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Not for use in diagnostic procedures.



Biotin-16-ddUTP

 **Version: 10**

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Biotin- ϵ -aminocaproyl- γ -aminobutyryl-[5-(3-aminoallyl)-2',3'-dideoxy-uridine-5'-triphosphate]
tetralithium salt

Cat. No. 11 427 598 910 25 nmol
25 μ l , 1 mM

Store the product at -15 to -25°C .

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1. General Information

1.1. Contents

Vial / Bottle	Label	Function / Description	Content
1	Biotin-16-ddUTP	1 mM tetralithium salt solution.	1 vial, 25 µl

1.2. Storage and Stability

Storage Conditions (Product)

When stored at –15 to –25°C, the product is stable through the expiry date printed on the label.

Vial / Bottle	Label	Storage
1	Biotin-16-ddUTP	Store at –15 to –25°C. ⚠️ A decomposition of approximately 5% may occur within 6 months.

1.3. Additional Equipment and Reagent required

For oligonucleotide labeling

i The 5x Reaction buffer and CoCl_2 solution are supplied with the Terminal Transferase*.

- Reaction buffer, 5x conc.: 1 M Potassium cacodylate, 125 mM Tris-HCl, 1.25 mg/ml BSA (pH 6.6 at +25°C)
- CoCl_2 solution, 25 mM
- Terminal Transferase, recombinant*: 400 U in 60 mM potassium phosphate (pH 7.2 at +4°C), 150 mM KCl, 1 mM 2-mercaptoethanol, 0.5% Triton X-100, 50% glycerol
- Autoclaved, double-distilled water
- Water bath

For analysis of biotin-labeled DNA

- Nylon Membranes*
- Streptavidin-AP-conjugate for nucleic acid detection*

For detection of labeled oligomer

- ELISA technique using the Streptavidin-AP conjugate for nucleic acid detection*.

1.4. Application

Biotin-16-ddUTP can be used for a variety of applications:

- Preferentially used for 3'-end labeling of oligonucleotides with Terminal Transferase, recombinant*. The labeling is carried out enzymatically at the 3' end by incorporation of a single biotin-labeled dideoxyuridine triphosphate (biotin-ddUTP).
- Common hybridization techniques.
- Biotin-labeled oligonucleotides are especially useful for screening expression libraries for sequence-specific DNA binding proteins, such as transcription factors.
- Substrate for Terminal Transferase*, DNA polymerase I* (holoenzyme and Klenow fragment), T4 DNA Polymerase*, Taq DNA Polymerase*, and Reverse Transcriptase (Transcriptor Reverse Transcriptase*).
- Biotin-labeled oligonucleotides can be used as a hybridization probe for DNA and RNA transfers, colony and plaque screening, and *in situ* hybridization.

2. How to Use this Product

2.1. Before you Begin

Sample Materials

Biotin-16-ddUTP is used with HPLC or gel-purified oligonucleotides.

2.2. Protocols

Oligonucleotide 3'-end labeling reaction

The following protocol describes a standard labeling reaction using Biotin-16-ddUTP

⚠ Do not increase the amount of oligonucleotide in the standard labeling reaction. Larger amounts may be labeled by increasing the reaction volume and components proportionally.

1 Dissolve the oligonucleotide in double-distilled water.

2 Add the following to a microcentrifuge tube on ice:

Reagent	Volume [μl]
Reaction buffer, 5x conc.	4
CoCl ₂ solution	4
Freshly denatured oligonucleotide, 100 pmol	X
Biotin-16-ddUTP solution	1
Terminal Transferase, rec. 400 U	1
Autoclaved, double-distilled water	X
Final Volume	20

- Mix and centrifuge briefly.
- Incubate for at least 60 minutes at +37°C.

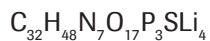
3 Use the labeled probe immediately or store in aliquots at -15 to -25°C.

Analysis of biotin-labeled DNA

Analyze the biotin-labeled DNA via spot assay prior to usage as a hybridization probe. Therefore, add labeled oligonucleotide to Nylon Membranes* and detect probe with the Streptavidin-AP-conjugate for nucleic acid detection*.

2.3. Parameters

Chemical Formula



Chemical Name

Structural formula

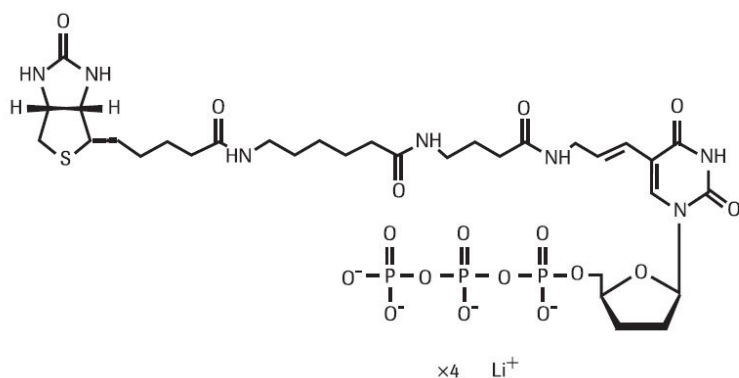


Fig. 1: Chemical structure of Biotin-16-ddUTP









Molecular Weight

955.5 Da

3. Supplementary Information

3.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

Text convention and symbols	
 Information Note: Additional information about the current topic or procedure.	
 Important Note: Information critical to the success of the current procedure or use of the product.	
   etc.	Stages in a process that usually occur in the order listed.
   etc.	Steps in a procedure that must be performed in the order listed.
* (Asterisk)	The Asterisk denotes a product available from Roche Diagnostics.

3.2. Changes to previous version

Layout changes.

Editorial changes.

3.3. Ordering Information

Product	Pack Size	Cat. No.
Reagents, kits		
Nylon Membranes for Colony and Plaque Hybridization	50 discs, 82 mm diameter	11 699 075 001
Nylon Membranes, positively charged	10 sheets, 20 x 30 cm	11 209 272 001
	20 sheets, 10 x 15 cm	11 209 299 001
	1 roll, 0.3 x 3 m	11 417 240 001
Streptavidin-AP-conjugate for nucleic acid detection	150 U, (200 µl)	11 093 266 910
Taq DNA Polymerase, 5 U/µl	custom fill, 5 U/µl	11 147 633 103
Transcriptor Reverse Transcriptase	custom fill	03 531 252 103
DNA Polymerase I	250 U	10 642 711 001
	1,000 U	10 642 720 001
Terminal Transferase, recombinant	custom fill	03 289 869 103
Taq DNA Polymerase, 1 U/µl	250 U, 1 U/µl, 200 reactions in a final volume of 50 µl	11 647 679 001
	1,000 U, 4 x 250 U, 800 reactions in a final volume of 50 µl	11 647 687 001

3.4. Trademarks

All product names and trademarks are the property of their respective owners.

3.5. License Disclaimer

For patent license limitations for individual products please refer to:

List of biochemical reagent products.

3.6. Regulatory Disclaimer

For life science research only. Not for use in diagnostic procedures.

3.7. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

3.8. Contact and Support

To ask questions, solve problems, suggest enhancements or report new applications, please visit our **Online Technical Support Site.**

To call, write, fax, or email us, visit **sigma-aldrich.com**, and select your home country. Country-specific contact information will be displayed.

