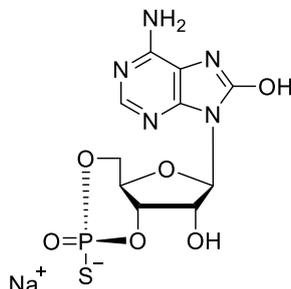


Technical Information about Rp-8-OH-cAMPS

Polar, membrane-impermeant and PDE resistant inhibitor of cAMP-dependent protein kinases

Update: June 15, 2017 HU



Abbreviation: **Rp-8-OH-cAMPS**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₀ H ₁₁ N ₅ O ₆ PS·Na	[pending]	383.3	λ _{max} 268 nm / ε 11000 / pH7	H 004

Name: 8- Hydroxyadenosine- 3', 5'- monophosphorothioate, Rp-isomer (Rp-8-OH-cAMPS)

Description: Rp-8-OH-cAMPS is an analogue of the parent second messenger cyclic AMP in which the hydrogen in position 8 of the adenine nucleobase is replaced by the polar hydroxy moiety. In addition, the equatorial one of two exocyclic oxygen atoms in the cyclic phosphate moiety is replaced by sulfur. The suffix "p" indicates that R/S nomenclature refers to phosphorus.

Properties:

- polar analog of the PDE-resistant protein kinase A inhibitor Rp-cAMPS
- High polarity and hence low membrane permeability
- Metabolic stability towards cyclic nucleotide- responsive phosphodiesterases

Rp-8-OH-cAMPS is a membrane-impermeant inhibitor of protein kinase A which can be used for blocking of extracellular PKA receptors. If applied intracellularly by pipette, its high polarity keeps it trapped inside the cell. Its metabolic stability avoids potential side effects through active metabolites.

Specification: Lyophilized or crystallized sodium salt. The free acid or other salt forms are available upon request. Equal amounts of Rp-8-OH-cAMPS can appear very different in volume due to sensitivity of the lyophilized form to humidity, and 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 99% (HPLC /UV/268 nm). The product is not sterile and has not been tested for endotoxins. Since even minor agonistic impurities can already activate protein kinase and compete with the antagonistic effect it is very important to work with strictly pure compounds concerning cyclic nucleotide contaminants and Rp-8-OH-cAMPS is specially checked for their absence.

Solubility: Rp-8-OH-cAMPS has excellent solubility in water or buffer. When opening the tube 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.

Stability and Storage: Rp-8-OH-cAMPS has sufficient stability at room temperature and does not need special care during handling or shipment. Nevertheless, we recommend that the compound should be stored in the freezer, for longer storage periods preferably in freeze-dried form, since desulfurization yielding 8-OH-cAMP can occur slowly.

Toxicity and Safety: Since cyclic AMP has multiple tasks in every organism it is possible that even polar cAMP analogs 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 compounds 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:

Otmakhov, N.; Lisman, J.E., *J. Neurophysiol.*, **87**, 3018 - 3032 (2002): "Postsynaptic application of a cAMP analogue reverses long-term potentiation in hippocampal CA 1 pyramidal neurons"