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Product Information

ExcelTaq™ series

Blood Direct DNA Polymerase

TP2000 500 units

Blood Direct DNA Polymerase (5 U/μl)	100 μl
5X Blood Direct Buffer	1 ml × 4
Positive Control Primers (10 μM, each)	50 μl

Storage

4°C for 6 months
-20°C for 24 months

Description

The ExcelTaq™ Blood Direct DNA Polymerase is designed for amplifying targeted DNA directly from whole blood, eliminating the need for a lengthy DNA isolation process. The ExcelTaq™ Blood Direct DNA Polymerase is highly tolerant in the presence of PCR interfering/ inhibiting substances in blood, such as IgG, hemoglobin, and lactoferrin. The ExcelTaq™ Blood Direct DNA Polymerase is compatible with most anticoagulants, such as citrate, EDTA, and heparin (Fig. 1). The ExcelTaq™ Blood Direct DNA Polymerase includes a pair of Positive Control Primers (CCR5) that are compatible with primate blood samples.

Features

- 5'→3' DNA polymerase activity
- No detectable 3'→5' exonuclease (proofreading) activity
- Generates PCR products with 3'-dA overhangs
- Compatible with most anticoagulants

Applications

- Direct amplification of DNA from blood samples
- High throughput screening without DNA purification
- Suitable for multiplex PCR

Storage buffer

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

CCR5 control primer sequence

CCR5-F: 5'-CTCCCAGGAATCATCTTTACC-3'

CCR5-R: 5'-TCATTTCGACACCGAAGCAG-3'

Recommended PCR Condition

Blood	3 μ l
Forward primer	0.1 – 0.5 μ M
Reverse primer	0.1 – 0.5 μ M
5X Blood Direct Buffer	10 μ l
dNTPs	0.2 mM (each)
Blood Direct DNA Polymerase	0.25 μ l (1.25 U)
Add ddH ₂ O to	to 50 μ l
Total volume	50 μ l

Note: Mix well before PCR Reaction

Recommended PCR Program

94°C	3 min	}	30 ~ 40 cycles
94°C	30 sec		
50~68°C*	30 sec		
72°C	1 min/kb		
72°C	3 min		

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

Post amplification analysis

Centrifuge PCR reaction mixture at $1000 \times g$ for 1 ~ 3 minutes. **Load only the clear supernatant of the PCR products for gel electrophoresis analysis.**

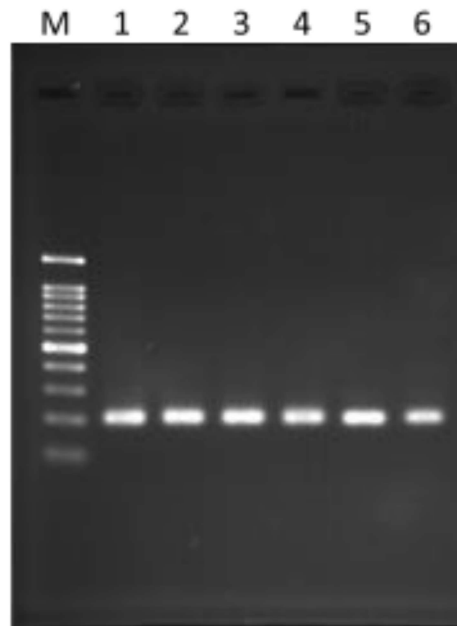


Fig. 1. The ExcelTaq™ Blood Direct DNA Polymerase amplified 200 bp from differently treated blood samples using CCR5 specific primers. M: DM2100 marker, lane 1: fresh blood, lane 2: blood + citrate, lane 3: blood +EDTA, lane 4: blood + EDTA/ Fluoride, lane 5: blood + Heparin, lane 6: 1 mm² of dry blood on filter paper.

Quality Control

Functional Testing

ExcelTaq™ Blood Direct DNA Polymerase is tested for performance in the polymerase chain reaction (PCR) using a 200 bp target from the CCR5 genomic 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 DNA Polymerase source for 4 hours at 37°C.

Residual Nucleotides Assay

No contaminating residual nucleotides were detected from a purified DNA polymerase source by a 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 µl
DM2300	ExcelBand 100 bp+3K DNA Ladder, 500 µl
DM3100	ExcelBand 1 KB (0.25-10 kb) DNA Ladder, 500 µl
DM4100	ExcelBand XL 25 kb DNA Ladder, Broad Range (up to 25 kb), 500 µl
NS1000	FluoroVue Nucleic Acid Gel Stain (10,000X), 500 µl
TF1000	SMO-HiFi DNA Polymerase, 100 U
TP1000	ExcelTaq Taq DNA Polymerase, 500 U
TP1200	ExcelTaq 5× PCR Master Dye Mix, 200 RXN
TP2100	ExcelTaq 5× Blood Direct PCR Master Mix Kit, 200 RXN
TP5000	ExcelTaq Hot Start II DNA Polymerase, 500 U
RP1000	ExcelRT Reverse Transcriptase, 20,000 U
RP1100	ExcelRT One-step RT-PCR Kit, 50 RXN
VE0100	B-BOX Blue Light LED epi-illuminator, AC 100-240V, 50/60Hz

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