GTS-21 dihydrochloride

Cat. No.: HY-14564A
CAS No.: 156223-05-1
Molecular Formula: C₁₉H₂₂Cl₂N₂O₂
Molecular Weight: 381.3
Target: nAChR
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
- H₂O : 50 mg/mL (131.13 mM; Need ultrasonic)
- DMSO : 16.5 mg/mL (43.27 mM; Need ultrasonic and warming)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent</th>
<th>Concentration</th>
<th>Mass (1 mg)</th>
<th>Mass (5 mg)</th>
<th>Mass (10 mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mM</td>
<td></td>
<td></td>
<td>2.6226 mL</td>
<td>13.1130 mL</td>
<td>26.2261 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td></td>
<td>0.5245 mL</td>
<td>2.6226 mL</td>
<td>5.2452 mL</td>
</tr>
<tr>
<td>1 mM</td>
<td></td>
<td></td>
<td>0.2623 mL</td>
<td>1.3113 mL</td>
<td>2.6226 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 (6.56 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.56 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.56 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
GTS-21 dihydrochloride is a selective α7 nicotinic acetylcholine receptor agonist, has recently been established as a promising treatment for inflammation. Target: nAChR

in vitro: GTS-21 is one of the most potent α7nAChR agonists, has been reported to attenuate pro-inflammatory cytokine production, improve outcomes in sepsis models, pancreatitis, and ischemia-reperfusion injury, and inhibit the production of endotoxin-induced TNF in lung tissue. In addition, recent studies have demonstrated that GTS-21 inhibits the activities of endothelial cells and monocyte.
macrophages, as well as the secretion of pro-inflammatory cytokines in peripheral blood samples, by regulating the JAK2-STAT3 pathway. [1] In vivo: In septic animals, GTS-21 significantly ameliorated GI motility, lowered systemic and colonic levels of IL-6, decreased colonic permeability, and decreased the number of positive cultures obtained from blood and mesenteric lymph nodes. Splenectomy prevented animals from developing sepsis-induced ileus. Chrna7 mice displayed a more severe septic phenotype, whereas GTS-21 remarkably was also beneficial in these animals. [2]

REFERENCES
