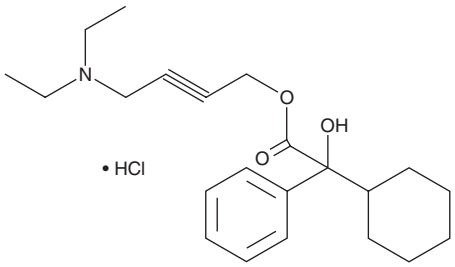
PRODUCT INFORMATION

Oxybutynin (hydrochloride)

Item No. 23825

CAS Registry No.: 1508-65-2
Formal Name: 4-(diethylamino)-2-butyn-1-yl ester α-cyclohexyl-α-hydroxy-benzeneacetic acid, monohydrochloride
Synonym: MJ4309-1
MF: $C_{22}H_{31}NO_3$ • HCl
FW: 394.0
Purity: ≥98%
UV/Vis.: λ_{max}: 202 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

Oxybutynin (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the oxybutynin (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Oxybutynin (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of oxybutynin (hydrochloride) in ethanol is approximately 20 mg/ml and approximately 50 mg/ml in DMSO and DMF.

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 oxybutynin (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of oxybutynin (hydrochloride) in PBS, pH 7.2, is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Oxybutynin is an antagonist of muscarinic acetylcholine receptors (K_is = 5, 14.5, 3.7, 5.3, and 40 nM for human recombinant M_{1-5}, respectively).[1] It inhibits intracellular calcium mobilization induced by carbamoylcholine (carbachol; Item No. 14486) in bladder smooth muscle and submandibular gland cells isolated from cynomolgus monkeys (K_is = 2 and 1 nM, respectively).[2] Oxybutynin inhibits volume-induced bladder contraction (VIBC) and oxotremorine-induced salivation (OIS) in rats (ID_{50}s = 0.062 and 0.089 mg/kg, respectively).[1] It also increases pupil diameter (PD) and locomotor activity (LMA; ED_{50}s = 0.29 and 0.52 mg/kg, respectively) and decreases small intestinal transit (SIT; ID_{50} = 0.22 mg/kg) in rats. Formulations containing oxybutynin have been used in the treatment of overactive bladder.

References

1. McNamara, A., Pulido-Rios, M.T., Sweazey, S., *et al.* Pharmacological properties of TD-6301, a novel bladder selective muscarinic receptor antagonist. *Eur. J. Pharmacol.* **605(1-3)**, 145-152 (2009).
2. Kobayashi, S., Ikeda, K., and Miyata, K. Comparison of *in vitro* selectivity profiles of solifenacin succinate (YM905) and current antimuscarinic drugs in bladder and salivary glands: A Ca^{2+} mobilization study in monkey cells. *Life Sci.* **74(7)**, 843-853 (2004).

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