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## Cesium KlenTaq AC-LA

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## Datasheet

# Cesium KlenTaq AC-LA DNA Polymerase

**Amount:** 100  $\mu$ l (25 units/ $\mu$ l or 1000 reactions) per tube

**Shipping conditions:** Ambient temperature

**Storage conditions:** -20°C for enzyme, 4°C for 10x Cesium 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

Cesium KlenTaq AC-LA is a double cold-sensitive mutant of KlenTaq1 (5'-exonuclease deficient Taq polymerase with improved fidelity and thermostability) with the Long-and-Accurate feature that allows amplification of longer products with higher fidelity and accuracy. Due to its suppressed activity at low temperatures this enzyme is designed for hot start PCR performance.

## A TYPICAL PCR PROTOCOL for a 50 $\mu$ l reaction

Reagent	Volume	Final Concentration
10x Cesium KlenTaq PCR buffer	5 $\mu$ l	3.5 mM MgCl <sub>2</sub>
dNTP mix (10 mM)	1 $\mu$ l	200 $\mu$ M each
Left Primer	variable	0.2 $\mu$ M
Right Primer	variable	0.2 $\mu$ M
DNA template <sup>†</sup>	variable	0.1-100ng
Betaine 5M <sup>‡</sup>	13 $\mu$ l (optional)	1.3 M
Cesium KlenTaq AC-LA Polymerase <sup>*</sup>	0.1 $\mu$ l	2.5 units
de-ionized distilled H <sub>2</sub> O	Adjust final volume to 50 $\mu$ l	-

Cesium KlenTaq PCR buffer contains 35mM MgCl<sub>2</sub>.

<sup>†</sup> DNA amount depends mostly on genome size and target gene copy number.

<sup>‡</sup> Betaine is a general PCR enhancer. It usually improves the yield and specificity of amplification especially for longer targets.

<sup>\*</sup> **To determine specific optimal enzyme concentration, we strongly recommend an enzyme titration test for each target. Targets larger than 1kb may require more enzyme.**

## 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 T<sub>m</sub> primers for 40-60 seconds
4. Extension: 68° for 2 min / 1kb target
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.

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