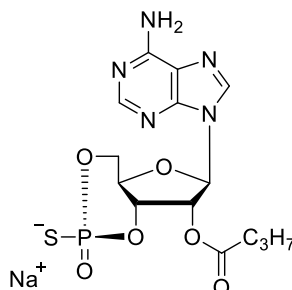


## Technical Information about Sp- 2'- O- Monobutyryl- cAMPS

Metabolically activated precursor of Sp-cAMPS, a PDE-resistant activator of protein kinase A

Update: June 26, 2017 HU



### Abbreviation:

**Sp-2'-O-MB-cAMPS**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C <sub>14</sub> H <sub>17</sub> N <sub>5</sub> O <sub>6</sub> PS·Na	[152218-23-0]	437.4	λ <sub>max</sub> 259 nm / ε 15200 / pH 7	M 005

**Name:** 2'- O- Monobutyryladenosine- 3', 5'- cyclic monophosphorothioate, Sp-isomer

**Description:** Sp-2'-O-MB-cAMPS is an analogue of the parent compound cyclic AMP where the axial 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. In addition, the hydroxy group in position 2' of the ribose is esterified by butyric acid.

**Properties:** Sp-2'-O-MB-cAMPS is a lipophilic precursor of Sp-cAMPS with significantly higher membrane permeability. During metabolic activation by esterases Sp-cAMPS and butyrate are released.

**Specification:** Crystallized or lyophilized sodium salt. Please keep in mind that equal amounts of the compound may look different in volume depending on humidity. Micromolar quantities are determined by UV at 259 nm.

**Purity:** Typical analysis is better than 97% (HPLC /UV/259 nm). The product is not sterile.

**Solubility:** Sp-2'-O-MB-cAMPS has sufficient solubility in water or buffer for most applications. 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:** Sp-2'-O-MB-cAMPS has sufficient stability at room temperature and does not need special care during handling or shipment. The compound and stock solutions thereof can be stored in the refrigerator for some days but should be frozen for longer storage periods, preferably in a freeze-dried form.

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

**Selected References for Sp-2'-O-MB-cAMPS:**

- 1 Hügl, S. R.; White, M. F.; Rhodes, C. J., *J. Biol. Chem.*, **273**, 17771 - 17779 (1998): " Insulin-like Growth Factor I (IGF-I)-stimulated Pancreatic Beta-Cell Growth is Glucose-dependent - Synergistic Activation of Insulin Receptor Substrate-mediated Signal Transduction - Pathways by Glucose and IGF-I in INS-1 Cells"
- 2 Cousin, S.P.; Hügl, S.R.; Myers, M.G.; White, M.F.; Reifel-Miller, A.; Rhodes, C. J., *Biochem. J.*, **344**, 649 - 658 (1999): "Stimulation of Pancreatic  $\beta$ -Cell Proliferation by Growth Hormone is Glucose-dependent: Signal Transduction via Janus Kinase 2 (JAK2)/Signal Transducer and Activator of Transcription 5 (STAT5) with no Crosstalk to Insulin Receptor Substrate-mediated Mitogenic Signalling"