

**Product Name:** (S)-(+)-Dimethindene maleate

**Catalog No.:** 1425

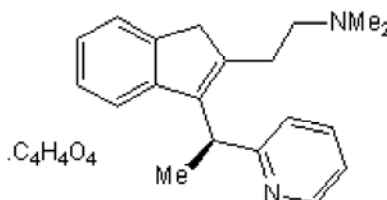
**Batch No.:** 3

**CAS Number:** 136152-65-3

**IUPAC Name:** *N,N*-Dimethyl-3-[(1*S*)-1-(2-pyridinyl)ethyl]-1*H*-indene-2-ethanamine maleate

## 1. PHYSICAL AND CHEMICAL PROPERTIES

<b>Batch Molecular Formula:</b>	C <sub>20</sub> H <sub>24</sub> N <sub>2</sub> .C <sub>4</sub> H <sub>4</sub> O <sub>4</sub>
<b>Batch Molecular Weight:</b>	408.5
<b>Physical Appearance:</b>	White solid
<b>Solubility:</b>	water to 100 mM with gentle warming DMSO to 100 mM
<b>Storage:</b>	Desiccate at RT
<b>Batch Molecular Structure:</b>	



## 2. ANALYTICAL DATA

<b>TLC:</b>	R <sub>f</sub> = 0.45 (Dichloromethane:Methanol:Ammonia soln. [6:3.5:0.5])
<b>HPLC:</b>	Shows 99.6% purity
<b>Chiral HPLC:</b>	Shows 100% purity
<b><sup>1</sup>H NMR:</b>	Consistent with structure
<b>Mass Spectrum:</b>	Consistent with structure
<b>Optical Rotation:</b>	[α] <sub>D</sub> = +132.4 (Concentration = 1, Solvent = Water)
<b>Microanalysis:</b>	
	Carbon Hydrogen Nitrogen
	Theoretical 70.57 6.91 6.86
	Found 70.46 7.02 6.85

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**bio-techne.com**

info@bio-techne.com

techsupport@bio-techne.com

**North America**

Tel: (800) 343 7475

**China**

info.cn@bio-techne.com

Tel: +86 (21) 52380373

**Europe Middle East Africa**

Tel: +44 (0)1235 529449

**Rest of World**

[www.tocris.com/distributors](http://www.tocris.com/distributors)

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**Description:**

(S)-(+)-Dimethindene maleate is an enantiomer that is a subtype-selective M<sub>2</sub> muscarinic receptor antagonist (pK<sub>i</sub> values are 7.08, 7.78, 6.70 and 7.00 for M<sub>1</sub>, M<sub>2</sub>, M<sub>3</sub> and M<sub>4</sub> receptors respectively). Also H<sub>1</sub> histamine receptor antagonist (pK<sub>i</sub> = 7.48). Allows formation of extended pluripotent stem (EPS) cells in combination with CHIR 99021 (Cat.No. 4423), minocycline hydrochloride (Cat.No. 3268) and human leukemia inhibitory factor. For more information about how Dimethindene maleate may be used, see our protocol: Generation and Propagation of EPS cells (LCDM Cocktail). Please see product specific page on [www.tocris.com](http://www.tocris.com) for full description.

**Physical and Chemical Properties:**

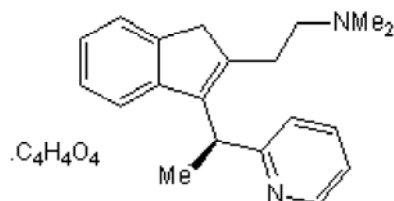
Batch Molecular Formula: C<sub>20</sub>H<sub>24</sub>N<sub>2</sub>.C<sub>4</sub>H<sub>4</sub>O<sub>4</sub>

Batch Molecular Weight: 408.5

Physical Appearance: White solid

**Minimum Purity:** ≥99%

**Batch Molecular Structure:**



**References:**

**Yang et al** (2017) Derivation of pluripotent stem cells with in vivo embryonic and extraembryonic potency. *Cell*. **169** 243. PMID: 28388409.

**Lambrecht et al** (1999) Neuronal soma-dendritic and prejunctional M<sub>1</sub>-M<sub>4</sub> receptors in gastrointestinal and genitourinary smooth muscle. *Life Sci*. **64** 403. PMID: 10069503.

**Pfaff et al** (1995) The (S)-(+)-enantiomer of dimethindene: a novel M<sub>2</sub>-selective muscarinic receptor antagonist. *Eur.J.Pharmacol.* **286** 229. PMID: 8608784.

**Storage:** Desiccate at RT

**Solubility & Usage Info:**

water to 100 mM with gentle warming  
DMSO 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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