Internship Proposition
(one page max)
Master 2 GP Immunology & ImmunoIntervention (I^3)
2024-2025

Lab: CR2TI

Team: 4

Name and position of the supervisor: Nicolas Degauque CRCN / Antoine Néel PU-PH

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Candidate (if internship filled): Aurélie Briane

Title of the internship: Modulation of the CD8 T lymphocyte response by B lymphocytes in ANCA vasculitis

Summary of the internship proposal:

Anti-neutrophil cytoplasmic antibody (ANCA)-associated vasculitis (ANCAVs) are rare autoimmune diseases that represent a subset of systemic vasculitis whose pathophysiology remains unclear. Our preliminary data suggest that CD8 T cells play a pathogenic role in AAV and that the effect of B depletion on this CD8 T cell response contributes to the efficacy of rituximab, an anti-CD20 depleting mAb. B lymphocytes could then be considered a key player in the pathophysiology of AAV, with a role that goes beyond the humoral response. Therefore, we intend to pursue the study of B lymphocytes regulation of CD8 T lymphocytes in AAV by analyzing the diversity of functions of CD8 LT subpopulations (proliferation, cytotoxic function, cytokine secretion), characterizing the functions of B cell subpopulations, and characterizing the mechanisms of B cell/CD8 T cross-talk according to the clinical context (diagnosis of AAV, remission phase). The mechanisms involved will be characterized by exploring the contribution of soluble factors secreted by B cell and ligand-receptor interactions. Finally, a CD8 T lymphocyte / B cell / glomerular endothelial cell coculture model will be used to confirm the active role of CD8 T lymphocytes in the development of vasculitis. Two control groups will be used: age- and sex-matched healthy volunteers (HV) and patients with systemic scleroderma (SyS; systemic autoimmune disease). Using cell culture assays and multiplex flow cytometry, we aim to better understand the role of CD8 T cells in AAV and how the B cell compartment functionally influences CD8 subpopulations. CD8 T cells could then be used as a potential therapeutic target in autoimmunity or as an early predictive marker of relapse.

Option(s) linked to the project:

☐ Clinical Research Profile (Recherche Clinique)
☐ Data Analyst Profile (Recherche et Analyse de Données Biologiques)
☒ Experimental Biology Profile (Recherche Expérimentale)

Form to be sent by email to : gpi3@univ-nantes.fr