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

Lab: CRCI2NA

team: SATE (#7) and Epi2TR group

Name and position of the supervisor: PF CARTRON (CRCN INSERM) and J RAIMBOURG (ongologist ICO)

Email of the supervisor: pierre-francois.cartron@inserm.fr and Judith.raimbourg@ico.unicancer.fr

Candidate: unidentified

Title of the internship: Evaluation of bifunctional directed against PDL1/PD1 and Epiplayer/protein-X interaction in non-small cell lung cancer

Summary of the internship proposal:
Immunotherapy aimed at blocking PDL1/PD1 interactions has emerged as one of the most promising therapies in the fight against cancer. To this end, several strategies have been developed, ranging from the use of antibodies to peptides.
At the same time, the development of epidrogens (*i.e.* molecules targeting epigenetic gene regulators) is also a fast-growing field, with the development of increasingly selective molecules. In the laboratory, we have demonstrated the need to selectively target certain DNMT/x-protein complexes without altering the integrity of other DNMT/x-protein complexes.
Based on these two observations, a research program is being implemented by the research groups led by Dr M Lopes (IBMM, Montpellier) and Dr PF Cartron (CRCI2NA, Nantes) to develop a series of bifunctional peptides targeting both PDL1/PD1 and Epiplayer/protein-X interactions.
The Master2 research program proposed here is part of this research program, focusing on PD-L1. More specifically, the Master1 research program will aim to:
1. Identify a cell model suitable for studying the bifunctional peptides developed.
2. Test the inhibitory/saturating effect of the peptides synthesized/designed by our team (comparison with other strategies targeting PD-L1).
3. Analyze the impact of PD-L1 saturation on cellular phenotypes (doubling time, migration, invasion, sensitivity to apoptosis induction, etc.).
4. Determine whether the use of peptides targeting PD-L1 induces epigenetic/epitranscriptomic/transcriptomic reprogramming.
5. Test the efficacy of the most effective peptides in cellular, organoid and in vivo models.

<u>Option(s) linked to the project:</u>

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