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

Lab: INCIT, UMR 1302

Team: 1

Name and position of the supervisor: PATINEC Allan Post-doctoral researcher

Email of the supervisor: allan.patinec@univ-nantes.fr

Candidate (if internship filled): Tiphaine CLEMENT

Title of the internship: Identification of the antigens from *Faecalibacterium Duncaniae* that induces DP8αα Treg lymphocyte reactivity

Summary of the internship proposal:

Our team identified a few years ago a new population of double-positive regulatory T cells (CD4/CD8αα), called DP8, which recognizes a bacterium from the microbiota *F. Duncaniae*. We have shown, in individuals developing inflammatory pathologies of the digestive tract (e.g., Crohn's disease) or in those presenting strong inflammatory reactions following hematological transplants (graft-versus-host reaction), that *F. Duncaniae* was much less represented in the microbiota of patients, accompanied by a significant decrease in the number and activity of DP8 Tregs, thus confirming the cause-and-effect link between the bacterium, the DP8 and the pathophysiology of these diseases.

We have recently demonstrated, in *in-vivo* models of induced inflammation in mice, that the adoptive transfer of DP8 can resolve inflammation in treated animals. The development of an immunotherapy protocol by adoptive transfer of DP8 is currently underway in the laboratory to propose a therapeutic solution for the affected patients. The administration of an antigenic peptide recognized by these DP8 would be simpler to implement and certainly better tolerated than an adoptive transfer of lymphocytes. That is why we propose to identify the antigen of *F. Duncaniae* recognized by the DP8, in order to have an alternative to the transfer of T lymphocytes.

It is in this context that the M2 internship will take place, under the direction of the researcher in charge of this work. The objective will be to produce DP8 clones specific to *F. Duncaniae*, then to search for immunogenic bacterial sub-fractions and finally to screen molecules of interest in order to identify candidate motifs for a potential treatment.

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