Gossypol acetic acid

**Cat. No.:** HY-17510

**CAS No.:** 12542-36-8

**Molecular Formula:** C₃₂H₃₄O₁₀

**Molecular Weight:** 578.61

**Target:** Bcl-2 Family

**Pathway:** Apoptosis

**Storage:**
- Powder: -20°C for 3 years, 4°C for 2 years, In solvent: -80°C for 6 months, -20°C for 1 month

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### SOLVENT & SOLUBILITY

**In Vitro**

- **DMSO:** 25 mg/mL (43.21 mM; Need ultrasonic)
- **H₂O:** < 0.1 mg/mL (insoluble)

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>Mass 1 mg</th>
<th>Mass 5 mg</th>
<th>Mass 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>1.7283 mL</td>
<td>8.6414 mL</td>
<td>17.2828 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.3457 mL</td>
<td>1.7283 mL</td>
<td>3.4566 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.1728 mL</td>
<td>0.8641 mL</td>
<td>1.7283 mL</td>
</tr>
</tbody>
</table>

**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

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### 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 Ki values of 0.5-0.6 μM and 0.2-0.3 mM, respectively.

**IC₅₀ & Target**

- **Bcl-xL:** 0.5-0.6 μM (Ki)
- **Bcl-2:** 0.2-0.3 mM (Ki)

**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 Ki of 0.5 to 0.6 μM. ([±]-Gossypol also potently binds to Bcl-2 protein with a Ki 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**