

## Abstract of Presentation

**Note: This paper should be typed in “Times New Roman” of 12pt.**

Name (Underline the family name)

Hisanori KATO

Presentation Title(Should be no more than 20 words):

Omics-Based Science of Food and Nutrition in Japan

Abstract :

Japan has been maintaining the highest levels in the world with the average life span. Well-balanced nutrition is of the primary importance for attaining the life-long health. On the other hand, functional food factors, the concept of which largely originated from Japan, have beneficial effects for prevention of life style-related diseases. The understanding of mechanisms underlying the effects of nutritional alterations as well as consumption of functional food factors is still an issue of priority in nutrition and food science. Very promising strategy to accomplish this would be exhaustive quantification of biological molecules, as called transcriptomics, proteomics, and metabolomics, whose target molecules are mRNAs, proteins, and metabolites, respectively. Showing some results of our group, which include the effects of dietary proteins and anti-obesity food components on global gene expression, the effectiveness of such ‘omics’ approach, especially of transcriptomics will be discussed. In these studies, global gene expression analyses were performed with animals consuming different diets or cells treated with food factors. In many of such studies the amount of information is extremely large and hard to manipulate. We are in good cooperation with informaticians, which enable us effective analyses and interpretation of data. Our group has constructed and is maintaining a database specialized for “omics” data of food and nutrition science (Nutrigenomics Database). To extend such a cooperation described above to international collaboration will contribute much to the promotion of health, the effective utilization of new food resources, and the creation of new industries.