

## Lyoph-Ready OmniTaq

Cat #: GF300



**Amount:** 1000 x 25  $\mu$ l reactions  
(equivalent to 250 ul standard OmniTaq. Volume may be up to 2.5x higher)

**Shipping conditions:** Ice Pack

**Storage conditions:** 4°C

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

### PRODUCT DESCRIPTION:

A lyoph-ready version of OmniTaq DNA Polymerase, a double mutant of Taq polymerase that makes the enzyme resistant to the inhibitory effects of blood, soil and more. OmniTaq is extremely sensitive and able to perform well using very low amounts of template DNA. Another special feature of OmniTaq is its fast running ability. 10x buffer composition is: 500 mM Tris-Cl pH 9.1, 160 mM ammonium sulfate, 0.25% Brij 58, and 25 mM magnesium chloride.

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

Reagent	Volume	Final Concentration
10x Taq Mutant Reaction Buffer	2.5 $\mu$ l	1x
dNTP mix (10 mM each)	0.5 $\mu$ l	200 $\mu$ M each
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
OmniTaq	0.05 – 0.25 $\mu$ l **	
De-ionized distilled H <sub>2</sub> O	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 or may benefit from the use of an LA (Long Accurate) version of the polymerase.

### 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

Please visit us on the web at [www.klentag.com](http://www.klentag.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.