Phenserine

Cat. No.: HY-103374

CAS No.: 101246-66-6

Molecular Formula: $C_{20}H_{23}N_3O_2$

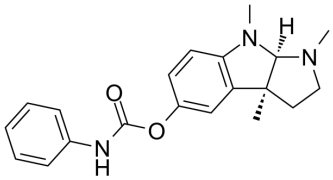
Molecular Weight: 337.42

Target: Cholinesterase (ChE); Amyloid-β

Pathway: Neuronal Signaling

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 200 mg/mL (592.73 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	2.9637 mL	14.8183 mL	29.6367 mL
5 mM	0.5927 mL	2.9637 mL	5.9273 mL
10 mM	0.2964 mL	1.4818 mL	2.9637 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 5 mg/mL (14.82 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 5 mg/mL (14.82 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Phenserine ((-)-Eseroline phenylcarbamate) is a derivative of Physostigmine and is a potent, noncompetitive, long-acting and selective AChE inhibitor. Phenserine reduces β-amyloid precursor protein (APP) and β-amyloid peptide (Aβ) formation. Phenserine improves cognitive performance and attenuates the progression of Alzheimer's disease[1][2][3].

IC_{50} & Target

AChE; β-amyloid precursor protein; β-amyloid peptide[1]

In Vitro

Phenserine (1-25 μM; 48 hours; CHO APP_{751SW} cells) treatment CHO APP_{751SW} cell shows 18.6% reduction in cells treated with 10 μM of Phenserine, while 25 μM concentration of Phenserine reduces APP level by 51.4%[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[2]

Cell Line:	CHO APP_{751SW} cells
Concentration:	1 μM, 2.5 μM, 5 μM, 10 μM, 25 μM
Incubation Time:	48 hours
Result:	8.6% reduction in cells treated with 10 μM, while 25 μM concentration reduces APP level by 51.4%.

In Vivo

Phenserine (1-4 mg/kg; intraperitoneal injection; for 4 days; male Fischer-344 rats) treatment improves learning when cholinergic function has been impaired in a spatial memory task[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Fischer-344 rats (5 months old) induced by scopolamine[3]
Dosage:	1 mg/kg, 2 mg/kg, 4 mg/kg
Administration:	Intraperitoneal injection; for 4 days
Result:	Improved morris water maze performance of scopolamine-treated rats..

REFERENCES

[1]. Klein J. Phenserine. Expert Opin Investig Drugs. 2007 Jul;16(7):1087-97.

[2]. Asuni AA, et al. Modulation of amyloid precursor protein expression reduces β-amyloid deposition in a mouse model. Ann Neurol. 2014 May;75(5):684-99.

[3]. Janas AM, et al. The cholinesterase inhibitor, phenserine, improves Morris water maze performance of scopolamine-treated rats. Life Sci. 2005 Jan 21;76(10):1073-81.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA