

DNA polymerase I (10 U/ μ L)

Product description

DNA Polymerase I synthesizes DNA in the 5'→3' direction using dNTPs as substrates, given the presence of a template and primer (DNA or RNA). The enzyme has a molecular weight of approximately 109,000 and possesses both double-strand specific 5'→3' exonuclease activity and single-strand specific 3'→5' exonuclease activity. This enzyme can be used together with DNase I (Cat#10325/14549) for nick translation and with RNase H (Cat#12906) for synthesizing the second strand of cDNA.

Specifications

Cat NO.	12903ES60 / 12903ES76 / 12903ES92
Size	500 U / 2,500 U / 10,000 U

Components

Components No.	Name	12903ES60	12903ES76	12903ES92
12903-A	DNA polymerase I (10 U/ μ L)	50 μ L	250 μ L	1 mL
12903-B	10×DNA Polymerase I Reaction Buffer	1 mL	1×5 mL	4×5 mL

Storage

This product should be stored at -25~-15°C for 2 years.

Instructions

Filling in 5' Overhangs of Double-Stranded DNA:

1. Set up the reaction system as shown in the following table:

Component	Volume
dsDNA with 5' overhang	X μ L
10×DNA Polymerase I Reaction Buffer	2 μ L
dNTP Mix (2.5 mM each) (Cat#10123)	0.8 μ L
DNA polymerase I (10 U/ μ L)	1 μ L
H ₂ O	to 20 μ L

[Note]: Reduce the amount of enzyme when filling in ends to avoid loss of template due to exonuclease activity.

If dsDNA with 5' overhang is an oligonucleotide, the final concentration should be around 0.5 μ M; if it is digested plasmid DNA, the final concentration should be around 5-200 ng/ μ L.

2. After setting up the reaction, gently mix the reaction components and centrifuge briefly to collect any liquid on the tube walls.

3. Reaction conditions: Incubate at 37°C for 20 minutes. Adjust the incubation time based on your specific requirements.

4. To terminate the reaction, incubate at 75°C for 20 minutes to inactivate DNA Polymerase I.

Digestion of Double-Stranded Linear DNA:

1. Set up the reaction system as shown in the following table:

Component	Volume
dsDNA	X μ L
10 $\times$ DNA Polymerase I Reaction Buffer	2 μ L
DNA polymerase I (10 U/ μ L)	1 μ L
H ₂ O	to 20 μ L

2. After setting up the reaction, gently mix the reaction components and centrifuge briefly to collect any liquid on the tube walls.

3. Reaction conditions: Incubate at 37°C for 20 minutes. Adjust the incubation time based on your specific requirements.

4. To terminate the reaction, incubate at 75°C for 20 minutes to inactivate DNA Polymerase I.

Notes

1. This product is intended for research use only.

2. For your safety and health, please wear a lab coat and disposable gloves when handling this product.