Product Data Sheet

Product Name: D-JNKI-1 (AM-111)
Cat. No.: GC30057

Chemical Properties

Cas. No.	1445179-97-4		
SMILES	Asp-Gln-Ser-Arg-Pro-Val-Gln-Pro-Phe-Leu-Asn-Leu-Thr-Thr-Pro-Arg-Lys-Pro-Arg-Pro-Pro-Arg-Arg-Arg-Gln-Arg-Arg-Lys-Lys-Arg-Gly-NH2		
Formula	$C_{164}H_{286}N_{66}O_{40}$	M.Wt	3822.44
Solubility	Water : ≥ 50 mg/mL (13.08 mM)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	D-JNKI-1 (AM-111)		

Protocol

Animal experiment:

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 μg/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.

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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]. 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.
[3]. 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.
[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.

Background

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D-JNKI-1 is a highly potent and cell-permeable peptide inhibitor of JNK.

D-JNKI-1 (1 μM-1 mM) treatment prevents apoptosis and loss of neomycin-exposed hair cells[1].

D-JNKI-1 (10 μM) 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 μg/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].

[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.

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