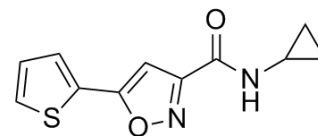


ISX-9

Cat. No.:	HY-12323		
CAS No.:	832115-62-5		
Molecular Formula:	C ₁₁ H ₁₀ N ₂ O ₂ S		
Molecular Weight:	234.27		
Target:	Others		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 37 mg/mL (157.94 mM)
 H₂O : < 0.1 mg/mL (insoluble)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1 mg	5 mg	10 mg
	1 mM		4.2686 mL	21.3429 mL	42.6858 mL
	5 mM		0.8537 mL	4.2686 mL	8.5372 mL
	10 mM		0.4269 mL	2.1343 mL	4.2686 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (10.67 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: 2.5 mg/mL (10.67 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (10.67 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ISX-9 (Isoxazole 9) is a potent inducer of adult neural stem cell differentiation. ISX-9 activates Ca²⁺ influx through both voltage-gated Ca²⁺ channels and NMDA receptors and increases neuroD expression. ISX-9 also induces cardiomyogenic differentiation of Notch-activated epicardium-derived cells (NECs)^{[1][2][3]}.

In Vitro

ISX-9 promotes neurogenesis in vivo, enhancing the proliferation and differentiation of hippocampal subgranular zone

(SGZ) neuroblasts, and the dendritic arborization of adult-generated dentate gyrus neurons. At 2.5-20 μ M, ISX-9 has been shown to dose-dependently trigger neurogenesis and block gliogenesis in adult rat hippocampal stem cells through a calcium-activated signaling pathway dependent on myocyte-enhancer factor 2-dependent gene expression^[1]. Molecular exploration of ISX-9-induced regulation of neurogenesis (via FACS and microarray of SGZ stem and progenitor cells) suggested the involvement of the myocyte-enhancer family of proteins (Mef2)^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

ISX-9 (20 mg/kg; for 12 days; mice) treatment improves hippocampal function. ISX-9 enhances spatial memory ability in the Morris water maze test. ISX-9 enhances hippocampal neurogenesis and memory in vivo, and its effects are reliant on Mef2^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Stem Cell Reports. 2017 Mar 14;8(3):538-547.
- ACS Chem Neurosci. 2018 Dec 19;9(12):3175-3185.
- Materials Today Chemistry 12 (2019) 78e84
- Patent. US20180273906A1.

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REFERENCES

- [1]. Petrik D, et al. Functional and mechanistic exploration of an adult neurogenesis-promoting small molecule. FASEB J. 2012 Aug;26(8):3148-3162.
- [2]. Jay W Schneider, et al. Small-molecule activation of neuronal cell fate. Nat Chem Biol. 2008 Jul;4(7):408-10.
- [3]. Jamie L Russell, et al. Targeting native adult heart progenitors with cardiogenic small molecules. ACS Chem Biol. 2012 Jun 15;7(6):1067-76.

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

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