11beta-Hydroxyprogesterone

Cat. No.: HY-N2337  
CAS No.: 600-57-7  
 Molecular Formula: C₂₁H₃₀O₃  
 Molecular Weight: 330.46  
 Target: Endogenous Metabolite  
 Pathway: Metabolic Enzyme/Protease  
 Storage: 4°C, sealed storage, away from moisture  
 * In solvent: -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

SOLVENT & SOLUBILITY

In Vitro  
DMSO: 50 mg/mL (151.30 mM; Need ultrasonic)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td></td>
<td>3.0261 mL</td>
<td>15.1304 mL</td>
<td>30.2609 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td>0.6052 mL</td>
<td>3.0261 mL</td>
<td>6.0522 mL</td>
<td></td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td>0.3026 mL</td>
<td>1.5130 mL</td>
<td>3.0261 mL</td>
<td></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 (7.57 mM); Clear solution  
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
   Solubility: ≥ 2.5 mg/mL (7.57 mM); Clear solution  
3. Add each solvent one by one: 10% DMSO >> 90% corn oil  
   Solubility: ≥ 2.5 mg/mL (7.57 mM); Clear solution

BIOLOGICAL ACTIVITY

Description  
11beta-Hydroxyprogesterone is a potent inhibitors of 11β-Hydroxysteroid dehydrogenase; also activates human mineralocorticoid receptor in COS-7 cells with an ED₅₀ of 10 nM.

IC₅₀ & Target  
EDS0: 10 nM (human mineralocorticoid receptor, COS-7 cell)[1]

In Vitro  
11OHP displays agonist mineralocorticoid activity. 11β-hydroxyprogesterone activates the transiently expressed hMR in COS-7 cells in a dose-dependent manner with an ED₅₀ of 10 nM and stimulates Ams/sc in mpkCCD cl4 cells.
Docking 11β-hydroxyprogesterone within the hMR-ligand-binding domain homology model reveals that the agonist activity of 11OHP is caused by contacts between its 11β-hydroxyl group and Asn770[1].

**In Vivo**

11β-hydroxyprogesterone causes a significant elevation in blood pressure within 3 days, an effect that persisted throughout the 14-day infusion. 11β-hydroxyprogesterone is potently hypertensinogenic in the rat and that this activity depends on an intact adrenal and at least in part on the activation of mineralocorticoid receptors[2].

**PROTOCOL**

**Animal Administration** [2]

Rats: 11α- and 11β-OHP are dissolved in propylene glycol (100%) and infused at 3 and 10 µg/h, respectively, for 14 days. Control rats received vehicle only. BP is measured the day before pumps were implanted and on days 3, 7, 10, and 14 after implantation. Indirect systolic BPs are measured with a modified tail-cuff method[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**REFERENCES**


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

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