

This year, Functional Food Center (FFC) co-hosted its 19th International Conference with Kobe University. The 19th International Conference of Functional Food Center (FFC) and 7th International Symposium of Academic Society for Functional Food and Bioactive Components (ASFFBC) were held on November 17-18, 2015 at Kobe University, Kobe Japan. The conference was titled “Functional and Medical Foods, Bioactive Compounds and Biomarkers: Longevity and Quality of Life”.



FFC has worked for many years to bring together a global network of professionals (scientists, functional food experts, and food industry representatives) in an environment to promote innovative research in functional and medical food science. FFC aims to publicize novel research and support for functional food and bioactive compounds by educating medical, scientific, and public health professionals as well as students and the public. Since 2004, the FFC/Functional Food Institute has organized conferences in venues where scientists, researchers, medical doctors, and food industry professionals have presented their novel research and discoveries about functional foods and bioactive compounds for the management of chronic diseases. Similar to previous FFC conferences, there was a plethora of distinguished and reputable food and medical industry professionals attending this conference from around the world. The FFC conference at Kobe University included 30 presenters from 16 countries.

The conference was a 2-day program that involved 8 sessions including 6 sessions of oral presentations and 1 session of poster presentations each day. The session topics and session chairs were presented in this manner:

1. Regulatory issues and health claims: functional food definition and the status of functional foods in the US and Japan. Session Chairs: Yasuhito Shirai, PhD, Professor (Kobe University, Japan) and Hitoshi Ashida, PhD, Professor (Kobe University, Japan)
2. Probiotics, prebiotics and intestinal environment. Session Chair: Francesco Marotta, PhD, MD (ReGenera Research Group for Aging, Italy)
3. Bioactive food compounds: sources and potential health benefits. Session Chairs: Kanekanian Ara, PhD, (Cardiff Metropolitan University, United Kingdom) and Amanda Suddes, PhD (Manuka Health New Zealand Ltd, New Zealand)
4. Poster Presentations
5. Functional and medical foods for the management of chronic diseases. Session Chair: Julius Oben, PhD, Professor (University of Yaoundé I, Cameroon)
6. Special session organized by Health Bioscience team of Kobe University: Functional food research in Kobe University and Japan. Session Chairs: Yasuhito Shirai, PhD, Professor (Kobe University, Japan) and Masashi Mizuno, PhD, Professor (Kobe University, Japan)
7. Research and development of new functional food products. Session Chair: Hiroshi Maeda, PhD, Professor (Sojo University, Japan)
8. Poster Presentations



Session 1 opened with lecturers that included government representatives from Japan, Dr. Fukue Seino, and the United States, Dr. Pamela Starke-Reed, who both spoke about the regulation and advances of functional food research.

Fukue Seino, PhD, Deputy Director of the Food Labeling Division, Consumer Affairs Agency, Government of Japan, Tokyo, Japan, presented “Japanese system to regulate functional foods”. Fukue Seino described a newly established system in Japan for the regulation of functional products called “Food with Function Claims”, which was launched this year in April.

Pamela Starke-Reed, PhD, Deputy Administrator, Nutrition, Food Safety and Quality, USDA; gave an oral presentation on “Advances in the Functional Foods Research at the USDA Agricultural Research Service”. Dr. Pamela Starke-Reed discussed the research programs and current studies conducted by the Agricultural Research Service (ARS) in the United States including functional and medical foods.

Also, in the first session Dr. Danik Martirosyan, PhD, President of Functional Food Center, presented, “A new definition for functional food by FFC: Creating functional food products using new definition”. Dr. Martirosyan explained that the FFC defines functional foods as “natural or processed foods that contain known or unknown biologically-active compounds; which, in defined amounts, provide a clinically proven and documented health benefit for the prevention, management, or treatment of chronic disease”. This definition is unique to other definitions by stressing bioactive compounds as the backbone of functional food research. Dr. Martirosyan added the importance of this definition for the development functional food products. He also announced a new certification and evaluation service by FFC for functional food products. This process will ensure the quality and efficacy of functional food claims and will be met by the highest standards following the FDA and FOSHU guidelines.

Some of the many other distinguished presenters included:

Doman Kim, PhD, Professor, Seoul National University, Republic of Korea, presented “Enzymatic production of a natural sweetener rubusoside using a thermostable lactase and its uses”. In this lecture, Dr. Kim discussed his research on Rubusoside (Ru), a sweetener component in herbal tea, which has been shown to enhance the

solubility of many anticancer compounds. The researchers found that a compound used in oral chemotherapy, teniposide, which shows poor solubility in water or ether, demonstrated solubility at $3.42 \pm 0.11 \text{ mg.mL}^{-1}$ in the presence of 10% (w/v) of Ru. In part of teniposide's poor water solubility, it is currently delivered via a nonaqueous formulation and precipitates from the intravenous solution when diluted with other fluids for infusions.

Santad Wichienchot, PhD, Assistant Professor, Director of Interdisciplinary Graduate School of Nutraceutical and Functional Food (IGS-NFF) and head of post-graduate curriculum in Functional Food and Nutrition at the Prince of Songkla University (PSU), Thailand, presented, "Production and evaluation of prebiotics by fecal fermentation in simulated colon system, rat and clinical study". Dr. Santad Wichienchot elaborated on the current research being done in Thailand on prebiotics and gut health.

Carsten Gründemann, Dr. rer. nat., Principal Investigator at the Institute of Environmental Health Sciences in the Center for Complementary Medicine at the University Medical Center Universitätsklinikum Freiburg, Germany, presented, "Quality aspects of *Lentinula edodes* (Shiitake) preparations: Biological and chemical analysis of a functional food mushroom". Dr. Carsten Gründemann discussed the quality control evaluation of the activity of the preparations for Shiitake extracts in commercial and experimental Shiitake products. His study analyzed *in vitro* bioactivity, safety and content of β -glucans and endotoxins of Shiitake extracts.

Mikio Nishizawa, MD, PhD, Professor at the Ritsumeikan University, gave an oral presentation on, "The anti-inflammatory effects of the enzyme-treated asparagus extract and its constituents in hepatocytes". In this lecture, Dr. Mikio Nishizawa's presented his investigations of the anti-inflammatory properties of ETAS, the enzyme-treated asparagus extract, on rat hepatocytes. His research team analyzed the effect of ETAS and its constituents on the expression of genes involved in inflammation, including the *iNOS* gene.

Ara Kanekanian, PhD, Programme Director of the Cardiff Metropolitan University presented "Bioactive peptides from enzymatic hydrolysis of casein by trypsin and probiotic bacteria". Dr. Ara Kanekanian discussed the potential health benefits and physiological functions of certain bioactive peptides from protein hydrolysis found in milk and proteolytic enzymes in other fermented dairy products. He measured the amount of casein hydrolysates in milk and fermented dairy products as well as the physiological effect of casein hydrolysis in providing protection from cardiovascular diseases.

Hoyoku Nishino, MD, PhD, Professor of the Kyoto Prefectural University of Medicine and Ritsumeikan University, lectured on, "Multi-functional aspects of fucoxanthin, a natural carotenoid". Dr. Nishino discussed the multi-functional aspects of fucoxanthin and its health promoting effects. Current scientific literature reports that fucoxanthin has anti-oxidative, anti-inflammatory, and anti-obesity activities and explains the physiological effect of fucoxanthin. Dr. Nishino even introduced a new academic society to the conference audience called the "fucoxanthin Institute", which will be created to promote fucoxanthin science.

Representing ReGenera Research Group and Montnapoleone Medical Center, Prof. Marotta Francesco, MD, PhD, presented, "A fermented papaya preparation: novel avenues in cardiovascular and brain nutritional support strategies". Prof. Marotta presented preliminary data that shows fermented papaya preparation (FPP) may have potential neuroprotective effects for patients with Parkinson's disease. The preliminary findings suggest that FPP could be a part of a comprehensive preventive strategy plan for patients with a higher risk of metabolic diseases and related neurodegenerative disease.

Julius Oben, PhD, Professor, Head of Laboratory of Nutrition and Nutritional Biochemistry, Faculty of Science, University of Yaoundé I, Yaoundé, Cameroon, presented "The effect of a novel dietary supplement ResArgin™ on various age related conditions in rats". In this lecture, Dr. Julius Oben discussed the effect of ResArgin compared to the effect of Resveratrol on aging biomarkers such as glucose intolerance and insulin resistance, age-related pathologies, and hair regrowth.

Yasuhito Shirai, PhD, Professor, Department of Agrobioscience, Graduate School of Agricultural Science, Kobe University, Kobe, Japan, presented “Diacylglycerol kinase as a target of functional food to prevent and improve diabetic renal dysfunctions”. In this presentation, Dr. Shirai discussed his current research investigating Diacylglycerol kinase a’s (DGK ✓) involvement in the ViE-induced improvement of diabetic nephropathy (DN). More research needs to be done investigating EGCG as one of the potential functional foods that may target DGKa, in order to, manage diabetic renal dysfunctions.

Hiroshi Maeda, PhD, Professor, Sojo University, Japan, presented, “Preparation of function-enhanced vegetable oils”. In this lecture, Dr. Maeda discussed the preparation of enriched conventional low functional edible oils to function enriched edible oils, using dried residues of tomato juice and other vegetable residues.

Takuma Hayashi, PhD, Professor, Shinshu University School of Medicine, Japan presented, “Preventive effect of ascorbic acid against Tat-dependent HIV-1 replication.” Dr. Hayashi spoke about his investigations on the inhibition mechanism of ascorbic acid against HIV-1, using *in vitro* and *in vivo* experiments

In addition to the conference presentations, conference attendees were welcomed to participate in a tea ceremony in a Japanese teahouse and a banquet after the first day on Kobe University’s campus. Kobe University and Functional Food Center hosted these events to give attendees an understanding of the importance of tea in Japanese culture and more time to network with other scientists, medical experts, government representatives of Japan and the U.S., and the organizing committee of FFC 29th International Conference.



After the sessions on the last day of the conference, there was a panel discussion on the efficacy and safety of bioactive food compounds. The panelists included: Ken-ichi Yoshida, PhD, Ro Osawa, PhD, Francesco Marotta, MD, Pamela Starke-Reed, PhD, Danik Martirosyan PhD, Hiroshi Maeda, PhD.

The conference closed with the distribution of awards and membership certificates of the Academic Society for Functional Foods and Bioactive Compounds. Kobe University presented Motoki Murata, student, from Kyushu University a certificate and watch for the best poster presentation. Functional Food Society awarded Hiroshi Maeda, PhD, Professor, from Sojo University the [Introduction to Functional Food Science](#), third edition textbook, for an excellent oral presentation in the conference.

Though Functional Food Center does more than just organize conferences to create public awareness for functional food. FFC also sends out newsletters to more than 450,000 readers composed of scientists, medical doctors, dietitians, nutritionists, and food industry professionals. Additionally, the Functional Food Center/Functional Food Institute operates *The Journal of Functional Foods in Health and Disease* (FFHD), a peer-reviewed, open-access journal. FFHD keeps members of the ASFFBC, readers of FFC newsletter, and the public informed on the most current topics of functional food and bioactive compound research and development. In each of FFC's newsletters, readers are given information on future conferences, recently published articles in FFHD, and background information on modern functional food research topics. FFC writes and publishes textbooks, which academic professionals, researchers, and students primarily use, and are meant to outline functional food science, definitions, modern discoveries and research, technology, regulation, and other topics relevant to today's health and food culture, market, and legislation. Lastly, the newest service from FFC is to provide [evaluation and certification](#) for functional food products to ensure efficacy and quality in consumer markets at a lower cost. Functional Food Center/Functional Food Institute provides these services and conferences, in order to, bridge the gap between functional food researchers and consumers.

ReGenera, the official sponsor of 19th International conference of FFC