



# SZABO SCANDIC

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Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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### Lieferung & Zahlungsart

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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

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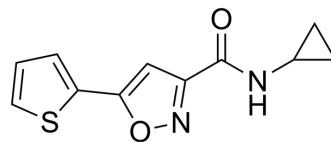
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## ISX-9 (GMP)

Cat. No.:	HY-12323G
CAS No.:	832115-62-5
Molecular Formula:	C <sub>11</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub> S
Molecular Weight:	234.27
Target:	Calcium Channel
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



## BIOLOGICAL ACTIVITY

<b>Description</b>	<p>ISX-9 (Isoxazole 9) is a potent inducer of adult neural stem cell differentiation. ISX-9 activates Ca<sup>2+</sup> influx through both voltage-gated Ca<sup>2+</sup> channels and NMDA receptors and increases neuroD expression. ISX-9 also induces cardiomyogenic differentiation of Notch-activated epicardium-derived cells (NECs)<sup>[1][2][3]</sup>. <b>In Vitro:</b> 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 μM, 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<sup>[1]</sup>.</p> <p>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)<sup>[1]</sup>. <b>In Vivo:</b> 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<sup>[1]</sup>.</p>								
<b>In Vitro</b>	<p>ISX-9 (20 μM; for 7 days) can induce generated cardiac progenitor cells (CPCs) starting from human-induced pluripotent stem cells (hiPSCs)<sup>[1]</sup>.</p> <p>ISX-9 (20 μM) induces CPCs to secrete extracellular vesicles (EV)<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis<sup>[1]</sup></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Cell Line:</td> <td>hiPSCs, CPCs</td> </tr> <tr> <td>Concentration:</td> <td>20 μM</td> </tr> <tr> <td>Incubation Time:</td> <td></td> </tr> <tr> <td>Result:</td> <td>Showed EV were enriched in EV-specific markers Tsg101, CD9, Hsp70, and flotillin-1.</td> </tr> </table>	Cell Line:	hiPSCs, CPCs	Concentration:	20 μM	Incubation Time:		Result:	Showed EV were enriched in EV-specific markers Tsg101, CD9, Hsp70, and flotillin-1.
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Result:	Showed EV were enriched in EV-specific markers Tsg101, CD9, Hsp70, and flotillin-1.								
<b>In Vivo</b>	<p>CPC<sup>ISX-9</sup>-derived EV reversed cardiac remodeling in infarcted mice<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Animal Model:</td> <td>NOD/SCID Mice<sup>[1]</sup></td> </tr> <tr> <td>Dosage:</td> <td>20 μL (CPC<sup>ISX-9</sup>)</td> </tr> </table>	Animal Model:	NOD/SCID Mice <sup>[1]</sup>	Dosage:	20 μL (CPC <sup>ISX-9</sup> )				
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Administration:	CPC <sup>ISX-9</sup> were injected into the myocardium along the border zone.
Result:	(EV-CPC <sup>ISX-9</sup> ) Promoted CM proliferation and angiogenesis and reversed ventricular remodeling in mice post MI.

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## REFERENCES

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- [1]. Wanling Xuan, et al. miRNAs in Extracellular Vesicles from iPS-Derived Cardiac Progenitor Cells Effectively Reduce Fibrosis and Promote Angiogenesis in Infarcted Heart. *Stem Cells Int.* 2019 Nov 11;2019:3726392. doi: 10.1155/2019/3726392. eCollection 2019.
- [2]. Maria Magdalena Barreca, et al. Mesenchymal and Induced Pluripotent Stem Cells-Derived Extracellular Vesicles: The New Frontier for Regenerative Medicine? *Cells.* 2020 May 8;9(5):1163.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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