DATA SHEET

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Biotecnologia ao seu alcance

SuperTaq Pol

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

Cat. Nº.	Amount
☐ POL-110XS	250 units
☐ POL-110S	500 units
☐ POL-110L	2.500 units
☐ POL-110XL	4 x 1.000 units

Unit Definition:
One unit is defined as the amount of the enzyme required to catalyze the incorporation of 10 nmoles of dNTPs into an acid-insoluble form in 30 minutes at 70 °C.

Concentration:
5 units/µL

Shipping:
Shipped on blue ice

Storage Conditions:
Store at -20 °C

For *in vitro* use only!

Additional Storage Conditions:
Avoid freeze/thaw cycles

Shelf Life:
36 months

Description:
SuperTaq Pol 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 contains detergents and may interfere with automated pipetting systems.

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.

Kit contents:

SuperTaq Pol (blue cap)
5 units/µl SuperTaq Pol in Tris-HCl pH 8.0 (25°C), KCl, EDTA, DTT, 50% (v/v) Glycerol, and stabilizers.

SuperTaq Colorless Reaction Buffer (red cap) - 5x conc.
Proprietary formulation supplied at pH 8,5. DOES NOT CONTAIN $MgCl_2$.

SuperTaq Green Reaction Buffer (red cap) - 5x conc.
Is supplemented with tracking dyes for direct loading of PCR products on gels. DOES NOT CONTAIN $MgCl_2$.

MgCl2 Stock Solution (yellow cap)
25 mM $MgCl_2$.

PCR Reaction Setup

The PCR procedure below shows appropriate volumes for a single 50-µL reaction. For multiple reactions, prepare a master mix of components common to all and then dispense appropriate volumes into each PCR reaction tube prior to adding template DNA and primers.

Thaw, mix, and briefly centrifuge each component before use.

Add the following components to a microcentrifuge tube:

1. Prepare PCR master mix
Note: Consider the volumes for all components listed next steps to determine the correct amount of water required to reach your final reaction volume.

Components	50 µL rxn	[final]
Water, grade PCR	To 50 µl	
5X Reaction Buffer	10 µl	1X
$MgCl_2$	2-8 µl	1.0 -4.0 mM
dNTP (Mix 10 mM)	1 µl	200 µM
SuperTaq (5U/ µl)	0,25 - 0,5 µl	1,25 – 2,5 U/reaction

2. Add template DNA and primers

Components	50 µL rxn	[final]
Foward primer (10 µM)	0,5 - 2,5 µl	0,1 – 0,5 µM
Reverse primer (10 µM)	0,5 - 2,5 µl	0,1 – 0,5 µM
DNA template		10 pg – 1 µg**

**genomic DNA: 1 ng-1µg; plasmidial or viral DNA: 1 pg-1 ng

Cap each tube, mix, and briefly centrifuge the content.

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3. Incubate reactions in a thermal cycler.

Recommended cycling conditions:

Step		Temp.	Time
Initial denaturation		95 °C	1 - 3 min
30 cycles	Denaturation	95 °C	15 - 30 sec
	Annealing [1]	45-68 °C	15 - 30 sec
	Elongation [2]	72 °C	1 min/kbp
Final extension (Optional)		72 °C	1 - 2 min/kbp
Hold		4 - 8 °C	

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/kb is recommended.

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