Micro Exosome Isolation Kit

Cat. No. : P-CA-501
Size : 20Test / 50Tests

Product Description

This kit utilizes our proprietary homogeneous liquid magnetic beads, engineered for the selective capture of exosomes while minimizing the adsorption of contaminants. This results in the isolation of exosomes with superior purity and high recovery rates. With its user-friendly design, exceptional purity, and robust recovery efficiency, it is ideally suited for exosome isolation from complex biological matrices such as plasma and serum. The isolated exosomes are versatile for a wide range of downstream applications, including Western blot (WB) analysis, nanoparticle tracking analysis (NTA), nanoparticle flow cytometry for particle size characterization, electron microscopy, omics profiling, and functional studies in cellular and animal models.

Product Composition

Component	Specifications		Storage Conditions
	20 Tests	50 Tests	
Exosome Beads	2 mL	5 mL	2-8°C, Shading Light
Solution A	100 mL	125 mL×2	2-8°C, Shading Light
Elution Buffer	2 mL	5 mL	2-30°C, Shading Light

Storage Conditions

Exosome Beads and Solution A should be stored at 2-8°C; Elution Buffer at 2-30°C. This product has a shelf life of 18 months.

Applicable Samples

This kit is designed for the efficient enrichment and isolation of exosomes from a variety of limited and high-value biological samples. It is particularly optimized for use with serum and plasma. For rare and precious sample types, including cerebrospinal fluid, saliva, bile, or seminal plasma, we recommend consulting our technical support team for specialized guidance and protocols.

Required Instruments, Reagents, and Consumables (Not Included)

- High-Speed Refrigerated Centrifuge
- Benchtop Orbital Shaker
- 1.5 mL Centrifuge Tubes
- Magnetic Rack
- Ultrafiltration Tubes (MWCO: 10 kDa)

Protocol

1. Sample Processing

1) **Cell Removal:** Centrifuge the sample at 300 × g for 5 minutes at 4°C. Carefully transfer the supernatant to a new centrifuge tube.

Note: This step can be skipped for cell-free samples.

2) **Removal of Cellular Debris:** Centrifuge the supernatant obtained from Step 1 at 2,000 × g for 10 minutes at 4°C. Transfer the supernatant to a new centrifuge tube.
3) **Removal of Large Particles:** Centrifuge the supernatant obtained from Step 2 at 14,000 × g for 30 minutes at 4°C. Carefully transfer the resulting supernatant to a new centrifuge tube.

2. Exosomes Enrichment

1) **Magnetic Bead Preparation:** Add 100 µL of Exosome Beads to a 1.5 mL centrifuge tube. Place the tube on a magnetic rack for 1 minute and discard the storage buffer.
2) **Sample Incubation:** Add 500 µL of the preprocessed sample to the magnetic beads (if the volume is less than 500 µL, top up with Solution A). Secure the centrifuge tube on an orbital shaker and incubate at room temperature with gentle rotation (17 rpm) for 30 minutes.
Note: During the binding process, magnetic beads may aggregate in certain samples. This will not affect the separation efficiency.
3) **Separation of Beads:** Place the tube on a magnetic rack and let it stand for 30 seconds. Discard the supernatant.
4) **Washing:** Add 1 mL of Solution A and mix by gentle inversion. Place the tube on the magnetic rack, let it stand for 30 seconds, and discard the supernatant.
5) **Repeat Washing:** Repeat Step 4 two more times, retaining the magnetic beads at the end.

3. Exosome Isolation

Elution: Add 100 µL of Elution Buffer to the magnetic beads containing the enriched exosomes. Mix by pipetting.

1) **Incubation:** Secure the centrifuge tube on an orbital shaker and incubate at room temperature with gentle rotation (17 rpm) for 30 minutes.
2) **Separation of Exosomes:** Place the tube on a magnetic rack and let it stand for 30 seconds. Carefully transfer the supernatant to a new 1.5 mL centrifuge tube. This supernatant contains the isolated exosomes.
Note: Exosomes should not be stored in Elution Buffer for extended periods. For long-term storage, use ultrafiltration tubes (MWCO: 10 kDa) to replace the buffer with PBS.

Product Advantage

1. **Low Starting Volume:** Enables the enrichment of exosomes from limited or precious samples.
2. **Rapid Processing:** Exosome isolation can be completed within 2 hours.
3. **Ease of Use:** Requires only a standard magnetic rack; no specialized equipment is needed.
4. **High Reproducibility:** Minimal operational proficiency required, ensuring consistent results.
5. **High Recovery Rate:** Achieves a recovery rate exceeding 90%.
6. **High Purity:** Purified exosomes are suitable for direct RNA and protein extraction.
7. **Excellent Integrity:** Magnetic bead-based isolation preserves exosome integrity better than other methods.
8. **High Throughput:** Capable of processing multiple samples simultaneously and compatible with automated systems.
9. **Wide Applicability:** Suitable for isolating exosomes from complex samples like plasma and serum, as well as simpler samples such as cell culture supernatants and urine.