

carbohydrate source (“aruk” group). These different diets were given for 4 weeks. Food intake, body weight and blood glucose were measured weekly. Other measurements; fasting insulin, adiponectin, etc. were assessed at the end of experimental period. **【Results and Discussion】** The food intake, weight gain and non-fasting blood glucose were almost similar in both groups. The fasting blood glucose and insulin levels of control group tended to be higher than “aruk” group ($p=0.478$; $p=0.221$). The AUC for blood glucose of “aruk” group was likely to be smaller ($p=0.701$) and adiponectin level was apt to be lower ($p=0.702$) than control group but statistically not significant. Based on HOMA-IR and QUICKI calculation, mice fed “aruk rice” tended to less insulin resistant ($p=0.329$) and more insulin sensitive ($p=0.461$) than mice fed cornstarch. “Aruk” group had strong trend to have higher GPx activity ($p=0.093$) and selenium concentration ($p=0.535$ for plasma; $p=0.346$ for liver) than control group. In this study the experimental diet was only given for 4 weeks, so that the efficacy might not be enough to result in significant effect on the variables measured. Also, inadequate sample size may lessen the power analysis to detect statistical differences. However, the data demonstrates that “aruk rice” has tendency to have more benefits in glycemic and antioxidant features compare to cornstarch. So, it is possible to develop “aruk rice” as the alternative diet for diabetes control.

9. Selenium Enrichment in Mung Bean Sprouts

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【Introduction】 Selenium (Se) is an essential nutrient that is important to human nutrition and health. Mung bean sprouts, daily consumed by Indonesian people, are vegetables containing high vitamins, minerals, and phytochemicals that are easy to be cultivated but contain small amounts of selenium. It is expected to increase its nutritional value and health benefit if these sprouts are enriched with Se. This study aims to evaluate the Se accumulation in Se enriched mung bean sprouts. **【Methods】** Mung beans were cultivated in three conditions; 1)

beans were soaked for one night (12 hours) in Se solutions as sodium selenite with concentrations: 1.0, 5.0, or 10.0 $\mu\text{g}/\text{ml}$ then moisturized twice a day (morning and evening) with selenite solution. 2) Beans were soaked for one night in 1.0, 5.0, or 10.0 $\mu\text{g}/\text{ml}$ sodium selenite then moisturized twice a day with tap water. 3) Beans were soaked for one night in tap water then moisturized twice a day with 1.0, 5.0, or 10.0 $\mu\text{g}/\text{ml}$ sodium selenite. Cultivation was done at 25°C for 5 days. After harvested, the sprouts were washed, put into plastic bags and stored at -80°C until extraction. Before measured by using modification of Watkinson method, mung bean sprouts were frozen with liquid nitrogen then grinded to make them homogenous. **【Results and discussion】** Soaking or moisturizing with sodium selenite increased the total Se content in mung bean sprouts. The result showed that mung bean sprouts soaked and moisturized with Se solution had the highest Se concentration (mean 0.51 $\mu\text{g}/\text{gr}$, 2.58 $\mu\text{g}/\text{gr}$ or 5.19 $\mu\text{g}/\text{gr}$ Se from 1.0, 5.0, or 10.0 $\mu\text{g}/\text{ml}$ sodium selenite, respectively). Soaking these sprouts with Se in the beginning of cultivation period did not increase much Se concentration because the bean is morphologically still covered by hard layer of seed coat that might prevent transportation of Se into the bean. However, soaking is important process in cultivating sprouts. In addition, compared to other sprouts enriched with 10 $\mu\text{g}/\text{ml}$ sodium selenite reported previously, mung bean sprouts did not accumulate high Se but it is adequate to fulfill Se recommended dietary allowance for female (26 μg), male (34 μg) and Se supplementation (200 $\mu\text{g}/\text{day}$).

10. 関節リウマチ患者における骨質の検討

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【目的】 近年, 骨密度と独立した骨折のリスク因子として骨質の存在が注目されている. ペントシジンやホモシステインは代表的な骨質マーカーであり, 関節リウマチ患者ではしばしば高値を示すと報告されている. 今回, 骨質マーカーと生物学的製剤の有無, 疾患活動性との関連につき検討を行った. **【方法】** 対象は当科でペントシジン及びホモシステインを測定した関節リウマチ患者 88 例のうち, 腎機能障害や糖尿病患者を除いた 73 例. 血中ペントシジン, 血中ホモシステイン, intact PINP, TRACP-5b, CRP, ESR, MMP-3, DAS28-ESR, DAS28-CRP, CDAI, SDAI, 腰椎及び大腿骨近位 BMD を測定し