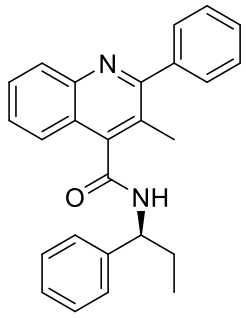
Product data sheet

MedKoo Cat#: 526724 Name: SB-222200 CAS#: 174635-69-9 Chemical Formula: $C_{26}H_{24}N_2O$ Exact Mass: 380.1889 Molecular Weight: 380.49	
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:
SB-222200 is a central nervous system penetrant, potent and selective NK-3 receptor antagonist.

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	10	26.28
DMSO	10	26.28
Ethanol	15	39.42

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.63 mL	13.14 mL	26.28 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. Zhou Y, Yang Z, Ou Y, Cai H, Liu Z, Lin G, Liang S, Hua L, Yan Y, Zhang X, Wu R, Qin A, Hu W, Sun P. Discovery of a selective NLRP3-targeting compound with therapeutic activity in MSU-induced peritonitis and DSS-induced acute intestinal inflammation. Cell Mol Life Sci. 2023 Jul 27;80(8):230. doi: 10.1007/s00018-023-04881-x. PMID: 37498355.
2. Sarau HM, Griswold DE, Bush B, Potts W, Sandhu P, Lundberg D, Foley JJ, Schmidt DB, Webb EF, Martin LD, Legos JJ, Whitmore RG, Barone FC, Medhurst AD, Luttmann MA, Giardina GA, Hay DW. Nonpeptide tachykinin receptor antagonists. II. Pharmacological and pharmacokinetic profile of SB-222200, a central nervous system penetrant, potent and selective NK-3 receptor antagonist. J Pharmacol Exp Ther. 2000 Oct;295(1):373-81. PMID: 10992004.

In vivo study

1. Li SY, Li XF, Hu MH, Shao B, Poston L, Lightman SL, O'Byrne KT. Neurokinin B receptor antagonism decreases luteinising hormone pulse frequency and amplitude and delays puberty onset in the female rat. J Neuroendocrinol. 2014 Aug;26(8):521-7. doi: 10.1111/jne.12167. PMID: 24863620.
2. Hether S, Misono K, Lessard A. The neurokinin-3 receptor (NK3R) antagonist SB222200 prevents the apomorphine-evoked surface but not nuclear NK3R redistribution in dopaminergic neurons of the rat ventral tegmental area. Neuroscience. 2013 Sep 5;247:12-24. doi: 10.1016/j.neuroscience.2013.05.006. Epub 2013 May 11. PMID: 23673279.

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7. Bioactivity

Biological target:

SB-222200 inhibited (125)I-[MePhe(7)]neurokinin B (NKB) binding to Chinese hamster ovary (CHO) cell membranes stably expressing the hNK-3 receptor (CHO-hNK-3R) with a K(i) = 4.4 nM and antagonized NKB-induced Ca(2+) mobilization in HEK 293 cells stably expressing the hNK-3 receptor (HEK 293-hNK-3R) with an IC(50) = 18.4 nM. SB-222200 was selective for hNK-3 receptors compared with hNK-1 (K(i) > 100,000 nM) and hNK-2 receptors (K(i) = 250 nM).

In vitro activity

SB-222200 has potential for alleviating NLRP3-dependent inflammatory diseases. In this study, SB-222200 effectively inhibited NLRP3 inflammasome activation in macrophages while not affecting other inflammasomes. It blocked the NEK7-NLRP3 interaction and NLRP3 oligomerization.

Reference: Cell Mol Life Sci. 2023 Jul 27;80(8):230. https://pubmed.ncbi.nlm.nih.gov/37498355/

In vivo activity

In a rat model of schizophrenia, SB-222200 microinjection prevented changes in the distribution of NK3R in dopaminergic dendrites. However, SB-222200 did not affect the trafficking of NK3R to the nucleus of these neurons. SB-222200 may have future potential in further schizophrenia studies.

Reference: Neuroscience. 2013 Sep 5;247:12-24. https://pubmed.ncbi.nlm.nih.gov/23673279/

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.