TOOLS *Taq* DNA polymerase

Storage: -20℃

Product information:

Components	ETT-BA01	ETT-BA01-4
TOOLS *Taq* DNA polymerase	500 U (2.5 U/μL)	500 U (5 U/μL)
10x TOOLS *Taq* buffer	1.8 mL	-
10x TOOLS *Taq* buffer (Mg^{2+} free)	-	1.8 mL
$MgCl_2$ (25 mM)	-	1.8 mL

Introduction

TOOLS *Taq* DNA Polymerase is a recombinant 94 kDa DNA polymerase expressed in an *Escherichia coli* strain that carries the DNA polymerase gene cloned from *Thermus aquaticus*. It has both 5′→3′ polymerase and exonuclease activities and has no detectable 3′→5′ exonuclease activity. The extension rate of TOOLS *Taq* DNA Polymerase is 1–2 kb/min in PCR. In addition, it has a 3' adenylation activity. Thus, the PCR products can be used directly in TA-cloning procedures.

Unit Definition

One unit of TOOLS *Taq* DNA Polymerase is defined as the amount that incorporates 10 nmol of dNTPs into acid-insoluble material within 30 min at 74 °C with activated salmon sperm DNA as the template primer.

Storage Buffer

20 mM Tris-HCl (pH 8.0), 0.1 mM EDTA, 1 mM DTT, 100 mM KCl, stabilizers, 50% glycerol

10× TOOLS *Taq* Buffer

200 mM Tris-HCl (pH 8.4), 200 mM KCl, 100 mM $(NH_4)_2SO_4$, 15 mM $MgCl_2$

- There are two types of 10× TOOLS *Taq* buffers that can be chosen, as follows.
- Mg^{2+}plus and Mg^{2+}free: Mg^{2+}free buffer is supplied with 25 mM $MgCl_2$ solution separately.
- Unless specifically requested, Mg^{2+}plus buffer is supplied as a regular component.

Applications

This product is suitable for PCR amplification of DNA fragments, DNA labeling, primer extension, DNA sequencing, and addition of additional A at the 3′-end of the PCR products. PCR products with A-tailing at the 3′-end are suitable for TA cloning.

Protocol

1. To set up a 50-µL PCR reaction system: A 1-kb fragment of human genomic DNA was amplified (if using a different reaction system, proportionally increase or reduce the amount of reaction components).

Template	<1 µg
Primer 1(10 µM)	1 µL
Primer 2(10 µM)	1 µL
10× TOOLS *Taq* Buffer	5 µL
dNTP Mixture(2.5 mM)	4 µL
TOOLS *Taq* (2.5 U/µL)	0.5–1 µL
ddH_2O	Up to 50 µL

2. PCR cycle set-up：

94℃	3 min	
94℃	30 sec	30 cycles
55℃	30 sec	
72℃	1 min	
72℃	5 min	

3. Result detection: Load 5 µL of PCR products to agarose gel for detection.

Note: The example is only for reference; users must set up an optimal reaction system according to different reaction conditions such as different templates or primers.

This product is for research only, not for diagnostic and clinical use.