

**VAMNE Magnetic Cell/Tissue
Total RNA Kit (Prepackaged)**

RMA3302



Instruction for Use

Version 25.1

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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		RMA3302-01 (50 × 1 T)	RMA3302-02 (6 × 16 T)
BOX 1	VAMNE Magnetic Cell/Tissue Total RNA Kit (Prepackaged for RMA3302)	50 × 1 T	6 × 16 T
	Lysis Buffer	25 ml	50 ml
	RDD Buffer	2 × 1.4 ml	3 × 1.8 ml
	Elution Buffer	1 ml	1 ml
BOX 2	Proteinase K	1.5 ml	3 ml
	DNase I	150 µl	300 µl
	Buffer TP	1 ml	2 × 1 ml

Component Information for RMA3302-01 VAMNE Magnetic Cell/Tissue Total RNA Kit (Prepackaged for RMA3302)

Well	Components	Volume per well
Well 1	Binding Buffer	230 µl
Well 2	Beads	250 µl
Well 3	Wash Buffer 1	700 µl
Well 4	Wash Buffer 2	700 µl
Well 5	Wash Buffer 3	700 µl
Well 6	Elution Buffer	70 µl

Component Information for RMA3302-02 VAMNE Magnetic Cell/Tissue Total RNA Kit (Prepackaged for RMA3302)

Well	Components	Volume per well
Columns 1 & 7	Binding Buffer	230 µl
Columns 2 & 8	Beads	250 µl
Columns 3 & 9	Wash Buffer 1	700 µl
Columns 4 & 10	Wash Buffer 2	700 µl
Columns 5 & 11	Wash Buffer 3	700 µl
Columns 6 & 12	Elution Buffer	70 µl

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 automated nucleic acids extraction instrument (Vazyme #VNP-32P) and equivalent instruments (Heater positions: columns 1, 6, 7, and 12).

05/Applications

≤30 mg animal tissue.

≤5 × 10⁶ cultured cells.

06/Notes

1. For use with RMA3302-01, the Reagent Strips Holder (Vazyme #EXS101, available upon request from sales representatives) must be prepared in advance.
2. 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.
3. The automated nucleic acid extraction instruments should be disinfected with the UV light for 30 min before and after use.
4. 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.
5. Properly dispose of all samples and reagents, thoroughly wipe down and disinfect all work surfaces with 75% ethanol.

07/Experiment Process

1. Reagents Preparation

- a. RMA3302-01: Take out the prepackaged strip from the kit. Invert the strip several times to fully resuspend the magnetic beads. Gently flick the strip to concentrate the reagents and beads at the bottom. Before use, insert a single reagent strip into the Reagents Strips Holder (Vazyme #EXS101) in the correct orientation firmly. Carefully remove the aluminum sealing film.

- b. RMA3302-02: Take out the prepackaged plate from the kit. Invert the plate several times to fully resuspend the magnetic beads. Gently flick the plate to concentrate the reagents and magnetic beads 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 Pretreatment

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+1 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 microcentrifuge 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 above liquid into wells in columns 1 and 7.
- ▲ After processing muscle, skin, bone or tail samples from rats or mice, incubate at room temperature for 5 min. Centrifuge at 12,000 rpm ($13,400 \times g$) for 1 min, and carefully transfer 500 µl of the supernatant to the wells in columns 1 and 7.

▲ 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 sample input amount should be ≤ 10 mg.

- b. Cell Culture: Take $\leq 5 \times 10^6$ 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 columns 1 and 7.

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+2 reactions.

- b. Add the prepared DNase I working solution to the wells in columns 2 and 8, 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 Reagents Strips Holder (Vazyme #EXS101)/96-deep-well plate into the nucleic acid extraction instrument with the notch toward the inner **left** front of the instrument. Install the magnetic rod sleeves and ensure they are properly seated.
- b. Edit the program as below (or select the corresponding pre-imported program) to perform automated extraction.

Step	Well Position	Name	Mixing Time (min)	Absorption Time (sec)	Waiting Time (min)	Volume (μl)	Mixing Speed	Temperature (°C)	Mixing Position	Mixing Amplitude	Absorption Position	Absorption Speed
1	1	Lysis	2	0	0	750	8	58	10%	80%	0	10
2	2	Beads	0.5	30	0	300	8	-	10%	80%	0	10
3	1	Lysis	5	60	0	750	8	58	10%	80%	0	10
4	3	Wash 1	1	30	0	700	8	-	10%	80%	0	10
5	2	DNase I	10	30	0	300	8	-	10%	80%	0	10
6	3	Wash 1	1	30	0	700	8	-	10%	80%	0	10
7	4	Wash 2	1	30	0	700	8	-	10%	80%	0	10
8	5	Wash 3	1	30	5	700	8	-	10%	80%	0	10
9	6	Elution	2.5	80	0	70	8	75	10%	80%	0	10
10	2	Beads	0.1	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 position: Above the kit; Drying fan: OFF)												

- c. After the automated extraction, promptly transfer the eluates from the wells in columns 6 and 12 (note the valid working wells containing purified RNA) into 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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