

Materials List for:

Reverse Transcription Loop-Mediated Isothermal Amplification (RT-LAMP) Assay for the Specific and Rapid Detection of Tilapia Lake Virus

Theerawut Phusantisampan¹, Pattarasuda Rawiwan^{2,3}, Sri Rajiv Kumar Roy², Malinee Sriariyanun⁴, Win Surachetpong^{2,3}

¹Department of Biotechnology, Faculty of Applied Science, King Mongkut's University of Technology North Bangkok (KMUTNB)

²Department of Veterinary Microbiology and Immunology, Faculty of Veterinary Medicine, Kasetsart University

³Center for Advanced Studies for Agriculture and Food, Institute for Advanced Studies, Kasetsart University

⁴Department of Chemical and Process Engineering, The Sirindhorn Thai-German International Graduate School of Engineering (TGGS), King Mongkut's University of Technology North Bangkok (KMUTNB)

Correspondence to: Win Surachetpong at fvetwsp@ku.ac.th

URL: <https://www.jove.com/video/61025>

DOI: [doi:10.3791/61025](https://doi.org/10.3791/61025)

Materials

Name	Company	Catalog Number	Comments
Tissue collection:			
Clove oil	Better Pharma	N/A	
Tricaine methanesulfonate	Sigma-Aldrich	E10521	An alternative option to clove oil
RNA extraction:			
Acid guanidinium-phenol based reagent (TRIzol reagent)	ThermoFisher Scientific Corp.	15596026	
Acid guanidinium-phenol based reagent (GENEzol reagent)	Geneaid	GZR100	
Direct-zol RNA Kit:	Zymo Research	R2071	
- Direct-zol RNA PreWash			
- RNA Wash Buffer			
- DNase/RNase-free water			
- Zymo-spin IIIICG columns			
- Collection Tubes			
RT-LAMP:			
1x SD II reaction buffer	Biotechrabbit	BR1101301	
Magnesium sulfate (MgSO ₄)	Sigma-Aldrich	7487-88-9	
dNTP set	Bioline	BIO-39053	
Betaine	Sigma-Aldrich	B2629	
Calcein mixture	Merck	1461-15-0	
Bst DNA polymerase	Biotechrabbit	BR1101301	
AMV reverse transcriptase	Promega	M510A	
Nuclease-free water	Invitrogen	10320995	
Elite dry bath incubator, single unit	Major Science	EL-01-220	
Gel electrophoresis:			
Agarose	Vivantis Technologies	PC0701-500G	
Tris-borate-EDTA (TBE) buffer	Sigma-Aldrich	SRE0062	
Tris-acetic-EDTA (TAE) buffer:			
- Tris	Vivantis Technologies	PR0612-1KG	
- Acetic acid (glacial), EMSURE	Merck Millipore	1000632500	

- Disodium Ethylenediaminetetraacetate dihydrate (EDTA), Vetec	Sigma-Aldrich	V800170-500G	
Neogreen	NeoScience Co., Ltd.	GR107	
DNA gel loading dye (6X)	ThermoFisher Scientific Corp.	R0611	
DNA ladder and markers	Vivantis Technologies	PC701-100G	
Mini Ready Sub-Cell GT (Horizontal electrophoresis system)	Bio-Rad	1704487	
PowerPac HC power supply	Bio-Rad	1645052	
Gel Doc EZ System	Bio-Rad	1708270	
UV sample tray	Bio-Rad	1708271	
NaBI imager	Neogene Science		
cDNA synthesis:			
ReverTra Ace qPCR RT Kit	Toyobo	FSQ-101	
Viva cDNA Synthesis Kit	Vivantis Technologies	cDSK01	An alternative option for cDNA synthesis
NanoDrop2000 (microvolume spectrophotometer)	ThermoFisher Scientific Corp.	ND-2000	
T100 Thermal Cycler	Bio-Rad	1861096	
RT-qPCR:			
iTaq Universal SYBR Green Supermix	Bio-Rad	1725120	
Nuclease-free water, sterile water	MultiCell	809-115-CL	
8-tube PCR strips, white	Bio-Rad	TLS0851	
Flat PCR tube 8-cap strips, optical	Bio-Rad	TCS0803	
CFX96 Touch Thermal Cycler	Bio-Rad	1855196	
General equipment and materials:			
Mayo scissors		N/A	
Forceps		N/A	
Vortex Genie 2 (vortex mixer)	Scientific Industries		
Microcentrifuge LM-60	LioFuge	CM610	
Corning LSE mini microcentrifuge	Corning	6765	
Pipettes	Rainin	Pipete-Lite XLS	
QSP filtered pipette tips	Quality Scientific Plastics	TF series	
Corning Isotip filtered tips	Merck	CLS series	
Nuclease-free 1.5 mL microcentrifuge tubes, NEST	Wuxi NEST Biotechnology	615601	