Salmeterol

Cat. No.: HY-14302
CAS No.: 89365-50-4
Molecular Formula: C₂₅H₃₇NO₄
Molecular Weight: 415.57
Target: Adrenergic Receptor
Pathway: GPCR/G Protein; Neuronal Signaling
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: ≥ 100 mg/mL (240.63 mM)
* “≥” means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent 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>2.4063 mL</td>
<td>12.0317 mL</td>
<td>24.0633 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td>0.4813 mL</td>
<td>2.4063 mL</td>
<td>4.8127 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td>0.2406 mL</td>
<td>1.2032 mL</td>
<td>2.4063 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 (6.02 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.02 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.02 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Salmeterol (GR33343X) is a potent and selective human β2 adrenoceptor agonist. Salmeterol shows potent stimulation of cAMP accumulation in CHO cells expressing human β2, β1 and β3 adrenoceptors with pEC50s of 9.6, 6.1, and 5.9, respectively [1].

IC50 & Target
<table>
<thead>
<tr>
<th>β2 adrenoceptor</th>
<th>β1 adrenoceptor</th>
<th>β3 adrenoceptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.6 (pEC50)</td>
<td>6.1 (pEC50)</td>
<td>5.9 (pEC50)</td>
</tr>
</tbody>
</table>
### In Vitro

Salmeterol (0.001-25 µM) inhibits human T lymphocyte proliferation\(^\text{[2]}\).

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

**Cell Proliferation Assay\(^\text{[2]}\)**

<table>
<thead>
<tr>
<th>Cell Line:</th>
<th>Human T lymphocytes (THP-1 cells)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration:</td>
<td>0.001, 0.01, 0.05, 0.2, 1, 5, and 25 µM</td>
</tr>
<tr>
<td>Incubation Time:</td>
<td></td>
</tr>
<tr>
<td>Result:</td>
<td>The proliferation of Th2 cells was inhibited in a concentration dependent manner.</td>
</tr>
</tbody>
</table>

### In Vivo

Salmeterol (0.16 mg/kg), Formoterol (0.32 mg/kg) and combined treatment have therapeutic effects in mice with chronic obstructive pulmonary disease (COPD)\(^\text{[3]}\).

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

**Animal Model:** Male C57BL/6 mice (6-8 weeks old, body weight: 32-35 g)\(^\text{[3]}\)

**Dosage:** Salmeterol (0.16 mg/kg) and/or Formoterol (0.32 mg/kg)

**Administration:** The therapeutic efficacy of co-treatment was investigated in this model over a 56-day-long observation period.

**Result:** COPD assessment test scores were markedly improved in mice with COPD.

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**CUSTOMER VALIDATION**

- Cell Rep. 2019 Dec 3;29(10):2929-2935.e4
- Drug Test Anal. 2020 Aug 27.

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**REFERENCES**


