

Klen Bst Polymerase Enzyme(8U/μl)

Reference Guide

Catalog	Description
HL - KBst- 100	800 Units
HL - KBst - 200	1600 Units
HL - KBst- 400	3200 Units

Store at -20°C
 PI/HL -KBst- 02

Product Description

KlenBstPolymerase Enzyme is used for Loop-Mediated Isothermal Amplification (LAMP). It is a full-length (large fragment) 67 kDa polymerase from *Bacillus stearothermophilus*. It has 5' → 3' polymerase. The enzyme has a strand displacement activity and also lacks 5' → 3' exonuclease activity. KlenBst Polymerase is less sensitive to inhibitors compared to other Taq Polymerases, therefore can be used with partially purified samples. The enzyme works optimally at a uniform temperature at 65° and can be heat-inactivated when exposed to temperatures above 80°C for 20 minutes. Ideal for high yields.

Source

Modified synthetic KlenBstPolymerase gene from *Bacillus stearothermophilus* expressed and purified in *E. coli* strain.

Reagents Supplied

- KlenBst Polymerase Enzyme (8U/μl)
- KlenBst Reaction Buffer 2X (1.25ml)

Unit definition

One unit is the amount of enzyme required to catalyze the incorporation of 10nmol of dNTP into acid-insoluble material in 30 minutes at 65°C.

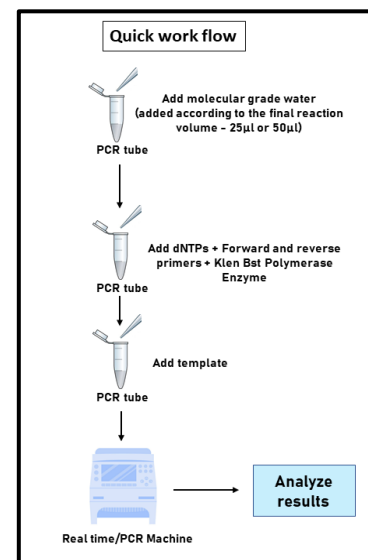
Storage

Recommended storage condition is -20°C

LAMP Assay procedure

Component	Volume (μL)
KlenBst Reaction Buffer (2X)	12.5
10mM dNTP Mix	1.5
Primers	10 to 20μM (Depends on primer type)
Template DNA	Variable (user-defined)
KlenBst Polymerase Enzyme (8U/μL)	1.0 to 1.5μL
** Additive	(Optional)
Water	Variable (user-defined)
Total reaction volume	25.0

** Additive is optional and can be used to enhance the results by better denaturation, especially for GC rich templates



Reaction components

Additive: The reagent helps in better denaturation of GC-rich templates. Using reagents like DMSO, betaine, etc. can improve the LAMP outcome. However, this should be done with careful standardization

Template: Optimal DNA template concentration usually used in Isothermal amplification is up to 1 ng for both plasmid and phage DNA while 10-15ng for genomic DNA. The higher concentrations of template DNA generate non-specific LAMP products whereas lower concentrations affect the LAMP

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Optimal Assay Conditions

60 °C to 65°C for 40 to 60 minutes

Applications

- Isothermal DNA amplification by the method of loop-mediated isothermal amplification (LAMP)
- Whole-genome amplification (WGA)
- Ramification amplification (RAM)
- Multiple displacement amplification (MDA)
- Random-primed DNA labeling
- Labeling by fill-in 5'-overhangs of dsDNA
- Rapid Sequencing from nanogram amounts of DNA template
- Useful in next-generation sequencing
- Catalyzes the polymerization of nucleotides into duplex DNA in the 5'→3' direction in the presence of magnesium ions
- Whole-genome sequencing
- Sample identification in Forensics

*We recommend referring to our quick enzyme guide to choose the right enzyme for your needs

Taq Polymerase Enzyme	QuickStart Taq Polymerase Enzyme	HotStart Taq Polymerase Enzyme	Klen BST Polymerase Enzyme
Used for endpoint PCR	Real-time PCR and Endpoint PCR	Real-time PCR	Real-time LAMP and LAMP
Works with temperature shifts	Works with temperature shifts	Works with temperature shifts	Ideal for isothermal PCRs 60°C – 65°C
No activation	30 seconds activation	15 minutes activation	No activation

Other PCR products from HuwelLifeSciences that you may be interested

S.No.	Product description	Catalogue No.
1.	Universal PCR Mix (2X)	HL - UPM - 100 - 1.25ml
2.	UltraFast Real Time PCR Mix 5X	HL - UFPCM - 100 - 500µl HL - UFPCM - 200 - 1ml
3.	UltraFast Real Time PCR Mix 5X with UDG	HL - UUFPCM - 100 - 500µl HL - UUFPCM - 200 - 1ml
4.	Taq Polymerase Enzyme (5U/µl)	HL - Taq - 50 - 250Units HL - Taq - 100 - 500Units HL - Taq - 200 - 1000Units
5.	HotStart Taq Polymerase Enzyme (5U/µl)	HL - HSTaq- 50- 250Units HL - HSTaq - 100 - 500Units HL - HSTaq - 200 - 1000Units
6.	QuickStart Taq Polymerase Enzyme (5U/µl)	HL - QSTaq - 50 - 250Units HL - QSTaq - 100 - 500Units HL - QSTaq- 200 - 1000Units

For further information on protocols and details, please contact our technical support:
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