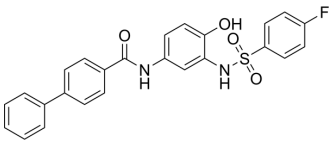
SN-011

Cat. No.:	HY-145010
CAS No.:	2249435-90-1
Molecular Formula:	$C_{25}H_{19}FN_2O_4S$
Molecular Weight:	462.49
Target:	STING
Pathway:	Immunology/Inflammation
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 (216.22 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1622 mL	10.8110 mL	21.6221 mL
	5 mM	0.4324 mL	2.1622 mL	4.3244 mL
	10 mM	0.2162 mL	1.0811 mL	2.1622 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 (5.41 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.41 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SN-011 is a potent and selective mouse and human STING inhibitor, with an IC_{50} of 76 nM for STING signaling. SN-011 competes with cyclic dinucleotide (CDN) for the binding pocket of the STING dimer, blocking CDN binding and STING activation. SN-011 can be used for the research of STING-driven autoimmune and inflammatory disease[1].

IC_{50} & Target

IC50: 76 nM (STING signaling)[1]

In Vitro

SN-011 (1 μM; pretreated for 6 h) significantly suppresses the STING stimulator-induced expression of Ifnb, Cxcl10, and Il6 mRNA in mouse embryonic fibroblasts (MEFs)[1].
SN-011 (0.001-10 μM; pretreated for 6 h) inhibits 2′3′-cGAMP-induced Ifnb expression in MEFs, mouse bone marrow-derived macrophages (BMDMs) and human foreskin fibroblasts (HFFs) with IC_{50}s of 127.5, 107.1, and 502.8 nM, respectively[1].

SN-011 (1 μM; pretreated for 3 h) inhibits 2′3′-cGAMP-induced STING oligomerization and phosphorylation in HFFs[1].
SN-011 (1 μM) suppresses HSV-1 infection (4 h), HT-DNA (1 h), or 2′3′-cGAMP stimulation (30 min) induced STING ER-to-Golgi translocation[1].

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

Western Blot Analysis[1]

Cell Line:	Human foreskin fibroblasts
Concentration:	1 μM
Incubation Time:	Pretreated and then stimulated with 2′3′-cGAMP for 1 h
Result:	Suppressed 2′3′-cGAMP-induced STING oligomerization and phosphorylation.

In Vivo

SN-011 (5 mg/kg; i.p. 3 times weekly for a month) strongly inhibits hallmarks of inflammation and autoimmunity disease, and protects Trex1 $^{/}$ mice from death[1].

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

Animal Model:	4-wk-old Trex1$^{-/-}$ mice[1]
Dosage:	5 mg/kg
Administration:	I.p. 3 times weekly for a month
Result:	Improved survival of mice. Reduced severe multiorgan inflammation. Reduced serum antinuclear antibody.

CUSTOMER VALIDATION

- Genes Dis. 18 October 2022.
- J Virol. 2023 Apr 11;e0018823.

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REFERENCES

[1]. Hong Z, et, al. STING inhibitors target the cyclic dinucleotide binding pocket. Proc Natl Acad Sci U S A. 2021 Jun 15;118(24):e2105465118.

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