

## DFS-Taq DNA Polymerase DNA-free

### Features:

Researchers are often encountering with contaminating DNA present in their polymerase preparations that often preclude or obscure accurate interpretation of PCR results, especially when targeting conserved sequences. Maximo DFS-Taq DNA Polymerase is ideal in detecting and identifying bacterial DNA, looking for a more accurate method in mutation scanning techniques, or wanting to prevent the amplification of undesired DNA sequences.

The standard concentration of Maximo DFS-Taq is 5 u/μl. On request we can supply concentrations up to 50 u/μl.

### Applications:

- Standard / General PCR
- PCR with bacterial DNA
- Quantitative PCR
- E. coli contamination studies
- Microbial (i.e., 16S/23S) contamination studies
- Forensic studies
- PCR cloning
- RT-PCR

### Description:

Maximo DFS-Taq DNA Polymerase is a recombinant thermostable DNA polymerase that possesses a 5'→3' polymerase activity and a double-strand specific 5'→3' exonuclease activity. The enzyme consists of a single polypeptide with a molecular weight of 94KD.

**Concentration:** 5 u/μl

### Unit definition:

One unit incorporates 10 nmol of deoxyribonucleotide into acid-precipitation material in 30min at 74 degree

### Storage Buffer:

25 mM Tris-HCl (pH 8.0), 150 mM NaCl, 0.05 mM EDTA, 1 mM DTT, 50% glycerol.

### Reaction Buffers supplied with the enzyme:

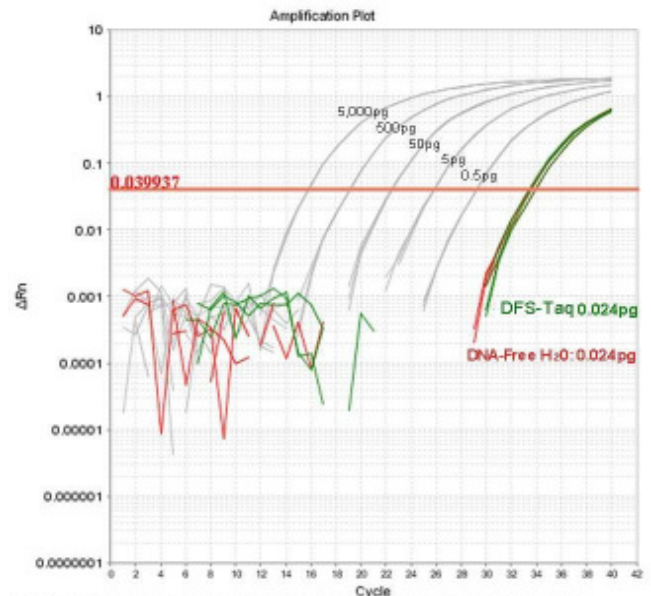
10X Buffer I:

200mM Tris-HCl, 100 mM KCl, 100mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 1% Triton X-100, at pH 8.8 (25°C)

10X Buffer II:

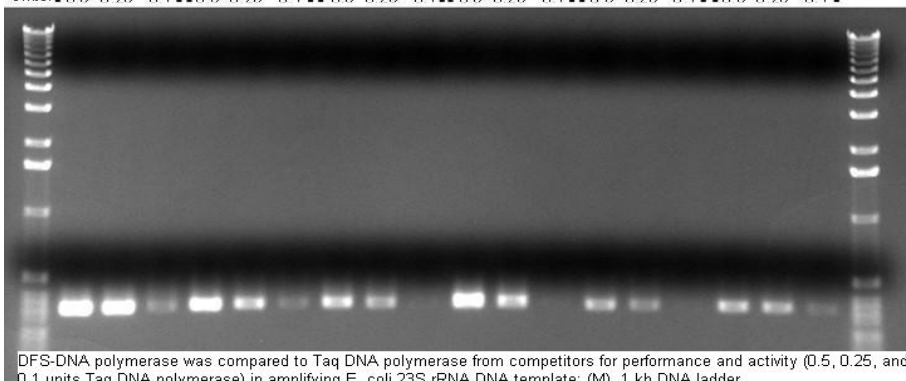
200mM Tris-HCl, 100 mM KCl, 20mM MgSO<sub>4</sub>, 100mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 1% Triton X-100, at pH 8.8 (25°C)

MgCl<sub>2</sub>: 25 mM



DFS Taq DNA polymerase (5 Units) was tested against DNA-free water for presence of E. coli gDNA contamination in qPCR using 23S primers. Standard curve with serial dilution (5,000pg, 500pg, 50pg, 5pg, 0.5pg); R<sup>2</sup> = 1.000.

DFS-Taq	Competitor A	Competitor B	Competitor C	Competitor D	Competitor E
Units: 0.5 0.25 0.1	0.5 0.25 0.1	0.5 0.25 0.1	0.5 0.25 0.1	0.5 0.25 0.1	0.5 0.25 0.1



DFS-DNA polymerase was compared to Taq DNA polymerase from competitors for performance and activity (0.5, 0.25, and 0.1 units Taq DNA polymerase) in amplifying E. coli 23S rRNA DNA template: (M), 1 kb DNA ladder.

### Quality control:

- E. coli genomic DNA testing after treatment with T5 DNase
- PCR with various templates – human and bovine genomic DNA, Phage Lambda DNA
- 3 kb DNA amplification from 50 ng DNA
- batch variation

**Transportation:** on blue ice

**Storage:** at -20 °C for 12 months

Usage:

Components	Volume per reation
10X reaction buffer I	5 µl
25 mM MgCl <sub>2</sub>	1.5 µl (if necessary)
dNTP-Mix (40mM)	1.0 µl
Up-stream primer (10 µM stock)	0,5-2.5 µl
Down-stream primer (10µM stock)	0.5-2,5 µl
Template DNA	0.1-15 ng/ml plasmid DNA 1-10 µg/ml genomic DNA
Maximo Taq DNA Polymerase (5 u/µl)	0.2 - 1.0 µl
Sterile dest. Water (molecular grade)	up to 50 µl total reaction volume

Note:

- vortex all solutions carefully before using
- dispense all reagents on ice
- add the enzyme after Template DNA
- may you have to optimize the MgCl<sub>2</sub> concentration for best result

General Thermo-Cycler protocol:

Step	Time	Temperature
Initial denaturation	2-5 min	94-95 °C
25-30 Cycles: Denaturation Annealing Extension	10-25 sec 10-25 sec 60 sec	94-95 °C 55-65 °C 72 °C per 1kb
Final extension	5 min	72 °C

Ordering information:

Cat.-no	Description	Amount
S105	Maximo DFS-Taq DNA Polymerase	500 units
S106	Maximo DFS-Taq DNA Polymerase	5x500 units
S107	Maximo DFS-Taq DNA Polymerase	20x500 units
S108	Maximo DFS-Taq DNA Polymerase	100x500 units or as bulk