

PRODUCT INFORMATION



Rp-Adenosine-5'-O-(1-thiotriphosphate) (sodium salt)

Item No. 38535

Formal Name: Adenosine, 5'→P''-ester with [P''(R)]-thiotriphosphoric acid ((HO)2P(O)OP(O)(OH)OP(O)(OH)(SH)), tetrasodium salt

Synonym: Rp-ATP-α-S

MF: C₁₀H₁₂N₅O₁₂P₃S • 4Na

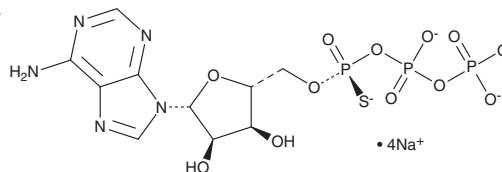
FW: 611.2

Purity: ≥95%

Supplied as: A solution in water

Storage: -80°C

Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

Rp-ATP-α-S is an isomer of the sulfur-containing nucleotide derivative ATP-α-S and an agonist of the purinergic P2Y₁ receptor.¹ It increases calcium mobilization in HEK293 cells expressing the human P2Y₁ receptor (EC₅₀ = 75 nM). Rp-ATP-α-S binds to washed isolated human platelets (K_i = 156 nM), inhibits ADP-induced aggregation of isolated human platelet-rich plasma (PRP; pA₂ = 4.74), and inhibits cAMP production induced by prostaglandin E₁ (PGE₁; Item No. 13010) in isolated human PRP (pA₂ = 5.26).^{1,2} It also induces relaxation of carbamoylcholine-precontracted guinea pig taenia coli strips (EC₅₀ = 56 nM).³ Rp-ATP-α-S has been used in the synthesis of cyclic dinucleotides that are recognized by bacterial riboswitches.⁴

References

1. Major, D.T., Nahum, V., Wang, Y., *et al.* Molecular recognition in purinergic receptors. 2. Diastereoselectivity of the h-P2Y₁-receptor. *J. Med. Chem.* **47(18)**, 4405-4416 (2004).
2. Agarwal, A.K., Tandon, N.N., Greco, N.J., *et al.* Evaluation of the binding to fixed platelets of agonists and antagonists of ADP-induced aggregation. *Thromb. Haemost.* **62(4)**, 1103-1106 (1989).
3. Cusack, N.J. and Hourani, S.M. Adenosine 5-diphosphate antagonists and human platelets: No evidence that aggregation and inhibition of stimulated adenylate cyclase are mediated by different receptors. *Br. J. Pharmacol.* **76(1)**, 221-227 (1982).
4. Burnstock, G., Cusack, N.J., and Meldrum, L.A. Effects of phosphorothioate analogues of ATP, ADP and AMP on guinea-pig taenia coli and urinary bladder. *Br. J. Pharmacol.* **82(2)**, 369-374 (1984).
5. Launer-Felty, K.D. and Strobel, S.A. Enzymatic synthesis of cyclic dinucleotide analogs by a promiscuous cyclic-AMP-GMP synthetase and analysis of cyclic dinucleotide responsive riboswitches. *Nucleic Acids Res.* **46(6)**, 2765-2776 (2018).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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