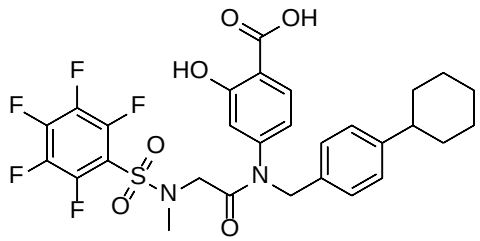
Product data sheet

MedKoo Cat#: 406523 Name: BP-1-102 CAS#: 1334493-07-0 Chemical Formula: $C_{29}H_{27}F_5N_2O_6S$ Exact Mass: 626.1510 Molecular Weight: 626.59	
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:
BP-1-102 is a potent, orally bioavailable and selective STAT3 inhibitor. BP-1-102 binds Stat3 with an affinity (K(D)) of 504 nM, blocks Stat3-phospho-tyrosine (pTyr) peptide interactions and Stat3 activation at 4-6.8 μM, and selectively inhibits growth, survival, migration, and invasion of Stat3-dependent tumor cells. BP-1-102-mediated inhibition of aberrantly active Stat3 in tumor cells suppresses the expression of c-Myc, Cyclin D1, Bcl-xL, Survivin, VEGF, and KrÃ¼ppel-like factor 8, which is identified as a Stat3 target gene that promotes Stat3-mediated breast tumor cell migration and invasion.

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
DMSO	15.0	23.9

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.60 mL	7.98 mL	15.96 mL
5 mM	0.32 mL	1.60 mL	3.19 mL
10 mM	0.16 mL	0.80 mL	1.60 mL
50 mM	0.03 mL	0.16 mL	0.32 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. Jiang X, Tang J, Wu M, Chen S, Xu Z, Wang H, Wang H, Yu X, Li Z, Teng L. BP-1-102 exerts an antitumor effect on the AGS human gastric cancer cell line through modulating the STAT3 and MAPK signaling pathways. Mol Med Rep. 2019 Apr;19(4):2698-2706. doi: 10.3892/mmr.2019.9892. Epub 2019 Jan 24. PMID: 30720080; PMCID: PMC6423579.
2. Wu QY, Cheng Z, Zhou YZ, Zhao Y, Li JM, Zhou XM, Peng HL, Zhang GS, Liao XB, Fu XM. A novel STAT3 inhibitor attenuates angiotensin II-induced abdominal aortic aneurysm progression in mice through modulating vascular inflammation and autophagy. Cell Death Dis. 2020 Feb 18;11(2):131. doi: 10.1038/s41419-020-2326-2. PMID: 32071300; PMCID: PMC7028955.

In vivo study

1. Jiang Z, Huang J, You L, Zhang J. BP-1-102, a STAT3 inhibitor, reduces intracranial aneurysm rupture and suppresses inflammatory responses in a mouse model. J Drug Target. 2021 Mar 8:1-25. doi: 10.1080/1061186X.2021.1895817. Epub ahead of print. PMID: 33682559.
2. Wu QY, Cheng Z, Zhou YZ, Zhao Y, Li JM, Zhou XM, Peng HL, Zhang GS, Liao XB, Fu XM. A novel STAT3 inhibitor attenuates angiotensin II-induced abdominal aortic aneurysm progression in mice through modulating vascular inflammation and autophagy. Cell Death Dis. 2020 Feb 18;11(2):131. doi: 10.1038/s41419-020-2326-2. PMID: 32071300; PMCID: PMC7028955.

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7. Bioactivity

Biological target: BP-1-102 is an inhibitor of transcription factor Stat3 with an IC50 of 6.8 μM.

In vitro activity

AGS and HGC-27 cells were exposed to various concentrations of BP-1-102 to evaluate its effect on the proliferation of GC (gastric cancer) cells using a CCK8 assay. Compared with the control group, BP-1-102 treatment dose-dependently suppressed the proliferation of AGS cells (Fig. 2A) but had no such inhibitory effect on HGC-27 cells (Fig. 2B). Furthermore, the results of the colony formation assays showed that the BP-1-102-treated AGS cells formed smaller and fewer colonies compared with those in the control group. BP-1-102 was less effective towards HGC-27 cells than AGS cells (Fig. 2C and D). These results indicated that BP-1-102 exerted a tumor suppressive role in GC cells lines and that this effect was enhanced by high expression levels of p-STAT3 (Y705).

Reference: Mol Med Rep. 2019 Apr;19(4):2698-2706. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6423579/

In vivo activity

The role of BP-1-102, an oral bioavailable STAT3 inhibitor, in IA (intracranial aneurysms) was investigated. An IA mouse model was constructed by injecting elastase into the cerebrospinal fluid with simultaneous induction of hypertension by deoxycorticosterone acetate (DOCA) implantation. The results showed that the proportion of IA rupture in mice after BP-1-102 administration was significantly reduced, and the survival time was significantly extended. Further research showed that compared with the Vehicle group, the proportion of macrophages infiltrated at the aneurysm and the expression of pro-inflammatory cytokines in the BP-1-102 administration group were significantly reduced.

Reference: J Drug Target. 2021 Mar 8:1-25.
https://www.tandfonline.com/doi/abs/10.1080/1061186X.2021.1895817?journalCode=idrt20

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.