

5x OmniTaq PCR Kit Cat #: 320

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, a double mutant of Taq polymerase that makes the enzyme resistant to the inhibitory effects of blood, soil, inhibitory foods, and more. It remains functional in up to 20-25% whole blood, especially in the presence of our PCR Enhancer Cocktails. 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. 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. The 5x OmniTaq PCR kit is optimized for targets up to 1 kb in length. **For longer targets, please choose the 5x OmniTaq LA PCR Kit.** 5X composition is: 5x OmniTaq DNA Polymerase, 1 mM dNTPs, 250 mM Tris-Cl pH 8.3, 80 mM ammonium sulfate, 0.125% Brij 58, and 12.5 mM magnesium chloride.

TYPICAL PCR PROTOCOL for a 25 µl reaction:

Reagent	Volume	Final Concentration
5x OmniTaq PCR Kit Reagent	5 µl	1x
Left Primer	variable	0.2 µM
Right Primer	variable	0.2 µM
DNA template [†]	variable	0.5-100ng
PCR Enhancer Cocktail (recommended)*	12.5 µl	1x
de-ionized distilled H ₂ O	Adjust final volume to 25µl	-

[†] 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, plasma, soil, inhibitory foods, and other PCR inhibitors.

CYCLING CONDITIONS

1. Pre-incubation: 94° for 2 minutes for 1 cycle
2. Denaturing: 94° for 40-60 seconds
3. Annealing: 55°-70° depending on the specific primers (5° less than T_m) 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.

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