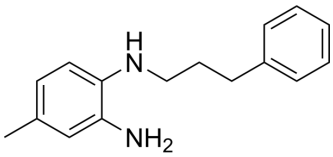
JSH-23

Cat. No.:	HY-13982
CAS No.:	749886-87-1
Molecular Formula:	$C_{16}H_{20}N_2$
Molecular Weight:	240.34
Target:	NF-κB
Pathway:	NF-κB
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 56 mg/mL (233.00 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	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

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (10.40 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.40 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

JSH-23 is an NF-κB inhibitor which inhibits NF-κB transcriptional activity with an IC_{50} of 7.1 μM in lipopolysaccharide (LPS)-stimulated macrophages RAW 264.7. JSH-23 inhibits nuclear translocation of NF-κB p65 without affecting IκBα degradation [1].

IC_{50} & Target

NF-κB

7.1 μM (IC_{50}, in RAW 264.7 cells)

In Vitro

JSH-2 (1-300 μM; 24 hours) at <100 μM does not show significant cytotoxic effects on the RAW 264.7 cells[1].

Nuclear amount of NF-κB p65 is markedly increased upon exposure to LPS for 1 h. Treatment of JSH-23 (30 μM; 1 hours) to

LPS- stimulated RAW 264.7 cells decreases nuclear content of NF-κB p65 in a dose-dependent manner[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[1]

Cell Line:	Macrophages RAW 264.7
Concentration:	1, 3, 10, 30, 100, 300 μM
Incubation Time:	24 hours
Result:	Did not show significant cytotoxic effects at <100 μM.

Western Blot Analysis[1]

Cell Line:	Macrophages RAW 264.7 with LPS-stimulated
Concentration:	30 μM
Incubation Time:	1 hour
Result:	Decreased nuclear content of NF-κB p65 in a dose-dependent manner, corresponding to 49±4% inhibition at 3 μM, 75±7% at 10 μM and 95±8% at 30 μM.

In Vivo

JSH-23 (1 mg/kg, 3 mg/kg; orally administered; daily; for 2 weeks) significantly reverses the nerve conduction and nerve blood flow deficits seen in diabetic rats[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Sprague Dawley diabetic rats (250-270 g)[2]
Dosage:	1 mg/kg, 3 mg/kg
Administration:	Orally administered; daily; for 2 weeks
Result:	Produced significant improvement in motor nerve conduction velocity (MNCV).

CUSTOMER VALIDATION

- Signal Transduct Target Ther. 2021 Apr 24;6(1):167.
- Nat Immunol. 2023 Nov;24(11):1813-1824.
- Sci Immunol. 2022 Jan 21;7(67):eabj5501.
- Sci Transl Med. 2023 Sep 27;15(715):eade3157.
- ACS Nano. 2023 Jan 4.

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REFERENCES

[1]. 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.

[2]. 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.

Caution: Product has not been fully validated for medical applications. For research use only.

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