

Product components

Components	Component number	Size	
		100	RXN
Mag Buffer RL	RM30225	65 mL	
Mag Buffer WB2 & Beads	RM30226	65 mL	
Mag Buffer WB1	RM30227	65 mL	
Mag Buffer WB2	RM30228	65 mL	
Mag Buffer EB	RM30229	20 mL	

Product Description

This kit uses magnetic bead-based technology for nucleic acid purification. It utilizes functional groups on magnetic beads to enrich nucleic acids from sample lysates onto the bead surface. The beads are then washed to remove proteins and other impurities, and then separate magnetic beads with magnetic separation device, so as to quickly separate and purify DNA from samples. The whole process does not require the use of phenol, chloroform and β -merphytoethanol,, safe and non-toxic, and the use of paramagnetic magnetic beads, suitable for high-throughput automated extraction.

Storage

Store at room temperature (10-30°C).

Applicable samples

Applicable to whole blood, plasma, serum, tissue extract, environmental samples, swab washings, etc.

Sample Preservation

Samples to be extracted within 1 day can be stored at 2 - 8°C;

Samples to be extracted within 1 week can be stored at -20°C;

Samples to be extracted over 1 week need to be stored at -80°C, and repeated freezing and thawing should be avoided.

Notes

1. The extraction products of this kit are DNA/RNA. During the operation process, special attention should be paid to preventing the degradation of RNA by RNase.
2. Please read the instruction manual carefully before use and operate strictly in accordance with the instruction manual. Sample processing should be carried out in a laminar flow cabinet or a biological safety cabinet.
3. Before and after using the automated nucleic acid extractor, the automated nucleic acid extractor needs to be disinfected by ultraviolet irradiation.
4. There may be a trace amount of magnetic bead residues in the eluent after extraction. When pipetting the eluent, every effort should be made to avoid pipetting in the magnetic beads; if the magnetic beads are pipetted in, a magnetic rack can be used for a second magnetic attraction.
5. Unless otherwise specified, reagents of different batch numbers should not be mixed for use, and ensure that this kit is used within the validity period.
6. Dispose of all samples and reagent materials properly. Thoroughly clean and disinfect all operating countertops with 75% ethanol.

Automated Extraction

1. Turn on the power of the instrument and wait for it to complete the self-test. Then set the instrument parameters as shown in the following table.

Table 1. Automated extraction protocol on S-48/S-16 device

Step	1	2	3	4	5	6	7
Station	3	1	2	3	4	5	3
Wait Time	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:02:00	00:00:00
Mix Mode	2	2	2	2	2	2	2
Mix Time	00:00:30	00:07:00	00:03:00	00:02:00	00:01:00	00:03:00	00:00:10
Pause	No	No	No	No	No	No	No
Mag Time	00:00:30	00:01:00	00:00:50	00:00:50	00:00:50	00:00:50	00:00:00
Volume	600 µL	600 µL	600 µL	600 µL	600 µL	70 µL	600 µL
Temperature	--	75°C	--	--	--	80°C	--

Table 2. Automated extraction protocol on S-96 device

Step	1	2	3	4	5	6	7
Station	3	1	2	3	4	6	3
Waiting Time	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:03:00	00:00:00
Mixing Time	00:00:30	00:07:00	00:03:00	00:02:00	00:01:00	00:03:00	00:00:10
Mixing Speed	6	6	6	6	6	6	6
Collecting time	00:00:30	00:01:00	00:00:50	00:00:50	00:00:50	00:00:50	00:00:00
Pause	Station 1 does not pause						
	Lysis: 75°C			Elution: 80°C			

Table 3. Automated extraction protocol on N-96 device

Step	1	2	3	4	5	6	7
Station	3	1	2	3	4	6	3
Wait Time	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:03:00	00:00:00
Mix Mode	2	2	2	2	2	2	2
Mix Time	00:00:30	00:07:00	00:03:00	00:02:00	00:01:00	00:03:00	00:00:10
Pause	No	No	No	No	No	No	No
Mag Time	00:00:30	00:01:00	00:00:50	00:00:50	00:00:50	00:00:50	00:00:00
Volume	600 µL	600 µL	600 µL	600 µL	600 µL	70 µL	600 µL
Temperature	--	75°C	--	--	--	80°C	--

2. (Omit this step for prepackaged reagents) For non-prepackaged reagents, please pre-package each component (shake well before use) according to the following table and make proper marks.

Table 4. 96-well plate reagents dispensing chart

Components	Volume per well	96 RXN-Plate	16 RXN-Column
Mag Buffer RL	600 µL	Plate 1	Column 1/7
Mag Buffer WB1	600 µL	Plate 2	Column 2/8
Mag Buffer WB2 & Beads	600 µL	Plate 3	Column 3/9
Mag Buffer WB2	600 µL	Plate 4	Column 4/10
Mag Buffer EB	70 µL	Plate 6	Column 5/11

3. Add 200 µL of the sample to the 96-well plate corresponding to Column 1/7 (for S-16/S-48 extractor) or Plate 1 (for S-96/N-96 extractor).

Note: If required, an additional 20 µL of Proteinase K (20 mg/mL) may be added to the well containing Mag Buffer RL to enhance lysis efficiency.

4. Place the 96-well plate with the dispensed reagents into the corresponding position of the instrument according to Table 4 (Before using the prepackaged reagents, invert it several times to mix well, then gently shake the plate to concentrate the solution at the bottom of the wells. Carefully remove the sealing film to avoid plate vibration and liquid splashing), and run the program.
5. After the program ends, the instrument will automatically stop. The extracted nucleic acid samples are contained in the deep-well plate corresponding to the elution buffer Mag Buffer EB (for S-48/S-16 device, the extracted nucleic acid samples are in columns 5 and 11 of the deep-well plate.) These samples can be directly used for downstream experiments. If long-term storage is required, they can be packaged or transferred to new centrifuge tube and stored in a -20°C refrigerator.

Manual Extraction

- Transfer 600 µL of **Mag Buffer WB2 & Beads** into a 1.5 mL centrifuge tube (Note: To ensure complete resuspension of the magnetic beads, please pipette immediately after thorough vortex mixing). Place the tube on a magnetic stand and let it stand for 1 minute. Then transfer all the supernatant to a new 1.5 mL centrifuge tube for later use.
- Add 200 µL of the sample to the 1.5 mL centrifuge tube containing the magnetic beads from Step 1. Then add 600 µL of **Mag Buffer RL** to the centrifuge tube. After mixing thoroughly, place it in a metal bath (at 65°C) or let it lyse at room temperature for 15 minutes, with several inversions and mixings during this period.

Note: If required, an additional 20 µL of Proteinase K (20 mg/mL) may be added to the lysis buffer to enhance lysis efficiency.

- Place the centrifuge tube on the magnetic stand and let it stand for 1 minute. After the magnetic beads are completely adsorbed by the magnetic stand, discard the liquid in the tube.
- Remove the centrifuge tube and add 600 µL of **Mag Buffer WB1**. Vortex the centrifuge tube to mix thoroughly for 7 minutes. Then place it on the magnetic stand again, let it stand for 1 minute, and discard the liquid in the tube.
- Remove the centrifuge tube and add 600 µL of the supernatant transferred out in Step 1. Vortex the centrifuge tube to mix thoroughly for 4 minutes. Then place it on the magnetic stand again, let it stand for 1 minute, and discard the liquid in the tube.
- Remove the centrifuge tube and add 600 µL of **Mag Buffer WB2**. Vortex the centrifuge tube to mix thoroughly for 4 minutes. Then place it on the magnetic stand again, let it stand for 1 minute, and discard the liquid in the tube.
- Open the tube cap and let it dry at room temperature for 5 minutes until the ethanol has completely evaporated (Both ethanol residue and excessive drying will affect the efficiency of nucleic acid elution in the next step).
- Remove the centrifuge tube and add 70 µL of the elution buffer **Mag Buffer EB**. Vortex to mix thoroughly so that the

magnetic beads are completely immersed in the elution buffer. Then place it in a metal bath (80°C) or vortex at room temperature for 3 minutes.

9. After the incubation is completed, place the centrifuge tube on the magnetic stand and let it stand for 1 minute. After the magnetic beads are completely adsorbed, carefully transfer the liquid to a new, clean centrifuge tube using a pipette (Be careful not to aspirate the magnetic beads). The resulting solution is the nucleic acid sample.
10. This sample can be directly used for downstream experiments. If it needs to be stored for a long time, please place it in a -20 °C refrigerator.