Supervisor Portfolio for the Doctoral Programme in Biosciences and Drug Research

Cell Biology

Guillaume Jacquemet

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Group Name: Cell Migration Lab
Unit: Cell Biology
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Areas of Expertise

- Cancer cell biology
- Cell adhesion and migration
- Microscopy and live imaging
- Image analysis

Research Projects

- The role of filopodia during breast cancer progression
- Cancer cell communication via filopodia trans- endocytosis
- Deciphering the mechanisms of pancreatic cancer metastasis
- The role of mechanosensitive calcium channels in melanoma
- The role of TLNRD1 in endothelium homeostasis
- Democratising deep learning for microscopy with ZeroCostDL4Mic

Special Methodologies & Techniques

- Microscopy (super-resolution microscopy, live imaging, traction force microscopy)
- Image analysis, deep learning and computer vision
- Cell and molecular biology
- Mass spectrometry (identification of protein-protein interactions using pull-downs and biotinylation-based strategy)
- Zebrafish embryo to study cancer biology
- Flow and perfusion chambers

Major Funding & International Networks

- Sigrid Juselius Foundation
- Wellcome Trust
- Academy of Finland
- Finnish Cancer Foundation
- Inflames
- Turku Bioscience

Selected Publications

- TLNRD1 is a CCM complex component and regulates endothelial barrier integrity. J Cell Biol. 2024 Sep 2; 223(9): e202310030. DOI: 10.1083/jcb.202310030
- CellTracksColab is a platform that enables compilation, analysis, and exploration of cell tracking data. PLOS Biol. August 8, 2024. DOI: 10.1371/journal.pbio.3002740
- MYO10-filopodia support basement membranes at preinvasive tumor boundaries. Dev Cell. 2022; 57 (20), 2350- 2364. E7. DOI: 10.1016/j.devcel.2022.09.016
- TrackMate 7: Integrating state-of-the-art segmentation algorithms into tracking pipelines. Nat. Methods. 2022; 19 829832. DOI: 10.1038/s41592-022-01507-1
- Democratising Deep Learning for Microscopy with ZeroCostDL4Mic. Nat Commun. 2021; 4:15;12(1):2276. DOI: 10.1038/s41467-021-22518-0