Product Data Sheet

Product Name: (R)-Rivastigmine D6 tartrate
Cat. No.: GC34993

Chemical Properties

Cas. No.	194930-00-2		
SMILES	O=C(OC1=CC=CC([C@@H](C)N(C([2H])([2H])[2H])C([2H])([2H])[2H])=C1)N(CC)C.O=C(O)[C@H](O)[C@@H](O)C(O)=O		
Formula	$C_{18}H_{22}D_6N_2O_8$	M.Wt	406.46
Solubility	DMF: 25 mg/ml,DMSO: 16 mg/ml,Ethanol: 16 mg/ml,PBS (pH 7.2): 10 mg/ml	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	(R)-Rivastigmine D6 tartrate		

Background

Rivastigmine-d_6 is intended for use as an internal standard for the quantification of rivastigmine by GC- or LC-MS. Rivastigmine is a cholinesterase (ChE) inhibitor that inhibits butyrl ChE (BChE) and acetyl ChE (AChE; IC_{50}s = 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 ($AlCl_3$), 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 $AlCl_3$-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

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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.

1.Yu, Q.S., Zhu, X., Holloway, H.W., et al.Anticholinesterase activity of compounds related to geneserine tautomers. N-oxides and 1,2-oxazinesJ. 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 neuronsPLoS One6(7)e21954(2011) 3.Ismail, M.F., Elmeshad, A.N., and Salem, N.A.Potential therapeutic effect of nanobased formulation of rivastigmine on rat model of Alzheimer's diseaseInt. J. Nanomedicine8393-406(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 ratsPsychopharmacology (Berl)233(7)1235-1243(2016)