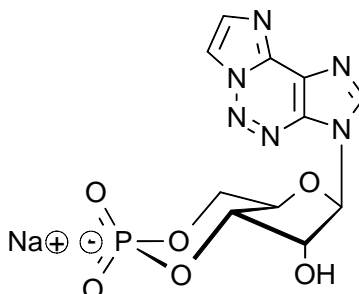


Technical Information about 2-Aza-ε-cAMP

Fluorescent activator of cAMP-dependent protein kinases

Update: September 18, 2009 AI



Abbreviation: 2-Aza-ε-cAMP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C ₁₁ H ₁₀ N ₆ O ₆ P·Na	[50663-90-6]	376.2	λ _{max} 290 nm / ε 5000 / pH7	A 015

Name: 2- Aza-1, N⁶- ethenoadenosine- 3', 5'- monophosphate (2-Aza-ε-cAMP)

Description: 2-Aza-ε-cAMP is an analogue of the parent second messenger cyclic AMP in which both the N¹ and the N⁶ nitrogen atoms in the adenine nucleobase are connected by an etheno bridge forming a tricyclic ring system. In addition, the ring carbon atom C² has been replaced by nitrogen.

Properties:

- Fluorescent analogue of cyclic AMP with λ_{exc} 358 nm, λ_{em} 494 nm
- Membrane permeability comparable to 8-Bromo-cAMP (BIOLOG Cat. No. B 007)

Specification: Crystallized or lyophilized sodium salt. Other salt forms of 2-Aza-ε-cAMP are available upon request. Equal concentrations of the compound can appear very different in volume due to 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 purity is better than 98% (HPLC / UV/ 290 nm). The product is not sterile and has not been tested for endotoxins.

Solubility: 2-Aza-ε-cAMP has sufficient solubility in water or buffer for most applications. When opening the tube please 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: 2-Aza-ε-cAMP has sufficient stability at room temperature and does not need special care during handling or shipment. Nevertheless, we recommend that the compound should be protected from light and stored in the freezer, for longer storage periods preferably in freeze-dried form

Toxicity and Safety: Since cyclic AMP has multiple tasks in every organism it is likely that lipophilic cAMP analogues 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 compounds 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 2-Aza-ε-cAMP:

Kraemer, A.; Rehmann, H.; Cool, R.H.; Theiss, C.; de Rooij, J.; Barrere-Lemaire, S.; Wittinghofer, A., *J. Mol. Biol.*, **306**, 1167 - 1177 (2001): "Dynamic Interaction of cAMP with the Rap Guanine-nucleotide Exchange Factor Epac1"

Vicentini, G.E.; Constantin, J.; Lopez, C.H.; Bracht, A., *Biochem. Pharmacol.*, **59**, 1187 - 1201 (2000): "Transport of Cyclic AMP and Synthetic Analogs in the Perfused Rat Liver"

Walton, T.J.; Bayliss, M.A.; Pereira, M.L.; Games, D.E.; Genieser, H.-G.; Brenton, A.G.; Harris, F.M.; Newton, R.P., *Rapid Commun. Mass Spectrom.*, **12**, 449 - 455 (1999): "Fast-atom Bombardment Tandem Mass Spectrometry of Cyclic Nucleotide Analogues Used as Site-selective Activators of Cyclic Nucleotide-dependent Protein Kinases"

Øgreid, D.; Ekanger, R.; Suva, R.H.; Miller, J.P.; Døskeland, S.O., *Eur. J. Biochem.*, **181**, 19 - 31 (1989): "Comparison of the Two Classes of Binding Sites (A and B) of Type I and Type II Cyclic-AMP-dependent Protein Kinases Using Cyclic Nucleotide Analogs"

Øgreid, D.; Ekanger, R.; Suva, R.H.; Miller, J.P.; Sturm, P.; Corbin, J.D.; Døskeland, S.O., *Eur. J. Biochem.*, **150**, 219 - 227 (1985): "Activation of Protein Kinase Isozymes by Cyclic Nucleotide Analogs Used Singly or in Combination"

Tsou, K.C.; Yip, K.F.; Lo, K.W., *Anal. Biochem.*, **60**, 163 - 169 (1974): "¹N⁶-Etheno-2-aza-adenosine 3',5'-Monophosphate: A new Fluorescent Substrate for cyclic Nucleotide Phosphodiesterase"

Tsou, K.C.; Lo, K.W.; Yip, K.F.; *FEBS Lett.*, **45**, 47 - 49 (1974): "A Fluorescent Method for the Demonstration of Cyclic 3',5'-AMP Phosphodiesterase Activity in Polyacrylamide Gel"