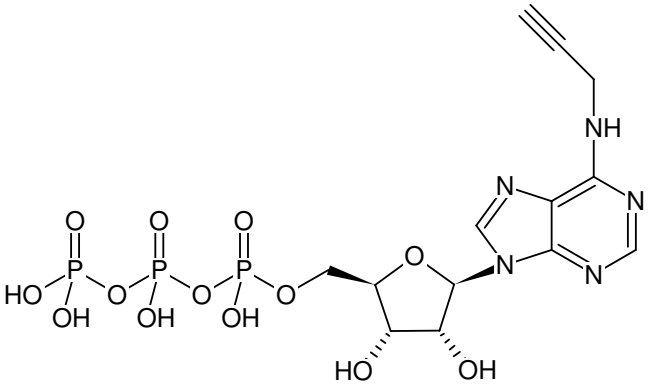
DATA SHEET

Jena Bioscience

N^6-Propargyl-ATP (N^6pATP)

N^6-Propargyl-adenosine-5'-triphosphate, Sodium salt

Cat. No.	Amount
CLK-NU-001-1	1 mg
CLK-NU-001-5	5 mg



Structural formula of N^6-Propargyl-ATP (N^6pATP)

For general laboratory use.

Shipping: shipped on gel packs

Storage Conditions: store at -20 °C

Short term exposure (up to 1 week cumulative) to ambient temperature possible.

Shelf Life: 12 months after date of delivery

Molecular Formula: $C_{13}H_{18}N_5O_{13}P_3$ (free acid)

Molecular Weight: 545.23 g/mol (free acid)

Exact Mass: 545.01 g/mol (free acid)

Purity: ≥ 95 % (HPLC)

Form: solid

Color: white to off-white

Solubility: 10 mM Tris-HCl pH 7.5

Spectroscopic Properties: λ_{max} 262 nm, ε 18.0 L $mmol^{-1}$ cm^{-1} (Tris-HCl pH 7.5)

Applications:
in vitro AMPylation of proteins[1,2]

in vitro polyadenylation of RNA[3]

The resulting alkyne-functionalized protein[1,2] or RNA[3] can subsequently be processed via Cu(I)-catalyzed (azide-alkyne) click chemistry that offers the choice

- to introduce a Biotin group for subsequent purification tasks (via Azides of Biotin)
- to introduce fluorescent group for subsequent microscopic imaging (via Azides of fluorescent dyes)
- to crosslink the RNA to azide-functionalized biomolecules e.g.proteins

Presolski *et al.*[4] and Hong *et al.*[5] provide a general protocol for Cu(I)-catalyzed click chemistry reactions that may be used as a starting point for the set up and optimization of individual assays.

Agonistic ligand, mainly for nucleoside receptor A_1
Nucleoside-triphosphates can be converted by different membrane-bound phosphatases into nucleosides acting as nucleoside receptor ligands. In some cases nucleoside phosphates act also directly on nucleoside receptors.

Please note: This compound contains a phosphoramide linkage which is hydrolyzed at pH <7.0.
For preparation of a 10 mM solution use 100 mM buffer (for example: bicarbonate, borate, phosphate and Tris) to prevent degradation at acidic pH.

Related Products:
Copper (II)-Sulphate ($CuSO_4$), #CLK-MI004
Tris(3-hydroxypropyltriazolylmethyl)amine (THPTA), #CLK-1010
Sodium Ascorbate (Na-Ascorbate), #CLK-MI005

Selected References:

[1] Grammel *et al.* (2011) A Chemical Reporter for Protein AMPylation. *J. Am. Chem. Soc.* **133**:17103.

[2] Broncel *et al.* (2012) A New Chemical Handle for Protein AMPylation at the Host-Pathogen Interface. *ChemBioChem* **13**:183.

[3] Grammel *et al.* (2012) Chemical Reporter for Monitoring RNA Synthesis and Poly (A) Tail Dynamics. *ChemBioChem* **13**:1112.

[4] Presolski *et al.* (2011) Copper-Catalyzed Azide-Alkyne Click Chemistry for Bioconjugation. *Current Protocols in Chemical Biology* **3**:153.

[5] Hong *et al.* (2011) Analysis and Optimization of Copper-Catalyzed Azide-Alkyne Cycloaddition for Bioconjugation. *Angew. Chem. Int. Ed.* **48**:9879.

Sirci *et al.* (2012) Ligand-, structure- and pharmacophore-based molecular fingerprints: a case study on adenosine A1, A2A, A2B, and A3 receptor

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Volonte *et al.* (2009) Membrane components and purinergic signalling: the purinome, a complex interplay among ligands, degrading enzymes, receptors and transporters. *FEBS J.* **276**:318.

Yegutkin (2008) Nucleotide and nucleoside converting enzymes: Important modulators of purinergic signalling cascade. *Biochim. Biophys. Acta* **1783**:673.

Joshi *et al.* (2005) Purine derivatives as ligands for A3 adenosine receptors. *Current Topics in Medicinal Chemistry* **5**:1275.

Volpini *et al.* (2002) N6-Alkyl-2-alkynyl derivatives of adenosine as potent and selective agonists of the human adenosine A3 receptor and starting point for searching A2B ligands. *J. Med. Chem.* **45 (15)**:3271.

Hess (2001) Recent advantages in adenosine receptor antagonist research. *Expert Opin. Ther. Patents* **11 (10)**:1533.

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Jacobson *et al.* (2001) Ribose modified nucleosides and nucleotides as ligands for purine receptors. *Nucleosides, Nucleotides & Nucleic Acids* **20 (4)**:333.

Van Galen *et al.* (1994) A binding site model and structure-activity relationships for rat A3 adenosine receptor. *Molecular Pharmacology* **45**:1101.