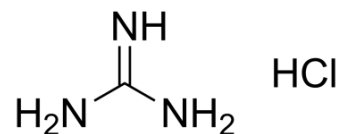


Guanidine hydrochloride

Cat. No.:	HY-B0178A
CAS No.:	50-01-1
Molecular Formula:	CH ₆ ClN ₃
Molecular Weight:	95.53
Target:	Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (1046.79 mM)
 H₂O : ≥ 50 mg/mL (523.40 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
			1 mM	10.4679 mL	52.3396 mL
	5 mM		2.0936 mL	10.4679 mL	20.9358 mL
	10 mM		1.0468 mL	5.2340 mL	10.4679 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: PBS
Solubility: 100 mg/mL (1046.79 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.08 mg/mL (21.77 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.08 mg/mL (21.77 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.08 mg/mL (21.77 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Guanidine hydrochloride (Guanidinium chloride) a strong chaotrope, is also a strong denaturant of proteins^{[1][2]}.

IC₅₀ & Target

Human Endogenous Metabolite

In Vitro

Guanidine hydrochloride at low concentrations refolds acid-unfolded apomyoglobin and cytochrome c, stabilizing the

molten globule state, i.e. a compact denatured state with a significant amount of secondary structure, but substantially disordered tertiary structure. Guanidine hydrochloride (> 1 M) causes co-operative unfolding of the molten globule state^[1]. A considerable degree of ordered structure remains due to the presence of disulfide bonds, which Guanidine hydrochloride does not affect^[2].

Guanidine hydrochloride at millimolar concentrations, is able to causes efficient loss of the normally stable [PSI⁺] element from yeast cells. 5 mM Guanidine hydrochloride in growth media cures [PSI⁺] and other prions of yeast. 5 mM Guanidine hydrochloride significantly reduces Hsp104-mediated basal and acquired thermotolerance by 30-fold and 50 fold, respectively. Guanidine hydrochloride also reduces the ability of Hsp104 to restore activity of thermally denatured luciferase [3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

A significant reduction in the death rate of infant mice infected with ten LD₅₀) of coxsackievirus A16 is observed when they are treated 58 h after infection with two injections of Guanidine hydrochloride at 145 mg/kg per injection^[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Virus Res. 2020 Jul 2;283:197974.
- Virol J. 2018 Jan 3;15(1):1.

See more customer validations on www.MedChemExpress.com

REFERENCES

- [1]. Y Hagihara, et al. Guanidine hydrochloride-induced folding of proteins. J Mol Biol. 1993 May 20;231(2):180-4.
- [2]. G Jung, et al. Guanidine hydrochloride inhibits Hsp104 activity in vivo: a possible explanation for its effect in curing yeast prions. Curr Microbiol. 2001 Jul;43(1):7-10.
- [3]. Saeed Emadi, et al. A comparative study on the aggregating effects of guanidine thiocyanate, guanidine hydrochloride and urea on lysozyme aggregation. Biochem Biophys Res Commun. 2014 Aug 8;450(4):1339-44.
- [4]. E C Herrmann Jr, et al. Prevention of death in mice infected with coxsackievirus A16 using guanidine HCl mixed with substituted benzimidazoles. Antiviral Res. 1982 Dec;2(6):339-46.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA