

## THESIS POSITION in IMMUNOLOGY

**Team:** Pathophysiology and immunotherapy of inflammatory disorders (Pi2D)

**Supervisors:** Dr M.Mar NARANJO GOMEZ and Pr Yves-Marie PERS  
Antibodies, Immunomodulation and Immunotherapy

### **Integrated 3D Analysis of Neutrophils: Bridging Clinical and Multi-omics Insights Towards Precision Medicine in Autoimmune Arthritis Disease**

We are seeking a highly motivated PhD candidate to join our innovative Immun4Cure initiative at the Institute for Regenerative Medicine & Biotherapy (IRMB; Montpellier, France). Our collaborative project is an exciting opportunity to explore the intersection of **immunology and RNA biology**.

**Context: Autoimmune diseases (AID)** involve the immune system mistakenly attacking the body's tissues, causing chronic inflammation and damage, and affecting millions of people globally. **Rheumatoid Arthritis (RA)** is one such disease, marked by persistent joint inflammation driven by immune cells like **neutrophils (PMNs)**. While PMNs defend against pathogens, their uncontrolled activation can harm tissues and is linked to RA. Maintaining a tightly regulated balance between protective versus deleterious effect of PMN is crucial. Yet the role of PMNs in RA remains unclear. Differentiating PMN profiles during remission and flare-ups could enhance our understanding, improve patient stratification, and support personalized RA treatments.

The main objective of the project is to acquire **high dimensional molecular and cellular relevant data** on the integrative analyses of **PMN biology** (phenotype/function and molecular profiles associated to their diversity) in blood and synovial liquid RA patient's samples. More precisely, the thesis objectives plan to identify **new biomarkers** for the diagnosis of autoimmune diseases and to deepen the characterization of RA as well as to explore the mechanisms associated.

**Environment:** The thesis position is fully supported during 3 years by the IHU (University Hospital Institute) Immun4Cure. This institute offers a breakthrough program with new cellular and biological therapeutic tools to fully restore immune homeostasis in autoimmune diseases and change the course of care and prognosis. Immun4Cure brings together 11 research institutes, 10 clinical departments, 3 hospital laboratories, 2 research infrastructures and a whole range of technical platforms.

Our global **Translational Research Program** proposes to study at multidimensional level the function of PMN and their interactions with other myeloid cells in autoimmune disease patients (the Clinical Unit-CHU Montpellier) in collaboration with Dr Alexandre DAVID (expert in post-transcriptional mechanisms at IRCM, Montpellier). The project represents a genuine interdisciplinary collaboration, uniting partners whose combined expertise covers the crucial aspects of clinical, molecular biology, immunology and integrating data.

**Required skills:** knowledge in immunology, experience in cell biology and multiparametric analyses, to be a driving force and capable to work independently, proficiency in English.

**Funding:** IHU IMMUN4CURE. Beginning of the contract: 1 October 2024

If you are motivated to improve and define a new care pathway for patients, we encourage you to apply to join our team!

**How to apply:** Submit CV/Resume and Cover Letter (+Reference/s) to Dr M. Mar NARANJO GOMEZ ([maria.naranjo@inserm.fr](mailto:maria.naranjo@inserm.fr)) and Pr Yves-Marie PERS ([ym-pers@chu-montpellier.fr](mailto:ym-pers@chu-montpellier.fr)).