Hieff™ WS Bst DNA Polymerase(40 U/μL)

Product description

Bst DNA Polymerase is derived from Bacillus stearothermophilus DNA Polymerase I. It possesses 5'→3' DNA polymerase activity and strong strand displacement activity but lacks 5'→3' exonuclease activity. It is suitable for DNA strand displacement reactions, isothermal amplification techniques such as LAMP (Loop-mediated Isothermal Amplification), and rapid sequencing.

WS Bst DNA Polymerase is a hot-start version of Bst DNA Polymerase developed using reversible modification technology. It effectively inhibits DNA polymerase activity at room temperature, allowing for reaction setup and operation at ambient conditions without non-specific amplification, thereby improving reaction efficiency. Furthermore, the enzyme releases its activity at elevated temperatures, eliminating the need for a separate activation step.

Specifications

Cat.No.	14412ES03 / 14412ES05 / 14412ES08
Size	8,000 U / 40,000 U / 400,000 U

Components

Components No.	Name	14412ES03 (8,000 U)	14412ES05 (40,000 U)	14412ES08 (400,000 U)
14412-A	Hieff™ WS Bst DNA Polymerase(40 U/μL)	200 μL	1 mL	10 mL
14412-B	10× Hieff™ WS Bst DNA Polymerase Buffer	1 mL	3 × 1 mL	3 × 10 mL
14412-C	100 mM MgSO4	1 mL	1 mL	10× 1 mL

Product Applications

This product is suitable for various isothermal amplification reactions, including LAMP, CPA, and RCA.

Unit Definition

1 Unit (U) is defined as the amount of enzyme required to incorporate 10 nmol of dNTP into acid-insoluble precipitates in 30 minutes at 65°C.

Enzyme Storage Buffer Composition

10 mM Tris-HCl, 50 mM KCl, 0.1 mM EDTA, 1 mM DTT, 0.1% Triton X-100, 50% Glycerol, pH 7.5 @ 25°C.

Storage

This product should be stored at -25~-15°C for 2 years.Avoid repeated freeze-thaw cycles.

Notes

1. When in use, the enzyme should be kept on ice or in an ice bath. Immediately after use, store it at -20°C.

2. This product is for research use only.

3. Please operate with lab coats and disposable gloves，for your safety.

LAMP Experimental Case Study

1. Reaction System Preparation

Component	Volume (μL)	Final Concentration
10× Hieff™ WS Bst DNA Polymerase Buffer	2.5	1×
dNTP Mix (25 mM each)	1.4	1.4 mM each
dUTP (25 mM) (Optional addition)	1.4	1.4 mM
UDGase (1 U/μL) (Optional addition)	1	0.04 U
Template DNA	10 ng~1 μg	-
10×Primers	2.5	-
Hieff™ WS Bst DNA Polymerase(40 U/μL)	1*	-
ddH2O	to 25	-

【Notes】:

1)The amount of Hieff™ WS Bst DNA Polymerase can be adjusted and optimized depending on the specific application.

2)The Mg^{2+} concentration can be adjusted between 8–10 mM depending on the experiment. The final Mg^{2+} concentration is 8 mM when using the 10× buffer.

3)10× Primers: 16 μM FIP/BIP, 2 μM F3/B3, and 4 μM each for Loop F and Loop B.

4)dNTP (Cat#10124), dUTP (Cat#10128), and UDGase (Cat#10303) from our company are compatible with this product.

2. Reaction Conditions

Temperature	Time	Function
25~37°C	5~10 min	Degradation of U-containing templates (optional)
60~65°C	30~60 min	Reaction
85°C	5 min	Inactivation