

Taq Core Kit / high yield

Kit of Taq DNA polymerase, dNTPs and high yield buffer

Core kits for standard PCR

Cat.-No.	Size	Conc.
PCR-231S	200 units	5 units/ μ l
PCR-231L	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

Taq Pol (red cap)

5 units/ μ l 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)

dNTP Mix (white cap)

10 mM each dNTP (dATP, dCTP, dGTP, dTTP)

10x High yield buffer complete (green cap)

670 mM Tris-HCl, 166 mM (NH₄)₂SO₄, 15 mM MgCl₂, 4.5% Triton X-100, 2 mg/ml Gelatin, pH 8.8 (25°C)

10x High yield buffer without MgCl₂ (blue cap)

670 mM Tris-HCl, 166 mM (NH₄)₂SO₄, 4.5% Triton X-100, 2 mg/ml Gelatin, pH 8.8 (25°C)

MgCl₂ stock solution (yellow cap)

25 mM MgCl₂

Description

Taq Core Kit / high yield contains all reagents required for PCR (except template and primer) in one box combining simple handling with high flexibility. The premium quality polymerase, ultrapure dNTPs and the optimized complete reaction buffer ensure superior amplification results. The additional reaction buffer without MgCl₂ in combination with the MgCl₂ stock solution allows an easy optimization of difficult amplifications.

The kit is recommended for use in routine PCR reactions. It is optimized for high efficiency and gives best 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
1 μ l	dNTP Mix	white cap
1-5 μ l	each Primer (10 μ M)	
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	

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

Recommended cycling conditions

Initial denaturation	94°C	2 min	1x
Denaturation	94°C	30 sec	30x
Annealing ¹⁾	45 - 68°C	30 sec	
Elongation ²⁾	72°C	30 sec - 3 min	
Final elongation	72°C	2 min	1x

- 1) The annealing temperature depends on the melting temperature of the primers used.
- 2) The elongation time depends on the length of the fragments to be amplified. A time of 1 min/kbp is recommended.

For optimal specificity and amplification an individual optimization of the recommended parameters may be necessary for each new primer-template pair.

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For detailed information please visit
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