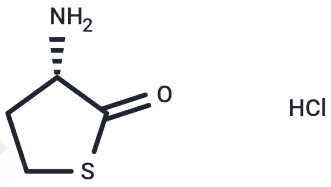
Data Sheet (Cat.No.T19393)

TargetMol

L-Homocysteine thiolactone hydrochloride

Chemical Properties



CAS No. : 31828-68-9

Formula: C4H8ClNOS

Molecular Weight: 153.63

Storage: Store at low temperature
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-Homocysteine thiolactone hydrochloride is neurotoxic and can induce epilepsy and Alzheimer's disease.
Targets(IC50)	Others,Amino Acids and Derivatives
In vitro	At a concentration of 0.25 mM and after 24 h incubation with L-Homocysteine thiolactone hydrochloride showed around 40% of cell death. Using 1 mM of L-Homocysteine thiolactone hydrochloride and after 24 h incubation up to 80% of cell death was detected. HUVEC cells were therefore incubated with increasing concentrations of Hcy (1 mM–10 mM) or L-Homocysteine thiolactone hydrochloride (0.25 mM–1 mM) for different times. None of the Hcy or L-Homocysteine thiolactone hydrochloride concentrations tested had an effect on TNF-α or IL-1α secretion. However, Hcy or L-Homocysteine thiolactone hydrochloride promoted the release of IL-8 starting from 3 h and increasing according to a dose-time dependent manner. [3]
In vivo	L-Homocysteine thiolactone hydrochloride dissolved in PBS was injected i.p., into 4-12-week-old mice (40-600 nmol/g body weight). To determine how Pon1 affects its turnover in vivo, L-Homocysteine thiolactone hydrochloride was injected i.p. into Pon1−/− and Pon1+/+ mice, and Hcy-thiolactone kinetics in plasma were monitored. A non-toxic dose of 600 nmol L-Homocysteine thiolactone hydrochloride /g body weight in most experiments, but similar results were obtained with doses as low as 40 nmol/g body weight. This shows that in Pon1−/− mice Hcy-thiolactone metabolism is not impaired during its transit from the intraperitoneal cavity to the bloodstream and suggests that Pon1 has a negligible contribution to Hcy-thiolactone turnover in membranes surrounding the intraperitoneal cavity. [4]

Solubility Information

Solubility	H2O: 20 mg/mL (130.18 mM),Sonication is recommended. DMSO: 100 mg/mL (650.91 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	6.5091 mL	32.5457 mL	65.0915 mL
5 mM	1.3018 mL	6.5091 mL	13.0183 mL
10 mM	0.6509 mL	3.2546 mL	6.5091 mL
50 mM	0.1302 mL	0.6509 mL	1.3018 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

Jakubowski H, et al. Homocysteine thiolactone: metabolic origin and protein homocysteinylation in humans. J Nutr. 2000 Feb;130(2S Suppl):377S-381S.
Huang RF, et al. Homocysteine thiolactone induces apoptotic DNA damage mediated by increased intracellularhydrogen peroxide and caspase 3 activation in HL-60 cells. Life Sci. 2001 May 11;68(25):2799-811.
Kerkeni M, et al. Comparative study on in vitro effects of homocysteine thiolactone and homocysteine on HUVECcells: evidence for a stronger proapoptotic and proinflammative homocysteine thiolactone. Mol Cell Biochem. 2006 Oct;291(1-2):119-26.
Borowczyk K, et al. Metabolism and neurotoxicity of homocysteine thiolactone in mice: evidence for a protective role of paraoxonase 1. J Alzheimers Dis. 2012;30(2):225-31.
Stanojlović O, et al. Two types of seizures in homocysteine thiolactone-treated adult rats, behavioral and electroencephalographic study. Cell Mol Neurobiol. 2009 May;29(3):329-39.