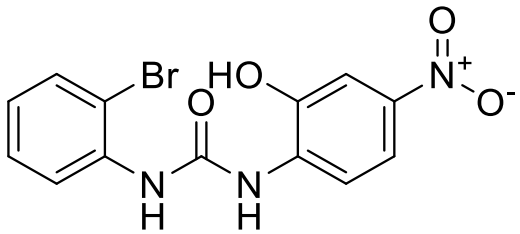
Product data sheet

MedKoo Cat#: 406514 Name: SB225002 CAS#: 182498-32-4 Chemical Formula: $C_{13}H_{10}BrN_3O_4$ Exact Mass: 350.9855 Molecular Weight: 352.14	
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:
SB225002 is a novel and potent microtubule inhibitor and CXCR2 antagonist with potential anticancer activity. SB225002 promotes mitotic catastrophe in chemo-sensitive and -resistant ovarian cancer cells independent of p53 status in vitro. SB225002 induces apoptosis in both wild-type and p53-deficient ovarian cancer (OVCA) cells through alternative mechanisms. SB225002 promotes mitotic catastrophe, as evidenced by the accumulation of mitotic cells with spindle abnormalities, chromosome mis-segregation, multi-polar cell division, multiple nuclei, aneuploidy/polyploidy and subsequent extensive apoptosis.

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	30	85.19
DMSO	30	85.19
Ethanol	10	28.40

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.84 mL	14.20 mL	28.40 mL
5 mM	0.57 mL	2.84 mL	5.68 mL
10 mM	0.28 mL	1.42 mL	2.84 mL
50 mM	0.06 mL	0.28 mL	0.57 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. Goda AE, Sakai T. Molecular insights into the microtubules depolymerizing activity of the IL-8 receptor B antagonist SB225002. Eur Rev Med Pharmacol Sci. 2022 May;26(10):3726-3734. doi: 10.26355/eurrev_202205_28869. PMID: 35647855.
2. Xu M, Jiang H, Wang H, Liu J, Liu B, Guo Z. SB225002 inhibits prostate cancer invasion and attenuates the expression of BSP, OPN and MMP-2. Oncol Rep. 2018 Aug;40(2):726-736. doi: 10.3892/or.2018.6504. Epub 2018 Jun 18. PMID: 29917166; PMCID: PMC6072299.

In vivo study

1. Cao Q, Li B, Wang X, Sun K, Guo Y. Therapeutic inhibition of CXC chemokine receptor 2 by SB225002 attenuates LPS-induced acute lung injury in mice. Arch Med Sci. 2018 Apr;14(3):635-644. doi: 10.5114/aoms.2017.64980. Epub 2017 Jan 6. PMID: 29765453; PMCID: PMC5949915.

2. Bento AF, Leite DF, Claudino RF, Hara DB, Leal PC, Calixto JB. The selective nonpeptide CXCR2 antagonist SB225002 ameliorates acute experimental colitis in mice. J Leukoc Biol. 2008 Oct;84(4):1213-21. doi: 10.1189/jlb.0408231. Epub 2008 Jul 24. PMID: 18653784.

7. Bioactivity

Biological target:

SB225002 inhibits 125I-IL-8 binding to CXCR2 with an IC50 of 22 nM.

In vitro activity

This study provides evidence for the development of SB225002 as a compound to target microtubules dynamics and IL-8 signaling. Following SB225002 washout, the mitotic checkpoint was abrogated, and cell cycle perturbations were gradually restored with induction of cell death. SB225002 activated JNK signaling, which contributed to cell death and restrained polyploidy. SB225002 increased intracellular ROS which played a role in mediating SB225002 cytotoxicity.

Reference: Eur Rev Med Pharmacol Sci. 2022 May;26(10):3726-3734. https://pubmed.ncbi.nlm.nih.gov/35647855/

In vivo activity

SB225002 has treatment potential for LPS-induced acute lung injury. Treatment with SB225002 significantly attenuated LPS-induced lung injury and suppressed the inflammatory responses in damaged lung tissue. Compared to the PBS-treatment group, SB225002 dramatically decreased the lung wet/dry ratio, protein concentration, and infiltration of neutrophils in lung tissue. SB225002 treatment appeared to inhibit inflammatory cytokine production and increase survival time compared to the PBS group.

Reference: Arch Med Sci. 2018 Apr;14(3):635-644. https://pubmed.ncbi.nlm.nih.gov/29765453/

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.