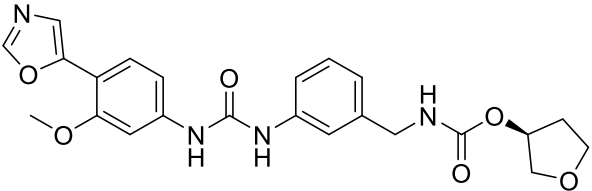


# Product data sheet



MedKoo Cat#: 206228 Name: Merimepodib CAS#: 198821-22-6 Chemical Formula: C <sub>23</sub> H <sub>24</sub> N <sub>4</sub> O <sub>6</sub> Exact Mass: 452.16958 Molecular Weight: 452.46	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

## 1. Product description:

Merimepodib, also known as VX-497, is orally bioavailable IMPDH inhibitor, which inhibits the proliferation of primary human, mouse, rat, and dog lymphocytes at concentrations of approximately 100 nM. In vivo, oral administration of VX-497 inhibits the primary IgM antibody response in a dose-dependent manner, with an ED(50) value of approximately 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. These studies demonstrate that VX-497 is a potent, specific, and reversible IMPDH inhibitor that selectively inhibits lymphocyte proliferation.

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	50.0	110.51

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.21	11.05	22.10
5 mM	0.44	2.21	4.42
10 mM	0.22	1.11	2.21
50 mM	0.04	0.22	0.44

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

1. Markland W, McQuaid TJ, Jain J, Kwong AD. Broad-spectrum antiviral activity of the IMP dehydrogenase inhibitor VX-497: a comparison with ribavirin and demonstration of antiviral additivity with alpha interferon. *Antimicrob Agents Chemother.* 2000 Apr;44(4):859-66. doi: 10.1128/AAC.44.4.859-866.2000. PMID: 10722482; PMCID: PMC89783.
2. Zhou S, Liu R, Baroudy BM, Malcolm BA, Reyes GR. The effect of ribavirin and IMPDH inhibitors on hepatitis C virus subgenomic replicon RNA. *Virology.* 2003 Jun 5;310(2):333-42. doi: 10.1016/s0042-6822(03)00152-1. PMID: 12781720.

### In vivo study

1. Decker CJ, Heiser AD, Chaturvedi PR, Faust TJ, Ku G, Moseley S, Nimmesgern E. The novel IMPDH inhibitor VX-497 prolongs skin graft survival and improves graft versus host disease in mice. *Drugs Exp Clin Res.* 2001;27(3):89-95. PMID: 11447770.
2. Li SF, Gong MJ, Shao JJ, Sun YF, Zhang YG, Chang HY. Antiviral activity of merimepodib against foot and mouth disease virus in vitro and in vivo. *Mol Immunol.* 2019 Oct;114:226-232. doi: 10.1016/j.molimm.2019.07.021. Epub 2019 Aug 3. PMID: 31386979.

# Product data sheet



## 7. Bioactivity

### Biological target:

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

### In vitro activity

VX-497 is most potent against the first group of viruses, which includes HBV, HCMV, EMCV, and RSV, with 50% inhibitory concentrations (IC50s) of 0.38, 0.80, 1.0, and 1.14  $\mu$ M, respectively. 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  $\mu$ M. VX-497 did not demonstrate antiviral efficacy against the third group of viruses, as measured by its inability to achieve an IC50 measurement for YFV, coxsackie B3 virus, or influenza A virus at 31  $\mu$ M, the highest concentration tested. Next, whether VX-497 has any direct or indirect effect on the IFN- $\alpha$  signaling pathway was determined. To this end L929 cells and EMCV-infected L929 cells were treated with IFN- $\alpha$  alone and with IFN- $\alpha$  supplemented with VX-497. No noticeable difference in pattern or intensity of gel-retarded bands (data not shown) was observed when the experiments were repeated with the addition of VX-497 (range, 100 to 500 nM). This suggests that VX-497 does not alter, positively or negatively, the IFN- $\alpha$  signaling pathway in L929 cells and that the antiviral effect of VX-497 in the EMCV replication system is indeed independent.

Antimicrob Agents Chemother. 2000 Apr; 44(4): 859–866. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC89783/>

### In vivo activity

In the skin transplant study, trunk skin grafts from Balb/c mice were grafted onto C57Bl/6 mice. Mice were administered vehicle or VX-497 twice daily until day 10. Mean survival of skin grafts on vehicle-treated animals was 9.9 +/- 0.9 days. Graft survival was prolonged significantly in animals treated with VX-497 to 13.2 +/- 1.2 (p < 0.001, Kaplan Meier Log-Rank test) days in the 50 mg/kg group and 13.9 +/- 1.0 (p < 0.001) days in the 85 mg/kg group. In the GVHD study, 150 x 10(6) nonadherent splenocytes from B6 mice were injected intravenously into the F1 hybrid strain B6DBA/2. Groups of animals (n = 6) were administered vehicle or 50 or 100 mg/kg VX-497 b.i.d for 8 days. 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 was reduced to a 1.6-fold increase in the VX-497-treated mice. Serum IFN-gamma levels were increased 54-fold in the vehicle group while there was a 7.4-fold increase in VX-497-treated animals. Spontaneous spleen cell proliferation was increased 9.9-fold in the absence of VX-497 and there was a 3.5-fold increase in its presence. Thus, VX-497 has been shown to be effective in both a skin transplantation and a GVHD model in the mouse. The demonstrated pharmacological activity of VX-497 in these murine transplantation models warrants further evaluation of the drug in transplantation indications.

Drugs Exp Clin Res. 2001;27(3):89-95. <https://pubmed.ncbi.nlm.nih.gov/11447770/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*