

Supplementary Material

Diel variation in gene expression of the CO₂-concentrating mechanism during a harmful cyanobacterial bloom

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Supplementary Table 1. Overview of *Microcystis* primer pairs used for qPCR analysis.

Primer name	Sequence 5'→3' (length)	Target gene(s)	Function of complete protein/complex	Locus tag	Accession no. (Genbank)	Expected product size (bp)	Amplification efficiency (E)	RT-qPCR on		Reference
								cDNA (1)	or qPCR on gDNA (2)	
16S-F	GTCGAACGGGAATCTTCGGAT (21)	<i>16S rRNA</i>	Used as reference gene	IPF_5548	AM778951.1	157	1.88±0.03	1		Sandrini <i>et al.</i> , 2015a
16S-R	GCTAATCAGACGC AAGCTCTTC (22)							1		Sandrini <i>et al.</i> , 2015a
cmpA-F	GTAAACACCCAGGGTAACGGA (22)	<i>cmpA</i>	High-affinity ATP-dependent bicarbonate uptake system	IPF_2181	AM778958.1	180	1.87±0.01	1		Sandrini <i>et al.</i> , 2015a
cmpA-R	GCTAACCGAATCCAGAAAGT (25)							1		Sandrini <i>et al.</i> , 2015a
bicA-F1	CAAGCTAACGGTCCATCAT (20)	<i>bicA</i>	Low-affinity bicarbonate/sodium symporter	IPF_4911	AM778949.1	132	1.89±0.01	1,2		Sandrini <i>et al.</i> , 2015a
bicA-R1	AGGCACATCACTCAAGTCCA (20)							1,2		Sandrini <i>et al.</i> , 2015a
sbtA-F1	CTGGCCTTTTGTGGTGG (20)	<i>sbtA</i>	High-affinity bicarbonate/sodium symporter	MAE_62090	AP009552.1	143	1.89±0.02	1,2		Sandrini <i>et al.</i> , 2015b
sbtA-R1	AGGTTGGAATTGGCGATGG (19)							1,2		Sandrini <i>et al.</i> , 2015b
bicA-F2	TCAAGACCCATCC TCACCA (19)	<i>bicA</i>	Low-affinity bicarbonate/sodium symporter	IPF_4911	AM778949.1	264	1.86±0.02	2		This study
sbtA-R2	CCACCAATCAAAAAGGCCAG (20)	<i>sbtA</i>	High-affinity bicarbonate/sodium symporter	MAE_62090	AP009552.1			2		This study
chpX-F	CCTGTCAAGTCTCTCTCAT (21)	<i>chpX</i>	Low-affinity CO ₂ uptake system	IPF_1842	AM778957.1	113	1.90±0.02	1		Sandrini <i>et al.</i> , 2015a
chpX-R	TTCAGGATACCCA CTACCTCG (21)							1		Sandrini <i>et al.</i> , 2015a
chpY-F	ATATCGCCAAAATGCCGACC (20)	<i>chpY</i>	High-affinity CO ₂ uptake system	IPF_1545	AM778958.1	114	1.80±0.01	1		Sandrini <i>et al.</i> , 2014
chpY-R	GACATCATCCGCA CCTGTTC (20)							1		Sandrini <i>et al.</i> , 2014

ccmR-F2	CCTACCGTCTCAAC CCAAGT (20)	ccmR	Transcriptional regulator of CCM genes	IPF_1549	AM778958.1	109	1.88±0.01	1	Sandrini <i>et al.</i> , 2014
ccmR-R	ACAGTAATTCCTG ACCCGCTT (21)							1	Sandrini <i>et al.</i> , 2014
ccmR2-F	TCCTTGGGATAAA CCACATACCA (23)	ccmR2	Transcriptional regulator of CCM genes	IPF_2166	AM778949.1	204	1.88±0.02	1	Sandrini <i>et al.</i> , 2014
ccmR2-R	TTTTCTCGACCATG GCATCAC (21)							1	Sandrini <i>et al.</i> , 2014
rbcX-F	CGGATCATGACGG TAAGAGAACA (23)	rbcX	RuBisCO chaperone, in same operon as genes of small and large subunit of RuBisCO	IPF_2531	AM778933.1	157	1.87±0.01	1,2	Sandrini <i>et al.</i> , 2015a
rbcX-R	ATTCCGATGTCTCT GGTTGACT (22)							1,2	Sandrini <i>et al.</i> , 2015a
ccmM-F	AAGTCCACACCTT CTCTAACCTC (23)	ccmM	Carboxysomal protein; in same operon as other carboxysomal genes	IPF_5695	AM778933.1	118	1.88±0.01	1	Sandrini <i>et al.</i> , 2014
ccmM-R	CTGTCTCGCCAAAT GTGAA (19)							1	Sandrini <i>et al.</i> , 2014
ccaA1-F	ACTCCTGCGGTTA ATACTGTGG (22)	ccaA	Carboxysomal carbonic anhydrase	IPF_5538	AM778919.1	97	1.89±0.02	1	Sandrini <i>et al.</i> , 2014
ccaA1-R	GATAAATGCGATC AGCTTGGGAG (23)							1	Sandrini <i>et al.</i> , 2014
mcyB-F	ATCCCATGCTCAG AGACGTT (20)	mcyB	Microcystin synthesis	IPF_375	AM778952.1	163	1.87±0.02	1,2	Sandrini <i>et al.</i> , 2014
mcyB-R	AGATGTCCGCAGG GATTCAT (20)							1,2	Sandrini <i>et al.</i> , 2014
gvpC-F	GTAATTGAGGACA ACCCCATGC (22)	gvpC	Structural component of gas vesicles	MAE_37620	AP009552.1	153	1.89±0.02	1	This study
gvpC-R	TGCCTGTTCTTGCG CTTG (18)							1	This study
isiA-F	CTTTAGGCTTTGGA GTCGGAGA (22)	isiA	Chlorophyll-binding protein	IPF_5322	AM778872.1	117	1.89±0.01	1	This study
isiA-R	GGTGAATAAAGGC TCCTGCTC (21)							1	This study
flv4-F	GATCCCCACGAAG TCAGAGA (20)	flv4	Photoprotection of PSII	IPF_2586	AM778929.1	166	1.89±0.01	1	This study
flv4-R	GTTCATCTCCCA CCTCCT (20)							1	This study

Locus tags are based on the genomes of *Microcystis* strain PCC 7806 (IPF) and NIES-843 (MAE). Amplification efficiencies of the different primer pairs are based on $n = 27$ -86 amplification curves.

References

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