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Kazuko Sakamoto

American Association for Cancer Research, USA

Dimensional approaches to nutrition, food science and healthy life

Current progression of bioscience is unimaginably getting faster, deeper and broader than ever. Relatively new fields, nutrigenetics, nutrigenomics, and nutritional epigenetics are examples of studies related to extended nutrition. Among them, nutritional epigenetics is directly link to the gene regulation by the food. The focus is how the molecules in food interact via metabolic systems with the molecules that attach to DNA and how to control gene expression in the body. This altered gene activity without changing the DNA sequence and leads to modifications that can be transmitted to daughter cells to carry to the offspring. Therefore, public health services come to attention in this field to shape up people's healthy life. One of the examples is polyphenols in green tea have a variety of health benefits in our life for protective diseases including cancer as well as curing inflammation in humans. The names of active compounds in green tea are eight cate chins (polyphenols), such as epicatechin, catechin, gllocatechin, epigallocatechin, epicatechin gallate, epigallocatechin gallate, gallocatechin gallate and catechin gallate. These slightly different chemical structures and their metabolic pathways are complicated in the body. However, all catechins together in green tea seem to work at the synergetic maximum benefits rather than one of those catechins alone in the body. Administered individual catechins are absorbed and reach the several organs and tissues, then alter the metabolisms in their own ways; break down or restructure there; in some case affected by gut microbiome, to work preferably beneficial to keep up healthy state in the body.

Biography

Kazuko Sakamoto completed her Master's degree in Human Nutrition in the University of Nebraska-Lincoln, and Ph. D. from Kansas State University in Nutrition science. Since then in USA, she was in postdoctoral training at Veterinary Medicine and Biochemistry at KSU. Then finally she found her devoting interest in green tea and cancer protection at AMC Cancer Center at Denver, Colorado. She became an independent cancer researcher moving from Pennsylvania State University, Case Western Reserve University, and to Moores' Cancer Center in San Diego. Many awards show her continuing endless efforts in cancer research.

kzksakamoto@yahoo.com