Gossypol acetic acid

**Cat. No.:** HY-17510  
**CAS No.:** 12542-36-8  
**Molecular Formula:** C$_{32}$H$_{34}$O$_{10}$  
**Molecular Weight:** 578.61  
**Target:** Bcl-2 Family  
**Pathway:** 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**  
DMSO : 25 mg/mL (43.21 mM; Need ultrasonic)  
H$_2$O : < 0.1 mg/mL (insoluble)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass 1 mg</th>
<th>Mass 5 mg</th>
<th>Mass 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>1.7283 mL</td>
<td>8.6414 mL</td>
<td>17.2828 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.3457 mL</td>
<td>1.7283 mL</td>
<td>3.4566 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.1728 mL</td>
<td>0.8641 mL</td>
<td>1.7283 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 (4.32 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**  
Gossypol acetic acid ((±)-Gossypol-acetic acid), a natural product isolated from cottonseeds and roots, binds to Bcl-xL protein and Bcl-2 protein with $K_i$ values of 0.5-0.6 μM and 0.2-0.3 mM, respectively.

**IC$_{50}$ & Target**  
<table>
<thead>
<tr>
<th>Bcl-xL</th>
<th>Bcl-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5-0.6 μM (Ki)</td>
<td>0.2-0.3 mM (Ki)</td>
</tr>
</tbody>
</table>

**In Vitro**  
Gossypol, a natural product isolated from cottonseeds and roots that has been studied as an anticancer agent. The racemic form of Gossypol ((±)-Gossypol) is tested in several clinical trials and is well tolerated. The racemic form Gossypol ((±)-Gossypol) binds to Bcl-xL protein with a $K_i$ of 0.5 to 0.6 μM. (±)-Gossypol also potently binds to Bcl-2 protein with a $K_i$ value of 0.2-0.3 mM. The natural racemic Gossypol has two enantiomers, namely the (±)-Gossypol
and (+)-Gossypol enantiomers. The racemic form and each of the enantiomers of Gossypol are tested against UM-SCC-6 and UM-SCC-14A in 6-day MTT assays. (-)-Gossypol exhibits greater growth inhibition relative to (±)-Gossypol than (+)-Gossypol in both cell lines tested (P<0.001). An intermediate growth inhibitory effect is observed with (±)-Gossypol but this effect is only observed at the higher dose of Gossypol (10 μM, P<0.0001)[1].

**PROTOCOL**

**Cell Assay**[1]

Two representative UM-SCC cell lines, UM-SCC-6 and UM-SCC-14A, are continuously exposed to 0 (vehicle control), 5 or 10 μM (±)-Gossypol, (-)-Gossypol or (+)-Gossypol in a 6-day MTT cell survival assay[1].

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

**REFERENCES**