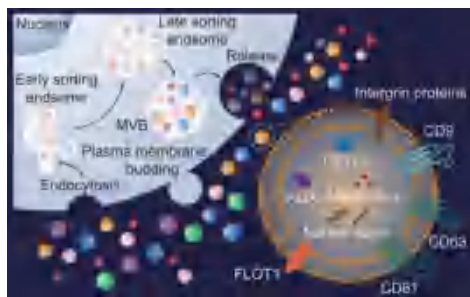


EXODUS

Extracellular Vesicle Subtype Isolation Solutions

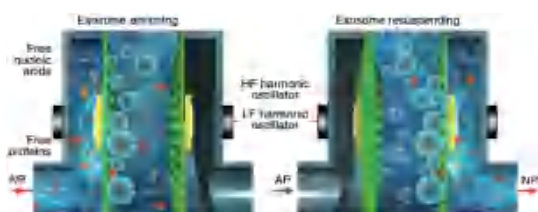
What are extracellular vesicle subtypes?



Extracellular vesicles (EVs) are membrane-bound small vesicles (30 nm-1 μ m) released by cells into the extracellular matrix, playing a crucial role in intercellular communication and physiological regulation. EVs are primarily classified into two major categories or subtypes: exosomes (30-150 nm) and microvesicles (100-1000 nm). Studies on EVs are mainly focused on <150 nm exosomes, while the characteristics and functions of medium and large EVs (>150 nm) are relatively unexplored. This is mainly due to the lack of methods for size-based separation of EV subtypes. Establishing new isolation methods will help researchers better understand the origin, composition, functions, and critical roles of EV subtypes in the development of diseases.

EXODUS isolation principle for EV subtypes

A negative pressure oscillation system (NPO) combined with a double-coupled harmonic oscillation system (HO) acts on the nanofiltration device to rapidly remove impurities, such as free nucleic acids and proteins in the sample, to obtain ultra-pure exosomes. The isolation of extracellular vesicle subtypes based on their size is achieved by replacing the nano-membranes with different pore sizes in the EXODUS-sub device.

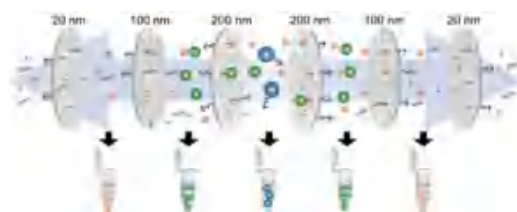


EXODUS isolation principle illustration

Nature Methods.2021,18(2):212-218



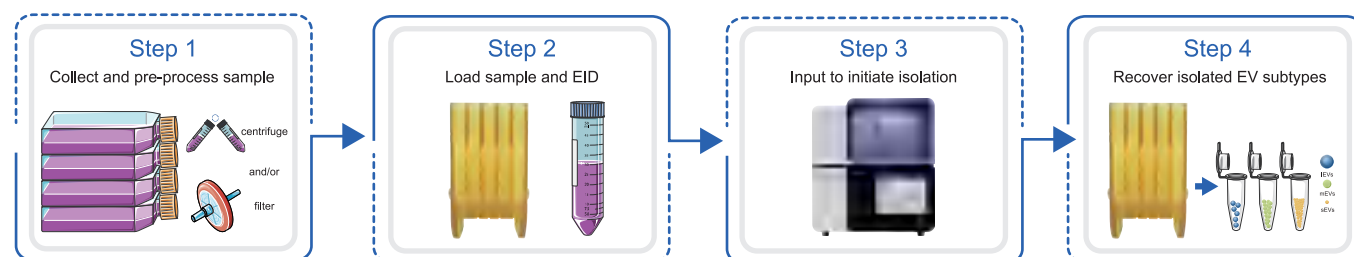
EXODUS-sub subtype isolation device



Working principle diagram of EXODUS-sub subtype isolation device

Sci Adv.2023,9(11):1137-1144.

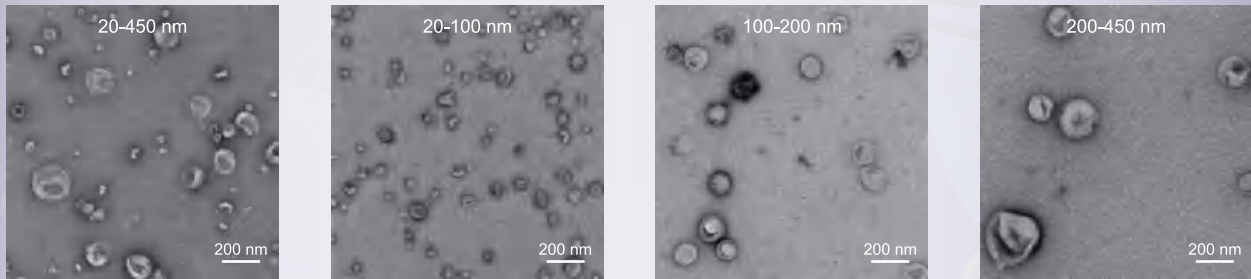
EXODUS isolation procedure for EV subtypes



Extracellular Vesicle Subtype Isolation Solutions

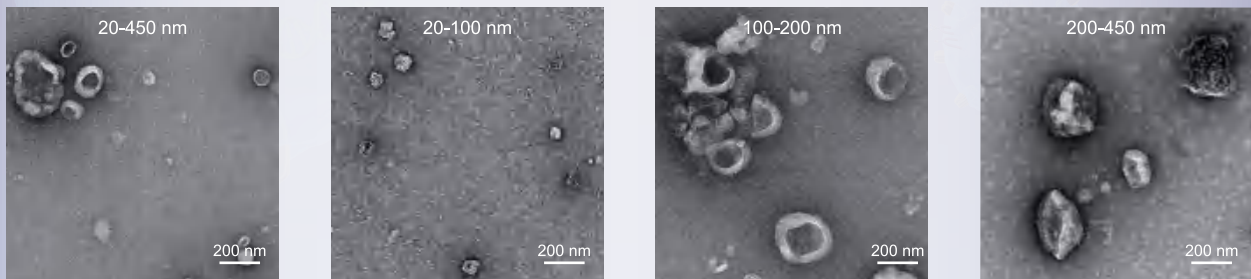
EXODUS EV subtype isolation results

Extracellular vesicle subtypes in urine



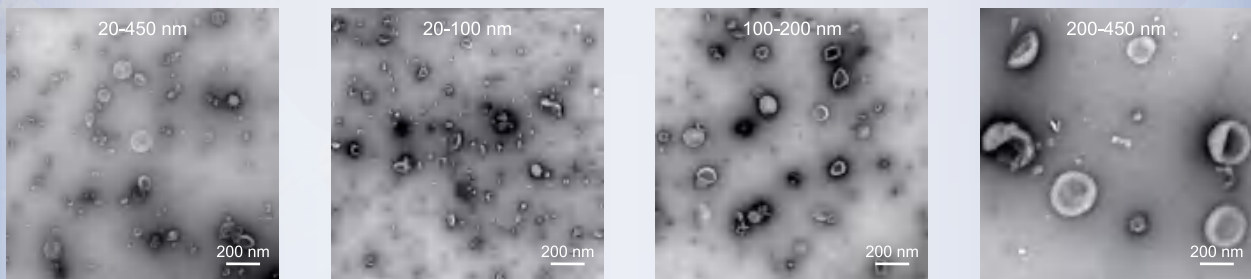
Nature Methods.2021,18(2):212-218.

Extracellular vesicle subtypes in tear



Sci Adv.2023,9(11):1137-1144.

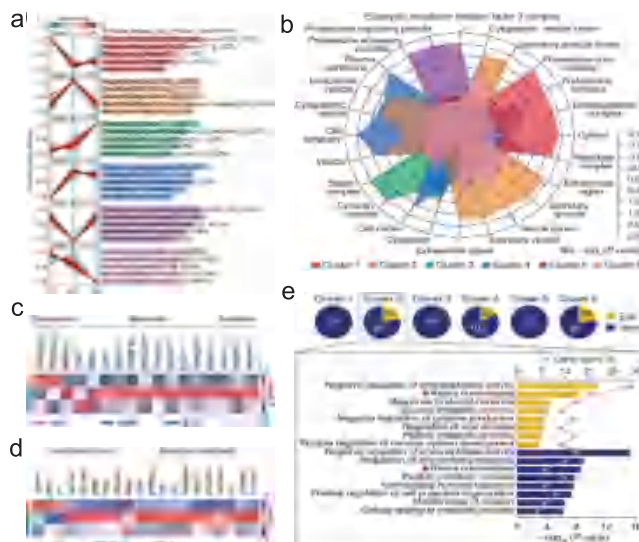
Extracellular vesicle subtypes in MSCs culture medium



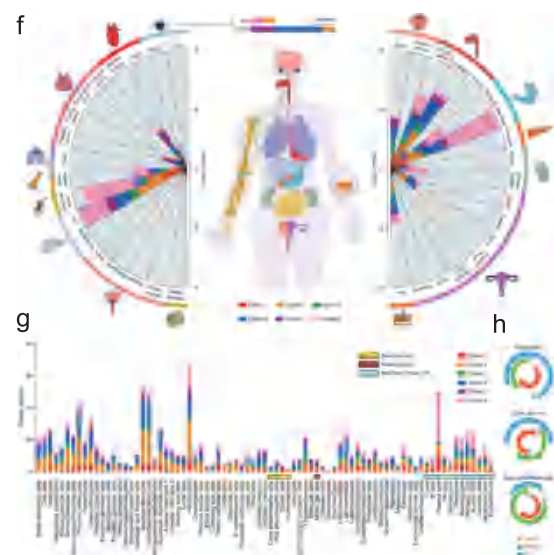
Unpublished.

Applications of EXODUS in isolating EV subtypes

Composition and biological functions of tear EV subtypes



Origin and cellular source of tear EV subtypes proteins



Sci Adv.2023,9(11):1137-1144.