Phenylbutazone

Cat. No.: HY-B0230
CAS No.: 50-33-9
Molecular Formula: C₁₉H₂₀N₂O₂
Molecular Weight: 308.37
Target: COX
Pathway: 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 (324.29 mM)
H₂O: < 0.1 mg/mL (insoluble)
* "≥" means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<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></td>
<td>3.2429 mL</td>
<td>16.2143 mL</td>
<td>32.4286 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td>0.6486 mL</td>
<td>3.2429 mL</td>
<td>6.4857 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td>0.3243 mL</td>
<td>1.6214 mL</td>
<td>3.2429 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 (8.11 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.11 mM); Clear solution

BIOLOGICAL ACTIVITY

Phenylbutazone is used as a non-steroidal anti-inflammatory agent for the treatment of chronic pain, including the symptoms of arthritis. Target: Others

Phenylbutazone was originally made available for use in humans for the treatment of rheumatoid arthritis and gout in 1949. However, when combined with paracetamol and many other household painkillers even in the smallest doses can cause irreversible liver degradation proving fatal in many cases. It is no longer approved, and therefore not marketed, for any human use in the United States. In the UK it is used to treat ankylosing spondylitis, but only when other therapies are unsuitable. Phenylbutazone may be administered orally (via paste, powder or feed-in) or intravenously. It should not be given intramuscularly or injected in any place other
than a vein, as it can cause tissue damage. Tissue damage and edema may also occur if the drug is injected repetitively into the same vein. Phenylbutazone should be administered only under the advice of a veterinarian.

<table>
<thead>
<tr>
<th>IC₅₀ &amp; Target</th>
<th>COX-2</th>
<th>COX-1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.1 μM (IC₅₀)</td>
<td>3.7 μM (IC₅₀)</td>
</tr>
</tbody>
</table>

REFERENCES