
Product Data Sheet

Product Name: Oxitropium Bromide

Cat. No.: GC32049

Chemical Properties

Cas. No. 30286-75-0

SMILES CC[N@@+](C(=O)OC(C)C)C(=O)OC(C)CFormula C₁₉H₂₆BrNO₄ M.Wt 412.32

Solubility Soluble in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure **Protocol****Animal experiment:**

Mice: In the oxitropium bromide inhalation group, animals are given 2 puffs of inhalation from a oxitropium bromide MDI (metered dose inhaler) via a 75-mL spacer, and then diaphragm muscles are dissected and measured as to contractility immediately, 1 hour, 2 hours and 4 hours later (n=5 animals each). An animal is placed in a centrifugal tube (inner diameter=30 mm) with a round hole (diameter=10 mm) in the bottom, its nose and mouth being exposed through the hole to breath. An oxitropium bromide MDI (metered dose inhaler) releases 2 puffs into a spacer attached to the tube. Aerosols of oxitropium bromide are inhaled for about 10 seconds, while the animal is breathing spontaneously through the hole of the tube[1].

References:

Caution: Product has not been fully validated for medical applications. For research use only.

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- [1]. Shindoh C, et al. Effects of inhalation or incubation of oxitropium bromide on diaphragm muscle contractility in mice. *Allergol Int.* 2011 Sep;60(3):365-72.
- [2]. Kohno SW, et al. Effect of oxitropium bromide (Ba253) on increased airway resistance induced by various agonists and antigen in the guinea pig. *Jpn J Pharmacol.* 1989 Aug;50(4):455-66.
- [3]. Takeyama K, et al. Effect of oxitropium bromide on histamine-induced airway goblet cell secretion. *Am J*

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Respir Crit Care
Med. 1996
Jul;154(1):231-6.

Background

Oxitropium bromide is an mAChR antagonist used as an anticholinergic bronchodilator drug for the treatment of asthma and chronic obstructive pulmonary disease.

Oxitropium bromide is a muscarinic antagonist which blocks muscarinic acetylcholine receptors (mAChR). Incubation with oxitropium bromide of untreated diaphragm muscle and diaphragm muscle injected with endotoxin does not increase the force-frequency curves dose-dependently in vitro; however, it causes both types of muscle to be fatigue resistant[1].

Oxitropium bromide inhalation shifts force-frequency curves upward at 2 h after inhalation and inhibits the decrease of force-frequency curves due to endotoxin injection in vivo[1]. Oxitropium bromide strongly and persistently inhibits the acetylcholine (ACh)-induced resistance. The increase in resistance induced by histamine, serotonin, leukotriene D4 or antigen is prevented by oxitropium bromide oxitropium bromide[2]. Inhalation of the anticholinergic agent oxitropium bromide at doses of 1.5 µg and higher greatly attenuates the decrease in mucus score produced by intravenous histamine but not by inhaled histamine[3].

[1]. Shindoh C, et al. Effects of inhalation or incubation of oxitropium bromide on diaphragm muscle contractility in mice. *Allergol Int.* 2011 Sep;60(3):365-72. [2]. Kohno SW, et al. Effect of oxitropium bromide (Ba253) on increased airway resistance induced by various agonists and antigen in the guinea pig. *Jpn J Pharmacol.* 1989 Aug;50(4):455-66. [3]. Takeyama K, et al. Effect of oxitropium bromide on histamine-induced airway goblet cell secretion. *Am J Respir Crit Care Med.* 1996 Jul;154(1):231-6.

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