

## Pfu DNA Polymerase

Cat. no. 4992760

Storage: -30~-15°C for two years.

Concentration: 2.5 U/μl

Product size

Product components	4992760
Pfu DNA Polymerase	500 U
10× Pfu Buffer	1.8 ml

TIANGEN BIOTECH (BEIJING) CO., LTD.

[HTTP://WWW.TIANGEN.COM/EN](http://www.tiangen.com/en)

The product is used for research only, neither intended for the diagnosis, or treatment of a disease, nor for the food, or cosmetics etc.

### Introduction

*Pfu* DNA Polymerase is a thermostable enzyme with a molecular weight of approximately 90 kDa. It catalyzes the polymerization of nucleotides into duplex DNA in the 5'-3' direction in the presence of magnesium and it also exhibits 3'-5' exonuclease (proofreading) activity, resulting in blunt-ended PCR products without 3' -dA overhangs. *Pfu* DNA Polymerase is recommended for use in PCR and primer extension reactions that require high-fidelity DNA synthesis.

### Unit Definition

One unit of *Pfu* DNA Polymerase is defined as the amount that incorporates 10 nmol of dNTPs into acid-insoluble material within 30 min at 74°C with activated salmon sperm DNA as the template/primer.

### Storage Buffer

50 mM Tris-HCl (pH 8.2), 0.1 mM EDTA, 1 mM DTT, Stabilizers, 50% Glycerol.

### Applications

High fidelity DNA amplification, such as DNA sequencing, gene expression & cloning, gene site-directed mutagenesis, SNP, end repairing, etc.

### 10× Pfu Buffer

200 mM Tris-HCl (pH 8.8), 100 mM KCl, 100 mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 20 mM MgSO<sub>4</sub>, other components.

### Quality Control

Purity up to standard by SDS-PAGE assay. No exogenous nuclease activity is detected. Single copy gene in human genome could be amplified effectively. No significant activity change when stored at room temperature (15-30°C) for one week.

### Note

- The extension of *Pfu* DNA Polymerase is about 500-1000 bp/min normally. Because *Pfu* DNA Polymerase with 3'-5' exonuclease activity may degrade the primers, it should be added later than other components, and immediately go to PCR step.
- As *Pfu* DNA Polymerase has superior thermostability compared to *Taq* DNA Polymerase, for high-GC templates, temperature of denaturation can be increased to 98°C, which doesn't have any influence on *Pfu* DNA Polymerase's activity.

### Example

**Note: The following example is only for reference, user must set up optimal reaction system according to different reaction conditions such as different templates or primers, etc.**

- For 50 μl PCR reaction system: 1 kb fragment of human genomic DNA was amplified (If use different reaction system, please proportionally increase or decrease the amount of reaction components referring to this system).

Template	< 1 μg
Primer 1(10 μM)	1 μl
Primer 2(10 μM)	1 μl
10× Pfu Buffer	5 μl
dNTP Mixture(2.5 mM)	4 μl
Pfu (2.5 U/μl)	0.5-1 μl
ddH <sub>2</sub> O	up to 50 μl

- PCR cycle set-up:

94°C 3 min	} 30 cycles
94°C 30 sec	
55°C 30 sec	
72°C 2 min	
72°C 5 min	

- Result detection: Load 5 μl PCR products to agarose gel for detection.