GenScript *Taq* DNA Polymerase Manual

Technical Manual No. 0213 **Update date 10112010**

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 µl PCR reaction in a thin-wall PCR tube on ice by the following recipe:

5 µl 10X *Taq* buffer solution containing Mg^{2+}.

1 µl 10 mM dNTP stock

1 µl Forward primer (50 uM)

1 µl Reverse primer (50 uM)

2 µl Template (up to 100 ng/µl) sterile or filtered H_2O

39.5 µl sterile or filtered H_2O

0.5 µl *Taq* polymerase (5 units/µl)

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℃, 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

Green*Taq* DNA Polymerase, Cat. No. E00043

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* 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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