Virus Nucleic Acid Isolation Kit

Cat No. orb180514
Size: 100 Reactions
Sample: Up to 300 µl of the whole blood
Sample: Up to 200 µl of virus sample
Format: Reagent and mini spin column
Sample material: Serum, plasma, body fluids
Operation time: 20 minutes
Elution volume: 50 µl

Description

The Virus Nucleic Acid Isolation Kit provides a fast, simple, and cost-effective method for the isolation of viral DNA/RNA from cell-free samples such as serum, plasma, body fluids and the supernatant of virus-infected cell cultures. Its unique buffer system will efficiently lyse cells and degrade protein, allowing for the nucleic acid to be easily bound by the glass fiber matrix of the column. Contaminants such as salts, metabolites and soluble macromolecular cellular components are removed in the Wash Step. The phenol extraction and ethanol precipitation are not required, and the high-quality nucleic acid is eluted in the RNase-free elution buffer. The viral DNA/RNA isolated with the Total Nucleic Acid Isolation Kit (Virus) is suitable for a variety of routine applications, including the Real-time PCR/RT-PCR, Automated Fluorescent DNA Sequencing, PCR, and other enzymatic reactions. The entire procedure can be completed within 15-20 minutes.

Specification

➢Isolates both viral RNA and DNA, allowing simultaneous detection of both types of virus
➢Removes inhibitors that might interfere with downstream assays, ensuring greater assay specificity, sensitivity and reproducibility
➢Prepares nucleic acid samples in only 20 minutes
➢Yields a concentrated sample that is suitable for direct assay (no precipitation required)
➢Universal viral nucleic acid purification system - One kit for both DNA and RNA viral purification, allowing simultaneous testing of both viral types
➢Environment-friendly -Less infectious plastic waste due to the reduced number of hands-on steps
➢Safety - No phenol/chloroform extractions
➢Versatility - Spin and vacuum formats available
➢Quality - RNA suitable for downstream applications

Application

➢Reverse transcription
➢Northern blotting
➢PCR

Kit Contents

Contents	NA016-0100
Buffer V1	45 ml
Buffer V2 (Add ethanol)	6 ml (45ml)
Buffer W1	45 ml
Buffer W2 (Add ethanol)	15 ml (60 ml)
Buffer RE	10 ml
VN Columns	100 PCS
Collection Tubes	100 PCS

Quality Control

The quality of the Biorbyt Virus Nucleic Acid Isolation Kit is tested on a lot-to-lot basis to ensure consistent product quality.

Required Materials

- Absolute EtOH
- PBS (Phosphate Buffered Saline)
- Microcentrifuge tubes (DNase and RNase free)

Virus Nucleic Acid Isolation Kit Protocol

Step 1 Lysis

1. Transfer up to 200 µl of the virus sample into a 1.5 ml microcentrifuge tube and add 400 µl of the Buffer V1. (If the sample is less than 200 µl, adjust the sample volumn to 200 µl with the PBS)
2. Mix well and let it stand at the room temperature for 10 minutes.

Step 2 Nucleic Acid Binding

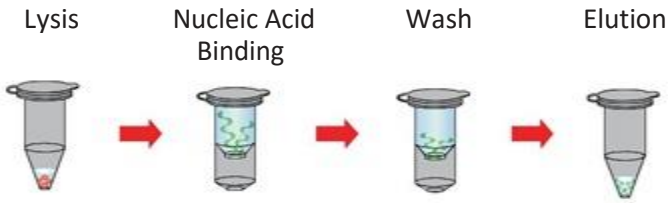
1. Add 450 µl of the Buffer V2 (ethanol added) to the sample lysate and shake vigorously.
2. Place a VN Column in a Collection Tube.
3. Transfer 700 µl of the lysate mixture to the VN Column.
4. Centrifuge at 16,000 x g for 1 minute.
5. Discard the flow-through and place the VN Column back in the Collection Tube.
6. Transfer the remaining lysate mixture to the VN Column.
7. Centrifuge at 16,000 x g for 1 minute.
8. Discard the flow-through and place the VN Column back in the Collection Tube.

Step 3 Wash

1.Add 400 µl of the Buffer W1 into the VN Column.
2.Centrifuge at 16,000 x g for 30 seconds.
3.Discard the flow-through and place the VN column back into the Collection tube.
4.Add 600 µl of Buffer W2 (ethanol added) into the VN Column.
5.Centrifuge at 16,000 x g for 30 seconds.
6.Discard the flow-through and place the VN column back into the Collection tube.
7.Centrifuge at 16,000 x g again for 2 minutes to remove the residual Buffer W2.

Step 4 Elution

1.Place the VN column in a clean 1.5 ml microcentrifuge tube (DNase and RNase free).
2.Add 50 µl Buffer RE or RNase-free water (pH is between 7.0 and 8.5) to the center of each VN column, let it stand for 2 min, and centrifuge at 14,000 x g for 2 min.



Troubleshooting

Problem	Cause	Solution
Low yields	Insufficient performance of the elution buffer during the elution step	Remove the residual buffers during the wash steps completely. The remaining buffers decrease the efficiency of the following elution steps.
	Incomplete lysis	Check the incubation time of the Lysis Step.
	Viral nucleic acid remains on the column	Repeat the Elution Step. Incubate the column for 5 min with water prior to centrifugation.
Poor performance of RNA in downstream applications	Interference of the residual ethanol	Be sure to remove the entire Buffer V2 and W2.
Degraded RNA	Source	Do not freeze and thaw sample more than once. Increase the viral concentration in the sample.
	RNase contamination	Ensure not to introduce RNase during the procedure. Check buffers for the RNase contamination.

Caution

1. Add 45 ml and 60 ml of the ethanol (96–100%) to the Buffer V2 and W2, and shake before use.
2.Check the Buffers before use for salt precipitation. Re-dissolve any precipitate by warming up to 37°C.
3.The Buffers V1 and W1 contain irritants. Wear gloves when handling these buffers.
4.Research Use Only. Not intended for any animal or human therapeutic or diagnostic uses.