Betamethasone

Cat. No.: HY-13570
CAS No.: 378-44-9
Molecular Formula: C₂₂H₂₉FO₅
Molecular Weight: 392.46
Target: Glucocorticoid Receptor
Pathway: GPCR/G Protein
Storage: 4°C, protect from light
* In solvent: -80°C, 6 months; -20°C, 1 month (protect from light)

SOLVENT & SOLUBILITY

In Vitro

DMSO: ≥ 50 mg/mL (127.40 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Preparation Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>2.5480 mL</td>
<td>12.7402 mL</td>
<td>25.4803 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.5096 mL</td>
<td>2.5480 mL</td>
<td>5.0961 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.2548 mL</td>
<td>1.2740 mL</td>
<td>2.5480 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 (6.37 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.37 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.37 mM); Clear solution

BIOLOGICAL ACTIVITY

Betamethasone is a glucocorticoid steroid with anti-inflammatory and immunosuppressive properties. Target: Glucocorticoid Receptor. Betamethasone is a potent glucocorticoid steroid with anti-inflammatory and immunosuppressive properties. Unlike other drugs with these effects, betamethasone does not cause water retention. The median (range) IC50 value for betamethasone butyrate propionate evaluated in the streptococcal pyrogenic enterotoxin A-stimulated peripheral-blood mononuclear cells was 291.6 (0.001-1171.5) ng/mL, which was significantly higher than the value 0.072 (0.01-222.5) ng/mL found in concanavalin A-stimulated peripheral-blood mononuclear cells (P=0.0245) [1]. Children exposed prenatally to betamethasone (n = 121) did not differ in systolic or diastolic
blood pressure from children exposed to placebo (n = 102) (mean difference: systolic: -1.6 mm Hg; 95% confidence interval: -4.1 to 0.8 mm Hg; diastolic: -0.3 mm Hg; 95% confidence interval: -2.5 to 1.8 mm Hg) [2]. Intra-articular corticosteroid injection of 6 mg of betamethasone acetate/betamethasone sodium phosphate at the knee joint was not significantly associated with SAI at the time points tested [3].

Clinical indications: Dermatitis; Discoid lupus erythematosus; Eczema; Lichen; Prurigo; Psoriasis

Toxicity: Symptoms of overdose include burning, itching, irritation, dryness, folliculitis, hypertrichosis, acneiform eruptions, hypopigmentation, perioral dermatitis, allergic contact dermatitis, maceration of the skin, secondary infection, skin atrophy, striae, and miliaria.

REFERENCES

