Warm Start Bst 2.0 DNA Polymerase（Glycerol free, high density）

Cat.No.:HYB114

Product Description

Bst 2.0 DNA Polymerase is derived from *Bacillus stearothermophilus* DNA Polymerase I, which has 5′→3′ DNA polymerase activity and strong chain replacement activity, but no 5′→3′ exonuclease activity. Bst 2.0 DNA Polymerase is ideally suitable for strand-displacement, Loop-mediated isothermal amplification（LAMP）and rapid sequencing.Warm Start Bst 2.0 DNA polymerase is a hot start version of Bst 2.0 DNA polymerase obtained by reversible modification technology. It can inhibit DNA polymerase activity at room temperature, so the reaction system can be operated and prepared at room temperature to prevent nonspecific amplification and improve reaction efficiency. This version can also be lyophilized. In addition, its activity can be released at high temperature, so there is no need for a separate activation step.

Components

Components	1600U	8000U	80000U
Warm Start Bst 2.0 DNA Polymerase (Glycerol free, high density) (32 U/μL)	0.05 mL	0.25 mL	2.5 mL
10×HH Bst 2.0 Buffer	1.5 mL	2 × 1.5 mL	3 × 10 mL
$MgSO_4$（100 mM）	1.5 mL	2 × 1.5 mL	2 × 10 mL

Storage

This product should be stored at -25 to -15°C.

Unit Definition

One unit is defined as the amount of enzyme that incorporate 25 nmol of dNTP into acid insoluble material in 30 minutes at 65°C.

Quality control

1. **Protein Purity Assay (SDS-PAGE)：** The purity of Bst 2.0 DNA polymerase is ≥ 99% determined by SDS-PAGE analysis.

2. **Endonuclease Activity：** Incubation of a 50 µL reaction containing a minimum of 8U of Warm Start Bst 2.0 DNA polymerase with 1 µg λDNA for 16 hours at 37℃ results in no detectable degradation as determined.
3. **Exonuclease Activity：** Incubation of a 50 µL reaction containing a minimum of 8 U of Warm Start Bst DNA 2.0 polymerase with 1 µg λ -Hind III digest DNA for 16 hours at 37℃ results in no detectable degradation as determined.
4. **Nickase Activity：** Incubation of a 50 µL reaction containing a minimum of 8 U of Warm Start Bst 2.0 DNA polymerase with 1 µg pBR322 DNA for 16 hours at 37°C results in no detectable degradation as determined.
5. **RNase Activity：** Incubation of a 50 µL reaction containing a minimum of 8 U of Warm Start Bst 2.0 DNA polymerase with 1.6 µg MS2 RNA for 16 hours at 37°C results in no detectable degradation as determined.
6. ***E. coli* DNA:** 120 U of Warm Start Bst DNA 2.0 polymerase is screened for the presence of *E. coli* genomic DNA using TaqMan qPCR with primers specific for the *E. coli* 16S rRNA locus. The *E. coli* genomic DNA contamination is ≤ 1 Copy.

Instructions

1. Reaction system

Components	Volume
10×HH Bst 2.0 Buffer	2.5 uL
$MgSO_4$ (100 mM)	1.5 uL
dNTPs (10 mM each)	3.5 uL
SYTO™ 16 Green (25×)*	1 uL
Primer mix**	6 uL
Warm Start Bst 2.0 DNA Polymerase (Glycerol free, high density) (32 U/µL)	0.25 uL
Template	x µL
ddH_2O	Up to 25 µL

*SYTOTM 16 Green (25 ×): According to experimental needs, other dyes can be used as substitutes;

**Primer mix: obtained by mixing equal volumes of 20 µM FIP, 20 µM BIP, 2.5 µM F3, 2.5 µM B3, 5 µM LF, 5 µM LB.

2. Reaction Condition

1 × HH Bst 2.0 Buffer, the incubation temperature is between 60 °C and 65 °C.

3. Heat Inactivation

80 °C, 20 min.

Application

1. LAMP isothermal amplification;
2. DNA strand single displacement reaction;
3. High GC gene sequencing;
4. DNA sequencing of nanogram level.