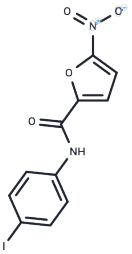
Data Sheet (Cat.No.T5154)

TargetMol

C-176

Chemical Properties



CAS No. : 314054-00-7

Formula: C11H7IN2O4

Molecular Weight: 358.09

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	C-176 (STING inhibitor 1) is a STING inhibitor with selectivity and blood-brain barrier permeability. C-176 inhibits STING-mediated IFNβ production and possesses anti-inflammatory activity.
Targets(IC50)	STING
In vitro	**METHODS**: HEK293T cells expressing mCherry-STING were transfected with plasmids encoding cdG Syn or RIG-I and an IFNβ luciferase reporter gene, then treated with C-176 (0.01-1.25 μM) to detect IFNβ luciferase activity. **RESULTS**: C-176 strongly reduced STING-mediated, but not RIG-I or TBK 1-mediated, IFNβ reporter activity. [1] **METHODS**: The rat microglial cell line GMI-R1 was treated with LPS (1 μg/mL) and C-176 (20 μM), and target protein expression levels were measured by Western Blot. **RESULTS**: LPS activated the STING signaling pathway. Although the levels of mitochondrial superoxide and STING were not affected by C-176 treatment, the increase in the phosphorylation levels of TBK1 and NF-κB could be significantly reversed by C-176, suggesting that STING signaling could be inhibited by C-176 treatment in GMI-R1 cell line. [2]
In vivo	**METHODS**: To investigate the anti-inflammatory activity in vivo, C-176 (750/375 nmol per mouse in corn oil) was injected intraperitoneally into C57BL/6J mice, and CMA (224 mg/kg) was administered either 1 h or 4 h. After 4 h, the mice were euthanized, and the serum was collected for measurement of CMA-induced cytokine levels. **RESULTS**: C-176 significantly reduced the CMA-mediated induction of Type 1 IFNs and IL-6 serum levels without significant toxicity. [1]

Solubility Information

Solubility	DMSO: 120 mg/mL (335.11 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween80+45% Saline: 1.8 mg/mL (5.03 mM) *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7926 mL	13.963 mL	27.9259 mL
5 mM	0.5585 mL	2.7926 mL	5.5852 mL
10 mM	0.2793 mL	1.3963 mL	2.7926 mL
50 mM	0.0559 mL	0.2793 mL	0.5585 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Haag SM, et al. Targeting STING with covalent small-molecule inhibitors. Nature. 2018 Jul;559(7713):269-273.
Liu X, Cen X, Wu R, et al.ARIH1 activates STING-mediated T-cell activation and sensitizes tumors to immune checkpoint blockade.Nature Communications.2023, 14(1): 4066.
Jin L, Yu B, Wang H, et al.STING promotes ferroptosis through NCOA4-dependent ferritinophagy in acute kidney injury.Free Radical Biology and Medicine.2023
Zhang X, et al. STING Contributes to Cancer-Induced Bone Pain by Promoting M1 Polarization of Microglia in the Medial Prefrontal Cortex. Cancers (Basel). 2022 Oct 22;14(21):5188.
Li R, Xiong Y, Ma L, et al.Neutrophil extracellular traps promote macrophage inflammation in psoriasis.Clinical Immunology.2024: 110308.