VioTaq™ DNA Polymerase

(VT1001)

***Description*:**

Recombinant VioTaq DNA Polymerase is expressed and purified from *E. coli* to a very high homogeneity without nuclease contamination. It consists of a single polypeptide with a molecular weight of about 92 kD. VioTaq is thermostable at 95 ℃ with a half-time of 30 minutes and replicates DNA at 70-74 ℃. This enzyme has 5'-3' exonuclease and extra A addition activity without 3'-5' exonuclease activity. It has a remarkable DNA polymerization activity with a very low error frequency (~10^{-5}). VioTaq DNA polymerase is most suitable for large-scale PCR screening at a low cost.

***Product Contents*:**

VioTaq DNA Polymerase (stored at -20 ℃), 500 U (2.5 U/μl); 10X PCR Buffer, containing 20 mM $MgCl_2$.

***Storage Buffer*:**

20 mM Tris-HCl, pH 8.0; 0.1 mM EDTA;
1 mM DTT; 1.0% Triton X-100; 50% glycerol

***Unit Definition*:**

One unit incorporates 10 nmole of dNTP into acid-precipitable material in 30 minutes at 74 ℃.

***Basic PCR protocol*:**

1. Suggested set-up of a PCR reaction

Components	***Volume***	***Final Conc.***
10X PCR buffer plus $MgCl_2$	5 μl	1X (with 2.0 mM $MgCl_2$)
10 mM each dNTP	1 μl	0.2 mM each
10 μM 5' Primer	2.5 μl	0.5 μM
10 μM 3' Primer	2.5 μl	0.5 μM
Template DNA	1-10 μl	< 0.5 μg
VioTaq (2.5 U/μl)	1 μl	2.5 U
Add sterile ddH_2O to	50 μl (Final volume)	

2. Mix contents and overlay with 50 μl of mineral oil. When using a thermal cycler with a heated lid, do not need to add mineral oil.

3. Suggested PCR amplification cycles

Initial Denaturation: 94 ℃ for 3-5 min.
Run 25-35 cycles of the following steps:
*Denature at 94 ℃ for 30-60 sec.
*Anneal at Temp (start as 5 ℃ below Tm) for 1 min.
*Elongate at 72 ℃ for 1 min. (for 1-2 kb product)
(Adjust elongation time based on product size, 1-2 kb per 1 min.)
Final Elongation: 72 ℃ for 10 min.
Maintain at 4 ℃ or store at -20 ℃.