



Two postdoctoral positions in Immunology are available at the “Vulnerability and Ageing of the Immune System” team within the ImmunoConcept Laboratory of the Bordeaux University, France under the supervision of Victor Appay.

Start and Duration of the appointments: From October 2021 for 2 to 3 years

Research context and projects: Elderly people present an increased rate of severe infections and cancers compared to younger individuals, resulting in a significant reduction in their quality of life and increasing medical costs. Growing evidence indicates that disease in the elderly is related to changes of the immune system competence with ageing, characterized by quantitative and qualitative alterations of immune cells, and a hyper-inflammatory status, referred to as **immunosenescence and inflammaging**, respectively.

Our projects tackle immunological questions pertaining to the induction or loss of effective **human T-cell responses**, from early immune compartments (i.e. hematopoietic stem cells and progenitors) to late memory T-cells in **older humans**, and individuals with **cancer** or infected by viruses (e.g **HIV, CMV or SARS-CoV-2**). We aim to I) Dissect the alterations of the **hematopoietic stem cell** compartment and their impact on lymphopoietic capacity in the elderly; II) Uncover impairments of antigen specific **naïve $\alpha\beta$ and $\gamma\delta$ T-cells** with old age, and develop strategies to improve **T-cell priming and vaccine** efficacy in this setting of ‘compromised’ immunity.

Candidate qualification and selection criteria: We seek highly motivated, creative and enthusiastic postdoctoral fellows, able to work independently with excellent communication skills. Applicants should have a Ph.D. with at least one first-author publication and a strong background in immunology. Basic knowledge of RNAseq analysis is an asset but not requested.

Criteria to evaluate candidates will include academic achievements, past research experience (internships, master thesis), interest in working in a multidisciplinary research environment, enthusiasm and communication skills

Application: Candidates should send their application including CV, a brief description of research accomplishments, list of publications, cover letter and contact for at least two referees into a single PDF file to Victor Appay (victor.appay@immuconcept.org).

Selected candidates will be contacted for an on-site or video interview.

PI profile: Victor Appay is a research director at the INSERM. The study of cellular immunity has been the central theme of his research for more than 20 years. His work has initially focused on the characterization of human T cells in various infectious contexts, particularly HIV-1 infection. His findings have provided refined mechanistic insights into the workings and induction of effective CD8⁺ T cell responses against HIV, and into the role of immune activation in the development of premature immunosenescence during HIV infection. In recent years, he concentrates increasing efforts on the study of immune ageing in the older population, with the aim to provide advanced understanding in the emerging field of immunogerontology.

Recent Publications:

- The STING ligand cGAMP potentiates the efficacy of vaccine-induced CD8⁺ T cells. JCI Insight. 2019.
- Elderly human hematopoietic progenitor cells express cellular senescence markers and are more susceptible to pyroptosis. JCI Insight. 2018.

Environment of the laboratory: The “Vulnerability and Ageing of the Immune System” team is **co-directed by Julie Dechanet-Merville and Victor Appay**, whose research focuses on human immunology, in particular the study of cellular immunity (i.e. mediated by $\alpha\beta$ and $\gamma\delta$ T-cells) in viral infection or cancer settings, and aims at finding solutions to boost effective immunity in pathological and ageing contexts.

The successful candidates will benefit from an excellent scientific environment and state-of-the-art research facilities within the ImmunoConcept Laboratory. This project will require a wide variety of techniques including multi-parametric flow cytometry, microculture approaches, single cell molecular profile analyses and T-cell receptor repertoire analyses applied to the study of human cohorts.

Bordeaux is among the most historical and attractive cities to live in France, with strong cultural and gastronomical assets, and benefits from an advantageous geographical situations in the South West of France (e.g. easy access to the sea, and only 2 hours from Paris by train).