BIONANOGEN

NANO TECHNOLOGY ADD FOR INNOVATION

BNG® Quick-RNA Isolation Kit

INSTRUCTIONS FOR USE

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RT-qPCR.025

IVD

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BNG® Quick-RNA Isolation Kit Instruction Manual

Kit Contents and Storage Conditions				
	Contest	**50 Test**	**100 Test**	**Storage**
1	Lysis Buffer I	1560 µL	3110 µL	+15^{0}C / +25^{0}C
2	Lysis Buffer II	2630 µL	5260 µL	+15^{0}C / +25^{0}C
3	RNA capture agent	102 µL	202 µL	-20^{0}C
4	Carrier RNA	51 µL	101 µL	-20^{0}C
5	Elution Buffer	2500 µL	5000 µL	+15^{0}C / +25^{0}C
6	Spin Column	50 piece	100 piece	+15^{0}C / +25^{0}C
7	Collection Tube	50 piece	100 piece	+15^{0}C / +25^{0}C

User Supplied Equipment and Consumables
1) 1-10 µL and 100-1000 µL Micropipette: Adjustable volume
2) Microcentifuge Tubes; 1.5-2.0 ml volumetric and nuclease-free
3) Micropipette tips; 1-100-1000 µL volumetric and filters
4) Microcentrifuge machine; able to operate 8.000 g
5) Vortex mixer
6) Disposable, powder-free nitrile gloves
7) 70% Ethanol and 100% Ethanol (molecular biology degree)

Intended Use:

Kit is used for viral nucleic acid isolation from nasopharyngeal and oropharyngeal swap samples, liquefied phlegm samples.

Principle:

The kit is based on the principle that genetic material in viral particles of any lipid membrane or protein shell is extracted by physical, enzymatic and biochemical processes and purified by spin column technique. **BNG® Quick-RNA İsolation Kit** is an in vitro extraction kit used to obtain nucleic for swab sample. It has a fast and simple method to obtain high purity viral RNA from cell-free body fluids containing viruses. High efficiency and purity are obtained as a result of isolation.

Warnings:

1) Kit components should be stored in accordance with the storage conditions. The solutions must be at room temperature while the protocol is being applied.

2) All clinical specimens and all resulting waste materials should be treated as potentially infections.

3) Dispose of unused reagents, waste and spicimens in accordance with country or local regulations.

4) Do not eat, drink or smoke in laboratory work areas.

5) Wear protective disposable gloves, laboratory coats and eye-wear when handling clinical specimens and kit reagents. Wash hands thoroughly after handling specimens and test reagents.

6) The kit components should be mixed with gentle shaking before use.

7) The components of the kit should not be mixed with the components of different lot numbers or the chemical substances of the same but different manufacturers.

8) To maintain the stability of the kit components, tube and bottle caps must be tightly closed after each use.

9) The sample tube should be thoroughly mixed after each chemical addition.

10) Use all pipetting devices and instruments with care and follow the manufacturer's instructions for calibration and quality control.

11) In order to prevent contamination, the kit should be kept away from any DNA, RNA and especially amplified nucleic acid source.

12) Use new, sterile aerosol barrier or filter pipette tips to avoid sample contamination.

13) The samples should be prepared in biocabinet area, depending on the sample. The area where the nucleic acid isolation is performed and the area where the PCR installation is made should be different.

14) The cleansable surfaces of rooms, benches and devices where analysis is performed should be regularly cleaned with 10% NaClO, ethanol and Rnase away. Clean and new gloves should be used during work.

15) Wash hands thorougly after handling specimens and test reagents. Avoid contact or reagents with the skini eyes or mucous membranes. If contact does occor, immediately wash with large amounts of water.

Application Protocol

1. Add 50 µl of nasopharyngeal/oropharyngeal swab samples into 1.5 ml tube (not provided).

2. Add µl 31 µl **Lysis Buffer I**, 52,5 µl **Lysis Buffer II**, 2 µl **RNA capture agent** and 1 µl **Carrier RNA** on it.

3. 5 sec. Vortex process is applied to the microcentrifuge tube.

4. One spin column is placed in the collection tube.

5. Transfer 136,5 µL of sample liquid from the sample tube to the column.

6. Centrifuge the column at 8000 xg for 5 minute room temperature(15-25^{0}C) .

7. 200 µL %70 Ethanol(not provided) is pipetted into the column.

8. Centrifuge the column at 8000 xg for 2 minute room temperature(15-25^{0}C) .

9. 200 µL **%**100 Ethanol (not provided) is pipetted into the column.

10. Centrifuge the column at 8000 xg for 2 minute room temperature(15-25^{0}C) . After centrifugation, the collection tube is discarded together with the waste liquid contained therein. The column is then inserted into a new 1.5 mL microcentrifuge tube to store.

11. 50 µL **Elution Buffer** is pipetted into the column.

12. It is incubated for 1 minute at room temperature (15-25^{0}C).

13. The column is centrifuged at 8000 xg for 1 minute at room temperature (15-25 ° C) with a 1.5 mL microcentrifuge tube underneath.

14. At the end of the process, the spin column is discarded. The elution tube containing the nucleic acid is closed. The microcentrifuge tube contains the isolated viral RNA. You can use viral RNA directly in PCR, RT-qPCR and qPCR applications. Store at -20'C for short term storage and at -80'C for long term storage.

Troubleshooting		
Trouble	**Possible Reason**	**Solution Suggestion**
Low RNA yield or low purity	Inappropriate storage conditions	**Carrier RNA** and **RNA capture agent** from the kit components should be stored at a temperature of -20^{0}C or lower; while the other componets should be stored at +15 to +25^{0}C. "Warnings" section should be read carefully and necessary actions should be taken.
	Chemicals and the sample are not mixed well	The sample tube should be thotoughly mixed after each chemical addition.
PCR yield is too low	Low analyte aomunt	The amount of sample should be increased.

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