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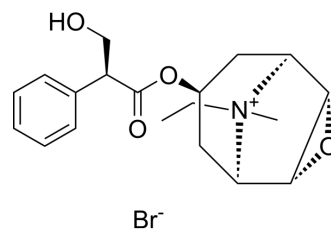
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Oxitropium Bromide

Cat. No.:	HY-U00105
CAS No.:	30286-75-0
Molecular Formula:	C ₁₉ H ₂₆ BrNO ₄
Molecular Weight:	412.32
Target:	mAChR
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Oxitropium bromide is an mAChR antagonist used as an anticholinergic bronchodilator agent for the treatment of asthma and chronic obstructive pulmonary disease.
IC₅₀ & Target	mAChR ^[1]
In Vitro	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] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	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 ^[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] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration ^[1]	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] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
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REFERENCES

[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.

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

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