

Oscillatoriales cyanobacterium JSC-12 OsceyDRAFT_OTA.1_C11,	gb AJUB01000011.1
Oscillatoriales cyanobacterium JSC-12 OsceyDRAFT_OTA.1_C5,	gb AJUB01000005.1
Neosynechococcus sphagnicola sy1 strain CAUP A 1101 synech5_c92,	gb JJML01000087.1
Oscillatoriales cyanobacterium 'hensonii' Contig_28,	gb MQTZ01000028.1
Tolypothrix sp. PCC 7601 strain UTEX B 481 FDUTEX481_Contig11.7,	gb AGCR01000081.1
Geitlerinema sp. PCC 7105 Gei7105DRAFT_GPC.5_C1,	gb ANFQ01000016.1
Synechococcus sp. NKBG15041c DNA, contig; Contig37,	dbj BAUB01000037.1
Synechococcus sp. NKBG042902 DNA, contig; contig00049,	dbj BAWS01000049.1
Synechococcus sp. OG1 genome assembly, contig: Ga0154052_11,	emb FXBO01000001.1
Spirulina subsalsa PCC 9445 Contig210_C7,	gb ALVR01000007.1
Spirulina major PCC 6313 Contig40_C7,	gb ALVQ01000011.1
Spirulina major PCC 6313 Contig40_C6,	gb ALVQ01000010.1
Prochlorothrix hollandica PCC 9006 = CALU 1027 strain PCC 9006 Pro9006DRAFT_Contig13.4_C6,	gb ANKN01000130.1
Prochlorothrix hollandica PCC 9006 = CALU 1027 contig_6,	gb AJTX02000008.1
Cyanobacterium BACL30 MAG-120619-bin27 contig01994_1_120619-bin27,	gb LICO01000137.1
Prochlorococcus marinus str. MIT 1320 PMIT1320_contig000015,	gb LVHP01000015.1
Prochlorococcus marinus str. MIT 1318 PMIT1318_contig000011,	gb LVHO01000011.1
Prochlorococcus marinus str. MIT 1313 PMIT1313_contig000025,	gb LVHN01000025.1
Prochlorococcus sp. MIT 0701 contig00278,	gb JNBA01000052.1
Prochlorococcus sp. MIT 0703 contig00063,	gb JNBC01000051.1
Prochlorococcus sp. MIT 0702 contig00350,	gb JNBB01000057.1
Prochlorococcus marinus str. MIT 1323 PMIT1323_contig000011,	gb LVHQ01000011.1
Prochlorococcus sp. MIT 1303 PMIT1303_contig000009,	gb LVHK01000009.1
Prochlorococcus marinus str. MIT 1342 PMIT1342_contig000012,	gb LVHS01000012.1
Prochlorococcus marinus str. MIT 1312 PMIT1312_contig000019,	gb LVHM01000019.1
Prochlorococcus marinus str. MIT 1327 PMIT1327_contig000016,	gb LVHR01000016.1
Prochlorococcus sp. MIT 1306 PMIT1306_contig000003,	gb LVHL01000003.1
Synechococcus sp. WH 8016 ctg48,	gb AGIK01000004.1
Synechococcus sp. RS9917 strain RS9917 1099465004204,	gb AANP01000006.1
Synechococcus sp. RS9916 1100013017033,	gb AAUA01000001.1
Synechococcus sp. BL107 1099739244040,	gb AATZ01000004.1
Synechococcus sp. CC9616 Syn9616DRAFT_scaffold1.1_C11,	gb AZXL01000011.1
Synechococcus sp. MIT S9509 MITS9509_contig000022,	gb LVHV01000022.1
Synechococcus sp. MIT S9504 MITS9504_contig000025	gb LVHT01000025.1
Synechococcus sp. MIT S9508 MITS9508_contig000023,	gb LVHU01000023.1
Synechococcus sp. WH 7805 1099646010154,	gb AAOK01000001.1
Synechococcus sp. WH 7805 1099646010151,	gb AAOK01000002.1
Prochlorococcus marinus str. PAC1 contig_40,	gb JNAX01000012.1
Prochlorococcus sp. HOT208_60m_810B23 contig_78,	gb MWOW01000077.1
Prochlorococcus sp. HOT208_60m_813L03 contig_179,	gb MWOQ01000179.1
Prochlorococcus sp. scB243_495K23 contig_79,	gb JFLW01000001.1
Prochlorococcus sp. scB243_497J18 contig_62,	gb JFMJ01000030.1
Prochlorococcus sp. scB243_498N4 contig_88,	gb JFMV01000003.1
Prochlorococcus sp. scB245a_518A17 contig_93,	gb JFMZ01000006.1
Prochlorococcus sp. scB245a_518I6 contig_192,	gb JFND01000017.1

Prochlorococcus sp. scB245a_520M11 contig_48,	gb JFNV01000007.1
Prochlorococcus sp. HOT208_60m_813G15 contig_201,	gb MWOS01000193.1
Prochlorococcus sp. HOT212_60m_824E10 contig_234,	gb MWPE01000234.1
Prochlorococcus marinus str. MIT 9202 ctg_1109798534680,	gb ACDW01000004.1
Prochlorococcus sp. scB241_527I9 contig_103,	gb JFKX01000072.1
Prochlorococcus sp. scB243_496M6 contig_311,	gb JFMF01000082.1
Prochlorococcus sp. scB241_528J14 contig_226,	gb JFLD01000052.1
Prochlorococcus sp. scB241_526K3 contig_514,	gb JFKR01000138.1
Prochlorococcus sp. scB243_495D8 contig_45,	gb JFLT01000015.1
Prochlorococcus sp. scB241_527E15 contig_55,	gb JFKV01000005.1
Prochlorococcus marinus genome assembly CLC assembled cntgs, contig contig201,	emb CVSY01000134.1
Prochlorococcus sp. scB241_526B22 contig_136,	gb JFKP01000094.1
Prochlorococcus sp. scB241_526N9 contig_105,	gb JFKT01000050.1
Prochlorococcus sp. scB241_529J15 contig_25,	gb JFLQ01000052.1
Prochlorococcus sp. scB241_527L22 contig_130,	gb JFLA01000002.1
Prochlorococcus sp. scB241_529D18 contig_121,	gb JFLO01000006.1
Prochlorococcus sp. scB241_528N20 contig_40,	gb JFLH01000052.1
Prochlorococcus sp. scB245a_518O7 contig_175,	gb JFNG01000001.1
Prochlorococcus sp. HOT208_60m_810P02 contig_114,	gb MWOV01000110.1
Prochlorococcus marinus str. SB Contig35,	gb JNAS01000002.1
Prochlorococcus marinus str. MIT 9314 contig00003,	gb JNAO01000008.1
Prochlorococcus sp. REDSEA-S22_B1 scaffold15,	gb LUPT01000015.1
Prochlorococcus sp. HOT208_60m_813B04 contig_108,	gb MWOU01000107.1
Prochlorococcus sp. HOT208_60m_808G21 contig_126,	gb MWYO01000126.1
Prochlorococcus sp. HOT208_60m_808A10 contig_170,	gb MWOZ01000170.1
Prochlorococcus sp. HOT212_60m_826P21 contig_17,	gb MWPC01000016.1
Prochlorococcus sp. HOT212_60m_823D04 contig_152,	gb MWPG01000150.1
Prochlorococcus sp. HOT212_60m_824C06 contig_157,	gb MWPF01000157.1
Prochlorococcus marinus str. GP2 contig00002,	gb JNAH01000003.1
Prochlorococcus marinus genome assembly CLC assembled cntgs, contig contig28,	emb CVSW01000032.1
Prochlorococcus marinus str. MIT 9321 contig00003,	gb JNAP01000007.1
Prochlorococcus marinus str. MIT 9401 contig00017,	gb JNAR01000003.1
Prochlorococcus marinus str. MIT 9322 contig00009,	gb JNAQ01000004.1
Prochlorococcus marinus str. MIT 9302 contig00019,	gb JNAM01000014.1
Prochlorococcus sp. scB245a_520K10 contig_181,	gb JFNU01000004.1
Prochlorococcus sp. MIT 0601 Contig3413,	gb JNAU01000004.1
Prochlorococcus sp. SS52 contig00003,	gb JNBE01000008.1
Prochlorococcus marinus str. LG contig00002,	gb JNAT01000010.1
Prochlorococcus marinus str. SS2 contig00002,	gb JNAY01000018.1
Prochlorococcus marinus str. SS51 contig00004,	gb JNBD01000003.1
Prochlorococcus marinus str. SS35 contig00001,	gb JNAZ01000008.1
Lyngbya confervoides BDU141951 scaffold_233,	gb JTTE01000084.1
Aphanocapsa montana BDHKU210001 scaffold_0,	gb JTJD01000271.1
Lyngbya confervoides BDU141951 scaffold_0,	gb JTTE01000274.1
Synechococcus sp. PCC 7335 ctg_1103496006877,	gb ABRV01000019.1

Leptolyngbya sp. PCC 7375 Lepto7375DRAFT_LPA.5_C3,	gb ALVN01000003.1
Leptolyngbya sp. PCC 7375 Lepto7375DRAFT_LPA.5_C1,	gb ALVN01000001.1
Leptolyngbya sp. PCC 6406 LEP6406DRAFT_scaffold1.1_C71,	gb ALVV02000071.1
Leptolyngbya sp. PCC 6406 LEP6406DRAFT_scaffold1.1_C14,	gb ALVV02000014.1
Halomicronema hongdechloris C2206 DENOVO_2015_c8,	gb LAZT01000008.1
Halomicronema hongdechloris C2206 DENOVO_2015_c39,	gb LAZT01000037.1
Halomicronema hongdechloris C2206 DENOVO_2015_c25,	gb LAZT01000023.1
CCM4 accession No KY999936	lcl Query_23673
Leptolyngbya sp. KIOST-1 LS_contig_4,	gb JQFA01000004.1
Nodosilinea nodulosa PCC 7104 Lepto7104DRAFT_LPD.2_C11,	gb ALVP01000011.1
Phormidium tenue NIES-30 NIES-30_Scaffold_40,	gb MRCG01000040.1

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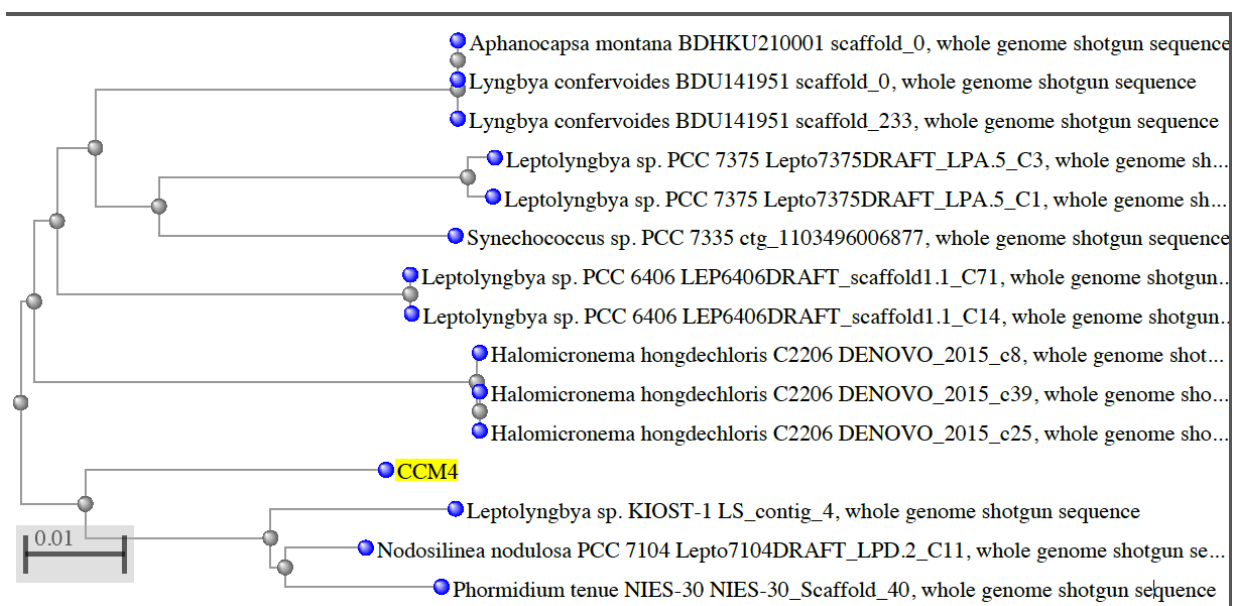


Fig 1SA. Phylogenetic classification of CCM 4 using its partial (1450 bp) 16S rDNA gene sequence (GeneBank accession number and cyanobacterial whole genome shotgun Page 25 of 30). The strains used and its accession No. are below in the list of cyanobacterial whole genome shotgun sequence. No. of the cyanobacterial listed above.

Fig 1SB. Amplification of the cluster in which CCM 4 is included.

1. *Aphanocapsa montana* BDHKU210001 gb|JTJD01000271.1(unknown)
2. *Lyngbya confervoides* BDU141951 gb|JTJE01000274.1(unknown)
3. *Synechococcus* sp. PCC 7335 ctg\_1103496006877, gb|ABRV01000019.1
4. *Leptolyngbya* sp. PCC 7375 Lepto7375DRAFT gb|ALVN01000003.1
5. *Leptolyngbya* sp. PCC 7375 Lepto7375DRAFT\_LPA.5 gb|ALVN01000001.1
6. *Leptolyngbya* sp. PCC 6406 LEP6406DRAFT\_ gb|ALVV02000071.1
7. *Leptolyngbya* sp. PCC 6406 LEP6406DRAFT\_ gb|ALVV02000014.1
8. *Halomicronema hongdechloris* C2206 DENOVO\_ gb|LAZT01000008.1
9. *Halomicronema hongdechloris* C2206 DENOVO\_ gb|LAZT01000037
10. *Halomicronema hongdechloris* C2206 DENOVO\_ gb|LAZT01000023.1
11. CCM4 genBank accession number KY999936
12. *Leptolyngbya* sp. KIOST-1 LS\_contig\_4, gb|JQFA01000004.1
13. *Nodosilinea nodulosa* PCC 7104 Lepto7104DRAFT gb|ALVP01000011.1
14. *Phormidium tenue* NIES-30 NIES-30\_Scaffold\_40 gb|MRCG01000040.1