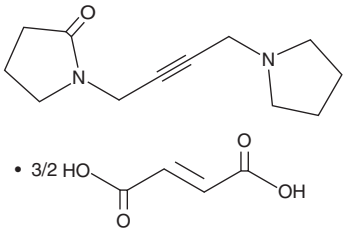
PRODUCT INFORMATION

Oxotremorine (sesquifumarate)

Item No. 35707

CAS Registry No.:	17360-35-9
Formal Name:	1-[4-(1-pyrrolidinyl)-2-butyn-1-yl]-2-pyrrolidinone, 2E-butenedioate (2:3)
MF:	$C_{12}H_{18}N_2O \bullet 3/2C_4H_4O_4$
FW:	380.4
Purity:	≥95%
Supplied as:	A 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

Oxotremorine (sesquifumarate) is supplied as a solid. A stock solution may be made by dissolving the oxotremorine (sesquifumarate) in the solvent of choice, which should be purged with an inert gas. Oxotremorine (sesquifumarate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of oxotremorine (sesquifumarate) in these solvents is approximately 10, 14, and 16 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 oxotremorine (sesquifumarate) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of oxotremorine (sesquifumarate) in PBS (pH 7.2) is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Oxotremorine is an agonist of muscarinic acetylcholine receptors (mAChRs).[1] It binds to M_1, M_2, M_3, and M_4 mAChRs (K_is = 3.31, 9.33, 5.24, and 7.08 µM, respectively, for the human receptors). It inhibits acetylcholine (ACh; Item No. 23829) release in rat cerebral cortical slices when used at a concentration of 10 µM, an effect that can be reversed by the non-selective mAChR antagonist atropine (Item No. 12008).[2] Oxotremorine induces tremors, salivation, and lacrimation in mice (ED_{50}s = 0.11, 0.22, and 0.28 mg/kg).[3] It induces analgesia in the hot plate test in mice when administered at a dose of 0.5 mg/kg.[4] Oxotremorine has been used to induce parkinsonian symptoms as a model of Parkinson's disease in mice.[5]

References

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2. Szerb, J.C. and Somogyi, G.T. Depression of acetylcholine release from cerebral cortical slices by cholinesterase inhibition and by oxotremorine. *Nat. New Biol.* **241(108)**, 121-122 (1973).
3. Moon, M.W., Chidester, C.G., Heier, R.F., *et al.* Cholinergic activity of acetylenic imidazoles and related compounds. *J. Med. Chem.* **34(8)**, 2314-2327 (1991).
4. Pleuvry, B.J. and Tobias, M.A. Comparison of the antinociceptive activities of physostigmine, oxotremorine and morphine in the mouse. *Br. J. Pharmacol.* **43(4)**, 706-714 (1971).
5. Castensson, S., Sievertsson, H., Lindeke, B., *et al.* Studies on the inhibition of oxotremorine induced tremor by a melanocyte-stimulating hormone release-inhibiting factor, thyrotropin releasing hormone and related peptides. *FEBS Lett.* **44(1)**, 101-105 (1974).

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