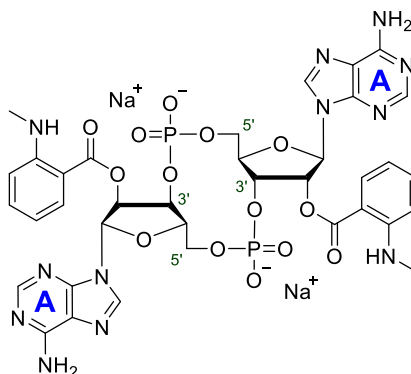


## Technical Information about Di-MANT-c-diAMP

Update: August 08, 2019 HU



**Abbreviation:** Di-MANT-c-diAMP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C <sub>36</sub> H <sub>38</sub> N <sub>12</sub> O <sub>14</sub> P <sub>2</sub> (free acid)	[pending]	924.7 (free acid)	λ <sub>max</sub> 256 nm / ε 40000 / pH 8	D 159

**Name:** 2', 2''- O- (Di- N'- methylanthraniloyl)- cyclic diadenosine monophosphate

**Description:** In Di-MANT-c-diAMP two 5'-AMP units are connected to form a cyclic structure. In addition, both ribose 2'-hydroxy groups are esterified by the fluorescent methylisatoic acid.

**Properties:** Di-MANT-c-diAMP is a fluorescent analogue of the bacterial second messenger c-diAMP (BIOLOG Cat. No. C 088). The MANT fluorophore (λ<sub>exc</sub> 355 nm, λ<sub>em</sub> 448 nm) has a certain sensitivity for its environment and can change its spectral properties upon binding.

**Specification:** Lyophilized or crystallized sodium salt. The free acid or other salt forms are available upon request. Equal concentrations of Di-MANT-c-diAMP can appear very different in volume due to sensitivity of the lyophilized form to humidity. The compound can even contract to small volume droplets. Normally the product is located in the conical bottom of the tube. Micromolar quantities are determined by UV at λ<sub>max</sub>.

**Purity:** Typical analysis is better than 95% (HPLC / UV / 256 nm). The product is not sterile and has not been tested for endotoxins.

**Solubility:** Di-MANT-c-diAMP is soluble in water (≥ 1.7 mM, limits have not been determined). Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing. When opening the tube please make sure that no substance is lost within the cap.

**Stability and Storage:** Di-MANT-c-diAMP is chemically rather stable and does not need special care during handling or shipment. Nevertheless, the compound should be protected from light and stored in the freezer, for longer storage periods preferably in freeze-dried form.

**Toxicity and Safety:** Please keep in mind, that the *in vivo* properties of this compound are not sufficiently characterized up to now. Avoid skin contact or ingestion and allow only trained personnel to handle the product. Our products are designed, developed and sold for research purposes only! They are intended for *in vitro* and nonhuman *in vivo* laboratory applications. Any other use requires approval of health authorities.

**Not for drug, household or related uses!**

**Selected References for Di-MANT-c-diAMP:** Di-MANT-c-diAMP is a new structure which has been synthesized by BIOLOG Life Science Institute for the first time. There are no corresponding references available at present.

**Selected References for Related Fluorescent Analogues of Adenine and Guanine Nucleotides:**

Hiratsuka, T., *Biochim. Biophys. Acta.*, **742**, 496 - 508 (1983): "New Ribose-modified Fluorescent Analogs of Adenine and Guanine Nucleotides Available as Substrates for Various Enzymes"

Hiratsuka, T., *J. Biol. Chem.*, **257**, 13354 - 13358 (1982): "New Fluorescent Analogs of cAMP and cGMP Available as Substrates for Cyclic Nucleotide Phosphodiesterase"

**Selected References for c-diAMP:**

Corrigan, R.M.; Campeotto, I.; Jeganathan, T.; Roelofs, K.G.; Lee, V.T.; Gründling, A., *Proc. Natl. Acad. Sci. USA*, **110**, 9084 - 9089 (2013): "Systematic Identification of Conserved Bacterial c-di-AMP Receptor Proteins"

Abdul-Sater, A.A.; Grajkowski, A.; Erdjument-Bromage, H.; Plumlee, C.; Levi, A.; Schreiber, M.T.; Lee, C.; Shuman, H.; Beaucage, S.L.; Schindler, C., *Microbes Infect.*, **14**, 188 - 197 (2012): "The Overlapping Host Responses to Bacterial Cyclic Dinucleotides"

Corrigan, R.M.; Abbott, J.C.; Burhenne, H.; Kaefer, V.; Gründling, A., *PLoS Pathog.*, **7**, e1002217 (2011): "c-di-AMP is a New Second Messenger in *Staphylococcus aureus* with a Role in Controlling Cell Size and Envelope Stress"

Oppenheimer-Shaanan, Y.; Wexselblatt, E.; Katzhendler, J.; Yavin, E.; Ben-Yehuda, S., *EMBO Rep.*, **12**, 594 - 601 (2011): "c-di-AMP Reports DNA Integrity During Sporulation in *Bacillus subtilis*"

Woodward, J.J.; Iavarone, A.T.; Portnoy, D.A., *Science*, **328**, 1703 - 1705 (2010): "c-di-AMP Secreted by Intracellular *Listeria monocytogenes* Activates a Host Type I Interferon Response"

Witte, G.; Hartung, S.; Büttner, K.; Hopfner, K.-P., *Mol. Cell*, **30**, 167 - 178 (2008): "Structural Biochemistry of a Bacterial Checkpoint Protein Reveals Diadenylate Cyclase Activity Regulated by DNA Recombination Intermediates"