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Sparing Effect of Ingested Daidzein On α -Tocopherol in Serum and Liver of Rats Deficient in Vitamin E

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We investigated a possible sparing effect of orally administered daidzein on vitamin E levels in rats. Fifteen Sprague-Dawley male rats with an average body weight of 250 grams were fed a purified type diet (AIN-93M) containing all the nutrients as suggested except α -tocopherol, which was completely excluded from vitamin mixture. It has reported that no isoflavones have been detected in this diet AIN-93M to the use of the casein-based. After a period of adaptation, the rats were randomly allotted into three different treatment groups; a positive control (+ vitamin E), a negative control (- vitamin E), and a treatment group (a negative control + daidzein). Daidzein (4, 7-dihydroxyisoflavone) were administered orally at a dose of 20 mg/day in every day for six weeks. Levels of α -tocopherol in serum and liver were significantly lower ($p < 0.001$) in rats of the negative control group compared to those of the positive control. Levels of α -tocopherol were significantly decreased up to 70 and 85 % in serum and liver, respectively, compared to those of the positive control group. However, the levels in serum and liver of rats administered with daidzein were significantly increased ($p < 0.001$) by 46 and 59 %, respectively, compared to those of vitamin E deficient rats. This observations suggest that the administered isoflavone was effective in preventing the reduction of vitamin E in the body.

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Induction of the Anticarcinogenic Marker Enzyme, Quinone Reductase, in Murine Hepatoma Cells by Wild Vegetables Produced in Ullung Island, Korea

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Phase II enzymes are transcriptionally induced by a wide variety of chemical agents and natural products and such induction plays critical roles in protection against chemical carcinogens and other toxic xenobiotics. In the present study, the ability of 5 wild vegetables with different parts produced in Ullung Island, Korea, to induce the activity of the phase II anticarcinogenic marker enzyme, quinone reductase (QR), has been investigated in murine hepatic C7 cells. As a results, methanol extracts of *Achyranthes japonica* (Miq.) Nakai (leaf and seed), and *Saussurea grandifolia* Maxim (leaf) at doses which are not exhibiting cytotoxicity were found to show over threefold increases in QR activity, compared to non-treated control. Methanol extracts of *Aruncus dioicus* var. *kamtschaticus* (Maxim) H. Hara (root) and *Cirsium nipponicum* (Maxim) Makino (stem) at doses which are not exhibiting cytotoxicity were found to show about 2.7-fold increases in QR activity, compared to non-treated control. Further study on identification and action mechanism of active compound(s) from leaves of *Achyranthes japonica* (Miq.) Nakai is now in progress.