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ProductInformation

8-Bromoadenosine-3′,5′-cyclic monophosphorothioate, Rp-isomer

Product Number **B 2432**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_{10}H_{10}BrN_5O_5PSNa$
Molecular Weight: 446.2
Extinction coefficient: E^M = 17,000 (264 nm, pH 7)
Synonym: Rp-8-Br-cAMPS

This compound is an analog of cyclic AMP. The hydrogen in position 8 of the base of cyclic AMP is replaced by bromine and the equatorial exocyclic oxygen atom in the cyclic phosphate moiety is replaced by sulfur. It may be viewed as a combination of the protein kinase inhibitor Rp-cAMPS and 8-Br-cAMP. It is more lipophilic than either of these two compounds. The net result is that Rp-8-Br-cAMPS is a membrane-permeable antagonist of cyclic AMP-dependent protein kinases and is not metabolized by mammalian cyclic nucleotide phosphodiesterases. Rp-8-Br-cAMPS occupies cAMP binding sites and prevents dissociation and thus activation of the kinase holoenzyme. Preincubation with the inhibitor prior to the activation step is necessary. Rp-8-Br-cAMPS discriminates between the two isozymes of protein kinase A and prefers type I.

The phosphorylation of endogenous hepatocyte proteins is affected oppositely by Rp-8-Br-cAMPS and increased cAMP, indicating that Rp-8-Br-cAMPS inhibits basal cAMP-kinase activity.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

Rp-8-Br-cAMPS is readily soluble in water (at least 45 mM) or buffer. Rinse tube walls (and cap if necessary) carefully and preferably use an ultrasonicator or vortex to achieve total and uniform mixing. When the tube is opened, make sure that no substance is lost within the cap.

Storage/Stability

Solutions of Rp-8-Br-cAMPS should be stored in the refrigerator. For longer storage, the product should be lyophilized and frozen.

References

1. Gjertsen, B. T., et al., Novel (Rp)-cAMPS analogs as tools for inhibition of cAMP-kinase in cell culture. Basal cAMP-kinase activity modulates interleukin-1 beta action. J. Biol. Chem., **270(35)**, 20599-20607 (1995).
2. Dostmann, W.R., et al., Probing the cyclic nucleotide binding sites of cAMP- dependent protein kinase I and II with analogs of adenosine 3', 5' - cyclic phosphorothioates. J. Biol. Chem., **265(18)**, 10484-10491 (1990).
3. Yokozaki, H., Unhydrolyzable analogues of adenosine 3':5'-monophosphate demonstrating growth inhibition and differentiation in human cancer cells. Cancer Res., **52(9)**, 2504-2508 (1992).

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