WarmStart Bst DNA polymerase V2

WarmStart Bst DNA polymerase V2 (Glycerol-free) (8 U/μL)	100 μL
10×HH Bst V2 Buffer	250 μL
MgSO4（100 mM）	150 μL

For research use only

Cat No: YT6010
Size: 800 U (100 RXN)
Store at –20°C

Product 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.

WarmStart Bst DNA polymerase V2 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.

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

• **Protein Purity Assay (SDS-PAGE)** ： The purity of WarmStart Bst DNA polymerase V2 is ≥ 99% determined by SDS-PAGE analysis using
Coomassie Blue detection.

• **Endonuclease Activity**：Incubation of a 50 μL reaction containing a minimum of 8 U of WarmStart Bst DNA polymerase V2 with 1 μg λDNA for 16 hours at 37 ℃ results in no detectable degradation as determined.

• **Exonuclease Activity**：Incubation of a 50 μL reaction containing a minimum of 8 U of WarmStart Bst DNA polymerase V2 with 1 μg λ -Hind III digest DNA for 16 hours at 37 ℃ results in no detectable degradation as determined.

• **Nickase Activity** ： Incubation of a 50 μL reaction containing a minimum of 8 U of WarmStart Bst DNA polymerase V2 with 1 μg pBR322 DNA for 16 hours at 37 ℃ results in no detectable degradation as determined.

• **RNase Activity** ： Incubation of a 50 μL reaction containing a minimum of 8 U of WarmStart Bst DNA polymerase V2 with 1.6 μg MS2 RNA for 16 hours at 37 ℃ results in no detectable degradation as determined.

• ***E. coli* DNA**: 120 U of WarmStart Bst DNA polymerase V2 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.

LAMP Reaction

Reagent	Quantity for 50µl volume
10 ×HH Bst V2 Buffer	2.5 µL
MgSO4 (100 mM)	1.5 µL
dNTPs (10 mM each)	3.5 µL
SYTOTM 16 Green (25×)*	1 µL
Primer mix**	6 µL
WarmStart Bst DNA polymerase V2 (Glycerol-free)(8 U/µL)	1 µL
Template	X µL
ddH2O	Up to 25 µL

*SYTOTM 16 Green (25 ×): According to experimental needs, other dyes can be used as substitutes; **Primer mix: obtained by mixing 20 µ M FIP, 20 µ M BIP, 2.5 µ M F3, 2.5 µ M B3, 5 µ M LF, 5 µ M LB and other volumes。

Reaction and Condition
1 × HH Bst V2 Buffer, the incubation temperature is between 60 ° C and 65 ° C.

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.