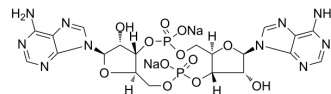


## c-di-AMP disodium

<b>Cat. No.:</b>	HY-12326A
<b>CAS No.:</b>	2734909-87-4
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>22</sub> N <sub>10</sub> Na <sub>2</sub> O <sub>12</sub> P <sub>2</sub>
<b>Molecular Weight:</b>	702.38
<b>Target:</b>	STING; Bacterial; Endogenous Metabolite
<b>Pathway:</b>	Immunology/Inflammation; Anti-infection; Metabolic Enzyme/Protease
<b>Storage:</b>	-80°C, protect from light, stored under nitrogen



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 270 mg/mL (384.41 mM; Need ultrasonic)

H<sub>2</sub>O : ≥ 50 mg/mL (71.19 mM)

\* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
	1 mM			1.4237 mL	7.1187 mL
5 mM			0.2847 mL	1.4237 mL	2.8475 mL
10 mM			0.1424 mL	0.7119 mL	1.4237 mL

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

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 6.75 mg/mL (9.61 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 6.75 mg/mL (9.61 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 6.75 mg/mL (9.61 mM); Clear solution

### 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<sup>[1][2][3][4]</sup>.

#### IC<sub>50</sub> & Target

STING<sup>[3]</sup>

## In Vitro

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 *S. aureus*, *L. monocytogenes*, *S. pyogenes*, and *Mycobacterium spp*<sup>[1]</sup>.

c-di-AMP sodium combines with model antigens, such as OVA or  $\beta$ -Gal, acts as a potent mucosal adjuvant stimulating both humoral and cellular responses<sup>[4]</sup>.

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

## CUSTOMER VALIDATION

- Gut Microbes. 2022 Jan-Dec;14(1):2119055.
- Cell Death Dis. 2022 Jul 28;13(7):653.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## 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.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA