Mag Beads Viral DNA/RNA Extraction Kit

【Product Name】

Mag Beads Viral DNA/RNA Extraction Kit

【Packaging Specifications】

50T/box (Art.No.GP531-50); 100T/box (Art.No.GP511-100);

300T/box (Art.No.GP531-300)

【Intended Use】

This product is designed for extracting viral DNA/RNA from 0.2mL bodily fluids (such as serum, plasma, ascites, supernatant of tissue homogenate, supernatant of cultured cells, cerebrospinal fluid, urine, suspended cells from sloughed cells, etc.). The extracted material is intended for use in PCR/RT-PCR, Real-time PCR/Real-time RT-PCR.

【Detection Principle】

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

【Main Components】

Component	GP531-50	GP531-100	GP531-300
Lysate	30mL	60mL	180mL
Washing buffer	31mL	62mL	186mL
Eluant	6mL	12mL	34mL
Bead suspension	1.05mL	1.05mL*2	6.2mL

【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.

【Self-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: 80% ethanol.(Formulated with DEPC)

【Sample Requirements】

Applicable sample types: Serum, plasma, ascites, supernatant of tissue homogenate, supernatant of cell culture, cerebrospinal fluid, urine, suspension of shed cells, etc.

【Precautions】

1. Wear protective equipment before starting the operation;
2. Strictly follow the operating steps, and waste must be placed in a waste container containing disinfectant to avoid contamination;
3. Use centrifuge tubes, pipettes, tips, etc., that do not contain DNA and RNA enzymes;
4. If reagents appear turbid or precipitate, place them in a 37°C water bath until clarified;
5. Mix the magnetic bead suspension thoroughly before use;
6. In case reagents accidentally splash onto the skin or eyes, immediately rinse with water for 5-10 minutes.

【Manual Extraction Procedure with Centrifuge Tubes】

1. **Preparation:** Prepare RNase-free tips and 1.5mL centrifuge tubes, or treat tips and 1.5 mL centrifuge tubes with 0.1% DEPC water before use.
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

Place the centrifuge tube on the magnetic stand and let it stand for 1 minute. Invert the tube to ensure complete adsorption of the magnetic beads by the magnetic stand, thoroughly removing the supernatant (keep the centrifuge tube fixed on the magnetic stand throughout, avoiding contact with the magnetic beads).

4. Wash with Wash Solution 1

Remove the centrifuge tube from the magnetic stand, add 600 μL of Wash Solution 1 to the tube, close the tube cap, vortex for 10 seconds to ensure thorough mixing of the magnetic beads, then vortex for 1 minute. Place the centrifuge tube on the magnetic stand, invert 2-3 times, and let it stand until the magnetic beads are completely adsorbed, thoroughly removing the supernatant.

5. Ethanol 80% Wash Twice

80% Ethanol Wash Twice: Remove the centrifuge tube from the magnetic stand, add 600μL of 80% 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 2-5min.

7. Elution

Remove the centrifuge tube, add 50-100μL elution buffer (DEPC water), vortex for 20 seconds to ensure thorough mixing of the magnetic beads with the elution buffer, shake at 37°C with constant temperature and 1500 rpm for 10 minutes (or shake at room temperature for 10 minutes).

8. Nucleic Acid Transfer

Place the centrifuge tube on the magnetic stand and let it stand for 1 minute. After the magnetic beads are completely adsorbed, transfer the supernatant to a new RNase-free centrifuge tube.

【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	3、9	4、10	5、11	6、12
Reagent	Sample position（580μL）	Washing liquid（600μL）	80% 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）	Suction time(sec)	Volume (μL)	Mixing velocity	Ttemperature
1	1	Cleavage binding	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
Station	1	3	4	5	6	5
Waiting time	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
Mixing time	00:10:00	00:02:00	00:01:00	00:01:00	00:05:00	00:00:30
Suspend	No	No	No	No	No	No
Suction time	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	100 μL	600 μL
Temperature	37℃	/	/	/	37℃	/

【Basic Information】

Version Number: 1.1

Version Disclaimer: Nanjing Rebeads Biotech Co., Ltd. reserves all rights to this practical guide.

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