

Product Data Sheet

Product Name: Diphenhydramine

Cat. No.: GD10478

Chemical Properties

Cas. No. 58-73-1

Formula C₁₇H₂₁NO

M.Wt 255.355

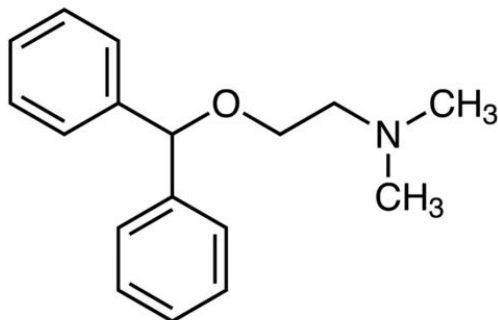
Solubility DMSO : 100 mg/mL (391.62 mM; Need ultrasonic)

Storage

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Background

Diphenhydramine is a first-generation histamine H₁-receptor antagonist with anti-cholinergic effect. Diphenhydramine hydrochloride can cross the ovine blood-brain barrier (BBB) .

Diphenhydramine (1-300 μM, 30 s) can block **NMDA**-activated membrane currents. This property can be responsible for or add to its sedative, analgesic and memory related effects^[2].

Diphenhydramine (0-10 mg/kg, i.v. and p.o.) has better oral bioavailability when used in combination with Dimenhydrinate sup[>][3].

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

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Diphenhydramine (20 mg/kg, i.p.) can improve the kidney injury induced by Cisplatin (CDDP) in mice, and does not affect the anti-tumor efficacy of Cisplatin^[4].

Pharmacokinetic parameters for diphenhydramine after single oral or intravenous administration of diphenhydramine HCl (5 mg/kg) to six healthy dogs by using a noncompartmental model with first-order elimination^[3]

Route	Dose (mg/kg)	AUC _{last} (ng·h/mL)	C ₀ (ng/mL)	CL (mL/h/kg)	T _{1/2} (h)	K _{el} (1/h)	MRT (h)	V _{ss_obs} (mL/kg)	C _{max} (ng/mL)	T _{max} (h)	V _Z (mL/kg)	F (%)
i.v.	5	391.20	266.10	2833.04	1.89	0.45	2.47	6582.36	/	/	/	/
p.o.	5	153.80	/	/	4.98	0.59	6.97	/	35.80	1.30	180157.36	7.75

[1]. Jason P Berninger, et al. Effects of the antihistamine diphenhydramine on selected aquatic organisms. Environ Toxicol Chem. 2011 Sep;30(9):2065-72.

[2]. F枚hr KJ, et al. Open channel block of NMDA receptors by diphenhydramine. Neuropharmacology. 2015 Dec;99:459-70.

[3]. Ehling S, et al. Diphenhydramine pharmacokinetics after oral and intravenous administration of diphenhydramine and oral administration of dimenhydrinate to healthy dogs, and pharmacodynamic effect on histamine-induced wheal formation: a pilot study. Vet Dermatol. 2019 Apr;30(2):91-e24.

[4]. Hamano H, et al. Diphenhydramine may be a preventive medicine against cisplatin-induced kidney toxicity. Kidney Int. 2021 Apr;99(4):885-899.

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