



serve safer seafood

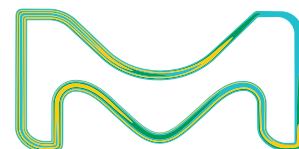
Ensure Accurate Analysis with Marine Toxin Certified Reference Materials

The presence of marine toxins in shellfish and seafood has always been a concern but has spread in recent years due to climate change. It is therefore important to monitor the presence of marine toxins in seafood. In the past decade, various new methods using LC-MS have been established to complement or replace the traditional biological tests.

For identification and quantitation of these toxins, we are offering an increasing range of certified reference materials (CRM) as solutions prepared according to ISO/IEC 17025 and ISO 17034 by a combined setup of quantitative NMR (qNMR) and Isotope Dilution MS (IDMS) to ensure highest precision and accuracy.

In a first step, the accurate concentration of a dissolved toxin is determined by ¹H-qNMR measurements. Gravimetric dilution and ampoule filling deliver the final product with a certified concentration and an associated expanded uncertainty, which can be subsequently applied in an HPLC-IDMS experiment that results in a concentration for the stable isotope-labeled analog. IDMS experiments are also carried out to determine the homogeneity and stability contribution to the overall uncertainty.

Several paralytic shellfish toxins (PST) have been developed so far, for example the well-known Neosaxitoxin or Saxitoxin and their stable isotope-labeled analogs ¹⁵N₇-Neosaxitoxin and ¹⁵N₇-Saxitoxin. More recent additions to this range include further PSTs (e.g. GTX-6) as well as lipophilic toxins such as Okadaic acid or Pectenotoxin 11 and cyclic imine toxins like Gymnodimin and Pinnatoxins E, F and G.



Product Features Include:

- Manufactured under ISO/IEC 17025 and ISO 17034 accreditation
- Certification by quantitative NMR and Isotope Dilution MS with traceability to NIST or NRC SRM
- Solution produced gravimetrically
- Homogeneity, short and long-term stability tested by LC-MS or LC-IDMS
- Supplied with a comprehensive certificate including certified concentration and overall uncertainty from characterization, homogeneity and stability



Marine Biotoxins

Cat. No.	Analyte	Class	Solution Composition	Quantity
93665	Saxitoxin hydrochloride	Paralytic Shellfish Toxin	20 µg/g in hydrochloric acid	0.5 mL
30929	[15N7]-Saxitoxin hydrochloride	Paralytic Shellfish Toxin	10 µg/g in hydrochloric acid	0.5 mL
41619	Neosaxitoxin	Paralytic Shellfish Toxin	20 µg/g in hydrochloric acid	0.5 mL
41206	[15N7]-Neosaxitoxin	Paralytic Shellfish Toxin	10 µg/g in hydrochloric acid	0.5 mL
07568	N-sulfocarbamoyl neosaxitoxin (GTX6)	Paralytic Shellfish Toxin	20 µg/g in hydrochloric acid	0.5 mL
39302	Okadaic acid	Lipophilic Toxin	20 µg/g in methanol	0.5 mL
80099	Pectenotoxin-11 (PTX-11)	Lipophilic Toxin	20 µg/g in methanol	0.5 mL
80694	Pinnatoxin E	Cyclic Imines	20 µg/g in 0.1% acetic acid in 50% acetonitrile	0.5 mL
40538	Pinnatoxin F	Cyclic Imines	20 µg/g in 0.1% acetic acid in 50% acetonitrile	0.5 mL
40821	Pinnatoxin G	Cyclic Imines	20 µg/g in 0.1% acetic acid in 50% acetonitrile	0.5 mL
80779	Gymnodimine	Cyclic Imines	20 µg/g in methanol	0.5 mL



We are continuously expanding this range of products.
For a complete and up-to-date list, please visit
[SigmaAldrich.com/marinetoxins](https://www.sigmaaldrich.com/marinetoxins)

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