Exosome Isolation Kit (Precipitation)

Cat. No.: P-CA-505

Size: 20Tests / 50Tests

Product Description

This product is an exosome isolation kit utilizing the precipitation method, optimized for efficient exosome isolation from a wide array of sample types. It offers key benefits including simplicity, rapid processing, and high exosome recovery rates. The exosomes isolated with this kit are suitable for a diverse range of applications, such as Western blot (WB) analysis, nanoparticle tracking analysis (NTA), nanoparticle flow cytometry for particle size characterization, electron microscopy, omics profiling, and functional studies in both cellular and animal models.

Product Composition

Component	20Tests	50Tests	Storage Conditions
Exosome Precipitation Solution	10 mL	25 mL	2-8°C, Shading Light
Solution A	25 mL	25 mL	2-8°C, Shading Light

Storage Conditions

This kit should be stored under the recommended conditions and has a shelf life of 18 months.

Applicable Samples

This kit is suitable for exosome isolation from various sample types, commonly used with serum, plasma, cell culture supernatants, and urine. For other sample types, please consult the company's technical support.

Required Instruments, Reagents, and Consumables (Not Included)

- High-speed refrigerated centrifuge
- Centrifuge tubes

Protocol

1. Preperation

1) Remove the components (Exosome Precipitation Solution, Solution A) stored at 2-8°C from the refrigerator and bring them to room temperature.
2) It is recommended to use fresh samples. If the samples are stored at -80°C, thaw them in a 37°C water bath and set aside.

2. 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.
   Note: Alternative method for removing large particles (large vesicles): Filter the supernatant

obtained in step 2) through a 0.2 μm microporous filter and collect the filtrate.

3. Exosome Precipitation

1) Select the appropriate procedure based on Exosome sample type:

- Operation protocol of serum and plasma exosome samples

  Transfer 500 μL of the processed sample to a 1.5 mL centrifuge tube, add 500 μL of Solution A, mix well, and then add 250 μL of Exosome Precipitation Solution. Invert and mix thoroughly.

  Note: If the serum/plasma exosome sample volume needs adjustment, scale the volumes according to the ratio: sample:Solution A:Exosome Precipitation Solution = 2:2:1. This ratio can be scaled up or down accordingly.

- Operation protocol of cell culture supernatant and urine exosome samples

  Transfer 1 mL of the processed sample to a 1.5 mL centrifuge tube, add 250 μL of Exosome Precipitation Solution, and invert to mix thoroughly.

  a. If the sample volume is too large, it can be concentrated to 1-2 mL before proceeding with this step.

  b. If adjustment of cell culture supernatant/urine exosome sample volume is needed, scale according to the ratio: sample:Exosome Precipitation Solution = 4:1, scaling up or down as necessary.

2) Incubate at room temperature for 30min (rapid flow):

Note: If the time permits, 4°C overnight incubation is recommended (for higher recovery).

3) Centrifuge at 4°C, 12,000 g for 30 minutes, and discard the supernatant:

Note: After discarding or carefully aspirating the supernatant, use a 200 μL pipette to remove as much residual supernatant as possible.

4. Exosome Recovery

1) Re-suspend the exosome pellet. Add 200 μL of Solution A to the precipitate and gently pipette up and down to mix.

2) Collect the exosome particles. Transfer the re-suspended solution to a new 1.5 mL centrifuge tube and centrifuge at 4°C, 12,000 g for 5 minutes. Retain the supernatant, which is rich in exosome particles.

Note: If a large pellet remains, collect the supernatant after centrifugation, then centrifuge at 12,000 g for 5 minutes multiple times until no significant pellet remains. The final supernatant will contain the exosomes.

3) The separated exosomes can be used for subsequent experiments immediately. If experiments are not performed within 24 hours, store at 4°C. Otherwise, aliquot and store at -80°C.

Product Advantages

1. **Wide Sample Compatibility:** Suitable for complex samples such as plasma and serum, as well as simpler samples like cell culture supernatants and urine.
2. **High Recovery Rate:** Compared to other methods, this kit yields higher exosome concentration.
3. **Ease of Use:** No specialized equipment required; the process is straightforward.
4. **Rapid:** Exosome isolation can be completed in just 1.5 hours.
5. **Reproducibility:** Minimal dependence on operator skill, ensuring consistent results.
6. **High Throughput:** Capable of processing multiple samples simultaneously.