PRETICX®
O xilooligossacarIDEO seletivo para todas as idades

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PRETICX®
O xilooligossacarídeo seletivo para todas as idades

DESCRIÇÃO
Preticx® é um prebiótico a base de xilooligossacarídeos (XOS).

MECANISMO DE AÇÃO
O promove de maneira seletiva a recuperação e manutenção da microbiota intestinal à base de xilooligossacarídeos (XOS), através do crescimento de Bifidobacterium e inibindo o crescimento de bactérias relacionadas a síndrome metabólica, diabetes e obesidade, além de manter o teor de água nas fezes auxiliando no tratamento da constipação. Apresenta efetividade em baixas doses reduzindo o desconforto pela alta fermentação além do risco aumentado de proliferação concomitante de bactérias patogênicas. Estudos referem-se ao uso de dose diferenciada no tratamento da constipação em gestantes.

INDICAÇÕES
✓ Constipação, inclusive em gestantes;
✓ Diarreia em crianças;
✓ Manutenção e proteção (colite) da microbiota intestinal;
✓ Prevenção da síndrome metabólica, obesidade e diabetes.

DOSE USUAL
Recomendação oral de 1,4 a 2,8g de Preticx® ao dia.

SUGESTÕES DE FÓRMULAS

**Preticx®** ..................................................... 1 g
Base shake sem lactose......................... 1 dose

**Modo de uso:** dissolver 1 dose em 250 ml de água 2 vezes ao dia, pela manhã e à noite em jejum.

**Indicação:** constipação em gestantes.

**Preticx®** .......................................................... 1,4 g
Glutamina .......................................................... 3 g
Base Shake sem lactose................................ 1 dose

**Modo de uso:** dissolver 1 dose em 250 ml de água ao dia, em jejum.

**Indicação:** manutenção da saúde intestinal.

**Preticx®** .......................................................... 900 mg
Picolinato de cromo................................. 30 mcg
Vanádio quelato ........................................... 50 mcg
Sachê qsp...................................................... 1 sachê

**Modo de uso:** dissolver 1 sachê em 250 ml de água, 30 min antes do almoço e do jantar.

**Indicação:** controle da obesidade.

PRINCIPAIS REFERÊNCIAS

Xylooligosaccharides increase bifidobacteria but not lactobacilli in human gut microbiota.

This study was conducted to determine the tolerance and effects of the prebiotic xylooligosaccharide (XOS) on the composition of human colonic microbiota, pH and short chain fatty acids (SCFA) in order to determine whether significant changes in the microbiota would be achievable without side effects. Healthy adult subjects (n = 32) were recruited in a double-blind, randomized, placebo-controlled study. Subjects received 1.4 g XOS, 2.8 g XOS or placebo in daily doses. The study consisted of a 2 week run-in, an 8 week intervention, and a 2 week washout phase. Stool samples were collected at baseline, after 4 and 8 weeks of intervention and 2 weeks after cessation of intervention. Samples were subjected to culture, pyrosequencing of community DNA, pH and SCFA analyses. Tolerance was evaluated by daily symptom charts. XOS was tolerated without significant gastrointestinal side effects. Bifidobacterium counts increased in both XOS groups compared to the placebo subjects, the 2.8 g per day group showed significantly greater increases than the 1.4 g per day group. Total anaerobic counts and Bacteroides fragilis group counts were significantly higher in the 2.8 g per day XOS group. There were no significant differences in the counts of Lactobacillus, Enterobacteriaceae and Clostridium between the three groups. XOS intervention had no significant effect on stool pH, SCFA or lactic acid. Pyrosequencing showed no notable shifts in bacterial diversity. XOS supplementation may be beneficial to gastrointestinal microbiota and 2.8 g per day may be more effective than 1.4 g per day. The low dose required and lack of gastrointestinal side effects makes the use of XOS as a food supplement feasible.

Effect of xylooligosaccharide intake on severe constipation in pregnant women.

Xylooligosaccharides (XOS) are mainly composed of two or three xylose units with beta-1,4 linkages. They are obtained by hemicellulose hydrolysis, which is relatively abundant in the cell walls of grains. XOS increases the number of intestinal Bifidobacterium in humans, and maintains the fecal water content within the normal range. To examine the effect of XOS intake on severe constipation in pregnancy, which is predominant in the third trimester, thirty constipated pregnant women were treated with 4.2 g XOS daily for 4 wk. During the study, the clinical efficacy was assessed using a daily diary. The subjects indicated the number of stools and the clinical symptom scores. Twenty-nine subjects completed the study. The mean number of stools was 1.1 +/- 0.4 in the pre-treatment week, and increased in weeks 1-4 of XOS administration to 5.3 +/- 2.1, 5.9 +/- 2.5, 6.2 +/- 2.2 and 6.7 +/- 1.9, respectively. At the end of the study, 27 subjects could defecate spontaneously. The occurrence of very loose or very hard stools decreased and the stool consistency normalized. The stool color changed from dark to yellowish brown. No side effects were observed. XOS intake was highly effective for the reduction of severe constipation in pregnant women without adverse effects.

In vitro study of the prebiotic xylooligosaccharide (XOS) on the growth of Bifidobacterium spp and Lactobacillus spp.

We recently demonstrated that XOS increased the counts of Bifidobacterium in vivo without increasing Lactobacillus in healthy adults. In the current study, we evaluated the effect of XOS on the growth of 35 Bifidobacterium and 29 Lactobacillus strains in in vitro conditions. Bacteria were identified by 16S rRNA sequence analysis. The growth stimulation was determined by agar dilution technique on plates containing two-fold serial dilutions of XOS (100-0.1 mg/ml). The growth of 86% of Bifidobacterium strains was stimulated at 1.56 mg/ml XOS and 100% at 6.25 mg/ml XOS. The growth of 38% of Lactobacillus strains was stimulated at 1.56 mg/ml XOS and 62% at 6.25 mg/ml XOS; 31% of Lactobacillus were not stimulated by XOS. Our results further suggest that XOS may be beneficial in stimulating intestinal Bifidobacterium without having much effect on Lactobacillus. The potential role for XOS in managing obesity should be investigated further.
Xylooligosaccharide supplementation alters gut bacteria in both healthy and prediabetic adults: a pilot study.

BACKGROUND: It has been suggested that gut microbiota is altered in Type 2 Diabetes Mellitus (T2DM) patients. OBJECTIVE: This study was to evaluate the effect of the prebiotic xylooligosaccharide (XOS) on the gut microbiota in both healthy and prediabetic (Pre-DM) subjects, as well as impaired glucose tolerance (IGT) in Pre-DM. SUBJECTS/METHODS: Pre-DM (n = 13) or healthy (n = 16) subjects were randomized to receive 2 g/day XOS or placebo for 8-weeks. In Pre-DM subjects, body composition and oral glucose tolerance test (OGTT) was done at baseline and week 8. Stool from Pre-DM and healthy subjects at baseline and week 8 was analyzed for gut microbiota characterization using Illumina MiSeq sequencing. RESULTS: We identified 40 Pre-DM associated bacterial taxa. Among them, the abundance of the genera Enterorhabdus, Howardella, and Slackia was higher in Pre-DM. XOS significantly decreased or reversed the increase in abundance of Howardella, Enterorhabdus, and Slackia observed in healthy or Pre-DM subjects. Abundance of the species Blautia hydrogenotrophica was lower in pre-DM subjects, while XOS increased its abundance. In Pre-DM, XOS showed a tendency to reduce OGTT 2-h insulin levels (P = 0.13), but had no effect on body composition, HOMA-IR, serum glucose, triglyceride, satiety hormones, and TNFα. CONCLUSION: This is the first clinical observation of modifications of the gut microbiota by XOS in both healthy and Pre-DM subjects in a pilot study. Prebiotic XOS may be beneficial in reversing changes in the gut microbiota during the development of diabetes.

Dietary xylooligosaccharide downregulates IFN-γ and the low-grade inflammatory cytokine IL-1β systemically in mice.

Dietary carbohydrates improve growth conditions for distinct populations of bacteria that may affect mucosal and systemic immunity. In this study, we fed in a parallel experiment a 10% xylooligosaccharide (XOS)-supplemented diet or a control diet to 2 groups of male C57BL/6NTac mice for 10 wk from weaning. We found that the XOS diet significantly increased Bifidobacterium throughout the intestine compared with control-fed mice, with the highest proportions found in the ileum after XOS feeding (P < 0.001). In the intestinal epithelium, most innate immune-related genes were unaffected by XOS feeding, whereas expression of interleukin 1β (II1β) (P < 0.01) and interferon γ (Ifnγ) (P < 0.05) was significantly less in blood from XOS-fed mice than from control-fed mice. In vitro treatment of blood with propionate significantly decreased II1β (P < 0.01), Ifnγ (P < 0.01), and interleukin 18 (II18) (P < 0.001) expression, supporting our hypothesis that increased production of short-chain fatty acids (SCFAs) in the gut, which are transported across the intestine and into the systemic compartments, results in downregulation of low-grade inflammatory cytokines. The defensin regenerating islet-derived protein 3γ (Reg IIIγ) was significantly more highly expressed in the small intestine (P < 0.01) in XOS-fed mice compared with control-fed mice, suggesting only minor contact between bifidobacteria and epithelial cells. In support of this, the SCFA-induced sodium/hydrogen exchanger isoform 3 expression tended to be greater in the XOS group than in the control group (P = 0.06), indicating an indirect SCFA-mediated antiinflammatory effect of XOS. In conclusion, XOS feeding decreases systemic inflammation, and this effect is most likely caused by higher SCFA concentrations as a result of an increased bifidobacterial saccharolytic fermentation in the entire gut and not only in the large intestine.
Sulfasalazine or enteral diets containing fish oil or oligosaccharides attenuate chronic colitis in rats.

Recent studies have suggested that n-3 fatty acids from fish oil (FO) as well as short-chain fatty acids may attenuate some of the gut injury and inflammation-associated ulcerative colitis (UC). The objectives of this study were to (a) assess the antiinflammatory activity of sulfasalazine (SAZ), a drug known to be effective in the treatment of human UC in a model of chronic granulomatous colitis in rats and (b) determine whether enteral diets supplemented with either FO or two indigestible oligosaccharides (fructooligosaccharide, FOS; xyloligosaccharide, XOS) could attenuate the inflammation observed in a model of chronic granulomatous colitis. In one series of experiments, female Lewis rats were randomized into three groups consisting of a sham-operated control group, a colitic group, and a colitic group in which rats were given oral sulfasalazine (SAZ) immediately after induction of colitis and continued for 3 weeks. Chronic granulomatous colitis with liver and spleen inflammation was induced by subserosal (intramural) injection of purified peptidoglycan-polysaccharide (PG/PS) into the distal colon. Sham-operated rats were injected with human serum albumin. All rats received standard lab chow. In a second series of experiments, female Lewis rats were randomized into six groups consisting of four colitic groups fed enteral diets, a colitic group fed chow, and a sham-operated group fed a control enteral diet. Enteral diets (300 kcal/kg/day) contained either FO, FOS/gum arabic, XOS/gum arabic, or no bioactive ingredient (control diet). All rats were fed for 1 week before induction of colitis. Rats consumed the diets for 3 additional weeks before being killed. SAZ significantly attenuated the PG/PS-induced increases in myeloperoxidase (MPO) activity as well as significantly reduced the PG/PS-induced increases in liver and spleen weights. Control (enteral diet) as well as the FO and XOS diets significantly attenuated the increase in colon weight when compared with chow-fed rats. We also found that the FO and XOS diets significantly attenuated the PG/PS-induced increases in colonic MPO activity and colon weight. The FOS and XOS diets significantly attenuated the PG/PS-induced increases in liver weights when compared with PG/PS + chow-fed animals. The antiinflammatory activity of these diets was confirmed by means of histological inspection showing an inhibition of inflammation and maintenance of crypt cell integrity. These results demonstrate that a complete enteral diet supplemented with either FO, FOS, or XOS exhibited antiinflammatory activity that was similar in efficacy to the known antiinflammatory drug SAZ in this model of colitis.

Randomised clinical trial: efficacy of a new synbiotic formulation containing Lactobacillus paracasei B21060 plus arabinogalactan and xiloooligosaccharides in children with acute diarrhoea.

BACKGROUND: Acute diarrhoea is a frequent problem in children with heavy economic burden for families and society. AIM: To test the efficacy of a new synbiotic formulation containing Lactobacillus paracasei B21060, arabinogalactan and xiloooligosaccharides in children with acute diarrhoea. METHODS: Double-blind, randomised, placebo-controlled trial, including children (age 3-36 m) with acute diarrhoea who were allocated to placebo or symbiotic group. Major outcome was resolution rate of diarrhoea at 72 h. Total duration of diarrhoea, daily stool outputs, stool consistency, working days lost by parents, adjunctive medications, and hospitalisation were also assessed. RESULTS: We enrolled 55 children in placebo group and 52 in synbiotic group. The two groups were similar for demographic and clinical characteristics. Resolution rate of diarrhoea at 72 h was significantly higher in synbiotic group (67%) compared to placebo group (40%, P = 0.005). Children in synbiotic group showed a significant reduction in the duration of diarrhoea (90.5 h, 78.1-102.9 vs. 109.8 h, 96.0-123.5, P = 0.040), daily stool outputs (3.3, 2.8-3.8 vs. 2.4, 1.9-2.8, P = 0.005) and stool consistency (1.3, 0.9-1.6 vs. 0.6, 0.4-0.9, P = 0.002) compared to placebo group (data expressed as mean, 95% CI). Rate of parents that missed at least one working day (41.8% vs. 15.4%, P = 0.003), rate of children that needed adjunctive medications (25.5% vs. 5.8%, P = 0.005) or hospitalisation (10.9% vs. 0%, P = 0.014) after the first 72 h of treatment, were reduced in synbiotic group. CONCLUSION: The synbiotic formulation studied is effective in children with acute diarrhea.
Effects of xylooligosaccharides in type 2 diabetes mellitus.

The purpose of this study was to evaluate the effect of xylooligosaccharide (XOS) on the blood sugar, lipids and oxidative status in type 2 diabetes mellitus (DM). A total of 26 outpatient subjects of Taichung Veterans General Hospital, Taiwan, with HbA1c levels between 7.0 and 10.0% and triglyceride <400 mg/dL were enrolled in the present study. Subjects were supplemented with 4 g/d XOS (n=12) or a placebo (n=14) for 8 wk in a randomized double-blind clinical design. The results showed that the anthropometric values and nutrient intakes did not change during the experimental period. XOS supplementation not only reduced the glucose, HbA1c and fructosamine concentrations, but also decreased the levels of total cholesterol, low density lipoprotein (LDL) cholesterol, oxidized low density lipoprotein (ox-LDL) and apolipoprotein B. The activity of catalase of the erythrocyte sample decreased in the XOS group, but not the activities of superoxide dismutase and glutathione peroxidase. In conclusion, the dietary supplementation with XOS for 8 wk was effective in improving the blood sugar and lipids in type 2 diabetes, indicating that XOS-containing diets might be beneficial to DM subjects.

REFERÊNCIAS


