Oxitropium Bromide

**Cat. No.:** HY-U00105  
**CAS No.:** 30286-75-0  
**Molecular Formula:** C₁₉H₂₆BrNO₄  
**Molecular Weight:** 412.32  
**Target:** mAChR  
**Pathway:** GPCR/G Protein; Neuronal Signaling  
**Storage:** Please store the product under the recommended conditions in the COA.

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**BIOLOGICAL ACTIVITY**

<table>
<thead>
<tr>
<th>Description</th>
<th>Oxitropium bromide is an mAChR antagonist used as an anticholinergic bronchodilator drug for the treatment of asthma and chronic obstructive pulmonary disease.</th>
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<tbody>
<tr>
<td><strong>IC₅₀ &amp; Target</strong></td>
<td>mAChR[1]</td>
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</tbody>
</table>

**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].

**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 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].

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**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 breathe. 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**
