

Taq Core Kit

Kit of Taq DNA polymerase, dNTPs and reaction buffer

Core kits for standard PCR

| Cat.-No. | Size | Conc. |
|----------|------------|------------------|
| PCR-232S | 200 units | 5 units/ μ l |
| PCR-232L | 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 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

Description

Taq Core Kit 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 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 μ l PCR assay | | |
|---------------------------|----------------------------------|-----------|
| 5 μ l | 10x Taq reaction 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.

Related products

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For detailed information please visit
www.jenabioscience.com/pcr