

**Additional file 7**

**Putative methylases/methyltransferases in the genome of *Microcystis aeruginosa* PCC 7806**

Gene ID	COG number	Function	Gene ID	COG number	Function
mic0260	COG0270	Site-specific DNA methylase (putative <i>Eco47II</i> , <i>Sau96I</i> modification methylase)	mic3149	COG0863	DNA modification methylase (putative <i>CfrBI</i> modification methylase)
mic0262	COG0863	DNA modification methylase	mic3329	COG1092	Predicted SAM-dependent methyltransferase
mic0319		SAM-dependent methyltransferase	mic3380	COG1743	Adenine-specific DNA methylase containing a Zn-ribbon
mic0367		SAM-dependent methyltransferase	mic3417	COG2189	Adenine specific DNA methylase (Putative type II DNA modification enzyme)
mic0434	COG4889	Adenine specific DNA methyltransferase	mic3467	COG1002	Type II restriction enzyme, methylase subunit
mic0510		SAM-dependent methyltransferase	mic3571	COG0116	Predicted N6-adenine-specific DNA methylase
mic0553		SAM-dependent methyltransferase	<b>mic3707</b>	COG0286	<b>Type I restriction-modification system methyltransferase subunit</b>
mic0555		SAM-dependent methyltransferase	mic3729	COG0220	Predicted SAM-dependent methyltransferase
mic0714	COG0286	Type I restriction-modification system methyltransferase subunit	mic3737		SAM-dependent methyltransferase
mic0757		SAM-dependent methyltransferase	mic3776		Methyltransferase (putative <i>SsoI</i> methylase)
mic0919		Modification methylase (putative <i>EcoRV</i> methylase)	mic3919	COG0270	Site-specific DNA methylase (putative type II <i>HaeII</i> modification methylase)
mic1132		SAM-dependent methyltransferase	mic4082	COG0863	DNA modification methylase (putative <i>BstYI</i> methyltransferase)
mic1135		Predicted O-methyltransferase	mic4091	COG1002	Type II restriction enzyme, methylase subunit
mic1145	COG0286	Type I restriction-modification system methyltransferase subunit	mic4194		SAM-dependent methyltransferase
<b>mic1231</b>	<b>COG0270</b>	<b>Site-specific DNA methylase</b>	<b>mic4261</b>	<b>COG0338</b>	<b>Site-specific DNA methylase (putative <i>EcoRV</i> modification methylase)</b>
mic1247		SAM-dependent methyltransferase	mic4360		SAM-dependent methyltransferase
mic1485	COG0270	Site-specific DNA methylase	<b>mic4390</b>	<b>COG0270</b>	<b>Site-specific DNA methylase</b>
mic1536	COG0270	Site-specific DNA methylase	mic4632	COG0270	Site-specific DNA methylase
<b>mic1611</b>	<b>COG0338</b>	<b>Site-specific DNA methylase (<i>MspAII</i> methyltransferase)</b>	mic4878		SAM-dependent methyltransferase
mic1716	COG0286	Type I restriction-modification system methyltransferase subunit	mic4888	COG1002	Type II restriction enzyme, methylase subunit
mic1905		predicted N-6 adenine-specific DNA methylase	mic4913	COG0286	Type I restriction-modification system methyltransferase subunit
mic1963	COG0313	Predicted methyltransferase	mic4976		SAM-dependent methyltransferase
mic2077		SAM-dependent methyltransferase	mic5066	COG0270	Site-specific DNA methylase (putative <i>HhaI</i> modification methylase)
mic2080		SAM-dependent methyltransferase	mic5070	COG1002	Type II restriction enzyme, methylase subunit
mic2088	COG1002	Type II restriction enzyme, methylase subunit	mic5255		SAM-dependent methyltransferase
mic2201	COG0270	Site-specific DNA methylase	<b>mic5298</b>		<b>Modification methylase (putative <i>NspV</i> methylase)</b>
mic2315		Site-specific DNA methylase	mic5314		SAM-dependent methyltransferase
mic2318	COG0863	DNA modification methylase (putative <i>PvuII</i> modification methylase)	mic5330		Type II restriction enzyme, methylase subunit
mic2460		SAM-dependent methyltransferase	mic5528		N6-adenine-specific methylase
mic2464	COG0863	DNA modification methylase	mic5612		SAM-dependent methyltransferase
mic2569		SAM-dependent methyltransferase	mic5613	COG0338	Site-specific DNA methylase
mic2593	COG1002	Type II restriction enzyme, methylase subunit	mic5683	COG0338	Site-specific DNA methylase
<b>mic2808</b>	<b>COG0863</b>	<b>DNA modification methylase (putative <i>AvaI</i> modification methylase)</b>	mic6590	COG1002	Type II restriction enzyme, methylase subunit
mic3127		SAM-dependent methyltransferase	mic6600	COG0270	Site-specific DNA methylase (putative <i>HhaI</i> modification methylase)
mic3146	COG0863	DNA modification methylase (cytosine methylase)	mic7256	COG0286	Type I restriction-modification system methyltransferase subunit

Enzymes shown in bold are co-localized with putative methylases shown in the table of additional file 6.