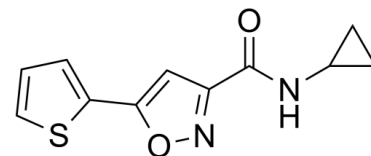


## Data Sheet

|                    |   |
|--------------------|---|
| Product Name:      | ISX-9   |
| Cat. No.:          | CS-5072   |
| 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:            | Others  |
| Pathway:           | Others  |
| Solubility:        | DMSO : ≥ 37 mg/mL (157.94 mM); H <sub>2</sub> O : < 0.1 mg/mL (insoluble) |



### BIOLOGICAL ACTIVITY:

ISX-9 is a small molecule inducer of adult neural stem cell differentiation. Target: At 2.5-20  $\mu$ 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. ISX-9 administered at 20 mg/kg for 12 days to mice has been reported to improve hippocampal function as evidenced by enhanced spatial memory ability in the Morris water maze test.

### PROTOCOL (Extracted from published papers and Only for reference)

Cell assay [1] Arc+ and cFos+ cells were quantified in the GC layer, while Ki67+, BrdU+, DCX+, and YFP+ cells, YFP+ neurons, and nestin-GFP+ Type-1 and Type-2 cells were quantified in the SGZ. While main figures present data as percentages. Unpaired t tests were used for statistical analysis. Dendritic and somatic analysis of DCX+ neurons was performed using the NeuroLucida software with unbiased systematic random sampling of the visual field. Eighteen DCX+ neurons from both groups (3 neurons/brain) were selected for analysis of the dendritic trees and neuronal soma ( $\times 40$  objective). Data were analyzed with unpaired t tests. Animal administration [1] Mice were given a disubstituted isoxazole, Isx-9, or its vehicle, Isx-9 was discovered from a NeuroD/GluR2-luciferase screening of a small molecule library owned by UTSW. After several isoforms of disubstituted isoxazoles were identified, side-chain modification showed that an isoxazole with N-cyclopropyl and 5-thiopen (Isx-9) had fast pharmacokinetics and increased activity in transgenic Nkx2.5-luciferase reporter mice. The Isx-9 used for this present work was synthesized by Omm Scientific. For in vivo administration, Isx-9 was prepared as 2 mg/ml of 30% Veh in sterile milliQ-purified H<sub>2</sub>O. Veh (v/v) or Isx-9 (20 mg/kg) was injected intraperitoneally in 3 different in vivo paradigms to measure different aspects of Isx-9's effects (paradigms are depicted in figures that accompany data). To assess acute (1 d) effects of Isx-9, mice were given a single injection of Veh or Isx-9 and killed 10, 30, or 60 min later for mass spectrometry (MS) or 12 d later for IHC. To assess the effects of repeated (7 d) Isx-9, mice were given a single daily injection (5 PM) of Veh or Isx-9 for 7 d and killed 1, 12, 30, or 60 d after the last injection. This was used for IHC, locomotion, fluorescent-activated cell sorting (FACS), microarray, quantitative PCR (qPCR), and inducible transgenic analyses.

### 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.

### CAIndexNames:

3-Isloxazolecarboxamide, N-cyclopropyl-5-(2-thienyl)-

### SMILES:

O=C(C1=NOC(C2=CC=CS2)=C1)NC3CC3

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

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