

# Certificate of Analysis

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**Product Name:** Rivastigmine tartrate

**Catalog No.:** 4440

**Batch No.:** 1

CAS Number: 129101-54-8

IUPAC Name: *N*-Ethyl-*N*-methylcarbamic acid 3-[(1*S*)-1-(dimethylamino)ethyl]phenyl ester (2*R*,3*R*)-2,3-dihydroxybutanedioate

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>14</sub>H<sub>22</sub>N<sub>2</sub>O<sub>2</sub>·C<sub>4</sub>H<sub>6</sub>O<sub>6</sub>

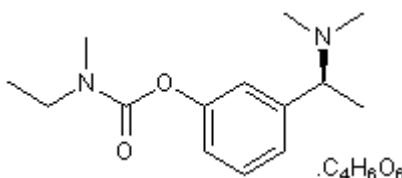
**Batch Molecular Weight:** 400.42

**Physical Appearance:** White solid

**Solubility:**  
water to 100 mM  
DMSO to 100 mM  
ethanol to 100 mM

**Storage:** Store at RT

**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**Melting Point:** Between 123 - 124°C

**HPLC:** Shows 100% purity

**<sup>1</sup>H NMR:** Consistent with structure

**Mass Spectrum:** Consistent with structure

**Optical Rotation:** [α]<sub>D</sub> = +4.36 (Concentration = 5, Solvent = Ethanol)

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	53.99	7.05	7
Found	54.11	7.16	6.96

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**Description:**

Dual cholinesterase inhibitor (ChEI); inhibits both butyrylcholinesterase (BChE) and acetylcholinesterase (AChE). Brain penetrant.

**Physical and Chemical Properties:**

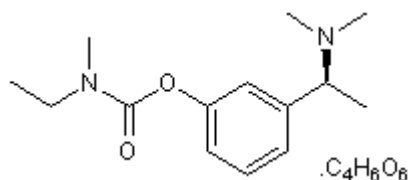
Batch Molecular Formula: C<sub>14</sub>H<sub>22</sub>N<sub>2</sub>O<sub>2</sub>.C<sub>4</sub>H<sub>6</sub>O<sub>6</sub>

Batch Molecular Weight: 400.42

Physical Appearance: White solid

**Minimum Purity:** >99%

**Batch Molecular Structure:**



**Storage:** Store at RT

**Solubility & Usage Info:**

water to 100 mM  
DMSO to 100 mM  
ethanol to 100 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Luo et al** (2006) Inhibition of human acetyl- and butyrylcholinesterase by novel carbamates of (-)- and (+)-tetrahydrofurobenzofuran and methanobenzodioxepine. *J.Med.Chem.* **49** 2174. PMID: 16570913.

**Groner et al** (2007) The kinetics of inhibition of human acetylcholinesterase and butyrylcholinesterase by two series of novel carbamates. *Mol.Pharmacol.* **71** 1610. PMID: 17347320.

**Bailey et al** (2011) Rivastigmine lowers Aβ and increases sAPPα levels, which parallel elevated synaptic markers and metabolic activity in degenerating primary rat neurons. *PLoS One* **6** e21954. PMID: 21799757.

**Mehta et al** (2012) New acetylcholinesterase inhibitors for Alzheimer's disease. *Int.J.Alzheimers Dis.* PMID: 22216416.

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