

Call for admission to the Doctoral positions with scholarships of the 39th cycle (a.y. 2023/24) according to the Directorial Decree no. 1031/2022, 1058/2022 e 119/2022, within the Italian National Recovery and Resilience Plan (NRRP), in the frame of Mission 4, component 2 “From Research to Business” in the context of the Doctorates of the 39th cycle (a.y. 2023/24)

A.Y.2023/2024 – Cycle 39

RESEARCH TOPIC DESCRIPTION

Proposed research/Scholarship title	Development of a novel extra-cellular vesicle purification technology
Supervisor	Prof.ssa Francesca Demichelis
Brief description of the proposed research	<p>In the last few years, extracellular vesicles (EVs) and their associated molecular cargos (including proteins, RNA, DNA, etc.) have emerged as compelling biomarkers for the diagnosis and progression assessment of several diseases. This project aims to develop new methodological approaches to purify and characterize extracellular vesicles from biofluids. The newly tested methods will be validated compared to gold standard EV isolation techniques, like ultracentrifugation, density gradient, and size-exclusion chromatography. The standardization of the new approaches will be paired with state-of-the-art technologies in microscopy, cytofluorimetry, and next-generation sequencing. Ultimately, the results will be generated using human samples. Overall, given the EV's clinical implications, this project will contribute to implementing a valuable platform for precision medicine.</p>