NOTE NO. 28 - September 19 1988

RAPID ANALYSIS OF PEPTIDE TOXINS IN CYANOBACTERIA*

**Analytes:** Chromatogram #I: Nodularia spumigena toxin (650 µg/gm), Chromatogram #II: Microcystis aeruginosa toxin (3,950 µg/gm), Chromatogram #III: Oscillatoria agardhii toxin (2,400 µg/gm)

**Guard column:** 5 micron GFF ISRP, 1 cm x 3.0 mm ID  
**Regis Product Number:** 731440

**Analytical column:** 5 micron GFF ISRP, 15 cm x 4.6 mm ID  
**Regis Product Number:** 731451

**Mobile Phase:** 88% 0.1 M KH₂PO₄ (pH 6.8), 12% Acetonitrile

**Procedure:** The following procedure for the detection of hepatotoxic peptides in cyanobacteria is recommended: Lyophilize the cyanobacterial sample. Extract 4-10 mg cyanobacteria with water, 100 µ l/mg, in an ultrasonic bath for 5 minutes. Vortex in the middle of the sonication. Centrifuge (10 min, 10,000 G) and collect the supernatant. Reextract the pellet with water-methanol-butanol (75:20:5, v:v:v), 100 µ l/mg dry weight. Centrifuge and combine the supernatant with the previous one. Centrifuge the sample once more or filter it through a 0.45 micron filter. Inject 20 µ l sample into the chromatograph and compare to toxin standards.

**Conclusion:** The method described should appeal to many laboratories that are involved in environmental analysis. The usual protocols for cyanobacterial toxins have been quite awkward because of the extensive off-line sample preparation. The use of an ISRP column cuts down the sample clean-up work drastically.

**Detection:** 238 nm, 0.005 AUFS

**Flow Rate:** 1.0 ml/min

**Sample Size:** 20 microliters

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