DNA Polymerase (1-2 kb/min) Enzyme

Catalogue No.:abx071004

DNA Polymerase is purified from E. coli expressing a cloned DNA polymerase from Thermus aquaticus. The enzyme consists of a single polypeptide with a molecular weight of approximately 94 kDa. DNA Polymerase has 5′-3′ DNA polymerase activity and 5′-3′ exonuclease activity. The extension rate is about 1-2 kb/min. The enzyme can amplify genomic DNA fragments up to 4 kb. This kit does not contain 2.5 mM dNTPs.

Contents:

Component	500 U	3 kU	10 kU	50 kU
DNA Polymerase	500 U	6 × 500 U	4 × 2500 U	10 × 5000 U
10X Buffer	1.2 ml	6 × 1.2 ml	20 × 1.2 ml	100 × 1.2 ml
6X DNA Loading Buffer	1 ml	2 × 1 ml	4 × 1 ml	20 × 1 ml

Target: DNA Polymerase

Tested Applications: PCR

Host: Bacteria

Conjugation: Unconjugated

Biological Activity: One unit of DNA Polymerase incorporates 10 nmol of deoxyribonucleotide into acid-precipitable material in 30 minutes at 74 °C.

Purity: > 99% (SDS-PAGE)

Quality Control: Assayed for amplication efficiency to amplify the p53 gene from 10 ng of human genomic DNA.

Storage: Store at -20°C for up to 2 years. Avoid repeated freeze/thaw cycles.

Molecular Weight: 94 kDa

Buffer: DNA Polymerase: Contains 200 mM Tris-HCl (pH 8.3), 200 mM KCl, 100 mM (NH4)2SO4, 20 mM MgSO4
Buffer: 20 mM Tris-HCl (pH 8.0), 0.1 mM EDTA, 1 mM DTT, 100 mM KCl, 50% glycerol, stabilizers.

Endotoxin Level: Functional absence of double and single stranded endonuclease activity.

Concentration: 5 U/µl

Note: THIS PRODUCT IS FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC, THERAPEUTIC OR COSMETIC PROCEDURES. NOT FOR HUMAN OR ANIMAL CONSUMPTION.

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Directions for use:

Reaction Components:

Component	Volume	Final Concentration
Template	Variable	as required
Forward Primer (10 µM)	1 µl	0.2 µM
Reverse Primer (10 µM)	1 µl	0.2 µM
10X Buffer	5 µl	1X
2.5 mM dNTPs	4 µl	0.2 mM
DNA Polymerase	0.5-1 µl	2.5-5 U
Nuclease-Free Water	Variable	N/A
Total Volume	**50 µl**	N/A

Thermal Cycling Conditions:

Number of Cycles	Temperature	Time per Cycle
1 cycle	94 °C	2-5 min
	94 °C	30 seconds
30-35 cycles	50-60 °C	30 seconds
	72 °C	1-2 kb/min
1 cycle	72 °C	5-10 min

Notes:

• PCR products using this enzyme are not suitable for polyacrylamide gel electrophoresis (PAGE).
• A final concentration of 2 mM $MgSO_4$ is sufficient for amplification of most targets. For some targets, a higher Mg^{2+} concentration may be required.
• For optimal results, we recommend using a 100 mM $MgSO_4$ stock solution to prepare a titration from 2 mM to 4 mM (final concentration) in 0.25 mM increments.
• 0.5 µl (2.5 U) enzyme is sufficient per 50 µl reaction volume. For better amplification, up to 1 µl (5 U) enzyme can be used.
• If precipitation is observed after thawing the Buffer, warm in a 37 °C water bath to dissolve the precipitate and mix before use.

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