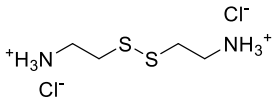
Product data sheet

MedKoo Cat#: 591248 Name: Cystamine dihydrochloride CAS#: 56-17-7 Chemical Formula: $C_4H_{14}Cl_2N_2S_2$ Exact Mass: 223.9975 Molecular Weight: 225.19	
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:
Cystamine dihydrochloride is a radiation-protective agent that interferes with sulfhydryl enzymes. It may also protect against carbon tetrachloride liver damage.

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	13.84	61.46
PBS (pH 7.2)	10.0	44.41
Water	33.76	149.92

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	4.44 mL	22.20 mL	44.41 mL
5 mM	0.89 mL	4.44 mL	8.88 mL
10 mM	0.44 mL	2.22 mL	4.44 mL
50 mM	0.09 mL	0.44 mL	0.89 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. Cho SY, Lee JH, Ju MK, Jeong EM, Kim HJ, Lim J, Lee S, Cho NH, Park HH, Choi K, Jeon JH, Kim IG. Cystamine induces AIF-mediated apoptosis through glutathione depletion. Biochim Biophys Acta. 2015 Mar;1853(3):619-31. doi: 10.1016/j.bbamcr.2014.12.028. Epub 2014 Dec 27. PMID: 25549939.

In vivo study

1. Wang S, Li X, Li M, Jiang L, Yuan H, Han W, Wang X, Zeng T, Xie K. Cystamine attenuated behavioral deficiency via increasing the expression of BDNF and activating PI3K/Akt signaling in 2,5-hexanedione intoxicated rats. Toxicol Res (Camb). 2016 Dec 12;6(2):199-204. doi: 10.1039/c6tx00409a. PMID: 30090490; PMCID: PMC6062339.
2. Cisbani G, Drouin-Ouellet J, Gibrat C, Saint-Pierre M, Lagacé M, Badrinarayanan S, Lavallée-Bourget MH, Charest J, Chabrat A, Boivin L, Lebel M, Bousquet M, Lévesque M, Cicchetti F. Cystamine/cysteamine rescues the dopaminergic system and shows neurorestorative properties in an animal model of Parkinson's disease. Neurobiol Dis. 2015 Oct;82:430-444. doi: 10.1016/j.nbd.2015.07.012. Epub 2015 Jul 29. PMID: 26232588.

7. Bioactivity
Biological target:

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Cystamine dihydrochloride (Decarboxycystine, 2-Aminoethyl disulfide, 2,2'-Dithiobisethanamine) acts as an anti-infective agent, which is used in the treatment of urinary tract infections and also as a radiation-protective agent that interferes with sulfhydryl enzymes.

In vitro activity

Cystamine treatment resulted in a dose- and time-dependent cytotoxicity in the DU145 and HeLa cell lines but showed no effect in the MCF7 and A549 cell lines (Fig. 1a–d).

Reference: Biochim Biophys Acta. 2015 Mar;1853(3):619-31. https://pubmed.ncbi.nlm.nih.gov/25549939/

In vivo activity

Interestingly, cystamine co-treatment profoundly suppressed 2,5-HD-induced motor deficits. Compared with the rats in the 2,5-HD group, the cystamine co-treated animals were able to walk normally although they moved slowly than the rats in the control group.

Reference: Toxicol Res (Camb). 2017 Mar 1; 6(2): 199–204. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6062339/