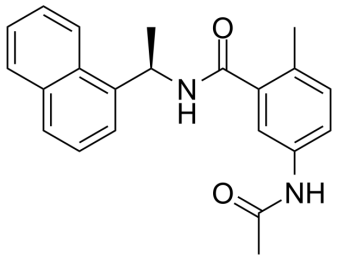
PLpro inhibitor

Cat. No.:	HY-17542
CAS No.:	1093070-14-4
Molecular Formula:	$C_{22}H_{22}N_2O_2$
Molecular Weight:	346.42
Target:	SARS-CoV
Pathway:	Anti-infection

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (288.67 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8867 mL	14.4333 mL	28.8667 mL
5 mM	0.5773 mL	2.8867 mL	5.7733 mL
10 mM	0.2887 mL	1.4433 mL	2.8867 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.22 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.22 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

PLpro inhibitor is a potent inhibitor of papain-like protease (PLpro) with an IC_{50} of 2.6 μM[1]. PLpro inhibitor inhibits SARS-CoV-2 PLpro with an IC_{50} of 5.0 μM and an EC_{50} of 21.0 μM[2].

IC_{50} & Target

IC50 : 2.6 μM (Papain-like protease (PLpro))[1]; 5.0 μM (SARS-CoV-2 PLpro)[2]
EC50: 21.0 μM (SARS-CoV-2 PLpro)[2]

In Vitro

PLpro inhibitor is a potent inhibitor against the papain-like protease (PLpro) from the coronavirus that causes severe acute respiratory syndrome (SARS-CoV). PLpro inhibitor was found to have IC_{50} value of 2.6 μM. PLpro inhibitor display significant antiviral activity with EC_{50} values of 13.1 μM, without toxicity up to the highest concentration tested. Notably, the increasing antiviral potency correlates with the in vitro inhibition of PLpro, suggesting that the compounds work directly on the

enzyme in cells[1][3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nucleic Acids Res. 2021 Jan 8;49(D1):D1113-D1121.
- Cell Rep. 2021 May 18;35(7):109133.
- ACS Infect Dis. 2020 Aug 14;6(8):2099-2109.
- Sci Rep. 2021 Mar 8;11(1):5433.
- bioRxiv. 2020 Jul.

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REFERENCES

[1]. Ratia, K., et al., A noncovalent class of papain-like protease/deubiquitinase inhibitors blocks SARS virus replication. Proc Natl Acad Sci U S A, 2008. 105(42): p. 16119-24.

[2]. http://www.google.com/patents/WO2010022355A1cl=en

[3]. Brendan T Freitas, et al. Characterization and Noncovalent Inhibition of the Deubiquitinase and deISGylase Activity of SARS-CoV-2 Papain-Like Protease. ACS Infect Dis. 2020 May 19.

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