

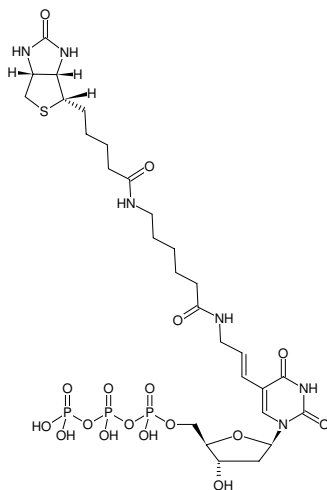


## Biotin-11-dUTP

Biotin-X-(5-aminoallyl)-dUTP

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

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



Structural formula of Biotin-11-dUTP

### For general laboratory use.

**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:** C<sub>28</sub>H<sub>45</sub>N<sub>6</sub>O<sub>17</sub>P<sub>3</sub>S (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:**  $\lambda_{\max}$  240/289 nm,  $\epsilon$  10.7/7.1 L mmol<sup>-1</sup> cm<sup>-1</sup> (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*<sup>-</sup> [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 paraneuronal 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.