPIAVKDNILTKNIPTTAASCMLKHFIPQYDAFIQQLKNAGAIIGK
 TNLDEFAMGSSSTETSFPGTYNPNWNTKCVPGGSSGSAASVAAFQCFSAIGTDTGGSIRQ
 PAALCGCIGLKPTYGRVSRYGIIAYASSLDQAGPIRTVEDAAIMLSVLAKHDPQDTS
 FKATDNYINLKKQDLTGITIGIPKEFISEHIDPPILDYQQAIEQAKELGAKTIDLSP
 HATDHAIIATYYIIATAEASSNLARFDGVRVYGRYAKNSHTLEELYINSRTKGFGEVRRRI
 LLGTHVLSTDYYENYHKAQVRYLILQDFLSVFKKCDILLTPVSPITAWEIGSTIKKPI
 TIYHKDIFTVSLNLAGLPLGSLIPAGLVKGLPVGIIQLIGQAFDESTLLSIGNILHKYLGPT
 SQPNL

>LAW0886 1102873:1103156 reverse MW:10870

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MLTIEHLTYLAQLAKLNTSSETLKKFNDEYKDI LHDIEKLVQVETTNIPALYNPSTIMQD
 NKRNDIPIPTPNPREFLTNSPEANEKFFVPRIV

>LAW0887 1103384:1103869 reverse MW:17804

MSIRINYANELQRQEETKISKPIQGSSFENLLSEELTATSTINPSKVLGKSSNVEQML
 LMGLAKPKAAKFVKDATLTSITEQASILLNSWDEYSSALEEGITTRGAWEKLTITENHTK
 NLQGNLANIQPPNSDLESMVNELSIMAVVEKAKINRGDYML

>LAW0888 1104132:1104584 forward MW:16056

MPVLNKIVCAIDLSEQSRTIADYAVMLAKMSNASIIVVYVAPTLTQYTGFIIPNTIDSF
 VGEIVSGAEQAIKSFVDTHFQGVNAQGTVVVGYAAEILSLAIEKADMIVMGRGRKGL
 DRILFGSVAEKVKSSTCPVLTVHPVEESV

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>LAW0889 1105139:1105771 reverse MW:23163

MLKIIISLKEAVNFINQGKLIIFPTETFFGLGCKIFNNETIQQIFIAKQRAINMPLPLII
 GNWEQLTITAIEVPQIIYPLLQHFPGALSIVLNAKKNISPYITASTQKVAVRLSSHPIAK
 EIALDLVGEPPIATSANINKNPPVTKITQLDIRLYPIEGIIDIPPIPTGGLPSTLIELHP
 NNTISILREGIISKNVKEKAAELCGIISL

>LAW0890 1106149:1110171 reverse MW:149826

MNNTCVLSLINYIKLLYIIKFLNRYRLVKYINNINNSKYLTKINIKSIPCILILLFSIV
 CIKVTITFAMDKNSDMNDKEASTPNISNFLKGLVPKKLHCYLDDEQTELDINVTAIKESQ
 KTKNPSQKSIINCTIIHPQLREPLIFGQSYQVNQSELELLKTLVQQPITIRQLAQLGLS
 GAESSNKLQTAQAQLTSPLGSKRKYAPVSSSTETLTTRTSSSIETSSIPQSTQSASSSIIT
 SNLEEVVVRPKIPSTKQGNKAPLDPQTLVASKRSVFSNLQLENLGLQKIKAIYEE
 GQSTLHILLQTIKDLHREGQADKELTEKYRSMLEQQVELAKFIKEKEEEEEQQQIKQVMK
 RHENVQDLEMLKKNISCSSTSTPEQINFDLLSLPVDQLSGLDLTTLKNIIFEPVESKRRTL
 EDQIRQKIKGKQVDPTLQKQYQYLVTLQTDVLMATKNFSEEKLSQLPPTSGLAYRLQEV
 KAITQLLKEKIPSPKSEDGNNIQFIILEKKDDRRSETSKTTVRINQQGIQTTNTKEKTK
 KKNLIATLDKSSSLETDIEPPHSSEQQSSSSSNSTKKKKKKEKTSVPKTHTFSANIPSE
 EVITTTTSSSEQTTVQMPLEAKTLVATGDKQPPSSSSHHKQKKKQTQTSTLSSNQSLLSI
 HANSPSPSIESTSQQSNAMPLKTKEA IENECTPDIPRKKKKEKKHLKHTPKNPSSSIPTC
 CEEETSTSNEDSTIPYPTLNRPEFEELKIPDTPKKKPKKKKPKGLGLTVGDSLLSEGRT
 TSTSDTTPIQPPSGFINQDHKDKKEALKNCPLSPDEFSDDDNTKEDSGPMYIPGVFCGN

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NLDLESPRPPKPHYLPNIIGDVTSITTETLETLDIYNSPLGEGEEDNEDPQKNVGENEE
 IQVAVRESEQSQAQQQQPQCTNNTGTSPGQNTQPQHPIVAQTPAQPTPLPGNGRRARRQ
 QTRQTQLLTKKHPSTNSLIAELLPEGQFSSQLQFALSDTSEFISETLKSLALKAHFSS
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 PEKKGITGTMIGFYSWGKVTNSRRVTHGEKHIVTKGSPDITLTGGLIHLGYNIPAIKTLI
 LTPYIGCLVSNVRWSPYTEEQSPVVKISENRENLEKSIGLKTWELTEYSQLQTWIVG
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>LAW0891 1111143:1111616 forward MW:17883

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MSSKSLRILVVGRLRIPFWRAAAEHYKRI SCWRAIYETIIKDGNSLSVSQRKAMEGKN
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 DCLSLGNITFPHELARVIFLEQVYRAETLLRNIPYHH

>Int 1111705:1113402 forward MW:64224

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 MLGLVWYLI EWIKSWFFTGFPLPFTMGFARYPVMLQCASIGSYALSGLYVAI LCLVYF
 SILYSQSKDIHKCSIKWPLIRALSVACILFISIVLFGYITLKTNPIDMNIQDGVTAIIQ
 GNDDQIVKWNPQTKYRSAQKYVRASEELLKNI FRLHEGGNTYYPDVFLWPETVILDFKA
 EVEKGIHNPITYFVNKYQIPVIFGAPGIETAGKDITIFNRLYYYSPGNRDLDCESNKIN
 KSLQWYDKEHLVPPFGEYTPFFNFPLSOLLQEVGTYTPGEKVAPLLFEIKETVKKGSIA
 CYRTISMGILICYEVIFPELARKRVAEGAQVFITVSNDSWFGHTIAPVQHLQIAQMRSIE
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>LAW0893 1113451:1114539 forward MW:40961

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 GLLKGERGIHRLIRISPFDSGRRHTSFASVDVIPDAGEEVVIDIKSDLRIDVFRSSGP
 GGQSVNTTSSAVRITHIPTGIVAQCQNEKSQHNNKESAMRILRARLYEQEIKLRDAAKQA
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 SL

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>himD 1114982:1115257 forward MW:10227

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>dapF 1115585:1116430 forward MW:30859

MFSREDIPSIIEFFKLHGCGNDFVVIDNRSLFIPKEKMSSWAEVICRRKRGVGDGIAFFE
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 ELQDATVTMTDPTNILLNVSLEVEKETQQVHFVNTGPHLVVFDNLIDYDIIPKGKLLR
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>dapA 1116477:1117382 forward MW:33122

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 GLFQHFKTIASQESIPILLYNVPGRTGCNLLPETVARIVQDIPEVVGIKDATGNLEQFSE
 IIEFCPIGFQVLTGDDFTILPSMILGGCGVISVISNIVPAMVVELCSLIEKNKLEEARQI
 HYNLAPLCRLMFVETNIPVKTALSMEKLELEFRPLTELSPINFTKLESTLKNIGIIS
 K

>araJ 1117584:1118747 forward MW:42065

MLYIKKSLIALSFGTLGLGIAEFIIIGILPYIATDFGITIPTAGHLISAYASGVFIGAPF

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LIFVRRYPLKNILLALIVII MLGNLIASIAFN YETMMLARFISGLPHGSYFGVGSIIAEK
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 PQIENVPDTGLKGGFYFLKRLAPWLLIIATILGNGAVFCWYSYIIPLLTNVSGFSPHSAT
 LLIVFAGVGMVIGNFFGGVLSDRMLPIRIAFIQGLLSIVLICIFFFSYIPWVSILLMIL
 GTACLFALSSPQQLLLIKFSKGGELLGTSSAQMAFN LGNAIGAYCGGLPIQMGLGYQYSA
 LVGV PFSVIGCFILYFFYQKFGMIKVN

>tatD 1118929:1119711 forward MW:29435

LPLIGADSHAHLVFPEL FTRLSEVIKRAASAGVAFLGNVFLSIQEYQEYNEVLKTI PGIF
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 FAREMRKPIVIHSRDAARDTIRILESEGCIAYPVLWHCFSGDAVSFLDRILSNGWNI SVA
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 DIIELWTQCGENTKKFFMLS

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>LAW0899 1119740:1120381 reverse MW:23734

MSITPLKNSYVSTNYEKKSSTENLHSNTETKNTEAVKNN SQRTQKNNNYLSSNPI SWLQQ
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 GIKVIADSPEKEKVEKFFEDNPD LVKQFEKI QALNNVEESRKQQRIDVNAIRQRVQVESM
 MAWYSGSGGGGISSIMDFSGGQTSFFSGINKHV

>LAW0900 1120638:1121039 forward MW:15000

MAVILLGNEHIWKLPFCRLEFVAILEKMLSF AKLQTEVYLVSDTTIAFFNLHYMNCLGI
 TNVLSFPMDD ELAGSII LSVD AVCRESLLYRQPILDYCLSLLSHGIAH IAGYTHGVEMD
 KFCSNLLL PFKLA

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>dsr 1121253:1121570 forward MW:11944

MAEVIYKGNFEVDEDEGFLN FENWGPEWVDYVKESEGIS EVD AHRKIEFLQDYKKN
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>LAW0902 1121916:1122938 forward MW:37663

MKIIHSAIFAVTLLTAWSTVCFAAEVTASCTKR VESYNYLVDYSGSMMM KHVAVREPKIE
 LAKEA ILKINAAMPKMSYQGGLYTFAPYSV IIPQGSWN SCVAECAVNTIKSDLEIFGRLT
 PMGDG IKMHETVINQMPPQAAV ILLTDGHNNLGMNPVEEVKSIYQTNPNVCFHVV SFADD
 AEGKAIIDQIVALNSGSVLVDGLQLLQNP AVCQEFVNSVFCQEQILVTEEVVVL RGVNFA
 FDSFALDDTAKAILEETVRLIRANPDFNVRLLG WTDSTGPDAYNRLRSQERADAVKNFLV
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>LAW0903 1122971:1123441 forward MW:18159

LDSSPFFVKGFYMKKFFFVLM LIPFLSIIPQVEVLAKVNIQSEQEVKEKLEHFAKEYLC
 QANKNLKCN RDAKFITKVGDEFIAKFHEVDIDSLSIELY PSSSSKSI LYVGYVIYIEKCY
 ECRAKTKVEAEQGNFKVTAGRRVRELARFTNGKWI I

>rpoB 1123545:1127711 reverse MW:155138

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 WFLKTLPSKIGTLLDMAMADLEKVL YFDSYIVLDPGSTNLTKMQVISEDQYLQVIEHINE
 ESFVVGMGAEAIRG LLEELNLETLRNSLREESQSTKSQT KKKLTKRLKVV EAFIESG NR
 PEWMIMEVIPVIPP ELRPLVPLDGGRFATSDLNDLYRRVINRNNRLKRLMELGAPEIIR
 NEKRLQEAVDALFDNGRRGRAIAGTNGRPLKSLSDMIK GKQGRFRQNLGKRV DYSGRS
 VIVVGPKLKLHQCGLPKMALELFKPF IYSELEKRGHASTIKS AKKIVEREELVVDILS
 DVVREYPI LLNRAPTLHRLG IQAFEP LLVEGKAIQLHPLVCAAYNADFDGDQMAVHIPLS
 VEAQVECRVLM MSTNNILSPANGSPVIVPSQDIVLGLYMTVERSFEKGE GMVFCAPWEV
 ISAI DNNQVNIHAKIKVRMEDGNIYNTTAGRILVWEGLPKGLKFEYVNCVLT KKNIATLV
 GNAYRDAGIKATVILCDRLKDIGYEYATRAGITIGVKDLIIPATKKTIDTATSEVDDIE
 RQYRDGII TRTEKYNKVVDVWTKATQDISSEM TKEISTEVVKDPKTERTEVNQSFNPIFM
 MSNSGARGNQDQMRQLAGMRGLMAKPSGEI IETPITSNFREGLTVLQYFTSTHGARKGLA
 DTALKTANSGYLTRRLVDVVQDVI VYKND CGTVDGI EVKQVQDGG EIKQNL SERILGRVL

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LYPIYHPVTNEIIFPENTLIDEYVVKKLEEIGIASVTIRSALTCQSERGVCALCYGRDLA
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 EPFVSEVNGFIKFTDLIDGKTYQEKLDEATHQSSMTIEYRTTSFRPSISICDAEGQTKQ
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 PKDMAVVSEIAGIVTYAGESKGRKRLIVTPEIGDPKEYLIPKGKHINVSDGDFVEAGDLL
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 PVLIEIDS

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>rpoB 1127787:1131908 reverse MW:153865

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 YFGTLPLMTEKGTFIINGTERVIVNQLQRSPGIFIHDSGKTHASRKVLYSCRIIPMRGS
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 DPSLFRKDIAYTDILDNDNNLLVAAGKITKRVWRQMEASGLEAFEVDPSTVIGQFLAED
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 SDNDILEAIKLLTHLKDSHGPPADDIDHLGNRRVRLVGELENQYRIGLVRMERAIKERMS
 IQEVATLMPHDLINPKPVAALLKEFFGTSQLSQFMDQTNLSLSEVTHKRRLSALGPGGLTR
 ERAGFEVRDVHVSHYGRICPIETPEGPNIGLIVSLTTYAKVNDYGFIETPYRVVRNGYVT
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 VSI SAALIPFLEHDDANRALMGSNMQRQAVPLLRSERPLVGTGMEVDVAHDSGSCILAEG
 DGIIRYADANRIIVSYDDPNLYPEFGGVRAYDLLKYHKSQNFCFGQRPSCIPGQIVKKG
 EVLADGPAIRDGGLALGKNLVVAFMPWCGYNFEDSILISERVVKEDTYTSVHIEEFEIVA
 RDTKLGPEEITRDI PNVGEEMLSNLDENGIIRIGAAVKPEDILVGKITPKGETQLTPEEK
 LLRAIFGDKARDVKNTSLKVPPGIEGTVIDVKVFNRRSGEKDDRTRLIEDYEISLMDSKE
 QNYIKSITQRMKEKILPLINGKQLGTTILGKKGGEVLAEENSAITPELLDSLPLKKLEGA
 FKSKELENETITEMLSQYEKQINYIKTIYDSKRGKVTGDDLPPGVI RMVKVHIAVKKLA
 VGDKMAGRHGKNGVVSILPEEDMPFFADGSPVDIVLNPLGVPSRMNIGQIMETHLGWAA
 KELGQQLNMVEQGVAIQSLREQVKSVFESPEISAEIDAMDDDTFRTSVQKLKKGII TMT
 PVFDGAGESEVWDWLAKAGLPSDGKAILYDGRGTGEAFKNRVTTGVMYILKLHHLVDEKIH
 ARSTGPYSLVTQQPLGGKAQFGGQRLGEMEVWALEAYGASYLLQEFLTVKSDDVSGRVKM
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>hemL 1132246:1133538 reverse MW:46258

VQEESKELYSKAVKLIPGGVNSPVRACRNVGCEPVFIESAKGAYLTTVDGQELLDFVLS
 WGAII LGHTNSTVTNAIKKAASNGTTFGAPCKAEVLLAKEIIDAFPGMDMIRMVSSGTEA
 TMSALRLARGVTGRNKVLKFIGCYHGHADPFLASAGSGVATLSIPGTPGVPEVTVRDTLL
 APYNDLSTVKDLFVMYKDLAAVFVEPIAANMGLIPPKEGFLKGLRALCDAHGTLLIMDE
 VITGFRVAYGGAQTRFDITPDLTTLGKIIGGGLPIGAYGGKAKYMEHIAPLGEIYQAGTL
 SGNPLVMTAGFETLQLLKDINYTILEKQVATFANELEVILKDKGVVPVQVSNFASMFTVFF
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 KIMFNITDVN

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>nirH 1133538:1134038 reverse MW:19165

MSYSFSEIECAILRMVQNNIPDSMTPYADIANAVGTEEHFVLELLQMQKDDSVIRRFAS
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 NKGDCVKVIEQLKNKTVLKDYAILESIKELKKTSMKYFQLVNERNI

>hypD 1134626:1135717 forward MW:39807

MLATQKLSDPVLCKVLLNKLNNLLDRPLRFMEVCGTHTVSIKSGITLLPKGIDHLSGP
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DILKIAIDNPKDIVILPGIGFETTAPTIAATILMAEKEGINNIAVIPCHKLVPPALEMLL
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KYKVENAYPRAVYQDGNPQARNILYKVFQVGDSSQWRGLEFLPMSGLTFRDHYKKFDALER
FDITGVNVHPNTGCICGEILKGVTPSACLLFGKECTPEEPIGPCMVSTEGSCAAYFKYH
MIR

>igt 1136500:1137279 reverse MW:29455

MKYVLIDPIAFSFGSFDVHWYGYMYLIGFLCAWILGRYRAKKSYSILTTNDVGDLLTWGM
IGVIVGGRFGYILFYDFNILEYTDPLEVFKIWNNGMSFHGGFLGATVAACIWGYKRQLHCL
AVLDFLSPLISPLFFGRIGNFINGELWGAITDKSWGIVFSPGGPYRHPSQLYEAFEG
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VPLIIIGFWLITRHRQTHT

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>cmk 1137481:1138158 reverse MW:25167

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QCKKVTFQLQGVGKNSLLMNGESIGHEIRSETAGILAAQLGERTIIREYLKNIEQQIGN
TMSIIAEGRDLGTEVFPKAQFKFFIDANPIIRAQRFRNQLKKEGIFQDYNDILHSINYRD
KLDKNRTIAPLEPAKDAILIDSSIMDIDSILKIMLNYITIPHLSQ

>LAW0911 1138388:1139284 reverse MW:32461

MYFPTAGVETSFFIPPLASFIVSFFMSMLGLSGAFLLIPFQISFLGYTNPSVSSTTQLYN
VISNPV GALQYAREHRMIWPLAWIIIFGGIPGVMV GALIRITYLSDS QSFKIFVATVLLI
IGAKLTQSLLSSFFPKKSIHPLINIKSSSTKVIQKSLRQISYTYANNSYTFSVIKTFLLS
LLVGIIGGIYIGGSAIIVPFLTSIFGLPIHTIAGAALMGSGVISVISLVFYSFLALLYP
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>dnaK 1139678:1141579 forward MW:67998

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KLKADAEAYLGESVSEAVITVPAYFNDAQRQATKDAGRIAGLDVKRIINEPTAASLAYGF
DKKANEDIAVFDLGGGTFDVSILEVGDSSVEVLATNGDTFLGGEDFDQRIINYLVEEFK
EQGIDLSKDNMALQRLKDSAENAKKELSTAMETEINLPFITADQSGPKHLLIKLTRAKLE
QLVMDLVGRTIEPCSKALEDAGLQTSNIDEVILVGGMTRMPLVQKKVAEFFGKEPNRSVN
PDEVVAMGAAIQGGILAGDVKDVLDDVTPLSLGIETMGGVFTKLIDRNTTIPTRKSQTF
TTAADNQPSVSIHVLQGERPMASDNMTLARFDLTGIPPAPRGVPQIEVAFNIDANGIVNV
SAKDLGTGKEQSIQITASSGLSEADIEKLIRESHASEDKKKQEIIEVRNHADGLIYST
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QETSGASGDPTDTSASSSKSGDDVVDADFTEVK

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>aspA 1141712:1143127 reverse MW:51841

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GHEKGEYQYLHPNNDINMSQSTNDVYPTALRIALIKELKSLITSISYLCDTIDKKADEFK
NIKIGRTQLQDAVPMTLGQEFRAWSIMMREDIERIKETSKLMQEINLGATAIGTGINTV
PQYKELATTYLTEITELTLTSSPDLEATQDTGAYVQLSGVLKRVTVKLSKICNDLRLLS
SGPRCGLGEINLPPRAPGSSIMPGKINPVIPEVVNQIAFKVIGNDITVTMAAEAGQLELN
VMEPIIAYSLSFQSIINISNGCYTLADKCFNGIIANIEKREFVDNSIGIITVLPFLGYE
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>dacC 1143320:1144207 reverse MW:33655

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IENFSKKEILFLEELFYVDASNYGFMDDKPLNSFTATIPQHNVYKVPGMGNFIYKGLAQK
KWAEIQKIIIGKDVVLTSGVRGIIKQFYFLAKAQKHNGNLSLASRSLAPPGYSFHGIGDF
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>livE 1144573:1145496 forward MW:34070

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MVQKTEYIWFDFGEFIPWDQAKIHVLSHALHYGTGAFEGIRAYRCIDGTSAIFRLSDHVKR
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 IAVWPWGAYLGEEGLKNGINVKTSSFVRHHVNAMMTKAKLSGNYVNSVLAKMEAKSSGYD
 EALMLDSAGFVSEASGENIFIIRDGVIKTTPLTSILGGITRNSVISIASDLGYTVIEQQF
 TRDELYISDEAFFTGAAEVTPIQSVDNRIIGEGKIGSITHAIQKKYFSIVKGEDPFYKN
 WLTFFTI

>dnaX 1145527:1147251 forward MW:65282

MKQVSLAIRYRPQSFKEVVGQEVKKILSRAAAESKVVPAYLLSGTRGVGKTTIARIFAK
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 KVFIIIDEAHMLTRESFNALLKTLLEPPPFSTFVFATTEPHKFPVTIISRCQHFLKPLTK
 EELIYNLIHVLKQENICYEDNAIQLIARRASGSI RDSMSLLGQTLMFNGILTENVVRNV
 LGLAEQEFYEKLLRAFQDQNYEEVVKLNQILLEKGVDLGFFLREFATLWRNFLLRKVS
 LDANMLGMLPDEIPRLTSLANLFEPYILHAAWQMVLENQRQILMSLEPPVALELLFLNLT
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 EVVEGDLQFISVKDVKSKRDTISSSMNEGEIEEPTWEGFLQYCSKNGSTINTYFLNKLT
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>LAW0917 1147270:1147581 forward MW:11285

MQNMNELVRQAGLMQNKIANLQREMGDRTEIATSGGGMVKVIANCKQDIKSIEIDPKVIE
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>recR 1147646:1148257 forward MW:22762

VDQHIPEILRTVIGQLTKLPLGPKSAMRIAMTFLKWPESETRSLGKSIYELRDKLGLCS
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 LDKLEIDRLIDRLNKGEVKEVILALGSTIEAETTATMIYSLISKRFPIRVTRLAQGIPL
 GAEVKFMRETLRQSLQYRQELS

>LAW0919 1148418:1149008 reverse MW:22569

MEQVQTISSSNSTFSNKTIPNHVLDIESRYSAEEVGGWQFAEKMEISIAVTYDSTTDT
 FTSYTQETIFPLFQRLKADLIIGFNHTTFDYAVLQPFAPYNLQNLPSDLLKEIKKSLS
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>LAW0920 1149173:1150072 reverse MW:33513

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 SRTYLPPLHRQELMVRKLNFLKQLSEEVRLEEVRQELLQTLRDKKEALASIPSIWPI SG
 FITSHFGNRPSPTGRIEYHKGLDISAAIGTPIQASGNRVI LAGCDGAYGNCVVLQHGS
 GLTSRYAHMSTVDVKVGQNVRRGQIIGYVGSTGRSSGPHLHYEVKVNMGMNVDPLRYILD

>purD 1150886:1152172 forward MW:46543

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 GIFHHIDDARDFIKNTGTPVVIKVDGLASGKGVFVSHTTEEDALKALEYIMDKKVFGESGA
 TIVIEEFLEGEESLLAFCSGDVVLPLPSVQDHKA AFDGDVGPNTGGMGVYSPAPCLPKD
 MLEEMANLTI LPIVKEMSKQGHYPYVILYAGLMMTKDGPVLEYNIRFGDPECQVLMMLR
 ENDLITLIESCLTGSLSGINLKIHSSSALGVVIVADGYPDYTPKGMLIEGIEKVKEQKGI
 EVFHSGTQLDNGQFYSNGGRILCVTSFSSTLLKAQQDVYQALKMIHIEKTRYRTDIGLKG
 LRYKNETC

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>purK 1152159:1152674 forward MW:18008

MKHVKVAIFIGSPSDEIVSPCTEILTQLNIPYIFTVSSAHRTPERTAELIDSLEANGCE
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>lepB 1152735:1153367 forward MW:24333

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MGSIVKMFQWLRKTVFWEYLEAIFWAGCMAIILTTFFVIQAFKIPSGSMLETQIGDHLLV
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RNGEKVVPEYVQHSQEDIIIPVRDNWGPVVVPSSEYFVLGDNRRDSDLDSRFWGFVNQKNI
CGKAWIIYWSSQGLHNIRFDRIGKFIHEDN

>qacE 1153381:1153701 reverse MW:11159

MFNSYIGAILIAAGLDIIANLMLARSQGFKIYYGILSLICVGLAFLALAYATQGLDLAV
AYAMWGGFGILGTSLGGWFLFGQKLKPSAWIGIIILIGGIVSLNLA

>qacE 1153732:1154109 reverse MW:13855

MQPRQYTSQVKHWIYLIIAILLEVIGTSMKLSQLGTWIFEPNIGYLLMLICIGLSYYML
ALAATGLPIGVAYAFWEGLGLILITLVSIFVIDEKMTITRLISL FALLSGAILIHHGTVN
ISSNN

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>mdb 1154151:1156142 reverse MW:75893

MNIKLHLPPIYTITKFLFIWILILARISMFILLYDALSNIPFSQILYAFYIGSKFDI
RIAVIISIPLCLLLLSPYLEKRLPKYIPYILSLYGLIISLVLILYITDFGYFFYLQRQLD
ATLFDLFTTPIISLHMVWESYIFWISIAFCLTSLCLFFIYLILKSNKITMLSSFPRGC
WTIITLIIILFLFAYGQINTTLFPLRWSNAYFSINKDLAILGLNPIQNLTYDKIMSAIPP
DIAATHTSYPRIAEWLNVTPNEKNLNFIRVIKGHKQSTPINIVIIIMESLAWPRTSLAP
GEDNPTPNLKKLAKESLLFPFFAPARTTARAIFTTMTGIPDVNRSGGTSSRNQKLEQH
LIMNEFKGYEKYYMLGGSASWANIRGLLDHNI EHLQFEEGKWNSPSVDVWGISDLDLFR
EAIKIFNNSPLPFIGVIQTSSFHKPYTIPSDNAGFIKLNPTPELLANYGYTSDEEYNSMR
FADHALGEFFALAKTQPWFQNTIFAIFGDHGLNDPSLNMTPGYLACRLQSNHILLLYAP
GRIQPGEYPYPCGQPDIFPTLASLAGITYHNQTMGRNLLDPATHHDSKQFIAGETEAFIR
LVQDGYCYIKEETEGLYFLADTECNLIEKESERTQSMRQAATDFFAIAKYMLYNNKRPN
KEN

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>mvn 1156205:1157719 reverse MW:55708

MFYHTLIITIGAFFSKLLGLMRDVSIAWLLGSTTTADALTIALRLPFFFRLLGEGSLSI
GLTISICRHESICNSG IQLTLRIAVIFALIGTISSVWF IPTIALDILAPGFNWEHTVH
SETIQLFRICLPYIIFAILTSGIAVLHSEHFLLPALSPVLFNSSVIIFALISIGYTPI
DRGVFLSYGVLCGGIFQWMSQLPLALYLKKAEPKVDYNISILTKNVLKIPKNIFIASIPQ
LTFILATALTSFLPTGHVASLFYAERLIEFPIGILSSAIGIVALPVLTTIYRQNKLSIFG
DEVSKNVSLILAINFPAALGLIAISMLVQAIFYHGEFNFQAVNITTFALCAYAPGLPAI
ALSKTLLSTYYAINNQTVPFYVGMILTITLSFLLGALLLYFFNIGPPLAASLSLWFYCWL
LWKKLHCFIPVHFPFKVSLQLLAACCTFILCYTTVYFLSDGVPVITICLVVPIGIIISYV
ASLYLLDKKQLIQIKNIRYPTSI

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>tgt 1157845:1158960 forward MW:41420

LNPPGTFHITATDGSARTGVLYTAHGINVTPIFMPVGTVGSVKA IAPDDLEAISA E IILG
NTYHLYLRPGDEL IARRGGLHVFNWEKPI LTDSGGFQIFSLSSLRKLHKDGVIFRSHID
GSKHVFTPERVITIQRNLNSDIMMVLDECVAANADYTYTAQSLDLTIHWAKRSRDVYPKG
EGDNLLFGIVQGGMFKSLRHSSVSQLIDLDFDGYAIGGLSVGEPKEIMMELLYDTAPLLP
KTKPRYLMGVGTPLDILKGEIAGVDMFDCVLPTRNARNGTLYTSQGKLNIKRKEYAEDDL
PLDENCSCYTCQTFSTRAYLRHLFHSQELLAFLRLNSIHNLTYFLNIFGARKA IHGGYFFN
YKQQVEQLYCN

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>LAW0929 1159064:1160209 reverse MW:43899

MPTLSIVIPVYNYMGYWLPIAIESCLWQSHKKIEVIVNDGSTDNTQEVIEHYSSITNTIR
YHTQPNKGSIGIARQVQNLAKGDFITWIDADDLAPMAAEQLLKIAIQDNVPLVCGNAV
T FSDKTLNTRANPHDEIHHTTFCENPDYWCNTIGRWIFSLPFLNNGKAGRPFLHPNFKL
SLGSTCFIFDVLSSNVPFSQCIDELYFIRQECHKYLLPSELLVEQKLVHYLEVKSILLDA
NAIKPFINYLNKNYWNLDKMTLPMNTQNI R WLNRIEISFELFADLN IKWFSDDYLHPE
VDAEPDLLPFAEACINKERKKVIQLLLPLVTSSQPNNSSQIFQTLRSEIQSLFYNRSKR
TKNYLQALEKLVSNRIITNSL

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>rpIL 1160320:1160706 reverse MW:13512
 MSVTKEQVIEFISNMTVLELSQFIKELEEKFGVSAAAPAVGMMMAAPTAASAEAEAEKEKT
 EFDVILKEAGANKIAVIKVVREALTGLGLKEAKDKVDGAPSTLKEGVSKEDAEAEAKQLTE
 AGATVEVK

>rpIJ 1160754:1161272 reverse MW:18729
 VNRSEKAALISQIKAKADTASFVVVTDKFGISVEELTCLRAKLRESGGEYLVVKNLARI
 AFTDGIHSIIKDQFKDNCAIAFGYNEPVAIAKTINDFVKTSKFITVRHGSLEGTLTLLTKD
 IEDLAKLPSKPELIAQTLGTLNAVPTNFVSLFANIRPLFYALQAIKAAKAA

>rpIA 1161433:1162140 reverse MW:25054
 MPKLGKKYRNAVKGVDSLHLSFEDAQTQS IQTSFANFDETVDIA IGLGVDPKYSQDMVR
 GAVTLPYGLGKTVRVAVFCKGEKEAEAKEAGADYAGAEELVAKIKDGLDFDAAVATPDV
 MALVGQVGRQLGPRGLMPNAKTGTVTFNVTNAIKELKAGRIDFKVDKAGVLHAPLGKVSF
 GSEKILGNLKS L VETVNR LKPSSAKGTYIKSMAISTTMGPGFKIDTNLVKKFLES

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>rpIK 1162245:1162667 reverse MW:15079
 MAKKELAKIKLQIPAGVANPSPVGPALGQHGLNIMQFCKEFNARTQDQKGMIPVVITA
 YADRSFTFITKTPPAAVLIMKAAKIDKGSSEP NRNKVKGKISIEQVEEIAKLKLPDLTAKD
 LDSAKRSIIGTARSMGIEIK

>nusG 1162747:1163331 reverse MW:22054
 MTEHNEPLAQANKTADPGKSRWYIVHTYSGFEQRVEATIKEMMRSGQDEGLIHEVVLPTE
 RVVELGKGG LKRTTRKFPYGYIMLRMTMDYSWHLIQTIPKVTGFVGGKNR PAMPKDEE
 ASKILSLMETRQEQRPKFSFERGDEIRVIDGPFGGFNGIVEDVNYDKGKLRVSVSIFGR
 QTPVELDFIQVSKG

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>tufA 1163863:1165056 reverse MW:43590
 MAKEKFTRNKPHVNVGTIGHIDHGKTTLTAITKVASMKMGGKFGVGYDEIDKAPEEKERG
 ITIATAHVEYETPKRHYAHVDCPGHADIKNMITGAAQMDGAIIVVAATDGPMPQTREHI
 LLARQVGV P YLVVFMNKCDMVDDPELLELLEVEIRELLSTYGYPGDDVPVIRGSALKALN
 SDSADSDDAKPILELLDACDSYIPDPQRDIDKPFLMPIEDVFSISGRGT VVTGRVERGVI
 KVGEEIEIVGIKPTIKTTCTGVEMFRKLLDQGEAGDNIGVLLRSVKRDEVERGQVLSALK
 SITPHRKFKAEVYVLSKEEGRHTPPFFSGYRPFYCRTTDVTGVITLNEGVMVMPGDNA
 TFNVELIYPIAMEQGLRFAIREGGRTVGAGVVTEIVE

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>pqqL 1165638:1168367 reverse MW:102555
 MPQNSIYASNKKTQFMKKRFFIFSIFLLGVFMATYMVQPLEATSSIIKTNDILPENL
 TKKHPIVTRLCNGLTVLVLEDNRFPLVSTRLYVHTGSAYEKPEQSGISHILEHMVFKGTE
 SRPNATISQEVEAVGGYLNAAATSYDYTVYKTDMPSSQWKLGMDDVVRDMAFHPMLDPQDLE
 SEKKVILAE LARGEDNPHSFAFKLLAKSLAGTPYSRPIIGYPETINAVTSQDLKDYIAT
 HYQPQDMLLVVVDVKANEVLQEANHLFSKYNNNTQNIILPLPYAEELPLKEGQGTVTIIP
 PGTWNKIYLTAAVPVSNALNIESNTLDVLAQLLGGDKTSLFYRTYKHEKQLVEDIQVTNY
 SFERTGVFLITAEVEISKIRPFWDTLTKDLANLSAKKFSQQELDRAKLNLEDNLYRTKET
 LPGLASKLGYFEFFLN GEEGEKNTIEAIQSVDIDMLDEAISKWIRPERFAAVVLPKDV
 MPNLQATLEKNWPKKHEEATVVNQSNKKEIVKLGKKT VVLI PDNTLPYCSVTLLFSGGD
 ALVSDQQGLPSLTATILTKGTSNKTVIEIQNFLADRAADLSASAGRKTF SVTFTGPSKF
 NNELFPLVLDI IKNPVFFQPEVSRGIQDQLAAIKSQEDQPLGLAFRKT P PFLPHSVYGY
 MQLGNPEVIKKFTQQDIKKFWEKQIAQPWVLA IAGQFDREKVLQFVRDLPEPIEDKIVVP
 EPSWGKERELDINIPGRNQAHL LLIYKTVPD TNPETPIFNVMETILSGQGGLLFRDLRDE
 QALGYVTAFNRQTTETGYLGLYIGTEPNKISVAEKGFKDTIQQSLIDKLLPETELNRAK
 NQIEGEYYRERQSLGSRASEAAML TLENRPLNYAMEQVKKATHVTAQQIKELAQR YLLSE
 KPYIVKILP

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>thiC 1168519:1169796 forward MW:46444
 VFSLEKNKVLSELISKHIDKIALEERLTSEQINLGICSGTMVLLGNLKHSDVKPTLIGQP
 ARIKVNANIGTSPLESSFNKEMDKLKVAYEAGADTVMDLSTGGDLYKIREEMLAGTSLPL

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GTVPLYAVAQKYIKKHSDPAKMDPEELFEEIERQADQGVDFMTLHCGVITYKAAELGSQNN
RVLGIVSRGGALLARWMFKNKKENPLYTEYDRLLKIASKYNTVLSLGDGLRPGGGCDAGD
SAQWEELMVLGELTRRGQQAGVQCMIEGPGHVRLHEVEAQVISIKKLTHGAPLYVLGPLV
IDSSPGYDHISGAIGAAVSVRAGVDFLCYLTPAEHLSLPNKDDVYQGVMSRIAAQAGEV
SLGRPLALEREACISESRKKLDWDGMRNAALDANAVDLRREPHKKEKVCSCMGDFCSMDM
LNDKW

>purF 1169954:1171351 reverse MW:51769

MCGVFGITNHEEAARMAYFGLYSLQHRGQESAGIASYNGNNITSYVDMGLVPDVFSEDIL
SKELKGHYAIGHVRYSTTGISSRRNAQPI SVRICDIELALAHNGNLTNAMQLRKQLENDG
AIFQTNDSSEIFLHLIAHNLTNRSIEEAILYSCTQVKGAYSLVILVGNKLVGIRDPHGFR
PLTLGKIEDSYALASESCAFDLLDITLIRDIKPGEMVIDEGHVTSVPLLHSKNVPTRQC
IFELIYFARPDSIVFGEDVYHCRKNMGI ELSNECKTHADLVMPFPD SGVYAALGFSQASG
IPYEQAYIRNHVYGRTFIQPSQNI RDFGVRIKLNVPVRSMIANKRLCI IDDSIVRGTTVST
RVKKLRELKASEI HFRVSCPPLRFPCFYGINFSSKGELIAAKHPIEDLPNLLHLDLTLYLL
SLEGLLKSVESTSNNYCLACLNGEYPPYEQKSVCSGCPKTKDSTK

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>carB 1171427:1174657 reverse MW:118219

MPKRSDIKKIMVIGSGPIIGQACEFDYSGTQGIKALKEEGYNVVLVNSNPATIMTDPTL
ANHTYIEPLELETVTAIRKERPCALLPTLGGQTALNIALNLAKSGILHECGTELGASA
DVI EKAESREKFRQSMENIGLKVPSAIAKTEEVHQIALNIPFPVIVRPAFTLGGTGGG
IAYNMEDLELIAIQGLTASPTNEVMIEQSVIGWKEFEMEVRDAADNCIIICSIENLDPM
GIHTGDSITVAPAQTLSDIEYQKMRNASIAIMREIGVKTGGSNIQFGVNPKNDELVVIEM
NPRVSRSSALASKATGFPIAKIAAKLAVGYTLDEL RNDITYKTSAAFEP AIDYCVVKIPR
FTFEKFPGAKDELTTSMKSIGEVMAIGRTFKEAFQKGLRSLETGLPGFNSSNYTFTEEEL
PILLRNPNSLRIVAIIHQALSSGMSLNHIHTLTHIDPWFLYQFKELIEMELILHNFALSNT
ITASNPELRPLLLKAKQFGFSDKQLAIAWERPESDIRNLRKELDIVPTYLVDTCAAEFE
AFTPYYYSTYESAKELSLEKKKKVIGGGPNRIGQGEFDYCCCHAAYALKDSNIEAIM
INSNPETVSTDYDTSRDLRYFEPLTFEDVMNIIAQEQPDGVVVQFGGQTPLNLALPLVRAG
VPI LGTSPEAIDRAENRSRQALLQKLLKQQPANGTATSINEAASIAKTIGYPIVVRPSY
VLGGRAMQIIYEEKELIHYFSLYGKDCNLD RPILIDQFLEYAIEVDVDALSDGNTVYIAG
VMEHIEEAGIHSGDSSCVIPPHLSQELIEDIKSQTALAKELQVIGLMNIQFAIKDNVI
YILEVNPRASRTTPFVSKATGVPLPYLAMQVMLGVSLKELNPWAI EKTGYVSVKESVFPF
HRFPGVDIVLGPEMKSTGEVMGIASTFEEAFLKGQQGVGQYLPSTGKVFFSVNDRDKPLL
IDIAKQYLQLGFELIATSGTAVLLSKNNIPVQHVLKVYEGRPNIIDLKNGDIALVINTP
SGKQTTNDSRTIRQATLQYNIPYSTTLGAKAIAAIAQASRDTPIQVKS IQEYYNL

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>yqiE 1174801:1175283 forward MW:17950

MADQCKCPHCGNYIKEYKNPLPAVDIIYSPDHGVIIVSRKNEPLGFAPGGFIEYGETV
EHAAIRESYEETGLQIILQGVLGYSKDRDRHHTLSVVFVACPLDIEKLGAGDDAASA
KFFLLNDMPPELVFDHKKIFEDFNCFLQGKRPLAPLVEPTE

>corC 1175531:1176382 forward MW:31984

LSLDRSTEKNLWSRLLSFFHGRSNDLSLEQAILEARDDGELDTEEGSMILSILKFDELQVQ
DVMIPRTDFDCMPSPVSEVASCIVETGHSRPIYKDTRDNIVGIA YAKDLIELLLDPS
KHHTPIDTTMREPFVVPETKPVRELLQEFRTRKNHLAIAIDEYGGTSGLLTIEDVLEEIV
GDI EDEHDAPKEEDIHVIGDNCYELSGRAYLDDLLKGINLEADEVDTIGGYLSLEAGHV
PEQGETFEFDGWKFEVTEADAKQIRKVRVEKLLDEFSSKEENN

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>rpsL 1176552:1176923 forward MW:13999

MPTINQLIRHERKKVVKRKKTPALQGCPQRRGVCTRVTTPKKNPNSALRKVARVRLTNG
LEVTAIIPGEGHNLQEHSVVLIRGGRVKDLPGVRYHIRGTLDTSGVQDRRQRSSKYGAK
RPK

>rpsG 1177061:1177531 forward MW:17930

MPRKGPVPRREVLDPDIYNSRLASRFVNRLMYDGKKGVAEKIFYGALENLSEKTGEEPLR

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AFERALDNVVKPQFEVKARRVGGATYQVPMEVRSRQISLSIRWLITYARSRGEKGMVNKL
AAEFLDAFNNRGGAVKKKEDTHRMAEANKAFAHYRW

>fusA 1177547:1179622 forward MW:76370

VSRTVPIEKQRNIGIMAHIDAGKTTTTTERILYYTGVSHKIGETHDGASTMDWMEQEQRG
ITITSAATTCFWDGYRINIIDTPGHVDFTIEVERSLRVLDGAVAVFDAVAGVEPQSETVW
RQANRYGVPRVCFVNKMDRIGANFFRCVDMIQERLRAKPVCLQLPIGAEDNFEGIIDLIH
GVSLKFDKETKGLEVERGPIPELMELYQEKRLEMMEAAAEEDEVLLAKYLEGTELTAE
IIACIRKATIEQRLVPVLCGSAFRNIGVQPLLDVAVVQYLPSPLDIPQMVGHNPNSPEEEI
VCHCSDKEPLAGLVFKLASDPFIGHLSFFRIYSGFVESGMTVLNNTTEKRERIGRLLKMH
ANKREDIKWAGAGDIVALVGLKQASTGDTLCDEKRPVILESLDIPEPVIEVAIEPKTKTD
RDALSTGLNKLAKEDPSFRVKGNEETGQTLIAGMGELHLEIIDRLLREFNVNANVGKPKQ
VAYREITKPGKSDTKYAKQSGGRGQYGHCVIEIEPNPNGYTFINSISGGVIPKEYIPA
IDKGIQDALKSGILAGFPVVDIKVNLVFGSYHEVDSSEQAFYVAGSMAIKDAMHKSNIPL
LEPIMDVEVTPDDYLDGVMGDLNRRGKQVQSMEARSGAQAIRAQVPLSEMFGYATELRS
RTQGRATFSMQFDHYERVPAAIAEEVIKRSR

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>LAW0945 1179650:1180744 reverse MW:40947

MYKKFFNIYLNIIITHHLHFFLYFFLLTLECIITYTTSHAASIEPGIRLESLECIENNQTK
LDLAIWYPTLQKPIQINYGDWNI IASHGAKPYPGKYPAILSHDSAGSRFSLHELATTLT
QKGYIVVSVTHQGDNADMSLMFTIKQITGRVHQLNIIIDFLMNDQELFDILDTQKIGII
GIGTGGAALLLGGAKLDPSAWWDYCNIILPSSSIIVNDAYCSSWVKPMNILAQQIDP
QETYNNPRITAIIVVAPGFGMFFSKESLASLSRPILLVEATKDYINPPKYHSQYIEKQLS
TYYEMIVLSEASTATLISPCSESLEQVLPMECSKELDVTKQLIQKEIANTSAAFFTRCFS
LFKK

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>gidA 1181886:1183754 forward MW:68817

MRTTFDCIVVGGGHAGCEASMALARLGQKVLLITGNVDRIGHLSCNPAVGGIAKGHIVRE
IDALGGMMGLWADKAGIQFRTLNRSGPAVRATRAQVDRDLYMQAVKQDIFSQPNSVWQ
DTVEAIIIVKDGHTGGVKTAGLQFLNSQYVILTTGTFLSGLMHIGQKNFSGGRLGDVGTSK
LSSSLHSIGLHLGRLKTGTTPRLLKTSIDFTSMEMQLGDTPIPSFSFHGPKPSQPQVPCY
ITWTNEYTHDIVRSGMDRSPMFTGVITGTGARYCPSIEDKVARFADRDRHQIFVEPEGLT
SQECYINGISTSLPLDIQLAL IATIPGLENAMVRPGYAI EYDYVDPMLHPTLETQVLP
GLWLAGQINGTSGYEEAAGQGLWAALNVFCKITRQEPFILGRDNAYLAVLVDDLVTQGTK
EPYRMFTSRAEYRLLLREANADIRLTPGRKIGLVGDYQWNLQKISDIDTLVNRLQNI
RIKPDTLDPISIFLELGESIPNRAYTLEELLKRPSITFQTLRKIYSDLPITSEDVYLETET
IIKYAGYLDRQEELVQRSAKLEHSYLPKEIDYTKVAGLSSEVIEKLQIVRPQTLGQAGRI
SGVTPAAITCLEIYLKKIHAFR

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>LAW0947 1184004:1184525 forward MW:19718

MLIKFFVFMKTKRSFQHYLLVLLITYVNFLFGCSSKVI VGGGYSKNTLLTQHIVKTAQ
SQIGTRYVLGGTTPRGFDCSGLVWWAYKKHGVCI PRLTEDQARAGIAIKFHAIKPGDIII
FKTCKGRSGLHSGLYTGCGRFIHSRSGKHVRHDKIENLYWKS KLHTIRRIIQ

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>LAW0948 1184566:1185660 reverse MW:40272

MQVLLLDLGLLELRGGQRQVYYLAQELQHSDVVPFIACPKASALAVVCKKERIPFIPLLGR
SPANPLILFQLEKALRKL SINIHTNDAHSAALGAFSKALHGNNILLMHSRRVSYPLHTG
SRMKKYLLADSI VTVSEEIRKRVIQSGIEPNKVSTIHSCIDPSLYPKDKRDKGRFVFQS
IGALTSQKGYSNLLQAMHIIKKAKDLPPWEVRIAGSGELFQSLLEAFELNVAQLALLG
QQDSRVILPLADAVVPSVEGEGSNATIKEGWATGIPV IASNLESNAELIQDEINGLLVP
VNDPVALAMAMIRCMQEPRLCEKIVSEGTKSLENFTTTTMMVKQYLQLYRNLFPMRTIPQQ
QKAS

>LAW0949 1185825:1186151 reverse MW:12389

MCRILASFLACFMLIMVSYTLSDAKSDKFRTKGTVTSVNEEEQMFTIKNKHGETISFKVE
RKSDFEIERSIFDDKDVSFSELKVGDEVKVKAYKGEPPVADDVTIYRK

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>LAW0950 1186164:1187114 reverse MW:35396

MLPILATNAFVDHIQYQLCPGAEKLLFYNHSSEDIYYGPNQMVIPIDAHLVHRGDGVFE
TLSIMEYHILQLKEHIKRIVTSSKKLKLSPCSTSKLKKLIMTVAKAVNKNEGNIRVLIG
RGLGGFSSISLEYPNSSLYIVVYNTTQLLESWYKNGLTACKSNILSNPILFLTNIKTVSY
ILGILMELEAIEQKVNLTLSFNEQWCFTKSAIANIAIVSQDNTLIFLEFQNILIETILEK
TIEALKPSVLIELQCITEQELLTAKKILVLGTTTHLCIGITKYNGHIIGNGTTGPISNMLR
NMLKKTLLKHGIPINH

>asd 1187315:1188358 reverse MW:38369

VSKKPVIAIVGATGAVGRECIKLFEEFNPLNDIKLFASSQSVGIKIPFNSDELSVQEIT
DQSLQDVIDAIFSAGSEVSKKYAPIAVSSGCVVIDNSSHWRMDDRCPLVIPEVNAHTLDN
HRGIIANPNCSTIQLIVVLAPLHNIGKIKRIIVSTYQSVSGTGQKGINEIEKQTLQIFNL
QQPEVTIYPHRIAFNCIPHIDSFNDNYTKEEMKITNETKKIFDDPAIKVTATCVRVPVF
YGHSESVNIEMENKIPQQRARILSQAPGVCVYDNPKENMYPTPLDATGEDLTFVGRIRE
DHSIDNGLNLWIVADNVRKGAALNAIQIAEHLVNNDLLTIDNPNLFL

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>LAW0952 1189061:1189645 reverse MW:22335

MSKRAILKKQYIILLIIIVGALSICGTTSYFIEHPTLTMHIEQQEASAIQQDKNITNAS
QTDLLTLTQKLQANPNDAIRILLELSKYFIELCEWKQAEYFLLHALIVEPNNPDILYLLGI
TQYNQEEYIDAVNSFKKVLIEPDPSAQYSLGLLYLYLDEKNQGLQYLQQVIDNPKSTP
EMKQTTQQLLANHK

>ccmC 1189772:1190455 reverse MW:25864

MKPLWLYTLVSLSGLMAFCQYLIYCYAPIESELGIQKIFYLHLPLAWWALISFFIVCI
ASIGYLKTRKTYWDALSGATAEIGVILSSATIITGSIWKGQSWGVMWTDPRLTALVLW
FLYSAYLVLRQLDIPQERRSLLCSVLGIIAFLDVPLVFLSARIWRSIHPTVFASNNGGLD
SEMKLTLIACIICFGFFWLCIISIRGKQYIQRERLAALTSTQIWKGK

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>LAW0954 1190503:1191180 reverse MW:24341

MFTHAIIIAQKDIKLLFSRGIGVIQALLLGLLLIFIFSLSKPLDENITAQAAATIFWLAS
IFCQVLTFNILYHIEKKSDTWSGLLTPCPVQAIWLGKALTGFIIISVAQLIFIPAIIVVF
LNQEPGICWAQSLIIIFLINIGLVSIGSLIGGLSQGQSTQESLISIIILFPLVPLLLAGI
HTCTDALSSSESTEAMYSWMHIVIAFDAIFAASALALFPVISLGDE

>ccmA/ccmB 1191225:1191860 reverse MW:24189

MLLQLIAISKVYSNRPIKKNISLNTSNTITYLTGENGAGKSTLLKIMAGLLKPTSGEII
FNCSLEEIGYLGHTPFYQDLSAYENLLFWGRLYKKRLDKKIATAIEQMKLTRFIYERT
RTFSRGMQLRNLNFAVLMLKPKLLLLDEPEGLDNQSLICYNEIINAKTAGAGIVWISH
NLIKNEKVDQHIILKNKKIEYTKKEPYAFQQ

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>ccmF 1191823:1193829 reverse MW:74944

MTIALIDIFWIANLWPHKLNKFIILIKNKYPNQSSKKVSLTLAEITSISITILLSIAS
GILTYALASYNFSLQYVASYTDQFLPLFYRITAFWAGQAGSMLFWALSTSIASCIFQHTY
LYKKLSIDTKLWFWILYLSIMAFFGLLLITWNNPFILLDIKPIDGNLNPQLQNPGMIFH
PPLFLGYGWFTIPGCLALAQTISNQKEEPSWIVISKPFILSAWAFLTAGIVLGGWWAYM
ELGWGGYWAWDPVENASLIPWLISTAALHTIIIQTHKNVLTHINVFLMALTTLSTFFATY
LVRSGIVQSVHAFGTSNVGKPLLIFITFATITIIISIFYTAYSTKDENSELSTINSRIGFLI
FTSWLLLALAILILLATMWPVFTSFWNQIILGQSILQSSTSINQESAGSIGLTSDFYNKT
CLPLFAILMALLSLCPWLGWTRGIHNLKNITLVLITFFTSSCIMYLSGYQLPIAAILGASS
AFAIMTSTVLLVLDKQTRSINKPMLLAYGIFHGVALIAMGIAFSGPYKIEIEQILHEGETI
KVGNFDIKLIKIQEGELVDYAYIEGLLEVRKDGKIDFIAPQRRYKKGWGMQFAEADTI
PSLGNELYASLLAVDHQNRALFRLSSMPLVNWIIWIGGAIISLLPFFSISSYRGKNYASS
ANSYQQSI

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>b2503 1193968:1194384 reverse MW:15550

MDKKSNTTYVYIIALLLFIIVGIGYLAFIGFYENSVYFLNVKEAIAMPSEKLKSARLFGI
VIAEHYQQHGKTSFQLRDKEYPSNIVSVEYTGVIPDTFRTGAEAIVEGSLTPEGIFQA

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KTLMTKCPSKYEKEEEKKS

>yhdP 1194473:1195519 reverse MW:39040

MIILLGTVFLIVLISALCSMMEAAIYSIPITYIEHLREQGSKKGEKLYYLHSNIDQPITA
VLILNTIANTAGAALAGAIATTTLHESTMPFFAAILTLLILAFGEIIPKTLGVAYSKRIA
IILLNPLCILIVTLKPLIMLSSYLTRLVSPRKRPTVTEDDIRALTSLSRESGRIKPYEEH
VIKNILSLDLKYAHEIMTPRTMVFLHENLTVSEAYSNPKIWNYSRIPTYGENNEDITGI
IQRYEIGRYMTNGETEKKLLEIMQPAKFVLESQTVDHLLAFLEERQHLFIVLDEYGGLS
GVVSLLEDVLETMLGREIVDESDDTPDLRALAKKRHSALIQNNKNTLLK

>rpsJ 1196267:1196584 forward MW:11795

MTTVSSDRIRIKLKAYDYRILDKAVAEIVDTARNTGASIA GPIPLPTNIHKFTVNRSVHV
DKKSREQFEMRIHKRLMDILEPTQQTVDALGKLSLPAGVDVEIKL

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>rpIC 1196606:1197238 forward MW:22595

MSEKIGILGQKLGMTQVFGGNGFAVPVTVVQAGPCPIVQIKTVEKEGYNALQIAFGEGKK
KHVSKSMQGHFSKAGLSLYRKIQEVRLKGSLSYEVGQVLTVGLFSVGDVKVITGKSIGK
GFQGMARRWNFAGSKDSHGCEKVHRAAGSIGNNTFPGHVFVKGMAGHWGTEKVTVQNLV
VVDIRPEDNIIILIHGSVPGPKNSFLFISMQ

>rpID 1197254:1197874 forward MW:22864

MAIVTVYNQQKEETGKINLSSKIFEVQVQPEILHLVVRAQLAAKRAGTHSVKTRGHVSGG
GAKPWRQKGTGRARAGSNRSPLWRGGGIVFGPQPRDYSFKVNKKIRSLALCMALSSRFAE
ENLIVIDNIVLPEIKTKHFVGVANILGLHKALIVAPVESTQLLLSMRNVPNVKKLLTYDRL
NVYDILKYKQLVLLLEGAVQHIEARLK

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>rpIW 1197889:1198176 forward MW:10915

MHPTQIILRPVITEKVTILRDSVKKVAFFVHPQSNKIEVKKAIELLFNVKVMAINVVNYT
PRVTRNRKRVHVSIGCRKAYVTLAPGEKISFFEGL

>rpIB 1198179:1199009 forward MW:30126

MAIRNLKPTSPGCRFQITISDFKEITCSSPEKSLTYGLCKKAGRNNHGHITSRRRGGGAKR
LYRLIDFKRDKVGVPKVAQIEYDPNRTARIALHLYVDGEKRYILAPVGIKQGDIIETGV
DADIKPGNSLPLHIPIGTLIHNIELNPGRGGQLCRSAGAYAQLVAREGKYALLRMPSGE
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GGRHPVSPWGMPTKGYKTRDKKPKSSRLIVKRRGQK

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>rpsS 1199018:1199299 forward MW:10530

MPRSLKKGPFVDKDLMKKVDAAIANNDRRVLKTSRRSTILPEMVGLTFAVHNGKKFLPV
FITENMVGHKLGEFSPTRTFYGHAGDKKTKAKK

>rpIV 1199312:1199650 forward MW:12363

MESKACAKFIRVSPRKARLIASNVKGTVELAMNILKFTPKNKSAGIILGVMRSALANA
NAKLDVDTLIVKEIVNEGPTWKRFPRAQGRATHIRKRSSHISVVLSEGQE

>rpsC 1199654:1200295 forward MW:24598

MGQKVHPYGFRLGYNKNWQSRWFSKKDYANFIYEDYKIRSYIKKLLYSAGISKMEIERAG
GKICLMLSTARPGIVIGRKGVEIEKLRLELRKNFGQEFSLLEVTEVRRPEVDAQLVAENIA
MQLERRVAFRRAMKRTVSMARKFGAEGIKITCSGRLAGAEIARTEWYRDGRVPLQTLRAD
IDYGFAEAHTTYGIIIGVKVWIYKGEVLDKEVEK

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>rpIP 1200295:1200708 forward MW:15272

MLAPKKVKFRKWQGRLRGPALRGISIAYGDIALKSTEHGKLTSSQIEAARIAMMRHIKR
GGKVVIRVFPDHPITAKPLETRQSGSGKSPVGCAPVKPGRILYEIKGVNIDLAREALIR
AAHKL PVKTVIVLKERL

>rpsQ 1200896:1201162 forward MW:10117

MPQIIAKCNGRVLVGTVISDKNDKTIIVHVETLVKHPLLKFIHRKFKFTAHDPLNECSI
GDTVKIIIEFRPLSRNKRWHLVAILEKAV

>rpIN 1201178:1201546 forward MW:13304

MIQVESTLQVADNSGAKKVACIKVLGGSKRRYATVGDIIVSVKEAIPHSKVKKGEVLQA

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VIVRTKKEVRRMDGSYIKFDSNAAVLLSKQGEPVGRIFGVPARELRARNFMKIIISLAPE
VL

>rpIX 1201555:1201875 forward MW:12228

MQQIRIHKNDKVMVIAGKDKGKIGKVLKVKCHKHNRILVEKVNIVKRHVKNPNPYRREHGGI
IEKELPIVTSNLMIICSSCTSPTRVHYRYSESGKKLRICKKCNESL

>rpIE 1201885:1202424 forward MW:20221

MTRLEKFYQEKVVPALQKEFLYKSIMQVPTIEKISLNIIGLGVASQSNKIMEEAISELSLI
AGQKAVITRAKKSIAFKLREGMPIGCRVTLRKERMWDFLDKLMNFALPRVRDFRQVSE
GFDGHNFTLGIKEHSIFPELEIDRIENTKGMNITIVTSAVLDSEGKVLDDLGMFPFK

>rpsH 1202656:1203036 forward MW:13983

MMTDPISDMLTRIRNAQLALHKDVAIPYSKIKYSIANILKEEGYINELTLNNGTITLYFK
YYKGKAAIEGLRRISKSGRRVYVSTHDIPSVQNGLGICILSTSIGVIGCNKARCSKVGGE
LLCEVW

>rpIF 1203044:1203589 forward MW:19839

MSRIGKLPIMIPAGVEITFGEKNISIKGPKATLVTPKCELLSIEHKEDKIIILTCNFDTRE
SLAQYGLRRLLANCIEGVTKGFSKTLEVIGVGYRVSVKGNIVELSVGYSHPVHIELPDG
ITAKAEGQKLTIMGSDKVLVGEMAARRIRIRKPEPYKGGIKYSEIIRKAGKSGGKGGK
K

>rpIR 1203602:1203964 forward MW:13476

MSIKSKNKLRQHRKIRIRKKIFGTADQPRLVIFRSNLHIYAQLVDDITGSTLLTTSTLSL
KDNGINIRANKSGSTLVGKEIARLAIKQIIKIVFDRNGYLYHGRVKAVADGAREGGLKF

>rpsE 1203989:1204480 forward MW:16997

MEQSELGFIEKVVSLNRVAKVVKGRRFSFALSALVVVDGKGSVGFGLGKAQEVPEALRKA
TEQARKAMMKIPLIEGTLPEYIILGEFGAGSVMLKPASRGTIAGGAVRAIMEAAGVTDV
LAKAIGTNNPHNVLRATMAGLSALRSAQLVSNIRGKLLLEAPRK

>rpIO 1204661:1205110 forward MW:16395

MNLTTLYPFLEERKLRKRVRGRGSASGLGCTSGKGNKGNARSGGGVVRPGFEGGQMPQR
LPKHGFKNAFFKVEYAI FNLDWLTTFKGGKNEILLEDIYSHKLCVGTVPKILGSGSISN
IVTIEAHKFSRSALKKLHEVGGQAKIIEK

>secY 1205122:1206429 forward MW:47800

MAVSTTTLNAAPELKIKLLWTVGLLCAYRIGVHIPVPGVDGIALTHFFESVAGTLFGLFD
MFSGGGLRNVSVFALGIMPYISASIIIMQLLQVIIPDFKRMKEEGAAGRYKITQYTRYGT
VIIITLIQIGIGIAIGLESMYSPTNIPIVLEPGWVFRIVTVLTLTAGTVLIMWLGEQISEKG
IGNGISLIIIFSGIVVGIPGAIIVKTYQLIILGDMNILIALVLMFMFAVLTGVVFMERAQR
RIPIQYAKRQLGRKVVYGGQSTHLPLRVNTAGVIPPFIASSLLLFPATMASFDISDWLKD
IAVWFSPSTILYNCFVLVIFFFCYFYTAIIFDSKDIENLKKAGGFIPGIRPGEKTCEYL
DGVLSRLTLWGGVYISIIISILPMMLISQFNVPFYFGGTSILILVGVAMDFMSQIESHFIS
KQYEGLMNKKTKGRG

>map 1206433:1207203 forward MW:28120

VKKYRGTFLNKEREIGILKEANRMVATILEELEKQVRPGLSTLYFEDIVQQMCREFKVKP
AFQGYGYPYALCCSVNEAVVHGVVSEKKILQEGDIVSFDVGLVYQGFYGDARTVPVGT
ISSEASQLIQITRESLELGVLETRAGNHLYDISSAIQHHVESAGFHIVKRFVGHGIGIGL
HEKPEVPNFVPTVGLGIPLKVGMLVAIEPMVTIGSPEVEILEDKWTAITCDRSLAAHFEH
SVAIILPSGPCVLDLSLV

>rpsM 1207425:1207793 forward MW:13703

VARIAGIDLPRGKRSDIALSIIYGVGRVTALKVLDVAVGINWSRSIDDLSAEELNEVRKEL
EKNYKVEGELRREVSANIKRLMDIGCYRGLRHRKGLPVHGQRTHTNARTRKGRKGA
VGGK

>rpsK 1207850:1208239 forward MW:14029

MAKPKRIGKKREKNIPVGVVHIQASFNNTIITFTDPRGNTISWASSGQSGFKGSRKSTP

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FAAQVAEEQAARRAQDNGMRTVGIYVKGPGSGRESAMRAINAVGFKVAFIRDITPIPHNG
CRPPKRRRV

>rpsD 1208262:1208888 forward MW:23934

LAKYNDAKCRLCRREGTKLFLKGDRCFDTKAYDRRYPAGQHGRRVKKMSDYA IQLREK
QKVRVYGVLEKQFREYFVHADMAKGITGVNLLSYLERRLDNVVYRLGLANSRVQARQLI
RHGIFTLNGHKVTIPSLQVNVGDSIEVPEKNRKISVVADAQSI VGRRGCPSWLELDASTF
KGVVKALPQREDIQFPINEHLIVELYSK

>rpoA 1208901:1209944 forward MW:38940

MLFREGTRLINSRNWAKLVRPEAVINMESNTTTYGRFEYEPLERGYGITIGNALRRVLL
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IVTAADIQTNQHVEVLNPEQHIATLTEDIELRMEFEVRMGKGYVPAEMHEDLHEEIGLIK
LDSSFSPIRNVTVVEQARVGQMTNYDKLVLEVWTDGVSVPEDAIAYSAKIIKDQISVFI
NFDERISGSGGNEGSGSSDLNDLNFKGIDELELSVRATNCLRSANISTVGELVQKAEADM
LKTKNFGKKSLEIKALLTSMGLDFGMKIDGFEKKYQEWKRKQHHEA

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>rpIQ 1209934:1210314 forward MW:14461

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IDEKSI

>xanB 1210609:1212024 forward MW:52590

MNNIYPIILCGGSGTRLWPLSREYYPKQFINFGSGTLFENTLSCIASLRNVQNPVVCCNE
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SIFHSAVMSGISVAIEGHFVTFGVNPTGPESGFGYLQYQEVSDGIFKILNFTEKPSKAR
AKEFLALGN YAWNSGIFLFRASTYLNELELLAPQIFSACKQGW DERTQDPLGFFRPNSQK
FLQSPSGSIDYVIMEKTEKLYMVKLETNWSDLGSWESFYNAEVHDSMGNVVSGDVI AQDT
ENCYLNSTQRLV CALGVKNIIVVETADAVLVVDRNQTQNVKNLLEQLRISGRTESETHMR
VFRPWGSYETLFSSTGYKVKKITVSPGATLSLQLHQYRAEHWIVVYGIANVTINKAEHIV
KVNQSIYIPVGV EHLRANYGEEPLEVIEVQSGSYVGEDDIRLEDVYGRTE

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>vc0389 1212317:1213618 forward MW:46394

MIDETEPNVVALFPLVIFLTLFIGTGIFLTFMGTEMAFYQLSATVAI LPAICISVLQ GK
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GLFLTGAFISTAMGTSMTIAAIAPIAVGVGQQTDSL SLLMGVVIGGAMFGDNLSFISD
TTIAATRSQNCMKDKFRMNFLIALPAALITIFLLWASGTSSYVVHNESYEFIKVLPYLV
IITLAMIGMNVFVLA VGI LFSGILGLSTTNYSFLIWAQDIYKGF LGMNEIFVLSMLIGG
LGELIRYHGGIAWLLKMVDTLVTHLSKRKSPKVG EWCI GLLVTLANLCVANNTVAIILTG
KMSKEIADKHGISC RK SASLLDIFSCVIQGLIPYGAQLLLAGSISQVSPFSIAIENWYCM
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>hisS 1213908:1215167 forward MW:47772

MNNIITA IKGFSDLFQ PESNMFSYIEHTARAI FSLYNYEELRI PLLERTELCRSIGLET
DIVQKEMYTFLDRKNRSLTRPEATASIRAYIENK KYTQEAVSKFLSIGPMFRYERPQK
GRMRQFHQVNCECLGVTDSYIDAEIIMLMQFLTALEIKDIRLEINSLGCADCRPLYKDI
LQKWLDQLDTQTLCCDDCQRRKETNPLRVLDCKVSFC KEKTSQAPHFLDYQCKTCLDQFST
VTLLSLENIPYIINHRLVRGLDYMRRTTFEVISSNIGSQGAIAGGGRYNGLVAQLGGPD
IPGIGFACGMERLALLLP RKDLPRPDFMIGVFI AEGKDKAFSISQLHKAGFSGEMLFNL
GSMKSLMRHANKARVRYCLLLGTEELALNSISIKNMDTGVQEKISLDKVSSYFITKLSK

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>aspS 1215195:1216994 forward MW:68381

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NISKT PPFQIEDNIETGETLRLQWRYDLRRPVMKKNII LRSNAMQIRNYLSSHGFLEI
ETPFLTKSTPEGARDFLVPSRLYHGKLFALPQSPQIFKQLCMVAGLD RYFQITRCRDED
LRADRQPEFTQIDIEMSFVNEEQVMECAEHLMQTLFQEALSTEISLPFPRITWFEAMKQY

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GVDKPDIRFGLELHDVTSIVHMSEFKLFSHAKLVKAI RVPGGASLSRKEIDDFTEFVKNY
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 RVQLGNYLGLIPQNTWSFVWVTDFFLYEYSEEERRVVSCHHPFTAPKESDIHFMKTNPAE
 VKARAYDLVLNGNEVGGGSI R IHQAEIQRHLFEDLGFSLEDIQQQFGFFIEALEYGAPPH
 GGIAFGLDRLVMLMSNESIRDVIAFPKTQKGACPLTGAPDFVSSKQLRELGLTLRNKN

>dppF 1217085:1218077 forward MW:37038

MNQNSYTKPLIECNLSLTKHFAIRHGVWQRIQGYVHAVEEVSLTVYQGETFGLVGESGCGK
 STLSRMI VGLLHPSSGELFFNGQSI FDSVNKKALRHKLQMI FQDPFSSLNPRLP I G I S I A
 EPLTVLKVSAKKKLESILEILEFVGLQPEQKDRYPHEFSGGQRQRI A I A R A L I A H P E L L V
 CDEAVSALDASVQAQVLLKDLQAHFGLTYIFISHDLAVVGYMSDRVAVMYLGRIVELA
 PTKSLFERPAHPYTQILLDSIPIPDPSRKTYRLLKGELPSSLSPPSGCPFHLQCPKVMPI
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>LAW0989 1218216:1218980 forward MW:28587

MSQISPLYGIIIPARYGSSRLPGKPLIDIW GKPMFWYVYQNAVESNIFRSVVLATDSEEI
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 PFIDVSIQVTTLSTRITANQAMLPHQKV V V S S N G D A L Y F S R A A I P Y L R D N D T D G Y Y L G H
 IGLYAFRMHTLDFVHLPPSQLEQFEKLEQLRLENNIPIRVVNTNHTSQGVDTVEDLEI
 VQGLLAQRMEAVSR

>carA 1218980:1220110 forward MW:41736

MKALLALEDFILEGQSINGHCCESSGEVIFNTGMTGYQEILTDPSSYGGMVCMTWPLIGN
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 RINGAMRGIISTSIDPNDLILRVKKVPSMEGQNYVTKVAPNSPWVLYGQCVVPADIKED
 GSFLWKQNKIPLIVDYGIKWNIRLLEGAGFDPLMVPLFSLEQVKASGAKAIFLSNGP
 GDPGTLIDEIQIIRELMEYPIAGICLGHQLLGHAVGGTTRKLTFGHHGSNHP I K N L A T G
 HIEISSQNHGFCVNFESNNDIEVTHINLNDNTLEGFIHKT K P I L A V Q H H P E A S P G P M D S Q
 YFFTRFKEVVLLKLG C

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>LAW0991 1220290:1221117 forward MW:32159

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 SIMHPKVREIFPLTI IYTKGQERQLLSDVYELLTVVDSTIQDAAKEALKDFETRERRLF
 NEGQKQLEKGNILEAREAFSKLAKEFKDDPELMGQIGKMYLKYEYEDAI I Y L E T A L T I N
 PELAYLYNYIGIALRKVGKFDIAEKYYLRASKYLKDPNLFFNLGRLYIDWGDWEKAIVS
 ASAALKVRPDFMEAKLRKYAERMKHKNSSVLFEE

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>LAW0992 1221162:1221821 reverse MW:25361

MKKKHALYEENYFHLFNRRVTPSYSLGLPFFNPIP DSTLFNPLAYLFGSIYYLYKGIW
 RKALILLALNIPAMFQPLPIIQPLTTPLEI I S S I C L V I G C F I L C M M I F L Q Y T E V I I G L I I
 LLLPIFIYYCFLSTNQHISIIATISFWSTLTSLFIFFLLRKKSNQLVLILLIGIIGWMVG
 VSPQTL LWSFFT VLPYTLAGIMGKYDVYRSKVLHETFYW

>acrA 1222274:1223455 forward MW:42739

VFLFIGVPMHGLFLLKGLIILWIGAGLISCSSNEQASMPAPLVEVMTIESKDTPIVLTF
 VGQTEGSR SVEVRAQVSGILMNRAYEEGQYVEKGQLLFEIEPDTYKANLEQAQSMMEQAK
 AKFVQAQQERDRILPLYKKNVAVSQKDRDSAVASYNAAKADLDAKAEVTEAKIKLGYAYV
 KSPVSGYASKENKTIGNLITAGSSSDSLLTVVNQVNP I Y A N F S I P S P Q Y M H I K M L K S E N L
 LTIDNPTATMTLADGS I Y K E T G K V T F I D K Q V N P S T S V V A A R A E F I N P D A H V L P G Q F V R V N
 VQGVI L V N A I L I P Q K A L I Q T Q K G T V V A V V N K E N K V E M R P V R I G Q N Y G E N F F V Y S G L S N G D
 R V I V E G N N K A I P G Q P V R L K E S I Q P A M N E A G G K K

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>acrB 1223455:1226604 forward MW:114414

MSNKENITEVKEGFFLRRPIFSTVISLFI T F I G I L A I F S L P I E Q Y P N L T P P Q V E I K T T Y N
 GASANTVSESVASVLEEQVNGVDNMSYMNVSAGTGTMTLTVTFDVGTDPEEATINVNNR
 VQLATPKLPQDVQRTGISVLKKSPA I L Q I V F L T S P D E R Y D T I F L S N Y A L L N I V D D L K R V P
 GVGDVQNFAGQDYAIRVWLKPDRMEQLKITPNDVINAINDQNIQIGAGRIGDEPVSSSIG

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VTWQIIITKGRLETPEQFENIILRTEPDGSIILRLKDIARIELGAQVYNFTGRQDGLAAIPI
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 LVFLVVYLF LQNWRATLIPCLAVPVSIVGTFAGMHLLGFSINTLTMFGLVLAIGIVVDDA
 IVVLENVERHISEGQPVIHATAKAMSEVTSAAIAIVLVLCVAFIPVAFIGGLAGRMYYQQF
 AITIAVSVVISGVVALTFTPALCIVLLRNYEPTTSSFFKNFNDWFANITGKYIHIVKVLL
 RRTLLTICLFLVLLGTTALIKIVPSGLVPDEDQGYFISLVMLPDGASLSRTSKTASILE
 QQLIKDSSVEHVMSFSGLDAISGASKTNAATIFVTLKPWGERKKKDESSFAIVRKVFLG
 SEIPEGYVVAFNPPPISGMSNTGGFELWVQNRIGASEVELYTMIQKVLQKARGRKELQGL
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 SDYRALPENIKEVYVRNRNGEMVPIISLLKVKPIAGSQIERFNGFPAAKIMGSPASGYS
 SGQAMDAIESVAKEVLPEGYTLAWSGSSYQERVVSGGGSFVLLLSLIMVFLILAAQYESW
 SLPLTILTAVPFAAFGAILAIWLRGIANDVYFQVALITLVGLSAKNAILIVEFAVEKYRL
 DGMNIDAIEEASRLRFRPIIMTSLAFILGCVPLAISTGAGAASRHAIGTSVIGGMLLAT
 IIAPLFIPFFFRWIMVISEKFSSKKSTQE

>oprM 1226608:1227987 forward MW:51211

MKRLLLCIIITCVIVSSCSFAPDYNRPHLELPEVWVSSPETGVPASMQWWKRFNDSTLDIL
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 ANFSASWEIDIWGIIRNAKDAAFSQLMATEAEKEGVFLSIAAQTANAYFLLRSLDLQCSI
 AERTVKTREDALSITYTAQYQKGFINKLDLTRAKTEVETARTALYQKRIAQENAETALSVL
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 RAAWLPSISLTGLFGIVSPHLSDLLKNPLKTWSYGETGTVPILDFGQVYYNVEAAQAKER
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>LAW0996 1228358:1228783 forward MW:15407

MPIYEEYCTQCDNTFEEWSKNASSHEHKKPCNCGGDAKQLISNTAFILKSGSWYVTEYGN
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 TKSAVTASSEVTSSNEATISK

>purB 1228824:1230155 forward MW:50294

MIDRYTRKEMGRIWTLNRYQTWLRVELAVCLAWNKLGVISDDAFKTIQERAVIDVNRIL
 EIESITHHDVIAFLTALEEQIGPEARFIHLGCTSSDIVDTATSLLLIEAGELILKGFDKL
 LTSIESLALKHQGLLCMGRTHGVHAEPTTFALKFANFFAEIQRDKERFVQAFNGIHVGKF
 SGAVGTYTFLTPEVETIACDILGLKPDISTQVIQRDRHAEYFTALAITAGSIERLCVEL
 RHLQRTEVREVEEGFQKGQKSSAMPHKKNPISAENMTGLSRLIRGNVLAALLENQALWHE
 RDISHSSVERVIMPDTTILMDYIFHRLSGILDELIVLPENIECNMQASFGLFYQRILNA
 LIESGMGRQEAYVSVQRNAMQSWETKQPFQEVIMDDTNI VSCLGQEMLEKLFDTSFYLR
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>pyrE 1230186:1230749 forward MW:20526

MDILKKRLAKIFFERSYKEGNFTLSSGRKSDYFDCRQTALHPEGAWLIGNLLNALLVDV
 DISAVGGMTLGADPLISAITVISYELDRPLSGLIVRKEAKLHGTAQYVEGLANVHSGDRV
 AVIEDVVTGNSLLLACERIKASGLTIAILCTIFDREEGGKEFLQEAGYELRSLFTRKEL
 VDLATSL

>LAW0999 1231102:1232007 forward MW:35605

LEDAFFFTIGIHLTTFNTFISIKDIFQVNKIAIAEMHSSMIPGRRDNVSLRKPRNQEGTS
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 CGEIHVEKEAEYVSWFHQYLRMPNSSIEGIRKLYWKENEQGELKIVGMKWI PQELDLES
 SYLESITSKITAFIEDWRFWETGDVEKYAVYYAEDSIQGDRRGKDAIEHKRSTWNTRK
 PKEVFLTGLRVMVAVKDGIVQDMAQRFHDALAYSCKGIKTLLLRPTGKSWVIVREDWSEIL
 Q

>LAW1000 1232004:1232939 forward MW:34517

MNTKSSMLSLILMHDDGEARSIRISKRGLWLLVILTILAPIAGLIGLWVGWEAWESMSNW

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QQEKLAYQTQIDELRVQLERFATLEALLKRQDAALGSKVDNPQLQKERQVNTSEKKDVVK
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TTSIQPSVVTGKSAHTTGEQSSFIDYGVVKKVENVQKQIQGKRIQAQISLFNTEKVPQLS
GHVQFALITNDGKKYALSGSDTSFRITRFKSMFIDSELPVSDAIAQKSKLLIEVVSGDKV
VFRQLYPLSEK

>napC 1233552:1234028 forward MW:17832

MSKESLWKS PWFKYLLGGFILGII VIVGINWGMKVTDSRPF CASCHIMEQAAVTNKLSIH
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ISNMTVSSTEAKPYCVDCHRDMKMHMQPISKRIVADD

>nrfA 1234021:1235574 forward MW:59222

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AIGDVLDSDRPNRYAFKSGLPATCWCKTPQMLKWTKDDGNAFWSKDMNEFRERLHPEDD
TVGCVNCHNPQTMELQLYSEPLKDYLVSVGKDPDKLSRQEMRSLVCAQCHVEYYFEKTGV
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DGP HGSAGVTCADCHMPYIRGENGQKMSSHYWTSPLKDP EMRACRQCHADKSPEFLKESV
VSVQKATFDQLLIAQELSVKAHEAVRLADEYTGPRANNYDQLMIQARDMIRKGQLFDYV
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>lysC 1235666:1236898 reverse MW:44301

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LYKQLKNYDALIIAGFQGVTEGQITTLGRGSDTSAVAIAASLGSKCEIYTDVEGVYT
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TQENSIMEAVLVSSIAYDNDQARVTLCDIPHHIGTAASIFGPLAEQHILVDMI IQASSRN
NLTDITFTVSRKDLTRACNLMEELIKSIGGKSVECATNVAKVSLIGVGMRNHAGVAAKAF
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>LAW1004 1236903:1237505 reverse MW:22895

MYNNLQNTPPMSSIVTKTYTQNSPPSVIFTISNPNSMTYFGQYIATLLVNYSFMPVILLY
GEVGS GKTTFTRGLVQHFLYNEYAEVSSPSFTICNYYP TNPTVIHCDLYRCSHTIPEEIIY
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HQQVIQLKLMNTQNLSSPIV

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>truB 1237651:1238547 forward MW:33180

MEQYHG LLLVVKPQGITSAACTYYLKKMGQRKIGHAGTLDPMAQGVLLILLGHGTKIFNY
LLEGGEKVYKATVCFGQTTD TDWREGKVLTTQSWEHITSEEVREHIFSWKGINKQLIPPY
SAAKYQGQPLYALSRKGENTPHKTKKIEISCVEVLTINLPYVTFRVTCSSGTYIRSLAHS
LGMRMRCGAVLTEL TREYSYPFGLDTAIPFEDLV TNPDLLLDRIIPITAALPDWSIVVVN
KSEVSQIKNGIPLFRDRTTCLSGKKTVLLLEDGTPLALAEAMNTSNGAVWTLRLGLWT

>pnpA 1239053:1241263 forward MW:80946

MSFRKPPIRLATQVGGKEIIFETGYMATQANGSLTVQCGGTIVLVTVCSQPLES DKGFFP
LTVEYSEKMYAAGRIPGSFFRREIGRP SERETLISRLIDRPIRPMFPKGLAEDVQILANV
ISSDQENESDILAVTGASAAVMLSSLPFECAIAAGRIGRLNGQFVLNPTINEIELSDLNI
VFAASSEAVVMVEGEANVVEEIIIEALEWGHKEIQPIITLQNKIQELAGRNKIPFVPVE
ENIVFSKKVEELADKFGIVEAMQVKEKQFRKEARKAVKEKVLAILKEDPLYAEHSDILNT
VSEIIGNLEKKIVRQRI VKENLRIDGRDITVRPIAIEVGLLPRTHGSALFTRGETQSLC
ITTLSSTDNQRVDSL AGDVTKNFMLHYNFPF SVGEVKPVRVSRREIGHGALAEKALKY
ILPSQNTFPFTVRIVAETLESNGSSSMAAICGGCLSLMDAGVPI SAPVAGVAMGLIKEDD
QFIVLTDIIGDEDAFGDMDFK IAGTTKGITAVQMDIKITGLTTDVMRKAMEQAREARIHI
LSEMAKALDVPRNSLSQYAPQHAELVVNPD AIRMIIGPGGKNIKQITTVTGA AIDINDSG
KISIFAPTSEAMEQAKQMILYYDQRPELGKNYKGVKVRKILEIGAILEIMP NVEAFVHISQ

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LAVEHIAQVTDVVQLGEDMIIKVIIEITGDRVRASRKAVLLEEEGITWTPEESSRFSKGNR
NGDRSRHNNRERTRRT

>gatB 1241379:1242812 reverse MW:53709

MSHFEAVIGLEVHVQLGTSKSLFCSCPTTFGTPPNTNICEICAGMPGALPSLNKLAVEYA
VKAGLALHCTINTHSFFSRKNYFYPDLPNGYQISQGTHALCTSGYLDLTIKNNNKRIGIH
QIHLENDAGKSIHSPHENKSFIDLNRAGVPLIEIVSKPDINTPSEAVAYLKSLSHAIVTYL
GISDGNMEEGNFRCDANISLRPYNSKHLGTRTEIKNLNSFRNVQRALEFEINRQQDILED
GKTI IQETRLYNSDKDITTPMRDKETAHDYRYFPDPLVPIYVTIQEIEKWKGEIPELSD
SRQKRFVIEWGLAHQDAEILTSSRELADFFEKAVKLYPKPKKIANLIKILLHMLNEHNI
TIQQCTMKPEAIAELAAIIDENLISIKIAHDFEDLFSKQLMPKDYVIKHGLTQISDTKT
IDTIVVEVLAENPTEVAAYKNGKTKLLSFFIGQVMKKMQGANPALVNQALHNILSK

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>LAW1008 1242831:1243469 reverse MW:25173

MNIHDCITMLIECFELQTQKTMWHEELPEIEPPKLTVYTPSIFKELVVIQHLENFKIWH
HEEDIARRRDIEPILIAECKRSIDQLNQQRNDFMEQIDIAFLNLIQPLLPTNTNNVHTNT
ESLGMADRSSILSLKIWHMNEQVERSDVTEHIECNCKQLHVLKEQHIDLNNAILNLVN
EFHQGIRKPKLYFYKMYNNPSLNPQLYSLTS

>yfjB 1244106:1244963 reverse MW:31242

MKTLKHALIVYKVGNPQAEKTAHDIQHWFYKNVTSNLFSSDIPESQLKQSLVHTQVAII
LGGDGTFLSISRNLIEKQIPVLGINFGQVGFLEIHPENWPMLEQLYSHKLVLQKKIVL
SWSIRHNQVIKNGFAINDVVVGRGALARVLAVDVSINKHHIGVIRSDGILVSTPLGTSG
YTI SAHGPLVHPDVQALTLTSVSTLFRSTPPLVPLSTTITLTPSPHAI EPFLTVDGQEG
FVLKPNDSVGIQGIKSGLLIYTTANYSYLQHLQKKGLLSSTDFNL

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>gmhA 1245221:1245856 forward MW:22543

MNKAFQLITSHLETGIKLRSEFFTAHASTIVEMARQIASSVACGGKII IAGNGGSAADAQ
HWAGEFVNRFLDRPPLPAIALTTDSSILTAIGNDFGFHLIFAKQLQAIGQQGDVFLGIS
TSGNSVNLIEALHVARKQRITTVGLTGKGGGMAPLCDFLIDVPHQSTPLVQEVHATIGH
MLCMLIDYFLFENVSAIQPLLNDPAPHENNE

>hemC 1246200:1247129 forward MW:33993

MKKITIA TRGSKLAFWQANYIKDQLQKMYSYLEVDLMVIKTKGDHILDVPLAKVGGKGLF
VKEIEEALLSGEADCAVHSMKDVPMELPFELCLAAITEREDPTDMFLSIKYSGVKSLPEN
ALVGTSSLRQAQLLALRPDLQIPLRGNIDTRLRKLMAEEFDAIIMATAGIKRLGLIAP
YMSSLPCSVMLPAVGGALGIEVQKERQDVLELFSFLNHKETYHCIQAERDFLAGLDGGC
QVPIAGYATICKQETICLEGLVAKSDGSVMIRNRLERSVSDAYDIGMTLSKILLAEGADD
ILASMHTIL

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>lon 1247217:1249670 forward MW:91770

VAKVLPVSRCLCARLSPDRIPWEVSSEIPKNVSHRSLQPRVHKALERALAITISGYNI
YLSGEALLGRSYLLKEFLVPRAKMQTPDLLFVHNFNEVDKPCLLTVPSGQGGKIQTGL
TKVLSEIRKQVPLWLENEYI KKHNTIKDKFQSSRNKLLKEMRGVANKQEFNVDLDEHGG
LTLYPLVEGKRLSEDEFNRLDVNLRQSLKQKGDNLLSSMSSMRKLRNAEKTFSAEKNL
DQEVITNLLDKLFVPPFVEEVLRHCPDNKSLKNYFNELQKDI FEHPESFITRDNASIALHQ
QHDVSQLCPTETEYRYYINIFVDNSNTKGAPIVFEDHPTATHLLGCI ERAEMGALITD
FTLIKSGSLHKANGGFLILHLDDILQHPLAWEGLLLALRSGVSTLEDFGETTDGDIRTKG
IEPESIPLDVKVILVGNEDFYERLLEHDDRFSKLFKIKAQLT TTTERTAKGIRSWLFQLS
KIIDDTMLLPFDAESLAGLV DYSSRECEDQKKLSLRFPLIRDVMI EASAIANMAGNELVQ
KIHLDEAIASRLNRVNLVEELFIEEYDRDLIKVMTTGWSVGRVNGLSVSWYGDFFGLPH
QISCTVGVGHGGIIDLERESELGGPIHTKAMLILKSYLVDQFAKKKPLVLTGSLCFEQNY
AGVEGDSASGAELALLSAVSGVPLKLSLAFTGAVNQSGQIMAVGGVNRKIEGFFEICSR
RGLTGEQGVIPYDNIHMLNPKVIEAVKDKKFAIYPVKHITAELELLTDMPSGRPLKK
GGFSPNSLYDKVDSRLQELGHLAEHAFSKTYRKKTRK

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>nar 1249691:1250893 reverse MW:44088

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MFKHDYTLPMFPREALPWISAVSLLFLCSYMRSTLAPLLVYVENSQIGHIQSTSLLLM
 QSIGYSISLFCGFLLSKITPAHMVAFSVFFSSICLCLMPYVETLSEARLLFALLGFGCG
 FYPFAGIAVLSTLVYPSDWGKAISIEVAANLNFIPLLAQLFLQVTNWQGVCAYLWGP
 MLVLSILFIFFGRRGQEHVPLPSYSGYKELLFTPASWAVVILLIAQAGEYSVFSILQLY
 LTDEVGFTPGSSNILISSRLITPFIIVILGGWASDRFNVYFIKFCILHTLALTAMAFD
 IPSLSIIGIIFQTISISCLFPSIFKAFAIRFPLSQALLMSLSMTSSGLISNGGITMFLG
 YCGEHLTFGIGFICLALYSIGCIWITNLLKVKVKQVIVPN

>LAW1014 1251229:1251711 forward MW:18364

MHINIVRVRHRRRLQLMYNTQNLRLRTFFSPQILPVKSKFSQVSAIQKTVILTWLEEHKA
 QNVLAFDVVNKNLCMDIVVILTATSSRHAKGLADGILEECTKQNFYLRMEGYQYQGWIL
 VDLNDIVINIFQAGIRELYALETLWKGCPLLNGQLATNTL

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>gmpA 1251726:1253258 forward MW:55847

MNVVPILLILLDGYGLAPDSTGNAAKLAFTPNIDRMLAMSGGTQIHASGRAVGLPDGYMG
 NSEVGHLNIGAGRUVYQMQTRIDVAIENKELDSNPILLDLFTKVKSSNGRLHLLGLLSNG
 GVHSHIRHLEALLSIAKEHNIQVILHPFMDGRDTPKDGKLFMKEIVSFLTSTSSGVIGS
 FCGRFYAMDRDKRWERIKLAWDAIVHGVGLHVEDSVKALEQAYASGETDEFIKPRVMGNS
 SVNCVQDNDAVLFFNFRADRARELVSAFILPDFNGFDRGRVPHLSGIATMTMYDKEFNIP
 VLFNHENITKTLGEVVSALGLLQLRIAETEKYAHVTYFFSGGREEVFTGEERILVQSPRD
 VATYDLKPEMSVMEVTDRLLTAWNSKKFSLIVCNLANPDMVGHTGNIKASISALEAVDNC
 VGRIEKAVAEHQHGFILTADHGNVEEMLDKSGQPQTAHSCNPVPLIAIYDGKPLNLKESG
 KLGDIAPTILSIWDVSI PNEMTGNNLLSSE

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>LAW1016 1253603:1253965 reverse MW:13616

MSKSLALYDEALHIGQLELDALKAEEVEKADEYCNHRAQLLENAWNIRDAENEQIRSKLL
 AIKTLQEELIQEGTKLKTNIQQQLSASKKQKVLKGYKLSVGQATSMLDNELHKLSIIAQ

>LAW1017 1253967:1254572 reverse MW:23101

MIIDGNKTDMMQIKNFSNLEEILLYAASDSRLENRIVTDVLLNDELFSELYPHQAEDIPT
 NEINSVEIRSIPFGEMAYNITEELLKVSNIATGSKEVAQHFRGEDDEGLELFQDLLDV
 IRDFMTMVSVLRTDFIVTDDNVFADCSEQISSLLSEMTDVLEQEDWIMLADLLEYELIPA
 CERWNIIEELRKAIQNNLGA

>rfaQ 1254631:1256223 reverse MW:60024

MHAIVINLSRFGDLIQTQPVITALHQDGYQVGLICLSSFVDATSCLSHITYVNPISGGKL
 LSLIEQNWIIYALANFQEWIEQIYNTFPPNRI LNLTPHIPARLLAYGLSQSIIPVEGFSVD
 KYGFGVSDSMWAKLFEASTKKRRCSPYNLVDFRMI SHVEHIPACYKLLPQKTNLLTST
 THFKNHFETNKQYLGFLGASSTLRQWPVSHFAQLGKKLYNLGLIIPVLFGESEQHILA
 QEYIKTGAPCIDLVGKTKIAELAAILLHISLLITNDTGMHLAAGMIPSLAIFLATAQP
 YDTGPYLEDCCCLEPSLNCHPCDFDTTCPIDTICRTTISADAIWPLLTYRLTNKKWPEKA
 PIETSTVARVWITTRDHYGFFNLQSLSGHDKEDRSSWLYIQRYYYRQLIDLLDNPNTTKS
 YRPLSTKVISQLSQNVRQQASNTLEQISSLLKLEQQGLLLSEKHISQFGKKFLSTTYNI
 TELLEQNELFTALGIFWKMSIHEHADNLSHVLTIANSFQKIITKWNNSLK

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>lpxA 1256500:1257321 reverse MW:29602

MSVTIHPTAIIASSAQIGIDVTIGPYVIEDDVNVGDRTYIDSHAVIKQYTRIGTDNHIH
 SHAMVGGQPQDLKFSGEITWLEIGNYKIREFATLHRGTAGGGGITKIGNNNLFMAYTHV
 AHDCILGSNIVMSNCSTLAGHVHIDNFAILGGLSAVHQFCKIGEHAFIGGMTGISQDIPP
 WMLITGRKGIHGPNLVGLRRANVPSTTIAAVKDTFKLIWKSTIPRPESLKTLEKKYPDV
 PEVQSIIRFIRNSERGCNTASGSEPSDELDDL

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>fabZ 1257321:1257782 reverse MW:17350

MSHPLPPNIQEILQLLPHRYPFLLVDRVIEFNAGKYIKAYKNVSI NEPFFQGHFPGFPVM
 PGVLI LEAMAQSGGITVLQSF PINELQGVFLFAGIENVKFRQQVIPGDQILECEIIRH
 KLQLWKMSCQAFVNNKLVAEAILTAAMTNKENF

>lpxD 1257792:1258817 reverse MW:36687

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MPQYKLSEIAKLLNLTQGGDIEVVGVNTLQDASPNEISFLANAKYIHQLVLSQAGAIIL
SKEYASRVPRALISTEPYRDFGRVLSLFSIPQGCDFGISHQAYIHPTAQVSKTATIYPFV
FIGSHTVIEENTTLFPGVYIGEHCYHIGKNCIYPTNTVLMANTSIGNDCI IHAGVVLGSDG
FGFALTEEKQKIPQVGNV I IKDKVEIGANTTVDRGTLGTTTINENTKIDNLVQIGHGVTV
GKNTVIVSQVGISGSTSIGNDCILAGQAGISGHLTIGNNVTIGPQSGIGKNIPDNQILGG
SPAVDQRQTLKTSVLMPRFPELFR I KKKLEKILEKKKEHNI

>LAW1022 1258821:1259381 reverse MW:20779

MKVKTLSMAILACLLVANSASFADFP IGVFNSQSIAMESEAAKAAQKKLQSEFGNEKTQL
EKQAKDLQTKADDLQAKSAAMSNQAREDKQREFLELRRNFEEKSRDFAIRVEQAENTLRQ
YLAEQIYLAETIAKKKGLKLVLDSASGSVMYLEKNLDTKEILEA INAAWKKGGSKLPE
MANRKK

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>amiA 1259526:1261328 reverse MW:67519

MSNIICRQAI A ILSNYIYWKLLWIPILAYFIVITNNNI IQAAAPTSPGARYEEAKKALK
NLQSDSINQKLRDPWLKISDLFFKIYTSFPDWINRPFALYSAVALDELAKHSFTVSDAE
KAIKCYQSVITKYPKRTITESALLNIAKVYAERLHKPNDAKKYLQKLLTDYPKSDKINEA
QIYLSLENLKEEPQKTSTTSTSKAKEAFHSTSKQKNSHLQKKTSEKTLAQLENIRWEVK
KSYLKL I I TLTEPITWDVISHPANPKTGNPI RLL I ELHNTIPNPCIKPGICIKQNKLEKL
RVDLSTPTVTKLLLDLDFSDLKTFKVETTHNPFQLI IYTSPTPDGIANGMKIGQTKHSHPKS
TSPKPIVAHDLAQQLGLTVKTI LIDAGHGGKDPGATHNGI I ESELTELESKKLGQILA
GFTVHYTRQNTWVALEARSRKATTVKADLMISIHINANKNTQIHGLETTYLGLARSKES
TYIARIENSTSEKTLNDLDILLKDVMLTSKKHESRRLAESVHQNILTHLIQKNYNTHNGG
IKSAPFHVLI GPKIPSI LVEVGYCSNKAQAQLASSNYQKALIEGLAKGIFCYLKKLQSP

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>LAW1024 1261471:1264125 reverse MW:99723

LCN ILYCNI IANAASKDDPSI VVLPFQINGSSNDEELQTELPMLLATALKNKGFRVIPNK
SALNLLYKQNISQLNISTAKKVAQQLHADYVVYGSFNQTGENFSDSRLIDSTGVASARP
LYIEKPKFNELNIAVTELAERISNGLIKKNTIADVRIHGLKVLDPDVI LTRLTINKGDHT
DHAKINAEIKKIWELGYFSDVSASIEESGEGRLLVFTVQEKPKITD VVVQGSKAVSIDNI
LAAMSSKKGSVISDRLLSQDIQKITDLYRKEGYLAEVNIEKEKENTSSATLLLTVNEG
KKLYIKDVRIEGLETIKAKTLKKEALTERNFLSWFTGTGVLREEYLERDSIAISAYAMN
HGYVDIQVASPEVTFNEKGI VITFRVKEGKRYKIGKIDFKGDLIETNEQLLKVTKIDDHK
NYEQYFSLSVMQDDVKALTDYFSDYGYAFAEVDLETTKNEEDATIDVTFLIDKKQKVFLR
RIIVEGNTRTRDNVILRELRLADGDLFNGQHLRRSNECLNRLGYFNQVDTDTLPTGKDDE
VDLLVKVQEARTGAI TGGVGYSTHSGKFGVSGSISERNLWGKGYILSIEGFISKSSSLDL
SFTNPRVYD TDFGFSNNIYTLRDEWDDFRKKT YGDIRLFHPIGEYSSIFVGYRIDQYRL
YDIPSTAPRSYLDYQGNISSVVS GGFTFDSTDSRERPSKGHIAKLIVEYGGGGLGNDN
FFKPIAELQGFYSISRSKNHIIHWRTRAGAAYKNSKKPVPVDFRFFIGGIDSI RGYDTE
LAPKDPFRGDEIGGDRMAFLNLEYI WTFQPELGLALVPFYDIGFQTDVQTSNPFSLKQ
SYGLELRWRSPMGDLRFAYGIPLNKNVSGKKTGRFEFSMGQFF

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>IoID 1264118:1264825 reverse MW:25619

MSQYLLENIVKQYDSPSEPICVLHKINLSIAHGESLAI IGASGSGKSTLLHILGALDIPS
SGTVLFNKNL SHMGPNEKACFRNKLLGFI QFHNLLPEFSAEENVAMKAL IAGIPKKA
LLLAREALGSGLENKYHHRITMLSGGERQRVAIARAILLEPQVLLADEPTGNLDQKTGE
HIANLLISLNKTFNITLIVVTHNNDIAHSMGRCLELKSGLDHDKTPEYISSTVTV

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>IoIC 1264828:1266111 reverse MW:46958

MKFELFIALHYLFARRKQAFIYLI SLMSILGVAIGVASLVVVLGVYNGFTIDIRDKILGA
NAHIIITGNFDSPIEEPTSFTQLSTTSMLSQNALIILNKLQQTSAIIGATPFIYAECMIS
SPHGVKGLILRGIDPSSAQNVISMLSHLTGKNLEDLIPKVLGTPDGI IIGNELAQRNLVT
IGSRVNLLSPTGQKTSSGFQPIRPLIVTGIFHTGMFEYDTSLAFTSLNAARELLGLPHN
YISGIEVSIHDVYQANYITNQLQQELGHNFVRSWMDMNANLFAALKLEKIGMFIILAMV
VLIGSFSIVTTLIMLVMEKTRDIAILTSMGATSQMIRRIFILQGTIIGIVGTLLGYLLGI

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TLALLLQKYQFIKLP PGVYTI D HLPVLLN WLDIFII GTSAMLLCFFATLYPAHQ AARLQP
IEGLRYE

>lysU 1266111:1267484 reverse MW:52841

MLRAEYEAYSASELESLDEIFACAGRIISLRSFGKVIFFHIMDRSGRIQCYASRENMGEE
AFSTFKKFDIGDIVGVNGKLFRTKMGELTLCNSTITLLAKSFRSLPEKHNGLTNIELRYR
QRYIDLIVNPKTRDIFRKRSKIHEIRAFLEENGFI EVETPILQPIPGGAMARPFTTHNN
AMDMTLYMRIAPELYLKRLLVGGFEKLFELNRSFRNEGISI QHNPEFTMCEFYWAYATYL
DLMELTEEMFAYLTKKICGTM TISYQGNTIDFTPGTWQKYTFHESLEKIGGHSPEFYNNF
EKVSEYIKEHGEKVLTTDKIGKLQAKLFDLDVENKLIQPTFIYHYPTDISPLSKKNKDNP
EVTDRFELFIAGKEIANAFSELNDPIDQRLRFEEQVLEKARGDEEACPMDEDYLRAL EYG
MPPAAGEGIGIDRLVMLLTDSPSIREVILFPLLRTER

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>LAW1028 1268376:1269200 forward MW:29898

MKNFFVLLYIMALSVVHVSASSLELFKDQSGVLDIAGGTAHLPVMKQAAKNIMMVNPAIK
ITVTGGGSGVGVKKLAEGLISIGNTGRPLKEFEVEQYGLVSFPFAIDGVTIIVNPSNPIT
QLTKLQKKIFSGKIRNWKVEVGGNNAPISLYIREDGSGTREVFEKVMHKTHPYKKANVF
NSTGSIKTAISQDKNAIGYIGYLDSSVKGLVVDNMIPTQENTFNGSYTISRLLYMNTK
GEPKGITKLFIDYIYSPDGRDIITKAGYIPIERE

>pstC 1269253:1270083 forward MW:30029

MSWLKVSIFYFAVSIVLTGILVLI TMLIALALPIISNTNLEKISL TWQPNEG YFGILPML
GGSFFLAIFALSLAWPLALGLNIWMLKVDRFLARVVAYFIKLMIAIPTVVYGFVAVFLL
VPLVREGAGGTGFCLFSAGVILALLILPTITLVFESGLATSLEKLRLEGIALGFSRLELF
YFFVLPKSKKIFVVAAGIIGFGRAIGDTLISLMLSGNSPQLPQNI FESIRTLTAHIAL TSA
NEMSGMAYDSLFLSGILLIINATVSILVRHIKLS

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>pstA 1270080:1270970 forward MW:32236

MNQVFLFLFSLLASFSVVIIMVVICFFIAFLIWNGLPTLNIAIFFGNVPLRALLGLEPV
WDGIWPAVLGTLELIGITLSLAIIPGIGCGIFLSEYASASQSYIRWLVDILSGIPSI VM
GLFGFLLIIFLRHTIWPEANTCLLLAGGCLALLVLPTIIVTSQEAFSAVSNELYLSATAL
GFTKEQFIWFIKLPAASRGLWGGVLLAISRSAEDTAVILLTG VVANAGLPSGLGSKFEAL
PFIIYYTATQYQTQQLSQFGAII VLLFLIVSLFCIARLIGSKIYRFSYREGKCL

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>pstB 1270961:1271734 forward MW:28966

MSIAVHVVDLTVSFHQQEVLSHITMDIPSHGIFVITGRSGSGKTTLLRSINRLNEEFDGC
VTKGYIEADLGYGLKSVFPSIQKNFTLSKLRQKIGMVFQTPNVFPTS VYRNISIPLEQLT
HYAKKDIPTYVVSALDRVGLLQEVENRLDIPAHYLSGGQQQLCFARMLALEPAI LLLDE
PTSSLDIHATQKIESLLELASEYPIIMVSHNITQICRLAHEIVILEYGTIINKLTEKAY
YKEILTSIEHNINIIN

>LAW1032 1271838:1272293 reverse MW:17029

MDAQSILKELGPIINLPDLALDENNVCRVEFDDMPVD FEALPDGSMLYIYAQVSPVPPPG
RREKLFTRLLTGNLFGGETLGSTLGYDINQESIVMHIALAVEKNSFSDFQTTLERFLDRL
KFWREECQDIVLGSNGNRD AEDVNYKDGLRV

>LAW1033 1272481:1273890 reverse MW:52690

MVNSTSHYSSDIYISNPMPIAPHNRPRENTNRNRGRRIFLALISLGMTELARLALRAYRT
RHTPNNTPQVRQAQIAQHNLQI DSHLDPNKLPMFPRVKENVIMSTSQFFEGIDVPNPK
NFIDSALQQLRNDITNYPKLSKMFKELLSAKLNDTVLKEHI INKVTSQISTSDVNLGP
IVQFLLTKFNSEIEGVL TGPPSMLKESIEELNRHIIISTKNI IQEKVIDKCIETGLKAV
LNALNATPQEV MALPRQITLTKLYTAADNIEKTANQKNGTPTEIPACVYEKILS QLSDSF
YSTIIQAGILTNAATKDSHITMILLEKSMHIVSNSNISPLIEKITQSPEDIKEKKRTAIQ
LSRLLCDQARTVFNNEWDIYPSNKQNLISLVVYLLTKLNHPQLQD TTVREQLSVLAKEID
KDGLNLAKKLSQANSNEAAVTRLMAQSNFLSKTLIMILSFIGGKGYGLE

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>LAW1034 1274250:1275641 reverse MW:52418

MPISSTIQGIFDFLGSRAQRPDQPTTVPTASYFKIGCRVALGFATLGVSEIVRYAITA

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YQATYGNSTAKVEKHRVQYFNKEVIESDL DHTKDSKFPGTAIKVLNKTTQELKESGIEIE
 DPQSTLDETL LYLKKEIKLEDRLDSEHYCKLLCDSLKLTALQRCIEAKVKEAYDKDGRQ
 VEQSILERAIKRRQKLITALGEVPPTLLKERCNELADYVYTTCLNIEKEDSIIATVIDTV
 AKGLAWAFNLNSYQTNPTLRETGVNVLKKEAEETEQAQKNNKGP I KAVPEEKYKERLSS
 SADS YFQCIKDVGMHLSKLVKDKQKCFKIITSGLKAYEALKESGTIVVICNPLITPEELR
 KQLPTLYHELELCLITALGEDDWSDL SQHQKELYLRVLCALLTRKHKILGPFLKENQLLI
 EEVKEQLEEIQQRNNEEGETSSNADDISSSLTLVNLFLKKN TI

>LAW1035 1276286:1277317 reverse MW:39149

VDCS IKNKKGKNTMEINPIPIG SINILTTQSLTESQSTEEAKIEQQKSSQSKYVLRTKGI
 PRIALAFLSFGITEVVRAVQSYQAKRIISQEPRLSTEFPSL FKNKTERYNARLLKTVFE
 DTPNTSTSDVLKNAIKKVEKELEQSSIRKNPDAQPIIKRAYQQLWLT PNKQHKLTEEELS
 TIISKEIKNILIKEQVIKELQTELDTRGVKYDQGS LAVLLQRKAKTIEGLCYYSNERLSQ
 ELTSIVIKVANLAESLQNYGKAKREIKQLYLEVKGIDINSQEAMQDTELRLKLLLAIDEKA
 EQYEARETSRNGGEMPVIPIGAYRYIFTQTAEPFFDTLETQHT

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>LAW1036 1277447:1278403 reverse MW:35202

MQVQLRNVSDSSQNLENVQATENKQKANTQDGGQPRVGKGAIPRIMAALNSAVNFVSSTLQ
 EYKTA ILTTTQSTSVQQNEIRLQNRDLISQMLDPNQPPFPNAIDNATKQTIKDLAGISH
 KEVGSITSTALNNLSMSTITKLETKLTDIMTSLTTEMKNILLKDVVVQNLKNELGTRGV
 PNDEGAMATLLMTKQYEMGALARTPNENLQKT IENLVTSMSDNAVTQRNYTQAKNEIQNT
 YIEA IMVNKDMTKQEASQLPELKELKLDQA ALELEETYTTKNGGQLPEISLQDYREIF
 QGVAAPYLNIGINATIL

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>LAW1037 1278568:1279566 reverse MW:36997

MLMPMLPVRFTGPTNQTPVDDREQR TKVLAQIDHQHQAEP RSLGQRILTATGLARVGGW
 LGTLGLSELARALHGYNTR ESAGAAPRALANQQIQREN RQLLQQLHDNVATGQFQPHQE
 AVESAMEKAKTDLQGIASDPRHLLGRSILSLQSKPSAFDEPITDKSLSHLLSKELKQEM
 ILEEANKQLRHALGKRGPWGYGADRAGLLSERSKDIRGLTNYPPDQINRELEKIVSEMVT
 RGENLHNSSEARKSALSAYVQAVMDRFQLTNAQVTGNPEYKKLKLLLD ESAGTHERQLTA
 RNGGLMPLISQSSYEEALHRTTQQFLIELGVR

>LAW1038 1279875:1280561 reverse MW:26363

MLTLPTVFIGSPIISDIDKPPFITTRQQT LTTSPNSSKYLHRICLSLITLGIYELIKVTC
 SIFNSKSKSSFFSMEKDEYSDYGYHILQPLSEEKTL LPNNIKRTMENIQNSFTATTNTAP
 LPLAKYGLEIPQTKNLTKENIIKKLIQELKLI IIEKILSDLHNELKNKNIYIDEIDKS
 YLLHTEHTKIVSLALNPDYMSKEIKQLVYKLIKYIETKYNHIINYNN

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>LAW1039 1281061:1282206 reverse MW:43353

MII EHSPYTQGPVATDRNLSSTQQNR RWPQGISRVLLAIVTLGVSEAVFAIQSYCAQR
 NQNQQPRVNQTQARQYNKKLLEDMCNPNKEFPYPNAIENAVQKVEEELG SYSEDSPEDIL
 EKALKALKPEVLQLPTCLDEEVFTTIFIQKLKELL LQKVLIEEVKIECDNRGIPVSSTSL
 LILTGEKPELDISGISENETKLVQAVSKLANT IENKHNSDKAIQNASIKLKNLIANK
 TGIRSFVSTHCNYKKLCENYKLATIVLESTIKTKHTENNVPIPAILFEKLAEEELCKEQ
 IQDFENQNHTQISSAQQQYRPKTRQERIEY LKQSEKKAREKIDAERAATLVGATSRRTDS
 IQSRYEELVKKLLSELEQQVT

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>LAW1040 1282447:1283466 reverse MW:38428

MPAFPTIFGGPIVSGIERSSRIPTQKNTTNRPCGIPRILLGIATLGISELVTAVQNFRTA
 KQLSSPDVQRNIRLYNYNVVDSMTNPYQESTFPGAMHEALALACSDLRKYGFKPDVQKH
 LSHSLKTLKMNT PQMKEKLT YELMVMYLSQEKYHCLEEIVSSLIQSKLSSINPVTGCLE
 SVDEQLIKYIIESRGKQTLYKLAALPSPNKRSEKMKLGDSVVQVTENLGNQLQNMLNSTY
 VLNRIKEKICTLLITSGQYTEEDVRQSKLYKDTANNCRITLDMDDHKIRREHRNNTPRKS
 VEDYQKLLSSEITMLQRQLQTYNSSSHNNSNSSIVSTSI

>LAW1041 1283628:1284554 reverse MW:34495

MSAVSTISNGAIVSGTDKNSKTPTQQSKNRSHGIPRILLGIVTLGISELVLAIHSHYYTRK

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AQAQPPQAMRTPLNGVRHQYKI ICSSLESKTSPFPEAIQNA ILDAQDCLKPI IITSVDEN
ILKQSLSGLQMLHEFPEPFTSQSFELELTKE IKFNLVKNLFSKTL IERLQQEGISEPPT
ECISQMCTVETSTLKQISTMPKEKISEAMNKLILKSTAI ILSNDNAKQARKKVLKLD
LITQYSISEQEAKEHSKYKELSTKLVKCCTELQDAKQAEHPGEYVVTVDYQDAFLKFN
QSFLSSLM

>LAW1042 1285000:1286004 reverse MW:37653

MRGVTSRISNSSSTQHIVETHFKETNTDSSSQFGQTKMNSSGTRRI ILAALTLGISEAVR
AISSYCTKSSEHQGAQVAEKESPRLRAREGTPLEAARRHNYGV IHSTIDPKQDSPFPEA
IQNAMVSAQEYLPKIVTPGHEDILTRSLTTLQMLHEIPEPFTSQSFELELTKEIKLTI L
KNSFSDSLIQELQQRKVPQPEFISQLRTIETPVLTNISNMPKEE IPEAMNKLILKSAAT
IHNAHNSKQAREESLIYQHVITSRYNISEQEAKKDNGYKMLETRLMECSTELQDAEKAK
HPEYVPLRQYQAEFIEVTAPFLAIFGVTTETKF

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>hprA 1286368:1287339 reverse MW:35461

MQITILSGKETNPGDNPWTPLEALGKLTVYDLTKPEQTVERAKDADILLVGRDILTTEHI
EELPKLKCIGVLGTGYNQIDIETAGKRGIPVINVTAYGVDVAQAHAFALLELCRHTAAL
DQAIRNGAWSSPDWAPWKYPQVELTYKCFG IGYGNIGQKAGYIAHGFDMSVLAYDERPV
QPPSYTPFSFADLDEVFKNADVLSLHCPLETEDNFHLVNKKRIETMKDGAII INVARGALL
DEQAVADALISGKLGGLGSDAFVDEPINLNNPLLSAPNTVFTPHIAWESVEARNIVRIL
AENLKAWMGKPKQSVNTEYLVK

>LAW1044 1287421:1288035 reverse MW:22633

MLFQCLLI ILLLLPGCGLLYRSP IPTYYVLQPSIKLTQLLTSKHDITGPIVAIDTITIPG
YLDQPQIFIREGEATVVQFAELHRWSESLAEGINRVLQQAISNVLAPINGLAVGPNSMIK
PDWILTVNIFQFDGAPNNEVILDAIWTLSSTHKISHTGRFTKLMTGPSITDMVITEGI
LLEQLGTFVGDEIRSHLPYELLKE

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>pqiB 1288038:1288997 reverse MW:35283

MSHQVSKTLIGAFVAGSILLIIAIIFFGSKLNFSTATFVMFFDKSISGLSPGSPVVM
GVPVGRVIDIKVDKISNDIGFTIPVYVELYENTHTIFIKHNLPQEEEEETEYLNLIKQG
LRASLAQQSLLTGQLMIELNFITPESQMDTTHVVFYKGTPIPTVPSKLDNLIKELTSPL
LDKISGNILEITNSLKILLNTPETNIPQLSNFLHQGLAAVAEFNQSLIDIRKASKKYG
TMVEGLNTELSLTLKEATKSFQTIINNTTERLLGNNSPTLLDIHHMLQEVSKAAKAIRILA
NMLERNPEVLIRGKGINQK

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>LAW1046 1288994:1289782 reverse MW:28953

MNTTNEPLITVKNLTIAYDDYIVQKNLTFTINKQDIFIIMGPGSGCGKSSLLRALVGLHRP
SVGNVYYNNVDFWALTEEKRLQLHNIGLLFQSGALWTSMTLAENIALPLERYTKLSIAE
IQEQVSLKLSLVGLSGFENYYPSELGGMKKRAGLARALADPKIVFFDEPSAGLDPI SA
GMLDELIVELTSNLMTVIVTHDLDTILSIGTNSIFLDTATHTILAQQDPKQLKENTHQ
PEVIRFLTRGKQPTQYTLGSPL

>tq2B 1289790:1290950 reverse MW:41738

MLQNTTHLPGKDDLPPSANITLFRQTLISFSGNWQLNQPDPATRFASQLNYPVVKELY
LKTNSLGIWSSLI AFIKTLINKAQSQQITINDHELPAGIKNLIQLAFQTPPNKEAHKKT
TQISFLEYIGDITLSLPSTIQKILTFLGEMTLSTKRLITGHSDCSSTNIWRCMQAGVEA
LPDIVSLISLLVGLILAFVGVILRMFGAEIYVSSLVAIGMTRIMGAVMTGVI LSGRTGAS
YAATIGTMNVNEEIDALMTFGRPSDFLVMPLIALTTMTPLLVVYSDFMGMLGGFIVGV
GVLGIEPLEYINFTQKGFALKNLWVGIIHGIAFGIIAITGCYQGLNSGKNASAVGLATT
SAVVYSIVGIVIAACTLIIFNIFNI

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>grpE 1291103:1291672 reverse MW:21719

MTDHTPLQPKHEITDQADQDTSAEMLVEEEDKKEIGPNYITEEEAQEIRLRALAEMENFK
KRLQKDHEQIRYAI DNLLTDMLPVLDSLDAIQYGSNDACKDILMGVSMTRKFLDRTL
KQYGVTVLGEINEPFNPHELHEAIAHEEREDIPEGHVSTLHQRGYQLYERLLRPAKVSVSS
NKNSNTNK

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>LAW1049 1292388:1293122 forward MW:27555

MMNSRI IQWVVL SVCMTQLLACGSLFRGFTGETLVSDAQPSLSVTVKMPMLTAGQITPYL
YTDYGYQFPVTFIAVYGVNENSPMAISTLSFTPNWQWDPLSFNMVDSPTVSYESFDGHN
FEGSTH IINGAKDPFTILVAPQERLASIYWLVRQYAYRAFFNKAKIILEYREPLPSNLSE
TTKLSVTNPEIQAFQQRAITAFIVSFNYKGVKPTAPYLKGINSRMVGNYLGSMSFIEPR
MIEH

>LAW1050 1293526:1294392 forward MW:32159

MQPYFVDLHHTIASDGTDPRELVIKAAKLKLAIAITDHTIAGLEEEAQAGRENQIE
VIRGCELGVTSKYGEIHLLGLWLPYDNISLKEMFKTLKDRHRAKLIISKLNKLGYNIS
YEEIANIPGEAIGRLHIAQHLTQKGYFVDTKEAFKSCLGHNGLAYIPKTTISLKEGVRV
LVDAGAMVSFAHPMLLRCPKDWLEDTIVMLKDYGLSAIEAYHSEHSQKDERYCVDLASRY
QLGITGGSDYHSGSKSNVKLGRGRGGVRMTLAMLVDLKERHFRINQTI

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>ileS 1294652:1297465 forward MW:107966

MTDYKETLNLNPTTFPMKANLVQREPEIILWWEENAVYEKMLEASGAKGIFILHDGPPYA
NGHIHLGTALNKILKDIVIKSRNMQGYRSCYVPGWDCHGLPIELKVEQELGKKKQEMPLS
LIRNRCREYAEKFLDIQREEFKRLGVFGSWDHPYQTMPIYESVITLELARFVEKGSVIR
SKKPIYWCYSCETALAEAEVEYADHTSSAIFVRFPIHDKRLHTIFPQADLTTTSIVIWTT
TPWTLPSNMAIALNADFDYALLQYKNEYIIASELVDICLKQFNWEDAKVIKVVQGDLE
GMKARHPLYDQESMIVLGDHVTLEAGTGCVHTAPGHGPEDYEVALRYNLDVYSPLDDQGR
YLDTVKFFAGLRVDQANPVVIQKLEEFHRIIQKNTIQHSYPHCWRCKSPVIFRATTQWFI
SMEKNLREQSLKAIKKNIEWIPSWGEDRIYNMIASRPDWCISRQRIWGPIVALICESC
GEVWNDPSWMKKAIEFFAIHPRGCDYWEAKLEDIVPVGLKCPHCEGEQWKRESIDLVDW
FDSGSSFAAVLEERP NLGFPADLYLEGSDQHRGWFHSSLLISIGTRGVPPYHAVLTHGYV
VDGDGRKMSKSMGNVTSPQEIISKFGVEILRLWVSSVDYREDVRISNEILQRLVDAYRRI
RNTCRYLLGNINDLTLDELVPVKEMESLDQYILDVVATAYTEIQKSYISYDFHTVFHKLH
NLCTTDLSAFYLDILKDRLYTSGVRSHKRKSAQTALFYILHMLLRSMAPILSFTAEEVYK
YIPDTLKDDNIVSVFMLPFFETSSFLDDRVSRYWETLLLIRAEVNQAIEPMRKKGEIGH
SLDTHITLYVAPELHTLLELNTDLCSLFIVSQLDIMPLSEASVDAVSKIDGLAVAVNR
AQGNKCQRCWMYKELGSNHQYPTLCPRCTEVVENMKI

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>isp 1297490:1297984 forward MW:19083

MRYCIIISLVALIIFLADQLTKFWITHIIPLYSSINVIPDFDLVNI RNREGAAGFLNRSD
IEWQFWLFLGATFWAIVIIFFLARSASNERFLFWGLGCILGGALGNLFDRLRIRAVIDF
LDFYIGDWHHPAFNVADIAICCGGFLVLSMWHNEKIKRNTIKE

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>LAW1053 1298127:1299044 forward MW:33927

LLEKERYHTTILCLGWGTMREKVAMVLILGSLLCISGCFGQNTDTRLHQLDQQQEEIRQ
LKAQLSGVQPAQADTWAQVQSLRQELASITGQIDDFNHATGAVGGIAGLASKVEKNEAAI
RKIEKQFDLKLDDQPAPSSISNTASPPVTPPMNSSTGLNNEGAQTNSQPKQSTPNK
IDTATVLYDTGVKLFNERKYKEALQSFTDFTNTYGTHKLI SNAWFWRGEANYQLGSYPAA
ALDYEQVISKYPKSGKIVSCYFKQALCFYKTGKKDAAKFRLEEVIKKFPTSPEAKRAKQI
LKSDF

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>cheZ 1299149:1299931 forward MW:29109

MPDPKSI LQDDTIQKVVTDVTDKILKELYELASELAPKISSTLIQPFLESKFYQRISND
MQDGLKRIYKEISTISDSPVNTVSVDKVKTESLFHEASEQLSEVLKQTEKAAIAIMEVVE
QDIVLQEEATLLTKLNSSHINIDPDFIRLKEIHLFGHEHLSSVMLSLSFQDLTGQRIKR
AVSALKEIEKTVVELYLSAGLLMQARDKNPNKSIDIEADTRQQVLALKDIQIGSELKG
PTSGVAQKDIDELMAKLGMD

>lpxB 1300313:1301428 forward MW:42061

MATVWINAGEVSGDLQASVLLNAMKEYQPDIKAYGMGGEYLKAAGQKNLFSIDELSVLGI
AEIFTTIPRAIQILRKIKYELKILRPDVVILVDAPEFNFRIAKIAHELGLLVCFIPPKV
WAWRTSRIFHLKKYVDCIISILPFEPKFYRQFGIEIEYVGNPLTDLVNWPRIEHIQPV

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RIGIMPGSRKKEVERLLPEFSYAAEELYTKYPQLSFYCIKAPNISTSYLKSLWFSSIPLC
IETSVDRYSAMRSCEYIIAASGTATLETALVGVPTVVTYKVSSLSALVARLALKVKWVSL
PNLILGKEVFPPELLQENAKGSKI SF ILEHWMKQQNITKELQKDLHEIRKQCGEIGSVSQA
ARIIVQKFLSH

>LAW1056 1301682:1302152 forward MW:18153

MSRIKRLHLELEIYWKREIYSPEIRKIFVWQTNII CVSFIIGIGTFFYSKMMIWFSSIVA
LISLWNFYMLVKQVMKVVNKPLIASLHISFLINTTLRILITCLLGYIALVNLRAPALAVL
LGFCSIICILGINIKALFSKKQLNVFHIDCEENS

>atpA 1302188:1302889 forward MW:26547

MAEQLPEPVLLSELLHMDKVTIAGQLVEFRHVFTWIAMLILFIVGLIVRRKLTLPVGRLL
QNFFEVLISSFENFTVINIGEEGRKFFPVLI GIFLLIAVENLLGLIPLCDAPTANINTNI
GMAIFVFLYYNYEGIKKWGFHYIHHFMGPSIVLAPFMIILECISHLARPLSLTLRFGNI
KGEEIVLLLFFLMAPLVGTIPVYFLFLLAKLLQAFIFYILTLIYLKGALESAH

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>atpC 1302949:1303296 forward MW:11521

MFKGVIGILVTFIALGITSVACAADPVI VGHVVKLDPSSLGLAIFGCAIGMALAALGCGI
GGGLGLKGACEGIARNPEASGKIQVALILGLAFIESLAIYALVINLIILFANPFV

>LAW1059 1303342:1303977 forward MW:23612

MFPLKSERIPLATIRRLALYVQVLEDIERNNTEVISSKPLAEACGVNASQLRKDLAYFGE
FGVRGVGYDVTSLIKAIKVSLGVNREWKVALIGIGNLGRALLNYEEFKHRGFHIGAYDC
DPFKIGEHVYGLEVTCTTKLKENVRKQKIELGIITTPPERAQAADSLVDAGVRGILNFV
SARIQVPEHVIVEYVNFHYLYSLAFKTSIA

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>LAW1060 1304124:1304564 forward MW:16933

MAAFRFSLQQVLDYREQLSEQARVELAKVTAAVISEERKVKELQEAHTQETNLRALDLN
NIGERWLLNFIKGLQEDLRISLAQLTLQNALKEAQGKVAQLAKEHKVLEKLSKQAER
HAKSERQKEQQNYDETASIRFNSKTF

>LAW1061 1304581:1305333 forward MW:27724

LILGTFKLLFLGSMFIFSEPQVVIIVANKEEIKENKSPDTSIKNFVTKKVESPLAYAQPT
TAVNVTTPAPKVRQNTSPFSQDIQPFGDTANNLGEAYPVTIPKADPNNISTRPDEALVTP
APAPKLNPFVVPKDSVQRKQEELNRREQELLSLQQMQSRLDELHALEGKIQKMLDEANNV
KDQKLTHLIDVYSNMKPKQAADVLATLDPKIAVKILSGMRGRQAGEVLTYMAPEPAAKLS
EMLSRTQLPN

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>truA 1305357:1306130 forward MW:29292

MPRLKFTLAYVGTAYHGWQTQRKSLPELPTIQSTLEKVIASII GKPVRVCGAGRTDAGV
HAEGQVAHV DIPESKCLKLDWQLVLNASLPKNIRVVHSLYVEDTFHAQHDAVQKLYAYRLW
LNHRYTPPVLYPFVWSCGRLDLEAMDKASTFLLGTHNFVSLQNRGKLLSTVRTISALYR
EPSQFFSLNESHEVTWFFKADGFLKQMVNRIMGLLVLVGRRKIQPEKIPYILEAKDRRHS
APTAPAHGLTLKKVFYS

>LAW1063 1306382:1306804 forward MW:16071

MPQVAARISEQQEQWLKDYFRTKSAGAEVLPWVVDTFRAVTNIKNTFSNVELKAIIEA
HKDFKLLPAHTRLSYLMLRVNDACDLSSVHNRYGVSRSLEAKLRLLDDTQAAALMVWAS
AFWVSRNCSADNMDEYITSY

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>fdhF 1307072:1307548 forward MW:17681

MGKYRFIMHEENCINCKACENVCRTTHDTAPGLWLGKLLYTTPEGKMEAQVKFRACPQC
HAKCVSACPTGALIMRDLGIVYVDVDKCTGCGLCLIACPHDLLWKDPRTGKIVKCDMCY
ERMDQGLEPSCIASCPTNALELIERKPGEPLHKIHHKK

>rfdD 1307621:1308496 reverse MW:32453

VNNKVALVLGGNTGLLGSVLRCLQQKNWDVHTLGREDDIILQPDFLSNYIDKCSNPAIF
NTIAWTQVDLAETHSNDALLINRTLPSLLGTILKGTSTHLIQFSTDFVFDGTKNVPYVEE
DVPYPLSVYGSKLAGEQAILQLKLENYSIIRTSWLFPGPRKNFIQTILELAKTKNFLHV
VHDQIGSPTYTPDLAEASISLVENKGGKIFHIANSQQASWCEFAAEAIRQANLSCTIQGI

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STNEWGKNI AKRPAYSVLNCERYRQITGISIRPWPQALREYIFTYFLPMET

>rfbB 1308493:1309512 reverse MW:38195

MQLLITGGCGFIGT NF IQLALKELKD VYIVNLDNLT YAGNPYNLKEIETT KPDQYLF IHG
DIGNATLVQ SLLQSYSFDAI INF AAE SHVDRSITNALPFITTNILGTQILLDAARAMNVP
KFIQISTDEVY GSLG I NGKFSEK TPLSPNSPY SASKASADMLVHAAYKTYGINTIITRCS
NNYGPYQFPEKLIPLMIHRALMDES LPIYGDGLQVRDWIHVEDHCRGILLVLEKGRPGNI
YNFGGSAEQTNLAVVKEILHLLNKPN SLIHHVKDRPGH DRRYAMDFSKAAKELGYMPQIT
FNKGLAATVNWYLSHRDWWQNILSGDYKEFMNRWYKDRL

>LAW1067 1309801:1310592 forward MW:29837

MKYGILLTTFGSFNLYCKVSFSNFESQVQECFPTIPIRWAFTSNALKKQNI FRDEKIGLL
DEVLSKMAFEQFTHIAVQPLQVIAGMEYSGIVSKIKILGERLGFSSILVGEPLITSSIHS
IERVKEAIFSVIPYKRKQTEPVI FMGHGKSMFKDKYRTLSIAVRNNDPLVFIGTMDGSY
RLEHILSALENALQTVWLM PFFT IIGKHVLED MVGKSPNSWQSRLEAAGFSCIPILKGLL
DNKAFSDIWI EHLKIVITNLYNT

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>LAW1068 1310656:1311624 forward MW:36534

MYHFNKQLVLYYIVALC LYL LVNISIANARIIVVIYGGDTCIT AQQACSIAIAEALLIES
EEYLSHKFSEPRREAIKKYFSMVSPGLV LNTTELEPTSLEDGR IKG VFDVPIRKTALYRL
LRELGLSYTTSFIQPYVLSM FNVPDEIALLDKLF LLEQVTGVVQSEKVDNTSHKIELQLS
FEDGIWVAKLLGAAQPIQASGYSIDNIWREIWGAFFSQRQKETS SYLLQSYLLRVSGWKHA
VEVEALGKTL SHWESITKNVLLHEVSIKGVIAAQWTLTILNMDGF EKQIKQYSLARKLH
YEIKPFEAIIKD NSIDIQCIGN

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>rnpA 1312240:1312479 forward MW:9103

LGLAVSKKIGNAVVRNRIKRL LRECFRLHQEYIPKSVDIVVVPKYHLRLVPI TLSMVIQD
IIFISNKMEKFLSTNGIEV

>yidC 1312833:1314431 forward MW:60029

MEDKRIVLAIILSLV VFLGWHSFAEYMGWISP KVQHVANERHSSVDQTATSNIALDSVQS
VFSPPTGKD VYIETPLYIAKIHSSG GILSSFILK KYKVNLDNTSPLVNLVSPEASQAMPL
GITLNGQPSWSNGNWSFLGGDLYLKPGETKELTFVGI VNGVKIRIFTFNADSYL IHEKL
QLASEKQNSCPTKVGLLVAATPFGTGQYDPT RMAWSIKDSFKEETSIDTLKEG IQESGE
FNWGGVMSNYFMNVVALSDPLYLT IKGRIQNDVVRVALERSNVLIPAEGTTSITVNWVFG
PKDRELLSRAPDKLENAIDFGMFSIIAKPLLTAL TFFYEYTGNGVVAIIVLTLCIKIVFW
PLSQKSYNSMEQMKLQPMQKLR EKYANDRDTLNREIMQLYKTYKVN PAGGCLPILLQI
PVFIGLYQALLNSIELRHATFIYYLPFTHLVWLADLSAADPFYITPLLMGASMFLQKLT
PASGDPTQQKIMMVPIIFTVMFLNFPAGLV IYWLFNLLSIGQQWMLRKA

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>jag 1314455:1315468 forward MW:38710

MEEFREFEERTLDEAIRAACKFFDATERLEIELIQDAKNGIFGLVGARKALIRARLAQM
QSSVDTLKQKKISSLSL SKTKKQNRKINH HQIDQVGNVGEISTQQLKSSYNQSLNNTVV
REEFPQVDNKIEREKDNEFSQLLDLSIENKGR LGPEVATLDVNEELFNDNYDGTTKNFSE
LDQDKLITEATNVVTKLIIPILGNVPIEVTILNNRLDVHVDCGEYSGLMIGRGGQTLASL
QYLSSRILSRIMSSIRIQFNIGDYREQQHERLRHLALS LAERVNRNSGRSCSTRPMSSYH
RRIIHLTLQNYPD IQRSSGDGILKR I I I QRRRQERR

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>thdF 1315534:1316913 forward MW:50924

MCDTIAA IATPSGTGGIGIIRISGPKSKERL TELFHSVSPKFTDFKPWMLHRGYLVAPT N
EFLDDILAVYMPAPYFTFTGEDVVELHCHGGH FLLLTILETVLCKNIRLAKPGEFSQRAFL
NGRMDLTQAEAVAELIAASSRNEVLLASNRLKGLLGQKIDIRRRIEELRVWICLAVDFP
EEESGIFPLEKFINGLLEIHEIIQKLIHAAERSRCWKEGVTVALAGAVNAGKSSLLNALL
GKERAI VTEHPGTTRDFLEECIIVNSLSIRLIDTAGLRVTS DPIEEQG IQGREKIDEAD
VILFIDGTGVGTEESKLLINNFV GVERTILVWNKVDLKVPPSNWTELYTSSQVSGICVSA
KTGSGIEELLVLLYNFVLSQHNAQEPTFDTIVPNMRQVEV FSLVLEEIRSLYEDIRSGIP
YDLCVAMLENISSMLNSIIGFDTPEEVLNRI FASFICIGK

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>rnCS 1316917:1317513 forward MW:22043

MNEESVYNGKSVSKEDINILPIIITYKGNIKVVQTENELRDALDLLKDETVLGFDEARPS
FKKGKSYPTALVQLASSQHVLIRLSKVPLGELLVNILSCAKIIKAGVAIHEDIRLLQKL
HPFEAEGIIDIAEMARRLQLKAQGLRTLAA NILGCRVSKAVQCSNWEKELSPQQVLYAA
TDAWVGRELYFKLLEMGA

>LAW1074 1317595:1320534 forward MW:113188

MQGPPFLIIPWERDFLECLSSIIIKETDGHLDKAAVIFMHDRPRRYLTAYFQQHPELSKP
CILPYILTIQELLSCLYLEQHTSLCYEAGLLDQVDLLFSCVEQLSALNVSLFNLLSKGGE
VGFFPWGLQLASVFEECFTQGLKPRDLLYTEGEVAPFGTALLASLGQIFLLYKQKLEQEG
MTTPALKAYVLAEQIRQSTFDLPSFLKQKSI FLAGFSTLTGTENIIFRYLWEKGAKICLH
VDSSLADTGKGHWACSSQAKWIQSWNASTELVFQTKPVKKTWHFFAGYDLHSQLEKLQDD
FSLHEDIQTSTAVLTNSKSLPILHHLPHKNCNISLGYPLNKSLLFRLLNIFKIRELQ
QEDGTIYWKSLLHLIRHPYLRFLKIDGFELYSLLHKLEQWIVNGQKYIDLNMFFREVEYE
QPHKKYDFSESECLLQKLIKVTVENCITIDTLAKFADFLSILCDFLLQFGYESWQRFPL
DAECLFRLVHKVIPALKDNMAHTVLSWDLQSMVVALIHDERVPFEADPITGLQVLGML
ETRLHFSKVFLIDVTDDQLPGNPIRSSLLPDSLRIKILGPLNAHDRDVLTAFTFYRLLAG
AKEVYLYWQEGIEVSNSEFEGKKQSRFVEEILWEEEQSIGSQITPGDYILNIAKPEVSPP
LRRRRHIKTPAIQRQLNSILSHPVSATQLDTYLMCPLRFYFERVAMVRPVEVVNEDDDP
ASVGQLLHKVLKVFMDYVGKECIKEDLSNERLRMLFKEELLSSGLINSLPPESSMMLSL
SGPEKLVRFLSRQPDKTKIILEKYFQATLQINGNTRVLEGLDRVDKRGNEGVIIFDYK
TGRINKNSDKLWQDESISWNLESFDLTSCIEHPEKADELLFTLSEKISTIQLLYYIYLYR
DATGEEIQDAAFISLGEDGAEYWLMRDLAANIKEDIILNKIPKLLKFLLYHMEYRLEIRP
HEGRHCNWCWNNLCKVNG

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>ncd2 1320591:1321721 forward MW:40890

MSFPSLIGELCARVPIIQGGMGVGISLSKLA SAVAKEGGIGVVASAMIGMREPDVAKNP
IEANLRLRREIQKAKEATKGIIGVNI MVALTTFFVEMVRTSIEEKADVIFSGAGLPLELP
KILLELCEQKKEEFKTKLVP IIASGRAATLIAKRWLSRYGYFPDAFVVEGPKAGGHLGFH
EKNLFDPNYALEQLVPGVVEAVKPFEDQRGQAIPIVIAAGGVFTGEDIARYLELGASGVQM
GTRFVATHECDADDRFKQAYVQAKEEDVTIIKSPVGMGRALFNTFIDSMRKGKRPFKC
IFKCVKTCEHETTPYCIATALISAMRGNL ERGF AFAGANVPRIDKISVKELITTLQQEF
DAFIQSIVPKSQPTVE

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>gIk 1321808:1322791 reverse MW:36333

VHILAADIGGTYSRFALFKDNPLCLIHKEYISSYTTSTFTILQQIMSNL FASVPLDMCV
LAIAGPIDNQEIVKPSNL PYSIIKKDLLSFCKNILFINDFEAQAWSCLTESMSDAVLLHP
EPKHNSFHNNNNVFSFNNKSGRLGVIAGGTGLGMAVLELDMYGKTKV IASEGGHSAFPFI
TNHELEFGNFLCQKKLNYARLDDVLSGSGLTWLHLFLTKEQFKPEEITLKPEFIDSETH
TYFSCFYARICRSLALFSLTQQGIVITGGLAKKCQILVNHP SFKKEFVNIGGEHKKILSR
MPIWLNCNDASGLWGAAQAGVIYSSKN

>LAW1077 1322933:1323712 reverse MW:27970

MIEGISSSSISFSGCSGCSVHSDS QSKKENTNPIQNNLSKEKDTDATGLRLTPEQKKE
VEELKKRDQEVRTHEQAHTAGGDLTSPASYTTTKGPDNKS YATGGEVQINVSPEEGNPE
KTIEKARKIRSAALAPANPSSQDMQVASQANQMEAQAKIEKNSIENAENGKNLSEKNTI
TTKKQEKSINKIGNFSVNESLIGFLASPFMFSSAKNTTIDGNMIGAHLPPSQKAVASLY
SYNDKLAQETLPSSLSLMI

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>HydH 1324889:1326631 forward MW:65597

MLIKTTMKEYQPKLSWRTIGIFFLLILLATFIIGKSGKQSQNIVLQLFLDKGSTLINSIA
HLTKDDTIGYNKGFQIQLVIDKLVQRKDVYFIVVTTQEKIFFAHSSDSNFPLNRSEINTL
VDMASATVIPGDGIMWNFLQLNNNAFVVYSRSPGIVSDSPVNV TQGNFKDGSFIFIGFN
PELFLLEVQDADKEQSLLSICTILFFCLLLLLSFIFFRNFGYIQKTYNVINALTEYVV LTS
KDGLMLLDSAGAVLQMNPAQAQFFHISNPIIGSWVYLSNKKHDELFPPIFYDVIKQVIEQ

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GKLEETELFLSLAGEEHYII VQGNSLDTFKKGQPEYLLSFRDITKIRLLEKDLYQKDTLA
SIGSLASGVAHEIRSPLSSIKGYVNYLGDRLPYDSSDQELIKIIMQEDRLNRVISDLIG
LSVPTDVYPEYIDLQKVIEDTLRLVKLDAKRHSVELLFYRNEELPFVPLDPDRIRQVLLN
LCLNALDAMPDGGSLKIIDFVNKNTQQFFLEVIDTGMGINEEVLPRI FDPYFTTKLKG TG
LGLSTVRKIVEAHKGTILVSSSELGKGTIFRLVFPLKLNEL

>hydG 1326651:1328066 forward MW:52741

MMKPIILIVDDDDVHRSMLSALLKGGWYETDEASDGDIAITKAKEHAYDTILSDLKMARV
DGIKMLECILNYPNPSIPIIIMTAWSSVETAVQALRMGAYDYLTKPLDFDALKKTLQKALT
HLQVHPIVRDNESFHKVNTKIEQSNLGI LGRSPCMLELIQMVSTVAPSEATILIVGESGT
GKELVARAIRQASHRS DAPFVTVNCAALSPALLESELFGHEKGAFTGADRRREGRFKQAD
GGTLFLDEIGELPLLLQAKLLRAIQQGEIQRVGS DTPITVNVRVIAATNRDLPEEVIAGR
FREDLYYRLNVIGIEVPPLRNRIEDIPLLATFFLEKFALSNRKVIGGFTPQSM DVLLRYN
WPGNVRELENAIERAVILTTGDYISERELPMVMTSPSQPNVLSQS DKEIVQYKDTVKHL
SQEQLTLEEELEKRAIINMLHETSENKSEAARRLGITRATLHNK LKRYGIE

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>LAW1080 1328199:1328615 forward MW:15777

MSEVLYEFYTG LMTQGNDSALSSKSPLKAFSNQTI DWDLSPEKAVTLHLEYGNNNWHVI
HTGGCSGHDSSVYFIVDTYSDPIQVRLIRRNFE MAEHLISIPLPDTLVKLFQKEYGNIRG
VFEPLPEIKEWLRT ELGQ

>oppD 1328645:1329628 reverse MW:36594

MQQQYL VKQTEYLLQVTDLSVQFNLDTPITILQHIQFCLNKGKTLCLV GESGCGKTMTAL
ALLKLLPEYGRIIISGQILFNNKELTQLSEAEIREKRGKDIGMIFQEPMTSLNPVIRVGDQ
IAEPLIQHLHFSKKDALHKAIELLKIVGISSPEKRILDYPHQLSGGIRQRIMIAMALSCS
PSLLIADEPTTALDVTIQRQLLVLLRQLIEKHQMSMLLITHNLGVVAEMADEVCVMYAGE
VIENASVYDLFKKPAHPYTQALMNAIPLLKKGKLRLESIPGTVPALGKLPICGNFRPRCP
LAHERCIKPPSTYIGNNHNVSCWLYN

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>feoA 1330153:1330491 forward MW:12228

MSAVVDSMTPFPCSEHDEL PVINEATACCVFDKVESYISLRDLKVGQHARVVRVQADGEL
GRRIRDMGLVPGTEVTIVGRAPLKDPVALRLLGFTLSLRNSEADYVMVSPIS

>feoB 1330619:1332820 forward MW:81218

MVILQKQTFALAGNPNSGKSTLFNTITGSHQHVGNYPGITVEQKEGFLHTDTDEILRIID
LPGTYSLTAYTEEEKVARMVLLNEHPDVVINVLNANALERNLYLTVQLLEMGMPLVLALN
MMDEVESHGLSINIKKLSSKMGLPVVPTVARTGKGCKRLILEACHLADARRGVEKKPLLI
SYGPDLPVVIKFMEEKIQEAFTIKNTPARWIALKFLEMDEELIEKTRQLNLNLSKQLEE
KVAEVT AHLHATFDTCPEAVIADYRYGYSAVLREGVLTQQDPVRYRIKLSDKLDTVLTH
KFFGPFVFMFFILYAIYHFTFTLGAIPMGWVASLFSFLRTQAGLLLPSGLLKS LVISGIIID
GVGGVMSFIPILLIFLQI AVL EDSGYMARMAYMLDRVFRFFGLHGCSVVPFIIGGGIAG
GCAVPGVLAARTLRSPREKLATLLVIPFMSCGAKLPVILFAGVFFPGHEASIMFGLTLA
GWGIALLTAKLFRSTIRGPSTPFVME LPPYRLPLLKGLFIHTYERTWSYLKAGTTILL
ISILFWAAMTYPELSKDR LAIYSKKEEVIQTEIKLTQAKGGDISSLQDSLQDVKKQVGEE
SLRNSLAGRVGLFLEPITEIAGFNWQMDIALLGGFVAKEIIATLGTAYS LGDVPQDAK
PLAEQLHQDKSWTLASALALLVFVLLYAPCLVTLVTIRQETGSWGWP IFSMIFNTLLAFI
LAVIVRYV SLLFL

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>LAW1084 1332824:1334038 reverse MW:45814

MNPLESIDSCITCSICTINCPVIAATKKFKGPKLTGPSAERFRLKQKQKEIEGLSYCSNCK
CCDISCP SNVKISSLNMLARA EYRTRRPPFRDWLLAHAPFLAKLIKWI PYQLQ LIGMKS
PITRWLLDKIGIDRRASIPFFAPTYFPKLYSKYKKKQKGHYTKKVFFPGCYINYYEPQT
GMDFVAIMEKANYEVILPKVRCCNLPLISNGY YSEGKVAHNSKILQQYAEQNIPIV TM
CPSCALTLKQEYAE LFP EMIDQVTSFSRNIEDACEFI IKLIESKELQINVT LHSTKLLYH
TACHLKAQGIKPGFELLQRLPGANIEDAEAGCCGISGSYGFKKDKYDIATSIGNNLFDI
IKKSGALFTLSECGTCRLQMYHHTGVEALHPLTLLHRILKQTPQ

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>LAW1085 1334050:1335303 reverse MW:46103

MNRKVDLIVVGGGLSGMTAAFAARKGKKCILITKNGTITIGSGTIDVLGYLPNGKPVSNPFEAVTFLPKRHPYQLIGELTVRNALKNFSELVGEENVYKTRSQKNTYVVTAAGTIKPTWMVTESMDMSIIPDIKNICILGIEGMKDFYPELIKGLSSKKYFANKTFTQAKLHFPESERNISTFNVAQYLETENGLKWLQVGIKQQGNQSDLIILPPI LGTTFLPHLLHKLEQKSNC
LIRECDVLPPTITGYRLNILLRYILKKYHVTIIDNAAVTSAEVKDNHCISVITTTQNSNIRKYEATHFIIATGGIISNGILTKHNRAWEPFNIDLPANPSSPDWANKELYPKIKKSHLFSMIGPTVDSFLRPTDSDGNPICDNVFFIGNTLNGYDSAYEKSGNGVAISTAYFASLNV

>gI pA 1335296:1336924 reverse MW:60508

MKALSFYKNQHWDVIVIGGGATGVGTLRDLMSRGLKTLLEQQDLAYGTTSRFHGLLHSGARYVMKDQGVATDCAKENIILSKICKPCIEINIGGLFIRTNEDDPEFEKNWVTACNNCKIKTTPISITDALKEAPTLSKHILSAYKVPDASIDGFKLVWHNVI SAQKYGGEFRTYTKVTSITNSNGVVTGVTIEDFWTKEITHLTCNFVINAAGSWCGDVAAGAGIELHLTPNKGALIVFNHRLSKKIINRLHPPSDGDI FVPHESTTILGTTSKNTRPDDI IPEQSDILELLNIGSVLFPKIHQYRILRSFAGTRPLYSMYKSPKELYASRSFRIIDHKNEGLSGMASICGGKVTTYRLMAEQISNVVCNYFNNNVPCNTAKEPLITEVDPTLHKKIKYFPIQGFEPALSRLGNSINEVSTAIKNLLKKDLICECEMVTFAEVEYIASQPSSYLLGDISRRTRMGMGTCQGTFCALRAIGNFLQFNLLSSKEPITDLLQTFQKKWVGIYPSLWGESLREVELFRQIYSATLNIEQENHE

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>LAW1087 1337223:1337819 reverse MW:21238

MRESFIVLACFLLGIIIGHIELVPKELIYEGLATCIVYFMLFTVGMTIGINSQAWQVIRSLKGGKILLVPLGILIGTLLGAVISWLILQNI FLRDVIAVASGLGYSLSSMLVTQFTTPDLGALTLLVNIAREIIAMTFAPLFVRLVGGGLPLSVAASSELCPPIIARTSGELNTILAI FSGAVLTICVPIIIITLLYK

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>LAW1088 1337816:1338124 reverse MW:11359

MVAEIVCISLGAFIGFLIRNHPRLIKTVDYSLIWSVRILLFLLGLSLGSNTTIIQQLDTLGIQAIITFFCIAGSLIAAKLLSRFVHIIPENIQEHLKEHLK

>LAW1089 1338433:1339086 forward MW:25818

MEQVMALEQTWTLHRPEDFKVRWKEFVLEYFKVGEYKNPPYWLNFWPSNYFLIEWLFHHKEDIAGELCIDLGCGLGFSAVIGQWLGAKVIGVEYVFEALTYAKYNAASNNISQPYWINMDWDKPAIVKNSIPYIWCSDI IYDTNDAEPIICFFDNMLKEDGI IWISEPKRPAYDVVLNKL EKRGNWCKCMFESEIPHCRPLPKFKRIYTRMWEISRG

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>LAW1090 1339149:1339568 forward MW:15807

MGETVRFVGSLEDDLLNKFDKLCDRQGYPSRSEALRDMIRQALAKDILQSKDSNAAGVLSLVYDHHTRELSRKLIERQHEMYDSI IATLHIHLDRYNCLEVL I KGNNGKIQQLADMLCSIRGVKLGAFSFLPVEEDVF

>LAW1091 1339592:1340368 forward MW:29492

MKDIQSTPAQIAFPIDRVGVKGLKFP IQIQRD IGMQHTVAIVDMGVDSLVSRRGTHMSRFVEVLQDWNELCCESLERLVKQTQKKLQSQHAYIAFFFPYFLHKRAPSTNMLSLFSYDCKLSAKSINYNIEFILELTVPVMTVCPCSKAISHEGAHSQRSEIYIQLRLEQFRFIEDFIVLAESSASSPLYSLKRADEKYVTEDAFAPKPFVEDVVRNISSKLITVTDVLGFRVEVESFESIHAHNAFAYIEHEFIC

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>LAW1092 1340557:1341606 forward MW:39344

MEIVSNGIIGESTTLKEVFHVLHKVAPT DSTVLVTGESGTGKELLVRLHAQSLRVTKPFVPINCGAIPKELLESELFGHEKGAFTHAVRSRAGRFEVADGGTVFLDEIGEMDLSLQVKILRVLQEKEIERVGGTGPRKVDVRIVAATNRNLEQEVEQGRFREDLYYRLNVIPLHLPPLRERGRDILLLTESFLTRFCARKQRPILKIDPEVSKVFLAYHWPGNVRELENIERLSILVDGNIVRLHDLPRKIIDS VGTLEDLTNIELPKSVESIPTSISPQEFIWPRLEDMRTRGVGLKEFLEQIEDRLLGEALLLSDGVKNAAEILGIKRTTLEKLLKRRLDGEV

>LAW1093 1341663:1344893 forward MW:122614

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VKFFIYSWLFQFFLITGGMILFTVEYVEAVSWKWSMLPGRERIIISYDTPNQGKKASRIS
 TTQLEIPLSTPAKDLRIGASPSPELVSDLSDGSKLHINLRDAAFYITTSTNPNQLI
 IDVFSDPLGNRWRNLGVPAPASAPSRASSALPEVPKNIKQIKVSNNQRLNKDQEKTSL
 SQEQKQVAKAPAESITSEGAKEKKQSIKADTSKDNVKKSQDVKGTLPVDTKDKQQVSKKE
 NQEAISKEEKIETVPTVPPPSVDELMTLAKVEKSQLASDEYSWSKKAKSPAQEDNTEEK
 LEKSQNNNNQKVINILENSSSSTEGTVQSKLTETPIVEAPIEETVNSIHSKLNFKGPDAMP
 KEKALSTLDKLEEVLNKNKLMQQPETRDSLQPLSKTNEEKPVSEPVVVYVDEKGNPVGKP
 PDTTAIEEAKKNMRAGQVQKAKDLLATLKGHALVQEQHEEVLYLFSELNEKIYKDRWIE
 GYEPITSTNKAMNFNLSRPRVAEALMRLGMVNLRIGNQDEAAGYFGALRRKFPQSEFIP
 EAYLALGKDQFSKGEYADAVKTFQLILDNYPESKAVQDASRFMAEALFKQGHYSRALILV
 DFDVRRWRPRLYLEDPNYLKMVGDLYSRENRLDDALKAYWTYYNLVPEAKDSHDTLFGKIGT
 SYFKKGLMQGGKDVFEELLKKFPKSDSAPKALLALGEEQVIKENPTIQELVTFENPSST
 IPEIYYKKILDEYPNSPEAQAAIRLAAWKLWHRDIPTAMTMAQQFLDKYSPYAPRAE
 EIIARGFDQSFALALQEENYERILSLWEKYPYLQIAYKDMTDELRLVALARAYLNRGDEEK
 GMDLLNQFLESPQDPNYGDYVYNYLAHYLRKEDWTNILKLGEKVSSWKFPVSARAQLDY
 ALAIASENLGLGNKALPLWERLYQREDIPLYQKAYANYFMARDAERRRDLNAAYKLNLT
 LKLFVTLQEERSDKADPERVRESLAALMDVTEVANRFVESLEWADQYAAFVPETSPDYAG
 LLFRKARLYRKMGDLSKWKQLLDEIVRREPESVFGMAASELRTYEVSRLSRFTQ

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>LAW1094 1344921:1345964 reverse MW:40080

MVSSRQSKATVPENIAEEYYQISHEILSSFPKYRPPVDLQFREDILKLYPYSRKGCRLT
 NEQIEEIQILCNEGRLFVSRDHPYSEHIVKQVDLVLLDSNLKEAEAADIFIRALDMRL
 LDFIGQPVLVFEKLYNDLMVFTEFLWQDKHRIKLFMRRLYTEHTLSHSLNTLFIGLWL
 LQTTTHEDKLIRREWDRSALGLILHDIGMSKIPSFILEKATPLKSEEKEKILLHTLAGVKI
 LQKLNLFNEITQAVMEHQERLDGSGYPNKLKETHLSKFGKLCVADSFAMISNRPYQA
 AIPPKAAAQLLANDKERYDSTFTVPLLNAYLGTGALESKLRQEHSNNA

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>pykF 1345968:1347383 reverse MW:51288

MKTKIIATIGPASNSKETLSQLIQAGVSIFRLNFSHGDSFAFIELISTIRELEHIHQIPI
 TIMQDLSGPKIRIGALPGDVALNVSKGDVLCGPEDKRTNDYPYIPFDHKAILSDLVVND
 ILILADGTLQFQVKEQNSNGTFLLIAQEDGIITSRKGALPGKSIKVPATEKDQKDLSD
 GLKLGVDVAVIAFVQSAEDIEAKRIKANGYDIPVIAKLERRNAIEHLEEILKEVDIIM
 VARGDLGIECPLPELPAIQKRIIRACNKASKPVIATQMLLSMVSNTPTPRAEITDVANA
 VLDGADCVMLESEETAMGNHPVETVGFMRDITTKAEELMIETRHLKEPEAEKSAAEFLLAYA
 ACLLAEKSLAKAIVTHTMTGTAARHVSTCRPSQPIYALTPSRTSLKGLNFSWGVLPQYLS
 ASSEGDLRTEINFIMQNPTFAIGEDIIITAGQSAPHTVQPRGTNFIKIFRK

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>mraZ 1347589:1348038 forward MW:17405

MQFRGQSYRNIDSKGRVILPPGYRETLEEYSSEGSFVLTTYDNCIVGYPEPQWKEIEEFK
 SKLRNSSKLRDFRRLFLGGAEKQSLDLQGRVIRAHIEYAKLDHEIVVLGQGEHFEIWI
 DQNRFKAVLEQDFDDVADELVESGIDFPL

>LAW1097 1348109:1349047 forward MW:35239

MHQPVMLEETIAMLKPHAKGRYLDGTVGLGGHSFAILQSAGDGAELCGLDQDKKALIAE
 MTLKPFKRVHLVHTKYSSFPLILKALGWKLLDGLIDIGVSSLQLDNAERGFSLYDGP
 LDMRMDQDANNNSLFEIVNKSQRQEYLKDIISRYGEEPQANRIAKAIVQKRRTKPIITTTKE
 LADLIEQAYPAAWRAKSRHHPATKTFQAFRIVVNSELNELEKFLNIMGWIA PGGRVAVI
 SFHSLEDRIVKQYMKSWTRSCICPPYVPVCKCFHKPEAILITKKPIRPSEKEISENIRSR
 SAKLRVAEKVLL

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>ftsI 1349553:1351634 forward MW:77947

MSYLGLSHRQNKYHKFTWTTSRKKVGRKYFSFRIDKWNFRFQIVAILFCIVWCGLWCRS
 AYIQLWKGTFFSEKARRQHIALETVSTPRGNIVDRNGRILAKSIQCYSVYADPFSIKDIE
 STAIKLSNCLHLSEETIRKLLQKQNRVWISRHIDDATAIAINQMKIPGVMLLKEYERVY
 PYKHVAGQLLGFVVDGNGLEGLEHSFNDYLSSFSTKQLVMRDASGRRFYINNGEELHNS

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TRELQLTIDLQIQSIAEDAIAQAVSEVGAkWGGVLI DVKSSEILAWSQYPPFFNPAYRQ
YKPSEYRNRLALDAFEPGSTFKPFLIAAALQEGIVTKDTLFNCEGGVWKIKNVVIRDDGT
PQKELSVTKILSHSSNIGCGKISLELGSQKFYYLTKLGFQPTGLNIIENKILRRPRE
WSEADL ISTAFGQSLSTNALQLTQGFLT IATHGIYKPI SLFKTPLKKVSEQRIFSEDISS
EVL TMMRQVVESGTGKRAA I SGVSIAGKTGTAQKVDKTGKYGQERIASFVGLFPAEDPHY
LIMVVIDEPI TKKYGGVIAAPVFRKIATKVMAYVGSPELQYQVVTKEEEKISSNKVSSL
VRTNKKEKSCSNTLEVRQKIDRKDPIEYATSLKIPDVVGKSI RKA IELFAGQGLVPEVKG
NGIVVIKQEPEAGTHLIKQHLLDKKCILWVSEK

>murE 1351636:1353084 forward MW:53606

MNRYPLKALESELEKKHMLICIDSRKVEKGCVFVALPGSSVDGGLFIPDAVSRGAAYIVC
RHNEVEYCGSAIPIVDDPRYTLGRLARIFYNTGNLSMPIIGVTGTNGKTTITYLLEYLF
RAKGNRTGVI GTIAYRWPFGFSKEAPLTPQCCLDLHAML AQMQVDKTEIVFMEVSSHALDQ
RRIAGISFKGVI FTNLTQDHLDYHKDMKEYFHAKARLFFEYPSKNKIMVASMDNQWGRKL
AKLVEPIIGFGFKNKPTQVSNYLFGKILSSSRAGLHLQMSFKDKVWELCTPLVGVHNAEN
LLAVQAISLQLGLAPEDFCCFEKFTGVPGRLEIVNKKQLDIFVDYAHTPDALINVLSAL
RDVGFKRIITVFGCGGNRDKAKRPLMGKAVAKLSDVAVLTSDNPRNEDPELIMADVLPGL
KKAKQIITEPDREKAIRQAI ELVSPGDALLVAGKGHECTQQIGFMKYPFSDQSVIRKILG
CD

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>murF 1353075:1354469 forward MW:50534

MRLSLDTILSVTGGTLVAPTTGYNSYIDGVSIDSRAITTNLSLFCISGNITDGHNFVLKA
VEEGASAILASHNPFEGEVPVPVILVPDTLNGLKVLAQAARKMTKAKVIGITGTAGKTTV
KELVAQLLTSKGVAKNYLNFNTQIGMSFSILAAQGDEDFWVMEVGISNPQDMEELGTIL
TPDIALIINVGPGHLSGLNKQGVAYHKAQLLRMYKDEGLGIVSLDYPDLVKEVKELRSGS
LFFSVLDNQCRYYSKYTGIVENGYTYRLWLDLDDIVDVTSPFLGNFGMESVLASATIAHK
LGVSSDSIKQQLFQAILPQNRFCFTHGNWLCIDDSYNANPLSMNAVIESTYKLSDEKPK
LVYVLGEMLELGDSSAEHEKIGKKLAQTGASII FWKGGMIDNVLIGLKGGGFKGILEKI
STEQEFQSLFLKHLRDEGII VFKGSRSNKMEVFVDVFMKLVGK

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>mraY 1354469:1355545 forward MW:39813

MLYNILFPLSSDYTILNVFKYITFRSVWSLITALILSILLGPYFIRWLQRINFKQI HED
VKIHKSKTGTPMGVLI CFSSLCSTILWSDLTNIYVWL TLLVFIGFSFIGFLDDYIKIL
HHQNKGFSAKVKLLAQVVVAGIAMLFLVSEPAYSTKLAFPFKSLHPDFGYFYVPPA I LV
MVGASNAVNLT DGLDGLAIAPVIVSIFVLSVYIYVTGNVKFSQYLQVDYIAGVGEVAVFC
GALIGAGLGLWFNAYPAQIFMGDVGSLGLGGVLGFLAVLCKQELLLLIVGALFVLETLS
VIVQVGYFKWTGGKRIFRMAPLHHHFELKGIPESKIIIRFWIISITFGLIALSALKLR

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>murD 1355559:1356881 forward MW:48979

MLSIANNCCISLAQNEWPLYKVAVVGTGRSGMAAARLLHSLGASIRIVDKTRENVSKT FM
DWIKQTNCEVMFGEHCPKQFEDIDIVIPSPGVPLNLLKPHFLNTIQVLSETELAWYQLSN
EKVIAITGTNGKTTIASLCAAMLVEEQISV FVGGNIGTPLSEYVLCKKKVSVVVLELSSF
QLQTCSLFRPDIAICSNISINHLDYHRNMDEYISAKLNICKNQCESDLAILKPGMEALVD
SYNLKARVVFYRDLGNFSTSRLLGVHNLENAEAAWLACKELGVTEEIAKKVVTTFEPLH
RLEQVRLLNGVLYVNDKSGTTVEALRAALESFKQPI LLLAGGRFKGGDLTSLRPIIKKQV
RIVGLFGNSREYFEDAWGDIIPITWDNTLEQAVKRLSNLAHNGEVILLAPATSSFDQYMN
YIERGNDFKRIVHEVLNEHC

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>spoVE 1356868:1358016 forward MW:42391

MSIVRQHRRLSGSNRHKDDISDIASYDWLLLTVVLI LLLCIGLIMVLSASGMVAERLTGDK
YYFFKRQCLFTIISGILLWVMAVIPRSLIYKLQYPFLFVIIGLLFLTITPLGAKVNGARR
WISLGLFSIQPLEFTKIALALYLAYFMSTKQELVKTFSKGVIPFAVTLILA IMLLVQPD
FGGAMILIMILFFMCLVGGTRFIYLFLSIAMSCTIAAALVWHSPYRARRLA AFLNPFQDA
QNTGYQLIQSLYALGSGGFWGAGIGGSNQKMFYLPEAHNDFIMSVIGEELGFLGITIVMA
LLFLFFVRSYLI VVKQRELRDRLSAFAVTLVIALGCILNLAVIMGMAPPKGVAMPFLSYG

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GSSLLATMCCVGLLLNFSRIGR

>murG 1358021:1359112 forward MW:40074

MKYRIA I T T G G T G G H V Y P A L A V A E Q F H D K A D L F F I G S Q Y G P E A E M V K T F N I P F Y G L P V R G
V L G R K W K A F S A L Y S M I K A I V K A R K I L Q K C M P D I V V G F G S Y A S F A P L V A A K L K R I P T A I H E
Q N V R P G L A N R M L A R L A D R V F L S V P D T L H I F T K K S K V R Y T G N P I R Q S I V D L H Y K F E D T K N S
S T R H L L V L G G S L G A I A I N S I V V D G L S R L F S N R I V I R H Q T G V H D W E R V K E G Y A L Y G R T N S Q
V T P F I D D M A E A Y Q W S D L V L C R A G A T T I A E L A A V G K P S I L I P F Y A T H D H Q T Y N A Q F L V R V
G A A V L I P E K N V V E V D V I E K I I A L F N D R V T L V N M A L A A H K H G R I D A A T C V A N E I I D L L S A N
A M K

>murC 1359109:1360470 forward MW:49238

M N S K I K S I Y M V G I G G S G M S G I A E I L L N L G Y E V H G S D I M E S H I I H R L R K L G A I I S I G H Q A E
N L G D I S V V V K S S A V T E D N P E I Q L A R Q H G I P V I P R A E M L T E L M R L R K G V A I A G T H G K T T T T
S L T A T V F D T A G F D P T V V I G G V L N A Y G A N A R L G Q G Q Y L I A E A D E S D G S F L L L L P I I N V V T N
I D L D H L D Y Y R S F E E I E H A F V T F M N N V P F Y G M N V V C G D D P G V Q R V L P R V N R Q V I T Y G F E S S
N H I W A E I I E C G I I N R F K V I A H G E C L G E V I L T Q P G K H N I L N A L A A I G V A L E V G I S P K C C I E
G L A N F K G V G R R F E Y K G E K N G I T V I D D Y G H P I E V A A T L E T A R K V F P D R R I V V A F Q P H R F S
R T Q A L F G E F C Q V L S T V D K L L L T E I Y P A L E K P I P G I N S Q N L A Q G I Q Q I S K I D V T Y Y P D I D A
V F H A L P H V L C A G D V L I T L G A G T I T T I G P K F L T C

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>LAW1106 1360502:1361392 forward MW:32128

M L Q I T T S P D L S T L T T L R L G G N A I A L I D V F E K K A L E Q L P H Q I Y K I G G K P H I L G G G S N I L A S
D G S L P F V L I R S K I L H D P I V T Y I D E Q G V V F V K V C A A M G L A R F L A W C C K E G L S G M E N L A G I P
G T I G G A V A G N A G S Y G L S I G E C I Y E L E I F S F N N G M K I L K N D E I Q Y A Y R K F S I D E E P G E F I I
I T A T V K L K Y K Q K Q Q I I E V I R E N V A K K T S V Q P V Q A R S A G C I F K N P N D G L S A G K L L E Q V G F K
G K G K D G I G F S S I H A N F L I N E G S K N S K I A F E L V Q D A K Q E V Q K S F N I I L Q T E V K V W S C

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>ftsQ 1361386:1362213 forward MW:31458

M L K D K R R Y K A N N Y N S R I A S Y P S L H I S N E N I R F G S I V T W S C W C F I G I I A L I L F Y F S G L H L Y
R L I T T S N F F C I E R I N I Y G A S F F H R S D I L K Y T N L Q T G I N S F S V N I G K I E K I L S S N P W V E K V
S V K R R L P G I F D I F I K E Y E P S F W I L K D D I I Y Y A D S V G R I I T P L D T D N F K S L P T L E V M E G G E
K F L P I L K D L I V F L E S S N S I I D V G T I S S V R L S S A S G I E I L L E N Y D I V L S F E P Q A W K E N L Q K
L C L V L S D L A C R G E L K Q T R S V T A V A T G V W V S Q E K N F

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>ftsA 1362407:1363639 forward MW:43953

M P Q S E L I V G L D I G T T K I C A V V G E L S G D G S V D V I G I G T S P S N G L R K G V V V N I E Q T V Q S I K K
A L E E A E L M A G C E I R S V Y A G I A G S H I K G F N S H G V I A V K G G E V S Q R D I D R A L D A A K A V A I P L
D R E V I H T L P Q E Y I I D D Q R G I I D P L G M A G V R L E V K V H I V T G A V T S A Q N I V R S C H K S G L D V S
D I V L E P L A S S K S V L T E E E R E I G V A L I D L G G G T S D I A I F A N D S T K Y T G V L P L G G Q N L T N D I
A F G L R T P V A A A E K I K I K Y G C V L A D I I Q S D E Y I E V P S V G G R E P R R L S R Q V L A E I C E P R M E E
I L T L I D Q E I V R S G F K N M I G A G V V L T G G T A L I Q G C Q E L G E Q I F N L P T R I G Y P R N V G G L K D M
V N S P K F A T A M G L L H F G A E K E G M E Q R F R I R T E H T I F N S I L S R M R K W F A E I S

>ftsZ 1363691:1365073 forward MW:48886

M E M L F D T M V P Q A K I K V I G V G G G G N A V Q N M I E S S L R G V T F I C A N T D A Q A L A R S K A D I K L Q
I G E K L T K G L G A G A E P A V G R D A A L E S I G V I K E A I G E S D M V F V T A G M G G G T G T G A A P I V A Q A
A K E M G A L T V G V V T K P F V F E G H K R S R S A D Y G I S Q L R E Y V D S L I T I P N D R L L T I A P K N A K L T
D M L K C A D D V L Y S A V R G I S D L I T V P G I I N V D F A D V R T I M S V S G L A M M G T G F A S G E G R A I E A
A R R A I T S P L L E D V S I T G A K A I L I N I T A T T E L G I D E Y S D A A N Y I H E A A Q G S G D T N I I I G T A
F D E E A G D E I R I T V I A T G I E S Q V G V K M Q G S T S S K A A M P S F R K S S H I T N T T S F K P E A I K H N L
A S E K P R Y R T P R L L T N P I E M D Y K T Q G D H S E I F T E D T G V N Y S I P T Y L R A L L G K Q G A Q S S K E E
Y D R T H H G D N N K D T H N P G H E N F V F D G N E Q D I P I F I Q K Q A N

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>LAW1110 1365182:1365661 forward MW:18673

M Y L E I E R K F L V I G D D W K C N N S A V L F K Q G Y I Q T S P C V V R V R I E G V K S Y L T I K K Q I E G I S R C
E F E Y P I P M D D A L Y L L N N L C K K P F I S K H R Y T V F Y E G I Q W V I D E F L D E N K G L I I A E V E L K I K

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DQSIILPSWVGQEVSNDRYYNSNLVQFPFSQWSLSEKS

>LAW1111 1365658:1366440 reverse MW:29659

MKFKFLYSIINTIRYEKRTLCHIPFVQTNHSIKIQPKINNSLNKKKKLCLQCRYLLQP
RTKGYCPCSGELNKDKQSPITPCNNCLKNPPSWEHFYFLNAYEGEYKLLIQSKFKGNPS
ITQLLGILLAECLLKLPTDAIIPMLHPSRLHKGFNQCQELARPVSYALKRPLRHDLL
SRVIPTSHQTGLSQTQRLNLIKNAFQADPGVKGLRILLIDDIMTTGTTLQATKALLKQH
TQAIDVCIARTPSLSLKKV

>LAW1112 1366446:1367042 reverse MW:22107

MSNIILLTCSPRANGNTDSIGAALFKELNDVLLPIEIIPLRSLSIRPCISCGFCITHPDQ
CFLEANDEVGWLFDKIRAASLI IASPIFFYGPQAQLKSFIDRSQKYWNNSNYTLYEPI
NNPFLKPAFVTLIAARNKGERVFEATLLILKCFQCIGFSLCDTLLLRDLGPHDFSHSN
EAQAQVSSFAKIIQSKLS

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>argF 1367118:1368020 reverse MW:34423

MINHFITIALDGGQSAWELLLRAKEMKDHKTNPYQCMQKVAALLFEKASTRTRVSFEVA
VRQLGGTTIFLTPNETQIGREEPKDTRVLSRYVDCIIRTFEQKRLYELIQLGSIPII
NALTDHGHPQVMADLLTIEYQTSDIANINITWVGDNVNSWIEASMYFPFKLTATP
KGYEPNKELIDFAQKNNAKISITNNPLLAVKDAHYYTDVWTSMGQEKECKRIEDFKDF
CVDNTLMNQATPSVKFLHCLPAHRGEEVSDQVIESEKSLVWDQAENRLHMQKALLEWIFQ

>LAW1114 1368164:1370053 reverse MW:70688

MLDFIRSNAQSWGKIAFGLIIIVFIFWIGITLGGPEVEVSVNGQSITIQELQKRCEE
IEQNIQNFPTISAAEINTFRIKQLATQQLILETLVLQEANRIGLIITPIELRKTIESFP
AFHNTEGKFDPAIYLQFLKERNDTPGHFESQIRTNLLINKIQQEITAGAYISPTAYDVY
MYESATRTIQYLLFPTEDYLNKVNISADEVAKFYNESSEQFKTPELNLEYLLITPRSLA
NNQTIIDTTVSEYYQHKEDFKSPEQIHAQHI VVFAPENSEPEVLKKAQEKINQAANA
IKGEDFSSVAKKFSQDNVAQNGGDLGWFTYEQAVPAFADVAFLTPGEISQPIQTPVGYHI
IKLIDKKPEEIKSFDEVSKTIQQLAEDKASIELQDVLENVQLAL IENKSLTEAGKPYNL
SPISTGLFPIKDIASQLELAKPDELSKLTHVSPGTILENPLITKTGYVIKVKDIKPE
KSI EVVENQISSLLKKQKANELAMKAAEEQLTILKNSSIPPAVAKNLKTSPAIIRSATIE
NLKNPQLVPDTFKATPGSWLTTPTVEQGVLIAYVSKEVVYPSKEQWDNIKEAFMSAIVK
SKREQMFKGFLTMLEKQAKITIKEEKIIN

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>flbD 1370349:1371827 reverse MW:54747

MMKQHILFLAPSHIITRIFPELRDSEIEVSLAENINSASAAIKKSRPDIISRPTLPGYK
VEELFNI AKEDPKFPIIVTTDKGTTEEAERLMTLGAQDYWLEPLSTEKIKTVLQKSYKL
TPLPSKSTLDGHPEDLSSAPTIIGSNPAIRRVLALAKQVAPSKASVLISGESGTGKEMF
ARTLHAWSNRSKGPFIIVNCAALPEHLLESELFGHEKGSFTGAIARKLGFELASGGTIL
LDEISEMDLALQSKLLRVLQEGEIDRVGGTETIKVDVRLATTNRDMEKWVDEGKFRQDL
FFRLNVIPLRLPSLAERGGDILELANFFINMYTKEYHLKPTKLSQEATTWLKNHNWPGNV
RELQNLMERAVLLAGGGLITPNHFLEETEWEPLFDEVPLEQQTESI IPEVITISNTTQAL
QTHPQSKSTTATTTSSVFPNAVIPHEMERLMIKGLEATSGNRTQAAELLGISIRTLRN
KLNEYKEQGFTI

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>priS 1372257:1373870 forward MW:58876

MKCNQCEQTAANDSCTNIGVCGKTDNVSHLQDVLIIYALRRLAHAALSARAKGIIVPEIDF
FTVQALFITLTNVNFDPNVIERFIEQAIINRKTFAQLRGCKIDNSTRPIIEEVKSMMSMPT
GIDDFHKDKNNCSAMQMLLYGLKGTSAAYHAAVLGKDDPNLYEFIEYGLAAGFPDREGN
IDKERTLSDWMDLVLRGKSNLRAMELLESNGVESFGVPTSTKVS LGQKKGKAILVSGHD
LKDLYDLLCQTEGTGINIYTHGEMLPAHGYPKLHAFTHLVGHYGTAWQNHKEISLFPGP
VLFTTNCIQNPKEYIENVFTSGVTGWPGVQHCKDGDYSKLIERAKELPGFSEDVPGKELL
TGFGKQSLLDAAPIVILDSIKSGVLQHIFLVGGCDGAKPGRNYYSEFVEKAPDNTVVLTG
CGKFRFFDKDLGMI GSLPRLIDMGQCNDAYAALQVVTALAEILDCGVNDLPVSLVLSWYE
QKAVSILLTLLAAGVKGIRLGPSPSFSVSEDILQLLVKEWGIAPITTPDKDIALLMQ

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>cheV 1374180:1375139 forward MW:35761

MAQTNILLETGTNELEIVEFYIDEPDYRGGYGINVAKVVEIIREQPVTAMPEMRHPSVMG
AFLYRNGRVVPLIDLSVYLGGAIPKNTDSRVIITEFNMVMNSFIVSGVNRHRLSWLDIE
PPGKFIQTMSQSSITGVVKMDDRVVFI LDLEAIVAELHPSLAIRMDETSDDHDVPEHPYKI
LHADDASIRKLIYSLLGKEGRFEVTQAVDGGAWDLLMKYRDEAIAEDRPITDFIEGVI
TDIEMPNDGLTLCKQIKEDSVLKVIPVAVFSSLINNSLIAKCKKVGADAQFAKPDQLSL
SDSMYSLIKSKELELSRKI

>LAW1118 1375188:1375997 forward MW:29981

VLGVIAGSGQFPFMVVKGAQEKGYKIVCGFHGHTDSKLEDIADHFEMMPLGQFNRLIRF
FRRSGVIELCMAGAIKPRALQVRPDFRAFRLYFSLCRKGDDALFRTI I KEFEKEGFLMV
SPSTFVFPFLHCPPGVLSNKQPKDILAEISYGWPIATSLGRFDIGQLIVVKQMVIAIEC
LEGTNATLQRGAELGGKNCVAIKIAKPIQDERVDLPAIGLETIHLVVKYQFKCIAVSAEK
TLFFDMPEALTLANKHKLCVMSLSDTDIR

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>gapB 1376132:1377148 reverse MW:37454

MSKTRIAINGFGRIGRQTFKAIYTMKEQLEVVAVNDLYDTNTNFHLLLEYDTNYGRANLN
ANINGNTVIIIGDWTIQCLAEKDPTNLPWASLGVDIVIESTGIFKTADQARVHLNNGAKKV
IITAPTKGEDIMIVMGVNQMDYPTKDNII SNASCTTNCLAPIALVLEKHFGIESGTM
VHSYTNQDRI LDLPKDLRRARAAACNI IPTSTGAAQAVAKV IPELKGKFTGWSLRVPTP
TVSIVDFTA ILKKNSDTETIRKALEEASNTYKLGIMAYNRTPLVSMDFKGDSSHSSIVEEE
YTI VQTDNLAKVISWYDNEWGYSCRVADLSNFLRTKGL

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>proC 1377471:1378307 reverse MW:29742

MLCQDSLGVVRVGCIGCGTMGSAI LSSLVPM AHPDNGLILSGYNRTPEKLAPLEEKGVQS
IDTIPNLIQQNDII ILGTPSAVVPILKECLPFLRPGHII ISLAAGITQIML TEAVESFC
PVI RVMNPNTPALVSGSIFALCLEDPKLSNEQSQSVIDL FSLIGLP IILPEKQFSAFTALI
GCGPAYVFHFMDALVEAAVT LGFPRQQS IYMVSELLNGSAKLATQPGNHPALLREQVCSP
GGITIAAINHMDRTAIRGNI IDA ILTAYKKEKQLEFIE

>ndk 1378307:1378723 reverse MW:15840

MQHTFALIKPDAVQRNLIGAIINMIEKNDFYISAMKMLQMNRRQAEGFYSVHRERPFNE
LVDYMI SGP I VSL I LTGENAVTRYRELMGATNPQNAQEGTIRKSFAISLMENAVHGSDSD
ENAIIEINYFFNAFERIR

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>LAW1122 1378753:1380090 reverse MW:50808

MSSRLSKYFSKHSIYLLQPYPHMARTILGSLISLLTAVILSTGYISYQLISTTLHFFQP
DKITSLESPKKTSLTLKIPKGQSYRESFLHTDLPYQEKATTSLTNRIRQTD FALMQTFIR
LDIHKDRVYPLLTKYHHKNETYRFQKIKIFLPHSVEYFVTNLQENLEAWADEIKLRACS
EHIYKLSINEITTHELIFIPTGEKFIQCPIDEKPRITIVIDDIGESIEAANQLIKLDFPI
TLSILPHTHYAKSIAMLTHTSTGNEVL I HQPMESI QSPYVSAGPGEIHTKMSAEEISNILC
KNIEKIPYASGLNNHMGSCFTCNEKGNHTVCKILASKGLFVLD SKTHPSSSFYNI AKGKG
LPAYYRTHFIDHGHTESSILNQLKKAEKYAI EKGQAI VIGHYPETISALKKWISLRDT
SIHIVPLRYQPIYIETVKSDFYFSKK

>prc 1380396:1381724 reverse MW:48840

MRVWLRVAALILTGSILFIGGSCVIAAVSDSDKFDALKRFSQVLDIVERYVYVKEVPRKEL
VDGALKGMLQSLDPHSTLLTEEEFKEMQEATSGEFCGIGIEITQENHLLTVVAPIDDTPA
DKAGIKAGDYILAVNGRPTSEMSLQEAASLIRGPKKTEVELTILHKDAKEPTTIKIKRET
IPLISIKSRELEPGYVWRISRFSERTTSELNEVLKAASKGPIQGI VLDLRSNPGGLLE
QAISVTDVFLKEGTIVSIRGRMEESSKEFKATNNTSDITAPIVVLVNAGSASASEIVAGA
LGDHKRALIVGERTFGKGSVQNI VPLADETGLKLTVALYYTPSGRSIQAEGIQPDIELPF
DPNPVATQTQNPLHMMREQDLRKHLEKNTSNTKEEKNTKNNQKSEQNKKEPLPEVKEFLN
KDNQLRMGLQLVKTLPKFRQIQ

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>nth 1381792:1382472 reverse MW:25812

MNPEINYQA ILIEIYEKLLNKLQASGWWPAETTLEVIIGAILTQNTVWTNVEKALCNLRN

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AGVLHDGNKILTLTDSSELSNLIKPAFFNIKTKRLKAILQFFASSCSFSFEKLDISLQH
LRKKLLLHVHGVGPETADSIILLYALNKPSFVVDSTYTKRILSRHKL IQPTASYEDIRSLFLE
NLPCHLQLFNEYHALIVRTCKHWCHKKTPLCSQCPLFELNDICLNC

>copA 1382916:1385270 reverse MW:85165

MLHSNLI LLELTVSKQQLNFIVKGMSTSCSSRLERTLGNIP EIQSVTVSLNNSMATVI
PIPEANIKKLIQEVISETTEKTFIANYLAEDLAEQKTWILQQESISHYLEELKQRLIIEF
FFTILVLFISMGPMWGVVPVFNPKTYPLNNAIAQLLLTIPVIWSGRYFYLI GFSRLWK
MSPNMDTLVALSTSAAI IYSIWSTIEISFGNYYTEPSLYYETAVVLITLISLGKYFEMLS
RFRMSDAISRLMNLVPETALRSLSSLDQEESEFEVPLSNIKVGDIVQVRPGSKVPVDGKI
LKGSSSINTSMLTGESMPVFTVGDVIGGTINLSGMFLMHAEKVGLNTALAHIRLVRE
AQQSKAPISRITDQISLIFVPPVIAIALVSGLTWLLLGDTSIADSRIVMTVLVISCPCA
LGLATPMSIMIATGRGAQLGLLIKSGAALEYAADLDTIVFDKTGTLTEGKPHLIHTVPLK
TMPDNELLRITASLEAVSEHPLADIVRAAHKHGLVLYPVINFMSYPGRGVRGELQVKTE
SITVLVGNKTFLEEHHISLDNKVGITTEEFAGQSFISLLVAINGQFSGIIAVTDPIREE
SNSVTEQLQHMGIRTIMLTGDSKQTAQIVANHLHLNEVIADVMPEGKAYA IQELKNKGR
VGMVGDGINDAPALAKADVIGIAIGSGIDIAIETSDIVLLNSLSTNHPLSGLVSALLLSRA
TLRNIRQNLFWAFGYNICIPIAAGILKLFGGPLLSPLAGLAMALSSISVVLNLRLLK
FTPS

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>LAW1126 1385472:1385933 forward MW:17187

MHILLYQPEIPPNTGNIRLCAATHPLHLIEPLGFKLEDRYLKRAGLDYWKHVILKVWP
QLDDYLLSDGLGRRLVITSARGGVAVHQFMFSADDTLVFGRETAGLPKDLMDQYEHKVR I
PIYSTVRSLNLSTAAGIILYQALSITGMLTKIS

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>LAW1127 1385991:1387358 forward MW:50127

VKIKNKYQQIQEIWQLTWPQASMLLCQFFISITDVWAAGQLGSEVQASIGIIAQAQMLLL
SLVMAASSGAVASISQSLGAKKYIRAQRYIGLVVFSCLILGVCLTILGVIFQVPFLEFVQ
TPESIFSMALIFFEFYLLALPGQYMLTIGSAVFRVAVKSVYIPLYVAIIIGILNFIGDMAF
GLGWWGWPSYGAIGIAWTTFISVSFGGVVILFLLFYNHWLTRYSFPPWCWIKKGSMYLLQ
VAGPSLATAAIWQTGYLVLFIIAGTLPSEGVATLAGLTAIRIEAILFLPGIAFSMTSAI
LVGYALGLGNKQEAHVLLMVVFAVCLSMSFLGAMLWPWRDTLAAFLSSDPLVRQEI VSY
LSYNILCVPFTIASIVLAGGLNGAGASIYPMIIFGCSIWGI RPLAWFLSHFLWETSSGV
YMALLVSQVVQSMLLLWIVLRYNWARFMSMYSMSK

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>LAW1128 1387436:1388335 forward MW:35196

MSEAAFPVHPSKFDNYTLLWEMTPQHSSDYTLTNIWGWKDFYGLEWWMFESGLCWI RQTR
HVDGADYIFWAPIGDWNSIDVWNLPLFKRGLHMQRVPEMLCSLLQEI LPRKINIEETPGQ
WEYIYSTKDLTTLTGRRFDSKRNLNSFFREYKEDYRPIGDSNILELIEFQKEWKWREC
KKSPSLAAEGEVLCDFKNWGLFPSLRGGALYSNNKVI AFSIGETLDENTVVVHFEKAKP
GIRGAYQAINNCFVRYECNDFDFINREQDLGEEGLKAKQSYYPIGFLKKNYVTVFPES

>gInQ 1388490:1389227 forward MW:27323

MAMIEIKDIHKWYGEFQVLKGISERIEKGEVLVICGPGSGGKSSLIRCINRLESIQEGDI
LFEGKSIFDPDVIDINELRTEVGMVFQQFNLYPHLSVVDNVTLAPIKVRGVSKADAHVLAM
ELLARVIGIDSQALKFPGELSGGQQRVAIARALAMQPKVMLFDEPTSAIDPEMINEVLSC
MKDLAREGMTMVCVTHEMGFAREVSDKVI FMDHGVILEEGPPEEFFGNPQHERTKSFLKE
ILSHH

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>LAW1130 1389244:1390113 forward MW:31575

LSNNIFMSKLLCIEIIADDTQLDVIISILFYQIPYGWEEESLSTGETILRIHCDNSEVKH
TVCNKLQSVFPNIKIHVKEVPIQDWSIAWRDFFTPVIADQFLILPPWLLDTPKSDQQII
VIEPKCAFGTGHHATTVLCLESISHCAKKGYLQPGMRFFDLGTGTGILGIACSLGLGTGI
GADIDPIAISNASENIALNKVESQMVITEAGVEAGLGESFNLIVANILAEPLKCLALDLI
ELLAPSGNILSLGLLDYQADDVEAAYS KLKGAQRVISGEWVALIWNRRQG

>secG 1390148:1390486 reverse MW:11799

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VNTLILSLHLIVCILLVIVLLQSGKEGMGVI FGGGNTSVFGSSGAGLLTKLTAFLAII
 FIITSLSYNIITNTNSANQSTILDVQIENSSNTTQAHPQSNQESSVDNHQKE
 >tpiA 1390582:1391340 reverse MW:27596
 MKILIAANWKMKNRLEAKDMIEKLMSMPEGIPPQRDIVLFPFLAIDTIKEKLNSTIV
 IGAQNFYPAPSGAFTGEISLEMLKDVGCSWVLIGHSEERRHIGELPTLIEQKTKLALS
 YGFSIILCIGETAQEREAGLVNSVLEQQLRTSLTDIPSKAISQLVIAYEPVWAIGTGKVASQ
 QDIITAHTLIRKILHNMIGNTSQNIRILYGGSVNSEASSILELDNVNGLLVGGASLQAE
 SFMKIIHAGFSE

>rimJ 1391360:1391830 reverse MW:18046
 MDPIYTQKCIPLTYSDLPEILALEKQYTSHTWNIPQFVNVLKQKGYKTFGVQTYCKKLIG
 YIFIYYNQDYLEVINIVVAKQMRKGYGKLLLNTALRLAAKKGILKIILEVRATNDSAIA
 FYKSFQFIQTGIRQKYSDTNEDALIYSKKVTSDIL

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>LAW1134 1391831:1392370 forward MW:20532
 MNNIFYPIDAFNNDKAPVVEFIDADCKTLIIAPITHAPRLKLGKVVVWQLFDSNRRIYL
 SRRASHLVITYPNLWDFSASGYILAGESCEDAALRELLLCFGIDKASLSNPRSYFFPLQEN
 FILSTLYTVSVMTTSIHFCYDIQDGMFLDEDELTFSSSEFLTPSLLWAIHNKIIIF

>mreB 1392420:1393421 reverse MW:35668
 MKRKYIAMD LGTANTLVFIQSQGI VLNPESTVAIDTLSGKVLAVGKEAHAYIGKVPHNIE
 VIRPLKDGCIADFDMAQTLIANLLQKIIGKWLVRKPHMICV PINITGVERRAVIDTAKR
 AGAHEVRLIEEPIAAAIGASLPVLEPIGSMIVDIGGGTTDIAVISMGEKACAQSVRVAGD
 ALNKAVQRYLQEHMQIFVGEI MAEKIKMTLGSLETPEPLTMEISGKHITNSGPTNLKLD
 HTHVQKAITPVIDIILKSILDVLEQTPPELSADIMQQGILLTGGGSLIQGLNTCITNLTG
 LPVNVDRTPLTTVINGAGATLDDIARYKQLLLE

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>LAW1136 1393424:1394458 reverse MW:38603
 MTDNHNGDNILDLIRSVFQVHNVALFLPTEDGNFTLVASASTECEPYTEEFIPP GKGLVG
 WVLRHQQPLILNFDQRQGYLGYSSNDEKLITSFMGCHLPGGGALCIDSITNHVFTEVD
 QQLLHRFAKLVVRQINTMGNANNQRLRRYYDGLQLFKLHEQTNWKEFLSLFLAIVTET
 TDSDYSVVFVSSVEGSSTYFVEGESSPLVLP HKKPLPEFSLVNGGLLGWVFRNEVPIYAEG
 TDGSSTPLFGKVSYIPEFQSIICLPVSI NKITCGVLCCLASCTARPLPQDMRIFTT MATIS
 LAQYLNIVALKYRLNRLLPDATIHRSGAIFYDPDTAPITHIKEE

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>cheB 1394777:1395850 forward MW:38184
 LTRVIVVDDSAFFRSSITKMLTQDSEIEVIGVAKDGI EGGLEKIKNLKPDVVTMDIEMP KL
 DGI STLKIIIMDEMPLPVI MVSSLTKEGAEATLKALEFGAVDFIPKYPGNSLASMDLAALS
 SDLCTKVKAVAAARAKRFPLKIRKDKVPIISPVKKDFFTSPNHSERSRRDIIAIGVSTGG
 PPAVQKVLSELPEFPACILIAQHMPAAFTKPF AERLNSMCKISVKEAEHGNPIKNGIAY
 VCPGGRHLRLDLKGALPQISVVSEPSTALYKPSANVLMESVKGSMGGRSVGVIMTGMGSD
 GVEGMRVLKSKGGFVIAQSEASCVVYGM PKAIVDGGLADEVVDLDNIAERVASALYK

>LAW1138 1395874:1397826 forward MW:71571
 MINHNVEQITQEILTRLESDKSDEIRSAAFEAAELKASDSIPLLIKHLQSPNFGVQEAAE
 YAIRKIRGVETVQSLIPLLRLEDVAIRNSAIDILQEIGADDLNTLYKLLHDQDVIDRIFV
 ADILGSGVGSFAVSMLIEVLENTD VNVRYQACISLGKLG YSEAKGALSNALEKDEDWVQ
 FAAVEALTKLKANACVDILLAALPKSSDFVASTIINALGIIGNMLSVPVLLQQLDKSTGP
 LRNATVKAIIQIIGAPSLGLLGEKDLDKLYTYLLVALEDEEIVLVAFTGLSFFQKKEA
 TTRKVFERIQKMSLDHADLLSAAIKCLIDVGYNSALKEGIFSKNEEVKVAIEVCGSIG
 DQDCVGLFIESFWILPLELQRFVINYL VNIADTSNLSFFTEVLSRHTDISIIKAALLFLG
 KQLSPALSSDILSYLYHPDVEVRKTALEACLALNDEQINKQVIELFFNEDPSLRMLAIIYA
 MGKISPETYVNSLLLALKDSSGEVRRAAIESLGELSKITPELFESSIVYDECKEVR LA
 LINLAKKIGTQQSLSFIINMLESDS WVVIRAI EALIDYKTEEVAVLAIINRLENADV LV
 TMKII EALGIIGGKLAFQALLNLINHENPDIQQA VSDALSIIQEEQG EDF

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>cheR 1397826:1398701 forward MW:33560

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MALPIETTSLRSSPGITDSEFKQLRDFIHQKSGIFIADNRKYL IENRLVGRIRALNLKSY
 GEYYSYLKFDPNRQTELTYLFAVTTNETSFFRNPPQLEVFQKVVLTRVIEEAKKSGRKK
 LRIWSAGCSSGEEPYTIAIIHELLCTEISHWDIKITANDLSESVLSIAKEGLYSEYSLR
 TTPKHIIDKYFTREGQGYRIKSNIKSLVSFGTINLKDKVQVSRVERSQIVFCRNVIYFD
 DEMKKQVISAFYDNLPPGGELIIGHSESLHSITKAFKLEHHTGTIIYRKQD

>soj 1398717:1399487 forward MW:28825

MKIIAIAIANQKGGVGKTTTALSVAALTRKKKKVLFIDLDPHVCASVHLRYYPKGQVNTLY
 QILIANREELPLIWSKVI LKRDSQAWDVVSGDTRLSEMESILHPFKRKGFI LKYALSLLS
 DKYDFI IIDCPPQSGVLLINALVAADLLLPIIQTDFLALHGLKLLCDTVKIINRRLQQPI
 PYRAVATMYDKRTKACRHILEVLQLKMKNIMFSTVVPIDTKLKEASTAGKVI FEYDAFSR
 GALAYESLAEVVSLLW

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>cheW 1399691:1400161 forward MW:17638

VVTDKYIQSIP EIQLVGFQLGSQLYSIPTVVVQEVVRKVP IFKLPASSKVVSQV I KLRGY
 ITPIVQVSSLLNITKNFLGEGSMFTLICNYKAFQFGIPIDNIHMYRVIHEDIQWSVDSL
 LGVAGEYIIGLFLKLYEKLIPILSIERIITDVFQRKV

>cheY 1400172:1400540 forward MW:13904

MSKHILVVDDSKTVRNLM SFVFKSKGYQVTTAEDGLDGLEKLYSVDKVDLIVSDINMPRM
 DGFTFIKSVREQDLRYNIPIIILSTEKEDEDIKKGMKFGANLYMVKPAQPDTLVRNIKML
 LG

>cheA_1 1400564:1401208 forward MW:23915

VHILYKRYVMSQDFMDPELFADFIEAKEHLETIEPNLLELEKSPNNLALLNEIFRPMH
 SLKGASGFLGLNKINHLAHAENILDELKRGEMVITSEIMDVILSATDALSQMIYNLEKT
 SSEGDVETESIMNLIDAIMSGELNVTATIVQPTQDTESENTSESKTQLTTVLEAVDQPATP
 VPLEMIDVSPVNQVETKVEAIP SHEKKNRELIFP

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>cheA_2 1401396:1403609 forward MW:79637

LKGNSGIIGFHELNSLTHEAETLLNRVRHGEMVATHELIDL LLLVVDVIDSLVERIESST
 GIVQPFDISEILVCLQS AVAGKDITLPKALIGSLNTVDSLEQNSIEHGVETIENQVSQTS
 TESSSAFNSSDKENIEFAVTVKQQQSTIHAALEALAQDSSQREYIDALYRSLISIQNAA
 GVMGYDELKVYAERTAGLVAQGRDSGIDFSLMLDILTQEVAVDDMIAVILAGDGITQLS
 SSPIEQKEVLSSQDGN TTDVVSSTPVVSAEHLTSLKSSSLSTQESPGQIESHVSPKPGPV
 LKTISNVPKNIKPPSVKSSQAKPANANDATSEQKSSSTIRVDHEKLDHLMNLIGELIINR
 NRYTMLARRLEEQGTNADVVEVAQDLSETTYAMARISDELQDTIMKVRMPVASVFSRFP
 RLVRDL SRKSGKEVDLVLEGEETE LDKSVVEVIGDPLVHLIRNAVDHGIEPESERIAQ GK
 STKGKVT LRAYHKGNSVAIEIEDDGKGLDPDKLREVAIKKGI LSAAEAKLLDDREAMELI
 FAPGFSSAEKIIDISGRGVGMDVVRTNIKNLKGSISIFSEIGKGRFTLSLPLTLAIDA
 LMVNVAGEVFAIPLDAVSETTKLEASKLNDINGRKAVTLRGEVLGLIELSELLNLPQEEH
 TDVLSVVI IHSNERRLGLVVKLLERQEIVIKPLGSYLGDI PCISGATIMGDGGVILILD
 PHEIYLLSTSAAKSVSQ

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>amyX 1405089:1405409 forward MW:11821

VGTTSSHGPGYAWGYTRTTMVHTKGSKTARWSQSQKMHLS PDWSLQLDSMKSESLVIRDQ
 HARVNAFPGLVHTARHTTKVGFTQSRANEQSRQSSTVGLMIGVKS

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>LAW1146 1406085:1406462 reverse MW:14335

MWSHLKDAPTACRQLVSDSISLPLQGFFSPFPHGTCSLSVAEEYLALEDGPPRFPQGYTC
 LAVLRYRLCLFQVQIRGYHSLWRNFPVLFSCLLQNHVCRYPNPNQSKLFGLGSSRFARHY
 YGSLF

>LAW1147 1407181:1407675 reverse MW:19183

MFLVNSRHHQFTAASRSSNSFI FTPKSAPSSEVTGPFCRVPWPEFSRAPWISHPTHLSWF
 AVRFDTYMLRSFSWQYRLNSFRTYVHGFASRIHLVDL PARQFYMLAPGLPTPGLPTFLRP
 SITLCIKYRNINLFPISYGFRPYLRDRLTLGRLLPLPRKPRVFG E

>LAW1148 1407750:1408049 reverse MW:11321

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LPPPILAYRFHWLPPILHIQAQNPMSYSKGAQGLPVFLRIHGIFTATSI SP SLWPRQCG
DRYAIRAGRNLDPKEFRYLRTVIVTAAVYWG FN LV LCLR

>LAW1149 1408082:1408363 reverse MW:10336

MNSWMRSACYPRRTFYPM SDGPSIRDHRITNANFRSCSTCLSCSQAPLCVCTQRLVSDQA
EGTFACLR YILGGDRPSQTTHQTLSPARLTGQG

>LAW1150 1409027:1411030 reverse MW:74595

QTTSLSIMQKGDVMGITLR TKL FLLVIVSISMAAIP I IFSAYEDFRSSNIELERKTFRSI
TSFVKDGLEARYFDILTYQATNTLQSKNQLRRIAMMLDSNLNILEKFPSKEQSTFLQEWI
KQLQQLNIHIEVYNANKKPLVNDPLFTTLTKY NLKDAKNRSFESLLNYEQLPINGEFTV
FENKNSSKSDPILVFLLPSPEDQH I ILTA IN ISDISKNALDAEEQLAKTIREKIEGF DLH
KDGFI AVFSDGTLIAHKGN NIGKKIDFISEKTLEARNKSMSEEV I SLSKDEKLL LHVA
YFKSLNWIYVAAA PQSEIEAPTRALIHQLVGI ALAA I LNSLLVTLILTARLITPLQTLTE
KALSLAEIDFSSPEAEELATADLP IERSDEVGQLSRAF SMMGKTLTQNI RELMETTTI KE
RMLGEISAARDIQMGI LPTTDTASLVPHYDISAF LDPKAVGGDFYDFFTSPEGKQVVVI
GDVSGKGI PAALFMSMTVTLIRYAI GKGLSPA EVAKEINEVLRKNNPSYMFVTLFIGIFD
PESGILEFVNCGHCLPYI I NSTTDKPI TTLDNSHQSPI VGVLEHA EYVNNQTQLHKNDIC
FLYTDGVTEAMAPNLELYGTERFEKTLDMNRK KSLKGLIAAVNQT I IEHRGEAEQSDDIT
MLAFMYK

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>LAW1151 1411391:1412671 reverse MW:48141

MAETVFN E F I FYETLIDLCE SIAWEKPV DENKLF TLT KHGAAPTQVMRLAEAFGLMLVKV
EAKNLQQA KLINDLQLQNK E LESTKKILAEQNT H L SRTIQENYQSQKI IGQCDEMHK VLE
LAKAIARYPINTLILGPTGSGKEVIAKMIHYSSPR SAGPFI AVNCTAIPDTLFESEMFGI
EKGVATGVNYRKGLIEEADKGT LFLDELADMSLANQAKLLRVLEEKEVVRVGS SKPIPID
IKIIAATNVNLEQSVKEGKFREDLYYRINVVEIKLPPLASRGDDILLLAQNFLNYHCSQL
HRPALTL SHDVQKKFLAYS WPGNVRELNNEMERVAALTIGD TVESSDLSQRI I KEWEENT
QDIQENL TTPSETSQRQDSLNLQQMEYNLIIRVLKQTNGNKSKAAELLGITREGLRKKLL
RLKIFD

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>LAW1152 1412680:1413048 reverse MW:13145

MKRVSLLDASIGIGTILGPQETPEPTIPQSRSLASTSLTTTSLEATYAPSNIQTVLEEA I
CPDAGDGGLLIPSVFSSNLQKCKENLSQSNQIEIQNFLQHDLEPLIDNEALLKMYVSLMI
EG

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>LAW1153 1413348:1414544 reverse MW:44002

EIVMANVSGIPAPRLLSTTNQMTNAAAGNTNRATGSMNGRNLTIKTPQSMIDNASEELT
TSLESKSSDDFAIKDRKRQGGKSDSLLKMQEYTEL TND DTRNAKRAMLSQVLRASQSSQ
DVLEKTLEQFSNKTDAWASLAEIAQEYGAESPQPTGLKSVLDAMETLENEFGDEIKAGLK
GALNSKEFTDIGSAAQLRDLYTTT V TITAAPDAVLARLLEEYESDDDLDR AIDFLLSTLG
GELESADPSMDKVHLQSVMGDIEKTQQLHSSHKQCTTALS RWKEKHKGGGENSTLTPLEM
MRELI ALKNENFISPSSIDKIVDQADPQDIEKEVLF LQEMLA AVRKFPIMVFDNVENRVR
VMGAVQDAVDDAVRREDEF LFQKEHPDVPLQPDENNIQ

>LAW1154 1415356:1416042 forward MW:25403

LIFNIVFTGGGNIMSDSTNLSSFGFQGNMNDFTNSEEMSQPSEVQGNSKEVRSNSERGI
PRITVDPTKNPTPMFRYAMLELVTARNIRESATSLMNSIADTQREQKAASSYLDQFRKHQ
SDV SQGHGSGSQGKWERIQWQVDWLKSHNIKYPSKVD TGDTWLN ADEWDLICKGTQAYI
DNIGSSTQQKMVQAQDALGQYNAQVQGATSSITNDIELSRVNTTQPF

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>LAW1155 1416504:1417094 forward MW:21496

LRRCSMSITGVSGATGATGAADV TGTAAPKFAVDPTKNPTPMFRYAMLELVTARNIRESA
TSLMNSIADTQREQKAASSYLDQFRKHQSDV SQGHGSGSQGKWERIQWQIDWLKSHNIK
YPSKVD TGDTWLN ADEWDLICKGTQAYIDNIGSSTQQKMVQAQDALGQYNSQVQGATSSI
TNDIELSRVNTTQPF

>LAW1156 1418018:1418524 forward MW:18237

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MSGVAPVGVFPLPNPDNYKDNPVAMYAFVLLLLYADSYRQASMNMKMLEVLQGEQKEAND
MIGSFNQKLSEVEKAGGGVTRPMTAAEKAWCDKNGINVPGYPNLNAENWTAVIKDTQKV
VDTKSTDIQSTMNIKEATGQYSSFMQGTSTNVTASNQMLNSIAKNIA

>LAW1157 1419132:1419671 forward MW:19766

MVMKQERQETQAATSEAPVMGTDNDMERVEAIMDALSTGSSIGDIIGITQEQMDVLYTIA
YGAYQAKNYQDAETLFQALCLYQHMDERYWMGLAGSRQGLENYKGAIEAYEMAGLAGSLG
DPTPFLYAGICYMKFGDKESARVAFLSTEALCQEGNRKHDLVKERAKAMLEILSGGVKQ

>LAW1158 1419668:1420858 forward MW:40591

MTNFGDISGSSARMSLMTGTSGEEGLEELEGGVPKEQGGPGKGDASEAAKGQAAADSIN
SAGGTEKPGEVGDKEDVGEGGEIPEGGEIPEGGEEVPEPPYVPPPLVEPAKISTVTDLS
TLMGSLQLTEQKKNAEKTVNEIKAQNKEQQVKFQEQIKKIEDNIAESKSGILKFFQKLF
AVIGAVLGAIGGALAIAGAASGNPLLVAAGIMAVASIDAAMSSLSDGKVSISAGISKA
LEAMGVPAETAQWIAFGIQLAMIAVTIAIGFASGGGGAMAGVSKIADMFSKSDVAKLAQ
MIEKASKIVQIAGSVNQSAIGGTGIGTAVVQSNIKANESQKEIEAAIAKVKAKIETLQD
FFKNQMEQFNAIMKIIITDIIQDSVNTKIAVQRGARE

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>LAW1159 1420906:1421703 forward MW:27903

ILEKTIMISLNNSSIQIPQQNIEESTSQEVTSSSGGQPAKVDGVS IQAPKAPVTSAA SNL
EGVQQREAQENVTKMGLPELSAPKGGYVQSTAAMFAEVTVDAMNQRKAAQDVQNSALE
GMVNMKLEAAKDIKEQSKLMMGLGIASSVMTTAMFGGTIGGVKSMTANPGVGTTPQAQV
TSNKLTLGKEIAEGRGGMDTGKESQVKSIDADIRTTQAEKKLEAQMELVKQFAENSKN
LAQQALQIMSEVTRDANATTQRILA

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>YscC 1422992:1424743 forward MW:64652

LKVLFIYILLWSILFIHLVSVSKAETLFSYLYTHYSEQESLGSLLTDFAFQTQGYSAIISPA
VRGNVSGFFKDENPYQFLEGMRSAGVMWYMLGKTMFYFTAELQRVFI SPQVMTVERLY
HILLNSSVISPLPIQLNGDMIILSGPPHYIEQVLQAVSIFEVSQLSNITMRVFPLKYAS
ADDIVIQSMDKTVTPG IASILRAMLNGQETATTIVEQPATVNKLNGEGLASKGKEKTE
KGNEVKQQAAGVNI MADPRMNAVVINDAAYRMPYEEV IHDLDKPELVEIHAAIVDIDS
EFKRD LGFTLQQGSSKKSMTMGDFSTTQQSLPLEITKGTVEGGGLTYSTIYSKGVEFFL
ARVQALETEGEARVLGKPSVLTVDNIQATLENTSTYYIQVQGYQTVDLFKVESGTVLRVT
PHI IYNDGTKSIKLVVAIEDNQDNSTDPVGSNVVLPPIKQTRINTQGVVNTGQSLLI
GGYYYEQQGVNDKGIPIPKDIPIIGYLFKTNKTSKMERLILITPRIIMPNTVTPIPAH
VDDPSFHRSVQDQTYDDIKPKSSTGGGCSRKRRAPIEEQRLG

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>LAW1161 1424743:1426164 forward MW:51723

MSKVDGIGIYVFSGPHVGAEEILPEGSYITGSDSCDIILTDISLAPRHAQLDVHIGESE
NTHTLTVIPLEGGVWSNNQAVPESGFQPKPGDFWYLGNTSFGWNFPKNWQNKAAQYAE
TLSQAENDNNLGLGEGTTQTQEQQDDLKVKVFGDTHPQDVISKIDKFSMGKLI GVCLLI
LFLGAI AISYQRDSVDEKTQVAFLQKVL EDNGFSGVSVIPGAQIIIRGVVQSDVQRQLI
YTLAQSVHSPVYIDVGVRRDDLVAVKAASFASRGIHISVKEFSDPGIISISGYMKDGFVEE
WSISAMRDDIPIPFKLEKHI VYAKEVAEVLDKIFAENKIGSLKVTYLAGEIEIVGSFDEE
RTKKLDKALAEIKKELDVPIMFKIQQIKPAPITSAQKQPVKDESDEESSVLGGSVIKGV
TLLPIPFITLSTGERIFKGGVLPSTGYTLDSVSLDKLIFSKDNQYKEYPLRGAN

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>LAW1162 1426377:1426856 forward MW:17467

LEGYMAVETGVVAQSKLQKILSEESGLYSQDPSGALSQPAPEDVQNFQKILEDDNQPLN
VISPSYHTQAI EIPSVQTENI VPVEEVHEVEQIDLPTDVQDREIAINSSQMVADLNTGVI
TPVELLRQLQKVVGVVQTQAVTTTQVSQQVEQNI STFLKE

>YscJ 1426865:1427701 forward MW:30500

VYLYMENVADSNIRKLVIEWLFQKKTIVLLLAIIILLYGCKVEVYQGLNEMQANAMLAT
LLKHGIVAEKQNTGKAGYTI RVDKSRLAESLELLRESGFPKEQYKSLGSI FSGEGMIASA
SEDQARLSYALSQELAGTFSRISGVL SARVHVALASGDQELEQRTPASAAIFLLHTPSSP
VVNLVPKIRELTSMSVPELSPDKVSVVLPVRESITIPTVASLSSIGGMFFSNGHATYVL

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LILAGITVLMVALLYLNIIFWKHVWTAYSESKSNTDN

>YscL 1427698:1428378 forward MW:25929

LVIRKHCVMVTQKRYTDFPSILFIKSNMFFPAHGVHILHEKDKALLTANDFLEETDKYL
KNATQETEFYKEQYALGYNNGKEEGSFEHALKIFGTIFSSIKFVENIETTLVRVTEAV
NKIVGEVDTLNHINDWIQKDLLQLQRKYQLTLYISHNDEKSVTIYINTLCANKPQLKNFL
HIVLDDSIKPGNCRVESELGNVEASIKTQMKALEQSLGVSTELEVE

>LAW1165 1428350:1429231 forward MW:32380

VFQLNWRWNNMSNTKISTYSFGDKPGSTITGGFGAQKPTSSDINFFEQSIKHKDDYPNN
YEVKEDNSQEEVEEKPTTQPPEQVTDKTEGKDEAFIEKDDAIGKDKDKIPGKGEPIEKE
DGVDKKEPIKDDKVVAVKNHEKDDSSSIKDDGLDKQITPMMLLSMVSIGKDDDLKVAHVQ
QINSPTIDLTELVRIMVAAPSSSNNGEVRITLAQGFAGTDVILRRDKEGMMLLVNFLASG
TAAYNQIANAQDLLKRRLEVVEGKSVNIEISDKQQETEKVTAVEGSGTSTTNQ

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>LAW1166 1429285:1430391 forward MW:40699

MVQTTQKLFEPANLLPLSAQVYNTASMCIRPWQFMLQDQLCTLDLLFLHDPFSSVYTI
HCGEGRWVIEFGKVPPLSLYPSFKDKPEVLCVPEEVKLAVFELLISPFHGFENMMGTPV
ELVSSSTLSPPSRDNFSVACSIPLVLHVEGNENEIPFLVKIEKENDAILLSQLQEFPLAY
SDVGPLSISVGIIEVGYTQLSTQQLQIEKDDILIPDQFFIQEKKIQLRFSRFLANCTIQG
GMATIMDVNDVGYPEDQNGGGEQFVENHTEAPNSHGQRTARANSRQSGQSSGIDVSG
LDLPVVFELEQRQFMTVQNIIGLLAPGYTFALSVDVQAPVTLRVNGKAIQVGRVLVLDLNGSLG
VQVVQVML

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>LAW1167 1430468:1430806 forward MW:11947

MRVISEENNGVIVISLDGRIDATTTTLFEDACKKAFETGVPVAVINMEKVEYISSAGLRG
VLTMLKLGNGASVNLVFCSLGEMVSEVFRISGFNSVLTITYPTIKEALAALSV

>rsbW 1430820:1431263 forward MW:16714

MATLTIPSGIEQLPHVNAFLRKSIPMAFKKRIHLIELAVEEILVNIIFRYAYHNENGA
SCQFVKHNGTPYFVITIKDWGEPFDPFQVPLPDLSDINNRPIGGLGVHLVRTAVDLYKY
KRES DINVVELFFQFLAEGMGNNNIS I

>LAW1169 1431313:1432011 forward MW:26041

MLRIVPLKYTLFAIITLFFCFDDTTNLANEILKNIQYTNKIAEQTMLAMQYRVKQARTP
QKYHPSEPIYENLLDQMDVYSLSPSAKIVLHRMIPTYVKEKVFRGEIKLPSDWKEIIQV
ASTKHNLDPALIAAVIQVESGFSGEALSPKGAKGLMQLMPDTGLELGATDLDFPMTNVDA
GSRYLRRQLDRFGSVELALAAYNAGPGAVIKYGGIPPYKETQEFVKKVLSAF

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>cheW 1432180:1432665 forward MW:17709

METNSSYRGSDDSLIQLVTFKIAGEEFGVDILKVQEIIRMPITKVPNAPLVEGVINL
RGKVIPVIDMRKRFGMPSSAHSQTRIKVMDLQGVVGFVVDVAVSEVLRIKESTVEPPPP
VVAGVGSEYMRGVGKLQDRLLILLDLKLLTESELETLSAL

>LAW1171 1432770:1434458 reverse MW:62295

MFKKIYVFYITLLLIFLTYVTPYDVWSFDLTIHHTNDIHSGLGKIKESGNPCFTSTTPD
CVGGMARLAQSILDIRQSTPNTILLDAGDQFVGTAFHSDFINTPDQLPFVKFLNRLGYVA
MSPGNHEFDHGCYEFFSAIRQLNFPVVVANLFTDPEMQSSITPWTIVEREGKRIGIIGL
ITEATATGSRACSAIFTNAEQALRNAIQEIKKQNVFTIIVLSHLGINVDMELASKVDDV
SVFVGGHTHTLLSNTYPNAYGPYPVIVKHSPSGHPVLIVTAKEKLEYLGRINITFDEQGIP
QKWNGDIVRLDKPISNDPAIVSIAELLSYGIPIKEKLEVKVGEIAHPRNPFDTSQPSN
EQLDEKPPFFYCRKQEGLTANIILDAILEAGRSNGAQIAIVTTGLIRGNLPIGLVQKLDVV
TAIPIEDKLYVGDVTGKIIQEAIEGVSKVHCFAGTFLQVAGLRFTLNAEKPVGERIQ
SIEYLNNKGYEPLDPNKTYRVIINGYPTEGHGDFIMLKDIKWTDIQKSPVEAVISYLKEH
SPLNVKKDGRIVNVTPIIIPNE

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>LAW1172 1434763:1435746 forward MW:37650

LYKSQKSSLDYAVTNINKALEEDNLVLLSNYVDFDLSLKNFVHSILQYWSSFRIDESRQK
ELEDNVQQIILLALRHNDKNQGNITS DSSITS IQTIDQKMPFSFLPKDFLQKLEKFT

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IYRQDEDIAILKTSIVHNEAEYHTELSLLVQRVAGKWHITKIINADELVKLHMAALDKKE
DQLTHEVAVRNDYIRNEMNKYYHVSECNFAVIKKENSNDVPLTISVGGINMGSEVLRS
AGMRCFLYDIHKNILAVLPLTMAKNVSPGDFFEQEWEYMEIPENVLGHSLFLMKDNTISCA
IEVTTVILADGTFLYLTPTPEKERLHP

>LAW1173 1435746:1438211 forward MW:92087

MLFLLRFILALLFIPLGITISYAKDTLSDHSSLSLPSKAQVVNEVWMLLLQSRVGELEA
ISYELSSLFKELPNFSQQLSNNIQEIEKKYQQYSAMAKVSRGLPIELSLVEERLKRLDNQ
LSVVMSPLLDNLNLIKVRLNEVSLLEEDAGVKTENLGSSKDLDIFVKNLAEVENKLGRL
KRVNEILKPAYMLRNNILAVQRQLEIIPSLWKSYYLAPTGKIYEPASWLNIIYESLMSFK
ETLLVRIAAELPESKQDWGSSLLRFFVILIPLVLLL VVFYSFSRHWSDELKNVWGHISKH
SLILLALGLAFHFSAWVPAGENYFLLSMIGTIIMSIGQVGLAWSLYTLDKSNKPKFSPFW
KLLIPFFGGILLLLFNFSGIIILTLLWVGILLVSFYDQKKCKLEDSFSLVNNLLQLHIVI
LWITLIMTMLGWTRISILLCMSYAALAIQIQAAGFVRLANISKYIPQEGFHGLFSGML
LAVALPAIILAIISITGLWILAYPGGAYLITHITKLDIFSIGKVSFSLVQILFLVSAFYIT
RSFVSVGRMFIANLPKHNMGMDRTLIGPIQTGFTYTLWAVFFFSTLYMLGVSLTSLAVVA
GGLSVGIGFGLQNI TNFISGLLIIFGQTLREGDIEVGNNLTGIVRKITIRTTLVETFD
NATIFVPNAELLSGRLTNWTRNGRTVRKDIGVAYDSDIGLVMGLLKEIADNHSQVLR
PEPMVVFSDFAASSLNILRFWVGDL SQAPDIITDLRVI IAKRFTEKNIDIAFPQLDIHI
RNDSVLALRRISPMASSELQPTKSIDLPGVTNNKPIIANS

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>mltD 1438532:1439695 forward MW:43864

LYLYSIRLLSIQPIAILRAMLTSGWVFDAFLYFFEGKGVTRSFCLVCMLVVGGMFFIFI
SGAFPDYRGIIEIRKPLSSSLPIPPQKDRPLSGSFWNIRGAFVRQEIPSDINSPILFSS
QNMFOFFEDSVGLRTAKGVTPLVIKEMDETIAELFSTNTMLITSLGEPLNFEGVPLRWN
GRNLCEMTPQSIARRNQFLNSWMKLTTFKSLVQQAGQYKEIVEKYSKKYNLSAELIYAI
ICVESSFNPAQISNRSAGLMLQIVPEMAGVEVKRWFYSGGLPTAEELLHPETNIKYGTSY
LYLLMTRHLRPI TNCLSREYCAIAAYNIGVGAMLKTFAVTPEEAFIINTYTAAEVQEHL
MQKLPKQTRVFLERVLTFKESFTVLL

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>LAW1175 1439752:1440264 forward MW:19483

MPKLFILLFYTLIFFSGCCVTSKGVIDPIRLFQESEPGKIGMNLKTI EDAMQSQIDLA
QGILEKFPKNENVRVRFQNI FMEYQQKLNTEQQKVVEVMNSLIQKTLDEYRVKNGYNV
TKDSLLSYDSSSDITNDIITILNSTPLTFEPVLDLDRDPETIVPPLSNN

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>LAW1176 1440333:1441112 reverse MW:28883

MSLSLNQTLCIQCGQCVKVPVSVILVRRSKNII IKNRSLSHCLHCGHCVAICPRSALTLD
LICPDLLQKATKPSLSDQRTMLFKSRRSIRFYKEQSFIDILNESLDEARYAPTAINSQ
QVEWILVEGKEKLHELSSRVADWARTIPGKYSKIAAAF DAGYDPI LRHAPTVIDLAHQD
SKWGAQDCTAAITYLELALHSHNLGSCWAGFVVAANQDIDLGLSLPEDRKIYAGLMVGY
PSVHFTWIPTRKPLRLTVV

>LAW1177 1441109:1443982 reverse MW:106316

MNKCIIHIEGARQHNLKNITIDIPREKLVVICGPGSGKSTLAFDIVYAEGQRRYIESLST
YARQFLPQMDKPDIDKIEGLSPAISLEQQTGRNPRSTVGTTEIYDFLRFVYARLGKMY
CTGCSKPIEARSVDEIIADILALPEGTKIILLSPLVELQKGTHIEKLLKADGFVRVRI
DGILYTI DEAPSLDKNKKHTIELVVDRLIKNDIRGLADSVELALRYGGGHVIEHEISI
SDEKKGIDTIHATESVCTSCRISFPTLTQQFFSFNSPQGACPRCSGLGTIEYFEPLLIAP
NRGLSLNTKAILPWANPKIFHRYESSLKEKLGKRYGFNLSTPLSEFNAAELDILFYGEQIN
DTPSQLSKSKKT VQKTIDNQRWSGIPILEQSLQYGMWRDILSRYLQNMDCPVCHGARL
RTEALAVQIQGVS IQELCTIPVSKTLNWLQQVIFSGRHAIIAEPLLKELIHRKFMINVG
LDYLSLGRMTTSLSGGEAQRIRLASQLGSGLVGVTVLDEPSIGLHPRDNERLVSTLRSL
QKRGNTVLVVEHDEATIRESDMI IELGPGSGLHGGEKVFQGSFRQLINESNTLTAKYMRG
DLTIPIDPKRRQPKNYLTQGITTHNLKNITCSFPLGTLTCTVGVSGSGKSSLVVDTLYK
HLALAHGIRVDQPGIIHG IQGIEKVERTISIDQTPIGKTPRSNPATYTKIFDEIRNIFAM

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TPDAKKRGYQPGRFSFNVPGGRCETCKGDGQLRVEMHFLPDIYVTCDCINGKRYNHETLE
VRYRGLNISEVLGLAVHEARKFFTNYPILERKLAILEEVGLDYLQLGQPATTLSSGGEAQR
IKISRELGKRSLPGTLYILDEPTTGLHMHEVGKLITVLQQLVDKATVVVIEHNKDVILA
SDYVIDLGGPGGGENGHIIVASGTPEEIMQDPQSITGKFLLEEVNVQRSYHTINGITL

>LAW1178 1444320:1445030 reverse MW:27232

MHLLKLYNDPRPLLLLTIVCGITVWWLSPLYLCIISFCLLNCLYNPFFNQSIYKKSTLYY
HAIFVCSWCMIKFIIDSLTMPISCYELLTNTVILGLRLCVLILLGLCLISKTTPRHIAL
AAGWYLRPFKQHTWEITLALSMLLHTIPRLFHTVSQIQATTRHRLSLLSRLQHIQVIMS
TTTRILIMSISKQSTVIAAKHLASPEPWELNHPPKTYSMFIAIAISCCLIIYLSILS

>cbi0 1445008:1445748 reverse MW:27441

MIQLNSVSFQWPQEHTPAVQDITFSLSSGSLICGSNGSGKSTLLQLLAGVQHICEGTY
IMDEICCPGSESSLLKKTALLLQDVEIQLLGSTVKENLLLPWSNPKDEYKQKAYELASLF
ALEKYWNSSVHHLSHGQKQLNIASALMLKPDLLLLDEPYSGLDYPATLQLSKILQQLGQ
KGLTRII SVHDLEQIIDITTNILILSEGKQVFFGSPKETLHMISEHPEWNI RLPSFWIQN
ASSQII

>bioY 1445735:1446292 reverse MW:19378

MSSTFTRINTIVWIAFFAALIAVSAFISFPLGPIPFTLQSLISLTGLCIGGKRAALCVI
LYIFAGCIGLPVFAGGKAGPGLSPTGGYLIGFIFGLAYLTGFGSGHNKNCPPKKAITIL
FMSLGLAVTYFCGATGLMWVLSFSPTKAILTGVLPLPGDILKLVIAFAIWKYLLKKGLL
PNDPA

>alaS 1446330:1448984 reverse MW:98810

MLTVNDIRQKFLGYFKNYNHQEI PSSSLIPRDDPSLLFTNAGMVQFKKVFTGQETRNYLR
ATTAQKCLRVGKHNLENVGR TARHHTFFEMLGNFSFGDYFKKEA IQFAWAFITEELNL
SKEFLYIT IYKDDDDAYDIWVNTIGVEPSRIYRMGEKDNFWSMGDTGPCGPCSEIHFDDQG
ETFCCGDNCGIGSCDCDRFLEIWNLVFMQYEQLPSEGERVILPKPSIDTGMGLERIVAICQ
QKSSNYDSDLFQPIIQYMASIAGVHYKKHEETDIALRVIADHSRAIAFMIADGILPSNEG
RGYVLRRLIRRAFRFQKQIGMNQPFYKTVNKVVELMGDIYTELYSRSEFMSRVVFDEEE
RFSITLDKGLILLEAELNALKEKNTKELPGDIAFKLYDITYGFPLDIINDIASKKHFAVDE
ANFQHLMQEQKERARSQWKGSGEKRIEACFQTLLEDGMQSEFIGYENLSGTGRIVALLDI
DGLPIEELPTKSSGYVIDMTPFYGTSGGQTGDIGILSTITGKTQVVDTLKPATNLIVHV
VTVTSGITLLDQEALLVSESERLDTARNHTCTHILQSVLQKILGDHVRQAGSLVSPTRL
RFDFTHIAPLTHEEIHAI ELQVNTIIMANLPLRVEFMDQQSALEKGAMALFEEKYGNIVR
VVTIGSENQTASIELCGGTHLTSTGQAGCFIIVSETGIAAGVRRIEAITGRNTLAYIKEY
QKELSTTAAILKTKPEKVVVEKVTSILSENKNLQKTVDLTLESSLSNQGKHLLDNLTRINN
IDVLTANLKNFSLKALRDIMDDIRSKLSSGIVCLASTEGTKVHLLLYVSKDLHNNFTASE
LIKKIVVPIHGAGGGRPDQAQAGGTNPSSLSETFELLKNILEDQ

>recA 1449016:1450083 reverse MW:38309

MAKKSISPEDSRREALKTALDTERKFGQGAVMKLSDDVHVKVAVIPTGSIGLDLALGIG
GIPRGRVTEIYGPESSGKTTTLHIIAECQKLGGAFAIDAEHALDIAYAKRLGVKTDEL
IISQPDHGEQALEIADMLVRSGAVDLVVVDSVAALIPQTELEGSGETQVGGHARLMSHA
LRKLTGTIHKSHAVIFINQIRMKIGVVGYGSPETTTGGNALKFYSSVRMDIRKIQTLKD
KEESYGSLTRVKVKNKMAPPFREAKFDI IWGTGISRSGELIDLVEAGIIDKSGSWFAF
GSEKLGQGEKVRALLDENTSLSKSSIETALMEHLGMNPEKLLCPVSDELEDNYDI

>metG 1450184:1452139 reverse MW:74969

VSSTYYISTPIYYVNARPHLGHAYSTIVADVLQRFYSILGEKTFFLTGTDEHGEKIIQAA
EAAGYSTQEFVDSISRQFQNLWPQLNITYDAFIRTTDLQHKEAVQKFLQHIYDAGDIYFG
EFGGYCLGGERFYTEKELEDGFCPQHKTKEPEFIEEQNYFFKMSKYSWLIEYLQHPNL
IRPERYKNEVLSLLESGALEDLISRPKTRLPWGIELPFDNTNYVCYVWFDALISYISALN
WPTGEYYKTFWPGEHLIAKDI LKPHAVFWPTMLKSAGLPMYKHLNVHGYWLNDRDTKMSKS
LNNAIDPITLIQQYGLDAFRYFLIREMNFSGDANFSEESLKHRINSDLANDLGNLFNRVL

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SMSTKYFKSLLPEAKEYTEPDMQLRQLTENAQYNYIQLMKNMRLSQAVEALWELIRALNK
YIDTQAPWKLKFKEGQTDRLKTVIRLTLECMRKVAISLWPIMPEITITMLKQLGISTSKSK
KYGNIPPTTCINNDIHAWEQLTGTMLAPTSNLFPRIELKEEISDKENKMSFQSNQSQPSI
YEQEEISFNDLQKVEIRIGTIVEASKHPNADNLLCFSIDIGENKPRQILSGIAQYTPES
MLGKQVCVVTNLAPKKIRGIESQGMILFAKTPSGLSLVTVESPVPTGSIVS

>LAW1184 1452273:1453223 reverse MW:36416

MKRILNTSFRPHGKKDIFFCEDPFIMKGDKVVVELEGGISLTQVVDILQSLPNSIDPLTV
PSIIRKATQKDLEQVKNKEFSKNAFAFCKSCIEHQPLMKLVDVEITLDQSKYIFYFTA
PNRIDFRDLIKDLIREYHAKIELRQIGERHETQLTGAIGNCGRVCCRRFLKDFSPVSIK
MAKEQNVFLNPSKISGSCGKLLCCLSYEQENYQIFNKQSPKIGKRYQTDQGS�KVRTNL
FKNTITVLNMSNEEIEYTLLEWDLHPTHTTPQTIKQNIHQNKTSHPSSDFLTLSDHD
TNKIDDNSLDTILTES

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>LAW1185 1454268:1454885 reverse MW:23229

MSIAKFFSNQTALLWKFMYSYFQPPVVRILHIVITLLIVINLILGYGFLCSTKNPDTYIIC
SSLLWVHISIGILLTLLTLLFIPACLFHRGIRHFYPLYWGDTKQLIKDLKVSLSFKLIPP
TSGGLAAVVQGLGLGALLTELAGIIFWIGWQTDGLYAHFFKEVHKVSATLLALYLLGHG
TMAIHFIVWQRRVARKKMRQKKS

>ruvA 1455153:1455752 forward MW:22171

MIAYLEGYIAEFGETSCVVATSSGIGYEVFLTTPTRSTLPNKGEQVRFYICHIVREDIQE
LFGFETWDERQTFIVLTSISKVGARTALNMLSTFRPNDRQCVEEDIFALTRVSGIGKK
TAQHIFLELKYKLQIDGNSTSSPSIGQSLFYDILTGLQGLGYTKEESSVVIKSVLQHE
PDLDVGSALRRCLKQLVKG

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>ruvB 1455725:1456750 forward MW:38067

MSETAGKGVTMPEIMQSSYPDETLREKDDSI RPSRLDDFIGQEELRENKLVFLNAARDR
GQAMDHTLFYGNPGLGKTTLAQIIAAELGVNLICTSGPVLERSGDLAAILTNLSKHDILF
VDEIHRMPITVEEILYPALEDYKLDLIVIGQGAARTVKIELEPFTLVGATTRIGLISSPL
RDRFGIISRLEFYTPPELSQIILRTSRILNVPITKKAIEIGRRSRGTPRIANRLLRRVR
DFAAVFGSATVDEELVNHALQKLDVDEKGLDQMDRKLTLVLIELFAGGPVGIKTAVACS
EEVRTIEDIYEPYLIQCGFMKRTPRGRMATVKAYKHLNLTD

>thyA 1456767:1457489 forward MW:27421

MPGVTPRVELLSYTPPELSVIYASFRQCYHAGFVGDMMWKLLDGEIPKEKQASFIHSLIE
SGHTSPIEHVSFTFAISGVSRALTHQLIRHRLASYSQQSQRYVDGSKFEYIVPPSIKDP
KALEKFTELMERIGEDYRELKALLESKRTASSIEDARFVLPQAAATNIVMTMNCRALLN
FFEHRCCFRAQWEIRNVAYMMLKHCMIIPAIFDPAGAKCERLQYCPEGEKYTCGLYPVR

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【0142】

実施例 19 リアルタイムPCR

以下のものを含有するPCRマスター混合物を調製する：1× TaqManバッファ-A (Perkin Elmer)、5.0 mM MgCl₂、1.25単位/反応のAmplitaq Gold、200 μM dATP、200 μM dCTP、200 μM dGTP、400 μM dUTP、5% DMSO、0.01単位/反応のUNG、100 μMの各プライマーおよび150 μMの各プローブ。5 μlの鋳型DNAを各PCR反応チューブ内に配置し、45 μlのマスター混合物を加える。PCRサンプルを50 °Cで10分間、ついで95 °Cで10分間の初期変性；94 °Cで30秒間、60 °Cで30秒間および72 °Cで1分間の40サイクルの増幅；72 °Cで7分間の最終伸長；ならびに25 °Cでの浸漬に付す。ABI Prism 7700または7900HT Sequence Detection System (Applied Biosystems, Inc.) を使用して、特異的PCR産物を検出する。結果をデルタ (Delta) -RQ (これは、サンプルと非鋳型対照とからのRn値における差である) として記録する。Rn値はレポーター発光とクエンチャー発光の比率である。TaqManアッセイの結果を確認するために、臭化エチジウム染色を伴うアガロースゲル電気泳動を行う。すべてのアッセイは2回反復して行う。

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【0143】

アッセイの感度を評価するために、10倍希釈のローソニア・イントラセルラリス (L. i

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ntracellularis) PHE細胞を、既知ローソニア・イントラセルラリス (*L. intracellularis*) 非含有糞豚場から集めた陰性糞便サンプル内に添加した。鑄型に使用したローソニア・イントラセルラリス (*L. intracellularis*) DNAの量は100ng~1fgの範囲である。QIAamp DNA Stool Mini Kitを使用してDNAを該添加済みサンプルから抽出し、糞便サンプル中のローソニア・イントラセルラリス (*L. intracellularis*) を検出するための該アッセイの感度を、上述のとおりPCRにより評価する。

【0144】

アッセイの特異性は、他のローソニア (*Lawsonia*) および非ローソニア属種からの鑄型DNAを使用して評価する。さらに、TaqManアッセイを通常のPCRと比較する。

【0145】

実施例 20 ローソニア・イントラセルラリスの検出および定量的ためのリアルタイムPCRの使用

ローソニア・イントラセルラリス (*L. intracellularis*) の検出および定量的ためのリアルタイムPCRアッセイを開発した。新規ユニーク配列に基づいてプライマーおよびプローブを設計した。感度を増加させるために、2セットのプライマー-プローブの組合せを試験し、マルチプレックス法としてTaqManアッセイにおいて使用して、特有のユニークローソニア・イントラセルラリス (*L. intracellularis*) 配列の断片を増幅した。反応混合物中のMgCl₂、プライマーおよびプローブの濃度に関してアッセイ条件を最適化した。関連実験において、最適濃度は、MgCl₂は5.0mM、各プライマーは100 nM、および各プローブは150 nMであることが判明している。

【0146】

標準的なローソニア・イントラセルラリス (*L. intracellularis*) を定量するために、既知量のローソニア・イントラセルラリス (*L. intracellularis*) DNA (100ng~1fg) の増幅から得た曲線を作成した。データ点から回帰線を作成し、相関係数 (R^2) 値を求めた。ローソニア・イントラセルラリス (*L. intracellularis*) の定量的ためにTaqManアプローチを用いる可能性も判定した。例えば、「伏せられた (blinded)」数のローソニア・イントラセルラリス (*L. intracellularis*) 細胞を含有するサンプルを、リアルタイムPCRを用いて分析し、該サンプルに加えられた細胞等価体の数を概算するための計算を行うことが可能である。

【0147】

リアルタイムPCRアッセイの感度を試験するために、既知量のローソニア・イントラセルラリス (*L. intracellularis*) PHEゲノムDNAを使用した。100ng~1fgの範囲のDNA濃度がCt値を与えた。ローソニア・イントラセルラリス (*L. intracellularis*) PHE DNAの正確な検出のためのカットオフ点を決定し、ローソニア・イントラセルラリス (*L. intracellularis*) の細胞等価体と相関させた。また、糞便内に加えたローソニア・イントラセルラリス (*L. intracellularis*) PHE細胞の10倍希釈物を使用して該アッセイの感度を決定した。

【0148】

例えば異なる動物種からの異なるローソニア・イントラセルラリス (*L. intracellularis*) 分離株、および非ローソニア・イントラセルラリス (*L. intracellularis*) 種を代表する分離株を使用して、TaqManアッセイの特異性を試験した。

【0149】

実施例 21 代表的な核酸およびポリペプチド配列

以下のポリペプチド配列 (配列番号8740) は、シネコシスチス属種 (*Synechosystis* sp.) およびノストック属種 (*Nostoc* sp.) からの溶血素と相同性を有し、以下の核酸配列 (配列番号8741) によりコードされている。以下の核酸配列 (配列番号8741) は、コード配列、ならびに該コード配列の上流および下流の約50ヌクレオチドを含有する。

【0150】

MIILLGTVFLIVLISALCSMMEAAIYSIPITYIEHLREQGSKKGEKLYLHSNIDQPITAVLILNTIANTAGAALAGAIA
TTTLHESTMPFFAAIILTLILAFGEIIPKTLGVAYSKRIAIILLNPLCILIVTLKPLIMLSSYLTRLVSPRKRPTVTEDD

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IRALTSLSRESGRIPYEEHVIKNILSLDLKYAHEIMTPRTMVFSLHENLTVSEAYSNPKIWNYSRIPTYGENNEDITGI
IQRYEIGRYMTNGETEKKLLEIMQPAKFVLESQTVDHLLAFLEERQHLFIVLDEYGGLSGVVSLEDVLETMLGREIVDE
SDTTPDLRALAKKRHSALIQNNKNTLLK (配列番号8740)。

【0151】

caagctataataacttacgctatgtagcagcacttctaattagagcaatttataggacaataatcatgataatccttt
taggaactgtttttcttattgttcttctctgcattatgctcaatgatggaagctgctatatactctatccctattact
tataatgaaacacctcgtgaaacaggaagcaaaaaaggagaaaaactttattatttacatagtaatatgatcagcctat
tacagccgtattaataatgaaactatagcaaaactgctggagctgcccttgctggagcaattgctacaacaacacttc
atgaatctactatgcctttctttgcagcaatcctcaccttgcttatttttagcttttggggaaattatacctaaaacacta
gggtgtgcttactctaaacgtatgctataattctccttaatcctctctgtattcttatagttactttaaaacccttat
tatgctttcaagctacttaacacgacttggttcacctcgaaaacgtcctacagttacagaagatgacatccgtgcactta
caagtctttccagagagctggtcgtatgaagccatagaagaacatgtcataaaaaatatccttagtcttgatttaaaa
tatgctcatgaaattatgactcccagaactatggtctttcacttcatgaaaaccttactgtctctgaagcttatagcaa
ccccaaaaatggaactatagtcgcatccctacttatggagaaaaataacgaagacattactggcattatccaacgatatg
aaattggacgatataatgaccaatggagaaacagaaaaaaaacttttagaaattatgcaaccagcaaaaattgtccttgaa
agtcaaacgttagatcatttacttcttgcatttttagaagaaagacaacatctttttattgtacttgatgagtatggggg
attatctggtgtgtttccttagaagatgtattagaaactatgcttggagagaaattgttgatgaaagtgatacaacac
ctgatcttagagcacttgcaaaaaaagacatagtgcattaatccaaaaataaaaaatactcttttaaaataacagaaa
tatacctttactcttaataaagtattaataaacttaaagtgaagctgaaacacctttcaaaaataag (配列番号8
741)。

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【0152】

以下のポリペプチド配列(配列番号8742)は、*Desulfovibrio desulfuricans* (Desulfovibrio desulfuricans)からの溶血素に対する相同性を有し、以下の核酸配列(配列番号8743)によりコードされている。以下の核酸配列(配列番号8743)は、コード配列、ならびに該コード配列の上流および下流の約50ヌクレオチドを含有する。

【0153】

MAKHKVRADELVFLQGLAESREQAKRLIMAGKVTLTNNSTIPLRLEKPGHKYPLESICSLIGVERFVSRGAYKLLTALD
FFKIDVKSCICLDAGASTGGFTDCLLQHASKVYVIDVGKQGLHEKLYTNEQVINIEGVNLRTASKDLIPEVDILTIDV
SFISLTLILPSCIRWLKASGIIIALIKPQFELYDPKIKKGVVKTSLQYEAVEKIIHFCQSELGLIFIGVVPVSVIKGPKG
NQEYLIYLKRR (配列番号8742)。

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【0154】

tatgactagcaagctaataatttatgtgttatattatcactatataattttataaataataagatgagaagaaagaatggc
caaacataaagtacgtgctgatgaacttggttttttacaagggttagcagaaagtcgtgaacaagctaaacgacttatta
tggcaggtaaggttacattaactaataattctacaactataccattacgtttggaaaaaccaggacataaataatccatta
gaaagtatctgcagtttaatagggtagaacgttttgtgagtagaggagcatataagctattaactgctctagatttttt
taaaattgatgtaaaaagttgtattgtcttgatgcaggcgcatctactgggtgggtttacagattgtcttttacaacatg
gagcatctaaagtataatgcgattgatgtaggcaaaggccaattacatgagaaactgtataactaatgaacaagttataaat
attgagggagtgaaattacgtacagcatctaaagatcttatcctgaagaagtagatattttaactattgatgtttcttt
tataatcgcttactttgattttaccgtcatgtatagcttggttaaaggcttccggaattatttatgccttaataaagcctc
aatttgaattataatccagataaaaataaaaaagggtgtagtaaaagaactagcttgcaatatgaagcagtagaaaaaatt
atcatttttgtcaatcagaacttgacttataatttatgggtgtgttccgtcggttaataaaaagggtccaaaaggaaatca
agaatatcttatttacttgaaaaacgttaataaacttattataatttgatattctatattatgtaggtatataaatata
aagaggtatgatta (配列番号8743)。

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【0155】

表26は、配列番号8741および8743に関する関連情報を含み、表2、3、4および5に合致して対応している。

【0156】

配列番号	N (nt)	生物
8741	29	<p>ホモ・サピエンス (<i>Homo sapiens</i>)、ラッツス・ノルベギクス (<i>Rattus norvegicus</i>)、ムス・ムスクルス (<i>Mus musculus</i>)、クロストリジウム・テタニ (<i>Clostridium tetani</i>) E88、クロストリジウム・スティックランジイ (<i>Clostridium sticklandii</i>)、フソバクテリウム・ヌクレアタム亜種ヌクレアタム (<i>Fusobacterium nucleatum</i> subsp. <i>nucleatum</i>) ATCC 25586、ストレプトコッカス・ニウモニエ (<i>Streptococcus pneumoniae</i>)、オリザ・サチバ (<i>Oryza sativa</i>)、ヘニアンツス・サリシフォリウス・パール・オボバツス (<i>Haenianthus salicifolius</i> var. <i>obovatus</i>)、ヘニアンツス・インクラッサツス (<i>Haenianthus incrassatus</i>)、ダニオ・レリオ (<i>Danio rerio</i>)、アラビドプシス・タリアナ (<i>Arabidopsis thaliana</i>)、ドロソフィラ・メラノガスター (<i>Drosophila melanogaster</i>)、セノルハブディティス・エレガンス (<i>Caenorhabditis elegans</i>)、ブドウ蔓葉巻き病関連 (<i>Grapevine leafroll-associated</i>) ウイルス、マイコプラズマ・カプリコルム (<i>Mycoplasma capricolum</i>) およびウトリクラリア・ラシニアタ (<i>Utricularia laciniata</i>)</p>
8743	33	<p>ムス・ムスクルス (<i>Mus musculus</i>)、クロストリジウム・アセトブチリクム (<i>Clostridium acetobutylicum</i>) ATCC824、プラスモジウム・ファルシパルム (<i>Plasmodium falciparum</i>)、ホモサピエンス (<i>Homo sapiens</i>)、クリプトスポリジウム・パルブム (<i>Cryptosporidium parvum</i>)、ダニオ・レリオ (<i>Danio rerio</i>)、メラノプルス・サングイニペス・エントモポックスウイルス (<i>Melanoplus sanguinipes entomopoxvirus</i>)、ジクチオステリウム・ジスコイデウム (<i>Dictyostelium discoideum</i>)、アラビドプシス・タリアナ (<i>Arabidopsis thaliana</i>)、マルチャンチア・ポリモルファ (<i>Marchantia polymorpha</i>)、イー・ヒストリチカ (<i>E. histolytica</i>)、シオナ・インテスチナリス (<i>Ciona intestinalis</i>)、オリザ・サチバ (<i>Oryza sativa</i>)、ロツス・コルニクラツス・パール・ジャポニクス (<i>Lotus corniculatus</i> var. <i>japonicus</i>)、ヤバサル腫瘍ウイルス、エンタモエバ・ヒストリチカ (<i>Entamoeba histolytica</i>)、ドロソフィラ・メラノガスター (<i>Drosophila melanogaster</i>)、ゼノプス・ラエビス (<i>Xenopus laevis</i>)、セノルハブディティス・エレガンス (<i>Caenorhabditis elegans</i>)、フォトルハブドゥス・ルミネッセンス亜種ラウモンディイ (<i>Photobacterium luminescens</i> subsp. <i>laumondii</i>)</p>

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他の実施形態

本発明はその詳細な説明に関連して記載されているが、前記の説明は本発明を例示するためのものであり、添付の特許請求の範囲により定められる本発明の範囲を限定するものではないと理解されるべきである。他の態様、利点および改変は特許請求の範囲の範囲内である。

【図面の簡単な説明】

【0158】

【図1-1】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号1~4）を示す。

【図1-2】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号5~8）を示す。 10

【図1-3】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号9~12）を示す。

【図1-4】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号13~16）を示す。

【図1-5】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号17~20）を示す。

【図1-6】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号21~24）を示す。

【図1-7】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号25~28）を示す。 20

【図1-8】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号29~32）を示す。

【図1-9】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号33~36）を示す。

【図1-10】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号37~40）を示す。

【図1-11】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号41~44）を示す。

【図1-12】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号45~48）を示す。 30

【図1-13】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号49~52）を示す。

【図1-14】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号53~56）を示す。

【図1-15】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号57~60）を示す。

【図1-16】ローソニア・イントラセルラリス特異的核酸分子の配列（配列番号61~62）を示す。

【図2-1】ローソニア・イントラセルラリス特異的核酸によりコードされるポリペプチド配列（配列番号63~73）を示す。 40

【図2-2】ローソニア・イントラセルラリス特異的核酸によりコードされるポリペプチド配列（配列番号74~84）を示す。

【図2-3】ローソニア・イントラセルラリス特異的核酸によりコードされるポリペプチド配列（配列番号85~95）を示す。

【図2-4】ローソニア・イントラセルラリス特異的核酸によりコードされるポリペプチド配列（配列番号96~106）を示す。

【図2-5】ローソニア・イントラセルラリス特異的核酸によりコードされるポリペプチド配列（配列番号107~117）を示す。*は終止コドンを示す。

【図2-6】ローソニア・イントラセルラリス特異的核酸によりコードされるポリペプチド配列（配列番号118~128）を示す。 50

【 1 - 15 】

(SEQ ID No:57)
ATTATGAGATGGCTTNNWACAGTGAICTACTCTTTGATTTACTACTCTCTCTTAACTCGGGGTGATTATGTTA
TNGACCTGATCTTAGAGGGTCACTTTATATGATCGCTGAGCAGCGAAATTAATGACAAAACAACAGTATGAGC
GTTATTAAATGTTACTCTGAGTGGGCAATCTGSPATGCACTGAGTAACTATGACAGCAGCAGAGGGCTG
GCTTAATTGGATTAACAAGGTCTGCTGCTAAAGACTCTGCTAGCTGATTAACAAGTCACTGAGTATGAGCAG
GATTATTGCTACTGATATGACAGCAACTCTTAGATGATGATGATGATGATGATGATGATGATGATGATGATGAT
AAAGATTGGGACACCTGAAGATATTGACAGAGCTAATCTTTTATGATCTCCAGGTCGGTTATATTACAG
GACAAATTCTTTGACAGTAATGAGTGTGATGATGATGATGATGATGATGATGATGATGATGATGATGATGATGAT
AAAATCTAAATATTAATATGTTTCAATAATAAAAGACTAAAAGAGTGGAGGATCTTAAAGTCACTGT
AGCATGCATACTGTGATGGCGCTTTTAAACCTGTAAGTGAAGAAACCCTGTTACCCCAATTAATGGCTT
TGAAATATACCTTTTGAACAGTGGTAAATAAGAAAGTCTCAACGGATCTTCAAATTGGCACCTGATGGCAT
GGCTGATGGGTATTCTTAACATTG

(SEQ ID No:58)
NN
AGGTGCAGCTCAAACTAATGTCGAAAGATTAATGATTTTACCGGGTAAGCGAAATCCCACTACTGCTCTC
AGCTCAATAAATTGGGCAAGAACTCCCTCACTGCTCAACAAGAAATGGAATATCCCATCTTTCTCTCTT
TTGTAATGATTAAGCAACTACTAATCTCTCAAGGTCTCAATGAGCTTATATGTAACCTAATATGATGG
GACCAAGCTATTGATTTTCATCAAGGCTTTGATGCTTCTTCTGGTACATAAATAGTCTATTTTTTTCCAT
GGGATTTCCAGTAACCTCAATCCCAATAGCGAGAAATTTATGCCAAGATTTGTACAGGCTCCACTAA
GTTAGGCTTATCTGTTGATTTCCAGCTTTTTCTTCTGGTCCCTCACTTTAATGCCATCCCAAG
CATGGCTCTCACTAGAACCAGTCAACATNCTATTTGATTTTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
NN
NN
CGAGCGATTTCCCTCACTGAGCAT

(SEQ ID No:59)
ACTTCAAGCCCACTCCCCACTCTTCTCTCCACCCGGATCCAAGCCCTGACTCTTCCATTAAGTCAAGAG
TTGAACCAAGCATTAATAATTCTTCCGCGACTTCTATCTATCTACTCTTCTTAATAATAGATATCGCTTATT
AAGCTCTTTAGCCCAATGGTAACCAATGTAATAAATCACTGAAATAGTTTACGAATCATCCACGACGATTAA
TAATTTAATGCTAAGCAATCAAGCACTAGCGGCTCTTTTAAATGATGAGGATAACAATCGGACCAAGCGCAT
AATGACCTCAAAATTTATAAATAGTTTAAATCAATAAAAATAGTATCTGAAATGAGTACTTTTCAAACTG
TTTTTAAATGACCTGAACACAAAAGAAATTATTTGTTAATTAATAATGATGAGTGAACCTGAGCTCG
AAAACGTTTTTCAATCCACGCAACACAGCACTTTGGATCGTCCCACTCTGGTCTACAGCTCTTCTGGAAG
AGGTCAGCTCTCACTAATGAATCAATAATCTGGGACGTACTTATATAATGATTAACAACCAAAACCTTTGA
AGCAGCTCTGAGCACTCAACCTGNN
NN
CCACCTAATCGACGCGCTCT

(SEQ ID No:60)
GCTTCTGTTTTCGAGGTTTGGAAATTAATCTGTGGCGGACCAGTTTAAATGGAAGCAGCAATAAGAGCAGC
TTTTGAGCTGGTGGAGCTCCTAGGATTAATTAATCTATCTCCCTCATGAAAGAGGATTAATAACTACTTCA
AATACGTAAGAAATAGATAATTTTTTTTAAAGAAAGCTTATGTTTGTAAAGTACGCTCAAGCCTATGAGTAAT
GCCAGTGAAAGTGCTACTAGAGCAATTTTCAAGCAATTTTCTTAGCAACCAAGGCTATCCATCCTTT
-CCTTATTACTCTATAATAGCCAAATTTTGAATGATTAAGTGGATGGATGGAATGCGAACAATGCTAAAGAAAG-
TTTTATGACCATCAAGAGATGATGCTCTTCTTAAATCTGTGATCAACCTGAGAAATCTCAAAATTAATTA
AGAAAAGTTTCCCTCACTCAATCACTAATCAACTAAAAAATAAAGCTTACGCGGTTTATTCATCTTAACTAATA
TTCTTAATGAGCTTACCACTTAGATTAATTAATGATTAATTTTCAATTAATAATGGATTAATACCAAAAT
AAAAAGTGTGTGGGGCCATCAACCAACCTAGGATGGAGCTGTGACATTAATGTTGAAAGCCCTCTGAGC
AAAAGCTCAACAAAATGGAACCTTGGACCAT

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(SEQ ID No:63)
RGVKGILLHDHAEVLSIATGKGRARATGIRHLIYTDGSRFMDNFVHSDIPIDIGRAVDTAVLNVNRRGTLRKT
AENKQVMBOELVYCNIGABERILWALEHVRERKRFVSRITABEQKLLHLVLIATKHSLDARYYQHILKRKRS
SFNAISLVPDKLRERAFQIDAGELTASPLNVLVGGKGAAN

(SEQ ID No:64)
DAPQVMPWLIBEAGIRNMSRIISIAKNTKLGLPLWYIGSTLKRIMGARILLHSHLEADGPAEKLTPICYQS
WEM

(SEQ ID No:65)
WQEHQTRBELMVFQPVGIVYAVKIYKYQGQSLNIVKENPYRLAMDHIGIFLTDALATKIFRKNPLRA
QAGLLYTLKCMDEGHVYVPEAFIELTSHLGDHQCIBDABELKRERIVCRLADHIGILVNRHYHSQEI
AFYQLRLHSPKSVQFNDDTISQVKNLNIILAPQMSAIVTSTSI

(SEQ ID No:66)
VFPDLLVAPLNMVQKSYMSYIQRKSLASRYETLMTVDRKPKSWELIABELSRIDRSIQBOVLRFYEAIRQVPL
LFTTERVLDPAREKMDLKYTBQMLFNSAHRSLVLSHYALIRSHMCTIGARELLAKKSDPVLSEVDPFLM
EKXBEPVGLMALNEKTRDQ*

(SEQ ID No:67)
QLQRIAELPFLGXXXXXXXPTNNDISKALSITSKIEDTIRIVQVAGLVDGRREKSVIYKYIAG
S*SNNKQSLSTGLFRVYHGLDLDABAGDFTVYVGHQVYVNNMG

(SEQ ID No:68)
RRMSIMVLVGLLIPNLVDSGGVSLFPLIGUVVPMGLVMGINVFQNFVFIAGALTSQFRDKAGKVINFIQL
LFLCLMGLTIICGLFNGBWFVAIAFDHKEFLFRPQSQTGLFKGXXXXXXXXXXXXHYGSG

(SEQ ID No:69)
DTALMDIIGTKIABERLAMDQETRLPNNKANNYGVVAREDDLLLYRPPCTBTVKVRSGKWSIAEVRKASVHA
IHVFNLYEALLISRIAQLTBAIDDPQSGLKGSIFGBEM

(SEQ ID No:70)
IIFLRSHIDFLRKLHABFDALIMATAGIKLGLIAPYMSLPCSMVAVQAGALIEVQKERQVLELFSPL
NHKETYHCIAERDFLAGLGGCVPIASVATICKQTICTLEGLVAKSDG

(SEQ ID No:71)
ELVQKTMNNPVYVQYAYARICSTRKAHLDFDFTVDVNEVPLNITTKDELNLRLDKFEDVYNAOHLAP-
HYITHYMLBLAGELHSHVYKVPVLSQNEKTVLSRLALLQAVQVIYNALNIGVTAPKMM

(SEQ ID No:72)
SGPTAAALMLMNDIAIKKGFASSQLGGLSSAFIPVSEDAFAAASQSNLSLEKLEAMTCVCSVGLMDIAPGD
TFASTISIGIAVEMAIIVINKTAVRIIPVPGKVGKAFVFGGLL

(SEQ ID No:73)
SVPGDQDVMNVRTGTGFLSCSSVQECMDLVAHLSAISRSVFPCHDFGFRITSHEVQKINIVYEEIQKIVN
WEKHIIFRKNANPEHPYQRTAGTNPDIYQNRNRSNFPVAVPVIIDSMQKFSITRQYQKFDYVGRHEDR
IIIA

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(SEQ ID No:61)
ATTAACCGAGTACCTGGATGAAAGACTTCAGAGTCAGAAAAGTTCTCACCGGTTCCACATCTTAACCTGGCACA
CCAGTFRGKGAACAAATGAGTACTGCACTCCAGCTGATCTCCATCACTTTTGAAGAATGGCAGCTGTT
AATGAAAGCTTTTATTAACCTCCTTGGCAACAGTTCACACATCTTGGACCTTCAACAGCTCTCCAAABAGGA
ATTTCCTGGGATGCGCAAGTTTATATCTAGAAGCTCTTCATTAATGTTCACTATATGATATCTCCGCG
GCTGATCTAACAAAAACACTGTATACCTTTTCCTTTCCTTCATGCAACCCAGGATTAATTAATATCTAAAGGC
TTCACTGGCGATTAGATGCAAAAATGAGGATTAATCACTGCTTGGTCCGAAAGTTTGAATGTTCAATACAGCA
GGTCGATATATATAACAGGAACCTTATGATGGAGTAACTTGACTCTGTAAATAAGAAAGCAAGCTTTCTCGAAA
AATGTCGTTTTCCGAAACCTTGAACCAAGTGGCTAATAACACTATGGAAAAGGCGTTCAATATATGTTGGTGC
ACTTTCGCCAAATGTTAACATCTCTTAAABAAACCTTTTTAACTGTTTCCGGGATAAAAGTTTTTTTTTC
TGGCAAAACTTTCTTTTCATGTCTATCTTTTAAACGATAATTAATAATGTTTATAAATAAGTCCTT
CATCCCTCAAAITTTATCTAAAGTGG

(SEQ ID No:62)
CCCACTACAATGATACATTAAGCAACAATTAACAAAGCTTAAGCTACTATTGTAGGTTATTAACGAAGT
TTTTGCTTTGTAAGAAACAAGCTTGGGGTGTAGGAATGAGACTATTTGATGTACAACCTATTGGGTGAT
TTCAATACATAGAGGTAAGTATGACGAATAAGAAAACAGGGAAGAGAACTTAAATGGCAACTCTTGGTGT
TTTTAAAGTCTCTGAAATGAGGTTGATGTTTTCACAGTAATACTACTTTCACAGAGGAGATGCTGATAAG
GATGGGTCATATATAGTCTCTAGGTTTAAACAGCTGTTGAGTACAGGCTGATTTCTGATGATGCTGCTGAA
GGACGATATGCTGTGATATCTATGGTACTAATAAGTAAATGAGTTGATTTTCAAGTAAATATAGAA
GTTTTACTAACCTTGAAACAGCTGGACACTTTTTTCTTAAATGATGAGTAGATTCTATCATATAGAT
GAAGCTGTACCTCTTTTATTAATCTTGGTGGGGAACAATCAACACTTGTCTCTCAATCGATAAATTT
TCTTAAATTTAGCCCCAGGATTTTTTTTGAATAAGAAAGGAGCTTTTTCATGAAAGGTTCTCAAGT
AAAAAGCCCGTAAAAATGTTAACTCTTAGCGCCCTTCAAGCAGCTGGCTGCCCTTTTTTAAAGCTG

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(SEQ ID No:74)
AVGEIQLDHPDKDTATLQEEVFAQLNFAEMRKPIVHSRDAARDTIRILSEBQCIAYPVLWHPGSDAVSFL
DRILSNQWISVAGPVTVYKQKQVIMPIPEDKILLIETDPCYLSFVWRKCNSEPALVFTAAAYIASLKKID
IELWTQCGEHTKFF

(SEQ ID No:75)
GSVKVLEHILITDSQGRPLSALVRIISGRHRYLSIHEGDTVIMSSRVLENSTLAVNLINRIYRGLATVCLMGQA
THVSHARQDELKILLTVVNPQVFPVTHGSRVQLFRHKELMWHQGFSEMPIILD

(SEQ ID No:76)
KRCWPPFARKKSWLGFKNKRSFEELEWYVNDVSDCYKPYVWALGKLLHEQLTGLDELYIITLRYGIDYGMN
KVVINGHVEIPIETARKALLGFPQSLEPSDGLRLIKKNGPKYLSKGDIVKIFSEPRAMRLYPLT*

(SEQ ID No:77)
LSEQVILITDSQGRPLSALVRIISGRHRYLSIHEGDTVIMSSRVLENSTLAVNLINRIYRGLATVCLMGQA
THVSHARQDELKILLTVVNPQVFPVTHGSRVQLFRHKELMWHQGFSEMPIILD

(SEQ ID No:78)
EIVRSQFNKMGAGVVLTGTALIQCCQELGQIPLNRIYPRNVVGGKMDVNSPKFATAMGLHPFAEKRM
BQRFRIETHTIFNSILSRMVK

(SEQ ID No:79)
LLKEYFEQELGILVNRVNETLIGNSFMLTQSLMSDRISGSARRALQIANDEVCIHQKLVHNLNYLBEKT
LPLKLVHQCSITIVPFKHELSTAFVTFSPFPEELTELLANFERTLMAEDIIIPVKYRGMFAY

(SEQ ID No:80)
MEIRGTTILAVRKHGVALAGDQVTLLGQSVVMKHTAKKVRMKNQVIXXXXXXXXXXXLPERFDNLYEETNG
NLVRAAVELAKERKDKYLRLEAMLLVVDKDFVLSGTGCIEPDDGIAAGSG

(SEQ ID No:81)
RTLSDYANNMILLSAVFSLDGTGTQDIETQFNSAAKLGKVRILITSCDLFPQAQRCWATGVSAVETLSDHRE
LSPGVYGTATKELRLARAVFVDTNGMITYQEIIVPEVTHSPPNYTAFEA

(SEQ ID No:82)
GKPAFLQVIAELVSDVGLGKASISIATSCDGLITEEIEAKVIDASPLDIKNLIPVEHNHELALYVNLATQ
AEVGGTDLVLSSEBCASLSRSVYFNDFVHGPTDILNLIYTKGDATVIRVTRQAKITIGREBLEMKDYQDKR
-ERDSVINTYBELIK-

(SEQ ID No:83)
LHRYTYSERILLLAEVYXXXXXXXXXXXXXPHLICDNTADVNTLRYKRNRPDPLAVMNVNINRIARQIA
YIEBVEIQQMSPECPVILKALPESLKNAPDVSITGLMPLTPLHLLCNLTKVABELERILPALVMTSANV
SGFTIIVNDDALIRLNTTDFPLPHNRIIIVVDSDV

(SEQ ID No:84)
SAVPTSLLFKQIIRLLTGLLELAVGNSFFIFIPIAMQGVSRNEIFFHLSVSLASVQSFAMVSFSPQ

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(SEQ ID NO:85) LVSCTLAHTGQSIOYQPLNDFYVFNKRSFSEETNITLCHLALGAKVAYEVALKNLSPLAGFMGACIECINTMPPT...

(SEQ ID NO:86) IQEBELFLGIMLLKXWISAPPYTSQITRNLQPHRFNDRLIENWQSLGRVFLMNDYAPTTVLAQLRGTHPEIVCA...

(SEQ ID NO:87) HKHFSISNQQYIRFIAYLQFSNLYGSLKFSLLAQIKGLQDVAQI SVQTRPDCLTNKLSLIVEMPLEKRVF...

(SEQ ID NO:88) LILDEATSLSLSEBERRMVQGALENNRNRTSLIIAHLSTLIEDRIIVPEGKIVSSGKHELLOSCELYTRY...

(SEQ ID NO:89) VTSPHKVAFPARCAVNI SYEKHLCSQVFPAGIPV8GFEQMVLEFDADLKRKGFDGIALPAGSYELHKINGVRID...

(SEQ ID NO:90) RKLQVATQMLMNDTQIAKSNMEYARQGVIMQVMEDEVVEMELFQAATGLNEEGPVGEVABGSARTPIYLNNG...

(SEQ ID NO:91) MTEPKEMWQHCITNGYIYNPERGDKRAKIPGTEFESLPDNWHCPVCGASKSKPKPLTD

(SEQ ID NO:92) DPYSDQMVKRAVILPYLGLKTRVAVFCKXXXXXXKXXXXXXXXXXVAKIKDQWLDFAAVATPDVMALVG...

(SEQ ID NO:93) DPLKTMVFMSSKWMKSSVDFIRLASHYTLARMLERDDFNNRYKENTPALHEDLYPLMQGYDSVALKSDTBLG...

(SEQ ID NO:94) SEVQSTLGMNMYRSADVNVIIGERGREVEVFBKELGPRGMRSLIIATSQSPVLRMRKXXXXXXXXXXE...

(SEQ ID NO:95) GCKLSEVYKLTEDQVNEVAVTIYRGIDVEKSGPQKGFLLVAEQLSALIEILKQALPRENYSVLEGFVSGQ...

[2 - 5]

(SEQ ID NO:107) HGTIFVSSYDRHTLPIGAYAPAAITSTIGPIEBFFIGALVLAXXXXGRGIYPDGGKLRAIKGEKAKTILL...

(SEQ ID NO:108) FFEPSINSSQLTIALPLGISPYTQAMSYLIDVRYNEVPVSRNIINFQCYLTMPPQLVAGPIRY

(SEQ ID NO:109) EWEHSPVAMFRAPTEWRHQFLCVDNKGKFKGRKCAEVNKTYYMOSDMNLYPFAVGSMNAARSNKQYSEL...

(SEQ ID NO:110) DVAFILHGGPBGDQILQALLERVCGPCYQAGSPAGSXXXXXXXXXXFRREGLLTPKSVFLPKPEVWEPGLN...

(SEQ ID NO:111) GSPYFLGLMKAFKDCAEQAADLTRALLIFIDPADIKYITHRGGVLLGLAPYEPBEEIAAVLLHAHLNIGLIT...

(SEQ ID NO:112) GKSQVIFDLEVPTRGFISSVRLKGDYNDVDEVIQGNFGGFDIVRIEDGREFSFKPRPQBQREMLSLIKSAB...

(SEQ ID NO:113) VDQDKALAEAMTLKPKFKEVHLVHTKYSSFPILKALGWLLDGALIDIGVSSLQLDNAERGFSLYDGLPDM...

(SEQ ID NO:114) FYTERAAEVGYSHGLFTONLYITLIDBKSLYKELRYALIAKIKREYSREPSLLLRKIVQTTISGGQRITGSQ...

(SEQ ID NO:115) DHCGRILLVLEKRPONINYFGGSABQTNLAVVKEILHLLNKPNSLIHVKDRPGHRRYAMDPSKAAKEGVMP...

(SEQ ID NO:116) IRFTALQSPSNYGYGLPSKFSLLAQIKGLQDVAQI SVQTRPDCLTNKLSLIVEMPLEKRVFQVQSLHDETL...

(SEQ ID NO:117) FVGLLIDVKIRIERRQFVVKGDTTYSYLAQDLDLARRVIHIIINFLHGLAATNCDDDELSMFLSPQEDLEALISXX...

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(SEQ ID NO:96) DRVRSAGVFMVBVFDSSGSIFFPVGABGAVARALLTKGTPGPPGVLLVCKPIRGGLRTRFKRPNLSFDVVBLEEK...

(SEQ ID NO:97) BISLTYGKGLNRESISGSVGFKSHTSYVGGVTTAGTRAEQVKVLLDVEDDKTFLTDTDVQNFYGLRNLNCNR...

(SEQ ID NO:98) DPLDSTRILEPNEVGBEHYTVARGVQKILQYKELQDI IALLMDELSDEDKLVSRARRIQRFLSQPFHVART...

(SEQ ID NO:99) IWPEDIITASDYMNSSGNDLREAVIVKRSYXXXXXXXXXXXXXXXXXXXXXATPRITMLAREPSEANL...

(SEQ ID NO:100) GIEFTVILKXKKSSEGAYTVIGALBSVVMADKPKRVFLAVRPLGGVLDRTKSTERPKRAIDGAQVQGDQVM...

(SEQ ID NO:101) NLLQVLMKATSLVAERTRAEDEPRLSLNQWQKFBGLSSIGTRNSNFISEISNMIAQSQEDWRITNSFRMNYADE...

(SEQ ID NO:102) AEWERPRRILIGNNEIINLGTPOGFLKTLTYYYFKQSGLELSIKGCGINSSHSLIKTSLQKQDTRIVNKKI...

(SEQ ID NO:103) PDEIWRVREALPWFRLQVRVASQXXXXXXXXXXXXXXXXNPDRAADPLA IARAFTVFLPFLYSGLPFGALMD...

(SEQ ID NO:104) WNEAYPEIDTIRNLLQIQSAGYKVLGHVLPKSNWKENYAPLQKNLERMKTYYNNDKAQQVIALIQSEIDL...

(SEQ ID NO:105) VTSFRIGLSELRVLSAETFPQPPQFKKELSHLKEIKKHLVPLWIDESEKINFPFAALFGPFLREKGRTRW...

(SEQ ID NO:106) PDGRFDNGLKIDELLLIVPNKTGAQKAQILRGPAGIYTRRRGRIRAEEDHMGGSLRQPKRGLSKAISRGLSK...

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(SEQ ID NO:118) YAITDDALFSNRVIEVVKQLLDAGIRIIIVREKKNSSNMLKDCITIKKLTREANACFIVNDHVDIAVLCSADG...

(SEQ ID NO:119) DYVIDVNLRFACIMREAAKIMTKRVGRIINVTSVVQSGNAGQVNYAAGLAGLIGITKSAKELASRNITVNA...

(SEQ ID NO:120) EPDLYKBRVVMQMLPALGFKHGGSSNISKVRPLEPFDWVLEPEIFPALFGSADVHIPIDWGKQLADLANSV...

(SEQ ID NO:121) BEGGPIWRGSEKWLDAPOVMEMLEIEAGIRNMBSRIISIAKNTLKLPLWYIGSTLKRIMGARILLKHSLEEA...

(SEQ ID NO:122) LVSAXXXXXXXXXXLMEEAANKAFBAGRSIGLHILHLEHBECCNYTLITREYRYPFIRKLMFYVYAQYAVVMP...

(SEQ ID NO:123) DPHVFVDSLEKGTGVIYVFGVTSSCISLAAGGRADGMKTLIAGTSLSKNFEEAVTVDQGTADAVFLIEQP...

(SEQ ID NO:124) ATPKQLQEGKRTIDELLPEFVALVRETSFRLVGNRHFVQLIGGISLHRKIAEMKTGEGKTLMATLSGLVNLAL...

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(SEQ ID No:63)
RQVKGILLHDBAFLVSIATGKRGARATRGIRHLTYDGSRPMDFNVHVSVDPIDIGRAAVDTAVLVNVRGETLKEI
AENKQOVMBOSLRYCNWIGARLWALEBHVEKRVVYISRTABPQKLLHLVLATKHELDADARYWQHIKRERS
SNASLKVDPKLLREAFDQJADGHTASFLTNVGRKGAIV

(SEQ ID No:64)
DAPQVMPMLIEBAGIRNMSRIISIAKNLTKLGLPLWYIGSTLKRIMGARILLEHSLRADGPABLKIPIYOCS
WRM

(SEQ ID No:65)
WQERQTTRELAVLQPIGIVSVYAVKIYKYQQOGLNIVKENPYRLAMDIGHIGFLTADALATKIGPEKDPNPLRA
QAGLITLKKCNDGSHVYVYFKEARTELHSHNLGDHQICEDALHBLKREERIVCRALDEHGITYLNRHYHBSQI
APYIQLRIHSPKSVQPKPMDTISQVYNKLNITLAFPEQMSATVSTTSKI

(SEQ ID No:66)
VRPDLVAPLMMQKSYMYSIQRLASRYVETLMVTDKPKSPWBLIAELSLRLDRISIQOVLRFIETAIKRVPL
LRTTEBVLDFABEBMKDLKYIKQGLFNSAHRSLVLSHYALIRSHMCTIGARELLAKSDPVWLESDVPLFN
EKBEPEVGLMALKNEKTRDQ*

(SEQ ID No:67)
QLQRIALFLPLGXKXXXXXXXXXXPTNNDISKALSLITSKIEDTHPIVQVYTAGLYDRREKSIVKYIYAG
STSNKQSLSTGLFRBYHGLDLDABEGDITVYVBSHQPNTG

(SEQ ID No:68)
RRMSINLVGLIILNVLTAAGGVFLPLPIGVFVPLGMVGNVFPWFYFPGAALTSGFRDKAGKVTFNIFGL
LPLCFGLMLTICGLFGWEGEFAVAFDTHKEPLFRFQSQGTGLFGKGGXXXXXXXXXXXXHYGSG

(SEQ ID No:69)
DPLMDIYCTKIAERLAMIDQELTLPNPKANTYIVAREDLLYHPCTEATVKGSRKGSIAEAVTRKASVHA
IHPVNVLEALLISRTAQLEAIDPQOGLKSGIFGEM

(SEQ ID No:70)
IIPLEGNITRRLKMLABEFDAIIMATAGIKRLLGLIAPYMSLPCSVMLPAVQGGALGIEVQKERQVLELEFLF
NHKETHYCIQERDPLAGLDGQCQVPIAGVATICQBTICLGLVAKSDG

(SEQ ID No:71)
ELVQRTMNYPTVYQYAYARICSIIRKADLGGFTITVNVNEVPSNITTKDELMLRLDLKDFEDVIYNAQHLAF
HYITRYLMELAGELSHYAKYVPLQSNKTIIVLSRALLQAVQVINYALNIFGVTAPEKM

(SEQ ID No:72)
SRGSTAALAMDALIKGGAFASQGLGSSAFVPSVEDASFAAVQSNILSEKLEAMTCVCSVGLDIAIIPGD
TPASTISGIIAVEMAIVGINKTAVRILIPVPGKVGSKAFPGGLL

(SEQ ID No:73)
SVPSDQVAVRQGTFFSLLSSSVQSCMDLVAHLSAIESRVVFFCHFDFGRTSHEVQKINVIEYBEIQQIVN
WSKHITPRKAMNPSHPYQSGTAQMDIYQNRERGNFYNAVPGVIDSMKQVFSITGRQYQLFDYVGHPEADR
TIIA

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(SEQ ID No:85)
LYGSLCQAHTQSIQVGNPLDYPFYNKRSFFSHTNITCHLALGARVAYEVALKNSPLAGMAGACIECINTNPTT
GFTTPCSFLKSKTGLQVHVBLGIVAFB

(SEQ ID No:86)
IGSELFLGIMLKWISAPPYTSQITRNQPLPHRPNRLIENWKQSLGRVFLNMDYPTTVLAQLRQTHPEIVIVCA
AHTDLSVYKQLQADLSIQIDGHQAPKVLVGLARGILVDEVSEYBKEGRLRBLIYELQSKQITDGLSLVLD
MALEKNABAVIGLHAFFBSQYPRKSHAVTILGPHMLQSDIKAVQCEPIDTVVF

(SEQ ID No:87)
HKHFSISNQIRIFAYLQSFNTYGPLSKFSSLAIQGLQVAGISVGTREPCLTKKGLSLIVMPPYLEKMWEP
GVQSLDEHDTLTKIKRHSKCSBQAIIOAANAQLQVCAHVWFLGPGSTPTMLQITDRINSLPHGIKPHNYCVC
KNTIPEK

(SEQ ID No:88)
LILDEATSSLDSBERMQVALNLRMRNLSLIIAHLSTILESRLIVFEDCKIVSGKHKELGSCBELYRLY
MMQPTGE

(SEQ ID No:89)
VTSFKAVAFARCAVNISYEHKLCQVFPAGIVPVEGFEGMVLDFADLKRKGFADIALPAGSYELHKINGVRLD
INXSIDELGVQDG

(SEQ ID No:90)
RKLQVATQIMNDSTQIAKSNBYARQGVIMQVMEVVEVSNMELFGQAITGLNESQVGEVABGSAETPIYLNRG
KADLGAQNFVSYLPIEGAALIEQGNADLATTIRGRESIAVSKADPPVTEPQLPYONAVLTDQNLKIFAGARTYML
QGVVLVQSGFGBIAMLNPNSTQSDGPFYI

(SEQ ID No:91)
MTEPKEMHQCITNCGYIYVPERGDKRAKIPPGTBFBSLNPVNHCPVCGASKSKFXPLTD

(SEQ ID No:92)
DPKYSDQVAVRQGTFFSLLSSSVQSCMDLVAHLSAIESRVVFFCHFDFGRTSHEVQKINVIEYBEIQQIVN
WSKHITPRKAMNPSHPYQSGTAQMDIYQNRERGNFYNAVPGVIDSMKQVFSITGRQYQLFDYVGHPEADR
TIIA

(SEQ ID No:93)
DELKTNVFNKMLMSMSVDFIRLASHYTARMLERDDFNSRYKENTPIALHLLYPLMGGYDSVALKSDIRLG
GTDQKFNLLVGRITLMSHYNIEPQCITLWDLBGLDVRMRSKYGVGIDEPYVQFSKVMISDELMMRWYEL
ISTSLEVEKLLQNVKEG

(SEQ ID No:94)
SEVKSITLMMNARYTTSADVNVIGLIGERGVEVVEFMEKELGPEGMTKRSVLIIATSDQSPVLMRXXXXXXXE
YPRDQKLVLLMDSVTRFAMAREIQLAVDEPPTTKGTEVFAAQLKLLERTGSRNTGTTIYTVSDGDDF
KEPIABACRSLDGTCTYCPGDDHF

(SEQ ID No:95)
GCKLEVYKGLTEDQVNMENATLIYRGIDVEKSPGQKGSFLVABEQLSIALEILKKNALPRENYVSGRVSQ
QMISQSEBERARAYASIQELMNTFSRIDVLTREVEVPGYTDQVDRSFIYIGFISIR

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(SEQ ID No:74)
AVGETIGLDYHKDCATLQBEVFRALNFABENRKPITVHSRDAARDTRILESEGCIAVPLVHCFSGDAVSFL
DRILSNGWNI SVAGPVTYFPGKELQVIFMIPEDKLLIETDCPLSPVFWRQKCNRPALVPTAYIASLKKIDI
IELWTQCGENTKKFF

(SEQ ID No:75)
GSVVVNLNTHITDGFNIREPVSQYVFTDTLYLQSGVEELLPICIBTAGPVTSEYVVVQQRMRHVAQMATAKI
LPTDPNRYTDTPTVAIIIDAQHIDTQNSPSAKNTDLVRSSIEBTRDYKRLLHEIRKSIDPFI

(SEQ ID No:76)
KRCXWPPIARKKSNLGFKNRSPFELEYWNCMDVDSYKPVVWALGKRLHQBTLGDELYI IALTRGYIDYGNM
KVVINGHEVLFBTARKALLGFPQSLPESDIQVRLRIKKNQPKYLSLSKGDIVKIPSEPRAMRIVLPLT*

(SEQ ID No:77)
LSEPGTVIITGQOGBLSALVRIISGEHRYLSIHKGDTVIMSSRVLPNSTLAVNRLNIRIYRGLGATVCINQQA
IHSVHARQDELKILLVTVNPFVPIHGEYQLFRHEKELAMQHGIPSENIIFILDD

(SEQ ID No:78)
RIVRSQFMMIAGVVTGGTALIQGCQELBQIFNLPTIRIGYPRNVGLKDMVNSPKFATAMGLLHPGAEKEM
BQRFRTIETHITFNISILSRMKW

(SEQ ID No:79)
LLKPEYQEBALGVNVRVNETLIGNSFMLTQGLLSSMSDRISGSARRAILQIANDEYCNBQKLVHLNLYLBBET
LPLKIVFHQCRSIIITVFFKHELTAFVFTSFPPELITELLANFSEPERTLMHAEDIIIPVKYRGMPEAY

(SEQ ID No:80)
MERTGTTILAVRKHGVALAGDQVTLGQSVMKHTAKKVRMYKNQVIKXXXXXXKXFLRFDNLYEETNG
NLVRAAEVLAKEWRKDYLRRLBAALLVVDKHTFVLSGTGKCIPEDDGIAATGSG

(SEQ ID No:81)
RTLSDYANNILII SAVPSLD TGVCIDTQRFPNSEAKLGEKVRILITISCDLPFAQRCWAGTGVSAVETLSHRE
LSFGYAYGIAKELRLARAVVDVTNGMIYQIIVPEMTHENYATAFBA

(SEQ ID No:82)
GKPAIQAQVIALVSDVGLQTKASISATSODLIGTESIEAKVKEIDASPLD IKNLIPIVBHNHHLAVNLQTA
REVQVITDVLGSCASLSRSVYNVDVHGPTDILANLITKGDATTIPRTVQAKITIGRERLEMKDYLRDKR
ERSVLANTYELIK

(SEQ ID No:83)
DHNRYITVNSBAILLAI EYXXXXXXXXXXXXFHLICDANADVNTLYRKNRDKPLAVMNVNINARQIA
YISEBVIQKMSQPECPVILKALPHSLPNLAPVDVSTIGLMLPYPLHLLCNLTKVAELERIPALVMTSANY
SGGTIYNNDALIRLNTIDDFLPHNRNIIVPDDSVV

(SEQ ID No:84)
SAVPTSLFKQIIRLLTGLLILAIVGNSFIIPIAMQGVVSEBNEIPFHLSSVSLAVSGFSFAWVSVPQ

【 3 - 4】

(SEQ ID No:96)
DRVRSAGVQVMEVFDSDGSGISFPFVGARGAVARALLTKGTGPPGVLLVKGPIRGGLRTRFKRPNLDFVVSLEEK
AEDVGAVDEFVTRGQEQNLMRARSRGFMSARGAGGQQRMFVVVGLILLMHPVSLLTIVVSDPEIPEARVDVH
QELKSVLQPD

(SEQ ID No:97)
LSELYQKGLNREBISGCVGFKSHYSGYVGGTITAGTRAEQVWVLLDVEDDKDPLTDTDVQVYGLRNLCCNSR
RLHQGNLDDALRLELIVNDRITNNEVIIRLRFVQKDKILFVTDITADEBKITBELDVEAFYQDYSYFDT
LAKVDQMVLSIF

(SEQ ID No:98)
DPLDSTRILSPNFVGEHYYTAVRGVQKILQYKELQDIILALLQMDLSEDEKLIVSRARRIQRFLSQPHVAF
PTGTAGEVYKLEDTIKGFKGILAGEYHLSSEDFYMVGNIDSAVAKYERKREK

(SEQ ID No:99)
LWPCDIITASDYWNISGNDRVAVIKRASXXXXXXXXXXXXXXXXXKXDAFESRITMLAREFSEANL
PETSVMQWQVYGANCRYRGVFIPTDFVHNEBENTIVQLEPLSREQLPLRFRVDLMPFAVXXXXXXXX
XXXXXTFSLNSVLTREAGSDENXYIVHATDFXHG

(SEQ ID No:100)
GIEPTVILKRRKSGEAYTIGAVESVVMADPKRVEFLAVRPLGQVDRTKSTERPRAI IDGAQVEGQDKVM
IAGAPLSYIAPTSTIRQKTQGBADCTISIPRFTTBYEIIITMSQHAEEDLKQYTKGDIIDTFKIPGNVESV
FP

(SEQ ID No:101)
NILQLNKATSLVAERTAADEPRLSINQWKKFEGLESIGTFRNSENFITSEINMIASQEDWRTNOSFRNLYADE
VFENFRYIRATHVQGQLMGPTQNLGYRDFRVSQSYGQTVNVALNNGTVNLAQNGCAIASKGIPLTNISM

(SEQ ID No:102)
AESWBRPRRLIGKNEILNLGTQPGGLKLYYYFKQSGLESLKCGINSSHSKIKTVSLEKQPTGDRDIVNKI
KMGVGRNFLTDKTVIGEQLAAAILFKPFTSGPFADLALNRNYESPKYQRYANPNFPYQSNALIBSSKVVDVL
VGVWAGVSVQAIALDRAISQKQL

(SEQ ID No:103)
PDIRSIVRALPDWRLQLVQVRSQXXXXXXXXXXXXXXXXXPDRADPLATARAFTVFLVYPSLQPGFAGALMD
RWRDRVLVGANVGRLLVVAITGLAV

(SEQ ID No:104)
WNAEYPSIDTENNQQIKIQSAGYKVLGHPVLPKSNWKENYAPLQKNLERMTYNNDEKACQVIALIQSIEDLY
KENSDDYSYVYIMKK

(SEQ ID No:105)
VSPRIGLHSELERLVSAETFPQPPTFKQKILSHLKLIRKHLVPLNTEDEBKWPFAALFPGFLLREGKTRW
QSNENIITIDHFOAVMSQSAIFRWLRYIQ

(SEQ ID No:106)
PDGRFNDGLKDEBLLIIVPKTGAKMAQLLRSAGIYTRRHGRIEAEDHMGLSIRQFRGLSKAISGLSTK
GVGPPGAFCLIPGSKPVLKRVSLYELI

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(SEQ ID NO:107)
HGTIFTVSSSTYDRHTLPIGAYAPAAITSTIGPIBEFFIGALVLAAXXXGRGFYIPDGGKLRATIKGEKAKTLL
QTIEDQPSTYSSNGKGVYITTEADPKAYNLLENVLFDMYVDAQQLEIKGKVTLL

(SEQ ID NO:108)
FEFESINSSQLKTIALPLGISFYTFQMSYLIDVYRNEVPSRNIINFGCYLTMFPQLVAGPIVRY

(SEQ ID NO:109)
EWEHSVPAENFGRAFTWREHPLCVDNKGKSFKGRKCAEKVNTYRYMQSDMYNLFPAVGSVNAARSNKQYSEL
LGVQSAFQGTCEAKIDGNRFEPEDRAKQVVARAALYMDKEYBYNLSRQORLFEAWSNMYPVDBWECTRAKRIBES
IQGNEIFVKNMC

(SEQ ID NO:110)
DVAFILHSGSPGDSILQALLERVCVQGRSPAGSXXKXXXXXXXXXXFRREGILLTPKSVFLPKPEVTWEPGLN
YPLPVKXNIGSSVNVHLVTVNEBELFAMEALFNAGEVLLSBAITIGQVTCGVIDDQALPPLIRSQGKFFDY
NKYAKGAEIBICPALEPHVLEKHIQYALRAHNTIKLQGCSDRDLILRDEVXFLEEV

(SEQ ID NO:111)
GGPYPLGLMKAFKDCAGAADLTRALLIFIDPADIKYIHTHGSVLLGLAPYIEPIEAIVLLHAHLNIGILLT
KGSAXKXXXXXXXXXXXXXXXXXXRTVAIVDDALITVADKEMLDYLPGLCRYHRSALPVGGLFAHLPAQTG
LISGICKGNVLAVAIEDCSTE

(SEQ ID NO:112)
GKSVQIFDLBVPQRFISVRLKGGKDYNDVEIGNFGGFPQDIVRIEDGREFSFKPRPQORQETEMLSLIKSAE
EDKMPAPRNKGGVFGVTKPIQYLAW

(SEQ ID NO:113)
VQDQKALAIEMTLKPPKRVHIVHTKSSPFLIKALGKLLDQALIDIGVSSIQLDNABRGFSPLYDQPLDM
RMDQAMNNSLFEIVNKSROEYKDIISRYGEEPAQNRKAIQVRRRTKPIITTKBLADLIBQAYPAWRAKSR
HPATKTKQAFRIIVNSSELNELEKFLNMIMGWIAPGRRVAISPTH*

(SEQ ID NO:114)
FYTRAAAEVGYSHAGLFTONLYITLIEDKSLVKELRYALIAEKIKREYSREPSILLRKIVQOYTTSGGRTTGSQ
LNLFLARIALPNVGBEHEFPAEBAALFAKPLFSPMESLPIILFKERYIYGLITGDRALVTTVLAPRYDNLKTYN
PLDR

(SEQ ID NO:115)
DHCRIILVLEKGRPGNIYFQGSABQTNLAVVKEILLHLNKPNSLIHVKDRPGHRRYAMDPSKAAKELGYMP
QITFNGLAATVMYLSHRDQVQNILSGDYKBFNMWYKDRL

(SEQ ID NO:116)
IRFIALYQSFNTYVGPLSKFSSILAQIKGLQDQVAGISVGTFRDCLTNKLSLIVEMPLYEKVWVFGVQSLHDET
IKIKRGHSKSEQALIQANAGLVCAHVMFGLPGETPPEHMLQTLDRNLNSLPIHGIKPHNVVYVCKNTLLEKBFN
ARNYSITTEADYSYD

(SEQ ID NO:117)
FVGLLDIVKRIERFQBFVVKGDITTSYLAKDDLARVVIHINFLHGLQAATNCDEDELASMPFSQEDLEALISXX
XXXXXWSKRELAKDVBAICBYVRKQSRRETNMGEFSFDIPSRYHKKLLFFRLTEPLIYARLDIVKPNGLSKSMK
ESNVXVLGNHMKI*

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(SEQ ID NO:118)
YAITDDALSFRNSVIEVVKQLLDAGIRLIQYREKNKSSNSMLKDCITIKKLTBEANACFIVNDHVDIAVLCNADG
VHLGQDDELIVKVRRLIGREKILGLSTHSPQQAIEWGADYIGVGLPYTKTKKDVCEPVTIYSLDWWVSHIA
TFFVATGGKQHNIQVVIQHGAKCWPVLKILSAPNI

(SEQ ID NO:119)
DYVIDVNLRGAFICMREAAKIMTKQRYGRIINVTISVVGQSGNAGOVNYAAKAGLIGITKSAKELASRTVNA
VAPGFIATDMTATLSDDVQKAYQBSIPLKRLGTPEDIAEAILFLVSPGAGYITGQILAVNGVM

(SEQ ID NO:120)
EPLDTERVWVWGMGLFALGFKHGSSNISKVRPLRFDWVLEPEIFPALFGGSAADVHIPIDWGGKQLADLANSV
EEVFPYQSYTYVGLTPVVGITNEDCRKLABEPSMILRNKEMPIERLEIDWYRAFHWCIQVPGCVLNFKDTSGKA
KXQARWRWKLAMGGLMAEBSGLASCI

(SEQ ID NO:121)
BEGGPIWRGSEKWLDAPOVMEMLIBEAGIRNMESRIISIAKNLTKLGLPLWYITGSLTKRIMGARILLKHSLEEA
DGAEKLTPIYQCSWRM

(SEQ ID NO:122)
LVSAXXXXXXXXXXXLMEANAKAAFEAGRSIGLHILHPHEBGCNNYLTIRTEYRYFFIRKLMFVYQAYVMP
GGMFTIDFSSAFVLTQTRIHFPPIILYNSQPNGLVDMWRQTMSEKGP IEPSEIDALLNICDTT*

(SEQ ID NO:123)
DPHFVPEDELEKGTGVYKVPVGTSSCISLAAGGRADGMKTLTIGTSLKKNFEAAVTVDQGTMDADVLEBP
HAYLKIDLEQLPEDIHRLGATDLVTVYKKEKAEHLAANIIDLPKAANSAFCPTMLQALQQLQIVAPRYI
NVPV*

(SEQ ID NO:124)
ATFKQLQEGKRTIDELLPEVVALVRETSFVLMGRHFDVQLIGISLHRGKIABMKTBGKTLMATLSGVNLAL
RKGVHVIVVNDYLAQRDAEWGALYSALSLTGVVTSGLSDDARKBAYADITYGTNNFQDFSDRNMKMYFYN
HLBQRGHFALLNE

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