**Product Data Sheet**

**SJ000291942**

- **Cat. No.:** HY-112331
- **CAS No.:** 425613-09-8
- **Molecular Formula:** C₁₆H₁₅FN₂O₄
- **Molecular Weight:** 318.3
- **Target:** TGF-β Receptor
- **Pathway:** TGF-beta/Smad
- **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: ≥150 mg/mL (471.25 mM)

*“≥” means soluble, but saturation unknown.*

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mg</td>
<td>3.1417 mL</td>
</tr>
<tr>
<td>5 mg</td>
<td>0.6283 mL</td>
</tr>
<tr>
<td>10 mg</td>
<td>0.3142 mL</td>
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</table>

Preparing Stock Solutions

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

### 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.

**IC₅₀ & 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].

REFERENCES


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