

Original Synbiotic Formula

Brief

The Philosophy

Complex chronic diseases are a mounting problem worldwide with many factors giving rise to a pandemic concern. Pollution, life style choices, stress levels, dietary patterns, globalization and virulent pathogens have collectively weakened our immune systems. The major "Port-of-Entry" for these xenobiotics and pathogens is our GI tract, with one cell-layer of mucous membrane as the barrier that separates and protects us. Our body focuses its defense, communication and intelligence at this one-celled mucous membrane.

BioImmersion Inc. designed a powerful range of Therapeutic Foods Synbiotic Formulas with the specific purpose to protect the integrity and functionality of the gastrointestinal system.

Properties

Amount per serving- ½ tablespoon provides 25 billion lactic acid bacteria and 5 grams of inulin. The Original Strain Synbiotic bacterial organisms- pedigreed human strains with four decades of scientifically proven research backing their performance in protecting the integrity of the GI tract: ***Lactobacillus acidophilus (ATCC 4356)***, ***Bifidobacteria longum (ATCC 15707)***, ***Streptococcus thermophilus (ATCC 19258)***, ***Lactobacillus rhamnosus (ATCC 7469)*** and ***Lactobacillus plantarum (ATCC 8014)***.

Technological Attributes

Microbiome Technology

Therapeutic Foods bacterial cultures are produced by the Microbiome Technology; a proprietary system that begins by feeding the bacteria with a strain-specific media (special food) to stimulate accelerated cell division. The optimal nutritional profile of these media guarantees cells that are compact and have significantly stronger and thicker cell walls. These physical characteristics result in greatly increased viability

and full potential for genomic expression for each probiotic organism. Dry Preservation Technology maintains ultra-low moisture content and ensures longer shelf life. Every batch is confirmed routinely by DNA sequencing to their original molecular identity from the ATCC Depository at Georgetown University and the Gene Bank in Bethesda, Maryland.

Clinical Application - The Original Strain

The Original Probiotic mix successfully passes through stomach acid and GI tract bile, and effectively colonizes and protects the mucous membrane through their abilities to protect, counteract and neutralize dietary toxin, mutagen, carcinogens and infectious organisms:

Against Dietary Toxins

Many agricultural commodities are vulnerable to attack by a group of fungi that are able to produce toxic metabolites called mycotoxins. Among various mycotoxins, aflatoxins have assumed significance due to their deleterious effects on humans. Aflatoxins are potent toxic, carcinogenic, mutagenic and immuno-suppressive agents. Mold mycotoxins can compromise the blood-brain barrier and induce a neurodegenerative process of protein and antigen liberation, provoking IgG, IgM or IgA response against different neuronal antigens which may result in chronic sensory neuropathy, demyelinating sensorimotor neuropathies or MS. The Original Formula Probiotic strains successfully bind mycotoxins. *L. rhamnosus* binds AFB1 in vivo and reduces bioabsorption of the toxin from the gut. *L. acidophilus* and *B. longum* neutralize AFB1 and AFM1 by binding mechanisms. *S. thermophilus* reduces content of ochratoxin A.

Against Dietary Mutagens

A mutagen is a natural or human made agent (physical or chemical), which can alter the structure or sequences of DNA. Mutagens may cause impaired cell function, cell death or cell transformation into cancer cells. One source of dietary carcinogens that might influence the incidence of breast cancer is called cooked meat mutagens because they are formed through heating protein-rich foods such as meats and fish. These are called heterocyclic amines. Heterocyclic amines are the only mammary carcinogen known to be present in everyday human diets. Another dietary mutagen

found in cured meats, cheese and beer is nitrosamines. They are potent DNA methylating agents. Approximately 300 of these compounds have been tested and 90% of them have been found to be carcinogenic. The Original Formula Probiotic strains effectively reduce or neutralize nitrosamines, heterocyclic amines and other dietary mutagens. *L. acidophilus* neutralizes pyrolysates, dietary mutagens that are carcinogenic. *B. longum* reduces incidence of liver, colon and mammary cancers in rats. *L. rhamnosus* binds and removes pyrolysate, aflatoxin B1 and Trp-P-1. *S. thermophilus* reduces mutagenic and carcinogenic effect of the substance N-methyl-N-nitro-N-nitrosoguanidine.

Against Dietary Carcinogens

All types of diets, including those that are defined as balanced diets, contain both toxic and protective substances. The risk of developing cancer may depend upon the relative consumption of protective versus toxic substances. Many scientists agree that the Western diet contributes to about 40% of human cancer. More than 50% of all cancer cases occur in cells that are in direct contact with the outside environment, including the skin, lungs and the digestive tract. Amongst the most protective substances, a healthy microbiotic flora is most important. The Original Probiotic Formula protects against the development of cancer. In numerous trials *L. acidophilus*, *B longum*, *L. rhamnosus*, *S. thermophilous*, all have shown the potential to prevent the induction of DNA damage and to inhibit the formation of precancerous colon lesions caused by a wide variety of mutagens.

Against Infectious Organism

Food and water borne diseases are a worldwide present-day concern. Gastrointestinal diseases in the US are on the increase. The result of globalization is that harmful microbes travel with the world commerce. Outbreaks of Cyclosporiasis that affected large numbers of people in the United States were traced to raspberries imported from Guatemala. Many American chickens now arrive in supermarkets contaminated with *Campylobacter*, eggs often contain *Salmonella* and pig meat *Toxoplasma gondii*. Verocytotoxin producing *Escherichia coli*, such as *E. coli* s0157 are emerging food borne pathogens worldwide. *L. acidophilus* inhibited aggressive enterovirulent strains of *Salmonella*, *E. coli*, *Pseudo-tuberculosis* and *Listeria*. *B. longum* has been found to neutralize *E. coli* and exerts marked inhibitory effects on

ulcerative colitis. *L. plantarum* provided therapeutic benefits to help in the recovery from enterocolitis. The Original Probiotic Formula bacteria were chosen for the specific purpose of preventing pathogenic bacteria from growing, invading and causing disease.

Clinical Application - Therapeutic Foods: Inulin

In the GI Tract

Inulin improves bowel habits - inulin is a highly viscous non-digestible soluble dietary fiber and therefore increases faecal biomass and water content of the stools. The addition of inulin in the diet is known to improve regularity and reduce constipation. Inulin shifts gut ecology in favor of friendly bacteria: the best known nutritional effect of inulin is its ability to stimulate *bifidobacterial* growth in the colon. Consistently nourishing Bifidobacteria with inulin allows them to “out compete” potential pathogenic organisms, such as *C. difficile*, *E. coli*, *Salmonella* and *Campylobacter*, thereby reducing their negative effects. Inulin helps in management of IBD: inulin is resistant to digestion in the upper GI tract and reaches the large intestine essentially intact where it is fermented by the Bifidobacteria, producing butyric acid. Butyric acid is the preferred energy substrate for the colonocytes. Deficits in butyric acid cause these mucosal lining cells to shrink and lose their tight junctions triggering an inflammatory response. Because butyric acid is the primary fuel for the colonocytes and an important signaling molecule, products that include inulin may protect and ameliorate IBD. Inulin reduces the risk of colon cancer: butyric acid stimulates stem cell differentiation within the crypts of the mucosal lining, thereby reducing the risk of developing colon cancer.

Systemic Medical Applications

Inulin helps protect against viral infections: in a study conducted at John Hopkins, 123 infants who were fed inulin with their cereal showed reduced incidence of fever, less antibiotic use, fewer doctor visits, less vomiting and fewer daycare absences. Inulin is proven to have a positive affect on cardiovascular health: Studies show that inulin reduces cholesterol and triglycerides blood levels, and reduces hepatic lipogenesis. Inulin can be beneficial in the management of diabetes: although inulin has a pleasant sweet taste, it has no effect on blood glucose levels or insulin levels,

therefore it can be used safely. Inulin enhances calcium and magnesium absorption: it is clinically proven to increase bone density. A study published in the American Journal of Clinical Nutrition showed that inulin increase calcium retention in adolescents by 15%. This increase in calcium absorption and bone density resulted after supplementing with 8 grams of inulin daily.

Therapeutic Foods Probiotic Formula are 100% Pure

BioImmersion Inc. utilizes 21st Century microbiological research, food chemistry and food technology science to develop and manufacture the Therapeutic Foods line of Synbiotic Formulas. All Formulas are manufactured without any excipients. Each powder or capsule contains only 100% pure probiotic bacterial blend and the special therapeutic foods. Our products are extensively and properly analyzed and documented to ensure consistent delivery of the highest levels of active ingredients.

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