MGIEasy Blood Genomic DNA Extraction Prepacked Kit (MGISP-NE32) User Manual

Manual Version: 1.0 Model: /

【Product Name】

MGIEasy Blood Genomic DNA Extraction Prepacked Kit (MGISP-NE32)

【Package】

Cat. No.	Model	Specification
940-000071-00	/	32 preps

【Intended Use】

MGIEasy Blood Genomic DNA Extraction Prepacked Kit (MGISP-NE32) can efficiently purify the Genomic DNA from blood, buffy coat, saliva. This kit is suitable for automated extraction on MGISP-NE32 (Automated Nucleic Acid Extractor and purification system).

【Kit Components】

Table 1 Main Components and specifications

Components		Package and amount
Proteinase K		760 μL×1 bottle
Blood 96-well pre-packed plate	Buffer LYS	2 plates
	Magnetic Beads H	
	Buffer BW1	
	Buffer W2	
	TE Buffer	
Magnetic bar protection case		2 pieces/ bag * 2 bags

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

【Storage Conditions】

Different reagent components in this kit should be stored under different conditions. Please store them separately according to the following conditions.

Table 2 Storage conditions of different reagents and expiration date

Components	Storage environment	expiration date
Blood 96-well pre-packed plate	2°C-30°C	12 months
Proteinase K	2°C-30°C	12 months
Others	0°C-30°C under dry conditions	12 months

⚠ **Note: If the solution has precipitates, it can be re-dissolved in a 37 °C water bath, shaken and mixed thoroughly before use**

【Applicable Automation Instrument】

Applicable automation instrument: Automated nucleic acid extractor

Model: MGISP-NE32.

【Sample Conditions】

1. This kit is suitable for sample types:

   Applicable to fresh blood, whole blood, frozen blood, buffy coat, plasma-free frozen blood, Salivary preservation fluid sample.

2. If the samples need to be extracted within 24 hours after collection, store it at 4 ℃; if the samples will not be extracted d within 24 hours, store it at -70 ℃ or below after collection. Avoid repeated freezing and thawing. Before use of frozen samples, thaw and mix them thoroughly. Fresh saliva samples should be tested immediately after collection. Saliva samples are recommended to be collected with saliva collector (MGI No. 1000025954), and can be stored at room temperature after collection.

3. Sample transportation: dry ice should be used for transporting blood samples. The transportation duration should be less than 7 days. Avoid repeated freezing and thawing during transportation. Use the saliva collector to preserve the sample and transport it at room temperature.

【Experimental Workflow】

Please follow the workflow as below:

A. Required Materials Not Supplied

Table 3 Required Materials for Manual Extraction

Type	Item Name	Note
Instrument	MGISP-NE32 Automated Nucleic Acid Extractor	Cat. No. 950-000013-00
	Vortex mixer	/
	Plate centrifuge	/
	Pipette	1 mL, 200 μL, 20 μL
Reagent	isopropanol	AR
	Saliva Collection Set	Cat No. 1000025954
Consumable	1.5 mL Centrifuge Tube	Nonstick, DNase-free, RNase-free
	Tips	1 mL, 200 μL, 20 μL
	0.2 mL PCR Tube	DNase-free, RNase-free

⚠ **Note: After the extraction, the extracted product can be transferred to 8 strip tubes for storage. If there is no need to transfer the product, the 8 strip tubes and caps consumable is unnecessary. If you do not need to extract the saliva sample, you do not need to prepare the [Saliva Collection Set].**

B. Read before use

1. Avoid repeatedly freezing and thawing samples, which may result in low DNA or RNA quality.
2. All reagents and samples need to be equilibrated to room temperature (10°C -30°C) before use.
3. This product is only used for scientific research. Please read this manual carefully before use.

C. Preparing Device and Consumable

1. Before first use, please confirm that the application script has been imported into the location of MGISP-NE32 or correctly edited the extraction process.
2. Set the extraction process: The extraction process is divided into two scripts, **[JB_005_1_V1]** and **[JB_005_2_V1]**, which can be edited according to a) or imported according to b).
   a) Script editing: Select New File in the main interface of the instrument, and the system's own process will appear on the interface. Edit according to the process parameters shown in Table 4 and Table 5.

Table 4. Automated Extraction Script-[JB_005_1_V1]

Step	Step 1
Hold	1
Name	Lysis
Wait Time(min:ss)	01:30
Mix Time(min:ss)	20:00
Mag Time(min:ss)	00:00
Volume （μL）	520
Mixing Method	Fast
Collect Method	Normal

Lysis temperature: 75°C. Lysis heating ends at Step 1.

Elution temperature: off.

Table 5. Automated Extraction Script-[JB_005_2_V1]

Step	Step 1	Step 2	Step 3	Step 4	Step 5
Hold	1	2	1	3	4
Name	Lysis	Beads	Bind	WashI	WashII
Wait Time (min:ss)	00:00	00:00	00:00	00:00	00:00
Mix Time (min:ss)	00:30	00:30	03:00	03:00	02:00
Mag Time (min:ss)	00:00	00:10 x 5	02:30	01:00	01:00
Volume (μL)	870	100	870	1000	600
Mixing Method	Fast	Medium	Fast	Fast	Fast
Collect Method	Normal	Cycle	Strong	Strong	Strong

Step	Step 6	Step 7	Step 8	Step 9
Hold	6	5	5	2
Name	WashII	Elute	Elute	Beads

Wait Time (min:ss)	00:00	02:00	00:00	00:00
Mix Time (min:ss)	02:00	05:00	00:00	00:30
Mag Time (min:ss)	01:00	01:30	00:20 x 5	00:00
Volume (μL)	600	150	150	100
Mixing Method	Fast	Medium	Slow	Fast
Collect Method	Normal	Strong	Cycle	Normal

Lysis temperature: off.

Elution temperature: 56°C. Elution starts heating at Step 7.

⚠ **Note: A legal filename consists of an English letter, a number, and an underscore, and a filename that does not include a suffix is no longer than 12 characters long.**

b) Script import: Insert the USB flash drive at the back of the instrument correctly, select [**Run**] in the main interface, select [**JB_005_1_V1**] and [**JB_005_2_V1**] from the root directory of the USB flash drive successively, click [**Import**], and wait for the prompt box **"File has been imported"** on the screen. It means that the script has been imported successfully.

⚠ **Note: The imported script must be in the root directory of the USB flash drive (\pcrex\MGI\), otherwise the instrument cannot find the script.**

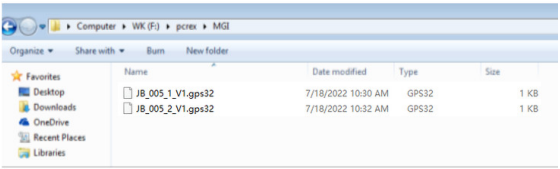

Figure 1 Storage path of the file in the USB flash drive

D. Sample processing

Please defrost sample at room temperature, mix thoroughly, and centrifuge.

Add the samples into the 1.5 mL tube according to Table 4, add 20 μL Proteinase K to each sample, mixed thoroughly to ensure that the mixture is completely resuspended. (Please start the extraction experiment within 30 mins after prepared this mixture).

Table 6 Recommended sample input volume

Sample type	Sample volume	Isopropyl alcohol volume
buffy coat, plasma-free frozen blood	200 μL	350 μL
fresh blood, whole blood, frozen blood	200 μL	350 μL
Salivary preservation fluid sample/ Fresh saliva	300 μL	350 μL

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

E. Automated Extraction Standard Workflow

1. Switch on the automatic nucleic acid purification system, and the instrument will conduct self-test. Self-test takes about 10 seconds. Please wait patiently. If no problem is found in the self-test, the main menu will appear on the screen, and then the user can edit, review, modify and delete files.

⚠ **Note: If there is any abnormal sound or display after the instrument is switched on, or there is a fault alarm during the instrument self-testing, please switch off the power immediately and contact MGI technical support.**

2. Invert the Blood 96-well pre-packed plate three times after placed at room temperature, then remove the plastic film, centrifuge in 96-well centrifuge for seconds (or swing by hand) to avoid adhered liquid. Remove the aluminum foil film of 96-well plate; make sure the direction of the plate is correct (magnetic beads in column 2 and Column 8).

⚠ **Note: The centrifugation time should not be too long to avoid magnetic beads coagulation.**

3. Add 220 μL sample and PK mixture solution to the columns 1 and 7 of the 96-well prepacked plate.

4. Place the plate onto the instrument, install the magnetic bar protection case (8-tips comb) on the instrument and run the following program.

5. Select the **[Device]** in the interface of run menu, selecting **[JB_005_1_V1]**. Click Run option of the lower right corner, and the screen show a tooltip about [Please ensure the 8-strip tips are inserted]. Check the 8-strip tips are placed correctly. Click Run.

6. After 20 minutes, the script was finished. Take out the reagent plate, add 350 μL isopropanol into the sample well, then put it back into the MGISP-NE32 and run script **[JB_005_2_V1],** Click Run, the running time is 30 minutes.

⚠ **Note: You allowed to open the door, until the alarm is no ringing and the mechanical arm is no moving.**

7. After the procedure is completed, transfer the eluted products in column 5 and 11 to new nuclease-free 8 strip tubes; if the products are not used immediately, store them in -20°C or below.

⚠ **Note: After the experiment, please take out the reagent plates immediately. It is forbidden to leave the product at temperature control position for a long time, otherwise it will affect the quality of the product.**

8. Dispose the used deep-well plates and magnetic bar protection case. Wiping the console with a dust-free paper soaked with 75% alcohol and closing the window. Click **[Main]**, selecting **[ultraviolet lamp]**, The holding time is 30 minutes. You can also modify the cleaning time accordingly

[Precautions]

1. This product is only used for scientific research, not for clinical diagnosis, please read this user manual carefully before use.

2. Please familiarize the operation and precautions of various instruments to be used before testing.

3. The reagents should be mixed thoroughly before use.

4. Please use the micro- Pipette for sample addition.

5. Direct contact of the skin and eyes with any samples and reagents should be avoided; do not swallow, 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】

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