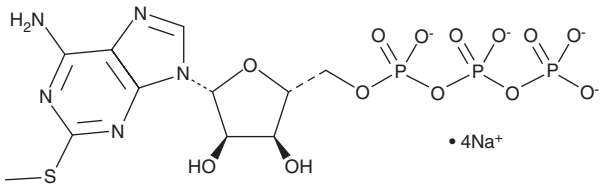
PRODUCT INFORMATION

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: $C_{11}H_{14}N_5O_{13}P_3S \bullet 4Na$
FW: 641.2
Purity: ≥95%
UV/Vis.: λ_{max}: 234, 275 nm
Supplied as: A solution in water
Storage: -80°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 µM in the presence of *E. coli* heat-stable enterotoxin).[3] 2-Methylthioadenosine triphosphate (1 µM) 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).

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