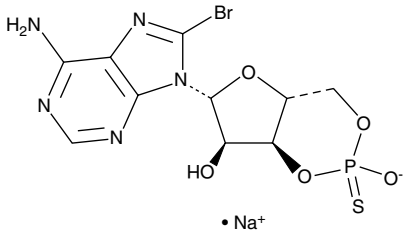
Product Information

Sp-8-bromo-Cyclic AMPS (sodium salt)

Item No. 16002

CAS Registry No.: 1573115-90-8
Formal Name: (4aR,6R,7R,7aS)-6-(6-amino-8-bromo-9H-purin-9-yl)-7-hydroxytetrahydro-4H-furo[3,2-d][1,3,2]dioxaphosphinin-2-olate 2-sulfide, monosodium salt
Synonyms: 8-Bromoadenosine 3',5'-cyclic Monophosphothioate SP-Isomer, Sp-8-bromo-cAMPS
MF: $C_{10}H_{10}BrN_5O_5PS \bullet Na$
FW: 446.2
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 212, 264 nm



Laboratory Procedures

For long term storage, we suggest that Sp-8-bromo-cyclic AMPS (Sp-8-bromo-cAMPS) (sodium salt) be stored as supplied at -20°C. It should be stable for at least two years.

Sp-8-bromo-cAMPS (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the Sp-8-bromo-cAMPS (sodium salt) in the solvent of choice. Sp-8-bromo-cAMPS (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of Sp-8-bromo-cAMPS (sodium salt) in these solvents is approximately 0.5, 25, and 30 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of Sp-8-bromo-cAMPS (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of Sp-8-bromo-cAMPS (sodium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Sp-8-bromo-cAMPS is a cell-permeable, cAMP analog that combines an exocyclic sulfur substitution in the axial position of the cyclophosphate ring with a bromine substitution in the adenine base of cAMP.[1-2] This configuration pools the structural features of two established cyclic-AMP-dependent protein kinase (PKA) activators, 8-bromo-cAMP (Item No. 14431) and Sp-cAMPS (Item No. 14983). Sp-8-bromo-cAMPS is a PKA agonist (EC_{50} = 1.5 µM) with improved lipophilicity and is not readily degraded by cyclic nucleotide phosphodiesterases.[3-4]

References

1. Yokozaki, H., Tortora, G., Pepe, S., *et al.* Unhydrolyzable analogues of adenosine 3':5'-monophosphate demonstrating growth inhibition and differentiation in human cancer cells. *Cancer Res.* **52(9)**, 2504-2508 (1992).
2. Dostmann, W.R., Taylor, S.S., Genieser, H.G., *et al.* Probing the cyclic nucleotide binding sites of cAMP-dependent protein kinases I and II with analogs of adenosine 3',5'-cyclic phosphorothioates. *J. Biol. Chem.* **265(18)**, 10484-10491 (1990).
3. Schwede, F., Maronde, F., Genieser, H., *et al.* Cyclic nucleotide analogs as biochemical tools and prospective drugs. *Pharmacol. Ther.* **87(2)**, 199-226 (2000).
4. Schaap, P., van Ments-Cohen, M., Soede, R.D., *et al.* Cell-permeable non-hydrolyzable cAMP derivatives as tools for analysis of signaling pathways controlling gene regulation in *Dictyostelium*. *J. Biol. Chem.* **268(9)**, 6323-6331 (1993).

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