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Technical Information about Sp-cAMPS

PDE-resistant activator of cAMP-dependent protein kinases type I and II

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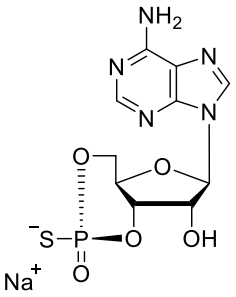

Abbreviation: **Sp-cAMPS**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{10}H_{11}N_5O_5PS{\cdot}Na$	[71774-13-5]	367.3	λ_{max} 259 nm / ε 15200 / pH 7	A 003 S

Name: Adenosine- 3', 5'- cyclic monophosphorothioate, Sp- isomer (Sp-cAMPS)

Description: Sp-cAMPS is an analogue of the natural signal molecule cyclic AMP in which the axial one of the 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:

- **activator of cyclic AMP-dependent protein kinase I and II**
- **very high metabolic stability towards mammalian cyclic nucleotide- responsive phosphodiesterases**
- **membrane permeability comparable to 8-bromo-cyclic AMP**
- **minimal disturbance of cellular functions due to only minor structural differences to natural cyclic AMP**

Specification: Crystallized or lyophilized sodium salt. Equal concentrations of Sp-cAMPS 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}. The triethyl ammonium salt of Sp-cAMPS is offered as well (Cat. No. A 003 T).

Purity: Typical analysis is > 99% (High Purity Grade) by HPLC / UV / 258 nm. The product is not sterile and has not been tested for endotoxins. BIOLOG's Sp-cAMPS is strictly checked for absence of the inhibitory Rp-cAMPS or cyclic AMP.

Stability and Storage: Sp-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 cyclic AMP can be formed by oxidation processes.

Toxicity and Safety: Since cyclic AMP has multiple tasks in every organism, it is possible that 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!

Solubility: Detailed information on the solubility of Sp-cAMPS 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.

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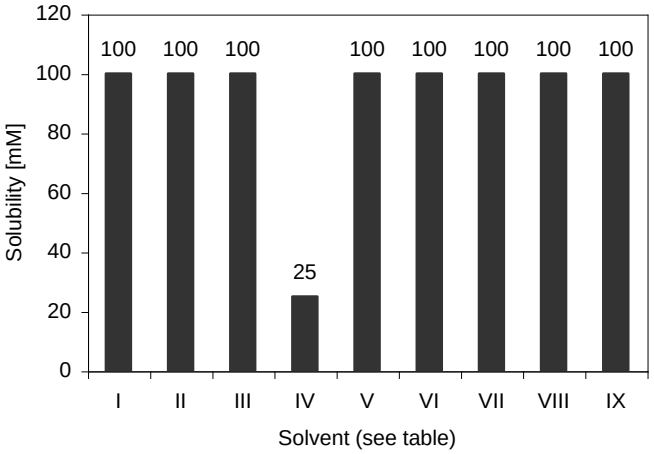
No.	Solvent	Solubility [mM]
I	H_2O	100
II	DMSO	100
III	DMF	100
IV	Ethanol 96%	25
V	Methanol	100
VI	PBS, pH 7.4	100
VII	100 mM Na_2HPO_4, pH 7.0	100
VIII	25 mM Hepes/NaOH, pH 7.2	100
IX	25 mMTris/HCl, pH 7.4	100



Selected References for Sp-cAMPS:

Since its first synthesis by F. Eckstein, Göttingen/Germany, there have been several hundred papers published with Sp-cAMPS, and it is impossible to list them all. However, since we were among the first to offer this structure commercially, we have quite a lot of data and experience with it. Please ask for a search in our data base for articles relevant for your field. For an extended reference list please refer to our website http://www.biolog.de.

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