Internship proposition
One page max
M2 0HNU 2025-26

Lab: CRCI²NA, Centre de Recherche en Cancérologie Immunologie Intégrées Nantes-Angers, UMR Inserm 1307 CNRS 6075, Nantes Université

Team: PETRY, Plasticity of the Environment of the Tumor after RadiotherapY
https://crci2na.univ-nantes.fr/en/research/team-10

Name and position of the supervisor: François Paris, Inserm Research Director, Head of the team

Email of the supervisor: francois.paris@inserm.fr

Candidate: none

Title of the internship: Anti-senescence strategies in 3D bioprinted model of GBM

Summary of the internship proposal:

Background: PETRY team in the CRCI²NA is contributing to glioblastoma research by demonstrating the importance of the vascular network in acute and chronic responses to radiotherapy. PETRY observes that radiological stress induces early aging of the peritumoral microvasculature, known as endothelial senescence, leading to increased aggressiveness of GBM relapses.

Project: The Master II project will contribute to the development of new strategies against GBM by investigating new approaches eliminating senescent cells induced by radiotherapy. During their training, students will specifically apply cell and molecular biology, confocal microscopy and live microscopy technologies, with the support of the PETRY technical team and national technology platforms. Specifically, the PETRY team has developed an inducible shRNA approach against critical molecular targets involved in the genesis of senescence in irradiated endothelial cells. The current project will seek to better understand the dynamics of these players involved in senescence in 3D bioprinted muticellular models (including endothelial cells, astrocytes, tumor cells and extracellular matrix) representing the complexity of GBM. In this model, senescence will be monitored as a function of time after radiotherapy by immunostaining and confocal analysis. The fate of tumor cells and astrocytes will be studied time, irradiation and the endothelial cell senescence inhibited or not by our shRNA approach.

Prospects: These results will represent a first step towards the development of dedicated pharmacological treatments enhancing the efficacy of radiotherapy by specifically targeting radiation-induced vascular dysfunctions.

Internship proposition

One page max

M2 0HNU 2025-26

Option(s) linked to the project:

☐ Hematology
☒ Oncology
☐ Immunology-Cancerology
☐ Nuclear Medicine

Option(s) linked to the profile:

☐ Clinical Research Profile
☐ Data Analyst Profile
☒ Experimental Biology Profile