Enzyme Combo LA   Cat #: 510

Amount:

Klentaq LA: 25 µl (0.05 µl per kb but no more than 0.325 µl/ 25 µl rxn)
OmniTaq LA: 25 µl (0.05- 0.5µl/ 25 µl rxn)
OmniTaq 2 LA: 25 µl (0.05- 0.5µl/ 25 µl rxn)
OmniTaq 3 LA: 25 µl (0.05- 0.5µl/ 25 µl rxn)
Omni Klentaq LA: 25 µl (0.05- 0.5µl/ 25 µl rxn)
Omni Klentaq 2 LA: 25 µl (0.05- 0.5µl/ 25 µl rxn)
Cesiµm Klentaq AC LA: 25 µl (0.05 µl/ 25 µl rxn)
Cesium Klentaq C LA: 25 µl (0.05 µl/ 25 µl rxn)
CesiumTaq LA: 25 µl (0.05 µl/ 25 µl rxn)
ZipTaq LA: 25 µl (0.05 µl/ 25 µl rxn)

10x Klentaq1 Reaction Buffer (1.5 ml) for use with Klentaq LA
10x Klentaq Mutant Reaction Buffer (1.5 ml) for use with Omni Klentaq LA, and Omni Klentaq 2 LA, Cesium Klentaq AC LA, and Cesium Klentaq C LA
10x Taq Mutant Reaction Buffer (1.5 ml) for use with OmniTaq LA, OmniTaq 2 LA, OmniTaq 3 LA, and CesiumTaq LA
10 ZipTaq Reaction Buffer (1.5 ml) for use with ZipTaq LA

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:
Our Enzyme Combo LA allows you to test 8 of our enzymes to see which one works best for your application. LA enzymes are not recommended for use with dUTP.

10x Klentaq1 Reaction Buffer is provided for Klentaq LA. Buffer composition is: 500 mM Tris, 160 mM ammonium sulfate, 0.5% Brij 58, and 35 mM magnesium chloride. Final pH is 9.2. pH 7.9 available upon request for better fidelity.

10x Klentaq Mutant Reaction Buffer is provided for Omni Klentaq LA, Omni Klentaq 2 LA, Cesium Klentaq AC LA, and Cesium Klentaq C LA. Buffer composition is: 500 mM Tris, 160 mM ammonium sulfate, 0.25% Brij 58, and 35 mM magnesium chloride. Final pH is 9.2. pH 7.9 available upon request for better fidelity.

10x Taq Mutant Reaction Buffer is provided for OmniTaq LA, OmniTaq 2 LA, OmniTaq 3 LA, and CesiumTaq LA. Buffer composition is: 500 mM Tris-Cl, 160 mM ammonium sulfate, 0.25% Brij 58, and 25 mM magnesium chloride. Final pH is 9.1. pH 7.9 available upon request for better fidelity.

10x ZipTaq Reaction Buffer is provided for ZipTaq LA. Buffer composition is proprietary.

TYPICAL PCR PROTOCOL for a 25 ul reaction:

Reagent	**Volume**	**Final Concentration**
10x appropriate buffer (see above)	2.5 µl	1x
dNTP mix (10 mM each)	0.5 µl	200 µM each
Left Primer	variable	200 nM
Right Primer	variable	200 nM
DNA template†	variable	0.1-100 ng
PCR Enhancer Cocktail (recommended)*	12.5 µl	1x
DNA Polymerase	0.05 – 0.25 µl **	
De-ionized distilled H2O	Adjust final volume to 25 µl	

† DNA amount depends mostly on genome size and target gene copy number.
* Our PCR Enhancer Cocktails or 1.3M Betaine (sold separately) confer additional inhibition resistance when using whole blood, serum,

plasma, soil, and some inhibitory foods.
** To determine specific optimal enzyme concentration, we strongly recommend an enzyme titration test for each target. Optimal concentrations start at 0.05 µl / 25 µl rxn when using purified DNA template. Our Omni enzymes require more enzyme (up to 0.5 µl / 25 µl rxn) for use with crude samples containing 5% or more whole blood, plasma or serum, or crude soil extracts, or food matrices. For all our enzymes, targets larger than 1 kb may require more enzyme.

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 Tm primers for 40-60 seconds*
4. Extension: 68° for 2 min/kb target*
5. Repeat steps 2-4 for 25-40 cycles

*ZipTaq LA requires only 1-5 seconds for each of the denature, anneal (optional), and extension steps. For longer products, add an additional extension of 1-5 seconds per kb.

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

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.

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.