

**Product Name:** Donepezil hydrochloride

**Catalog No.:** 4385

**Batch No.:** 3

CAS Number: 120011-70-3

IUPAC Name: 2,3-Dihydro-5,6-dimethoxy-2-[[1-(phenylmethyl)-4-piperidinyl]methyl]-1*H*-inden-1-one hydrochloride

**1. PHYSICAL AND CHEMICAL PROPERTIES**

**Batch Molecular Formula:** C<sub>24</sub>H<sub>29</sub>NO<sub>3</sub>.HCl

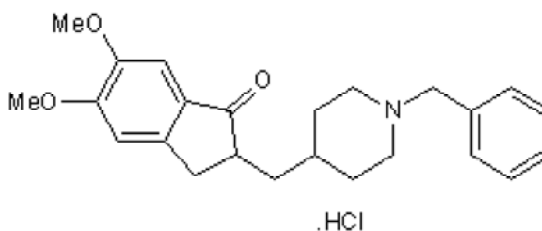
**Batch Molecular Weight:** 415.95

**Physical Appearance:** White solid

**Solubility:** water to 50 mM  
ethanol to 10 mM

**Storage:** Desiccate at RT

**Batch Molecular Structure:**



**2. ANALYTICAL DATA**

**HPLC:** Shows 100% purity

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

**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	69.3	7.27	3.37
Found	69.18	7.3	3.41

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**Description:**

Donepezil hydrochloride is a potent and selective acetylcholinesterase inhibitor (IC<sub>50</sub> = 5.7 nM). In animal models of Alzheimer's disease, Donepezil reduces brain tissue Aβ protein and plaque deposition, restores normal glucose metabolism, reduces neuroinflammation and rescues cognitive dysfunction and memory deficits. The pro-cognitive effects are potentiated by combination with Mefloquine (Cat. No. 6819). In vitro Donepezil reduces LPS-induced inflammation and protects against mitochondrial membrane potential damage.

**Physical and Chemical Properties:**

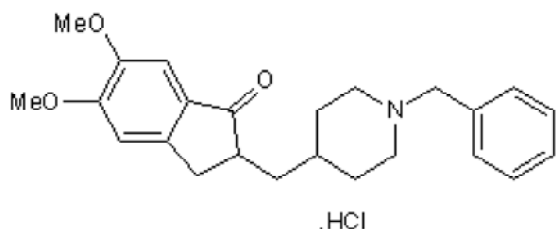
Batch Molecular Formula: C<sub>24</sub>H<sub>29</sub>NO<sub>3</sub>.HCl

Batch Molecular Weight: 415.95

Physical Appearance: White solid

**Minimum Purity:** ≥99%

**Batch Molecular Structure:**



**References:**

**Hugon *et al*** (2022) Impact of donepezil on brain glucose metabolism assessed using [<sup>18</sup>F]2-fluoro-2-deoxy-D-glucose positron emission tomography imaging in a mouse model of Alzheimer's disease induced by intracerebroventricular injection of amyloid-beta peptide. *Front.Neurosci.* **16**. PMID: 35281502.

**Kim *et al*** (2021) Donepezil regulates LPS and Aβ-stimulated neuroinflammation through MAPK/NLRP3 inflammasome/STAT3 signaling. *Int.J.Mol.Sci.* **22** 10637. PMID: 34638977.

**Droguerre *et al*** (2020) Efficacy of THN201, a combination of donepezil and mefloquine, to reverse neurocognitive deficits in Alzheimer's disease. *Front.Neurosci.* **14**. PMID: 32612499.

**Storage:** Desiccate at RT

**Solubility & Usage Info:**

water to 50 mM  
ethanol to 10 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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