PROTOCOL FOR LIFE BALANCE®

Dietary Supplement Information
for Physicians with Naturokinetics®
PRODUCT CODE: P2948
CATEGORY: DIGESTIVE HEALTH

Prebiotic Powder XOS

TECHNICAL SUMMARY

Prebiotic Powder XOS features PreticX™, a prebiotic complex comprised of xylooligosaccharides (XOS). XOS is a group of selective, bifidogenic prebiotics shown to increase the amount of healthful *Bifidobacteria* in the GI tract of healthy individuals, which is particularly beneficial with aging.* When added to the diet, Prebiotic Powder XOS helps to maintain healthy flora balance, nourishes the intestinal lining, and promotes regularity without additional bloating or flatulence.* Consider adding this product to probiotic supplements.

Structure Formula:

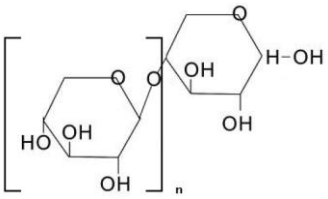

Figure 1: XOS; n=2 to 6

XOS is a group of sugar oligomers made up of xylose units naturally present in foods such as bamboo shoots, fruits, vegetables, milk, and honey. The structures of xylooligosaccharides are variable; it is generally a mixture of oligosaccharides formed by xylose residues linked through β-(1→4)-linkages. The number of xylose residues involved in their formation can vary from 2 (xylobiose) to 6. PreticX™ XOS is constituted of 26% xylobiose (n=2), 21% xylolriose (n=3), 12% xylotetraose (n=4), 16% other polymerized components greater than xylotetraose (n>4) and 5% mixed sugars (glucose, xylose, arabinose).

Chemical Name: D-xylose-hexulose ($C_{5n}H_{8n+2}O_{4n+1}$; n=2 to 6)

Allergen and Additive Disclosure: Not manufactured with wheat, gluten, soy, milk, egg, fish, shellfish or tree nut ingredients. Produced in a GMP facility that processes other ingredients containing these allergens. PreticX™ is manufactured via enzymatic hydrolysis (endoxylanase isolated from non-GMO *Streptomyces olivaceoviridis*) of xylan from corncob. The materials from enzyme sources are not included in the final product.

Delivery Form: Powder

ROLE AS NUTRIENT/FUNCTION

XOS is a prebiotic as defined by the FAO as a non-viable food component that confers a health benefit on the host associated with modulation of the microbiota.
Pre-clinical data published more than 20 years ago showed that XOS was a good substrate for *Bifidobacteria* growth in pure culture and that *Clostridium* and *E. coli* could not use XOS to grow.*

When metabolized by microflora, short-chain fatty acids (SCFA) are generated. A number of health effects have been reported for SCFA, including improvement in bowel function, calcium absorption, lipid metabolism, and epithelial colon cell protection.*

Supplement Facts

Serving Size 1 Level Teaspoon (approx. 2.7 g)
Servings Per Container about 31

	Amount Per Serving	% Daily Value
Calories	5	
Total Carbohydrate	2.6 g	1%*
Total Sugars	< 1 g	†
Xylooligosaccharides (XOS) (from PreticX™ Prebiotic Complex)	1.55 g (1,550 mg)	†

* Percent Daily Values are based on a 2,000 calorie diet.
† Daily Value not established.

Other ingredient: Maltodextrin (from non-GMO corn).

- **Selective Bifidogenic Effect***
- **Nourishes Intestinal Flora***

SUGGESTED USAGE: Adults and children (ages 4 & up), take 1 level teaspoon daily, or as directed by your healthcare practitioner. Mix into water, other beverage or food.

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Liberation: This product is in the form of a powder. No liberation step is necessary.

Absorption: XOS is not degraded by the low pH gastric fluid nor by digestive enzymes and can therefore reach the lower intestinal tract intact.

Distribution: There is no known tissue distribution of this prebiotic.

Metabolism: The metabolism of XOS in the colon by enzymes produced by resident microflora generates short-chain fatty acids (SCFA), hydrogen (H_2) and carbon dioxide (CO_2). These SCFA may be further metabolized for energy generation by the host.

Elimination: Products of XOS enzymatic degradation in the colon are eliminated in feces.

CLINICAL VALIDATION

- In a double-blind, randomized, placebo-controlled study carried out with 32 healthy volunteers, 1.4 g XOS per day for 8 weeks resulted in higher *Bifidobacterium* counts compared to the placebo group at 8 weeks (p=0.052) and 10 weeks (p=0.043; 2 weeks after the end of supplementation). There were no significant differences in the *Lactobacillus* and *Clostridium* counts. XOS was well tolerated with no significant difference versus placebo when comparing for excess flatus, bloating, number of stools, abdominal pain and borborygmi.
- In a randomized, prospective study carried out with 14 healthy volunteers, 1.4 g XOS for 28 days resulted in significantly higher *Bifidobacterium* counts (p<0.05).

SAFETY INFORMATION

Tolerability: There is a long history of human dietary exposure to xylose-based fibers as hemicelluloses from grain sources. In clinical studies XOS was well tolerated to up to 12 g/d.

Contraindications: None known.

INTERACTIONS

Drug Interactions: None known

Supplement Interactions: None known

Interaction with Lab Tests: None known

STORAGE

Store at ambient warehouse conditions in tightly sealed original container. Protect from excessive heat, light and moisture.