

Supplementary Table S2. Pairwise identity (%) of 16S rRNA gene sequences in *Geminocystaceae* strains

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. <i>G. herdmanii</i> PCC 6308																			
2. <i>G. papuanica</i> PAP1	97.35																		
3. <i>Geminocystis</i> sp. NIES 3708	97.01	95.84																	
4. <i>Geminocystis</i> sp. NIES 3709	97.43	98.19	97.72																
5. <i>G. urbisnovae</i> CALU 1334	95.53	97.45	97.90	97.01															
6. <i>G. urbisnovae</i> CALU 1759	95.54	97.45	97.44	96.71	99.85														
7. <i>G. urbisnovae</i> CALU 1794	95.32	97.56	97.22	96.49	99.63	99.63													
8. <i>G. urbisnovae</i> CALU 1801	94.59	96.01	96.42	95.69	98.88	98.83	98.62												
9. <i>G. urbisnovae</i> CALU 1807	95.46	97.56	97.91	97.01	99.85	99.71	99.49	98.69											
10. <i>Geminocystis</i> sp. KT25	95.70	96.57	97.99	96.53	99.72	99.73	99.45	98.44	99.82										
11. <i>Geminocystis</i> sp. CENA526	96.39	95.39	96.18	96.40	95.28	94.88	94.66	93.94	95.22	94.97									
12. <i>Geminocystis</i> sp. 1.1	96.71	96.31	96.63	96.22	95.23	95.23	94.99	94.18	95.23	95.39	98.19								
13. <i>Geminocystis</i> sp. CHAB6541	97.23	94.33	96.92	94.71	96.78	96.34	96.12	95.33	96.78	96.80	96.67	97.37							
14. <i>Geminocystis</i> sp. PltCNmn3	97.19	99.47	96.19	98.20	97.80	97.80	97.56	96.78	97.80	96.79	96.13	96.52	94.83						
15. <i>Geminocystis</i> sp. PMC 995.17	97.03	99.55	97.73	98.75	97.50	97.50	97.27	96.49	97.50	97.71	96.71	96.27	97.66	99.05					
16. <i>Cyanobacterium</i> sp. KSU-AQIQ-3	95.60	96.60	96.15	96.29	95.87	95.95	97.72	94.91	95.87	96.51	95.28	95.64	95.48	96.46	96.10				
17. <i>Cyanobacterium</i> sp. THH5	96.07	95.71	96.29	96.23	95.25	95.33	97.11	94.38	95.25	95.43	98.37	98.02	96.36	96.05	96.63	96.07			
18. <i>Cyanobacterium</i> sp. LLi	95.49	93.32	95.28	93.34	94.44	94.51	94.29	93.57	94.44	95.06	98.37	97.45	94.16	94.10	96.23	95.35	97.84		

Supplementary Table S3. Pairwise identity (%) of 16S rRNA gene sequences in the "*Cyanobacterium stanieri*" subcluster

	1	2	3	4	5	6
1. <i>Cyanobacterium stanieri</i> PCC 7202						
2. <i>Synechococcus</i> sp. AICB 1016	98.71					
3. <i>Synechococcus</i> sp. PCC 8806	98.80	96.91				
4. <i>Cyanobacterium</i> sp. CENA527	99.22	97.71	98.42			
5. <i>Cyanobacterium</i> sp. HL-69	97.99	95.68	98.02	97.74		
6. <i>Cyanobacterium</i> sp. UMPCC1230	96.29	94.74	96.37	96.50	96.28	

Supplementary Table S4. Pairwise identity (%) of 16S rRNA gene sequences in the "*Cyanobacterium aponinum*" subcluster

	1	2	3	4	5
1. <i>Cyanobacterium aponinum</i> PCC 1065					
2. <i>Cyanobacterium</i> sp. MCCB 114	99.20				
3. <i>Cyanobacterium</i> sp. MCCB 115	99.38	99.78			
4. <i>Cyanobacterium</i> sp. MCCB 238	99.28	99.71	99.93		
5. <i>Cyanobacterium</i> sp. MBIC 10216	99.28	99.84	99.92	99.84	