

Hot Start Klentaq1

Cat #: HS100



Amount: 100 μ l enzyme (sufficient for 2000 x 25 μ l reactions up to 1 kb)

Shipping conditions: Ambient

Storage conditions: -20°C

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:

Hot Start Klentaq1 is made with aptamer-based technology, enabling room temperature reaction set-up.

Klentaq1 is a 5'-exonuclease deficient Taq polymerase (an N-terminal deletion of Taq) with improved fidelity and thermostability.

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, 0.5% Brij 58, and 35 mM magnesium chloride. We also offer (upon request) 10x buffer at pH 7.9 for better fidelity.

TYPICAL PCR PROTOCOL for a 25 μ l reaction:

Reagent	Volume	Final Concentration
10x Klentaq1 Reaction Buffer	2.5 μ l	1x
DNTP mix (10 mM)	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
Betaine 5M*	6.5 μ l (optional)	1.3M
Hot Start Klentaq1**	0.05 – 0.25 μ l **	2.5 units
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.

* Betaine is a general PCR enhancer. It usually improves the yield and specificity of amplification especially for longer targets.

** To determine specific optimal enzyme concentration, we strongly recommend an enzyme titration test for each target. Targets larger than 1 kb may require more enzyme or may benefit from the LA (Long-Accurate) version of the polymerase

CYCLING CONDITIONS

1. Denaturing: 94° for 2 minutes for 1 cycle
2. Denaturing: 94° for 40-60 seconds
3. Annealing: 50°-68° depending on the specific primers (5° less than T_m) 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.klentaq.com for troubleshooting and detailed protocols.

REFERENCES:

Barnes, W.M. (1994) PCR amplification of up to 35 kb DNA with high fidelity and high yield from bacteriophage templates, PNAS 91, 2216-2220.

U.S. Patent No. 5,436,149