

4th Session

Amazing potential of food to keep us healthy

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The average life-expectancy of Japanese has prolonged rapidly in the past several decades, reaching 86.1 for female and 79.3 for male in 2008. The increased number of aged people, however, results in increased incidence of so-called life-style related diseases (LSRD), which will increase medical expenses of the society and induce tightness of the national budget. The possibility of reducing the risk of LSRD by certain foods was therefore considered 30 years ago, and a big national research project on foods with physiologic functions was constructed by Japanese scientists under the sponsorship of Ministry of Education, Science and Culture. Duration of this project (1984~1995) produced the world's first policy of legally permitting the commercialization of some functional foods. This is the birth of a distinct type of health food, termed "food for specified health use (FOSHU)".

Since the first FOSHU products appeared in 1993, more than 900 products with 8 different categories of functions have been approved by the ministry, and the market size has expanded to about 600 billion euro. In addition to supplement-type products, a variety of "very food-type" products, including tea beverage, bread, rice, noodle, yogurt, sausage, fermented bean, chewing gum, and so on are available. Many activities to create new categories of FOSHU are also being made, in which foods to prevent allergy, to reinforce body defense, to fight fatigue, and to improve skin conditions, are being investigated. Living healthy with the evidence-based foods, such as FOSHU, must be a desire of public. However, many problems that may impede the development and usage of functional foods have been recently pointed out. For example, researchers are struggling to prove the physiological functions of food, which are much milder than drugs and difficult to estimate the value. Industries are suffering from very strict examination by the governmental committee for FOSHU candidates. Consumers are confused by many similar products in the market, and cannot judge which is good. Medical doctors are worrying that usage of functional food may interfere with the proper medical treatment. Although many of these problems are beyond the field of basic food science, more detailed studies on food substances and their functions must be helpful to solve some of the problems.

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- 1949 Born in Tokyo, Japan
- 1977 Received Ph.D. degree in Agricultural & Biological Chemistry from The University of Tokyo
- 1978- Research Associate, Department of Agricultural & Biological Chemistry, The University of Tokyo
- 1986- Research associate, Department of Food Science, The University of British Columbia, Canada.
- 1990- Associate professor, Department of Food Science, University of Shizuoka, Japan
- 1993- Associate professor, Department of Agricultural & Biological Chemistry, The University of Tokyo
- 1996- Professor, Department of Applied Biological Chemistry, The University of Tokyo (Laboratory of Food Chemistry)

MAJOR RESEARCH AREA

- Regulation of intestinal epithelial cell functions by food factors
- Evaluation of food functions and safety by using cell culture systems
- Biochemistry of food proteins/peptides

MAJOR SCHOLARLY AND PROFESSIONAL ACTIVITIES

- Member, Science Council of Japan, 2003-present
- Head, International Union of Nutritional Sciences-Japan Adhering Body, 2003-present.
- President, Japanese Association for Animal Cell Technology, 2007-present.
- Committee Chair, Japanese Association for Food Immunology, 2004-present
- Editor-in-Chief, Japanese Society of Nutrition and Food Science, 2008-
- Director, Japan Society for Bioscience, Biotechnology and Biochemistry, 1995-2003, 2005-2007.
- Program officer, JSPS Research Center on Science System, 2003-2006

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