

Rapid Klentaq DNA Polymerase

Amount: 25 µl (25 units/µl or 250 reactions) per tube

Shipping conditions: Ambient temperature

Storage conditions: -20°C for enzyme, 4°C for 10x Rapid Klentaq buffer

Thermo stability: 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:

Rapid Klentaq is a double cold-sensitive mutant of Klentaq1 (5'-exonuclease deficient Taq polymerase with improved fidelity and thermostability). This enzyme is designed to provide robust amplification with a very short extension time. Due to its suppressed activity at low temperatures, it can perform hot-start PCR as well. 10x buffer composition is: 500 mM Tris-Cl pH 9.2, 160 mM ammonium sulfate, 1% Tween 20, and 35 mM magnesium chloride. We also offer (upon request) 10x buffer at pH 7.9 for better fidelity.

TYPICAL PCR PROTOCOL for a 50µl reaction:

Reagent	Volume	Final Concentration
10x Rapid Klentaq PCR buffer [†]	5µl	1x
dNTP mix (10 mM)	1µl	200µM each
Left Primer	variable	200 nM
Right Primer	variable	200 nM
DNA template [†]	variable	0.1-100 ng
Betaine 5M*	13µl (optional)	1.3 M
Rapid Klentaq Polymerase**	0.1µl	2.5 unit
de-ionized distilled H ₂ O	Adjust final volume to 50µl	-

[†] 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 use of an LA (Long Accurate) version of the polymerase.

CYCLING CONDITIONS

1. Denaturing: 94° for 2 minutes for 1 cycle
2. Denaturing: 94° for 30-45 seconds
3. Annealing: 50°-68° (depending on the specific T_m of primers) for 40-60 seconds
4. Extension: 68° for as little as 10 seconds for a 600 bp target (longer targets may require longer extension for optimal results. Try 2 min/kb to start.)
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.

Please visit us on the web at www.klentaq.com for troubleshooting and detailed protocols.

Notice to Purchaser

DNA Polymerase Technology products may not be resold, modified for resale or used to manufacture products without an agreement with DNA Polymerase Technology, Inc. Cold-sensitive mutant DNA Polymerases by DNA Polymerase Technology are licensed under US Patent No. 6,214,557. No license for Rapid Klentaq to be used in a Polymerase Chain Reaction has been purchased by DNA Polymerase Technology, Inc.