Internship proposition
One page max
M2 0HNU 2026-27

Lab: CRCI2NA

team: Team 9 - CHILD (ChromatIn and transcriptionaL Deregulation in pediatric bone sarcoma)

Name and position of the supervisor: GEORGES Steven, MCU

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Candidate: None

Title of the internship: Functional Validation of Super-Enhancer-Associated Targets in Chemoresistant Alveolar Rhabdomyosarcoma

Summary of the internship proposal:

Alveolar rhabdomyosarcoma (ARMS) is an aggressive pediatric cancer driven by the oncogenic fusion transcription factor PAX3-FOXO1 and frequently associated with chemotherapy resistance. Recent transcriptomic and epigenomic analyses performed in our laboratory have identified several super-enhancer-associated candidate genes potentially involved in chemoresistance. In addition, chemotherapy-sensitive and -resistant RH30 cell models have already been established and characterized.

The aim of this project is to functionally validate these candidate genes and their regulatory elements using CRISPR-dCas9-based approaches (KRAB/VPR), gene expression analyses, and cellular assays assessing proliferation, viability, and drug response. The ultimate goal is to identify novel transcriptional and epigenetic vulnerabilities that could be exploited therapeutically in chemoresistant fusion-positive rhabdomyosarcoma.

The student will gain hands-on experience in cancer biology, molecular biology, epigenetics, and functional genomics.

Option(s) linked to the project:
☐ Hematology Immunology-Cancerology
☒ Oncology ☐ Nuclear Medecine
Option(s) linked to the profile:
☐ Clinical Research Profile ☒ Data Analyst Profile
☒ Experimental Biology Profile