Title - Vitamin E and oxidative stress-related diseases

Abstract – Some diseases have been reported to relate to oxidative stress. I am researching about the biomarker of oxidative stress, especially lipid peroxidation products, and the antioxidant therapy. I focused on vitamin E as an antioxidant agent which suppresses lipid peroxidation. When I investigated about the molecular regulation mechanism of the blood vitamin E concentration, I clarified that a lipid transporter of liver cell is involved in the regulation of vitamin E. Then, I noticed that a compound X inhibits this lipid transporter and reduces blood vitamin E concentration. However, I could not think that the compound which lowers the vitamin E level was helpful to human diseases. On the other hand, Prof. Suzuki, Obihiro University of Agriculture and Veterinary Medicine, reported a resistance against malaria infection of α-tocopherol transfer protein knockout mice showing undetectable levels of vitamin E in plasma. Then, we combined our knowledge and examine about the effect of compound X against murine malaria infection. Pre-treatment for 2 weeks of compound X can rescue from death of mice infected with murine malaria. Interestingly, the side effects linked to prolonged vitamin E deficiency were avoided because the results showed that plasma vitamin E concentration was quickly recovered after compound X withdrawal.

Thus, compound X might be a suitable candidate for the treatment of malaria.
Dear Dr. Shichiri,

Please accept our thanks for being the DAILAB-CAFE Speaker on July 31, 2014.

We enjoyed your talk and appreciate your efforts!