

## Certificate of Analysis

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**Product Name:** TC 2559 difumarate

**Catalog No.:** 2737

**Batch No.:** 2

**IUPAC Name:** 4-(5-ethoxy-3-pyridinyl)-*N*-methyl-(3*E*)-3-buten-1-amine difumarate

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>12</sub>H<sub>18</sub>N<sub>2</sub>O. 2C<sub>4</sub>H<sub>4</sub>O<sub>4</sub>

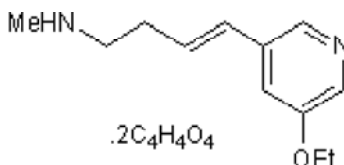
**Batch Molecular Weight:** 438.43

**Physical Appearance:** White solid

**Solubility:** water to 100 mM

**Storage:** Desiccate at RT

**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**HPLC:** Shows 98.4% purity

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

**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon Hydrogen Nitrogen		
Theoretical	54.79	5.98	6.39
Found	54.45	6.29	6.33

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**IUPAC Name:** 4-(5-ethoxy-3-pyridinyl)-N-methyl-(3E)-3-buten-1-amine difumarate

**Description:**

Subtype-selective partial agonist for  $\alpha 4\beta 2$  nicotinic acetylcholine receptors ( $EC_{50}$  values are 0.18, 12.5, 14.0, > 30, > 100 and > 100  $\mu$ M for  $\alpha 4\beta 2$ ,  $\alpha 4\beta 4$ ,  $\alpha 2\beta 4$ ,  $\alpha 3\beta 4$ ,  $\alpha 3\beta 2$  and  $\alpha 7$  receptor subtypes respectively). Displays selectivity for  $(\alpha 4)_2(\beta 2)_3$  receptor stoichiometry and enhanced CNS-PNS selectivity ratio. Attenuates scopolamine-induced cognitive deficits in a step-through passive avoidance task.

**Physical and Chemical Properties:**

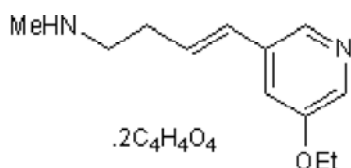
Batch Molecular Formula:  $C_{12}H_{18}N_2O \cdot 2C_4H_4O_4$

Batch Molecular Weight: 438.43

Physical Appearance: White solid

**Minimum Purity:** >98%

**Batch Molecular Structure:**



**References:**

**Zwart et al** (2006) 5-I A-85380 and TC-2559 differentially activate heterologously expressed  $\alpha 4\beta 2$  nicotinic receptors. *Eur.J.Pharmacol.* **539** 10. PMID: 16674940.

**Chen et al** (2003) The nicotinic  $\alpha 4\beta 2$  receptor selective agonist, TC-2559, increases DA neuronal activity in the ventral tegmental area of rat midbrain slices. *Neuropharmacology* **45** 334. PMID: 12871651.

**Bencherif et al** (2000) TC-2559: a novel orally active ligand selective at neuronal acetylcholine receptors. *Eur.J.Pharmacol.* **409** 45. PMID: 11099699.

**Storage:** Desiccate at RT

**Solubility & Usage Info:**

water 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.

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