

DNA Polymerase I, *E. coli*

Cat. Nos. DP0810500 and DP081025K

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1. Introduction

DNA Polymerase I from *E. coli*, is a DNA-dependent DNA polymerase. The enzyme also contains both 5'→3' and 3'→5' exonuclease activities¹. The 5'→3' exonuclease activity enables the enzyme to use nicks and gaps in the DNA as starting points for labeling the DNA by nick translation.

DNA Polymerase I, *E. coli* is available in two sizes, 500 units and 2,500 units, each at a concentration of 10 U/μl.

Applications

- Generate labeled DNA probes by nick translation.²
- Second strand cDNA synthesis.³
- *In vitro* synthesis of DNA.

2. Product Specifications

Storage: Store only at –20°C in a freezer without a defrost cycle.

Storage Buffer: DNA Polymerase I is supplied in a 50% glycerol solution containing 50 mM Tris-HCl (pH 7.5), 100 mM NaCl, 1.0 mM dithiothreitol, 0.1 mM EDTA, and 0.1% Triton® X-100.

Unit Definition: One unit converts 10 nmoles of dNTPs into acid-insoluble material in 30 minutes at 37°C under standard assay conditions.

Quality Control: DNA Polymerase I is function-tested in a 50-μl reaction containing 20 mM Tris-HCl (pH 7.5), 5 mM MgCl₂, 0.5 mM dithiothreitol, 10 μg of denatured activated calf thymus DNA, 2.5 μM each dNTP, and varying amounts of DNA Polymerase I.

Contaminating Activity Assays: DNA Polymerase I is free of detectable RNase, and non-intrinsic endonuclease and exonuclease activities.

3. Kit Contents

| Desc. | Concentration | Quantity |
|---|---------------|-------------|
| DNA Polymerase I, <i>E. coli</i> | | |
| DP0810500 | 10 Units/μl | 500 Units |
| DP081025K | 10 Units/μl | 2,500 Units |

4. Related Products

The following products are also available:

- Klenow Fragment DNA Polymerase
- Exo-Minus Klenow DNA Polymerase
- RNase-Free DNase I
- MMLV-Reverse Transcriptase
- Tobacco Acid Pyrophosphatase
- dNTP Solutions

5. References

1. Lehman, I.R. (1981) *The Enzymes Academic Press* **14**, 16.
2. Meinkoth, J. and Wahl, G.M. (1987) *Methods in Enzymology, Academic Press* **152**, 91.
3. Gubler, U. and Hoffmann, B.J. (1983) *Nucl. Acids Res.* **16**, 1999.

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