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The role of vitamin B6 in health and diseases

Although vitamin B6 is widely distributed in various foods, there is evidence that many adults are not obtaining adequate amounts of this nutrient from their diets, implying that the nutritional importance of vitamin B6 is under-recognized. In 2001, our group provided the first evidence for the anti-colon tumor effect of dietary supplemental vitamin B6 in mice received azoxymethane. Since then, a number of epidemiological studies have suggested an inverse association between vitamin B6 status and the risk of cancers. Furthermore, there is accumulating epidemiological evidence suggesting anti-cardiovascular and anti-inflammation effects of vitamin B6. Studies in our laboratory have indicated anti-inflammatory, anti-proliferative, anti-angiogenesis and anti-oxidant effects of vitamin B6 in animals and cell culture studies. Recently, our studies have revealed novel anti-inflammatory activities of vitamin B6, suggesting potential utility of vitamin B6 in preventing NLRP3 inflammasome-driven inflammatory diseases. We further found the elevation of carnosine and anserine (anti-inhibitory, anti-oxidant and ergogenic dipeptides) in heart and skeletal muscles of rats by dietary supplemental vitamin B6. These findings explain why vitamin B6 has important role in the anti-disease functions and health. In this lecture, I will present recent progress in the studies on these functions of vitamin B6.

Biography

Nori-hisa Kato has completed his PhD (1980) from Nagoya University, Japan. Currently, he is a Professor in Laboratory of Molecular Nutrition at Graduate School of Biosphere Science, Hiroshima University, Japan. His research interests are in elucidation of anti-disease food factors and the molecular mechanisms. He is an expert Editor of *Journal of Nutritional Science and Vitaminology* and has published more than 200 papers. He was given the Award for Excellence in Research Japan Society of Nutrition and Food Science (2012).

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