

Product data sheet



MedKoo Cat#: 314258 Name: Peramivir CAS: 330600-85-6 (free) Chemical Formula: C ₁₅ H ₂₈ N ₄ O ₄ Exact Mass: 328.2111 Molecular Weight: 328.413		
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:

Peramivir, also known as BCX1812 and RWJ 270201, is an antiviral drug for the treatment of influenza. Peramivir is a neuraminidase inhibitor, acting as a transition-state analogue inhibitor of influenza neuraminidase and thereby preventing new viruses from emerging from infected cells. Peramivir was approved to treat influenza infection in adults.

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
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.04 mL	15.22 mL	30.45 mL
5 mM	0.61 mL	3.04 mL	6.09 mL
10 mM	0.30 mL	1.52 mL	3.04 mL
50 mM	0.06 mL	0.30 mL	0.61 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

- Zhang CX, Tu Y, Sun XC, Chen DG, Zhang WN, Zhuang CL, Wang ZB, Su L. Peramivir, an Anti-Influenza Virus Drug, Exhibits Potential Anti-Cytokine Storm Effects. *Front Immunol.* 2022 Feb 28;13:856327. doi: 10.3389/fimmu.2022.856327. PMID: 35296098; PMCID: PMC8918788.
- Kobayashi M, Kodama M, Noshi T, Yoshida R, Kanazu T, Nomura N, Soda K, Isoda N, Okamatsu M, Sakoda Y, Yamano Y, Sato A, Kida H. Therapeutic efficacy of peramivir against H5N1 highly pathogenic avian influenza viruses harboring the neuraminidase H275Y mutation. *Antiviral Res.* 2017 Mar;139:41-48. doi: 10.1016/j.antiviral.2016.12.011. Epub 2016 Dec 22. PMID: 28012921.

In vivo study

- Farooqui A, Huang L, Wu S, Cai Y, Su M, Lin P, Chen W, Fang X, Zhang L, Liu Y, Zeng T, Paquette SG, Khan A, Kelvin AA, Kelvin DJ. Assessment of Antiviral Properties of Peramivir against H7N9 Avian Influenza Virus in an Experimental Mouse Model. *Antimicrob Agents Chemother.* 2015 Dec;59(12):7255-64. doi: 10.1128/AAC.01885-15. Epub 2015 Sep 14. PMID: 26369969; PMCID: PMC4649212.
- Onishi M, Kitano M, Taniguchi K, Homma T, Kobayashi M, Yoshinaga T, Naito A, Sato A. Intravenous peramivir inhibits viral replication, and leads to bacterial clearance and prevention of mortality during murine bacterial co-infection caused by influenza A(H1N1)pdm09 virus and *Streptococcus pneumoniae*. *Antiviral Res.* 2015 May;117:52-9. doi: 10.1016/j.antiviral.2015.02.012. Epub 2015 Mar 6. PMID: 25752738.

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7. Bioactivity

Biological target:

Peramivir (RWJ-270201;BCX-1812) is a highly potent, selective and orally active influenza virus neuraminidase (NA) inhibitor, with IC50 values ranging from 0.9 to 4.3 nM for nine NA subtypes.

In vitro activity

Peramivir dose-dependently inhibited TNF- α release with the half-maximal inhibitory concentration (IC50) as 4.3 μ M (Figure 1C). This study tested the cytotoxicity of peramivir in macrophages by a CCK-8 assay to eliminate the inhibitory effect on TNF- α might be achieved by cytotoxicity. Results demonstrated that no apparent toxicity was observed in the peramivir-treated macrophages at concentrations up to 40 μ M (Figure 1D).

Reference: Front Immunol. 2022 Feb 28;13:856327. <https://pubmed.ncbi.nlm.nih.gov/35296098/>

In vivo activity

This study demonstrates the antiviral activity of peramivir in a mouse model of H7N9 avian influenza virus infection. The data show that repeated administration of peramivir at 30 mg/kg of body weight successfully eradicated the virus from the respiratory tract and extrapulmonary tissues during the acute response, prevented clinical signs of the disease, including neuropathy, and eventually protected mice against lethal H7N9 influenza virus infection.

Reference: Antimicrob Agents Chemother. 2015 Dec;59(12):7255-64. <https://pubmed.ncbi.nlm.nih.gov/26369969/>

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.