## Solithromycin

**Cat. No.:** HY-17593  
**CAS No.:** 760981-83-7  
**Molecular Formula:** C_{43}H_{65}FN_{6}O_{10}  
**Molecular Weight:** 845.01  
**Target:** Bacterial  
**Pathway:** Anti-infection  
**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: ≥ 32 mg/mL (37.87 mM)  
H₂O: < 0.1 mg/mL (insoluble)  
*"≥" means soluble, but saturation unknown.*

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass (1 mg)</th>
<th>Mass (5 mg)</th>
<th>Mass (10 mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>1.1834 mL</td>
<td>5.9171 mL</td>
<td>11.8342 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td>0.2367 mL</td>
<td>1.1834 mL</td>
<td>2.3668 mL</td>
<td></td>
</tr>
<tr>
<td>10 mM</td>
<td>0.1183 mL</td>
<td>0.5917 mL</td>
<td>1.1834 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 (2.96 mM); Clear solution
2. Add each solvent one by one:  
   - 10% DMSO >> 90% corn oil  
   Solubility: ≥ 2.5 mg/mL (2.96 mM); Clear solution

### BIOLOGICAL ACTIVITY

**Description**  
Solithromycin (CEM-101) is an orally bioavailable, effective antimicrobial agent, with IC₅₀ for inhibition of cell viability, protein synthesis, and growth rate are 7.5 ng/mL, 40 ng/mL, and 125 ng/mL for Streptococcus pneumonia, Staphylococcus aureus, and Haemophilus influenzae, respectively. Solithromycin binds to the large 50S subunit of the ribosome and inhibits protein biosynthesis[1].

**IC₅₀ & Target**  
Bacterial[1]
### In Vitro

The IC\textsubscript{50}s values for Solithromycin on TNF\textalpha and CXCL8 release are 41.6 μM and 78.2 μM, respectively. Solithromycin markedly reduces MMP9 activity, with an IC\textsubscript{50} of 14.9 μM\textsuperscript{[2]}. Solithromycin (0-333 μM; 72 hours; U937 and PBMC cells) suppresses lipopolysaccharide-induced TNF\textalpha release and phorbol 12-myristate 13-acetate (PMA)-induced matrix metalloproteinase 9 (MMP9) activity, and does not affect cell viability in monocytic U937 and PBMC cells\textsuperscript{[2]}.

### In Vivo

Solithromycin (100 mg/kg; oral administration; every day; for 8 days; C57BL/6J mice) treatment inhibits inflammatory cells accumulation and pro-MMP9 production in cigarette smoke-exposed mice\textsuperscript{[2]}.

<table>
<thead>
<tr>
<th>Animal Model:</th>
<th>C57BL/6J mice (male, 4 weeks)\textsuperscript{[2]}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosage:</td>
<td>100 mg/kg</td>
</tr>
<tr>
<td>Administration:</td>
<td>Oral administration; every day; for 8 days</td>
</tr>
<tr>
<td>Result:</td>
<td>Inhibited cigarette smoke-induced neutrophilia and pro-MMP9 production.</td>
</tr>
</tbody>
</table>

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### REFERENCES
