# Bst II Plus DNA Polymerase (40 U/μL)

## Product Information

| Product name | Cat# | Size |
|---|---|---|
| Bst II Plus DNA Polymerase (40 U/μL) | 14402ES92 | 8,000 U |
| | 14402ES97 | 40,000 U |

## Product Description

Bst II Plus DNA Polymerase is derived from *Thermophilic Geobacillus sp* DNA Polymerase I, lacking 5'-3' exonuclease activity. Compared with Bst II DNA Polymerase, the enzyme has stronger 5'-3' DNA polymerase activity, strand displacement activity and dUTP tolerance, which is more suitable for anti-pollution isothermal amplification reactions, such as LAMP, CPA, etc.

## Product Components

| Component number | Components | Cat#/Size | |
|---|---|---|---|
| | | 14402ES92 (8,000 U) | 14402ES97 (40,000 U) |
| 14402-A | Bst II Plus DNA Polymerase (40 U/μL) | 200 μL | 1 mL |
| 14402-B | 10 × Bst II Plus DNA Polymerase Buffer | 1 mL | 3 × 1 mL |
| 14402-C | 100 mmol/L $MgSO_4$ | 1 mL | 3 × 1 mL |

## Applications

Suitable for a variety of isothermal amplification reactions such as LAMP, CPA, RCA, etc.

## Activity Definition

1 U refers to the amount of enzyme required to incorporate 10 nmol of dNTP into the acid-insoluble precipitate in 30 min at 65°C.

## Preservation Solution Components

10 mmol/L Tris-HCl, 50 mmol/L KCl, 0.1 mmol/L EDTA, 1 mmol/L DTT, 0.1% Triton X-100, 50% Glycerol, pH 7.5 @ 25°C.

## Heat Inactivation

Incubation at 85°C for 5 min.

## Shipping and Storage

The product is shipped with ice pack and can be stored at -20°C for 2 years. Please avoid repeated freeze-thaw.

## Cautions

1. Bst II Plus DNA Polymerase is sensitive to physical denaturation. Gently invert the tube when mixing, please do not shake vigorously.
2. Enzymes should be stored in an ice box or on an ice bath when used, and should be stored at -20°C immediately after use.
3. For your safety and health, please wear lab coats and disposable gloves for operation.
4. This product is for research use ONLY!

# Protocol for LAMP

## 1. Recommended reaction system

| Components | Volume (μL) | Final Concentration |
|---|---|---|
| 10×Reaction Buffer | 2.5 | 1× |
| 100 mmol/L $MgSO_4$ | 0.75 | 3 mmol/L+2 mmol/L in buffer=5 mmol/L |
| dNTP Mix (25 mmol/L each) | 1.4 | 1.4 mmol/L each |
| dUTP (25 mmol/L) (optional) | 1.4 | 1.4 mmol/L |
| UDGase (1 U/μL) (optional) | 1 | 0.04 U |
| DNA | 10 ng~1 μg | - |
| 10×Primers | 2.5 | - |
| Bst II Plus DNA Polymerase (40 U/μL) | 1* | 1.6 U/μL |
| $ddH_2O$ | to 25 | - |

Note: 1. *: According to different experiments, the concentration of Bst II Plus DNA Polymerase can be adjusted and optimized;

2. 10×Reaction Buffer：200 mmol/L Tris-HCl, 500 mmol/L KCl, 100 mmol/L $(NH_4)_2S0_4$, 20 mmol/L $MgS0_4$, 1% Tween-20, pH 8.8 @ 25℃.

3. If optimization is desired, try titrating concentration of $Mg^{2+}$ (4–10 mmol/L final).

4. 10× Primers：16 μmol/L FIP/BIP, 2 μmol/L F3/B3, 4 μmol/L Loop F/B each.

5. Yeasen Biotech products: dNTP (Cat#10124), dUTP (Cat#10128) and UDGase (Cat#10303) can be used with this product.

## 2. Reaction conditions

| Temperature | Time | Effect |
|---|---|---|
| 25~37°C | 5~10 min | Degradation of U-containing templates (optional) |
| 65°C | 30~60 min | Reaction |
| 85℃ | 5 min | Deactivation |