SARS-CoV-2 Mpro-IN-5

Cat. No.: HY-151901

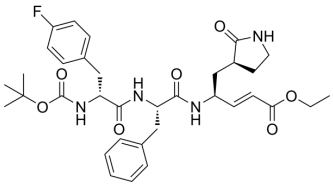
Molecular Formula: $C_{34}H_{43}FN_4O_7$

Molecular Weight: 638.73

Target: SARS-CoV

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-5 is a dual Inhibitor of Main Protease (M^{Pro}) and Cathepsin L (CatL), with IC_{50}s of 1800 nM and 145 nM respectively. SARS-CoV-2 Mpro-IN-5 has antiviral activity against SARS-CoV2. SARS-CoV-2 Mpro-IN-5 blocks SARS-CoV2 replication in hACE2 expressing A549 cells with IC_{50} value of 14.7 nM[1].

IC_{50} & Target

MPro/CatL[1]

In Vitro

SARS-CoV-2 Mpro-IN-5 (SM142) blocks SARS-CoV2 replication in A549-hACE2 cells with IC_{50} value of 14.7 nM[1].
SARS-CoV-2 Mpro-IN-5 (0-50 μM, 24 h) cause cytotoxicity in A549-hACE2 cells[1].
SARS-CoV-2 Mpro-IN-5 inhibits OC-43 virus mRNA expression A549 cells[1].
SARS-CoV-2 Mpro-IN-5 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.

Cell Viability Assay[1]

Cell Line:	A549-hACE2 cells
Concentration:	0, 0.1, 0.2, 2, 20, 50 μM
Incubation Time:	24 h
Result:	Dose-dependently inhibited cell viability, reduce by 15% at 50 μM.

In Vivo

SARS-CoV-2 Mpro-IN-5 (SM142) (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-5 (3 mg/kg, i.v.) shows a half-life of 2.1 h and high clearance of 18490 mL/min/kg in in male C57Bl/6 mice[1].
SARS-CoV-2 Mpro-IN-5 (10 mg/kg, p.o.) shows oral bioavailability of 37.5%[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.

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