DATA SHEET

Jena Bioscience

# KlenTaq

Thermostable DNA Polymerase
*Thermus aquaticus*, recombinant, *E. coli*

| Cat. No. | Amount |
|---|---|
| PCR-217S | 200 units |
| PCR-217L | 5 x 200 units |

**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 74 °C.

**For general laboratory use.**

**Shipping:** shipped on gel packs

**Storage Conditions:** store at -20 °C

**Additional Storage Conditions:** avoid freeze/thaw cycles

**Shelf Life:** 12 months

**Form:** liquid

**Concentration:** 5 units/µl

**Description:**
KlenTaq is a truncated version of Taq DNA Polymerase, lacking its first 280 amino acids. The enzyme catalyzes the polymerization of nucleotides into duplex DNA in 5'→3' direction in the presence of magnesium but lacks the 5'→3' exonuclease activity of Taq polymerase. The enzyme is purified by an additional separation process to reduce contaminating bacterial DNA sequences.
In addition to routine PCR, KlenTaq is recommended for genotyping and primer extension. Compared to Taq the enzyme shows an improved fidelity and thermostability.

**Content:**
**KlenTaq (red cap)**
5 units/µl KlenTaq 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)

**KlenTaq Buffer (green cap), 10x conc.**
200 mM Tris-HCl, 400 mM KCl, 25 mM $MgCl_2$, pH 8.5 (25 °C)

| component | PCR-217S | PCR-217L |
|---|---|---|
| KlenTaq Polymerase | 200 units / 40 µl | 5 x 200 units / 5 x 40 µl |
| KlenTaq Buffer, 10x conc. | 400 µl | 5 x 400 µl |

**PCR Reaction Set-Up:**
The PCR procedure below shows appropriate volumes for a single 50 µl reaction. For multiple reactions, prepare a master mix of all components and dispense appropriate volumes into each PCR reaction tube prior to adding template DNA and primers.
Thaw up and briefly centrifuge each component before use.
Add the following components to a PCR tube:

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**Prepare PCR Master Mix**

| comp. | cap | final conc. | 1 assay @ 50 µl |
|---|---|---|---|
| PCR-grade Water | white | | fill up to 50 µl |
| 10x reaction Buffer | green | 1x | 5 µl |
| dNTP Mix 10 mM | white | 200 µM each | 1 µl |
| KlenTaq | red | 2.5 units/reaction | 0.5 µl |
| forward primer (10 µM) | | 0.1 - 0.5 µM | 0.5 - 2.5 µl |
| reverse primer (10 µM) | | 0.1 - 0.5 µM | 0.5 - 2.5 µl |
| template DNA | | 10 pg - 1 µg[1)] | |

[1)]genomic DNA: 1 ng - 1 µg, plasmid and viral DNA: 1 pg - 1 ng

Mix and briefly centrifuge the components

**Optimisation of $MgCl_2$ concentration:**
The final assay contains 3.5 mM $Mg^{2+}$ as recommended for most applications. For an individual optimisation $Mg^{2+}$ stock solution (#PCR-266) mybe added.

**Incubate reactions in a thermal cycler**
Recommended cycling conditions:

| | | | |
|---|---|---|---|
| initial denaturation | 96 °C | 2 min | 1x |
| denaturation<br>annealing[2)]<br>elongation[3)] | 96 °C<br>50 - 68 °C<br>72 °C | 15 - 30 sec<br>15 - 30 sec<br>30 sec - 4 min | 25 - 35x |
| final elongation *(optional)* | 72 °C | 2 min | 1x |
| hold | 4 - 8 °C | | |

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

For optimal specificity and amplification an individual optimisation of the recommended parameters may be necessary for each new template DNA and/or primer pair.

**Related Products:**
$Mg^{2+}$ Stock, #PCR-266