

Product data sheet



MedKoo Cat#: 462128 Name: Otilonium bromide CAS: 26095-59-0 Chemical Formula: C ₂₉ H ₄₃ BrN ₂ O ₄ Exact Mass: 562.2406 Molecular Weight: 563.577		
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:

Otilonium bromide is an antimuscarinic and calcium channel blocker used to relieve spasmodic pain of the gut, especially in irritable bowel syndrome.

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	20.0	35.49
DMSO	62.67	111.19
Ethanol	61.5	109.12
PBS (pH 7.2)	10.0	17.74
Water	106.5	188.97

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.77 mL	8.87 mL	17.74 mL
5 mM	0.35 mL	1.77 mL	3.55 mL
10 mM	0.18 mL	0.89 mL	1.77 mL
50 mM	0.04 mL	0.18 mL	0.35 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. Lindqvist S, Hernon J, Sharp P, Johns N, Addison S, Watson M, Tighe R, Greer S, Mackay J, Rhodes M, Lewis M, Stebbings W, Speakman C, Evangelista S, Johnson I, Williams M. The colon-selective spasmolytic otilonium bromide inhibits muscarinic M(3) receptor-coupled calcium signals in isolated human colonic crypts. *Br J Pharmacol.* 2002 Dec;137(7):1134-42. doi: 10.1038/sj.bjp.0704942. PMID: 12429587; PMCID: PMC1573573.

2. Gandía L, Villarroya M, Lara B, Olmos V, Gilabert JA, López MG, Martínez-Sierra R, Borges R, García AG. Otilonium: a potent blocker of neuronal nicotinic ACh receptors in bovine chromaffin cells. *Br J Pharmacol.* 1996 Feb;117(3):463-470. doi: 10.1111/j.1476-5381.1996.tb15213.x. PMID: 8821535; PMCID: PMC1909307.

In vivo study

1. Gong Y, Kim YR. Therapeutic potential of otilonium bromide against *Vibrio vulnificus*. *Res Microbiol.* 2023 Jan-Feb;174(1-2):103992. doi: 10.1016/j.resmic.2022.103992. Epub 2022 Sep 17. PMID: 36122890.

Product data sheet



2. Xu C, Liu C, Chen K, Zeng P, Chan EWC, Chen S. Otilonium bromide boosts antimicrobial activities of colistin against Gram-negative pathogens and their persisters. *Commun Biol.* 2022 Jun 21;5(1):613. doi: 10.1038/s42003-022-03561-z. PMID: 35729200; PMCID: PMC9213495.

7. Bioactivity

Biological target:

Octylonium bromide (SP63) is an antimuscarinic used as a spasmolytic agent.

In vitro activity

Otilonium bromide (OB) inhibited the generation of ACh-induced calcium signals in a dose dependent manner (IC₅₀=880 nM). 6. In CHO-M(3) cells, OB inhibited calcium signals induced by ACh, but not ATP. In addition, OB did not inhibit histamine-induced colonic crypt calcium signals. The present studies have demonstrated that OB inhibited M(3) receptor-coupled calcium signals in human colonic crypts and CHO-M(3) cells, but not those induced by stimulation of other endogenous receptor types.

Reference: *Br J Pharmacol.* 2002 Dec;137(7):1134-42. <https://pubmed.ncbi.nlm.nih.gov/12429587/>

In vivo activity

Otilonium bromide showed potent antimicrobial activity against *V.vulnificus* and had a synergistic effect in combination with antibiotics. Field emission transmission electron microscope images revealed that otilonium bromide caused cell division defects in *V.vulnificus*. To investigate its inhibitory action mechanisms, this study examined the effect of otilonium bromide on the expression levels of several proteins crucial for *V.vulnificus* growth, motility, and adhesion. In addition, otilonium bromide significantly decreased the expression levels of outer membrane protein TolCV1, thus inhibiting RtxA1 toxin secretion and substantially reducing *V.vulnificus* cytotoxicity to host cells.

Reference: *Res Microbiol.* 2023 Jan-Feb;174(1-2):103992. <https://pubmed.ncbi.nlm.nih.gov/36122890/>

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.