



Internship proposition
One page max
M2 I3/OHNU 2024-25



Lab: CRCI²NA, Centre de Recherche en Cancérologie Immunologie Intégrées Nantes-Angers

Team: PETRY, Plasticity of the Ecosystem of Tumor after Radiotherapy

Name and position of the supervisor: Noémie Joalland, Postdoctoral Researcher

Email of the supervisor: noemie.joalland@univ-nantes.fr

Candidate: none

Title of the internship:

Impact of the senescent tumor microenvironment on neuroblastoma relapse

Summary of the internship proposal:

Background: Neuroblastoma is a pediatric tumor that derives from nerves and generally localizes along the abdominal sympathetic chains. It occurs around the first year of life and for children aged of 18 months and over, after a surgical resection, aggressive rounds of combined chemotherapies represent the standard treatment. Unfortunately, in about 40% of cases, tumor relapse, became chemo-resistant and metastasis in bones and bone marrow. To better understand mechanisms of resistance to standard treatment and propose new therapeutic strategies, PETRY team is interesting to the contribution of the senescent tumor microenvironment. Senescence is a natural processing of aging but it can be induced by genotoxic stress, such as radio or chemotherapy, and modify both phenotype and secretome of peritumoral microvasculature. The team already demonstrates that radiotherapy induces endothelial senescence in glioblastoma patients, leading to radio-resistance and increased aggressiveness of relapse.

Project: The Master II will participate to the description of the impact of endothelial senescence on neuroblastoma chemoresistance and metastasis capability. This project combines characterization of the secretome of senescent endothelial cells and functional assays on neuroblastoma cell lines. The final goal was to validate CXCL12/CXCR4 as a chemokine/receptor couple to target in new therapeutic strategy for neuroblastoma patient in relapse.

Techniques: cell culture, videomicroscopy, molecular biology, ELISA assay

Option(s) linked to the project:

- Clinical Research Profile
- Data Analyst Profile
- Experimental Biology Profile