



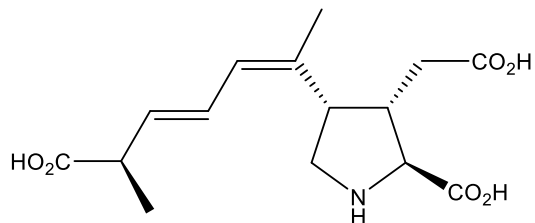
### Catalog # 10-2472

#### Domoic acid

CAS# 14277-97-5

(2S,3S,4S)-2-Carboxy-4-[(1Z,3E,5R)-5-carboxy-1-methyl-1,3-hexadien-1-yl]-3-pyrrolidineacetic acid

Lot # X101729



Domoic acid (DA), a kainic acid-type neurotoxin produced by certain species of the marine pennate diatom *Pseudo-nitzschia*, is responsible for amnesic shellfish poisoning.<sup>1</sup> Suspension feeders such as bivalve mollusks can accumulate and retain high amounts of DA in their tissues, threatening human health.<sup>2,3</sup> DA is a potent agonist at kainate and AMPA receptors<sup>4</sup> and induces convulsive behavior and seizures in rodents<sup>5</sup>. It induces structural and molecular changes in the developing zebra fish nervous system.<sup>6</sup>

- 1) Nie *et al.* (2022), *Biosynthesis and detection of domoic acid from diatom Pseudo-nitzschia: A review*; Curr. Pharm. Biotechnol., **27** 1238
- 2) Garcia-Corona *et al.* (2022), *First subcellular localization of the amnesic shellfish toxin, domoic acid, in bivalve tissues: Deciphering the physiological mechanisms involved in its long-retention in the king scallop Pecten Maximus*; Harmful Algae, **116** 102251
- 3) Guillotin and Delcourt (2021), *Marine Neurotoxins' Effects on Environmental and Human Health: an OMICS Overview*; Mar. Drugs, **20** 18
- 4) Hampson *et al.* (1992), *Interaction of domoic acid and several derivatives with kainic acid and AMPA binding sites in rat brain*; Eur. J. Pharmacol., **218** 1
- 5) Chiamulera *et al.* (1992), *Domoic acid toxicity in rats and mice after intracerebroventricular administration: comparison with excitatory amino acid agonists*; Pharmacol. Toxicol., **70** 115
- 6) Panlilio *et al.* (2020), *Developmental Neurotoxicity of the Harmful Algal Bloom Toxin Domoic Acid: Cellular and Molecular Mechanisms Underlying Altered Behavior in the Zebrafish Model*; Environ. Health Perspect., **128** 117002

#### PHYSICAL DATA

Molecular Weight: 311.33  
Molecular Formula: C<sub>15</sub>H<sub>21</sub>NO<sub>6</sub>  
Purity: >97% by HPLC  
NMR: (Conforms)  
Physical Description: Solution in water with 5% acetonitrile at 50 µg/0.5 mL  
Storage and Stability: Store as supplied at -20°C for up to 2 years from the date of purchase.

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