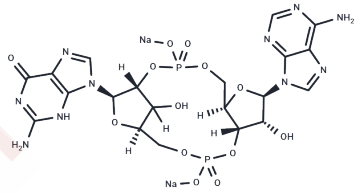
Data Sheet (Cat.No.T10065L)

TargetMol

2',3'-cGAMP sodium

Chemical Properties



CAS No. : 2734858-36-5

Formula: C20H22N10Na2O13P2

Molecular Weight: 718.37

Storage: Store at low temperature,Keep away from direct sunlight
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	2',3'-cGAMP sodium (2'-3'-cyclic GMP-AMP sodium) is a second messenger in cellular innate immunity, catalyzed by cGAMP synthase (cGAS) under DNA binding conditions. It binds to STING to form a dimer, inducing the production and expression of interferon-β and other cytokines.
Targets(IC50)	Endogenous Metabolite,cGAS,IFNAR,STING
In vitro	2′3′-cGAMP sodium is capable of enhancing the proinflammatory activation of cultured Wild-type (WT) macrophages. Unlike in macrophages (BMDM), 2′3′-cGAMP sodium treatment displayed anti-inflammatory effects in both WT primary mouse hepatocytes and differentiated 3T3-L1 adipocytes. Specifically, LPS-induced JNK p46 and NF-κB p65 phosphorylation states and IL-1β and TNFα mRNAs in 2′3′-cGAMP sodium -treated WT primary mouse hepatocytes were significantly lower than their respective levels in control-treated hepatocytes. In 3T3-L1 adipocytes, the anti-inflammatory effect of 2′3′-cGAMP sodium was even more pronounced. In particular, LPS-induced JNK p46 phosphorylation states in 2′3′-cGAMP sodium -treated adipocytes were markedly lower than in control-treated adipocytes, and were comparable with JNK p46 phosphorylation states in 2′3′-cGAMP sodium -treated adipocytes in the absence of LPS induction.[2]
In vivo	At 7 days after tumor cell inoculation, the mice were treated with zebularine alone, 2′,3′-cGAMP sodium alone, or the combination of both. A final concentration of 2.5 mg/mL zebularine was added to drinking water for 10 days until the mice were collected for conducting further experiments. A total of 100 μL of 10μg 2′,3′-cGAMP sodium in PBS at the indicated concentrations was injected into the site next to tumor. 2′,3′-cGAMP sodium treatment was repeated three times with 4-day intervals. This study unveils the role of zebularine in sensitizing the cGAS-STING pathway to promote anti-tumor immunity.[4]

Solubility Information

Solubility	H2O: 5 mg/mL (6.96 mM),Sonication is recommended. DMSO: 0.9 mg/mL (1.25 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.392 mL	6.9602 mL	13.9204 mL
5 mM	0.2784 mL	1.392 mL	2.7841 mL
10 mM	0.1392 mL	0.696 mL	1.392 mL
50 mM	0.0278 mL	0.1392 mL	0.2784 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

Guo X, et al. Cyclic GMP-AMP Ameliorates Diet-induced Metabolic Dysregulation and Regulates Proinflammatory Responses Distinctly from STING Activation. Sci Rep. 2017 Jul 25;7(1):6355.
Zhang X, et al. Cyclic GMP-AMP containing mixed phosphodiester linkages is an endogenous high-affinity ligand for STING. Mol Cell. 2013 Jul 25;51(2):226-35.
Su M, et al. Second messenger 2'3'-cyclic GMP-AMP (2'3'-cGAMP): Synthesis, transmission, and degradation. Biochem Pharmacol. 2022;198:114934.
Lai J, et al. Zebularine elevates STING expression and enhances cGAMP cancer immunotherapy in mice. Mol Ther. 2021;29(5):1758-1771.