

Product Name: Tiotropium bromide

Catalog No.: 5902

Batch No.: 2

CAS Number: 136310-93-5

IUPAC Name: (1 α ,2 β ,4 β ,5 α ,7 β)-7-[(2-Hydroxy-2,2-di-2-thienylacetyl)oxy]-9,9-dimethyl-3-oxa-9-azoniatricyclo[3.3.1.0^{2,4}]nonane bromide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₉H₂₂BrNO₄S₂·½H₂O

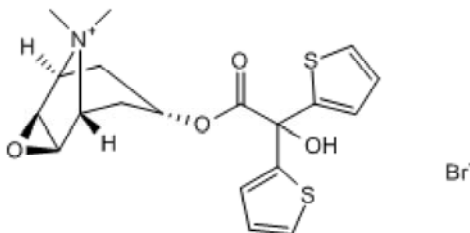
Batch Molecular Weight: 481.43

Physical Appearance: White solid

Solubility: water to 20 mM
DMSO to 100 mM

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.4% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	47.4	4.82	2.91
Found	47.21	4.75	2.79

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

Product Name: Tiotropium bromide

Catalog No.: 5902

Batch No.: 2

CAS Number: 136310-93-5

IUPAC Name: (1 α ,2 β ,4 β ,5 α ,7 β)-7-[(2-Hydroxy-2,2-di-2-thienylacetyl)oxy]-9,9-dimethyl-3-oxa-9-azoniatricyclo[3.3.1.0^{2,4}]nonane bromide

Description:

Potent muscarinic receptor antagonist. Inhibits electrical field stimulation-induced contraction of guinea pig trachea in vitro (IC₅₀ = 0.17 nM). Induces smooth muscle relaxation and bronchodilation.

Physical and Chemical Properties:

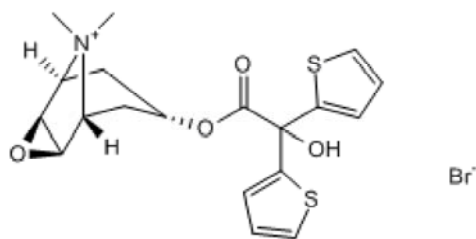
Batch Molecular Formula: C₁₉H₂₂BrNO₄S₂·½H₂O

Batch Molecular Weight: 481.43

Physical Appearance: White solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

water to 20 mM

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.

References:

Smit *et al* (2014) Bronchoprotection by olodaterol is synergistically enhanced by tiotropium in a guinea pig model of allergic asthma. *J.Pharmacol.Exp.Ther.* **348** 303. PMID: 24307202.

Ogoda *et al* (2011) Comparative characterization of lung muscarinic receptor binding after intratracheal administration of tiotropium, ipratropium, and glycopyrrolate. *J.Pharm.Sci.* **115** 374. PMID: 21358117.

Takahashi *et al* (1994) Effect of Ba 679 BR, a novel long-acting anticholinergic agent, on cholinergic neurotransmission in guinea pig and human airways. *Am.J.Respir.Crit.Care Med.* **150** 1640. PMID: 7952627.

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