

## Total Exosome Isolation (from serum)

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Store at 2°C to 8°C

### Product Description

Exosomes are small vesicles (30–120 nm) containing RNA and protein that are secreted by various types of cells in culture, and found in abundance in body fluids including blood, saliva, urine, and breast milk. Exosomes are thought to function as intercellular messengers, delivering their cargo of effector or signaling macromolecules between specific cells, however, their formation, the makeup of the cargo, and biological pathways in which they are involved remain incompletely understood.

The biological study of exosome function and trafficking requires the isolation of intact exosomes, but the current methods used are tedious, non-specific, and difficult. The Total Exosome Isolation (from serum) reagent provides a simple and reliable method of concentrating intact exosomes from blood serum samples. By tying up water molecules, the Total Exosome Isolation (from serum) reagent forces less-soluble components (i.e. exosomes) out of solution, allowing them to be collected after brief, low-speed centrifugation.

### Product Contents

Total Exosome Isolation (from serum) reagent contains reagents sufficient for processing 30 mL of serum.

Component	Amount	Storage
Total Exosome Isolation (from serum)	6 mL	2°C to 8°C

### General Guidelines

- The Total Exosome Isolation (from serum) reagent is not recommended for isolation of exosomes from plasma. Exosome preparations derived from plasma samples are of lower quality because plasma contains high levels of clotting factors that will co-precipitate with the exosomes and result in a large pellet that is difficult to resuspend.
- If you are isolating intact exosomes from cell culture media, use the Total Exosome Isolation (from cell culture media) reagent.
- After exosomes are isolated, total RNA and protein can be purified using the Total Exosome RNA and Protein Isolation Kit.
- To isolate exosomal proteins for immunoprecipitation, use Exosome Immunoprecipitation (Protein A) or Exosome Immunoprecipitation (Protein G).

### Prepare Sample

- Remove the serum sample from storage and place it on ice. If the sample is frozen, thaw the sample in a 25°C water bath until it is completely liquid, and place on ice until needed.
- Centrifuge the serum sample at 2000 × g for 30 minutes to remove cells and debris.
- Transfer the supernatant containing the clarified serum to a new tube without disturbing the pellet, and place it on ice until ready to perform the isolation.

### Isolate Exosomes

- Transfer the required volume of clarified serum to a new tube and add 0.2 volumes of the Total Exosome Isolation (from serum) reagent.

Serum	Reagent
100 µL	20 µL
1 mL	200 µL

- Mix the serum/reagent mixture well either by vortexing or pipetting up and down until there is a homogenous solution.

**Note:** The solution should have a cloudy appearance.

- Incubate the sample at 2°C to 8°C for 30 minutes.
- After incubation, centrifuge the sample at 10,000 × g for 10 minutes at room temperature.
- Aspirate and discard the supernatant. Exosomes are contained in the pellet at the bottom of the tube.
- Use a pipette tip to completely resuspend the pellet in a convenient volume of 1X PBS or similar buffer.

Starting Serum Volume	Resuspension Volume
100 µL	25–50 µL
1 mL	100–500 µL

- Once the pellet is resuspended, the exosomes are ready for downstream analysis or further purification through affinity methods.

Keep isolated exosomes at 2°C to 8°C for up to 1 week, or at ≤20°C for long-term storage.

## Related Products

Product	Cat. No.
Total Exosome RNA and Protein Isolation Kit	4478545
Total Exosome Isolation (from cell culture media)	4478359
Exosome Immunoprecipitation (Protein A)	10610D
Exosome Immunoprecipitation (Protein G )	10612D

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