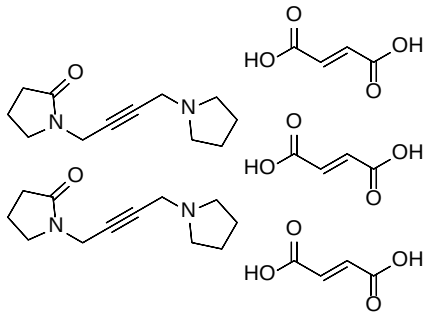
Product data sheet

MedKoo Cat#: 574381 Name: Oxotremorine sesquifumarate CAS: 17360-35-9 Chemical Formula: $C_{36}H_{48}N_4O_{14}$ Exact Mass: 760.3167 Molecular Weight: 760.794	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Oxotremorine sesquifumarate is a muscarinic agonist.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	16.0	21.03
DMSO	59.01	77.57
Ethanol	10.0	26.29
PBS (pH 7.2)	3.0	3.94
Water	54.76	71.97

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.63 mL	13.14 mL	26.29 mL
5 mM	0.53 mL	2.63 mL	5.26 mL
10 mM	0.26 mL	1.31 mL	2.63 mL
50 mM	0.05 mL	0.26 mL	0.53 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Kim EC, Toyono T, Berlinicke CA, Zack DJ, Jurkunas U, Usui T, Jun AS. Screening and Characterization of Drugs That Protect Corneal Endothelial Cells Against Unfolded Protein Response and Oxidative Stress. Invest Ophthalmol Vis Sci. 2017 Feb 1;58(2):892-900. doi: 10.1167/iovs.16-20147. PMID: 28159976; PMCID: PMC5295784.
2. Das M, Ganguly DK, Vedasiromoni JR. Enhancement by oxotremorine of acetylcholine release from the rat phrenic nerve. Br J Pharmacol. 1978 Feb;62(2):195-8. doi: 10.1111/j.1476-5381.1978.tb08445.x. PMID: 203356; PMCID: PMC1667799.

In vivo study

1. Frinchi M, Nuzzo D, Scaduto P, Di Carlo M, Massenti MF, Belluardo N, Mudò G. Anti-inflammatory and antioxidant effects of muscarinic acetylcholine receptor (mAChR) activation in the rat hippocampus. Sci Rep. 2019 Oct 2;9(1):14233. doi: 10.1038/s41598-019-50708-w. PMID: 31578381; PMCID: PMC6775129.
2. Song Z, Meyerson BA, Linderoth B. Muscarinic receptor activation potentiates the effect of spinal cord stimulation on pain-related behavior in rats with mononeuropathy. Neurosci Lett. 2008 May 2;436(1):7-12. doi: 10.1016/j.neulet.2008.02.044. Epub 2008 Feb 26. PMID: 18343581.

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7. Bioactivity

Biological target:

Oxotremorine sesquifumarate is a mAChR agonist that mainly activates M2 receptors.

In vitro activity

Oxotremorine (10.5 micron) produced a paralytic effect on twitch responses of rat diaphragm in vitro to direct and indirect stimulation. The paralytic effect of oxotremorine was absent when the diaphragm was stimulated directly in the presence of hemicholinium-3 (0.42 mM), at a time when twitch responses to indirect stimulation ceased completely. Oxotremorine, at two different pharmacologically active doses, strikingly increased the resting as well as electrically evoked release of acetylcholine into the bathing fluid from the phrenic nerve-diaphragm preparation.

Reference: Br J Pharmacol. 1978 Feb;62(2):195-8. https://pubmed.ncbi.nlm.nih.gov/203356/

In vivo activity

The present study was performed to examine whether cold hypersensitivity and heat hyperalgesia in rats with partial sciatic nerve injuries can be attenuated by SCS in the same way as tactile hypersensitivity and to explore a possibly synergistic effect of SCS and a muscarinic receptor agonist, oxotremorine. Oxotremorine was administered intrathecally. Tactile, cold and heat sensitivities were assessed by using von Frey filaments, cold spray and focused radiant heat, respectively. Oxotremorine i.t. dose-dependently suppressed the tactile hypersensitivity.

Reference: Neurosci Lett. 2008 May 2;436(1):7-12. https://pubmed.ncbi.nlm.nih.gov/18343581/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.