SC-560

Cat. No.: HY-59105
CAS No.: 188817-13-2
Molecular Formula: C₁₇H₁₂ClF₃N₂O
Molecular Weight: 352.74
Target: COX
Pathway: Immunology/Inflammation
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: ≥ 100 mg/mL (283.49 mM)
H₂O: < 0.1 mg/mL (insoluble)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>Mass of 1 mg</th>
<th>Mass of 5 mg</th>
<th>Mass of 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>2.8349 mL</td>
<td>14.1747 mL</td>
<td>28.3495 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.5670 mL</td>
<td>2.8349 mL</td>
<td>5.6699 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.2835 mL</td>
<td>1.4175 mL</td>
<td>2.8349 mL</td>
</tr>
</tbody>
</table>

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: ≥ 3 mg/mL (8.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3 mg/mL (8.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
SC-560 is a potent and selective COX-1 inhibitor with an IC₅₀ of 9 nM.

IC₅₀ & Target
<table>
<thead>
<tr>
<th>COX-1</th>
<th>COX-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 nM (IC₅₀)</td>
<td>6.3 μM (IC₅₀)</td>
</tr>
</tbody>
</table>

Preincubation of COX-1 with SC-560 inhibits the conversion of arachidonic acid to PGE2 in a concentration-dependent manner. The IC₅₀ of SC-560 for COX-2 is 6.3 μM, nearly 1,000-fold higher than with COX-1[1]. SC-560
shows a dose and time dependent inhibitory effect on HCC cell growth. SC-560 also inhibits colony formation in soft agar and induces apoptosis in HCC cells in a dose-dependent manner. Moreover, SC-560 decreases the levels of the anti-apoptotic proteins survivin and XIAP and activates caspase 3 and 7 in a dose and time dependent fashion[2].

**In Vivo**

Oral dosing with either 10 or 30 mg/kg SC-560 1 hour before assay completely inhibits ionophore-stimulated TxB2 production, indicating that SC-560 is orally bioavailable and inhibits COX-1 in vivo[1]. SC-560 extensively distributes into rat tissues, and has a CL approaching hepatic plasma flow. The drug displays low less than 15% and formulation dependent bioavailability after oral administration and demonstrates kidney toxicity[3].

**PROTOCOL**

**Cell Assay**[2]

HuH-6 and HA22T/VGH cells (5000/well) are treated with various concentrations of SC-560 (5, 10, 25, 50, 100, 200 μM) and cultured for 72 h. At the end of treatment, cell viability is assessed by MTS assay[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**Animal Administration**[3]

Rats: The pharmacokinetics of SC-560 is studied in Sprague-Dawley rats after a single intravenous (i.v.) and oral dose (10 mg/kg) in polyethylene glycol (PEG) 600 and a single oral dose (10 mg/kg) in 1% methylcellulose (MC). Serial blood samples are collected via a catheter inserted in the right jugular vein and serum samples are analysed for SC-560 using reverse phase HPLC. After oral administration of SC-560 in PEG, urine is also collected for 24 h and analyzed for urinary sodium, chloride, and potassium as well as NAG[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**REFERENCES**


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

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