Curriculum vitae

Sandra Torriani graduated in Biological Science at the University of Parma. She is a Full Professor in Food Microbiology at the Department of Biotechnology of the University of Verona. She was President of the CdLM in Biotechnology from 2015-2018. Over the past 20 years, Sandra Torriani has gained extensive expertise in research on the ecology, taxonomy, and genetics of lactic acid bacteria in both natural and man-made environments. Emphasis was placed on the identification, typing, and monitoring of food-relevant microorganisms using fingerprinting techniques. Ample attention is given to 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 for use 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 on research focused on feed and food microbiology at the Institute of Microbiology of the Catholic University of Piacenza and the Microbiology section at the University of Bologna. From 1994 to 1998, she got a stable position at the university as a researcher, and from 1998, she became an associate professor in Microbiology. In October 2006, she was appointed as a Full Professor in the sector AGR/16 (Agricultural Microbiology) at the Faculty of Science of the University of Verona. Currently, she teaches General Microbiology in the Degree Course in Biotechnology, Wine Microbiology in the Degree Course in Viticultural and Oenological Sciences and Technologies, and Food Microbiology and Traceability of Microorganisms in the Degree Course in Agri-food Biotechnology. Sandra Torriani has carried out short- and medium-scale scientific missions at highly qualified biotechnological and biomolecular research centers (as a visiting scientist at the Department of Microbiology, University of Stellenbosch, Stellenbosch, South Africa, and the Food Technology, Chemical Center, University of Lund, Sweden). Sandra Torriani maintains scientific contacts and has joint research with European (Belgium, France, Ireland, Germany, Greece, the Netherlands, Spain) and international (Argentina, the United States, and 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 served as an evaluator of proposals for the European Community's Fifth Framework Program (Area 1: Food, Nutrition, and Health). Since 2020, she has been an Associate Editor of the journal Food Microbiology. She is a reviewer for the VITIS-VEA database and several international journals. She is a member of the SIMTREA, Società Italiana di Microbiologia Agro-Alimentare e Ambientale. In 2011, she founded Microbion Ltd., a spin-off of Verona University, with the mission of translating scientific expertise from research 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 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 the Supervisor or Co-supervisor of more than 50 experimental theses and the supervisor of several PhD theses.

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 characterization, and selection of lactic acid bacteria cultures to be used as starter for food production and preservation; modeling 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. Interest was devoted to studying the biodiversity of lactic acid bacteria and yeast strains of different origins using advanced molecular techniques. Considerable progress in food microbiology has come from the development and validation of specific primers for rapid identification and direct detection of several species of lactic acid bacteria and yeasts in various food systems. Moreover, RT-PCR and Real-Time RT-PCR assays were developed for the rapid detection and quantification of viable yeasts and molds contaminating yogurts and pasteurized food products. The phylogenetic relatedness of some lactic acid bacteria and yeasts was examined by analyzing SSU rRNA and other coding gene sequences; the results allowed the proposal of a reclassification of the taxa studied and the creation of new species and subspecies. Further research areas include health risks and the application of new molecular strategies to evaluate the spread of genes coding for antibiotic resistance and the production of biogenic amines in food production chains. Areas of current research include functional genomics of probiotics and food-borne bacteria; selection of non-conventional yeasts for the production of fermented beverages; evaluation of bacteriocinogenic potential of lactic acid bacteria isolated from different ecosystems; horizontal gene transfer; study of the human microbiota in healthy subjects and those affected by diseases (obesity, diabetes) by traditional and genetic (RT-PCR, DGGE, metagenomics) methods.

Publications and bibliometric indicators

The research activity is documented by publishing over 190 articles in international peer-reviewed journals. She also contributed to 16 chapters in national and international books and participated in numerous national and international conferences, presenting posters or giving oral presentations.

The h-index is equal to 58, and the total citations are 9,451 (21/07/2026).