MGIEasy Blood Genomic DNA Extraction Prepacked Kit (MGISP-NE384) User Manual

Manual Version: 3.0

【Product Name】

MGIEasy Blood Genomic DNA Extraction Prepacked Kit (MGISP-NE384)

【Package】

Cat. No.	Specification
1000027847	96 preps

【Intended Use】

Used for nucleic acid extraction, enrichment, purification.

【Inspection Principle】

In this product, the high salt lysate can release DNA from the sample. The released nucleic acid will be captured by the superparamagnetic nano magnetic beads with high binding force. The impurities bound on the surface of nucleic acid will be washed away by the washing solution. Finally, the nucleic acid on the magnetic beads will be eluted to obtain high-quality genomic DNA. The extracted genomic DNA can be used for various applications such as enzyme digestion, PCR, fluorescent quantitative PCR, library construction, high-throughput sequencing.

【Kit Components】

Table 1 Main Components and Specification

Reagent	Package and Amount (96 preps)
Buffer LYS	300 μL × 96/Plate × 1 Plate
Buffer WB1	1000 μL × 96/Plate × 1 Plate
Buffer W2	600 μL × 96/Plate × 2 Plates
Buffer TE	150 μL × 96/Plate × 1 Plate
Proteinase K	2300 μL / tube x 1 tube
Magnetic Beads H	100 μL × 96/Plate × 1 Plate

⚠ **Note: Do not mix components of the reagent kits from different batches.**

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【 Storage Conditions 】

Different reagents in this kit have different storage conditions. Please store them separately according to the following conditions:

Table 2 Reagents Storage Conditions and Validity Period

Reagent	Storage Conditions	Validity Period
Proteinase K	2°C to 30°C	12 Months
Magnetic Beads H	2°C to 30°C	12 Months
Others	0°C to 30°C	12 Months

⚠ **Note: Proteinase K and magnetic beads H can be transported at 2°C to 30°C. For long-term storage, please store at 2°C to 8°C.**

⚠ **Note: The Buffer LYS may have precipitation, which will not affect the function. If precipitation occurs, please heat the reagent bottle in a 37°C water bath properly for 10 minutes approximately until the precipitation disappears, shake gently before use to avoid air bubbles.**

【 Applicable Automation Instrument 】

Applicable automation instrument:

High-throughput automated nucleic acid extractor: MGISP-NE384.

【 Sample Conditions 】

1. This kit is suitable to extract DNA from fresh blood, whole blood, frozen blood, buffy coat, plasma-free frozen blood, Salivary preservation fluid sample.
2. The samples can be stored at 4°C if will be extracted within 24 h after collection. If the samples will not to be extracted within 24 h, please stored at -70°C or below. Avoid repeated freezing and thawing; frozen samples need to be thawed and mixed before use.
3. Please use dry ice for sample transportation. Don't transport the samples for more than 7 days. Avoid repeated freezing and thawing during transportation.
4. All samples are regarded as potentially infectious items. Please treat it in accordance with relevant national standards.

【 Experimental Workflow 】

Please follow the workflow below:

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A. Required Materials Not Supplied

Table 3 Equipment and Materials Required but not Provided

Type	Item Name	Note
Instrument	MGISP-NE384	900-000358-00
	Vortex	/
	Desktop Centrifuge	Rotation speed not lower than 10,000 rpm/min
	Plate Centrifuge	/
	Pipette	1 mL、200 μL、20 μL
Reagent	Saliva Collection Set	1000025954
	Isopropyl alcohol	AR
Consumable	Tips	1 mL、200 μL、20 μL
	96-well PCR plate	DNase and RNase free
	1.5 mL Microfuge Tubes	DNase and RNase free

Table 4 Customer-prepared Materials for Automation

Consumables	Brand	Cat. No.	Quantity
96-well tip comb	MGI	1000025661	4 pieces

⚠ **Note: After the extraction, the extracted product can be transferred to a 96-well PCR plate for storage. If there is no need to transfer the product, the [96-well PCR plate] consumable is unnecessary. If you do not need to extract the saliva sample, you do not need to prepare the [Saliva Collection Kit].**

B. Read Before Use

1. Before experiment, read through the operation guide of the related reagent kits.
2. Avoid repeatedly freezing and thawing samples, which may result in low DNA quality.
3. If Buffer LYS has precipitation, it can be re-dissolved in a 37°C water bath. Shake and mix thoroughly before use.
4. All reagents and samples need to be equilibrated to room temperature (10°C to 30°C) before use.
5. Please don't use the consumables not recommended.
6. Perform cleaning before experiment and after experiment respectively.

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7. Dispose the samples and wastes according to related regulatory standards.

C. Automated Extraction Standard Workflow

C.1. Preparing Device and Consumable

1. Before first use, please confirm that the application script has been imported into the location of MGISP-NE384. For example, C:/ MGISP-NE384/ Scripts/ MGIEasy Blood DNA Extraction Prepacked Kit (MGISP-NE384)_V1.0.mgi.
2. Before starting each round of experiment, please make sure that the machine has finished [**clean**].
3. According to the requirements of the samples, each set of reagent plates should be prepared with a 96-well tip comb.

C.2. Preparing Samples

1. The high-throughput automated nucleic acid extractor can process 96, 192, 288, 384 samples at one time.
2. Pretreat the sample to be extracted and place the samples on ice for later use.

C.3. Preparing Reagents

1. Take out the pre-packaged 96-well plate from the kit, remove the outer packing, centrifuged with 3000 rpm for 1 min to collect reagent at the bottom.
2. Add the samples into the 1.5 mL microfuge tube according to Table 5, add 20 μL Proteinase K to each sample, mixed thoroughly to ensure that the mixtures are completely resuspended. (Please start the extraction experiment within 30 mins after the preparation of this mixture).

Table 5 Recommended Sample Input Volume

Sample type	Sample volume
buffy coat, plasma pheretic frozen blood	200 μL
fresh blood, whole blood, frozen blood	200 μL
Salivary preservation fluid sample/ Fresh saliva	300 μL

⚠ **Note: The input volume of blood samples must ≥ 100μL, and the input volume of salivary preservation fluid sample / Fresh saliva must ≥ 200μL.**

3. Transfer 220 μL sample and the proteinase K mixture into each well of the Buffer LYS mixture plate, be careful to avoid cross-contamination.

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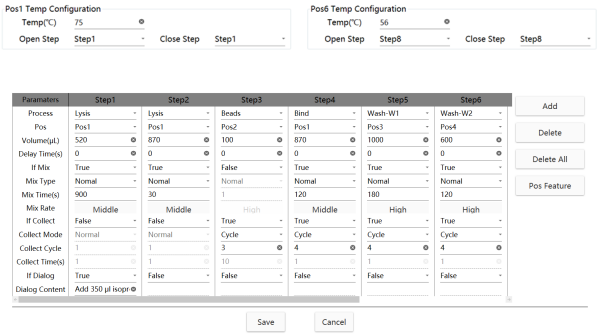
C.4. Instrument Operation

1. Double-click the icon of MGISP-NE384 on the desktop. The authentication interface will be displayed. Select User, enter password: 123456，click login.
2. The initialization interface will be displayed.
3. Click [**Initialize**]. The initialization will take approximate 1 minutes. If Initialize successfully displayed, means the device 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 unsettled, please contact MGI technical support.**

4. Select the [**Process Manage**] option, click [**Add**] or [**Import**] to set the extraction process.

   a) New Program: Click [**Add**], edit the program according to the parameters shown in Figure 1, and click [**Pos Feature**], input position information according to Table 6, and click [**Save**] after editing.



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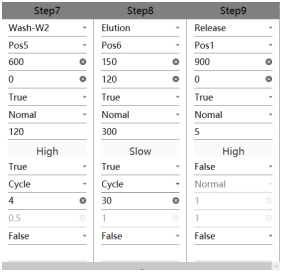

Figure 1 Process Editing Interface

⚠ **Note: The interface content of POS1 is: Add 350 μL isopropyl alcohol to each well of POS1 plate.**

Table 6 Pos Information

Pos1	Buffer LYS +Sample+ Proteinase K
Pos2	Magnetic beads H
Pos3	Buffer WB1
Pos4	Buffer W2
Pos5	Buffer W2
Pos6	TE Buffer

b) Import program: Click [**Import**] to import [**MGIEasy Blood DNA Extraction Prepacked Kit (MGISP-NE384)_V1.0.mgi**] .

5. Select the [**Clean**] option, emptying the console, wiping the console and tray with a dust-free paper soaked with 75% alcohol and closing 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 modify the cleaning time accordingly.

6. After [**Clean**], return to the main interface select [**Workflow**].

7. In the [**Workflow**] interface, Click [**Script**], select [**MGIEasy Blood DNA Extraction Prepacked Kit (MGISP-NE384)_V1.0**]. Follow the on-screen instructions to place the consumables and

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reagents, as shown in following figure 2 or table 7. Confirm the placement and close the door.

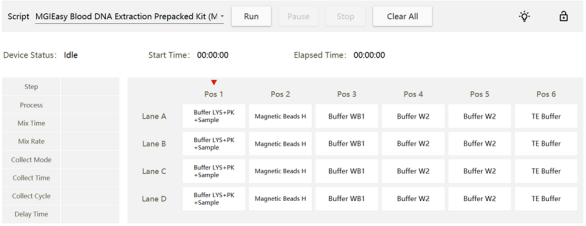

Figure 2 Operation Deck Layout

Table 7 Operation Deck Layout

Reagents	Position
Buffer LYS +Sample+ Proteinase K	LaneA、LaneB、LaneC、LaneD: Pos1
Magnetic beads H	LaneA、LaneB、LaneC、LaneD: Pos2
Buffer WB1	LaneA、LaneB、LaneC、LaneD: Pos3
Buffer W2	LaneA、LaneB、LaneC、LaneD: Pos4, Pos5
TE Buffer	LaneA、LaneB、LaneC、LaneD: Pos6

8. Confirming the consumables and reagents are placed correctly, close the instrument window. Click **[Run]**, The interface will be displayed as shown in figure 3. Check the corresponding test channel according to the number of samples and check the 96-well tip comb are placed correctly. Click the **[Confirm]**.

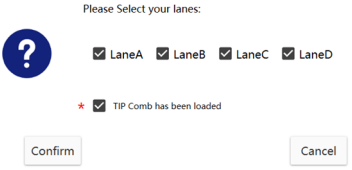

Figure 3 Selection Test Channel and **Magnetic Rod Sleeve** Interface

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9. After the process runs for 15 minutes, the interface as shown in figure. 4 will appear. According to the reminder, take out the plate in POS1 and add 350 μL isopropanol into each well with the pipette then put it back to POS1. Clicking the [**Confirm**] button, the process continues to run.

Figure 4 Add Isopropanol Interface

⚠ **Note: If an interface appears after opening the hatch door, please click the [Confirm] button on the two interfaces after adding reagents, and then click the [Resume] button to continue the process.**

10. The whole run will take approximate 60 minutes, please arrange the following work properly.

11. After the run ended, please take out the extraction product of pos6 immediately. It can be used directly for subsequent experiments or stored at -20°C.

12. Dispose the used deep-well plates and magnetic bar protection case. Select the [**Clean**] option, emptying the console, wiping the console and tray with a dust-free paper soaked with 75% alcohol and closing 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 modify 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 only used for scientific research, not for clinical diagnosis; please read this

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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. The micropipette should be used for sample addition;
5. Please avoid directly contacting any sample or reagent with skin and eyes, do not swallow reagent; once happen, 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.

【Production Company Information】

Company: Wuhan MGI Tech Co., Ltd.

Address:

Manufacturer Address: Building 24, Stage 3.1, BioLake Accelerator, No. 388, 2nd Gaoxin Road, East Lake High-Tech Development Zone, 430075, Wuhan, P.R.China

Building B13, No.818, Gaoxin Avenue, East Lake High-Tech Development Zone, 430075, Wuhan, P.R.China

Service Hotline: (+86) 4000-966-988

Email: MGI-service@mgi-tech.com

Website: https://en.mgi-tech.com

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