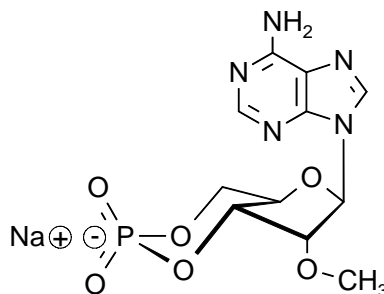


## Technical Information about 2'-O-Me-cAMP

Relatively polar PKA-inactive cAMP analogue with modified 2'-moiety for receptor mapping studies and patch clamp application techniques

Update: May 21, 2010 AI



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

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C <sub>11</sub> H <sub>13</sub> N <sub>5</sub> O <sub>6</sub> P·Na	[40269-29-2]	365.2	λ <sub>max</sub> 258 nm / ε 15000 / pH 7	M 050

**Name:** 2'-O-Methyladenosine-3', 5'-cyclic monophosphate

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**Description:** 2'-O-Me-cAMP is an analogue of the natural signal molecule cyclic AMP in which the 2'-hydroxyl group of the ribose has been methylated.

**Properties:** 2'-O-Me-cAMP is suitable for testing the 2'-position of the cAMP-skeleton in receptor mapping studies. Since a free 2'-ribose hydroxyl group in cyclic AMP is essential for stimulation of cAMP-dependent protein kinase (PKA), the methylated structure of 2'-O-Me-cAMP does not activate PKA, whereas it is a selective stimulator of the exchange factors directly activated by cAMP (Epac or cAMP-GEF). It is suitable for Epac activation by patch clamp application techniques. The structurally related cGMP-based analogue 2'-O-Me-cGMP is offered as well (Cat. No. M 036).

In comparison to potent Epac-activating analogues such as 8-pCPT-2'-O-Me-cAMP (Cat. No. C 041) or 8-pMeOPT-2'-O-Me-cAMP (Cat. No. M 034) 2'-O-Me-cAMP has considerably reduced lipophilicity which makes it much less membrane permeant. Furthermore, it is metabolized rapidly by cyclic nucleotide-dependent phosphodiesterases. For these reasons, 2'-O-Me-cAMP is not recommendable for investigating the role of Epac activation in cell culture experiments.

**Specification:** Lyophilized or crystallized sodium salt. The free acid or other salt forms of 2'-O-Me-cAMP are available upon request. **Equal concentrations of 2'-O-Me-cAMP 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 98% (HPLC / UV / 258 nm). The product is not sterile and has not been tested for endotoxins.

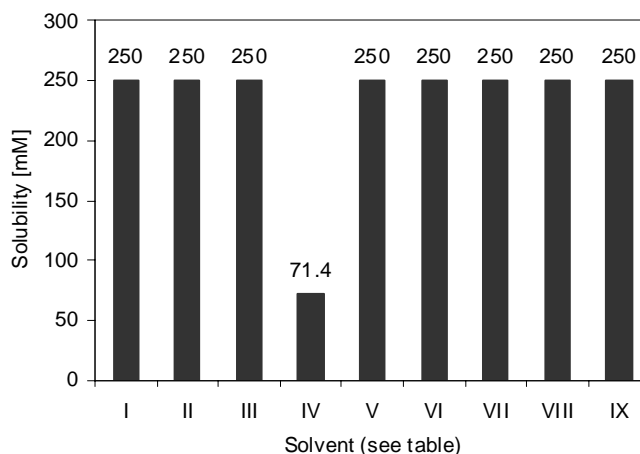
**Stability and Storage:** 2'-O-Me-cAMP is chemically rather stable. Nevertheless, we recommend that the compound should be stored in the freezer, for longer storage periods preferably in freeze-dried form.

**Toxicity and Safety:** Since cyclic AMP has multiple tasks in every organism it is very likely that its 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!**

**Solubility:** Detailed information on the solubility of 2'-O-Me-cAMP 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, however, slight batch-to-batch variations cannot be ruled out. 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 <sub>2</sub> O	250
II	DMSO	250
III	DMF	250
IV	Ethanol 96%	71.4
V	Methanol	250
VI	PBS, pH 7.4	250
VII	100 mM Na <sub>2</sub> HPO <sub>4</sub> , pH 7.0	250
VIII	25 mM HEPES/NaOH, pH 7.2	250
IX	25 mM Tris/HCl, pH 7.4	250



#### Selected References for 2'-O-Me-cAMP:

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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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