Version No.: FML1705

DNA/RNA Extraction Kit (Magnetic Beads)

[Packaging]101-Y: 10 preps/kit, 16 preps/kit, 32 preps/kit, 40 preps/kit,48 preps/kit, 64 preps/kit, 96 preps/kit；101-B: 50 preps/kit, 96 preps/kit, 60 preps/kit.

[Intended Use] The DNA/RNA Extraction Kit (Magnetic Beads) is designed for rapid purification of high quality nucleic acid DNA from dried blood spots. The treated products are used for clinical in vitro test.

[Principle] Nucleic acids DNA from a complex with magnetic beads in a specially formulated buffer. The beads nucleic acids complex is then separated from lysates using a magnet. Purified DNA are then eluted when the buffer condition is adjusted. Special magnetic beads technology enables purification of high-quality nucleic acids that are free of proteins, nucleases, and other impurities.

[kt Contents] Composed of buffer DW, Protinase K and magnetic bead , etc.

[Storage]All Reagents can be stored at room temperature (15–25°C) for 12 months.

[**Sample Requirements**] Dried Blood Spots

[Protocol]

Table 1. Product Application

Type	M101	Y101-G10	Y101-G30
Applicable method	Manual Operation	Automated purification (for GENFINE Purifier 32)	Automated purification (for GENFINE P96)

I. Manual operation

Before using, please add anhydrous ethanol into Buffer MWE2 according to the label on the bottle.

1. Sample treatment: Add 3-10 pieces of blood spot samples with a diameter of 3 mm into a 1.5 ml centrifuge tube, and add 200-400 µl of Buffer MDA and 20-50 µl of Proteinase K solution **(table 1)**. After vortex for 30 sec, put the mixture into a thermostatic oscillator preheated to 65°C and lysis for 30 min at 900 rpm.

Blood spots pieces	Buffer MDA Volume	Proteinase K Volume
3	200 µl	20 µl
6	300 µl	35 µl
10	400 µl	50 µl

Table 2. Reagent volume corresponding to the number of dry blood spots

Note: When the number of samples is relatively large, Buffer MDA and Proteinase K can be premixed in proportion. Please use the mixture within 1 h. Proteinase K in the kit is the amount of the corresponding 3 pieces of dry blood plaques. For more needs, you can buy it separately Catalog No. FA105-01).

2. During the sample lysis, add 15µl of FineMag Particles F and 600 µl of Buffer DLTP to a new centrifuge tube, pipette and mix evenly or shake and mix evenly for 10 sec.

3. After the sample lysis, transfer the supernatant to the centrifuge tube in step 2, and then place in a

thermostatic oscillator to oscillate at 900 rpm for 10 min at room temperature.

Note: While pipetting, try not to touch the filter paper sheet, otherwise it will affect the binding of magnetic beads and nucleic acid, resulting in lower yield.

4. Place the centrifuge tube on the magnetic stand and let it stand for 1 min. Carefully remove the liquid when the magnetic beads are completely attached.
5. Remove the centrifuge tube from the magnetic stand, add 800 µl of Buffer DW, slap and mix evenly or shake and mix evenly for 30 sec.
6. Place the centrifuge tube on Magnetic Separation Rack for 30 sec until all the magnetic particles are cleared from the solution. Discard the supernatant carefully.
7. Repeat steps 5 and 6 once.
8. Remove the centrifuge tube from the magnetic stand, add 800 µl of Buffer MWE2 (ensure that ethanol has been added before use), slap and mix evenly or shake and mix evenly for 30 sec.
9. Place the centrifuge tube on a magnetic stand and let it stand for 30 sec. Carefully remove the liquid after the magnetic beads are completely attached.
10. Remove the centrifuge tube from the magnetic stand, brief centrifugation. Place the centrifuge tube on a magnetic stand and let it stand for 30 sec. Carefully remove the liquid after the magnetic beads are completely attached.
11. Place the centrifuge tube on a magnetic stand and air-dry at room temperature for 5 min.
12. Remove the centrifuge tube from the Magnetic Separation Rack, add 60-100 µl Buffer EB, put into a thermostatic oscillator preheated to 65°C and incubation for 10 min at 1600 rpm.
13. Place the centrifuge tube on a magnetic stand and let it stand for 1 min. When the magnetic beads are completely attached, carefully transfer the DNA solution to a new centrifuge tube and store it under -20℃.

II. Automated purification (for GENFINE Purifier 32)

1. Take out pre-filled 96-well plates from the box, gently upside down to mix the beads. Carefully remove the seals from pre-filled plates to prevent liquid from spilling.
2. Treat the samples according to the methods in steps 1 of Manual operation extraction.
3. Add the200 µl sample solution to the 96-well plate in columns 2 and 8, Put the 96-deep-well plates into the of extractor.

   Note: Please run the program on the machine within 1h after adding sample.
4. Insert the magnetic rod sleeve into the card slot of the magnetic rod sleeve of the 32-channel automatic nucleic acid extraction instrument.
5. Select the program “Y101-G10” (**Table 3**) and start to run on the instrument.
6. At the end of the run, immediately remove 96-well plates from the instrument, then transfer the solution of rows 6, 12 to a new tube and store at -20℃.

Table 3. Procedure of GENFINE Purifier 32

Step	Well	Name	Mix time (s)	Amplitude	Frequency	Collect time (s)	Loop	Dry time (s)	Volume (μl)	Temperature (℃)	Heat time (s)
1	1	Binding	60	Middle	Fast	15	1	0	400	OFF	0
2	2	Binding	600	Middle	Middle	30	2	0	800	OFF	0
3	3	Wash 1	60	Middle	Middle	30	1	0	800	OFF	0
4	4	Wash 2	60	Middle	Middle	30	1	0	800	OFF	0
5	5	Wash 3	60	Middle	Middle	30	1	300	800	OFF	0
6	6	Elution	300	Low	Middle	30	3	0	60	85	300
7	5	Discard Beads	30	Middle	Middle	0	0	0	800	OFF	0

III. Automated purification (for GENFINE P96)

1. Take out pre-filled 96-well plates from the box, gently upside down to mix the beads. Carefully remove the seals from pre-filled plates to prevent liquid from spilling.
2. Treat the samples according to the methods in steps 1 of Manual operation extraction.Treat the samples according to the methods in steps 1 of Manual operation extraction.
3. Add the 200 μl treated solution to each well of Plate 2 (Buffer DLTP).

Note: The sample needs to be equilibrated to room temperature and run the program within 1h after adding the sample.

4. Put the 96 Tip Comb into the Plate 1 (Buffer DP + MF).
5. Immediately load the remaining plates onto the instrument as prompted.
6. Select the program（**Table 4**）and start the run.
7. At the end of the run, immediately remove the Plate 6 (Buffer EB) from the instrument, then transfer the solution to the final tubes/plate and store.

Note: The purified nucleic acid is ready for immediate use. Alternatively, store the plate at –20°C for long term storage.

Table 4. Procedure for GENFINE P96

Step	Well	Name	Volume (μl)	Temperature		Stay		Position	Shock		Magnetic			
				Vlaue (℃)	ON/OFF	Mode	Time (s)		Time (s)	Strength	Position	Time (s)	Cycle	Mode
1	1	Load	--	--	--	--	--	--	--	--	--	--	--	--
2	1	Binding	400	--	--	--	--	100%	1	High	100%	20	2	Step by step
3	2	Binding	800	--	--	--	--	100%	2	High	100%	20	3	Step by step
4	3	Washing	800	--	--	--	--	100%	1	High	100%	20	2	Step by step
5	4	Washing	800	--	--	--	--	100%	1	High	100%	20	2	Step by step
6	5	Washing	800	--	--	--	--	100%	1	High	100%	20	2	Step by step
7	6	Elution	100	85	ON	wait	300	100%	3	High	100%	30	4	Step by step
8	1	Discard Beads	--	--	--	--	--	--	--	--	--	--	--	--

[Precautions]

1. Please read the instructions carefully before use and operate in strict accordance with the requirements.
2. The operators can take up the post only after relevant trainings.

3. Note not to cause cross contamination during sample operation.
4. It is normal if there is crystallization in the lysate. Please incubate the lysate at 50~60°C for 30 minutes until the crystallization is completely melted, shake well, and cool to room temperature before use.
5. Failure to follow the instructions will result in inaccurate results.
6. Please do not use the product beyond the expiration date, and do not mix the reagent components of different batch numbers.
7. The samples to be tested involved in the kit should be considered as infectious substances, and should be handled and treated according to the requirements of General Rules for Safety of Microorganism and Biomedical Laboratory and Regulations for Management of Medical Wastes.

[Symbols]

Symbols	Meanings
	Manufacturer
	Authorized representative in the European Community
	*In vitro* diagnostic medical device
	This product fulfills the requirements of the European Directive 98/79 EC for in vitro diagnostic medical devices.
	Catalogue number
	Batch code

	Date of manufacture
	Use-by date
	Temperature limite
	Consult instructions for use
	Keep dry
	Keep away from sunlight
	Do not re-use
	Do not use if package is damaged

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