Product information

Product Name: Enzyme Combo LA

Catalog No: VN250EC

Packing Size: KlenTaq LA 25 µl, OmniTaq LA 25 µl, OmniTaq 3 LA, Omni Klentaq 2 LA 25 µl

Shipping Condition: Ambient temperature

Storage Condition: -20^{0}C

Thermo Stability: Retains at least 85% activity after 1 hour at 95^{0}C

Shelf life: At least 3 years from date of receipt under proper storage conditions

Product Description:

Enzyme Combo LA allows scientists to sample several different enzymes to determine which one is right for their application. The Long-and-Accurate feature allows for amplification of longer products with higher fidelity and accuracy.

Reaction Buffer:

The 10X KlenTaq Mutant Buffer composition is for KlenTaq LA, Omni Klentaq 2 LA. The 10x Taq Mutant Buffer is for OmniTaq LA, OmniTaq 3 LA.

Protocol:

PCR setting for a 25 µl reaction

Reagent	Volume	Final Concentration
10x Appropriate Reaction Buffer	2.5 µl	1x
dNTP Mix (10 mM)	0.5-1.0 µl	200-400 µM each
Left Primer	Variable	0.2-0.4 µM
Right Primer	Variable	0.2-0.4 µM
DNA template[†]	Variable	0.1-100 ng
PCR Enhancer Cocktail (PEC) (optional)*	12.5 µl	1x
Desired Enzyme**	0.05-0.5 µl	
De-ionized Distilled H_2O	Adjust final volume to 25 µl	

[†]DNA amount depends mostly on genome size and target gene copy number.
* For optimal performance, we recommend using one of our PCR Enhancer Cocktails (see PCR enhancers for the detail) if you encounter a problem to amplify the target. The PEC is not included with the enzyme and you should order separately if you need it.
** To determine specific optimal enzyme concentration, we strongly recommend an enzyme titration test for each target. A good starting amount of enzyme per 25 µl of reaction is 0.05 µl for purified DNA templates and 0.25 µl for crude samples containing 5% or more blood, serum and plasma. Targets larger than 1 kb may require more enzyme.

Typical Cycling Parameters

Initial denaturation	95^{0}C	2-5 min (for purified DNA) 5-10 min (for crude samples)
25-40 cycles		
Denaturation	94^{0}C	20 to 30 sec
Annealing	50^{0}C to 68^{0}C	30 to 60 sec
Extension	70^{0}C	2 min / 1kb target
Final Extension	70^{0}C	5 min
Hold	4^{0}C	

Troubleshooting guide

No PCR products	Check your PCR setting to see if you miss some components in the PCR master mix.
The bands in agarose gel are smear	Enzyme titration test to find optimal enzyme concentration for your target. Too much enzyme may inhibit the PCR, especially when the target gene is short and easy. Check to see if the DNA and primers degraded.
Low yield of products	Increase PCR cycles. Try gradient annealing temperature. Enzyme titration. Use PCR enhancer cocktail. Re-design primers.
Non-specific products are observed	Try gradient annealing temperature to find optimal annealing temperature for your target. Check GC content of the target. If it is more than 65%, you may need to use PEC-1-GC in the PCR. Check your primers or redesign them if necessary.

Note: This product is for R&D use only

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