

CV Bramucci

Massimo Bramucci graduated in Biological Sciences at the University of Camerino in 1982. He took his Research Doctor's degree in Cellular and Molecular Biology in 1990. In 1986, and 1987 he worked in the Department of Pharmacology at the Baylor College of Medicine in Houston (TX, USA), collaborating with Dr. H. Busch and Dr. E. Durban on cloning and sequencing of human Topoisomerase I. Since 2001 he has been Professor of Physiology in the department of Molecular, Cellular and Animal Biology, now School of Pharmacy, at the University of Camerino.

He is member of the Italian Physiological Society (SIF) and Association of Cell Biology and Differentiation (ABCD).

His scientific activity is focused on:

a) structural and functional study of peptides. This scientific work was based on the study of peptides isolated from the chromatin of various tissues, whose activity appears to be related to the regulation of growth and cell differentiation.

b) study the role of peptides on steroidogenesis in mammals and lower vertebrates. Native peptides, extracted from human and bovine seminal plasma, were characterized at the endocrine and paracrine levels as modulators of follicle stimulating hormone activity. Moreover, physiological mechanisms, which regulate the synthesis of testosterone in the testis of mammals, were studied. This research follows the studies previously performed to elucidate the role played by peptides (Ang II, PACAP, Bradykinin) and angiotensin converting enzyme (ACE) on steroidogenesis of gonads in lower vertebrates.

c) evaluation of the biological activity of essential oils, extracts and active compounds, derived from plants used in traditional medicine and of nutritional interest. This activity was focused in the study of the ethnobotanical, phytochemical and biological aspects of plants. Special attention was given to the study of the secondary metabolites, especially volatile substances, of which there are no studies on the matter, in order to use them in the pharmaceutical, cosmetics and food. The attention has focused on the antioxidants, antimicrobial, cytotoxic and antiproliferative effects of essential oils, extracts and constituents isolated from the plants under study. Particular interest was aimed in the study of antiproliferative and anti-inflammatory activity. For this purpose, an essential oil, purified from wild celery, *Smyrniolum olusatrum*, particularly rich in isofuranodiene, was characterized for its antiproliferative activity on human colon carcinoma cell line, were in fact highlighted the typical markers of apoptosis. Noteworthy the data obtained from the essential oil from *Xilopia parviflora* showing a significant anti-inflammatory activity. Recently, a research was extended to wheat and cabbage sprouts for the important role played in prevention of cardiovascular disease, inflammatory, neurodegenerative disorders, tumors and aging.

d) study of the biological activity of natural toxins and synthetic compounds in the control of cell proliferation. In this research, natural toxins produced by ciliated freshwater *Climacostomum virens* and *Coleps hirtus*, were characterized. Climacostol from *C. virens* induces apoptosis in human tumor cell lines by activating the mitochondrial intrinsic pathway and inducing a consequent generation of reactive oxygen species through Cu²⁺ metabolism.

He has published 92 articles (Scopus) in peer-reviewed journals. In the last 5 years, he has published 48 articles in peer-reviewed journals. Official H index is 18 (citations 1009), as calculated by Google Scholar, and 16 (citations 838), as calculated by Scopus.

He participated in research projects as Principal Investigator in granted project PRIN 2003 "Role of peptides from mammalian seminal plasma in steroidogenesis and spermatogenesis", as head of a Research Unit in PRIN 2009 "In vitro and in vivo validation of new micro-nanovectors as drug and gene delivery systems" and as a component of a Research Unit in PRIN 1998 "Internalization and serum protease stability of ACP peptides".