

Webinar on Recent Knowledge on Nutrients, Health and Immunity on February 26

Prof. Patricia Conway

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BRIEF CV

Prof. P. Conway, BSc & MSc (UQ), PhD (UNSW), MASM, has a strong research background complimented with employment in R&D in industry while being affiliated with universities in Sweden and Australia. In Australia Prof. Conway has worked for CSIRO and also for a Cooperative Research Centre for Food Industry Innovation where Prof. Conway was University based and interfaced with the industrial partners. In addition, Prof. Conway was Chief Scientist for a biotechnology company while being based at the University of New South Wales, in the School of Biotechnology and Biomolecular Sciences. She currently is (a) an Adjunct Professor at the University of New South Wales, (b) Chief Scientist and Director for a biotechnology company in Australia, and (c) Visiting Professor at Nanyang Technological University (NTU), Singapore in the School of Chemical and Biomedical Engineering and the NTU Food Technology Centre (NAFTEC).

Prof. Conway has managed projects (basic research, applications and clinical trials) and co-ordinate the application of the research findings to industrial partners. In addition, Prof. Conway has been responsible for management of patents and patent applications. Prof. Conway is an author on over 100 scientific papers in refereed international journals, monographs or book chapters, and presented many invited plenary or keynote lectures at international meetings and is an inventor on over 20 patents applications and Chief Investigator on grants both in Sweden and Australia. During her affiliation with Gothenburg University and with the University of New South Wales Prof. Conway has supervised PhD, Masters and Honours students and given lectures to undergraduate and post graduate students and assisted with practical classes.

Prof. Conway's research interests are gastrointestinal microbiology, probiotics and prebiotics with particular emphasis on bacterial colonization of the gastrointestinal tract and mechanisms of bacterial adhesion, pathogen inhibition and immune modulation in animals and humans.



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Latest Research on Probiotics and its Impact on Health and Immunity

By

Prof. Patricia Conway, Adjunct Professor, University of New South Wales, Australia and Visiting Professor, Nanyang Technological University, Singapore

ABSTRACT

With the appreciation of the importance of the gut microbiome for health, there is increased interest in probiotics for improving health. While the concept of probiotics is not new, science based approaches to developing targeted probiotic products is opening a new chapter for this topic. Previously, probiotic products contained mainly lactobacilli species and bifidobacteria, often isolated from food products. Today, we see host derived strains which are being selected based on a stringent set of criteria including target-directed screening, with several other genera also being considered for imparting health benefits. The selected potential candidates are evaluated using latest –omics approaches as well as the impact on the host immune and neurological functions. By understanding the mechanism(s) of action, it is possible to appreciate the extent of possible applications. This is particularly relevant for the emerging interest in personalized intervention strategies. Candidate probiotics target microbial signatures identified as putative indicators of health and disease. While these next generation probiotic strains hold promise, these cautionary statements apply: not all strains of the same species have the same potential probiotic features; health benefits need to be demonstrated for a product to be probiotic; probiotics are live microorganism which confer a health benefit.

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BRIEF CV

Dr Steinert received a Master´s degree in Nutritional Science from the Friedrich Schiller University Jena, Germany in 2006. After an academic exchange year at the University of Manchester, UK, he was awarded his PhD degree from ETH Zurich, Switzerland in 2010 focusing on gastrointestinal (GI) satiation signals, mechanisms of secretion and potential for therapeutic application in humans. Following a Roche Postdoc Fellowship under the supervision of Prof. Beglinger at the Department of Gastroenterology, University Hospital Basel, Switzerland.

Dr. Steinert continued his postdoctoral education at the laboratory of Prof. Michael Horowitz and Prof. Christine Feinle-Bisset at the University of Adelaide, Australia with support of a prestigious and highly competitive Mary Overton Early Career Fellowship. During this time, he further deepened his expertise in GI physiology, particularly gut motor and hormone functions and metabolic control. In 2014, Dr. Steinert joined DSM Nutritional Products in Basel, Switzerland to focus on the role of the gut microbiome in host health and the development of functional foods including pre- and probiotics. Dr. Steinert is also affiliated with the University Hospital Zurich, Switzerland where he is involved clinical research and lecturing. His work has been published in leading scientific journals (>50 publications) with its impact evidenced by numerous citations (H-index=26) and invitations to speak.



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The Proven Benefits of Functional Foods in Boosting Immunity

By

Robert E Steinert, Human Nutrition and Health, DSM Nutritional Products Ltd, Basel, Switzerland.

ABSTRACT

The immune system is a network of biological processes that protects an organism from disease. It detects a wide variety of pathogens including bacteria, viruses, fungi and parasites and has evolved to include a myriad of specialized cell types, communicating molecules and functional responses.

Nutrient status is an important factor contributing to immune competence. While undernutrition impairs the immune system and proper host protection, increasing intakes of some nutrients above habitual and recommended levels can enhance certain aspects of immune functioning. A number of micronutrients including vitamins A, C and D as well as trace elements such as zinc or copper have been demonstrated to have key roles in supporting the human immune system and reducing risk of infections. Moreover, the gut microbiota plays a key role in educating and regulating the immune system and, as a result, modifying the gut microbiota using functional foods such as pro and prebiotics has attracted significant research efforts. Here, I present an overview of the effects of pre and probiotics as well as selected micronutrients on host immune functioning with a particular focus on evidence from human clinical studies.

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BRIEF CV

Dr. Sesikeran is Chairman of Governing Council of ILSI India Knowledge Center on Functional Foods, Immunity and Gut Health (K-FFIG) – a center of excellence launched in 2020. He is the Former Director of NIN, ICMR Hyderabad. He is a Pathologist by training and has carried out research in the area of Nutrition, Food Safety, and Toxicology for 30 years. He has over 120 publications and Chapters in 3 Books. He has developed guidelines for Probiotics in foods, Guidelines for GM food safety, Guidelines for Biosimilar Drugs, Recommended Dietary Allowances and Dietary Guidelines. He was the Director NIN between 2006 and 2012. He is a Fellow of the National Academy of Medical Sciences and Fellow of the International Medical Scientists Academy. He is Fellow of AP & Telangana Academies of Sciences. Past President Nutrition Society of India. He is Public Trustee of ILSI India. Member Governing Body of Nutrition Foundation India, Member- Advisory Council on Science -Coca Cola India. Member Scientific Advisory Committee Gut Microbiota and Probiotic Science Foundation (India). He is also the Chairman of the Scientific Advisory Committee of PFNDAI.

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Gut Microbiome and Brain Function- Role of Nutrition

By

**B Sesikeran, Chairman, K-FFIG, Former Director, National Institute of
Nutrition (ICMR), Hyderabad**

ABSTRACT

It is known that moments of stress trigger gastrointestinal tract (GIT) symptoms and the basic physiology also shows the neuroendocrine mechanisms behind brain-GIT signaling. What was not entirely understood was the reverse- of the Gut signaling to the brain and the role of the gut microbiome as the signal generator. This new knowledge has generated a better understanding of the gut microenvironments and the molecular mechanisms behind bacterial metabolism and their role in communicating to the brain. The microbes have the ability to generate metabolites and neurotransmitter molecules using nutritional substrates and transmit signals through neural, neuroendocrine, paracrine , vascular as well as through immune mediators .Several disorders affecting brain function as well as certain mental health and neurodegenerative disorders now seem to have links to the gut microbiome and nutritional factors which could modify them. A better understanding of these mechanisms may now pave the way to prevent as well as treat or manage some of these neuropsychiatric as well as neurodegenerative diseases. Probiotics that may have these benefits are now defined as Psychobiotics. There is still a lot more to be understood through well designed animal as well as clinical studies.