SMOBIO®
Small Bio, Smart Tool

www.smobio.com

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 as 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 concentrations 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 $(NH_4)_2SO_4$, 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 µM
Reverse primer	0.1 – 0.5 µM
10X Klen Buffer	5 µl
dNTPs	0.2 mM (each)
Klen-Taq enzyme	0.5 µl (2.5 U)
ddH_2O	to 50 µl
Total volume	50 µl

Recommended PCR Program

94°C	2 min	
94°C	30 sec	25 ~ 40 cycles
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

SMOBIO Technology, Inc. claims all warranties with respect to this document, expressed or implied, including but not limited to those of merchantability or fitness for a particular purpose. In no event shall SMOBIO Technology, Inc. be liable, whether in contract, tort, warranty, or under any statute or any other basis for special, incidental, indirect, punitive, multiple or consequential damages in connection with or arising from this document, including but not limited to the use thereof.

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 µl
DM2100	ExcelBand 100 bp DNA Ladder, 500 µl
DM2300	ExcelBand 100 bp+3K DNA Ladder, 500 µl
DM3100	ExcelBand 1 KB (0.25-10 kb) DNA Ladder, 500 µl
NS1000	FluoroVue Nucleic Acid Gel Stain (10,000X), 500 µl
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× PCR Master Dye Mix, 200 RXN
TP1260	ExcelTaq 5× 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× 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

The latest version of the manual can be downloaded from www.smobio.com/shop.

For research use only
2023 ver. 2.3.0

P06-F11-A1