LAMP Amplification Reagent Bst 4.2 Basic Mix(Pre-freeze-dried Liquid)

Item No. : PC2620

Specification: 200T

Storage: Storage below -20℃, valid for 18 months; Once melted, it is recommended to store at 2-8℃, under this condition, the product is stably stored for 1 month. (**Note:** repeated freeze-thaw 10 times will not affect the performance of the product, but repeated freeze-thaw should be avoided; Products due to the high concentration of sugar components, products stored at -20°C may have crystals when melting. At this time, 3.125xBst4.2 Basic Mix can be completely melted at 37°C, while Bst4.2 enzyme products should be melted at 30°C, too high temperature may lead to the decline of hot start performance.)

Product Content:

First Name	200T
3.125xBst4.2 Basic Mix(freeze-dried)	1.6mL
Bst 4.2 (16U/μL)	100μL

Product Information:

Bst4.2 Basic Mix (freeze-dried) is a 3.125x concentrated reagent containing Helicaser, dNTP, Mg^{2+}, reaction buffer salt, freeze-dried excipients and stabilizers. Bst4.2 DNA/RNA polymerase is a single component. This product is intended for researchers with freeze-drying experience and can be freeze-dried directly without adding any other excipients.

Bst4.2 has the following properties:

（1）Bst 4.2 contains heat-activated Aptamer, a ligand that ensures enzyme activity blocking efficiency >95% at <30°C and complete enzyme activity release within 1min at >60°C. This property is conducive to the establishment of reaction system at room temperature, and greatly reduces the non-specific amplification at low temperature.

（2）When the reaction temperature was raised to 70℃, the formation of primer Dimer was significantly reduced, the amplification specificity was improved, and the nucleic acid release of crude samples was more adequate.

（3）The full system contains Helicaser, thus allowing for LAMP amplification without the use of F3/B3 primers (easy LAMP) and allowing for a doubling of primer dosage for FIP/BIP. This further reduces non-specific amplification and results in a significant increase in amplification uniformity.

This product is a multi-purpose reagent, suitable for LAMP Molecular Beacon probe, DP-LAMP probe, test strip, etc.

How to use:

	Standard LAMP	eLAMP
FIP/BIP	16μM each	8~16μM each
LF/LB	4~8μM each	4~8μM each
F3/B3	2μM each	Not required

1. Preparation of 10xLAMP Primer Mix

Note: eLAMP (easy LAMP) is a method for removing F3/B3 primers, a specific use strategy for the Bst4.2-3.2 series, for most primers, the amplification rate is almost unaffected under Helicaser.

2. The LAMP reaction system was prepared

3.125xBst4.2 Basic Mix	8μl
10x Primer Mix	2.5μL
Bst 4.2(16U/μL)	0.5μL
Template DNA/RNA	X μL
ddH_2O to total volume	25 μL

After the reaction system is prepared, the reaction is placed at 70°C for 20~40min.

3. Lyophilization of reagents (only for professionals)

This reagent can be used for subsequent freeze-drying directly by personnel with freeze-drying experience. The formula of the reagent is not harsh to freeze-drying conditions. However, for different users, due to the freeze-drying form, freeze-drying volume, machine load, freeze-drying container, freeze-drying abrasive and other factors are different, the following procedures are for reference only. Further program optimization needs to be adjusted according to the specific situation.

3.125xBst4.2 Basic Mix	8μL
25xPrimer Mix	1μL
Bst 4.2 (16U/μL)	0.5μL
ddH_2O to total volume	9.5-10μL

(**Note:** For non-professionals, please purchase freeze-dried products directly.)

Freeze-drying procedure after molding:

-50°C pre-freezing 10min; -50°C 4-8h (vacuum section); -50°C heating to 25°C (5°C per hour); 2h at 25°C; 25°C constant temperature.

Note:

(1) The recommended reaction temperature of Bst4.2 DNA/RNA Polymerase when used for LAMP amplification is 70°C, and the optimal reaction temperature is 70°C.

(2) The product contains high concentration of salt components. Take good personal protection when using to prevent contact and inhalation of the product with skin, eyes, nose, respiratory tract, etc. Once contact or inhalation, please rinse with plenty of water.

(3) To prevent aerosol pollution, partition operation as far as possible.