Bst 2.0 DNA Polymerase

Cat.No.:HYB111

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.

Components

Components	1600U	8000U	80000U
Bst 2.0 DNA Polymerase (8 U/μL)	0.2 mL	1 mL	10 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 8 U of Bst 2.0 DNA polymerase with 1 μg λDNA for 16 hours at 37°C results in no detectable degradation as determined.
3. **Exonuclease Activity：** Incubation of a 50 μL reaction containing a minimum of 8 U of Bst DNA 2.0 polymerase with 1 μg λ -Hind III digest DNA for 16 hours at 37°C results in no detectable degradation as determined.

4. **Nickase Activity：** Incubation of a 50 µL reaction containing a minimum of 8 U of 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 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 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
Bst 2.0 DNA polymerase (8 U/µL)	1 uL
Template	× 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.