HNB Indicator (100×, LAMP Grade)

Cat : G1218
Size: 1mL
Storage: -20℃, avoid light, valid for 1 year.

Introduction

LAMP is a new nucleic acid amplification technology. It uses four or six primers that can identify six specific regions on the target gene, and depends on the strong chain replacement activity of Bst DNA polymerase, DNA amplification can reach 10^9~10^{10} times in 30~60 minutes. There are many LAMP detection methods, including dye method, turbidity method, electrophoresis method, and TaqMan fluorescence probe method.

Hydroxy naphthol blue (HNB) is a metal ion indicator. The combination of HNB and magnesium ions (with an optimal concentration of generally 8mM-10mM) causes the initial color of the reaction system to be violet. As the reaction progresses, Mg^{2+} reacts with the precipitated pyrophosphate ions to form magnesium pyrophosphate precipitates. HNB loses magnesium ions, causing the system to turn blue, while the unreacted system remains violet.

Protocols(*for reference only*)

1. Take out this product and restore it to room temperature before use.
2. Add 1/100 of the total volume of the LAMP reaction system to the LAMP amplification reaction solution. It is recommended to first use sterile water to dilute HNB Indicator (100×, LAMP Grade)to 10×, then add 10× to the reaction system in a 10% ratio. (See note 1 and 2)
3. After preparing the reaction solution, start the reaction and observe the color change of the reaction solution.

Result

Amplification	The reaction liquid changes from light purple to light blue
Not Amplification	The reaction liquid is light purple

Note

1. The addition ratio of the indicator can be adjusted appropriately based on the color development of the reaction system. The recommended ratio for this product is 1:100.
2. The color development of this product is closely related to the concentration of $Mg^{2+}$and dNTP in the reaction system. Before adding this product, the final concentration of dNTP in the LAMP reaction system is best at 3.2mM, and the final concentration of $Mg^{2+}$is best at 8mM. Otherwise, there will be no color transition from light purple to light blue.
3. For your safety and health, please wear laboratory clothes and disposable gloves for operation.