FOOD ANALYSIS

SCREENING AND IDENTIFICATION OF MARINE BIOTOXINS

Solutions for Your Analytical Business

Markets and Applications Programs

Matrixes

Extracts of Fish, Seafood & Microalgae

Target Compounds

Toxin Groups of Okadaic Acid, Pectenotoxin, Azaspiracid, Yessotoxin, Palytoxin and Ciguatoxin

Sample Prep

Liquid-Liquid-Extraction

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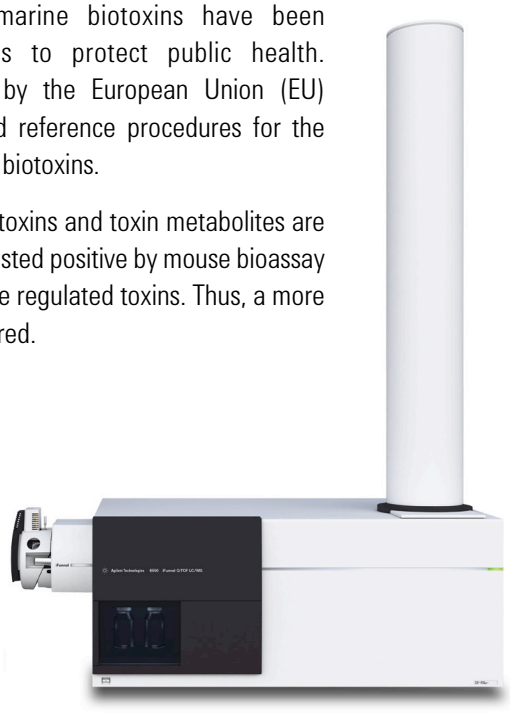
A turn-key application for food safety

The presence of marine biotoxins in shellfish, fish, and water can be the consequences of toxic micro algal blooms. For Molluscan shellfish such as oysters, clams, and mussels, algae is a food source and thus the toxins can concentrate in their tissue. Several cases of poisoning in humans have been associated with the direct consumption of mainly shellfish, but also fish or water contaminated by algal toxins. Depending on the type of toxin involved, mild to severe symptoms can occur sometimes even leading to death.

Monitoring programmes for marine biotoxins have been established in many countries to protect public health. Regulations have been issued by the European Union (EU) establishing maximum levels and reference procedures for the quantification of lipophilic marine biotoxins.

However, more than 200 marine toxins and toxin metabolites are described in literature. Samples tested positive by mouse bioassay cannot always be explained by the regulated toxins. Thus, a more comprehensive screening is required.



TOOLBOX FOR ACCURATE MASS SCREENING AND IDENTIFICATION OF MARINE BIOTOXINS

The complete solution from Agilent

Sample Preparation

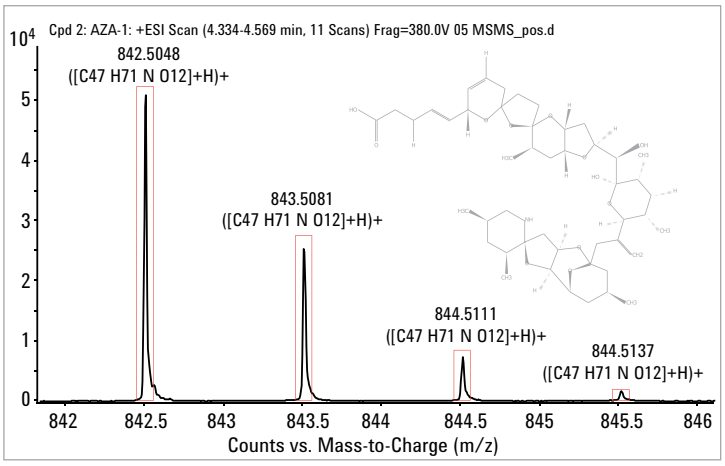
- Supported Liquid Extraction
- Solid Phase Extraction (SPE)
- FIltration
- QuEChERS

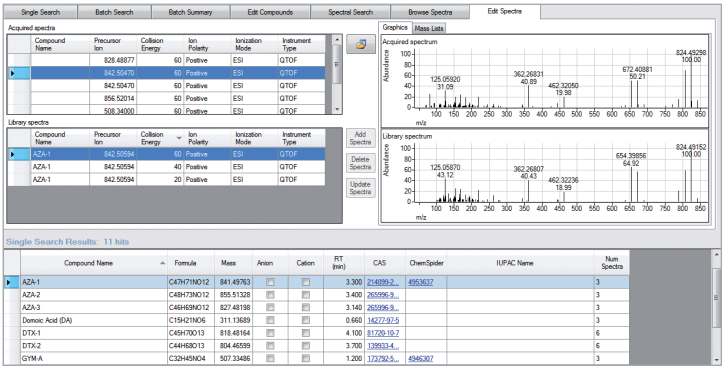
(U)HPLC – Accurate Mass QTOF Systems

- Agilent 1260/1290 Infinity Series
- 6550 Accurate-Mass Quadrupole Time-of-Flight (Q-TOF) LC/MS with iFunnel technology

Accurate Mass Screening

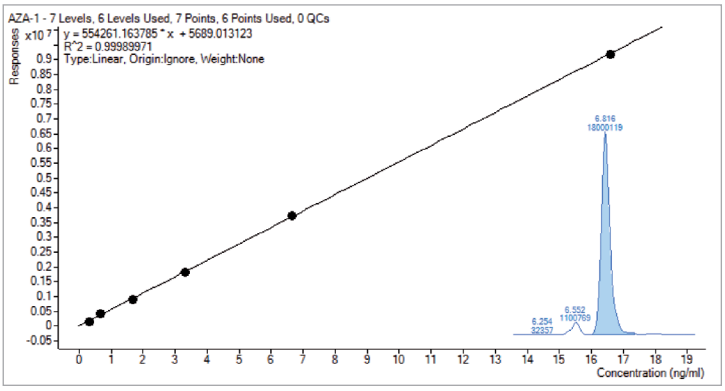
- Targeted and untargeted screening
- Data dependent acquisition to obtain MS and MS/MS data for unknowns in a single run
- All Ions MS/MS:
  high and low energy scans during acquisition, high energy scans create fragments, low energy scans preserve the precursor ions
- Accurate Mass Personal Compound Database and Library (PCDL)
- Find-by-Formula Algorithm for compound identification and confirmation
- Molecular Structure Correlator software for formula generation, fragment correlation and integrated database or web search (www.chemspider.com) to identify unknowns





Quantitative Analysis

- Quant method setup from screening results
- Automatic selection of quantifier and qualifier(s)
- Reporting of qualifier ratios
- Isotope pattern comparison and accurate mass metrics as QC
- Batch-at-a-Glance views for fast data review



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Published in Germany, October 21, 2013
5991-3377EN

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