

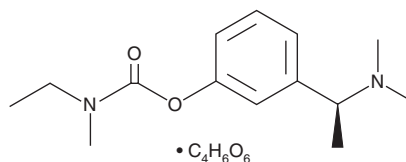
PRODUCT INFORMATION



Rivastigmine (tartrate)

Item No. 14270

CAS Registry No.: 129101-54-8
Formal Name: N-ethyl-N-methyl-carbamic acid, 3-[(1S)-1-(dimethylamino)ethyl]phenyl ester, 2R,3R-dihydroxybutanedioate
Synonyms: Exelon, SDZ-ENA 713
MF: C₁₄H₂₂N₂O₂ • C₄H₆O₆
FW: 400.4
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Rivastigmine (tartrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the rivastigmine (tartrate) in the solvent of choice. Rivastigmine (tartrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of rivastigmine (tartrate) in ethanol and DMSO is approximately 16 mg/ml and approximately 25 mg/ml in DMF.

Description

Rivastigmine is a cholinesterase (ChE) inhibitor that inhibits butyryl ChE (BChE) and acetyl ChE (AChE; IC₅₀s = 0.037 and 4.15 μM, respectively).¹ It increases levels of secreted amyloid precursor protein (sAPP) and decreases levels of soluble amyloid-β (1-40) and various N-terminal cleavage products in primary embryonic rat neurons undergoing degeneration when used at concentrations of 5 and 10 μM.² In a rat model of Alzheimer's disease induced by aluminum chloride (AlCl₃), rivastigmine (1 mg/kg per day) inhibits formation of amyloid plaques in brain sections and increases in AChE, IL-1β, and β-secretase 1 (BACE1) mRNA expression in the cerebral cortex.³ It inhibits AlCl₃-induced increases in escape latency time in the Morris water maze in a rat model of Alzheimer's disease when administered at a dose of 1 mg/kg. Rivastigmine (2 mg/kg) also reverses decreases in time spent in the open arms of an elevated plus maze, exploration time of a novel object in a novel object recognition test, and sucrose intake in a rat model of chronic mild stress.⁴ Formulations containing rivastigmine have been used in the treatment of dementia associated with Alzheimer's disease and Parkinson's disease.

References

1. Yu, Q.S., Zhu, X., Holloway, H.W., *et al.* Anticholinesterase activity of compounds related to geneserine tautomers. N-oxides and 1,2-oxazines. *J. Med. Chem.* **45**(17), 3684-3691 (2002).
2. Bailey, J.A., Ray, B., Greig, N.H., *et al.* Rivastigmine lowers Aβ and increases sAPPα levels, which parallel elevated synaptic markers and metabolic activity in degenerating primary rat neurons. *PLoS One* **6**(7), e21954 (2011).
3. Ismail, M.F., Elmehad, A.N., and Salem, N.A. Potential therapeutic effect of nanobased formulation of rivastigmine on rat model of Alzheimer's disease. *Int. J. Nanomedicine* **8**, 393-406 (2013).
4. Papp, M., Gruca, P., Lason-Tyburkiewicz, M., *et al.* Antidepressant, anxiolytic and procognitive effects of rivastigmine and donepezil in the chronic mild stress model in rats. *Psychopharmacology (Berl)* **233**(7), 1235-1243 (2016).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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