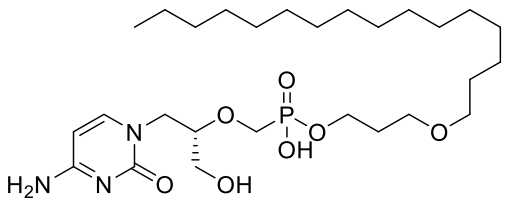
Product data sheet

MedKoo Cat#: 319653 Name: Brincidofovir CAS: 444805-28-1 Chemical Formula: $C_{27}H_{52}N_3O_7P$ Exact Mass: 561.3543 Molecular Weight: 561.7008	
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:
Brincidofovir, also known as CMX001, HDP-CDV and HDPCDV, is DNA polymerase inhibitor potentially for the treatment of cytomegalovirus, adenovirus, smallpox, and ebolavirus infections. Brincidofovir is a prodrug of cidofovir. Conjugated to a lipid, the compound is designed to release cidofovir intracellularly, allowing for higher intracellular and lower plasma concentrations of cidofovir, effectively increasing its activity against dsDNA viruses, as well as oral bioavailability.

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	1.0	1.78

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.78 mL	8.90 mL	17.80 mL
5 mM	0.36 mL	1.78 mL	3.56 mL
10 mM	0.18 mL	0.89 mL	1.78 mL
50 mM	0.04 mL	0.18 mL	0.36 mL

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. Trost LC, Rose ML, Khouri J, Keilholz L, Long J, Godin SJ, Foster SA. The efficacy and pharmacokinetics of brincidofovir for the treatment of lethal rabbitpox virus infection: a model of smallpox disease. Antiviral Res. 2015 May;117:115-21. doi: 10.1016/j.antiviral.2015.02.007. Epub 2015 Mar 4. PMID: 25746331.
2. Tylden GD, Hirsch HH, Rinaldo CH. Brincidofovir (CMX001) inhibits BK polyomavirus replication in primary human urothelial cells. Antimicrob Agents Chemother. 2015;59(6):3306-16. doi: 10.1128/AAC.00238-15. Epub 2015 Mar 23. PMID: 25801568; PMCID: PMC4432119.

In vivo study

1. Hutson CL, Kondas AV, Mauldin MR, Doty JB, Grossi IM, Morgan CN, Ostergaard SD, Hughes CM, Nakazawa Y, Kling C, Martin BE, Ellison JA, Carroll DS, Gallardo-Romero NF, Olson VA. Pharmacokinetics and Efficacy of a Potential Smallpox Therapeutic, Brincidofovir, in a Lethal Monkeypox Virus Animal Model. mSphere. 2021 Feb 3;6(1):e00927-20. doi: 10.1128/mSphere.00927-20. Erratum in: mSphere. 2021 Feb 17;6(1): PMID: 33536322; PMCID: PMC7860987.
2. Zaitseva M, McCullough KT, Cruz S, Thomas A, Diaz CG, Keilholz L, Grossi IM, Trost LC, Golding H. Postchallenge administration of brincidofovir protects healthy and immune-deficient mice reconstituted with limited numbers of T cells from lethal

challenge with IHD-J-Luc vaccinia virus. J Virol. 2015 Mar;89(6):3295-307. doi: 10.1128/JVI.03340-14. Epub 2015 Jan 14. PMID: 25589648; PMCID: PMC4337519.

7. Bioactivity

Biological target:

Brincidofovir (CMX001), the lipid-conjugated prodrug of Cidofovir (HY-17438), is an orally available, long-acting antiviral.

In vitro activity

This study investigated the effects of BCV (brincidofovir) in BKPyV-infected and uninfected primary human urothelial cells (HUCs), the target cells of BKPyV in PyVHC. The BCV concentrations causing 50 and 90% reductions (EC50 and EC90) in the number of intracellular BKPyV genome equivalents per cell (icBKPyV) were 0.27 μM and 0.59 μM, respectively. At 0.63 μM, BCV reduced viral late gene expression by 90% and halted progeny release.

Reference: Antimicrob Agents Chemother. 2015;59(6):3306-16. https://pubmed.ncbi.nlm.nih.gov/25801568/

In vivo activity

A three-dose regimen of 20 mg/kg BCV (brincidofovir) administered every 48 h starting either on day 1 or day 2 postchallenge protected 100% of mice. Initiating BCV treatment earlier was more efficient in reducing viral loads and in providing protection from pox lesion development. All BCV-treated mice that survived challenge were also protected from rechallenge with IHD-J-Luc or WRvFire VACV without additional treatment. In immune-deficient mice, BCV protected animals from lethality and reduced viral loads while animals were on the drug.

Reference: J Virol. 2015 Mar;89(6):3295-307. https://pubmed.ncbi.nlm.nih.gov/25589648/

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.