

## 5x Omni Klentaq PCR Kit

Cat #: 360



**Amount:** 125  $\mu$ l enzyme and two 1.25 ml tubes of 5x Mastermix  
(sufficient for 500 x 25  $\mu$ l reactions)

**Shipping conditions:** Ice Pack

**Storage conditions:** -20°C F

**Thermostability:** Retains at least 85% activity after 1 hour at 95°C

**Shelf life:** At least 1 year from date of receipt under proper storage conditions.

### PRODUCT DESCRIPTION:

Our 5x ready-to-use PCR kit contains Omni Klentaq, a mutant of Klentaq DNA polymerase known to be resistant to soil, blood, and other PCR inhibitors. This kit can be used for conventional as well as real-time PCR. For real-time applications you may need to add a fluorescent dye as an alternative to probes. 5x Mastermix composition is: 250 mM Tris-Cl pH 9.2, 80 mM ammonium sulfate, 0.13% Brij 58, 17.5 mM Magnesium Chloride, and 1 mM each dNTP.

### TYPICAL PCR PROTOCOL for a 25 $\mu$ l reaction:

Reagent	Volume	Final Concentration
5x Mastermix	5 $\mu$ l	1x
Left Primer	variable	200 nM
Right Primer	variable	200 nM
DNA template†	variable	0.1-100 ng
PCR Enhancer Cocktail (recommended)*	12.5 $\mu$ l	1x
Omni Klentaq	0.05 – 0.25 $\mu$ l **	
De-ionized distilled H2O	Adjust final volume to 25 $\mu$ l	

† 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.

\*\* To determine specific optimal enzyme concentration, we strongly recommend an enzyme titration test for each target. Good starting amount of the enzyme per 25  $\mu$ l reaction is 0.05  $\mu$ l for purified DNA templates and 0.25  $\mu$ l for crude samples containing 5-10% whole blood, plasma or serum. Targets larger than 1 kb may require more enzyme.

### CYCLING CONDITIONS:

1. Denaturing: 94° for 2-8 minutes for 1 cycle \*
2. Denaturing: 94° for 40-60 seconds
3. Annealing: 50°-68° depending on the specific T<sub>m</sub> primers for 40-60 seconds
4. Extension: 68° for 2 min/kb target
5. Repeat steps 2-4 for 25-40 cycles

Initial 2-8 min heating step is recommended for crude samples containing 5-10% whole blood, plasma or serum.

**Please visit us on the web at [www.klentaq.com](http://www.klentaq.com) for troubleshooting and detailed protocols.**

### 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.

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