

CiQUS Lecture



Adaptive immunity: From nanoparticle-shaped antibody repertoires to COVID-19 T cell responses

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More info: [this link](#)



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Abstract:

Adaptive immunity is characterized for being pathogen-specific, in contrast to the innate responses, which are quicker and non-specific defenses against both external and self threats. In this talk, I will touch upon both branches of adaptive immunity, namely B and T cell responses, in different contexts. Since B cells are mainly in charge of producing high-affinity antibodies against antigens, therapies inducing potent antibody production are very attractive for a wide range of diseases, including viral infections and tumors. In the first part, I will show how nanoparticles of different features can induce changes in the antibody repertoire from rats, and give shape to the antibody responses by modifying certain parameters of the particles. On the other hand, I will show research on T cell responses, particularly cytotoxic responses which are one of the main soldiers against infected and malignant cells. T cell responses against COVID-19 are depicted to show the specific activation of cytotoxic T cells by SARS-CoV-2, and generation of specific memory for developing recall responses in a large cohort that served to better understand the status of the pandemic.

Biosketch:

Dr. Pérez Potti did his bachelor studies in Biology at Universidade de Vigo focusing on the biotechnology branch. He finished in 2012 and moved to University College Dublin where He did a Master in Bionano Interactions to understand the basis of nanoparticle-living systems interactions. In 2013 he started his PhD in the lab from Prof. Kenneth Dawson focusing on immune reactions driven by nanoparticles and how they can be used to develop vaccine formulations, focusing his research on the production of specific antibodies in response to nanoparticles. After his PhD he moved to Stockholm and started working on T cell immunity in the Lab from Prof. Marcus Buggert, focusing on the development and heterogeneity of cytotoxic T cell responses in blood and organs. He developed part of a large study that contributed to understand COVID-19 immunity.