

Catalog	Unit
TBP0146-500U	500U
TBP0146-2500U	2500U

Description

mTaq DNA Polymerase is a variant of Taq polymerase featuring a specific deletion of an amino acid segment at the N-terminus along with targeted point mutations. Like conventional Taq, it retains terminal transferase activity that results in PCR products with a single 3'-A overhang—making it immediately suitable for T/A cloning applications.

Product Details

Purity: 99% by SDS-PAGE

Storage: -20°C

Components

Component	2500U
mTaq DNA Polymerase, 5 U/μl	5×100μl
mTaq PCR Buffer, 10×	5×1.8ml
Note: mTaq PCR Buffer contains 30mM MgCl ₂ .	

Protocol

1. Reverse the mTaq DNA Polymerase repeatedly until it is thoroughly mixed before use.
2. Put the PCR thin-walled tube on ice and add the following reagents except the whole blood.

PCR Reaction System

Reagent	50μL Reaction System	Final Conc.
mTaq DNA Polymerase	1μl	
mTaq PCR Buffer, 10×	5μl	1×
dNTP Mix, 2.5mM each	4μl	200μM each
Forward Primer (10μM)	2μl	0.4μM
Reverse Primer (10μM)	2μl	0.4μM
*Whole Blood	≤10%	
RNase-Free water	xμl	
Total	50μl	

Note:

- 1) Before adding the whole blood, suck up and down repeatedly and mix all kinds of reagents thoroughly.
- 2) DNA template: Whole blood can be treated with heparin sodium, Na-EDTA, K-EDTA, or sodium citrate. A whole blood level of 5-10% is usually recommended. High concentrations of blood are not recommended. For templates with high GC content, 10% DMSO was added.
- 3) Primers: The length of oligonucleotide primers usually contains 20-30 nucleotides, and the optimal GC content is 40-60% and evenly distributed in the primers. In conventional PCR reactions, primer concentrations should be 0.1-1.0μM as a reference for the set range.

3. Finally, add the whole blood to the bottom of the tube.

4. PCR reaction conditions

Step	Temperature	Time	Cycles
Predenaturation	95°C	5min	
Denaturation	95°C	30sec	35-40
Annealing	50-68°C	30sec	35-40
Extend	72°C	250-500bp/min	35-40
Final extension	72°C	10min	

Note:

- 1) Preheat the PCR instrument to 94-95°C, place the sample on the PCR instrument and start the cycle.
 - 2) mTaq improves cold sensitivity and has some hot start characteristics. Reaction ingredients can usually be prepared on ice, and finally Nonspecific products were avoided by adding polymerase and preheating the thermocycler to denaturation temperature (95°C).
 - 3) Denaturation temperature and time: In order to fully lysate blood cells and release/denature DNA prior to PCR cycle, the initial denaturation is required to be 95°C for 5 minutes.
 - 4) Annealing temperature and time: the annealing time is usually 30 seconds - 1 minute. The annealing temperature can be 5°C lower than the theoretical annealing temperature (T_m) and optimized by gradient PCR.
 - 5) Elongation time: the elongation reaction is usually carried out at 72°C. Generally, the stretch time is 1 minute every 250-500 bp. The final extension is recommended at 72°C for 10 minutes.
 - 6) Usually 35-40 cycles can achieve optimal amplification
5. Result detection: After the reaction, 5μL reaction product was taken and electrophoresis buffer was added to detect the result.

For research use only