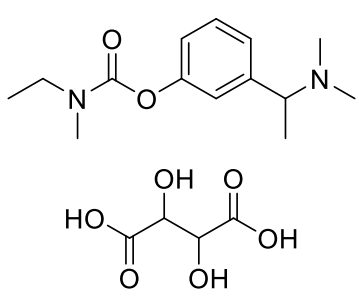


# Product data sheet



MedKoo Cat#: 318672 Name: Rivastigmine Tartrate CAS#: 129101-54-8 (tartrate) Chemical Formula: C <sub>18</sub> H <sub>28</sub> N <sub>2</sub> O <sub>8</sub> Molecular Weight: 400.42	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

## 1. Product description:

Rivastigmine tartrate is an orally active and potent cholinesterase (ChE) inhibitor. Rivastigmine tartrate is a parasympathomimetic or cholinergic agent used for the research of mild to moderate dementia, particularly Alzheimer's and dementia due to Parkinson's disease.

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
Water	50	124.87

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.50 mL	12.49 mL	24.97 mL
5 mM	0.50 mL	2.50 mL	4.99 mL
10 mM	0.25 mL	1.25 mL	2.50 mL
50 mM	0.05 mL	0.25 mL	0.50 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

1. Terada K, Migita K, Matsushima Y, Sugimoto Y, Kamei C, Matsumoto T, Mori M, Matsunaga K, Takata J, Karube Y. Cholinesterase inhibitor rivastigmine enhances nerve growth factor-induced neurite outgrowth in PC12 cells via sigma-1 and sigma-2 receptors. *PLoS One*. 2018 Dec 17;13(12):e0209250. doi: 10.1371/journal.pone.0209250. PMID: 30557385; PMCID: PMC6296549.
2. Arias E, Gallego-Sandín S, Villarroya M, García AG, López MG. Unequal neuroprotection afforded by the acetylcholinesterase inhibitors galantamine, donepezil, and rivastigmine in SH-SY5Y neuroblastoma cells: role of nicotinic receptors. *J Pharmacol Exp Ther*. 2005 Dec;315(3):1346-53. doi: 10.1124/jpet.105.090365. Epub 2005 Sep 6. PMID: 16144975.

### In vivo study

1. Mehri K, Oskuye ZZ, Nassireslami E, Karami E, Parvizi MR. Rivastigmine ameliorates botulinum-induced hippocampal damage and spatial memory impairment in male rats. *Neurotoxicology*. 2023 Jul 26;98:29-38. doi: 10.1016/j.neuro.2023.07.004. Epub ahead of print. PMID: 37507053.
2. Gupta P, Tiwari S, Singh A, Pal A, Mishra A, Singh S. Rivastigmine attenuates the Alzheimer's disease related protein degradation and apoptotic neuronal death signalling. *Biochem J*. 2021 Apr 16;478(7):1435-1451. doi: 10.1042/BCJ20200754. Erratum in: *Biochem J*. 2022 Jun 17;479(11):1147. PMID: 33660768.

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## 7. Bioactivity

### Biological target:

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Rivastigmine tartrate inhibits butyrylcholinesterase (BChE) and acetylcholinesterase (AChE) with IC50s of 0.037  $\mu$ M, 4.15  $\mu$ M, respectively. Rivastigmine tartrate can pass the blood brain barrier.

### In vitro activity

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The results from this study show that rivastigmine affords neuroprotection through a mechanism that is likely unrelated to AChE inhibition. For rivastigmine, the exact mechanism is unknown. PI3K-Akt blocker 2-(4-morpholinyl)-8-phenyl-1(4H)-benzopyran-4-one hydrochloride (LY294002) did not reverse the effects of rivastigmine.

Reference: J Pharmacol Exp Ther. 2005 Dec;315(3):1346-53. <https://pubmed.ncbi.nlm.nih.gov/16144975/>

### In vivo activity

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In male rats, rivastigmine administration alleviated biochemical and histological parameters and partially ameliorated Botulinum toxin (Botox)-induced impairments. Rivastigmine could be a suitable protective approach for side effects of Botox in the hippocampus. The hippocampal cholinergic system plays a significant role in memory and learning that could be affected by Botox.

Reference: Neurotoxicology. 2023 Jul 26;98:29-38. <https://pubmed.ncbi.nlm.nih.gov/37507053/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*