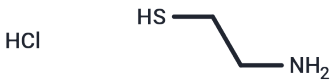
Data Sheet (Cat.No.T6460)

TargetMol

Cysteamine hydrochloride

Chemical Properties



CAS No. : 156-57-0

Formula: C2H7NS·HCl

Molecular Weight: 113.61

Appearance: no data available

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

Biological Description

Description	Cysteamine hydrochloride (Thioethanolamine Hydrochloride) is an agent for the treatment of nephropathic cystinosis and an antioxidant.
Targets(IC50)	Apoptosis,Reactive Oxygen Species,Endogenous Metabolite,Autophagy
In vitro	Cysteamine enhances intracellular glutathione (GSH) levels in cystinotic cells, effectively restoring their altered redox state and demonstrating antioxidant capabilities by increasing glutathione production, thus scavenging harmful OH and HOCl. It also mitigates increased apoptosis rates in cystinotic cells by counteracting the effects of elevated caspase 3 and protein kinase Cε activity. Furthermore, Cysteamine boosts the production of various heat shock proteins (HSP), notably murine Hsp40. It exhibits a dose-dependent mitigation of doxorubicin-induced death in cancer cells, including HeLa and B16 cells, without affecting cell survival on its own. Remarkably, it enhances the efficacy of doxorubicin in doxorubicin-resistant breast cancer cells, significantly increasing cell death. Additionally, Cysteamine (100 μM) not only heightens intracellular GSH levels but also improves the development of matured oocytes to the blastocyst stage in embryo cultures. [1][2]
In vivo	Cysteamine is introduced as a treatment for cystinosis by depleting lysosomal cystine. Cystamine can inhibit transglutaminase activity by binding to the cysteine in its active center. Cysteamine increases brain levels of brain-derived neurotrophic factor (BDNF), which is caused by the increased expression of the heat shock DNAJ-containing protein 1 (HSJ1). Cysteamine inhibits the formation of gastric and mammary tumors that are induced chemically or after irradiation, respectively. The administration of Cysteamine is also able to inhibit the metastasis of pancreatic cancer in a mouse model by decreasing the expression and activity of metalloproteinases. [1]

Solubility Information

Solubility	Ethanol: 22 mg/mL (193.64 mM),Sonication is recommended. H2O: 21 mg/mL (184.84 mM),Sonication is recommended. DMSO: 60 mg/mL (528.12 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	8.802 mL	44.0102 mL	88.0204 mL
5 mM	1.7604 mL	8.802 mL	17.6041 mL
10 mM	0.8802 mL	4.401 mL	8.802 mL
50 mM	0.176 mL	0.8802 mL	1.7604 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.

Reference

Besouw M, et al. Drug Discov Today, 2013, 18(15-16), 785-792.
de Matos DG, et al. Mol Reprod Dev, 1995, 42(4), 432-436.