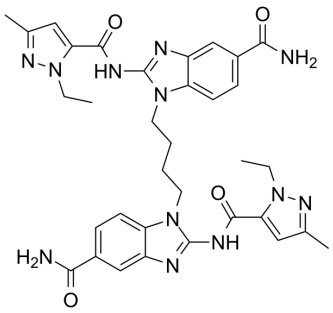
STING agonist-4

Cat. No.:	HY-123943
CAS No.:	2138300-40-8
Molecular Formula:	$C_{34}H_{38}N_{12}O_4$
Molecular Weight:	678.74
Target:	STING
Pathway:	Immunology/Inflammation
Storage:	-20°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 10 mg/mL (14.73 mM; Need ultrasonic)
H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.4733 mL	7.3666 mL	14.7332 mL
5 mM	0.2947 mL	1.4733 mL	2.9466 mL
10 mM	0.1473 mL	0.7367 mL	1.4733 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: 1 mg/mL (1.47 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 1 mg/mL (1.47 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

STING agonist-4 is an stimulator of Interferon Genes (STING) receptor agonist with an apparent inhibitory constant (IC_{50}) of 20 nM. STING agonist-4 is a two symmetry-related amidobenzimidazole (ABZI)-based compound to create linked ABZIs (diABZIs) with enhanced binding to STING and cellular function[1].

IC_{50} & Target

IC50: 20 nM (STING agonist-4)[1]

In Vitro

STING agonist-4 (Compound 2) (0.3-30 μM; 2 hours) causes phosphorylation of IRF3 and STING that is inhibited by the TBK1 inhibitor BX795 and induces dose-dependent secretion of IFN-β with an EC_{50} of 3.1 μM[1].
STING agonist-4 (Compound 2) (0.001 nM-1 μM) inhibits binding of full-length STING to the solid support with an apparent dissociation constant (K_d) of approximately 1.6 nM[1].

STING agonist-4 (Compound 2) (0-100 μM) is 18-fold more potent than cGAMP (an endogenous STING ligand), with an EC_{50} of 53.9 μM[1].

STING agonist-4 (Compound 2) (3 μM; 4 hours) promotes production of interferon γ-induced protein 10 (IP-10), IL-6 and TNF-α by a mechanism that is dependent on STING-mediated activation of TBK1[1].

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

Cell Viability Assay[1]

Cell Line:	Human peripheral blood mononuclear cells (PBMCs)
Concentration:	0.3 μM, 1 μM, 3 μM, 10 μM and 30 μM
Incubation Time:	2 hours
Result:	Caused phosphorylation of IRF3 and STING and induced secretion of IFN-β.

CUSTOMER VALIDATION

- Biomaterials. August 2022, 121673.
- Phytomedicine. 2023 Jun 10, 154922.
- Eur J Med Chem. 2023 Feb 4;250:115184.

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REFERENCES

[1]. Ramanjulu JM et al. Design of amidobenzimidazole STING receptor agonists with systemic activity. Nature. 2018 Dec;564(7736):439-443.

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