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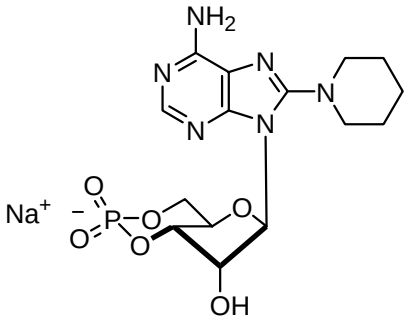
ProductInformation

8-PIP-cAMP
Product Number **P 0872**

Storage Temperature –70 °C

CAS RN: 31357-06-9
Synonym: 8- Piperidinoadenosine- 3', 5'-monophosphate sodium salt



Product Description
Molecular Formula: $C_{15}H_{20}N_6O_6PNa$
Molecular Weight: 434.32
Appearance: white powder

Eucaryotic cAMP-dependent protein kinase (cAK) exists as two different isozymes, type I and type II. In its deactivated state, both types form a tetrameric complex consisting of two regulatory and two catalytic subunits. Each regulatory subunit offers two cooperative binding sites, A and B, for the allosteric activator cyclic AMP (cAMP). After binding of cAMP to the regulatory subunits the holoenzyme complex dissociates, releasing free catalytic subunits which then are able to phosphorylate suitable substrates.

Chemically modified analogs of cAMP were shown to bind with different affinity to the A and B sites of the regulatory subunits (site selectivity) and, in contrast to cAMP itself, can discriminate between them. If a pair of differently modified cAMP analogs with opposite site selectivity is used simultaneously for kinase activation, a synergism is observed which exceeds the normally additive effect of both compounds. If correspondingly selected, these pairs can be rather specific and powerful activators of their target cAK isozymes, often providing stability towards phosphodiesterases (PDE) and membrane permeability as well.

8-PIP-cAMP is a site selective cyclic AMP analogue with high selectivity for site A of cAK type I and for site B of cAK type II. It acts synergistically together with analogues having opposite site-selectivity. For example, combination with 8-HA-cAMP preferentially activates type I, while combination with 6-MBC-cAMP selects type II. It exhibits increased metabolic stability and membrane permeability compared to cAMP.

Preparation Instructions
8-PIP-cAMP is readily soluble in water.

Storage/Stability
Store 8-PIP-cAMP at –70 °C

References
1. Schwede, F., et al., Biochemistry, **39,** 8803 - 8812 (2000).
2. Kopperud, R.et al., FEBS Lett., **546**, 121 - 126 (2003).
3. Skalhegg, B.S., et al., J. Biol. Chem., **267**, 15707 - 15714 (1992)

AH/PHC 10/04