Exosome isolation

Context

Exosomes are extracellular vesicles (EVs) of diameter within the range of 30-100 nm, that are formed via inward budding of endosomal membranes resulting in formation of multivesicular bodies and released from the cell after fusion of multi-vesicular body with the plasma membrane.

Exosomes are produced by almost all cells in vivo and in vitro. They are present in all biological fluids in various concentrations.

Expertise

Specific optimization steps in the isolation procedure are necessary due to great variability in the composition of different biological fluids.

Therefore a choice of the purification protocol depends on the biochemical composition and origin of the body fluid or cells considered the characteristics of EV sub-populations and the sample size.

Fields of Application

- Cell to cell communication
- Immune responses
- Diagnostics / biomarkers
- Anti-tumor therapy
- Vaccines
- Inflammation and parasitic and bacterial infections
- Drug delivery
- Cardiovascular and metabolic diseases, cancer, etc...

Technical features

- Scientific expertise and technical experience in the research field of extracellular vesicles
- Very high purity of EVs/Exosomes with high recovery rate and functionality
- Absence of Exosome co-precipitation products and contaminants (protein and organic co-aggregates)
- The isolated EVs/Exosomes are suitable for different downstream analysis such as micro RNA/RNA profiling, proteomics, lipidomics and functional studies in vitro or in vivo.

Transmission electron microscopy with uranyl acetate staining of exosomes derived from bovine milk (A) and Staphylococcus aureus (B)