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# B.HotStart Taq DNA Polymerase (for-Lyo)

**Product Number: PC97LY**

## Shipping and Storage

-20℃.

## Components

| Component | PC97LY |
|---|---|
| B.HotStart Taq DNA Polymerase (for-Lyo) | 50μl |
| 5×HotStart Taq Buffer with $Mg^{2+}$ (for-Lyo) | 1ml |

## Description

B.HotStart Taq DNA Polymerase is a mixture of anti Taq monoclonal antibodies and Taq DNA Polymerase, suitable for Hot Start PCR. Before high-temperature heating, anti Taq monoclonal antibodies bind to Taq DNA polymerase, inhibiting the activity of the polymerase, thereby inhibiting non-specific amplification caused by non-specific annealing of primers or primer dimerization under low-temperature conditions. The anti Taq monoclonal antibody has denatured in the initial DNA denaturation step of the PCR reaction, so there is no need for a hot start step and can be used under conventional PCR reaction conditions. This product is suitable for high-specificity PCR reactions, Multiplex PCR, high GC content (>60%), secondary structure, and other genome amplification and large-scale genome amplification detection with strong background.

This product does not contain components such as glycerol that affect the freeze-drying process, and has added freeze-drying protectants and excipients. It can be directly used for the preparation of freeze-drying samples to improve their stability and usability.

## Features

1. This product can be used to make freeze-dried powder or freeze-dried balls;
2. High specificity PCR reaction;
3. Complex template amplification;
4. Multiplex PCR;
5. Genomic amplification testing;
6. Fluorescence quantitative PCR.

## Unit definition

Using activated salmon sperm DNA as a template/primer, the activity of an acidic insoluble substance is defined as one active unit (U) when consuming 10 nmol of whole nucleotide at 74℃ for 30 minutes.

## Quality control

After multiple column purification, only a clear and single target band was visible in SDS-PAGE gel detection. qPCR method detected no residual Escherichia coli DNA and no contamination of nucleic acid endonucleases and exonucleases.

## Suggestion

The PCR product amplified using this reagent has a prominent "A" base at the 3 'end, which can be directly cloned into a T vector.

## Protocol

1. Sample preparation and use

1.1. Prepare freeze-dried samples of B.HotStart Taq DNA Polymerase (for-Lyo) and 5×HotStart Taq Buffer with $Mg^{2+}$

(for-Lyo) as needed;

1.2. Dissolve the prepared sample in RNase Free Water before use. The remaining reagents after dissolution can be stored at -20℃, and can be used directly after melting in the next experiment.

2. Common reaction systems (50μl) :

| | |
|---|---|
| 5×HotStart Taq Buffer with $Mg^{2+}$ (for-Lyo) | 10μl |
| Upstream primer (10μM) | 0.2-1.0μM(Final Conc.) |
| Downstream primer (10μM) | 0.2-1.0μM(Final Conc.) |
| dNTPs (10mM each) | 1.0μl |
| Template | 1-50ng(Plasmid)<br>10ng-1μg(Genome) |
| B.HotStart Taq DNA Polymerase (for-Lyo) | 0.25μl (1.25U) |
| $ddH_2O$ | Up to 50μl |

3. Common PCR amplification programs:

3.1. Two step amplification program:

| Cycle | Temperature | Time |
|---|---|---|
| 1 | 94℃ | 1min |
| 35-40 | 95℃ | 20s |
| | 60℃ | Adjust according to product length |

3.2. Three step PCR amplification program:

| Cycle | Temperature | Time |
|---|---|---|
| 1 | 94℃ | 1min |
| 35-40 | 95℃ | 15s |
| | 50-60℃ | 20s |
| | 72℃ | Adjust according to product length |

## Note

Both B.HotStart Taq DNA Polymerase (for-Lyo) and 5×HotStart Taq Buffer with $Mg^{2+}$ (for-Lyo) in this product already contain freeze-dried excipients. If other freeze-dried excipients need to be added, they need to be evaluated based on actual test data before adding.