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**Supplementary Table 1.** Relative abundance and frequency incidence in CNPJI cases. Relative abundance refers to percent composition of each species relative to the total number of organisms detected within each patient sample.

Species	Mean relative abundance (%)	Incidence (Cases)
Escherichia coli	0.151487	53
Cutibacterium acnes	0.096724	40
Staphylococcus epidermidis	0.124707	35
Staphylococcus aureus	0.079646	20
Enterococcus faecalis	0.026894	10
Acinetobacter radioresistens	0.024369	10
Streptococcus mitis	0.013866	9
Streptococcus dysgalactiae	0.066220	8
Pseudomonas aeruginosa	0.009136	8
Staphylococcus capitis	0.009863	7
Corynebacterium tuberculostearicum	0.005209	7
Acinetobacter guillouiae	0.008263	6
Ralstonia insidiosa	0.003824	6
Serratia marcescens	0.021585	5
Burkholderia cepacia	0.013951	5
Klebsiella pneumoniae	0.004991	5
Pelomonas puraquae	0.002614	5
Streptococcus canis	0.043956	4
Lactococcus lactis	0.008171	4
Corynebacterium jeikeium	0.007887	4
Staphylococcus lugdunensis	0.005676	4
Lactobacillus crispatus	0.003962	4
Acinetobacter baumannii	0.002758	4
Proteus mirabilis	0.001090	4
Staphylococcus piscifermentans	0.012964	3
Streptococcus sp	0.003265	3
Corynebacterium kroppenstedtii	0.002978	3
Acinetobacter junii	0.002095	3
Staphylococcus hominis	0.001778	3
Streptococcus anginosus	0.021978	2
Streptococcus sanguinis	0.018197	2
Granulicatella adiacens	0.014465	2
Staphylococcus simulans	0.012093	2
Pseudomonas putida	0.010743	2
Moraxella osloensis	0.005587	2
Prevotella melaninogenica	0.003430	2
Cytophaga hutchinsonii	0.003421	2
Terrahaemophilus aromaticivorans	0.002986	2
Enterobacter cloacae	0.002970	2
Staphylococcus pettenkoferi	0.002948	2
Massilia timonae	0.002275	2
Klebsiella oxytoca	0.002223	2
Klebsiella quasipneumoniae	0.001746	2
Anaerococcus vaginalis	0.001533	2
Acinetobacter calcoaceticus	0.001364	2
Kocuria rhizophila	0.001335	2
Staphylococcus pseudintermedius	0.001184	2
Grimontella senegalensis	0.001116	2

<i>Corynebacterium segmentosum</i>	0.000828	2
<i>Comamonas terrigena</i>	0.000684	2
<i>Stenotrophomonas maltophilia</i>	0.000667	2
<i>Anaerococcus tetradius</i>	0.000664	2
<i>Corynebacterium striatum</i>	0.009601	1
<i>Citrobacter koseri</i>	0.009298	1
<i>Peptoniphilus harei</i>	0.009241	1
<i>Parvimonas micra</i>	0.008175	1
<i>Streptococcus marmoratae</i>	0.007667	1
<i>Streptococcus pneumoniae</i>	0.005559	1
<i>Enterococcus faecium</i>	0.005495	1
<i>Klebsiella aerogenes</i>	0.004106	1
<i>Methylobacterium goesingense</i>	0.002885	1
<i>Campylobacter curvus</i>	0.002747	1
<i>Thermus scotoductus</i>	0.002747	1
<i>Fingoldia magna</i>	0.001748	1
<i>Corynebacterium macginleyi</i>	0.001586	1
<i>Parabacteroides gordonii</i>	0.001570	1
<i>Capnocytophaga granulosa</i>	0.001465	1
<i>Lactobacillus iners</i>	0.001465	1
<i>Pseudomonas fragi</i>	0.001406	1
<i>Corynebacterium auriscanis</i>	0.001293	1
<i>Acinetobacter indicus</i>	0.001221	1
<i>Ezakiella massiliensis</i>	0.001221	1
<i>Facklamia languida</i>	0.001221	1
<i>Microbacterium oxydans</i>	0.001221	1
<i>Micrococcus aloeverae</i>	0.001221	1
<i>Veillonella parvula</i>	0.001192	1
<i>Acidovorax delafieldii</i>	0.001137	1
<i>Brevibacterium iodinum</i>	0.001099	1
<i>Bacillus cereus</i>	0.001047	1
<i>Corynebacterium confusum</i>	0.000966	1
<i>Brevibacterium otitidis</i>	0.000950	1
<i>Microbacterium barkeri</i>	0.000836	1
<i>Microbacterium hydrocarbonoxydans</i>	0.000835	1
<i>Microbacterium imperiale</i>	0.000810	1
<i>Neisseria mucosa</i>	0.000785	1
<i>Veillonella dispar</i>	0.000776	1
<i>Balneimonas sp</i>	0.000758	1
<i>Shigella boydii</i>	0.000741	1
<i>Abiotrophia defectiva</i>	0.000725	1
<i>Corynebacterium fournierii</i>	0.000725	1
<i>Actinomyces viscosus</i>	0.000696	1
<i>Rhizobacter fulvus</i>	0.000696	1
<i>Sphingomonas wittichii</i>	0.000694	1
<i>Bacillus niabensis</i>	0.000670	1
<i>Burkholderia cenocepacia</i>	0.000654	1
<i>Sphingomonas sp</i>	0.000639	1
<i>Variovorax paradoxus</i>	0.000617	1
<i>Cloacibacterium normanense</i>	0.000611	1
<i>Acinetobacter schindleri</i>	0.000597	1
<i>Comamonas phosphati</i>	0.000594	1
<i>Morganella morganii</i>	0.000549	1
<i>Aerococcus urinae</i>	0.000543	1
<i>Arthrobacter pascens</i>	0.000543	1
<i>Megamonas funiformis</i>	0.000543	1
<i>Bacteroides vulgatus</i>	0.000536	1
<i>Nonomuraea candida</i>	0.000536	1
<i>Lysobacter soli</i>	0.000517	1
<i>Haemophilus influenzae</i>	0.000473	1
<i>Staphylococcus haemolyticus</i>	0.000471	1

<i>Sneathia sanguinegens</i>	0.000446	1
<i>Anaerococcus rubiinfantis</i>	0.000417	1
<i>Rathayibacter caricis</i>	0.000412	1
<i>Nocardioides basaltis</i>	0.000402	1
<i>Acinetobacter</i> sp	0.000388	1
<i>Psychrobacter faecalis</i>	0.000388	1
<i>Gemella haemolysans</i>	0.000383	1
<i>Prevotella</i> sp	0.000379	1
<i>Corynebacterium xerosis</i>	0.000375	1
<i>Comamonas testosteroni</i>	0.000370	1
<i>Fusobacterium equinum</i>	0.000370	1
<i>Acinetobacter johnsonii</i>	0.000366	1
<i>Cupriavidus basilensis</i>	0.000366	1
<i>Peptoniphilus rhinitidis</i>	0.000362	1
<i>Arthrobacter</i> sp	0.000354	1
<i>Brevundimonas diminuta</i>	0.000354	1
<i>Cellvibrio mixtus</i>	0.000354	1
<i>Paraburkholderia fungorum</i>	0.000354	1
<i>Pseudoglutamicibacter albus</i>	0.000354	1
<i>Sphingomonas melonis</i>	0.000354	1
<i>Methylobacterium tardum</i>	0.000343	1
<i>Lactobacillus johnsonii</i>	0.000314	1
<i>Rubellimicrobium mesophilum</i>	0.000305	1
<i>Anaerococcus hydrogenalis</i>	0.000278	1
<i>Prevotella colorans</i>	0.000278	1
<i>Prevotella timonensis</i>	0.000278	1
<i>Streptococcus agalactiae</i>	0.000278	1
<i>Curtobacterium flaccumfaciens</i>	0.000275	1
<i>Fronthabitans australicus</i>	0.000275	1
<i>Herbaspirillum autotrophicum</i>	0.000275	1
<i>Nocardioides plantarum</i>	0.000275	1
<i>Pilimelia columellifera</i>	0.000275	1
<i>Sphingobium estrogenivorans</i>	0.000275	1
<i>Bacteroides dorei</i>	0.000271	1
<i>Lautropia mirabilis</i>	0.000271	1
<i>Mycobacterium mucogenicum</i>	0.000271	1
<i>Peptoniphilus phoceensis</i>	0.000271	1
<i>Agrococcus jenensis</i>	0.000268	1
<i>Brevibacterium ravenstephanii</i>	0.000268	1
<i>Cellvibrio japonicus</i>	0.000268	1
<i>Cutibacterium granulosum</i>	0.000268	1
<i>Dolosigranulum pigrum</i>	0.000268	1
<i>Okibacterium fritillariae</i>	0.000268	1
<i>Porphyromonas catoniae</i>	0.000268	1
<i>Alloprevotella tanneriae</i>	0.000265	1
<i>Faecalibacterium prausnitzii</i>	0.000259	1
<i>Actinomyces provencensis</i>	0.000256	1
<i>Helcobacillus massiliensis</i>	0.000247	1
<i>Methylobacterium radiotolerans</i>	0.000244	1
<i>Bacteroides ovatus</i>	0.000242	1
<i>Delftia tsuruhatensis</i>	0.000242	1
<i>Planomicrobium chinense</i>	0.000239	1
<i>Brevundimonas vesicularis</i>	0.000236	1
<i>Alkanindiges illinoisensis</i>	0.000231	1
<i>Bradyrhizobium japonicum</i>	0.000222	1
<i>Aureobasidium pullulans</i>	0.040816	1
<i>Candida albicans</i>	2.011364	3
<i>Candida glabrata</i>	2.135417	3
<i>Candida tropicalis</i>	0.291667	1
<i>Cryptococcus neoformans</i>	0.052083	1
<i>Monilinia fructicola</i>	0.816327	1

Naganishia diffluens	0.135417	1
Naganishia friedmannii	0.177083	1
Penicillium corylophilum	0.030303	1
Saccharomyces paradoxus	0.052083	1
Septoria arundinacea	0.142857	1
Symmetrospora foliicola	0.114583	1