Internship proposition
One page max
M2 I3/0HNU 2024-25

Lab: CRCI2NA / INSERM UMR 1307 / CNRS UMR 6075 / Nantes Université

team: Team 9 - CHILD "CHromatin and transcrIptionaL Deregulation in pediatric bone sarcoma"

Name and position of the supervisor: Bénédicte BROUNAIS-LE ROYER

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Candidate:

Title of the internship: Implication of P300 in osteosarcoma development

Summary of the internship proposal:

Osteosarcoma is the most common primary malignant bone tumor, with 250 patients diagnosed each year in France, and mainly affects children and adolescents. Patient survival has not changed in recent decades, and is closely linked to the response to chemotherapy. It reaches 60-70% at 5 years for patients with localized tumors, and only 30% when pulmonary metastases are detected at the time of diagnosis. It is therefore essential to develop new therapeutic strategies to improve the treatment of osteosarcoma patients. In this context, we are interested in the mechanisms of transcriptional regulation and more specifically in histone acetylation by the Histone Acetyltransferase (HAT) P300 at the enhancers that govern gene expression in osteosarcoma cells.
The aim of this research project is to better understand how histone acetylation by HAT P300 regulate gene expression in osteosarcoma cells and consequently control the development of these tumors. We will therefore evaluate the involvement of HAT P300 in the metastatic tumor development of osteosarcoma *in vitro*, using PROTAC (Proteolysis-Targeted Chimaeras) to selectively degrade P300. We will focus on the involvement of P300 in the migration and invasion of PDX-derived osteosarcoma cells (OS052 and OS525). Then, the therapeutic potential of JQAD1 will be analyzed in a pre-clinical model of osteosarcoma using these same cells and recently developed within our team.

Option(s) linked to the project:

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