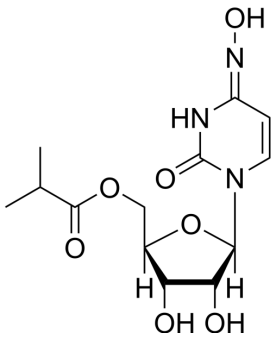
Molnupiravir



Cat. No.:	HY-135853
CAS No.:	2492423-29-5
Molecular Formula:	$C_{13}H_{19}N_3O_7$
Molecular Weight:	329.31
Target:	Influenza Virus; SARS-CoV
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 : 50 mg/mL (151.83 mM; Need ultrasonic)

H_2O : 12.5 mg/mL (37.96 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0367 mL	15.1833 mL	30.3665 mL
5 mM	0.6073 mL	3.0367 mL	6.0733 mL
10 mM	0.3037 mL	1.5183 mL	3.0367 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 50% PEG300 >> 50% saline
   Solubility: 25 mg/mL (75.92 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% PEG400 >> 2.5% Ethoxylated hydrogenated castor oil >> 87.5% water
   Solubility: 12.05 mg/mL (36.59 mM); Clear solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.59 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.59 mM); Clear solution
5. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.59 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Molnupiravir (EIDD-2801) is an orally bioavailable proagent of the ribonucleoside analog EIDD-1931. Molnupiravir has broad spectrum antiviral activity against influenza virus and multiple coronaviruses, such as SARS-CoV-2, MERS-CoV, SARS-CoV.

	Molnupiravir has the potential for the research of COVID-19, and seasonal and pandemic influenza[1][2].
In Vivo	Molnupiravir (50-500 mg/kg; p.o.; every 12 hours for 3 days) is robustly antiviral and able to prevent SARS-CoV replication and disease[1]. Molnupiravir (7 mg/kg; p.o.; twice daily for 3.5 days) significantly reduces shed virus load and duration of fever[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 mice (intranasal infection with SARS-CoV)[1]
Dosage:	50, 150, 500 mg/kg
Administration:	Oral; every 12 hours for 3 days
Result:	Body weight loss is significantly diminished or prevented.

Animal Model:	Ca/09-infected female ferrets[1]
Dosage:	7 mg/kg
Administration:	Oral; twice daily for 3.5 days
Result:	Shed virus load and duration of fever were significantly reduced.

CUSTOMER VALIDATION

- N Engl J Med. 2023 Jan 5;388(1):89-91.
- Nature. 2022 Apr;604(7904):134-140.
- Cell. 2022 Nov 10;185(23):4347-4360.e17.
- Nat Microbiol. 2022 Jun 15.
- Nat Commun. 2023 Jul 4;14(1):3952.

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REFERENCES

[1]. Toots M, et al. Characterization of orally efficacious influenza drug with high resistance barrier in ferrets and human airway epithelia. Sci Transl Med. 2019 Oct 23;11(515). pii: eaax5866.

[2]. Sheahan TP, et al. An orally bioavailable broad-spectrum antiviral inhibits SARS-CoV-2 in human airway epithelial cell cultures and multiple coronaviruses in mice. Sci Transl Med. 2020 Apr 6. pii: eabb5883.

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