

Product Data Sheet

Product Name: Emeramide (BDTH2)

Cat. No.: GC31671

Chemical Properties

Cas. No. 351994-94-0

SMILES O=C(C1=CC=CC(C(NCCS)=O)=C1)NCCS

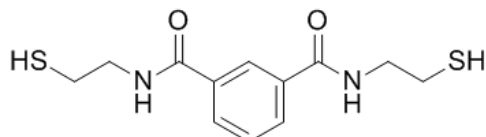
Formula $C_{12}H_{16}N_2O_2S_2$ M.Wt 284.4

Solubility DMSO : 100 mg/mL (351.62 mM); Water : < 0.1 mg/mL (insoluble) Storage Store at -20°C, unstable in solution, ready to use.

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines U-87 MG cells

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Preparation Method Cells were plated in clear-bottom opaque 96-well plates at a density of 2×10^4 cells/well. After overnight attachment, they were treated with PbAc (0-300μM) for 24 or 48h, Emeramide (0-200μM) for 24h, or DMSA (0-500μM) for 24h to establish individual toxicity profiles.

Reaction Conditions 0-200μM; 24h

Applications Emeramide reduces cell viability at high concentrations.

Animal experiment [2]:

Animal models H67D knock-in mutant mice

Preparation Method H67D knock-in mutant mice and control wild-type (WT) mice (5–6 weeks old, n = 6–8 per group) were main tained on a 12-h light/dark cycle, and given facility chow and water ad libitum. Mice were administered with Emeramide (450mg/kg body weight), Deferiprone (100mg/kg), or vehicle (0.5% Carboxymethylcellulose) by oral gavage daily for 6 weeks.

Dosage form 450mg/kg; po; 6 weeks

Applications Oral Emeramide reduces iron accumulation in the brain and liver.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

References:

- [1]. Gadde R, Betharia S. N, N' bis-(2-mercaptoethyl) isophthalamide (NBMI) exerts neuroprotection against lead-induced toxicity in U-87 MG cells[J]. Archives of Toxicology, 2021, 95(8): 2643-2657.
- [2]. Cheng R, Gadde R, Fan Y, et al. Reversal of genetic brain iron accumulation by N, N'-bis (2-mercaptoethyl) isophthalamide, a lipophilic metal chelator, in mice[J]. Archives of Toxicology, 2022, 96(7): 1951-1962.

Background

Emeramide (BDTH2) is a lipid-soluble heavy metal chelator and antioxidant [1]. Emeramide forms strong covalent or semi-covalent thiosulfide complexes with “soft metals” (such as mercury (Hg^{2+}), lead (Pb^{2+}), and cadmium (Cd^{2+})), thereby reducing the free concentration and toxicity of these metals [2]. Emeramide can help restore or protect intracellular thiol/antioxidant systems, such as glutathione (GSH), thereby alleviating metal-induced oxidative stress [3]. Emeramide is primarily a potential therapeutic agent for heavy metal poisoning [4].

In U-87 MG cells, Emeramide (0-200 μM ; 24h) reduces cell viability at high concentrations [5]. In HepG2 cells, pretreatment with Emeramide (0-100 μM ; 24h) reduced CuSO_4 -induced cell death and decreased ROS levels [6].

In H67D knock-in mutant mice, oral Emeramide (450mg/kg; po; 6 weeks) reduces iron accumulation in the brain and liver [7].

References:

- [1]. Secor J D, Kotha S R, Gurney T O, et al. Novel lipid-soluble thiol-redox antioxidant and heavy metal chelator, N, N'-bis (2-mercaptoethyl) isophthalamide (NBMI) and phospholipase D-specific inhibitor, 5-fluoro-2-indolyl des-chlorohalopemide (FIPI) attenuate mercury-induced lipid signaling leading to protection against cytotoxicity in aortic endothelial cells[J]. International journal of toxicology, 2011, 30(6): 619-638.
- [2]. Wang Y, Zhang S, Bian J, et al. A method for the rapid detection of heavy metal mercury ions based on a novel mercury chelator N, N'-bis (2-mercaptoethyl) isophthalamide[J]. Food Chemistry, 2025, 468: 142486.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

- [3]. Secor J D, Kotha S R, Gurney T O, et al. Novel lipid-soluble thiol-redox antioxidant and heavy metal chelator, N, N'-bis (2-mercaptoethyl) isophthalamide (NBMI) and phospholipase D-specific inhibitor, 5-fluoro-2-indolyl des-chlorohalopemide (FIPI) attenuate mercury-induced lipid signaling leading to protection against cytotoxicity in aortic endothelial cells[J]. International journal of toxicology, 2011, 30(6): 619-638.
- [4]. Geier D A, Geier M R. Reductions in plasma and urine mercury concentrations following N, N' bis-(2-mercaptoethyl) isophthalamide (NBMI) therapy: a post hoc analysis of data from a randomized human clinical trial[J]. Biometals, 2024, 37(2): 433-445.
- [5]. Gadde R, Betharia S. N, N' bis-(2-mercaptoethyl) isophthalamide (NBMI) exerts neuroprotection against lead-induced toxicity in U-87 MG cells[J]. Archives of Toxicology, 2021, 95(8): 2643-2657.
- [6]. Gadde R, Betharia S. NBMI Exerts Protection Against Copper Overload in HepG2 and SH-SY5Y Cell Lines[J]. The FASEB Journal, 2022, 36.
- [7]. Cheng R, Gadde R, Fan Y, et al. Reversal of genetic brain iron accumulation by N, N'-bis (2-mercaptoethyl) isophthalamide, a lipophilic metal chelator, in mice[J]. Archives of Toxicology, 2022, 96(7): 1951-1962.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA