Product Information

Adenosine 5’-[γ-thio] triphosphate tetralithium salt

≥75% (HPLC), powder

A1388

Product Description

This product is a non-hydrolyzable ATP analog phosphorothioate. It effectively cannot be hydrolyzed by ATPase (the rate of hydrolysis is 1/200th that of normal ATP).[1] Phosphorothioates or phosphothioates are compounds where one oxygen of a phosphate is replaced with a sulfur. This modification is most often used with nucleotide analogues:

- Cyclic-phosphorothioate, cAMP analog (Cat. No. A7580)
- α-phosphorothioate, AMP analog (Cat. No. A1640)
- β-phosphorothioates, ADP analog (Cat. No. A8016)
- GDP analog (Cat. No. G7637)
- γ-phosphorothioates, ATP analog (Cat. No. A1388)
- GTP analog (Cat. No. G 8634)

This material is an inhibitor of alkaline phosphatase and a substrate for *E. coli* DNA-dependent RNA polymerase (K_M = 3.8 x 10-^{5}M). It can also be hydrolyzed by snake-venom phosphodiesterase. ATP-γ-S can be translocated by mitochondrial ATP/ADP translocase, and it is a potent inhibitor of ATP-driven reverse electron transport.[2]

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

This product is soluble water (10 mg/mL), yielding a clear solution.

References

1. Yasuoka, K., et al., Interaction of adenosine-5'-O- (3-thiotriphosphate) with Ca^{2+}, Mg^{2+}-adenosine triphosphatase of sarcoplasmic reticulum. J. Biochem. (Tokyo), 91, 1629-1637 (1982).
2. Data for Biochemical Research, 3rd ed., Dawson, R. M. C., et al., Oxford University Press (NewYork, NY: 1986), p. 261.

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