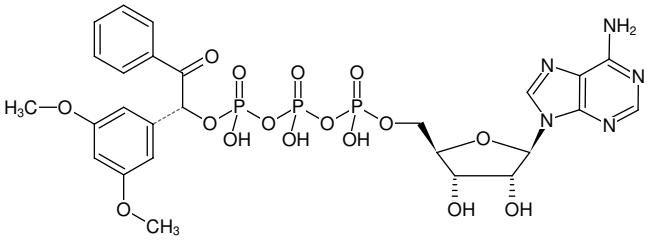
DATA SHEET

Jena Bioscience

# DMB-caged-ATP

Adenosine-5'-triphosphate, $P^3$-(1-(3',5'-dimethoxyphenyl)-2-oxo-2-phenyl-ethyl)-ester, Triethylammonium salt

| Cat. No. | Amount |
|---|---|
| NU-309S | 10 µl (10 mM) |
| NU-309L | 5 x 10 µl (10 mM) |



Structural formula of DMB-caged-ATP

***For research use only!***

**Shipping:** shipped on blue ice

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

**Additional Storage Conditions:** store dark

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

**Shelf Life:** 12 months after date of delivery

**Molecular Formula:** $C_{26}H_{30}N_5O_{16}P_3$ (free acid)

**Molecular Weight:** 761.46 g/mol (free acid)

**Exact Mass:** 761.09 g/mol (free acid)

**CAS#:** 159899-51-1

**Purity:** ≥ 95 % (HPLC)

**Form:** clear aqueous solution

**Concentration:** 10 mM - 11 mM

**pH:** 7.5 ±0.5

**Spectroscopic Properties:** $\lambda_{max}$ 256 nm, ε 25.6 L $mmol^{-1}$ $cm^{-1}$ (Tris-HCl pH 7.5)

**Applications:**

Ligand for purinergic receptors:

The nucleotide can be transported extra- or intracellular in a protected form to the target. After activation by well-defined conditions the liberated ATP can interact with P2X- and P2Y-receptors. Interacting subreceptor types and corresponding references are listed in Data sheet #NU-1010.

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. The caged form is protected during uptake and transport in animal experiments and can be well-directed released through activation at the target tissue.

**Selected References:**


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.

Apell *et al.* (1998) Partial reactions of the Na,K-ATPase: kinetic analysis and transport properties. *Acta Physiol. Scand.* **163**:235.

Sokolov *et al.* (1998) Fast transient currents in Na,K-ATPase induced by ATP concentration jumps from the P-3-[1- (3',5'-dimethoxyphenyl)-2-phenyl-2-oxo]ethyl ester of ATP. *Biophys. J.* **74 (5)**:2285.

Sokolov *et al.* Fast transient currents in the Na,K-ATPase induced by ATP concentration jump experiments from DMBcaged ATP. *Biophys. J.* **72 (2)**:242.

Thirlwell *et al.* (1995) Inhibition of unloaded shortening velocity in permeabilized muscle-fibers by caged-ATP compounds. *J. Muscle Res. Cell M.* **16 (2)**:131.

Thirlwell *et al.* (1994) Kinetics of relaxation from rigor of permeabilized fast-twitch skeletal fibers from the rabbit using a novel caged-ATP and apyrase. *Biophys. J.* **67 (6)**:2436.

Corrie *et al.* (1992) Synthetic, mechanistic and photochemical studies of phosphate-esters of substituted benzoins. *J. Chem. Soc. Perkin Trans.* **1 (18)**:2409.

Corrie *et al.* (1992) The development and application of photosensitive caged compounds to aid time-resolved structure determination of macromolecules. *Philos. T. Roy. Soc. A* **340 (1657)**:233.