



MGIEasy Nucleic Acid Extraction Kit User Manual

Manual Version: 1.0

Model: VDR01P-96

[Product Name]

MGIEasy Nucleic Acid Extraction Kit

[Package]

Cat. No.	Model	Specification
1000027005	VDR01P-96	96 preps

[Intended Use]

MGIEasy Nucleic Acid Extraction Kit can be used to efficiently purify viral DNA or RNA from nasopharyngeal swabs and oropharyngeal swabs and is suitable for use in downstream molecular detection. This kit is suitable for both manual and automated extraction on MGISP-NE384(High-throughput Automated Nucleic Acid Extraction and Purification System).

[Kit Components]

Table 1 Main components and specification (VDR01P-96)

Box ID	Reagent	Package and amount
		96 Preps
Box1	Buffer MLB	450 μ L \times 96
	Buffer MW1	500 μ L \times 96
	Buffer MW2	500 μ L \times 96
	RNase Free Water	50 μ L \times 96
Box2	Enhancer Buffer	100 μ L \times 1 tube
Box3	Magnetic Beads M	1.5 mL \times 1 tube

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

[Storage Conditions]

Storage conditions vary among the reagents in this kit. Please store them separately according to the following conditions:

Table 2 Reagents storage conditions and validity period

Reagent	Storage Conditions	Validity Period
Enhancer Buffer	-25°C to -15°C	12 months
Magnetic Beads M	2°C to 8°C	12 months
Others	0°C to 30°C	12 months

Note:

The Buffer MLB may undergo precipitation, which will not affect its function. If precipitation occurs, please heat the reagent bottle in a 50°C water bath properly for around 10 min until the precipitation disappears, then mix thoroughly for use.

[Applicable Automation Instrument]

Automated Nucleic Acid Extraction and Purification System, Model: MGISP-NE384.

[Sample Conditions]

1. VDR01P-96 is suitable to extract virus DNA and RNA from nasopharyngeal swabs and oropharyngeal swabs.
2. The samples are recommended to be extracted within 24 h at 4°C after collection; if the samples are not to be extracted within 24 h, they 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 during transportation. Do not transport the samples for a period longer than 7 days. Avoid repeated freezing and thawing during transportation.
4. Sample Safety: All samples are regarded as potentially infectious items and shall be handled in accordance with relevant national standards.

[Experimental Workflow]

Please follow the workflow below:

A. Required Materials Not Supplied

d) Required Materials for MGISP-NE384 Automatic Workflow

Table A-1 Required Materials for Automatic Extraction

Type	Item Name	Note
Instrument	Plate centrifuge	/
	Vortexer	/
	Pipette	1 mL, 200 μ L, 20 μ L

Consumable	Tips	1 mL, 200 μ L, 20 μ L
	96-well tips comb	Cat. No. 1000025661, MGI
	96-well PCR plate	DNase-free, RNase-free

B. Read before use

1. This product is for scientific research only and is not intended for clinical diagnosis.
2. Avoid repeatedly freezing and thawing samples, which may result in low DNA or RNA quality.
3. If Buffer MLB or Buffer MW1 has undergone precipitation, it can be re-dissolved in at 50°C water bath. Shake and mix well before use.
4. All reagents and samples need to be equilibrated to room temperature (10°C to 0°C) before use.
5. Please use the recommended consumables for automated or manual operations.
6. Please read the manual carefully before the experiment.
7. If you have other questions, please contact MGI technical support:

MGI-service@mgi-tech.com

C. MGISP-NE384 Automated Extraction Standard Workflow

C.1. MGISP- NE384 Automated Extraction Preparation

1. Preparing Device

- 1) Before first use, please confirm that the application script has been imported into the script location of MGISP-NE384.
- 2) Before starting each round of experiment, please make sure that the machine has finished "clean".

2. Preparing Consumable

Take out the consumables required for one workflow for 384 samples, as listed in the table below:

Table C-1 Materials required

Consumables	Brand	Cat. No.	Quantity
96-well tips comb	MGI	1000025661	4 pieces
96-well PCR plate	/	/	4 pieces

3. Preparing Samples

- 1) The Automated Nucleic Acid Extractor can process 96 to 384 samples at one time.
- 2) Pretreat the sample to be extracted and place them on ice for later use.

4. Preparing Reagents

- 1) Take out the pre-packaged 96-well plate from the kit, remove the outer packing, the 96-well plate are centrifuged at 3000 rpm for 1 min to collect reagents at the bottom.
- 2) Preparing Magnetic Beads M Mixture: Transfer Enhancer Buffer into the tube of Magnetic Beads M, and mix well to ensure that the Mixture are completely resuspended.
- 3) Preparing Buffer MLB Mixture: Add 16 μL of the Magnetic Beads M Mixture into each well of Buffer MLB Mixture plate.
- 4) Add 200 μL of sample into each well of the Buffer MLB Mixture plate. Be careful to avoid cross-contamination.

C.2. MGISP-NE384 Operation

Instrument Operation

- 1) Double-click the icon of MGISP-NE384 on the desktop. The authentication interface will be displayed. Select **"User"**, enter the password **"123456"**, and click **"login"**.
- 2) The initialization interface will be displayed.
- 3) Click **"Initialize"**. The initialization takes approximately 1 minutes. If **"Initialize"** is successfully displayed, it means that the device has connected successfully, and you can go to the next step.

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

- 4) Select the **"Clean"** option, empty the console, wipe the console and tray with a dust-free paper soaked with 75% alcohol and close the window. Click **"Start"**, and the instrument will open the fan filter unit and UV lamp to clean the internal environment of the instrument. The default cleaning time is 20 minutes. You can also adjust the cleaning time accordingly.
- 5) After **"Clean"**, return to the main interface and select **"Workflow"**.

- 6) In the Workflow interface, click **"Script"**, and select **"MGI Nucleic Acid Extraction"**. Follow the on-screen instructions to place the consumables and reagents (Table C-2). Install the Magnetic bar protection case.

Table C-2 Operation Deck Arrangement

Reagents	Position
Buffer MLB Mixture+Sample	LaneA、LaneB、LaneC、LaneD: Pos1
Buffer MW1	LaneA、LaneB、LaneC、LaneD: Pos2
Buffer MW2	LaneA、LaneB、LaneC、LaneD: Pos3
Rnase Free Water	LaneA、LaneB、LaneC、LaneD: Pos6

- 7) Confirm that the consumables and reagents are placed correctly, and close the instrument window. Click **"Run"**. Check the corresponding test channel according to the number of samples and check the Magnetic bar protection case to make sure that it is placed correctly. Click **"Confirm"**.
- 8) The whole run takes approximately 20 minutes, and please arrange the following work properly.
- 9) After the run ends, please take out the extraction product at pos6 immediately. It can be used directly for subsequent experiments or stored at -80°C.
- 10) Dispose of the used deep-well plates and magnetic bar protection case. Select the **"Clean"** option, empty the console, wipe the console and tray with a dust-free paper soaked with 75% alcohol and close the window. Click **"Start"**, and the instrument will open the fan filter unit and UV lamp to clean the internal environment of the instrument. The default cleaning time is 20 minutes. You can also adjust the cleaning time as needed.

Note: After the experiment, please take out the extracted product immediately. It is forbidden to leave the product at pos6 for a long time, otherwise it will affect the quality of the product.

[Precautions]

1. This product is for scientific research only, not for clinical diagnosis. Please read this instruction carefully before use;
2. Please familiarize yourself with the operation and precautions of various instruments to be used before testing;
3. When all the reagents are taken out from the specified storage environment, please use



them according to the requirements. The reagents should be shaken and mixed before use;

4. Please transfer sample using precise and qualified pipette;
5. Keep your skin and eyes from direct contact with any sample or reagent. (Do not swallow any sample or reagent.) If it happens, immediately rinse with plenty of water and go to the hospital for treatment in time;
6. All samples and various wastes should be treated in accordance with relevant regulations.

[Manufacture Information]

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