ONLINE ISSN : 1880-1404
PRINT ISSN : 0916-717X

Biomedical Research on Trace Elements
Vol. 18 (2007) , No. 4 391-394

Assessment of Nutritional Availability of Selenium in Selenium-enriched Pumpkin

Munehiro Yoshida[1)2)], Kikue Sano[1)], Eri Ishiyuki[1)], Toshimasa Nishiyama[3)] and Kenji Fukunaga[1)]

1) Laboratory of Food and Nutritional Sciences, Department of Biotechnology,Faculty of Engineering, Kansai University
2) High Technology Research Center, Kansai University
3) Department of Public Health, Kansai Medical University

(Received: March 22, 2007)
(Accepted: May 29, 2007)

Abstract:
The nutritional availability of selenium(Se)in Se-enriched pumpkin(Se-pumpkin)was assessed by comparing with selenite and Se-enriched *Kaiware* radish sprouts(Se-sprouts). Male weanling ddY mice were fed a *Torula* yeast-based Se-deficient diet. After feeding for 3 weeks, mice were divided into 7 groups and fed the basal diet or a diet supplemented with 0.05 or 0.25μg/g of Se as either sodium selenite, Se-pumpkin or Se-sprouts for further one week. Supplementation of Se dose-dependently increased serum and liver Se concentrations and glutathione peroxidase(GPX)activities. In serum Se and GPX, the increases by Se supplementation did not significantly vary with Se source, but in the liver Se and GPX, the increases by selenite supplementation were significantly higher than those by supplementation with Se-pumpkin or Se-sprouts. A difference between the effect of Se-pumpkin and that of Se-sprouts was found in the elevation of liver Se concentration; supplementation with Se-pumpkin caused significantly higher elevation of liver Se than that with Se-sprouts. When liver Se was used, the nutritional availabilities of Se from Se-pumpkin and that Se-sprouts were estimated to be 97% and 65% to selenite Se, respectively. However, when liver GPX was used for the estimation, the availability of Se from either Se-pumpkin or Se-sprouts was less than 50% to selenite Se.

Key words: selenium, nutritional availability, glutathione peroxidase, selenium-enriched vegetables, selenium-enriched radish sprouts, selenium-enriched pumpkin

To cite this article:

Munehiro Yoshida, Kikue Sano, Eri Ishiyuki, Toshimasa Nishiyama and Kenji Fukunaga, “Assessment of Nutritional Availability of Selenium in Selenium-enriched Pumpkin”, Biomedical Research on Trace Elements, Vol. **18**, pp.391-394 (2007) .

JOI JST.JSTAGE/brte/18.391