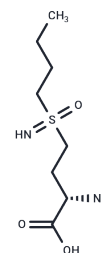


L-BUTHIONINE-(S,R)-SULFOXIMINE

Chemical Properties

CAS No. :	83730-53-4
Formula:	C ₈ H ₁₈ N ₂ O ₃ S
Molecular Weight:	222.31
Storage:	Keep away from moisture, Store at low temperature Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	L-Buthionine-(S,R)-sulfoximine, a cell-permeable and irreversible inhibitor of γ -glutamylcysteine synthetase (K _i <100 μ M), induces oxidative stress in cells by depleting GSH.
Targets(IC50)	Ferroptosis
In vitro	IC50 values (microM) for L-buthionine-S,R-sulfoximine (BSO) on melanoma, breast and ovarian tumor specimens were 1.9, 8.6, and 29, respectively. The IC90 for melanoma was 25.5 microM, a level 20-fold lower than steady-state levels achieved clinically [1]. GSH loss induced by L-buthionine-S,R-sulfoximine (BSO) leads to overproduction of reactive oxygen species (ROS) and triggers apoptosis of MYCN-amplified neuroblastoma cells [2].
In vivo	Systemic BSO administration selectively altered GSH homeostasis and EAAT3 levels in the mice cerebellum. Intraperitoneal treatment of mice with 67mmol/kg of BSO depleted GSH and GSSG in the liver at 27h of treatment [3].

Solubility Information

Solubility	DMSO: Insoluble, H2O: 50 mg/mL (224.91 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.4982 mL	22.4911 mL	44.9822 mL
5 mM	0.8996 mL	4.4982 mL	8.9964 mL
10 mM	0.4498 mL	2.2491 mL	4.4982 mL
50 mM	0.090 mL	0.4498 mL	0.8996 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Marengo B, et al. Mechanisms of BSO (L-buthionine-S,R-sulfoximine)-induced cytotoxic effects in neuroblastoma. *Free Radic Biol Med.* 2008 Feb 1;44(3):474-82.

Armstrong JS, et al. Role of glutathione depletion and reactive oxygen species generation in apoptotic signaling in a human B lymphoma cell line. *Cell Death Differ.* 2002 Mar;9(3):252-63.

Valdovinos-Flores C, et al. Systemic L-Buthionine -S-R-Sulfoximine Treatment Increases Plasma NGF and Upregulates L-cys/L-cys2 Transporter and γ -Glutamylcysteine Ligase mRNAs Through the NGF/TrkA/Akt/Nrf2 Pathway in the Striatum. *Front Cell Neurosci.* 2019 Jul 23;13:325.

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