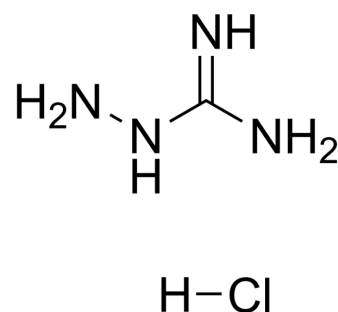


Aminoguanidine hydrochloride

Cat. No.:	HY-B1041
CAS No.:	1937-19-5
Molecular Formula:	CH ₇ ClN ₄
Molecular Weight:	110.55
Target:	NO Synthase; Apoptosis
Pathway:	Immunology/Inflammation; Apoptosis
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

H₂O : ≥ 100 mg/mL (904.57 mM)
 DMSO : 100 mg/mL (904.57 mM; Need ultrasonic)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
	1 mM		9.0457 mL	45.2284 mL	90.4568 mL
	5 mM		1.8091 mL	9.0457 mL	18.0914 mL
	10 mM		0.9046 mL	4.5228 mL	9.0457 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 (904.57 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (22.61 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (22.61 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (22.61 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Aminoguanidine hydrochloride (Pimagedine hydrochloride) is an inhibitor of diamine oxidase and nitric oxide synthase. Aminoguanidine hydrochloride has a dose-dependent inhibitory effect on apoptosis induced by Doxorubicin (HY-15142). Aminoguanidine hydrochloride has antioxidant properties. Aminoguanidine hydrochloride can be used in diabetic nephropathy research^{[1][2][3][4]}.

In Vitro	<p>Aminoguanidine (100, 200, 500, 1000 μM, 24 h) can reduce DOX-induced DNA damage and apoptosis in A549 cells^[1]. Aminoguanidine (100 μM, 30 min) can induce ERK activation in AR42J cells and promote cell proliferation^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Apoptosis Analysis^[1]</p>	
	Cell Line:	A549
	Concentration:	100-1000 μ M
	Incubation Time:	24 h
	Result:	Showed protective effect on DOX-induced DNA damage and decreased DOX-induced apoptosis.
	<p>Cell Proliferation Assay^[2]</p>	
	Cell Line:	AR42J
	Concentration:	100 μ M
	Incubation Time:	24-96 h
	Result:	Showed a significant increase in cell proliferation after incubation for 48 h.
In Vivo	<p>minoguanidine (50 mg/kg, Intraperitoneal injection) protects mice from CCl4-induced hepatotoxicity^[3]. Aminoguanidine (200 mg/kg, Single dose intraperitoneal injection) is protective against cyclophosphamide (CP) -induced oxidative stress and kidney damage in rats^[4].br/> MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	
	Animal Model:	Male Swiss albino mice ^[3]
	Dosage:	50 mg/kg
	Administration:	Intraperitoneally 30 min before the administration of CCl4
	Result:	Inhibited the serum AST level and protected hepatotoxin-induced lipid peroxidation.
	Animal Model:	Adult male Wistar rats ^[4]
	Dosage:	200 mg/kg
	Administration:	Intraperitoneally 1 hour before the administration of CP and killed 16 hours after CP injection.
	Result:	Attenuated CP-induced MDA elevation and prevented CP-induced protein oxidation. Restored the GSH levels and attenuated CP-induced increase in MPO activity.

CUSTOMER VALIDATION

- Biomed Pharmacother. 2022 May 17;151:113109.
- Biomed Pharmacother. 2019 Dec;120:109527.

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REFERENCES

- [1]. Sabuncuoglu S. Antiapoptotic effect of aminoguanidine on doxorubicin-induced apoptosis. Mol Cell Biochem. 2014 Sep;394(1-2):129-35.
- [2]. Chowdhury P. Aminoguanidine (AG) Induces Induced both Pro- and Antioxidant Effect in AR42J Cells, a Rat Pancreatic Tumor Cell Line. Ann Clin Lab Sci. 2017 Sep;47(5):572-580. PMID: 29066484.
- [3]. Al-Shabanah OA, et al. Protective effect of aminoguanidine, a nitric oxide synthase inhibitor, against carbon tetrachloride induced hepatotoxicity in mice. Life Sci. 2000;66(3):265-70.
- [4]. Abraham P, et al. Protective effect of aminoguanidine against cyclophosphamide-induced oxidative stress and renal damage in rats. Redox Rep. 2011;16(1):8-14.
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Caution: Product has not been fully validated for medical applications. For research use only.

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