TLA DNA Polymerase

Cat. No. : E-3200

Lot No. : 0702

- **Description :** TLA DNA Polymerase is derived from novel *Thermococcus onnurineus* NA1 and is thermostable DNA polymerase having 3 '- 5' exonuclease (proofreading) activitys. TLA DNA polymerase shows the superior fidelity than *Pfu* DNA polymerase or Vent DNA polymerase and has the amplification efficiency like *Taq* DNA polymerase. Also, TLA DNA polymerase can reduce the reaction time since it has three times to five times higher processivity than *Pfu* DNA polymerase. TLA DNA polymerase produces blunt-ended PCR products, making it ideal for blunt-ended cloning projects.

- **Unit Definition :** One unit is defined as the amount of enzyme required to catalyze the incorporation of 10 nmoles of dNTP into acid-insoluble material in 30 minutes at 72 °C.

- **Applications :** Polymerase Chain Reaction(PCR).
Primer extension.
PCR cloning or the gene synthesis requested high fidelity.

- **Concentration :** 2.5 units/ul

- **Volume** 100 ul

- **Supplied with :** 10X Reaction Buffer (1 mL) : Contains Tris-HCl, KCl, 10 mM $MgCl_2$, pH 9.5
Enzyme Dilution Buffer (0.5 mL) : Tris-HCl, EDTA, DTT, KCl, Stabilizers, 50 % Glycerol, pH 8.0
dNTPs Mixture (1 mL) : 10 mM, each dNTP 2.5 mM

- **Storage Condition :** Store at -20°C.

- **Quality Assurance :** Nuclease activity is not detected after incubation of 1 ug of substrate DNA – supercoiled plasmid and lambda/*Hin*dIII DNA - with 5 units of TLA DNA Polymerase in 50 ul reaction volume with the supplied Reaction buffer for 18 hr at 37 °C and 70 °C.

- **General Reaction Condition & Recommended Cycling parameter**

Components	Each concentration	20 ul reaction volume	50 ul reaction volume
TLA DNA polymerase	0.05 units/ul	0.4 ul	1 ul
10 X reaction buffer	1 X	2 ul	5 ul
dNTPs Mixture	Each 0.2~0.25 mM	1.6 ul~2 ul	4~5 ul
Primer (5 pmole/ul)	Each 0.25~1 uM	1~4 ul	2.5~10 ul
D.W.	Variable	Variable	Variable
Template DNA*	Variable	Variable	Variable
Total volume		20 ul	50 ul
Step	Temperature	Time	Number of cycles
Initial Denaturation	95 °C	5 min	1 cycle
Denaturation	94 °C	0.5~1 min	25~35 cycles
Annealing	45~65 °C	0.5~1 min	
Extension	72 °C	1 min/ kb	
Final extension	72 °C	5~10 min	1 cycle
In case of long PCR, it is recommended to use two-step PCR methods.			
Initial Denaturation	94 °C	2~5 min	1 cycle
Denaturation Annealing/extension	94 °C 68 °C	30 sec 1~2 min/kb	The cycle number is dependent on the amount of template DNA
Final Extension	72 °C	5 min	1 cycle

* concentration of template DNA : 1 pg~100 ng of plasmid DNA, 1 ng~500 ng of human DNA

Note

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