

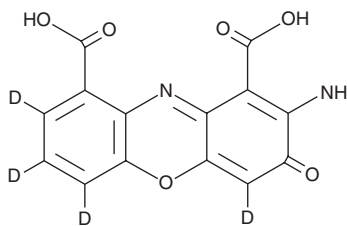
PRODUCT INFORMATION



Cinnabarinic Acid-d₄

Item No. 37209

Formal Name: 2-amino-3-oxo-3H-phenoxazine-4,6,7,8-d₄-1,9-dicarboxylic acid
MF: C₁₄H₄D₄N₂O₆
FW: 304.3
Chemical Purity: ≥95% (Cinnabarinic acid)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Cinnabarinic acid-d₄ is intended for use as an internal standard for the quantification of cinnabarinic acid (Item No. 11988) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Cinnabarinic acid-d₄ is supplied as a solid. A stock solution may be made by dissolving the cinnabarinic acid-d₄ in the solvent of choice, which should be purged with an inert gas. Cinnabarinic acid-d₄ is soluble in DMSO.

Description

Cinnabarinic acid is an agonist of metabotropic glutamate receptor 4 (mGluR4) and active metabolite of 3-hydroxyanthranilic acid.^{1,2} It is formed *via* two-step oxidation of 3-hydroxyanthranilic acid. Cinnabarinic acid (100 μM) selectively induces inositol phosphate production in HEK293 cells expressing mGluR4 over HEK293 cells expressing mGluR1, mGluR2, mGluR5, mGluR6, mGluR7, or mGluR8.¹ It inhibits D-amino acid oxidase (DAAO) in a cell-free assay (IC₅₀ = 1.37 μM).³ Cinnabarinic acid (30 μM) increases levels of reactive oxygen species (ROS) and induces apoptosis in primary mouse thymocytes.⁴

References

1. Fazio, F., Lionetto, L., Molinaro, G., *et al.* Cinnabarinic acid, an endogenous metabolite of the kynurenine pathway, activates type 4 metabotropic glutamate receptors. *Mol. Pharmacol.* **81(5)**, 643-656 (2012).
2. Subba Rao, P.V. and Vaidyanathan, C.S. Enzymic conversion of 3-hydroxyanthranilic acid into cinnabarinic acid. Partial purification and properties of rat-liver cinnabarinic synthase. *Biochem. J.* **99(2)**, 317-322 (1966).
3. Lefin, R., Petzer, A., Cloete, S.J., *et al.* Phenothiazine, anthraquinone and related tricyclic derivatives as inhibitors of D-amino acid oxidase. *Results Chem.* **4**, 100278 (2022).
4. Hiramatsu, R., Hara, T., Akimoto, H., *et al.* Cinnabarinic acid generated from 3-hydroxyanthranilic acid strongly induces apoptosis in thymocytes through the generation of reactive oxygen species and the induction of caspase. *J. Cell. Biochem.* **103(1)**, 42-53 (2008).

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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