

# Galanthamine

**Catalog No: tcsc1217**



## Available Sizes

**Size:** 50mg

**Size:** 100mg



## Specifications

**CAS No:**

357-70-0

**Formula:**

$C_{17}H_{21}NO_3$

**Pathway:**

Neuronal Signaling

**Target:**

AChE

**Purity / Grade:**

>98%

**Solubility:**

DMSO :  $\geq 59$  mg/mL (205.32 mM)

**Alternative Names:**

Galantamine

**Observed Molecular Weight:**

287.35

## Product Description

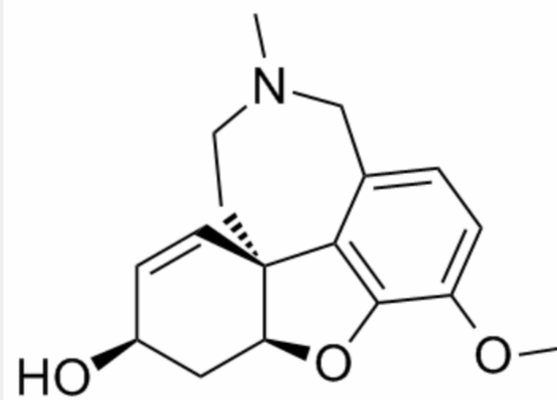
Galanthamine is a potent acetylcholinesterase (**AChE**) inhibitor with **IC<sub>50</sub>**

of 500 nM.

IC50 & Target: IC50: 0.5  $\mu$ M (AChE)<sup>[1]</sup>

**In Vitro:** Galanthamine inhibits AChE and BChE with IC<sub>50</sub> of 0.5 and 8.5  $\mu$ M<sup>[1]</sup>. Galanthamine acts as a positive allosteric modulator (PAM) of human  $\alpha$ 4 $\beta$ 2 AChRs expressed in permanently transfected HEK 293 cells. Galanthamine increases the response of ( $\alpha$ 4 $\beta$ 2)<sub>2</sub> $\alpha$ 5 AChRs to 1  $\mu$ M ACh by up to 220% with very low concentration (EC<sub>50</sub>=0.25 nM). Only small potentiation (20%) of either  $\alpha$ 4 $\beta$ 2 or ( $\alpha$ 4 $\beta$ 2)<sub>2</sub> $\beta$ 3 AChRs is detected using FLEXstation assays. Galanthamine at concentrations of 1  $\mu$ M and above inhibits all three AChR subtypes<sup>[2]</sup>.

**In Vivo:** Acute administration of Galantamine (0.3-3 mg/kg, i.p.) increases IGF2 mRNA levels in the hippocampus, but not in the prefrontal cortex, in time- and dose-dependent manner. Galantamine (3 mg/kg, i.p.) causes a transient increase in fibroblast growth factor 2 mRNA levels and a decrease in brain-derived neurotrophic factor mRNA levels in the hippocampus, while it does not affect the mRNA levels of other neurotrophic/growth factors. The Galantamine-induced increase in the hippocampal IGF2 mRNA levels is blocked by Mecamylamine, a nonselective nicotinic acetylcholine (ACh) receptor (nAChR) antagonist, and Methylycaconitine, a selective  $\alpha$ 7 nAChR antagonist, but not by Telenzepine, a preferential M1 muscarinic ACh receptor antagonist. Moreover, the selective  $\alpha$ 7 nAChR agonist PHA-543613 increases the IGF2 mRNA levels, while Donepezil, an acetylcholinesterase inhibitor, does not. Galantamine also increases hippocampal IGF2 protein, which is blocked by Methylycaconitine<sup>[2]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!