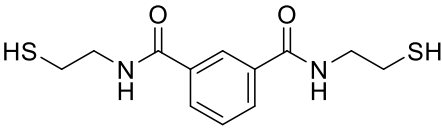


Product data sheet



MedKoo Cat#: 319633 Name: Emeramide CAS#: 351994-94-0 Chemical Formula: C ₁₂ H ₁₆ N ₂ O ₂ S ₂ Exact Mass: 284.0653 Molecular Weight: 284.39		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Emeramide, also known as NBMI, BDTH2 or N,N'-Bis(2-mercaptoethyl)isophthalamide, is a mercury/heavy metal chelator. Emeramide molecule consists of two thiol groups and linked via a pair of amide groups. NBMI can be used to chelate heavy metals like lead, cadmium, copper, manganese, zinc, iron, and mercury from ground water, coal tailings, gold ore, waste water of battery-recycling plants, and contaminated soil. Warning: Our product, supplied as a pure chemical solid powder, has NOT been approved by FDA, is for research use only, not for human use.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	50.0	175.81
DMF	50.0	175.81

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.52 mL	17.58 mL	35.16 mL
5 mM	0.70 mL	3.52 mL	7.03 mL
10 mM	0.35 mL	1.76 mL	3.52 mL
50 mM	0.07 mL	0.35 mL	0.70 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Gadde R, Betharia S. N,N'-bis-(2-mercaptoethyl) isophthalamide (NBMI) exerts neuroprotection against lead-induced toxicity in U-87 MG cells. Arch Toxicol. 2021 Aug;95(8):2643-2657. doi: 10.1007/s00204-021-03103-2. Epub 2021 Jun 24. PMID: 34165617.
2. Secor JD, Kotha SR, Gurney TO, Patel RB, Kefauver NR, Gupta N, Morris AJ, Haley BE, Parinandi NL. 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. Int J Toxicol. 2011 Dec;30(6):619-38. doi: 10.1177/1091581811422413. Epub 2011 Oct 12. PMID: 21994240; PMCID: PMC3503146.

In vivo study

1. Ke T, Bornhorst J, Schwerdtle T, Santamaría A, Soare FAA, Rocha JBT, Farina M, Bowman AB, Aschner M. Therapeutic Efficacy of the N,N' Bis-(2-Mercaptoethyl) Isophthalamide Chelator for Methylmercury Intoxication in Caenorhabditis elegans. Neurotox Res. 2020 Jun;38(1):133-144. doi: 10.1007/s12640-020-00194-0. Epub 2020 Mar 31. PMID: 32236898; PMCID: PMC7924665.

Product data sheet



2. Nilsson JLÅ, Blomgren A, Nilsson UJ, Högestätt ED, Grundemar L. N,N'-Bis(2-mercaptoethyl)isophthalamide Binds Electrophilic Paracetamol Metabolites and Prevents Paracetamol-Induced Liver Toxicity. Basic Clin Pharmacol Toxicol. 2018 Nov;123(5):589-593. doi: 10.1111/bcpt.13058. Epub 2018 Jul 9. PMID: 29908097.

7. Bioactivity

Biological target:

Emeramide is a thiol-redox antioxidant and heavy metal chelator.

In vitro activity

Even the lowest NBMI concentration (10 μ M) successfully attenuated PbAc-induced toxicity by bringing the cell viability up from 42 to 83% ($p < 0.0001$), while the positive control DMSA did not show any impact in cell viability at even the highest concentration (100 μ M) tested (Fig. 4b).

Reference: Arch Toxicol. 2021 Aug;95(8):2643-2657. <https://pubmed.ncbi.nlm.nih.gov/34165617/>

In vivo activity

Here this study used the nematode *Caenorhabditis elegans* (*C. elegans*) to test the efficacy of NBMI in attenuating MeHg toxicity in vivo in the whole organism. The results showed that NBMI reduced both the acute toxicity (125 μ M MeHg, 1 h) and chronic (5 μ M MeHg, 24 h) MeHg toxicity. Co-treatment with NBMI achieved maximal efficacy against MeHg toxicity, however delayed treatment 6 days after initiation of exposure was also effective at reducing neurotoxicity. Co-treatment of NBMI reduced the worms' death rate, structural damage in DAergic neurons, and restored antioxidant response levels.

Reference: Neurotox Res. 2020 Jun; 38(1): 133–144. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7924665/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.