Data sheet

Bst DNA Polymerase
(Exonuclease Minus)

Cat. No: P0045 (2000 U)
Cat. No: P0046 (10,000 U)

Introduction:

Bst DNA Polymerase, Exonuclease Minus, is a 67 kDa *Bacillus stearothermophilus* DNA Polymerase protein (large fragment) which has a 5'-3' polymerase activity and strand displacement activity but lacks 3' – 5' exonuclease activity. Also has reverse transcription activity.

Source: A recombinant *E. coli* strain carrying the Bst DNA Polymerase gene (large fragment).

Application:

- ✓ nucleic acid amplification methods, including isothermal amplification
- ✓ whole genome amplification
- ✓ multiple displacement amplification
- ✓ sequencing DNA with high GC content and secondary structures
- ✓ rapid sequencing from nanogram amounts of DNA Template

Kit Contents

	P0045	P0046
Bst DNA Polymerase (8 U/µL)	250µl	5X250µl
Reaction Buffer (10x)	1.2 mL	5X1.2 mL
100 mM MgSO4	500 µl	5X500 µl

Storage:

Store at -20°C.

Unit definition:

1 unit is defined as the amount of polymerase required to convert 10 nmol of dNTPs into acid insoluble material in 30 minutes at 65°C.

Quality control:

- ✓ **Bst DNA Polymerase** is free of detectable RNase, and DNase (exo- and endonuclease) activities.
- ✓ Purity: >99% as judged by SDS-polyacrylamide gels with blue staining.
- ✓ No detectable DNA contamination

Typical LAMP Protocol

1.- Prepare the reaction mix as shown in the Table in the order listed. During this step the reaction mix tube should always be held on the ice to prevent the background activity of the enzyme.

Component	Volume (µL)	Final Conc
10X ThermoPol Buffer	2.5 µl	1X (contains 2 mM $MgSO_4$)
$MgSO_4$ (100 mM)	1.5 µl	6 mM (8 mM total)
dNTP Mix (10 mM)	3.5 µl	1.4 mM each
FIP/BIP Primers	-	1.6 µM each
F3/B3 Primers	-	0.2 µM each
Loop F/B Primers	-	0.4-0.8 µM each
Bst DNA Polymerase 8 U/µl)	1 µl	0.32 U/µl
DNA Sample	variable	> 10 copies or more
Nuclease-free Water	to 25 µl	

2.-Incubate reaction at 65°C for 30–60 minutes. Running a temperature gradient from (55–65 °C) is strongly recommended to determine optimum temperature.

- Running a no-template control is strongly recommended to ensure amplification specificity.
- If optimization is desired, try titrating Mg^{2+} (4–10 mM final) or Bst DNA Polymerase (0.04–0.32 U/µl), or changing reaction temperature (50–68°C).

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