



Data Sheet (22.10.2007)

mi-Splendid Taq Set

Thermostable DNA Polymerase for long range PCR

Source: *Thermus aquaticus*, gene expressed in *E. coli*

Cat.-No.	Size	Conc.
mi-E6004	250 units	5 units/µl

For *in vitro* use only! For research only!

Content

1. mi-Splendid Taq DNA Polymerase, 250 units (5 u/µl)
2. dNTP mixture, 800 µl (2.5 mM each, in water (sodium salts, pH 7-9) Purity: ≥ 98% for each dNTP)
3. 10x Buffer (MgCl₂ 15 mM), 1000 µl
4. 6x Loading dye, 500 µl

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.

Recommended PCR Assay (50 µl volume)

5 µl	10x Reaction buffer with MgCl ₂
0.25-0.5 µl	Taq Pol (1.25-2.5 u)
4 µl	of dNTP Mix (2.5 mM each)
0.2-1 µM	of each Primer
2-50 ng	template DNA
Fill up to 50 µl	PCR grade H ₂ O

PCR condition (example)

when amplifying 1 kb DNA fragment

< 3 step > PCR	< 2 step > PCR
94°C 30 seconds	94°C 30 seconds
50-55°C* 30 seconds	
72°C 1 min.**	68°C 1 min.
4-8°C indefinite to store	4-8°C indefinite to store

* Annealing temperature: TA°C = T_m -5°C

** Amplification time: 1 sec per 60 bp approximately

Note: Denaturation varies depending on used PCR machines and tubes. It is recommended for 10-30 sec. at 94°C or 1-8 sec. at 98°C.

Store at -20°C, avoid frequent thawing and freezing.

Description

mi-Splendid Taq DNA Polymerase is a newly developed, highly pure, thermostable recombinant DNA polymerase encoded by a modified gene from *Thermus aquaticus* and expressed in *E. coli*. Its recombinant nature ensures utmost purity, reproducibility and processivity. mi-Splendid Taq DNA Polymerase, with proofreading activity, provides more efficient amplification and higher fidelity than conventional Taq DNA polymerases under conventional PCR conditions. The enzyme leaves a single 3'-dA nucleotide overhang that makes the products suitable for cloning by a TA vector system. It is also possible to clone the PCR product in blunted vector after blunting and phosphorylation of the ends. mi-Splendid Taq DNA Polymerase provides more efficient amplification and higher fidelity, especially for long PCR products, than the conventional Taq DNA Polymerase.

Application

For amplification of long DNA products by Polymerase Chain Reaction.

Performance and purity tests

The performance of DNA amplification in the PCR was confirmed by using lambda DNA as the template (amplified fragment: 20 kb; up to 30 kb can be possible) and also by using human genomic DNA as a template (beta globin gene, amplified fragment: 17.5 kb; up to 20 kb can be possible).

No nicking activity, endonuclease or exonuclease activity is detectable after the incubation of 0.5 µg supercoiled pBR322 DNA, 0.5 µg lambda DNA or 0.5 µg lambda/Hind III digested DNA with 10 units of the enzyme for 1 hour at 72°C.