TransStart® FastPfu DNA Polymerase

Please read the datasheet carefully prior to use

Cat. No. AP221

Store at: -20°C for two years

Concentration: 2.5 units/μl

Description:

TransStart® FastPfu DNA Polymerase is a hot start high-fidelity DNA polymerase used for fast PCR. Offering a high amplification efficiency and high extension rate (4 kb/min, it is 8 times that of ordinary Pfu enzymes), *TransStart® FastPfu* DNA Polymerase amends the defects of low amplification efficiency, low yield and low extension rate (0.5 kb/min) in common Pfu polymerase, and greatly shortens reaction time.

- Offers 54-fold fidelity as compared to *EasyTaq®* DNA Polymerase.
- PCR products can be directly cloned into *pEASY®*-Blunt vectors.
- Amplification of genomic DNA fragment up to 15 kb.
- Amplification of plasmid DNA fragment up to 20 kb.

Features:

- Hot start, high specificity.
- High amplification efficiency.
- Fast and high fidelity.

Applications

- Amplifies complex and high GC/ AT templates.
- High fidelity and fast PCR, blunt end cloning, site-directed mutagenesis.
- Amplifies long fragment.

Kit Contents

TransStart® FastPfu DNA Polymerase	AP221-01/11 250 U×1	AP221-02/12 500 U×1	AP221-03/13 500 U×6
5×TransStart® FastPfu Buffer	1.2 ml×1	1.2 ml×2	1.2 ml×12
2.5 mM dNTPs	- / 500 μl×1	- / 1 ml×1	- / 1 ml×6
6×DNA Loading Buffer	500 μl×1	1 ml×1	1 ml×2
50 mM MgSO4	200 μl×1	400 μl×1	1 ml×1
Complimentary Component PCR Stimulant	200 μl×1	400 μl×1	1 ml×1

Storage Buffer

50 mM Tris-HCl (pH 8.2), 0.1 mM EDTA, 1 mM DTT, Stabilizers, 50% glycerol

5×TransStart® FastPfu Buffer with Mg2+

100 mM Tris-SO4 (pH 9.2), 200 mM KCl, 10 mM $MgSO_4$, 10% Glycerol, others

Reaction Components (50 μl reaction volumes)

Component	Volume	Final Concentration
Template	Variable	As required
Forward Primer (10 μM)	1 μl	0.2 μM
Reverse Primer (10 μM)	1 μl	0.2 μM
5×*TransStart® FastPfu* Buffer	10 μl	1×
2.5 mM dNTPs	4 μl	0.2 mM
TransStart® FastPfu DNA Polymerase	1 μl	2.5 units
Nuclease-free Water	Variable	-
Total volume	50 μl	-

Suggested conditions (50 μl reaction volumes)

Template	Input
Genomic DNA	10-500 ng
Plasmid DNA	1-30 ng
cDNA	1-2 μl cDNA from RT reaction (50-500 ng RNA for RT reaction)

PCR

Number of cycles	Temperature	Time
1 cycle	95°C	2 min
30-35 cycles	95°C	20 sec
	Tm-5°C	20 sec
	72°C	4 kb/min
1 cycle	72°C	5 min

PCR Stimulant

PCR Stimulant is used to optimize the amplification of complex templates or high GC/ AT templates. The amplification of the Pfu series of enzymes is enhanced significantly. The concentration of the storage solution is 5×, and the concentration of the working solution can be adjusted between 0.5×-2.5×

Notes

- For GC-rich templates, the recommended denaturation temperature is 98°C
- To ensure high fidelity, we recommend using high quality dNTPs. dNTPs containing dUTP cannot be used.
- It is recommended to add *TransStart® FastPfu* DNA Polymerase to the reaction system in the last step.
- If 5×*TransStart® FastPfu* Buffer has a small amount of precipitation after thawing, please heat it in a 37°C water bath and mix it for use.