Annex I: IDIBAPS lymphoid area groups

Hemato-Oncology – Lymphoid Neoplasms (Armando López-Guillermo [alopezg@clinic.cat])

The group represents the clinical counterpart of lymphoid research carried out at IDIBAPS. It is mainly devoted to translate clinico-biological findings to the patients in terms of diagnosis, prognosis and treatment. Our main focuses are CLL, DLBCL, FL, MCL and MZL, as well as transformed lymphomas. In the last years we have developed prognostic tools, studies on mutational landscape and liquid biopsy applied to lymphoproliferative disorders. In addition, we are involved in clinical trials with new molecules and have an academic program with CAR-T therapy.

Molecular pathology of lymphoid neoplasms (Elias Campo [ECAMPO@clinic.cat])

The research activity is focused on the study of genetic and molecular mechanisms involved in the pathogenesis of lymphoid neoplasms and their clinical implications with the ultimate goal of better characterize distinct entities, define more precise diagnosis criteria, establish predictive models of evolution and response to the treatment, and determine the molecular basis for new therapeutic strategies. Our research uses a multidisciplinary approach from pathology to genomics combined with functional and clinical studies. A) Profile of genomic/epigenomic alterations in lymphoid neoplasms and their biological and clinical impact. B) Clinico-pathological characterization of human lymphoid neoplasms.

Experimental therapies in lymphoid malignancies (Dolors Colomer [DCOLOMER@clinic.cat])

Translation of the genomic studies of CLL to clinical practice by analyzing: 1) Clinical impact of the genomic profile in patients with CLL with the new approved targeted therapies (BTK and BCL2 inhibitors) in untreated CLL patients , in relapse or refractory to treatment and in Richter transformation (RT); 2) Development of cell and animal models based on CLL-specific recurrent mutations to explore their functional mechanisms, and 3) Development of in vitro 3D models that simulate lymph nodes and the tumor microenvironment to test the efficacy of drugs and explore new therapies.
We intend to integrate the molecular, functional and clinical data with new therapeutic strategies in CLL patients treated with the new drugs approved. The ultimate goal is to establish a more precise diagnosis, improve the risk stratification of patients and identify new therapeutic strategies and be able to achieve a more personalized medicine in accordance with the biology of the tumor and improve the response and quality of life of patients with CLL

Molecular genetics of paediatric lymphomas (Itziar Salaverria [ISALAVER@recerca.clinic.cat])

The group studies the genetic and molecular profiles of the different subtypes of non-Hodgkin lymphoma in the pediatric population and in young adults through the application of high-resolution techniques for the identification of specific genetic markers (e.g. structural alterations, mutations) and target genes/pathways that may be useful biomarkers in the management of these patients. Of note, our focus cover both, NHL in immunocompetent patients and post-transplant lymphoproliferative syndromes.

Lymphoma Genetics Group (Silvia Beà [SBEA@clinic.cat])

The group is involved in the identification of genetic alterations (mutational and structural variants) in the pathogenesis of several adult mature B-lymphoid neoplasms and their clinical translation. Currently, several lines of research include the study of mantle cell lymphoma, follicular lymphoma, transformed splenic marginal zone lymphoma and specific subsets of diffuse large B-cell lymphoma. The methodology used is high-resolution techniques such as whole-genome and –exome sequencing, NGS panels, copy number arrays, molecular cytogenetic techniques (FISH and optical genome mapping), and combination with expression arrays, digital gene expression and RNAseq.

Biomedical epigenomics (Iñaki Martin Subero [IMARTINS@recerca.clinic.cat])

The Biomedical Epigenomics group is focused on the application of wet-lab and computational technologies to characterize the epigenome of lymphoid neoplasms. The current efforts of the group are focused on understanding gene deregulation in several types of lymphoid tumours through integrative omics at bulk and single cell level, and mechanistic studies using genome editing technologies.

Functional characterization of oncogenic mechanisms in lymphomagenesis (Virginia Amador[vamador@recerca.clinic.cat])

Our objective is to identify and characterize the functional role and clinical relevance of immunecheckpoints and cancer stem cell (CSC) factors, responsible for immunosuppressive mechanisms and clonogenic growth with resistance to current therapies in MCL, in order to find new biomarkers and potential targets for more specific and effective therapeutic strategies in aggressive MCL. To develop this project, in vitro and in vivo preclinical models will be developed to evaluate immunotherapies and anti-CSC therapies for MCL that would help increase the survival and outcome of patients with relapsed/refractory MCL.

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