Harringtonine

Cat. No.: HY-N0862
CAS No.: 26833-85-2
Molecular Formula: \(\text{C}_{28}\text{H}_{37}\text{NO}_{9}\)
Molecular Weight: 531.59
Target: Influenza Virus
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 : ≥ 100 mg/mL (188.11 mM)
* “≥” means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent</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></td>
<td>1.8811 mL</td>
<td>9.4057 mL</td>
<td>18.8115 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td>0.3762 mL</td>
<td>1.8811 mL</td>
<td>3.7623 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td>0.1881 mL</td>
<td>0.9406 mL</td>
<td>1.8811 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 (4.70 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.70 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.70 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Harringtonine is a natural Cephalotaxus alkaloid that inhibits protein synthesis. Harringtonine has anti-chikungunya virus (CHIKV) activities with an EC\(_{50}\) of 0.24 μM.

In Vitro
Harringtonine inhibits the elongation phase of translation by preventing substrate binding to the acceptor site on the 60-S ribosome subunit and therefore block aminoacyl-tRNA binding and peptide bond formation\(^[1]\). Harringtonine
displays potent inhibition of Chikungunya virus infection with an EC$_{50}$ of 0.24 μM. Harringtonine could inhibit other alphaviruses$^{[2]}$. Harringtonine inhibits the growth of human myeloid leukemia cells in vitro at low concentrations. The mechanism of the antitumor action of harringtonine is considered to be an effect on protein synthesis and is characterized by breakdown of polysomes to monosomes$^{[3]}$.

**PROTOCOL**

**Cell Assay**$^{[2]}$

For harringtonine treatment studies with Sindbis virus, BHK21 cells are seeded into 96-well plates and infected with Sindbis virus at an MOI of 1 for 1 h prior to being washed twice with PBS and incubated with various concentrations of harringtonine (0.1 μM, 1 μM, 5 μM, and 10 μM) at 37°C with 5% CO2. Cell supernatants are harvested for plaque assays at 24 h postinfection$^{[2]}$.

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

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