DIACYLGLYCEROL KINASES IN THE CONTROL OF IMMUNE RESPONSE AND CANCER PROGRESSION GROUP

DEPARTMENT OF IMMUNOLOGY AND ONCOLOGY

We are looking for highly motivated candidates with interest in immunology and cancer to develop a PhD in T lymphocyte biology and immunotherapy. Our group has a long-standing interest in decipher the molecular mechanisms that limit antitumor T cell responses and the development of new alternatives to circumvent this problem. We have helped to demonstrate that one of the main mechanisms that restricts antitumor T cell functions involves two members of the Diacylglycerol Kinase family of proteins. Failures to proper control these enzymes trigger an unbalance between Calcium and Diacylglycerol signals that ultimately drive T lymphocytes into hypo-responsive states. Fine-tuning of DAG-based signaling in T cells is critical to shape tumor immune surveillance. The candidate will participate in the project Diacylglycerol Kinase targeting to overcome resistance of solid tumors to immunotherapy (DGKTARGET) (PID2022-136871OB-I00) developing some of the objectives that ultimately aim to fully unleash the potential of targeting these two kinases to reinvigorate the immune response to facilitate tumor destruction.

This project will be developed by the group that Prof. Mérida (Orcid: 0000-0003-2762-6241) heads in the Department of Immunology and Oncology (DIO) at the National Centre for Biotechnology. The Mérida's team is considered of reference in the DGK field and along the years has generated a large body of knowledge as well as many tools for DGK research including plasmids, genetically modified cells lines, antibodies and mouse models. The group has a large expertise in the study of T cell signaling and has optimized several techniques of use in the area of immuno-oncology including characterization of tumor-infiltrating-lymphocytes by flow cytometry, 3D cultures and xenograft models. The project has important translational potential and will provide an excellent opportunity for the student to acquire proficiency in a variety of methodologies including use of animal models, cytometry, microscopy, cell culture and molecular biology. In the laboratory we maintain several international collaborations that will provide the opportunity of spending some periods abroad to extend his/her training in different techniques. The CNB and more specifically the DIO provide an excellent framework for the development of this project providing all the necessary equipment, facilities and common services. Assistance to seminars and participation in courses will further implement the formation of the student along these years. The proposed project fits perfectly with the Ph.D. program in Molecular Biosciences at the UAM. This doctoral program comprises a series of theoretical and practical courses in the areas of Molecular and Cell Biology with a clear biomedical orientation.

More information CNB web page

http://www.cnb.csic.es/index.php/es/investigacion/departamentos-de-investigacion/inmunologia-y-oncologia/role of diacylglycerol kinases in the control of immune response and cancer progression

Requirements:

Degree in Biomedical Sciences.

Master in Biomedical Sciences.

Previous experience in the immunology field will be valuable. Indispensable a good level of English.