

SYBR Green I Instructions for nucleic acid dyes

Item number: SR4110

Specification: 50/100 μ L

Storage: Store at -20°C away from light, valid for at least one year.

Product Description:

SYBR Green I dye is a fluorescent dye that binds directly to double-stranded DNA (dsDNA) and is the most commonly used DNA-binding dye for fluorescence quantitative PCR. In quantitative PCR, SYBR Green I can fluoresce after non-specific binding with double-stranded DNA (dsDNA), and the purpose of detecting the amplification of PCR products can be achieved by detecting the fluorescence intensity of SYBR Green I in the reaction system. In the free state, SYBR Green I emits weak fluorescence. Once it binds to dsDNA, its fluorescence increases by 1000 times. The total fluorescence signal from a reaction is proportional to the amount of dsDNA present, and increases with the increase of amplified products. Therefore, by detecting the fluorescence signal intensity in the PCR reaction liquid, the target gene can be accurately quantified, and the melting temperature of the amplified target DNA fragment can also be determined.

Instructions for use (for reference only) :

When used, configure the PCR reaction mixture and add 10000 \times SYBR Green I concentrate to the PCR reaction system so that the final concentration is 0.5 \times (adjusted between 0.2 \times and 1 \times). The above procedure is recommended to be carried out on ice.

Note: ① Please refer to the instructions for using DNA polymerase for preparation method of reaction solution and PCR amplification conditions.

② For the use of Realtime PCR amplification instrument, please refer to the instructions of each instrument.

Note:

The effect of using concentration on the results of fluorescent PCR

The concentration of SYBR Green I is the key factor to ensure the success of fluorescence quantitative PCR experiment. If the concentration of SYBR Green I is too low, the change of fluorescence signal will be reduced, which means that the sample with low copy may not be detected; At high concentrations, the PCR reaction will be inhibited and the efficiency of PCR reaction will be reduced. Therefore, when using SYBR Green I, the concentration should be optimized according to the actual situation, and the final concentration of the reaction is between 0.2 \times and 1 \times .

The influence of magnesium ion concentration

The inhibitory effect of SYBR Green I on PCR reaction can be reduced by increasing the concentration of magnesium ion. We suggest that the concentration of magnesium ion in the fluorescent PCR reaction with SYBR Green I is 0.5 ~ 3mM higher than that in the ordinary PCR

reaction without SYBR Green I.

Related products:

<i>PC2440</i>	<i>Random</i>
<i>PC2450</i>	<i>Oligo T16</i>
<i>G8142</i>	<i>GoldView Ⅱ type nucleic acid stain (5000×)</i>
<i>SY1040</i>	<i>SYBR Green Ⅱ(10000×)</i>
<i>PC1100</i>	<i>Taq DNA Polymerase</i>
<i>PC1300</i>	<i>Pfu DNA Polymerase</i>
<i>PC2100</i>	<i>dNTPs Mix(2.5mM each)</i>
<i>PC2200</i>	<i>dNTPs Mix(10mM each)</i>

Related literature:

- [1] Baoling Ju, Ying Nie, Xufang Yang, et al. miR-193a/b-3p relieves hepatic fibrosis and restrains proliferation and activation of hepatic stellate cells. *Journal of Cellular and Molecular Medicine*. April 2019. (IF 4.658)
- [2] Wenlin Tai, Shuhao Deng, Wenjuan Wu, et al. Rapamycin attenuates the paraquat-induced pulmonary fibrosis through activating Nrf2 pathway. *Journal of Cellular Physiology*. July 2019. (IF 4.522)
- [3] Hongming Zhang, Moyan Liu, Yuyan Zhang, et al. Trimetazidine Attenuates Exhaustive Exercise-Induced Myocardial Injury in Rats via Regulation of the Nrf2/NF-κB Signaling Pathway. *Frontiers in Pharmacology*. March 2019. (IF 3.845)

Note: For more information on the use of this product, please refer to the Solarbio website.