Instructions for Taq plus DNA Polymerase

Item number: PC1200
Specification: 500U/1000U
Concentration: 5U/μL
Storage: -20℃ storage, valid for at least one year.

Product Information:

Taq Plus DNA Ploymerase is a mixture of Taq enzyme and Pfu enzyme with both 5 '→ 3' exonuclease activity and 3 '→5' exonuclease activity. Taq Plus DNA Ploymerase combines the high efficiency of Taq DNA Ploymerase with the high fidelity of Pfu DNA Ploymerase. Compared with Taq enzyme, Taq Plus DNA Ploymerase has the advantages of increased amplification length (up to 10kb of effective amplification length for template) and good fidelity. Compared with Pfu enzyme, TAQ Plus DNA ploymerase has the advantages of fast amplification speed and high reaction efficiency. It is often used for PCR amplification with high fidelity and complex template structure (such as high GC content and secondary structure, etc.). The PCR products can be directly cloned by TA. If it is necessary to improve the cloning efficiency, it is recommended to purify them first and add A before TA cloning.

Activity definition:

1 unit (U) Taq plus DNA Polymerase activity is defined as the amount of enzyme required to incorporate 10 nmol of deoxynucleotides into an acid-insoluble substance using activated salmon sperm DNA as a template at 74℃ for 30min.

Quality control:

The purity of Taq plus DNA Polymerase was more than 99% according to SDS-PAGE. No exogenous nuclease activity was detected. No host residual DNA was detected by PCR. It can effectively amplify single copy genes in human genome. Stored at room temperature for a week, no significant activity changes.

Enzyme storage buffer:

20mM Tris-HCl (pH 8.0); 0.1mM EDTA; 1mM DTT; 100mM KCl; 50% glycerol; Other ingredients.

Scope of application (for reference only) :

For the high-fidelity amplification of DNA, such as gene expression cloning, gene site-specific mutation, intracellular gene point mutation analysis (SNP) and end complement equality.

It is recommended that PCR system (taking 50μl reaction system as an example)

Template	<0.5μg
Upstream primer (10μM)	1μL
Downstream primer (10μM)	1μL
10×Buffer (including Mg^{2+})	5μL
dNTP (2.5mM each)	4μL
Taq plus DNA Polymerase	0.5-1μL
ddH_2O up to 50μL	

What to watch for:

1. When adding samples for PCR reaction system, Taq Plus DNA Ploymerase is added in the last step, and the whole process should be operated on ice.

2. When taking Taq DNA Ploymerase for PCR reaction, please use autoclave treated suction heads.

3. The 10 x Taq Plus Buffer contains 15mM Mg^{2+}. If a higher concentration of Mg^{2+} is required for PCR reaction, please add it separately.

4. In general, Taq Plus DNA Ploymerase can amplify fragments below 10kb very well. Whether it can successfully amplify longer fragments is mainly related to the structure of the template and the design of the primer. If it is difficult to expand and grow fragments, it is better to use Long Taq DNA Ploymerase.

Related products:

PC1220	*2 x Taq Plus PCR MasterMix (with dye)*
PC1300	*Pfu DNA Polymerase*
PC2200	*dNTPs Mix(10mM each)*
D1020	*10 x DNA loading buffer*
T1060	*50 x TAE buffer*
G8142	*GoldView Type II Nucleic Acid Stain (5000×)*