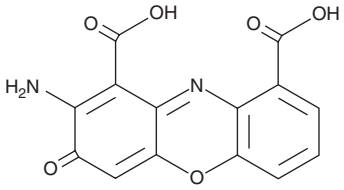
PRODUCT INFORMATION

Cinnabarinic Acid

Item No. 11988

CAS Registry No.:	606-59-7
Formal Name:	2-amino-3-oxo-3H-phenoxazine-1,9-dicarboxylic acid
MF:	$C_{14}H_8N_2O_6$
FW:	300.3
Purity:	≥98%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

Cinnabarinic acid is supplied as a solid. A stock solution may be made by dissolving the cinnabarinic acid in the solvent of choice, which should be purged with an inert gas.. Cinnabarinic acid is soluble in DMSO (warmed) at a concentration of approximately 25 mM.

Cinnabarinic acid is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

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 (IC_{50} = 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 cinnabarinate 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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM