Mag Beads Animal Tissue Genomic DNA Extraction Kit

【Product Name】

Mag Beads Animal Tissue Genomic DNA Extraction Kit

【Package Specifications】

50T/box（Art.No.SP311-50）；300T/box（Art.No.SP311-300），

64T/box（Art.No.SP311-64）；96T/box（Art.No.SP311-96）

【Detection Principle】

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

【Main Components】

Components	GP311-50	GP311-300	GP311-64	GP311-96
Tissue digestive solution	11mL	65mL	14mL	20mL
Proteinase K	1.1mL	6.6mL	1.35mL	2mL
Binding Buffer	11mL	65 mL	600μL*16*4	600μL*96
Washing buffer	15mL (Add 19.5mL anhydrous ethanol)	90mL (Add 117mL anhydrous ethanol)	600μL*16*4	600μL*96
80% Ethanol	provide for oneself		600μL*16*8	600μL*96*2
Eluant	6mL	33mL	100μL*16*4+1mL	100μL*96+ 1mL
Beads	1.1mL	6.6mL	300μL*16*4	300μL*16*4

【Storage Conditions and Shelf Life】

The magnetic bead suspension should be stored at 2-8°C, proteinase K should be stored below 4°C, and the remaining reagents can be stored at room temperature. The shelf life for all components is one year.

Transportation can be done between 4-37°C, and the shipping duration should not exceed 14 days.

【Optional Reagents】

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

【Self-provided Reagents and Equipment】

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

2. Reagents: Absolute ethanol, 80% ethanol.

【Sample Requirements】

This reagent is suitable for fresh tissues or tissues stored in a -80°C freezer for up to 3 months.

【Precautions】

1．Before the experiment, carefully read the instructions for this kit and strictly follow the operating procedures.

2．Avoid freezing the magnetic beads; mix the magnetic bead suspension thoroughly before use.

3．Before each use, check for any precipitation in each component. If present, re-dissolve at 37°C.

4．For the first use, add the specified amount of absolute ethanol according to the label instructions on the washing solution.

【Single-tube Manual Operating Steps】

1．Sample Pretreatment:

1) Formalin-immersed Tissue: Place 1-15mg of animal tissue in a 2.0mL centrifuge

tube, add 1ml PBS buffer, vortex for 10s, remove the supernatant, and repeat this step once. Add 1ml absolute ethanol, vortex for 10s, remove the supernatant, and repeat this step once.

2) Regular Tissue: Proceed directly to subsequent experimental steps.

2. Sample Lysis and Digestion: Weigh 1-15mg of animal tissue into a 2.0mL centrifuge tube, add 200μL tissue digestion solution and 20μL proteinase K, shake well, shake at 65°C with constant agitation at 1400rpm for 30min (extend the time for samples with no visible tissue) or let it digest overnight at 55°C.

3. DNA Binding: After digestion and lysis, add 200μL binding solution, 400μL absolute ethanol, and 20μL magnetic beads to the centrifuge tube. Shake at room temperature for 4min to facilitate binding.

Note: If RNA removal is required, 10μL RNase A (10mg/mL) can be added during the binding step.

4. Magnetic Separation: Place the centrifuge tube on the magnetic stand, invert 2-3 times, let it stand until the magnetic beads are fully adsorbed, completely remove the supernatant (keep the centrifuge tube fixed on the magnetic stand throughout, avoiding contact with the magnetic beads).

5. Wash 1: Remove the centrifuge tube from the magnetic stand, add 600μL washing solution to the tube, seal the tube, vortex for 10s to ensure thorough mixing of the magnetic beads, then vortex for 1-2min and perform magnetic separation.

6. 80% Ethanol Wash: Remove the centrifuge tube from the magnetic stand, add 600μL 80% ethanol to the tube, seal the tube, vortex for 10s to ensure thorough mixing of the magnetic beads, then vortex for 1-2min and perform magnetic separation.

7. Repeat the above step 6 for one additional wash.

8. Ethanol Removal: Place the centrifuge tube on the magnetic stand, put it in a fume hood, and air-dry for 2min.

9. Elution: Take out the centrifuge tube, add 100-200μL elution solution, vortex for 20s to ensure thorough mixing of the magnetic beads with the elution solution, and shake in a constant temperature shaker at 60°C for 4min.

10. Nucleic Acid Transfer: Place the centrifuge tube on the magnetic stand and let it stand for 1min. After the magnetic beads are fully adsorbed, transfer the supernatant to a new centrifuge tube, obtaining pure genomic DNA, and store at -20°C for future use.

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

1. On-machine preparation

In a 96-well plate, add the specified amounts into each corresponding well according to the table below. Process 16/32 samples simultaneously.

Position	1、7	2、8	3、9	4、10	5、11	6、12
Reagent	Binding buffer（200μL） Anhydrous ethanol (400μL)	Bead （20μL） water（280μL）	Washing buffer（600μL）	80% Ethanol（600μL）	80% Ethanol（600μL）	Eluant（100μL）

Note: Product number GP311-64, available in a pre-packaged format of 64 tubes per box, requires no sample preparation for loading. Begin the operation directly from step 2.

2. Sample Handling

Follow the steps in the single-tube manual extraction [Steps 1 and 2]. Transfer the digested and lysed samples to the wells of the 96-deep well plate in the first and seventh columns. Secure the 96-well plate and insert the magnetic rod sleeve. Note: If RNA removal is necessary, add 10μL RNase A (10mg/mL) to the wells in the first and seventh columns.

3. On-Machine Extraction

Open the instrument's operating program, select the "tissue" program, click "Run" to execute the fully automated extraction program.

4. Nucleic Acid Transfer

After the instrument operation is complete, transfer the elution products from the wells in the 6th and 12th columns of the deep well plate to new centrifuge tubes free of 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）	Magnetic time(sec)	Volume (μL)	Mixing velocity	Ttemperature
1	2	Moving beads	0	0	60	300	3	OFF
2	1	Combine	0	4	60	900	3	OFF
3	3	Washing 1	0	1	60	600	3	OFF
4	4	Washing 2	0	1	60	600	3	OFF
5	5	Washing 3	0	1	60	600	3	OFF
6	6	Elution	2	4	90	100	3	60℃
7	5	Abandon beads	0	1	0	600	3	OFF

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

1. On-machine preparation

In a 96-well plate, add the specified amounts into each corresponding well according to the table below. Process 96 samples simultaneously.

Position	1	2	3	4	5	6
Reagent	Binding buffer （200μL） anhydrous	Bead （20μL） water	Washing buffer （600μL）	80% Ethanol （600μL）	80% Ethanol （600μL）	Eluant （100μL）
	ethanol (400μL)	（280μL）				

Note: Product number GP311-96, available in a pre-packaged format of 96 tubes per box, requires no sample preparation for loading. Begin the operation directly from step 2.

2. Sample Handling

Follow the steps in the single-tube manual extraction [Steps 1 and 2]. Transfer the digested and lysed samples to the wells of the 96-deep well plate in the first and seventh columns. Secure the 96-well plate and insert the magnetic rod sleeve.

Note: If RNA removal is necessary, add 10μL RNase A (10mg/mL) to the wells in the first and seventh columns.

3. On-Machine Extraction

Open the instrument's operating program, select the "tissue" program, click "Run" to execute the fully automated extraction program.

4. Nucleic Acid Transfer

After the instrument operation is complete, directly seal the elution solution from workstation 6 or transfer it to a clean centrifuge tube free of nucleases, and store at -20°C for future use.

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

Procedure	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
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	00:00:30	00:04:00	00:01:00	00:01:00	00:01:00	00:04:00	00:00:30
Suspend	No	No	No	No	No	No	No
Suction time	00:01:00	00:01:00	00:01:00	00:01:00	00:01:00	00:01:00	00:00:00

Volume	300μL	900 μL	600 μL	600μL	600 μL	100 μL	600 μL
Temperature	/	/	/	/	/	60℃	/

【Basic Information】

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