

Title: 2,3-Seco-2,3-dioxo-lyngbyatoxin A from a Red Sea Strain of the Marine Cyanobacterium *Moorea producens*

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Chemical investigation of the organic extract of a Red Sea strain of the cyanobacterium Moorea producens has afforded 2,3-seco-2,3-dioxo-lyngbyatoxin A (1). Five known compounds including lyngbyatoxin A (2), majusculamides A and B (3 and 4), aplysiatoxin (5) and debromoaplysiatoxin (6) were also isolated. Their structures were elucidated by using HR-FAB-MS, 1D and 2D NMR analyses. The compounds were evaluated for antiproliferative activity against HeLa cancer cells. Lyngbyatoxin A (2) showed potent activity, with an IC₅₀ of 9.2 nM, while 5 and 6 displayed modest activity with IC₅₀ values of 13.3 and 3.03 μM, respectively. In contrast, compounds 1, 3 and 4 were inactive, with IC₅₀ values greater than 50 μM. The lack of cytotoxicity for 2,3-seco-2,3-dioxo-lyngbyatoxin A (1) demonstrates that the indole moiety in lyngbyatoxin (2) is essential for its cytotoxicity, and suggests that detoxification of 2 may be carried out by biological oxidation of the indole moiety to yield 1.