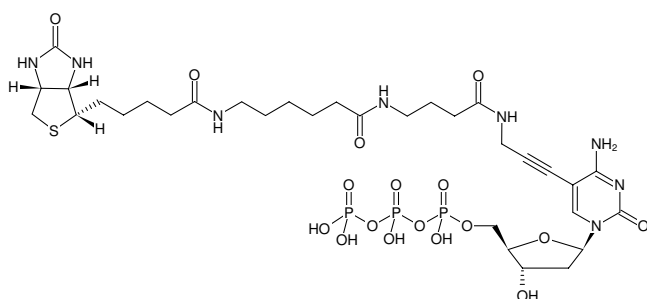


**Biotin-16-dCTP**

Biotin-16-Propargylamino-dCTP

 γ -[N-(Biotin-6-amino-hexanoyl-6-aminobutanoyl)]-5-(3-propargylamino)-2'-deoxycytidine-5'-triphosphate, Triethylammonium salt

Cat. No.	Amount
NU-809-BIO16-S	200 μ l (1 mM)
NU-809-BIO16-L	5 x 200 μ l (1 mM)



Structural formula of Biotin-16-dCTP

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:** C₃₂H₅₁N₈O₁₇P₃S (free acid)**Molecular Weight:** 944.78 g/mol (free acid)**Exact Mass:** 944.23 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} 294 nm, ϵ 9.3 L mmol⁻¹ cm⁻¹ (Tris-HCl pH 7.5)**Applications:**

Incorporation into DNA/cDNA by

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

Description:

Biotin-16-dCTP is enzymatically incorporated into DNA/cDNA as substitute for its natural counterpart dCTP. 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 16-atom linker attached to the C5 position of cytidine.

Recommended Biotin-16-dCTP/dCTP ratio for PCR: 50% Biotin-16-dCTP/ 50% dCTP

Please note: The optimal final concentration of Biotin-16-dCTP may vary depending on the application and assay conditions. For optimal product yields and high incorporation rates an individual optimization of the Biotin-16-dCTP/dTTP ratio is recommended.

Selected References:

- [1] Sugimoto *et al.* (1999) Isolation and mapping of a putative b subunit of human ATP synthase (ATP-BL) from human leukocytes. *DNA Res.* **6** (1):29.
- [2] Sreedharan *et al.* (1995) Structure, expression, and chromosomal localization of the type I human vasoactive intestinal peptide receptor gene. *Proc. Natl. Acad. Sci. U S A.* **92** (7):2939.
- [3] Yue *et al.* (1997) Apoptosis and necrosis in the newborn piglet brain following transient cerebral hypoxia-ischaemia. *Neuropathol. Appl. Neurobiol.* **23** (1):16.
- [4] Zammetto *et al.* (2005) Unambiguous identification of expressed MAG-E-A genes on a DNA microarray. *Clin Chem* **51**:2420.
- [5] Grimmond *et al.* (2001) Expression Profiling with DNA Microarray's: A User's Perspective and Guide. In: DNA Microarrays: Gene Expression Applications (Jordan). Springer Verlag Berlin Heidelberg.