TransFast® *Taq* DNA Polymerase

Cat. No. AP101
Concentration 5 units/μl
Storage： at -20°C for two years

Description

TransFast® *Taq* DNA Polymerase is an engineered version of *Taq* DNA Polymerase. The enzyme consists of a single polypeptide with a molecular weight of approximately 94 kDa.

TransFast®*Taq* DNA Polymerase has 5′-3′ DNA polymerase activity and 5′-3′ exonuclease activity. It lacks 3′-5′ exonuclease activity.

- The extension rate is about 6 kb/min.
- Template-independent "A" can be generated at the 3′ end of the PCR product. PCR products can be directly cloned into *pEASY*®-T vectors.
- Amplification of genomic DNA fragment up to 4 kb.

Advantages

- High efficiency amplification
- Rapid amplification

Applications

Routine PCR with rapid amplification

Unit Definition

One unit (U) is defined as the amount of enzyme required to catalyze the incorporation of 10 nmol of dNTP into an acid-insoluble material in 30 minutes at 74°C, with activated salmon sperm DNA used as template.

Quality Control

TransFast® *Taq* DNA Polymerase has passed the following quality control assays: functional absence of double- and single-stranded endonuclease activity; >99% homogeneous measured by SDS-PAGE. Each batch of *TransFast*® *Taq* DNA Polymerase has been assayed for amplification efficiency from as little as 10 ng of human genomic DNA.

Storage Buffer

20 mM Tris-HCl (pH 8.0), 0.1 mM EDTA, 1 mM DTT, 100 mM KCl, 50% glycerol, stabilizers

10×*TransFast*® *Taq* Buffer (with Mg^{2+})

200 mM Tris-HCl (pH 8.4), 100 mM KCl, 100 mM $(NH_4)_2SO_4$, 20 mM $MgSO_4$, others

Kit Contents

Component	AP101-01/11	AP101-02/12
TransFast® *Taq* DNA Polymerase	500 U×1	500 U×6
10×*TransFast*® *Taq* Buffer	1.2 ml ×1	1.2 ml ×6
2.5 mM dNTPs	- / 900 μl ×1	- / 900 μl ×6
6×DNA Loading Buffer	1 ml×1	1 ml ×2

Reaction Components

Component	Volume	Final Concentration
Template	Variable	as required
Forward Primer (10 μM)	1-2 μl	0.2-0.4 μM
Reverse Primer (10 μM)	1-2 μl	0.2-0.4 μM
10×*TransFast® Taq* Buffer	5 μl	1×
2.5 mM dNTPs	4 μl	0.2 mM
TransFast® Taq DNA polymerase	0.5-1 μl	2.5-5 unit
ddH_2O	Variable	-
Total volume	50 μl	-

Thermal cycling conditions

94°C	2-5 min	
94°C	30 sec	30-35 cycles
50-60°C	30 sec	
72°C	X sec	
72°C	5-10 min	

An interpretation about X sec

Targets	X sec
0-2 kb	10 sec/kb
2-3 kb	20 sec/kb
>3 kb	30 sec/kb

Notes

- Recommended extension time can achieve optimal amplification performance, but increase the extension time may result in decreased amplification specificity
- A final concentration of 2 mM $MgSO_4$ is sufficient for most targets amplification. For some targets, more Mg^{2+} may be required; use the 100 mM $MgSO_4$ stock to prepare a titration from 2 mM to 4 mM (final concentration) in 0.25 mM increments.
- 0.5 μl (2.5 units) of *TransFast® Taq* DNA Polymerase is enough for a single 50 μl reaction. For better amplification, up to 1 μl (5 units)/reaction *TransFast® Taq* DNA Polymerase can be used.

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