BioVision

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For research use only

Terminal Transferase (TdT)

CATALOG#: M1249-500 500 Units (25 µl)
M1249-2500 2500 Units (125 µl)

SOURCE: An *E. coli* strain that carries the cloned Terminal Transferase gene from calf thymus.

MOLECULAR WEIGHT: Theoretical: 58 kDa

CONCENTRATION: 20,000 U/ml

SPECIFIC ACTIVITY: 42,000 U/mg

COMPONENTS:

Product Name	M1249-500	M1249-2500	Part No.
Terminal Transferase	500 Units	2500 Units	M1249-XX-1

SUPPLIED IN: 50 mM KPO4, 100 mM NaCl, 1.43 mM β-ME, 50% Glycerol 0.1% Triton® X-100, pH 7.3 @ 25°C

STORAGE TEMPERATURE: Store all components at -20°C. For long term storage, aliquot and store at -80° C. Avoid repeated freeze-thaw cycles. Avoid repeated freeze/thaw cycles. All components are stable for 1 year from the date of shipping when stored and handled properly.

UNIT DEFINITION: One unit is defined as the amount of enzyme catalyzing the incorporation of 1 nmol dATP into acid-insoluble material in a total reaction volume of 50ul in 1 hour at 37°C using d(A)18 as primer.

REACTION CONDITIONS: 1X Terminal Transferase (TdT) Reaction Buffer Supplement with 0.25 mM $CoCl_2$, Incubate at 37°C

1X TdT REACTION BUFFER: 50 mM Potassium Acetate, 20 mM Tris-acetate, 10 mM Magnesium Acetate, pH 7.9 @ 25°C

UNIT ASSAY CONDITIONS: 1X Terminal Transferase Reaction Buffer, 0.72 µM $d(A)_{18}$, 0.2 mM dATP, and 1 µCi [^{3}H]- dATP in a 50 µl total reaction volume.

HEAT INACTIVATION: 75°C for 20 min

DESCRIPTION: Terminal transferase (TdT) is a template independent polymerase that catalyzes the addition of deoxynucleotides to the 3' hydroxyl terminus of DNA molecules. The 58.3 kDa enzyme does not have 5' or 3' exonuclease activity. The addition of Co^{2+} in the reaction makes tailing more efficient.

QUALITY CONTROL ASSAYS: **Exonuclease Activity:** Incubation of 50 units of enzyme with 1 µg sonicated [^{3}H] DNA (2 x 10^5 cpm/µg) for 4 hr at 37°C in 50 µl assay buffer released < 0.5% radioactivity.

Endonuclease Activity: Incubation of 50 units of enzyme with 1 µg φX174 RF I DNA for 4 hr at 37°C in a 50 µl reaction buffer resulted in < 10% conversion to RF II.

HIGHLIGHTS:

- Isolated from a recombinant source
- Labeling of the 3' ends of DNA with modified nucleotides (e.g., ddNTP, DIG-dUTP)
- Protruding, recessed or blunt-ended double or single-stranded DNA molecules serve as a substrate for TdT

APPLICATIONS:

- Addition of homopolymer tails to the 3' ends of DNA
- Labeling the 3' ends of DNA with modified nucleotides (e.g., ddNTP, DIG-dUTP)
- TUNEL assay (in situ localization of apoptosis)
- TdT dependent PCR

RELATED PRODUCTS:

- Taq DNA Polymerase (Cat. No. 9001)
- PFU DNA Polymerase (Cat. No. 9003)
- Ready™ DNA Polymerase (Cat. No. M1146)
- Robust Ready™ DNA Polymerase (Cat. No. M1147)
- Fire Start™ DNA Polymerase (Cat. No. M1148)
- Breeze™ DNA Polymerase (Cat. No. M1149)
- Distant™ DNA Polymerase (Cat. No. M1150)
- Advance™ DNA Polymerase (Cat. No. M1151)
- Outstretched™ DNA Polymerase (Cat. No. M1152)

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