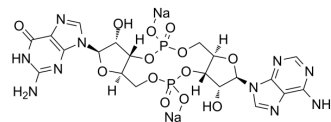


cGAMP disodium

Cat. No.:	HY-110385
CAS No.:	2407516-83-8
Molecular Formula:	C ₂₀ H ₂₂ N ₁₀ Na ₂ O ₁₃ P ₂
Molecular Weight:	718.37
Target:	STING; Endogenous Metabolite
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

H₂O : 180 mg/mL (250.57 mM; Need ultrasonic and warming)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	1.3920 mL	6.9602 mL	13.9204 mL
5 mM	0.2784 mL	1.3920 mL	2.7841 mL
10 mM	0.1392 mL	0.6960 mL	1.3920 mL

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

BIOLOGICAL ACTIVITY

Description

cGAMP (Cyclic GMP-AMPP) disodium functions as an endogenous second messenger in metazoans and triggers interferon production in response to cytosolic DNA. cGAMP diammonium activates stimulator of interferon genes (STING), which activates a signaling cascade leading to the production of type I interferons and other immune mediators^{[1][2][3][4]}.

In Vitro

cGAMP disodium promotes the antigen-specific proliferation capacity of spleen cells in mice^[2].
 cGAMP disodium directly activates murine and human dendritic cells in vitro^[2].
 On stimulation with cGAMP disodium, fibroblasts from the patients showed increased transcription of IFNB1 but not of the genes encoding interleukin-1 (IL1), interleukin-6 (IL6), or tumor necrosis factor (TNF)^[3].
 cGAMP disodium activates the endoplasmic reticulum (ER)-resident receptor STING, thereby inducing an antiviral state and the secretion of type I IFNs^[4].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

cGAMP (5 µg; nostril mucosal adjuvant) disodium promotes the antigen-specific cytokine production by spleen cells of immunized mice^[2].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female C57BL/6 (H-2b) mice 6-8 weeks old ^[2]
Dosage:	5 µg
Administration:	Nostril mucosal adjuvant
Result:	Higher titers of ovalbumin (OVA)-specific IgA and total IgG as well as IgG1 and IgG2c in the sera of mice immunized with cGAMP-adjuvanted OVA as compared to sera from OVA-immunized mice.

CUSTOMER VALIDATION

- J Nanobiotechnology. 2022 Jan 6;20(1):23.
- Patent. US20210017607A1.
- bioRxiv. 2020 Jul.

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REFERENCES

- [1]. Wu J, et al. Cyclic GMP-AMP is an endogenous second messenger in innate immune signaling by cytosolic DNA. *Science*. 2013 Feb 15;339(6121):826-30.
- [2]. Skrnjug I, et al. Cyclic GMP-AMP displays mucosal adjuvant activity in mice. *PLoS One*. 2014 Oct 8;9(10):e110150.
- [3]. Ablasser A, et al. Cell intrinsic immunity spreads to bystander cells via the intercellular transfer of cGAMP. *Nature*. 2013 Nov 28;503(7477):530-4.

Caution: Product has not been fully validated for medical applications. For research use only.

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