Supplementary Files

1. The sequence obtained by sequencing in this study

> WZU 2010-1

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>WZU 2010-2
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>WZU 2010-3
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2. The sequence name used to build the phylogenetic tree

1 2010-1

2 2010-2

3 2010-3

4 *Oscillatoria kawamurae* (AB741575.1)

5 *Coleofasciculus chthonoplastes* WW3 (EF654052.1)

6 *Coleofasciculus chthonoplastes* WW6 (EF654054.1)

7 *Symplocastrum torsivum* CPER-KK1 (EF654065.1)

8 *Anagnostidinema pseudacutissimum* CCALA 142 (EU196629.1)

9 *Phormidium irriguum f. minor* ETS-02 (FN813342.1)

10 *Phormidium cf. irriguum* CCALA 759 (FN813343.1)

11 *Gloeobacter kilaueensis* JS1 (NR121745)

12 *Gloeobacter violaceus* PCC 7421 (NR074282)

13 *Phormidium arthurensis* (HQ012544.1)

14 *Phormidium arthurensis* (HQ012544.1)

15 *Geitlerinema splendidum* P014 (JQ712602.1)

16 *Anagnostidinema amphibium* HA4216-MV1 (KC525097.1)

17 *Microcoleus vaginatus* CCALA 152 (KC633969.1)

18 *Symplocastrum flechtnerii* WJT32-NPBGF (KF312349.1)

19 *Symplocastrum californicum* WJT9-NPBG9 (KF312350.1)

20 *Geitlerinema splendidum* SERB 48 (KP890770.1)

21 *Anagnostidinema carotinosum* JR21 (KT315945.1)

22 *Potamolinea aerugineo-caerulea* 38PC (KX001788.1)

23 *Potamolinea magna* 47PC (KX001789.1)

24 *Pseudanabaena foetida var. subfoetida* PS1306 (LC016779.1)

25 *Oscillatoria princeps* CCALA 1115 (MG255280.1)

26 *Microcoleus vaginatus* SAG 2502 (MK953007.1)

27 *Wilmottia murrayi* FBCC-A402 (MN473878.1)

28 *Limnofasciculus baicalensis* BBK-W-15 (MN970098.1)

29 *Gracilinea arenicola strain* CATCB9 (MT311246.1)

30 *Marmoreocelis xerophila* CATCB5 (MT311247.1)

31 *Konicacronema caatingensis* CATCB1 (MT311248.1)

32 *Konicacronema caatingensis* CATCB6 (MT311249.1)

33 *Edaphophycus epilithus* FBCC-A203 (MZ700337.1)

34 *Kastovskya adunca* ATA6-11-RM4 (NR_125700.1)

35 *Wilmottia koreana* FBCC-A812 (NR_172594.1)

36 *Allocoleopsis franciscana* PCC 7113 (NR_176474.1)

37 *Hillbrichtia pamiria* TAU-MAC Cylx 15.1 (NR_176595.1)

38 *Olisthonema eestii* TAU-MAC 3318 (NR_176602.1)

39 *Pseudanabaena cinerea* (NR_177726.1)

40 *Ramsaria avicennae* (NR_177916.1)

41 *Wilmottia stricta* (NR_177922.1)

42 *Limnofasciculus baicalensis* BBK-W-15 (NR_186902.1)

43 *Hillbrichtia pamiria* Cylx 15.1 (OK490145.1)

44 *Olisthonema eestii* TAU-MAC 3518 (OL310652.1)

45 *Allocoleopsis franciscana* ACKU679 (OR365294.1)

46 *Pycnacronema arboriculum* 41PC (MF581657.1)

47 *Pycnacronema brasiliensis* 45PC (MF581661.1)

48 *Pycnacronema conicum* 7PC (MF581656.1)

49 *Pycnacronema edaphica* CATCA7 (MT311244.1)

50 *Pycnacronema marmoreum* 42PC (MF581658.1)

51 *Pycnacronema rubrum* 43PC (MF581659.1)

52 *Pycnacronema savannensis* 49PC (MF581663.1)