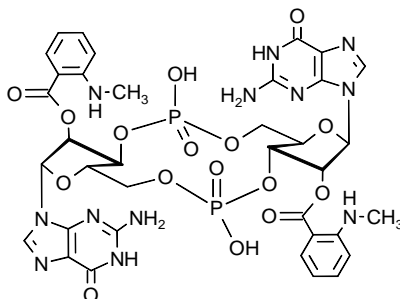


## Technical Information about Di-MANT-c-diGMP

Update: August 10, 2011 AI



**Abbreviation:** **Di-MANT-c-diGMP**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C <sub>36</sub> H <sub>38</sub> N <sub>12</sub> O <sub>16</sub> P <sub>2</sub> (free acid)	[pending]	956.7 (free acid)	λ <sub>max</sub> 252 nm / ε 38700 / pH 7	D 101

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

**Description:** In Di-MANT-c-diGMP two 5'-GMP 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-diGMP is a fluorescent analogue of the natural signalling molecule c-diGMP (BIOLOG Cat. No. C 057). 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-diGMP can appear very different in volume depending on 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 / 252 nm). The product is not sterile and has not been tested for endotoxins.

**Solubility:** Di-MANT-c-diGMP has excellent solubility in water. 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-diGMP 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-diGMP:** Di-MANT-c-diGMP is a new structure which has been synthesized by BIOLOG LSI for the first time. There are no corresponding references available at the moment.

### 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-diGMP:**

Camilli, A.; Bassler, B.L., *Science*, **311**, 1113 - 1116 (2006): "Bacterial Small-Molecule Signaling Pathways"

Römling, U.; Gomelsky, M.; Galperin, M.Y., *Mol. Microbiol.*, **5**, 629 - 639 (2005): "C-di-GMP: the Dawning of a Novel Bacterial Signalling System"

Karaolis, D.K.R.; Cheng, K.; Lipsky, M.; Elnabawi, A.; Catalano, J.; Hyodo, M.; Hayakawa, Y.; Raufman, J.-P., *Biochem. Biophys. Res. Comm.*, **329**, 40 - 45 (2005): "3', 5'-cyclic Diguanylic Acid (c-di-GMP) Inhibits Basal and Growth Factor-stimulated Human Colon Cancer Cell Proliferation"

Simm, R., Morr, M., Kader, A., Nimtz, M., Römling, U., *Mol. Microbiol.*, **53**, 1123 - 1134 (2004): "GGDEF and EAL Domains Inversely Regulate Cyclic Di-GMP Levels and Transition from Sessility to Motility"

Jenal, U., *Curr. Opin. Microbiol.*, **7**, 185 - 191 (2004): "Cyclic Di-guanosine-monophosphate Comes of Age: A Novel Secondary Messenger Involved in Modulating Cell Surface Structures in Bacteria?"

D'Argenio, D.A. & Miller, S.I., *Microbiology*, **150**, 2497 - 2502 (2004): "Cyclic di-GMP as a Bacterial Second Messenger"