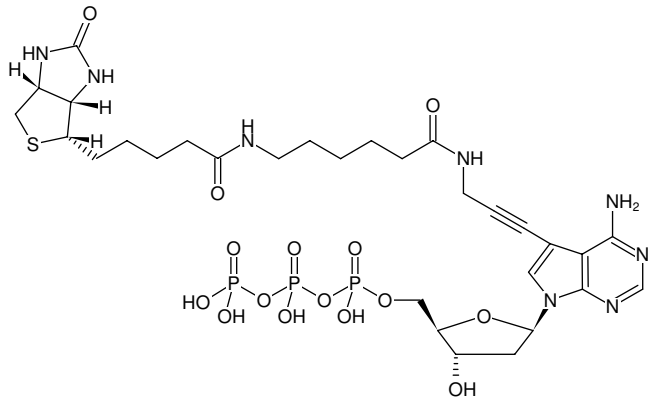
DATA SHEET

Jena Bioscience

Biotin-11-dATP

γ-[N-(Biotin-6-amino-hexanoyl)]-7-propargylamino-2'-deoxy-7-deaza-adenosine-5'-triphosphate, Triethylammonium salt

Cat. No.	Amount
NU-1175-BIOX-S	10 µl (1 mM)
NU-1175-BIOX-L	5 x 10 µl (1 mM)



Structural formula of Biotin-11-dATP

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: $C_{30}H_{45}N_8O_{15}P_3S$ (free acid)

Molecular Weight: 882.71 g/mol (free acid)

Exact Mass: 882.19 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} 280 nm, ε 12.7 L mmol^{-1} cm^{-1} (Tris-HCl pH 7.5)

Applications:
Incorporation into DNA/cDNA by
- PCR with *Taq* polymerase [1] & in-house data
- Nick Translation with DNAse I/ DNA Polymerase I [2]
- Primer Extension with Klenow *exo*$^-$ [3,4]
- Reverse Transcription with MMLV Reverse Transcriptase [5]

Description:
Biotin-11-dATP is enzymatically incorporated into DNA/cDNA as substitute for its natural counterpart dATP. 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 7-Deaza position of adenine.

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

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

Selected References:

[1] Zammatteo *et al.* (2005) Unambiguous identification of the expressed MAGE-A genes on a DNA microarray. *Clin. Chem.* **51 (12)**:2420.

[2] Dauwerse *et al.* (1999) Two-colour FISH detection of the inv (16) in interphase nuclei of patients with acute myeloid leukaemia. *Br. J. Haematol.* **106 (1)**:111.

[3] Vorwerk *et al.* (2008) Microfluidic-based enzymatic on-chip labeling of miRNAs. *N. Biotechnol.* **25 (2)**:142.

[4] Beier *et al.* (2008) Microfluidic primer extension assay. *Methods Mol Biol* **822**:143.

[5] Vankoningsloo *et al.* (2008) Gene expression silencing with 'specific' small interfering RNA goes beyond specificity - a study of key parameters to take into account in the onset of small interfering RNA off-target effects. *FEBS J.* **275 (11)**:2738.