

## Certificate of Analysis

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**Product Name:** Dimebon dihydrochloride

**Catalog No.:** 3201

**Batch No.:** 2

**CAS Number:** 97657-92-6

**IUPAC Name:** 2,3,4,5-Tetrahydro-2,8-dimethyl-5-[2-(6-methyl-3-pyridinyl)ethyl]-1*H*-pyrido[4,3-*b*]indole dihydrochloride

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:**  $C_{21}H_{25}N_3 \cdot 2HCl \cdot 2\frac{1}{2}H_2O$

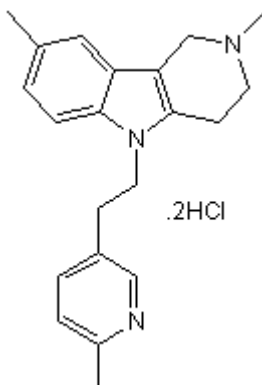
**Batch Molecular Weight:** 437.41

**Physical Appearance:** Off-white solid

**Solubility:**  
water to 100 mM  
DMSO to 100 mM  
ethanol to 25 mM

**Storage:** Desiccate at RT

**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

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

**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	57.66	7.37	9.61
Found	57.43	7.04	9.5

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

Non-selective antihistamine that displays cognitive enhancing abilities. Also displays high affinity for 5-HT<sub>6</sub> (particularly 5-HT<sub>6</sub> and 5-HT<sub>7</sub>), α-adrenergic, dopaminergic, AMPA and NMDA receptors, and L-type calcium channels. Does not inhibit acetylcholinesterase activity. Exhibits neuroprotective activity in cellular models of Alzheimer's and Huntington's disease and preserves cognitive function following administration to AF64A lesioned rats. Protects neurons against the neurotoxic action of β-amyloid fragment; shown to enhance autophagy in yeast and reduce intracellular Aβ42 levels.

**Physical and Chemical Properties:**

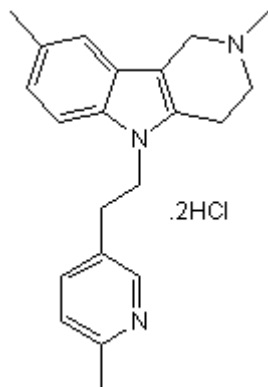
Batch Molecular Formula: C<sub>21</sub>H<sub>25</sub>N<sub>3</sub>·2HCl·2½H<sub>2</sub>O

Batch Molecular Weight: 437.41

Physical Appearance: Off-white solid

**Minimum Purity:** >98%

**Batch Molecular Structure:**



**References:**

**Bachurin et al** (2001) Antihistamine agent dimebon as a novel neuroprotector and a cognitive enhancer. *Ann.N.Y.Acad.Sci.* **939** 425. PMID: 11462798.

**Schaffhauser et al** (2009) Dimebon is a 5-HT<sub>6</sub> antagonist with acute cognitive enhancing activities. *Biochem.Pharmacol.* **78** 1035. PMID: 19549510.

**Okun et al** (2009) From anti-allergic to anti-Alzheimer's: molecular pharmacology of dimebon. *Curr.Alzheimer Res.* **7** 97.

**Giorgetti et al** (2010) Cognition-enhancing properties of dimebon in a rat novel object recognition task are unlikely to be associated with acetylcholinesterase inhibition or *N*-methyl-D-aspartate receptor antagonism *J.Pharm.Exp.Ther.* **333** 748.

**Bharadwaj et al** (2012) Latrepirdine (Dimebon) enhances autophagy and reduces intracellular GFP-Aβ42 levels in yeast. *J.Alzheimers Dis.* **32** 949. PMID: 22903131.

**Storage:** Desiccate at RT

**Solubility & Usage Info:**

water to 100 mM  
DMSO to 100 mM  
ethanol to 25 mM

CAUTION - This product is hygroscopic and we recommend that it is desiccated upon arrival.

**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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