

# Certificate of Analysis

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

<b>Product Name:</b>	<b>(+)-Tubocurarine chloride</b>	<b>Catalog No.:</b>	<b>2820</b>	<b>Batch No.:</b>	<b>9</b>
<b>CAS Number:</b>	57-94-3	<b>EC Number:</b>	200-356-9		
<b>IUPAC Name:</b>	2,3,13a,14,15,16,25,25a,-Octahydro-9,19-dihydroxy-18,29-dimethoxy-1,14,14-trimethyl-13 <i>H</i> -4,6:21,24-dietheno-8,12-metheno-1 <i>H</i> -pyrido[3',2':14,15][1,11]dioxacycloecosino[2,3,4- <i>ij</i> ]isoquinolinium chloride hydrochloride				

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>37</sub>H<sub>41</sub>ClN<sub>2</sub>O<sub>6</sub>.HCl.4½H<sub>2</sub>O

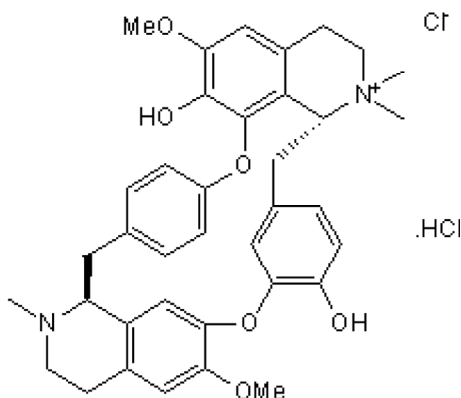
**Batch Molecular Weight:** 762.72

**Physical Appearance:** White solid

**Solubility:** water to 25 mM

**Storage:** Store at +4°C

**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**HPLC:** Shows 98.7% purity

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

**Mass Spectrum:** Consistent with structure

**Optical Rotation:** [α]<sub>D</sub> = +212 (Concentration = 0.78, Solvent = Methanol)

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen	Chlorine
Theoretical	58.27	6.74	3.67	9.3
Found	57.41	6.56	3.57	9.57

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

**Product Name:** (+)-Tubocurarine chloride

**Catalog No.:** 2820

**Batch No.:** 9

**CAS Number:** 57-94-3

**EC Number:** 200-356-9

**IUPAC Name:** 2,3,13a,14,15,16,25,25a,-Octahydro-9,19-dihydroxy-18,29-dimethoxy-1,14,14-trimethyl-13*H*-4,6:21,24-dietheno-8,12-metheno-1*H*-pyrido[3',2':14,15][1,11]dioxacycloicosino[2,3,4-*ij*]isoquinolinium chloride hydrochloride

**Description:**

(+)-Tubocurarine chloride is a competitive, non-selective nicotinic acetylcholine receptor antagonist; causes skeletal muscle relaxation. Also a 5-HT<sub>3</sub> and GABA<sub>A</sub> receptor antagonist.

**Physical and Chemical Properties:**

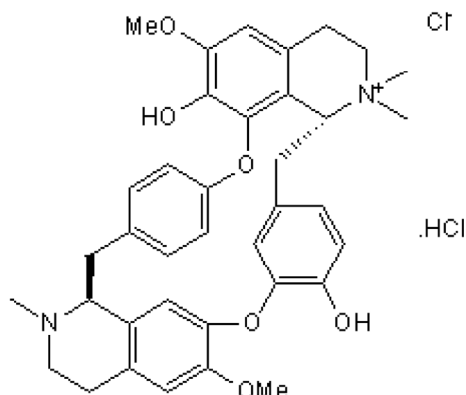
Batch Molecular Formula: C<sub>37</sub>H<sub>41</sub>ClN<sub>2</sub>O<sub>6</sub>.HCl.4½H<sub>2</sub>O

Batch Molecular Weight: 762.72

Physical Appearance: White solid

**Minimum Purity:** ≥98%

**Batch Molecular Structure:**



**Storage:** Store at +4°C

**Solubility & Usage Info:**

water to 25 mM

This compound is hygroscopic and may absorb atmospheric moisture during prolonged storage, causing the solid to become sticky and/or collapse into a gel or glass-like form. Although purity is unaffected, it may be difficult to extract the full quantity from the vial. In such a situation, we recommend that solutions are made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

**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. \*Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

**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:**

**Wotring and Yoon** (1995) The inhibitory effects of nicotinic antagonists on currents elicited by GABA in rat hippocampal neurons. *Neurosci.* **67** 293.

**Pederson and Cohen** (1990) *d*-Tubocurarine binding sites are located at α-γ and α-δ subunit interfaces of the nicotinic acetylcholine receptor. *Proc.Natl.Acad.Sci.USA* **87** 2785.

**Peters et al** (1990) Antagonism of 5-HT<sub>3</sub> receptor mediated currents in murine N1E-115 neuroblastoma cells by (+)-tubocurarine. *Neurosci.Letts.* **110** 107.

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

**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

Tel:+1 612 379 2956