Technical Datasheet

Taq Polymerase (*recombinant)*

Cat No:	CA-1724-05	**Pack size:**	500U
Lot No:	P5993	**Concentration:**	3 U/µl

Description

- Thermostable enzyme of approximately 94 kDa from *Thermus aquaticus*
- Ultrapure, recombinant protein

Applications

- Recommended for use in PCR and primer extension reactions at elevated temperatures to obtain a wide range of DNA products up to 10 Kb
- Taq DNA Polymerase enzyme replicates DNA at 74°C and exhibits a half-life of 40 minutes at 95°C
- Taq DNA Polymerase catalyzes the polymerization of nucleotides into duplex DNA in the 5'→3' direction in the presence of magnesium ions
- Maintains the 5'→3' exonuclease activity
- Lacks the 3'→5' exonuclease activity

Reagents Supplied

10X Taq Buffer A
10X Taq Buffer B
10X Taq Buffer C

Unit Definition: One unit is defined as the amount of enzyme required to catalyse the incorporation of 10 nmoles of dNTP into acid-insoluble material in 30 minutes at 70°C

10X Reaction Buffers:

10X Taq Buffer A (optimization buffer without $MgCl_2$): Buffer allows to optimize $MgCl_2$ concentration
10X Taq Buffer B (general application, up to 10 kb): Buffer contains 15 mM $MgCl_2$ and is optimized for use with 0.2 mM of each dNTP
10X Taq Buffer C (coloured): 10X Taq Buffer B Enriched with two gel tracking dyes and a gel loading reagent; Enables direct loading of PCR products onto an agarose gel

RESEARCH USE ONLY

Storage Buffer

20 mM Tris-HCl (pH 8.0 at 22°C)
100 mM KCl
0.1 mM EDTA
1 mM dithiothreitol
50% glycerol
Stabilisers

Assay Conditions

25 mM Tris-HCl (pH 9.5 at 25°C)
50 mM KCl
10 mM $MgCl_2$
1 mM dithiothreitol
200 µM each of dCTP, dGTP, dTTP, and dATP (a mix of unlabeled and [α-^{32}P] dATP)
10 µg activated calf thymus DNA
1 mg/ml bovine serum albumin
15 µg activated calf thymus DNA
Total reaction volume is 50 µl

Quality Control

Assay	Conditions	Result
Nicking	5, 10 and 20 units of Taq DNA polymerase were incubated with pBR322 DNA for 1 hour at 70˚C	≤10% conversion of RFI to RFII
DNase	5, 10 and 20 units of Taq DNA polymerase were incubated with [^{32}P] labelled λ DNA (both single and double stranded) for 1 hour at 70˚C	None detected
3'-Exonuclease	5, 10 and 20 units of Taq DNA polymerase were incubated with [^{3}H] labelled 3'-ends of λ/Taq I DNA frgaments for 1 hour at 70˚C	None detected

Storage Conditions: Store at -20°C

Certification

Cambio Ltd certifies that this product meets all current specifications when used under the recommended conditions and applications.

Senior Scientist:  Date: 20/07/2018

RESEARCH USE ONLY