SARS-CoV-2-IN-34

Cat. No.:	HY-P3492
Molecular Formula:	$C_{91}H_{119}N_{13}O_{16}S$
Molecular Weight:	1683.06
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-IN-34 (S-20-1) is a blood brain barrier penetrable pan-coronavirus (CoV) fusion inhibitor with broad-spectrum inhibitory activity. SARS-CoV-2-IN-34 effectively inhibits infection by pseudotyped and authentic SARS-CoV-2, and pseudotyped variants of concern (VOCs). SARS-CoV-2-IN-34 shows high affinity to RBD in S1 and HR1 domain in S2 of SARS-CoV-2 S protein. SARS-CoV-2-IN-34 can be used for the research of infection[1].

In Vitro

SARS-CoV-2-IN-34 (0.1-100 μM; 30 min) inhibits infection by PsV of SARS variants on Huh-7 and Caco-2 cells with IC_{50}s values ranging from 0.54 to 10.23 μM and inhibits infection of pseudotyped SARS-CoV, MERS-CoV, HCoV-229E, HCoV-NL63, and bat SARSr-CoV WIV1 with IC_{50}s ranging from 1.30 to 12.02 μM[1].

SARS-CoV-2-IN-34 (0.1-100 μM; 30 min) inhibits the replication of authentic SARS-CoV 2 on Caco-2 cell line with an IC_{50} value of 8.14 μM and inhibits authentic HCoV-OC43 and HCoV-229E infection in RD cells and Huh-7 cells with IC_{50}s of 6.25 and 9.46 μM, respectively[1].

SARS-CoV-2-IN-34 (0.1-100 μM; 2-4 h) potently inhibits cell-cell fusion mediated by S protein of SARS-CoV-2, SARS-CoV, MERS CoV, HCoV-229E and HCoV-NL63 with IC_{50}s ranging from 1.47 to 5.44 μM[1].

SARS-CoV-2-IN-34 (50 μM; 1 h) inhibits SARS-CoV-2 infection at the early stage of viral entry[1].

SARS-CoV-2-IN-34 (0-2 μM) shows binding effects to S1, RBD and HR with K_d value of 67, 61 and 277 nM, respectively[1].

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

Cell Cytotoxicity Assay[1]

Cell Line:	Huh-7, Caco-2 and RD cell lines
Concentration:	0-1000 μM
Incubation Time:	12 hours
Result:	Showed low on Huh-7, Caco-2 and RD cells with CC_{50}s of ⊠800, 692.7 and 274.2 μM, respectively.

In Vivo

SARS-CoV-2-IN-34 (60 and 80 mg/kg; intranasal route 0.5 h pre- or post-challenge with HCoV-OC43 and SARS-CoV-2 Delta) effectively protects mice from infection[1].

SARS-CoV-2-IN-34 (50 mg/kg; i.p. and p.o. once) shows good oral bioavailability and higher absorption rate under fed conditionsis, it is expected to have potential oral bioavailability[1].

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Animal Model:	C57BL/6 mice with HCoV-OC43 infection[1]
Dosage:	80 mg/kg
Administration:	Intranasal route; 80 mg/kg 0.5 h pre- or post-challenge with HCoV-OC43
Result:	Significantly decreased relative HCoV-OC43 RNA level of both prevention and treatment group.

Animal Model:	hACE2-transgenic C57BL/6 mice with SARS-CoV-2 Delta variant infection[1].
Dosage:	60 mg/kg
Administration:	Intranasal route; 60 mg/kg 0.5 h pre- or post-challenge with SARS-CoV-2 Delta
Result:	Exhibited prophylactic and therapeutic effect against SARS-CoV-2 Delta infection with intranasally administered.

REFERENCES

[1]. Xue S, et al. A novel cyclic γ-AApeptide-based long-acting pan-coronavirus fusion inhibitor with potential oral bioavailability by targeting two sites in spike protein. Cell Discov. 2022 Sep 8;8(1):88.

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