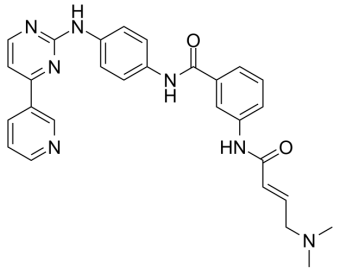
JNK-IN-7

Cat. No.:	HY-15617
CAS No.:	1408064-71-0
Molecular Formula:	$C_{28}H_{27}N_7O_2$
Molecular Weight:	493.56
Target:	JNK
Pathway:	MAPK/ERK Pathway
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 : 33.33 mg/mL (67.53 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.0261 mL	10.1305 mL	20.2610 mL
	5 mM	0.4052 mL	2.0261 mL	4.0522 mL
	10 mM	0.2026 mL	1.0130 mL	2.0261 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: ≥ 2.75 mg/mL (5.57 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.75 mg/mL (5.57 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

JNK-IN-7 is a potent JNK inhibitor with IC_{50} of 1.5, 2 and 0.7 nM for JNK1, JNK2 and JNK3, respectively.

IC_{50} & Target

JNK3	JNK1	JNK2
0.7 nM (IC_{50})	1.5 nM (IC_{50})	2 nM (IC_{50})

In Vitro

JNK-IN-7 is a relatively selective JNK inhibitor in cells. In addition to JNK 1, 2, 3, JNK-IN-7 also binds to IRAK1(IC_{50}=14.1 nM), YSK4 (IC_{50}=4.8 nM), ERK3 (IC_{50}=22 nM), PIK3C3, PIP5K3 and PIP4K2C[1]. Expression of divalent metal-ion transporter 1 (DMT1) in HCT116 is demonstrated to be markedly decreased under stimulation with TNF for 24 and 48 h, while JNK-IN-7 can significantly reverse the decrease. TNF can down-regulate DMT1 expression, while JNK-IN-7 can markedly suppress this function[2].

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

PROTOCOL

Cell Assay [2]

Intestinal epithelial cell line (HCT116) is cultured in DMEM medium. To determine the mechanisms of TNF involved in regulating DMT1 expression, JNK-IN-7 (1 μM), NF-κB inhibitor (BAY 11-7082, 1 μM), and caspase-3/8 inhibitor (Z-DEVD-FMK, 50 μM) are also added into the culture medium. After 48 h of culture, cells are then collected to detect the expression of DMT1 by qRT-PCR[2].

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

CUSTOMER VALIDATION

- J Allergy Clin Immunol. 2019 Oct;144(4):1036-1049.
- Sci Adv. 2020 May 22;6(21):eaaz8521.
- J Exp Clin Cancer Res. 2023 Jul 13;42(1):166.
- Department of Biological Engineering, University of California. 2019 Nov.

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REFERENCES

[1]. Zhang T, et al. Discovery of Potent and Selective Covalent Inhibitors of JNK. Chem Biol. 2012 Jan 27;19(1):140-54.

[2]. Wu W, et al. Divalent metal-ion transporter 1 is decreased in intestinal epithelial cells and contributes to the anemia in inflammatory bowel disease. Sci Rep. 2015 Nov 17;5:16344.

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