

Taq Pol

Thermostable DNA polymerase

Thermus aquaticus, recombinant, *E. coli*

| | Cat. No. | Size | Conc. |
|--|------------|---------|------------|
| | TAQ_100KU | 100 kU | 5 units/μl |
| | TAQ_1000KU | 1000 kU | 5 units/μl |

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

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 | |

Taq Pol (red cap)

5 units/μl Taq DNA Polymerase in 20 mM Tris-HCl, 100 mM KCl, 0.1 mM 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)

200 mM Tris-HCl, 500 mM KCl, 15 mM MgCl₂, pH 8.5 (25°C)

10x Taq reaction buffer without MgCl₂ (blue cap)

200 mM Tris-HCl, 500 mM KCl, pH 8.5 (25°C)

MgCl₂ stock solution (yellow cap)

25 mM MgCl₂

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 |