



**SMOBio**<sup>®</sup>

Small Bio, Smart Tool

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## Product Information

ExcelTaq™ series

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### Blood Direct DNA Polymerase

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#### **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    |

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#### 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'-TCATTTGACACCGAAGCAG-3'

## Recommended PCR Condition

|                             |                       |
|-----------------------------|-----------------------|
| Blood                       | 3 $\mu$ l             |
| Forward primer              | 0.1 – 0.5 $\mu$ M     |
| Reverse primer              | 0.1 – 0.5 $\mu$ M     |
| 5X Blood Direct Buffer      | 10 $\mu$ l            |
| dNTPs                       | 0.2 mM (each)         |
| Blood Direct DNA Polymerase | 0.25 $\mu$ l (1.25 U) |
| Add ddH <sub>2</sub> O to   | to 50 $\mu$ l         |
| <hr/>                       |                       |
| Total volume                | 50 $\mu$ 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.**

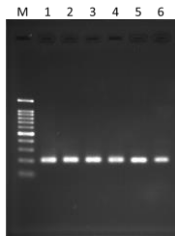


Fig. 1. The ExcelTaq™ Blood Direct DNA Polymerase amplified 200 bp from differently treated blood samples using CCR5 specific primers. M: DM2100 marker, lane 1: fresh blood, lane 2: blood + citrate, lane 3: blood +EDTA, lane 4: blood + EDTA/ Fluoride, lane 5: blood + Heparin, lane 6: 1 mm<sup>2</sup> 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](http://www.smobio.com/shop).