HelixAmp™ FastLAMP Kit (Ver. 2.0)

Kit Contents

HelixAmp™ FastLAMP Kit (Ver. 2.0)		
Cat. No.	**FLMP2-100** (100rxns)	**FLMP2-500** (500rxns)
FastLAMP Enzyme V2	0.1ml	0.1ml x 5ea
5x FastLAMP Buffer V2 (Mg-free)	0.5ml	0.5ml x 5ea
100mM $MgSO_4$	0.25ml	0.25ml x 5ea
D-Solution	1ml	1ml x 5ea
Instructions for Use	1ea	1ea

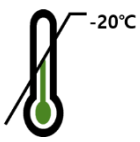
Description

HelixAmp™ FastLAMP Kit (Ver. 2.0) provides simple and fast (within 20 minutes) target DNA amplification using loop-mediated isothermal Amplification (LAMP). This kit consists of 5x FastLAMP buffer V2 (Mg-free), FastLAMP Enzyme V2 and a D-Solution. The 5x FastLAMP Buffer V2 (Mg-free), optimized for fast amplification, contains buffering reagents, dNTPs, and salts. The FastLAMP Enzyme V2 is composed of a newly engineered *Bst* DNA Polymerase that provides improved amplification reaction properties. The novel *Bst* DNA polymerase enhances the DNA polymerization speed and allows the fast isothermal amplification reaction.

Application

Isothermal amplification (LAMP) of DNA target

Storage



Store below -20℃

Shelf life

12 months

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Quality Control

By NanoHelix's ISO 13485-certified Quality Management System, each lot of **HelixAmp™ FastLAMP Kit (Ver. 2.0)** was tested against predetermined specifications to ensure consistent product quality.

Protocol

1. Reaction Mixture

- LAMP products can be analyzed by examining the end-point product or real-time assay.
- Prepare the reaction mix according to the following table for the selected analysis method.

Components	For end-point	For real-time (intercalating dye or probe)
Template [1]	1 ~ 5µl	1 ~ 5µl
5x FastLAMP Buffer V2 (Mg-free)	5µl	5µl
FastLAMP Enzyme V2	1µl	1µl
100mM $MgSO_4$	2.25µl	2.25µl
10x LAMP Primer mix [2]	2.5µl	2.5µl
Fluorescent dye [3] or probe	-	x µl
RNase-free Water	Adjust to final 25µl	

1) **Template preparation**: Purified DNA sample using a commercial DNA preparation kits or a manual method can be applied directly to this assay. For better amplification and detection sensitivity, we recommend to use the **D-Solution** provided in this kit. **D-Solution** helps to denature the template DNA and induces efficient primer binding to its target sequence. The denatured template can be prepared by adding 1/10 volume of the D-Solution to the DNA sample.
Ex) DNA Sample 50ul + D-Solution 5ul

2) For simplicity in setting up reactions, we recommend making stocks of the LAMP primers at a usable concentration. For example, we suggest a following **10x LAMP Primer Mix** containing all six LAMP primers. If there is low-efficiency or non-specific amplification, modify the primer concentration or design a new set of primers for the target sequence.

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10x LAMP Primer Mix	
LAMP primers	Primer concentration.
FIP	16μM
BIP	16μM
F3	2μM
B3	2μM
LF	8μM
LB	8μM

3) Recommend using final 0.1~0.2x SYBR Green I or 0.1~0.3x EvaGreen dye (not supplied in this kit).

2. Reaction Condition

For end-point assay: Incubate at 65°C for 30 minutes. Time can be extended as necessary for very low copy targets, challenging sample types, etc. Analysis the reaction product by a gel-electrophoresis or other detecting tools including colorimetric and fluorescence detection, turbidity observation, lateral flow devices, etc.

For real-time assay (intercalating dye or probe): Use a real-time PCR machine or an isothermal amplification instrument to run the assay. Set the instrument to a constant incubation temperature at 65°C. Measure the fluorescence intensity at every 1 min for 30 minutes. The reaction time can be increased as necessary for very low copy targets, challenging sample types, etc.

Products

Cat. No.	Products	Size
FLMP2-100	HelixAmp™ FastLAMP Kit (Ver. 2.0)	100rxns
FLMP2-500	HelixAmp™ FastLAMP Kit (Ver. 2.0)	500rxns

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