

Supplementary Material

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Supplementary Table S1. Taxa included in the analysis, with locality and / or environment information, reference publication, and GenBank accession numbers

Taxon	Voucher / Strain	Locality and / or Environment	GenBank accession	Reference publication
Outgroup				
<i>Nostoc punctiforme</i> Hariot	765173 / SAG60.79	France	GQ287652	Abdel-Basset et al. (unpublished)
Ingroup				
<i>Aerosakkonema funiforme</i> Nanda Kyaw Thu & Watanabe	1246630 / Lao26	Laos: Nam Ngum Dam	NR114306	Thu et al. (2012)
<i>Blennothrix ganeshii</i> Watanabe & Komárek	1546126 / -	Mexico	KM276546	Palinska (unpublished)
<i>Blennothrix</i> sp.	515283 / AQS	-	EU586735	Rehakova et al. (unpublished)
<i>Capillus aestuarii</i> comb. nov.	PCC 7419	Salt marsh	NR114680	Nübel et al. (1997)
	PCC 7419	Salt marsh	AJ000714	Nübel et al. (1997)
	PCC 7419	Salt marsh	NR112110	Ishida and Yokota (unpublished)
	PCC 7419	Salt marsh	AB039013	Ishida and Yokota (unpublished)
<i>Capillus salinus</i> T. A. Caires, C. L. Sant'Anna and J. M. C. Nunes gen. nov., sp. nov.	ALCB 114379	Brazil, Bahia State, Pedra do Sal Beach, Salvador city	KY824052	This study
<i>Capillus tropicalis</i> T. A. Caires, C. L. Sant'Anna et J. M. C. Nunes gen. nov., sp. nov.	ALCB 114392	Brazil, Bahia State, Camaçari city, Arembepe Beach	MF190468	This study
<i>Hydrocoleum cantharidosmum</i> Gomont ex Gomont	1031264 / -	Atlantic Ocean: Gran Canaria, Canaries	GU238277	Palinska et al. (unpublished)
<i>Hydrocoleum glutinosum</i> Gomont ex Gomont	1031257 / -	Indian Ocean: Mayotte, Comoros Islands	GU238276	Palinska et al. (unpublished)
<i>Hydrocoleum lyngbyaceum</i> Kützing ex Gomont	487778 / HBC7	Bahamas	EU249124	Foster et al. (2009)
<i>Hydrocoleum majus</i> Holden	1031260 / -	Indian Ocean: Mayotte, Comoros Islands	GU238273	Palinska et al. (unpublished)
<i>Limnoraphis hieronymusii</i> (Lemmermann) J. Komárek, E. Zapomelová, J. Smarda, J. Kopecky, E. Rejmánková, J. Woodhouse, B. A. Neilan & J. Komárková	1118285 / N-929	-	JN854140	Komárek et al. (2013)
<i>Limnoraphis robusta</i> (Paracutty) J. Komárek, E. Zapomelová, J. Smarda, J. Kopecky, E. Rejmánková, J. Woodhouse, B. A. Neilan & J. Komárková	1118279 / CCALA 966	Guatemala: Lake Atitlán	NR118325	Komárek et al. (2013)
<i>Lyngbya aestuarii</i> Liebman ex Gomont	927705 / UTEXLB2515	-	HQ419208	Salmon et al. (unpublished)
<i>Lyngbya arboricola</i> Brühl & Biswas	1610724 / SERB 34	India	KM982583	Silambarasan and Kathiresan (unpublished)
<i>Lyngbya</i> cf. <i>majuscula</i> Harvey ex Gomont	1414809 / miya1-1mo9	Japan: Okinawa, Miyakojima, Tomori	AB863125	Suda et al. (2013)
<i>Lyngbya confervoides</i> C. Agardh ex Gomont	643080 / LC14	USA: Florida, Fort Lauderdale	FJ602751	Sharp et al. (2009)
	643078 / LC15	USA: Florida, Fort Lauderdale	FJ602752	Sharp et al. (2009)
	279833 / VP0401	USA: Florida, Broward County	AY599507	Paul et al. (2005)

Supplementary Table S1. Continued

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<i>Lyngbya majuscula</i> Harvey ex Gomont	276770 / specimen_voucher=JHB-22Aug96-01C2	Jamaica: Hector Bay	AY599503	Flatt et al. (2005)
	276769 / PAB 5-27-03-1	Panama: Bocas del Toro, Isla Bastimentos	AY599502	Flatt et al. (2005)
	1414809 / miya1-1mo9	Japan: Miyakojima, Tomori, Okinawa	AB863125	Suda et al. (2013)
<i>Lyngbya martensiana</i> Meneghini ex Gomont	1905544 / MBDU518	India	KX913923	Prasannabalaji and Muralitharan (unpublished)
	1118287 / H3b/7	Guatemala: Lake Atitlan	JN854142	Komárek et al. (2013)
<i>Lyngbya polychroa</i> Meneghini ex Forti	643076 / LP6	USA: Florida, Fort Lauderdale	FJ602749	Sharp et al. (2009)
	643077 / LP2	USA: Florida, Fort Lauderdale	FJ602750	Sharp et al. (2009)
<i>Lyngbya semiplena</i> J. Agardh ex Gomont	1610725 / SERB 7	India	KM982556	Silambarasan and Kathiresan (unpublished)
<i>Lyngbya</i> sp.	1125343 / SM-12	-	JN399098	Mazhar (unpublished)
	937445 / SAG 36.91	-	HQ419205	Salmon et al. (unpublished)
	1414815 / Madea130904B	Japan: Okinawa, Onna, Maeda	AB863123	Suda et al. (2013)
	1397098 / clone 0517N1	USA: Oahu, Hawaii	KC854785	Sherwood et al. (unpublished)
	332961 / FFP12-4	USA: Florida, Indian River Lagoon	KC207937	Engene et al. (2013a)
	332961 / IRL1	-	KC222261	Engene et al. (2013a)
	332961 / clone FFP12-1	USA: Florida, Indian River Lagoon	KC207934	Engene et al. (2013a)
	332961 / SWMP11-12	USA: Clear Lake in California	JX006093	Kurobe et al. (2013)
	332961 / clone SWMP11-13	USA: Clear Lake in California	JX006094	Kurobe et al. (2013)
	332961 / SWMP11-14	USA: Clear Lake in California	JX006095	Kurobe et al. (2013)
	1414811 / aka2mo30	Japan: Zamami, Aka, Kushi-baru, Okinawa	AB863114	Suda et al. (2013)
	1414814 / kushi2mo23	Japan: Zamami, Aka, Kushi-baru, Okinawa	AB863122	Suda et al. (2013)
	937446 / SAG34.98	-	HQ419206	Salmon et al. (unpublished)
	1424297 / 2.1	Bank of a river with highly saline water, India	KF644563	Ray and Sutradhar (unpublished)
	332961 / clone PAL-8-15-08-1	Panama: tropical marine environment	JQ899059	Engene et al. (2012)
	<i>Lyngbya wollei</i> (Farlow ex Gomont) Speziale & Dyck (=Microseira wollei G. B. McGregor & B. C. Sendall)	1165856 / SG	USA: Silver Glen Springs, Florida	JQ282906
521094 / Carmichael / Alabama		USA: Alabama	EU439567	Kellmann et al. (2008)
1549807 / AW2009 clone B37		Australia	KM077452	McGregor and Sendall (unpublished)
1328891 / YC1109 clone A45		Australia	KM077454	McGregor and Sendall (unpublished)
1549808 / YC2010 clone B9		Australia	KM077455	McGregor and Sendall (unpublished)
<i>Moorea bouillonii</i> (L. R. Hoffmann & Demoulin) Engene, Rottacker, Kastovsky, Byrum, Hy. Choi, Ellisman, Komárek & Gerwick	207920 / 1406-23	Japan: Kagoshima, Tokunoshima, Kanami	LC172270	Sumimoto et al. (unpublished)
	574344 / PNG7-14	Marine environment	FJ041305	Engene and Gerwick (unpublished)
	207920 / 1406-23	Japan: Kagoshima, Kanami, Tokunoshima	LC172270	Sumimoto et al. (unpublished)

Supplementary Table S1. Continued

Taxon	Voucher / Strain	Locality and / or Environment	GenBank accession	Reference publication
<i>Moorea producens</i> Engene, Rottacker, Kastovsky, Byrum, Hy. Choi, Ellisman, Komárek & Gerwick	1155740 / PNG 07 / 14 / 07-6.2	-	JQ388600	Engene et al. (unpublished)
	656839 / PAL-8-17-08-2	Palmyra Atoll: Northern Pacific Ocean	GQ231522	Taniguchi et al. (2010)
	748033 / NAC8-47	Curaçao: Schlange baii	GU724198	Engene et al. (2011)
<i>Okeania erythroflocculosa</i> Engene, Paul, Byrum, Gerwick, Thor & Ellisman	1387518 / FFP12-7	USA: Florida, Indian River Lagoon	KC986930	Engene et al. (2013b)
<i>Okeania hirsute</i> Engene, Paul, Byrum, Gerwick, Thor & Ellisman	1458930 / PAB-10-Feb-10-1	Bocas del Toro, Panama	NR118586	Engene et al. (2013b)
<i>Okeania lorea</i> Engene, Paul, Byrum, Gerwick, Thor & Ellisman	1387515 / BCBC12-1	Belize: Carrie Bow Cay	KC986932	Engene et al. (2013b)
	1458934 / FK12-17	Florida Keys	NR118545	Engene et al. (2013b)
<i>Okeania plumata</i> N. Engene, V. J. Paul, T. Byrum, W. H. Gerwick, A. Thor & M. H. Ellisman	1458931 / FK12-2	Looe Key, Florida Keys (Sandy bottom)	NR118585	Engene et al. (2013b)
	1387523 / NAB11-47	-	KC196267	Engene et al. (2013b)
<i>Okeania</i> sp.	1855409 / Odo1	Japan: Okinawa, Itoman, coast of Odo	LC155112	Sueyoshi et al. (unpublished)
	1458972 / PAC-18-Feb-10-2	Panama	JQ899057	Engene et al. (2013b)
	1870759 / 1504-34	Japan	LC164723	Tadenuma et al. (unpublished)
<i>Oscillatoria amoena</i> Gomont	1521532 / SAG 1459-7	-	KM019962	Friedl et al. (unpublished)
<i>Oscillatoria acuminata</i> Gomont	56110 / PCC 6304	-	NR112111	Ishida et al. (2001)
<i>Oscillatoria</i> cf. <i>curviceps</i> C. Agardh ex Gomont	493184 / Fkv-4	-	EU196624	Lokmer and Kastovsky (unpublished)
<i>Oscillatoria duplisecta</i> (Pollini) Kützing	402879 / ETS06	Italy: Veneto, Euganean Thermal Springs	AM398647	Moro et al. (2007)
<i>Oscillatoria earlei</i> N. L. Gardner	361873 / NTAP016	-	DQ308545	Thajuddin et al. (unpublished)
<i>Oscillatoria kawamurae</i> Negoro	432294 / icclb20060001	Japan: Lake Biwa, Otsu, Shiga, lake water	AB298443	Ishikawa (unpublished)
<i>Oscillatoria limosa</i> C. Agardh ex Gomont	1521531 / SAG 42.87	-	KM019961	Friedl et al. (unpublished)
<i>Oscillatoria lutea</i> C. Agardh, nom. inval. (= <i>Lyngbya lutea</i> Gomont ex Gomont)	872926 / SAG 1459-3	-	AB115967	Chaw et al. (unpublished)
	1628181 / SERB 50	-	KP890772	Silambarasan and Kathiresan (unpublished)
<i>Oscillatoria miniata</i> Hauck ex Gomont	748041 / NAC8-50	Curaçao: Playa Barbara	GU724203	Engene et al. (2011)
<i>Oscillatoria nigroviridis</i> Thwaites ex Gomont	482565 / 3LOSC	-	EU244875	Simmons et al. (unpublished)
<i>Oscillatoria princeps</i> Vaucher ex Gomont	1610731 / SERB35	India: mangrove	KM982584	Silambarasan and Kathiresan (unpublished)
<i>Oscillatoria prolifera</i>	587408 / UTEX 1270	-	AB075993	Tomitani et al. (unpublished)
<i>Oscillatoria sancta</i> Kützing ex Gomont	129962 / PCC7515	-	NR112112	Ishida et al. (2001)
<i>Oscillatoria</i> sp.	1414823 / zan1mo51	Japan: Okinawa, Yomitan, Zanpa	AB863134	Suda et al. (unpublished)
	483694 / PAB-21	Panama	EU253967	Linington et al. (2007)
	179408 / PCC 7112	-	AB074509	Seo and Yokota (2003)
	1414820 / odo5mo67	Japan: Okinawa, Itoman, Odo	AB863131	Suda et al. (unpublished)
<i>Oscillatoria tenuis</i> C. Agardh ex Gomont	549786 / NIES33	-	AB042844	Ishibashi and Oikawa (unpublished)
<i>Phormidium aerugineo-caeruleum</i> (Gomont) Anagnostidis & Komárek	493191 / R-aq	-	EU196641	Lokmer and Kastovsky (unpublished)

Supplementary Table S1. Continued

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<i>Phormidium autumnale</i> Gomont	383878 / Arct-Ph5	-	DQ493873	Comte et al. (2007)
<i>Phormidium etoshii</i> P. Dadheech, D. A. Casamatta, P. Casper & L. Krienitz	1356327 / KR2008 / 49	Namibia	KC014068	Dadheech et al. (2013)
<i>Phormidium irriguum</i> f. <i>minor</i> Sciuto & Moro	759718 / ETS02	Thermal springs	FN813342	Sciuto et al. (2012)
<i>Phormidium setchellianum</i> Gomont	460264 / CCALA 144	-	JN230343	Strunecký et al. (2012)
<i>Phormidium</i> sp.	1929281 / GI08AO	Italy: Giglio	KY363612	Nies et al. (unpublished)
<i>Phormidium terebriforme</i> (C. Agardh ex Gomont) Anagnostidis & Komárek	1108185 / UAM 408	Spain: Madrid, Guadarrama river	JN382220	Loza et al. (2013)
	284925 / KR2003 / 25	Kenya: Hot spring at Lake Bogoria	AY575936	Loza et al. (2013)
<i>Phormidium uncinatum</i> Gomont ex Gomont	1240321 / CAWBG523	New Zealand	JX088098	Harland et al. (unpublished)
<i>Plectonema calotrichoides</i> Gomont	1520005 / SAG1463-4	-	KM019914	Friedl et al. (unpublished)
<i>Plectonema</i> sp.	1521500 / SAG38.90	Switzerland: Monte Verità, dry rock	KM019916	Friedl et al. (unpublished)
<i>Plectonema wollei</i> Farlow ex Gomont Speziale & Dick (= <i>Microseira wollei</i> G. B. McGregor & B. C. Sendall)	937447 / NO93	Australia: Queensland	HQ419202	Salmon et al. (unpublished)

The taxa sequenced in this study are highlighted in boldface font.

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