Product Manual

Product Name	Taq DNA Polymerase
Source	Recombinant expressed in E. coli
Catalog Number	CSB-DEM023
Physical Form	Liquid
Enzyme Activity	5U/μL
Storage Conditions	-20 ±5°C
Molecular Weight	94 kDa
Storage Buffer	10 mM Tris-HCl, 100 mM KCl, 1 mM DTT, 0.1 mM EDTA, 0.5% Tween 20, 0.5% NP-40, 50% Glycerol
Activity Definition	The amount of enzyme required to incorporate 10 nmol of deoxynucleotide into acid-insoluble material within 30 min at 75°C is defined as one unit of activity (U).
Quality Control	No detectable exonuclease and endonuclease activities
Shelf Life	24 months

Product Description

Taq DNA Polymerase is a recombinant expressed thermostable DNA polymerase with 5'-3' polymerase activity and 5'-3' exonuclease activity. It is suitable for both regular PCR and fluorescence quantitative PCR (SYBR Green dye method, probe method) when used with an optimized buffer system. It is also tolerant to dUTP, dITP, and fluorescently labeled nucleotides. The PCR product generated has a single dA nucleotide overhang at the 3' end, making it directly applicable for TA cloning.

Product components

Component No.	Component Name	Specifications		
1	5×PCR buffer	1.2mL	6mL	12mL
2	Taq DNA Polymerase	500U	2500U	5000U

Operating instructions

Recommended Reaction System

Component	Volume
ddH_2O	Up to 30 μL
5× PCR Buffer	6 μL
10 mM dNTPs	0.6 μL
Upstream Primer (10 μM)	0.6 μL
Downstream Primer (10 μM)	0.6μL
Template DNA	X μL
Taq DNA Polymerase	0.5 μL

Note:

a. Primer concentration:

In general, a final primer concentration of 0.2 μM in the reaction system produces good results.If the reaction performance is poor, adjust the primer concentration within the range of 0.1 μM to 1.0 μM.

b. Template concentration:

For animal and plant genomic DNA, use 0.1-1 μg; for E. coli genomic DNA, use 10-100 ng; for λDNA, use 0.1-10 ng; for plasmid DNA, use 0.1-10 ng. If the template is undiluted cDNA, the volume used should not exceed 1/10 of the total volume of the qPCR reaction.

c. Polymerase concentration:

It is recommended to use 0.05 U/μL. The enzyme amount can be adjusted between 0.25-1 μL. Increasing the enzyme amount can generally improve the amplification yield, but it may reduce specificity.

d. Fluorescence quantitative PCR:

When using this product for fluorescence quantitative PCR, add a final concentration of 1× SYBR Green I (dye method) or 0.3 μL 10 μM TaqMan Probe (probe method) to the recommended system.

Recommended PCR Reaction Program

Temperature	Time	Cycles
95°C	3 min	1
95°C	30 s	
45-68°C	30 s	30-35
72°C	1 kb/min	
72℃	5min	1

Note:

e. Fluorescence quantitative PCR program (dye method):

95°C for 2 min; 95°C for 10 s, 56°C for 30 s＊, 40 cycles; Melt Curve Stage.

f. Annealing temperature and time:

The annealing temperature should be adjusted based on the primer's Tm value, generally set to 3-5°C below the primer's Tm value.The recommended annealing time is 20 sec, which can be adjusted within the range of 10-30 sec.