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Current Topics in Nutraceutical Research 11 (3): 67-74

67-74 THE EFFECT OF AMARANTH FLOUR ON PLASMA CHOLESTEROL PROFILE IN MICE WITH DIET-INDUCED DYSLIPIDAEMIA
Zdeněk Chmelík, Hana Kotolová, Veronika Závalová, Ladislava Bartošová, Pavel Such˘ and Peter Kollár

ABSTRACT: ***Constipation is a prevalent, symptom-based disorder. There is evidence supporting the fact that the intake of prebiotics can affect bowel habit and is mildly laxative. Fructooligosaccharides (FOS) are referred to as prebiotics because they are capable of selectively stimulating the growth of beneficial bacteria such as bifidobacteria and enhancing their survival in vivo. Thus, the present study tests the laxative effect of FOS on the constipated mice and constipated adults. In the animal experiment, 100 Kun-Ming mice were randomized into 10 groups with 10 in each, among which 5 groups (control group, constipation group, and low, medium, high dose of FOS groups) were for small intestine movement experiment, the other 5 groups (the same as above) were for defecating experiment. The animals were treated with different doses of FOS (0.4, 0.8, and 2.5 g/kg bw) for 10 days, and then subjected to the small intestine movement experiment (reflected by ink propellant rate) and defecating experiment (reflected by the time of the first black feces excretion and the number and the weight of mice feces within 5 hrs). In the human study, a total of 100 constipated adults were enrolled on the basis of inclusion and excluded criteria in a randomized, double-blind study with the consumption of 5 g/d FOS for 10 days. The stool frequency, stool shape, straining effort and evacuation were used to define the efficacy of FOS. In the animal study, compared to constipation group, FOS effectively boosted the ink propellant rate, shortened the time of the first black feces excretion, and increased the number, fecal weight and the level of SCFA in the mice. In the human study, FOS significantly increased the bowel evacuation rate, reduced perception of straining effort and pain, and improved the quality of stools. These data indicate that FOS effectively enhanced the bowel movement and showed a significant improvement in the parameters related with bowel evacuation, and thus FOS could serve as a useful and safe tool for ameliorating constipation.***

Current Topics in Nutraceutical Research 11 (3): 75-82

75-82 **INHIBITION OF ALBUMIN GLYCATION BY INDIAN CULINARY PLANTS EXTRACTS**

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ABSTRACT: ***The anticancer activity of Cantron® and its presumed constituents were examined in vitro against a number of leukemia, solid tumor and normal cell types in a disk diffusion assay. It was demonstrated to have solid tumor selectivity against murine Colon38 compared to both murine leukemia L1210 and murine bone marrow stem cells (CFU-GM). The cytotoxic compounds in Cantron® with significant anticancer activity in vitro were shown to be catechol and tetrahydroxyquinone (THQ). IC_{50} values were determined against 13 different cancer cell lines and yielded an average value of 22.8 µg/mL for Cantron®, 2.3 µg/mL for catechol and 23.7 µg/mL for THQ. Clonogenic studies for these three materials demonstrated a similar increase in cell killing as a function of exposure time (from 2 h to 7 days) with the 7 day S_{10} value (concentration with yielded a 10% survival of clonogenic cells) of 5, 1.6 and 5 µg/mL, respectively, for Cantron®, catechol and THQ. An HPLC assay for catechol demonstrated its percentage in Cantron® at 12.7% by weight, a value also deduced from the cytotoxic activities of the components of Cantron®. These studies indicate that Cantron® has both anticancer activity and therapeutic potential.***

Current Topics in Nutraceutical Research 11 (3): 83-90

83-90 **CAROTENOIDS IN RELATION TO MARKERS OF ENDOTHELIAL FUNCTION AND ATHEROSCLEROSIS IN YOUNG PEOPLE**

Hsien-Tsai Wu, Cyuan-Cin Liu, Jyun-Hao Dong, Ching Jung Lai, Ding-Yuan Chen, Cheuk-Kwan Sun and Jian-Jung Chen

ABSTRACT*: The aims of this study were to determine the effect of conjugated linoleic acid (CLA) supplementation on nutritional status, symptoms of eating problems and dietary intake in rectal cancer patients undergoing chemoradiotherapy. In this randomized clinical trial, 33 volunteer patients with rectal cancer who were referred to the radiotherapy center were recruited. Patients were assigned into CLA group (n=16), receiving 3 g CLA/d and placebo group (n=17) receiving placebo capsules (sunflower oil)*

for 6 weeks. Before and after intervention, nutritional status, weight, symptoms of eating problems and dietary intake of patients were assessed by Patients Generated Subjective Global Assessment, Seca scale, questionnaire and 24-hour food recall method, respectively. At the end of intervention, 2 patients were excluded from the study. In the CLA group, incidence of malnutrition decreased significantly as compared with the placebo group (P=0.033). In comparison with placebo group, CLA supplementation resulted in significant (P<0.05) reduction in incidence of appetite loss, nausea, diarrhea, pain and significant increase in dietary intake (P<0.05). At the end of study, the mean body weight of patients decreased significantly in both groups (P<0.05). According to our results, it seems that CLA may provide new complementary treatment by improving malnutrition, eating problems and dietary intake. However, further studies with large sample size are needed to confirm our results.

Current Topics in Nutraceutical Research 11 (3): 91-96

91-96 **INHIBITION OF ODORANT-INDUCED SIGNAL TRANSDUCTION BY DIINDOLYLMETHANE, A FOOD-DERIVED BIOACTIVE MOLECULE**

Yeo Cho Yoon, Shuaiyu Wang, Sung-Hee Kim, Mi-Jeong Sung, Jin-Taek Hwang, Min Jung Kim, Mee-Ra Rhyu and Jae-Ho Park

ABSTRACT: *Overweight and obesity affect more than 66% of the adult population and are associated with a variety of chronic diseases. Weight loss has then beneficial effects in reducing health risks associated with chronic diseases. In recent decades, weight management has evolved into a multi-disciplinary approach, combining low-calorie diets with physical activity and nutritional supplementation. This could help weight loss by inducing a reduction in caloric intake, an increased lipolysis or a reduction of the nervous system feedback of hunger sensation. The study presented in this work aimed at evaluating the efficacy of a dietary supplemental containing phloridzin, isoflavones and probiotics (Re-Code®), as an adjuvant in reducing body weight and fat mass in slightly overweight women. Phyto-supplement consumption was included in a body weight reduction programme including a mild hypocaloric diet and moderate daily physical activity. A randomised, double-blinded, placebo-controlled trial was conducted on 40 slightly overweight women aged 30 to 54. Women taking the phyto-supplement showed greater reductions in body weight, fat mass and waist, thigh and buttock circumference than the control group. Moreover, the used phyto-supplement proved to be an effective adjuvant in body weight and fat mass reduction when associated with both a mild low-calorie diet and moderate physical activity in overweight women.*

Current Topics in Nutraceutical Research 11 (3): 97-102

97-102 **L-CARNITINE SUPPLEMENTATION IN DUCHENNE MUSCULAR DYSTROPHY STEROIDNAÏVE PATIENTS: A PILOT STUDY**

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ABSTRACT: *Sea cucumber, possessing various active compounds, is a traditional food in Asia. Acaudina molpadioidea is a kind of sea cucumber widespread in Eastern Asia. Sepsis is the systemic inflammatory response to infection predominantly from gram-negative bacteria. Here, we investigated the effect of active compounds of sea cucumber (A. molpadioidea) on the sepsis. Our results found the polysaccharides, but not polypeptides, from sea cucumber improved the survival in CLP induced septic mice. After polysaccharides oral administration, the colony-forming units (CFU) were all decreased in liver, spleen, and blood samples of septic mice compared with controls. The pro-inflammatory factors, IL-1β and TNFα, were both down regulated in the plasma of polysaccharides fed mice. There were similar*

plasma levels of IL-10 in polysaccharides and saline fed mice. The peritoneal macrophages from polysaccharides fed mice exhibited stronger phagocytosis and bacterial killing capabilities than controls. This study provides a kind of new potential food to possibly improve sepsis-related mortality in human.

Current Topics in Nutraceutical Research 11 (3): 103-108

103-108 IN VITRO ACTIVITY OF LOQUAT LEAF EXTRACT AGAINST OXIDATIVE DAMAGE IN NEURONAL CELL

Sun Jin Hur, Young Il Bae, Young-Chan Kim, Inwook Choi and Chang Ho Jeong

ABSTRACT: ***The aim of this study was to evaluate sucrase inhibition by D-xylose in humans. Sucrose was administered with D-xylose to 13 healthy volunteers (5 males and 8 females), and their blood glucose levels were examined. The mean ± standard error glycemic indices (GIs) of sucrose with 5% D-xylose (XF) and sucrose alone were 59.6 ± 4.0 and 77.6 ± 3.1, respectively. The mean glycemic index of sucrose with 5% D-xylose (XF) was 23% lower than that of sucrose alone. The mean glycemic index of sucrose with 5% D-xylose (XF) in obese individuals was significantly lower than that of sucrose with 5% D-xylose (XF) in normal-weight individuals. The glycemic index of sucrose with 5% D-xylose (XF) was reduced approximately 40% when compared with sucrose alone in obese individuals. However, the reduction in the glycemic index by D-xylose was relatively less in normal-weight individuals than in obese individuals. Additionally, there was a negative correlation between the glycemic index of sucrose with 5% D-xylose (XF) and body-fat percentage. Therefore, sucrose administered with an appropriate amount of D-xylose can contribute to the reduction of problems caused by excess sucrose consumption.***