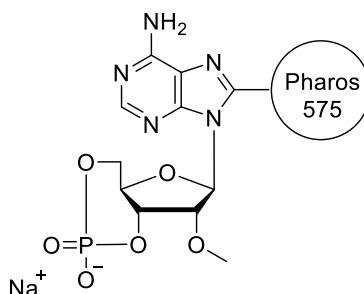


## Technical Information about 8-[ $\phi$ -575]-2'-O-Me-cAMP

Fluorescent and membrane-permeant analogue of cyclic AMP

Update: September 20, 2018 HU



**Abbreviation:** **8-[ $\phi$ -575]-2'-O-Me-cAMP**

CAS No.	UV	BIOLOG Cat. No.
[pending]	$\lambda_{\max}$ 575 nm / $\epsilon$ 20960 / pH 7	P 021

**Name:** 8- [Pharos-575]- 2'- O- methyladenosine- 3', 5'- cyclic monophosphate

**Description:** In 8-[ $\phi$ -575]-2'-O-Me-cAMP the relatively small Pharos 575 dye is connected to position 8 of the heterocyclic nucleobase of cyclic AMP (cAMP) via a spacer. In addition, the ribose 2'-hydroxy group has been methylated.

**Legal information:** The reagent is protected under patent EP 1511757 and foreign equivalents issued or licensed to BIOLOG Life Science Institute.

**Properties:** 8-[ $\phi$ -575]-2'-O-Me-cAMP is a fluorescent analogue of cAMP with  $\lambda_{\text{exc}}$  577 nm and  $\lambda_{\text{em}}$  605 nm. The fluorophore can be excited e.g. by a Kr/Ar laser. Due to its high lipophilicity/membrane permeability and bright red fluorescence, 8-[ $\phi$ -575]-2'-O-Me-cAMP is especially suitable for studies with intact cells.

Since a free 2'-ribose hydroxy group in cAMP is essential for stimulation of cAMP-dependent protein kinase (PKA), the methylated structure of 8-[ $\phi$ -575]-2'-O-Me-cAMP does not activate PKA, but is expected to be a selective stimulator of the exchange proteins directly activated by cAMP (Epac or cAMP-GEF).

**Specification:** Lyophilized or crystallized sodium salt. Other salt forms are available upon request. Equal concentrations of 8-[ $\phi$ -575]-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  $\lambda_{\max}$ .

**Purity:** Typical analysis is better than 98% (HPLC / UV / 270 nm). The product is not sterile and has not been tested for endotoxins.

**Solubility:** 8-[ $\phi$ -575]-2'-O-Me-cAMP has limited solubility in water, but is better soluble in methanol. 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:** 8-[ $\phi$ -575]-2'-O-Me-cAMP 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:** Since cAMP has multiple tasks in every organism it is possible that lipophilic cAMP 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 8-[ $\phi$ -575]-2'-O-Me-cAMP:**

Pereira, L.; Rehmann, H.; Lao, D.H.; Erickson, J.R.; Bossuyt, J.; Chen, J.; Bers, D.M., *Proc. Natl. Acad. Sci. USA*, **112**, 3991 - 3996 (2015): "Novel Epac Fluorescent Ligand Reveals Distinct Epac1 vs. Epac 2 Distribution and Function in Cardiomyocytes"

**Selected References for the related Compound 8-[ $\phi$ -575]-cAMP (Cat. No. P 019):**

Moll, D.; Prinz, A.; Brendel, C.M.; Berrera, M.; Guske, K.; Zaccolo, M.; Genieser, H.-G., Herberg, F.W., *BMC Biochem.*, **9**: 18 (2008): "Biochemical Characterization and Cellular Imaging of a Novel, Membrane Permeable Fluorescent cAMP Analog"