



Internship proposition
One page max
M2 OHNU 2025-26



Lab: CIRCI2NA

Team: PETRY

Name and position of the supervisor: C. Pecqueur, DR CNRS

Email of the supervisor: claire.pecqueur@univ-nantes.fr

Candidate:

Title of the internship: Investigating the role of IDH1/2 on molecular transition in GBM

Summary of the internship proposal:

Glioblastoma (GBM) is a highly heterogeneous and aggressive primary brain tumor characterized by dynamic transitions between distinct molecular states, contributing to therapeutic resistance and tumor recurrence. Among the genetic alterations implicated in GBM, mutations or loss of function in isocitrate dehydrogenase (IDH) genes significantly reshape the tumor epigenome and metabolism, yet their role in driving state transitions remains poorly understood.

This project aims to investigate how IDH status influences the molecular plasticity of GBM cells. To do so, we will use primary GBM cultures derived from patient tumors and manipulate IDH expression through lentiviral transduction strategies. The innovative aspect of this study lies in the use of genetically encoded molecular state tracers, reporters that allow real-time monitoring of specific transcriptional programs associated with defined GBM cell states (e.g., proneural vs. mesenchymal). The student will be responsible of cell transduction and/or expansion, as well as the phenotypic characterization of these cells through flow cytometry, microscopy and western blot.

This interdisciplinary project integrates molecular biology, cancer genetics, and advanced imaging and cytometry approaches. It will provide new insights into the mechanisms by which IDH contributes to GBM cell plasticity, with potential implications for therapeutic targeting of cell state transitions.

Option(s) linked to the project:

Hematology

Immunology-Cancerology

Oncology

Nuclear Medicine

Option(s) linked to the profile:

Clinical Research Profile

Experimental Biology Profile

Data Analyst Profile