

Taq Pol

Thermostable DNA polymerase

Thermus aquaticus, recombinant, *E. coli*

Cat.-No.	Size	Conc.
PCR-202S	200 units	5 units/μl
PCR-202L	1000 units	5 units/μl

For *in vitro* use only
 Quality guaranteed for 12 months
 Store at -20°C, avoid frequent thawing and freezing

Taq Pol (red cap)

5 units/μl Taq DNA Polymerase in 20 mM Tris-HCl, 100 mM KCl, 0.1 EDTA, 1 mM DTT, 0.5% Tween-20, 0.5% Nonidet P-40, 50% (v/v) Glycerol, pH 8.0 (25°C)

10x Taq reaction buffer complete (green cap)

100 mM Tris-HCl, 500 mM KCl, 15 mM MgCl₂, pH 8.3 (25°C)

10x Taq reaction buffer without MgCl₂ (blue cap)

100 mM Tris-HCl, 500 mM KCl, pH 8.3 (25°C)

MgCl₂ stock solution (yellow cap)

25 mM MgCl₂

Description

Taq Pol is recommended for use in routine PCR reactions. It is optimized for high specificity and guarantees minimal by-product formation. The buffer system is particularly suitable for plate based PCR and automated pipetting where a detergent free buffer system is required.

The enzyme replicates DNA at 72°C. It catalyzes the polymerization of nucleotides into duplex DNA in 5'→3' direction in the presence of magnesium. It also possesses a 5'→3' polymerization-dependent exonuclease replacement activity but lacks a 3'→5' exonuclease activity.

Unit definition

One unit is defined as the amount of the enzyme required to catalyze the incorporation of 10 nmoles of dNTP's into an acid-insoluble form in 30 minutes at 70°C using hering sperm DNA as substrate.

Recommended PCR assay

50 μl PCR assay		
5 μl	10x Taq reaction buffer complete	green cap
200 μM	each dNTP	
0.2-1 μM	each Primer	
2-50 ng	Template DNA	
0.2-0.5 μl (1-2.5 u)	Taq Pol	red cap
Fill up to 50 μl	PCR grade H ₂ O	

Optimization of MgCl₂ concentration

A concentration of 1.5 mM Mg²⁺ is recommended for most applications. For an individual optimization use the reaction buffer without MgCl₂ and add MgCl₂ stock solution as shown in the table below.

50 μl PCR assay				
MgCl ₂ stock.	2 μl	3 μl	4 μl	6 μl
Final MgCl ₂ conc.	1 mM	1.5 mM	2 mM	3 mM