VAMNE Magnetic Cell/Tissue Total RNA Kit (Prepackaged)

RMA3303

Instruction for Use

Version 25.1

Contents

For Research Use Only. Not for use in diagnostic procedures.

01/Product Description

VAMNE Magnetic Cell/Tissue Total RNA Kit (Prepackaged) is designed for the extraction of high-purity RNA from cells and animal tissues, achieving high-throughput processing of samples. The kit is based on superparamagnetic particle purification technology with an optimized reagent system, which can effectively remove various impurities and specifically bind nucleic acids. DNase I can efficiently eliminate DNA. The fully automated workflow is simple, rapid, and safe. The obtained RNA can be directly used for downstream molecular biology applications such as RT-PCR, qRT-PCR, Northern blot, Dot blot, *in vitro* translation, and Next-generation sequencing.

02/Components

	Components	RMA3303-01 (1 × 96 T)
BOX 1	Binding Plate	1
	Beads Plate	1
	Wash Plate 1	1
	Wash Plate 2	1
	Wash Plate 3	1
	Elution Plate	1
	Lysis Buffer	50 ml
	RDD Buffer	3 × 1.8 ml
	Elution Buffer	1 ml
BOX 2	Proteinase K	3 ml
	DNase I	300 µl
	Buffer TP	2 × 1 ml

03/Storage

BOX 1: Store at 15 ~ 25°C and ship at room temperature.

BOX 2: Store at -30 ~ -15°C and ship at ≤0°C.

04/Applicable Instruments

For use with the fully automated nucleic acids extraction instrument (Vazyme #VNP-96P) and equivalent instruments.

05/Applications

≤30 mg animal tissue.

≤5 × 10^6 cultured cells.

06/Notes

1. The key to successful RNA extraction is to prevent RNase contamination. RNases are ubiquitous and extremely stable in the environment. Even trace amounts of RNase can rapidly degrade RNA. Therefore, please follow standard RNA extraction precautions, including wearing masks and disposable sterilized gloves, operating in a dedicated and clean area, and using RNase-free laboratory consumables.
2. The automated nucleic acid extraction instruments should be disinfected with the UV light for 30 min before and after use.
3. Traces of magnetic beads may remain in the eluate after extraction. Avoid aspirating the magnetic beads. If magnetic beads are accidentally aspirated, repeat magnetic absorption once more using a magnetic rack.
4. Properly dispose of all samples and reagents, thoroughly wipe down and disinfect all work surfaces with 75% ethanol.

07/Experiment Process

1. Reagents Preparation

Take out the prepackaged plates from the kit, invert and mix several times to fully resuspend the magnetic beads. Gently flick the plate to concentrate the reagents and magnetic beads sink at the bottom of the well. Before use, ensure the plate orientation and carefully remove the aluminum sealing film.

▲ Avoid vibration when tearing off the sealing foil to prevent liquid from spilling.

2. Sample processing

Sample Pre-processing Solution preparation (520 µl): Mix 470 µl of Lysis Buffer, 30 µl of Proteinase K, and 20 µl of Buffer TP thoroughly.

▲ It is recommended to prepare Pre-processing Solution for N+2 reactions. Pre-processing Solution needs to be prepared freshly and used immediately.

a. Animal Tissue: Weigh ≤30 mg of animal tissue powder pre-ground in liquid nitrogen into a 1.5 ml micocentrifuge tube. Add 520 µl of Pre-processing Solution, and immediately mix thoroughly by pipetting or vortexing until no obvious powder clumps remain. Alternatively, weigh ≤30 mg of animal tissue, add 520 µl of Pre-processing Solution, and homogenize immediately until no obvious powder clumps remain. Transfer all of the lysate to the wells of **Binding Plate**.

▲ After processing muscle, skin, bone or tail samples from rats or mice, incubate at room temperature for 5 min. Centrifuge at 12,000 rpm (13,400 × g) for 1 min, and carefully transfer 500 µl of the supernatant to the wells of Binding Plate.

▲ For animal tissue with high endogenous RNase content (e.g., spleen, pancreas), the recommended input amount is ≤10 mg.

▲ Thymus samples contain high levels of genomic DNA, and the input amount should be ≤10 mg.

b. Cell Culture: Take ≤5 × 10^6 cells to a 1.5 ml centrifuge tube, add 520 µl Pre-processing Solution, immediately pipette or vortex until no cell clumps, transfer all the lysate to wells in Binding Plate.

3. Aliquoting DNase I

a. Prepare DNase I Working Solution: Mixing 47 µl of RDD Buffer with 3 µl of DNase I thoroughly.
▲ It is recommended to prepare DNase I Working Solution for N+3 reactions.

b. Add the prepared DNase I Working Solution to the wells of **Beads Plate**, dispensing 50 µl into per well.
▲ Make sure DNase I is added to the liquid, adding to the well wall will reduce the efficiency of genome elimination.

4. Operation on the automatic instrument

a. Place the 96-deep-well plates into the nucleic acid extraction instrument in the following order: Binding Plate, Beads Plate, Wash Plate 1, Wash Plate 2, Wash Plate 3, and Elution Plate. Position the plates with the notched corner toward the inner right front of the instrument. Place the magnetic rod sleeves in the **Beads Plate** and ensure they are properly seated.

b. Edit the program as below (or select the corresponding pre-imported program) to perform automated extraction.

Step	Plate Position	Name	Mixng Time (min)	Absorption Time (sec)	Waiting Time (min)	Volume (µl)	Mixing Speed	Temperature (°C)	Mixing Position	Mixing Amplitude	Absorption Position	Absorption Speed
1	2	Beads	0.1	0	0	300	8	-	10%	80%	0	10
2	1	Lysis	2	0	0	750	8	58	10%	80%	0	10
3	2	Beads	0.5	30	0	300	8	-	10%	80%	0	10
4	1	Lysis	5	60	0	750	8	58	10%	80%	0	10
5	3	Wash 1	1	30	0	700	8	-	10%	80%	0	10
6	2	DNase I	10	30	0	300	8	-	10%	80%	0	10
7	3	Wash 1	1	30	0	700	8	-	10%	80%	0	10
8	4	Wash 2	1	30	0	700	8	-	10%	80%	0	10
9	5	Wash 3	1	30	5	700	8	-	10%	80%	0	10
10	6	Elution	2.5	80	0	70	8	65	10%	80%	0	10
11	2	Beads	0	0	0	300	8	-	10%	80%	0	10
Other settings (in the Option menu): Temperature control (TC) setting (TC Type: Start with TC); Absorption setting (Absorption type: **Reciprocate absorption**); Drying setting (Drying positon: Above the kit; Drying fan: OFF)												

c. After the automated extraction, promptly transfer the eluates from the Elution Plate to clean, RNase-free microcentrifuge tubes. The extracted product can be stored at -30 ~ -15°C for short-term storage, and -85 ~ -65°C for long-term storage.

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