Native Taq DNA Polymerase

(Thermus aquaticus)

Cat. No.	size
E2504-01	200 units
E2504-04	500 units
E2504-02	1000 units
E2504-03	5000 units

Unit Definition: One unit is defined as the amount of enzyme required to catalyze the incorporation of 10 nmoles of dNTP into acid-insoluble material in 30 minutes at 74°C. The reaction conditions are: 50 mM Tris-HCl (pH 9.0 at 25°C), 50 mM NaCl, 5 mM $MgCl_2$, 200 µM each of dATP, dCTP, dGTP, dTTP (a mix of unlabeled and [^{3}H]dTTP), 10 µg activated calf thymus DNA and 0.1 mg/ml BSA in a final volume of 50 µl.

Storage Conditions: Store at -20°C.

References:

1. *Chien, A., Edgar, D.B. and Trela, J.M. (1976) J. Bacteriol. 127, 1550.*
2. *Kaledin, A.S., Sliusarenko, A.G. and Gorodetskii, S.I. (1980) Biokhimiya 45, 644.*

Stable thermophilic DNA polymerase, suitable for applications requiring high temperature synthesis of DNA.

Description:

- Taq DNA Polymerase is a thermostable enzyme of approximately 94 kDa from *Thermus aquaticus.*
- Ultrapure protein isolated from *Thermus aquaticus*.
- The enzyme replicates DNA at 74°C and exhibits a half-life of 40 min at 95°C (1,2).
- 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.
- Taq DNA Polymerase is recommended for use in PCR and primer extension reactions at elevated temperatures to obtain a wide range of DNA products up to 10 kb.
- Native Taq DNA Polymerase is recommended for use in special PCR applications, where traces of *E.coli* genomic DNA may interfere with amplification specificity.

Storage Buffer:

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

10 x Reaction Buffers:

10 x Pol Buffer A (optimization buffer without $MgCl_2$):

The buffer allows to optimize $MgCl_2$ concentration.

10 x Pol Buffer B (general application, up to 10 kb):

The buffer contains 15 mM $MgCl_2$ and is optimized for use with 0.2 mM of each dNTP.

10 x Pol Buffer C (colored):

10 x Pol Buffer B enriched with two gel tracking dyes and a gel loading reagent. The buffer enables direct loading of PCR products onto an agarose gel.

Quality Control:

All preparations are assayed for contaminating endonuclease, 3'-exonuclease, and nonspecific single- and double-stranded DNase activities. Typical preparations are greater than 95% pure, as judged by SDS polyacrylamide gel electrophoresis.

This product is developed, designed and sold exclusively for research purposes and in vitro use only.

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