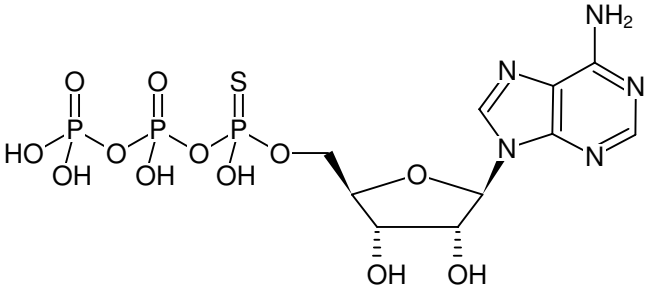
DATA SHEET

Jena Bioscience

ATPαS

Adenosine-5'-(α-thio)-triphosphate, Sodium salt; (Mixture of R_p and S_p isomers)

Cat. No.	Amount
NU-408S	25 µl (100 mM)
NU-408L	5 x 25 µl (100 mM)



Structural formula of ATPαS

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: $C_{10}H_{16}N_5O_{12}P_3S$ (free acid)

Molecular Weight: 523.24 g/mol (free acid)

Exact Mass: 522.97 g/mol (free acid)

CAS#: 29220-54-0

Purity: ≥ 95 % (HPLC)

Form: solution in water

Color: colorless to slightly yellow

Concentration: 100 mM - 110 mM

pH: 7.5 ±0.5

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

Applications:
Crystal structure in complex with adenylyl cyclase[1]

Activation of beta-cell adenylyl cyclase[2]

Potent agonist for P2Y11-receptor[3]

Full agonist for rP2Y1-receptor[4]

Specific Ligands:

Binding to P2Y2- and P2Y6-receptors[5]

Ligand for purinergic receptors:
P2Y[2,5,7]
$P2Y_2$[6]
$P2Y_{11}$[3]

Related Products:
γ-[(6-Aminohexyl)-imido]-ATPαS (NU-278) labeled with various fluorescent dyes

Selected References:

[1] Mou *et al.* (2009) Sructural basis for inhibition of mammalian adenylyl cyclase by calcium. *Biochemistry* **48 (15)**:3387.

[2] Chevassus *et al.* (2002) P2Y receptor activation enhances insulin release from pancreatic beta-cells by triggering the cyclic AMP/protein kinase A pathway. *Naunyn Schmiedebergs Arch. Pharmacol.* **366 (5)**:464.

[3] Van der Weyden *et al.* (2000) Pharmacological characterisation of of P2Y11 receptor in stably transfected haematological cell lines. *Mol. Cell. Biochem.* **213 (1)**:75.

[4] Vohringer *et al.* (2000) A chimeric rat brain P2Y1 receptor tagged with GFP: high-affinity ligand recognition of adenosine diphosphates and triphosphates and selectivity identical to that of wild-type receptor. *Biochem. Pharmacol.* **59 (7)**:791.

[5] Schafer *et al.* (2003) ATP- and UTP-activated P2Y receptors differently regulate proliferation of human lung epithelial tumor cells. *Am. J. Physiol. Lung Cell. Mol. Physiol.* **285 (2)**:L376.

[6] Gorodeski (2002) Regulation of transcervical permeability by two distinct P2 purinergic receptor mechanisms. *Am. J. Physiol. Cell Physiol.* **282 (1)**:C75.

[7] Schäfer *et al.* (1999) ATPalphaS is a ligand for P2Y receptors in synaptosomal membranes: solubilization of[35S]ATPalphaS binding proteins associated with G-proteins. *Neurochemistry Int.* **34 (4)**:303.

Kim *et al.* (2009) Profiling the selectivity of DNA ligases in an array format with mass spectrometry. *Nucleic Acids Research* **38 (1)**:e2.

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OsumiDavis *et al.* (1996) Effect of alpha-Thio-ATP on the steady-state kinetics of nucleotide incorporation catalyzed by the wildtype and active-site mutant T7 RNA polymerases. *Biophys. J.* **70 (2)**:SU480, Part 2.

Cristalli *et al.* (1993) Identification of a receptor for ADP on blood-platelets by photoaffinity-labeling. *Biochem. J.* **291**:875, Part 3.

Savi *et al.* (1993) ADP-dependence of platelet activation-induced by a thrombin receptor agonist. *Nouv. Rev. Fr. Hematol.* **35 (2)**:115.

Shi *et al.* (1993) Mechanism of adenylate kinase - what can be learned from a mutant enzyme with minor perturbation in kinetic-parameters. *Biochemistry-US* **32 (25)**:6450.

Cullis *et al.* (1992) Energy coupling in DNA gyrase - a thermodynamic limit to the extent of DNA supercoiling. *Biochemistry- US* **31 (40)**:9642.

Tomkinson *et al.* (1992) DNA ligase-I from Saccharomyces-cerevisiae - physical and biochemical characterization of the cdc9 gene-product. *Biochemistry-US* **31 (47)**:11762.