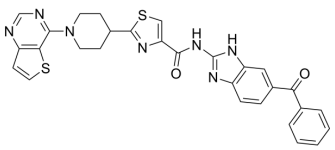
SC75741

Cat. No.:	HY-10496
CAS No.:	913822-46-5
Molecular Formula:	$C_{29}H_{23}N_7O_2S_2$
Molecular Weight:	565.67
Target:	NF-κB; Influenza Virus
Pathway:	NF-κB; 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 : 83.33 mg/mL (147.31 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7678 mL	8.8391 mL	17.6782 mL
	5 mM	0.3536 mL	1.7678 mL	3.5356 mL
	10 mM	0.1768 mL	0.8839 mL	1.7678 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: ≥ 2.08 mg/mL (3.68 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (3.68 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.68 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SC75741 is a broad and efficient NF-κB inhibitor with an IC_{50} of 200 nM for p65[1]. SC75741 blocks influenza viruses (IV) replication. SC75741 impairs DNA binding of the NF-κB subunit p65, resulting in reduced expression of cytokines, chemokines, and pro-apoptotic factors. SC75741 subsequently inhibits caspase activation and blocks caspase-mediated nuclear export of viral ribonucleoproteins[2].

IC_{50} & Target

p65
200 nM (IC_{50})

In Vitro

SC75741 (5 μM; 24-96 hours) inhibits long-term A549 cells proliferation[2].
SC75741 (1-10 μM; 5.5-65 hours) reduces A549 cells viability in a concentration-dependent manner indicating a cytostatic effect for A549 cells within a time frame of about 50 and 65 hours[2].
SC75741 (5 μM; 24 hours) strongly inhibits cleavage of the effector caspase 3 induced upon H7N7-infection[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[2]

Cell Line:	A549 cells
Concentration:	5 μM
Incubation Time:	24, 48, 72 and 96 hours
Result:	Inhibited long-term cell proliferation

Cell Viability Assay[2]

Cell Line:	A549 cells
Concentration:	1, 2, 5 or 10 μM
Incubation Time:	5.5, 29, 50, 65 hours
Result:	Reduced cells viability in a concentration-dependent manner.

Western Blot Analysis[2]

Cell Line:	MDCK cells
Concentration:	5 μM
Incubation Time:	24 hours
Result:	Inhibited cleavage of the effector caspase 3 induced upon H7N7-infection.

In Vivo

SC75741 (intraperitoneal injection; 15 mg/kg; for 2 days) leads to a reduced propagation of the H5N1 virus mRNA by 90% in the lungs of infected mice[2].
The plasma-levels of SC74751 (intravenously of 5 mg/kg and intraperitoneally of 15 mg/kg; for 3.5 and 6 hours) after i.v. administration decreases mono-exponentially and half-life is roughly 40 min. After i.p. administration, elimination of SC75741 seems to be limited by a slow uptake from the peritoneum and a half-life of 55 min is observed[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Inbred female C57BL/6 mice at the age of 6-8 weeks[2]
Dosage:	15 mg/kg
Administration:	Intraperitoneal injection; for 2 days
Result:	Reduced the amount of viral mRNA by 90%.

Animal Model:	Inbred female C57BL/6 mice at the age of 6-8 weeks[1]
Dosage:	5 mg/kg or 15 mg/kg
Administration:	Intravenously of 5 mg/kg and intraperitoneally of 15 mg/kg; 3.5 and 6 hours

Result:	Half-life was roughly 40 min and 55 min for i.v. and i.p. administration, respectively.

CUSTOMER VALIDATION

- J Clin Invest. 2024 Oct 1:e178628.
- Cell Rep Med. 2024 May 29:101592.
- Phytomedicine. 2024 Feb 12:126:155450.
- EMBO Rep. 2020 Nov 5;21(11):e49305.
- Free Radic Biol Med. 2024 Jun 1:S0891-5849(24)00506-9.

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REFERENCES

[1]. Haasbach E, et al. The NF-kappaB inhibitor SC75741 protects mice against highly pathogenic avian influenza A virus. Antiviral Res. 2013 Sep;99(3):336-44.

[2]. Ehrhardt C, et al. The NF-κB inhibitor SC75741 efficiently blocks influenza virus propagation and confers a high barrier for development of viral resistance. Cell Microbiol. 2013 Jul;15(7):1198-211.

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