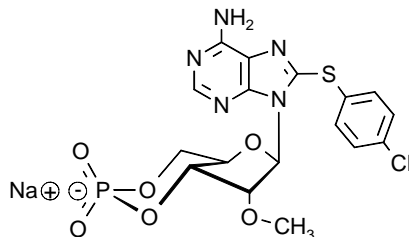


Technical Information about 8-(4-Chlorophenylthio)-2'-O-methyl-cAMP

Potent, specific and membrane-permeant activator of the Epac cAMP receptor

Update: May 31, 2011 AI



Abbreviation: 8-pCPT-2'-O-Me-cAMP / 8-CPT-2'-O-Me-cAMP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₇ H ₁₆ ClN ₅ O ₆ PS·Na	[510774-50-2]	507.8	λ _{max} 282 nm / ε 16000 / pH 7	C 041

Name: *para*-Chlorophenylthio-2'-O-methyladenosine- 3', 5'- cyclic monophosphate (8-pCPT-2'-O-Me-cAMP) or 8-(4-chlorophenylthio)-2'-O-methyladenosine- 3', 5'- cyclic monophosphate (8-CPT-2'-O-Me-cAMP)

Legal information: The Reagent is subject to patent application n° EP 02077219.0 and foreign equivalents. The Reagent and any improvements are owned and licensed by The UMCU/ UMCU Holding Pharmaceuticals. The Reagent is sold under limited, non transferable and non exclusive licence from The UMCU/ UMCU Holding for research purposes only, to the exclusion of any commercial use, transfer or otherwise sale of this Reagent or its components or derivatives to a third party. Use or sale of Reagent for any commercial purposes requires a commercial license from The UMCU - Universiteitsweg 100, Utrecht, The Netherlands / UMCU Holding - Yalelaan 40, Utrecht, The Netherlands.

Description: 8-pCPT-2'-O-Me-cAMP is an analogue of the natural signal molecule cyclic AMP in which the hydrogen in position 8 of the heterocyclic nucleobase is replaced by the lipophilic 4-chlorophenylthio moiety. In addition, the ribose 2'- hydroxy group has been methylated.

Properties: 8-pCPT-2'-O-Me-cAMP is a potent stimulator of exchange factors directly activated by cAMP (Epac or cAMP-GEF), a newly discovered receptor for cyclic AMP.

Since a free 2'-ribose hydroxyl group in cyclic AMP is essential for stimulation of cAMP-dependent protein kinase (PKA), the methylated structure of 8-pCPT-2'-O-Me-cAMP is an extremely poor PKA activator and allows for specific discrimination between both signalling pathways. On the other hand, potent activators of PKA carrying a modified 6 position at the adenine nucleobase can be used as Epac-negative controls. N⁶-modified cyclic AMP analogues such as N⁶-Benzoyl-cAMP (Cat. No. B 009) or N⁶-Phenyl-cAMP (Cat. No. P 006) are specific PKA agonists, but show only neglectable agonistic properties on Epac.

The high lipophilicity of 8-pCPT-2'-O-Me-cAMP (> dibutyryl-cAMP) allows for good membrane permeability in most biosystems, and its increased resistance towards phosphodiesterases prevents from rapid hydrolysis.

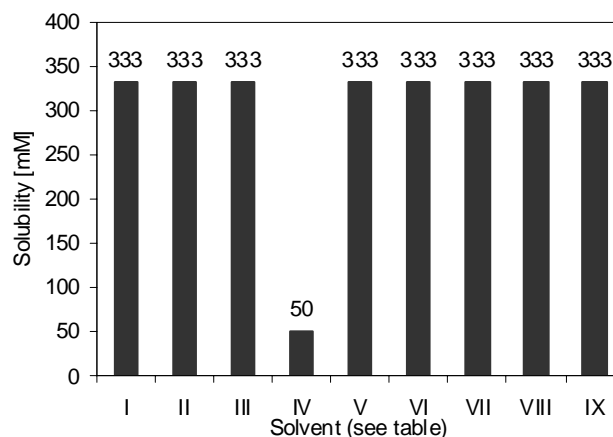
Specification: Lyophilized or crystallized sodium salt. The free acid or other salts of 8-pCPT-2'-O-Me-cAMP are available upon request. **Equal concentrations of 8-pCPT-2'-O-Me-cAMP can appear very different in volume due to sensitivity of the lyophilized form to humidity. The compound can even contract to small volume droplets.** Normally the product is located in the conical bottom of the tube. Micromolar quantities are determined by UV at λ_{max}.

Purity: Typical analysis is better than 98% (HPLC / UV / 282 nm). The product is not sterile and has not been tested for endotoxins.

Stability and Storage: 8-pCPT-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. Since UV radiation develops a fluorescent impurity, which can disturb in fluorescence assays, avoid bright light during handling and experiments.

Solubility: Detailed information on the solubility of 8-pCPT-2'-O-Me-cAMP in water and various buffers are listed in the solubility chart below. Concentrations have been determined 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 ₂ O	333
II	DMSO	333
III	DMF	333
IV	Ethanol 96%	50
V	Methanol	333
VI	PBS, pH 7.4	333
VII	100 mM Na ₂ HPO ₄ , pH 7.0	333
VIII	25 mM HEPES/NaOH, pH 7.2	333
IX	25 mM Tris/HCl, pH 7.4	333



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

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For a detailed list please inquire or visit our website (<http://www.biolog.de>).

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