Mag Beads FFPE Genomic DNA Extraction Kit (Eco-friendly)

【Product Name】

Mag Beads FFPE Genomic DNA Extraction Kit (Eco-friendly)

【Package Specifications】

Bottle：50T/box（Art.No.GP321-50），100T/box（Art.No.GP321-100），300T/box（Art.No.GP321-300），500T/box（Art.No.GP321-500）

Pre-packaging：32T/box（Art.No.GP321-32）；64T/box（Art.No.GP321-64）；96T/box（Art.No.GP321-96）

【Intended Use】

This reagent is suitable for extracting genomic DNA from formalin-fixed tissues and paraffin-embedded tissues. The DNA obtained through this process can be used for various downstream applications such as PCR and Real-time PCR.

【Detection Principle】

DNA binds to the surface of Magbeads coated with silicon under high-salt conditions. After multiple washes to remove impurities such as proteins, the DNA is eluted under low-salt conditions, resulting in high-purity genomic DNA.

【Main Components】

1. Main components of bottled

Components	GP321-50	GP321-100	GP321-300	GP321-500
Dewaxing solution	55mL	110mL	310mL	260mL*2
Tissue digestive solution	11mL	22mL	65mL	110mL
Binding buffer	11mL	22mL	65mL	110mL
Proteinase K	1.1mL	1.1mL*2	6.5mL	11mL
Washing buffer	15mL(+19.5mL Anhydrous ethanol)	30mL(+39mL Anhydrous ethanol)	90mL(+117mL Anhydrous ethanol)	150mL(+195mL Anhydrous ethanol)
Eluant	6mL	12mL	35mL	60mL
Bead suspension	1.1mL	1.1mL*2	6.5mL	11mL

2. Main components of Pre-packaging

Components	GP321-32	GP321-64	GP321-96
Dewaxing solution	35mL	70mL	106mL
Tissue digestive solution	7mL	14mL	22mL
Proteinase K	0.7mL	1.4mL	1.1mL*2
Packaging Reagent	16T / plate, 2 plates	16T / plate, and 4 plates	96T / plate * 6
Eluant	0.5mL	0.5mL	0.5mL

Pre-packaged Situation of GP321-32 and GP321-64 Plates (Suitable for 32-channel/48-channel Nucleic Acid Extractors)

Hole	1/7	2/8	3/9	4/10	5/11	6/12
Reagent	Binding Buffer（600μL）	Bead Suspension（300μL）	Washing Buffer（600μL）	80%Ethanol（600μL）	80%Ethanol（600μL）	Eluant（100μL）

Pre-packaged Situation of GP321-96 Plates (Suitable for 96-channel/192-channel Nucleic Acid Extractors)

Hole	1	2	3	4	5	6
Reagent	Binding Buffer（600μL）	Bead Suspension（300μL）	Washing Buffer（600μL）	80%Ethanol（600μL）	80%Ethanol（600μL）	Eluant（100μL）
Plates	1	1	1	1	1	1

【Storage Conditions and Shelf Life】

Magnetic Bead Suspension: Store at 2-8°C. Proteinase K: Store below 4°C. Other reagents: Store at room temperature. Shelf life is one year.

Transportation: Can be transported at 4-37°C for up to 14 days.

【Optional Reagents】

RNase A (10mg/mL) (Catalog number: RBX001)

1. Equipment: Nucleic acid extractor, 2.2mL 96-well deep well plate (U-bottom), magnetic rod sleeve, magnetic rack, vortex oscillator, constant temperature oscillator, etc.

2. Reagents: Absolute ethanol, 80% ethanol.

【Sample Requirements】

This reagent is suitable for formalin-fixed tissues and paraffin-embedded tissues.

【Precautions】

1. Magnetic beads must not be frozen, and the magnetic bead suspension should be thoroughly mixed before use.

2. If using RNase A, store it below 4°C.

3. Before each use, check if any component has precipitated. If so, re-dissolve at 60°C.

4. Before initial use, add the specified amount of absolute ethanol according to the label instructions for the wash solution.

【Manual Single Tube Operation Steps】

1. Sample Preparation:

1) Paraffin Section: Take 3-6 paraffin sections (5-10μm thick).

Remove excess paraffin around the tissue with a blade and place the paraffin tissue into a 1.5mL Eppendorf tube. Add 500μL of tissue deparaffinization solution to the tube, vortex for 15 seconds, shake at 56°C, 1300rpm for about 2 minutes, then centrifuge at 13000rpm for 1 minute. Discard the solution, taking care not to lose the sediment, and repeat this step once. Add 1mL absolute ethanol, vortex for 10 seconds, then centrifuge at 13000rpm for 1 minute. Discard the solution, taking care not to lose the sediment, and repeat this step once. Open the tube cap and allow the ethanol to evaporate at room temperature for 10 minutes.

2) Formalin-Soaked Tissue: Weigh 10-30mg of the sample and place it in a 1.5mL Eppendorf tube. Add 1mL of PBS buffer, vortex for 10 seconds, then centrifuge at 13000rpm for 1 minute. Discard the solution, taking care not to lose the sediment, and repeat this step once. Add 1mL absolute ethanol, vortex for 10 seconds, then centrifuge at 13000rpm for 1 minute. Discard the solution, taking care not to lose the sediment, and repeat this step once. Open the tube cap and allow the ethanol to evaporate at room temperature for 10 minutes.

2. Sample Lysis and Digestion:

Add 200μL tissue digestion solution and 20μL Proteinase K to the aforementioned samples. Shake at 60°C, 1400rpm for 60 minutes, then shake at 90°C, 1400rpm for another 60 minutes.

3. DNA Binding:

Add 200μL binding solution, 400μL absolute ethanol, and 20μL magnetic beads to the lysed samples. Bind at room temperature for 5 minutes, vortexing 2-3 times during this period. Note: If RNA removal is required, add 10μL RNase A (10mg/mL) to the centrifuge tube and allow it to stand at room temperature for 10 minutes.

4. Magnetic Separation:

Place the centrifuge tube on the magnetic rack, invert it 2-3 times, and let it stand until the magnetic beads are completely adsorbed. Thoroughly remove the supernatant (keep

the centrifuge tube fixed on the magnetic rack throughout), avoiding contact with the magnetic beads.

5. Washing:

Remove the centrifuge tube from the magnetic rack, add 600μL washing solution, cover the tube, vortex for 10 seconds, then vortex for 1-2 minutes for magnetic separation.

6. 80% Ethanol Wash:

Remove the centrifuge tube from the magnetic rack, add 600μL 80% ethanol, cover the tube, vortex for 10 seconds, then vortex for 1-2 minutes for magnetic separation.

7. Repeat Step 6 Wash:

Repeat the previous step once.

8. Ethanol Evaporation:

Place the centrifuge tube on the magnetic rack and air dry in a fume hood for 3-5 minutes.

9. Elution:

Remove the centrifuge tube, add 100μL elution solution, vortex for 20 seconds to ensure thorough mixing of the magnetic beads with the elution solution. Place the tube in a 60°C water bath for 5 minutes, vortexing twice during this period (alternatively, shake at 60°C for 5 minutes).

10. Nucleic Acid Transfer:

Place the centrifuge tube on the magnetic rack and let it stand for 1 minute. After complete absorption of the magnetic beads, transfer the supernatant to a new centrifuge tube to obtain pure genomic DNA, and store it at -20°C for later use.

【Automated Operation Steps for 16/32-Channel Nucleic Acid Extractor】

1. Sample Preparation

Add the specified amounts listed in the table to each corresponding well of a 96-well plate, which can simultaneously process 16/32 samples.

Position	1、7	2、8	3、9	4、10	5、11	6、12
Reagent	Binding Buffer（200μL）Anhydrous ethanol（400μL）	Beads（20μL）Water（80μL）	Washing buffer（600μL）	80% Ethanol（600μL）	80% Ethanol（600μL）	Eluant（100μL）

Note: If using pre-packaged reagents, skip the sample preparation step and proceed directly to step2.

2. Sample Handling:

Refer to the steps in the manual single tube extraction for [1] and [2]. Transfer the lysed and digested samples to the wells in the first and seventh columns of the 96-well plate, secure the plate firmly, and insert the magnetic bar sleeve.

Note: If RNA removal is required, add 10μL RNase A (10mg/mL) to the wells in the first and seventh columns, and let it stand at room temperature for 10 minutes.

3. On-machine Extraction:

Open the operation program of the instrument, select the corresponding program, and click "Run" to execute the fully automated extraction program.

4. Nucleic Acid Transfer:

After the instrument operation is complete, transfer the eluate from the wells in the 6th and 12th columns of the deep well plate to new centrifuge tubes without nucleases.

The parameters for the 32-channel nucleic acid extractor (QP-AUT-32) program are set as follows

Step	Site	Name	Waiting time(min)	Mixing time(min)	Suction time(sec)	Volume (μL)	Mixing velocity	Temperature

1	2	Transfer beads	0	0	60	100	3	OFF
2	1	DNA binding	0	5	40	900	3	OFF
3	3	Washing 1	0	1	40	600	3	OFF
4	4	80% Ethanol	0	1	40	600	3	OFF
5	5	80% Ethanol	0	1	40	600	3	OFF
6	6	Elution	2	5	60	100	3	60℃
7	5	Abandon beads	0	1	0	600	3	OFF

【Automated Operation Steps for 96-Channel Nucleic Acid Extractor】

1. Sample Preparation

Add the specified amounts listed in the table to each corresponding well of a 96-well plate, which can simultaneously process 96 samples.

Position	1	2	3	4	5	6
Reagent	Binding Buffer（200μL） Anhydrous Ethanol（400μL）	Beads（20μL） Water（80μL）	Washing Buffer（600μL）	80% Ethanol（600μL）	80% Ethanol（600μL）	Eluant（100μL）

Note: If using pre-packaged reagents, skip the sample preparation step and proceed directly to step2.

2. Sample Handling

Refer to the steps in the manual single tube extraction for [1]. Transfer the lysed and digested samples to the wells in the first and seventh columns of the 96-well plate, secure the plate firmly, and insert the magnetic bar sleeve.

Note: If RNA removal is required, add 10μL RNase A (10mg/mL) to the wells in the first and seventh columns, and let it stand at room temperature for 10 minutes.

3. On-machine Extraction:

Open the operation program of the instrument, select the corresponding program, and click "Run" to execute the fully automated extraction program.

4. Nucleic Acid Transfer:

After the instrument operation is complete, transfer the eluate from the wells in the 6th and 12th columns of the deep well plate to new centrifuge tubes without nucleases.

The parameters for the 96-channel nucleic acid extractor (QP-AUT-96) program are set as follows

Station	2	1	3	4	5	6	5
Waiting time	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:02:00	00:00:00
Mixed model	3	3	3	3	3	3	3
Mixing time	00:00:00	00:05:00	00:01:00	00:01:00	00:01:00	00:05:00	00:00:30
Suspend	No	No	No	No	No	No	No
Magnetic suction time	00:01:00	00:01:00	00:01:00	00:01:00	00:01:00	00:01:00	00:00:00
Volume	100μL	900 μL	600 μL	600 μL	600 μL	100 μL	600 μL
Temperature	—	—	—	—	—	60℃	—

【Basic Information】

Version Number: 1.1

Nanjing Rebeads Biotech Co., Ltd.

Address: 9th Floor, Building D, No. 606 Ningliu Road, Chemical Industry Park, Jiangbei New District, Nanjing

Postal Code: 210000

Phone: 025-58069660

Email: order@rebeads.com.cn