



**SMOBio**<sup>®</sup>

Small Bio, Smart Tool

[www.smobio.com](http://www.smobio.com)

## Product Information

SMO-HiFi™ series

### SMO-HiFi™ DNA Polymerase

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#### TF1000 100 units

SMO-HiFi™ DNA Polymerase (1 U/μl)	100 μl
10X HiFi™ Buffer	600 μl
25 mM MgSO <sub>4</sub>	500 μl
dNTPs Mix (2 mM each)	600 μl
DMSO	600 μl

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## Storage

-20°C for 24 months

## Applications

- High fidelity PCR
- Generates blunt end amplicons for cloning with GetClone™ PCR cloning vector

## Description

The SMO-HiFi™ DNA Polymerase is a new genetically modified, recombinant DNA polymerase with 70 times higher fidelity than *Taq* DNA polymerase during amplification, as well as very high elongation rate. Being highly thermostable, SMO-HiFi™ DNA Polymerase can remain viable even after being subjected to boiling for 2 minutes. The SMO-HiFi™ DNA Polymerase is also designed to operate in much lower  $Mg^{2+}$  concentration as compared to other DNA polymerase products.

## Features

- 5'→3' DNA polymerase activity
- 3'→5' exonuclease (proofreading) activity
- High reaction rate (up to 1 kb/10 seconds)
- High fidelity, 70 times higher than *Taq* DNA polymerase
- Blunt end amplicons
- Thermo-stable: half-life is more than 10 hrs at 95°C

## Storage Buffer

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

## 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 $\mu$ M
Reverse primer	0.1 – 0.5 $\mu$ M
10X HiFi™ Buffer	5 $\mu$ l
MgSO <sub>4</sub> (25 mM)	2 $\mu$ l
dNTPs (2 mM each)	5 $\mu$ l
SMO-HiFi™ DNA Polymerase	1 $\mu$ l (1 unit)
DMSO	5 $\mu$ l
H <sub>2</sub> O	to 50 $\mu$ l
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Total volume	50 $\mu$ l

## Recommended PCR Program

94°C	2 min	} 25 ~ 40 cycles
94°C	15 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**

SMO-HiFi™ DNA Polymerase is tested for performance in the polymerase chain reaction (PCR) using 1 unit of enzyme to amplify a 665 bp target from 1 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 SMO-HiFi™ DNA Polymerase for 4 hours at 37°C.

### **Residual Nucleotides Assay**

No contaminating residual nucleotides were detected from purified SMO-HiFi™ 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
CV1100	GetClone PCR Cloning Vector II, 20 RXN
DM2100	ExcelBand 100 bp DNA Ladder, 500 $\mu$ l
DM2300	ExcelBand 100 bp+3K DNA Ladder, 500 $\mu$ l
DM3100	ExcelBand 1 KB (0.25-10 kb) DNA Ladder, 500 $\mu$ l
DL5000	FluoroDye DNA Fluorescent Loading Dye (Green, 6 $\times$ ), 1 ml
NS1000	FluoroVue Nucleic Acid Gel Stain (10,000X), 500 $\mu$ l
TP1000	ExcelTaq DNA Polymerase, 500 U
TP1100	ExcelTaq 5 $\times$ PCR Master Mix, 200 RXN
TP1200	ExcelTaq 5 $\times$ PCR Master Dye Mix, 200 RXN
TP1260	ExcelTaq 5 $\times$ Fluorescent PCR Master Mix, 200 RXN
TP2000	ExcelTaq Blood Direct DNA Polymerase, 500 U
TP5000	ExcelTaq Hot Start II DNA Polymerase, 500 U
TF3000	G-HiFi DNA Polymerase, 1 U/ $\mu$ l, 100 U
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](http://www.smobio.com/shop).

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