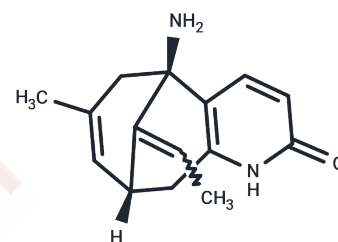


(-)-Huperzine A

Chemical Properties

CAS No. :	102518-79-6
Formula:	C ₁₅ H ₁₈ N ₂ O
Molecular Weight:	242.32
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



Biological Description

Description	(-)-Huperzine A (HupA), an active Lycopodium alkaloid extracted from the traditional Chinese herb, is a potent, selective and reversible acetylcholinesterase (AChE) inhibitor and has been widely used in China for the treatment of Alzheimer's disease (AD).
Targets(IC50)	Apoptosis, Cholinesterase (ChE), iGluR
In vitro	In both animal models and patients with Alzheimer's Disease (AD), (-)-Huperzine A has been shown to improve learning and memory impairments. Compared to the control group treated with saline, significant inhibition of acetylcholinesterase (AChE) activity was observed in the cortex, striatum, hippocampus, medulla, septal nuclei, cerebellum, and thalamus of rats 30 minutes post-mortem.
In vivo	Compared to tacrine, strychnine, galantamine, and carbachol, (-)-Huperzine A exhibits stronger inhibition of acetylcholinesterase (AChE) activity but has the least effect on butyrylcholinesterase (BuChE). (-)-Huperzine A protects cells against glutamate, hydrogen peroxide, β -amyloid, ischemia, and astrosporine-induced cytotoxicity and apoptosis. This protective function is achieved through a series of processes including the regulation of apoptotic protein expression (such as Bcl-2, Bax, p53, and caspase-3), alleviation of oxidative stress, mitochondrial protection, upregulation of nerve growth factor and its receptors, and interference with amyloid precursor protein metabolism. Notably, (-)-Huperzine A preferentially inhibits the tetrameric form of AChE (G4 form).

Solubility Information

Solubility	DMSO: 250 mg/mL (1031.69 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (20.63 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.1268 mL	20.6339 mL	41.2677 mL
5 mM	0.8254 mL	4.1268 mL	8.2535 mL
10 mM	0.4127 mL	2.0634 mL	4.1268 mL
50 mM	0.0825 mL	0.4127 mL	0.8254 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

- Zhao Q, et al. *Eur J Pharmacol*, 2002, 455(2-3), 101-107.
- Zhang HY, et al. *Trends Pharmacol Sci*, 2006, 27(12), 619-625.
- Wang R, et al. *Acta Pharmacol Sin*, 2006, 27(1), 1-26.
- Zheng CY, et al. *J Neurosci Res*, 2008, 86(11), 2432-2440.

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