Lymphoma Team

Work program

The advent of new immuno- and cell-therapies into the clinical practice of hematological neoplasms raised the need for a better understanding of tumor microenvironment (TME) in terms of cell composition and function. Deeper dissections of immune and stromal TME components in the context of peculiar malignancy subtypes might reveal new drug targets and optimize the personalization of current treatments. However, the study of TME remains challenging due to two main reasons: i) the phenotypic/functional heterogeneity of TME within and between patients, and ii) the difficulty of conciliating biological and clinical data in the context of controlled trials and real-world practice.
The research activity of the Laboratory of Diagnostic Hematology and Cell Therapy has long been devoted at applying the cutting-edge bioinformatic and mathematical approaches of TME dissection, exploiting public big data to generate and validate prognostic/predictive hypotheses in several hematological malignancies. Such approach is tightly interconnected with a retrospective/prospective activity of internal data recording (clinical and biological) of real-world cohorts as well as centralization of samples from prospective controlled multicentric clinical trials.
The research effort of the team has already provided large amounts of results in the field of the diffuse large B cell lymphoma and related subtypes, producing valuable prognostic gene panels (validated on NanoString technology), and allowing the conceptualization of new immunotherapy rationales for high-risk patients. Additional research lines are aimed at optimizing the diagnostics of rare lymphoma subtypes by transcriptomics as well as at producing new predictive tools for other hematological malignancies.

Team Composition

Team Leader

Maria Carmela Vegliante, PhD –Hematology Unit IRCCS

Team members
Sabino Ciavarella
Giacomo Loseto
Carla Minoia
Maria Stella De Candia
Antonio Negri
GianMaria Zaccaria
Grazia Gargano
Paolo Mondelli
Anita Pappagallo
Fabio Pavone
Felice Clemente

Team Network

- Department of Mathematics, University of Bari Aldo Moro, 70125 Bari, Italy
- FIL, Fondazione Italiana Linfomi
- Division of Diagnostic Haematopathology, European Institute of Oncology, IRCCS, Milan, Italy.
- August Pi i Sunyer Biomedical Research Institute (IDIBAPS) and Hospital Clinic, Barcelona Spain.

- Hematology Unit and Translational Research Laboratory, Azienda USL-IRCCS, Reggio Emilia, Italy.
- Tumor Immunology Unit, Department of Sciences for Health Promotion and Mother-Child Care "G. D'Alessandro,", University of Palermo, Palermo, Italy

Key funding

- Ricerca Corrente 2022-Ministry of Health
- Bando Roche per la ricerca indipendente 2020
- Fil Club -*FollEz study 2022*

Key publication

- **NR1H3 (LXRα) is associated with pro-inflammatory macrophages, predicts survival and suggests potential therapeutic rationales in diffuse large b-cell lymphoma.**
  Vegliante MC, Mazzara S, Zaccaria GM, De Summa S, Esposito F, Melle F, Motta G, Sapienza MR, Opinto G, Volpe G, Bucci A, Gargano G, Enjuanes A, Tabanelli V, Fiori S, Minoia C, Clemente F, Negri A, Gulino A, Morello G, Scattone A, Zito AF, Tommasi S, Agostinelli C, Vitolo U, Chiappella A, Barbui AM, Derenzini E, Zinzani PL, Casadei B, Rivas-Delgado A, López-Guillermo A, Campo E, Moschetta A, Guarini A, Pileri SA, Ciavarella S. Hematol Oncol. 2022 Jul 18.
- **Prognostic value of lesion dissemination in doxorubicin, bleomycin, vinblastine, and dacarbazine-treated, interimPET-negative classical Hodgkin Lymphoma patients: A radio-genomic study.**
  Durmo R, Donati B, Rebaud L, Cottereau AS, Ruffini A, Nizzoli ME, Ciavarella S, Vegliante MC, Nioche C, Meignan M, Merli F, Versari A, Ciarrocchi A, Buvat I, Luminari S.Hematol Oncol. 2022 May 23.
- **Spatial transcriptome of a germinal center plasmablastic burst hints at MYD88/CD79B mutants-enriched diffuse large B-cell lymphomas.**
  L'Imperio V, Morello G, Vegliante MC, Cancila V, Bertolazzi G, Mazzara S, Belmonte B, Mangogna A, Balzarini P, Corral L, Lopez G, Di Napoli A, Facchetti F, Pagni F, Tripodo C.Eur J Immunol. 2022 Aug;52(8):1350-1361.
- **Electronic case report forms generation from pathology reports by ARGO, automatic record generator for onco-hematology.**
  Zaccaria GM, Colella V, Colucci S, Clemente F, Pavone F, Vegliante MC, Esposito F, Opinto G, Scattone A, Loseto G, Minoia C, Rossini B, Quinto AM, Angiulli V, Grieco LA, Fama A, Ferrero S, Moia R, Di Rocco A, Quaglia FM, Tabanelli V, Guarini A, Ciavarella S.Sci Rep. 2021 Dec 10;11(1):23823.
- **Predictive and Prognostic Molecular Factors in Diffuse Large B-Cell Lymphomas.**
  Pileri SA, Tripodo C, Melle F, Motta G, Tabanelli V, Fiori S, Vegliante MC, Mazzara S, Ciavarella S, Derenzini E. Cells. 2021 Mar 18;10(3):675.
- **A New Ensemble Method for Detecting Anomalies in Gene Expression Matrices.**
  Laura Selicato, Flavia Esposito, Grazia Gargano, Maria Carmela Vegliante, Giuseppina Opinto, Gian Maria Zaccaria, Sabino Ciavarella, Attilio Guarini, Nicoletta Del Buono. Mathematics, 2021-04 | Journal article.
- **18F-FDG PET/CT Cannot Substitute Endoscopy in the Staging of Gastrointestinal Involvement in Mantle Cell Lymphoma. A Retrospective Multi-Center Cohort Analysis.**
  Skrypets T, Ferrari C, Nassi L, Margiotta Casaluci G, Puccini B, Mannelli L, Filonenko K, Kryachok I, Clemente F, Vegliante MC, Daniele A, Sacchetti G, Guarini A, Minoia C. J Pers Med. 2021 Feb 13;11(2):123.
- **Primary, Bilateral and Diffuse Renal Non-Hodgkin's Lymphoma in a Young Woman Suffering from Turner Syndrome.** Rossini B, Skrypets T, Minoia C, Quinto AM, Zaccaria GM, Ferrari C, Maggialetti N, Mastrorosa A, Gatti P, Casiello M, Ciavarella S, Guarini A. J Pers Med. 2021 Jul 7;11(7):644.
- **Hodgkin Lymphoma: A Special Microenvironment.**

Opinto G, Agostinelli C, Ciavarella S, Guarini A, Maiorano E, Ingravallo G. J Clin Med. 2021 Oct 12;10(20):4665.

- **Intra-tumour heterogeneity of diffuse large B-cell lymphoma involves the induction of diversified stroma-tumour interfaces**.
  Sangaletti S, Iannelli F, Zanardi F, Cancila V, Portararo P, Botti L, Vacca D, Chiodoni C, Di Napoli A, Valenti C, Rizzello C, Vegliante MC, Pisati F, Gulino A, Ponzoni M, Colombo MP, Tripodo C. EBioMedicine. 2020 Nov;61:103055.
- **A Spatially Resolved Dark- versus Light-Zone Microenvironment Signature Subdivides Germinal Center-Related Aggressive B Cell Lymphomas**.
  Tripodo C, Zanardi F, Iannelli F, Mazzara S, Vegliante M, Morello G, Di Napoli A, Mangogna A, Facchetti F, Sangaletti S, Chiodoni C, VanShoiack A, Jeyasekharan AD, Casola S, Colombo MP, Ponzoni M, Pileri SA. iScience. 2020 Sep 16;23(10):101562.
- **The Tumor Microenvironment of DLBCL in the Computational Era**.
  Opinto G, Vegliante MC, Negri A, Skrypets T, Loseto G, Pileri SA, Guarini A, Ciavarella S. Front Oncol. 2020 Mar 31;10:351.
- **Diffuse large B-cell lymphoma: the stuff of cell-of-origin and microenvironment.**
  Pileri SA, Vegliante MC, Ciavarella S. Oncotarget. 2019 Jun 18;10(40):3991-3993.
- **Dissection of DLBCL microenvironment provides a gene expression-based predictor of survival applicable to formalin-fixed paraffin-embedded tissue.**
  Ciavarella S, Vegliante MC, Fabbri M, De Summa S, Melle F, Motta G, De Iuliis V, Opinto G, Enjuanes A, Rega S, Gulino A, Agostinelli C, Scattone A, Tommasi S, Mangia A, Mele F, Simone G, Zito AF, Ingravallo G, Vitolo U, Chiappella A, Tarella C, Gianni AM, Rambaldi A, Zinzani PL, Casadei B, Derenzini E, Loseto G, Pileri A, Tabanelli V, Fiori S, Rivas-Delgado A, López-Guillermo A, Venesio T, Sapino A, Campo E, Tripodo C, Guarini A, Pileri SA.
  Ann Oncol. 2018 Dec 1;29(12):2363-2370.
- **SOX11 promotes tumor protective microenvironment interactions through CXCR4 and FAK regulation in mantle cell lymphoma**.
  Patricia Balsas, Jara Palomero, Álvaro Eguileor, Marta Leonor Rodríguez, Maria Carmela Vegliante, Ester Planas-Rigol, Marta Sureda-Gómez, Maria C Cid, Elias Campo, Virginia Amador. Blood. 2017 Jul 27; 130(4):501-513.
- **SOX11 defines two different subtypes of mantle cell lymphoma through transcriptional regulation of BCL6.**
  J Palomero, M C Vegliante, A Eguileor, M L Rodríguez, P Balsas, D Martínez, E Campo, V Amador. 2016 Jul; 30(7):1596-9.
- **SOX11 promotes tumor angiogenesis through transcriptional regulation of PDGFA in mantle cell lymphoma.**
  Jara Palomero, Maria Carmela Vegliante, Marta Leonor Rodríguez, Alvaro Eguileor, Giancarlo Castellano, Ester Planas-Rigol, Pedro Jares, Inmaculada Ribera-Cortada, Maria C Cid, Elias Campo, Virginia Amador. Blood. 2014 Oct 2; 124(14):2235-47.
- **SOX11 regulates PAX5 expression and blocks terminal B-cell differentiation in aggressive mantle cell lymphoma.**
  Maria Carmela Vegliante, Jara Palomero, Patricia Pérez-Galán, Gaël Roué, Giancarlo Castellano, Alba Navarro, Guillem Clot, Alexandra Moros, Helena Suárez-Cisneros, Sílvia Beà, Luis Hernández, Anna Enjuanes, Pedro Jares, Neus Villamor, Dolors Colomer, José Ignacio Martín-Subero, Elias Campo, Virginia Amador. Blood. 2013 Mar 21; 121(12):2175-85. Plenary paper.