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:

KlenTaq

Thermostable DNA Polymerase
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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 annealing[2)] elongation[3)]	96 °C 50 - 68 °C 72 °C	15 - 30 sec 15 - 30 sec 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