Hispidulin

Cat. No.: HY-N1950  
CAS No.: 1447-88-7

Molecular Formula: C₁₆H₁₂O₆
Molecular Weight: 300.26
Target: Pim
Pathway: JAK/STAT Signaling

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: 62.5 mg/mL (208.15 mM; Need ultrasonic)

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>Mass (mL) 1 mg</th>
<th>Mass (mL) 5 mg</th>
<th>Mass (mL) 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>3.3304 mL</td>
<td>16.6522 mL</td>
<td>33.3045 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.6661 mL</td>
<td>3.3304 mL</td>
<td>6.6609 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.3330 mL</td>
<td>1.6652 mL</td>
<td>3.3304 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: ≥ 2.08 mg/mL (6.93 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
   Solubility: ≥ 2.08 mg/mL (6.93 mM); Clear solution

3. Add each solvent one by one: 10% DMSO >> 90% corn oil  
   Solubility: ≥ 2.08 mg/mL (6.93 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**
Hispidulin is a natural flavone with a broad spectrum of biological activities. Hispidulin is a Pim-1 inhibitor with an IC₅₀ of 2.71 μM.

**IC₅₀ & Target**
IC₅₀: 2.71 μM (Pim-1)[¹]

**In Vitro**
Hispidulin induces cell death in a dose- and time-dependent manner in HepG2 cells. Hispidulin induces apoptosis through mitochondrial dysfunction, which is characterized by decreased Bcl-2/Bax ratio, disrupted mitochondrial membrane.
potential and increased release of cytochrome C and activated caspase-3[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| In Vivo                                                                 | Hispidulin shows significant inhibitory effect on mouse tumor size[2], Hispidulin treatment effectively prevents ovariectomy-induced body weight loss and attenuates ovariectomy-induced bone loss. Hispidulin treatment also decreases trabecular spacing in ovariectomy mice[3]. Intraperitoneally administering hispidulin (10 or 50mg/kg) to rats 30 min before intraperitoneally injecting kainic acid (15mg/kg) increases seizure latency and decreases seizure score. In addition, hispidulin substantially attenuates kainic acid-induced hippocampal neuronal cell death, and this protective effect is accompanied by the suppression of microglial activation and the production of proinflammatory cytokines such as interleukin-1β, interleukin-6, and tumor necrosis factor-α in the hippocampus[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

| PROTOCOL                                                               | HepG2 cells are treated with different concentrations of hispidulin (50, 100, 200μM) for 24, 48 and 72 h. Following treatment, cells are further incubated with MTT reagents at 37°C for 4 h before DMSO is added, to dissolve formazan crystals, and absorbance is measured at 570 nm in a microplate reader[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
|                                                                      | Mice: Tumor are established in mice. Mice are treated with DMSO or Hispidulin at a dosage of 10, 20 or 40mg/kg/day for 35 days. The body weight of tumor-bearing mice is recorded every week and tumor volume is calculated [2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

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REFERENCES


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