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- 91-94** **ISOLATION AND CHARACTERIZATION OF PROBIOTIC MICROORGANISMS FROM CURD AND CHILI SAUCE**
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A. Kushugulova, S. Kozhakhmetov, A. Supiyev, G. Shakhabayeva, S. Saduakhasova, S. Sabitkyzy, A. Gulayev, T. Nurgozhin, Zh. Zhumadilov and A. Sharman

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53-60 KESTOSE, A PREBIOTIC FRUCTOOLIGOSACCHARIDE, ENHANCES INTERCELLULAR TIGHT JUNCTION RECOVERY VIA A RHO-ASSOCIATED KINASE-DEPENDENT MECHANISM IN INTESTINAL CACO-2 CELLS

Toshimitsu Shirai, Yoshimitsu Suzuki, Kohei Kamikado, Yasuhiro Koga and Ryo Aoki

ABSTRACT: *Kestose, a prebiotic fructooligosaccharide, has been shown to exert a therapeutic effect on the clinical manifestation of atopic dermatitis (AD) in infants through a unknown mechanisms. Since restoration of the impaired intestinal barrier may be useful for the treatment of AD, we investigated the effect of kestose on the intestinal barrier using the Caco-2 cell monolayer in a Ca²⁺ switch assay. Our results show that apical kestose treatment (1% w/v) led a significant acceleration of the restoration of barrier function after Ca²⁺ replenishment. Kestose also enhanced the reassembly of tight junction (TJ) proteins. An acceleration in the dephosphorylation of myosin light chain (MLC) was also found by kestose treatment. Moreover, an inhibitor of Rho-associated kinase (ROCK), a key enzyme involved in the phosphorylation of MLC, abrogated the kestose-mediated promotion of TJ restoration. These results indicate that kestose accelerates the recovery of epithelial TJ assembly through the induction of MLC dephosphorylation via a ROCK-dependent mechanism.*

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61-66 EFFICACY OF PROBIOTICS IN THE PREVENTION OF ANTIBIOTIC-ASSOCIATED DIARRHOEA (AAD) IN CHILDREN- A REVIEW

Michael J Fox, Kiran DK Ahuja and Rajaraman D Eri

ABSTRACT: *Antibiotic-associated diarrhoea (AAD) is recognized as a common problem with the use of antibiotics. Probiotics and probiotic yogurt formulations have been used in clinical studies aimed at treating AAD. In this review, we describe the summary of a number of clinical research studies utilizing probiotics and yogurt specifically for treating AAD in children. A detailed evaluation of study design, methodology, data analysis and interpretation is carried out to describe the merits and limitations of such studies. Overall, there is a clear evidence for the beneficial effects of specific probiotics and yogurt in AAD in children.*

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SAFETY OF A FORMULA SUPPLEMENTED WITH GALACTO-OLIGOSACCHARIDES IN TERM INFANTS

Marcello Giovannini, Elvira Verduci, Gianvincenzo Zuccotti, Giacomo Biasucci, Alberto Podestà, Amilcare Rottoli, Dario Gregori, Simonetta Ballali, Giuseppe Banderali, Enrica Riva, Diana Ghisleni, Laura Pogliani, Cristina Cicero, Monica Tonella and Ilaria Frugnoli

ABSTRACT: *Infant formula design aims at achieving the same beneficial effects on physical and physiological development seen in breast-fed infants. The objective of this study was to evaluate the safety of an infant milk formula supplemented with GOS (0.4g/100mL) in terms of growth and incidence of adverse effects. This was a double blind, multicenter, parallel group, randomized clinical trial. Weight (g), length (cm), and occipito-frontal head circumference (cm) were measured. The incidence of adverse events (AEs) and infants acceptance and tolerance of the study formula were evaluated. A total of 199 breast fed infants and 163 formula fed (80 in the control and 83 in the study group) were recruited. All three groups showed appropriate physical development throughout the period. Length was significantly associated with breastfeeding. Diarrhea was comparably present in all groups. GOS supplemented formula stimulated infants' growth and prevented AEs similarly to human milk.*

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75-84

SUPPRESSION OF DIET-INDUCED HYPERCHOLESTEROLEMIA BY PROBIOTIC DAHI CONTAINING *LACTOBACILLUS ACIDOPHILUS* AND *LACTOBACILLUS PLANTARUM*

Dheeraj Mohania, Vinod K. Kansal, Ravinder Nagpal, Yuichiro Yamashiro and Francesco Marotta

ABSTRACT: *The present study was conducted to evaluate the hypocholesterolemic effect of probiotic LaLp Dahi containing *Lactobacillus acidophilus* (LaVK2) and *Lactobacillus plantarum* (Lp9) on rat model. Three groups of male Wistar rats were fed supplements of probiotic Dahi, Dahi or buffalo milk, respectively for 120 days. After the supplements were consumed, the animals were fed basal hypercholesterolemic diet. Plasma total cholesterol increased by over 70.0% in buffalo milk and Dahi; while on probiotic Dahi, it decreased by 47.0%. The plasma HDL-cholesterol significantly increased in LaLp Dahi-fed rats (78.7%), relative to buffalo milk (57.5%) or Dahi-fed groups (62.1%). The content of VLDL + LDL-cholesterol level was significantly lower on probiotic Dahi (1.5 mg/dl) than on buffalo milk (58.9 mg/dl) and Dahi (56.1 mg/dl). The plasma TAGs on probiotic Dahi was decreased by 77.9%, while it increased by 96.7% on buffalo milk and 58.6% on Dahi. Atherogenic index significantly decreased by 94.0% on probiotic Dahi as compared to only 13.1% decline on buffalo milk. It was concluded that the probiotic Dahi attenuate diet induced hypercholesterolemia and decrease the depositions of triacylglycerols and cholesterol in liver and aortic tissues in rats. The mechanism is mediated by an increase in HDL-cholesterol and diminutions in LDL plus VLDL cholesterol and triacylglycerols in plasma.*

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- 85-90** **IMMUNOMODULATORY AND IMMUNORESTORATIVE POTENTIAL OF INTRAGASTRICALLY FED VIABLE AND NON-VIABLE L. ACIDOPHILUS IN SWISS ALBINO MICE**
Ritu Pawan and Aruna Bhatia

ABSTRACT: *Though the immunomodulatory effect of probiotics is known but hardly any literature shows its immunorestorative effect. In the present study the effect was immunorestorative capacity of intragastrically administrated live and dead (lysates) probiotic strain of Lactobacillus acidophilus was investigated in hydrocortisone-treated Swiss Albino mice. The cell-mediated immune response was assessed by Nitroblue Tetrazolium (NBT) reduction, inducible Nitric Oxide Synthase activity (iNOS), bactericidal activity and Delayed Type Hypersensitivity (DTH) response. The development of anti-BSA antibodies as a measure of humoral immune response was checked by ELISA. The results showed that both the live and dead bacteria feeding potentiated the cell-mediated immune response as well as humoral immune response, however the activity was better ($p < 0.05$) in the former. Moreover, the suppressive effect of chemically damage immune system by hydrocortisone in mice was attenuated by live and dead L. acidophilus and was restored towards normalcy. Our findings that even the dead probiotic bacteria may exert immunomodulatory effects and improve the immune function damaged by immunosuppressive agents. It is concluded that in immunocompromised host where live bacteria may give harmful effects, the dead bacteria may be given to boost the immune response.*

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- 91-94** **ISOLATION AND CHARACTERIZATION OF PROBIOTIC MICROORGANISMS FROM CURD AND CHILI SAUCE**
Shubhangi Goyal, Trisha Raj, Chiranjib Banerjee, Jahangir Imam and Pratyoo Shukla

ABSTRACT: *The present work is an attempt to isolate probiotic microorganisms present in curd and chili sauces. Among the eight isolates recovered during this study, the isolate STP2 was further selected because of its higher stability in low pH (pH-3) and high temperature (45°C) and resistance towards antibiotics such as penicillin, ampicillin, and erythromycin. Amplification and sequence analysis of 16s rDNA of isolate STP 2 revealed that isolated bacteria belong to Bacillus subtilis.*

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- 95-100** **ISOLATION AND CHARACTERIZATION OF LACTOBACILLIFROM TRADITIONAL KAZAKH DAIRY PRODUCTS**
A. Kushugulova, S. Kozhakhmetov, A. Supiyev, G. Shakhbayeva, S. Saduakhasova, S. Sabitkyzy, A. Gulayev, T. Nurgozhin, Zh. Zhumadilov and A. Sharman

ABSTRACT: *Bacteria of genus Lactobacillus were isolated from a number of traditional Kazakh dairy products. These isolates were subjected to classical microbiological techniques to examine their biological characteristics and in vitro genotoxic properties. Of 148 isolates of Lactobacilli, 20 strains exhibited novel probiotic properties.*

