

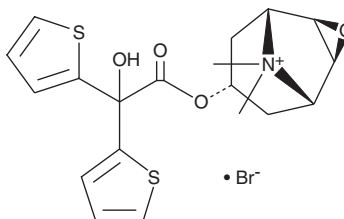
PRODUCT INFORMATION



Tiotropium (bromide)

Item No. 15773

CAS Registry No.: 136310-93-5
Formal 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, monobromide
Synonym: BA 679BR
MF: C₁₉H₂₂NO₄S₂ • Br
FW: 472.4
Purity: ≥98%
UV/Vis.: λ_{max} : 238 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Tiotropium (bromide) is supplied as a crystalline solid. A stock solution may be made by dissolving the tiotropium (bromide) in the solvent of choice. Tiotropium (bromide) is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of tiotropium (bromide) in these solvents is approximately 20 and 10 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of tiotropium (bromide) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of tiotropium (bromide) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Tiotropium is an antagonist that binds to M₁, M₂, and M₃ muscarinic acetylcholine receptors (K_ds = 0.43, 0.54, and 0.69 nM, respectively, for human receptors).¹ It decreases acetylcholine-induced contraction of isolated guinea pig trachea in a concentration-dependent manner. *In vivo*, tiotropium (1 g/L inhaled aerosol) confers complete protection against acetylcholine-induced bronchospasms in anesthetized dogs. Formulations containing tiotropium have been used in the treatment of chronic obstructive pulmonary disease (COPD).

Reference

1. Disse, B., Reichl, R., Speck, G., *et al.* Ba 679 BR, a novel long-acting anticholinergic bronchodilator. *Life Sci.* 52(5-6), 537-544 (1993).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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