Ver. 2401-04

HelixAmp™ Fast RT-LAMP Kit (Ver. 2.0)

Kit Contents

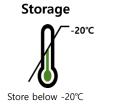
HelixAmp™ Fast RT-LAMP Kit (Ver. 2.0)				
Cat. No.	FRLMP2-100 (100rxns)	FRLMP2-500 (500rxns)		
RT-LAMP Enzyme V2	0.2ml	0.2ml x 5ea		
5x RT-LAMP Buffer V2 (Mg-free)	0.5ml	0.5ml x 5ea		
100mM MgSO ₄	0.25ml	0.25ml x 5ea		
Instructions for Use	1ea	1ea		

Description

HelixAmp[™] Fast RT-LAMP Kit (Ver. 2.0) provides simple and fast (within 20 minutes) target RNA amplification using loop-mediated isothermal Amplification (LAMP). This kit consists of a 5x RT-LAMP Buffer V2 (Mg-free), 100mM MgSO₄ and a RT-LAMP Enzyme V2. The 5x RT-LAMP Buffer V2 (Mg-free), optimized for fast amplification, contains buffering reagents, dNTPs, and salts. The RT-LAMP Enzyme V2 is a blend of engineered *Bst* DNA polymerase, thermostable reverse transcriptase (RTase), and RNase inhibitor. The novel *Bst* DNA polymerase enhances the DNA polymerization speed and allows the fast isothermal amplification reaction. The thermostable RTase is fully active at a relatively high temperature (60°C) and it makes possible the one-step RT-LAMP in a constant reaction temperature.

Application

Loop-Mediated Isothermal Amplification (LAMP) of RNA target





NanoHelix Co., Ltd. F711-1(Rev.0)



Quality Control

By Nanohelix's ISO 13485-certified quality management system, each lot of **HelixAmp[™] Fast RT-LAMP 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 assay	For real-time assay	
Template RNA	1 ~ 5µl	1 ~ 5µl	
5x RT-LAMP Buffer V2 (Mg-free)	5µl	5µl	
RT-LAMP Enzyme V2	2µl	2µl	
100mM MgSO ₄	2.25µl	2.25µl	
10x LAMP Primer Mix ¹⁾	2.5µl	2.5µl	
Fluorescent dye ²⁾ or probe	-	ΧμΙ	
RNase-free Water	Adjust to final 25µl		

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.

10x LAMP Primer Mix			
LAMP primers	Primer concentration.		
FIP	16µM		
BIP	16µM		
F3	2μΜ		
В3	2μΜ		
LF	8μΜ		
LB	8μΜ		

²⁾ Recommend using final 0.1~0.2x SYBR Green I or 0.1~0.3x EvaGreen dye (not supplied in this kit).

NanoHelix Co., Ltd. F711-1(Rev.0)



2. Reaction Condition

For end-point assay: Incubate at 60°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 (fluorescent 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 60°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
FRLMP2-100	HelixAmp™ Fast RT-LAMP Kit (Ver. 2.0)	100rxns
FRLMP2-500	HelixAmp [™] Fast RT-LAMP Kit (Ver. 2.0)	500rxns

NanoHelix Co., Ltd. F711-1(Rev.0)