

## Terminal Deoxynucleotidyl Transferase (TdT)

**Catalog #:** 2001-500 500 units  
2001-2500 2500 units

### Unit Definition:

One unit is the enzyme activity that incorporate 1 nMol dAMP into acid-insoluble products within 60 min at 37°C under assay conditions using d(pT)<sub>6</sub> as primer.

**Concentration:** 20 units/μl

### 5X Reaction Buffer (Supplied with the enzyme):

1 M potassium cacodylate, 125 mM Tris-HCl; 5 mM CoCl<sub>2</sub>; 1.25 mg/ml BSA; pH 6.6 at 25°C.

**Storage:** Store at -20°C.

### Description:

The human recombinant deoxynucleotidyl terminal transferase (TdT) is expressed and purified from *E. coli* with specific activity of 20,000 units per mg protein. The recombinant enzyme has the same enzyme activity as native enzyme, catalyzing a template-independent addition of deoxyribonucleoside triphosphates to the 3'-OH end of double- or single-stranded DNA. TdT is supplied in 50% glycerol, 50 mM Sodium Phosphate (pH 7.2). The enzyme is free of all exo- and endonuclease contamination.

### Application:

Terminal transferase can be used to add hetero- or homopolymer tails to DNA fragments. The tailing reaction can be used in cDNA cloning, in DNA 3' end radioactive labeling (e.g. α-32p dNTPs or α-32p ddNTPs) or nonradioactive labeling (e.g. digoxigenin, biotin, FITC, or Br-dUTP). The tailing reaction has also been used to label fragmented genomic DNA in apoptotic cells.

### Tailing Reaction:

A typical tailing can be performed in a 20 μl reaction:

- DNA template (up to 0.7 pmol DNA, equal to 1 μg linearized 3 kb DNA plasmid)
- Add 4 μl 5 x Reaction Buffer
- Add labeling nucleotide to final concentration 5 μM
- Add ddH<sub>2</sub>O to 20 μl
- Add 2.5 μl TdT (50 units)
- Mix well, and incubate at 37°C

The following tail lengths are obtained after 15 min incubation: ~100 dA or dT; ~20 dG or dC.

### References:

1. Chang, L.M.S. & Bollum, T.J. (1971) *J. Biol. Chem.* **246**:909.
2. Chang, L.M.S. & Bollum, T.J. (1985) *J. Biol. Chem.* **260**:10495.

### Other Products:

1. KinaseSTAR™ JNK & Akt Activity Assay Kits
2. Histone Deacetylase Fluorometric & Colorimetric Assay Kits
3. Calpain Activity Assay Kit
4. Apoptotic Cell Isolation Kit
5. MitoCapture™ Mitochondrial Apoptosis Detection Kit
6. Mitochondria/Cytosol Fractionation Kit
7. Nuclear/Cytosol Fractionation Kit
8. Cytochrome c Releasing Apoptosis Assay Kit
9. ApoSENSOR™ ATP Determination Kit & ADP/ATP Ratio Assay Kit
10. ApoGSH™ Glutathione Detection Kit
11. Nitric Oxide Fluorometric & Colorimetric Detection Kits
12. Annexin V-FITC, -Cy3, -Cy5, -EGFP, -PE, -Biotin Kits and Bulk Reagents
13. CaspSCREEN™ Flow Cytometric Caspase Assay Kit
14. CaspGLOW™ Active Caspase Staining Kits
15. CaspSELECT™ Caspase-3 & -7 Immunoassay Kits
16. Caspase-1,-2,-3,-5,-6,-8,-9,-10 Activity Assay Kits
17. Recombinant Human, Mouse, Rat Active Caspases & Procaspsases
18. Ready-to-use Caspase Inhibitors & Sets
19. Ready-to-use Caspase Substrates and Sets
20. Quick Apoptotic DNA Ladder Detection Kit
21. Ready-to-use Apoptosis Inducers and Set
22. Quick Cell Proliferation Assay Kit
23. LDH-Cytotoxicity Assay Kit
24. Live-Dead Cell Staining Kit
25. Anti-Caspase-1,-2,-3,-4,-5,-6,-7,-8,-9,-10,-11,-12,-13,-14 & Active Caspases
26. Many Other Apoptosis & Cell Signaling Related Antibodies
27. Anti-GFP, His, GST, and Other Tag Antibodies
28. Growth Factors, Cytokines & Chemokines (many)
32. Link-FAST™ 5 Minutes DNA Ligation Kit
33. Gel-FAST™ 20 Minutes Gel Staining/Destaining Kit
34. Protease Inhibitor Cocktail