**Tenofovir alafenamide hemifumarate**

**Cat. No.:** HY-15232B  
**CAS No.:** 1392275-56-7  
**Molecular Formula:** C₂₁H₂₉N₆O₅P.₁/₂ C₄H₄O₄  
**Molecular Weight:** 534.5  
**Target:** HIV; Reverse Transcriptase  
**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**: 50 mg/mL (93.55 mM; Need ultrasonic)

### Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>1.8709 mL</td>
<td>9.3545 mL</td>
<td>18.7091 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.3742 mL</td>
<td>1.8709 mL</td>
<td>3.7418 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.1871 mL</td>
<td>0.9355 mL</td>
<td>1.8709 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 (4.68 mM); Clear solution

2. Add each solvent one by one: **10% DMSO >> 90% (20% SBE-β-CD in saline)**  
   Solubility: ≥ 2.5 mg/mL (4.68 mM); Clear solution

3. Add each solvent one by one: **10% DMSO >> 90% corn oil**  
   Solubility: 2.5 mg/mL (4.68 mM); Clear solution; Need warming

## BIOLOGICAL ACTIVITY

**Description**  
Tenofovir alafenamide hemifumarate (GS-7340 hemifumarate) is an investigational oral prodrug of Tenofovir. Tenofovir is a HIV-1 nucleotide reverse transcriptase inhibitor.

**IC₅₀ & Target**  
HIV-1, NRTIs[^1]

**In Vitro**  
Tenofovir alafenamide hemifumarate (GS-7340 hemifumarate) antiviral activities are similar across all cell types,

[^1]: For reference.
ranging from 5 to 7 nM, while the CC$_{50}$ varies from 4.7 to 42 μM for MT-4 and MT-2 cells, respectively. The antiviral activity of TAF is evaluated against a panel of HIV-1 and HIV-2 isolates, including HIV-1 group M subtypes A to G, as well as group N and O isolates. Overall, for the 29 primary HIV-1 isolates tested in PBMCs, TAF EC$_{50}$s range from 0.1 to 12 nM, with a mean EC$_{50}$ of 3.5 nM compared to a mean EC$_{50}$ of 11.8 nM for AZT, which is used as an internal control. For the HIV-2 isolates, the mean EC$_{50}$s are 1.8 nM for TAF and 6.4 nM for AZT$^2$.

<table>
<thead>
<tr>
<th>In Vivo</th>
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</thead>
<tbody>
<tr>
<td>Tenofovir alafenamide hemifumarate (GS-7340 hemifumarate) is an amidate prodrug of Tenofovir with good oral bioavailability and increases plasma stability compared to Tenofovir disoproxil fumarate (TDF)$^1$.</td>
</tr>
</tbody>
</table>

**Customer Validation**


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**References**
