

Tumorigenesis is a complex, multistep, multipath process leads to tumor formation, whereby normal cells are transformed into cancer cells. This process is characterized by changes at the cellular, genetic, and epigenetic levels and abnormal cell division. Tumor development and progression are also regulated by the biochemical and biophysical properties of the local microenvironment. While, the presence of some immune cells such as cytotoxic T cells is important for limiting tumor growth, the appearance of others, including tumor-associated macrophages, correlates with invasiveness, metastasis, and poor prognosis. Developments in both basic immunology and tumor biology have increased our knowledge of the interactions between the tumor cells and the immune system.

This project relates to important but weakly explored issues in cancer immunology, concerning the newly recognition innate lymphoid cells (ILCs) role in lymphoproliferative diseases. Innate lymphoid cells (ILCs), functionally resemble T lymphocytes in cytotoxicity and cytokine production. But, in recent studies ILCs have emerged as novel important immune effector cells, playing a critical role also in tumor immunosurveillance, immune responses and tissue homeostasis. In our project we would like to analyze the frequency, subset distribution and function of ILCs in newly diagnosed DLBCL patient and compare it with blood specimens from healthy donors. Latest discoveries regarding the role of these cells, with their adjusting properties, in cooperation with other immunologic cells should lead to new and powerful avenues in cancer immunology. Therefore, we want to focus on the potential association of ILCs with tumor progression and define the degrees of overlap, interactions and the subtle differences between ILC and other lymphocytes development. We would like to find out if DLBCL cells express receptors for cytokines secreted by ILCs. For that reason, the final aim of this work is to determine the immunological role of each ILCs subpopulations individually in response to lymphoma cells influence.

Obtained results may have priceless significance for revision and understanding the questions about contribution of these cells in malignant transformation and tumor growth.