# Cesium Klentaq-C-LA DNA Polymerase

**Amount:** 25 µl (0.1 µl / 50 µl reaction)
**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-C-LA Polymerase is a double cold-sensitive mutant of Klentaq1 polymerase. Due to its suppressed activity at low temperatures this enzyme is designed for hot start PCR performance. It also features the Long-and-Accurate feature that allows amplification of longer products with higher fidelity and accuracy. 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 Cesium Klentaq PCR buffer | 5µl | 1x |
| dNTP mix (10 mM) | 1µl | 200µM each |
| Left Primer | variable | 0.2 µM |
| Right Primer | variable | 0.2 µM |
| DNA template† | variable | 0.1-100ng |
| Betaine 5M* | 13µl (optional) | 1.3 M |
| Cesium Klentaq-C-LA Polymerase** | 0.1 - 0.5µl | |
| de-ionized distilled $H_2O$ | 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 longer than 1 kb may require more enzyme.

**CYCLING CONDITIONS**
1. Denaturating: 94° for 2 minutes for 1 cycle
2. Denaturating: 94° for 30-45 seconds
3. Annealing: 50°-68° depending on the specific primers' Tm for 40-60 seconds
4. Extension: 72° for at least 1 min
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.**