Merimepodib

Cat. No.: HY-13986
CAS No.: 198821-22-6
Molecular Formula: C₂₃H₂₄N₄O₆
Molecular Weight: 452.46
Target: HBV; HCV
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: ≥ 31 mg/mL (68.51 mM)
* "≥" means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Mass Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
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</thead>
<tbody>
<tr>
<td>1 mM</td>
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<td>5 mM</td>
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<td>10 mM</td>
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</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 (5.53 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (5.53 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (5.53 mM); Clear solution

BIOLOGICAL ACTIVITY

Description
Merimepodib (VX-497) is a noncompetitive and oral inhibitor of inosine monophosphate dehydrogenase (IMPDH) with broad spectrum antiviral activities.

In Vitro
VX-497 has antiproliferative effect on lymphoid and keratinocyte cells. The antiproliferative effect of VX-497 in cells is reversed within 48 h of its removal[1]. VX-497 has intermediate antiviral activity against a second group of viruses,
which includes HSV-1, parainfluenza-3 virus, BVDV, VEEV, and dengue virus, with IC50s ranging from 6 to 19 μM. VX-497 is 100-fold more potent, with an IC50 of 380 nM and a corresponding CC50 of 5.2 μM, for a therapeutic index of 14. The antiviral activity of VX-497 in HepG2.2.15 cells is reversed threefold by the addition of guanosine[2].

In Vivo

Oral administration of VX-497 inhibits the primary IgM antibody response in a dose-dependent manner, with an ED50 value of appr 30-35 mg/kg in mice. Single daily dosing of VX-497 is observed to be as effective as twice-daily dosing in this model of immune activation[1]. GVHD developed in the vehicle-treated allografted F1 mice and treatment with VX-497 improved all manifestations of the disease significantly. The 2.9-fold increase in spleen weight in allografted animals is reduced to a 1.6-fold increase in the VX-497-treated mice. Serum IFN-gamma levels are increased 54-fold in the vehicle group while there is a 7.4-fold increase in VX-497-treated animals[3].

PROTOCOL

Cell Assay [2]

The murine fibroblast L929 cell line is cultured in Eagle minimal essential medium supplemented with 10% fetal bovine serum, nonessential amino acids, 50 U of penicillin per mL, 50 μg of streptomycin per mL, and 2 mM l-glutamine. EMCV is infected at 500 PFU/107 L929 cells. Cells are left untreated or are treated with different concentrations of murine IFN-α alone, VX-497 alone, or combinations thereof. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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REFERENCES

