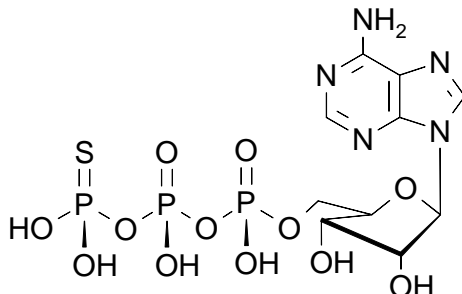


## Technical Information about Adenosine-5'-O-(3-thiotriphosphate)

Update: November 17, 2011 AI



**Abbreviation:** ATP- $\gamma$ -S

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
C <sub>10</sub> H <sub>16</sub> N <sub>5</sub> O <sub>12</sub> P <sub>3</sub> S (free acid)	[93839-89-5]	523.3 (free acid)	$\lambda_{\max}$ 258 nm / $\epsilon$ 15200 / pH 7	A 060

**Name:** Adenosine- 5'- O- (3- thiotriphosphate)

**Description:** ATP- $\gamma$ -S is an analogue of adenosine-5'-O-triphosphate (ATP) in which one of the non-bridging oxygens at the  $\gamma$ -phosphate is replaced by sulphur.

**Properties:** ATP- $\gamma$ -S has increased metabolic stability and may be useful for inhibition or activation of ATP-responsive receptors and determination of their stereospecificity as well as for thiophosphorylation of proteins. Biolog also offers N<sup>6</sup>-modified ATP- $\gamma$ -S analogues such as 6-Bn-ATP- $\gamma$ -S (Cat. No. B 072) or 6-PhEt-ATP- $\gamma$ -S (Cat. No. P 026) that can be used in studies on kinase-substrate relationships (chemical genetics).

**Specification:** Aqueous solution of the sodium salt (10 mM). Other salt forms of ATP- $\gamma$ -S are available upon request. Micromolar quantities are determined by UV at  $\lambda_{\max}$ . 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 purity is better than 95% (HPLC / UV / 258 nm) at time of quality control and packing. However, actual purity depends on storage and transport conditions. The product is not sterile and has not been tested for endotoxins.

**Stability and Storage:** ATP- $\gamma$ -S is most stable when stored as aqueous solution in the freezer (-20° Celsius necessary, -80° recommended), however, at ambient temperature the compound slowly starts to decompose. Thus, 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 contents of the vial in order to avoid repeated freeze/thaw 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 ATP has important 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 ATP- $\gamma$ -S:

Lo, H.-C.; Hollingsworth, N.M., *Methods Mol. Biol.*, **745**, 135 - 149 (2011): "Using the Semi-synthetic Epitope System to Identify Direct Substrates of the Meiosis-specific Budding Yeast Kinase, Mek1"

Carlson, S.M.; Chouinard, C.R.; Labadorf, A.; Lam, C.J.; Schmelzle, K.; Fraenkel, E.; White, F.M., *Sci. Signal.*, **4**, 11 (2011): "Large-Scale Discovery of ERK2 Substrates Identifies ERK-Mediated Transcriptional Regulation by ETV3"

Chi, Y.; Welcker, M.; Hizli, A.A.; Posakony, J.J.; Aebersold, R.; Clurman, B.E., *Genome Biol.*, **9**, R149 (2008): "Identification of CDK2 Substrates in Human Cell Lysates"

Allen, J.J.; Lazerwith, S.E.; Shokat, K.M., *J. Am. Chem. Soc.*, **127**, 5288 - 5289 (2007): "Bio-orthogonal Affinity Purification of Direct Kinase Substrates"

Schultz, C.; Vaskinn, S.; Kildalsen, H.; Sager, G., *Biochemistry*, **37**, 1161 - 1166 (1998): "Cyclic AMP Stimulates the Cyclic GMP Egression Pump in Human Erythrocytes - Effects of Probenecid, Verapamil, Progesterone, Theophylline, IBMX, Forskolin, and Cyclic AMP on Cyclic GMP Uptake and Association to Inside-out Vesicles"

Chrysogelos, S.; Register, J.C.3rd; Griffith, J., *J. Biol. Chem.*, **258**, 12624 - 12631 (1983): "The Structure of recA Protein-DNA Filaments. 2 recA Protein Monomers Unwind 17 Base Pairs of DNA by 11.5 Degrees/Base Pair in the Presence of Adenosine 5'-O-(3-thiotriphosphate)"