

LavaLAMP DNA and RNA Isothermal Amplification Kits

Rapid and sensitive loop-mediated amplification assays available in convenient master mix and flexible component kit formats

LavaLAMP™ DNA Master Mix

- The LavaLAMP DNA Master Mix greatly simplifies reaction optimization by limiting optimization to target specific components and conditions, such as LAMP primer design, target concentration and reaction temperature. This master mix is heat stable at 90 °C for ≤5 minutes, which enables the addition of a reaction preheating step which may, depending on the target, increase assay sensitivity and decrease time to results (TTR).

LavaLAMP™ DNA Component Kit

- The LavaLAMP DNA Component Kit, designed for LAMP assay development, contains a the same unique, highly processive DNA polymerase enzyme as the LavaLAMP DNA Master Mix and individual component reagents for complete control and optimization for your LAMP assays.
- This kit is an exact deconstruction of the LavaLAMP DNA Master Mix. When set up with the initial conditions described in its User Manual, the reactions will match the Master Mix-based reaction composition.

• Loop-mediated isothermal amplification (LAMP):

Allows researchers to run assays outside of high-tech laboratories using low complexity instrumentation.

- **Single enzyme:** All LavaLAMP assays are built around a proprietary DNA polymerase with strand displacement activity that works on both RNA and DNA templates. Master mix formulations have been specifically optimised for each template type.

- **Lyophilization-ready reagents:** Specially formulated for room temperature stability in the absence of glycerol and betaine. Liquid formulations can be seamlessly freeze-dried for long term storage at ambient temperatures. Ideal for point of care (POC) applications.

Faster detection with LavaLAMP DNA Master Mix

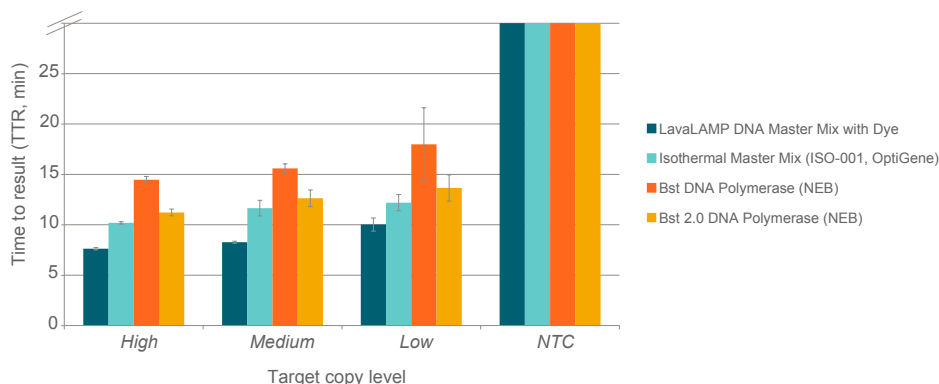


Figure 1. Loop-mediated isothermal amplification (LAMP) with real-time fluorescent detection of amplified products. LAMP reactions were set up using the indicated kits according to manufacturer's recommendations. Target DNA (*C. difficile*) at varying input amounts, *tcdA* target LAMP primers, and Green Fluorescent Dye (LavaLAMP Kit) were included in all reactions. Reactions were run on a CFX96 Thermal Cycler (Bio-Rad) at the following temperatures: LavaLAMP; 68 °C; other kits at the recommended 65 °C and fluorescence was measured in real-time to determine the TTR. NTC denotes No Target Control.

LavaLAMP™ RNA Master Mix

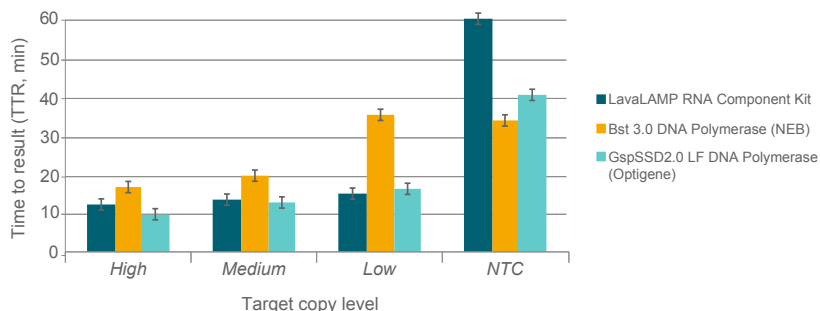
- The LavaLAMP RNA Master Mix is built around a proprietary DNA polymerase with strand displacement activity that works on RNA and DNA templates, making LAMP possible for RNA targets/templates. Just one enzyme is needed to convert the RNA target into cDNA to then act as template for additional LAMP. By combining this enzyme with an optimized master mix formulation, we've made an easy-to-use system that enables fast, sensitive detection of specific RNA targets. A "pre-optimized reaction formulation" lets you shift focus to optimizing the most important parameters: RNA LAMP primer design and reaction temperature.

LavaLAMP™ RNA Component Kit

- The LavaLAMP RNA Component Kit employs the same DNA polymerase used in the LavaLAMP RNA Master Mix, compatible with both RNA and DNA templates, making RNA LAMP possible using a single DNA polymerase to convert RNA into cDNA before amplification into a detectable, target-specific dsDNA. Because this kit is a deconstruction of the LavaLAMP RNA Master Mix, reactions set up using initial conditions outlined in its User Manual will match the reaction compositions of the Master Mix reaction. The individual reagent format enables complete control to optimize reaction conditions for your target and primer set.

Performance comparison: LavaLAMP RNA Component Kit vs. competitor kits

Figure 2. (A) RNA LAMP reactions were set up according to kit manufacturer's recommendations. Target MS2 RNA at varying input amounts, MS2 target RNA LAMP primers, and Green Fluorescent Dye (LavaLAMP Kit) were included in all reactions. Reactions were run on a CFX96 Thermal Cycler (Bio-Rad) at 68 °C for LavaLAMP kits and at 65 °C for other polymerases and fluorescence was measured over 60 minutes to determine the TTR



Ordering information

Cat no.	Size	Description
30066-1	200 rxn	LavaLAMP DNA Master Mix
30067-1	200 rxn	LavaLAMP DNA Master Mix with Dye
30086-1	200 rxn	LavaLAMP RNA Master Mix
30087-1	200 rxn	LavaLAMP RNA Master Mix with Dye
30076-1	500 rxn	LavaLAMP DNA Component Kit
30077-1	500 rxn	LavaLAMP DNA Component Kit with Dye
30096-1	500 rxn	LavaLAMP RNA Component Kit
30097-1	500 rxn	LavaLAMP RNA Component Kit with Dye
30078-2	200 rxn	Green Fluorescent Dye
30078-1	500 rxn	Green Fluorescent Dye

Master Mix kits contain: LavaLAMP DNA or RNA Master Mix, DNA or RNA Positive Control LAMP Primer Mix, and DNA or RNA Positive Control as appropriate for each DNA or RNA kit. The LavaLAMP DNA or RNA Master Mix with Dye also contains Green Fluorescent Dye for fluorescent detection of amplified DNA.

Component kits contain: 10X LavaLAMP DNA or RNA Buffer, LavaLAMP DNA or RNA Enzyme, Magnesium Sulfate, 100 mM, DNA or RNA Positive Control LAMP Primer Mix and DNA or RNA Positive Control as appropriate for each DNA or RNA kit. The LavaLAMP DNA or RNA Component Kit with Dye also contains Green Fluorescent Dye for fluorescent detection of amplified DNA.

Note: Standard LavaLAMP reactions are 25 µL.

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