Exosome Extraction Kit (urine)

Cat: EX0012
Size: 20T
Storage: RT, Valid for 2 year. Mix well before use.

Kit Components:

Kit Components	Size
Exosome Concentration Solution	100mL
Exosome Solution Buffer	20mL
50mL Centrifugal Filter Column	20

Introduction:

Exosomes are small vesicles (30-150nm) secreted by cells containing RNA and proteins that are abundant in body fluids such as blood, saliva, urine, and milk. Exosomes are thought to function as intercellular messengers, transporting their effectors or signaling molecules between specific cells; However, their structure, effector composition, and the biological pathways involved are still unclear.

In the study of the biological function of exosomes, complete exosome particles need to be isolated, and the traditional ultracentrifugation method is complicated, demanding in hardware and difficult to operate. The exosome rapid extraction kit developed by Solebao Biological is suitable for urine exosome extraction with optimized components, and can obtain high-purity exosome particles quickly and efficiently.

Self-prepared Material:

High-speed centrifuge (can reach 10000g centrifugal force); Vortex oscillator; 50mL centrifugal rotor; 1.5mL centrifugal tube.

Protocols:

1. Sample pretreatment

(1) Sampling: If the sample is frozen, remove it from the refrigerator and thaw it in a water bath at 25℃. Place the completely melted sample on ice; If it is a fresh sample, collect the sample and place it on ice.

(2) Initial sample dosage: A minimum of 25mL of urine should be used for a single extraction.

(3) Centrifuge to remove cell debris: The sample was transferred to a centrifuge tube and centrifuged at 3000g at 4℃ for 10min to remove cell debris in the sample (Note: If there is more precipitation, 3000g can be centrifuged for several times for 10min until there is no obvious precipitation, and the centrifugal supernatant is taken each time).

(4) Supernatant transfer: The centrifuge supernatant that removes cell debris is transferred to a 50mL centrifuge filter column.

(5) Sample filtration: Transfer the 50mL centrifugal filter column to a high-speed centrifuge, centrifuge at 3000g at 4℃ for 10min, and remove the liquid in the lower chamber of the filter

column (Note: If there is residual liquid in the upper chamber, this step can be repeated to obtain more sample size).

2. Extract exosomes

(1) Supernatant pretreatment: Add Exosome Concentration Solution (ECS reagent) to the supernatant after centrifugation filtration, and the specific dosage is as follows: (Note: Other dosage specifications please be converted according to the reagent dosage and other proportions in the table).

Sample name	Sample dosage	Add the ECS dose
Urine	25mL	5mL

(2) Solution mixing: After adding ECS reagent, cover the centrifuge tube tightly, mix it by vortex oscillator for 1 min, and then place it at 4℃ for 2h.

(3) Exosome precipitation: The centrifuge tube containing the mixed liquid was centrifuged at 10000g at 4℃ for 60min, and the supernatant was discarded. The precipitation was rich in exosome particles (Note: Absorb the supernatant as much as possible).

(4) Exosome weight suspension: Take Exosome Solution Buffer (ESB reagent) and blow the centrifugal precipitate evenly (specific dosage added in the table below). After it dissolves, transfer the heavy suspension to a new 1.5mL centrifuge tube (Note: Other dosages should be converted according to the reagent dosage in the table).

Urine sample volume	Add ESB dose
25mL	0.5mL

(5) Collect exosome particles: Centrifuge a 1.5mL centrifuge tube containing the heavy suspension at 4℃ at 12000g for 5min and retain the supernatant, which is rich in exosome particles (Note: If there is much precipitation, the supernatant can be centrifuged at 12000g/2min for several times until there is no obvious precipitation, and the centrifugal supernatant can be taken each time).

(6) Preservation of exosomes: Store them in a cryogenic refrigerator at -80℃ for use. If the sample quantity is large, it is recommended to store after packaging.

Note:

This product is intended for life science research only and is not intended for medical diagnosis or other purposes.