



Second Laureate Fundamental

- ◆ **Researcher:** Prof. Guido Ferlazzo
- ◆ **Nationality:** Italy
- ◆ **Date of Birth:** November 30, 1962
- ◆ **Field:** Medicine, Immunology / Oncology
- ◆ **Position:** Associate Professor, Laboratory Head
- ◆ **Scientific Affiliation:** Laboratory of Immunology and Biotherapy, University of Messina
- ◆ **Research Work Title:** Human Dendritic Cells Activate Resting Natural Killer (NK) and Are Recognized via the NKp30 Receptor by Activated NK Cells: Implications for Novel Cancer Vaccines

Abstract:

During the innate response to many inflammatory and infectious stimuli, dendritic cells (DCs) undergo a differentiation process termed maturation. Mature DCs activate antigen-specific naive T cells. In our study, we have shown that mature DCs activate resting human natural killer (NK), which increase in numbers, start secreting interferon-gamma and acquire cytolytic activity against several tumor cell lines.

The DC-activated NK cells then kill immature DCs via NKp30 activating receptor but mature DCs are protected from NK lysis.

We suggest that DCs are able to control directly the expansion of NK cells and that the lysis of immature DCs can regulate the afferent limb of innate and adaptive immunity.

These discoveries have paved the way for others who have since expanded on the regulatory role of NK cells in shaping the adaptive immune response in human and have relevant implications for the production of new vaccines for cancer and viral diseases.

Biography:

Guido Ferlazzo, born in Padova, Italy, in 1962, obtained his Medical Doctor Degree at the University of Messina in 1987. He then moved to Genoa to become a specialist in Oncology. Here, at the National Institute for Cancer Research, he started his studies on tumor immunology, which will be the main topic of his research in the next years. Since 1993, he obtained a tenured position as Research Scientist at the National Institute for Cancer Research.

In 1997 he moved to Detroit, U.S.A., where he joined as a Research Associate the Wayne State University, working at the Karmanos Cancer Institute.

In 2002 he joined the Rockefeller University in New York, U.S.A., where he remained as a Member of the Adjunct Faculty until 2008.

Lately, Ferlazzo returned to Italy where he became Head of the Laboratory of Immunology and Biotherapy at the University of Messina. At the same Institution, he is currently Professor of Immunology and General Pathology at the School of Medicine.

His researches received thousands of citations in scientific journals, with an average of at least one citation per day in the last 10 years.

