



MedImmune, Inc.

Job Description

Position #SWB26RIA

Job Title: Postdoctoral Fellow – Science without Borders

Site: MedImmune, Gaithersburg, MD

Department: Research-Respiratory Inflammation and Autoimmunity (RIA)

Duration: 2 years

We are seeking a highly motivated postdoctoral fellow to join the Respiratory Inflammation and Autoimmunity (RIA) department to lead an independent research project focused on understanding the homeostasis and regulation of T follicular helper (T_{FH}) cells in the context of autoimmunity. The research will be conducted in a collaborative and innovative environment with a group of talented scientist and post-doctoral fellows in Medimmune's state-of-the-art laboratories. The position offers a unique opportunity for a talented scientist to work in a dynamic environment and to develop their career at the interface of basic research and translational sciences.

The central theme of this proposal is to evaluate the regulation of the follicular helper T cell subset in autoimmune disease. The factors that control homeostasis and regulation of various T cell subsets with autoreactive potential are unclear. T follicular helper (T_{FH}) cells are a highly specialized CD4 T cell subset involved with humoral immune responses. These cells are required for the formation and maintenance of the germinal center (GC) reactions that produce high affinity antibody producing B cells. Not only are these cells important for responses to foreign antigen but they have also been implicated in autoimmunity. However, very little is known regarding the role of T_{FH} cells during immune homeostasis and peripheral tolerance. A greater understanding of the role T_{FH} cells play in immune homeostasis, peripheral tolerance and autoimmunity could lead to the development of effective therapeutics for the treatment of autoimmune diseases. The candidate will independently design and execute experiments and summarize data as well as prepare publications.

Major Duties and Responsibilities:

Candidates will conduct in vitro and in vivo experiments using novel transgenic strains to examine the different homeostatic factors that regulate survival and proliferation of T_{FH} as well as the examination of their contribution to autoimmunity and mechanisms of peripheral T_{FH} tolerance. The candidate will independently design and execute experiments, summarize data, report them internally and externally through conferences. The candidate will also be required to prepare manuscripts for submission to peer review journals.

Requirements/Qualifications:

Nationality: Brazilian citizenship or permanent residency

Education: PhD in Immunology, Biology or related discipline

Experience: Doctoral and/or Post-Doctoral research

Special Skills/Abilities:

The successful candidate must have a background in immunobiology with at least one publication in the field of immunology.

- Well versed in the field of Immunology and autoimmunity
- Must be well-motivated and capable of working both independently and as part of a team
- Strong hands on in vivo modelling inclusive of immunizations and adoptive transfer skills are required.
- Background in multi-color flow cytometry is required
- In vitro cell based cultures and assay are required
- Background in mouse T cell and B cell immuno-assays is required
- Development and execution of ELISAs required

All applicants must have strong written and verbal communication skills with demonstrable abilities to conduct a logical research project.

Project Summary:

There are more than 80 classified autoimmune diseases that can be characterized by the presence of high affinity somatically mutated autoantibodies that arise in the germinal center located in secondary lymphoid tissues or ectopic follicles. The germinal center reactions that give rise to these autoantibodies are regulated by T_{FH} . T_{FH} are a specialized subset of differentiated CD4 T cells that supports germinal center B cell responses leading to the generation of somatically mutated, high-affinity class-switched antibodies. The indispensability of T_{FH} to the germinal center response has positioned these cells at a pivotal check point of immunological tolerance in the periphery. The role of dysregulated T_{FH} in disease pathogenicity has been correlated to the excessive production of autoantibody and end organ manifestation leading to conditions such as Sjögren's Syndrome, lupus nephritis, immune thrombocytopenia and also immunopathologies associated with lymphomas. Most recently it has been demonstrated that T_{FH} are included in the memory CD4 T cell pool and retain their ability to rapidly and effectively promote germinal center formation compared to naïve and non- T_{FH} memory T cells. An increased understanding of peripheral T cell tolerance in the germinal center is necessary to facilitate the development of T_{FH} specific novel therapeutics. This post-doctoral project will focus on the homeostasis and regulation of T_{FH} in both autoimmune and non-autoimmune environments using a novel transgenic mouse model. These studies are expected to help in the elucidation of molecules or mechanisms that regulate the homeostasis and peripheral tolerance induction in T_{FH} and may help in the development of strategies to specifically suppress their function in an effort to blunt their contribution to disease pathogenicity.

Application Instructions:

Please note that these postdoctoral positions are advertised under an AZ/MedImmune partnership with Brazilian Science without Borders (SWB). If you are interested in any of these positions, please apply through the SWB website specifying the position number, [click here](#).