HPi1

Cat. No.: HY-120536
CAS No.: 13080-21-2
Molecular Formula: C₄H₈N₄S
Molecular Weight: 192.24
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: 62.5 mg/mL (325.11 mM; Need ultrasonic)

<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>5.2018 mL</td>
<td>26.0092 mL</td>
<td>52.0183 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td>1.0404 mL</td>
<td>5.2018 mL</td>
<td>10.4037 mL</td>
<td></td>
</tr>
<tr>
<td>10 mM</td>
<td>0.5202 mL</td>
<td>2.6009 mL</td>
<td>5.2018 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 >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.08 mg/mL (10.82 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
HPi1 is a potent, selective and orally active antimicrobial against Helicobacter pylori with an IC₅₀ of 0.24 μM and an MIC of 0.08-0.16 μg/mL. HPi1 is inactive against other bacteria, including the gut commensals Lactobacillus casei, Lactobacillus reuteri, and Bifidobacterium longum[1].

IC₅₀ & Target
IC₅₀: 0.24 μM (Helicobacter pylori)[1]
MIC: 0.08-0.16 μg/mL (Helicobacter pylori)[1]

In Vitro
The MIC against H. pylori isolates ranged from 0.002-0.032 μg/mL (0.01-0.17 μM) in the agar dilution assay. HPi1 is effective against the clarithromycin-resistant strains ARHp172 (MIC of 0.004–0.016 μg/mL) and ARHp246 (MIC of 0.008–0.032 μg/mL)[1].
HPi1 has some activity against the Bacteroides species, but at concentrations at least 18-fold higher than the H. pylori
MIC. More potent activity is detected for Campylobacter jejuni with an MIC of 0.3 μg/mL\[^1\]. HPi1 has good physicochemical and pharmacological properties, including determining the aqueous solubility (19 μg/mL), human plasma protein binding (93% bound), stability with human liver microsomes (T\(_{1/2}\) of 1.3 hours) and the ability to passively permeate membranes\[^1\].

<table>
<thead>
<tr>
<th>In Vivo</th>
<th>HPi1 (6.25-50 mg/kg; Oral gavage; once a day; for 3 days; female C57BL/6 mice) treatment decreases colony counts below the limit of detection at doses of 25 or 50 mg/kg/day[^1].</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Model:</td>
<td>Adult specific-pathogen-free female C57BL/6 mice (6-8-week-old) fed with H. pylori SS1 suspension[^1]</td>
</tr>
<tr>
<td>Dosage:</td>
<td>6.25 mg/kg, 12.5 mg/kg, 25 mg/kg, 50 mg/kg</td>
</tr>
<tr>
<td>Administration:</td>
<td>Oral gavage; once a day; for 3 days</td>
</tr>
<tr>
<td>Result:</td>
<td>Reduced colony counts to below the limit of detection.</td>
</tr>
</tbody>
</table>

**REFERENCES**


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