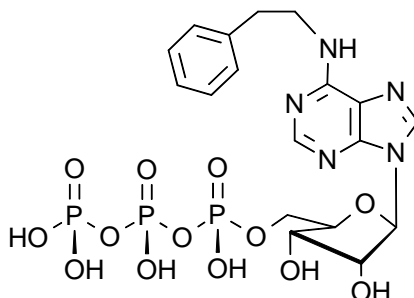


## Technical Information about N<sup>6</sup>-(2-Phenylethyl)-ATP

Update: January 11, 2012 HU



**Abbreviation:** 6-PhEt-ATP

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C <sub>18</sub> H <sub>24</sub> N <sub>5</sub> O <sub>13</sub> P <sub>3</sub> for free acid	[181705-62-4]	611.3 for free acid	λ <sub>max</sub> 269 nm / ε 20500 / pH 7	P 012

**Name:** N<sup>6</sup>-(2-Phenylethyl)adenosine-5'-O-triphosphate, sodium salt

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

### Properties:

- ATP analogue useful for specific interaction with modified receptor proteins
- Selective inhibitor of ATP hydrolysis by an engineered myosin-Iβ mutant (Gillespie et al. 1999)
- Suitable for studying cystic fibrosis transmembrane conductance regulator (CFTR) gating (Zhou et al. 2005)

**Specification:** Sodium salt in aqueous solution (10 mM). Other salt forms of 6-PhEt-ATP are available upon request. Micromolar quantities are determined by UV at λ<sub>max</sub>. 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 purity is better than 95% (HPLC / UV / 269 nm) at time of quality control and packing. The product is not sterile and has not been tested for endotoxins.

**Stability and Storage:** 6-PhEt-ATP is relatively stable when stored frozen in aqueous solution (-20° Celsius necessary, -80° recommended). In order to maintain its original high quality, and especially if you want to avoid any decomposition, 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 very 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-PhEt-ATP:

Jih, K.-Y.; Li, M.; Hwang, T.-C.; Bompadre, S.G., *J. Physiol.*, **589**, 2719 - 2731 (2011): "The Most Common Cystic Fibrosis-associated Mutation Destabilizes the Dimeric State of the Nucleotide-binding Domains of CFTR"

Miki, H.; Zhou, Z.; Li, M.; Hwang, T.-C.; Bompadre, S.G., *J.Biol.Chem.*, **285**, 19967 - 19975 (2010): "Potentiation of Disease-associated CFTR Mutants by Hydrolyzable ATP Analogs"

Chi, Y.; Welcker, M.; Hizli, A.A.; Posakony, J.J.; Aebersold, R.; Clurman, B.E., *Genome Biol.*, **9**, R149 (2008): "Identification of CDK2 Substrates in Human Cell Lysates"

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

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"

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

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 (2003): "Engineering the Serine/Threonine Protein Kinase Raf-1 to Utilize an Orthogonal Analogue of ATP Substituted at the N6 Position"

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"

Liu, Y.; Witucki, L.A.; Shah, K.; Bishop, A.C.; Shokat, K.M., *Biochem.*, **39**, 14400 - 14408 (2000): "Src-Abl Tyrosine Kinase Chimeras: Replacement of the Adenine Binding Pocket of c-Abl with v-Src to Swap Nucleotide and Inhibitor Specificities"

Singh, A.K.; Tasken, K.; Walker, W.; Frizzell, R.A.; Watkins, S.C.; Bridges, R.J.; Bradbury, N.A., *Am. J. Physiol.*, **275**, C562 - C570 (1998): "Characterization of PKA Isoforms and Kinase-dependent Activation of Chloride Secretion in T84 Cells"

Liu, Y.; Shah, K.; Yang, F.; Witucki, L.; Shokat, K.M., *Bioorg. Med. Chem.*, **6**, 1219 - 1226 (1998): "A Molecular Gate which Controls Unnatural ATP Analogue Recognition by the Tyrosine Kinase v-Src"

#### References cited in this Technical Information:

Zhou, Z.; Wang, X.; Li, M.; Sohma, Y.; Zou, X.; Hwang, T.-C., *J. Physiol.*, **569**, 447 - 457 (2005): "High Affinity ATP/ADP Analogues as New Tools for Studying CFTR Gating"

Gillespie, P.G.; Gillespie, S.K.; Mercer, J.A.; Shah, K.; Shokat, K.M., *J. Cell. Biol.*, **274**, 31373 - 81 (1999): "Engineering of the Myosin- $\beta$  Nucleotide-Binding Pocket to Create Selective Sensitivity to N<sup>6</sup>-Modified ADP Analogs"