AmpONE™ Hot Start Taq DNA polymerase

Ver. 1.00

Cat. No. 531 - 025 (250 Units)

Storage at : -20 °C

Lot. No. A12B34CD

Expiration date : 0000.00.00

Description

HS-Taq DNA polymerase is purified from the cloned *Thermos aquaticus* DNA polymerase gene expressed in *E. coli*. It has supplied to inactivated form, but in PCR reaction, it has restored the activity at above annealing temperature. The hot start PCR technique enhances specificity, sensitivity, yield of PCR amplification. It is recommended for use in routine PCR, real-time PCR and TA cloning.

Components

10X HS-Taq reaction buffer (with 25 mM Mg^{2+})	1 vial (800 μℓ)
dNTP mix (2.5 mM each)	1vial (500 μℓ)
HQ buffer	1 vial (500 μℓ)

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 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)

Reaction mixture (example)

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

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
Tm = 2 (A+T) + 4 (G+C)

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

HQ buffer

- In GC-rich reaction, HQ buffer increases the activity of 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 μℓ	50 μℓ
0.5X HQ	2 μℓ	5 μℓ
1X HQ	4 μℓ	10 μℓ
1.5X HQ	6 μℓ	15 μℓ
2X HQ	8 μℓ	20 μℓ

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