

c-di-AMP VacciGrade™

Cyclic diadenylate monophosphate: a STING ligand

Catalog # vac-nacda

For research use only. Not for use in humans.

Version # 15K27-MM

PRODUCT INFORMATION

Content:

- 1 mg of lyophilized c-di-AMP VacciGrade™
- 10 ml sterile endotoxin-free physiological water (NaCl 0.9%)

Storage and stability:

- c-di-AMP VacciGrade™ is shipped at room temperature and should be stored at -20 °C. Lyophilized product is stable 1 year when properly stored.
- Upon resuspension, prepare aliquots of c-di-AMP VacciGrade™ and store at -20 °C. Resuspended product is stable 6 months when properly stored. Avoid repeated freeze-thaw cycles.

Quality control:

- c-di-AMP VacciGrade™ is a preclinical grade preparation of the cyclic dinucleotide c-di-AMP. It is prepared under strict aseptic conditions and is tested for the presence of endotoxins. c-di-AMP VacciGrade™ is guaranteed sterile and its endotoxin level is <0.005 EU/μg.
- Purity and structure has been determined by LC/MS and NMR: ≥ 95%
- Biological activity has been assessed by measuring induction of the interferon pathway in THP1-Blue™ ISG cells.

METHODS

Preparation of sterile stock solution (1 mg/ml):

- Add 1 ml endotoxin-free physiological water to the 1 mg c-di-AMP VacciGrade™ vial to obtain a solution at 1 mg/ml.
- Mix the solution by pipetting up and down.

Working Concentration: 5-50 μg/mouse

CHEMICAL PROPERTIES

Synonym: c-di-AMP sodium salt

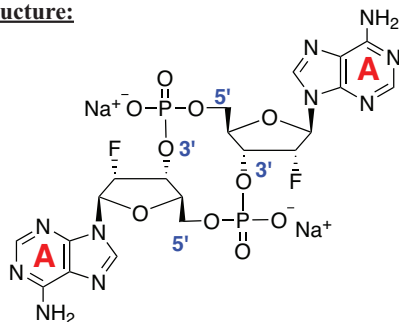
CAS number: 54447-84-6

Formula: C₂₀H₂₂N₁₀O₁₂P₂ · 2Na

Molecular weight: 702.38

Solubility: 50 mg/ml in physiological water

Structure:



DESCRIPTION

Cyclic diadenylate monophosphate (c-di-AMP) is an intracellular signaling molecule produced by bacteria. Administration of c-di-AMP can induce a strong immune response *in vitro* and *in vivo*². It was recently found that this cyclic dinucleotide induces the production of cytokines, such as type I interferons, through the STING/TBK1/IRF3 pathway¹. Due to its immunostimulatory properties, this molecule has been investigated as a vaccine adjuvant. Mucosal delivery of c-di-AMP elicits a balanced Th1/Th2 profile and Th17 response², which is crucial against intracellular pathogens. This adjuvant acts through the recruitment of monocytes and granulocytes, and the maturation of dendritic cells³.

1. Burdette DL. et al., 2010. STING is a direct innate immune sensor of cyclic di-GMP. *Nature*. 478(7370):515-8. **2. Ebsensen T. et al., 2011.** Bis-(3',5')-cyclic dimeric adenosine monophosphate: strong Th1/Th2/Th17 promoting mucosal adjuvant. *Vaccine*. 29(32):5210-20. **3. Karaolis DK. et al., 2007.** Bacterial c-di-GMP is an immunostimulatory molecule. *J Immunol*. 178:2171-81.

RELATED PRODUCTS

| Product | Description | Cat. Code |
|----------------------------|----------------------------|-------------|
| 2'2'-cGAMP VacciGrade™ | STING ligand | vac-nacga22 |
| 2'3'-cGAMP VacciGrade™ | STING ligand | vac-nacga23 |
| 3'3'-cGAMP VacciGrade™ | STING ligand | vac-nacga |
| AddaVax™ | Squalene-Oil-in-water | vac-adx-10 |
| Alhydrogel® 2% | Al(OH) ₃ gel | vac-alu-250 |
| c-di-GMP VacciGrade™ | STING ligand | vac-nacdg |
| CFA | Complete Freund's adjuvant | vac-cfa-10 |
| EndoFit™ Ovalbumin | For <i>in vivo</i> use | vac-efova |
| Flagellin FliC VacciGrade™ | TLR5 ligand | vac-fla |
| MPLAs VacciGrade™ | TLR4 ligand | vac-mpls |
| ODN 2006 VacciGrade™ | Human TLR9 ligand | vac-2006-1 |
| Poly(I:C) VacciGrade™ | TLR3 ligand | vac-pic |

TECHNICAL SUPPORT

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