Aminoguanidine hydrochloride

Cat. No.: HY-B1041

CAS No.: 1937-19-5

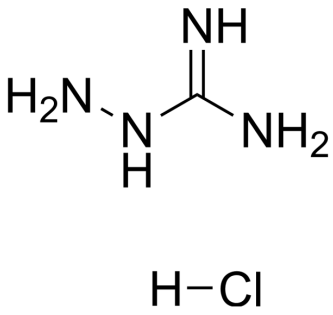
Molecular Formula: CH_7ClN_4

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

H_2O : ≥ 100 mg/mL (904.57 mM)
DMSO : 100 mg/mL (904.57 mM; Need ultrasonic)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	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

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (904.57 mM); Clear solution; Need ultrasonic
2. 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
3. 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
4. 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

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.

Apoptosis Analysis [1]

Cell Line:	A549
Concentration:	100-1000 μM
Incubation Time:	24 h
Result:	Showed protective effect on DOX-induced DNA damage and decreased DOX-induced apoptosis.

Cell Proliferation Assay [2]

Cell Line:	AR42J
Concentration:	100 μM
Incubation Time:	24-96 h
Result:	Showed a significant increase in cell proliferation after incubation for 48 h.

In Vivo

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.

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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