Manidipine dihydrochloride

Cat. No.: HY-17403
CAS No.: 89226-75-5
Molecular Formula: C₃₅H₄₀Cl₂N₄O₆
Molecular Weight: 683.62
Target: Calcium Channel
Pathway: Membrane Transporter/Ion Channel; 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: 50 mg/mL (73.14 mM; Need ultrasonic)

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>Mass (1 mg)</th>
<th>Mass (5 mg)</th>
<th>Mass (10 mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>1.4628 mL</td>
<td>7.3140 mL</td>
<td>14.6280 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.2926 mL</td>
<td>1.4628 mL</td>
<td>2.9256 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.1463 mL</td>
<td>0.7314 mL</td>
<td>1.4628 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: ≥ 2.5 mg/mL (3.66 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (3.66 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Manidipine dihydrochloride (CV-4093) is a dihydropyridine compound and a calcium channel blocker for Ca²⁺ current with IC₅₀ of 2.6 nM. IC₅₀ value: 2.6 nM
Target: calcium channel
Manidipine dihydrochloride is described to block T-type Ca²⁺ channels specifically and is also described to have a high selectivity for the vasculature, presenting negligible cardiodepression as compared to other Ca²⁺ channel antagonists. Manidipine is also described to not significantly affect norepinephrine levels, suggesting a lack of sympathetic activation with this compound. Manidipine reduces pro-inflammatory cytokines secretion in human endothelial cells and macrophages. Manidipine, unlike other third-generation dihydropyridine derived drugs, blocks T-type calcium channels present in the efferent glomerular arterioles, reducing intraglomerular pressure and microalbuminuria.
REFERENCES


