Kia Prime Taq ™ DNA Polymerase

KIAGEN
Advanced Biotech Company

USAGE INFORMATION

Cat. No.

A-type

G-1000 250 units
G-1001 500 units
G-1002 1,000 units

B-type

G-1000-1 250 units
G-1001-1 500 units
G-1002-1 1,000 units

Description: *Prime Taq*™ DNA Polymerase is a high quality recombinant enzyme and catalyze 5'→3' synthesis of DNA. The enzyme has no detectable 3'→5' proofreading exonuclease activity. It is provided with 10X reaction buffer that contains PCR enhancers. This reaction buffer will enable or improve sub-optimal PCR caused by templates that have a high degree of secondary structure or that are GC-rich.

Quality Control: Endonuclease, Exonuclease, DNase, RNase and Protease activity is not detected. *Prime Taq*™ DNA Polymerase is determined to be >90% pure as judged by SDS-PAGE.

Unit Definition: One unit is defined as the amount of enzyme required to catalyze the incorporation of 10 nmoles of dNTPs into acid-insoluble material in 30 minutes at 74℃.

Buffer and Reagents:

Storage Buffer: 20 mM Tris-HCl (pH 8.0), 100 mM KCl, 0.5 mM EDTA, 0.1 mM DTT, 0.5% Tween 20, 0.5 % Nonidet P-40, 50% Glycerol
10X Reaction Buffer: Contains Tris-HCl (pH 9.0), PCR enhancers, $(NH_4)_2SO_4$, 20 mM $MgCl_2$
10 mM dNTPs Mixture: 2.5 mM each of dATP, dCTP, dGTP and dTTP

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Optimal reaction conditions, such as reaction time, temperature, and amount of template DNA, may vary and must be individually determined.

Conc. of Enzyme

5 units/μl

Supplied with

A-type
10X Reaction Buffer
(with 20 mM $MgCl_2$)
with 10 mM dNTPs Mixture
B-type
10X Reaction Buffer
(with 20 mM $MgCl_2$)
without dNTPs Mixture

Product Use Limitations

This product is sold for research purposes only.
This is not to be used for human diagnostic or drug purposes.
All claims must be brought within expired date.

User Notes

Store at -20℃
Avoid multiple freeze-thaw cycles and exposure to frequent temperature changes.

General Reaction Protocol:

1. Thaw 10X reaction buffer and dNTPs mixture.
2. Prepare a master mix.

Component	Volume	Final Conc.
10X Reaction Buffer	5 μl	1X
10 mM dNTPs Mixture	1～5 μl	0.2～1 mM
Upstream Primer	Variable	0.1～1.0 μM
Downstream Primer	Variable	0.1～1.0 μM
Prime Taq™ DNA Polymerase (5 U/μl)	0.2～0.5 μl	1.0～2.5 unit
Template DNA	Variable	10 fg～1 μg
Sterilized D.W.	Variable	-
Total Volume	50 μl	-

Amount of template
Bacteriophage λ, cosmid, plasmid → 10 fg～300 ng

Total genomic DNA → 100 ng～1 μg

3. Mix the master mix and dispense appropriate volumes into PCR tubes. Centrifuge the reactions in a microcentrifuge for 10 seconds.
4. Perform PCR using your standard parameters (3-step cycling).

Step	Temperature & Reaction Time		
Initial denaturation	5 min at 94℃	-	-
25～35 cycles	30 sec. at 94℃	30 sec. at 50～60℃	30～60 sec. at 72℃
Final extension	-	-	5 min at 72℃

*For PCR products longer than 3～4 Kb, use an extension time of approximately 1 min per Kb DNA.

5. Separate the PCR products by agarose gel electrophoresis and visualize with EtBr or any other means.

A DNA fragment which is amplified by *Prime Taq*™ DNA Polymerase has A-overhang, and it enables you to do cloning by using T-vector.

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