Tribioscience

WellStart II BST DNA polymerase

Catalog	Unit
TBP0157-1600	1600 U

Description

WellStart II BST DNA polymerase is a purified recombinant enzyme expressed in Escherichia coli, with its gene originally derived from Bacillus stearothermophilus and subsequently modified through targeted point mutations to enhance its performance. Its strong chain replacement activity enables efficient isothermal amplification, making WellStart II BST DNA polymerase well-suited for Loop-mediated Isothermal Amplification (LAMP), Multiple Displacement Amplification (MDA), and Whole Genome Amplification (WGA).

Product Details

Purity: < 98% by SDS-PAGE
Unit definition: The amount of enzyme required to add 10nmol of deoxynucleotides to acidic insoluble substances within 30 minutes at 65℃ is defined as 1 active unit (U).
Heat Inactivation: Incubate at 80°C for 5 minutes before inactivation.
Storage: Stored at-20ºC

Components

Component	1600U
WellStart II BST DNApolymerase(8U/μL)	200μL
10×WellStart II BST Reaction Buffer	1.5mL
100mM $MgSO_4$Solution	1.5mL

Protocol

Isothermal Amplification (LAMP) Operation Guidelines:
Mix the following components in proportion and incubate at 65°C for 30-60 minutes. Incubate at 80°C for 5 minutes to inactivate.

Component	25μL Reaction System	Final Concentration
10×WellStart II BST Reaction Buffer	2.5 μL	1× (contain 2mM $MgSO_4$)
100mM $MgSO_4$ Solution	1.5 μL	6 mM (8mM in total)
dNTP Mix(10mM)	3.5 μL	1.4 mM each
FIP/BIP Primers (25×)	1 μL	1.6 μM
F3/B3 Primers (25×)	1 μL	0.2 μM
LoopF/B Primers (25×)	1 μL	0.4 μM
WellStart II BST DNA polymerase (8U/μL)	0.5-1 μL	160-320 U/mL
DNA Sample	variable	>10 copies or more
Sterile water	Add to 25 μL	
Total Volume	25 μL	

Note:

1) LAMP primers are composed of 4 or 6 primers (including Loop), 25× primers include: 40μM FIP, 40μM BIP, 5μM F3, 5μM B3, 10μM LoopF,10μM LoopB.
2) To optimize the reaction, the Mg^{2+} concentration (4-10mM), enzyme quantity, or reaction temperature (60-72°C) can be adjusted. The optimal reaction temperature for this enzyme is 65-68°C;
3) Do not shake vigorously. Mixing vigorously can inactivate the enzyme;
4) Ensure that there are no bubbles in the reaction system after adding the system

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