

IDIL mentoring proposal on the resistance of melanoma to MAPK inhibitors

Romain Larive

In the Montpellier Cancer Research Institute, I propose to mentor an IDIL student from 2025-2026 on the resistance of melanoma to MAPK inhibitors.

Title

MelanoPredict : How to predict the unpredictable with the rare melanoma cells that will resist to therapy ?

Keywords

Advanced melanoma; Resistance to targeted therapies; Spatial phosphoproteomics.

Description

The efficacy of MAPK inhibitors is limited by the very frequent emergence of acquired resistance. Our hypothesis is that the intracellular MAPK signaling network lies at the heart of melanoma resistance to MAPK inhibitors. We have developed a single-cell quantitative phospho-proteomics approach to analyze intratumoral heterogeneity, and we recently identified a minority subpopulation with a MAPK network distinct from the main population. The internship objectives will be to study the involvement of MAPK subpopulations in MAPKi resistance, and to identify these subpopulations in biopsies from melanoma patient. Anticipating therapeutic failures due to cancer resistance to treatment is a key factor in moving towards effective personalized medicine.

Host laboratory and research environment

The Montpellier Institute of Cancer Research (IRCM) carries the central theme "From concepts to biomarkers and innovations in precision medicine" with the flagship program "Tumor cell plasticity and microenvironment: escape and vulnerability to treatments". In the "[Tumor Invasion Signaling](#)" team, our group is composed of Romain Larive (leader), Florian Favier (PhD student in cancer biology, 2nd year) and Alain Mangé (research engineer). The IRCM offers a stimulating and collaborative international environment, and has the technical platforms essential for the internship (tumor heterogeneity exploration platform for single cell proteomics; tumor organoid platform).

Position summary and perspectives

The student will benefit from a monthly stipend of 550~600 € and will have the possibility to apply, depending on his/her motivation, for a PhD in our research group.

Application

The selection of the candidates will be based on the following criteria: Experience in molecular pharmacology, biochemistry and cell biology (cell culture, Flow cytometry, proteomics, fluorescence microscopy) ; Autonomy, initiative, and ability to work in a team; Interest in cancer research and interdisciplinarity; Communication and organizational skills.

Applications should be sent to romain.larive@umontpellier.fr with a cover letter summarizing qualifications and a CV including academic records (grades and rankings) and letters of reference (if available).