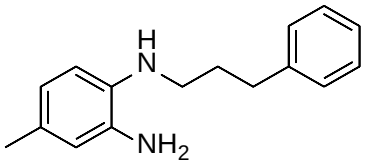
Product data sheet

MedKoo Cat#: 406426 Name: JSH-23 CAS#: 749886-87-1 Chemical Formula: $C_{16}H_{20}N_2$ Exact Mass: 240.1627 Molecular Weight: 240.34	
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:

JSH-23 is a nuclear factor-kappa B (NF-κB) nuclear translocation inhibitor. JSH-23 inhibits LPS and cytokine-induced nuclear translocation of the p65 subunit of NF-kB as analyzed by EMSA and western blot. JSH-23 treatment significantly reversed the nerve conduction and nerve blood flow deficits seen in diabetic animals. Reduction in mechanical pain threshold was also partially corrected by the treatment. Protein expression studies showed that nuclear translocation of p65/p50 subunit was inhibited by JSH-23 treatment in the sciatic nerve. The treatment also lowered the elevated IL-6, TNF-α, cyclo-oxygenase (COX-2) and inducible nitric oxide synthase (iNOS) levels/expression, indicating reduction in the inflammatory damage of the sciatic nerve. Apart from these effects, JSH-23 also increased Nrf2 and hemeoxygenase-1 (HO-1) levels which could imply its potential in increasing the strength of antioxidant defence.

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	25.0	104.02
DMSO	43.0	178.91
DMSO:PBS (pH 7.2) (1:2)	0.30	1.25
Ethanol	15.0	62.41

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	4.16 mL	20.80 mL	41.61 mL
5 mM	0.83 mL	4.16 mL	8.32 mL
10 mM	0.42 mL	2.08 mL	4.16 mL
50 mM	0.08 mL	0.42 mL	0.83 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. Guo Z, Chen W, Dai G, Huang Y. Cordycepin suppresses the migration and invasion of human liver cancer cells by downregulating the expression of CXCR4. Int J Mol Med. 2020 Jan;45(1):141-150. doi: 10.3892/ijmm.2019.4391. Epub 2019 Oct 31. PMID: 31746344; PMCID: PMC6889938.

In vivo study

1. Kumar A, Negi G, Sharma SS. JSH-23 targets nuclear factor-kappa B and reverses various deficits in experimental diabetic neuropathy: effect on neuroinflammation and antioxidant defence. Diabetes Obes Metab. 2011 Aug;13(8):750-8. doi: 10.1111/j.1463-1326.2011.01402.x. PMID: 21447040.

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2. Wang Q, Dong X, Li N, Wang Y, Guan X, Lin Y, Kang J, Zhang X, Zhang Y, Li X, Xu T. JSH-23 prevents depressive-like behaviors in mice subjected to chronic mild stress: Effects on inflammation and antioxidant defense in the hippocampus. Pharmacol Biochem Behav. 2018 Jun;169:59-66. doi: 10.1016/j.pbb.2018.04.005. Epub 2018 Apr 21. PMID: 29684396.

7. Bioactivity

Biological target: JSH-23 inhibits NF-κB transcriptional activity with an IC50 of 7.1 μM in RAW 264.7 cells.

In vitro activity

JSH-23, an inhibitor of the NF-κB pathway, impaired the migration of liver cancer cells, and was found to act synergistically with cordycepin. Furthermore, cordycepin treatment reduced the chemotactic migration ability of liver cancer cells to stromal cell-derived factor 1 (SDF1), which was significantly enhanced following treatment with JSH-23.

Reference: Int J Mol Med. 2020 Jan;45(1):141-150. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6889938/

In vivo activity

The antidepressant-like effects of JSH-23 were investigated in the chronic mild stress (CMS) mouse model. Administration of JSH-23 significantly prevented the decreased sucrose preference in the SPT (sucrose preference test) and prevented the increased immobility time in the FST (forced swimming test) caused by CMS, but had no effect on locomotor activity. Expression of NF-κB p65 protein in the hippocampus was decreased, and elevated levels of IL-6 and TNF-α were reduced, after JSH-23 administration. In addition to its anti-inflammatory effect, JSH-23 treatment increased the expression of SOD and Nrf 2 in the hippocampus, suggesting that it strengthens antioxidant defense.

Reference: Pharmacol Biochem Behav. 2018 Jun;169:59-66.
https://www.sciencedirect.com/science/article/abs/pii/S0091305718300364?via%3Dihub

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.