

High Quality Products for Nucleic Acid Research

Deuterated NTPs Now Available

“Over the course of several years now, my group has consistently been happy with the quality of the NTPs and services provided by ISOTEC. We are particularly pleased by the fact that the NTPs are often available in stock and can be ordered in large quantities at short notice. We routinely obtain very high yields when using their NTPs and the customer service is exceptional.”

– Dr. Hashim M. Al-Hashimi
Robert L. Kuczkowski Professor of Chemistry
University of Michigan

Stable isotope labeled nucleic acids play a significant role in studying the links between the structure and dynamics of the overall global conformation of RNA and DNA molecules. These labeled nucleic acids help to improve NMR methodologies by enhancing experimental sensitivity and spectral resolution, as well as facilitating the measurement of local and long-range distance restraints.¹⁻³ Uniformly enriched ¹³C and/or ¹⁵N nucleic acids have been the most prominent labeling patterns; however, deuterated nucleotides are becoming more important as the size of the studied molecules is becoming larger than 40 nucleotides long.

With the increased size, the resonance line widths and signal crowding become large obstacles that can be significantly reduced by replacing the hydrogen atoms with deuterium.⁴ Deuterated nucleotides can be used to enzymatically synthesize RNA and DNA molecules allowing for the simplification of coupling patterns by reducing line widths, removing nonessential resonances, and increasing NOE intensities.^{5,6}

NEW Deuterated NTPs

Cat. No.	Product Description
738034	ATP-2, 8-d ₂ , 1', 2', 3', 4', 5', 5'-d ₆
738042	CTP-5, 6-d ₂ , 1', 2', 3', 4', 5', 5'-d ₆
738050	UTP-5, 6-d ₂ , 1', 2', 3', 4', 5', 5'-d ₆
738069	GTP-8-d, 1', 2', 3', 4', 5', 5'-d ₆

¹³C, ¹⁵N Labeled NTPs

Cat. No.	Product Description
645702	ATP- ¹³ C ₁₀ , ¹⁵ N ₅
645699	CTP- ¹³ C ₉ , ¹⁵ N ₃
645680	GTP- ¹³ C ₁₀ , ¹⁵ N ₅
645672	UTP- ¹³ C ₉ , ¹⁵ N ₂
646237	dATP- ¹³ C ₁₀ , ¹⁵ N ₅
646229	dCTP- ¹³ C ₉ , ¹⁵ N ₃
646210	dGTP- ¹³ C ₁₀ , ¹⁵ N ₅
646202	dTTP- ¹³ C ₁₀ , ¹⁵ N ₂

- Each NTP has a minimum of 95% chemical purity with the remaining portion consisting of the corresponding NMPs and NDPs
- Minimum 98 atom % isotopic purity
- Supplied as the sodium salt, in 100 mM solution with 5 mM Tris buffer
- Convenient 1 mg, 10 mg, and 25 mg quantities
- To verify the highest standards, each product is analyzed by multiple analytical methods including
 - Structure verification by ¹H and ¹³C NMR
 - Chemical purity by HPLC

For more detailed information on nucleotides and related products, visit aldrich.com/bionmr

More Labeled Nucleic Acid Research Products

¹³C Labeled NTPs

Cat. No.	Product Description
710695	ATP- ¹³ C ₁₀
711020	CTP- ¹³ C ₉
710687	GTP- ¹³ C ₁₀
711012	UTP- ¹³ C ₉

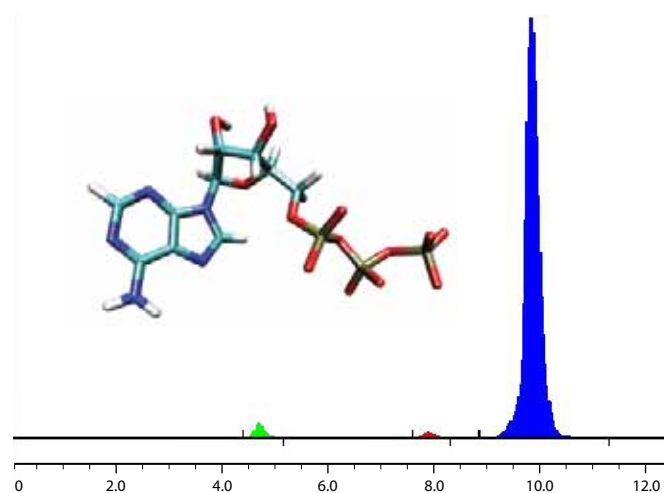
¹⁵N Labeled NTPs

Cat. No.	Product Description
707783	ATP- ¹⁵ N ₅
707759	CTP- ¹⁵ N ₃
707775	GTP- ¹⁵ N ₅
707767	UTP- ¹⁵ N ₂

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HPLC analysis of ATP-¹³C₁₀, ¹⁵N₅:



This chromatogram of ATP-¹³C₁₀¹⁵N₅, demonstrates the chemical purity of the compound (96.5%) in relation to AMP (2.4%) and ADP (1.1%).

Need more Information?

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