Ruby Bst DNA Polymerase

Cat. No. : RK21005

Product components

Components	Component number	Size-1 1600 U	Size-2 8000 U
Ruby Bst DNA Polymerase(8,000 U/mL)	RM20553	200 μL	1 mL
10X Isothermal Amplification Buffer II	RM20832	1.25 mL	1.25 mL*2
MgSO4 (100 mM)	RM20143	1.25 mL	1.25 mL*2

Product Description

Ruby Bst DNA Polymerase is an in silico designed homologue of *Geobacillus stearothermophilus* DNA Polymerase I(large fragment). Ruby Bst DNA Polymerase has 5′→3′ DNA polymerase activity and strong strand displacement activity but lacks 5′→3′ exonuclease activity. Ruby Bst DNA Polymerase displays improved amplification speed, yield, salt tolerance and thermo stability compared with wild-type Bst DNA Polymerase, Large Fragment.

Source

Ruby Bst DNA Polymerase is prepared from an *E. coli* strain.

Applications

Isothermal Amplification: Loop-Mediated Isothermal Amplification (LAMP)

Definition of Activity Unit

One unit of the enzyme catalyzes the incorporation of 25 nmol of dNTP into acid-insoluble precipitate in 30 minutes at 65°C.

Store

-20℃, avoid repeated freezing and thawing.

Inhibition and Inactivation

Inactivate at 80 ℃ for 20 min.

Other Materials

Reagent: dNTP Mix，FIP/BIP Primers，F3/B3 Primers，LoopF/LoopB Primers，Nuclease-free Water.

Instrument: PCR instrument or water bath pot.

Protocol

1. LAMP

Reagent	Volume	Final concentration
10X Isothermal Amplification Buffer II	2.5 μl	1X (contains 2 mM MgSO4)
MgSO4 (100 mM)	1.5 μl	6 mM
dNTP Mix (10 mM)	3.5 μl	1.4 mM each
Primers (25X)	1 μl	1.6 μM FIP/BIP，0.2 μM F3/B3，0.4 μM Loop F/B
Ruby Bst DNA Polymerase(8,000 U/mL)	1 μl	/
DNA Sample	variable	/
Nuclease-free Water	to 25 μl	

2 . Mix the reaction components and centrifuge briefly to collect the contents at the bottom of the tube.

3. Incubate the mixture at 65 °C for 30-60 min.
4. Stop the reaction by heating at 80 °C for 20 min.

Precautions

1) It is recommended to operate reagent premix, template addition, and detection in different spaces to avoid reagent contamination, so that it would affect subsequent experiments;

2) The reaction is greatly affected by Mg^{2+} or enzyme. If the reaction result is not ideal, the final concentration of Mg^{2+} can be adjusted between 4mM and 10 mM. If necessary, Bst enzyme activity can be titrated to achieve ideal performance;

3) It is recommended to design 2-3 pairs of primers at the same time, and select the best one for experiments;

4) Use NTC(no template control) to detect the specificity of amplification;

5) If it is necessary to open the lid after the reaction is completed, it is necessary to perform thermal deactivation before opening the lid.

6) For your safety and health, please wear lab coat and disposable gloves.