



SMOBIO

Small Bio, Smart Tool

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Product Information

ExcelTaq™ series

Klen-Taq DNA Polymerase

TK1000 500 units

Klen-Taq DNA Polymerase (5 U/μl) 100 μl

10X Klen Buffer 1.2 ml

Storage

-20°C for 24 months

Features

- 5'→3' DNA polymerase activity
- 3'→5' exonuclease activity (proofreading)
- 4X fidelity compared to *Taq* DNA polymerase
- Thermo-stable: up to 98°C during PCR denaturing step
- Robust PCR performance, resistant to variance in PCR conditions

Description

The ExcelTaq™ Klen-Taq DNA Polymerase is a specially blended enzyme mix containing KlenTaq-1 DNA polymerase (a 5'-exo-minus, N-terminal deletion of *Taq* DNA polymerase) and a small amount of a proofreading DNA polymerase. This unique blending helps to improve the fidelity, yield and processivity of the resultant PCR process. Klen-Taq is also highly robust, showing high tolerance of varying concentration of Mg^{2+} ; it is highly thermostable and has four times the fidelity compared to *Taq* DNA polymerase.

The ExcelTaq™ Klen-Taq DNA Polymerase is ideal for DNA amplifications 0.5-5 kb in length on genomic DNA, and up to 10 kb on less complex templates.

ExcelTaq™ Klen-Taq DNA Polymerase mixture

Klen-Taq DNA Polymerase	5 U/μl
Proofreading DNA polymerase	Trace

Unit Definition

One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into an acid-insoluble material in 30 minutes at 74°C.

Storage Buffer

40 mM Tris-HCl (pH 7.5), 50 mM KCl, 0.1 mM EDTA, 25 mM (NH₄)₂SO₄, 5.0 mM 2-mercaptoethanol, stabilizer, and 50% (v/v) glycerol

10X Klen Buffer

400 mM Tricine-KOH (pH 9.2), 150 mM KOAc, 35 mM Mg (OAc)₂, and 750 μg/ml BSA

Recommended PCR Condition

Template	1 – 150 ng
Forward primer	0.1 – 0.5 μ M
Reverse primer	0.1 – 0.5 μ M
10X Klen Buffer	5 μ l
dNTPs	0.2 mM (each)
Klen-Taq enzyme	0.5 μ l (2.5 U)
ddH ₂ O	to 50 μ l
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Total volume	50 μ l

Recommended PCR Program

94°C	2 min	} 25 ~ 40 cycles
94°C	30 sec	
50~68°C*	30 sec	
68°C	30 sec/kb	
68°C	1 min	

*Optimal PCR condition varies according to primers' thermodynamic properties.

Quality Control

Functional Testing

ExcelTaq™ Klen-Taq DNA Polymerase is tested for performance in the polymerase chain reaction (PCR) using 0.5 µl of enzyme to amplify a 665 bp target from 1 ng of tested plasmid DNA. The resulting PCR product is visualized as a single band on an ethidium bromide-stained agarose gel.

Nuclease Assay

No contaminating endonuclease or exonuclease activity was detected using pUC19 incubated with ExcelTaq™ Klen-Taq DNA Polymerase for 4 hours at 37°C.

Residual Nucleotides Assay

No contaminating residual nucleotides were detected from purified ExcelTaq™ Klen-Taq DNA Polymerase by PCR assay.

Other Information

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Caution: Not intended for human or animal diagnostic or therapeutic uses.

Related Products

CK1000	Champion E. coli Transformation Kit
DM1100	ExcelBand 50 bp DNA Ladder, 500 μ l
DM2100	ExcelBand 100 bp DNA Ladder, 500 μ l
DM2300	ExcelBand 100 bp+3K DNA Ladder, 500 μ l
DM3100	ExcelBand 1 KB (0.25-10 kb) DNA Ladder, 500 μ l
NS1000	FluoroVue Nucleic Acid Gel Stain (10,000X), 500 μ l
RP1000	ExcelRT Reverse Transcriptase, 20,000 U
TF1000	SMO-HiFi DNA Polymerase, 100 U
TF3000	G-HiFi DNA Polymerase, 100 U
TP1000	ExcelTaq Taq DNA Polymerase, 500 U
TP1200	ExcelTaq 5 \times PCR Master Dye Mix, 200 RXN
TP1260	ExcelTaq 5 \times Fluorescent PCR Master Mix, 200 RXN
TP2100	ExcelTaq Blood Direct PCR Master Mix Kit, 200 RXN
TP5000	ExcelTaq Hot Start II DNA Polymerase, 500 U
TQ1110	ExcelTaq 2 \times Q-PCR Master Mix (SYBR, ROX), 200 RXN
VE0100	B-BOX Blue Light LED epi-illuminator, AC 100-240V, 50/60Hz



B-BOX™ Blue Light LED epi-illuminator

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