CMD InnoCARE (Innovation pour les maladies CArdiovasculaires, métaboliques et REspiratoires)

Master 2 Internship proposal (2024-2025)

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Profile(s) linked to the project:
☒ Experimental Biology *(Recherche expérimentale)*
☐ Research and Biological Data Analysis *(Recherche et analyse de données biologiques)*
☐ Clinical Research *(Recherche clinique)*

Lab: UMR1087

Team: Equipe 4 « Cardiometabolic diseases »
https://umr1087.univ-nantes.fr/research/research-teams/team-iv-research-programs-2022
EV-Link axis : Extracellular vesicles and inter-organ communication in cardiometabolic diseases
https://umr1087.univ-nantes.fr/research/research-teams/program-iv-4-extracellular-vesicles-and-inter-organ-communication-in-cardiometabolic-diseases

Name and position of the supervisor: **Soazig Le Lay, Inserm Research director**

Email of the supervisor: **soazig.lelay@inserm.fr**

Candidate (if known):

Title of the internship:
Extracellular vesicles : new non-invasive biomarkers of MASLD severity

Summary of the internship proposal:
Metabolic dysfunction associated liver Disease (or MASLD) is an early stage of metabolic liver disease, occurring in the context of obesity and affecting 25% of the world's population. The progression of this steatosis to steatohepatitis (or MASH) considerably increases the risk of cirrhosis and hepatocellular carcinoma, which are associated with a poor prognosis. Progression from MASLD to MASH remains difficult to diagnose in the absence of invasive liver biopsy making crucial the discovery of new non-invasive diagnostic markers. In this context, extracellular vesicles (EVs) have recently emerged as biomarkers of pathological damage, due to their informative content of the pathophysiological state and relative availability in the blood.

We hypothesized that circulating EVs might represent promising non-invasive biomarkers for diagnosing the severity of MASLD.

Based on a patient cohort (CHU d'Angers) comprising patients at different stages of MASLD severity and plasma banks, we aim to perform multiparametric phenotyping of plasma EVs in order to test the potential of plasma EV biomarkers for the diagnosis of MASLD severity. To this end, a combination of techniques will be used to assess EV size/concentration (NTA), EV protein markers (Western-Blot), EV phenotyping (flow cytometry) and mitochondria-containing EVs (digital PCR and flow cytometry).

Form to be sent by email to **gpinnocare@univ-nantes.fr**