Tehran Cavosh Clon
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CERTIFICATE OF ANALYSIS

Product Name: Taq DNA Polymerase 2500u (5 u/µl)
Catalog Number: DP1603
Lot Number: 0016039
Exp. Date: 11.2022
Concentration: 5 unit/µl- 2500 units
Shipping Condition: wet or Dry Ice
Store Condition: -20°C
Application: for use in Molecular Biology applications.

Description:
Taq DNA Polymerase was originally isolated from the thermophilic eubacterium Thermus aquaticus BM, a strain lacking Taq restriction endonuclease. The enzyme was cloned in E.coli and is isolated to be free of unspecific endo or exonucleases. The enzyme consists of a single polypeptide chain with a molecular weight of approx 95KD. It is a highly processive 5'-3' DNA polymerase, that lacks 3'-5' exonuclease activity. The enzyme exhibits highest activity at a pH of around 9 (adjusted at 20°C) and temperatures around 75°C. Taq DNA polymerase activity is stable against prolonged incubations at elevated temperatures (95°C) and can therefore be used to amplify DNA-fragments by the polymerase chain reaction (PCR). Taq DNA polymerase also accepts modified deoxyribonucleoside triphosphates as substrates and can be used to lable DNA fragments either with radionucleotides, digoxigenin or biotin. The high processivity, absence of exonuclease activity and temperature optima of Taq DNA polymerase enable the use of this enzyme in DNA sequencing especially where the resolution of secondary structures plays a major role.

Unit Definition:
One unit incorporates 10 nmol of deoxyribonucleotide acid-precipitable material in 30 minutes at 74°C.

Storage Buffer:
20 mM Tris-HCl (pH 7.9), 0.1 mM EDTA, 5 mM 2ME, added stabilizers, and 50% glycerin.

Quality Control:

Absence of endonucleases:
1µl lambda DNA is incubated with 10 units of Taq DNA polymerase in 50µl test buffer containing 1.5mM $MgCl_2$ for 16 hours at 65°C. No detectable degradation of lambda DNA observed.
1µl Eco/Hind-fragment of lambda DNA is incubated with 10 units Taq DNA polymerase in 50µl test buffer containing 1.5mM $MgCl_2$ for 16 hours at 65°C. The amount of enzyme showing no alteration of the banding pattern.

Absence of nicking activity:
1µl supercoiled pBR 322 DNA is incubated with Taq DNA polymerase in 50µl test buffer containing 1.5mM $MgCl_2$ for 4 hours at 65°C. The amount of enzyme showing no relaxation of supercoiled DNA.

Absence of priming activity:
100ng of template DNA is incubated without primers with 10 units Taq DNA polymerase in 100µl test buffer containing $MgCl_2$ and dNTP under PCR conditions. As analyzed agarose gel electrophoresis, no DNA synthesis occurs.

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Heat Stability:
10 units of Enzyme incubated 30min. at 95°C and then used in PCR amplification reactions under PCR conditions. As analyzed by agarose gel electrophoresis, DNA synthesis occurs.

Functional assay:
SinaClon Taq DNA polymerase was tested for amplifications of 977 and 788bp multiplex PCR from human genomic DNA, DNA viruses and amplification of cDNA (RNA viruses).

Note 1: This is the signature indicates that the above material has met all quality specifications and has been reviewed by a quality department.

شرکت سینا کلون
Sina Clon
شماره ثبت: ۲۷۳۰۸۶

Quality authorized by:
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1400.08.29