Superstart qPCR PreMix plus-UNG

Cat.No.:HYA422

Product Description

Superstart qPCR PreMix plus-UNG is a specialized reagent designed for qualitative and quantitative Real Time PCR (RT-qPCR) reactions using the probe-based method. It contains Superstart Taq plus, a novel hot-start enzyme with blocked Taq polymerase activity at room temperature, which effectively inhibits nonspecific amplification caused by primer nonspecific annealing or primer dimers under low-temperature conditions. This enhances the specificity of amplification reactions and delivers more stable detection results for ultra-low concentration templates. Formulated with an optimized qPCR-specific Buffer and a UNG/dUTP anti-contamination system, this reagent generates excellent standard curves over a wide quantitation range, enabling accurate quantification. It effectively prevents false-positive amplification induced by PCR product carryover and aerosol contamination. This reagent is compatible with real-time PCR instruments from most manufacturers, including Applied Biosystems, Eppendorf, Bio-Rad, and Roche.

Components

2×Superstart qPCR PreMix plus-UNG

*This reagent already contains Superstart Taq plus, UNG, PCR Buffer, $MgCl_2$, dNTPs, stabilizers, and other components.

Storage

Store at -20℃ for long-term storage; stable for 3 months at 4℃. Mix thoroughly before use and avoid repeated freeze-thaw cycles.

Instructions

1. Reaction system

Components	25μL Volume	50μL Volume	Final Concentration
2×Superstart qPCR PreMix plus-UNG	12.5 μL	25 μL	1×
25×Primer-Probe Mix*	1 μL	2 μL	1×
Template DNA**	-	-	-
ddH_2O	Up to 25 μL	Up to 50 μL	-

*Typically, a final primer concentration of 0.2 μM yields satisfactory results; if the reaction performance is unsatisfactory, the primer concentration can be adjusted within the range of 0.2–1 μM. Generally, the probe concentration is optimized within the range of 0.1–0.3 μM. Concentration gradient experiments can be performed to identify the optimal combination of primers and probes.

**The copy number of the target gene varies among different types of DNA templates. If necessary, serial dilution can be conducted to determine the optimal amount of DNA template to add.

2. Reaction program

Step	Temperature	Time	Cycles
Digestion	50℃	2 min	1
Pre-denaturation	95℃	1-5 min	1
Denaturation	95 ℃	10-20 s	40-50
Annealing and Extension	56~64℃	20-60 s	

Quality Control

1. Functional Testing: qPCR sensitivity, specificity, and repeatability.
2. Free of extraneous nuclease activity, as well as extraneous endonuclease and exonuclease contamination.

Technical Information

1. Superstart qPCR PreMix plus-UNG incorporates a novel hot-start enzyme, enabling rapid hot start within 1–5 minutes. Formulated with a specially optimized Buffer system, it is compatible with multiplex real-time PCR reactions.
2. It exhibits enhanced specificity and significantly improves the sensitivity for limit detection in real-time PCR. This results in marked improvements in the normalization of amplification

curves and fluorescence values for ultra-low concentration templates, making it suitable for use as a high-sensitivity real-time PCR detection reagent.

3. For primers with low annealing temperatures or amplification of long fragments exceeding 200 bp, the three-step PCR protocol is recommended.
4. Different target genes vary in their dUTP utilization efficiency and sensitivity to UNG enzyme. Therefore, if the use of the UNG system leads to decreased detection sensitivity, the reaction system should be adjusted and optimized accordingly.
5. Use dedicated areas and pipettes for pre- and post-amplification steps. Operate with gloves and replace them frequently. Do not open the reaction tubes after PCR completion to minimize contamination of samples by PCR amplicons.
6. For Research Use Only !