

D-JNKI-1

Cat. No.:	HY-P0069
CAS No.:	1445179-97-4
Molecular Formula:	C ₁₆₄ H ₂₈₆ N ₆₆ O ₄₀
Molecular Weight:	3822.44
Sequence:	{d-(DQSRPVQPFLLNLTTPRKPRPPRRRQRKKRG)-NH ₂ ro-Pro-Arg-Arg-Arg-Gln-Arg-Arg-Lys-Lys-Arg-Gly}}-NH ₂
Sequence Shortening:	{d-(Asp-Gln-Ser-Arg-Pro-Val-Gln-Pro-Phe-Leu-Asn-Leu-Thr-Thr-Pro-Arg-Lys-Pro-Arg-P ro-Pro-Arg-Arg-Arg-Gln-Arg-Arg-Lys-Lys-Arg-Gly}}-NH ₂
Target:	JNK
Pathway:	MAPK/ERK Pathway
Storage:	Sealed storage, away from moisture Powder -80°C 2 years -20°C 1 year * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (26.16 mM)
 H₂O : ≥ 50 mg/mL (13.08 mM)
 * "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	0.2616 mL	1.3081 mL	2.6161 mL
	5 mM	0.0523 mL	0.2616 mL	0.5232 mL
	10 mM	0.0262 mL	0.1308 mL	0.2616 mL

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

In Vivo

- Add each solvent one by one: Saline
Solubility: 50 mg/mL (13.08 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: PBS
Solubility: 25 mg/mL (6.54 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (0.65 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (0.65 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (0.65 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	D-JNKI-1 (AM-111) is a highly potent and cell-permeable peptide inhibitor of JNK.
IC₅₀ & Target	JNK
In Vitro	D-JNKI-1 (AM-111; 1 μ M-1 mM) treatment prevents apoptosis and loss of neomycin-exposed hair cells ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	D-JNKI-1 (AM-111; 10 μ M) prevents nearly all hair cell death and permanent hearing loss induced by neomycin ototoxicity in the scala tympani of the guinea pig cochlea. Local delivery of D-JNKI-1 also prevents acoustic trauma-induced permanent hearing loss in a dose-dependent manner ^[1] . D-JNKI-1 (0.3 mg/kg, i.p.) reverses these pathological events in the brain mitochondria of the rat and almost completely abolishes cytochrome c release and PARP cleavage ^[2] . D-JNKI-1 (1 μ g/kg, s.c.) results in a significant decrease in the disease activity index, and reduces the expression of CD4 ⁺ and CD8 ⁺ cells in mice ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration ^[3]	D-JNKI-1 is dissolved in a 0.9% sodium chloride solution for subcutaneous application. Each group (the 1.0% DSS group and the 1.5% DSS group) is randomly subdivided into an intervention group (n = 15) and a control group (n = 15). The mice in the intervention group receive three subcutaneous nuchal administrations of 1 μ g/kg D-JNKI-1 on days 2, 12, and 22. The mice in the control group receive physiological saline subcutaneously as a negative control at the same time points in a comparable stress situation. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
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CUSTOMER VALIDATION

- Nat Commun. 2020 Jan 3;11(1):71.
- Cell Rep. 2021 Feb 9;34(6):108736.
- Oncotarget. 2017 Oct 6;8(54):92864-92879.

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REFERENCES

- [1]. Wang J, et al. A peptide inhibitor of c-Jun N-terminal kinase protects against both aminoglycoside and acoustic trauma-induced auditory hair cell death and hearing loss. J Neurosci. 2003 Sep 17;23(24):8596-607.
- [2]. Zhao Y, et al. The JNK inhibitor D-JNKI-1 blocks apoptotic JNK signaling in brain mitochondria. Mol Cell Neurosci. 2012 Mar;49(3):300-10.
- [3]. Kersting S, et al. The impact of JNK inhibitor D-JNKI-1 in a murine model of chronic colitis induced by dextran sulfate sodium. J Inflamm Res. 2013 May 3;6:71-81.
- [4]. Wang C, et al. Wu-tou decoction attenuates neuropathic pain via suppressing spinal astrocytic IL-1R1/TRAF6/JNK signaling. Oncotarget. 2017 Oct 6;8(54):92864-92879.

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

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