

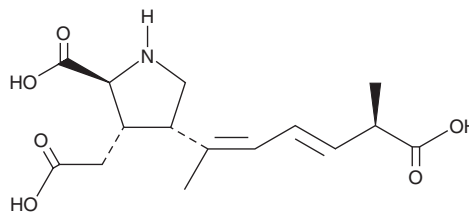
# PRODUCT INFORMATION



## Domoic Acid

Item No. 21433

**CAS Registry No.:** 14277-97-5  
**Formal Name:** (2S,3S,4S)-2-carboxy-4-[(1Z,3E,5R)-5-carboxy-1-methyl-1,3-hexadien-1-yl]-3-pyrrolidineacetic acid  
**Synonyms:** Domoate, (-)-Domoic Acid, L-Domoic Acid, NSC 288031  
**MF:** C<sub>15</sub>H<sub>21</sub>NO<sub>6</sub>  
**FW:** 311.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 240 nm  
**Supplied as:** A 50 µg/0.5 ml solution in water with 5% acetonitrile  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Domoic acid is supplied as a solution in water. To change the solvent, simply evaporate the water under a gentle stream of nitrogen and immediately add the solvent of choice. The solubility of domoic acid in methanol is approximately 0.6 mg/ml.

### Description

Domoic acid is a kainate receptor agonist, neurotoxin, and an analog of (-)-(α)-kainic acid (Item No. 78050).<sup>1</sup> Domoic acid binds to GluR5, GluR6, and GluR7 recombinant homomeric kainate receptors (K<sub>i</sub>s = 2, 6, and 37 nM, respectively), KA-1 and KA-2 kainate receptors, and the GluR4 AMPA receptor. It also binds to kainate and AMPA receptors in rat forebrain membranes (IC<sub>50</sub>s = 4.9 and 9.2 nM, respectively).<sup>2</sup> *In vitro*, domoic acid depolarizes primary motor neurons and dorsal root fibers isolated from newborn rats at potencies of 2.2 and 34 relative to kainate, respectively.<sup>3</sup> *In vivo*, domoic acid induces convulsive behavior in rats (ED<sub>50</sub> = 0.07 nmol/animal) and induces seizures in mice with a 50% convulsive dose (CD<sub>50</sub>) value of 0.09 nmol/animal.<sup>4</sup>

### References

- Hampson, D.R. and Manalo, J.L. The activation of glutamate receptors by kainic acid and domoic acid. *Nat. Toxins*. **6(3-4)**, 153-158 (1998).
- Hampson, D.R., Huang, X.-p., Wells, J.W., et al. Interaction of domoic acid and several derivatives with kainic acid and AMPA binding sites in rat brain. *Eur. J. Pharmacol.* **218(1)**, 1-8 (1992).
- Ishida, M. and Shinozaki, H. Novel kainate derivatives: Potent depolarizing actions on spinal motoneurons and dorsal root fibres in newborn rats. *Br. J. Pharmacol.* **104(4)**, 873-878 (1991).
- Chiamulera, C., Costa, S., Valerio, E., et al. Domoic acid toxicity in rats and mice after intracerebroventricular administration: Comparison with excitatory amino acid agonists. *Pharmacol. Toxicol.* **70(2)**, 115-120 (1992).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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