

Ronald Saraswat, PhD

CELL & MOLECULAR BIOLOGIST | AGEING • CELL BIOLOGY • TRANSLATIONAL RESEARCH

Paris, France | [Google Scholar](#) | [LinkedIn](#) | [ORCID](#)



RESEARCH INTERESTS

- Ageing Biology & Cellular Senescence
- Intercellular Communication & Extracellular Vesicles
- Quantitative Proteomics & Functional Cell Biology
- Stem-cell Ageing & Regenerative Biology
- Metabolism & Cell-state Transitions

CORE EXPERTISE

- Primary human **endothelial cells** (HAoEC/HUVEC), HeLa, MSC and NSC-34 culture
- Long-term primary-cell and mammalian-cell models, transfection and functional assays
- Flow cytometry**, confocal microscopy and quantitative imaging
- Immunofluorescence
- Cellular stress, **senescence** and cell-cycle readouts
- EV isolation: differential centrifugation and SEC
- NTA, TRPS/qNano, zeta potential and DLS
- S-Trap sample preparation and **LC-MS/MS proteomics**
- MaxQuant, Perseus, **R/Bioconductor**, Cytoscape, Reactome and GraphPad Prism

ANIMAL RESEARCH

CESU Level B (France, rodents) and **LAST-certified** in Ireland for independent experimentation in rodents.

Practical **rodent laboratory training**, including intravital mouse EV imaging and vena cava ligation training. Theoretical training in aquatic animal models.

AWARDS & LEADERSHIP

- Young Investigator Award**, TiCardio Training School, Maastricht (2022)
- Marie Skłodowska-Curie Actions Doctoral Fellow, TiCardio ITN (2020–2023)
- Elected Early-Stage Researcher Representative, TiCardio Supervisory Board** (2021–2023)
- Co-founder and organiser, Gene & Tonic Cité (2026–present)

EDUCATION

PhD, Health Biology
Aix-Marseille Université & Johannes Gutenberg University Mainz | Dec 2023

MSc, Neuropharmacology (2.1)
University of Galway | 2017

BSc, Life Sciences
University of Delhi | 2015

University Diploma, Student Entrepreneurship (D2E1)
Aix-Marseille Université | 2024

LANGUAGES

English: Native / Fluent

French: A2-B1 (Intermediate)

SCIENTIFIC PROFILE

MSCA-trained cell and molecular biologist with a PhD in Health Biology and postdoctoral experience in mammalian cell biology, extracellular vesicles, quantitative functional assays and LC-MS/MS proteomics. Experienced in combining primary human cell models, flow cytometry, confocal microscopy and quantitative proteomics to investigate mechanisms of ageing, cellular senescence and intercellular communication. Motivated to apply these approaches to understanding how metabolism regulates stem-cell function, tissue ageing and regenerative potential.

RESEARCH EXPERIENCE

Postdoctoral Researcher | Apr 2025 - Mar 2026

Lavieu Lab, Université Paris Cité | Paris, France

- Optimised and standardised quantitative NanoLuc-based workflows for reproducible assessment of extracellular-vesicle-mediated cargo delivery and intracellular functional readouts.
- Optimised artificial-fusogen overexpression, Lipofectamine transfection, plasmid preparation, EV dosage and assay parameters for quantitative cargo-delivery studies.
- Evaluated uptake and functional intracellular cargo delivery of modified and lipid-hybridised EVs in a cross-institute translational collaboration.
- Coordinated two parallel projects, including experimental planning, structured troubleshooting, documentation, result review, scientific communication and guidance of Master's and PhD researchers.

Doctoral Researcher - MSCA TiCardio ITN | Jan 2020 - Dec 2023

Aix-Marseille Université, C2VN & Johannes Gutenberg University Mainz, CTH | France / Germany

- Investigated how ageing and replicative senescence alter primary human endothelial cells, endothelial EVs and communication with recipient cells.
- Established long-term HAoEC and HUVEC models and quantified cellular stress, senescence and endothelial activation using SA-beta-galactosidase, gamma-H2AX, cell-cycle/stress markers, flow cytometry, immunofluorescence and confocal microscopy.
- Isolated and characterised EVs by differential centrifugation, size-exclusion chromatography, NTA, TRPS/qNano, zeta potential/DLS, microscopy and flow-based approaches.
- Assessed thrombo-inflammatory mechanisms using tissue-factor activity, thrombin-generation assays, TNF-alpha priming and recipient-cell functional experiments.
- Prepared S-Trap samples for quantitative LC-MS/MS proteomics and analysed datasets using MaxQuant, Perseus, R, Cytoscape, Reactome and FunRich.
- Identified age-associated extracellular-vesicle signatures, prioritised candidate proteins for mechanistic validation and contributed to a first-author manuscript currently under peer review.

Earlier Research Experience

- Research Assistant, OmniSpirant/University of Galway (2019): engineered MSCs, EV therapeutics, lentiviral GFP transduction, NTA, DLS and PEGylation.
- Research Assistant, University of Galway (2017–2018): redox signalling, mitochondrial biology and quantitative protein analysis.

SELECTED PUBLICATIONS AND RESEARCH OUTPUTS

- Saraswat R. et al. First-author original research manuscript on age-associated endothelial extracellular-vesicle proteomics and function. Under peer review (2026). *Contact via website contact form for more details.
- Akbulut A.C., Saraswat R. et al. “*Blood Coagulation and Beyond.*” *Thrombosis and Haemostasis*. 2023;123(8):808-839. DOI: 10.1055/a-2052-9175.
- Konkoth A., Saraswat R. et al. “*Multifaceted Role of Extracellular Vesicles in Atherosclerosis.*” *Atherosclerosis*. 2021;319:121-131. DOI: 10.1016/j.atherosclerosis.2020.11.006.
- Saraswat R., McDonagh B. “*Diagonal Electrophoresis for the Detection of Proteins Involved in Disulfide Bonds.*” *Methods Mol Biol*. 2019;1855:279-286. DOI: 10.1007/978-1-4939-8793-1_23.

PRESENTATIONS, LEADERSHIP & PROFESSIONAL ACTIVITIES

- Oral presentation:** Senescence Molecular Signature on Endothelial Extracellular Vesicles, Joint TiCardio-INNOVTE Conference, Marseille, France (2023).
- Poster presentation:** Role of Endothelial Extracellular Vesicles in the Propagation of Pro-Senescent Signals and Thrombo-Inflammation, TiCardio Training School, Maastricht, The Netherlands (2022) – **Young Investigator Award**.
- Co-founder and organiser:** Gene & Tonic, Cité Internationale Universitaire de Paris (2026–present).

RESEARCH MOBILITY AND COLLABORATION

- MSCA doctoral secondments at CTH Mainz (cellular senescence and vascular thrombosis models and assays, intravital EV imaging, and mouse vena cava ligation training) and ISAS Dortmund (quantitative LC-MS/MS proteomics).
- Cross-laboratory project coordination and scientific collaboration across France, Germany and Ireland.