CE

PRODUCT NAME

Nucleic acid extraction kit

SPECIFICATIONS

24 Tests/Box; 48 Tests/Box,

INTENDED USE

This product is intended use for the extraction and purification of viral nucleic acids (DNA and RNA) in samples The processed product is intended use for clinical in vitro diagnosis.

PRINCIPLE

This kit consists of magnetic beads with a unique separation effect and a unique buffer system. It can isolate high-quality viral DNA/RNA from complex samples. The unique embedded magnetic beads have a strong affinity with nucleic acids under certain conditions. The magnetic beads release the adsorbed nucleic acid when the conditions change, which can rapid separation and purification of nucleic acid. The whole process is safe and convenient. The extracted viral DNA/RNA has a high yield, high purity, and stable quality, which is suitable for the automatic extraction of high-throughput workstations.

FEATURES

1. Simple and fast: High-quality viral DNA/RNA can be obtained within 20-30 minutes.
2. High-throughput: It can be integrated with magnetic bar method or pipetting method for high-throughput extraction experiments.
3. Safe and non-toxic: Don't need organic reagents, such as phenol/chloroform.

CONTENTS

<table>
<tr><th rowspan="2">No</th><th rowspan="2">Contents</th><th colspan="2">Specifications</th><th rowspan="2">Volume/Test</th></tr>
<tr><th>24 Tests</th><th>48 Tests</th></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Lysis Buffer</td><td>2.76 mL</td><td>5.30 mL</td><td rowspan="2">244 μL</td></tr>
<tr><td colspan="2">Add 3.59 mL/5.30 mL isopropanol before use.</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Washing Buffer A</td><td>3 mL</td><td>6 mL</td><td rowspan="2">375 μL</td></tr>
<tr><td colspan="2">Add 7 mL /14 mL absolute ethanol before use.</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Washing Buffer B</td><td>3.5 mL</td><td>7 mL</td><td rowspan="2">500 μL</td></tr>
<tr><td colspan="2">Add 10.5 mL /21 mL absolute ethanol before use.</td></tr>
<tr><td>4</td><td>Elution Buffer</td><td>2 mL</td><td>4 mL</td><td>50 μL</td></tr>
<tr><td>5</td><td>Magnetic Beads Buffer</td><td>300 μL</td><td>600 μL</td><td>10 μL</td></tr>
<tr><td>6</td><td>Proteinase K</td><td>160 μL</td><td>320 μL</td><td>6 μL</td></tr>
</table>

Note:

1. Don‘t freeze the components of the kit.
2. The components from different batches of kits cannot be used interchangeably.
3. Add absolute ethanol or isopropanol according to the label instructions of the reagent bottle before use.

Self-provided reagents: Absolute Ethanol (AR), Isopropanol (AR)

STORAGE AND STABILITY

Store the kit at 15-30° C and protected from light for 12 months. Keep it at 2-8℃ for longer storage time. Please use it up within 6 months after opening. Transport at room temperature.

SPECIMEN REQUIREMENTS

1. Liquid samples: serum, plasma, mouthwash, pleural fluid, ascites, and cerebrospinal fluid samples can be directly subjected to nucleic acid extraction.
2. Swab samples: add 2-3 mL of normal saline to the swab tube, shake and mix well, then take the swab solution for subsequent nucleic acid extraction.

TEST PROCEDURE

Ⅰ Manual Extraction

1. Add ***244 μL*** lysis buffer, ***10 μL*** magnetic beads buffer, and ***6 μL*** proteinase K to ***1.5 mL*** centrifuge tube (Please check whether isopropyl alcohol has been added before use. Use after mixing).
2. Add ***200 μL*** of sample to centrifuge tube (Please diluted samples with saline if necessary).
3. Mix by pulse-vortexing for ***0.5-1 min*** to completely lyse the virus.
4. Place mixture at room temperature for ***2 min*** to combine magnetic beads and nucleic acid completely.
5. Centrifuge briefly to collect the liquid adhering to the tube wall and tube cap.
6. Place centrifuge tube on the magnetic rack for ***2 min***. Carefully remove the liquid when the magnetic beads are completely adsorbed.
7. Take centrifuge tube from the magnetic rack. Add ***375 μL*** washing buffer A (Please check whether absolute ethanol has been added before. Use after mixing). Mix by pulse-vortexing for ***1 min***.
8. Place centrifuge tube on the magnetic rack for ***2 min***. Carefully remove the liquid when the magnetic beads are completely adsorbed.
9. Take centrifuge tube from the magnetic rack. Add ***500 μL*** washing buffer B (Please check whether absolute ethanol has been added before. Use after mixing). Mix by pulse-vortexing for ***1 min***.
10. Place centrifuge tube on the magnetic rack for ***2 min***. Carefully remove the liquid when the magnetic beads are completely adsorbed.
11. Place the centrifuge tube on the magnetic rack to dry for ***1-2 min*** at room temperature (Note: Please make sure that the ethanol evaporates completely when drying. Because residual ethanol will inhibit subsequent enzymatic reactions. But don't dry it for too long to avoid difficulty in eluting nucleic acid).
12. Take centrifuge tube from the magnetic rack. Add ***50 μL*** elution buffer. Mix by pulse-vortexing for ***1 min***. Waiting for ***1 min*** at room temperature.
13. Place centrifuge tube on the magnetic rack for ***2 min***. Carefully place nucleic acid solution to a new centrifuge tube. Store at appropriate conditions.

Ⅱ Automatic Magnetic Bar Instrument Extraction (The operation method refers to the operation manual of the instrument. The following operation method takes the nucleic acid extractor NP968 as an example)

1. Add ***244 μL*** lysis buffer, ***10 μL*** magnetic beads buffer, and ***6 μL*** proteinase K to the first column of the 96-well plate (self-provided) with a pipette that contained a suction nozzle (Please check whether isopropyl alcohol has been added before use. Use after mixing).
2. Add ***375 μL*** washing buffer A (Please check whether absolute ethanol has been added before. Use after mixing) to the second column of the 96-well plate with a pipette that contained a suction nozzle.
3. Add ***500 μL*** washing buffer B (Please check whether absolute ethanol has been added before. Use after mixing) to the third column of the 96-well plate with a pipette that contained a suction nozzle.
4. Add ***50 μL*** elution buffer to the fourth column of the 96-well plate with a pipette that contained a suction nozzle.
5. In the laminar flow bench (negative pressure), add ***200 μL*** of sample to the first column of the 96-well plate with a pipette that contained a suction nozzle.
6. Turn on the nucleic acid extractor. Place above 96-well plate on the sample stage of the nucleic acid extractor. Put a magnetic sleeve on the magnetic bar.
7. Set up the program according to the following table.

No.	Hole Position	Name	Waiting Time (min)	Mixing Time (min)	Magnetic time (min)	Speed	Volume (μL)
1	1	Mix	0	1	0	Middle	460
2	1	Digest	2	0	120	Middle	460
3	2	Wash1	0	1	120	Middle	375
4	3	Wash2	0	1	120	Middle	500
5	4	Elution	1	1	0	Middle	50
6	4	Adsorption	1	0	120	Middle	50
7	1	Back	0	0	0	Middle	0

8. The procedure will be completed in ***16 min***.
9. Pipette out DNA or RNA. Store the nucleic acid at ***-20° C***. Store at ***-80° C*** for long-term storage.
10. Disinfect the operating bench and nucleic acid extractor with 10% hypochlorous acid or 75% alcohol. Turn on the UV lamp of the nucleic acid extractor for disinfection.

PERFORMANCE CHARACTERISTICS

1. This kit is suitable for the extraction of viral nucleic acids (RNA and DNA) in samples. Such as Hepatitis B Virus (HBV) in serum, Influenza A Virus (IAV) in throat swab preservation solution.
2. Different extraction methods were used to extract the above two viral nucleic acids. Detect the extracted nucleic acid with a fluorescent PCR analyzer. The results show that the nucleic acid extraction effect of this kit is equivalent to that of Liferiver nucleic acid extraction reagent and TIANGEN magnetic bead method virus DNA/RNA extraction kit.
3. The extraction efficiency of this kit for virus nucleic acid in various samples is not less than 85%.

PRECAUTIONS

1. This kit is suitable for manual extraction or automatic instrument extraction.
2. Self-provided reagents: Absolute Ethanol (AR), Isopropanol (AR).
3. The operator should have professional training and operating experience. Extraction is carried out in a laminar flow bench (negative pressure) or pollution-proof cover. Ensure the safety of the operator.
4. In order to prevent the volatilization of the active ingredients, after adding isopropanol and absolute ethanol to the reagent, make sure that the bottle cap is tightened.