Es Taq DNA Polymerase

Item No. E665597 (500 U)
Storage condition: -20℃

Product content

individual parts making up a compound	E665597 500U
Es Taq DNA Polymerase, 5 U/μl	100 μl
10×PCR Buffer	1.8 ml

Product Introduction

Es Taq DNA Polymerase is an optimized mixture of Taq and Pfu DNA Polymerase with 5′ →3′ DNA polymerase activity, 5′ →3′ exonuclease and 3′ →5′ exonuclease activity. Compared with Taq DNA Polymerase, Es Taq DNA Polymerase has the excellent performance of high amplification efficiency and low mismatch rate, and can amplify DNA fragments with high efficiency. Most of the PCR products amplified by Es Taq DNA Polymerase have an "A" base at the 3′ end, which can be directly used for T/A cloning. This product is suitable for routine PCR reactions and gene cloning reactions that require high fidelity.

Active Definition

The amount of enzyme required to dope 10 nmol of deoxyribonucleotide into acid-insoluble material was defined as 1 activity unit (U) at 74° C for 30 min using activated salmon sperm DNA as template/primer.

Quality control

After several column purification, the purity of the product is greater than 99% by SDS-PAGE; no exogenous nuclease activity is detected; no host residual DNA is detected by PCR; it can effectively amplify single-copy genes in the human genome; and there is no obvious change in the activity after storing it at room temperature for one month.

Usage

The following is an example of a PCR reaction system and reaction conditions for amplifying a 1 kb fragment of human genomic DNA as a template, which should be improved and optimized according to the template, primer structure and size of the target fragment in actual operation.

1. PCR reaction system

reagents	50 μl reaction system	final concentration
10×PCR Buffer	5 μL	1×
dNTP Mix, 10 mM each	1 μL	200 μM each
Forward Primer, 10 μM	2 μL	0.4 μM
Reverse Primer, 10 μM	2 μl	0.4 μM
Template DNA	<0.5 μg	<0.5 μg/50 μl
Es Taq DNA Polymerase, 5 U/μl	0.25-0.5 μl	1.25-2.5U/50 μl
ddH2O	up to 50 μL	/

Note: Please use the final concentration of 0.1-1.0 μM as a reference for setting the range of primer concentration. If the amplification efficiency is not high, the primer concentration can be increased; if a non-specific reaction occurs, the primer concentration can be decreased to optimize the reaction system.

2. PCR reaction conditions

move	temp	timing	/
premutability	94° C	2 min	/
denaturation	94° C	30 s	25-35 cycles
annealing (metallurgy)	55-65° C	30 s	25-35 cycles
reach	72° C	30 s	25-35 cycles
At last, an extension.	72° C	2 min	/

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 extension time should be set according to the size of the amplified fragment, and the amplification efficiency of Es Taq DNA Polymerase of this product is 2 kb/min.

3) 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 amount of amplification 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.