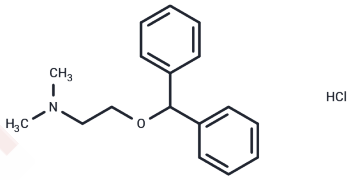
Data Sheet (Cat.No.T0330)

TargetMol

Diphenhydramine hydrochloride

Chemical Properties



CAS No. : 147-24-0

Formula: C17H22ClNO

Molecular Weight: 291.82

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Diphenhydramine hydrochloride (DPH) is a histamine H1 antagonist used as an antitussive and antiemetic. It is also used for pruritus and dermatoses, for hypersensitivity reactions, as an antiparkinson, a hypnotic, and as an ingredient in common cold preparations.
Targets(IC50)	Histamine Receptor
In vitro	Diphenhydramine blocks tetrodotoxin-sensitive (TTX-S) and tetrodotoxin-resistant (TTX-R) sodium currents with K(d) values of 48 mM and 86 mM, respectively, at a holding potential of -80 mV. Diphenhydramine shifts the conductance-voltage curve for TTX-S sodium currents in the depolarizing direction but has little effect on that for TTX-R sodium currents. Diphenhydramine causes a shift of the steady-state inactivation curve for both types of sodium currents in the hyperpolarizing direction. Diphenhydramine produces a profound use-dependent block when the cells are repeatedly stimulated with high-frequency depolarizing pulses. [1] Diphenhydramine induces apoptosis in a dose- and time-dependent manner in both CCRF-CEM and Jurkat cell lines, whereas Cimetidine fails to induce significant effects at similar concentrations. Diphenhydramine-induced apoptosis is evaluated in terms of morphology, flow cytometry, and the release of cytochrome c to the cytosol. Diphenhydramine inhibits cell proliferation without inducing apoptosis in human peripheral blood mononuclear cells. [2] Diphenhydramine (500 nM) significantly reduces the baseline firing of the periaqueductal gray neurons without a significant effect on the frequency of postsynaptic potentials. Diphenhydramine at high concentration inhibits periaqueductal gray neurons, but at low concentrations it has no effect on the baseline-firing rate and it blocks the response to neurotensin and tomedial preoptic nucleus stimulation. [3]

Solubility Information

Solubility	DMSO: 45 mg/mL (154.2 mM),Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.4268 mL	17.1338 mL	34.2677 mL
5 mM	0.6854 mL	3.4268 mL	6.8535 mL
10 mM	0.3427 mL	1.7134 mL	3.4268 mL
50 mM	0.0685 mL	0.3427 mL	0.6854 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.

Reference

Kim YS, et al. Brain Res,2000, 881(2), 190-198.
Jangi SM, et al. Oncol Res,2004, 14(7-8), 363-372.
Kreitel KD, et al. Neuroscience,2002, 114(4), 935-943.

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