SuperPro Multiplex PCR Mix

Catalog Number: S666084 (1 mL)

Storage condition: -20℃, try to avoid repeated freezing and thawing

Products content

Component	1 mL
2.5×SuperPro Multiplex PCR Mix	1 mL
ddH2O	1 mL

Products Introduction

SuperPro Multiplex PCR Mix is a pre-mixed system for all types of multiplex PCRs at 2.5× concentration, containing DNA polymerase, PCR Buffer, dNTPs, Mg^{2+} as well as stabilizers and enhancers, etc. The product is easy to use and convenient to operate by adding primers and templates, which reduces contamination and improves the throughput and reproducibility of the assay. It reduces the chance of contamination and improves the detection throughput and reproducibility.

The DNA polymerase contained in the SuperPro Multiplex PCR Mix is a genetically engineered recombinant enzyme with 5'→3' DNA polymerase activity and no 5'→3' exonuclease activity. The DNA polymerase has been modified by a new type of antibody and is an antibody-modified hot start enzyme, which can effectively reduce the non-specific amplification caused by the non-specific binding of primers and templates or primer dimers at room temperature, and at the same time, it has the excellent features of short activation time, strong amplification ability, high sensitivity, good stability, etc. The unique PCR buffer system and hot start enzyme can be used for the production of the DNA polymerase. The unique combination of PCR buffer system and hot starter enzyme significantly improves PCR amplification efficiency, sensitivity and inhibitor tolerance.

SuperPro Multiplex PCR Mix has a wide range of applications and is suitable for all types of multiplex PCR, such as microsatellite analysis, amplicon banking, genotyping and SNP detection.

caveat

1. Before use, please mix the product gently by turning it up and down after it has been completely melted and centrifuged for a short period of time.
2. Avoid repeated freezing and thawing of this product, repeated freezing and thawing may degrade the performance of the product. This product can be stored at -20℃ for a long time.

Usage

1. PCR reaction system

Extract the DNA amplification reaction system:

reagents	25 μL system	50 μL system	final concentration
2.5×SuperPro Multiplex PCR Mix	10 μL	20 μL	1×
5×Primer Mix	5 μL	10 μL	1×
Template DNA	X μL	X μL	
ddH2O	Up to 25 μL	Up to 50 μL	

Note: When designing the primers, the difference between the Tm of each primer should be minimized, and the difference should be controlled within 5℃ as much as possible. Please use the final concentration of 0.05-0.2 μM as a reference for setting the range of each primer concentration. If the amplification efficiency is not high, the primer concentration can be increased; if non-specific amplification occurs, the primer concentration can be decreased to optimize the reaction system. For optimal amplification, it is recommended that the primer mixture be vortexed for 10 s and centrifuged briefly before use.

2. **PCR** reaction program

move	temp	timing	circulate
premutability	95°C	2 min	1
denaturation	95°C	10 s	30-40
annealing (metallurgy)	55-65°C	30 s	30-40
reach	72°C	1 kb/min	30-40
ultimate extension	72°C	5 min	1

Attention:

1) In general, the annealing temperature is 5℃ lower than the melting temperature of the amplification primer, Tm. When the desired amplification efficiency cannot be obtained, the annealing temperature should be lowered appropriately; when a non-specific reaction occurs, the annealing temperature should be increased, thus optimizing the reaction conditions.

2) The number of cycles can be set according to the downstream application of the amplified product. If the number of cycles is too low, the amplification amount will be insufficient; if the number of cycles is too high, the chance of mismatch will increase and the non-specific background will be serious. Therefore, the number of cycles should be minimized under the premise of ensuring the product yield.

3) PCR products are easily contaminated by aerosols, which leads to inaccurate and unreliable results. It is recommended to physically separate the PCR preparation area from the PCR reaction area, use special pipettes and other equipment, and clean the experimental areas regularly (using 0.5% sodium hypochlorite or 10% bleach to wipe and clean) to ensure the credibility of the experimental results.