

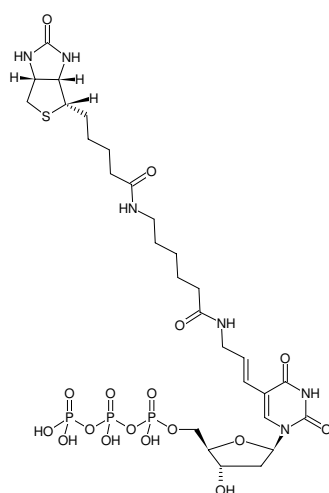


Biotin-11-dUTP

Biotin-X-(5-aminoallyl)-dUTP

γ -[N-(Biotin-6-amino-hexanoyl)]-(5-aminoallyl)-2'-deoxyuridine-5'-triphosphate, Triethylammonium salt

Cat. No.	Amount
NU-803-BIOX-S	200 μ l (1 mM)
NU-803-BIOX-L	5 x 200 μ l (1 mM)



Structural formula of Biotin-11-dUTP

For research use only!

Shipping: shipped on gel packs

Storage Conditions: store at -20 °C

Short term exposure (up to 1 week cumulative) to ambient temperature possible.

Shelf Life: 12 months after date of delivery

Molecular Formula: C₂₈H₄₅N₆O₁₇P₃S (free acid)

Molecular Weight: 862.67 g/mol (free acid)

Exact Mass: 862.18 g/mol (free acid)

Purity: \geq 95 % (HPLC)

Form: filtered solution (30 kDa) in 10 mM Tris-HCl

Color: colorless to slightly yellow

Concentration: 1.0 mM - 1.1 mM

pH: 7.5 \pm 0.5

Spectroscopic Properties: λ_{\max} 240/289 nm, ϵ 10.7/7.1 L mmol⁻¹ cm⁻¹ (Tris-HCl pH 7.5)

Applications:

Incorporation into DNA/cDNA by

- PCR with *Taq* polymerase [1,2] & in-house data
- Nick Translation with DNase I/ DNA Polymerase I [3,4] & in-house data
- Primer Extension with Klenow 3'-5' *exo*⁻ [5]
- 3'-End Labeling with Terminal deoxynucleotidyl Transferase (TdT) [6]
- Reverse Transcription with MMLV Reverse Transcriptase [7]

Description:

Biotin-11-dUTP is enzymatically incorporated into DNA/cDNA as substitute for its natural counterpart dTTP. The resulting Biotin-labeled DNA/cDNA probes are subsequently detected using streptavidin conjugated with horseradish peroxidase (HRP), alkaline phosphatase (AP), a fluorescent dye or agarose/magnetic beads. Optimal substrate properties and thus labeling efficiency as well as an efficient detection of the Biotin moiety is ensured by a 11-atom linker attached to the C5 position of uridine.

Recommended Biotin-11-dUTP/dTTP ratio for PCR and Nick Translation: 50% Biotin-11-dUTP/ 50% dTTP

Please note: The optimal final concentration of Biotin-11-dUTP may vary depending on the application and assay conditions. For optimal product yields and high incorporation rates an individual optimization of the Biotin-11-dUTP/dTTP ratio is recommended.

Related Products:

Biotin-16-dUTP, #NU-803-BIO16
 Biotin-16-dCTP, #NU-809-BIO16
 Biotin-11-dCTP, #NU-809-BIOX
 Digoxigenin-11-dUTP, #NU-803-DIGX

Selected References:

- [1] Day *et al.* (1990) Synthesis *in vitro* and application of biotinylated DNA probes for human papilloma virus type 16 by utilizing the polymerase chain reaction. *Biochem J* **267**:119.
- [2] Ried *et al.* (1992) Simultaneous visualization of severe different DNA probes by *in situ* hybridization using combinatorial fluorescence and digital imaging microscopy. *Proc. Natl. Acad. Sci. USA* **89**:1388.
- [3] Langer *et al.* (1981) Enzymatic synthesis of biotin-labeled polynucleotides: novel nucleic acid affinity probes. *Proc Natl Acad Sci USA* **78**:6633.
- [4] Brigati *et al.* (1983) Detection of viral genomes in cultured cells and paraneighbored tissue sections using biotin-labeled hybridization probes. *Virology* **126**:32.
- [5] Day *et al.* (2008) Microfluidic-based enzymatic on-chip labeling of miRNAs. *N Biotechnol* **25**:142.
- [6] Flickinger *et al.* (1992) Differential incorporation of biotinylated nucleotides by terminal deoxynucleotidyl transferase. *Nucleic Acids Res* **20**:2382.
- [7] Anderson *et al.* (2005) Incorporation of reporter-labeled nucleotides by DNA



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polymerases. *Biotechniques* **38**:257.

Moritz *et al.* (2014) Simple methods for the 3' biotinylation of RNA. *RNA*. **20** (3):421.