

Product Data Sheet

Product Name: N6-Methyladenosine-5'-Triphosphate

Cat. No.: GN20007

Chemical Properties

Purity	>99.00%	Extinction Coefficient	15,567 Lmol ⁻¹ cm ⁻¹ at 265 nm
Formula	C ₁₁ H ₁₈ N ₅ O ₁₃ P ₃ (free acid)	M.Wt	521.20 g/mole (free acid)
Salt Form	Li+	Concentration	
Buffer	H ₂ O	Storage	-20°C or below
Synonyms	N ⁶ -Methyl-ATP, m ⁶ ATP	Backbone	5'-Triphosphate
Base Analog	Adenosine	Sugar Type	RNA
Nucleotide Category	Base Modified RNA		
Applications	Aptamers, Epigenetics/DNA Damage, In vitro Transcription, Mutagenesis, Photocrosslinking Studies		

Background

N6-Methyladenosine-5-Triphosphate (N6-methyl ATP; m6ATP) is a base-modified analog of adenosine, identified as a minor nucleoside in natural RNA^[1]. N6-Methyladenosine-5'-Triphosphate is a dynamic, reversible, covalent modification of ribonucleotides, commonly found in eukaryotic messenger RNA (mRNA), and plays a crucial regulatory role in RNA splicing, export, stability, and translation^[2, 3]. N6-Methyladenosine-5-Triphosphate serves as a substrate for RNA polymerase and is used as a complete substitute for ATP in mRNA modification reactions^[4, 5]. Additionally, N6-Methyladenosine-5-Triphosphate is an effective agonist for P2Y purinergic receptors in guinea pigs and Escherichia coli^[6]. This product is provided in the form of a lithium salt solution.

References:

[1] Yuan Y, Arneson R, Burke E, et al. Efficient 3'-end tailing of RNA with modified adenosine for nanopore direct total RNA sequencing[J]. bioRxiv, 2024: 2024.02. 24.581884.

[2] Zheng H, Li S, Zhang X, et al. Functional implications of active N6-methyladenosine in plants[J].

Caution: Product has not been fully validated for medical applications. For research use only.

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Frontiers in Cell and Developmental Biology, 2020, 8: 291.

[3] Anderson S J, Kramer M C, Gosai S J, et al. N6-methyladenosine inhibits local ribonucleolytic cleavage to stabilize mRNAs in Arabidopsis[J]. Cell reports, 2018, 25(5): 1146-1157. e3.

[4] Parr C J C, Wada S, Kotake K, et al. N 1-Methylpseudouridine substitution enhances the performance of synthetic mRNA switches in cells[J]. Nucleic Acids Research, 2020, 48(6): e35-e35.

[5] Potapov V, Fu X, Dai N, et al. Base modifications affecting RNA polymerase and reverse transcriptase fidelity[J]. Nucleic Acids Research, 2018, 46(11): 5753-5763.

[6] Burnstock G, Fischer B, Hoyle C H V, et al. Structure activity relationships for derivatives of adenosine-5'-triphosphate as agonists at P2 purinoceptors: Heterogeneity within P2x and P2y subtypes[J]. Drug development research, 1994, 31(3): 206-219.

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