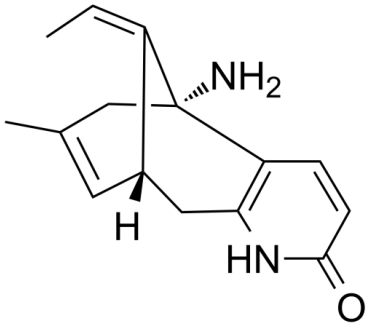
Data Sheet

Product Name:	(-)-Huperzine A
Cat. No.:	CS-1153
CAS No.:	102518-79-6
Molecular Formula:	$C_{15}H_{18}N_2O$
Molecular Weight:	242.32
Target:	AChE; Apoptosis; iGluR
Pathway:	Apoptosis; Membrane Transporter/Ion Channel; Neuronal Signaling
Solubility:	DMSO : ≥ 100 mg/mL (412.68 mM)



BIOLOGICAL ACTIVITY:

(-)-Huperzine A (Huperzine A) is an alkaloid isolated from a Chinese club moss, with neuroprotective activity. (-)-Huperzine A is a potent, highly specific, reversible and blood-brain barrier penetrant inhibitor of **acetylcholinesterase (AChE)**, with an **IC_{50}** of 82 nM. (-)-Huperzine A also is non-competitive antagonist of **N-methyl-D-aspartate glutamate (NMDA) receptor**. (-)-Huperzine A is developed for the research of neurodegenerative diseases, including Alzheimer's disease[1][2][3][4][5]. IC50 & Target: IC50: 82 nM (AChE) [1], NMDA[3] **In Vitro:** (-)-Huperzine A (1 μM; 2 hours) attenuates Aβ23-35 (20 μM)-induced neuronal injury[2]. (-)-Huperzine A (100 μM) reversibly inhibits the NMDA-induced current (IC_{50}=126 μM) in whole-cell voltage-clamp recording in CA1 pyramidal neurons acutely dissociated from rat hippocampus[3].
In Vivo: (-)-Huperzine A (0.1-0.2 mg/kg; i.p.; daily; for 12 days) can alleviate the cognitive dysfunction and neuronal degeneration induced by i.c.v. infusion of beta-amyloid protein-(1-40) in rats[5].

References:

[1]. MA Xiao-Chao, XIN Jian, WANG Hai-Xue, et al. Acute effects of huperzine A and tacrine on rat liver. Acta Pharmacol ogica Sinica, 2003, 24(3):247-250.

[2]. Rui Wang, et al. Progress in studies of huperzine A, a natural cholinesterase inhibitor from Chinese herbal medicine. Acta Pharmacol Sin. 2006 Jan;27(1):1-26.

[3]. J M Zhang, et al. Huperzine A, a nootropic alkaloid, inhibits N-methyl-D-aspartate-induced current in rat dissociated hippocampal neurons.Neuroscience. 2001;105(3):663-9

[4]. Maung Kyaw Moe Tun, et al. The pharmacology and therapeutic potential of (−)-huperzine A. J Exp Pharmacol. 2012; 4: 113–123.

[5]. R Wang, et al. Huperzine A attenuates cognitive dysfunction and neuronal degeneration caused by beta-amyloid protein-(1-40) in rat. Eur J Pharmacol. 2001 Jun 15;421(3):149-56.

CAIndexNames:

5,9-Methanocycloocta[b]pyridin-2(1H)-one, 5-amino-11-ethylidene-5,6,9,10-tetrahydro-7-methyl-, (5R,9R,11E)-

SMILES:

O=C1NC2=C([C@@](/C3=C\C)(N)CC(C)=C[C@@]3([H])C2)C=C1

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

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