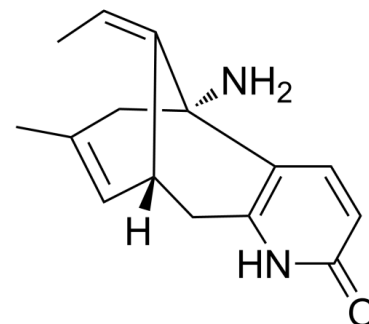


## Data Sheet

<b>Product Name:</b>	(-)-Huperzine A
<b>Cat. No.:</b>	CS-1153
<b>CAS No.:</b>	102518-79-6
<b>Molecular Formula:</b>	C <sub>15</sub> H <sub>18</sub> N <sub>2</sub> O
<b>Molecular Weight:</b>	242.32
<b>Target:</b>	Apoptosis; Cholinesterase (ChE); iGluR
<b>Pathway:</b>	Apoptosis; Membrane Transporter/Ion Channel; Neuronal Signaling
<b>Solubility:</b>	DMSO : ≥ 100 mg/mL (412.68 mM)



### BIOLOGICAL ACTIVITY:

(-)-Huperzine A (Huperzine A) is an alkaloid isolated from *Huperzia serrata*, with neuroprotective activity. (-)-Huperzine A is a potent, highly specific, reversible and blood-brain barrier penetrant inhibitor of **acetylcholinesterase (AChE)**, with an **IC<sub>50</sub>** 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<sup>[1][2][3][4][5]</sup>. IC<sub>50</sub> & Target: IC<sub>50</sub>: 82 nM (AChE) <sup>[1]</sup>, NMDA<sup>[3]</sup> *In Vitro*: (-)-Huperzine A (1 μM; 2 hours) attenuates Aβ<sub>23-35</sub> (20 μM)-induced neuronal injury<sup>[2]</sup>.

(-)-Huperzine A (100 μM) reversibly inhibits the NMDA-induced current (IC<sub>50</sub>=126 μM) in whole-cell voltage-clamp recording in CA1 pyramidal neurons acutely dissociated from rat hippocampus<sup>[3]</sup>.

*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<sup>[5]</sup>.

### References:

- [1]. MA Xiao-Chao, XIN Jian, WANG Hai-Xue, et al. Acute effects of huperzine A and tacrine on rat liver. *Acta Pharmacologica 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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