Cancer Immunology Research

About the Master

Dmitry I. Gabrilovich, MD, PhD, is currently the Christopher M. Davis Professor in Cancer Research and Program Leader, Translational Tumor Immunology, at the Wistar Institute in Philadelphia and Wistar Professor, Department of Pathology and Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania (Philadelphia, PA). Dr. Gabrilovich graduated from the Medical School of Kabardino-Balkarian State University, USSR, and in 1989 received his PhD in epidemiology from the Central Institute of Epidemiology, Moscow, USSR, after which he worked as the head of the cellular immunology group at the HIV Reference Center in Moscow. During those years, his group demonstrated the activation of neutrophils in HIV-infected individuals.

Based on this work, in 1992, he was awarded the Wellcome Trust Fellowship to study dendritic cell (DC) biology in experimental retroviral infection under Dr. Stella C. Knight at the Imperial College of London in the United Kingdom. He was trained in cancer research at University of Texas Southwestern Medical School (Dallas, TX) and Vanderbilt University (Nashville, TN) in the laboratory of Dr. D. Carbone.

Dr. Gabrilovich obtained his first independent faculty position at Loyola University Medical School in Chicago, IL, in 1999. In 2000, Dr. Gabrilovich moved to H. Lee Moffitt Cancer Center in Tampa, FL, where he progressed through the ranks and eventually became Robert Rothman Endowed Chair in Cancer Research and Head, Section of Dendritic Cell Biology.

While at Vanderbilt, he demonstrated that DCs in tumor-bearing mice (and later in cancer patients) were functionally impaired. He has described the first tumor-derived factor directly implicated in DC defects in cancer, VEGF, and suggested that myeloid progenitor cells were the main targets for this negative effect. In subsequent work at Loyola University and Moffitt Cancer Center, he described and characterized immature myeloid cells with immunosuppressive activity, making him one of the first to discover the cells now called myeloid-derived suppressor cells (MDSC). His group characterized a number of molecular mechanisms regulating expansion and function of these cells. Dr. Gabrilovich established the role of antigen-specific mechanisms in the regulation of T-cell tolerance mediated by MDSCs and described the critical contribution of peroxynitrite to this effect. Dr. Gabrilovich's group also provided some of the first evidence that MDSCs can be therapeutically targeted in patients. His group established lipid accumulation as one of the mechanisms negatively regulating DC function in cancer. Currently, his group is a world leader in the evaluation of DC accumulation and function and in determining which mechanisms make the most suitable targets for therapeutic enhancement of antitumor responses.

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