Elabscience®

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Viral Nucleic Acid (DNA/RNA) Extraction Kit (Conventional Method)

Catalog No: EL-XG-04
Size: 50/100/200 Tests

This manual must be read attentively and completely before using this product.

If you have any problems, please contact our Technical Service Center for help.

Phone: 240-252-7368(USA) Fax: 240-252-7376(USA)
Email: techsupport@elabscience.com
Website: www.elabscience.com

Please refer to specific expiry date from label on the side of box.

Please kindly provide us the lot number (on the outside of the box) of the kit for more efficient service.

Intended Use

This kit is designed for extraction of nucleic acid (DNA/RNA) in human biological fluids such as nasopharyngeal swabs, sputum, broncho lavage fluid and alveolar lavage fluid.

Storage and Stability

1. This kit can be stable for 6 months at 2-8℃.
2. This product is shipped at 2-8℃.

Kit Components

Items	Specifications			Storage
	50 Tests	100 Tests	200 Tests	
Lysis Solution	25 mL, 1 vial	50 mL, 1 vial	100 mL, 1 vial	2-8℃, 6 months
Wash Buffer	60 mL, 1 vial	120 mL, 1 vial	240 mL, 1 vial	2-8℃, 6 months
Elution Buffer	3 mL, 1 vial	6 mL, 1 vial	12 mL, 1 vial	2-8℃, 6 months
Adsorption Column	50 tubes	100 tubes	200 tubes	2-8℃, 6 months
Collection Tube (2 mL)	50 tubes	100 tubes	200 tubes	Room temperature (15-25℃)
Collection Tube (1.5 mL)	50 tubes	100 tubes	200 tubes	Room temperature (15-25℃)

Other required reagents: Absolute ethanol

Test Principles

This kit provides all necessary reagents for highly pure viral nucleic acid (DNA/RNA) extraction from samples such as human serum, plasma, urine, cell culture supernatant, nasopharyngeal swabs, sputum, ascites and broncho lavage fluid. The extracted pure viral nucleic acid can be directly applied for Reverse Transcription, PCR, RT-qPCR, RT-PCR, Next Generation Sequencing, Northern Blot and other related assays.

Based on the technology of purification of silica gel column, samples are lysed in the high concentration guanidine salt lysis solution, so the nucleic acid could be absorbed on filter membrane by the interaction of hydrogen bond and electrostatic, while proteins and other impurities cannot be absorbed.

This kit enables a simple, fast, safe and efficient operation process to extract viral nucleic acid with a high yield, high purity, stable and reliable quality.

Protocols for Assays

Sample Collection and Storage

1. This kit is suitable for detection of pharynx swab, nasopharyngeal extract, sputum, bronchial lavage fluid, alveolar lavage fluid, etc.The collection was carried out according to the *Technical Guidelines for Laboratory Detection of Pneumonia with Novel Coronavirus Infection*.
2. It is recommended to complete the DNA/RNA extraction with freshly collected samples. Otherwise,

samples can be kept at 2-8℃ for less than 24h, at -20℃ for less than 30 days and at -70℃ for longer storage. Avoid repeated freeze-thaw cycles.

Viral Nucleic Acid (DNA/RNA) Extraction

Notes before this process

1. Bring all the reagents to room temperature for viral nucleic acid (DNA/RNA) extraction.
2. It is recommended to dissolve the **Lysis Solution** at 37°C for 10 min to thaw the precipitation and mix it thoroughly before use.
3. The collected samples should be avoided repeated freeze-thaw cycles.
4. All assay procedures should be performed at room temperature (15°C-25°C) and finished ASAP.
5. Before extraction, heat the 2019-Novel Coronavirus for inactivation by incubating the collected samples at 56 °C for 30 minutes, balance the samples at room temperature for 10 minutes to avoid aerosols.

Assay procedures

1. Add 500μL **Lysis Solution** to an EP tube (1.5mL, RNase -free).
2. Add 200μL sample to the tube, mix thoroughly. Sample less than 200μL can be supplemented with sterile saline solutions.
3. Place the **adsorption column** in a **collection tube (2mL)** and transfer the mixture to the adsorption column, centrifuge it at 12,000 × g for 1 minute.
4. Discard the filtrate and reuse the collection tube. Add 600μL **Wash Buffer** to the adsorption column, centrifuge it at 12,000 × g for 30 seconds, and then discard the filtrate.
5. Repeat **Step 4** once.
6. Transfer the adsorption column to a new **collection tube (1.5mL)**, add 50μL **Elution Buffe**r, incubate at room temperature for 1 minute, then centrifuge it at 12,000 × g for 1 minute.
7. Discard the adsorption column, the eluted DNA/RNA can be used directly for subsequent assays. The extracted viral nucleic acid can be stored at -20℃ for a short term and at -70℃ for a longer term.

Declaration

1. To ensure the accuracy and reliability of the experimental results, please use the calibrated pipette, pipette tips and other consumables for sample treatment and reagent preparation operations. All appliances should be free of DNA and RNA enzymes.
2. Clean the workbench immediately after the experiment.
3. Sample handling shall be performed in a biosafety cabinet to ensure operator safety and prevent contamination of the environment.
4. The tested samples should be as fresh as possible, and the extraction process should strictly avoid RNA degradation caused by RNA enzyme contamination and improper operations.

5. The pipette tips used in the experiment should be threw directly into the waste tank containing 10% sodium hypochlorite and discarded with other waste materials.
6. Operation table and various experimental devices should be sterilized with 10% sodium hypochlorite, 75% alcohol and ultraviolet lamp frequently.
7. The samples to be tested by this kit shall be considered as infectious substances and shall be operated and handled in accordance with the relevant requirements of the *Ministry of Health's General Guidelines for Biosecurity in Microbiomedical Laboratories* and the *Medical Waste Management Regulations*.