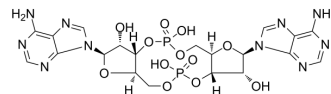


c-di-AMP

Cat. No.:	HY-12326		
CAS No.:	54447-84-6		
Molecular Formula:	C ₂₀ H ₂₄ N ₁₀ O ₁₂ P ₂		
Molecular Weight:	658.41		
Target:	STING; Bacterial; Endogenous Metabolite		
Pathway:	Immunology/Inflammation; Anti-infection; Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

H₂O : 3.33 mg/mL (5.06 mM; Need ultrasonic)

Solvent	Mass	Concentration		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	1.5188 mL	7.5941 mL	15.1881 mL
	5 mM	0.3038 mL	1.5188 mL	3.0376 mL
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

c-di-AMP (Cyclic diadenylate) is a STING agonist, which binds to the transmembrane protein STING thereby activating the TBK3-IRF3 signaling pathway, subsequently triggering the production of type I IFN and TNF. c-di-AMP (Cyclic diadenylate) is also a bacterial second messenger, which regulates cell growth, survival, and virulence, primarily within Gram-positive bacteria, and also regulates host immune response. c-di-AMP (Cyclic diadenylate) acts as a potent mucosal adjuvant stimulating both humoral and cellular responses^{[1][2][3][4]}.

IC₅₀ & Target

STING^[3]

In Vitro

c-di-AMP (Cyclic diadenylate) signaling is a central factor in many Gram-positive bacteria regulating cell wall synthesis, potassium ion channels, DNA repair, and biofilm formation. c-di-AMP is also essential for cell growth, survival, and virulence of several well-known human pathogenic bacteria including *S. aureus*, *L. monocytogenes*, *S. pyogenes*, and *Mycobacterium spp*^[1].

c-di-AMP (Cyclic diadenylate) combines with model antigens, such as OVA or β-Gal, acts as a potent mucosal adjuvant stimulating both humoral and cellular responses^[4].

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

CUSTOMER VALIDATION

- Cell Death Dis. 2022 Jul 28;13(7):653.

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REFERENCES

- [1]. Fahmi T, et al. c-di-AMP: An Essential Molecule in the Signaling Pathways that Regulate the Viability and Virulence of Gram-Positive Bacteria. *Genes (Basel)*. 2017 Aug 7;8(8).
- [2]. Ning H, et al. Recombinant BCG With Bacterial Signaling Molecule Cyclic di-AMP as Endogenous Adjuvant Induces Elevated Immune Responses After Mycobacterium tuberculosis Infection. *Front Immunol*. 2019 Jul 3;10:1519.
- [3]. Ebensen T, et al. The Combination Vaccine Adjuvant System Alum/c-di-AMP Results in Quantitative and Qualitative Enhanced Immune Responses Post Immunization. *Front Cell Infect Microbiol*. 2019 Feb 19;9:31.
- [4]. Sanchez MV, et al. Intranasal delivery of influenza rNP adjuvanted with c-di-AMP induces strong humoral and cellular immune responses and provides protection against virus challenge. *PLoS One*. 2014 Aug 20;9(8):e104824.
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Caution: Product has not been fully validated for medical applications. For research use only.

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