Morroniside

Cat. No.: HY-N0532
CAS No.: 25406-64-8
Molecular Formula: C₁₇H₂₆O₁₁
Molecular Weight: 406.38
Target: MMP; Pyroptosis; Apoptosis
Pathway: Metabolic Enzyme/Protease; Apoptosis; 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 (246.08 mM; Need ultrasonic)
H₂O: 50 mg/mL (123.04 mM; Need ultrasonic)

Preparation of Stock Solutions

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>2.4608 mL</td>
<td>12.3038 mL</td>
<td>24.6075 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.4922 mL</td>
<td>2.4608 mL</td>
<td>4.9215 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.2461 mL</td>
<td>1.2304 mL</td>
<td>2.4608 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 (5.12 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.12 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.12 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Morroniside has neuroprotective effect by inhibiting neuron apoptosis and MMP2/9 expression.

IC₅₀ & Target

<table>
<thead>
<tr>
<th>IC₅₀ &amp; Target</th>
<th>MMP2</th>
<th>MMP9</th>
</tr>
</thead>
</table>

In Vivo
Morroniside reduces the expression of MMP2 and MMP9 in an I/R injury model. Treatment with Morroniside significantly reduces I/R-associated neuron apoptosis in a dose dependent manner. The results demonstrate that active caspase3 and
Bax are significantly upregulated in the model group compared with the control group, while Bcl2 is significantly downregulated. The expression of active caspase3 and Bax is significantly downregulated by Morroniside treatment in a dose-dependent manner, while the expression of Bcl2 is significantly upregulated\[^1\]. Morroniside has an ameliorative effect on diabetes-induced alterations such as oxidative stress, inflammation, and apoptosis in the liver of type 2 diabetic db/db mice\[^2\].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### PROTOCOL

**Animal Administration\[^1\]**

Rats\[^1\]

A total of 50 adult male Sprague Dawley rats (age, 7-8 weeks; weight, 260-280 g) are used. Rats are randomly assigned into five groups (n=10 in each). Rats in the control group undergo sham surgery. All other rats undergo suture occluded surgery, with a 0.26 mm nylon monofilament inserted through the right common carotid artery and are divided into groups as follows: The cerebral I/R injury model group (model), no treatment; low dose group, 30 mg/kg/day Morroniside by gavage; moderate dose group, 90 mg/kg/day Morroniside by gavage; high dose group, 270 mg/kg/day Morroniside by gavage. Rats in the control and model groups receive an equal volume of normal saline\[^1\].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### REFERENCES

