enzynomics

*n*Taq

Cat.#	Size	Conc.
P025B	250 units	5 units/μl
P050B	500 units	5 units/μl

Store at -20℃

Supplied with: 10X *n*Taq Buffer (Mg^{2+} free)
dNTP Mixture
25 mM $MgCl_2$
Sterile water

India Contact:

Life Technologies (India) Pvt. Ltd.
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Product description

A gene encoding the Thermus aquaticus (Taq) DNA polymerase was cloned and expressed in *E. coli*, and the enzyme was purified to homogeneity. The purified Taq polymerase (*n*Taq) has optimal activity at high temperatures (72℃), which helps amplify secondary-structured regions. *n*Taq DNA Polymerase has greatly reduced activity of 5'→3' exonuclease activity. As a result, formation of erroneously amplified products caused by the 5'→3' exonuclease activity of wild type polymerase is effectively prevented. In addition, high GC-content or secondary-structured regions can be efficiently amplified due to the genetic modifications in the catalytic domain of the polymerase.

Characteristics

- Molecular weight: 94 kDa
- Error rate: 2.4 X 10^{-5}
- Thermal stability: Half life of 40 min at 95℃
- A-tail formation at 3' ends of amplified duplex DNA.

Applications

- Amplification of DNA fragments shorter than 3 kb (Suitable for general PCR analysis)
- Amplification of cDNA and genomic DNA.
- Primer extension
- Colony PCR

For Research Use Only. Not for use in diagnostic procedures.

ISO9001 ISO14001 ISO13485

- Multiplex PCR
- Labeling of DNA fragments with radioactive-isotopes
- Nucleotide sequencing

Quality control

- Purity: >99% on SDS-PAGE
- Endonuclease-free
- Exonuclease-free
- RNase-free
- Inhibitor-free

Unit definition

One unit is defined as the amount of enzyme required to incorporate 10 nmol of dNTP into acid insoluble materials in 30 min at 74℃ in a 50-μl reaction mixture (20 mM Tris-HCl/pH 8.8, 50 mM KCl, 2.5 mM $MgCl_2$, 10 mM β-mercaptoethanol, 12.5 μg of calf thymus DNA).

Storage buffer

20 mM Tris-HCl (pH 7.9), 100 mM KCl, 0.1 mM EDTA, 1 mM DTT, 0.5% NP-40, 0.5% Tween-20, 50% glycerol.

10X *n*Taq Buffer (Mg^{2+} Free)

Mg^{2+} plus Buffer: containing 15 mM $MgCl_2$
Mg^{2+} free: $MgCl_2$ free

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Standard PCR conditions

- PCR mixture[a]

10X *n*Taq Buffer (Mg^{2+} free)	2 μl
*n*Taq DNA Polymerase[b] (5 units/μl)	0.2 μl
dNTP Mixture (2 mM each)	2 μl
$MgCl_2$[c] (25 mM)	X μl
Template DNA[d] (0.1~500 ng/μl)	1 μl
Primer 1 (5 pmole/μl)	1 μl
Primer 2 (5 pmole/μl)	1 μl
Sterile water	up to 20 μl
[a]Assemble the reaction mixture on ice	
[b]Add the PCR polymerase at the final step	
[c]Adjust Mg^{2+} to 1.5~5 mM with 25 mM $MgCl_2$	
[d]Plasmid DNA, 0.1 ng~30 ng; genomic DNA, 50 ng~500 ng	

- PCR cycle

Initial denaturation	95℃	2 min
Denaturation	95℃	30 sec
Annealing[a]	55℃~65℃	30~60 sec
Elongation	72℃	1 min/kb
Number of cycles	25~35 times	
Final elongation	72℃	5 min
When cycles are over, keep the reaction mixture at 4℃; may add 10 mM EDTA until use to prevent DNA degradation.		
[a]Recommended annealing temperatures is 5 to 10℃ below the lower Tm of the two primers used.		

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