HOKImag

Application in oncology:

Isolation of exosomes from serum of tumor patients

Exosomes are 50 to 150 nanometer small membrane vesicles. They are formed billions of times by tumor cells as well as by many other cell types and released into the bloodstream. Through their surface markers, tumor-specific exosomes can be identified from serum and used as highly sensitive, highly specific non- or minimally invasive serological diagnostic markers. Thus, they serve for diagnosis and follow-up of carcinoma diseases or other chronic diseases. Exosomes can also be used to non-invasively infer the mutational status of the primary tumor.

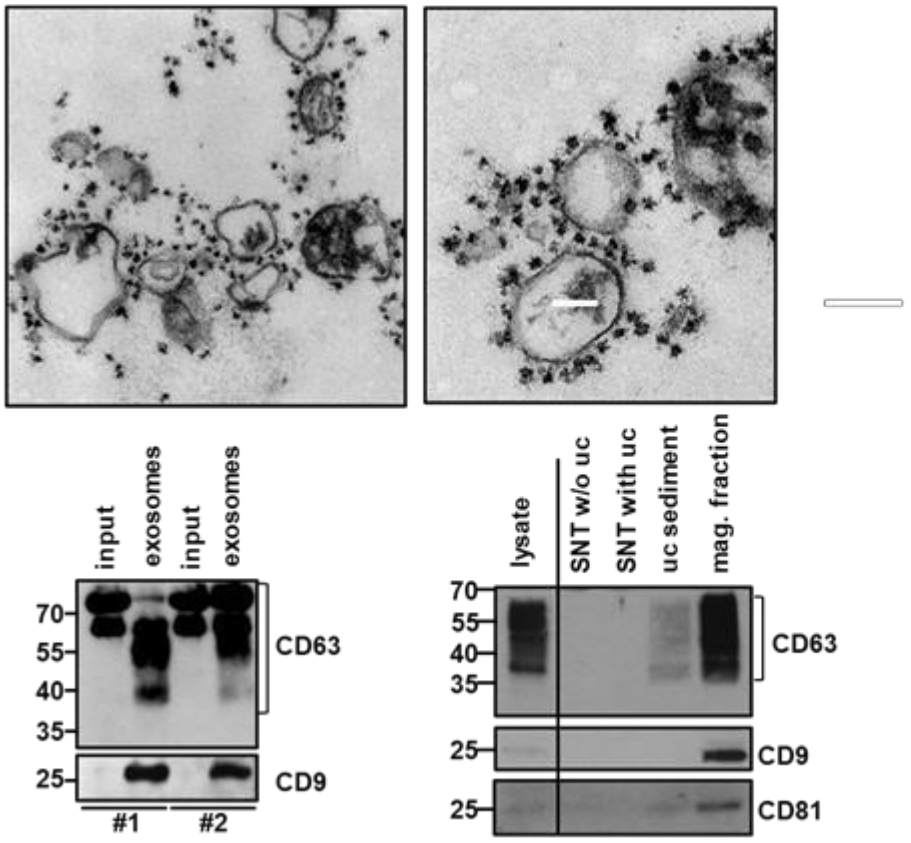
Magnetic labeling of exosomes is performed in patient serum via binding of superparamagnetic beads attached to exosome-specific antibodies.

Advantages of the "free flow" method with HOKImag:

The HOKImag magnetic chamber system, with its high-gradient magnetic field and "free-flow" separation column, represents an ideal technology for selective and gentle immunomagnetic isolation of exosomes from patient sera and cell culture supernatants. The isolated vesicles remain morphologically and functionally intact.

Example of the application of the HOKImag magnetic chamber system:

EM-images of exosomes isolated by immunomagnetic means using HOKImag from culture supernatants of tumor cells and Western blot analysis for characteristic marker proteins.



Source: Fritsch, J., Tchikov, V., Hennig, L., Lucius, R., Schütze, S. (2019} A toolbox for the immunomagnetic purification of signaling organelles. ***Traffic,*** 14, 321-336.