V02

HNB 指示剂（100×, LAMP 级）

货号：G1218
规格：1mL
保存：-20℃，避光保存，有效期 1 年。

产品介绍：

LAMP 是一种新型核酸扩增技术，采用 4 或 6 条能够识别目的基因上的 6 个特异区域的引物，依赖于 Bst DNA 聚合酶的强链置换活性，在 30～60 分钟内 DNA 扩增可达 10^9～10^{10} 倍。LAMP 检测方法分为多种，包括染料法、浊度法、电泳法及的 TaqMan 荧光探针法。

羟基萘酚蓝（HNB）是一种金属离子指示剂，HNB 与镁离子（最适浓度一般为 8mM-10mM）结合使得反应体系初始颜色为紫罗兰色，随着反应的进行，Mg2+与析出的焦磷酸根离子反应生成焦磷酸镁沉淀，羟基萘酚蓝失去了镁离子使得体系颜色变为天蓝色，而未反应的体系则仍保持着紫罗兰色。

操作步骤：*(仅供参考)*

1. 将本产品放置在室温条件下待用。
2. 将本染料按 LAMP 反应体系总体积的 1/100 加入到 LAMP 扩增反应液中。如体系较小，建议先用无菌水将 100×母液稀释成 10×母液，用时按 10% 的比例向反应体系中加入 10×母液。（见注意事项 1、2）
3. 配制好反应液后开始反应，观察反应液颜色变化。

染色结果：

发生扩增	反应液由淡紫色变成淡蓝色
未发生扩增	反应液为淡紫色

注意事项：

1、 指示剂加入比例可根据反应体系显色情况进行适当调整，本产品建议比例为1:100。
2、 本产品的显色与反应体系中 Mg^{2+}的浓度和 dNTP 的浓度密切相关，加入本产品之前，LAMP 反应体系中的 dNTP 的终浓度最好为 3.2mM，Mg^{2+}的终浓度最好为 8mM，否则不会发生淡紫色到淡蓝色的颜色转变。
3、 为了您的安全和健康，请穿实验服并戴一次性手套操作。

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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.