

Curriculum Vitae

Daniela Frasca

PROFESSIONAL EXPERIENCE

Research Assistant Professor

Microbiology and Immunology

University of Miami Miller School of Medicine

II. HIGHER EDUCATION

University of Rome La Sapienza, Italian BSc University degree in Biology cum laude, 1980 (mentor: Prof. Gino Doria)

University of Rome La Sapienza, PhD in Cell Biology and Development, November 2008 (mentor: Prof. Enza Piccolella), for work done in the Dept. of Microbiology and Immunology at the University of Miami

III. EXPERIENCE

Academic (institutions; rank/status; dates)

Volunteer in the ENEA-Euratom Immunology Group, Laboratory of Pathology, ENEA Casaccia, Rome, working under the supervision of Prof. Gino Doria. Full time research devoted to immunomodulation of the thymus-dependent antibody response of aging mice by thymic hormones (1980-1981)

Staff member at ENEA Casaccia, Rome. Major research topics deal with: immunomodulation of T cell functions in aging mice and humans by hormones and cytokines (1984-1994); recovery of the immune system by hematopoietic cytokines (1991-2000); DNA damage repair (1984-2001).

Research associate 3 in the Department of Microbiology and Immunology, University of Miami Miller School of Medicine, working on the effect of aging on E2A transcription factors regulating peripheral B cell functions in mice and humans (2001-2009)

Research Assistant Professor at the Department of Microbiology and Immunology, University of Miami Miller School of Medicine, working on the molecular mechanisms for the age-related defects in mouse and human B cell functions (2010-present)

Non-Academic:

Tecnofarmaci, a private pharmacological company, staff member (1982-1983)

Current Research Interest:

Regulation of antibody responses to vaccines in healthy individuals of different ages. The age-related impairment in humoral immune responses observed in mice and humans leads to increased frequency and severity of infectious diseases and is responsible for the reduced vaccine responses observed in elderly individuals. The decreased ability of aged individuals to produce high affinity protective antibodies against infectious agents is due to combined defects in immune cells (B cells, T cells and antigen-presenting cells). We have characterized intrinsic B cell defects occurring in aging mice and humans and we have identified several B cell biomarkers that can help to predict the response of an individual to infectious agents and vaccines.

Mechanisms for decreased B cell responses in obesity and Type-2 Diabetes (T2D). More recently we have started to identify and characterize functional changes in B cells from obese individuals, either healthy or T2D, and identify molecular mechanisms involved. Obesity represents a significant risk to public health, and obesity-related insulin resistance is considered a major driving force for the development of T2D. Obesity is characterized by chronic low-grade inflammation which has been shown to have a negative impact on immune responses and health outcomes. We have shown that chronic inflammation in obese individuals, similar to what we have observed in the elderly, induces an increase in intrinsic B cell inflammation, which impairs antibody production to infectious agents and vaccines.

IV. PUBLICATIONS

Juried or referred journal articles and exhibitions: 117 publications

Full list of my published work is available at: **Errore. Riferimento a collegamento ipertestuale non valido.**

Books and monographs: 45 publications

V. PROFESSIONAL

Funded Research

NIH - R56 AG032576, 9/1/2015-8/31/2016, "Regulation of primary and memory B cell vaccine responses in the elderly". Role: Multi-PI.

NIH - R21 AG042826, 4/1/2013-3/31/2015 in NCE until 3/31/16, "Micro-RNAs: a new mechanism negatively regulating B cell responses in the elderly". Role: Multi-P.I.

NIH - R21 AI096446, 8/1/2012-7/31/2015, "Molecular mechanisms for TNF-mediated inhibition of B lymphocyte function". Role: Multi-PI.

NIH - R13 AG050422-01, 9/5/2015-9/6/2015, "The Aging Immune System: Mechanisms and Restoration".

Previous Funded Research (in Europe)

Italian National Council of Research, "Effect of hematopoietic cytokines on the recovery of the immune system in irradiated mice" (1994-1995), P.I.

EUCAMBIS "European Union Concerted Action on the Molecular Basis of Immunosenescence", CT 94-1209 (1994-1997), Member

ImAginE "Immunology of Ageing in Europe", QLRT-1999-02031 (1999-2003), Member

Italian Ministry for the University and Scientific Research (MURST-Fondo per i progetti strategici art. 51, comma 9, 1998), "Mechanisms of action and biological effects of ionizing radiations. Biological bases of individual susceptibility" (1999), P.I.

Italian Ministry for the University and Scientific Research (MURST-Interuniversity research project), "The immune system during aging and longevity" (2000), P.I.

Editorial Responsibilities

Mechanisms of Ageing and Development, 1995-present

Experimental Gerontology, 2000-present

Vaccine, 2009-present

Expert Review of Vaccine, 2010-present

Age, 2012-present

Immunity & Ageing, 2012-present

Journal of Infectious Diseases, 2013-present

Cancer Immunology Immunotherapy, 2014-present

Honors and Other Professional Activities

Member of the Italian Society for Immunology since 1984; member of the Council, 1986-1988.

Member of the Italian Society for Radiation Research since 1996; member of the Council 1999-2001.

Member of the American Aging Association since 2010.

Member of the American Association of Immunologists since 2010.

Co-organizer of the satellite meeting "Aging and the immune system" in conjunction with the 13th International Congress of Immunology - Milan, August 2013. An R13 application (AG044133) was submitted and awarded to seek partial support for the American participants to the satellite.

Co-organizer of the satellite meeting "Immunosenescence: Hot Topics and Interventions" in conjunction with the 4th European Congress of Immunology - Vienna, September 2015. An R13 application (AG050422) was submitted and awarded to seek partial support for the American participants to the satellite.

Guest Editor of a special issue of Experimental Gerontology containing 22 contributions from participants at the satellite meeting "Aging and the immune system", published in 2014.

Guest Editor of a special issue of Immunology Letters entitled "Immunity during Aging and Longevity", 12 contributions, published in 2014.

Invited speaker at national and international meetings (AAI, European Congress of Immunology, International Congress of Immunology, Workshop on CMV and Immunosenescence).

Invited speaker at The Obesity Society Symposium during the AAI meeting in New Orleans, May 2015.