DATA SHEET

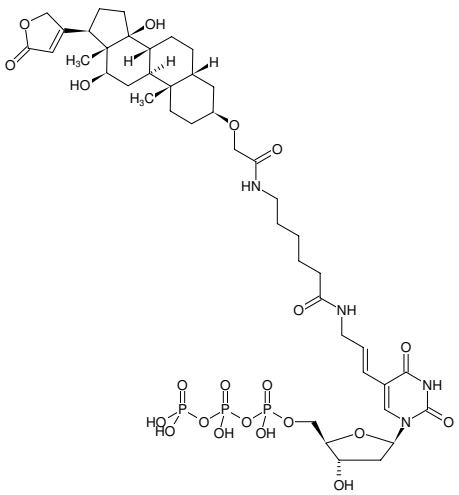
Jena Bioscience

DIG-11-dUTP

alkali-stable

Digoxigenin-X-(5-aminoallyl)-2'-deoxyuridine-5'-triphosphate, Triethylammonium salt

Cat. No.	Amount
NU-803-DIGXS	25 µl (1 mM)
NU-803-DIGXL	5 x 25 µl (1 mM)



Structural formula of DIG-11-dUTP

For research use only!

Shipping: shipped on blue ice

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: $C_{43}H_{65}N_4O_{21}P_3$ (free acid)

Molecular Weight: 1066.91 g/mol (free acid)

Exact Mass: 1066.34 g/mol (free acid)

Purity: ≥ 95 % (HPLC)

Form: sterile solution 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} 290 nm, ε 8.8 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] and in-house data
- Primer Extension with Klenow *exo*$^-$ [4]
- 3'-End Labeling with Terminal deoxynucleotidyl Transferase (TdT) [5]
- Reverse Transcription with MMLV Reverse Transcriptase [6]

Incorporation into RNA by
- 3'-End Labeling with Terminal deoxynucleotidyl Transferase (TdT) [7]

Description:

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

Recommended Digoxigenin-11-dUTP/dTTP ratio for PCR and Nick Translation: 35% Digoxigenin-11-dUTP/ 65% dTTP

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

Related Products:

HighFidelity Digoxigenin PCR Labeling Kit, #APP-101-DIGX
Digoxigenin NT Labeling Kit, #PP-310-DIGX

Selected References:

[1] Anderson *et al.* (2005) Incorporation of reporter-labeled nucleotides by DNA polymerases. *Biotechniques* **38**:257.

[2] Jackson *et. al* (1991) Detection of Shiga Toxin-Producing Shigella dysenteriae Type 1 and Escherichia coli by Using Polymerase Chain Reaction with Incorporation of Digoxigenin-11-dUTP. *J Clin Microbiol.* **29 (9)**:1910.

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

[4] Wiegant *et al.* (2008) Probe Labeling and Fluorescence In Situ Hybridization. *Current Protocols in Cytometry*: Unit 8.3.

[5] Schmitz *et al.* (2008) Nonradioactive labeling of oligonucleotides in vitro with the hapten digoxigenin by tailing with terminal transferase. *Anal Biochem* **199**:222.

[6] Grimmond *et al.* (2001) Expression Profiling with cDNA Microarray's: A User's Perspective and Guide. In: *DNA Microarrays*: Gene Expression

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Applications (Jordan). Springer Verlag Berlin Heidelberg.

[7] Rosemeyer *et al.* (1995) Nonradioactive 3'-end-labeling of RNA molecules of different lengths by terminal deoxynucleotidyltransferase *Anal Biochem* **224**:446.