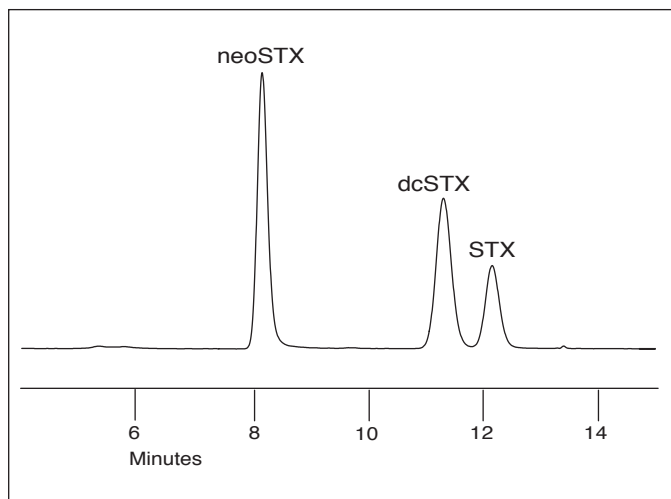




Paralytic Shellfish Toxins

The paralytic shellfish toxins are a group of 18 secondary metabolites deposited in bivalve mollusks by dinoflagelates. Dinoflagelates blooms are seasonal, occurring during warm months. Since it is unpredictable whether an infestation will occur, the shellfish population should be regularly monitored for toxins. Ingestion of contaminated shellfish can lead to paralytic shellfish poisoning; a life-threatening illness.



Dinoflagelate-derived Neurotoxins in Bivalve Mollusks

METHOD

Analytical Conditions

- COLUMN: Reversed-phase column for PST analysis, C₈, 4.6 x 150 mm, Catalog No. 0846150
- TEMPERATURE: 40 °C
- FLOW RATE: 0.8 mL/min
- MOBILE PHASE: A. For C1–C4 toxins:
Tetrabutylammonium phosphate (1 mM) adjusted to pH 5.8 with acetic acid
- B. For GTX-1 to GTX-6, dcGTX2, and dcGTX3:
Sodium 1-heptanesulfonate (2 mM) in 10 mM Ammonium phosphate, pH 7.1
- C. For STX, neoSTX, and dcSTX:
Sodium 1-heptanesulfonate (2 mM) in 10 mM Ammonium phosphate, pH 7.1 : Acetonitrile (2 : 1)

Post-column Conditions

- POST-COLUMN SYSTEM: Pinnacle PCX or Vector PCX
- REAGENT 1: Periodic acid (7 mM) in 50 mM Potassium Phosphate buffer, pH 9.0
- REACTOR 1: 75 °C, 2.0 mL
- REAGENT 2: 0.5 M Acetic Acid
- REACTOR 2: ambient, 0.1 mL
- FLOW RATE: 0.4 mL/min each
- DETECTION: Fluorometer
λ_{ex}: 330 nm
λ_{em}: 390 nm

REFERENCES:

- 1) Y. Oshima, K Sugino, T. Yasumoto
"Latest Advances in HPLC Analysis of Paralytic Shellfish Toxins in Bioactive Molecules" **10**, (1989) 319–326
- 2) J. J. Sullivan, M. M. Wekell, and L. L. Kentala,
J. Food Sci. **50**(1) (1985) 26–29.
- 3) Y. Oshima, *JOAC, INTL.* **78**(2) (1995).