Desisobutyryl-ciclesonide

**Cat. No.:** HY-111490

**CAS No.:** 161115-59-9

**Molecular Formula:** C₂₈H₃₈O₆

**Molecular Weight:** 470.6

**Target:** Glucocorticoid Receptor

**Pathway:** GPCR/G Protein

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

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**SOLVENT & SOLUBILITY**

**In Vitro**

DMSO: ≥ 50 mg/mL (106.25 mM)

*”≥” means soluble, but saturation unknown.*

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Solvent</th>
<th>Mass (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td></td>
<td>2.1249 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
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Preparing Stock Solutions:

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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 (5.31 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.31 mM); Clear solution

3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.31 mM); Clear solution

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**BIOLOGICAL ACTIVITY**

**Description**

Desisobutyryl-ciclesonide is the active metabolite of Ciclesonide. Desisobutyryl-ciclesonide has affinity for the glucocorticoid receptor.

**IC₅₀ & Target**

Glucocorticoid receptor[1]
Ciclesonide, an inhaled corticosteroid with almost no affinity for the glucocorticoid receptor, is highly effective in downregulating in vitro pro-inflammatory activities of airway parenchymal cells when converted into the active metabolite Desisobutyryl-ciclesonide. Peripheral blood mononuclear cell proliferation to C. albicans is dose-dependently inhibited by 0.3-3.0 μM Ciclesonide and Desisobutyryl-ciclesonide but inhibition by Desisobutyryl-ciclesonide is higher. A significant proliferation to PhlP5 is observed only in cultures from atopic subjects: an effective downregulation is already detected at 0.03 μM Ciclesonide and 0.003 μM Desisobutyryl-ciclesonide (complete inhibition at 3 μM Ciclesonide and 0.03 μM Desisobutyryl-ciclesonide). 3 μM Ciclesonide and Desisobutyryl-ciclesonide reduce the PhlP5-specific T-cell blast proliferation and interleukin 4-producing cell proportion. In PBMCs cultures from atopic patients, both Ciclesonide (CIC) and Desisobutyryl-ciclesonide (des-CIC) induce a dose-dependent downregulation of PhlP5-induced proliferation. The effect is already significant at 0.03 μM Ciclesonide and at 0.003 μM Desisobutyryl-ciclesonide (p<0.001, each comparison), with an early complete inhibition observed at 3 μM Ciclesonide and at 0.03 μM Desisobutyryl-ciclesonide. The inhibitory activity toward PhlP5-induced PBMC proliferation is higher for Desisobutyryl-ciclesonide than for Ciclesonide at 0.003 μM (p<0.05), 0.03 μM (p<0.001) and 0.3 μM (p<0.05)[1].

REFERENCES