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

Master 2 Internship proposal (2024-2025)

1 page maximum

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: L'institut du thorax, INSERM UMR1087, CNRS UMR 6291

Team: Team III, Vascular and Pulmonary Diseases

Name and position of the supervisor: Quillard Thibaut

Email of the supervisor: thibaut.quillard@univ-nantes.fr

Candidate (if known):

Title of the internship: heterogeneity of vascular cells and atherosclerotic plaques

Summary of the internship proposal:

Atherosclerosis and its complications (myocardial infarction, stroke, etc.) remain the leading cause of death worldwide, despite better understanding of the disease's pathophysiology and improved clinical management of patients. Atherosclerotic plaques are highly heterogeneous, depending on their anatomical location. Plaques arising from the carotid arteries are lipid-rich and inflamed, as in contrast, lesions developing in the femoral arteries are highly fibrous and largely calcified. Our work on numerous human samples suggests that intrinsic differences in vascular cells between these territories may participate in differential plaque formation, and our recent results show that phenotypically and functionally, smooth muscle cells of carotid and femoral arteries are different and respond differently to atherogenic stimuli such as oxidized lipids.
This internship will continue to compare the responses of these vascular cells (proliferation, apoptosis, oxidative stress, endoplasmic reticulum stress) to atherogenic stimuli. We will also analyze the functional role of signaling pathways in these cellular functions associated with atherosclerosis.