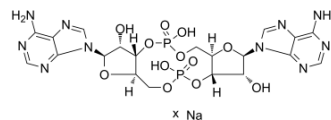


c-di-AMP sodium

Cat. No.:	HY-12326A
Molecular Formula:	C ₂₀ H ₂₄ N ₁₀ O ₁₂ P ₂ .xNa
Target:	STING; Bacterial; Endogenous Metabolite
Pathway:	Immunology/Inflammation; Anti-infection; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	c-di-AMP (Cyclic diadenylate) sodium 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 sodium 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 sodium acts as a potent mucosal adjuvant stimulating both humoral and cellular responses ^{[1][2][3][4]} .
IC₅₀ & Target	STING ^[3]
In Vitro	<p>c-di-AMP (Cyclic diadenylate) sodium 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 sodium is also essential for cell growth, survival, and virulence of several well-known human pathogenic bacteria including <i>S. aureus</i>, <i>L. monocytogenes</i>, <i>S. pyogenes</i>, and <i>Mycobacterium spp</i>^[1].</p> <p>c-di-AMP sodium combines with model antigens, such as OVA or β-Gal, acts as a potent mucosal adjuvant stimulating both humoral and cellular responses^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

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.

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

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