

Inflammatory Diseases

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DESCRIPTION

The Inflammatory Diseases group is a multidisciplinary team: Our research aims are: a) to study etiopathogenic mechanisms of immune-mediated diseases to develop tools to advance toward a more personalized medicine; b) to find biomarkers of response to immunotherapy treatments in cancer and chronic inflammatory diseases to select the most suitable drugs and to identify the patient population that can benefit from them, and c) to analyze the involvement immune system in the pathogenesis of autoimmune processes, immunodeficiencies, and immunosenescence.

MAIN LINES OF RESEARCH

- The role of the immune system in the development and perpetuation of autoimmune, immune mediated diseases and chronic inflammatory processes.
- The immunological response associated with the clinical course during immunomodulatory therapies.
- The involvement of autoantibodies, components of the adaptive immune system, in the pathogenesis of autoimmune processes.
- Mechanisms involved in immunodeficiency.
- Immunosenescence.

SCIENTIFIC CHALLENGES

- To study regulatory pathways in chronic inflammatory diseases to identify cellular and molecular therapeutic targets.
- To understand the appearance and evolution of



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autoimmune events, immunodeficiencies, infections, and cardiovascular diseases to improve diagnosis tools.

- To decipher the immune response involved in the development or the control of tumors to discover new biomarkers of prognosis to immunotherapies.
- To elucidate biomarkers related to immune sense and susceptibility to infections.
- To characterize cellular immune responses in immunological disorders such as infections, hypersensitivity reactions and immunodeficiencies.
- Different strategies were applied according to the goal and pathology:
- Characterization of cell populations in complex human biological fluids by multiparametric flow cytometry analysis complemented with dimensionality reduction and data visualization techniques.
- Study the expression and dynamics of inflammatory mediators with advance clustering analysis.
- Identification of new specificities of autoantibodies in subgroups of patients.
- Study of mechanisms involved in immunodeficiency caused by alterations of molecular components.

ACTIVE GRANTS

- Vidal Alcorisa, Silvia. Estudio del perfil pro-inflamatorio de las plaquetas y sus derivados en pacientes con artritis reumatoide para identificar biomarcadores de inflamación y dianas terapéuticas. PI20/00184. Instituto de Salud Carlos III (ISCIII). Duration: 2021-2023. 87.120,00 €.
- Vidal Alcorisa, Silvia. Determination of circulating leukocyte-platelet complexes & PD-L1 expression on circulating cells in patients with advanced SCLC patients receiving anti-PD-L1 blockade agents in combination with platinum and etoposide. Non-competitive. PNC00088/6. Roche Farma SA. Duration: 2021-2023. 40.000,00 €.
- Vidal Alcorisa, Silvia. In vitro assessment of cytokine production in HBV patients. IIBSP-PRG-2021-57. Non-competitive. PRECIGEN. Duration: 2021-2023. 29.940,00 €.

GRANTS AWARDED

- Mariscal Rodríguez, Anais. Análisis comparativo de los resultados de especificidades antigénicas de muestras de neuropatías autoinmunes y síndromes miasténicos. IIBSP-NEU-2023-63. Duration: 2023-2023.
- Mariscal Rodríguez, Anais. Detección de anticuerpos anti-sintetasa: comparación entre métodos. IIBSP-AAS-2023-87. Duration: 2023-2024.
- Moga Naranjo, Maria Esther. Estudio VAN: correlación de la sensibilidad in Vitro de pacientes con alergia respiratoria y alimentaria mediante la utilización de ImmunoCap, Alex y Noveos. IIBSP-VAN-2022-74 (Estudio VAN). Duration: 2023-2024.
- Vidal Alcorisa, Silvia. Therapeutic targets in mechanisms of tolerance for autoimmune disease patients, 2nd part (IL-11). Non-competitive. PRECIGEN. Duration: 2023-2025. 75.000,00 €.

DOCTORAL THESES DEFENDED

- Julià Agulló, Germa. Comparació de la resposta immune als pacients de COVID-19 amb evolució greu i moderada. 12/09/2023. Universitat Autònoma de Barcelona. Supervisors: Vidal Alcorisa, Sílvia.
- Ronny de la Torre Cevallos. Immunodeficiencias Primarias en Ecuador: Como crear un sistema de diagnóstico estructurado. 15/11/ 2023. Universitat Autònoma de Barcelona. Supervisors: Martínez Martínez, Laura; de la Calle Martín, Óscar.

SCIENTIFIC PRODUCTION

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