T4 DNA Polymerase

Introduction

T4 DNA polymerase is a DNA polymerase derived from the T4 bacteriophage. Our product is extracted from Escherichia coli (*E. coli*) that carries its gene. In the presence of template, primer and dNTP, T4 DNA polymerase can synthesize DNA in the 5'→3' direction. Additionally, it possesses 3'→5' exonuclease activity but lacks 5'→3' exonuclease activity. T4 DNA polymerase is widely used in molecular biology experiments, particularly for applications such as blunting DNA ends with 5'- or 3'-overhangs and gap filling.

Components and Storage

Size / Components	K3107-150 U	K3107-750 U	Storage
T4 DNA Polymerase (5 U/μL)	30 μL	150 μL	-20℃
10 × T4 DNA Polymerase Reaction Buffer	300 μL	1.5 mL	-20℃
Shipping: Dry Ice		**Shelf life:** 12 months	

Protocol for blunting of 5'- or 3'-overhangs

1. Prepare the reaction system on ice following the table below:

Components	20 μL Reaction	Final Concentration
dsDNA with overhang	X μL	＜0.05 μg/μL
dNTP (2.5 mM each)	0.8 μL	100 μM
10 × T4 DNA Polymerase Reaction Buffer	2 μL	1×
T4 DNA Polymerase (5 U/μL)	0.2 μL (1 U)	0.05 U/μL
Nuclease-free Water	Add to 20 μL	

2. After setting up the reaction system according to the table above, gently mix (using a pipette for gentle pipetting or low-speed vortexing) and then centrifuge.
3. Incubate at 12°C for 15 minutes.
4. Add EDTA to a final concentration of 10 mM, then incubate at 75°C for 20 minutes to terminate the reaction.

Product properties

1. **Enzyme activity unit:** One unit is defined as the amount of enzyme required to incorporate 10 nmol of dNTP into an acid-insoluble precipitate within 30 minutes at 37°C.
2. **Storage solution:** 100 mM KPO_4, 1 mM DTT, 50% Glycerol (pH 6.5 @ 25°C).
3. **Inactivation conditions:** Incubation at 75°C for 20 minutes.

Note

1. The enzyme-related operations should be performed on ice to avoid prolonged exposure at room temperature, which will affect its activity.
2. For research use only. Not to be used in clinical diagnostic or clinical trials.

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