Piracetam

Cat. No.: HY-B0585
CAS No.: 7491-74-9
Molecular Formula: C₆H₁₀N₂O₂
Molecular Weight: 142.16
Target: iGluR
Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:
- Powder: -20°C 3 years
- Powder: 4°C 2 years
- In solvent: -80°C 6 months
- In solvent: -20°C 1 month

**SOLVENT & SOLUBILITY**

**In Vitro**

DMSO : ≥ 100 mg/mL (703.43 mM)
H₂O : ≥ 50 mg/mL (351.72 mM)

*"≥" means soluble, but saturation unknown.*

Preparation of 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>7.0343 mL</td>
<td>35.1716 mL</td>
<td>70.3433 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>1.4069 mL</td>
<td>7.0343 mL</td>
<td>14.0687 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.7034 mL</td>
<td>3.5172 mL</td>
<td>7.0343 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 (17.59 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (17.59 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**

Piracetam (UCB-6215) is a cyclic derivative of the neurotransmitter gamma-aminobutyric acid (GABA), used in treatment of a wide range of cognitive disorders.

**In Vitro**

Piracetam (UCB-6215) is able to significantly decrease the fusogenic and destabilising effect of Abeta 29-42, in a concentration-dependent manner. Preincubation of piracetam, at a piracetam/peptide ratio of 960, during 20 min before the addition of Abeta 29-42 prevents almost completely the mixture of the two fluorescent probes. Preincubation of piracetam with lipids prevents almost completely the release of calcein induced by the peptide in a...
**In Vivo**

Piracetam (UCB-6215) (< 1.0 mM) preincubated with brain membranes enhances membrane fluidity in aged mice, rats and humans, as indicated by decreased anisotropy of the membrane-bound fluorescence probe 1,6-diphenyl-1,3,5-hexatriene (DPH). Piracetam (UCB-6215) (300 mg/kg once daily) significantly increases membrane fluidity in some brain regions of young and aged rats, but has no measurable effect on membrane fluidity in the young rats\[^2\]. Piracetam (UCB-6215) (300 mg/kg daily for 6 weeks) improves active avoidance learning in the aged rats only and elevates membrane fluidity in all brain regions except the cerebellum in the aged rats. Piracetam (UCB-6215) (300 mg/kg daily for 6 weeks) also improves NMDA receptor density in the hippocampus and on muscarinic cholinergic receptor densities in the frontal cortex and the striatum and to a lesser extent in the hippocampus of rats\[^3\].

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

**REFERENCES**

