DATA SHEET

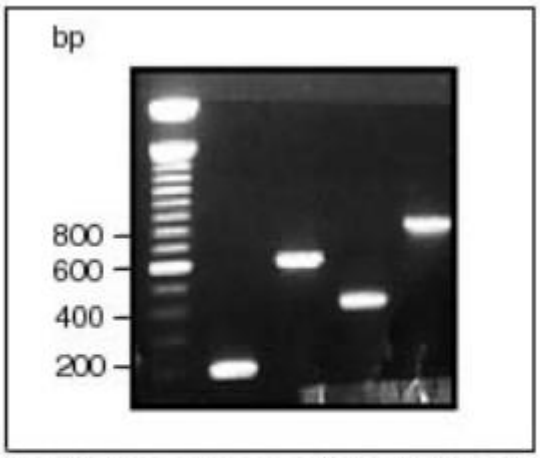
Taq DNA Polymerase PCR
Cat. No. G008

Quantity 5,000U
Concentration 5U/µl

Description:
Taq DNA Polymerase PCR is a highly thermostable DNA Polymerase isolated from the thermophilic bacterium Thermus aquaticus. Taq DNA Polymerase PCR catalyzes the 5'-3' synthesis of DNA. The enzyme has no detectable 3'-5' proofreading exonuclease activity, and possesses low 5'-3' exonuclease activity. Amplification with this polymerase generates PCR products with 3'-A overhangs.

Application:
DNA amplification by Polymerase Chain Reaction (PCR) -DNA sequencing

Form:
Enzyme supplied with 10X buffer and MgCl2 Image



Amplification of human ZNF217 transcription factor with Taq Polymerase with primers designed at different lengths of the gene. Lane 1: 100bp DNA marker; lane 2: 200 bp; lane 3: 600 bp; lane 4: 400 bp; lane 5: 800 bp. Electrophoresis was performed on 1.0% gel.

Storage Store at -20ºC
Notes This product is distributed for laboratory research only.
Caution: Not for diagnostic use .

Taq DNA Polymerase

Gentaur Molecular Products
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1910 Kampenhout, Belgium

Cat. No.	Con.	Quantity
G008	5U/µl	5,000U
G009	5U/µl	1,000U
G126	5U/µl	10,000U

Description
Taq DNA Polymerase is a highly thermostable DNA Polymerase isolated from the thermophilic bacterium *Thermus aquaticus*. Taq DNA Polymerase catalyzes the 5' to 3' synthesis of DNA. The enzyme has no detectable 3' to 5' proofreading exonuclease activity, and possesses low 5' to 3' exonuclease activity. PCR products, amplified up to 6kb in length with Taq DNA Polymerase, generate a single base (A) 3' overhang. The error rate of this PCR amplification is 2.2x10-5 per nucleotide per cycle.

Source
E.coli cells carrying a cloned *pol* gene from *Thermus aquaticus*

Components	1,000U	5,000U
Taq DNA Polymerase	200µl	1.0ml
10X PCR buffer, minus Mg	2.0ml	10.0ml
25mM $MgCl_2$	1.0ml	5.0ml

Storage Buffer*50mM Tris-HCl (pH 8.0), 100mM NaCl, 0.1mM EDTA, 5mM DTT, 50% glycerol and 1.0% Triton®X-100.

10X PCR Buffer*200mM Tris-HCl (pH 8.4), 200mM KCl, 0.5% Tween 20 and enzyme stablizers. 25mM MgCl2 supplied separately.

Unit Definition One unit of the enzyme catalyzes the incorporation of 10 nanomoles of deoxyribonucleotides into a polynucleotide fraction (adsorbed on DE-81) in 30 mins at 70°C.
*Intellectual property included

The following basic protocol serves as a general guideline and a starting point for any PCR amplification. Optimal reaction conditions (incubation times and temperatures, concentration of Taq Polymerase, primers, MgCl2 and template DNA) vary and need to be optimized. PCR reactions should be assembled in a DNA-free environment. DNA sample preparation, reaction mixture assemblage and the PCR process, in addition to the subsequent reaction analysis, should be performed in separate areas. A control reaction, omi□ing template DNA, should always be performed to confirm the absence of contamination.

1. Add the following components to a sterile 0.2ml PCR tube si□ing on ice.

Components	Volume
DNA Template	~100ng
Forward Primer (10µM)	1µl
Reverse Primer (10µM)	1µl
10X PCR Buffer	5µl
25mM $MgCl_2$	3µl
dNTP Mixture (10mM each)	1µl
Taq DNA Polymerase (5U/µl)	0.5-1µl
ddH_2O	up to 50µl

We recommend preparing a mastermix for multiple reactions, to minimize reagent loss and enable accurate pipeting.

2. Mix contents of tube and centrifuge briefly.
3. Incubate tube in a thermal cycler at 94°C for 3 mins to completely denature the template.
4. Perform 25-35 cycles of PCR amplification as follows:

Denature: 94°C for 30 sec
Anneal: 55°C for 30 sec
Extend: 72°C for 1 min/1kb template

5. Incubate for an additional 10 mins at 72°C and maintain the reaction at 4°C. The samples can be stored at -20°C until use.
6. Analyze the amplification products by agarose gel electrophoresis and visualize by ethidium bromide or SafeView™ staining. Use appropriate molecular weight standards.