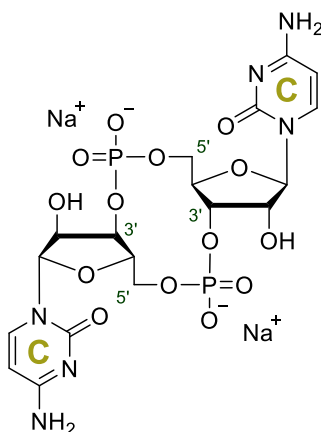


Technical Information about c-diCMP

Pyrimidine c-diNMP analogue

Update: May 31, 2019 HGG



Abbreviation: c-diCMP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₈ H ₂₄ N ₆ O ₁₄ P ₂ (free acid)	[73121-00-3]	610.4 (free acid)	λ _{max} 270 nm / ε 16200 / pH 7	C 200

Name: Cyclic dicytidine monophosphate (c-diCMP)

Description: c-diCMP is a cyclic dinucleotide where two 5'-CMP units are interconnected via 3'-5' phosphodiester bonds to form a cyclic structure.

Properties: c-diCMP is a pyrimidine cyclic dinucleotide that has been shown (Ross et al.) to be inactive as inducer of cellulose synthase activity in *Acetobacter xylinum*, in contrast to c-diGMP as the natural allosteric effector and is a non-degradable inhibitor of a Ca²⁺-sensitive phosphodiesterase (PDE-A) within the same system.

Specification: Crystallized or lyophilized sodium salt. Please keep in mind that equal concentrations of the compound may look 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_{max}.

Purity: Typical analysis is better than 95% (HPLC / UV / 270 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: c-diCMP is soluble in water and aqueous buffers (≥ 100 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: c-diCMP has sufficient stability at room temperature and does not need special care during handling or shipment. Nevertheless, we recommend that the compound should be 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 c-diCMP:

Launer-Felty, K.D. and Strobel, S.A, *Nucl. Acids Res.*, **46**, 2765 - 2776 (2018): "Enzymatic synthesis of cyclic dinucleotide analogs by a promiscuous cyclic-AMP-GMP synthetase and analysis of cyclic dinucleotide responsive riboswitches"

Wang, C.; Sinn, M.; Stifel, J.; Heiler, A.C.; Sommershof, A.; Hartig, J.S., *J. Amer. Chem. Soc.*, **139**, 16154 - 16160 (2017): "Synthesis of All Possible Canonical (3'-5'-Linked) Cyclic Dinucleotides and Evaluation of Riboswitch Interactions and Immune-Stimulatory Effects"

Ertem, G.; Ferris, J.P., *Nature*, **379**, 238 – 240 (1996): "Synthesis of RNA oligomers on heterogeneous templates"

Ross, P.; Mayer, R.; Weinhouse, H.; Amikam, D.; Huggirat, Y.; Benziman, M.; de Vroom, E.; Fidder, A.; de Paus, P.; Sliedregt, L.A., *J. Biol. Chem.*, **265**, 18933 - 18943 (1990): "The cyclic diguanylic acid regulatory system of cellulose synthesis in *Acetobacter xylinum*. Chemical synthesis and biological activity of cyclic nucleotide dimer, trimer, and phosphothioate derivatives"

Markham, A. F.; Nakagawa, E.; Ohtsuka, E.; Ikehara, M., *Biopolymers*, **19**, 285 – 296 (1980): "Studies on transfer ribonucleic acids and related compounds. XXVI. Circular dichroic properties of cyclic oligoribonucleotides and their linear counterparts"