Liquiritin

Cat. No.: HY-N0376
CAS No.: 551-15-5
Molecular Formula: C₂₁H₂₂O₉
Molecular Weight: 418.39
Target: Reactive Oxygen Species
Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
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 : 150 mg/mL (358.52 mM; Need ultrasonic)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concentration</td>
<td>1 mg</td>
</tr>
<tr>
<td></td>
<td>1 mM</td>
<td>2.3901 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.4780 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.2390 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 (5.98 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.98 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.98 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Liquiritin, a flavonoid isolated from Glycyrrhiza, is a potent and competitive AKR1C1 inhibitor with IC₅₀ values of 0.62 μM, 0.61 μM, and 3.72μM for AKR1C1, AKR1C2 and AKR1C3, respectively. Liquiritin efficiently inhibits progesterone metabolism mediated by AKR1C1 in vivo[1]. Liquiritin acts as an antioxidant and has neuroprotective, anti-cancer and anti-inflammatory activity[2].

IC₅₀ & Target
IC₅₀: 0.62 μM (AKR1C1), 0.61 μM (AKR1C2) and 3.72μM (AKR1C3)[1]
Liquiritin can target the residues Ala-27, Val-29, Ala-25, and Asn-56 of AKR1C1\textsuperscript{[1]}. Liquiritin (50 μM; 6 hours) results in 85.00% of reduction in progesterone metabolism, which is mediated by Aldo-keto reductase family 1 member C1 (AKR1C1) enzymatic activity in HEC-1-B cells\textsuperscript{[1]}.

Liquiritin (100 μM) increases glucose-6-phosphate dehydrogenase expression on B65 neuroblastoma cells\textsuperscript{[2]}.

REFERENCES


\textsuperscript{[2]} Zeng C, et al. Liquiritin, as a Natural Inhibitor of AKR1C1, Could Interfere With the Progesterone Metabolism. Front Physiol. 2019 Jul 3;10:833.