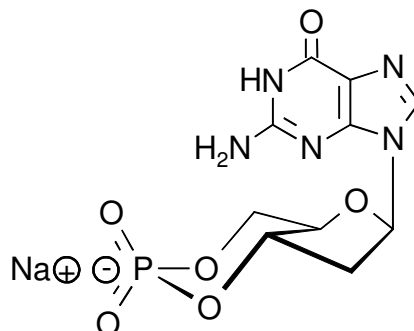


Technical Information about 2'-Deoxy-cGMP

Analogue of cGMP for mapping studies of cGMP-responsive binding proteins

Update: October 15, 2007 TR



Abbreviation: 2'-dcGMP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₀ H ₁₁ N ₅ O ₆ P·Na	[93919-42-7]	351.2	λ _{max} 252 nm / ε 13500 / pH 7	D 020

Name: 2'- Deoxyguanosine- 3', 5'- cyclic monophosphate; cyclic deoxyguanosine- 3', 5'- monophosphate.

Description: 2'-dcGMP is an analogue of the natural signal molecule cyclic GMP in which the 2'-hydroxy group in the ribose moiety is lacking.

Properties: Due to its lacking 2'-hydroxy group 2'-dcGMP can be useful for cGMP receptor mapping studies. Receptor proteins which need e.g. hydrogen bonds to recognize cyclic GMP at the 2' ribose part, will show considerably reduced binding affinity. 2'-dcGMP is, for example, an rather inactive control at cGMP-dependent protein kinases, for which an intact 2'-OH group is essentially required.

Specification: Lyophilized or crystallized sodium salt. The free acid or other salt forms of 2'-dcGMP are available upon request. 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 98% (HPLC / UV / 252 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: 2'-dcGMP is readily soluble in water or buffers. 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: 2'-dcGMP is chemically stable under conditions of biological systems and media. Nevertheless, we recommend that the compound should be stored in the freezer, for longer storage periods preferably in freeze-dried form.

Toxicity and Safety: Since cyclic GMP has multiple tasks in every organism it is very likely that cGMP analogues will interfere with many cell regulation processes *in vivo*. However, due to the rather small quantities to work with no health hazards have been reported. Nevertheless 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 2'-dcGMP:

Hebert, M.C.; Schwede, F.; Jastorff, B.; Cote, R. H., *J. Biol. Chem.*, **273**, 5557 - 5565 (1998): "Structural Features of the Nucleocatalytic cGMP Binding Sites of Frog Photoreceptor Phosphodiesterase Using cGMP Analogs"

Øgreid, D.; Ekanger, R.; Suva, R.H.; Miller, J.P.; Døskeland, S.O., *Eur. J. Biochem.*, **181**, 19 - 31 (1989): "Comparison of the Two Classes of Binding Sites (A and B) of Type I and Type II Cyclic AMP-dependent Protein Kinases Using Cyclic Nucleotide Analogs"