

Ver. 1.0

Cat. No. 502 - 025

Storage at : - 20°C

Lot. No. A0000BCD

Expiration date : 2000.00.00

Description

Clean α -Taq DNA polymerase is a suitable enzyme for long and accurate PCR. It has a high fidelity and productivity than Taq DNA polymerase. Clean α -Taq DNA Polymerase are thermostable enzymes to minimize the contamination of genomic DNA using new purification method. There is no *E. coli* genomic DNA contamination in the amplification (over 40 cycles) using *E. coli* 16S RNA primer. Most PCR products that amplified with α -Taq DNA polymerase, have one A added at 3' termini.

Components

10X Clean α -Taq reaction buffer (with 25 mM Mg ²⁺)	1 vial (800 μ l)
dNTP mix (2.5 mM each)	1 vial (500 μ l)
HQ buffer	1 vial (500 μ l)

Purity

exonuclease activity	None detected
endonuclease activity	None detected
protease activity	None detected
SDS-PAGE	single band

Unit definition

One unit is the amount of α -Taq DNA polymerase required to incorporate 10 nmol of dNTP into acid-insoluble product in 30 minutes at 72 °C

Storage buffer

50 mM	Tris-HCl (pH 7.9)
50 mM	KCl
0.1 mM	EDTA
1 mM	DTT
0.5 mM	PMSF
50 %	glycerol (v/v)

Thermal PCR condition

95 °C	2 min	
95 °C	20 sec	} 30 - 35 cycles
A °C	10 sec	
72 °C	B min	
72 °C	2 - 5 min	

A : The value is 4 ~ 6 lower than Tm of primers

$$T_m = 2(A+T) + 4(G+C)$$

B : below 3 kb 0.5 - 1 min/kb
more than 3 kb 1 - 2 min/kb

Reaction mixture

10X Clean α -Taq reaction buffer	5 μ l
(optional : HQ buffer)	5 - 20 μ l
dNTP mix (2.5 mM each)	4 μ l
primer 1	5 - 10 pmol
primer 2	5 - 10 pmol
template	- μ l
Clean α -Taq (2.5 U/ μ l)	0.5 - 1 μ l
DW	up to 50 μ l

HQ buffer

- In GC-rich reaction, HQ buffer increases the activity of α -Taq DNA polymerase.
- HQ buffer removes a hair-pin structure of GC-rich region.
- The dilution factor of HQ buffer is variable, 0.5x - 2x, depending on a case by case basis.
- We recommend to use of HQ buffer in PCR reaction of long-size target.

HQ buffer (example)

reaction vol.	20 μ l	50 μ l
0.5X HQ	2 μ l	5 μ l
1X HQ	4 μ l	10 μ l
1.5X HQ	6 μ l	15 μ l
2X HQ	8 μ l	20 μ l

End note : For research use only. Not for use in diagnostic or therapeutic procedures.