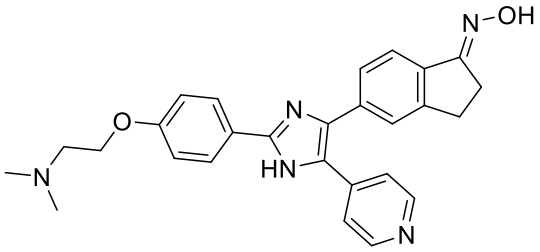
Product data sheet

MedKoo Cat#: 406109 Name: SB-590885 CAS#: 40554-55-4 Chemical Formula: $C_{27}H_{27}N_5O_2$ Exact Mass: 453.2165 Molecular Weight: 453.54	
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-590885 is a novel triarylimidazole that selectively inhibits Raf kinases with more potency towards B-Raf than c-Raf. SB-590885 stabilizes the oncogenic B-Raf kinase domain in an active configuration, which is distinct from the previously reported mechanism of action of the multi-kinase inhibitor, BAY43-9006. Malignant cells expressing oncogenic B-Raf show selective inhibition of mitogen-activated protein kinase activation, proliferation, transformation, and tumorigenicity when exposed to SB-590885 , whereas other cancer cell lines and normal cells display variable sensitivities or resistance to similar treatment.

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	2	4.41
DMSO	3	6.62
Ethanol	0.5	1.10

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.20 mL	11.02 mL	22.05 mL
5 mM	0.44 mL	2.20 mL	4.41 mL
10 mM	0.22 mL	1.10 mL	2.20 mL
50 mM	0.04 mL	0.22 mL	0.44 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. Aldaghi SA, Jalal R. Concentration-Dependent Dual Effects of Ciprofloxacin on SB-590885-Resistant BRAFV600E A375 Melanoma Cells. Chem Res Toxicol. 2019 Apr 15;32(4):645-658. doi: 10.1021/acs.chemrestox.8b00335. Epub 2019 Mar 14. PMID: 30829029.
2. King AJ, Patrick DR, Batorsky RS, Ho ML, Do HT, Zhang SY, Kumar R, Rusnak DW, Takle AK, Wilson DM, Hugger E, Wang L, Karreth F, Lougheed JC, Lee J, Chau D, Stout TJ, May EW, Rominger CM, Schaber MD, Luo L, Lakdawala AS, Adams JL, Contractor RG, Smalley KS, Herlyn M, Morrissey MM, Tuveson DA, Huang PS. Demonstration of a genetic therapeutic index for tumors expressing oncogenic BRAF by the kinase inhibitor SB-590885. Cancer Res. 2006 Dec 1;66(23):11100-5. doi: 10.1158/0008-5472.CAN-06-2554. PMID: 17145850.

In vivo study

Product data sheet

1. Ahnstedt H, Säveland H, Nilsson O, Edvinsson L. Human cerebrovascular contractile receptors are upregulated via a B-Raf/MEK/ERK-sensitive signaling pathway. BMC Neurosci. 2011 Jan 11;12:5. doi: 10.1186/1471-2202-12-5. PMID: 21223556; PMCID: PMC3023719.

7. Bioactivity

Biological target:

SB-590885 is a potent B-Raf inhibitor (Kd = 0.3 nM). It less effectively inhibits c-Raf (Ki = 1.72 nM) and has little effect at 46 other kinases. SB-590885 blocks activation of ERK1/2 and anchorage-independent cell proliferation of melanoma cells with either wild type or V600E B-Raf at nanomolar concentrations.

In vitro activity

In the study, SB-590885 was observed to stabilize the oncogenic B-Raf kinase domain in an active state. Cells expressing oncogenic B-Raf displayed a specific response to SB-590885, inhibiting mitogen-activated protein kinase activation, proliferation, transformation, and tumorigenicity. While these effects were notable in malignant cells expressing oncogenic B-Raf, varying responses were observed in other cancer cell lines and normal cells upon similar treatment.

Reference: Cancer Res. 2006 Dec 1;66(23):11100-5. https://pubmed.ncbi.nlm.nih.gov/17145850/

In vivo activity

When applied to human cerebral arteries in a cultured environment, SB-590885 significantly reduced the contractions mediated by 5-HT_1(B), AT_1, and ET(B) receptors and also led to a substantial reduction in AT_1 receptor immunoreactivity. SB-590885 mitigated the increase in phosphorylated B-Raf expression induced during the culture process.

Reference: BMC Neurosci. 2011 Jan 11;12:5. https://pubmed.ncbi.nlm.nih.gov/21223556/

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.