Nucleic Acid Extraction-Free Kit

Cat. No.: N1508469 | Pack size: 50 tests | Storage: Room temperature

Overview

This kit uses a patented buffer system containing Lysis Buffer B1 and Lysis Buffer B2 for direct lysis of DNA or RNA viruses. It is suitable for direct molecular detection of DNA or RNA viruses from blood and tissue sample materials.

The extraction-free workflow does not require protease digestion, high-temperature incubation, deproteinization, organic solvent extraction, or ethanol precipitation. The process is simple, rapid, stable, and suitable for direct PCR/qPCR or RT-qPCR template preparation.

Key Features

- Extraction-free workflow with viral DNA or RNA release completed in approximately 5 min
- No liquid nitrogen, organic extraction, or ethanol precipitation required
- Suitable for tissue materials, blood, plasma, and tissue homogenates
- Compatible with downstream qPCR and RT-qPCR amplification systems

Contents & Storage

Cat. No.	Component	Size	Storage
N1508469A	Lysis Buffer B1	5.5 mL	RT
N1508469B	Lysis Buffer B2	5.5 mL	RT

Materials Required But Not Supplied

Item	Recommended Specification	Purpose
Sample material	Tissue sample 5-10 mg, plasma, homogenate, or fresh anticoagulated whole blood	Nucleic acid release
1.5 mL centrifuge tubes	Clean, nuclease-free	Sample processing
Tissue grinder	For tissue samples	Mechanical homogenization
Vortex mixer and centrifuge	10,000 rpm capability	Mixing and clarification

Item	Recommended Specification	Purpose
Direct amplification PCR/RT-qPCR reagents	User-validated amplification system	Result detection

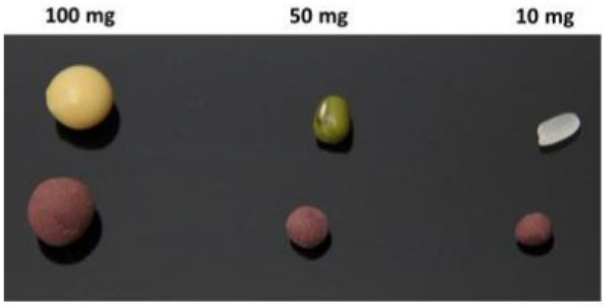
Preparation Before Use

1. Bring reagents to room temperature and mix gently. Use clean nuclease-free consumables. Prepare lysates immediately before amplification.

Protocol

Sample Amount Guidance

The recommended tissue input is 5-10 mg, approximately the size of one to half a grain of rice. Excessive sample input may cause false-negative results.



Reference image for tissue sampling amount: 100 mg, 50 mg, and 10 mg examples.

Tissue Samples

Place 5-10 mg tissue sample into a 1.5 mL centrifuge tube. Add 100 µL Lysis Buffer B1, ensure the buffer covers the sample, and grind thoroughly. Leave at room temperature for 5 min. Add 100 µL Lysis Buffer B2, vortex to mix, and centrifuge at 10,000 rpm for 2 min. Carefully transfer 100 µL supernatant to a clean tube as template. Use approximately 1/10 of the PCR reaction volume as template (e.g., 5 µL template in a 50 µL PCR reaction).

Note: *The template must be prepared and used immediately.*

Blood Samples

Add 20 µL (or 10 µL) tissue homogenate, plasma, or fresh anticoagulated whole blood to 100 µL Lysis Buffer B1. Vortex and leave at room temperature for 5 min. Add 100 µL Lysis Buffer B2, vortex to mix, and centrifuge at 10,000 rpm for 2 min. Transfer 100 µL supernatant to a clean tube as template. Use approximately 1/10 of the PCR reaction volume as template.

Note: *The template must be prepared and used immediately.*

Recommended qPCR Amplification System

Component	Volume
ddH_2O	Up to 50 µL
Direct Amplification qPCR Reaction Mix	38 µL
Direct Amplification HotStart Taq Enzyme	2 µL
Direct Amplification qPCR Primers and Probes	5 µL
Template	5 µL

Primer-Probe Mix for qPCR (Recommendation)

Primer-Probe	Stock Solution	Final Concentration in Mix	Single-Serve Volume
Primer F	40 pmol/µL	4 pmol/µL	5 µL
Primer R	40 pmol/µL	4 pmol/µL	5 µL
TaqMan Probe	20 pmol/µL	2 pmol/µL	5 µL

qPCR Reaction Program

Step	Temperature	Time	Number of Cycles
1	95 ℃	3 min	1 cycle
2	95 ℃ / 60 ℃ (fluorescence collection)	15 s / 30 s	40 cycles

Annealing temperature should be determined according to primer and probe design.

Recommended RT-qPCR Amplification System

Component	Volume
ddH_2O	Up to 50 µL

Component	Volume
Direct Amplification RT-qPCR Reaction Mix	38 µL
Direct Amplification RT-qPCR Enzyme Mix	2 µL
Direct Amplification RT-qPCR Primers and Probes	5 µL
Template	5 µL

RT-qPCR Reaction Program

Step	Temperature	Time	Number of Cycles
1	50 °C	10 min	1 cycle
2	95 °C	3 min	1 cycle
3	95 °C / 60 °C (fluorescence collection)	10 s / 30 s	40 cycles

Storage & Handling

Store at room temperature for up to 24 months. Keep containers tightly closed and avoid contamination.

Safety & Precautions

1. This kit does not have independent in vitro diagnostic function and must not be used as a diagnostic reagent.
2. Strictly control sample input. Excessive tissue input may inhibit amplification or cause false-negative results.
3. Use prepared template immediately and avoid repeated freeze/thaw or prolonged storage of lysates.
4. Wear lab coat, gloves, and eye protection. Read the current SDS before use.

Quality Control

QC Item	Method	Acceptable Range
Component completeness	Visual inspection on receipt	All listed components present; no leakage or visible damage
Enzyme performance	Functional amplification or end-repair assay	Meets product specification when used under recommended conditions
Storage integrity	Cold-chain and label check	Stored at the specified temperature and protected from repeated freeze/thaw cycles

Troubleshooting

Issue	Possible Causes	Corrective Action
False-negative or weak signal	Excessive tissue input or inhibitors in lysate	Use 5-10 mg tissue, clarify lysate, and limit template to 1/10 of reaction volume
Poor reproducibility	Incomplete homogenization or inconsistent sample input	Standardize sample amount and grinding process
Amplification inhibition	Too much lysate in PCR/qPCR	Reduce lysate input or perform dilution optimization

Recommended Applications

Extraction-free nucleic acid release · direct qPCR · direct RT-qPCR · viral DNA/RNA detection research

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Where any product component is classified as hazardous under CLP (EC) 1272/2008 or OSHA HCS (29 CFR 1910.1200), the product Safety Data Sheet (SDS) takes precedence over this document for handling, storage, and disposal information.

Performance depends on sample type, sample condition, handling, and operator technique. Users are responsible for validating the product for their specific application.

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