Swab/Saliva Viral DNA/RNA Extraction Kit (Magnetic Beads)

Catalog No.: V4002 Size: 200 preps

CE IVD

Description

Swab/Saliva Viral DNA/RNA Extraction Kit (Magnetic Beads) is a product specially designed for KingFisher and other nucleic acid extraction instruments. It is a small volume purification kit suitable for the extraction of various virus RNA/DNA from plasma, cell-free body fluids, viral stock solutions and infected tissues. The kit adopts the magnetic particle purification technology based on superparamagnetism, which can minimize the risk of cross-contamination and improve the sensitivity and accuracy of detection. The operation time of the instrument is only about 30 minutes. It can also be used for manual operation.

Main components

The kit consists of the following components:

The name of the reagent	Amount	Component description
Buffer MVL	65 ml × 2	Provide environment for lysing and binding to the magnetic beads
Buffer MW	20 ml × 3	Remove residual proteins and other impurities
Mag Beads	4.5 ml	Adsorb viral nucleic acid
DEPC-Water	12 ml	DEPC - treated water, RNase - free
DS Carrier	450 μl	Capture trace nucleic acid
Proteinase K	1 ml × 4	Lyses proteins bound to nucleic acids

Storage conditions

Store DS Carrier and Proteinase K at -20°C, Mag Beads and DEPC-Water at 2-8°C, others at room temperature (RT, 15-25°C), and transport at RT.

Notes

1. When using this kit, please wear lab coat, disposable latex gloves, disposable masks to protect you from the reagents, and protect the nucleic acid from nucleases that are present on skin. The microcentrifuge tubes and pipette tips should be autoclaved and free of DNase and RNase.
2. Before using, vortex the Mag Beads well to ensure that the beads are fully resuspended. Mag Beads cannot be frozen.
3. For refractory samples, the lysis condition can be set to 55°C for 10 minutes.
4. Please check whether there is crystal precipitation in the Buffer MVL. If there is crystal precipitation, place it at room temperature or 37°C until the crystal is dissolved. Mix it before use.
5. In order to reduce the times of liquid addition, Proteinase K, Mag Beads and DS Carrier can be pre-mixed, and the mixture can be placed at 2~8°C for 2 days. Mix 10 to 20 times to disperse the beads before using. Due to the inhibition of Buffer MVL on Proteinase K, samples should be added as soon as possible after the addition of Buffer MVL.
6. This kit can be adapted to all the automatic instruments based on magnetic beads. If it is used for the first time, it can simulate the operation procedure through the empty plate, and then add samples for extraction after it is accurate.

Before use

Add 80 ml 100% ethanol to Buffer MW (20 ml), and store at RT.

Vortex the Mag Beads well to ensure that the beads are fully resuspended.

Prepare 1× PBS solution, pH 7.4, in case of need.

Sample preparation

A. Throat swab (with preservation solution), saliva: vortex vigorously for 30 sec, take 200 µl for experiment.

B. Plasma, serum and viral stock solution: prepare 10-200 µl of plasma, serum or viral stock solution, if the initial amount is less than 200 µl, use PBS solution to make up to 200 µl.

C. Virus-infected tissue: prepare 10 mg of virus-infected tissues to be ground with liquid nitrogen, and add 200 µl of PBS solution to the ground tissues.

Protocol A: Automatic Operation Process of Single Deep-Well Plate

Prepare the reagents listed below to each well:

Well	Reagent and amount/well	Operation process
A	Sample: 200 µl	Mixing at 20~55°C for 3 min by vibrating. The digested sample release DNA/RNA to the Mag Beads. Transfer the beads to well B.
	Buffer MVL: 600 µl	
	Mag Beads: 20 µl	
	DS Carrier: 2 µl	
	Proteinase K: 20 µl	
B	Buffer MW: 600 µl	Wash the beads by vibrating for 1 min, then magnetic absorption for 5 sec. Transfer the beads to well C.
C	Buffer MW: 600 µl	Wash the beads by vibrating for 1 min, then magnetic absorption for 5 sec. Transfer the beads to well D.
D	DEPC-Water: 100 µl	Air dry the beads for 1 min. Elute the beads by vibrating for 1 min, then magnetic absorption for 5 sec. Transfer the beads back to well A.

The nucleic acid in well D is purified and can be used in RT-PCR, NGS and other experiments or stored under -20°C.

Protocol B: Automatic Operation Process of 96 Deep-Well Plate

Prepare the reagents listed below to each plate:

Plate	Reagent and amount/well	Operation process
A	Sample: 200 µl	Mixing at 20~55°C for 3 min by vibrating. The digested sample release DNA/RNA to the Mag Beads. Transfer the beads to plate B.
	Buffer MVL: 600 µl	
	Mag Beads: 20 µl	
	DS Carrier: 2 µl	
	Proteinase K: 20 µl	
B	Buffer MW: 600 µl	Wash the beads by vibrating for 1 min, then magnetic absorption for 5 sec. Transfer the beads to plate C.
C	Buffer MW: 600 µl	Wash the beads by vibrating for 1 min, then magnetic absorption for 5 sec. Transfer the beads to plate D.
D	DEPC-Water: 100 µl	Air dry the beads for 1 min. Elute the beads by vibrating for 1 min, then magnetic absorption for 5 sec. Transfer the beads back to plate A.

The nucleic acid in plate D is purified and can be used in RT-PCR, NGS and other experiments or stored under -20°C.

Protocol C: Manual Operation Process

1. Prepare 200 µl sample in a 1.5 ml Nuclease-free EP tube. If the initial amount is less than 200 µl, use PBS solution to make up to 200 µl.
2. Add the reagents in order: 600 µl Buffer MVL, 20 µl Mag Beads, 20 µl Proteinase K and 2 µl DS Carrier. Vortex

vigorously for 15 sec, mix well. Incubate at room temperature for 10 min,and mix upside down twice during the process.

3. Centrifuge briefly. Place the tube on the magnetic rack and let it stand for 1 min. Remove the supernatant with a pipette.

4. Washing 1: Take the tube off the magnetic rack. Add 600 µl Buffer MW. Vortex for 15 sec, then centrifuge briefly. Put the tube back to the magnetic rack, and let stand for 1 min. Carefully discard all solutions.

5. Washing 2: Take the tube off the magnetic rack. Add 600 µl Buffer MW. Vortex for 15 sec, then centrifuge briefly. Put the tube back to the magnetic rack, and let stand for 1 min. Carefully discard all solutions.

6. Air drying at room temperature for 3 ~ 5 min until the surface of the magnetic beads does not reflect light.

Note: To ensure the purity of nucleic acid, no residual Buffer MW is allowed. The excessive drying (cracking) of the beads can affect the final yield.

7. Add 100 µl DEPC-Water, vortex for 15 sec, and let stand for 3-5 min, during which gently oscillate 2 times to accelerate nucleic acid dissolution.

8. Put the tube back to the magnetic rack, and let stand for 1 min. Pipette the supernatant to a new 1.5 ml Nuclease-free EP tube. The obtained DNA/RNA can be directly used for subsequent detection, or be stored at -30 ~ -15°C for short-term storage or at -70°C for long-term storage.

Example of Application Allsheng Auto-Pure32A Automated Nucleic Acid Extractor

Step	Well	Name	Mixing time	Magnetic absorption time	Waiting time	Volume	Mixing speed	Temperature
1	1	Lysis	3 min	0	0	840	8	OFF
2	1	Magnetic absorption	0	5 sec	0	840	8	OFF
3	2	Wash 1	1 min	5 sec	0	600	8	OFF
4	3	Wash 2	1 min	5 sec	0	600	8	OFF
5	4	Elution	1 min	5 sec	1 min	100	8	OFF
6	1	Drop	0.5 min	0	0	840	8	OFF

This procedure can quickly and efficiently extract viral RNA from nasal swab.

[Explanation of Marks]

IVD	The product is used in vitro, please don't swallow it		Please don't reuse it
	Validity		Please read the instruction book carefully before using
	Warning, please refer to the instructions in the annex		Manufacturer
2℃ 8℃	Temperature scope within which the product is reserved	LOT	Batch number

EC REP	European union authorization representative		Keep dry
	Avoid overexposure to the sun		Don't use the product when the package is damaged
CE	The product meets the basic requirements of European in vitro diagnostic medical devices directive 98/79/EC		

[Basic Information]

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EC REP

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