ALS-8112

**Cat. No.:** HY-12983  
**CAS No.:** 1445379-92-9  
**Molecular Formula:** C₁₀H₁₃ClFN₃O₄  
**Molecular Weight:** 293.68  
**Target:** RSV  
**Pathway:** Anti-infection  
**Storage:**  
- Powder: -20°C for 3 years, 4°C for 2 years  
- In solvent: -80°C for 6 months, -20°C for 1 month

**SOLVENT & SOLUBILITY**

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**In vitro**  
DMSO: $\geq 47$ mg/mL (160.04 mM)  
$\geq$ means soluble, but saturation unknown.

<table>
<thead>
<tr>
<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>3.4051 mL</td>
<td>17.0253 mL</td>
<td>34.0507 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.6810 mL</td>
<td>3.4051 mL</td>
<td>6.8101 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.3405 mL</td>
<td>1.7025 mL</td>
<td>3.4051 mL</td>
</tr>
</tbody>
</table>

Preparing Stock Solutions

Please refer to the solubility information to select the appropriate solvent.

**In vivo**  
1. Add each solvent one by one: 1% DMSO $\gg$ 99% saline  
   Solubility: $\geq 0.5$ mg/mL (1.70 mM); Clear solution

2. Add each solvent one by one: 5% DMSO $\gg$ 40% PEG300 $\gg$ 5% Tween-80 $\gg$ 50% saline  
   Solubility: $\geq 2.5$ mg/mL (8.51 mM); Clear solution

3. Add each solvent one by one: 5% DMSO $\gg$ 95% (20% SBE-β-CD in saline)  
   Solubility: $\geq 2.5$ mg/mL (8.51 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**  
ALS-8112 is a potent and selective respiratory syncytial virus (RSV) polymerase inhibitor. The 5'-triphosphate form of ALS-8112 inhibits RSV polymerase with an IC₅₀ of 0.02 μM.

**IC₅₀ & Target**  
IC₅₀: 0.02 μM (RSV)[¹]

**In Vitro**  
The 5'-triphosphate form of ALS-8112 (ALS-8112-TP) is the active form of the drug and selectively inhibits RSV polymerase.
through chain termination of RNA synthesis\(^2\). ALS-008112 enters various types of epithelial cells in the respiratory tract and is subsequently phosphorylated to form an intracellular nucleoside triphosphate with a half-life of approximately 29 hours. The nucleoside triphosphate analogue inhibits RSV replication by means of chain termination\(^3\). ALS-8112 is a pan-strain inhibitor of RSV replication in vitro. The RNA transcription activity of the RSV–RNP complex is dose-proportionally inhibited by ALS-8112-TP with an IC\(_{50}\) of 0.020 ± 0.008 \(\mu\)M\(^4\).

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

### PROTOCOL

**Cell Assay**\(^4\)

ALS-8112 and its prodrug ALS-8176 are stored at 4°C in dimethyl sulfoxide (DMSO), and diluted in water. HEp-2 cells per well are plated in a 96-well plate. Each compound is serially diluted (1:3) up to 9 distinct concentrations. Cells are pre-incubated with compounds for 24 hours at 37°C in a 5% \(\text{CO}_2\) atmosphere. After 24 hours of pre-incubation with compounds, RSV A2, Long, or B1 at a multiplicity of infection (MOI) of 0.5 is added to the cells, except for the background controls. The plate is then incubated for additional 4 days in the same conditions and at the end of the incubation 50 \(\mu\)L the supernatant from each well of the plate is collected\(^4\).

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### REFERENCES


