(-)-Huperzine A ≥ 99%

BC1002

Storage

Store at or below -20°C.

Contents

- Product Manual
- (-)-Huperzine A≥ 99%

Shipping Condition

Ship with ice pack.

Introduction

(−)-Huperzine A (HupA) is an acetylcholinesterase (AChE) inhibitor with an IC_{50} value of 82 nmol/L and acts as an antagonist of the N-methyl-d-aspartate (NMDA) receptor. AChE is the key brain enzyme responsible for the rapid degradation of the neurotransmitter acetylcholine. AChE inhibitors are probably useful in the amelioration of the Alzheimer's symptomatology.

It was found that NMDA markedly reduced AChE activities. In rat dissociated hippocampal neurons, HupA inhibited the NMDA-induced current. In neurons, 100 μM HupA, NMDA-induced currents were 55.7 ± 4.9% of the control values. The binding molecular ratio of NMDA receptor: HupA is 1:1. The inhibition of NMDA receptor by HupA is not competitive. HupA significantly increased the phosphorylation levels of both glycogen synthase kinase (GSK)-3α protein and GSK-3β protein in APPsw-overexpressing cells. Activated GSK-3 consequently decreased acetylcholine (ACh) level in the striatum.

Chemical Properties

Apperance	Solid
Cas No	102518-79-6
Molecular Weight	242.32
Formula	$C_{15}H_{18}N_{11}O$
Synonyms	EGCG
Solubility	≥ 12.12 mg/mL in DMSO; ≥ 23.13 mg/mL in EtOH

Biological Activity

In Vitro

Description	A potent, highly specific, reversible and blood-brain barrier penetrant inhibitor of acetylcholinesterase (AChE).
Target	NMDA Receptor
IC_{50}	82 nM

In Vivo

Description	(-)-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
Animal Model	Male Sprague-Dawley rats (220-280 g)
Dosage	0.1 mg/kg, 0.2 mg/kg
Administration	Intraperitoneal injection, daily, for 12 days

Preparing Stock Solution

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
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

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