Technical Information about N^6- (2- Methylbutyl)- ATP

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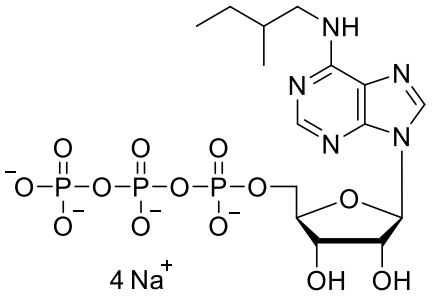

Abbreviation: **6-(2-MeBu)-ATP**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{15}H_{26}N_5O_{13}P_3$ for free acid	[252889-14-8]	577.3 for free acid	λ_{max} 268 nm / ε 17000 / pH 7	M 029

Name: N^6- (2- Methylbutyl)adenosine- 5'- O- triphosphate, sodium salt

Description: 6-(2-MeBu)-ATP is an analogue of adenosine- 5'- O- triphosphate (ATP) in which one hydrogen of the 6- amino group has been substituted by a 2- methylbutyl moiety.

Properties:

- Specific triphosphate-source for chemical-genetic engineered protein kinases with selective sensitivity to N^6-modified ATP analogues,
- radio-labelled 6-(2-MeBu)-ATP can be used for identification of the specific substrates of engineered protein kinases,
- selective inhibitor of the ATP hydrolytic activity 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 / 268 nm) at time of quality control and packing. The product is not sterile and has not been tested for endotoxins.

Stability and Storage: 6-(2-MeBu)-ATP is relatively stable when stored frozen in aqueous solution (- 20° celsius necessary, - 80° recommended). 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 content of the vial in order to avoid repeated freeze/thawing 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-(2-MeBu)-ATP:

Moffat, L.D.; Brown, S.B.A.; Grassie, M.E.; Ulke-Lemée, A.; Williamson, L.M.; Walsh, M.P., MacDonald, J.A., *J. Biol. Chem.*, **286**, 36978 - 36991 (2011): "Chemical Genetics of Zipper-interacting Protein Kinase Reveal Myosin Light Chain as a *Bona Fide* Substrate in Permeabilized Arterial Smooth Muscle"

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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"

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”

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”

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