

# Taxa used to reconstruct a huge phylogenetic tree including 1254 cyanobacterial sequences, six chloroplasts and six eubacterial species

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## Clade D1 (Anabaena-Nostoc):

Anabaena circinalis AWQC310F 1295 bp  
Aphanizomenon flos aquae A8 1295 bp  
Anabaena smithii TAC450 1295 bp  
Aphanizomenon flos aquae strAph Zayi 1295 bp  
Anabaena circinalis 1tu33s12 r strain 1tu33s12 1295 bp  
Anabaena ellipsoidea Ana HB 1295 bp  
Anabaena planctonica TAC424 1295 bp  
Anabaena crassa CENA207 1295 bp  
Anabaena circinalis AWT205B 1295 bp  
Anabaena crassa CENA196 1295 bp  
Anabaena circinalis AWQC331C 1295 bp  
Anabaena circinalis AWQC332H 1295 bp  
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Anabaena flos aquae 04 53 r strain 04 53 1295 bp  
Anabaena affinis NIES 40 1295 bp  
Anabaena spiroidea r strain PMC9702 1295 bp  
Anabaena spiroidea NIES 79 1295 bp  
Anabaena sigmoidea 0tu36s7 r strain 0tu36s7 1295 bp  
Anabaena sp1 strAna Ku5 1295 bp  
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Aphanizomenon flos aquae r strain PMC9707 1295 bp  
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Aphanizomenon flos aquae 1tu29s19 r strain 1tu29s19 1295 bp  
Aphanizomenon flos aquae strAph Ku 1295 bp  
Anabaena viguieri TAC433 1295 bp  
Aphanizomenon flos aquae 617 1295 bp  
Anabaena smithii TAC431 1295 bp  
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Anabaena flos aquae EH 1 1295 bp

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Anabaena smithii 1tu39s8 r strain 1tu39s8 1295 bp  
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Anabaena spiroides NIES 76 1295 bp  
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Aphanizomenon flos aquae varKlebahnii r strain 218 1295 bp  
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Cylindrospermopsis raciborskii strain Bal 6 1295 bp  
Cylindrospermopsis raciborskii strain 23D 1295 bp  
Wollea saccata ACCS 045 1295 bp  
Cylindrospermopsis raciborskii strain Florida G 1295 bp

Trichormus variabilis HINDAK 2001/4 r strain HINDAK 2001/4 1295 bp  
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Anabaena spXSP36B 1295 bp  
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 Anabaena spBECID8 1295 bp  
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 Umezakia natans TAC101 1295 bp  
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Calothrix spPCC 7101 for r 1295 bp  
Nostoc spPCC 8112 r strain PCC 8112 1295 bp  
Calothrix elenkinii RPC1 1295 bp  
Nostoc sp152 r strain 152 1295 bp  
Nostoc spMollenhauer 1 1 067 1295 bp  
Nostoc spHK 01 for 1295 bp  
Pseudanabaena spMBIC10772 for r strain MBIC10772 1295 bp  
Tolypothrix spPCC 7504 r strain PCC 7504 1295 bp  
Nostoc spMollenhauer 1 1 088 1295 bp  
Nostocaceae cyanobacterium SAG B11 82 1295 bp  
Nostoc elgonense TH3S05 r strain TH3S05 1295 bp  
Nostoc muscorum CENA18 1295 bp  
Tolypothrix spTOL328 r strain TOL328 1295 bp  
Tolypothrix spPCC 7415 r strain PCC 7415 1295 bp  
Nostoc spKU001 for r 1295 bp  
Nostoc spAl1 r strain Al1 1295 bp  
Nostoc spCam2S01 r strain Cam2S01 1295 bp  
Nostoc calcicola r strain TH2S22 1295 bp  
Trichormus doliolum strdoliolum 1 r strain doliolum 1 1295 bp  
Nostoc spSKS8 1295 bp  
Nostoc verrucosum KU005 for r 1295 bp  
Cylindrospermum spCENA33 1295 bp  
Nostoc spCENA88 1295 bp  
Nostoc carneum BF2 1295 bp  
Nostoc carneum IAM M 35 for r 1295 bp  
Cylindrospermum licheniforme UTEX 2014 for r 1295 bp

## Clade D2 (Calothrix-Fischerella):

Calothrix spBECID30 r strain BECID30 1295 bp  
Symphyonema sp1517 r strain 1517 1295 bp  
Scytonema spU 3 3 1295 bp  
Calothrix D253 r 1295 bp  
Rivularia spXSP25A r strain XSP25A 1295 bp  
Calothrix spBECID9 r strain BECID9 1295 bp  
Rivularia spBECID10 r strain BECID10 1295 bp  
Calothrix spBECID1 r strain BECID1 1295 bp  
Calothrix spPCC 8909 r strain PCC 8909 1295 bp  
Calothrix spBECID26 r strain BECID26 1295 bp  
Nostochopsis lobatus 92 1 r strain 92 1 1295 bp  
Rivularia spIAM M 261 for r 1295 bp  
Calothrix spBIR LS5 r strain BIR LS5 1295 bp  
Rivularia atra BIR MGR1 r environmental colony BIR MGR1 1295 bp  
Fischerella spCENA161 1295 bp  
Rivularia spXP16B r strain XP16B 1295 bp  
Stigonema ocellatum SAG 48 90 r strain SAG 48 90 1295 bp  
Brasilonema bromeliae SPC 951 1295 bp  
Rivularia atra BIR KRIV1 r environmental colony BIR KRIV1 1295 bp  
Fischerella thermalis PCC 7521 for r 1295 bp  
Hapalosiphon spIAM M 264 for 1295 bp  
Westiellopsis prolifica SAG 16 93 r strain SAG 16 93 1295 bp  
Rivularia spXP3A r strain XP3A 1295 bp  
Chlorogloeopsis spGreenland 5 1295 bp  
Symphyonema sp1269 1 r strain 1269 1 1295 bp  
Mastigocladopsis repens MORA r strain MORA 1295 bp  
Chlorogloeopsis fritschii PCC 6912 for 1295 bp  
Chroococidiopsis spCC4 1295 bp  
CfCalothrix spMuscicolous cyanobiont 5 1295 bp  
Calothrix spBECID14 r strain BECID14 1295 bp  
Brasilonema roberti lammi strlos manantiales1 1295 bp  
Calothrix spPCC 7507 r strain PCC 7507 1295 bp  
Calothrix spUKK3412 r strain UKK3412 1295 bp  
Brasilonema octagenarum UFV OR1 1295 bp  
Hapalosiphon hibernicus BZ 3 1 1295 bp  
Fischerella muscicola for r 1295 bp  
Scytonema spIAM M 262 for 1295 bp  
Calothrix desertica PCC 7102 1295 bp  
Calothrix spPCC 7715 r strain PCC 7715 1295 bp  
Fischerella spCENA19 1295 bp  
Scytonema hofmanni PCC 7110 for r 1295 bp  
Fischerella PCC7414Calothrix spAHLA9 r strain AHLA9 1295 bp  
Fischerella spMV9 1295 bp  
Rivularia spBECID12 r strain BECID12 1295 bp  
Tolypothrix spCCMP1185 for r 1295 bp  
Fischerella spIAM M 263 for 1295 bp  
Calothrix spXP11C r strain XP11C 1295 bp  
Calothrix spBECID33 r strain BECID33 1295 bp  
Calothrix spXP2B r strain XP2B 1295 bp  
Calothrix spBECID16 r strain BECID16 1295 bp  
Hapalosiphon sp804 1 r strain 804 1 1295 bp  
Calothrix spCCMEE 5093 1295 bp  
Calothrix spTJ12 UAM 372 1295 bp  
Rivularia spXP27A r strain XP27A 1295 bp

Chlorogloeopsis sp PCC7518Chlorogloeopsis spPCC 9212 for r 1295 bp  
 Symphyonemopsis spVAPOR1 r strain VAPOR1 1295 bp  
 Calothrix spBECID6 r strain BECID6 1295 bp  
 Filamentous thermophilic cyanobacterium tBTRCCn 101 1295 bp  
 Hapalosiphon welwitschii 1295 bp  
 Calothrix spMU27 UAM 315 1295 bp  
 Calothrix spXSP10A r strain XSP10A 1295 bp  
 Scytonema spHKAR 3 1295 bp  
 Calothrix spCAL3363 r strain CAL3363 1295 bp  
 Fischerella spHKAR 5 1295 bp  
 Chlorogloeopsis fritschii PCC 6912 for r 1295 bp  
 Mastigocladus laminosus Greenland 8 isolate 8 1295 bp  
 Rivularia spMU24 UAM 305 1295 bp  
 Nostochopsis sp89 45 r strain 89 45 1295 bp  
 Brasilonema spCENA114 1295 bp  
 Calothrix spPCC 7103 r strain PCC 7103 1295 bp  
 Calothrix spCAL3361 r strain CAL3361 1295 bp  
 Calothrix spBECID21 r strain BECID21 1295 bp  
 Filamentous thermophilic cyanobacterium tBTRCCn 403 1295 bp  
 Calothrix desertica PCC 7102 for r 1295 bp  
 Hapalosiphon delicatulus IAM M 266 for 1295 bp  
 Calothrix spXP9A r strain XP9A 1295 bp  
 Rivularia spPCC 7116 r strain PCC 7116 1295 bp  
 Fischerella major NIES 592 for 1295 bp  
 Stigonematales cyanobacterium AEL04 Oct 6 03 1295 bp  
 Calothrix spPCC 7714 r strain PCC7714 1295 bp  
 Brasilonema terrestre CENA116 1295 bp

### **Clade B1 (Chroocodiopsis):**

Unicellular thermophilic cyanobacterium tBTRCCn 23 1295 bp  
 Chroocodiopsis thermalis for r 1295 bp  
 Chroocodiopsis spMMG 6 1295 bp  
 Chroocodiopsis spBB79 2 r SAG 2023 1295 bp  
 Chroocodiopsis spCC3 complete 1295 bp  
 Chroocodiopsis spBB84 1 r strain SAG 2025 1295 bp  
 Chroocodiopsis spCC2 complete 1295 bp  
 Chroocodiopsis spCC1 complete 1295 bp  
 Unicellular thermophilic cyanobacterium tBTRCCn 28 1295 bp  
 Chroocodiopsis spCk4 1295 bp  
 Chroocodiopsis spMMG 5 1295 bp  
 Chroocodiopsis cubana r strain SAG 39 79 1295 bp  
 Chroocodiopsis spBB82 3 r strain SAG 2024 1295 bp  
 Chroocodiopsis spBB96 1 r strain SAG 2026 1295 bp

### **1 single species:**

Phormidium autumnale UTEX 1580 1295 bp  
 Phormidium tergestinum CCALA 155 1295 bp  
 Lyngbya wollei strCarmichael/Alabama 1295 bp  
 Phormidium uncinatum SAG 81 79 1295 bp

### **Clade C1 (Arthrospira-Lyngbya):**

Oscillatoria spCYA127 r strain CYA127 1295 bp  
Lyngbya polychroa LP5 1295 bp  
Microcoleus chthonoplastes CCY9607 1295 bp  
Lyngbya majuscula HECT 1295 bp  
Lyngbya spVP417a 1295 bp  
Trichocoleus sociatus SAG 26 92 1295 bp  
Lyngbya polychroa PNG6 68 rrnB 1295 bp  
Planktothrix pseudagardhii T19 6 6 for 1295 bp  
Lyngbya bouillonii PNG6 41 1295 bp  
Microcoleus spDAI 1295 bp  
Phormidium murrayi Ant Ph58 1295 bp  
Planktothrix agardhii NIVA CYA 68 1295 bp  
Microcoleus chthonoplastes PCC7420  
Microcoleus glaciei UTCC 475 1295 bp  
Lyngbya sordida NAC8 51 1295 bp  
Schizothrix spPNG5 22 1295 bp  
Lyngbya polychroa PNG6 51 1295 bp  
Planktothrix agardhii NIVA CYA 10 for 1295 bp  
Planktothrix pseudagardhii HAB639 1295 bp  
Symploca spHBC5 1295 bp  
Planktothrix pseudagardhii T1 8 4 for 1295 bp  
Symploca atlantica PCC 8002 for r 1295 bp  
Microcoleus chthonoplastes EBD 1295 bp  
Planktothrix rubescens r strain BC Pla 9303 1295 bp  
Planktothrix mougeotii HAB3343 1295 bp  
Planktothrix agardhii NIES 595 for 1295 bp  
Phormidiaceae cyanobacterium CPER KK1 1295 bp  
Oscillatoria spPCC 9018 1295 bp  
Planktothrix rubescens PCC 10106 1295 bp  
Lyngbya spVP417b 1295 bp  
Microcoleus chthonoplastes CCY0002 1295 bp  
Planktothrix rubescens CCAP 1459/14 1295 bp  
Planktothrix pseudagardhii NIVA CYA 153 for 1295 bp  
Oscillatoria spPCC 8926 1295 bp  
Pseudanabaenaceae cyanobacterium ANP1 KK1 1295 bp  
Lyngbya bouillonii PNG7 29 3 rrnB 1295 bp  
Planktothrix pseudagardhii HAB1346 1295 bp  
Lyngbya sordida NAC8 49 r 1295 bp  
Planktothrix mougeotii TK4 5 for 1295 bp  
Planktothrix agardhii NIVA CYA 34 for 1295 bp  
Planktothrix sp2 r strain 2 1295 bp  
Symploca spCCY0030 1295 bp  
Planktothrix rubescens NIVA CYA 151 for 1295 bp  
Lyngbya bouillonii PNG5 198 r 1295 bp  
Planktothrix spPCC 9214 1295 bp  
Planktothrix agardhii CCAP 1459/36 for 1295 bp  
Lyngbya majuscula 3L rrnB 1295 bp  
Planktothrix agardhii PCC 9637 1295 bp  
Lyngbya polychroa PNG6 9 r 1295 bp  
Planktothrix pseudagardhii HAB662 1295 bp  
Lyngbya sordida NAC8 52 1295 bp  
Lyngbya majuscula JHB 1295 bp  
Planktothrix agardhii NIVA CYA 30 for 1295 bp  
Microcoleus chthonoplastes CCY9606 1295 bp

Planktothrix agardhii PCC 10110 1295 bp  
Planktothrix agardhii HAB326 1295 bp  
Lyngbya bouillonii PNG7 63 1295 bp  
Planktothrix agardhii HAB237 1295 bp  
Planktothrix mougeotii TK5 1 for 1295 bp  
Planktothrix pseudagardhii HAB1379 1295 bp  
Lyngbya polychroa PNG6 45 1295 bp  
Lyngbya polychroa PNG6 48 1295 bp  
Symploca spVP642c 1295 bp  
Symploca PCC 8002 1295 bp  
Microcoleus chthonoplastes CCY9608 1295 bp  
Planktothrix agardhii NIVA CYA 56/3 for 1295 bp  
Planktothrix pseudagardhii r isolate VR1 1295 bp  
Microcoleus chthonoplastes MAF 1295 bp  
Lyngbya bouillonii PAL08 16 rrnB 1295 bp  
Microcoleus chthonoplastes WW11 1295 bp  
Microcoleus chthonoplastes LZW 1295 bp  
Lyngbya polychroa PNG5 194 rrnB 1295 bp  
Oscillatoria spPCC 8954 1295 bp  
Lyngbya majuscula 3L 1295 bp  
Lyngbya majuscula PAB 1295 bp  
Lyngbya majuscula PNG6 221 rrnB 1295 bp  
Planktothrix mougeotii TR2 4 for 1295 bp  
Lyngbya polychroa PNG6 68 r 1295 bp  
Lyngbya polychroa PNG6 38 rrnB 1295 bp  
Lyngbya bouillonii PNG7 22 r 1295 bp  
Lyngbya bouillonii PNG7 34 1295 bp  
Lyngbya majuscula PNG6 221 r 1295 bp  
Lyngbya bouillonii PNG7 22 rrnB 1295 bp  
Planktothrix agardhii CCAP 1459/23 for 1295 bp  
Planktothrix pseudagardhii HAB366 1295 bp  
Lyngbya majuscula NAC8 47 1295 bp  
Oscillatoria spPCC 8927 1295 bp  
Planktothrix spUVFP1 r strain UVFP1 1295 bp  
Microcoleus chthonoplastes SAH 1295 bp  
Planktothrix sp1LT27S08 r 1295 bp  
Lyngbya bouillonii PNG5 198 rrnB 1295 bp  
Lyngbya bouillonii PAL08 16 1295 bp  
Planktothrix agardhii HAB325 1295 bp  
Microcoleus chthonoplastes CCY9605 1295 bp  
Microcoleus spHTT U KK5 1295 bp  
Microcoleus spSAG 2212 1295 bp  
Planktothrix mougeotii HAB002 1295 bp  
Lyngbya polychroa PNG6 9 rrnB 1295 bp  
Planktothrix pseudagardhii HAB526 1295 bp  
Microcoleus chthonoplastes WW6 1295 bp  
Oscillatoria spPCC 9631 1295 bp  
Microcoleus chthonoplastes CCY9602 1295 bp  
Lyngbya sordida NAC8 53 1295 bp  
Symploca spVP642b 1295 bp  
Symploca spVP642a 1295 bp  
Microcoleus sp for r 1295 bp  
Lyngbya bouillonii PNG7 29 3 r 1295 bp  
Planktothrix agardhii 213 1295 bp  
Lyngbya bouillonii PNG7 14 1295 bp

Lyngbya bouillonii PNG7 4 1295 bp  
Lyngbya polychroa PNG5 192 1295 bp  
Lyngbya sordida NAC8 49 rrnB 1295 bp  
Planktothrix rubescens NIES 1266 1295 bp  
Microcoleus chthonoplastes CCY9603 1295 bp  
Microcoleus chthonoplastes WW3 1295 bp  
Symploca spVP377 1295 bp  
Planktothrix pseudagardhii HAB1131 1295 bp  
Planktothrix pseudagardhii HAB414 1295 bp  
Lyngbya polychroa PNG6 2 1295 bp  
Planktothrix mougeotii HAB626 1295 bp  
Lyngbya polychroa PNG6 57 1295 bp  
Symploca atlantica CCY9617 1295 bp  
Planktothrix agardhii NIVA CYA 313 for 1295 bp

### **Clade C2 (Trichodesmium-Oscillatoria):**

Geitlerinema spCCY0102 1295 bp  
Arthrospira platensis CG590 1295 bp  
Oscillatoria miniata NAC8 50 1295 bp  
Arthrospira platensis strain UTEX 2340 1295 bp  
Oscillatoria spongelliae SI04 40 1295 bp  
Hydrocoleum lyngbyaceum HBC7 1295 bp  
Phormidium spETS 05 r isolate ETS 05 1295 bp  
Oscillatoria prolifera for r 1295 bp  
Arthrospira platensis strain NIES 39 1295 bp  
Lyngbya hieronymusii varhieronymusii CN4 3 for 1295 bp  
Lyngbya cfconferoides VP0401 1295 bp  
Oscillatoria spongelliae SI04 46 1295 bp  
Planktothricoides raciborskii INBaOR for 1295 bp  
Pseudoscillatoria coralii BgP10 4S 1295 bp  
Geitlerinema spCCY9412 1295 bp  
Oscillatoria spongelliae SI04 45 1295 bp  
Phormidium autumnale Arct Ph5 1295 bp  
Phormidium lumbricale UTCC 476 1295 bp  
Blennothrix spPNG05 4 1295 bp  
Oscillatoria margaritifera NAC8 54 1295 bp  
Oscillatoria sancta for r 1295 bp  
Oscillatoria spongelliae KR04 3 1295 bp  
Oscillatoria spongelliae 36P3 1295 bp  
Arthrospira platensis strain SAG 257 80 1295 bp  
Ocfcorallinae r 1295 bp  
Trichodesmium thiebautii 1295 bp  
Trichodesmium sp 1295 bp  
Planktothricoides raciborskii NIES 207 for 1295 bp  
Oscillatoria spongelliae 32P1 1295 bp  
Lyngbya aestuarii PCC 7419 for r 1295 bp  
Planktothricoides raciborskii T1 6 2 for 1295 bp  
Lyngbya aestuarii for r 1295 bp  
Geitlerinema spBBD 1295 bp  
Phormidium animale SAG 1459 6 1295 bp  
Arthrospira platensis EB 9602 1295 bp  
Trichodesmium erythraeum IMS101 for r 1295 bp  
Trichodesmium erythraeum 1295 bp  
Microcoleus vaginatus UBI KK2 1295 bp

Planktothricoides raciborskii NSLA3 for 1295 bp  
Arthrospira maxima FACHB438 complete 1295 bp  
Oscillatoria sancta PCC 7515 1295 bp  
Geitlerinema spBBD HS217 1295 bp  
Arthrospira maxima BJ 2000 1295 bp  
Planktothricoides raciborskii OR1 1 for 1295 bp  
Lyngbya polychroa LP16 1295 bp  
Oscillatoria lutea for 1295 bp  
Microcoleus vaginatus PBP D KK1 1295 bp  
Microcoleus vaginatus SEV1 KK3 1295 bp  
Microcoleus acremanii UTCC 313 1295 bp  
Geitlerinema spBBD HS223 1295 bp  
Oscillatoria spongelliae SI04 47 1295 bp  
Oscillatoria acuminata for r 1295 bp  
Oscillatoria spMMG 3 1295 bp  
Microcoleus chthonoplastes CCY0602 1295 bp  
Trichodesmium tenue 1295 bp  
Planktothricoides raciborskii NSLA4 for 1295 bp  
Trichodesmium contortum 1295 bp  
Tychonema bourrellyi CCAP 1459/11B for 1295 bp  
Arthrospira platensis 8005Geitlerinema spA28DM 1295 bp  
Phormidium autumnale SAG 35 90 1295 bp  
Microcoleus antarcticus UTCC 474 1295 bp  
Arthrospira jenneri EB 9604 1295 bp  
Microcoleus rushforthii UTCC 296 1295 bp  
Oscillatoria spCk2 1295 bp  
Oscillatoria spongelliae KR04 1 1295 bp  
Microcoleus vaginatus CSI U KK1 1295 bp  
Oscillatoria sp195 A20 1295 bp  
Phormidium spUTCC 487 1295 bp  
Trichodesmium hildebrandtii 1295 bp  
Oscillatoria spNAC8 18 1295 bp  
Phormidium spKU003 for r 1295 bp  
Arthrospira platensis strain PCC 9223 1295 bp  
Phormidium autumnale SAG 78 79 1295 bp  
Oscillatoria spongelliae SI04 42 1295 bp  
Arthrospira platensis strain PCC 9108 1295 bp  
Oscillatoria margaritifera NAC8 55 1295 bp  
Oscillatoria spongelliae KR04 4 1295 bp  
Oscillatoria spongelliae 310P1 1295 bp  
Trichodesmium havanum strF34 5 1295 bp  
Phormidium autumnale Ant Ph68 1295 bp  
Geitlerinema PCC7105 for r 1295 bp  
Oscillatoria spongelliae SI04 41 1295 bp  
Geitlerinema spFlo1 1295 bp  
Phormidium spHBC9 1295 bp  
Microcoleus vaginatus SAG 2211 1295 bp  
Phormidium cfterebriformis KR2003/25 1295 bp  
Geitlerinema spW 1 1295 bp  
Microcoleus vaginatus CJI U2 KK2 1295 bp

### **Clade A1 (Microcystis):**

Microcystis spCHAB727 1295 bp  
Microcystis ichthyoblabe for r1 1295 bp

MSU66194 *Microcystis* spKND9506 1295 bp  
*Microcystis wesenbergii* for r 1295 bp  
*Chroococcus* spJJCM 1295 bp  
*Microcystis* spCHAB731 1295 bp  
*Microcystis wesenbergii* NIES 107 1295 bp  
*Gloeothece* sp PCC 6909/1 1295 bp  
*Microcystis* spCHAB728 1295 bp  
*Cyanothece* sp PCC 8801 1295bp  
*Microcystis* spCHAB729 1295 bp  
MAU40331 *Microcystis* spAWT139 1295 bp  
*Merismopedia glauca* 0BB39S01 r strain 0BB39S01 1295 bp  
MWU40334 *Microcystis wesenbergii* NIES112 r 1295 bp  
*M. glauca* strain B1448 1 rDNA 1295 bp  
*Gmembranacea* r 1295 bp  
*Microcystis wesenbergii* DNA for 1295 bp  
*Microcystis aeruginosa* strain 038 1295 bp  
*Microcystis aeruginosa* for strain NIES 604 1295 bp  
*Microcystis* sp269 r strain 269 1295 bp  
*Microcystis viridis* NIES 102 1295 bp  
*Cyanothece* spWH 8904 1295 bp  
*Microcystis* spCHAB1447 1295 bp  
*Crocospaera watsonii* WH 8501 1295 bp  
AF193247 Symbiont of *Climacodium frauenfeldianum* 1295 bp  
*Microcystis novacekii* for r 1295 bp  
*Cyanothece* spPCC 7424 1295 bp  
MAU40338 *Microcystis aeruginosa* PCC7005 r 1295 bp  
*Snowella litoralis* 1LT47S05 r strain 1LT47S05 1295 bp  
*Microcystis aeruginosa* NPCD 1 1295 bp  
*Microcystis aeruginosa* 0BF29S03 r 1295 bp  
*Microcystis* spCHAB1449 1295 bp  
*Snowella litoralis* 0TU37S04 r strain 0TU37S04 1295 bp  
*Cyanothece* spWH 8902 1295 bp  
*Microcystis aeruginosa* for r isolate TAC86 1295 bp  
*Pleurocapsa* PCC7327 for r 1295 bp  
*Microcystis* spGL260735 1295 bp  
*Microcystis ichthyoblabe* 0BB35S01 r 1295 bp  
*Microcystis* spCHAB657 1295 bp  
*Microcystis novacekii* for r isolate TAC65 1295 bp  
*Cyanothece* sp r strain PCC 7424 1295 bp  
MAU03402 *Microcystis aeruginosa* PCC7806 r 1295 bp  
*Microcystis aeruginosa* 0BB35S02 r 1295 bp  
*Synechocystis* PCC6805 for r 1295 bp  
MAU40339 *Microcystis aeruginosa* PCC7820 r 1295 bp  
*Microcystis novacekii* for r isolate TAC20 1295 bp  
*Microcystis* sp for r isolate 4B3 1295 bp  
*Microcystis aeruginosa* strain SPC 777 1295 bp  
*Microcystis* sp for r isolate T17 1 1295 bp  
*Microcystis aeruginosa* r isolate MK10 10 1295 bp  
*Microcystis aeruginosa* DNA for 1295 bp  
*Microcystis* spCHAB726 1295 bp  
*Microcystis viridis* DNA for 1295 bp  
*Microcystis* sp130 r strain 130 1295 bp  
*Microcystis aeruginosa* for 1295 bp  
*Synechocystis* spCCALA 700 1295 bp  
*Snowella rosea* 1LM40S01 r strain 1LM40S01 1295 bp



Woronichinia naegeliana 0LE35S01 r strain 0LE35S01 1295 bp  
Microcystis ichthyoblabe for r 1295 bp  
Aphanothece sacrum for r 1295 bp  
Synechocystis PCC6803 MAU03403 Microcystis aeruginosa NIES89 r 1295 bp  
MVU40332 Microcystis viridis NIES 102 complete 1295 bp  
Radiocystis spJJ30 1295 bp  
MWU40333 Microcystis wesenbergii NIES 107 complete 1295 bp  
MAU40340 Microcystis aeruginosa PCC 7941 complete 1295 bp  
Microcystis sp for r isolate T1 4 1295 bp  
Microcystis spGL280641 r strain GL280641 1295 bp  
Aphanocapsa spHBC6 1295 bp

### **Clade C3 (Spirulina):**

Spirulina spstrain MPI S4 r 1295 bp  
Spirulina major 0BB36S18 r strain 0BB36S18 1295 bp  
Spirulina subsalsa IAM M 223 for 1295 bp  
Spirulina PCC6313  
Spirulina spGLS010 1295 bp  
Halospirulina sp CCC Baja 95 Cl 3 r 1295 bp  
Spirulina spstrain CCC Snake PY 85 r 1295 bp  
Halospirulina tapeticola CCC Baja 95 Cl 2 1295 bp  
Halospirulina sp MPI S3 r 1295 bp

### **Clade A2 (Synechocystis):**

Synechocystis PCC6308 1295 bp  
Synechococcus spHOG 1295 bp  
Cyanobacterium spMBIC10216 for r 1295 bp  
Synechococcus spPCC 8807 1295 bp  
Cyanothece sp115 1295 bp  
Synechococcus spPH40 1295 bp  
Synechococcus sp for r strain PCC73109 1295 bp  
Halothece spPCyano42 1295 bp  
Cyanothece sp r strain PCC 7418 1295 bp  
Synechococcus elongatus CCMP1630 1295 bp  
Synechococcus spT71 1295 bp  
Synechococcus spUH7 1295 bp  
Euhalothece spZ M001 1295 bp  
Dactylococcopsis sp PCC 8305 1295 bp  
Euhalothece sp r strain MPI 96N304 1295 bp  
Cyanothece sp109 1295 bp  
Rubidibacter lacunae KORDI 51 2 1295 bp  
Oscillatoria rosea IAM M 220 for 1295 bp  
Cyanothece spGSL007 1295 bp  
Synechocystis trididemni for r 1295 bp  
Euhalothece sp r strain MPI 95AH10 1295 bp  
Cyanothece sp113 1295 bp  
Phormidium spMBIC10210 for r strain MBIC10210 1295 bp  
Halothece spPCC 7418 1295 bp  
Prochloron sp for 1295 bp  
Cyanothece sp104 1295 bp  
Synechococcus sp for r strain PCC7003 1295 bp  
Synechococcus sp r strain PCC 7002 1295 bp

Euhalothece sp r strain MPI 95AH13 1295 bp  
Synechococcus sp for r strain PCC7117 1295 bp  
Halothece sp r strain MPI 96P605 1295 bp

### **Clade B2 (Pleurocapsa):**

Pleurocapsa minor r strain SAG 4 99 1295 bp  
Dermocarpella incrassata r strain SAG 29 84 1295 bp  
Dermocarpa spMBIC10768 for r 1295 bp  
Chroococciopsis spPCC 6712 r strain PCC 6712 1295 bp  
Myxosarcina PCC 7325 1295 bp  
Chroococciopsis PCC6712 for r 1295 bp  
Stanieria PCC7301 for r 1295 bp  
Myxosarcina PCC 7312 1295 bp  
Dermocarpa spMBIC10004 for r 1295 bp  
Pleurocapsa spCALU 1126 1295 bp  
Pleurocapsa spOU 12 1295 bp  
Pleurocapsa PCC7319 for r 1295 bp  
Pleurocapsa sp r 1295 bp  
Pleurocapsa spOU 11 1295 bp  
Chroococciopsis spCCMP1489 r strain CCMP1489 1295 bp

### **single species:**

Xenococcus spCR 15M 1295 bp  
Stanieria cyanosphaera PCC 7437 1295 bp  
Stanieria cyanosphaera for r 1295 bp

### **Clade A3 (Chroococcus):**

Chroococcus spJJCVC r strain JJCVC 1295 bp  
Chroococcus spCCALA 702 1295 bp  
Chroococcus spCCALA 701 1295 bp  
Chroococcus spCCALA 057 1295 bp  
Chroococcus cfmembraninus CCALA 054 1295 bp  
Gloeocapsa PCC73106 for r 1295 bp  
Limnococcus limneticus Svet06 1295 bp  
Chroococcus minutus CCALA 055 1295 bp

### **Clade A4 (Synechococcus):**

Cyanobacterium 5X15 r 1295 bp  
Synechococcus spKORDI 70 1295 bp  
Prochlorococcus marinus subspastoris stTL2 1295 bp  
Synechococcus spKORDI 15 1295 bp  
Synechococcus spKORDI 49 1295 bp  
Synechococcus sp for r strain PCC7001 1295 bp  
AF098372 Synechococcus like strABRAXAS 1295 bp  
Cyanobium spJJ2 3 r strain JJ2 3 1295 bp  
Cyanobium sp0BB42S04 r strain 0BB42S04 1295 bp  
MHU40336 Microcystis holsatica NIES43 r 1295 bp  
Cyanobium spJJ9 A3 r strain JJ9 A3 1295 bp  
Synechococcus spKORDI 63 1295 bp

Synechococcus PCC7943 1295 bp  
Synechococcus spBN39 1295 bp  
AF098370 Synechococcus like strACE 1295 bp  
Synechococcus spHOS 1295 bp  
AF115268 Prochlorococcus spMIT9201 1295 bp  
Synechococcus spTAGS 1295 bp  
AF001467 Prochlorococcus spNATL2A 1295 bp  
Prochlorococcus marinus strTAK9803 2 1295 bp  
Syn CC9605Synechococcus spCENA108 1295 bp  
Synechococcus spKORDI 18 1295 bp  
Syn WH8101Synechococcus spKORDI 11 1295 bp  
AF098374 Synechococcus like strP212 1295 bp  
Synechococcus spKORDI 12 1295 bp  
Cyanobium spJJ27STR r strain JJ27STR 1295 bp  
AF001470 Prochlorococcus spNATL2 1295 bp  
Synechococcus spRS9921 1295 bp  
Synechococcus spKORDI 13 1295 bp  
Cyanobium spJJ9 C6 r strain JJ9 C6 1295 bp  
Cyanobium spJJ17 5 r strain JJ17 5 1295 bp  
AF081834 Synechococcus WH7803 1295 bp  
AF001474 Prochlorococcus spTATL1A 1295 bp  
Cyanobium spJJ5 5 r strain JJ5 5 1295 bp  
Synechococcus spOli31 1295 bp  
Synechococcus spMinos11 1295 bp  
Synechococcus spPS838 1295 bp  
Cyanobium spJJM10A4 r strain JJM10A4 1295 bp  
Cyanobium spY0011 1295 bp  
Synechococcus sp1tu39s01 r strain 1tu39s01 1295 bp  
Synechococcus spBN31 1295 bp  
Cyanobium spJJ12A2 r strain JJ12A2 1295 bp  
Synechococcus spMBIC10459 for r 1295 bp  
Cyanobium spJJ19B5 r strain JJ19B5 1295 bp  
Synechococcus spKORDI 54 1295 bp  
Synechococcus sp0tu28s07 r strain 0tu28s07 1295 bp  
Synechococcus spKORDI 16 1295 bp  
Cyanobium spJJ15 13 r strain JJ15 13 1295 bp  
AF115270 Prochlorococcus spMIT9211 1295 bp  
P marinus for 1295 bp  
Synechococcus spEW15 1295 bp  
MEU40335 Microcystis elabens NIES42 r 1295 bp  
AF001479 Synechococcus WH8103 1295 bp  
Synechococcus spBAC 9803 1295 bp  
Synechococcus spBAC 9810 1295 bp  
Synechococcus spKORDI 71 1295 bp  
Cyanobium spJJM10D5 r strain JJM10D5 1295 bp  
Synechococcus spKORDI 30 1295 bp  
Cyanobium spJJ11D3 r strain JJ11D3 1295 bp  
Aphanothece sp0BB21S01 r strain 0BB21S01 1295 bp  
Synechococcus spPS723 1295 bp  
Synechococcus spMBIC10007 for r 1295 bp  
Synechococcus spMBIC10456 for r 1295 bp  
Synechococcus spBE0807I 1295 bp  
Synechococcus PCC9005 1295 bp  
Synechococcus PCC7009 1295 bp  
Synechococcus spWH 5701 1295 bp

Synechococcus spRS9918 1295 bp  
 Synechococcus spMBIC10089 for r 1295 bp  
 AF098373 Synechococcus like strP211 1295 bp  
 AF053397 Prochlorococcus spMIT9303 1295 bp  
 Synechococcus sp0BB26S03 r strain 0BB26S03 1295 bp  
 AF001478 Synechococcus WH7805 1295 bp  
 Synechococcus spPS715 1295 bp  
 Synechococcus sp0BB22S0 r strain 0BB22S05 1295 bp  
 Synechococcus spC129 1295 bp  
 Microcystis elabens DNA for 1295 bp  
 Synechococcus spMLCB 1295 bp  
 Cyanobium spLB03 1295 bp  
 Microcystis holsatica DNA for 1295 bp  
 AF098371 Synechococcus like strPENDANT 1295 bp  
 Synechococcus spWH 8103 1295 bp  
 Synechococcus spWH 8018 1295 bp  
 Synechococcus spKORDI 52 1295 bp  
 Synechococcus PCC7918 1295 bp  
 AF001468 Prochlorococcus spMIT9107 1295 bp  
 AF001472 Prochlorococcus spGP2 1295 bp  
 Synechococcus spWH 7803 1295 bp  
 Prochlorococcus marinus strEQPAC1 1295 bp  
 Prochlorococcus spNATL1 1295 bp  
 Cyanobium spJJ12 6 r strain JJ12 6 1295 bp  
 Synechococcus spPS680 1295 bp  
 Synechococcus spAlmo3 1295 bp  
 Cyanobium spJJ7 9 r strain JJ7 9 1295 bp  
 Synechococcus spKORDI 17 1295 bp  
 Synechococcus spNAN 1295 bp  
 Cyanobium spNS01 1295 bp  
 Synechococcus spMBIC10613 for r strain MBIC10613 1295 bp  
 Cyanobium spJJ22 10 r strain JJ22 10 1295 bp  
 Synechococcus spRS9920 1295 bp  
 Synechococcus spKORDI 56 1295 bp  
 Synechococcus spMinos12 1295 bp  
 AF001475 Prochlorococcus spTATL1B 1295 bp  
 Synechococcus spIOCAS0401 1295 bp  
 Prochlorococcus marinus subsppastoris stTL1 1295 bp  
 Synechococcus spTAG 1295 bp  
 Synechococcus spWH 8020 1295 bp  
 Synechococcus spUBR 1295 bp  
 Synechococcus spKORDI 36 1295 bp  
 Synechococcus spKUAC 3043 1295 bp  
 Cyanobium spPCC 6904 1295 bp  
 Cyanobium spJJ13 6 r strain JJ13 6 1295 bp  
 AF115269 Prochlorococcus spMIT9202 1295 bp  
 AF053396 Prochlorococcus spMIT9302 1295 bp  
 Synechococcus spACT9807 1295 bp  
 Prochlorococcus spCCMP1426 1295 bp  
 Synechococcus spWH 8016 1295 bp  
 Synechococcus spKORDI 50 1295 bp  
 Synechococcus spCCMP839 1295 bp  
 Cyanobium spGSL004 1295 bp  
 Syn PCC6301 Cyanobium spJJ10 3 r strain JJ10 3 1295 bp  
 Synechococcus spT7cc1 1295 bp

AF053398 Prochlorococcus spMIT9312 1295 bp  
 Cyanobium spJJ19 11 r strain JJ19 11 1295 bp  
 Synechococcus spGL150636 r strain GL150636 1295 bp  
 Cyanobium spJJNV r strain JJNV 1295 bp  
 AF053399 Prochlorococcus spMIT9313 1295 bp  
 AF115271 Prochlorococcus spMIT9215 1295 bp  
 Synechococcus spPS845 1295 bp  
 Cyanobium spJJM10D4 r strain JJM10D4 1295 bp  
 Synechococcus spKORDI 65 1295 bp  
 Synechococcus spKORDI 78 1295 bp  
 Synechococcus spKORDI 42 1295 bp  
 Cyanobium spJJ22K r strain JJ22K 1295 bp  
 Merismopedia spCENA106 1295 bp  
 Synechococcus spPS840 1295 bp  
 Synechococcus spIOCAS0402 1295 bp  
 Cyanodictyon spJJCD r strain JJCD 1295 bp  
 AF001471 Prochlorococcus spPAC1 1295 bp  
 Synechococcus PCC7920 1295 bp  
 Cyanobium spJJ9 5 r strain JJ9 5 1295 bp  
 Cyanobium spJJR2A5 r strain JJR2A5 1295 bp  
 Synechococcus spWH 8012 1295 bp  
 Synechococcus spPCC 8966 1295 bp  
 Cyanobium spJJ8 4 r strain JJ8 4 1295 bp

### Clade AC1 :

Leptolyngbya sp 1295 bp  
 Synechococcus spMBIC10598 for r strain MBIC10598 1295 bp  
 MSU66194 Microcystis spKND9506 1295 bp  
 Microcystis wesenbergii for r 1295 bp  
 Leptolyngbya spCENA112 1295 bp  
 FilthermocyanobacteriumLeptolyngbya tenerrima UTCC 77 1295 bp  
 Leptolyngbya spCENA103 1295 bp  
 CfLeptolyngbya spGreenland 9 1295 bp  
 Limnothrix spB15 1295 bp  
 Leptolyngbya spFYG 1295 bp  
 MWU40334 Microcystis wesenbergii NIES112 r 1295 bp  
 Filamentous thermophilic cyanobacterium tBTRCCn 102 1295 bp  
 Calothrix spKVSF5 1295 bp  
 Arthonema africanum SAG 12 89 for 1295 bp  
 Limnothrix redekei 165c r strain 165c 1295 bp  
 Leptolyngbya spHBC3 1295 bp  
 L foveolarum r 1295 bp  
 AF170757 LPP group cyanobacterium QSSC5cya 1295 bp  
 Phormidium spIAM M 99 for 1295 bp  
 Leptolyngbya angustata UTCC 473 1295 bp  
 Oscillatoriales cyanobacterium OU 4 1295 bp  
 Leptolyngbya ant lh52 1Leptolyngbya spOU 14 1295 bp  
 Leptolyngbya spBN34 1295 bp  
 Phormidium spOU 10 1295 bp  
 Oscillatoriales cyanobacterium UVFP2 r strain UVFP2 1295 bp  
 Microcystis wesenbergii DNA for 1295 bp  
 Limnothrix spCENA110 1295 bp  
 Leptolyngbya spOU 8 1295 bp  
 Filamentous cyanobacterium GSL035 1295 bp

Microcystis sp269 r strain 269 1295 bp  
 Halomicronema spSCyano39 1295 bp  
 Starria zimbabweensis SAG 74 90 for r 1295 bp  
 Limnothrix spCENA109 1295 bp  
 Pseudanabaena tremula UTCC 471 1295 bp  
 Synechococcus spIR11 1295 bp  
 Chamaesiphon PCC7430Leptolyngbya spBN44 1295 bp  
 Phormidium spMBIC10818 for r strain MBIC10818 1295 bp  
 PlectonemMAU03402 Microcystis aeruginosa PCC7806 r 1295 bp  
 Leptolyngbya spNi6 C2 for r 1295 bp  
 CfLeptolyngbya spGreenland 10 1295 bp  
 Leptolyngbya spGreenland 7 1295 bp  
 Halomicronema spTFEP1 1295 bp  
 Leptolyngbya spBN43 1295 bp  
 Synechococcus C9Pseudanabaenaceae cyanobacterium PBP U KK1 1295 bp  
 Microcystis aeruginosa DNA for 1295 bp  
 L boryanum 1295 bp  
 Oscillatoriales cyanobacterium JSC 1 1295 bp  
 Filamentous thermophilic cyanobacterium tBTRCCn 408 1295 bp  
 Synechococcus sp for r strain PCC7335 1295 bp  
 Filamentous thermophilic cyanobacterium tBTRCCn 302 1295 bp  
 Leptolyngbya spOU 13 1295 bp  
 LPP group MBIC10086 for r 1295 bp  
 Oscillatoria spIAM M 117 for 1295 bp  
 Phormidium spMBIC10002 for r 1295 bp  
 Limnothrix redekei 165a r strain 165a 1295 bp  
 AF170758 LPP group cyanobacterium QSSC8cya 1295 bp  
 Phormidium spSAG 37 90 1295 bp  
 Leptolyngbya spMMG 1 1295 bp  
 Leptolyngbya spCENA104 1295 bp  
 Planktothrix sp FP1 1295 bp  
 LPP group MBIC10597 for r 1295 bp  
 AF170756 LPP group cyanobacterium QSSC3cya 1295 bp  
 Crinalium magnum SAG 34 87 for 1295 bp  
 MAU40340 Microcystis aeruginosa PCC 7941 complete 1295 bp  
 Leptolyngbya spITAC101 1295 bp  
 Filamentous thermophilic cyanobacterium tBTRCCn 407 1295 bp

### **Clade A5 (Acaryochloris):**

Acaryochloris spAwaji 1 for r 1295 bp  
 Acaryochloris marina strain MBIC 11017 1295 bp  
 Synechococcus spPCC 6312 1295 bp  
 Acaryochloris spJJ7 5 r strain JJ7 5 1295 bp  
 Syn lividusC1  
 Thermosynechococcus BP 1  
 Acaryochloris marina for r strain MBIC11017 1295 bp  
 Synechococcus PCC6717 1295 bp  
 Acaryochloris spJJ8A6 r strain JJ8A6 1295 bp

### **Clade C4 (Pseudanabaena):**

Anabaena spiroides NIES 78 1295 bp  
 Filamentous cyanobacterium 72 1 1295 bp

Pseudanabaena PCC7367 for r 1295 bp  
Synechococcus spPCC 7502 1295 bp  
Pseudanabaena PCC7403 for r 1295 bp  
Arthronema gygaxiana UTCC 393 1295 bp  
Pseudanabaena sp63 1 1295 bp  
Oscillatoria limnetica strain MR1 r 1295 bp  
Pseudanabaena sp1tu24s9 r strain 1tu24s9 1295 bp  
Phormidium mucicola IAM M 221 1295 bp  
Pseudanabaena PCC6802 1295 bp  
Pseudanabaena PCC7408 for r 1295 bp  
Limnothrix redekei NIVA CYA 227/1 for 1295 bp  
Pseudanabaena spPCC 7403 1295 bp  
Pseudanabaena sp0tu30s18 r strain 0tu30s18 1295 bp  
Pseudanabaena PCC6903 for r 1295 bp

### **Chloroplasts:**

Oedogonium cardiacum chloroplast  
Prochlorales cyanobacterium EV 7 1295 bp  
Glaucocystis nostochinearum plastid 16S rRNA gene  
Parachlorella kessleri chloroplast  
Stigeoclonium helveticum strain UTEX 441 chloroplast  
Porphyra yezoensis chloroplast

### **Single species at the basis:**

Gloeobacter violaceus PCC 7421  
Synechococcus sp. PCC 7336 1295 bp  
Synechococcus sp. P1

### **Non-cyanobacteria:**

Chlorobium sp.  
Agrobacterium tumefaciens  
Beggiatoa sp. 'Chiprana'  
Candidatus Chlorothrix halophila  
Thiobacillus prosperus  
Escherichia coli HS