Cat.:FE07-NA

Superstart Taq plus DNA Polymerase-Low DNA (Glycerol-Free) V01

Product Description

Superstar Taq plus DNA Polymerase-Low DNA (Glycerol-Free) is a specialized enzyme optimized and formulated to meet the specific requirements of lyophilized reagents. It is a novel hot-start enzyme independently developed by our company. This product effectively suppresses non-specific reactions arising from primer mispriming or primer-dimer formation during PCR system preparation and amplification processes, delivering superior performance in multiplex amplification. Meanwhile, it enables optimized amplification of ultra-low-concentration templates, provides higher target product yields, and achieves more stable results in limit-of-detection amplification. Manufactured via a specialized process, this product is free of residual genomic DNA and is suitable for the development of detection reagents in biopharmaceutical applications.

Size

5 U/μL

Components

1. Superstar Taq plus DNA Polymerase-Low DNA (Glycerol-Free)
2. 10×PCR Buffer Ⅱ (Mg^{2+} free) (optional))
3. 25 mM $MgCl_2$ (optional))

*10×PCR Buffer Ⅱ (Mg^{2+} free) does not containd NTP or Mg^{2+}, Please add dNTPs and $MgCl_2$ when preparing reaction systems.

Unit Definition

One unit of activity (U) refers to the amount of enzyme required to incorporate 10 nmol of deoxyribonucleotides into acid-insoluble material using activated salmon sperm DNA as a template/primer within 30 minutes at 74°C.

Storage

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

*If precipitation occurs during frozen storage or after thawing, this is a normal phenomenon; allow the product to equilibrate to room temperature and mix gently before 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

Component	Volume per Reaction	Concentration in Master Mix
10×PCR Buffer Ⅱ (Mg^{2+} free) [1]	5 μL	1×
dNTPs (10 mM each dNTP)	1 μL	200 μM
25 mM $MgCl_2$	2-8 μL	1-4 mM
Superstar Taq plus DNA Polymerase-Low DNA (Glycerol-Free)	0.25-0.5 μL	1.25-2.5 U
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 $MgCl_2$ 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

Standard PCR Protocol			
Procedure	Temp.	Time	Cycle
Hot-start	95°C	1-5 min	1
Denaturation	95°C	10-20 s	35-50
Annealing/Extension	56-64°C	20-60 s	

FAST PCR Protocol			
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. Fast hot-start activation can be achieved at 95°C or 94°C for 1–5 min.
2. Strong system adaptability, higher specificity and sensitivity.
3. It delivers higher product yields in conventional PCR. In real-time fluorescent quantitative PCR (qPCR), it markedly improves the normalization of amplification curves and fluorescence intensity for ultra-low-concentration templates. This enzyme is ideal for high-sensitivity PCR detection reagents and is fully applicable to multiplex PCR amplification.
4. The DNA polymerase has 5′-3′ polymerase activity, 5′-3′ exonuclease activity, lacks 3′-5′ exonuclease activity or proofreading function.
5. Suitable for qualitative and quantitative detection of conventional PCR and RT-PCR..
6. The PCR product has an A at the 3′ end and can be directly cloned into T vectors.
7.For primers with low annealing temperatures or amplicon fragments longer than 200 bp, it is recommended to use a fast PCR protocol for amplification.

Zhuhai Biori Biotechnology Co.,Ltd
Tel: +86-0756-8699969 Web: www.biori-en.com Email: marketing@biori-en.com
Addr:No. 88, Shui' an 1st Road, Xiangzhou District, Zhuhai, Guangdong 519060, China