SMOBIO
Small Bio, Smart Tool

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## Product information

**ExcelTaq DNA Polymerase**

| | | |
|---|---|---|
| **TP1000** | **500 units** | |
| | Taq Polymerase | 100 µl |
| | 10X Reaction Buffer | 1 ml × 2 |

## Storage

-20°C ≥ 24 months

## Description

ExcelTaq DNA Polymerase is a recombinant thermo-stable DNA polymerase expressed and purified from an *E. coli* strain carrying the cloned gene. With high DNA synthesis rate and thermo-stability, ExcelTaq DNA Polymerase is suitable for general and specialized PCR applications.

## Features

- 5'→3' DNA polymerase activity
- 5'→3' exonuclease activity
- None detectable 3'→5' exonuclease (proofreading) activity
- Generates PCR product with 3’-dA overhangs
- Thermo-stable – half life is more than 40 min at 95°C

## Applications

- Routine PCR amplification of DNA fragments up to 8 kb
- Generation of PCR product for TA cloning
- DNA labeling
- DNA sequencing

**Storage Buffer**

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

**10X Reaction Buffer**

200 mM Tris-HCl (pH 8.8 at 25°C), 100 mM KCl, 100 mM $(NH_4)_2SO_4$, 20 mM $MgSO_4$, 1% Triton X-100

**Unit Definition**

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

## Recommended PCR Condition

| | |
|---|---|
| Template | 1 – 150 ng |
| Forward primer | 0.1 – 0.5 µM |
| Reverse primer | 0.1 – 0.5 µM |
| 10 × *Taq* buffer | 5 µl |
| dNTPs 2 mM (each) | 5 µl (0.2 mM each) |
| *Taq* enzyme | 0.25 µl(1.25units) |
| $H_2O$ | 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 | |
| 72°C | 30 sec/kb | |
| 72°C | 1 min | |

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

## Quality Control

### Functional Testing

ExcelTaq DNA Polymerase is tested for performance in the polymerase chain reaction (PCR) using 1 unit of enzyme to amplify a 794 bp target from 10 pg 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 DNA Polymerase for 4 hours at 37°C.

### Residual Nucleotides Assay

No contaminating residual nucleotides were detected from purified ExcelTaq DNA Polymerase by PCR assay.

## Other Information

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

**Related Products**

| | |
|---|---|
| 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 |
| DM3200 | ExcelBand 1 KB Plus (0.1-10 kb) DNA Ladder, 500 µl |
| DM4100 | ExcelBand XL 25 kb DNA Ladder, Broad Range (up to 25 kb), 500 µl |
| DL5000 | FluoroDye DNA Fluorescent Loading Dye (Green, 6×), 1ml |
| DS1000 | FluoroStain DNA Fluorescent Staining Dye (Green, 10,000×), 500µl |
| TF1000 | ExcelTaq SMO-HiFi DNA Polymerase, 5 U/ µl, 500 U × 1 |
| TP1100 | ExcelTaq 5× PCR Master Mix, 200 RXN |
| TP1200 | ExcelTaq 5× PCR Master Dye Mix, 200 RXN |
| TP1260 | ExcelTaq 5× Fluorescent PCR Master Mix, 200 RXN |
| TP2000 | ExcelTaq Blood Direct DNA Polymerase, 5 U/ µl, 500 U × 1 |
| TP2100 | ExcelTaq Blood Direct PCR Master Mix Kit, 200 RXN |
| VE0100 | B-BOX™ Blue Light LED epi-illuminator, AC 100-240V, 50/60Hz |


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