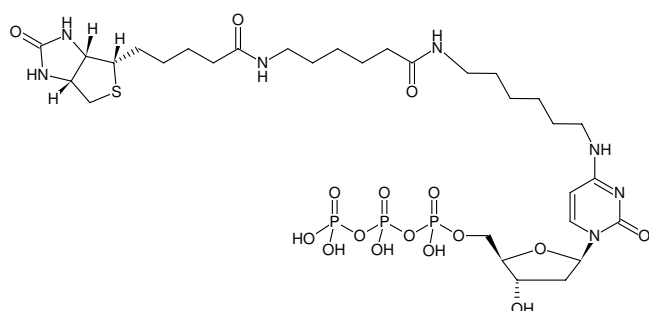


**Biotin-14-dCTP**

Bio-14-dCTP, Triethylammonium salt

Cat. No.	Amount
NU-956-BIO14-S	200 µl (1 mM)
NU-956-BIO14-L	5 x 200 µl (1 mM)



Structural formula of Biotin-14-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:** C₃₁H₅₄N₇O₁₆P₃S (free acid)**Molecular Weight:** 905.78 g/mol (free acid)**Exact Mass:** 905.26 g/mol (free acid)**Purity:** ≥ 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 ±0.5**Spectroscopic Properties:** λ_{max} 272 nm, ε 13.3 L mmol⁻¹ cm⁻¹ (Tris-HCl pH 7.5)**Applications:**

Incorporation into DNA/cDNA by

- Nick Translation with DNase I/ DNA Polymerase I [1] & in-house data
- Primer Extension with Klenow fragment [2]

Description:

Biotin-14-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 for Nick Translation are ensured by a 14-atom linker attached to the N4 position of cytosine. For PCR incorporation experiments e.g. with *Taq* polymerase Biotin-11-dCTP (#NU-809-BIOX) or Biotin-16-dCTP (#NU-809-BIO16) are recommended whose Biotin moiety is attached to C5 position of cytidine via a 11-atom or 16-atom linker, respectively.

Recommended Biotin-14-dCTP/dCTP ratio for Nick Translation: 50% Biotin-14-dCTP/ 50% dCTP

Please note: The optimal final concentration of Biotin-14-dCTP may very depending on the application and assay conditions. For optimal product yields and high incorporation rates an individual optimization of the Biotin-14-dCTP/dCTP ratio is recommended.

Selected References:

- [1] Gebeyehu *et al.* (1987) Novel biotinylated nucleotide-analogs for labeling and colorimetric detection of DNA. *Nucleic Acids Res.* **15** (21):4513.
 [2] Lieberman-Aiden *et al.* (2009) Comprehensive mapping of long range interactions reveals folding principles of the human genome. *Science* **326** (5959):289.