

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.

Highlights

- 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.

Applications

- Routine PCR
- High throughput PCR
- Colony PCR

Unit Definition

One unit of TransFast® Taq DNA Polymerase incorporates 10 nmol of deoxyribonucleotide into acid-precipitable material in 30 minutes at 74°C.

Quality Control

TransFast® Taq DNA Polymerase has passed the following quality control assays: functional absence of double- and single-strand endonuclease activity; >99% homogeneous measured by SDS-PAGE. Each batch of TransFast® Taq DNA Polymerase has been assayed for amplification efficiency to amplify p53 gene from 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 Mg²⁺)

200 mM Tris-HCl (pH 8.4), 100 mM KCl, 100 mM (NH₄)₂SO₄, 20 mM MgSO₄, 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	- / 800 μl ×1	- / 800 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 μ M)	1 μ l	0.2 μ M
Reverse Primer (10 μ M)	1 μ l	0.2 μ M
10 \times TransFast [®] Taq Buffer	5 μ l	1 \times
2.5 mM dNTPs	4 μ l	0.2 mM
TransFast [®] Taq DNA polymerase	0.5-1 μ l	2.5-5 unit
Nuclease-free Water	Variable	-
Total volume	50 μ l	-

Thermal cycling conditions

94°C	2-5 min	} 30-35 cycles
94°C	30 sec	
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

- A final concentration of 2 mM MgSO₄ is sufficient for most targets amplification. For some targets, more Mg²⁺ may be required.
- For optimal results, we recommend to use the 100 mM MgSO₄ stock to prepare a titration from 2 mM to 4 mM (final concentration) in 0.25 mM increments.
- 0.5 μ l (2.5 units) enzyme is enough for per 50 μ l reaction. For better amplification, up to 1 μ l (5 units) enzyme can be used.

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