

HotMaster Taq DNA Polymerase

Cat. no. 4992771/4992772

Storage: -30~-15°C for two years.

Concentration: 2.5 U/μl

Product size

Product Components	4992771	4992772
Hotmaster Taq DNA Polymerase	250 U	500 U
10× HotMaster Taq Buffer	1.8 ml	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

HotMaster Taq DNA Polymerase is developed by TIANGEN to provide hot-start PCR for higher PCR specificity. HotMaster inhibitor blocks the substrate binding site of HotMaster Taq DNA polymerases in a temperature-dependent manner. Inactive polymerase-inhibitor complexes are formed at temperatures <40°C, where the affinity of HotMaster inhibitor for Hotmaster Taq DNA polymerase is higher than the binding affinity of the template DNA. When the temperature increases to the specific annealing temperature of primers, the binding equilibrium shifts towards the complex formation with only target-specific primed template DNA. This minimizes the non-specific amplification in PCR and ensures high sensitivity and specificity. The PCR process is fast and convenient. PCR products generated by HotMaster Taq DNA Polymerase have 3'-dA overhangs that can be directly used in TA-cloning.

Product Highlights

- HotMaster Taq DNA Polymerase does not need to be activated by high temperature incubation step.
- Continuous control of annealing temperature during PCR process.
- The length of PCR amplification target sequence can reach 5 kb.
- No protein contamination during PCR.
- The optimum extension temperature of the enzyme is 65°C, which can be adjusted from 60°C to 70°C.

Unit Definition

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

Quality Control

The purity of SDS-PAGE is more than 99%; No activity of exogenous nuclease is detected; Single gene in human genome could be amplified effectively; No significant activity change when stored at room temperature (15-30°C) for one week.

Application

Highly specific DNA amplification: suitable for highly sensitive amplification of genomic DNA with high background (e.g. specific gene sites or detection of exogenous virus in genomic DNA), DNA sequencing, Multiplex PCR, TA-cloning etc.

Notes before starting

10× HotMaster Taq Buffer contain Mg²⁺ (15 mM MgCl₂). In some cases, PCR results can be further optimized by appropriately increasing the final Mg²⁺ concentration. The optimal extension temperature of Hotmaster Taq DNA Polymerase is 65°C. The extension temperature can be adjusted between 60-70°C.

Example

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

1. 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× HotMasterTaq Buffer	5 μl
dNTP Mixture(2.5 mM)	4 μl
HotMaster Taq (2.5 U/μl)	0.5-1 μl
ddH ₂ O	up to 50 μl

2. PCR cycle set-up:

94°C 3 min	} 30 cycles
94°C 30 sec	
55°C 30 sec	
65°C 1 min	
65°C 5 min	

3. Result detection: Load 5 μl PCR products to agrose gel for detecting.