Description

The Swab/Saliva Viral RNA/DNA Extraction Kit is suitable for the rapid extraction of high purity viral nucleic acids from plasma, serum, nasopharyngeal swab, sputum, bronchoalveolar lavage fluid, ascites, cell culture supernatant and urine. This kit is based on the silica gel column purification method. The sample is homogenized in the lysis buffer and the nucleic acids are released into the buffer. The lysis buffer contains a high concentration of guanidine. In this condition, the membrane absorbs nucleic acids by hydrogen bonds and electrostatic interactions, while proteins and other impurities are not absorbed. The lysate is transferred to the adsorption column for filtration, and the nucleic acid containing filter membrane is washed to remove residual proteins and other impurities, and finally the nucleic acids are eluted by the low-salt buffer solution. The obtained nucleic acids can be directly used in downstream experiments such as reverse transcription, PCR, RT-PCR, fluorescence quantitative PCR, next-generation sequencing and Northern blotting.

Storage Conditions

Store and transport at room temperature (15°C - 25°C).

Main components

The kit consists of the following components:

Name of the Reagent	Amount	Description
Lysis Buffer	50 mL	Provides an environment for lysing and binding to the column
Wash Buffer	24 mL	Removes residual proteins and other impurities
Elute Buffer	6 mL	Nuclease-free solution
Spin Columns	100 pcs	Adsorbs viral nucleic acids
Collection Tubes	100 pcs	Used for collection of eluted nucleic acids

Notes

1. Before doing the experiments, prepare RNase-free filtered pipette tips, 1.5 mL RNase-free centrifuge tubes, centrifuge, etc.
2. Always wear masks and gloves when working with potentially biohazard material.
3. Work in a laminar flow cabin, biosafety level II, when pipetting the samples.
4. If spills of the contaminated material occur, disinfect with 2.5% hypo chloride solution.
5. Pathogenic microorganisms including Hepatitis B virus and Human Immunodeficiency Virus (HIV) may be present in specimens. Universal precautions and local laboratory guidelines should be followed in handling all items contaminated with blood or body fluids. If a tube is leaking or is accidentally broken during collection or transport, use the established procedures in your facility for dealing with infectious spills. At a minimum, universal precautions should be employed.
6. Tubes should be discarded in an appropriate manner according to biosafety principles.
7. Avoid repeated freezing-thawing of samples, otherwise the extracted viral RNA will be degraded and the extracted amount will decrease.
8. All operating procedures, if not specified, are carried out at room temperature (15-25°C).
9. When using this kit, wear a lab coat, disposable latex gloves, and disposable masks and use RNase-free consumables to avoid RNase contamination.
10. Check whether there is crystal precipitation in the Lysis Buffer prior to using it. If there is precipitation, place it at room temperature or 37°C until the crystal is dissolved. Mix it before use.

Before use:

Add 96 mL anhydrous ethanol to Wash Buffer, and store at room temperature.

Protocol

1. Add 500 µL of Lysis Buffer into a 1.5 mL RNase-free centrifuge tube (self-provided).
2. Add 200 µL of the sample in the same tube, mix thoroughly by vortexing (if the sample is less than 200 µL, adjust the volume with normal saline to 200 µL).
3. Transfer the above mixture to the Spin Column (with Collection Tube). Centrifuge at 12,000×g for 1 min.

4. Discard the flow-through and put the Spin Column back into the 2 mL Collection Tube. Add 600 µL of Wash Buffer and centrifuge at 12,000×g for 30 sec, then discard the flow-through. Note: make sure the correct amount of anhydrous ethanol has been added to the Wash Buffer.
5. Repeat step 4 once.
6. Centrifuge for 2 min at 12,000×g to dry the column membrane and get rid of the remaining ethanol. Discard the flow-through and the collection tube.
7. Transfer the Spin Column to a new 1.5 mL Collection Tube (provided by the kit), add 50 µL Eluent Buffer to the center of the membrane of the Spin Column, and place it at room temperature for 1 min. Centrifuge at 12,000×g for 1 min.
8. Discard the Spin Column, the obtained DNA/RNA can be directly used for subsequent detection, or be stored at -25°C to -15°C for short-term storage or at -70°C for long-term storage.

Quick Sheet

Add 500 µL Lysis Buffer and 200 µL sample, and mix thoroughly by vortexing.

Transfer the mixture to the Spin Column and centrifuge at 12,000×g for 1 min.

Add 600 µL Wash Buffer to the Spin Column and centrifuge at 12,000×g for 30 sec (twice).

Centrifuge at 12,000×g for 2 min with empty column.

Add 50 µL Eluent Buffer, place it at room temperature for 1 min, and centrifuge at 12,000×g for 1 min.

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