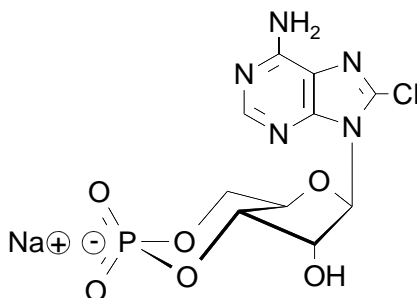


Technical Information about 8-Chloro-cAMP

Site selective activator of cAMP-dependent protein kinase and tumor growth inhibitor

Update: October 11, 2007 TR



Abbreviation:

8-Cl-cAMP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₀ H ₁₀ ClN ₅ O ₆ P·Na	[41941-56-4]	385.6	λ _{max} 262 nm / ε 17000 / pH 7	C 007

Name: 8- Chloroadenosine- 3', 5'- cyclic monophosphate (8-Cl-cAMP)

Description: 8-Cl-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 a chlorine atom.

Properties: 8-Cl-cAMP is a potent stimulator of cAMP-dependent protein kinases with high affinity for sites A and B of PKA type I. In addition it shows high site selectivity for site B of PKA type II. The analogue is degraded by cyclic nucleotide phosphodiesterases more slowly compared to natural cyclic AMP.

The increased lipophilicity which resembles 8-bromo cyclic AMP and Sp-cAMPS enables membrane permeability in several biosystems.

Due to its ability to stop growth of several cancer cell lines at very low doses, its therapeutic use is under investigation (Ref. 1-23, 26, 27). However, recent reports on active 8-Cl-metabolites showed that also degradation products could be responsible for cytostatic properties (Ref. 24, 25, 29-32). Therefore, BIOLOG offers an array of potential metabolites of 8-Cl-cAMP including 8-Cl-5'-AMP, 8-Cl-5'-ADP, 8-Cl-5'-ATP, 8-Cl-adenosine, 8-Cl-adenine, 8-Cl-5'-IMP, 8-Cl-inosine, 8-Cl-hypoxanthine and 8-Cl-xanthine and also the metabolically stable phosphorothioates Rp-/Sp-8-Cl-cAMPS (ref.28) (Cat. No.: C 003/C 004) are available.

Specification: Lyophilized or crystallized sodium salt. The free acid or other salt forms are available upon request. Equal concentrations of 8-Cl-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}. 8-Cl-cAMP is also available in bulk amounts.

Purity: Typical analysis is better than 98% (HPLC / UV / 262 nm). The product is not sterile and has not been tested for endotoxins.

Stability and Storage: 8-Cl-cAMP 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 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.

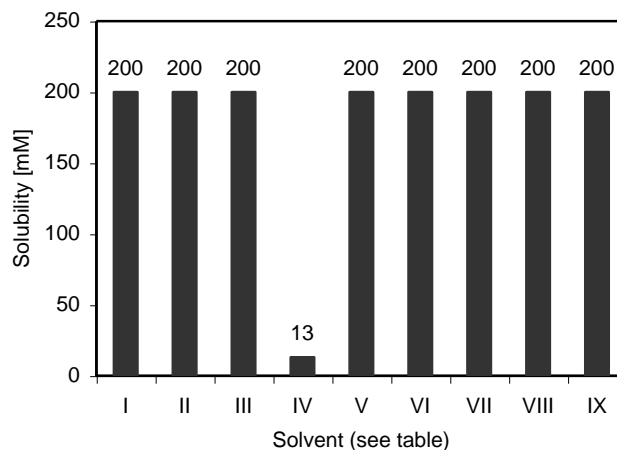
Our products are designed, developed and sold for research purposes only. They are intended for *in vitro* and nonhuman *in vivo* laboratory applications. Any other use requires approval of health authorities.

Not for drug, household or related uses!

P.t.o.

Solubility: Detailed information on the solubility of 8-Cl-cAMP in water and various buffers are listed in the solubility chart below. Concentrations have been tested at ambient temperatures and can be considered as minimum concentrations 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 ₂ O	200
II	DMSO	200
III	DMF	200
IV	Ethanol 96%	13
V	Methanol	200
VI	PBS, pH 7.4	200
VII	100 mM Na ₂ HPO ₄ , pH 7.0	200
VIII	25 mM HEPES/NaOH, pH 7.2	200
IX	25 mM Tris/HCl, pH 7.4	200



Selected References for 8-Cl-cAMP:

Due to limited space we cannot cite all references for 8-Cl-cAMP. If you do not find the information needed, please ask for a computer search in our reference and application data bank. For an extended reference list please refer to our website <http://www.biolog.de>. Since we permanently collect all data available, we appreciate receiving respective information such as citations, reprints or accepted manuscripts as well as unpublished application reports.

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