**J-147**

Cat. No.: HY-13779  
CAS No.: 1146963-51-0  
Molecular Formula: \( \text{C}_{18}\text{H}_{17}\text{F}_{3}\text{N}_{2}\text{O}_{2} \)  
Molecular Weight: 350.34  
Target: Monoamine Oxidase; Dopamine Transporter  
Pathway: Neuronal 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: ≥ 100 mg/mL (285.44 mM)  
H\(_2\)O: < 0.1 mg/mL (insoluble)  
* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Mass</th>
<th>Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td></td>
<td></td>
<td>2.8544 mL</td>
<td>14.2718 mL</td>
<td>28.5437 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td></td>
<td>0.5709 mL</td>
<td>2.8544 mL</td>
<td>5.7087 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td></td>
<td>0.2854 mL</td>
<td>1.4272 mL</td>
<td>2.8544 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 (8.56 mM); Clear solution  
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
   Solubility: 3 mg/mL (8.56 mM); Suspended solution; Need ultrasonic  
3. Add each solvent one by one: 10% DMSO >> 90% corn oil  
   Solubility: ≥ 3 mg/mL (8.56 mM); Clear solution

**BIological Activity**

**Description**  
J-147 is an exceptionally potent, orally active, neuroprotective agent for cognitive enhancement. J-147 can readily pass the blood brain barrier (BBB)[1]. J-147 can inhibit monoamine oxidase B (MAO B) and the dopamine transporter with EC\(_{50}\) values of 1.88 \(\mu\)M and 0.649 \(\mu\)M, respectively[2]. J-147 has potential for the treatment of Alzheimer’s disease (AD)[3].
J-147 promotes HT22 and primary cell survival in a dose-dependent manner (EC₅₀ value range of 0.06-0.115 μM) [2].

In Vitro

J-147 (diet is prepared by the addition of J-147 at 200ppm; 6 months) enhances memory and dendritic spine number in old mice[4]. The half life (t₁/₂) of J-147 is calculated at 1.5 hrs in plasma and 2.5 hrs in brain (per oral (PO) administration at a single dose of 20 mg/kg)[2].

Animal Model: 24 male C57Bl/6 mice aged 24 months; using 8 month-old mice as controls[4]
Dosage: 200 ppm
Administration: The diet was prepared by the addition of 200ppm; 6 months
Result: While both young and old animals recognized when an object was moved a large distance (135 degrees), a reduction in the recognition index (RI) in aged mice was observed when the object was moved a smaller distance of 45 degrees. The reduction in the RI was reversed upon treatment with J147.

REFERENCES