

Hot Start Omni Klentaq

Cat #: HS340



Amount: 125 μ l (500 x 25 μ l reactions)

Shipping conditions: Ambient temperature

Storage conditions: -20°C

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

Expiration: On tube label

PRODUCT DESCRIPTION:

Hot Start Omni Klentaq is made with aptamer-based technology, enabling room temperature reaction set-up.

Omni Klentaq is a multipurpose mutant of Klentaq is able to overcome inhibitors in blood, serum, soil, inhibitory foods, and fluorescent dyes. It can tolerate 15 - 20% whole blood or serum in the PCR reaction.

The aptamer binds to the polymerase at sub-cycling temperatures, inactivating the enzyme and preventing spurious amplification. 10x buffer composition is: 500 mM Tris-Cl pH 9.2, 160 mM ammonium sulfate, 0.25% Brij 58, and 35 mM magnesium chloride.

TYPICAL PCR PROTOCOL for a 25 μ l reaction:

Reagent	Volume	Final Concentration
10x Klentaq Mutant Reaction Buffer	2.5 μ l	1x
dNTP mix (10 mM each)	0.5 μ l	200 μ 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 μ l	1x
Hot Start Omni Klentaq	0.05 – 0.25 μ l **	
De-ionized distilled H ₂ O	Adjust final volume to 25 μ 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 or 1.3 M Betaine, a general PCR enhancer.

** To determine specific optimal enzyme concentration, we strongly recommend an enzyme titration test for each target. A good starting amount of the enzyme per 25 μ l reaction is 0.05 μ l for purified DNA templates and 0.25 μ 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 the 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_m 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 for troubleshooting and detailed protocols.

REFERENCES:

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.