VAMNE Magnetic Cell/Tissue Total RNA Kit

RMA101-C2

Version 24.1

Product Description

VAMNE Magnetic Cell/Tissue Total RNA Kit 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 (96 rxns)
BOX 1	Binding Buffer	50 ml
	Beads	13 ml
	Wash Buffer 1	70 ml
	Wash Buffer 2	70 ml
	Wash Buffer 3	70 ml
	Elution Buffer	10 ml
	Lysis Buffer 1	50 ml
	RDD Buffer	3 × 2 ml
BOX 2	Proteinase K	3 ml
	DNase I	300 µl

Storage

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

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

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.
5. This kit only contains reagents, and consumables are not included. Please contact sales for purchasing consumables.
6. When there is a risk of degradation of sample RNA, β-mercaptoethanol/4 M DTT can be added to the pretreatment solution to a final concentration of 1% (e.g. 5 µl β-mercaptoethanol or 5 µl 4 M DTT per 500 µl of pretreatment solution), which can effectively alleviate the problem of RNA degradation. And it is recommended to be prepared freshly.

Experiment Process

1. Preparation of prepackaged reagent

Pipette all related reagents to the corresponding well of the 96-well plate.

▲ Magnetic beads should fully mixed before dispensing.

▲ The program elution volume should be consistent with the volume added in the 96-well plate.

For VNP-32P (32 throughput)

Position	Reagent	Volume/Well
1/7 column	Binding Buffer	500 µl
2/8 column	Beads	135 µl
3/9 column	Wash Buffer 1	700 µl
4/10 column	Wash Buffer 2	700 µl
5/11 column	Wash Buffer 3	700 µl
6/12 column	Elution Buffer	50 - 100 µl

For VNP-96P (96 throughput)

Position	Order	Reagent	Volume/Well
Binding Plate	1	Binding Buffer	500 µl
Beads Plate	2	Beads	135 µl
Wash Plate 1	3	Wash Buffer 1	700 µl
Wash Plate 2	4	Wash Buffer 2	700 µl
Wash Plate 3	5	Wash Buffer 3	700 µl
Elution Plate	6	Elution Buffer	50 - 100 µl

2. Sample processing

Preparation of sample pre-processing solution: Add 30 µl Proteinase K to 470 µl Lysis Buffer and fully mix.

2.1 Animal tissue: Weigh and take tissues which is less than 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 well (plate).

2.2 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 well (plate).

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

▲ Sample with high endogenous RNase content (such as spleen, intestine, pancreas, etc.) 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

3.1 Preparation of working solution: Take 47 µl Buffer RDD for each reaction, add 3 µl DNase I, and mix gently.

3.2 Add the prepared DNase I working solution to the Beads well (plate) respectively. Add 50 µl DNase I per well.

▲ 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

4.1 Place the 96 deep well plate into the nucleic acid extraction instrument in the correct orientation (with the notch facing the upper left). Load the magnetic bar sleeves, and ensure it fully envelops the magnetic bars.

▲ Before extracting with VNP-96P, place the magnetic bar sleeve into the Beads Plate and then put them in the corresponding position of the instrument.

4.2 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	1000	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	1000	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	100	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												

4.3 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.