VAMNE Magnetic Cell/Tissue Total RNA Kit (96 Prepackaged)

RMA101-C2-P2

Version 24.3

Product Description

VAMNE Magnetic Cell/Tissue Total RNA Kit (96 Prepackaged) is used to extract high-purity RNA from cells and animal tissues, achieving high-throughput processing of samples. The kit is based on superparamagnetic particle purification technology and a unique reagent system, which can effectively remove various impurities and specifically adsorb nucleic acids. DNase I can efficiently remove DNA. The automated operation process is simple, fast, and safe. The obtained RNA can be directly used for molecular biology experiments such as RT-PCR, qRT-PCR, Northern Blot, Dot Blot, *in vitro* translation, and high-throughput sequencing.

Components

	Components	RMA101-C2-P2 (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 1	50 ml
	RDD Buffer	5 ml
BOX 2	Proteinase K	3 ml
	DNase I	300 µl

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.

Applicable Instruments

Automatic nucleic acids extraction instrument (Vazyme #VNP-96P) and similar types of instruments.

Applications

≤30 mg animal tissue.

≤5 × 10^6 cultured cells.

Notes

1. The key to RNA extraction is to prevent RNase contamination. RNase is widely present in the environment and is extremely stable. Even a small amount of RNase can quickly degrade RNA. Therefore, please take protective measures according to the routine RNA extraction procedure, including wearing masks and disposable sterilized gloves, operating in a separate clean area, and using RNase-free laboratory equipment.
2. The automatic nucleic acid extraction system should be disinfected by UV for 30 min before and after use.
3. There may be traces of magnetic beads remaining in the eluent after the extraction, so avoid aspirating the magnetic beads. If magnetic beads are aspirated, it can be removed with a magnetic stand.
4. Properly dispose of all samples and reagent, thoroughly wipe down and disinfect all work surfaces with 75% ethanol or RNase, RNA and DNA Remover (Vazyme #R504).

Experiment Process

1. Preparation of prepackaged reagent

Take out the prepackaged reagents from the kit, invert and mix several times to resuspend the magnetic beads. Gently shake the plate to make the reagents and magnetic beads sink to the bottom of the well.

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

2. Sample processing

Sample pre-processing solution preparation: Add 30 µl Proteinase K to every 470 µl Lysis Buffer 1, and mix well.

▲ When there is a risk of degradation of sample RNA, β-mercaptoethanol/4 M DTT can be added to the pre-processing solution to a final concentration of 1% (e.g. 5 µl β-mercaptoethanol or 5 µl 4 M DTT per 500 µl of pre-processing solution), which can effectively alleviate the problem of RNA degradation. And it is recommended to be prepared freshly.

a. Animal tissue: Weigh and take tissues which is ≤30 mg and grind in liquid nitrogen. Transfer the obtained animal tissue powder into a 1.5 ml centrifuge tube. Add 500 µl pre-processing solution and use a pipette to pipet it up or vortex until no obvious powder clumps are present. Alternatively, weigh and take ≤30 mg of animal tissue, add 500 µl pre-processing solution, and homogenize. Transfer all the lysate to **Binding Plate**.

b. Cell culture: Take ≤5 × 10^6 cells in a 1.5 ml centrifuge tube, add 500 µl pre-processing solution, pipette or vortex until no cell clumps, transfer all the lysate to **Binding Plate**.

▲ Pre-processing solution needs to be prepared freshly and used immediately.

▲ Sample with high endogenous RNase content (such as spleen, intestine, pancreas, etc.), the input amount should be less than 10 mg.

▲ For cells cultured in 96-well cell culture plates, the volume of pre-processing solution can be reduced to 200 µl.

3. Preparation of DNase I

a. Preparation of working solution: For each reaction, take 47 µl Buffer RDD into a new tube, then add 3 µl DNase I, and mix gently.

b. Add 50 µl prepared DNase I working solution to each well of **Beads Plate** respectively.

▲ Make sure DNase I is added to the liquid, adding to the wall will reduce the efficiency of genome removal.

4. Operation of the automatic instrument

a. Place the 96 well deep plate into the nucleic acid extraction instrument in the correct orientation (the notch faces the upper right and the reagent label faces outward). Put the magnetic bar sleeve into the **Beads Plate**.

b. Set the program as follows or import edited program (or select the corresponding preset) for automated extraction:

Step	Plate Position	Name	Mixing Time (min)	Adsorption Time (sec)	Waiting Time (min)	Volume (µl)	Mixing Speed	Temperature (°C)	Mixing Position	Mixing Amplitude	Adsorption Position	Adsorption Speed
1	1	Lysis	5	0	0	1,000	8	58	10	80	0	10
2	2	Beads	0.5	30	0	200	8	-	10	80	0	10
3	1	Lysis	2	60	0	1,000	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	200	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	60	0	70	8	75	10	80	0	10
10	2	Beads	0.1	0	0	200	8	-	10	80	0	10
Other settings (in the Option menu): Heating settings (heating and action start at the same time); Adsorption settings (three-stage adsorption); Drying position: Above the kit; Drying fan: OFF												

c. At the end of the automated procedure, transfer the eluent in **Elution Plate** to clean RNase-free centrifuge tubes for direct use in downstream experiments or store at -30 ~ -15°C for short-term storage, -85 ~ -65°C for long-term storage.