INTERNATIONAL JOURNAL OF PROBIOTICS & PREBIOTICS

Volume 9 Number 1/2 February – May, 2014

Review Articles

Research Articles

International Journal of Probiotics & Prebiotics 9 (1/2): 1-16.

ABSTRACT: ***Infections of the lower urinary tract occur frequently in young women, during pregnancy, and in preand post-menopausal women. Multiple drug resistance arising in different microbial isolates has complicated the therapeutic management of urinary tract infections. Because of the chronic nature of these urinary tract infections and the potential for antibiotic resistance, a natural remedial approach for prevention and treatment is desirable. In this milieu, several recent clinical researches have nominated probiotics as a promising natural option for long-term prevention of these ailments.***

International Journal of Probiotics & Prebiotics 9 (1/2): 17-22.

ABSTRACT: ***The use of a probiotics is widely accepted as natural means to promote a health which matters both for a both humans and animals as well. The mechanism of effect action of probiotics is directly associated connected with the properties of a selected probiotics strain. Selection is an important challenge that requires a platform of basic information about physiology and genetics of a candidate strain relevant to their intestinal role, functional activities, and interaction with the other micro flora. During the selection of while selecting an existing strain, it is of much importance to have a detail study about its origin, genetic makeup, and growth characteristics necessary to consider the origin of a strain, genetics and growth properties in vitro and in vivo. Probiotics must have the ability to exert a beneficial effect on a host, withstand into food stuff at a high cell count and remain viable throughout the shelf life of a product, withstand transits through a GI tract, adhere to intestinal epithelium cell lining and colonize the lumen of the tract, produce antimicrobial substances towards pathogens, technologically suitable for industrial processes and should be an associated with a pronounced health benefits. In the case of novel involvement of novel microorganisms and genetically altered modified strains as probiotics emphasizing their safety and risk while formulating new food has to be accessed. This review helps researchers to include the maximum select criteria for appropriate probiotics strain.***

.

International Journal of Probiotics & Prebiotics 9 (1/2): 23-30.

23-30 **A PROBIOTIC FERMENTED MILK DRINK CONTAINING *LACTOBACILLUS CASEI* STRAIN SHIROTA IMPROVES STOOL CONSISTENCY OF SUBJECTS WITH HARD STOOLS**

Linde Tilley, Katleen Keppens, Akira Kushiro, Toshihiko Takada, Takafumi Sakai, Mario Vaneechoutte and Bart Degeest

ABSTRACT: ***The aim of this study was to investigate the effect of a fermented milk drink containing Lactobacillus casei Shirota (LcS) on the bowel habit (with emphasis on stool consistency) of subjects suffering from hard stools. Secondly, it was tested whether the probiotic strain (LcS), was able to survive throughout the gastrointestinal tract. A double-blind, placebo-controlled, randomized study was carried out over an eight-week period in subjects with symptoms of constipation (n=120). To all subjects, 65 ml/day of a probiotic fermented milk drink containing LcS or a placebo was administered. Patients completed a questionnaire to assess the consistency of their stools. In half of the study population, the survival of the probiotic strain (LcS) was tested using (i) culture and (ii) an LcS specific monoclonal antibody to identify the cultured colonies as LcS (ELISA). There was a significant decrease in stool hardening when consuming a fermented milk drink containing LcS. The observed clinical effect went hand in hand with the observed microbiological effect as the number of viable LcS bacteria in the faeces increased when consuming fermented milk drink containing LcS and decreased during wash-out.***

International Journal of Probiotics & Prebiotics 9 (1/2): 31-38.

31-38 **MAINTENANCE OF HEALTHY INTESTINAL MICROBIOTA IN WOMEN WHO REGULARLY CONSUME PROBIOTICS**

Hirokazu Tsuji, Osamu Chonan, Yumi Suyama, Yukiko Kado, Koji Nomoto, Masanobu Nanno, Fumiyasu Ishikawa

ABSTRACT: ***Lactobacillus casei strain Shirota (LcS) and Bifidobacterium breve strain Yakult (BbrY) are probiotics that have been provided to consumers for many years and are reported to have beneficial effects on human health. Especially, "Yakult", a fermented milk beverage containing 6.5 billion live LcS, is drunk in more than 32 countries and regions worldwide, including in Japan, with more than 30 million products being provided to the market each day. This widespread mass consumption of this probiotic product has been achieved with the help of product delivery and sales staff. They provide the fresh probiotic drink to customers each day, and naturally they personally consume this probiotic beverage at high rates. Assuming that the effect of probiotics in improving intestinal microbiota would be observable in the staff routinely consuming the products, we compared the intestinal microbiota of 91 staff with that of 98 women from the general population who were not in the habit of drinking probiotic products. We found that 1) the frequencies of detection of LcS and BbrY in the feces were higher in the staff than in the general group of women; 2) counts of bacteria, including Bifidobacterium, the Clostridium coccoides group, the Bacteroides fragilis group, Enterococcus, and Lactobacillus, were significantly higher in the staff group than in the general group, whereas the frequencies of detection and counts of Prevotella, Staphylococcus, and C. perfringens were significantly lower in the staff group than in the general group; 3) the stools of the staff group were significantly softer than those of the general group . These results suggested that regular drinking of probiotic products improved the intestinal microbiota and bowel habit in these staff.***

International Journal of Probiotics & Prebiotics 9 (1/2): 39-48.

39-48 **THE INFLUENCE OF PREGNANCY ON THE USE AND ACCEPTANCE OF PROBIOTICS**

Natasha Ramsay, Kelton P. Tremellen and Karma L. Pearce

ABSTRACT: ***This study aimed to determine Australasian women's general knowledge of probiotics, their use, acceptance and motivations to consume probiotics and whether these variables changed during pregnancy. 493 women aged 20-42 years were surveyed online using Survey Monkey. Consumer preference and acceptance was evaluated using the psychological constructs used in Protection Motivation Theory. This analysis revealed women contemplating pregnancy or pregnant would only take probiotics if they perceived they were vulnerable to disease (β=0.33, p<0.04; (β=0.32, p<0.05) respectively). Selfefficacy was also a predictor of probiotics usage for pregnant women (β=-0.43, p<0.01) particularly when living in the metropolitan area (p=0.028). Healthy women, not pregnant or contemplating pregnancy were more likely to consume probiotics supplements is they were consuming vitamin supplements (β=0.42, p<0.01), they believed probiotics were effective (β=-0.15, p<0.01), were required (β=-0.11, p<0.01) and there were rewards of a maladaptive approach (β=0.17, p<0.01). While 60% of respondents believed probiotics to be good for gastrointestinal symptoms, alarmingly 30% felt that probiotic use in pregnancy was not safe. Given the benefits of probiotics in improving the maternal metabolic profiles, pregnancy outcomes and health outcomes for the offspring, education programs to address misconceptions need to recognize that pregnancy may change the acceptance of probiotics.***

International Journal of Probiotics & Prebiotics 9 (1/2): 49-54.

49-54 **NAGAMESE FERMENTED SOYBEAN (AXONE) REDUCES AGE AT FIRST PARTURITION, INCREASES LITTER SIZE AND MODULATES IMMUNE RESPONSE IN MOUSE MODEL**

Bhoj Raj Singh and R.K. Singh

ABSTRACT: ***Axone, also known as Aakhone or Akhuni is perhaps the most commonly used fermented soybean product of Nagaland that is relished in the most parts of North Eastern India. Despite its popularity little is known about its health benefits. This study evaluated growth, reproduction and immunomodulation effects of Axone in Swiss albino mice. Incorporation of Axone in regular diet of mice (1% W/W) significantly (p≤0.03) improved weight gain, reduced age of reproduction (sexual maturity) and increased litter size and survival of newborn mice. Axone also enhanced the humoral immune response (p≤ 0.05) against Salmonella enterica ssp. enterica ser Typhimurium.***

International Journal of Probiotics & Prebiotics 9 (1/2): 55-60.

55-60 **ANTIOXIDANT ACTIVITY OF THE PROBIOTIC CONSORTIUM** *IN VITRO*

A. Kushugulova, S. Saduakhasova, S. Kozhakhmetov, G. Shakhabayeva, I.Tynybayeva, T. Nurgozhin, F.Marotta and Zh. Zhumadilov

ABSTRACT: ***The antioxidant and antigenotoxic properties of the probiotic consortium, including the strains Streptococcus thermophilus, Lactococcus lactis, Lactobacillus plantarum, Lactobacillus fermentum, Lactobacillus acidophilus, Bifidobacterium longum, Bifidobacterium bifidum, were investigated. According to the results of our research the total antioxidant capacity (TAC) of the intact cells in the probiotic consortium was high – 15.3 mmol/ml, glutathione reductase activity was 0.004 U/ml, Superoxide dismutase activity was not revealed. The total antioxidant capacity of the cell lysates in the probiotic consortium is 11.1 mM/ml, glutathione reductase activity – 0,008 units/ml, superoxide dismutase activity – 0.24 U/mg. Co-incubation of the epithelial cells with the probiotic consortium reduces the percentage of damaged cells (DI - 0.6).***