SupraTaq DNA Polymerase

CATALOG NO. DP-001-0020, 200 units, 5 units/µl
DP-001-0050, 500 units, 5 units/µl

APPLICATION

- SupraTaq DNA polymerase is the best enzyme for everyday routine PCR applications;
- suggested for standard PCR, thermosequencing and for other research and diagnostic applications;
- for single copy gene and very low-abundance template (less then 100 DNA molecules of template) amplification, we suggest to use our super robust DNA amplification enzyme system, EU-Taq, HotStart PCR Ready Mix, and Platinum Taq DNA polymerase.

DESCRIPTION

SupraTaq DNA Polymerase is a thermostable DNA polymerase purified from the Thermus aquaticus strain by several rounds of liquid chromatography. The purity of SupraTaq DNA Polymerase is more then 90% of the total protein in the preparation. Amplification of DNA fragments (100 bp to 5 kb) can be achieved with it. The enzyme has both, 5'-3' polymerase- and 5'-3'exonuclease activities. SupraTaq DNA polymerase can add a single template-directed deoxyadenosin (A) residue to the 3' end of duplex PCR products. This property allows easy and efficient ligation of PCR products in TA cloning vectors.

CONCENTRATION

5 units/µl

STORAGE BUFFER

10 mM K-phosphate buffer pH 7.0, 100 mM NaCl, 0.5 mM EDTA, 1 mM DTT, 0.01% Tween 20; 50% glycerol (v/v)

STORAGE TEMPERATURE

Store SupraTaq DNA Polymerase below 0℃, preferably at -20℃, in a constant temperature freezer.

10X REACTION BUFER I

160 mM $(NH_4)_2SO_4$, 670 mM Tris-HCl pH 8.8 (at 25°C), 15 mM $MgCl_2$, 0.1% Tween 20.

1 ml 10x reaction buffer (contains 15 mM MgCl 2) Cat. No. DP-200-0022.

QUALITY CONTROL

SupraTaq DNA Polymerase was tested for the absence of unspecific endo- and exonucleases activities.

Guide of PCR Amplification

Set-up of a Standard PCR Reaction	
Component	Amount
ddH_2O	- µl
10x buffer	10 µl
dNTP (25 mM)	0.8 µl
DNA template	1 ng-1 µg
Primer 1 (20 µM)	5 µl
Primer 2 (20 µM)	5 µl
Taq DNA polymerase (5 units/µl)	0.4-2 µl
Total volume	100 µl

Note:

1. Mg^{2+} concentration varies in different PCR reaction buffer system. For amplification of genomic DNA sequence, the optimal Mg^{2+} should be determined by adding Mg^{2+} to a final concentration of 1.5 mM to 4.5 mM;
2. The amount of DNA template required varies depending on the type of DNA being amplified. Generally, 50 ng to 1000 ng of genomic DNA is recommended; Less DNA (1 ng-100 ng) can be used for amplification of plasmid DNA, purified DNA, and virus DNA;
3. Primer concentration between 0.2 µM and 1 µM are recommended (approximately 100 ng to 250 ng for typical 18- to 25-mer oligonucleotide primers in 100 µl reaction volume).
4. The amount of Taq DNA polymerase varies depending on the length of template to be amplified. Successful amplification can usually be achieved using 2-5 units of enzyme/100 µl reaction volume (higher for long template amplification).

Standard Temperature cycling Program		
1. 93°C	**3 min**	
2. 93°C 55-65°C 72°C	**30-60 sec** **30-60 sec** **2 min (add 1 min per kb target sequence length)**	**25-35 Cycles**
3. 72 °C	**5 min**	
4. 4 °C		

Note:

1. High quality thin-wall PCR tubes, strips, and plates are highly recommended for getting a consistent and duplicable PCR results. This is particularly important when amplification volume is less than 20 µl. EU thin-wall tubes can produce the most reliable results and the amplification volume can be as low as 5 µl.
2. The typical annealing temperature is between 55 °C and 72 °C. The optimal annealing temperature could be calculated by “Tm - 5 °C”

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