Virus Nucleic Acid Isolation Kit

Cat. No.: SN016-0100 Size: 100 Reactions
Cat. No.: SN016-0004 Size: 4 Reactions
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 proteins, 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.

Feature

- High binding capacity for viral RNA or viral DNA.

Applications

- Real-time PCR.
- PCR.
- RT-PCR.
- Enzymatic reactions.
- DNA sequencing.

Kit Contents

Contents	SN016-0100	SN016-0004
Buffer V1	45 ml X 1 bottle	1.5 ml X 1 vial
Buffer V2 (Add ethanol)	6 ml X 1 bottle (45 ml X 1 bottle)	0.22 ml X 1 vial (1.65 ml X 1 vial)
Buffer W1	45 ml X 1 bottle	2 ml X 1 vial
Buffer W2 (Add ethanol)	15 ml X 1 bottle (60 ml X 1 bottle)	0.3 ml X 2 vials (1.2 ml X2 vials)
Buffer RE	10 ml X 1 bottle	1 ml X1 vial
VN Columns	50 pieces X 2 bags	4 pieces X 1 bag
Collection Tube	50 pieces X 2 bags	

Quality Control

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

Required Materials

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

Virus Nucleic Acid Isolation Kit Protocol

Step 1 Lysis

1. Transfer of the virus sample (up to 200 µl) or whole blood (up to 200 µl) to a 1.5 ml microcentrifuge tube and add 400 µl of the Buffer V1. (If the virus sample is less than 200 µl, adjust the sample volume 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

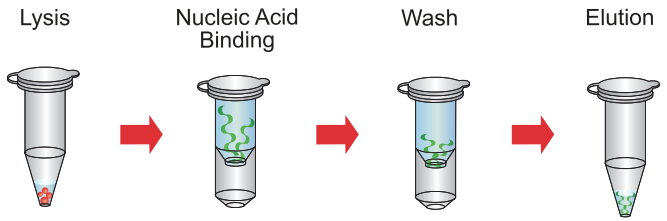
1. Add 450 µl of the Buffer V2 (ethanol added) to the sample lysate and shake vigorously.
2. Place a VN Column in a Collection Tube.
3. Transfer 700 µl of the lysate mixture to the VN Column.
4. Centrifuge at 16,000 x g for 1 minute.
5. Discard the flow-through and place the VN Column back into the Collection 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 into 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) into the center of each VN column, let it stand for 2 min, and centrifuge at 14,000 x g for 2 minutes.



Troubleshooting

Refer to the table below to troubleshooting problems that you may encounter when you did DNA / RNA isolation with the kit.

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 minutes 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 RNase contamination	Do not freeze and thaw sample more than once. Increase the viral concentration in the sample.
		Ensure not to introduce RNase during the procedure. Check buffers for the RNase contamination.

Related Ordering Information

Cat. No.	Description	Size
SM101-0500	*Taq* DNA polymerase	500 U
SM200-0100	PCR SUPERMIX	100 Reactions
SM201-0100	Hot Start SUPERMIX	100 Reactions
SA001-0500	AGAROSE Tablet, 0.5g	100 Tablets
SL001-1000	Novel Juice Supplied in 6X Loading Buffer	1 ml
SD010-R600	1 Kb DNA Ladder RTU	600 µl
ST040-4000	100 mM dNTP Set	4 x 1 ml
ST046-1000	100 mM dNTP Set	4 x 250 µl
ST025-1000	2.5 mM dNTP Mix	1 ml
ST010-1000	10 mM dNTP Mix	1 ml

Caution

- During the operation, always wear the latex or vinyl gloves while handling reagents.
- Check buffers before use for salt precipitation. Re-dissolve any precipitate by warming up to 37°C.
- When using 100 reaction assays, add 45 ml of the ethanol (96-100%) to the Buffer V2, and shake before use; add 60 ml of the ethanol (96-100%) to the Buffer W2, and shake before use.
- When using 4 reaction assays, add 1.65 ml of the ethanol (96-100%) to the Buffer V2, and shake before use; add 1.2 ml of the ethanol (96-100%) to the each vial of the Buffer W2, and shake before use.
- All products are for research use only.