Galanthaminone

Cat. No.: HY-I0020

CAS No.: 510-77-0

Molecular Formula: $C_{17}H_{19}NO_3$

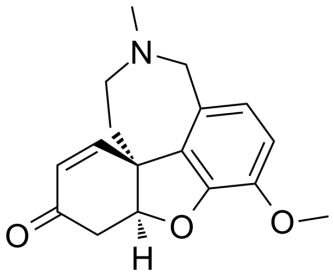
Molecular Weight: 285.34

Target: Cholinesterase (ChE)

Pathway: Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 10 mg/mL (35.05 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.5046 mL	17.5230 mL	35.0459 mL
5 mM	0.7009 mL	3.5046 mL	7.0092 mL
10 mM	0.3505 mL	1.7523 mL	3.5046 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: ≥ 1 mg/mL (3.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (3.50 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1 mg/mL (3.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Galanthaminone (Narwedin) is a competitive and reversible cholinesterase (AChE) inhibitor; is used for the treatment of mild to moderate Alzheimer's disease and various other memory impairments.

IC_{50} & Target

AChE

In Vitro

Galanthaminone reduces the action of AChE and therefore tends to increase the concentration of acetylcholine in the brain.

	is also an allosteric ligand at nicotinic acetylcholine receptors. It has shown activity in modulating the nicotinic cholinergic receptors on cholinergic neurons to increase acetylcholine release. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Absorption of Galanthaminone is rapid and complete and shows linear pharmacokinetics. It is well absorbed with absolute oral bioavailability between 80 and 100%. It has a half-life of seven hours. Peak effect of inhibiting acetylcholinesterase was achieved about one hour after a single oral dose of 8 mg in some healthy volunteers. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Greenblatt HM, et al. Structure of acetylcholinesterase complexed with (-)-galanthamine at 2.3 A resolution. FEBS Lett. 1999 Dec 17;463(3):321-6.

[2]. Heinrich M, et al. Galanthamine from snowdrop--the development of a modern drug against Alzheimer's disease from local Caucasian knowledge. J Ethnopharmacol. 2004 Jun;92(2-3):147-62.

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