Cat.:E07-NA

Superstart Taq plus DNA Polymerase-Low DNA

V01

Product Description

Superstart Taq plus DNA Polymerase-Low DNA is a new hot-start enzyme product developed by our company. This product not only effectively suppresses nonspecific reactions caused by non-specific primer annealing or primer dimers during PCR system preparation and amplification, thereby delivering superior performance in multiplex amplification, but also optimizes amplification of extremely low-concentration templates to yield higher product yields and achieve more stable ultra-low-temperature amplification results. This product has undergone special processing to ensure the absence of DNA residues and is suitable for the development of detection reagents related to biopharmaceuticals.

Size

5 U/μL

Components

1. 5 U/μL Superstart Taq plus (DG)
2. 10×PCR Buffer Ⅱ (Mg^{2+} free)（optional）
3. 25 mM $MgCl_2$（optional）

*10× PCR Buffer II (Mg^2 free) does not contain dNTPs or Mg^{2+}; please add dNTPs and $MgCl_2$when preparing the reaction mixture.

Unit Definition

At 74°C for 30 minutes, using activated salmon sperm DNA as a template/primer, the amount of enzyme required to incorporate 10 nmol of deoxynucleotides into acid-insoluble material is 1 unit of activity (U).

Storage

Store at -20±5°C. Vortex before use. Avoid freeze-thaw cycles.

*If precipitation occurs after refrigeration, this is normal; it is recommended to allow the product to reach room temperature before mixing and use.

Quality control

1. SDS-PAGE electrophoresis purity no less than 98%.
2. Amplification sensitivity, between-batch difference, and stability.
3. No exogenous nuclease activity, no exogenous endo/exonuclease contamination.

Prepare Reaction Mix

Components	Volume per Reaction	Final Concentration
10×PCR Buffer Ⅱ (Mg^{2+} free) [1]	5 μL	1×
dNTPs (10 mM each)	1 μL	200 μM
25 mM $MgCl_2$	2-8 μL	1-4 mM
5 U/μL Superstart Taq plus (DG)	0.25-0.5 μL	1.25-2.5 U/Reaction
25×Primer Mix [2]	2 μL	1×
Template	——	＜1 μg/Reaction
ddH_2O	To 50 μL	——

1. This Buffer does not contain dNTP or Mg^{2+}. dNTPs and MgCl2 must be added before use.
2. If used for qPCR/qRT-PCR, fluorescent probes need to be added to the reaction system. The final concentration of primers is usually 0.2 μM for better results. when the reaction performance is poor, the primer concentration can be adjusted within the range of 0.2-1 μM. The probe concentration is usually optimized in the range of 0.1-0.3 μM. Concentration gradient experiments can be performed to find the best combination of primers and probes.

Reaction Programe

Fast PCR Program			
Procedure	Temp.	Time	Cycle
Hot Start	95°C	1-5 min	1
Denaturation	95°C	10-20 s	35-50
Annealing and Extension	56-64°C	20-60 s	

Standard PCR Program			
Procedure	Temp.	Time	Cycle
Hot Start	95°C	1-5 min	1
Denaturation	95°C	10-20 s	35-50
Annealing	56-64°C	10-30 s	
Extension	72°C	10-60 s	

Notes

1. Capable of rapid hot start at 95°C or 94°C for 1–5 minutes.
2. Highly adaptable system with superior specificity and sensitivity.
3. Yields higher product quantities in standard PCR; in quantitative PCR, it significantly improves the linearity of amplification curves and fluorescence intensity for templates at extremely low concentrations; Suitable for use as a high-sensitivity PCR detection reagent and for multiplex PCR amplification reactions.
4. Possesses 5′-3′ polymerase activity and 5′-3′ exonuclease activity; lacks 3′-5′ exonuclease activity and has no proofreading function.
5. Suitable for qualitative and quantitative detection in standard PCR and RT-PCR.
6. The 3′ end of the PCR product is A, allowing the product to be directly cloned into a T-vector.
7. For primers with lower annealing temperatures or for amplifying fragments longer than 200 bp, we recommend using the Standard PCR Program.