

Supplementary Table S1 Four metagenomic datasets used in this study.

Name	Number of paired reads	Sequencing platform	Source
FACHB-83	6,500,346	Illumina, HiSeq PE150	Enrichment culture of Anabaena sp. FACHB-83
FACHB-168	10,649,267	Illumina, HiSeq PE125	Enrichment culture of Calothrix sp. FACHB-168
DAYAB-A02	171,468,141	MGI Tech, DNBseq PE150	Marine microbiome
DAYAB-A35	264,406,596	MGI Tech, DNBseq PE100	Marine microbiome