MGIEasy Nucleic Acid Extraction Kit User Manual

Manual Version：2.0　　Model：VDR03P-96

【Product Name】

MGIEasy Nucleic Acid Extraction Kit

【Package】

Cat. No.	Model	Specification
1000024106	VDR03P-96	96 preps

【Intended Use】

Nucleic Acid Extraction Kit can efficiently purify the viral DNA and RNA from nasopharyngeal swab and oropharyngeal swab and is suitable for the downstream molecular detection.

【Inspection principle】

The high-salt lysis solution in this product can release the nucleic acid (DNA/RNA) in the sample. The released nucleic acid is captured by the high-binding superparamagnetic nanomagnetic beads, and the impurities are washed away by the washing solution. Then the nucleic acid on the magnetic beads is eluted to obtain a high-purity DNA or RNA sample.

【Kit Components】

Table 1　Main Components and specification

Components	Package and amount
Buffer Lys	500 μL*96
Magnetic Beads	100 μL*96
Buffer RW	200 μL*96
Nuclease Free Water	50 μL*96

Note: Do not mix components in different batches of kits.

【Storage Conditions】

- Storage temperature and conditions: 2°C to 8°C. Dry and dark environment.
- Validity Period：12 months
- Use immediately after peeling off the sealing film. Avoid placing the kit in a temperature below 0°C to prevent the magnetic beads from being frozen.

Note: *The Buffer Lys and Buffer RW may have some precipitation which will not affect the function. If it precipitates, please heat the reagent bottle in 37°C water bath properly for around 10 min until the precipitation disappear, then mix thoroughly before use.*

【Applicable Automation Instrument】

Applicable automation instrument:
Automated Nucleic Acid Extractor, Model: MGISP-NE384;

【Sample Conditions】

1. The kit is suitable to extract virus DNA and RNA from throat swab.
2. The samples are recommended to be extracted within 24 h at 2°C to 8°C after collection; If can't be extracted within 24 h, the samples should be stored at -70°C or below. Avoid repeated freezing and thawing; Frozen samples need to be thawed and mixed before use.
3. Sample transportation: use dry ice for transportation. Don't transport the samples exceeding 7 days. Avoid repeated freezing and thawing during transportation.
4. Sample Biosafety: All samples are regarded as potentially infectious items. The operations shall be performed in accordance with relevant national standards.

【Experimental Workflow】

Please follow the workflow as below:

A. Materials Required but Not Provide

Table 2 Required Materials for Automatic Extraction

Type	Item Name	Note
Instrument	MGISP-NE384 Automated Nucleic Acid Extractor	Cat. No. 900-000358-00, MGI
	Plate centrifuge	/
	Vortex	/
	Pipette	1 mL, 200 μL, 20 μL
Consumable	Tips	1 mL, 200 μL, 20 μL
	96-well PCR plates	/
	96-well Tip Comb	Cat. No. 1000025661, MGI

B. Read before uses

1. Avoid repeatedly freezing and thawing samples, which may result in low DNA or RNA quality.
2. If Buffer Lys and Buffer RW have precipitate, it can be re-dissolved in 37 °C water bath. Shake and mix ***thoroughly*** before use.
3. All reagents and samples need to be equilibrated to room temperature (10°C -30°C) before use.
4. Please read the manual carefully before the experiment.
5. If you have other questions, please contact MGI technical support:

   MGI-service@mgi-tech.com

C. MGISP-NE384 Automated Extraction Standard Workflow

C.1. Instrument Setup

1) Before first use, please confirm that the application script has been installed.
2) Perform pre-clean before experiment.

C.2. Preparing Consumables

Take out the consumables required for one run at room temperature for later use, as listed in the table below:

Table 3 Customer-prepared Materials for MGISP-NE384 Automated Extraction

Consumables	Brand	Cat. No.	Quantity
96-well Tip Comb	MGI	1000025661	4 Plates
96-well PCR plates	/	/	4 Plates

C.3. Preparing Samples

1) The script of MGISP-NE384 automation system is suitable for 96/192/288/384 samples.
2) The samples need to be inactivated before running on MGISP-NE384. Keep on ice for later use after prepared.

C.4. Preparing Reagents

1) Take out the pre-packaged 96-well plate from the kit. MGISP-NE384 can support 4 kits to extraction at one run.

2) Remove the outer packing; Invert several times to re-suspend the magnetic beads, then collect the beads to the bottom with plate centrifuge at 500 rpm for 30 s. Other reagents are centrifuged at 3000 rpm for 1 min to collect reagent at the bottom. Tear the aluminum film carefully, avoid the liquid spilled out.

3) Add 200μL sample to the Buffer Lys plate.

C.5. MGISP-NE384 Operation

1) Double-click the icon of MGISP-NE384 on the desktop, the mode selection interface is displayed, as shown in following figure1. Select "**User**" and input the password **"123456"**, click **"LOGIN"**.

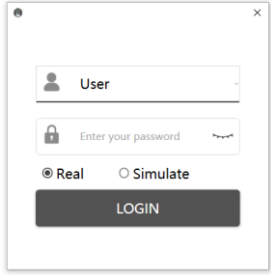

Figure 1 Login Interface

2) Click **"LOGIN"**. The initialization interface is displayed, as shown in following figure 2.

Figure 2 Initialization Interface

3) Click **"Initialize"**. When the home interface is displayed (as shown in following figure 3), the device is connected successfully, and you can go to the next step.

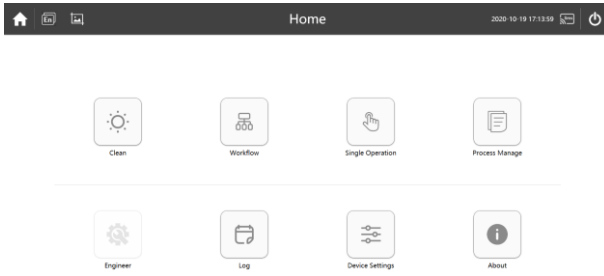

Figure 3 Home Interface

Note: If the initialization fails, check whether the power switch is turned on, and whether more than one software program is running. Try to restart the software. If the problem persists, contact MGI technical support.

4) Click the menu button and select "**Clean"** in the menu. Clear the operation platform and close the door. Click **"Start"** and start to clean (as shown in following figure 4).

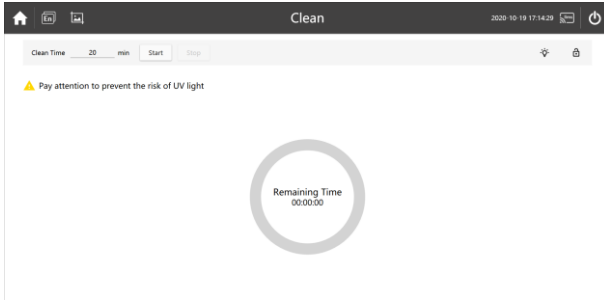

Figure 4 Clean Interface

5) After clean step completed, Click the menu button and select "**Workflow"** in the menu.
6) In the Workflow interface, click "**Script"**, to select **【MGI Nucleic Acid Extraction [VDR03P-96] _V1.1 】** ,verify that the extraction script corresponds to the reagent version. Follow the on-screen instructions to place the reagent plates on MGISP-NE384 as shown in the figure 6 (Table 4). Install the plastic magnetic bar protection case on the instrument and close the door.

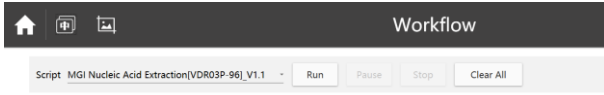

Figure 5 Run Wizard Interface

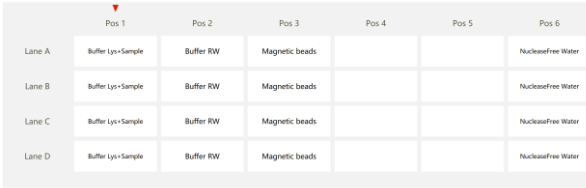

Figure 6 Operation Deck Arrangement

Table 4 Position arrangement of samples, reagents and consumable

Materials	Position arrangment
Buffer Lys + samples	LaneA、LaneB、LaneC、LaneD: Pos1
Buffer RW	LaneA、LaneB、LaneC、LaneD: Pos2
Magnetic beads	LaneA、LaneB、LaneC、LaneD: Pos3
Nuclease Free Water	LaneA、LaneB、LaneC、LaneD: Pos6

7) Click "**Run**" to start extraction workflow.

8) It is expected to run 15 min. After the process is finished, take out the product at Pos6.

9) The product can be used to perform the next testing operation directionally. They are also can be transferred to a 96-well PCR plate for storage.

10) Dispose of the used deep-well plates, and waste bag to the designated waste area. Perform a post-clean before powering off the device.

✔ **Stopping point: The extracted samples can be stored in the -80 °C refrigerator for a long time.**

【Precautions】

1. This product is only used for research. Please read this manual carefully before use;
2. Please familiarize the operation and precautions of various instruments to be used before testing;
3. Please use the micro- Pipette to pipette sample;
4. All samples and reagents should be avoided to directly contact with skin and eyes; do not swallow, once happen, immediately rinse with plenty of water and go to the hospital for

treatment in time;

5. All samples and various wastes should be treated in accordance with relevant regulations.

【Production Company Information】

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