LAMP Green™ *50X DMSO Solution*

Catalog number: 17555
Unit size: 100 ul

Component	Storage	Amount
LAMP Green™ *50X DMSO Solution*	Freeze (< -15 °C), Minimize light exposure	100 µL

OVERVIEW

Isothermal amplification methods provide detection of nucleic acid target sequence in a streamlined, exponential manner. The existing dyes that successfully detect the LAMP reaction are mostly based on the end point method using the colorimetric analysis. LAMP Green™ enables real-time fluorescence measurement of a LAMP reaction. The dye can be detected using the SYBR or FAM channel on common real-time PCR instruments. LAMP Green™ is compatible with the agarose gel electrophoresis, making it possible to run on a gel and analyze it by gel imager.

KEY PARAMETERS

qPCR

Instrument specification(s)	SYBR or FAM filter

Fluorescence microplate reader

Excitation	490 nm
Emission	525 nm
Cutoff	515 nm
Recommended plate	Solid black

SAMPLE EXPERIMENTAL PROTOCOL

Table 1. 25 µL LAMP reaction mix.

Components	DNA/RNA target detection	No Template Control (NTC)
LAMP master mix (2X)	12.5 µL	12.5 µL
LAMP primer mix (10X)	2.5 µL	2.5 µL
LAMP Green™ (50X)	0.5 µL	0.5 µL
Target DNA/RNA	Varies	0 µL
ddH_2O	Varies	9.5 µL
Total Volume	25 µL	25 µL

The following protocol can be used as a guideline and should be optimized according to your experimental needs.

1. Thaw all components to be used at room temperature and place on ice. Vortex briefly to mix and centrifuge to collect material.
2. Prepare reaction mix as described in Table 1. Volumes are listed for 25 µL/LAMP reaction. Adjust volume accordingly as per use. If necessary, LAMP Green™ concentration can be optimized.
3. Vortex reaction mix and centrifuge to collect material.
4. Seal the reaction vessel.
5. Incubate at 65°C for 30 minutes. If necessary, time can be extended (i.e., for low copy targets, challenging sample types, or reactions known to produce slower amplification times).
6. If using with a qPCR machine, the signal can be read with either a SYBR or FAM filter in real-time. For microplate reader-based assays, measure the signal at Ex/Em = 490/525 nm (Cutoff = 515 nm).
7. If reaction products will be analyzed after LAMP reaction is completed, then deactivate the enzyme by heating at >80°C for 5 minutes.

Note Deactivation can be performed for LAMP master mix provided by the manufacturer. LAMP Green™ is compatible with agarose gel electrophoresis, so samples can be analyzed on an agarose gel.

EXAMPLE DATA ANALYSIS AND FIGURES

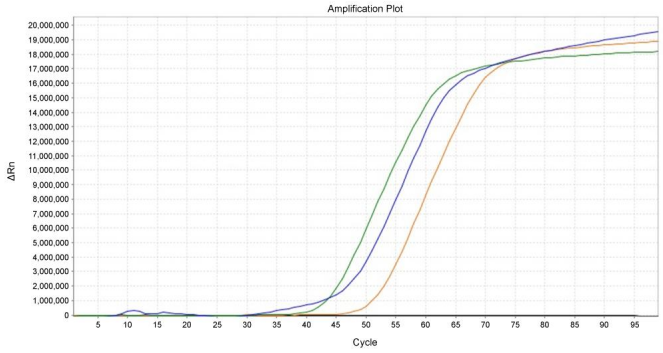

Figure 1. LAMP detection of BRCA1 in HeLa cells. 500 ng (Green), 50 ng (Blue), 5 ng (Orange), and NTC (Black) of gDNA in HeLa cells was used in LAMP reaction with LAMP Green™ fluorescent dye using ABI 7500 qPCR machine.

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