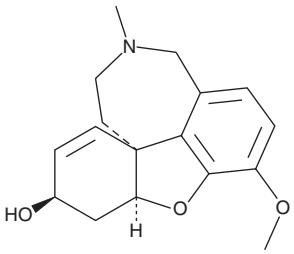
PRODUCT INFORMATION

Galantamine

Item No. 17559

CAS Registry No.:	357-70-0
Formal Name:	(4aS,6R,8aS)-4a,5,9,10,11,12-hexahydro-3-methoxy-11-methyl-6H-benzofuro[3a,3,2-ef][2]benzazepin-6-ol
Synonyms:	Galanthamine, NSC 100058
MF:	$C_{17}H_{21}NO_3$
FW:	287.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 210 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Plant/*Lycoris radiata*



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Galantamine is supplied as a crystalline solid. A stock solution may be made by dissolving the galantamine in the solvent of choice, which should be purged with an inert gas. Galantamine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of galantamine in ethanol is approximately 15 mg/ml and approximately 50 mg/ml in DMSO and DMF.

Galantamine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, galantamine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Galantamine has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Galantamine is an alkaloid that has been found in *Galanthus* and has acetylcholinesterase (AChE) inhibitory and nicotinic acetylcholine receptor (nAChR) potentiating activities.[1-3] It selectively inhibits AChE over butyrylcholinesterase (BChE; IC_{50}s = 636 and 8,404 nM, respectively).[2] Galantamine (0.5 µM) potentiates ACh-induced currents in HEK293 cells expressing human α4β2 subunit-containing nAChRs. *In vivo*, galantamine (1.3 mg/kg per day) decreases escape latency and path length in the Morris water maze in the APP23 transgenic mouse model of Alzheimer's disease.[4] Formulations containing galantamine have been used in the treatment of Alzheimer's disease.

References

1. Harvey, A.L. The pharmacology of galanthamine and its analogues. *Pharmacol. Ther.* **68(1)**, 113-128 (1995).
2. Rook, Y., Schmidtke, K.U., Gaube, F., *et al.* Bivalent β-carbolines as potential multitarget anti-Alzheimer agents. *J. Med. Chem.* **53(9)**, 3611-3617 (2010).
3. Samochocki, M., Zerlin, M., Jostock, R., *et al.* Galantamine is an allosterically potentiating ligand of the human α4/β2 nAChR. *Acta Neurol. Scand. Suppl.* **176**, 68-73 (2000).
4. Van Dam, D. and De Deyn, P.P. Cognitive evaluation of disease-modifying efficacy of galantamine and memantine in the APP23 model. *Eur. Neuropsychopharmacol.* **16(1)**, 59-69 (2006).

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