

#### Curriculum vitae.

Sandra Torriani graduated in Biological Science at the University of Parma. Actually, she is Full Professor in Food Microbiology at the Department of Biotechnology of the University of Verona. She is President of the CdLM in Biotechnology (elected for the period 2015-2018). During the past 20 years, Sandra Torriani has gained an extensive expertise in researches dealing with ecology, taxonomy and genetics of lactic acid bacteria in both natural and man-made environments. Particular emphasis was directed on identification, typing and monitoring of microorganisms of food interest by using fingerprinting techniques. Ample attention is given to the molecular analysis and detection of microorganisms involved in food fermentation, the selection of suitable strains of lactic acid bacteria, bifidobacteria, yeasts, micrococci and GRAS-staphylococci to be used as starters in the food and wine industry and the development of new probiotic products and functional foods.

#### Relevant education and main career stages.

After the scientific degree, Sandra Torriani graduated in Biological Science at the University of Parma in 1982. From 1982 to 1994 she collaborated to researches focused on feed and food microbiology at the Institute of Microbiology of the Catholic University of Piacenza and the section of Microbiology of the University of Bologna. From 1994 to 1998, she got a stable position at University as researcher, and from 1998 she becomes Associated Professor in Microbiology. In October 2006, she got a position as Full Professor in the sector AGR/16 (Agricultural Microbiology) at the Faculty of Science of the University of Verona.

Sandra Torriani has realised short and medium scientific missions in highly qualified biotechnological and biomolecular research centres (visiting scientist at Department of Microbiology, University of Stellenbosch, Stellenbosch, South Africa and Food Technology, Chemical Center, University of Lund, Sweden). Sandra Torriani maintains scientific contacts and has joint researches with European (Belgium, France, Ireland, Germany, Greece, Holland, Spain) and international (Argentine, United State, South Africa) Universities.

Sandra Torriani has been involved in several national (MI, MURST, CNR, private) and European (FAIR) research projects. She has been a national member of the FIL-IDF groups of experts A10/11 "Bacteriological quality of raw milk", F40 "Microbiological safety of raw and unpasteurized milk and milk products", and A30 "Microbiological quality and safety of raw and unpasteurized farm milk and products".

She acted as an evaluator of proposals within the fifth framework programme (Area 1, Food, Nutrition and Health) for the European Community. From 2004, she is a member of the Editorial Board of the journal Food Microbiology, and from 2011 of ISRN Microbiology; she is reviewer for the database VITIS-VEA and for several international journals. She is a member of the SIMTREA, Società Italiana di Microbiologia Agro-Alimentare e Ambientale.

In 2011, she founded the company Microbion Ltd., a spin-off of the Verona University, with the mission to transfer the scientific expertise gained in research experiments into industrial applications.

#### Teaching and research.

Teaching. She gave University courses in several disciplines of Microbiology: General Microbiology, Microbiology and Immunology, General Microbiology and Applied to the Animal Production, Agricultural Microbiology, Food Microbiology, Biotechnology of Micro-organisms, Dairy Microbiology, Wine Microbiology, Biotechnology of Fermentation, Applied Microbiology (constituted by the modules: Food Microbiology, Agro-Industrial Microbiology and Microbiological Techniques). She was Supervisor or Co-supervisor of more than 50 experimental degree thesis and Supervisor of several PhD thesis. Currently, she is tutor of PhD students.

Research focus. Important research areas of Sandra Torriani include: molecular food ecology, molecular taxonomy and phylogeny of lactic acid bacteria and related organisms; isolation,

biotechnological characterisation and selection of lactic acid bacteria cultures to be used as starter for food production and preservation; modelling of the lactic acid bacteria and undesirable bacteria growth in fresh and fermented foods; rapid identification and direct detection in complex food matrices of specific microbial species; studies on probiotics. Particular interest was devoted to the study of the biodiversity of lactic acid bacteria and yeast strains of different origin, using advanced molecular techniques. Considerable progress in food microbiology comes from the designation and validation of specific primers for rapid identification and direct detection in several food systems of several species of lactic acid bacteria and *Saccharomyces* yeasts. Moreover, RT-PCR and Real-Time RT-PCR assays were developed for rapid detection and quantification of viable yeasts and moulds contaminating yogurts and pasteurized food products. The phylogenetic relatedness of some lactic acid bacteria and yeasts was examined, analysing the sequences of SSU rRNA and other coding genes; the results allowed to propose a reclassification of the taxa studied and the creation of new species and subspecies. Further research areas include aspects related to health risk, and the application of new molecular strategies to evaluate the spread of genes coding for antibiotic-resistances and for the production of biogenic amines in the food production chains. Areas of current research include: functional genomics of probiotics and food-borne bacteria; evaluation of bacteriocinogenic potential of lactic acid bacteria isolated from different ecosystems; horizontal gene transfer; study of the human microbiota in subjects healthy or affected by diseases (obesity, diabetes) by traditional and genetic (RT-PCR, DGGE, metagenomics) methods.

Publications and bibliometric indicators.

The research activity is documented by the publication of over 150 articles in international peer review journals. She also contributed to 15 chapters in national or international books, and participated to numerous national and international conferences with posters or oral presentations. The h-index is equal to 39 and the total citations are 4,261 (12/11/2017).