

Magnetic Viral DNA/RNA Kit

Cat.No.: HYC426

Product Description

This kit is designed for viral nucleic acid extraction from swabs, tissues, feces, blood, serum, plasma and other samples. It adopts superparamagnetic nanomagnetic beads and a proprietary buffer system, enabling efficient and specific binding of nucleic acids in lysate to magnetic beads. The extracted nucleic acids feature high purity and stable quality, free of proteins, nucleases and impurities that may inhibit downstream applications. This product is applicable to subsequent experiments including PCR, real-time PCR, NGS and biochip analysis.

Components

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Lysis Buffer	50 mL
Buffer WB1	50 mL
Buffer WB2	100 mL
RNase-Free Water	10 mL
Proteinase K	3×1.25 mL
Magnetic Beads N	2×1 mL

Storage

Stored in a dry place at room temperature (15-30°C).

Required Reagents and Equipment

Manual single-tube extraction

- Thermomixer
- Magnetic rack for 2 mL & 15 mL tubes

Instructions

Preparations

- Avoid repeated freeze-thaw cycles of samples, which will reduce the yield of extracted nucleic acids.
- The extracts obtained with this kit are viral DNA/RNA. Take strict precautions against nucleic acid degradation during operation. Dedicated labware and pipettes must be used. Disposable consumables such as centrifuge tubes and pipette tips shall be autoclaved. Operators shall wear powder-free gloves and masks.
- For long-term storage, store Proteinase K at -20 °C.

Protocol

1. Sample processing

- For whole blood, serum and similar samples: Pipette 300 µL directly.
- For saliva samples: Pipette 300 µL directly. If the sample contains excessive impurities, let it stand briefly or perform a short centrifugation, then pipette 300 µL of the supernatant.
- For swab samples:
Dry swabs: Resuspend with PBS or normal saline. Add 500 µL of PBS/normal saline into a 2 mL centrifuge tube, place one dry swab into the tube, vortex thoroughly, then transfer 400 µL for extraction.
Wet swabs: Vortex to mix well, then take 400 µL for extraction.
- For gauze-based environmental samples: Squeeze the sample directly from wet gauze and pipette 300 µL. In case of excessive impurities, let it stand briefly or centrifuge for a short time, then collect 300 µL of the supernatant.
- For animal tissue samples: Weigh 20–50 mg tissue, fully homogenize with 500 µL of normal saline or PBS. Centrifuge at 12000 rpm for 1 minute, then pipette 400 µL of the supernatant.
- For fecal samples: Transfer 1 g of feces into a self-provided 15 mL centrifuge tube. Add 10 mL of fecal virus preservation solution or PBS, vortex to mix thoroughly. Centrifuge at 8000 rpm for 3 minutes, then take 300 µL of the supernatant.

2. Manual Operation

- 1) Take a self-provided 1.5 mL centrifuge tube. Add 30 μ L Proteinase K, 300/400 μ L sample (equilibrate the sample to room temperature in advance) and 500 μ L Lysis Buffer. Vortex for 5 seconds, then incubate and mix on a thermomixer at 80 °C and 1700 rpm for 4 minutes.
- 2) Add 20 μ L Magnetic Beads N to the tube and vortex for 10 seconds. Incubate and mix on a thermomixer at room temperature and 1700 rpm for 4 minutes. Place the tube on a magnetic rack. After complete bead capture, carefully discard all liquid.
- 3) Add 500 μ L Buffer WB1, vortex, and mix on the thermomixer at room temperature and 1700 rpm for 1 minute. Place the tube on the magnetic rack again. Once beads are fully captured, gently remove all liquid.
- 4) Add another 500 μ L Buffer WB2, vortex, and mix on the thermomixer at room temperature and 1700 rpm for 1 minute. Place on the magnetic rack and discard all liquid after full bead capture.
- 5) Add a further 500 μ L Buffer WB2, vortex, and mix on the thermomixer at room temperature and 1700 rpm for 1 minute. Place on the magnetic rack and remove all liquid after complete bead adsorption.
- 6) Air-dry the tube for 2–5 minutes until the beads appear matte to ensure no residual ethanol remains.
- 7) Add 60 μ L RNase-Free Water and vortex. Incubate and mix on the thermomixer at 80 °C and 1700 rpm for 4 minutes.
- 8) Place the tube on the magnetic rack. After bead capture, transfer the eluted nucleic acid solution into a new centrifuge tube. Store at -80 °C for long-term preservation.