Tribioscience

Golden Star Taq DNA Polymerase

Catalog	Unit
TBP0151-500	500U
TBP0151-2500	2500U

Description

Golden Star Taq DNA Polymerase is an innovative, chemically modified version of standard Taq polymerase. The enzyme remains completely inactive at room temperature, effectively eliminating non-specific amplification events such as primer-dimers. Golden Star Taq DNA polymerase is immediately compatible with T/A cloning vectors without the need for additional manipulation or gel purification. This enzyme is versatile across numerous molecular biology techniques, including conventional PCR, RT-PCR, real-time (qPCR), multiplex PCR, gene chip analysis, and SNP detection, particularly when high specificity is required.

Product Details

Purity: 99% by SDS-PAGE
Storage: -20°C

Components

Component	500U	2500U
Golden Star Taq DNA Polymerase, 5U/μl	100μl	5×100μl
5×Golden Star Taq PCR Buffer	1.9ml	5×1.9ml

Note: The 5×Golden Star Taq PCR Buffer of this product contains 8.5mM magnesium ions.

Protocol

The following examples are the PCR reaction system and reaction conditions for the amplification of 1kb fragment using human genomic DNA as template. In actual operation, corresponding improvements and optimization should be made according to the template, primer structure and the size of the target fragment.

1. PCR Reaction System

Reagent	50μL Reaction System	Final Concentration
5×Golden Star Taq PCR Buffer	10μl	1×
dNTP Mix, 10mM each	1μl	200μM each
Forward Primer, 10μM	2μl	0.4μM
Reverse Primer, 10μM	2μl	0.4μM
Template DNA	<0.5μg	0.2 mM
Golden Star Taq DNA Polymerase, 5 U/μl	0.5μl	2.5 U/50μl
ddH_2O	up to 50μl	

Note: Primer concentration, please use final concentration 0.1-1.0μM as reference for setting range. When the amplification efficiency is not high, the primer concentration can be increased. When nonspecific reactions occur, the concentration of primers can be reduced to optimize the reaction system.

2. PCR Reaction Program

Step	Temperature	Time	Cycles
Pre denaturation	95°C	10min	
Denaturation	95°C	30s	30-40 cycles
Annealing	55-65°C	30s	
Extend	72°C	1min	
Final extension	72°C	5min	

Note:

1) In general experiments, the annealing temperature is 5°C lower than the melting Temperature Tm of the amplification primer, and the annealing time is generally 30-60s. If the desired amplification efficiency cannot be obtained, the annealing temperature should be appropriately reduced; When the nonspecific reaction occurs, the annealing temperature is increased to optimize the reaction conditions.
2) The extension time should be set according to the size of the amplified fragment. The Golden Star Taq DNA Polymerase included in this product has an expansion efficiency of 1-2KB /min.
3) Cycle number can be set according to downstream application of amplified products. If the number of cycles is too small, the increment of expansion is insufficient; If the number of cycles is too high, the mismatch rate will increase, and the non-specific background will be serious. Therefore, the number of cycles should be reduced as far as possible under the premise of ensuring the product yield.
4) The product must be pre-denaturated at 95°C for 10 min under the condition of enzyme Activation.

For research use only

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