Facultad de Ciencias

MASTER'S DEGREE IN BIOMEDICAL RESEARCH
Research Project Proposal
Academic year 2024-2025

Project Nº 15
Title: Implementation of new fluorescence tag approaches for tracking cell-cell interactions in the tumor microenvironment
Department/ Laboratory *Laboratory where the project will be carried out indicating Department, Area, Faculty, CUN, CIMA etc.* Laboratory of dynamics of anti tumor immunity. Immunology and Immunotherapy department
Director 1 Álvaro Teijeira Sánchez **Contact:** *ateijeiras@unav.es* **Codirector:** **Contact:** *Contact e-mail*
Summary *Immune cells are highly motile cells that frequently interact with each other and other stromal cells. Such interactions fine tune immune cell functionality by providing outside-in signals by receptor -receptor ligand interactions. Few tools have been developed so far to identify cell-cell interactions in vivo. Our lab is especially interested in the dynamics of immune responses within the antitumor immune responses. Therefore, to have in place efficient tools to track cell interactions and identify cells that have interacted with others is of great need. The Master student to join our group will implement several fluorescence -based techniques to allow the detection of interaction of immune and stromal cells with antitumor T cells. For this purpose, the use of two different tools, slpmCherry (Ombratto et al. Nat 2019) and Puffin (Lebeke T et al. BioxRiv). Will be set up. Cross comparison between both systems will be performed in vitro assays. Using well established transduction protocols, retroviral vectors will be used to infect transgenic T cells prior in vivo transfer. Interacting cells will be identified both by Flow cytometry and fluorescence microscopy techniques. The candidate will be trained in a plethora of techniques ranging from molecular biology, cell culture, in vivo experimentation to live imaging, conduct a independent research project and collaborate with other members of the team to implement novel state of the arts tools for immunoncology research.*

yes	X
no	

Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?