

SJ000291942

## Chemical Properties

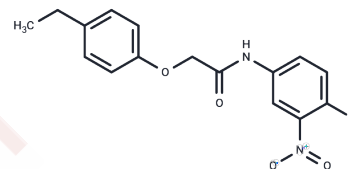
CAS No. : 425613-09-8

Formula: C<sub>16</sub>H<sub>15</sub>FN<sub>2</sub>O<sub>4</sub>

Molecular Weight: 318.3

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year



## Biological Description

Description	SJ000291942 is an activator of the canonical bone morphogenetic proteins (BMP) signaling pathway.
Targets(IC50)	TGF-beta/Smad
In vitro	SJ000291942 is the most potent compound in causing severe ventralization in embryos, displaying higher mortality rates at lower doses compared to controls and two other compounds, indicating its strong induction of ventralization through enhanced BMP signaling activity. It elevates bmp2b and szl expression levels, suggesting activation of the canonical BMP signaling pathway in zebrafish assays. Further, immunoblotting experiments on C33A-2D2 cell lysates treated with SJ000291942 show its ability to activate SMAD1/5/8 phosphorylation within 1 hour in a serum-free medium, mirroring its high activity observed in zebrafish. Additionally, SJ000291942 significantly induces phosphorylation of Extracellular Signal-regulated Kinase, ERK1/2 (P-ERK1/2). High doses of BMP4 treatments (100 and 300ng) result in a gene expression profile similar to that of osteoblasts, while a low dose (10ng) of BMP4 closely matches the effects observed with 25µM of both compound 3 and SJ000291942 treatments.

## Solubility Information

Solubility	DMSO: 60 mg/mL (188.5 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1417 mL	15.7085 mL	31.4169 mL
5 mM	0.6283 mL	3.1417 mL	6.2834 mL
10 mM	0.3142 mL	1.5708 mL	3.1417 mL
50 mM	0.0628 mL	0.3142 mL	0.6283 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

### Reference

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.

Qin X, Fu L, Li C, et al. Optimized inner ear organoids for efficient hair cell generation and ototoxicity response modeling. Science China Life Sciences. 2025: 1-15.

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