AmpONE™ *Taq* DNA Polymerase

Ver 3.1

Cat. No. 501-025 (250 Units)
501-050 (500 Units)
501-100 (1,000 Units)

Storage at -20°C

Disclaimer

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

Description

AmpONE™ *Taq* DNA Polymerase is a highly purified recombinant enzyme that expresses the *Thermus aquaticus* DNA polymerase gene in *Escherichia coli* (*E.coli*) and is used for conventional PCR experiments. This polymerase is a thermostable DNA polymerase, and is suitable for the amplification of fragments up to 5 kb from template. Also, this polymerase has 5′ → 3′ polymerase activity, but no 3′ → 5′ exonuclease (proofreading) activity.

AmpONE™ *Taq* DNA Polymerase can be used in various experiments such as conventional PCR, DNA sequencing, TA cloning, and etc.

Quality Control

No endonuclease activity, nicking activity, exonuclease activity, or priming activity has been detected.

Components

Cat. No. (Unit *)	501-025 (250 U)	501-050 (500 U)	501-100 (1,000 U)
Taq DNA Polymerase (5 U/μl)	50 μl x 1 tube	501-025 x 2	501-025 x 4
10X Reaction Buffer	1.0 ml x 1 tube		
2.5 mM dNTP Mix	0.8 ml x 1 tube		
6X Loading Dye **	1.0 ml x 2 tubes		

*** Unit Definition**

1 unit is the amount of AmpONE™ *Taq* DNA Polymerase required to incorporate 10 nmol of dNTP into acid-insoluble product in 30 minutes at 75°C.

**** 6X Loading Dye**

Please mind that 6X Loading Dye should not be mixed with PCR reaction mixture which may inhibit PCR reaction.

Storage Condition

Stable for 18 months when all components are stored in a frost-free freezer at -20ºC.

Storage Buffer (pH 7.5 at 25°C)

20 mM Tris-HCl, 1 mM dithiothreitol (DTT), 0.1 mM EDTA, 100 mM NaCl, 50% glycerol, Stabilizer

10X Reaction Buffer

10X Reaction Buffer is optimized for use with 0.2 mM for each of dNTPs.

Applications

Conventional PCR (up to 5 kb), TA cloning, Colony PCR

Recommended PCR Mixture

The volume of components for 20 μl or 50 μl PCR reaction:

Components	Reaction Volume	
	20 μl	50 μl
10X Reaction Buffer	2 μl	5 μl
2.5 mM dNTP Mix	1.6 μl	4 μl
Forward primer (10 pmol/μl)	0.8 μl	2 μl
Reverse primer (10 pmol/μl)	0.8 μl	2 μl
Template DNA (up to 500 ng)	-	-
Taq DNA polymerase (5 U/μl)	0.1 μl	0.25 μl
Add D.W. to	20 μl	50 μl

PCR Conditions

Step	Temp.	Time	Cycles
Initial Denaturation	95°C	5 min	1
Denaturation	95°C	30 sec	25~40
Annealing	**A**	30 sec	
Extension	72°C	**B**	
Final Extension	72°C	5 min	1
Cooling	4°C	∞	-

A: Recommended annealing temperature: 50~65°C
The value is 4-6 lower than Tm of primers
Tm = 2 (A+T) + 4 (G+C)

B: Recommended extension time: 10~60 sec
1 min/kb (the size of target PCR product)