Fast LAMP/RT-LAMP

for Point-of-Care Application

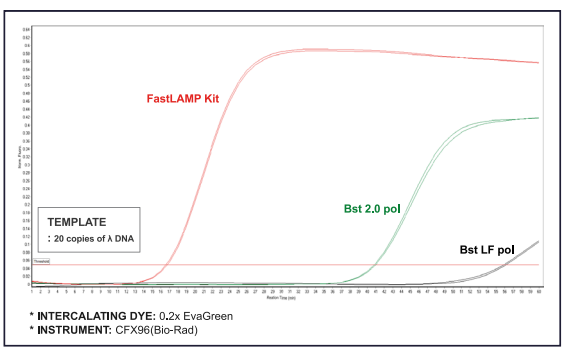
ISO 13485 : 2016

INNOBIZ

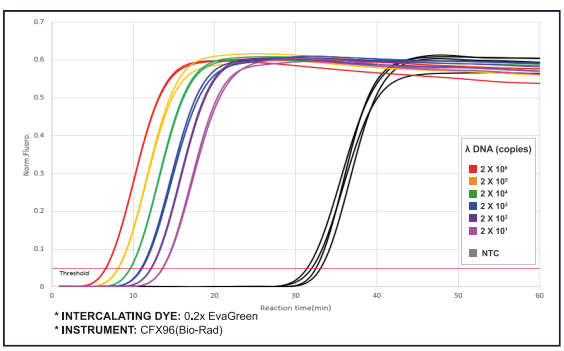
NANOHELIX
Reliable Partner for DNA Technologies

HelixAmp™ FastLAMP Kit (Ver. 2.0)

- **Fast detection**(< 20 minutes) for DNA target
- **Sensitive** and **accurate**
- **Flexible detection method:** Endpoint and real-time
- ***Bst* DNA polymerase-based** isothermal amplification
- Applicable to **POC MDx**



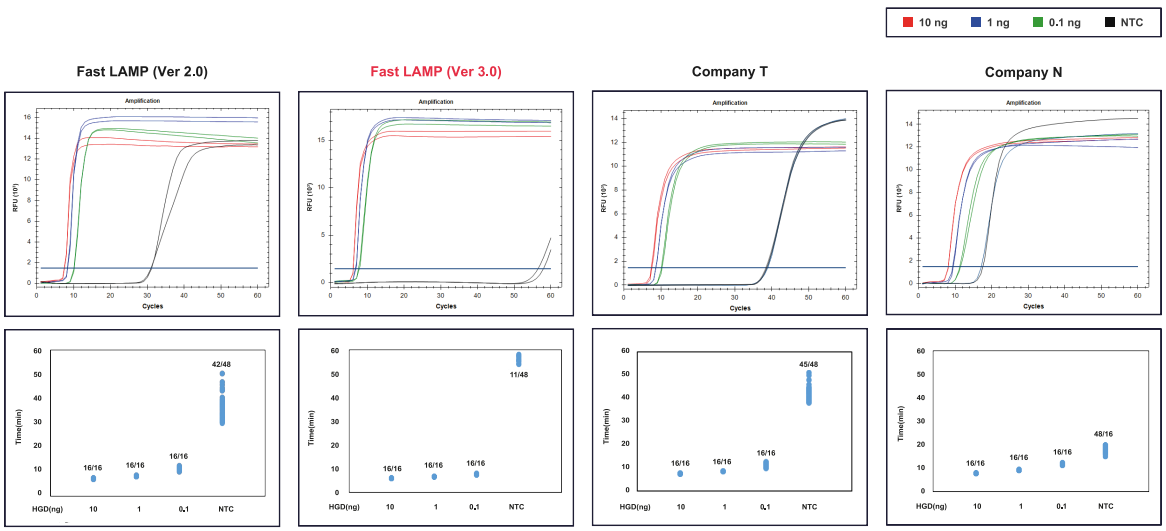
Real-time fluorescence LAMP assays of FastLAMP Kit compared with other company's products.



Sensitivity of FastLAMP Kit.

HelixAmp™ FastLAMP Kit (Ver. 3.0)

- **Lightning-fast** amplification: **8 minutes** to threshold
- **Unparalleled sensitivity**: As few as 10 to 50 copies of the target DNA in a reaction
- **Unmatched specificity**: Guarantee clear differentiation from background amplifications
- Ensuring **accurate** and **reliable** results: Experience next-level isothermal amplifications



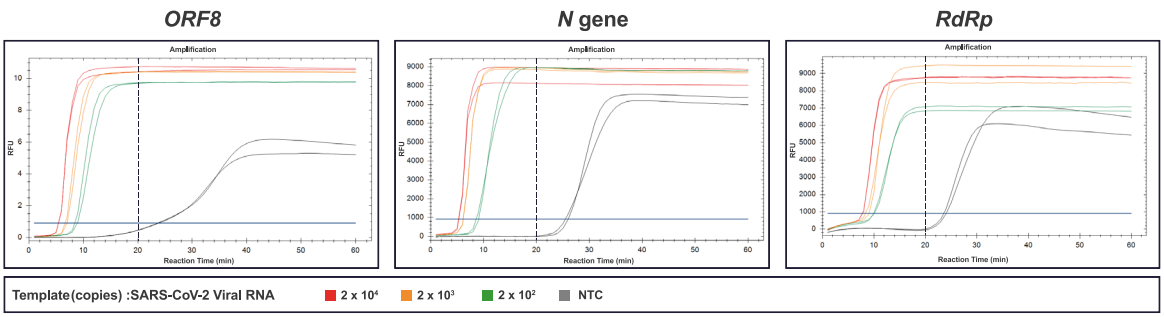
A comparative analysis of FastLAMP Kit (Ver. 3.0) and a competing company's LAMP Product.

Real-time isothermal amplifications of the BRCA gene were conducted from serially diluted human genomic DNA. The reactions were carried out at 65℃ for 60 minutes and analyzed using a real-time instrument(Bio-rad CFX96) by monitoring fluorescence signals. The kit exhibited exceptional results, demonstrating both the fastest amplification and the highest level of specificity.

info@nanohelix.net www.nanohelix.net

HelixAmp™ Fast RT-LAMP Kit (Ver. 2.0)

- **Fast detection**(< 20 minutes) for RNA target
- **Sensitive** and **accurate**
- **Flexible detection method:** Endpoint and real-time
- ***Bst* DNA polymerase-based** isothermal amplification
- Applicable to **POC MDx**



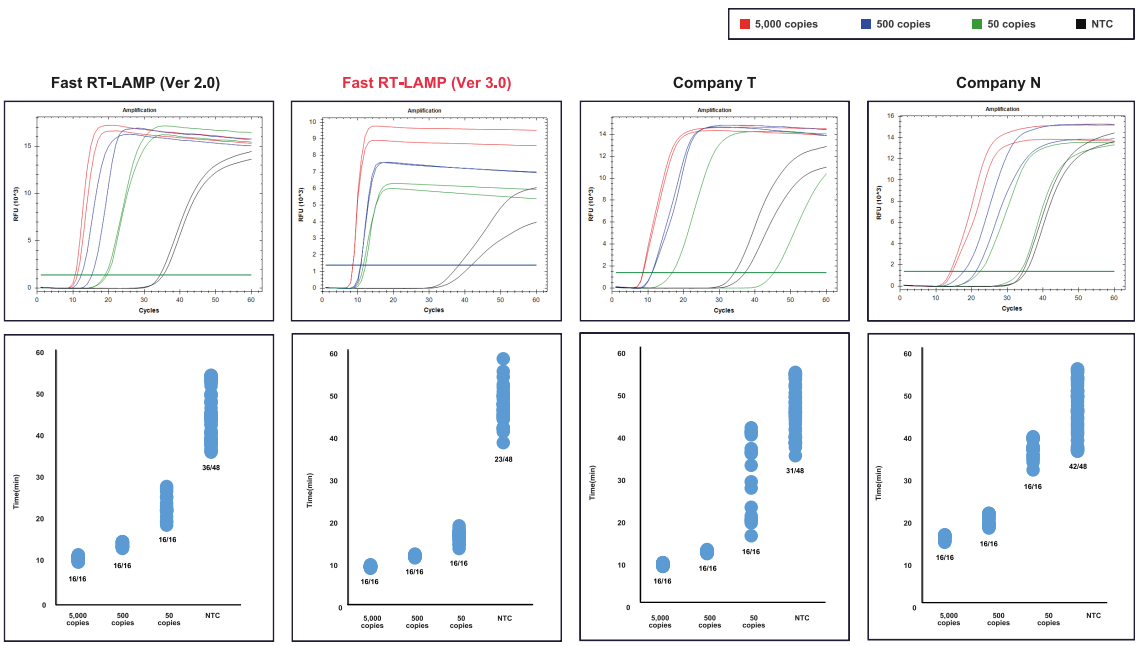
Real-time RT-LAMP test.

Serially-diluted SARS-CoV-2 RNAs were analyzed using the **Fast RT-LAMP Kit (Ver. 2.0)**, each target-specific LAMP primer set at 50°C for 10 minutes, and at 65°C for 60 minutes in 25 µl reaction volume. All targets were detected at 2x10² copies by intercalating dye(0.2x EvaGreen) and amplified within 20 minutes including RT incubation time. NTC was not amplified within 20 minutes.

* **Instrument:** CFX96(Bio-Rad)

HelixAmp™ Fast RT-LAMP Kit (Ver. 3.0)

- The **fastest one-step RNA amplification**: **8 minutes** to threshold
- **Unparalleled sensitivity**: As few as 10 to 50 copies of the target RNA in a reaction
- **Unmatched specificity**: Guarantee clear differentiation from background amplifications
- Ensuring **accurate** and **reliable** results: Experience next-level isothermal amplifications



Comparison of real-time RT-LAMP test.

Serially diluted SARS-CoV-2 RNAs were analyzed using the **Fast RT-LAMP Kit (Ver. 3.0)** and other company products. Reaction were incubated at 60°C for 60 minutes and monitored with LAMP fluorescence dye in the SYBR/FAM channel of a real-time instrument. The **Fast RT-LAMP Kit (Ver. 3.0)** shows highest specificity amplification.

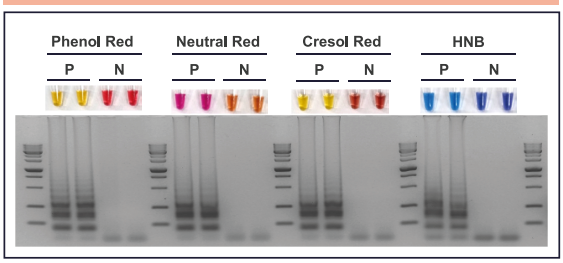
* **Instrument:** CFX96(Bio-Rad)

info@nanohelix.net www.nanohelix.net

HelixAmp™ pH-Sensing LAMP/RT-LAMP

- **Observable color change**
- **Applicable to various pH indicators**
- **Sensitive** and **accurate**
- Convenient POC testing

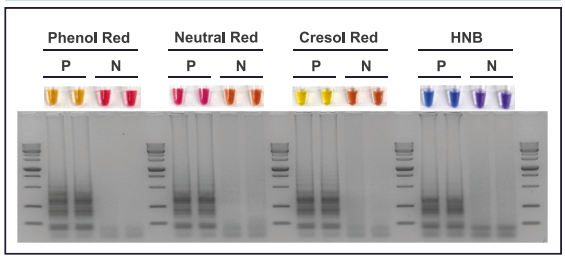
pH-Sensing LAMP



Visualization of products amplified with HelixAmp™ pH-Sensing LAMP.

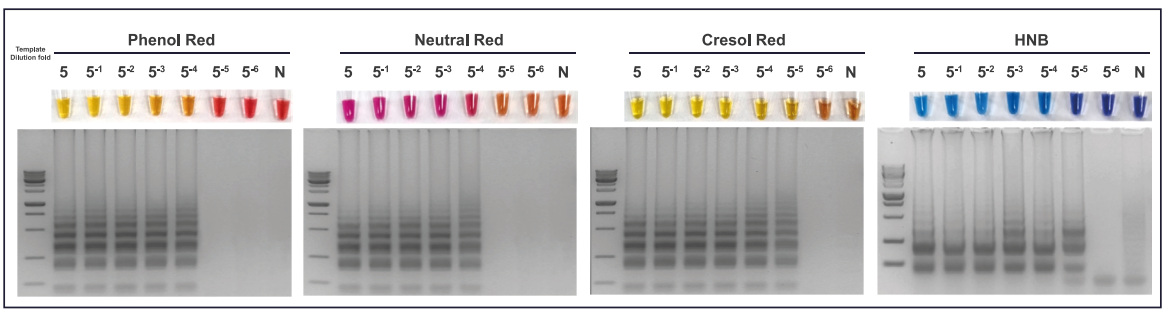
- **LAMP reaction:** 0.1 ng lambda DNA + lambda-specific LAMP primer set + each pH indication dye(Phenol Red, Neutral Red and Cresol Red) or hydroxynaphthol blue(HNB) + engineered *Bst* DNA polymerase at 65°C for 30 minutes.
- **Results:** P, positive reactions - Changing color
  N, negative reaction - Unchanging color

pH-Sensing RT-LAMP



Visualization of products amplified with HelixAmp™ pH-Sensing RT-LAMP.

- **LAMP reaction:** SARS-CoV-2 RNA(2 x 10^4 copies) + *ORF8*-specific LAMP primer set + each pH indication dye(Phenol Red, Neutral Red and Cresol Red) or hydroxynaphthol blue(HNB) + engineered *Bst* DNA polymerase at 50°C for 10 mins/65°C for 30 minutes.
- **Results:** P, positive reactions - Changing color
  N, negative reaction - Unchanging color



Colorimetric sensitivity of pH-Sensing LAMP according to the amount of template.

- **Template preparation:** Mix small brown planthopper(SBP) with 50 µl 1x Dilution Buffer in tube → Vortex → Incubation for 5 minutes at room temperature → Vortex for 30 ~ 60 seconds → 5 µl and 5-fold-serial diluted lysates were used as templates.
- **LAMP reaction:** Each lysate of SBP + SBP-specific LAMP primer set + each pH indication dye(Phenol Red, Neutral Red and Cresol Red) or hydroxynaphthol blue(HNB) + engineered *Bst* DNA polymerase at 65°C for 30 minutes.

Ordering Information

Product	Size	Cat. No.
HelixAmp™ FastLAMP Kit (Ver. 2.0)	100 rxns	FLMP2-100
	500 rxns	FLMP2-500
HelixAmp™ FastLAMP Kit (Ver. 3.0)	100 rxns	FLMP3-100
	500 rxns	FLMP3-500
HelixAmp™ Fast RT-LAMP Kit (Ver. 2.0)	100 rxns	FRLMP2-100
	500 rxns	FRLMP2-500
HelixAmp™ Fast RT-LAMP Kit (Ver. 3.0)	100 rxns	FRLMP3-100
	500 rxns	FRLMP3-500
HelixAmp™ pH-Sensing LAMP	100 rxns	PSLMP100
	500 rxns	PSLMP500
HelixAmp™ pH-Sensing RT-LAMP	100 rxns	PSRLMP100
	500 rxns	PSRLMP500

Bulk Product	Size	Cat. No.
HelixAmp™ FastLAMP Kit (Ver. 2.0), Bulk	Custom	BFLMP2
HelixAmp™ FastLAMP Kit (Ver. 3.0), Bulk	Custom	BFLMP3
HelixAmp™ Fast RT-LAMP Kit (Ver. 2.0), Bulk	Custom	BFRLMP2
HelixAmp™ Fast RT-LAMP Kit (Ver. 3.0), Bulk	Custom	BFRLMP3
HelixAmp™ pH-Sensing LAMP, Bulk	Custom	BPSLMP
HelixAmp™ pH-Sensing RT-LAMP, Bulk	Custom	BPSRLMP

NanoHelix Co., Ltd.

(Tel. +82 42 867 9055, Fax. +82 42 867 9057)

43-15, Techno 5-ro, Yuseong-gu, Daejeon, 34014, Republic of Korea

www.nanohelix.net **info@nanohelix.net**

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