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EliZyme™ LAMP OneS MIX

Intended use:

For Research Use Only. Not for use in diagnostic procedures.

Storage:

Upon arrival store components at -20 °C. Avoid prolonged exposure to light and keep components on ice when in use. When stored under these conditions, the kit will retain full activity until the expiration date indicated on the kit label. We recommend aliquoting the fluorescent dye at the first use to avoid excess freeze/thaws. Do not store the mix once it is combined with the RTase.

Product description

EliZyme™ LAMP OneS MIX is a revolutionary enzyme system designed to enable fast and sensitive reverse transcription of target RNA, followed by isothermal amplification, all in a single tube.

The kit employs the power of Bst Polymerase, which is provided in a convenient 2X mix format. This polymerase possesses exceptional strand displacement activity, enabling DNA synthesis to occur at a consistent temperature without the need for thermal cycling. Derived from the large fragment of Geobacillus stearothermophilus (formerly Bacillus stearothermophilus) DNA Polymerase, this specific part of the protein is responsible for catalyzing the synthesis of DNA in the 5'-3' direction, but lacks the 5'-3' exonuclease domain.

Reverse transcription of target RNA is accomplished through the utilization of the thermostable and highly active RTase, which is combined with an RNase inhibitor to protect the RNA from degradation caused by contaminating RNase enzymes.

EliZyme™ LAMP OneS MIX incorporates an advanced buffer system that ensures excellent yield and performance, even in challenging conditions such as the presence of inhibitors. The kit only requires the addition of primers, template, and water, and it includes a separate fluorescent dye for real-time detection using any qPCR instrument.

Content

	Ref. No.	Content	Size
EliZyme™ LAMP OneS MIX	EZ2901	1×1.25 ml 2× mix + 1×125 µl 20× Dye + 1×200 µl RTase	100 rxns
	EZ2905	4×1.56 ml 2× mix + 1×625 µl 20× Dye + 1×1 ml RTase	500 rxns

Buffer/MIX	Content

EliZyme™ LAMP OneS MIX	2× mix	6 mM $MgSO_4$, 3.2 mM dNTPs

The buffers composition has been optimized to maximize amplification success rates.

LAMP

Incubate at 65 ˚C for 30 minutes. Time can be extended and temperature can be modified (between 55 ˚C and 70 ˚C) as necessary for low copy targets, challenging templates, or whenever amplification times have been reported to be slow.

To improve sensitivity and specificity we recommend a quick cycle at the beginning of the reaction to facilitate the correct annealing of primers to the RNA template (for example 65 °C for 1 min, followed by a slow reduction of temperature to ambient value before starting the amplification).

If a qPCR instrument is used for signal detection, follow the reaction using the FAM channel, acquiring data every 10-15 seconds. If final products are to be analyzed after the reaction is complete, the enzyme can be inactivated by heating at 80 °C for 10 minutes.

Primers

We recommend a predicted melting temperature of around 60 ˚C using default Primer Explorer v5 settings. A primer set can be prepared with all 4 or 6 (if you include Loop) primers. A 10X primer set should contain: 16µM FIP, 16µM BIP, 2µM F3, 2µM B3, 4-8µM LoopF, 4-8µM LoopB in TE Buffer or water.

Reaction setup

EliZyme™ LAMP OneS MIX

After thawing, briefly vortex all components and shortly spin. Reactions should be setup on ice.

Reagent	25 µl reaction	Final conc.
2× EliZyme™ Bst Mix	12.5 µl	1×
20× EliZyme™ Fluorescent Dye	1.25 µl	1×
RTase	2 µl	1×
10× Primer set	2.5 µl	1×
Template DNA	Variable	
PCR grade water	Up to 25 µl	

LAMP profile

Step	Temperature	Time
Strand displacement	55-70 °C*	30-60 min
Deactivation**	80 °C	10 min

*Standard incubation at 65 ˚C for 30 minutes.

**If final products are to be analyzed after the reaction is complete, the enzyme can be inactivated by heating at 80 °C for 10 minutes.

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Manufacturer:

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REF	Catalog number		Upper limit of temperature
LOT	Batch code		Manufacturer
	Use by (last day of month)	Σ	Contains sufficient "N" tests