SARS-CoV-2 Mpro-IN-4

Cat. No.: HY-151900

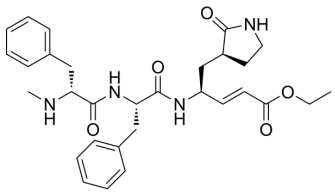
Molecular Formula: $C_{30}H_{38}N_4O_5$

Molecular Weight: 534.65

Target: SARS-CoV; Virus Protease

Pathway: Anti-infection

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	SARS-CoV-2 Mpro-IN-4 is a dual Inhibitor of Main Protease (M^{Pro}) and Cathepsin L (CatL), with IC_{50}s of 900 nM and 60 nM respectively. SARS-CoV-2 Mpro-IN-4 has antiviral activity against SARS-CoV2. SARS-CoV-2 Mpro-IN-4 blocks SARS-CoV2 replication in hACE2 expressing A549 cells with IC_{50} value of 8.2 nM[1].
IC_{50} & Target	MPro/CatL[1]
In Vitro	SARS-CoV-2 Mpro-IN-4 (SM141) blocks SARS-CoV2 replication in A549-hACE2 cells with IC_{50} value of 8.2 nM[1]. SARS-CoV-2 Mpro-IN-4 (50 μM, 24 h) does not cause any notable cytotoxicity in A549-hACE2 cells[1]. SARS-CoV-2 Mpro-IN-4 inhibits OC-43 virus mRNA expression A549 cells[1]. SARS-CoV-2 Mpro-IN-4 inhibits SARS-CoV2 infection by inhibiting both MPro and CatL[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	SARS-CoV-2 Mpro-IN-4 (SM141) (10 mg/kg for i.n. or 25 mg/kg for i.p.) protects K18-ACE2 mice from SARS-CoV2-induced weight loss and lethality[1]. SARS-CoV-2 Mpro-IN-4 (3 mg/kg, i.v.) shows a short half-life of 0.8 h and high clearance of 72 mL/min/kg in in male C57Bl/6 mice[1]. SARS-CoV-2 Mpro-IN-4 (10 mg/kg, p.o.) shows oral bioavailability of 5%[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	K18-hACE2 transgenic mice[1]
Dosage:	10 mg/kg (i.n.) or 25 mg/kg (i.p.)
Administration:	Intranasal inhalation (i.n.), once daily for 3 days, prior to the infection; or Intraperitoneal injection (i.p.), twice daily for 5 days, postinfection administration.
Result:	Prevented weight loss and prolonged survival.

REFERENCES

[1]. Mondal S, et al. Dual Inhibitors of Main Protease (MPro) and Cathepsin L as Potent Antivirals against SARS-CoV2. J Am Chem Soc. 2022 Nov 23;144(46):21035-21045.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA