Master Thesis

Project:
Role of tubulin-modifying enzymes in regulating myeloid cell function

Project description:
Immune-Mediated Inflammatory Diseases are caused by a loss of tolerance to self or harmless foreign antigens and are characterized by uncontrolled immune cell migration and cytokine production. Thus, the identification of mechanisms regulating these events is of high clinical relevance. Critical initiators of inflammation are tissue-resident myeloid cells, in particular, macrophages and dendritic cells. Microtubules represent a major constituent of the cytoskeleton and are essential regulators of a variety of cellular processes, including cell migration and the release of soluble factors (i.e. cytokines). Accumulating evidence suggests that specific post-translational modifications of tubulin are important to determine distinct microtubule functions. We have obtained data indicating that tubulin-modifying enzymes exert critical functions in regulating myeloid cell migration and/or cytokine secretion in the steady state and during inflammation. To investigate this hypothesis, we are combining the complementary expertise of our research teams. The experiments will involve animal models as well as multi-color flow cytometry, immunohistochemistry, in vitro cell culture and molecular expression profiling.

International and local embedding:
This project is a collaboration between the research teams of Drs. Michael Hahne (Montpellier) and Björn Clausen (Mainz). Our laboratories have a long-standing interest in studying the role and molecular control of myeloid cells in regulating immunity and tolerance. To this aim, our research focuses on the pathophysiology of various inflammatory disease models of the skin (contact dermatitis, psoriasis), intestine (colitis) and lung (asthma). In Montpellier, the Hahne team is part of the multidisciplinary Institut de Génétique Moléculaire de Montpellier (IGMM) (http://www.igmm.cnrs.fr/spip.php?rubrique32). In Mainz, the Clausen lab is part of the Institute for Molecular Medicine, headed by Prof. Ari Waisman, with a complementary research focus on T cell biology in mouse models of inflammatory brain disease (http://www.unimedizin-mainz.de/molekulare-medizin/home.html?L=1). In addition, our research is embedded in the interactive Research Center for Immunotherapy (FZI), which provides a stimulating scientific environment and state-of-the-art core facilities (http://www.fzi.uni-mainz.de/index_ENG.php).

Qualifications and skills:
You are a highly motivated Master student with a strong interest in immunology and translational biomedical research. You enjoy working independently as well as in a competitive research team. Relevant experience with murine models, flow cytometry and cell culture would be advantageous. Fluent proficiency in written and oral communication in English is a prerequisite.

Terms of employment:
The position is available immediately and the successful candidate will have the opportunity to perform her/his experiments at the IGMM in Montpellier. We offer an interesting and challenging research project, individual supervision and working in a young, dynamic, international team. In France, Master students will be compensated with a so-called “gratification” of about 500 € per month.

Information and application:
For further information regarding this vacancy, please contact Prof. Dr. Björn Clausen, E-mail: bclausen@uni-mainz.de, Tel: +49-(0)6131-2204; or Dr. Michael Hahne, E-mail: michael.hahne@igmm.cnrs.fr, Tel: +33-4 34359639. Interested candidates can send their electronic application in English, including a letter of motivation, Curriculum Vitae, credentials and qualifications, and reference contact information, to Prof. Clausen or Dr. Hahne.