

Taq Pol / high yield buffer

Thermostable DNA polymerase

Thermus aquaticus, recombinant, *E. coli*

	Cat. No.	Size	Conc.
	PCR-201S	200 units	5 units/ μ l
	PCR-201L	1000 units	5 units/ μ l

For *in vitro* use only

Quality guaranteed for 12 months

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

Description

Taq Pol / high yield buffer is recommended for use in routine PCR reactions. The buffer system is optimized for high efficiency and gives superior amplification results in a broad range of reaction conditions with most primer-template pairs. The buffer system facilitates the incorporation of labeled or modified nucleotides into DNA. Note that the ammonium based buffer system contains detergent and is not recommended for plate based PCR and automated pipetting.

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 μ l PCR assay		
5 μ l	10x High Yield Buffer complete	green cap
200 μ M	each dNTP	
0.2-1 μ M	each Primer	
2-50 ng	Template DNA	
0.2-0.5 μ l (1-2.5 u)	Taq Pol	red cap
Fill up to 50 μ l	PCR grade H ₂ O	

Taq Pol (red cap)

5 units/ μ l 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 High Yield Buffer complete (green cap)

600 mM Tris-HCl, 150 mM (NH₄)₂SO₄, 20 mM MgCl₂, 0.05% Tween-20, 0.05% Nonidet P-40, pH 8.8 (25°C)

10x High Yield Buffer without MgCl₂ (blue cap)

600 mM Tris-HCl, 150 mM (NH₄)₂SO₄, 0.05% Tween-20, 0.05% Nonidet P-40, pH 8.8 (25°C)

MgCl₂ Stock Solution (yellow cap)

25 mM MgCl₂

Optimization of MgCl₂ concentration

A concentration of 2.0 mM Mg²⁺ is recommended for most applications in combination with High Yield Buffer. For an individual optimization use the reaction buffer without MgCl₂ and add MgCl₂ stock solution as shown in the table below.

50 μ l PCR assay				
MgCl ₂ stock.	3 μ l	4 μ l	6 μ l	8 μ l
Final MgCl ₂ conc.	1.5 mM	2 mM	3 mM	4 mM