Tinzyme Co., Limited

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Well Start Bst DNA polymerase, large fragment

Product Number: BS07

Shipping and Storage

Transportation under 0°C and storage at -25~ -15°C.

Component

Component	BS07
Well Start Bst DNA polymerase,large fragment（1600U）	50μL
10× Bst Raction Buffer	1.5mL
$MgSO_4$（100mM）	1.5mL

Description

Bst DNA polymerase V2 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 DNA Polymerase V2 is ideally suitable for strand-displacement, isothermal amplification LAMP (Loop mediated isothermal amplification) and rapid sequencing. Well Start Bst DNA polymerase,large fragment is a hot-start version based on Bst DNA polymerase V2 obtained by reversible modification technology, which can inhibit DNA polymerase activity at room temperature, so the reaction system can be operated and formulated at room temperature to prevent non-specific amplification and improve reaction efficiency, and this version can be lyophilized. In addition, its activity is released at high temperatures, so there is no need for a separate activation step.

Application

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

Unit Definition

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

Heat Inactivation

80°C, 20 min.

Quality control

1. **Protein Purity Assay (SDS-PAGE) :** The purity of Well Start Bst DNA polymerase,large fragment is ≥ 99% determined by SDS-PAGE analysis using Coomassie Blue detection.
2. **Endonuclease Activity:** Incubation of a 50μL reaction containing a minimum of 8U of Well Start Bst DNA polymerase,large fragment with 1μg λDNA for 16 hours at 37°C results in no detectable degradation as determined.
3. **Exonuclease Activity：** Incubation of a 50μL reaction containing a minimum of 8U of Well Start Bst DNA polymerase,large fragment with 1μg λ -Hind III digest DNA for 16 hours at 37°C results in no detectable degradation as determined.
4. **Nickase Activity:** Incubation of a 50μL reaction containing a minimum of 8U of Well Start Bst DNA polymerase,large fragment with 1μg pBR322 DNA for 16 hours at 37°C results in no detectable degradation as determined.
5. **RNase Activity：** Incubation of a 50μL reaction containing a minimum of 8U of Well Start Bst DNA polymerase,large fragment with 1.6μg MS2 RNA for 16 hours at 37°C results in no detectable degradation as determined.

6. **E. coli DNA:** 120U of Well Start Bst DNA polymerase,large fragment 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.

Reaction and Condition

10× Bst Raction Buffer, the incubation temperature is between 60℃ and 65℃.

LAMP Reaction

Component	25μL
10× Bst Raction Buffer	2.5μL
$MgSO_4$（100mM）	1.5μL
dNTPs (10mM each)	3.5μL
SYTO™ 16 Green (25×)	1.0μL
Primer mix	6μL
Well Start Bst DNA polymerase,large fragment（1600U）	0.25μL
Template	XμL
ddH_2O	Up to 25μL