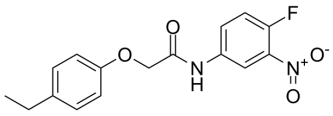
SJ000291942

Cat. No.:	HY-112331
CAS No.:	425613-09-8
Molecular Formula:	$C_{16}H_{15}FN_2O_4$
Molecular Weight:	318
Target:	TGF-β Receptor
Pathway:	TGF-beta/Smad
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 150 mg/mL (471.70 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	3.1447 mL	15.7233 mL	31.4465 mL
	5 mM	0.6289 mL	3.1447 mL	6.2893 mL
	10 mM	0.3145 mL	1.5723 mL	3.1447 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.86 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.86 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SJ000291942 is an activator of the canonical bone morphogenetic proteins (BMP) signaling pathway. BMPs are members of the transforming growth factor beta (TGFβ) family of secreted signaling molecules.

IC_{50} & Target

BMP[1]

In Vitro

Embryos treated with SJ000291942 display the most severe ventralization and SJ000291942 is also the most potent. SJ000291942 also causes more mortality, and at lower doses than controls and the other two compounds. This demonstrates our compounds cause ventralization of embryos consistent with increased BMP signaling activity. SJ000291942 causes an increase in bmp2b and szl expression. Zebrafish assays suggest that SJ000291942 activates the

canonical BMP signaling pathway. To extend these observations, immunoblotting of protein lysates from C33A-2D2 cells stimulated with SJ000291942 at different times is performed. SJ000291942 activates phosphorylation of SMAD1/5/8 in serum-free medium. Like in zebrafish embryos, SJ000291942 is most active. SJ000291942 induces p-SMAD1/5/8 maximally at 1hr of treatment. Immunoblotting analysis of lysates from C33A-2D2 treated with SJ000291942 reveals clear induction of the phosphorylated Extracellular Signal-regulated protein Kinase, ERK1/2 (P-ERK1/2) by SJ000291942. The highest dose (100 and 300ng) BMP4 treatments generate a gene expression signature most similar to osteoblast expression. Low dose (10ng) BMP4 treatment aligns closely with 25μM compound 3 treatment and with 25μM SJ000291942[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Biochim Biophys Acta Gen Subj. 29 October 2021, 130046.
- Prostate. 2021 Sep 23.
- Research Square Preprint. 2023 May 17.

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REFERENCES

[1]. Genthe JR, et al. Ventromorphins: A New Class of Small Molecule Activators of the Canonical BMP Signaling Pathway. ACS Chem Biol. 2017 Sep 15;12(9):2436-2447.

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