Data Sheet (23.03.2016)

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 research use only! Only for* in vitro *use!

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 $MgCl_2$

10x Reaction buffer complete $(NH_4)_2SO_4$ (green cap)

160 mM $(NH_4)_2SO_4$, 670 mM TrisHCl pH 8.8, 0.1 % Tween-20, 25 mM $MgCl_2$

10x Reaction buffer $(NH_4)_2SO_4$ without $MgCl_2$ (blue cap)

160 mM $(NH_4)_2SO_4$, 670 mM TrisHCl pH 8.8, 0.1 % Tween-20

$MgCl_2$ stock solution (yellow cap)

100 mM $MgCl_2$

Recommended $MgCl_2$ concentration: 1.5-6 mM

Recommended PCR Assay

50 µl PCR assay		
5 µl	10x Reaction buffer with $MgCl_2$	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_2O	

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 posesses 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.

Sensitivity

Taq DNA polymerase effectively directs PCR with templates up to 2 kb in length. High sensitivity of PCR reactions with *Taq* DNA polymerase in the optimal conditions – in some reactions at least 6 DNA molecules are necessary for detection. Enzyme has a very good performance in single-copy gene PCR from genomic mammalian DNA. In contrast to this enzyme, Taq DNA polymerases from the variety of suppliers contain contaminating DNA. With DNA-contaminated Taq DNA polymerase you can observe false-positive PCR results in some cases.

QC

> 98% protein homogeneity in 10% SDS-PAGE
No detectable exo-/endonuclease activities
PCR amplification tests with different templates
PCR amplification tests without templates as Negative Control
Exonuclease efficiency test showing efficient 5´-3´Exonuclease activity

Store at - 20 ± 5°C (the enzyme is stable at room temperature at least for 3 days without any loss of activity), avoid frequent thawing and freezing.

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