

L-Buthionine-(S,R)-sulfoximine hydrochloride

Chemical Properties

CAS No. :

Formula: C₈H₁₉ClN₂O₃S

Molecular Weight: 258.77

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.

Biological Description

Description	L-Buthionine-(S,R)-sulfoximine hydrochloride is a potent, cell-permeable, fast-acting, irreversible inhibitor of G-glutamylcysteine synthetase (γ -GCS) that depletes cellular glutathione levels. It has IC ₅₀ s of 1.9 μ M, 8.6 μ M, and 29 μ M in melanoma, breast, and ovarian tumor specimens, respectively [1] [2].
Targets(IC ₅₀)	Others,Ferroptosis
In vitro	L-Buthionine-(S,R)-sulfoximine synergistically enhanced BCNU activity against melanoma cell lines and human tumors. BSO (50 μ M) treatment for 48 hr causes a 95% decrease in ZAZ and M14 melanoma cell line GSH levels, and a 60% decrease in GST enzyme activity. GST- μ protein and mRNA levels are significantly reduced in both cell lines. GST- π expression is unaffected. BSO enhancement of alkylator action may be related in part to down regulation of GST [1]. L-Buthionine-(S,R)-sulfoximine (BSO) induces oxidative stress in a cell by irreversibly inhibiting gamma-glutamylcysteine synthetase which is an essential enzyme for the synthesis of glutathione (GSH) [2]. L-Buthionine-(S,R)-sulfoximine (BSO) was demonstrated to induce ferroptosis in cancer cells [3].
In vivo	BSO treatment resulted in a significantly increased frequency of DNA deletions and decreased concentrations of GSH and cysteine. BSO treatment reduced GSH concentration in mouse fetuses by 27% and 55% at 2 mM and 20 mM BSO doses, respectively, compared with untreated mice. Co-treatment with 2 mM BSO and 20 mM NAC depleted GSH to a similar extent as 2 mM BSO, consistent with the function of BSO inhibiting the γ -GCS enzyme indispensable for GSH synthesis [2].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.8644 mL	19.3222 mL	38.6444 mL
5 mM	0.7729 mL	3.8644 mL	7.7289 mL
10 mM	0.3864 mL	1.9322 mL	3.8644 mL
50 mM	0.0773 mL	0.3864 mL	0.7729 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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481