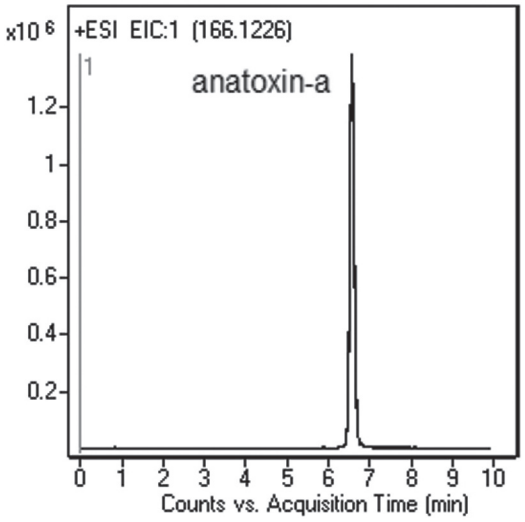
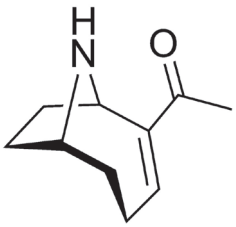
Anatoxin-a (ANTX-A)

Potent neurotoxin





Note: Anatoxin-a (ANTX-A) is a cyanobacterial neurotoxin, implicated in many animal and human poisoning incidents. ANTX-A blocks neurotransmission causing death by respiratory arrest. The presence of this toxin in freshwater has to be monitored in order to prevent fatalities.

Method Conditions

Column: **Cogent Diamond Hydride™**, 4µm, 100Å

Catalog No.: 70000-15P-2

Dimensions: 2.1 x 150 mm

Solvents: A: 50% MeOH / 50% DI H_2O / 0.1% formic acid
B: Acetonitrile / 0.1% formic acid

Gradient:

time (min.)	%B
0	70
5	30
6	30
7	70

Temperature: 25˚C

Post time: 5 min

Injection vol.: 1µL

Flow rate: 0.4 mL/min

Detection: ESI – POS - Agilent 6210 MSD TOF mass spectrometer

Sample: Stock Solution: (0.5 mg/mL) of Anatoxin-a fumarate was prepared in DI H_2O and stored at –20°C.
Working Solution: Sample for injection was diluted 1:100 using 50% A / 50% B solvent mixture. It was stored in the dark at 4°C.

Peak: Anatoxin-a, 166.1226 m/z $(M+H)^+$

t_0: 0.9 min

Discussion

Anatoxin-a is a low molecular weight, secondary amine and can be difficult to retain with reversed-phase columns. This application note illustrates a very simple method for retention of Anatoxin-a which does not require derivatization. The retention achieved is good, and the excellent repeatability is demonstrated by the overlay of five injections shown in the figure. If desired, a lower retention time of Anatoxin-a can be obtained by changing the starting concentration of solvent B in the gradient to 60%, designing a steeper gradient, or using a shorter column (e.g. 2.1 x 50 mm).

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