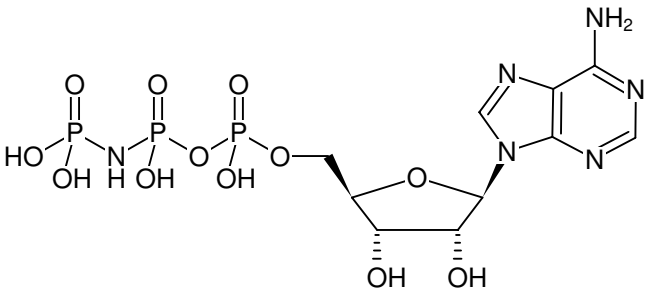
DATA SHEET

Jena Bioscience

# AppNHp

(AMPPNP)
AMPPNHP
Adenosine-5′-[(β,γ)-imido]triphosphate, Tetralithium salt

| Cat. No. | Amount |
|---|---|
| NU-407-10 | 10 mg |
| NU-407-50 | 50 mg |




Structural formula of AppNHp

**For general laboratory use.**

**Shipping:** shipped on dry ice

**Storage Conditions:** store at -20 °C

**Shelf Life:** 6 months after date of delivery

**Molecular Formula:** $C_{10}H_{17}N_6O_{12}P_3$ (free acid)

**Molecular Weight:** 506.19 g/mol (free acid)

**Exact Mass:** 506.01 g/mol (free acid)

**CAS#:** 72957-42-7

**Purity:** ≥ 95 % (HPLC)

**Form:** solid

**Color:** white to off-white

**Spectroscopic Properties:** $\lambda_{max}$ 259 nm, ε 15.4 L mmol$^{-1}$ cm$^{-1}$ (Tris-HCl pH 7.5)

**Applications:**
X-ray analysis[1, 2]

Hydrolyse studies[3, 4]Agonistic ligand, mainly for nucleoside receptor $A_1$
Nucleosidephosphates stabilized against hydrolytic degradation can directly bind to nucleoside receptors.

**Specific Ligands:**

Thymidylate kinase[1, 2]

for $P2Y_2$ receptor[5]

**Please note:** For reasons of stability, please make sure that the pH value of a solution of this product never drops below 7.0. This can be achieved by dissolving the nucleotide in a buffer of your choice (50 - 100 mM, pH 7 - 10). Dissolve and adjust concentration photometrically.
When stored at -20 °C, product may hydrolyze, thereby forming $AppNH_2$ at a rate of up to 1 % per month!

**Selected References:**


[1] Segura-Pena *et al.* (2007) Quartenary structure change as a mechanism for the regulation of thymidine kinase 1-like enzymes. *Structure* **15**:1555.

[2] Ostermann *et al.* (2003) Structure of human thhymidilate kinase in complex with prodrugs:Implications for the structure-based design of novel compounds. *Biochemistry* **42**:2568.

[3] Shimizu *et al.* (1997) Hydrolysis of AMPPNP by the motor domain of NCD, a kinesin-related protein. *Mol. Biol. Cell* **8**:1497.

[4] Suzuki *et al.* (1997) Hydrolysis of AMPPNP by the motor domain of ncd, a kinesin-related protein. *FEBS Lett.* **409 (1)**:29.

[5] Lazarowski *et al.* (1995) Pharmacological selectivity of cloned human P2U-purinoreceptor: potent activation by diadenosine tetraphosphate. *Br. J. Pharmacol.* **116 (1)**:1619.

Bodey *et al.* (2009) 9-Angström structure of a microtubule-bound mitotic motor. *J. Mol. Biol.* **388 (2)**:218.

Karow *et al.* (2009) A conformational change in the helicase core is necessary but not sufficient for RNA unwinding by the DEAD box helicase YxiN. *Nucleic Acids Research* **37 (13)**:4464.

Chang *et al.* (2005) Nitric Oxide-dependent Allosteric Inhibitory Role of a Second Nucleotide Binding Site in Soluble Guanylyl Cyclase. *J. Biol. Chem.* **280 (12)**:11513.

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Menz *et al.* (2001) The structure and nucleotide occupancy of bovine mitochondrial F-1-ATPase are not influenced by crystallisation at high concentrations of nucleotide. *FEBS Lett.* **494 (1)**:11.

Tereshko *et al.* (2001) Crystal structures of the catalytic domain of human protein kinase associated with apoptosis and tumor suppression. *Nat. Struct. Biol.* **8 (10)**:899.

Prodromou *et al.* (2000) The ATPase cycle of Hsp90 drives a molecular 'clamp' via transient dimerization of the N-terminal domains. *EMBO J.* **19 (16)**:4383.

Gil *et al.* (1999) N-Acetyl-L-glutamate kinase from Escherichia coli: cloning of the gene, purification and crystallization of the recombinant enzyme and preliminary X-ray analysis of the free and ligand-bound forms. *Acta Cryst. D* **55**:1350.

Shi *et al.* (1999) EDC cross-linking of actin and myosin S1. II. AMPPNP induces an allosteric transition from pre-hydrolysis state to posthydrolysis state. *Biophys. J.* **76 (1)**:A163.

Williams *et al.* (1986) Effects of purine nucleotides on the binding of [3H]cyclopentyladenosine to adenosine A1-receptors in rat brain membranes. *J. Neurochem.* **47 (1)**:88.