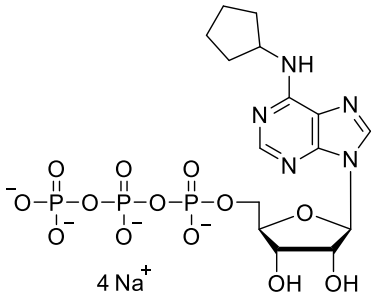
BIOLOG - LIFE SCIENCE INSTITUTE -

Technical Information about
N^6- Cyclopentyladenosine- 5'- O- triphosphate (6-cPe-ATP)

Update: November 01, 2018 HJ



Abbreviation: **6-cPe-ATP / cpATP**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{15}H_{24}N_5O_{13}P_3$ for free acid	[189822-11-5]	575.3 for free acid	λ_{max} 270 nm / ε 19900 / pH 7	C 062

Name: N^6- Cyclopentyladenosine- 5'- O- triphosphate

Description: 6-cPe-ATP is an analogue of adenosine-5'-O-triphosphate (ATP) in which one hydrogen of the 6-amino group has been substituted by a cyclopentyl moiety.

Properties:

- Specific triphosphate-source for chemical-genetic engineered protein kinases with selective sensitivity to N^6-modified ATP analogues (Shah et al. 1997, Liu et al. 1998),
- radio-labelled 6-cPe-ATP can be used for identification of the specific substrates of engineered protein kinases (Shah et al. 1997),
- inhibitor of an engineered myosin-Iβ mutant (Gillespie et al. 1999).

Specification: Sodium salt in aqueous solution (10 mM). The free acid or other salt forms are available upon request. Micro molar quantities are determined by UV at λ_{max}. When opening the tube please make sure that no liquid is lost within the cap. A short spin-down in a bench centrifuge is recommended before use.

Purity: Typical analysis is better than 95% (HPLC / UV / 270 nm). The product is not sterile and has not been tested for endotoxins.

Stability and Storage: 6-cPe-ATP is most stable when stored as aqueous solution in the freezer (-20° Celsius necessary, -80° recommended), however, at ambient temperature the compound slowly starts to decompose. Thus, in order to maintain its original high quality it is recommended to allow thawing only before using the product. If you will not use up the vial with one application, please aliquot the contents of the vial in order to avoid repeated freeze/thaw cycles for the rest. When making such aliquots be sure to operate quickly and to freeze the vial again as soon as possible.

Toxicity and Safety: Since nucleoside triphosphates have multiple tasks in every organism, it is likely that ATP 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 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 6-cPe-ATP:

Kumar, N.V.; Eblen, S.T.; Weber, M.J., *Methods*, **32**, 389 - 397 (2004): "Identifying Specific Kinase Substrates through Engineered Kinases and ATP Analogs"

BIOLOG Life Science Institute, Bremen, Germany Phone: 49 (0) 421 591355 Fax: 49 (0) 421 5979713 e-mail: service@biolog.de

Wan, L.; de los Santos, T.; Zhang, C.; Shokat, K.; Hollingworth, N.M., *Mol. Biol. Cell.*, **15**, 11 - 13 (2004): "Mek1 Kinase Activity Functions Downstream of *RED1* in the Regulation of Meiotic Double Strand Break Repair in Budding Yeast"

Hindley, A.D.; Park, S.; Wang, L.; Shah, K.; Wang, Y.; Hu, X.; Shokat, K.M.; Kolch, W.; Sedivy, J.M.; Yeung, K.C., *FEBS Lett.*, **556**, 26 - 34 (2004): "Engineering the Serine/Threonine Protein Kinase Raf-1 to Utilize an Orthogonal Analogue of ATP Substituted at the N^6 Position"

Ulrich, S.M.; Kenski, D.M.; Shokat, K.M., *Biochemistry*, **42**, 7915 - 7921 (2003): "Engineering a "Methionine Clamp" into Src Family Kinases Enhances Specificity toward Unnatural ATP Analogues"

Eblen, S.T.; Kumar, V.; Shah, K.; Henderson, M.J.; Watts, C.K.W.; Shokat, K.M., *J. Biol. Chem.*, **278**, 14926 - 14935 (2003): "Identification of Novel ERK2 Substrates through Use of an Engineered Kinase and ATP Analogs"

References cited in this Technical Information:

Gillespie, P.G.; Gillespie, S.K.H.; Mercer, J.A.; Shah, K.; Shokat, K.M., *J. Biol. Chem.*, **274**, 31373 - 31381 (1999): "Engineering of the Myosin-Iβ Nucleotide-binding Pocket to Create Selective Sensitivity to N^6-modified ADP Analogs"

Liu, Y.; Shah, K.; Yang, F.; Witucki, L.; Shokat, K.M., *Chem. Biol.*, **5**, 91 - 101 (1998): "Engineering Src Family Protein Kinases with Unnatural Nucleotide Specificity"

Shah, K.; Liu, Y.; Deirmengian, C.; Shokat, K.M., *Proc. Natl. Acad. Sci. USA*, **94**, 3565 - 3570 (1997): "Engineering Unnatural Nucleotide Specificity for Rous Sarcoma Virus Tyrosine Kinase to Uniquely Label its Direct Substrates"

BIOLOG Life Science Institute, Bremen, Germany Phone: 49 (0) 421 591355 Fax: 49 (0) 421 5979713 e-mail: service@biolog.de