VAMNE MagUltra FFPE DNA Extraction Kit (Prepackaged)

DM602

Version 24.1

Product Description

This kit employs a safe, non-toxic, and environmentally friendly deparaffinization solution along with an efficient lysis/de-crosslinking reagent, which can lyse and release trace amounts of DNA from paraffin-embedded sections and tissues. The high-affinity magnetic beads used in the kit can adsorb nucleic acids in a high-salt buffer and release nucleic acids in a low-salt elution buffer, thereby achieving rapid separation and purification of nucleic acids. The kit is compatible with the fully automated nucleic acid extraction instrument (Vazyme #VNP-32P), which utilizes the principle of magnetic bead adsorption. Through the specialized magnetic rod, the instrument adsorbs, transfers, and releases the magnetic beads, automatically completing the extraction and purification of nucleic acids. The entire operation process is simple, fast, safe, and efficient, yielding stable products with good integrity and amplifiability, suitable for downstream applications such as PCR, next-generation sequencing, and hybridization capture.

Components

Components	DM602-01 (4 × 16 T)
Proteinase K	2.6 ml
Deparaffinization Solution	52 ml
Buffer L/D	13 ml
DNA Reagents (Prepackaged for DM602)	4 × 16 T

Storage

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

If ambient temperatures often exceed 25°C, we suggest storing Proteinase K at 2 ~ 8°C.

Applications

0.5 - 5 paraffin sections (10 μm thick with approximately 30 mm^2 tissue area); <10 mg formalin-fixed and paraffin-embedded tissues.

Applicable Instruments

Suitable for fully automated nucleic acid extraction instruments (Vazyme #VNP-32P) and similar instruments (with heating slots at positions 1, 6, 7, and 12).

▲ If using other brands/models of automated instruments, matching consumables and programs need to be adjusted.

Self-prepared Materials

PBS, RNase A (100 mg/ml) (Vazyme #DE111), 1.5 ml or 2 ml Nuclease-free centrifuge tube, magnetic rack, vortex mixer, centrifuge, water bath.

Notes

1. Unless otherwise specified, do not mix reagents from different batches. Use the kit within its validity period.
2. Before use, check each component for precipitation. If precipitation is present, incubate at 37°C in a water bath for 30 min to re-dissolve, and mix thoroughly before use.
3. Ordinary 1.5 ml centrifuge tube may fall off when heated at 90°C. And it can be fixed with explosion-proof clamps.
4. Before using the fully automated nucleic acid extraction instrument, expose it to UV light for at least 30 min. After completing the experiment, wipe the interior of the extraction instrument with 75% ethanol and expose it to UV light for another 30 min.

Experiment Process

1. Sample Pre-treatment

◇ **Paraffin sections**

a. Take 0.5 - 5 of paraffin sections (10 μm thick with approximately 30 mm^2 tissue area), scrape the sliced tissue off with a clean blade and transfer it to a 1.5 ml centrifuge tube.

▲ Removing excess paraffin or cutting the sample into smaller pieces using scissors or a blade facilitates subsequent deparaffinization.

b. Add **800 μl of Deparaffinization Solution** to the sample, vortex vigorously for 5 sec. Briefly centrifuge, incubate at 56°C for 5 min. Vortex vigorously for 15 sec, and proceed to step 2.

◇ **Paraffin-embedded tissue**

a. Scrape approximately 10 mg of sample tissue with a surgical knife and transfer it to a 1.5 ml centrifuge tube.

▲ Removing excess paraffin or cutting the sample into smaller pieces using scissors or a blade facilitates subsequent deparaffinization.

b. Add **800 μl of Deparaffinization Solution** to the sample, vortex vigorously for 5 sec. Briefly centrifuge, incubate at 56°C for 5 min. Vortex vigorously for 15 sec, and proceed to step 2.

◇ **Formalin-fixed tissue**

a. Take approximately 10 mg of the sample, cut it into small pieces with a surgical knife, and place it in a 1.5 ml centrifuge tube.

b. Add **500 μl PBS solution** and vortex, centrifuge at 12,000 rpm (13,500 × g) for 1 min at room temperature. Discard the supernatant.

c. Repeat step b three times, enter step 2.

2. Add **40 μl of Proteinase K** and **200 μl of Buffer L/D** to the sample. Vortex for 5 sec, and briefly centrifuge to collect any droplets on the tube walls. Incubate at 56°C for 60 - 180 min (until the sample is completely digested), then incubate at 90°C for 60 min. Briefly centrifuge again to collect any droplets on the tube walls, and transfer the lower digestion liquid (approximately 220 μl) for further extraction.

▲ When transferring the lower layer of digestion liquid, avoid aspirating the upper deparaffinization layer. After transferring the lower digestion liquid, allow it to stand and return to room temperature.

3. (Optional) If you want to remove RNA from the sample, after the sample has returned to room temperature, add **2 μl RNase A (100 mg/ml)**, vortex gently and let it stand at room temperature for 3 - 5 min.

4. Preparation of Pre-packaged Reagents.

a. Take out the pre-packaged reagents and invert the container several times to resuspend the magnetic beads. Gently tap the microplate to collect the reagents and beads at the bottom of the wells. Before use, ensure the correct orientation of the wells and carefully remove the aluminum foil seal.

▲ Avoid shaking when removing the seal to prevent liquid splashing.

b. Add the lower layer of digestion solution to the 1st and 7th columns of the 96 well plate, taking care to avoid cross-contamination.

c. Place the 96-well plate into the automated nucleic acid extraction instrument (Vazyme #VNP-32P). Attach the magnetic rod sleeves and ensure they are properly installed.

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

Step	Plate Position	Name	Mixing Time (min)	Adsorption Time (min)	Waiting Time (min)	Volume (μl)	Mixing Speed	Temperature (°C)	Mixing Position	Mixing Amplitude	Adsorption Position	Adsorption Speed
1	5	Movebeads	0.5	0.5	0	300	10	OFF	10	80	0	5
2	1	Bind	10	1	0	650	10	OFF	10	100	0	5
3	2	Wash 1	1	0.5	0	500	10	OFF	10	100	0	10
4	3	Wash 2	1	0.5	0	500	6	OFF	10	100	0	10
5	4	Wash 2	1	0.5	1	500	6	OFF	10	100	0	10
6	6	Elution	10	1	0	100	10	65	10	100	0	10
7	5	Discard beads	0.1	0	0	300	5	OFF	0	80	0	1
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												

e. After the automated procedure is completed, transfer the elution buffer from wells in columns 6 and 12 (note the effective working wells) to clean nuclease-free centrifuge tubes. If not used immediately, store the elution product at -20°C.