T4 DNA Polymerase

CATALOG NO.: M1211-100

AMOUNT: 500 U (100 µl)

PRODUCT SOURCE: Recombinant *E. coli*

FORM: Liquid. Enzyme supplied with 10X Reaction Buffer

COMPONENTS:

Components Name	Volume	Part No.
T4 DNA Polymerase (5 U/µl)	100 µl	M1211-100-1
10X T4 DNA Polymerase Reaction Buffer	3 ml	M1211-100-2

DESCRIPTION: T4 DNA Polymerase catalyzes the 5'→3' synthesis of DNA from a single stranded, primed DNA template. This high fidelity enzyme also has potent 3'→5' exonuclease activity but lacks 5'→3' exonuclease function. T4 DNA Polymerase is the ideal choice for creating blunt ended DNA by removing 3'-overhangs or 5'-overhang filling, and is also useful for second strand DNA synthesis in site-specific mutagenesis.

APPLICATIONS:
1. Generates blunt end DNA by filling in 5'-overhangs or/and removing 3'-overhangs
2.High fidelity due to strong 3'→5' exonuclease activity
3. Synthesis of labeled DNA probes by the replacement reaction
4. Site-specific mutagenesis via primer extension from oligonucleotides

STORAGE CONDITIONS: Store all components at -20°C. Avoid repeated freeze-thaw cycles of all components to retain maximum performance. All components are stable for one year from the date of shipping when stored and handled properly.

ENZYME STORAGE BUFFER: 100 mM KPO4 (pH 6.5), 1 mM DTT, 50% (v/v) Glycerol

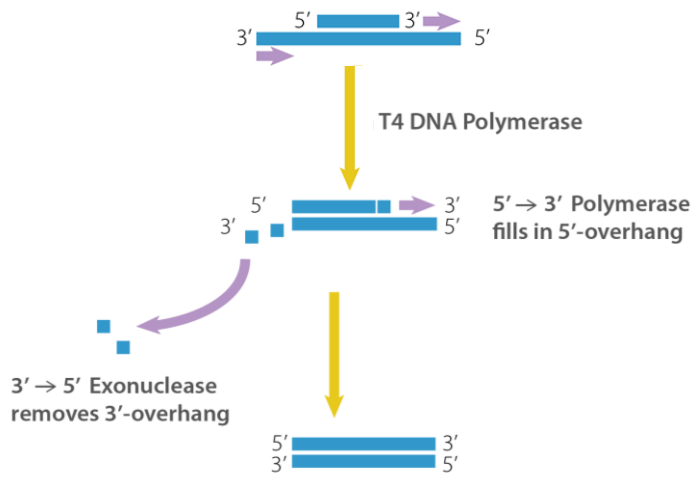
ENZYME UNIT DEFINITION: One unit is defined as the amount of T4 DNA Polymerase that catalyzes the incorporation of 10 nmol of dNTP into acid insoluble material in 30 minutes at 37°C using poly(dA-dT):poly(dA-dT) as a template:primer.

10X T4 DNA POLYMERASE REACTION BUFFER: 100 mM Tris-HCl, 500 mM NaCl, 100 mM $MgCl_2$, 10 mM DTT, pH 7.9

REACTION CONDITIONS: Use 1X T4 DNA Polymerase Reaction Buffer and incubate at 12°C. Supplement with 100 µg/ml BSA (not included).

Notes: To generate blunt ends by 3'-overhang removal and 3' recessed end fill-in, DNA should be dissolved in 1X T4 DNA Polymerase Reaction Buffer supplemented with 33 µM of all four dNTPs and 100 µg/ml BSA. Use 1 unit of T4 DNA Polymerase per 1 µg DNA and incubate the reaction for 15 minutes at 12°C. Stop the reaction by adding 10 mM EDTA (final concentration) and heating at 75°C for 20 minutes.

HEAT INACTIVATION: 75°C for 20 minutes



RELATED PRODUCTS:
- Advance™ DNA Polymerase (Cat# M1151-250, -1000)
- Blood Advance™ DNA Polymerase (Cat# M1153-100, -400)
- Breeze™ DNA Polymerase (Cat# M1148-250, -1000)
- Distant™ DNA Polymerase (Cat# M1150-250, -1000)
- Fire Start™ DNA Polymerase (Cat# M1149-250, -1000)
- Outstretched™ DNA Polymerase (Cat# M1152-250, -1000)
- PFU DNA Polymerase (Cat# 9003-500, -2500)
- Ready™ DNA Polymerase (Cat# M1146-1000, -5000, -10000)
- Robust Ready™ DNA Polymerase (Cat# M1147-250, -1000)
- Taq DNA Polymerase (Cat# 9001-500, -2500)

FOR RESEARCH USE ONLY! Not to be used on humans.

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