

**Prof. Emilio Jirillo, MD.****Basic Medical Sciences Neuroscience and
Sensory Organs, University Bari, Italy**

Degree in Medicine at the University of Bari, Bari, Italy (July, 1971).

Full Professor of Immunology at the University of Bari, Bari, Italy since 1986.

Scientific Director of the National Institute of Gastroenterology, Castellana Grotte (Italy) (1996-2009).

Permanence abroad: Max Planck Institute for Immunobiology, Freiburg, Germany (1977-1979); University of Alabama at Birmingham, Birmingham, USA (1981-1985).

Fields of interest: Mucosal immunology, Immunonutrition, Microbial Immunity, Neuroimmunology. In particular, his main studies have been focused on: 1. the immunobiology of endotoxins and their noxious effects in the host; 2. the intestinal immune response of mice to salmonella and their mutant strains; 3. the immunity in patients with: inflammatory bowel disease; Helicobacter pylori gastritis and chronic viral hepatitis; 3. antiinflammatory properties of various nutraceuticals such as polyphenols from red grape, probiotics and synbiotics; 4. Role of benzodiazepines on the immune response, immune response in patients with psychiatric disorders.

Publications listed in PubMed: 315;

Editorship: Editor in Chief of Endocrine Metabolic Immune Disorders; Clinical Immunology Endocrine Metabolic Drugs;

Section Editor of Current Pharmaceutical Design; Immunity and Ageing;

Associate Editor of Frontiers in Nutritional Immunology.

Major Grants: Ministry of Education, Ministry of Health, INTERREG, EU grants, Regional Grants.

Member of the: American Association of Immunologists, American Society of Microbiology, Mucosal Immunity Society.

Recent Scientific Achievements

Immunonutrition

Polyphenols

He has studied the role of polyphenols from red wine or fermented grape marc (FGM) in vitro and in vivo. In vitro, polyphenols from red wine were able to induce release of nitric oxide (NO) from human monocytes, thus contributing to the cardioprotective effects attributed to these compounds. In addition, polyphenols compete with bacterial endotoxins in the triggering of NF- κ B pathway, thus reducing release of proinflammatory cytokines from immune cells. In vivo experiments with FGM in colitis mice have documented the ability of polyphenols to attenuate clinical manifestations of colitis and reduce the secretion of proinflammatory cytokines such as tumor necrosis factor α and interleukin (IL)-1 β . In addition, FGM were able to reduce eosinophilia in asthmatic mice as well as production of IgE. In vitro experiments with FGM, using human peripheral blood mononuclear cells (PBMCs) have demonstrated that polyphenols were able to induce activation of T regulatory cells as well as release of IL-10, an anti-inflammatory cytokine. In the same set of experiments, FGM were able to decrease respiratory burst of granulocytes and monocytes as well as degranulation of basophils. Finally, administration of leucoselect, a compound enriched in polyphenols, to frail elderly people led to the increase of Th1 cytokines, thus recovering the impaired immunity in these subjects.

Probiotics

He has studied the effects of administration of pre- and probiotics (synbiotics) on the immune system of free-living elderly individuals. Quite interestingly, a synbiotic could enhance release of IL-6 and IL-8 in these subjects but without modifying the impaired adaptive immune response. In this framework, the immunomodulating effects of niche milk (donkey's and goat's milk) have been evaluated in vitro on human PBMCs. Quite interestingly, both milks were able to induce release of NO as well as to enhance release of IL-10, thus maintaining immune homeostasis. In in vivo studies, donkey's milk administration to healthy elderly people was able to increase release of IL-1 β , IL-6 and IL-8, while goat's milk decreased the secretion of these cytokines.