Taq DNA Polymerase

Catalogue No	203-1, 500 u 203-2, 1000 u 203-3, 2500 u
Concentration	5 u/µl

Reagents supplied: 10x Taq DNA polymerase Buffer (1.5ml) and/or 10x Taq DNA polymerase w/o $MgCl_2$ (1.5ml) and 25mM $MgCl_2$ (1.5ml).

Source: Purified from an *E. coli* strain carrying a plasmid with Taq DNA polymerase gene from *Thermus aquaticus* YT-1.

Description: Taq DNA Polymerase is a thermostable enzyme that catalyzes 5'→ 3' synthesis of DNA. The enzyme has no detectable 3' → 5' proofreading exonuclease activity, but possesses low 5' →3' exonuclease activity.

Unit definition: One unit is defined as the amount of enzyme required to catalyze the incorporation of 10 nmoles of dNTPs into acid insoluble material in 30 minutes at 72°C.

Reaction conditions: 1x Taq polymerase buffer [50 mM KCl, 10 mM Tris-HCl pH 8.5 @ 25°C, 1.5 mM $MgCl_2$, 0.1% Triton X-100].

Quality Control Assays:

- Standard DNA Polymerase Assay Conditions (not PCR conditions): The polymerase activity is assayed in 10 mM Tris-HCl (pH 8.5), 50 mM KCl, 1.5 mM $MgCl_2$, 200 µM each of dATP, dGTP, dCTP, dTTP (a mix of unlabeled and [^{3}H] dTTP) and 12.5µg activated calf thymus DNA, in a final volume of 50 µl.
- Functional Assay: Taq DNA Polymerase is tested for performance in the polymerase chain reaction (PCR) using 1.5 units of enzyme to amplify a 1730-bp region of the PspP I methyltransferase gene from 5 ng of bacterial genomic DNA. The resulting PCR product is visualized as a single band on an ethidium bromide-stained agarose gel.
- Absence of contaminants: Tested extensively for the absence of endo- and exodeoxyribonucleases.

Guaranteed stability: Taq DNA polymerase is guaranteed to maintain stability for six months from the date of shipment when stored as directed.

Storage Buffer: 100 mM NaCl, 50 mM Tris-HCl (pH 8.0 @ 25°C), 1 mM DTT, 0.1 mM EDTA, 1% Triton X-100 and 50% glycerol. Store at -20°C.

Recommended PCR mixture:

10x Taq pol. buf.	5 µl
10mM dNTP mix	1 µl
25µM forward primer	1 µl
25µM reverse primer	1 µl
Template DNA	1-500 ng
Taq DNA pol. (5 u/µl)	0.25-0.5 µl
Sterile ultrapure water	Up to 50 µl

Recommended PCR conditions:

Initial denaturation		94°C, 2min
25-35 PCR Cycles	Denature	94°C, 45sec
	Anneal*	45-68°C, 30sec
	Extend	72°C, 1min/kb
Final extension		72°C, 10min
Hold		4°C, indefinitely

**Anneal temperature depends on primer Tm*

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