Isoliquiritigenin

**Cat. No.:** HY-N0102  
**CAS No.:** 961-29-5  
**Molecular Formula:** C₁₅H₁₂O₄  
**Molecular Weight:** 256.25  
**Target:** Aldose Reductase; Influenza Virus; Autophagy; Apoptosis  
**Pathway:** Metabolic Enzyme/Protease; Anti-infection; Autophagy; Apoptosis  
**Storage:** Powder -20°C 3 years  
4°C 2 years  
In solvent -80°C 6 months  
-20°C 1 month

**SOLVENT & SOLUBILITY**

**In Vitro**

Ethanol : 100 mg/mL (390.24 mM; Need ultrasonic)  
DMSO : ≥ 100 mg/mL (390.24 mM)  
* "≥" means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Mass Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td></td>
<td>3.9024 mL</td>
<td>19.5122 mL</td>
<td>39.0244 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td>0.7805 mL</td>
<td>3.9024 mL</td>
<td>7.8049 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td>0.3902 mL</td>
<td>1.9512 mL</td>
<td>3.9024 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 (9.76 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
   Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution

3. Add each solvent one by one: 10% DMSO >> 90% corn oil  
   Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution

4. Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
   Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution

5. Add each solvent one by one: 10% EtOH >> 90% (20% SBE-β-CD in saline)  
   Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution

6. Add each solvent one by one: 10% EtOH >> 90% corn oil  
   Solubility: ≥ 2.5 mg/mL (9.76 mM); Suspended solution

**BIOLOGICAL ACTIVITY**
Isoliquiritigenin is an anti-tumor flavonoid from the root of *Glycyrrhiza glabra*, which inhibits aldose reductase with an IC$_{50}$ of 320 nM. Isoliquiritigenin is a potent inhibitor of influenza virus replication with an EC$_{50}$ of 24.7 μM.

**IC$_{50}$ & Target**

<table>
<thead>
<tr>
<th>IC$_{50}$</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 nM</td>
<td>Aldose reductase</td>
</tr>
</tbody>
</table>

**In Vitro**

Isoliquiritigenin may prevent diabetic complications through inhibiting rat lens aldose reductase with an IC$_{50}$ of 320 nM and sorbitol accumulation in human red blood cells with an IC$_{50}$ of 2.0 μM$^{[1]}$. Isoliquiritigenin (100 μM) markedly inhibits the hypoxia-induced prolonged TPS and TR90 of cardiomyocytes. Isoliquiritigenin significantly triggers AMPK Thr172 phosphorylation as compared with vehicle group. Isoliquiritigenin treatment also induces extracellular signal-regulated kinase (ERK) signaling pathway in the cardiomyocytes. Isoliquiritigenin treatment significantly decreases levels of phosphorylated ERK and STAT3 and can inhibit phosphorylation levels of ERK and STAT3 induced by recombinant human IL-6, which are critical signaling proteins in IL-6 signaling regulation networks$^{[4]}$. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**

Isoliquiritigenin shows concentration-dependent inhibition of the tonic contraction of mouse jejunum induced by various types of stimulants such as CCh (1 mM), KCl (60 mM) and BaCl$_2$ (0.3 mM) with IC$_{50}$ values of 4.96±1.97 mM, 4.03±1.34 mM and 3.70±0.58 mM, respectively$^{[2]}$. Isoliquiritigenin exhibits significant anti-tumor activity in MM xenograft models and synergistically enhances the anti-myeloma activity of adriamycin$^{[4]}$. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**REFERENCES**

Caution: Product has not been fully validated for medical applications. For research use only.
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