

Methods: The combined samples from salads and diets in ethanol were homogenized with Waring Blender. Total polyphenols of the extracts were colorimetrically determined using the Folin-Ciocalteu reagent. Values were expressed as catechin equivalent, CtE.

Results: Five healthy salads often eaten in Japan showed 28.4-52.3mg CtE of total polyphenols. The desirable daily intakes by three times of them were 85.2-157 mg CtE/d. The daily healthy diets showed 144-183mgCtE/300g of plant foods. The estimated values of daily intakes of total polyphenols by literatures are 104-255mgCtE.

Conclusion: The desirable daily intakes of total polyphenols would be 150-250mgCtE.

PD3-057 Terminalia bellirica improves serum triglyceride concentration and some kinds of biochemical parameters in mice.

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Terminalia bellirica (TB) is one of the commonly used plants in Indian traditional medicine. In particular, its fruit has been used in Ayurvedic medicine as a treatment for the various disorders. Since there has been a few report on the effect of TB fruit on the metabolic disorder, in this study, we examined the physiological benefits of TB fruit extract (TBfe) in C57BL/6 mice. Eight-week-old male C57BL/6 mice were divided into 3 groups (7 mice/group) and housed in individual cages. Animals were fed experimental diets based on AIN-93G containing 0, 1 and 3% of TBfe for 6 weeks. Results revealed that the mice fed the 1% TBfe diet, had significantly lower serum TG and AST level ($P < 0.05$) than other groups. Moreover, blood glucose, TBARS, ALT and hepatic TG levels also tended to be lower than other groups. However, there were no significant differences in body weight gain, food intake, liver weights and body fat percent between the groups. On the other hand, mice fed with 3% TBfe diet tended to suppress the body weight gain and body fat accumulation as compared with other groups. Results also indicated that, there were no significant differences in biochemical parameters between the groups. These results indicate that the consumption of moderate amount TBfe maintains successfully serum TG and glucose levels, and liver function indices as well as antioxidative potential in mice without growth suppression. TBfe may be an efficacious ingredient for modulation of the various biochemical parameters.

PD3-058 The anti-adiposity effects of bitter melon seed oil

Yi-Chun Chang, Pei-Hsuan Chen, Pei-Min Chao
Institute of Nutrition, China Medical University

Objectives: This study aimed at investigating the anti-adiposity effect of bitter melon seed oil (BMSO), a natural source of c9, t11, t13-CLN.

Methods: Experiment I, C57BL/6J mice were first induced to be obesity by a high fat diet (30% butter), then they were split into three groups to receive a diet with fat from butter, soybean oil, or soybean oil plus BMSO (1:1). Experiment II was designed to test the dose requirement and the underlying mechanisms of BMSO-mediated anti-adiposity effects. C57BL/6J mice were separated into four groups to receive high fat diets (30% fat) with different ratio of soybean oil plus BMSO: 30% soybean oil, 25% soybean oil+5% BMSO, 20% soybean oil+10% BMSO and 15% soybean oil+15% BMSO, respectively.

Results and Conclusion: BMSO was more potent than soybean oil in attenuating body fat accumulation induced by a butter-rich diet. The anti-adiposity effects of BMSO were seen in a dose-dependent manner. In the low and medium BMSO groups, activation of cAMP-dependent protein kinase (PKA) and phosphorylation of acetyl CoA carboxylase (ACC) in adipose and liver were observed and postulated to contribute

to a suppressed lipogenesis and increased lipolysis. However, adipocyte apoptosis and macrophage infiltration were seen in the adipose tissue of mice subjected to a high BMSO diet. The relevance of c9, t11, t13-CLN to BMSO-mediated anti-adiposity effects and the safety concerns of incorporating BMSO into dietary fats await for further studies.

PD3-059 The effect of stress level on the improvement of constipation in young Japanese women expected by a drink type yoghurt containing Bifidobacterium breve.

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(1) Seitoku University Department of Human Nutrition
(2) Yakult Central Institute for Microbiological Research

Objective: It is known that altered bowel habit in functional gastrointestinal (GI) disorders, such as constipation or diarrhea, is influenced by one's ability to cope with the levels of stress, the lack of physical activity, and poor nutrition. However, the effects of stress and lifestyle affecting GI disorders are not well documented. The aim of the present study is to examine how stress, lifestyle of subjects and the intake of yoghurt influences the GI tract.

Materials & methods: Study design: A double blind placebo randomized-controlled study was conducted in accordance with the test for probiotics constipation relieving ability. Ninety-two subjects were recruited from a female Japanese university in Chiba. A wash out period was included in the test diet (yoghurt). Subjects were requested to record their meal, defecation, and other daily events.

Results: On average, the subjects had their bowel movements of 5 times/week or less. When placed on the test diet, subjects experiencing lower levels of stress had increased defecation frequency and decreased urinary phenol. Whilst for subjects experiencing higher stress levels, no improvement in the relief of GI symptoms subjects were reported as a result of the differential analysis based on Cornell Medical Index-health questionnaire. In addition, a correlation between the status of defecation and lifestyle was also noticed.

Conclusions: Disordered lifestyle and high stress may have interfered with probiotic effects on the subject. It is suggested that the stress level and lifestyle related factors should be considered in assessing GI symptoms.

PD3-102 Efficacy assessment of lycopene-micronutrient tablets in reducing blood lipid disorders

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National Institute of Nutrition, Vietnam

Objective: To assess the efficacy of lycopene-micronutrient in reducing blood lipid disorders.

Method: Community intervention trial in 12 weeks among 110 military officers, who were overweight and having blood lipid disorders. The intervention group was administered with 2 tablets of lycopene-micronutrients (containing 5mg lycopene, 5mg vitamin E, 0.8mg vitamin B6, 1mcg vitamin B12, 0.18mg acid folic) a day. The control group was administered with placebo (containing 5mg vitamin E), also 2 tablets a day for 12 weeks. Plasma, collected pre and post intervention trial was analyzed for total cholesterol, high density lipoprotein cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C), triglyceride, lycopene concentration was assayed by HPLC.

Results: All 3 indicators: total cholesterol, LDL-C, triglyceride of the intervention group were significantly lower than those of the control ($p < 0.05$), meanwhile the concentration of HDL-C and lycopene of the intervention were higher than those of the control ($p < 0.01$). The efficacy of lycopene-micronutrient tablets is higher in the intervention group as total cholesterol (12.8%); LDL-C (15.4%), triglyceride (6.1%) and HDL-C (5.2%).

Conclusion: Lycopene-micronutrient tablets might have positive effect on reducing blood lipid disorders

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Materials & methods: Study design: A double blind placebo-controlled study was conducted in accordance with the test for probiotics constipation relieving ability. Nine subjects were recruited from a female Japanese university in Chiba. A wash out period was included in the test diet (yogurt). Subjects were requested to record their meal, defecation and other daily events.

Results: On average, the subjects had their bowel movement of 5 times/week or less. When placed on the test diet, subjects experienced lower levels of stress had increased defecation frequency and decreased urinary phenol. Whilst for subjects experiencing higher stress levels, no improvement in the frequency of GI symptoms subjects were reported as a result of differential analysis based on Cornell Medical Index questionnaire. In addition, a correlation between the frequency of defecation and lifestyle was also noticed.

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Conclusion: Lycopene-micronutrient tablets might have an effect on reducing blood lipid disorders