Details

Facility for Extracellular Vesicle Analysis and Liquid Biopsy (EV-Core)

The Facility for Extracellular Vesicle Analysis and Liquid Biopsy (EV-Core) is a cross-faculty platform at the Medical Center – University of Freiburg dedicated to the analysis of extracellular vesicles (EVs) and the development of innovative biomarker strategies derived from liquid biopsy. It provides infrastructure and methodological support for scientific and clinical research projects. The aim of the facility is to support translational research projects focused on the identification and validation of EV-based biomarkers in clinical contexts such as infectiology, oncology, immuno-oncology, neurology, psychiatry, and others. In addition, it contributes to basic research on the biological roles and functions of EVs in both physiological and pathological processes. The focus lies on standardized EV isolation, single-vesicle analytics, and multi-analyte profiling of protein-, RNA-, and DNA-based components for the identification of disease-specific signatures – particularly in situations where tissue biopsies are not possible. The EV-Core combines long-standing expertise in EV research, molecular methodology, and technological innovation – positioned at the interface between experimental science and clinical application.

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To website

Host Institution

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Scientific Domain

Primary Subjects:
- Biology
- Medicine

Secondary Subjects:
- Agriculture, Forestry, Horticulture and Veterinary Medicine

Category

Analytical Facilities

Scientific Services

-Support in establishing isolation protocols for extracellular vesicles (EVs) from cell culture medium, body fluids (blood, plasma, serum, cerebrospinal fluid, urine, saliva etc.), adapted to the planned followup analysis -Enrichment of EVs -Characterisation of EVs: measurement of concentration, size distribution, zeta potential distribution, and their data visualization, marker proteins -Single EV measurement -Fluorescence measurement of EVs -Fluorescent colocalization measuremen -Support in establishing isolation protocols for EV components, such as proteins, lipids, RNA and DNA -Detection and evaluation of biomarkers

Scientific Equipment

- NANO-flex 180° DLS Size (Colloid Metrix GmbH, Meerbusch, Germany)
- ZetaView x20 Series QUATT NTA (Particle Metrix GmbH, Inning am Ammersee, Germany)
- ZetaView x20 Series TWIN NTA, PMX220 (Particle Metrix GmbH, Inning am Ammersee, Germany)
- Flow NanoAnalyzer (NanoFCM Inc., Xiamen, China and Nottingham, UK)

Keywords

- extracellular vesicle
- EV
- nanoparticle
- exosome
- characterization of EVs
- single EV measurement
- fluorescence measurement
- zeta potential
- size distribution
- concentration
- dynamic light scattering
- DLS
- nanoparticle tracking analysis
- NTA

Networks

German Society for Extracellular Vesicles (GSEV)
https://gsev.org/

International Society for Extracellular Vesicles (ISEV)
https://www.isev.org/

Users per annum

Internal Users: 28
External Users in total: 12
External Users: 9
External Users in the EU: 1
External Users outside of EU: 2