

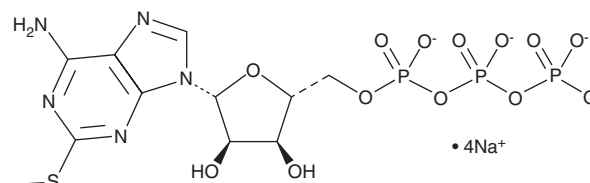
PRODUCT INFORMATION



2-Methylthioadenosine triphosphate (sodium salt)

Item No. 21418

CAS Registry No.: 100020-57-3
Formal Name: 2-(methylthio)-adenosine
5'-(tetrahydrogen triphosphate),
tetrasodium salt
Synonyms: 2-methylthio ATP, 2-MeSATP
MF: $C_{11}H_{14}N_5O_{13}P_3S \cdot 4Na$
FW: 641.2
Purity: $\geq 95\%$
UV/Vis.: λ_{max} : 234, 275 nm
Supplied as: A solution in water
Storage: $-80^\circ C$
Stability: ≥ 2 years



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

Laboratory Procedures

2-Methylthioadenosine triphosphate (sodium salt) is supplied as a solution in water. The solubility of 2-methylthioadenosine triphosphate (sodium salt) in PBS (pH 7.2) is approximately 10 mg/ml.

Description

2-Methylthioadenosine triphosphate is an agonist of the purinergic $P2X_2$ and $P2Y_1$ receptors.^{1,2} It is also an inhibitor of guanylate cyclase C (GC-C) in rat intestinal mucosal membranes ($K_i = 360 \mu M$ in the presence of *E. coli* heat-stable enterotoxin).³ 2-Methylthioadenosine triphosphate ($1 \mu M$) induces calcium influx in primary rat arcuate nucleus neurons in a fluorescence-based reporter assay.¹ It increases inositol phosphate accumulation in 1321N1 astrocytoma cells expressing human $P2Y_1$ receptors ($EC_{50} = 51 nM$).² 2-Methylthioadenosine triphosphate inhibits uroguanylin-induced increases in urine flow and sodium excretion in rats.⁴

References

1. Pollatzek, E., Hitzel, N., Ott, D., *et al.* Functional expression of P2 purinoceptors in a primary neuroglial cell culture of the rat arcuate nucleus. *Neuroscience* **327**, 95-114 (2016).
2. Schachter, J.B. and Harden, T.K. An examination of deoxyadenosine 5'(α -thio)triphosphate as a ligand to define P2Y receptors and its selectivity as a low potency partial agonist of the $P2Y_1$ receptor. *Br. J. Pharmacol.* **121**(2), 338-334 (1997).
3. Parkinson, S.J., Carrithers, S.L., and Waldman, S.A. Opposing adenine nucleotide-dependent pathways regulate guanylyl cyclase C in rat intestine. *J. Biol. Chem.* **269**(36), 22683-22690 (1994).
4. Zeng, C., Xia, T., Zheng, S., *et al.* Synergistic effect of uroguanylin and D_1 dopamine receptors on sodium excretion in hypertension. *J. Am. Heart Assoc.* **11**(6), e022827 (2022).

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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