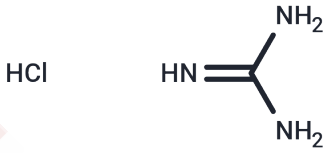
Data Sheet (Cat.No.T0415)

TargetMol

Guanidine hydrochloride

Chemical Properties



CAS No. :	50-01-1
Formula:	CH6ClN3
Molecular Weight:	95.53
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	Guanidine hydrochloride (Aminoformamidine Hydrochloride) is a strong organic base existing primarily as guanidium ions at physiological pH. It is found in the urine as a normal product of protein metabolism. It is also used in laboratory research as a protein denaturant.
Targets(IC50)	Arginase,Endogenous Metabolite,Autophagy,DNA/RNA Synthesis
In vitro	Guanidine HCl is the most popular protein denaturant. Analysis of unfolding transitions by Guanidine HCl provides several important parameters regarding the mechanism of conformational stability of proteins. [1] Guanidine HCl at low concentrations refolds acid-unfolds apomyoglobin and cytochrome c, stabilizing the molten globule state. Guanidine HCl (> 1 M) causes co-operative unfolding of the molten globule state. [2] Guanidine HCl is 2.8 times more effective than urea in unfolding ribonuclease but only 1.7 times more effective for lysozyme. △GWaterapp. values of Guanidine HCl are 9.7 Cal/mole for ribonuclease at pH 6.6, 6.1 for lysozyme at pH 2.9, 8.3 for α-chymotrypsin at pH 4.3, and 11.7 for β-lactoglobulin at pH 3.2. [3] Guanidine HCl at millimolar concentrations, is able to causes efficient loss of the normally stable [PSI+] element from yeast cells. 5 mM Guanidine HCl in growth media cures [PSI+] and other prions of yeast. [4] 5 mM Guanidine HCl significantly reduces Hsp104-mediated basal and acquired thermotolerance by 30-fold and 50 fold, respectively. Guanidine HCl also reduces the ability of Hsp104 to restore activity of thermally denatured luciferase. [5]

Solubility Information

Solubility	DMSO: 250 mg/mL (2616.98 mM),Sonication is recommended. H2O: 198.9 mM,Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (20.94 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	10.4679 mL	52.3396 mL	104.6792 mL
5 mM	2.0936 mL	10.4679 mL	20.9358 mL
10 mM	1.0468 mL	5.234 mL	10.4679 mL
50 mM	0.2094 mL	1.0468 mL	2.0936 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

Pace CN. Methods Enzymol, 1986, 131, 266-280.
Hagihara Y, et al. J Mol Biol, 1993, 231(2), 180-184.
Greene RF Jr, et al. J Biol Chem, 1974, 249(17), 5388-5393.
Eaglestone SS, et al. Proc Natl Acad Sci U S A, 2000, 97(1), 240-244.
Jung G, et al. Curr Microbiol, 2001, 43(1), 7-10.