Terminal Deoxynucleotidyl Transferase

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Cat. No.	Size
E1390-01	300 units
E1390-02	1 500 units

Unit Definition:
One unit is defined as the amount of enzyme required to transfer 1 nmol of dAMP from dATP to the 3'-OH terminus of the oligodeoxyribonucleotide initiator $p(dA)_{50}$ in 1 hr at 37°C.

Storage Conditions:
Store at -20˚C

Terminal transferase (TdT) is a template independent polymerase that catalyzes the addition of deoxyribonucleotide monophosphate from triphosphate to the 3' hydroxyl terminus of DNA.

Description:

- Preferred substrates are: single-stranded DNA, double-stranded DNA with 3'-hydroxyl termini and oligodeoxynucleotide primers (1).
- Used for specific labeling of 3'-termini with ribonucleotides (2).
- Labels 3'-ends of DNA fragments with an [-^{32}P] 3'-deoxynucleoside (3).
- Adds homopolymer tails of deoxyribonucleotides to vectors or cDNAs (4,5).

Storage Buffer:

100 mM Tris-HCl (pH 7.2 at 22°C), 1 mM dithiothreitol and 50% (v/v) glycerol.

Supplement: 25 mM $CoCl_2$

Co^{2+} increases the incorporation of pyrimidines (6) and makes addition to blunt and 3' recessed ends more efficient.

Assay Conditions:

40 mM potassium cacodylate (pH 7.2), 8 mM $MgCl_2$,8.3 mM potassium phosphate, 0.33 mM $ZnSO_4$, 10 mg/ml bovine serum albumin, 0.01 mM oligodeoxynucleotide $p(dA)_{50}$ and 1 mM [α -^{32}P]dATP in 1 hr at 37°C in a reaction volume of 60 µl.

Quality Control:

All preparations are tested for endonuclease, exonuclease and nonspecific RNase and single- and double-stranded DNase activities.

References:

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4. *Roychoudhury, R., Jay, E. and Wu, R. (1976) Nucleic Acids Res. 3, 863-877.*
5. *Deng, G. and Wu, R. (1983) Methods Enzymol. 100, 96-116.*
6. *Sambrook J., Fritsch E.F. and Maniatis T. (1989) Molecular cloning, 2nd edn.*