Glabridin

Cat. No.: HY-N0393
CAS No.: 59870-68-7
Molecular Formula: C₂₀H₂₀O₄
Molecular Weight: 324.37
Target: PPAR; Reactive Oxygen Species; Bacterial
Pathway: Cell Cycle/DNA Damage; Immunology/Inflammation; Metabolic
Enzyme/Protease; NF-κB; Anti-infection
Storage: Powder -20°C 3 years
In solvent -80°C 6 months
-20°C 1 month

SOLVENT & SOLUBILITY

In Vitro

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>3.0829 mL</td>
<td>15.4145 mL</td>
<td>30.8290 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.6166 mL</td>
<td>3.0829 mL</td>
<td>6.1658 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.3083 mL</td>
<td>1.5414 mL</td>
<td>3.0829 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 (7.71 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Glabridin is a natural isoflavan from Glycyrrhiza glabra, binds to and activates PPARγ, with an EC₅₀ of 6115 nM. Glabridin exhibits antioxidant, anti-bacterial, anti-nephritic, anti-diabetic, anti-fungal, antitumor, anti-inflammatory, antosteoporotic, cardiovascular protective, neuroprotective and radical scavenging activities.[1][2]

IC₅₀ & Target

PPARγ
6.1 μM (EC₅₀)
### In Vitro

Glabridin binds to and activates PPARγ, with an EC\textsubscript{50} of 6115 nM\textsuperscript{[1]}. Glabridin (40, 80 \(\mu\)M) inhibits the proliferation of SCC-9 and SAS cell lines in a dose- and time-dependent manner after treatment for 24 and 48 h\textsuperscript{[2]}. Glabridin (0-80 \(\mu\)M) also induces apoptosis, causes Sub-G1 cell cycle arrest in SCC-9 and SAS cell lines\textsuperscript{[2]}. Glabridin (0, 20, 40, and 80 \(\mu\)M) dose-dependently activates caspase-3, −8, and −9 and increases PARP cleavage, significantly phosphorylates ERK1/2, JNK1/2, and p-38 MAPK in SCC-9 cells\textsuperscript{[2]}.

### In Vivo

Glabridin (50 mg/kg, p.o. once daily) shows potent anti-inflammatory activity, ameliorates the inflammatory alterations induced by Dextran sodium sulphate (DSS) in rats\textsuperscript{[3]}.

### REFERENCES

\textsuperscript{[1]} Rebhun JF, et al. Identification of glabridin as a bioactive compound in licorice (Glycyrrhiza glabra L.) extract that activates human peroxisome proliferator-activated receptor gamma (PPAR\textgamma{}). Fitoterapia. 2015 Oct;106:55-61.
