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Strain identification and comparative analysis of toxigenic cyanobacteria from Nakdong River

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Microcystis aeruginosa is most commonly known to produce the hepatotoxic heptapeptide microcystin in a variety of forms with varying toxicity. We compared the molecular genetic method with the morphological characteristics to strain classification of cyanobacteria in Nakdong River. We have designed PCR primers (CJM98F, CJM1141R) for cyanobacterial 16S rRNA and phycocyanin intergenic spacer (PC-IGS) gene domain. In order to confirm the production of microcystins, we have designed PCR primers for the *N*-methyltransferase (NMT) domain of microcystin synthetase gene *mcyA* and have probed 24 cyanobacteria cultures as well as several field samples. The most of isolated strains from Nakdong River was classified *Microcystis aeruginosa* and the similarities were 99% with *M. aeruginosa* AF 139292. 42.8% among isolated strains contained the microcystin synthesis gene.

Key words : cyanobacteria, PCR primer, microcystin