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Technical Information about 2'-O-Me-cGMP

Relatively polar PKG- and Epac-inactive cGMP analogue

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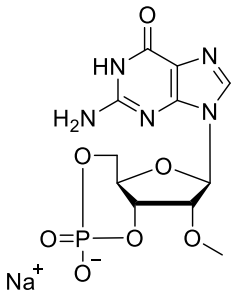

Abbreviation: **2'-O-Me-cGMP**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{11}H_{13}N_5O_7P{\cdot}Na$	[949909-73-3]	381.2	λ_{max} 252 nm / ε 13500 / pH 7	M 036

Name: 2'- O- Methylguanosine- 3', 5'- cyclic monophosphate

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Description: 2'-O-Me-cGMP is an analogue of the natural signal molecule cyclic GMP in which the 2'-hydroxy group of the ribose has been methylated.

Properties: Since a free 2'-ribose hydroxyl group in cyclic GMP is essential for stimulation of cGMP-dependent protein kinase (PKG), the methylated structure of 2'-O-Me-cGMP is expected to be an extremely poor PKG activator. Furthermore, the compound does not activate the exchange protein directly activated by cyclic AMP (Epac). It can be used as an inactive control in patch clamp applications and is also suitable for testing the 2'-position of the cGMP-skeleton in receptor mapping studies.
The structurally related cAMP-based analogue 2'-O-Me-cAMP is offered as well (Cat. No. M 050).

Specification: Lyophilized or crystallized sodium salt. The free acid or other salt forms 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.

Stability and Storage: 2'-O-Me-cGMP is chemically rather stable. 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 lipophilic 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!

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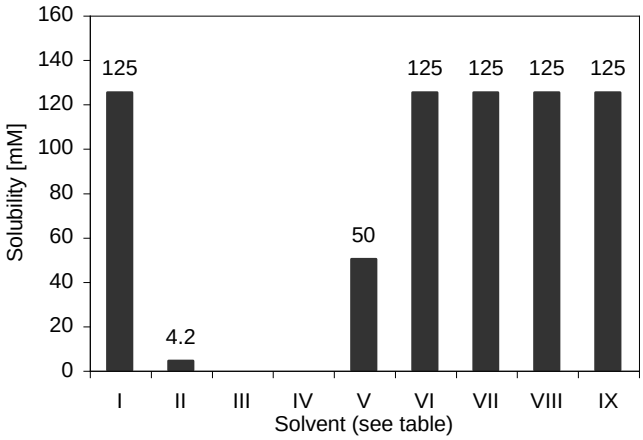
Solubility: Detailed information on the solubility of 2'-O-Me-cGMP in water and various buffers are listed in the solubility chart below. Concentrations have been tested at ambient temperature and can be considered as minimum concentrations usually obtainable. When opening the tube please make sure that no substance is lost within the cap. Please rinse tube walls carefully and preferably use ultrasonic or vortex to achieve total and uniform mixing.

No.	Solvent	Solubility [mM]
I	H_2O	125
II	DMSO	4.2
III	DMF	0
IV	Ethanol 96%	0
V	Methanol	50
VI	PBS, pH 7.4	125
VII	100 mM Na_2HPO_4, pH 7.0	125
VIII	25 mM Hepes/NaOH, pH 7.2	125
IX	25 mMTris/HCl, pH 7.4	125



Selected Reference for 2'-O-Me-cGMP:

Jäger, R.; Russwurm, C.; Schwede, F.; Genieser, H.-G.; Koesling, D.; Russwurm, M., *J. Biol. Chem*., **287**, 1210 - 1219 (2012): „ Activation of PDE10 and PDE11 Phosphodiesterases“

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Kang, G.X.; Chepurny, O.G.; Malester, B.; Rindler, M.J.; Rehmann, H.; Bos, J.L.; Schwede, F.; Coetzee, W.A.; Holz, G.G., *J. Physiol.-London*, **573**, 595 - 609 (2006): "cAMP Sensor Epac as a Determinant of ATP-sensitive Potassium Channel Activity in Human Pancreatic Beta Cells and Rat INS-1 Cells"

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