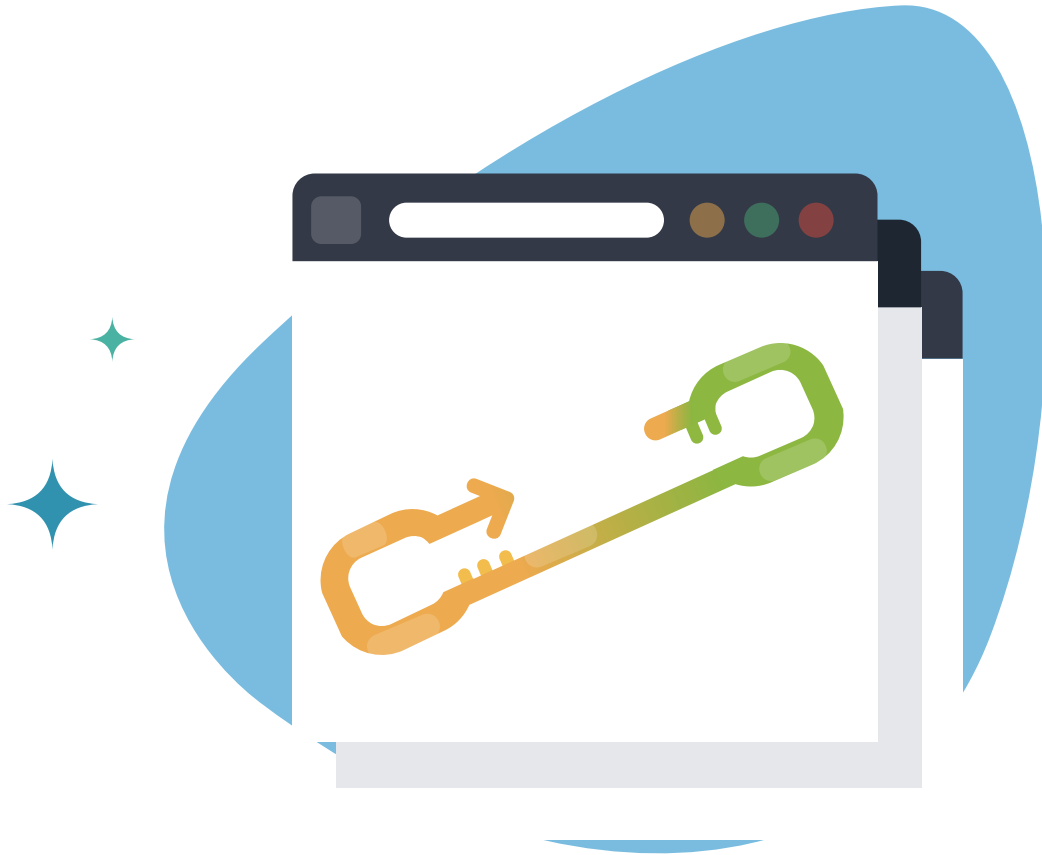


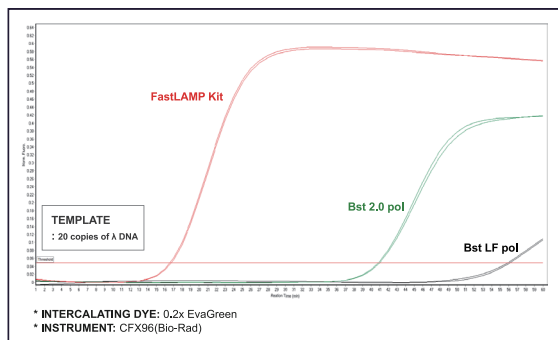
Fast LAMP/RT-LAMP

for Point-of-Care Application

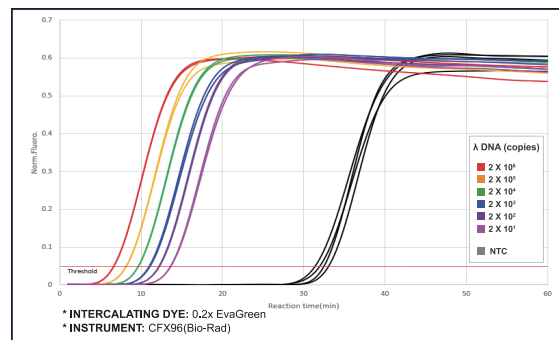


HelixAmp™ FastLAMP Kit (Ver. 2.0)

- **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**



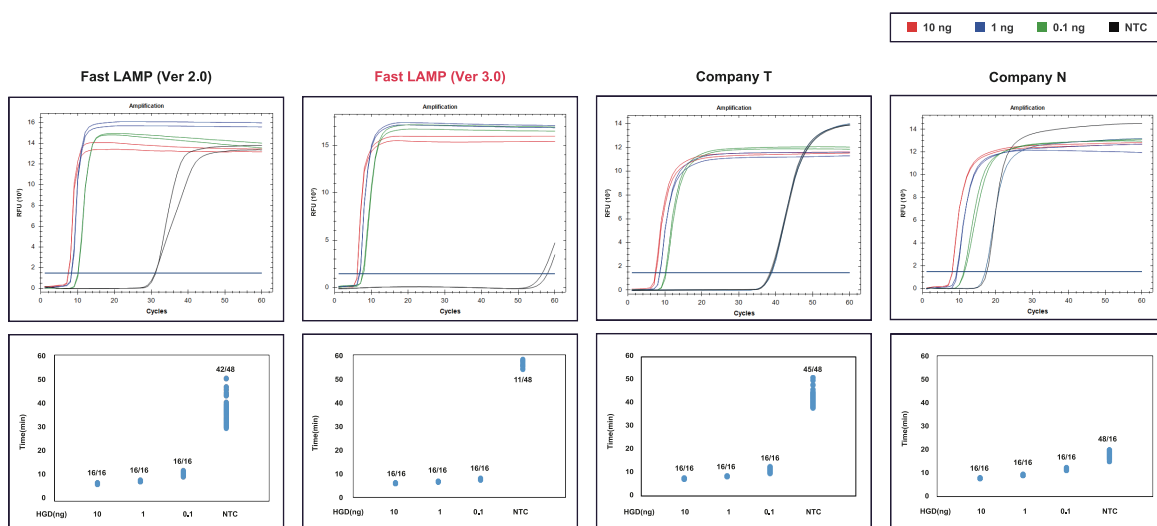
Real-time fluorescence LAMP assays of FastLAMP Kit compared with other company's products.



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

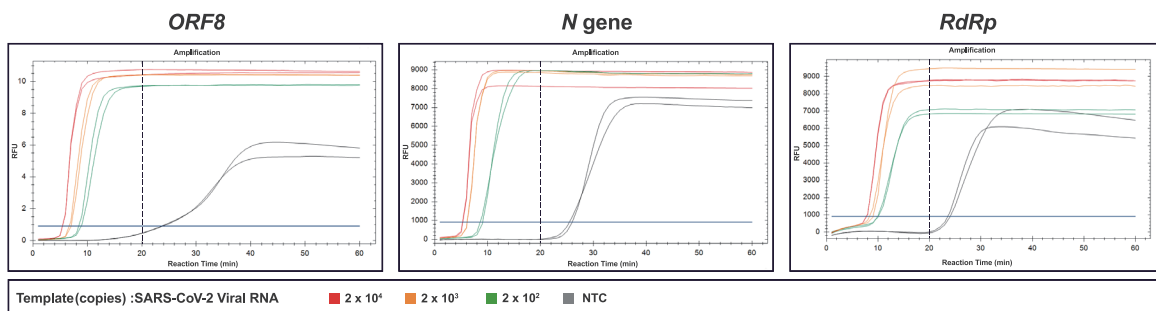


A comparative analysis of FastLAMP Kit (Ver. 3.0) and a competing company's LAMP Product.

Real-time isothermal amplifications of the BRCA gene were conducted from serially diluted human genomic DNA. The reactions were carried out at 65°C 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.

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**



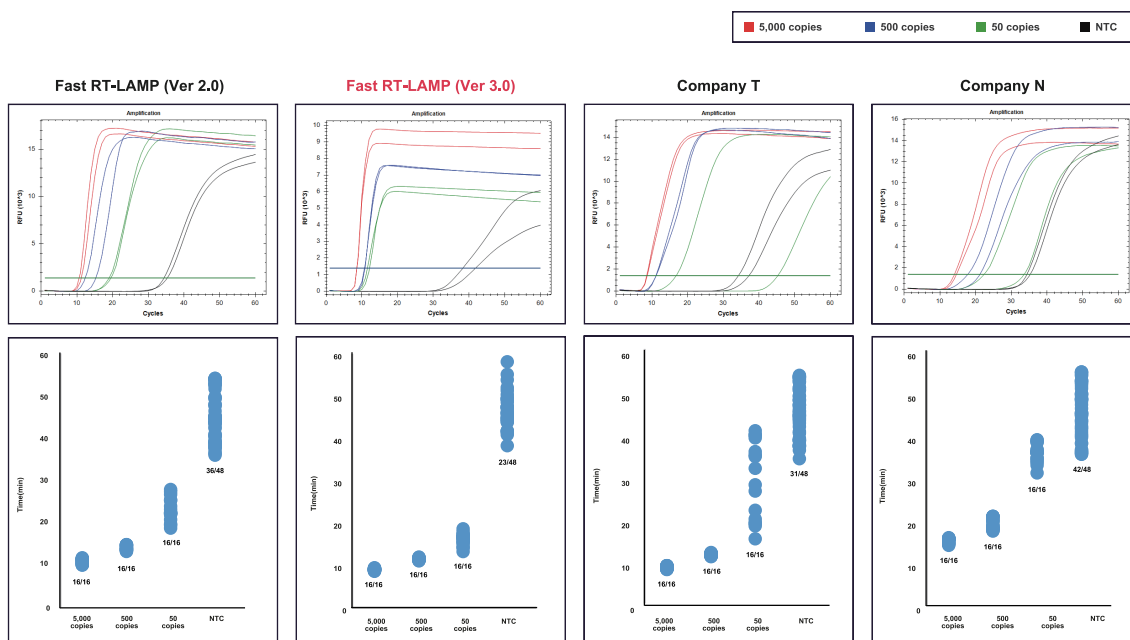
Real-time RT-LAMP test.

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



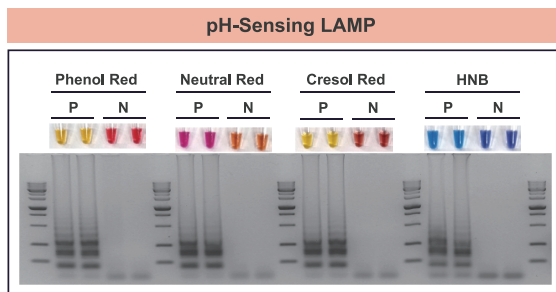
Comparison of real-time RT-LAMP test.

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)

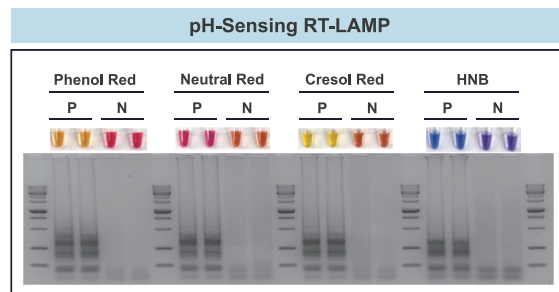
HelixAmp™ pH-Sensing LAMP/RT-LAMP

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



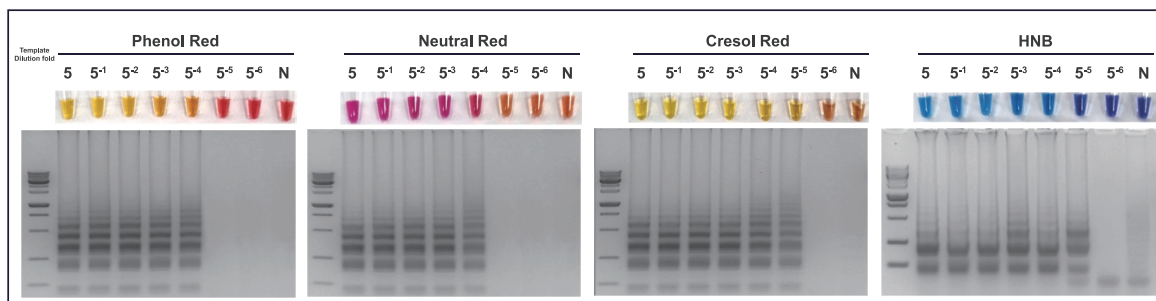
Visualization of products amplified with HelixAmp™ pH-Sensing LAMP.

- **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



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

- **LAMP reaction:** SARS-CoV-2 RNA(2×10^4 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 μ l 1x Dilution Buffer in tube \rightarrow Vortex \rightarrow Incubation for 5 minutes at room temperature \rightarrow Vortex for 30 ~ 60 seconds \rightarrow 5 μ l 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 |



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