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Technical Information about Sp-8-Br-2'-O-Me-cAMPS

Specific, membrane-permeant and metabolically stable activator of the Epac cAMP receptor

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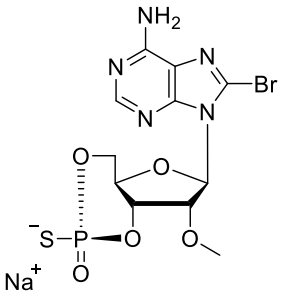

Abbreviation: **Sp-8-Br-2'-O-Me-cAMPS**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{11}H_{12}BrN_5O_5PS{\cdot}Na$	[634208-34-7]	460.2	λ_{max} 264 nm / ε 17000 / pH 7	B 031

Name: 8- Bromo- 2'- O- methyladenosine- 3', 5'- cyclic monophosphorothioate, Sp- isomer

Description: Sp-8-Br-2'-O-Me-cAMPS is an analogue of the natural signal molecule cyclic AMP in which the hydrogen in position 8 of the heterocyclic nucleobase is replaced by bromine, and the ribose 2'-hydroxyl group has been methylated. In addition, the axial one of the two exocyclic oxygen atoms in the cyclic phosphate moiety is modified by sulfur. The suffix "p" indicates that R/S nomenclature refers to phosphorus.

Properties: Sp-8-Br-2'-O-Me-cAMPS is a hydrolysis-resistant form of 8-Br-2'-O-Me-cAMP (Cat. No. B 022) which is a potent membrane-permeant stimulator of the exchange factors directly activated by cAMP (Epac or cAMP-GEF).
Since a free 2'-ribose hydroxyl group in cyclic AMP is essential for stimulation of cAMP-dependent protein kinase (PKA), the methylated structure of Sp-8-Br-2'-O-Me-cAMPS 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. N^6-modified cyclic AMP analogues such as N^6-Benzoyl-cAMP (Cat. No. B 009) or N^6-Phenyl-cAMP (Cat. No. P 006) are specific PKA agonists, but show only neglectable agonistic properties on Epac.

Specification: Crystallized or lyophilized sodium salt. **Please keep in mind that equal concentrations of the compound may look different in volume due to high 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 / 264 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: Sp-8-Br-2'-O-Me-cAMPS has sufficient solubility in water (≥ 10 mM). 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: Sp-8-Br-2'-O-Me-cAMPS is chemically rather stable 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.

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Toxicity and Safety: Since cyclic AMP has multiple tasks in every organism, it is very likely that cAMP analogues will interfere with many cell regulation processes i*n 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!

References for Sp-8-Br-2'-O-Me-cAMPS:

Sp-8-Br-2'-O-Me-cAMPS is a new structure which has been synthesized by BIOLOG LSI for the first time. Since there are no corresponding references available at the moment selected references for 8-Br-2'-O-Me-cAMP are cited.

Traver, S.; Marien, M., Martin, E.; Hirsch, E.C.; Michel, P., *Mol. Pharmacol*., **70**, 30 - 40 (2006): "The Phenotypic Differentiation of Locus Coeruleus Noradrenergic Neurons Mediated by BDNF is Enhanced by Corticotropin Releasing Factor Through the Activation of a cAMP-dependent Signaling Pathway"

Christensen, A.E.; Selheim, F.; de Rooij, J.; Dremier, S.; Schwede, F.; Dao, K.K.; Martinez, A., Maenhaut, C.; Bos, J.L; Genieser, H.-G..; Døskeland, S.O., *J. Biol. Chem.*, **278**, 35394 - 35402 (2003): "cAMP analog mapping of Epac1 and cAMP-kinase. Discriminating analogs demonstrate that Epac and cAMP-kinase act synergistically to promote PC-12 cell neurite extension"

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