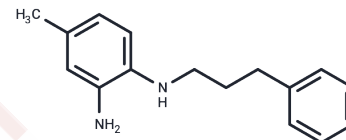


JSH-23

## Chemical Properties

CAS No. :	749886-87-1
Formula:	C <sub>16</sub> H <sub>20</sub> N <sub>2</sub>
Molecular Weight:	240.34
Storage:	Store at low temperature Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



## Biological Description

Description	JSH-23 is an NF-κB inhibitor that inhibits NF-κB transcriptional activity (IC <sub>50</sub> =7.1 μM) but does not affect IκBα degradation. JSH-23 is an antioxidant with anti-inflammatory activity.
Targets(IC <sub>50</sub> )	NF-κB
In vitro	<p><b>METHODS:</b> Bone marrow macrophage BMMs were treated with JSH-23 (0.78-200 μM) for 48-96 h. Cell viability was measured by CCK-8 assay.</p> <p><b>RESULTS:</b> JSH-23 had no detectable toxic effects at concentrations below 50 μM. [1]</p> <p><b>METHODS:</b> Macrophages RAW 264.7 harboring the reporter gene pNF-κB-SEAP-NPT were treated with LPS (1 μg/mL) and JSH-23 (1-30 μM) for 16 days, and SEAP expression was assayed to reflect NF-κB transcriptional activity.</p> <p><b>RESULTS:</b> JSH-23 inhibited LPS-induced SEAP expression in a dose-dependent manner by 23±3% at 3 μM, 68±3% at 10 μM, and 103±4% at 30 μM. JSH-23 inhibited NF-κB transcriptional activity. [2]</p>
In vivo	<p><b>METHODS:</b> To investigate the role in diabetic neuropathy, JSH-23 (1-3 mg/kg) was administered orally to streptozotocin-induced diabetic rats once daily for two weeks.</p> <p><b>RESULTS:</b> JSH-23 treatment significantly reversed nerve conduction and nerve blood flow deficits in diabetic animals. The treatment also partially corrected the reduced mechanical pain threshold. JSH-23 treatment inhibited nuclear translocation of the p65/p50 subunit in the sciatic nerve. [3]</p>
Kinase Assay	Measurement of NF-κB transcriptional activity: Macrophages RAW 264.7 transfected stably with reporter plasmid of pNF-κB-SEAP-NPT are treated with 1 μg/ml LPS and/or sample for 16 hours. As the reporter, SEAP activity in the cell-free culture media is measured as followed. Single cell-derived stable transfectants are plated in 5 ml of T-25 flask, and the media is decanted 24 h later. At this time, cells are washed twice with phosphate-buffered saline, and incubations are initiated by addition of new media. Chemicals are added to the culture medium after 24 h of incubations. Aliquots (25 ml) of medium from a control or chemical-treated cultures are taken at 0, 3, 20, 24, 48, and 72 h, heated at 65°C for 5 min to eliminate the alkaline phosphatase activity, and used immediately or stored at -20°C. Mixtures consisting of dilution buffer (25 ml), assay buffer (97 ml), culture media (25 ml), and 4-methylumbelliferyl phosphate (MUP, 1 mM, 3 ml) in each well of the 96-well plates are incubated for 60 min in the dark at room temperature. Fluorescence emits the product of the SEAP/MUP is measured at 449 nm

## A DRUG SCREENING EXPERT

Kinase Assay	using a 96-well plate fluorometer after excitation at 360 nm.
Cell Research	Macrophages RAW 264.7 are incubated with various concentrations of JSH-23 compound for 24 h. The cells are treated with WST-1 solution and absorbance is measured at 450 nm.(Only for Reference)

### Solubility Information

Solubility	DMSO: 255 mg/mL (1061 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: 16 mg/mL (66.57 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (20.8 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.1608 mL	20.8039 mL	41.6077 mL
5 mM	0.8322 mL	4.1608 mL	8.3215 mL
10 mM	0.4161 mL	2.0804 mL	4.1608 mL
50 mM	0.0832 mL	0.4161 mL	0.8322 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

- Mei L, et al. The Novel Antioxidant Compound JSH-23 Prevents Osteolysis by Scavenging ROS During Both Osteoclastogenesis and Osteoblastogenesis. *Front Pharmacol*. 2021 Sep 9;12:734774.
- Chen J, Liu G, Wang X, et al. Glioblastoma stem cell-specific histamine secretion drives pro-angiogenic tumor microenvironment remodeling. *Cell Stem Cell*. 2022
- Shin HM, et al. Inhibitory action of novel aromatic diamine compound on lipopolysaccharide-induced nuclear translocation of NF-kappaB without affecting IkappaB degradation. *FEBS Lett*. 2004 Jul 30;571(1-3):50-4.
- Lai X, Wang M, Zhu Y, et al. ZnO NPs delay the recovery of psoriasis-like skin lesions through promoting inflammation and keratinocyte apoptosis via nuclear translocation of phosphorylated NF-kB p65 and cysteine deficiency. *Journal of Hazardous Materials*. 2020: 124566
- Kumar A, et al. 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.
- Zhou D, Yang S, Yan H, et al. SC75741, a novel c-Abl inhibitor, promotes the clearance of TDP25 aggregates via ATG5-dependent autophagy pathway. *Frontiers in Pharmacology*. 2021: 2891.
- Kumar A, et al. *Diabetes Obes Metab*. 2011, 13(8), 750-758.
- Xia H, Zhang Z, You F. Inhibiting ACSL1-Related Ferroptosis Restrains Murine Coronavirus Infection. *Viruses*. 2021, 13(12): 2383.
- Song H, Tang X, Li X, et al. HLJ2 Effectively Ameliorates Colitis-Associated Cancer via Inhibition of NF-kB and Epithelial-Mesenchymal Transition[J]. *Drug Design, Development and Therapy*. 2020, 14: 4291.
- Song H, Tang X, Li X, et al. HLJ2 Effectively Ameliorates Colitis-Associated Cancer via Inhibition of NF-kB and Epithelial-Mesenchymal Transition. *Drug Design, Development and Therapy*. 2020, 14: 4291
- Zhang Q, Qian Y, Ren Y, et al. Phenethyl isothiocyanate inhibits metastasis potential of non-small cell lung cancer cells through FTO mediated TLE1 m6A modification. *Acta Pharmacologica Sinica*. 2023: 1-14.
- Lai X, Wang M, Zhu Y, et al. ZnO NPs delay the recovery of psoriasis-like skin lesions through promoting inflammation and keratinocyte apoptosis via nuclear translocation of phosphorylated NF-kB p65 and cysteine deficiency[J]. *Journal of Hazardous Materials*. 2020: 124566.
- Kuang B, Geng N, Yi M, et al. Panaxatriol exerts anti-senescence effects and alleviates osteoarthritis and cartilage repair fibrosis by targeting UFL1. *Journal of Advanced Research*. 2024
- ZnO NPs delay the recovery of psoriasis-like skin lesions through promoting nuclear translocation of p-NFkB p65 and cysteine deficiency in keratinocytes

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