Nizatidine

Cat. No.: HY-B0310
CAS No.: 76963-41-2
Molecular Formula: \(C_{12}H_{21}N_{5}O_{2}S_{2}\)
Molecular Weight: 331.46
Target: Histamine Receptor
Pathway: GPCR/G Protein; Immunology/Inflammation; 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 (150.85 mM)
H\(_2\)O: 20 mg/mL (60.34 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>3.017 mL</td>
<td>15.0848 mL</td>
<td>30.1696 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td>0.6034 mL</td>
<td>3.0170 mL</td>
<td>6.0339 mL</td>
<td></td>
</tr>
<tr>
<td>10 mM</td>
<td>0.3017 mL</td>
<td>1.5085 mL</td>
<td>3.0170 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: ≥ 3.5 mg/mL (10.56 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 3.5 mg/mL (10.56 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3.5 mg/mL (10.56 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**

Nizatidine is a histamine H\(_2\) receptor antagonist with low toxicity that inhibits gastric acid secretion. Target: Histamine H\(_2\) Receptor

Nizatidine, a selective histamine H\(_2\)-receptor antagonist, is a potent inhibitor of gastric acid secretion, with IC\(_{50}\) of 0.9 nM. Nizatidine exhibits maximal inhibition of gastric acid in rats within the first hour of drug administration, with EC\(_{50}\) of 1.383 μmol/kg [1]. Nizatidine also reversibly inhibits acetylcholinesterase (AChE), with
IC50 of 6.7 μM, and the inhibition is noncompetitive, with a Ki value of 7.4 μM. Nizatidine (0.3-3 mg/kg, i.v.) significantly increases the motor index of gastrointestinal (GI) motility in a dose-dependent manner. Nizatidine inhibits gastric acid secretion with ED50 and ED90 of 0.18 and 3.22 mg/kg in dogs, and 2.94 and 19.6 mg/kg in rats, respectively [2].

REFERENCES
