Mag Beads Viral DNA Extraction Kit

【Product Name】

Mag Beads Viral DNA Extraction Kit

【Packaging Specifications】

50T/box (Art.No.GP511-50); 100T/box (Art.No. GP511-100);

300T/box (Art.No.GP511-300); 500T/box (Art.No.GP511-500)

【Intended Use】

This product is designed for the extraction of 0.1-0.2mL genomic DNA from blood and viral genomic DNA from plasma/serum. The resulting product is intended for research or in vitro diagnostic use in clinical applications.

【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, DNA is eluted under low salt conditions, resulting in high-purity genomic DNA.

【Main Components】

Components	GP511-50	GP511-100	GP511-300	GP511-500
Binding buffer	30mL	60mL	180mL	300mL
Washing buffer	62mL	124mL	372mL	620mL
Eluant	6mL	12mL	34mL	55mL
Bead suspension	1.05mL	1.05mL*2	6.2mL	10.5mL
Proteinase K	1.05mL	1.05mL*2	6.2mL	10.5mL

【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 for all components is one year.

Transportation: Can be transported at 4-37°C, and the transportation time should not exceed 14 days.

【User-provided Equipment and Reagents】

1. Equipment: Nucleic acid extractor , 2.2mL 96-well deep plate (U-bottom), magnetic bar sleeve, magnetic stand, vortex oscillator, constant temperature oscillator, etc.;
2. Reagent: 75% ethanol.

【Sample Requirements】

1. Applicable sample types: Whole blood, red and white blood cells, plasma, serum.
2. Sample storage: Extraction can be done immediately, or samples can be stored at 2-8°C for testing within 24 hours. For long-term storage, samples should be stored at -20°C.

【Precautions】

1. Magnetic beads should not be frozen, and the magnetic bead suspension should be thoroughly mixed before use;
2. Check for precipitation of each component before each use. If present, re-dissolve at 60°C.

【Manual Extraction Procedure with Centrifuge Tubes】

1. Preparation: Thaw frozen samples at room temperature or 4°C in advance.
2. Lysis and Binding: Add 20μL Proteinase K, 200μL sample (supplement with elution buffer for insufficient samples), 580μL binding solution, and 20μL magnetic bead suspension to the centrifuge tube. Cover the tube, vortex for 10s, mix thoroughly, and shake at 55°C for 20min at 1500rpm.

Note: If there is no constant temperature mixer, the mixture can be placed in a 55°C water bath for 20min, vortex-mixing every 3min.

3. Magnetic Separation and Discarding Supernatant： Spin the centrifuge tube in the centrifuge for 5s, then place it on the magnetic stand for 1min to allow the magnetic beads to be completely adsorbed. Discard the supernatant completely (keep the centrifuge tube fixed on the magnetic stand throughout to avoid contact with the magnetic beads).

4. Wash with Wash Solution Twice：Remove the centrifuge tube from the magnetic stand, add 600μL wash solution to the tube, cover the tube, vortex for 10s to ensure thorough mixing of the magnetic beads, then vortex for 2min and perform magnetic separation to discard the supernatant. Repeat this step once, a total of two washes with "wash solution."

5. Ethanol 75% Wash Twice：75% Ethanol Wash Twice: Remove the centrifuge tube from the magnetic stand, add 600μL of 75% ethanol to the tube, cover the tube, vortex for 10s to ensure thorough mixing of the magnetic beads, then vortex for 1min, and perform magnetic separation to discard the supernatant. Repeat this step once, a total of two washes with "75% ethanol."

6. Ethanol Removal：Place the centrifuge tube on the magnetic stand, leave it in a fume hood, and air dry for 5min.

7. Elution: Remove the centrifuge tube, add 100μL elution buffer, vortex for 20s to ensure thorough mixing of the magnetic beads with the elution buffer, shake at 55°C for 10min at 1500rpm (or shake at room temperature for 10min).

8. Supernatant to a new centrifuge tube after the magnetic beads are completely adsorbed, and store at -20°C for later use.

【Automated 16/32-Channel Nucleic Acid Extractor Operating Procedure】

1. **Sample Preparation:** In a 96-well plate, add the specified amounts for each corresponding well according to the table below, simultaneously processing 16/32 samples.

Position	1、7	2、8	3、9	4、10	5、11	6、12
Reagent	Sample position（580μL）	Washing buffer（600μL）		75% Ethanol（600μL）		Eluant（100μL）

2. **Sample Addition:** Sequentially add 200μL of the sample (supplement insufficient samples with elution buffer), 20μL of proteinase K, and 20μL of magnetic bead suspension to the first column or seventh column of the 96-well plate.

3. **Automated Extraction:** Place the prepared 96-well sample plate into the nucleic acid extractor or a similar model nucleic acid extractor, and insert the magnetic rod sleeve. Open the instrument's operating program, select the "Blood & Viral" program, click "Run," and initiate the extraction process.

4. **Nucleic Acid Transfer:** After the automated program is complete, transfer the eluate from well 6 (or well 12) to a clean centrifuge tube 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）	Magnetic suction time(sec)	Volume (μL)	Mixing velocity	Ttemperature
1	1	Lysis and combination	0	20	60	860	3	55℃
2	2	Washing	0	4	60	600	3	—
3	3	Washing	0	3	60	600	3	—
4	4	75% Ethanol	0	2	60	600	3	—
5	5	75% Ethanol	0	2	60	600	3	—
6	6	Elution	2	10	80	100	3	55℃
7	4	Abandon beads	0	1	0	600	3	—

【Automated 96-Channel Nucleic Acid Extractor Operating Procedure】

1. **Sample Preparation:** In a 96-well plate, add the specified amounts for each corresponding well according to the table below, simultaneously processing 96 samples.

Position	1	2	3	4	5	6
Reagent	Sample position（580μL）	Washing buffer（600μL）		75% Ethanol（600μL）		Eluant（100μL）

2. **Sample Addition:** Add 200μL of the sample (supplement insufficient samples with elution buffer), 20μL of proteinase K, and 20μL of magnetic bead suspension to the 96-well plate at position 1.

3. **Automated Extraction:** Sequentially place the prepared 96-well sample plate into the QN-AUT-96 nucleic acid extractor or a similar model extractor, and insert the magnetic rod sleeve. Open the instrument's operating program, select the corresponding program, click "Run," and initiate the extraction.

4. **Nucleic Acid Transfer:** After the instrument completes the extraction process, either seal the eluate in well 6 or transfer it to a clean centrifuge tube without nucleases, storing it at -20℃ for future use.

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

Procedure	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Station	1	2	3	4	5	6	5
Waiting time	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:03:00	00:00:00
Mixed model	3	3	3	3	3	3	3
Mixing time	00:20:00	00:04:00	00:03:00	00:02:00	00:02:00	00:01:00	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	860μL	600 μL	600 μL	600μL	600 μL	100 μL	600 μL
Temperature	55℃	/	/	/	/	55℃	/

【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