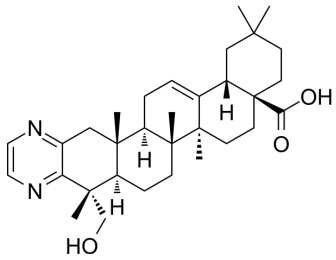
STING-IN-4

Cat. No.:	HY-151970
CAS No.:	2250374-27-5
Molecular Formula:	$C_{32}H_{46}N_2O_3$
Molecular Weight:	506.72
Target:	STING
Pathway:	Immunology/Inflammation
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 93.33 mg/mL (184.18 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9735 mL	9.8674 mL	19.7348 mL
	5 mM	0.3947 mL	1.9735 mL	3.9470 mL
	10 mM	0.1973 mL	0.9867 mL	1.9735 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 3.5 mg/mL (6.91 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3.5 mg/mL (6.91 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

STING-IN-4 (Compound 1) is a STING inhibitor that inhibits STING expression and hence reducing activation of STING and nuclear factor-κB (NF-κB) signaling. STING-IN-4 shows anti-inflammatory activity and can be used for the research of sepsis [1].

IC_{50} & Target

STING[1]

In Vitro

STING-IN-4 (Compound 1) (20 μM; 26 h) inhibits NO production induced by LPS in RAW264.7 cells[1].
STING-IN-4 (2.5-10 μM; 26 h) significantly inhibits the expression of iNOS in RAW264.7 cells[1].
STING-IN-4 (5 and 50 μM; 12 h) significantly reduces STING degradation at 49, 52, and 55 °C and it may have an ability to interact with STING and enhance thermal stabilization of STING[1].
STING-IN-4 (2.5-10 μM; 8 h) inhibits LPS-induced activation of STING/IRF3/NF-κB[1].

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

Western Blot Analysis[1]

Cell Line:	RAW264.7 cells
Concentration:	2.5, 5 and 10 μM
Incubation Time:	Pre-treated for 2 h followed LPS treatment for 6 h or 24 h
Result:	Inhibited the expression of iNOS (24 h). Blocked LPS-induced phosphorylation of TBK1, IRF3, p65, and IκB-α (6 h).

In Vivo

STING-IN-4 (Compound 1) (1-9 mg/kg; i.p.; daily for 3 days) protects against LPS-induced liver injuries in mice and inhibits STING/IRF3/NF-κB activation in septic mice livers[1].

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

Animal Model:	BALB/c mice, LPS-induced acute liver injury model[1]
Dosage:	1, 3 and 9 mg/kg
Administration:	Intraperitoneal injection, daily for 3 days
Result:	Significantly reduced the hemorrhage severity. Decreased the levels of alanine transaminase (ALT), aspartate aminotransferase (AST), and alkaline phosphatase (ALP) induced by LPS. Significantly reduced the levels of TNF-α, IL-6, and IFN-β compared with mice treated only with LPS. Markedly reduced the levels of STING, p-TBK, p-IRF3, p-p65, and p-IκB-α.

REFERENCES

[1]. Yu T, et al. Design and synthesis of hederagenin derivatives modulating STING/NF-κB signaling for the relief of acute liver injury in septic mice. Eur J Med Chem. 2023 Jan 5;245(Pt 1):114911.

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