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Sala Grados

Torres Quevedo, Campus Rio Ebro

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Insights into the biomolecular corona of extracellular vesicles for medical translation



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About the speaker: Prof. Annalisa Radeghieri is an Associate Professor in Biotechnology and Methods in Laboratory Medicine at the Department of Molecular and Translational Medicine at the University of Brescia and member of the Italian Center for Colloid and Interface Science (CSGI). Graduated in industrial biotechnology from the University of Bologna, she worked for several years on the intracellular trafficking of proteins. Currently, she leads the Extracellular vesicles laboratory in strict collaboration with prof. Paolo Bergese, at the Dept. of Molecular and Translational Medicine, University of Brescia, a multidisciplinary team featuring one of the first stories of integration of chemistry, nanotechnology and molecular biology in extracellular vesicle research. Her research encompasses both diagnostic/therapeutic and basic research fields, examining these particles from biophysical and biochemical perspectives. Prof. Radeghieri is also President and founder of the Italian society for Extracellular vesicles.

Abstract: The biomolecular corona (BC) is the dynamic assembly of proteins and other biomolecules at the interface between nanoparticles and their biological environment. Initially described for synthetic nanoparticles, the BC is now recognized as a defining feature of extracellular vesicles (EVs), strongly influencing their identity, biological function, cellular interactions, and role in health and disease. However, the mechanisms and dynamics governing biomolecular recruitment to EV surfaces remain poorly understood due to experimental challenges under physiological conditions. In this lecture, I will present recent advances from our laboratory on EV-BC formation and evolution, its dependence on EV origin, and its relevance for disease diagnostics, particularly antithrombin deficiencies, and EV-based therapeutic strategies.