

Taq DNA Polymerase
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I INTRODUCTION

Taq DNA Polymerase is a thermostable DNA Polymerase isolated from an *E. coli* strain that carries the *Taq* DNA polymerase gene. *Taq* DNA polymerase is the most common polymerase used for PCR* reactions

II APPLICATIONS

Taq DNA Polymerase can be used in most applications including the following:

- PCR.
- 3' A-tailing of blunt ends.
- Primer extension.
- DNA sequencing.

III KEY FEATURES

Key features of *Taq* DNA Polymerase:

- Terminal transferase activity. *Taq* DNA Polymerase has terminal transferase activity which results in the addition of a single nucleotide (adenosine) at 3' end of the extension product.
- High-purity. No contamination activity has been detected in standard test reactions.

IV SHIPPING AND STORAGE

This product is shipped on blue ice. Store the product at -20°C.

V GENERAL PCR PROTOCOL USING *Taq* DNA POLYMERASE

1. Thaw all the reagents for PCR on ice. **Vortex to mix to remove concentration gradient** and then spin down briefly.

2. Set up 50 μ l PCR reaction in a thin-wall PCR tube on ice by the following recipe:
 - 5 μ l 10X *Taq* buffer solution containing Mg^{2+} .
 - 1 μ l 10 mM dNTP stock
 - 1 μ l Forward primer (50 μ M)
 - 1 μ l Reverse primer (50 μ M)
 - 2 μ l Template (up to 100 ng/ μ l) sterile or filtered H₂O
 - 39.5 μ l sterile or filtered H₂O
 - 0.5 μ l *Taq* polymerase (5 units/ μ l)
3. Program PCR cycler as following and start:
 - Initial denaturing: 94°C for 3 minutes
 - Then 30 cycles of:
 - 94°C for 30 seconds
 - 55°C for 45 seconds
 - 72°C for 60 seconds (about 1 kb/minute)
 - Extension: 72°C for 7 minutes
4. When the temperature of PCR cycler reaches 94°C, put PCR reaction tube in and continue the program.
5. Analyze PCR fragments on a agarose or polyacrylamide gel.

Note:

1. This is a basic protocol. One needs to optimize the reagent concentrations, conditions and parameters.
2. This protocol is for PCR cycler with a hot lid. Otherwise, mineral oil needs to be added to prevent evaporation.
3. 5% DMSO, 1M betaine, or both can be included in PCR reaction to improve the results when a GC-rich template is used.

VI ORDER INFORMATION

Taq DNA Polymerase, Cat. No. E00007-1000 Cat. No. E00007-50000
Green*Taq* DNA Polymerase, Cat. No. E00043

* The PCR process is covered by U. S. Patent numbers 4683195 and 4683202 issued to Cetus and owned by Hoffman-La Roche Inc. GenScript does not encourage or support the unauthorized use of the PCR process. Use of this product is recommended for persons that either have a license to perform PCR or are not required to obtain a license.

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