5x OmniTaq-LA PCR Kit

Amount: 2 x 1.25 ml (250 reactions)
Shipping conditions: Ice pack
Storage conditions: for best performance, store at -20°C
Shelf life: At least 1 year if stored at -20°C and 10 freeze/thaws or at least 3 months if stored at 4°C.

PRODUCT DESCRIPTION:
Our 5x ready-to-use PCR kit contains OmniTaq-LA, a double mutant of Taq polymerase that makes the enzyme resistant to the inhibitory effects of blood, soil and more. It remains functional in up to 20-25% whole blood, especially in the presence of our enhancer products, or in some concentrations of crude soil extract where other commercial enzymes fail. Due to its suppressed activity at low temperatures this enzyme also provides a hot start for PCR. OmniTaq is extremely sensitive and able to pick up trace amounts of DNA in the sample reaction. OmniTaq managed to amplify successfully a single- copy human gene target from 5 pg input DNA. Another special feature of OmniTaq is its fast running ability. A 600bp bacterial target was amplified with 5 seconds extension time and 35 cycles starting off with 1ng of DNA template. This kit can be used for regular, as well as real-time PCR. It contains everything necessary for a PCR reaction to work perfectly, just add your template, primers/probes and water. For real time reactions you may need to add a fluorescent dye as an alternative to probes. 5X composition is: 5x OmniTaq-LA DNA Polymerase, 1 mM dNTPs, 250 mM Tris-Cl pH 8.3, 80 mM ammonium sulfate, 0.5% Tween 20, and 12.5 mM magnesium chloride.

TYPICAL PCR PROTOCOL for a 50µl reaction:

Reagent	Volume	Final Concentration
5x OmniTaq-LA PCR Kit Reagent	10 µl	1x
Left Primer	variable	0.2 µM
Right Primer	variable	0.2 µM
DNA template†	Variable	0.5-100ng
PCR Enhancer Cocktail (PEC) (recommended)*	25 µl	1x
de-ionized distilled H_2O	Adjust final volume to 50µl	-

† DNA amount depends mostly on genome size and target gene copy number.
*For optimal performance, we recommend using one of our PCR Enhancer Cocktails (PEC-1, PEC-1GC, PEC-2, or PEC-2-GC) which are specially formulated for use with whole blood, serum or plasma.

CYCLING CONDITIONS

1. Pre-incubation: 94° for 2 minutes for 1 cycle
2. Denaturating: 94° for 40-60 seconds
3. Annealing: 55°-70° depending on the specific primers (5° less than Tm) for 40-60 seconds
4. Extension: 68° for 2 min / 1kb target
5. Repeat steps 2-4 for 25-40 cycles

REFERENCES:
Kermekchiev, M.B., et al. (2003) Cold-sensitive mutants of Taq DNA polymerase provide a hot start for PCR. Nucl Acids Res. 31, 6139-6147.

Kermekchiev, M.B. et al. (2009) Mutants of Taq DNA polymerase resistant to PCR inhibitors allow DNA amplification from whole blood and crude soil samples. Nucl. Acids Res., 37 (5):e40 E pub.

Please visit us on the web at www.klentaq.com for troubleshooting and detailed protocols.