(20S)-Protopanaxadiol

**Cat. No.**: HY-N0797

**CAS No.**: 30636-90-9

**Molecular Formula**: C$_{30}$H$_{52}$O$_{3}$

**Molecular Weight**: 460.73

**Target**: P-glycoprotein; Reactive Oxygen Species; Apoptosis

**Pathway**: Membrane Transporter/Ion Channel; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; 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 : $\geq$ 100 mg/mL (217.05 mM)

H$_2$O : $<$ 0.1 mg/mL (insoluble)

* "≥" means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Mass</th>
<th>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></td>
<td>2.1705 mL</td>
<td>10.8523 mL</td>
<td>21.7047 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td></td>
<td>0.4341 mL</td>
<td>2.1705 mL</td>
<td>4.3409 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td></td>
<td>0.2170 mL</td>
<td>1.0852 mL</td>
<td>2.1705 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 $>>$ 90% corn oil

Solubility: ≥ 2.5 mg/mL (5.43 mM); Clear solution

### BIOLOGICAL ACTIVITY

**Description**

(20S)-Protopanaxadiol (20-Epiprotopanaxadiol) is an aglycon metabolic derivative of the protopanaxadiol-type ginseng saponin; apoptosis inducer. IC50 value: Target: apoptosis inducer. (20S)-Protopanaxadiol was used to induce cytotoxicity for two human glioma cell lines, SF188 and U87MG. For the SF188 cells, (20S)-Protopanaxadiol activated caspases-3, -8, -7, and -9 within 3 h and induced rapid apoptosis, which could be partially inhibited by a general caspase blocker and completely abolished when the caspase blocker was used in combination with an antioxidant. (20S)-Protopanaxadiol also induced cell death in U87MG cells but did not activate any caspases in these cells [1]. aPPD was able to inhibit P-gp activity as potently as verapamil on MDR cells. The blockage of P-gp activity was highly reversible as wash-out of aPPD resulted in an immediate recovery of P-gp activity. Unlike verapamil, aPPD did not
affect ATPase activity of P-gp suggesting a different mechanism of action [2].

REFERENCES
