MDL-28170

Cat. No.: HY-18236  
CAS No.: 88191-84-8  
Molecular Formula: C₂₂H₂₆N₂O₄  
Molecular Weight: 382.45  
Target: Proteasome  
Pathway: Metabolic Enzyme/Protease  
Storage: Powder -20°C 3 years  
In solvent -20°C 6 months  
-80°C 1 month

SOLVENT & SOLUBILITY

In Vitro  
DMSO : 30 mg/mL (78.44 mM; Need ultrasonic and warming)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass (mg)</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>2.6147 mL</td>
<td>13.0736 mL</td>
<td>26.1472 mL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.5229 mL</td>
<td>2.6147 mL</td>
<td>5.2294 mL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.2615 mL</td>
<td>1.3074 mL</td>
<td>2.6147 mL</td>
<td></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: ≥ 2.25 mg/mL (5.88 mM); Clear solution  
2. Add each solvent one by one: 10% DMSO >> 90% corn oil  
   Solubility: ≥ 2.25 mg/mL (5.88 mM); Clear solution

BIOLOGICAL ACTIVITY

Description  
MDL-28170 (Calpain Inhibitor III) is a potent, selective and membrane-permeable cysteine protease inhibitor of calpain that rapidly penetrates the blood-brain barrier following systemic administration[1][2]. MDL-28170 also block γ-secretase[4].

IC₅₀ & Target  
Calpain[1].

In Vitro  
MDL-28170 significantly and time-dependently improves the recovery of synaptic responses in hippocampal slices following prolonged, moderate hypoxia without hypoxic depolarization[1]. MDL-28170 dose-dependently inhibits brain cysteine proteinase activity (in vitro Kᵢ = 0.01 μM)[2].
In Vivo

Treatment with MDL-28170 (50 mg/kg, i.p.) completely prevents the striatal damage in four animals in each of the two treatment groups. The numbers of necrotic neurons are reduced by 85% and 68% in animals in which MDL-28170 injections are initiated at 0.5 and 3 h of recirculation, respectively[2].

MDL-28170 (30 mg/kg, i.p.) reduces the functional and structural deterioration of corpus callosum following fluid percussion injury[3].

MDL-28170 (10 mg/kg, i.p.) significantly improves nerve function parameters in diabetic rats. MDL-28170 (3 and 10 mg/kg, i.p.) improves nociceptive behavior in diabetic rats[5].

REFERENCES


