



Data Sheet (14.11.2007)

# mi-Taq only

## Thermostable DNA Polymerase (DNA free tested)

Source: *Thermus aquaticus*, strain YT-1

Cat.-No.	Size	Conc.
mi-E8001S	200 units	5 units/µl
mi-E8001L	1000 units	5 units/µl

For *in vitro* use only!

### Unit definition

One unit is defined as the amount of the enzyme required to catalyze the incorporation of 10 nmol of dNTP into an acid-insoluble form in 30 minutes at 72 °C.

### Taq Pol in storage buffer (red cap)

10 mM K-phosphate, pH 7.4, 0.1 mM EDTA, 50 % glycerol, 0.1 % Triton X-100, 0.1 % Tween 20

### 10x Reaction buffer complete KCl (black cap)

500 mM KCl, 100 mM TrisHCl pH 8.8, 0.1 % Tween-20, 15 mM MgCl<sub>2</sub>

### 10x Reaction buffer complete (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> (green cap)

160 mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 670 mM TrisHCl pH 8.8, 0.1 % Tween-20, 25 mM MgCl<sub>2</sub>

### 10x Reaction buffer (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> without MgCl<sub>2</sub> (blue cap)

160 mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 670 mM TrisHCl pH 8.8, 0.1 % Tween-20

### MgCl<sub>2</sub> stock solution (yellow cap)

100 mM MgCl<sub>2</sub>

Recommended MgCl<sub>2</sub> concentration: 1.5-6 mM

### Recommended PCR Assay

50 µl PCR assay		
5 µl	10x Reaction buffer with MgCl <sub>2</sub>	green cap
0.2-0.5 µl (1-2.5 u)	Taq Pol	red cap
5 µl	of dNTP Mix (2 mM each)	
0.2-1 µM	of each Primer	
2-50 ng	Template DNA	
Fill up to 50 µl	PCR grade H <sub>2</sub> O	

### Description

The Thermostable DNA Polymerase (94 kDa) is an enzyme that replicates DNA at 72 °C. The enzyme catalyzes the polymerization of nucleotides into duplex DNA in 5'→3' direction in the presence of magnesium ions. It also possesses a 5'→3' polymerization-dependent exo-nuclease replacement activity. The enzyme is highly purified and free of nonspecific endo- or exonucleases. It produces single 3'-dA nucleotide overhangs and is recommended for use in routine PCR, primer extension, etc. *Taq* only is free of bacterial DNA and also especially recommended for the work with bacterial DNA.

### Performance and purity tests

*Taq* DNA polymerase effectively directs PCR with templates up to 2 kb in length. The Enzyme was tested on the absence of endonuclease and nickase activities. No traces of bacterial DNA were detected in PCR with "no template" or with the primers complementary to the conserved region of 16S ribosomal gene. *Taq* DNA polymerases of most suppliers contain contaminating DNA, which can produce false-positive PCR results in some cases.

The following tests are performed with each lot:

- PCR with various templates – human and bovine genomic DNA, Phage Lambda DNA
- Exo- and Endo nucleases contamination tests
- "no primers" test with Lambda DNA
- "no template" test with the primers complementary to the conserved region of 16S bacterial ribosomal genes
- storage (3 days at room temperature) test – no change in performance.

**Sensitivity** of PCR with mi-*Taq* only DNA polymerase in the optimal conditions is very high – in some reactions less than 6 DNA molecules were detected.

**Store** at –20 °C (the enzyme is stable at room temperature at least for 3 days without any loss of activity), avoid frequent thawing and freezing.