R-1479

**Cat. No.:** HY-10444  
**CAS No.:** 478182-28-4  
**Molecular Formula:** C₉H₁₂N₆O₅  
**Molecular Weight:** 284.23  
**Target:** HCV; DNA/RNA Synthesis  
**Pathway:** Anti-infection; Cell Cycle/DNA Damage  
**Storage:**  
- Powder: -20°C, 3 years; 4°C, 2 years; In solvent: -80°C, 2 years; -20°C, 1 year

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### SOLVENT & SOLUBILITY

**In Vitro**  
DMSO: 100 mg/mL (351.83 mM; Need ultrasonic)

<table>
<thead>
<tr>
<th>Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>3.5183 mL</td>
<td>17.5914 mL</td>
<td>35.1828 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.7037 mL</td>
<td>3.5183 mL</td>
<td>7.0366 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.3518 mL</td>
<td>1.7591 mL</td>
<td>3.5183 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 (8.80 mM); Clear solution  
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (8.80 mM); Clear solution  
3. Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (8.80 mM); Clear solution

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### BIOLOGICAL ACTIVITY

**Description**  
R-1479 (4'-Azidocytidine), a nucleoside analogue, is a specific inhibitor of RNA-dependent RNA polymerase (RdRp) of HCV. R-1479 inhibits HCV replication in the HCV subgenomic replicon system (IC₅₀=1.28 μM)[1][2][3]. R-1479 is a click chemistry reagent, it contains an Azide group and can undergo copper-catalyzed azide-alkyne cycloaddition reaction (CuAAC) with molecules containing Alkyne groups. Strain-promoted alkyne-azide cycloaddition (SPAAC) can also occur with molecules containing DBCO or BCN groups.

**IC₅₀ & Target**  
IC₅₀: 1.28 μM (HCV replication)[1]
| **In Vitro** | R-1479 (R1479) inhibits HCV RNA replication with a mean IC<sub>50</sub> value of 1.28 μM when measured as dose-dependent reduction of Renilla luciferase activity after a 72 h incubation of proliferating replicon cells. R-1479 shows no effect on cell viability or proliferation of HCV replicon or HuH-7 cells at concentrations up to 2 mM<sup>[1]</sup>. The most potent and non-cytotoxic derivative is R-1479 with an IC<sub>50</sub> of 1.28 μM in the HCV replicon system. The triphosphate of R-1479 is prepared and shown to be an inhibitor of RNA synthesis mediated by NS5B (IC<sub>50</sub>=320 nM), the RNA polymerase encoded by HCV. R-1479 displays good activity in the replicon assay with no measurable cytotoxic or cytostatic effect<sup>[2]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

### PROTOCOL

**Kinase Assay**<sup>[1]</sup>  
The membrane-associated, native HCV replicase complex is isolated from 2209-23 HCV replicon cells and a derived cell line carrying HCV replicon RNA with a S282T mutation in the NS5B coding sequence. The in vitro replicase assay contain 10 μL of cytoplasmic membrane fraction, 50 mM HEPES (pH 7.5), 10 mM KCl, 10 mM dithiothreitol, 5 mM MgCl<sub>2</sub>, 20 μg/mL actinomycin D, 1 mM ATP, 1 mM GTP, 1 mM UTP, 30 μCi of [α-<sup>33</sup>P]CTP (3000 Ci/mmol, 10 mCi/mL), 1 unit/μL SUPERase-In, 10 mM creatine phosphate, and 200 μg/mL creatine phosphokinase in a final volume of 25 μL. Inhibition by nucleotide analogs is determined<sup>[1]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**Cell Assay**<sup>[1]</sup>  
The effect of R-1479 on the incorporation of tritiated thymidine into cellular DNA is measured using the [<sup>3</sup>H]thymidine incorporation scintillation proximity assay system. MTT and WST-1 assay systems are used to measure cell viability. The ATP bioluminescence assay kit HSII is used to measure intracellular ATP levels<sup>[4]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### CUSTOMER VALIDATION

- J Infect Dis. 2016 Sep 1;214(5):707-11.

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### REFERENCES


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

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