TIANGEN®

ET171207

HotMaster *Taq* DNA Polymerase

Cat. no. 4992771/4992772

Storage: -20°C.

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

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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 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 exogenetic virus in genomic DNA), DNA sequencing, Multiplex PCR, TA-cloning etc.

Notes before starting

10× HotMaster *Taq* Buffer contain Mg^{2+} (15 mM $MgCl_2$). In some cases, PCR results can be further optimized by appropriately increasing the final Mg^{2+} 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× HotMaster*Taq* Buffer	5 μl
dNTP Mixture(2.5 mM)	4 μl
HotMaster *Taq* (2.5 U/μl)	0.5-1 μl
ddH_2O	up to 50 μl

2. PCR cycle set-up:

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

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