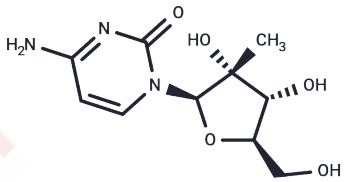
Data Sheet (Cat.No.T7215)

TargetMol

NM107

Chemical Properties



CAS No. : 20724-73-6

Formula: C10H15N3O5

Molecular Weight: 257.24

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	NM107 (2'-C-Methylcytidine) is a ribonucleoside with broad-spectrum antiviral activity and acts as a nucleoside inhibitor of the hepatitis C virus (HCV) NS5B polymerase, demonstrating an EC50 of 1.85 μM in wild-type replicon cells.
Targets(IC50)	HCV Protease
In vitro	NM107 reduces the number of viral plaques in BHK-21 cells infected with dengue type 2, reovirus type 1, West Nile, and yellow fever RNA viruses with EC50 values of 95, 26, 80, and 75 μM, respectively. NM107 inhibits hepatitis C virus (HCV) replication (EC50 = 2.2 μM in a replicon assay) and protects MDBK cells from infection with bovine virus diarrhea virus (BVDV; EC50 = 2.2 μM) and human corona virus (HCoV; EC50 = 90 μM). It also reduces infectious virus yield in BHK-21 cells infected with foot-and-mouth disease virus (FMDV; EC50 = 6.4 μM) and swine vesicular disease virus (SVDV; EC50 = 45.2 μM)[1].
In vivo	Prolonged norovirus shedding may occur in certain patients, such as organ transplant recipients. Established a mouse model for persistent norovirus infection (using the mouse norovirus MNV.CR6 strain). The nucleoside viral polymerase inhibitor 2′-C-methylcytidine (2CMC), but not favipiravir (T-705), reduced viral shedding to undetectable levels. Viral rebound was observed after stopping treatment, which was again effectively controlled by treatment with 2CMC. No drug-resistant variants emerged[2].
Animal Research	For all experiments, age- and sex-matched mice 8 to 12 weeks of age were infected by oral gavage with 10^6 CCID50 (50% cell culture infective doses) of CR6. At 7 days postinfection (p.i.), mice were left untreated (n = 9) or were treated with 100 mg/kg daily of 2'-C-Methylcytidine(2CMC) subcutaneously for 5 (n = 4), 7 (n = 4), or 11 (n = 4) days. Two more rounds of a 14-day treatment (with an ~4-week interval in between) with 2CMC (n = 10) or favipiravir (200 mg/kg daily by oral gavage [n = 5]) were given. On each day after infection, the general condition and weight of treated and untreated mice were assessed, individual stool samples were collected (whenever possible during one daily period of observation), and levels of MNV RNA were quantified by reverse transcriptase quantitative PCR (RT-qPCR)[2].

Solubility Information

Solubility	H2O: 50 mg/mL (194.37 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.77 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.8874 mL	19.4371 mL	38.8742 mL
5 mM	0.7775 mL	3.8874 mL	7.7748 mL
10 mM	0.3887 mL	1.9437 mL	3.8874 mL
50 mM	0.0777 mL	0.3887 mL	0.7775 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Goris N , De Palma A , Toussaint, JeanFrançois, et al. 2'-C-Methylcytidine as a potent and selective inhibitor of the replication of foot-and-mouth disease virus[J]. Antiviral Research, 2007, 73(3):161-168.

Rochapereira J , Dycke J V , Neyts J . Treatment with a Nucleoside Polymerase Inhibitor Reduces Shedding of Murine Norovirus in Stool to Undetectable Levels without Emergence of Drug-Resistant Variants[J]. Antimicrobial Agents & Chemotherapy, 2015, 60(3):AAC.02198-15.

Guedj J , Dahari H , Rong L , et al. Modeling shows that the NS5A inhibitor daclatasvir has two modes of action and yields a shorter estimate of the hepatitis C virus half-life[J]. Proceedings of the National Academy of Sciences, 2013, 110(10):3991-3996.