

First Laureate, Fundamental Research

- **Research Work Title:** Harnessing innate immunity against cancer
- **Researcher:** Prof. Eric Vivier
- **Country:** France
- **Field:** Immunology
- **Scientific Affiliation:** Aix Marseille University



Abstract:

The research has focused on molecular dissection of the mechanisms by which a population of white blood cells, the Natural Killer (NK) cells, helps to defend the body against internal assaults, such as cancers, and external aggressions, such as microbial infections. Prof. Vivier contributed to elucidate the molecular mechanisms controlling the development and the activation of NK cells and innate lymphoid cells (ILCs).

Prof. Vivier laboratory has been involved in the development of innovative treatments for cancer. This translation of basic research discoveries into clinical applications has led to the development of a first-in-class therapeutic monoclonal antibody, for which efficacy against various cancers is currently being assessed. He was also involved in the discovery of a new group of lymphocytes — innate lymphoid cells. They are currently attracting considerable interest in basic research and clinical applications. They appear to be the innate counterparts of T cells and are involved in maintaining the integrity of the body, particularly that of the mucosal tissues (e.g. gut, lung) to which they home preferentially.

Biography:

Prof. graduated from the Ecole Nationale Vétérinaire de Maisons-Alfort and received his doctoral degree in immunology from Paris XI University in 1991. He began his postdoctoral training as a Fogarty International Center Research Fellow at Harvard Medical School with Paul J. Anderson and Stuart F. Schlossman (the Dana-Farber Cancer Institute). He joined Aix-Marseille University as a professor at the Centre d'Immunologie de Marseille-Luminy (CIML) in 1993, becoming its director in 2008. In addition, he is the head of the "NK cells and Innate Immunity" lab, CIML and Head of the immunoprofiling lab, La Timone Hospital, Marseille. Prof. Eric Vivier has been a senior member of the Institut Universitaire de France since 2007. He is also a member of the French National Academy of Medicine. Prof. Eric Vivier has studied the biology of NK cells for over 20 years. The Vivier lab contributed to elucidate the molecular mechanisms controlling the development and the activation of NK cells and ILCs. He discovered critical components of the receptors and analyzed the mechanisms of activation and inhibition of signaling (such as KARAP/DAP12). And also generated original animal models to analyze NK cell fate and functions in vivo. He used these models to analyze NK cell development and identified critical stages in this process. He participated in identification of Innate Lymphoid Cells, and in particular a subset of ILCs in the intestine that express the NKp46 cell surface molecule and contribute to the control of commensal and pathogenic bacteria.

Prof. Vivier has published more than 300 scientific articles and is on the editorial boards of leading peer-reviewed journals. He serves on the expert panel of the European Research Council and on the committees of pharmaceutical and biotechnology companies.

In 1998, Prof. Vivier co-founded a start-up (Innate-Pharma) that has now become a Biotech company that develops therapeutic antibodies against various cancers. He is now Chief Scientific Officer of Innate-Pharma and Head of Innate Pharma Research Laboratories.

