



Marine biotoxins

Reference standards for seafood safety testing

reference standards • matrix materials



certified reference materials • proficiency testing

reference standards • matrix materials

Food safety monitoring

Marine biotoxins produced by algal species can accumulate in filtering shellfish and enter the food chain, causing severe cases of food poisoning. Before they can be offered to consumers, some seafood, especially shellfish are required to be tested to screen for these toxic compounds.

Despite many efforts to develop relevant compounds, the lack of standards and reference materials had hampered the development of a range of functions within measurement processes for marine toxins, including calibrations, method development and validation studies. LGC Standards have launched a new comprehensive range of marine biotoxins reference standards, including analogues and shellfish matrix reference materials.



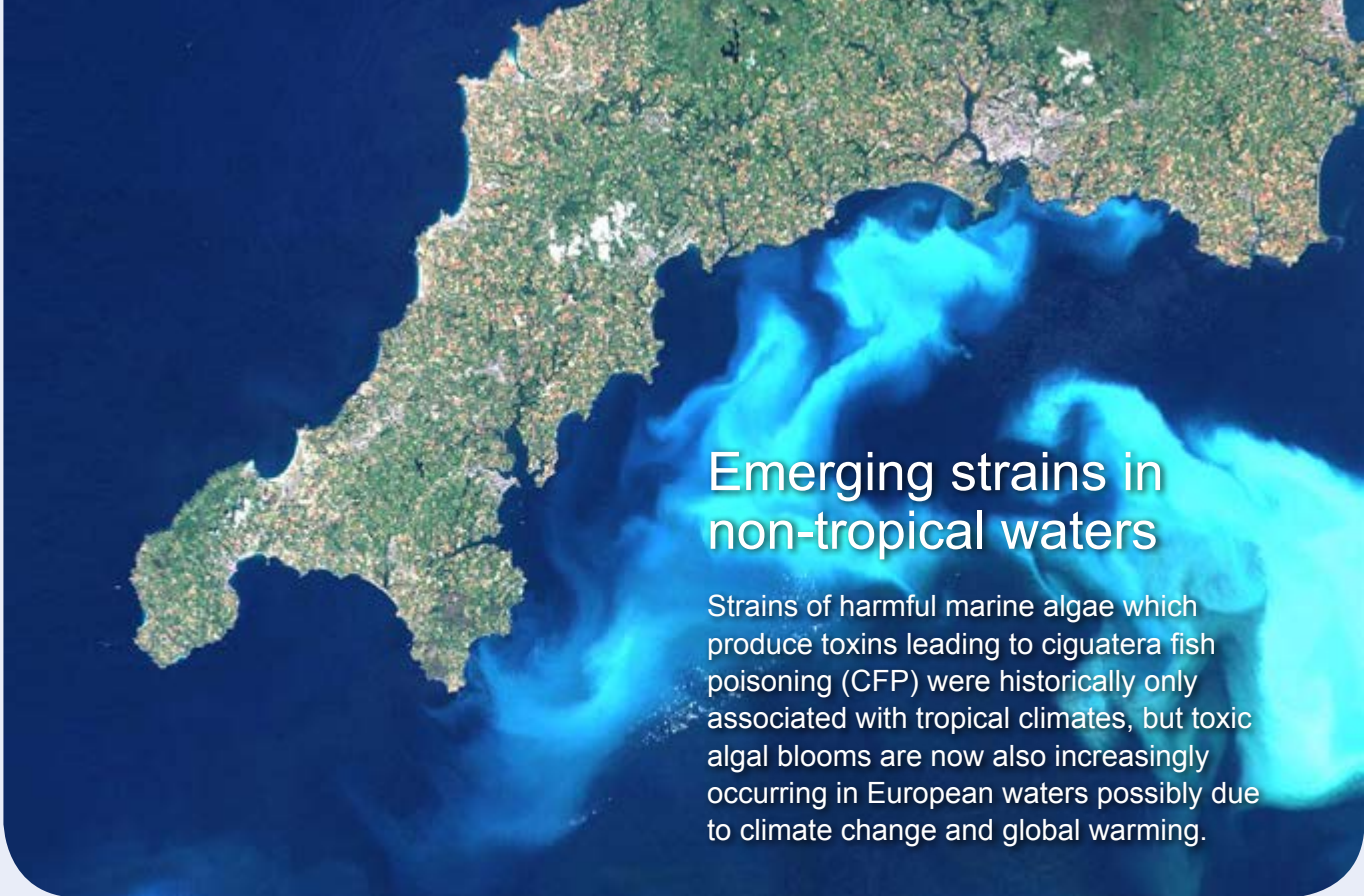
Certified Reference Materials are quantified using Quantitative Nuclear Magnetic Resonance spectroscopy (^1H -qNMR). Assignment of the purity is based on combination of measurements from ^1H -qNMR and Liquid Chromatography-Electrospray tandem Mass Spectrometry (LC-ESI-MS/MS).

New regulatory guidelines

In the EU, testing is driven by European Commission regulation No 15/2011 amending Regulation (EC) No 2074/2005.

Previous legislation allowed the use of mouse bio assay (MBA) methods. As of January 1st 2015, however, the regulation states:

“Chromatography (LC) mass spectrometry (MS) should be applied as the reference method for the detection of lipophilic toxins and used as matter of routine, both for the purposes of official controls at any stage of the food chain and own-checks by food business operators.”



Emerging strains in non-tropical waters

Strains of harmful marine algae which produce toxins leading to ciguatera fish poisoning (CFP) were historically only associated with tropical climates, but toxic algal blooms are now also increasingly occurring in European waters possibly due to climate change and global warming.

CIFGA company profile

Laboratorio CIFGA S.A. was founded in 2006 and is headquartered in Lugo, Spain. CIFGA's main focus is to provide marine biotoxins reference materials for research, analysis and development of analytical methodology for the detection and quantification of compounds. Initially set up to find alternative cancer treatments using marine biotoxins, the company is the first producer of marine biotoxin CRMs in Europe.

CIFGA now produce over 25 different marine biotoxin reference standards, all available exclusively through LGC.



Cifga
laboratorio s.a

Mussel matrix with DSP toxins

It is essential to use matrix reference materials to ensure in house QC materials are fit for purpose, for instrument calibration and for training.

We offer a homogenous mussel tissue with known concentrations of okadaic acid, dinophysistoxin-1 and dinophysistoxin-3. Concentrations of DSP toxins were established using European Union Reference Laboratory for Marine Biotoxins (EURLMB) approved extraction techniques with UHPLC-MS/MS.

LGC can satisfy all your laboratory quality needs, including proficiency testing, analytical services and training.


Proficiency Testing schemes include:

- QMAS - Meat and fish analysis
- QDCS - Dairy chemistry
- QFCS - Food chemistry
- QCS - Chocolate
- QMS - Food microbiology
- AFPS - Animal feed
- QGS - Gelatine



Marine biotoxin standards available from LGC

- Okadaic Acid (OA)
- Dinophysistoxin-1 (DTX1)
- Dinophysistoxin-2 (DTX2)
- Pectenotoxin-2 (PTX2)
- Yessotoxin (YTX)
- Homoyessotoxin (hYTX)
- Azaspiracid-1 (AZA1)
- Azaspiracid-2 (AZA2)
- Azaspiracid-3 (AZA3)
- Azaspiracid-4 (AZA4)
- Azaspiracid-5 (AZA5)
- Mussel matrix with DSP toxins
- Domoic Acid (DA)
- Decarbamoylsaxitoxin (dcSTX)
- Neosaxitoxin (NEO)
- N-sulfocarbamoyl Gonyautoxins 2 & 3 (C1&2)
- Gonyautoxins 2 & 3 (GTX2&3)
- Decarbamoylgonyautoxins 2 & 3 (dcGTX2&3)
- Gonyautoxin 5 (GTX5)
- 13-desmethyl spirolide C
- 13,19-didesmethyl spirolide C
- 20-methyl spirolide C
- Tetrodotoxins



QC materials are quantified using LC-ESI-MS/MS and are available for a range of marine toxins and analogues.

For further information, or if you require substances or materials not currently listed please contact one of our local sales offices.

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