



## **Ther-Biotic® Complete**

**Broad-Spectrum, High-Potency, 12-Species Probiotic Formula**  
with InTactic® acid-stable technology

### **DESCRIPTION**

Ther-Biotic® Complete is a high-potency, broad-spectrum, multispecies probiotic supplement containing 12 certified probiotic species each selected for well-documented supportive health benefits. A synergistic blend of health-promoting *Lactobacillus*, *Bifidobacterium*, and *Streptococcus* species formulated with InTactic® acid-stable technology, Ther-Biotic® Complete supplies essential intestinal microorganisms and promotes a more favorable intestinal microflora balance to support normal gastrointestinal and immune system function. Ther-Biotic® Complete is available both as an ultra-high potency powder and in encapsulated form. Each 1/4 teaspoon of Ther-Biotic® Complete powder provides 100+ billion CFUs of probiotic microorganisms. Each vegetarian capsule contains 25+ billion CFUs.

The probiotic species in Ther-Biotic® Complete are supplied in a base of inulin derived from chicory root and encapsulated in a Kosher-certified vegetarian capsule. Klaire's InTactic® acid-stable delivery technology, a proprietary hypoallergenic polysaccharide complex, protects microorganism potency during transit through the acidic gastric environment. Ther-Biotic® Complete is a hypoallergenic product free of common allergens, including dairy products, casein, gluten, corn, soy, egg, sugar, yeast, and maltodextrin. No artificial additives, colorings, flavoring, preservatives or salicylates are used. A small amount of L-leucine, a naturally occurring amino acid, is used as an encapsulation aid for the Ther-Biotic® Complete capsules.

### **OVERVIEW**

The gastrointestinal tract microflora is composed of more than 400 identified species and at least another 400 yet uncultured species. This highly complex community is integral to normal human development and health. The gastrointestinal microflora mostly consists of indigenous native species and healthful microorganisms that colonize the bowel only when they are consumed on a regular basis. A small percentage of the microflora has the potential to cause disease. All these microorganisms normally coexist in a balanced, complex community and promote normal gastrointestinal function, provide protection from infection, supply nutrients and vitamins, facilitate mineral absorption, modulate immune function, and metabolize cholesterol, bile salts, hormones and drugs. However, this delicate microecological balance can be disrupted by an array of factors including inadequate dietary intake of essential probiotics, nutritional deficiencies, chronic overgrowth of pathogenic microbes, stress, toxins, and the use of medications including antibiotics, immunosuppressants and proton pump inhibitors. Once the normal intestinal microflora is disrupted, a person becomes susceptible to a variety of infectious, allergic, autoimmune, and inflammatory diseases.

Probiotics are mainly living lactic acid bacteria (LAB) that have beneficial effects on the health and well-being of their host. Probiotics promote a more favorable balance of intestinal microflora by reducing populations of harmful microorganisms including a wide range of Gram-positive and Gram-negative pathogens such as *Staphylococcus aureus*, *Listeria monocytogenes*, *Salmonella typhimurium*, *Shigella flexneri*, *Escherichia coli*, and *Klebsiella pneumoniae* as well as yeast. This task is accomplished primarily through the production of substances toxic to pathogenic organisms such as lactic acid, acetic acid, formic acid, hydrogen peroxide, and bacteriocins. Probiotics compete with pathogens for niches and nutrients. They can inhibit pathogen-binding to enteric mucosal cells. Substantial evidence associates probiotic bacteria with boosting both innate and acquired immune responses by increasing circulating lymphocyte levels, stimulating antigen-specific antibody secretion, and enhancing phagocyte and natural killer (NK) cell activity. Probiotics ferment a variety

of sugars, digestible and non-digestible carbohydrates, and amino acids into short-chain fatty acids such as formate, lactate, acetate, propionate, and butyrate. These short-chain fatty acids nourish colonic mucosal cells, stimulate their growth, and contribute to normal colon function. They also facilitate the absorption of salt and water by the colon, stimulate colonic absorption of calcium, magnesium and potassium, increase colonic blood flow, enhance tissue oxygenation, and augment transportation of nutrients. The proteolytic enzymes probiotics secrete provide digestive support by metabolizing various dietary proteins, including gluten and casein, that can trigger immune responses in sensitive individuals. In addition, many probiotics breakdown mutagenic compounds and reduce activities of hydrolytic and reductive fecal enzymes involved in the production of tumor promoters, mutagens, and carcinogens from undigested dietary substrates and endogenous residues. Probiotics synthesize significant amounts of vitamin K and B vitamins including folates, thiamin, biotin, and vitamin B<sub>12</sub>.

### **High Potency Probiotics with InTactic®**

Research suggests that higher potency probiotic formulations offer clinical benefits that lower potency preparations do not. The percentage of ingested probiotics that survive the passage through the stomach and duodenum to reach the jejunum alive and viable is estimated to be between 10 and 40%. With bacterial concentrations in the colon as high as 1 trillion CFUs/gram of colon contents, it has been suggested that at least 10 billion viable microorganisms reaching the small bowel may be required to provide microecological benefit to the host. Clinical studies have demonstrated both the enhanced efficacy and safety of higher potency probiotic formulations, including their safety in immunosuppressed people. Attaining these high numbers requires high potency formulations or technology that ensures probiotic survival and viability. Formulated with over 100 billion CFUs per 1/4 teaspoon of powder and over 25 billion CFUs per capsule combined with InTactic® acid-stable technology, Ther-Biotic® Complete utilizes both strategies to assure the arrival of a high number of living, viable microorganisms in the small intestine. InTactic® is a highly purified polysaccharide material of marine origin that on exposure to gastric acid forms a gel-like matrix that surrounds and protects the probiotic bacteria. The InTactic® shield facilitates the survival of the probiotics while passing through the stomach. In the small intestines, the InTactic® shield dissolves releasing high numbers of viable, intact probiotics to begin exerting their health promoting functions.

### **Multispecies Probiotics**

Closely related probiotic species often exhibit vastly different physiological properties and diverse probiotic species may interact synergistically with one another. Laboratory experiments have shown that combined *Lactobacillus* species are more effective at inhibiting pathogenic bacterial growth than is each species alone. Animal studies have consistently demonstrated that multispecies probiotic formulations are more effective than mono-, bi-, and multistrain preparations. In children receiving antibiotics, a multispecies probiotic preparation was shown to reduce the number of stools per day compared to mono- and multistrain preparations. There are a number of ways in which different probiotics may interact that make multispecies formulations more consistently beneficial than mono- or multistrain preparations. The mutually beneficial interaction between *Streptococcus thermophilus* and *Lactobacillus bulgaricus* has been called “protocooperation” and is the best documented example of probiotic synergy. *L. bulgaricus* contains a cell wall proteinase that supplies critical amino acids to *S. thermophilus*. *S. thermophilus*, in turn, produces pyruvate, formate, and carbon dioxide that stimulate the growth of *L. bulgaricus*. *S. thermophilus* may synergistically facilitate the growth of other probiotics. *S. thermophilus* is an oxygen scavenger and may help create the anaerobic conditions in which strict anaerobes, such as *Bifidobacterium* species, thrive. *Lactobacillus* species replicate well in the small intestines at the prevalent pH of 6-7. As the lactobacilli multiply, they produce lactate and other organic acids that lower ambient pH enabling the growth of probiotics requiring lower ambient pH. Certain *Lactobacillus* strains have been shown to more than double the mucosal adhesion of *Bifidobacterium* species. In turn, the *Bifidobacterium* species, *B. animalis*, promotes the growth of *L. acidophilus* through the production acetate. The greater array of antimicrobial capabilities expressed by the different microorganisms may explain the documented synergy of multispecies probiotics’ enhanced antagonism to pathogenic microbes. The greater antagonism may also be in part explained by an increased uptake of diverse nutrients, a well documented mechanism by which probiotics control gastrointestinal pathogens. *S. thermophilus* produces organic acids that stimulate the growth of certain *Lactobacillus* species. In turn, lactobacilli produce peptides and amino acids that stimulate *S. thermophilus* growth. The combination of 12 well-researched and clinically-documented probiotics in Ther-Biotic® Complete synergistically provides optimal, essential probiotic support.

## LACTOBACILLUS SPECIES

*Lactobacillus* species are Gram-positive, non-spore forming rods or coccobacilli. They are facultative anaerobes characterized as homofermentative, meaning they produce primarily lactic acid as a fermentation end-product, or heterofermentative, meaning they produce lactic acid, carbon dioxide, ethanol, and acetic acid as principal fermentation end-products. There are presently over 50 *Lactobacillus* species. Since the advent of current gene typing and hybridization technologies, classification of lactobacilli has been rapidly evolving. Where *L. acidophilus* was once thought to be indigenous to the human gastrointestinal tract, it has been separated into six homology groups. *L. acidophilus* is now known not to be indigenous to the bowel, but species previously classified as *L. acidophilus*, such as *L. gasseri*, *L. crispatus*, and *L. johnsonii*, are indigenous. Classification of *Lactobacillus* species, and other microorganisms, is likely to continue to evolve. *Lactobacillus* is usually the predominant microbial genus in the small intestines. Most *Lactobacillus* species used as probiotics are not indigenous to the human gastrointestinal tract, but colonize the intestines when regularly consumed. Vegetarians and people ingesting traditional plant-based diets have high colonization rates of certain lactobacilli such as *L. plantarum*, *L. rhamnosus*, and *L. acidophilus*. Colonization rates with these important microorganisms are low in individuals consuming a standard Western diet consisting of highly processed foods. *Lactobacillus* species display many important features that make them beneficial microflora. These include production of enzymes to digest and metabolize proteins and carbohydrates, synthesis of B vitamins and vitamin K, hydrolysis of bile salts, antagonism of a wide range of microbial pathogens, enhancement of innate and acquired immunity, and inhibition of inflammatory mediators.

### *Lactobacillus acidophilus*

*L. acidophilus* is a widely recognized, highly prevalent probiotic. It is highly resistant to gastric acid, bile, pepsin, and pancreatin. *L. acidophilus* possesses more than 20 known peptidases and hydrolyzes casein and gluten. It ferments lactose, glucose, and raffinose and metabolizes a variety of other polysaccharides to aid digestion and absorption. It produces primarily the D(-) and L(+) isomers of lactate as its fermentation end product. It antagonizes a wide range of pathogenic bacteria including *Escherichia coli*, *Salmonella*, *Shigella*, *Clostridium*, *Listeria*, and *Helicobacter* species. As part of a multispecies probiotic formula, *L. acidophilus* has been shown to improve parameters of ulcerative colitis and prevent flare-ups of chronic pouchitis. *L. acidophilus* reduces flatulence, retards colonic transit time, and relieves abdominal bloating associated with irritable bowel syndrome. It has been shown to reduce intestinal concentrations of carcinogenic enzymes and in the laboratory decreases leptin production by adipocytes. Studies have shown *L. acidophilus* reduces cholesterol levels.

### *Lactobacillus rhamnosus*

Once classified as *L. casei* and then as a subspecies of *L. acidophilus*, *L. rhamnosus* strains are possibly the most extensively clinically studied of all probiotics. *L. rhamnosus* is a transient microorganism that colonizes the intestines when regularly consumed. It produces more peptidases than any other *Lactobacillus*. Although possessing both  $\alpha$ - and  $\beta$ -galactosidase activity, *L. rhamnosus* does not effectively ferment lactose. It produces a variety of fermentation end-products. *L. rhamnosus* favorably enhances and modulates innate and acquired immunity. It increases phagocytic activity in peripheral blood polymorpho-nuclear cells and killing activity in NK cells. It induces hyporesponsiveness in CD4<sup>+</sup> T cells by regulation of dendritic cell function and inhibits production of the proinflammatory cytokines TNF- $\alpha$  and interferon- $\gamma$ . *L. rhamnosus* has outstanding adherence to colon epithelial cell lines and suppresses the internalization of enterohemorrhagic *E. coli*, the cause of food-borne toxic *E. coli* infections. Clinical studies have found that *L. rhamnosus* strains can prevent and shorten the duration of rotavirus diarrhea, reduce the risk of antibiotic-associated diarrhea, and improve outcomes in *Clostridium difficile*-associated diarrhea. In a pilot study, *L. rhamnosus* significantly improved clinical status and intestinal permeability in children with stable Crohn's disease, although its effect on inducing and maintaining remission is uncertain. Trials have also found that *L. rhamnosus* strains may have a supportive role for infants with allergies to cow's milk, atopic dermatitis, and eczema. *L. rhamnosus* has shown promise in the support of people with food allergies. In healthy elderly subjects, *L. rhamnosus* has been shown to increase stool frequency and decrease fecal activity of the carcinogenic enzyme azoreductase.

### *Lactobacillus casei*

*L. casei* is a hardy, adaptive transient species. *L. casei* is naturally found in raw, fresh, and fermented dairy and plant products. It makes a number of proline-specific peptidases including proline iminopeptidases, x-prolyl dipeptidyl peptidase, and post proline endopeptidase, which make *L. casei* particularly effective at breaking down casein, casein-derived polypeptides, and gluten. *L. casei* beneficially modulates cells associated with the innate immune response. It enhances the number of IgA-producing cells supporting appropriate intestinal mucosa responses to immunological challenges. It has been shown to regulate the oxidative burst

capacity of monocytes and increase the tumoricidal activity of natural killer cells indicating it may support immune competence during ageing. *L. casei* strains support the eradication of *Helicobacter pylori*, decrease the secretion of TNF- $\alpha$  from the inflamed ileums of people with Crohn's disease, inhibit the ability of adherent-invasive *E. coli* derived from patients with Crohn's disease to adhere to and invade intestinal epithelial cells, and decrease inflammation in *Shigella*-infected intestinal epithelial cells. The consumption of *L. casei* has been shown to significantly increase the number of bowel movements and improve stool consistency in patients with chronic constipation. Consumption of *L. casei* has also been shown to reduce fecal activity of  $\beta$ -glucuronidase and  $\beta$ -glucosidase, enzymes that catalyze the production of many carcinogens.

#### ***Lactobacillus salivarius***

*L. salivarius* is indigenous to the intestinal tract and other mucosal surfaces. It is a biochemically complex *Lactobacillus* allowing it to ferment a variety of mono- and disaccharides and secrete several antimicrobial agents. *L. salivarius* has been shown to reduce interleukin-8 secretion, a powerful leukocyte and lymphocyte chemoattractant. It attenuates the inflammatory responses to *Salmonella typhimurium* and stimulates the secretion of interleukin-10, a cytokine that inhibits the inflammatory response to bacterial DNA. Although it stimulates the production of TNF- $\alpha$  by intestinal dendritic cells, in animal models of colitis *L. salivarius* reduces colonic TNF- $\alpha$  levels. It also decreases the expression of colonic inducible nitric oxide synthase. It significantly reduces the extent of colonic necrosis and inflammation in the animal colitis model. *L. salivarius* enhances intestinal calcium uptake and, compared to other lactobacilli, significantly increases intestinal cell transepithelial electrical resistance, a powerful measure of intestinal barrier function.

#### ***Lactobacillus plantarum***

*L. plantarum* is a transient bacteria readily isolated from plants, fruits, and vegetables. It is nearly universally present in the intestinal microflora of people consuming traditional plant-based diets and commonly found in vegetarians. *L. plantarum* is generally lacking in the gut microecology of people consuming a standard Western diet. *L. plantarum* is aerotolerant and can respire oxygen turning it into hydrogen peroxide. It ferments multiple carbon sources. A very hardy species, it is highly resistant to gastric acid and bile salts. *L. plantarum* exerts numerous favorable effects on the immune system by down-regulating interleukin-8, an inflammatory cytokine and facilitating induction of the central regulatory cytokine, interleukin-12. It reduces the induction of the inflammatory mediators, interleukin-6 and -10, as well as pro-inflammatory TNF- $\alpha$  and interferon- $\gamma$ . *L. plantarum* has been shown to support intestinal barrier function in animals and reduce translocation of bowel microflora to mesenteric lymph nodes and the spleen. Clinical studies have found that *L. plantarum* can reduce the risk of recurrent *C. difficile* diarrhea and diminish gastrointestinal symptoms in people with irritable bowel syndrome. In multispecies probiotic formulations, *L. plantarum* has been shown to improve parameters of active mild-to-moderate ulcerative colitis and to maintain remission in patients with recurrent pouchitis.

#### ***Lactobacillus paracasei***

*L. paracasei* is a transient bacteria that colonizes the intestines when regularly consumed in the diet. It has excellent acid-tolerance and is highly resistant to pancreatin. It is one of four *Lactobacillus* species able to ferment inulin and phleins (plant fructans). *L. paracasei* produces high levels of lactic acid. It antagonizes *C. difficile* and *S. aureus* as well as other pathogens. It contributes to a healthy vaginal microflora. Studies have found supportive benefit of *L. paracasei* in clinical conditions ranging from allergic rhinitis to nonrotavirus diarrhea in children.

### **BIFIDOBACTERIUM SPECIES**

*Bifidobacterium* species are non-motile, non-sporulating, Gram-positive rods that often have a Y-shape. They are fastidious and difficult to culture. *Bifidobacterium* species are strictly anaerobic producing the L(+) isomer of lactic acid and other short-chain fatty acids as fermentation end-products. They are highly adapted to the colonic environment where they vie for predominance with *Bacteroides* species. They constitute 95% of the intestinal microflora in healthy, breastfed infants. Among the first colonizers of the sterile gastrointestinal tract of newborns, they appear to play a pivotal role in the development of the gastrointestinal and immune systems. *Bifidobacterium* populations significantly decline with advancing age. *Bifidobacterium* species metabolize substrates that cannot be digested by the host and micro-organisms in the upper gastrointestinal tract. The short-chain fatty acids produced by *Bifidobacterium* are essential nutrients to the colonic mucosa and modulate colonic blood flow and motility.

### ***Bifidobacterium bifidum***

*B. bifidum* is among the many *Bifidobacterium* species normally found in large numbers in a healthy colon microflora. Its populations are reduced in allergic infants and decline significantly in the elderly. *B. bifidum* has been strongly linked with modulating the immune response. Studies have reported that allergic infants have lower intestinal populations of *B. bifidum* than do healthy infants. Animal studies have found that oral intake of *B. bifidum* can suppress total and antigen-specific IgE production and enhance IgM and IgG responses to select antigens. It can activate B cells making them more responsive to transforming growth factor- $\beta$ 1 and interleukin-5 for IgA secretion. *B. bifidum* enhances IgA response to *C. difficile* toxin A and in a pilot study along with *L. acidophilus* was found to reduce antibiotic-associated diarrhea and the incidence of positive testing for *C. difficile*-associated toxins. Supplementation with *B. bifidum* enhances leukocyte phagocytic activity.

### ***Bifidobacterium longum***

*B. longum* is often the dominant *Bifidobacterium* species found in people. It is exceedingly well adapted to the colonic microenvironment fermenting a broad spectrum of oligosaccharides and is resistant to high concentrations of bile salts. *B. longum* secretes a specific serpin that inhibits pancreatic and white cell elastases. Its inhibition of human neutrophil elastase is thought to be important to innate immunity and may attenuate harmful intestinal inflammation. It produces a protein that prevents the binding of enterotoxigenic *E. coli* to ganglioside receptors and in animal models inhibits the translocation of *E. coli* from the gastrointestinal tract to the mesenteric lymph nodes and other organs. *B. longum* augments the intestinal IgA secretory response to dietary protein antigens providing possible immunological protection against allergic reactions to undigested dietary antigens. Clinical studies have found that *B. longum* can favorably modulate inflammatory cytokine response to respiratory antigens, initiate resolution of colonic inflammation in patients with ulcerative colitis, and improve lactose digestion. Administration of *B. longum* has also been shown to reduce fecal bacterial  $\beta$ -glucuronidase activity an enzyme, that generates carcinogens, suggesting *B. longum* influences the metabolic activity of certain types of intestinal microflora involved in the production of  $\beta$ -glucuronidase.

### ***Bifidobacterium lactis***

*B. lactis* is a hardy species with unusual resistance to acid and high tolerance of oxygen. Worldwide it is the most widely used *Bifidobacterium* probiotic. *B. lactis* has excellent adherence to intestinal mucin and produces a variety of polyamines with anti-inflammatory and antimutagenic activities. It produces endopeptidases that digest proteins rich in proline such as casein and gliadin and in cell cultures *B. lactis* inhibits the cytotoxic effects of gliadin. *B. lactis* reduces white cell production of interleukin-2 in healthy adult volunteers. In elderly adults, supplementation with *B. lactis* has been shown to reduce constipation and improve immune status increasing numbers of helper and activated T cells and natural killer cells. It increases phagocytic activities of monocytes and polymorphonucleocytes. Added to infant formulas, *B. lactis* has been found to reduce the incidence and severity of diarrhea in childcare centers. In infants suffering from early onset atopic eczema, it alleviates allergic symptoms. Long-term administration of *B. lactis* together with *Streptococcus thermophilus* to infants in formula reduces colic and irritability and is associated with a lower incidence of antibiotic usage. *B. lactis* expresses oxalyl coenzyme A decarboxylase suggesting it has a potential role in breaking down intestinal oxalate.

### ***Bifidobacterium breve***

*B. breve* is a normal inhabitant of the gastrointestinal tract and is the most common species of *Bifidobacterium* found in the gut of breastfed infants. It secretes compounds, such as lactosidase, that favorably modify intestinal microflora by reducing *Bacteroides* and *Clostridium* populations and degrading mucin. Of the many commensal *Bifidobacterium* strains tested, *B. breve* has been shown to induce higher quantities of IgA in intestinal mucosal cells. Its prevalence in the infant bowel may act to increase resistance to infections in addition to priming the infant immune system. It enhances the immune response of Peyer's patch cells in laboratory experiments stimulating B cell proliferation and antibody production. Animal studies have found that *B. breve* administered orally increases antibody response to oral influenza vaccine. Clinical studies have found that *B. breve* eliminates *Campylobacter jejuni* from the stools of patients with campylobacter enteritis restoring normal intestinal microflora, but it is not effective at decreasing the duration of diarrhea. *B. breve* has been shown to decrease rotavirus shedding and reduce the risk of rotavirus-induced diarrhea in infants. Administration of *B. breve* has been shown to inhibit fecal mutagenic enzymes including  $\beta$ -glucuronidase and tryptophanase.

## TRANSIENT MICROORGANISM STRAINS

Transient microorganisms do not colonize the mucosal membrane of the gastrointestinal tract. Instead they exert beneficial functions as they pass through the small and large intestines. The two most recognized transient bacteria with a very long history of use are *Streptococcus thermophilus* and *Lactobacillus bulgaricus*. These two species are the primary cultures used for yogurt and many types of cheese production. They metabolize lactose improving lactose intolerance and produce a variety of fermentation end-products. These two microorganisms display a well-documented synergistic cooperation.

### *Streptococcus thermophilus*

*S. thermophilus* is an aerotolerant anaerobic, Gram-positive coccus highly adapted to metabolizing lactose to L(+)-lactate as well as alternative fermentation end-products including formate, acetoin, diacetyl, acetaldehyde, and acetate, which inhibit the proliferation of pathogenic bacteria in the intestines. Its production of  $\beta$ -galactosidase is greater in the small intestine than in the cecum. As a component of experimental infant formulas, long-term consumption in healthy infants reduced the severity of acute diarrhea, colic or irritability, and lowered the frequency of antibiotic use. *S. thermophilus* has been shown to diminish DNA damage and reduce formation of premalignant lesions in animals by protecting against heterocyclic aromatic amines, carcinogenic compounds produced from amino acids in meat during cooking. In animal models of methotrexate-induced small intestine mucositis, oral *S. thermophilus* administration reduces the severity of the inflammation. Clinical trials have found that *S. thermophilus* administration together with other probiotics has benefit in conditions ranging from prevention of rotavirus diarrhea in infants to maintaining remission in recurrent or refractory pouchitis, a complication of surgery for ulcerative colitis.

### *Lactobacillus bulgaricus*

*L. bulgaricus*, a subspecies of *L. delbrueckii*, is a highly adapted transient *Lactobacillus* closely related to *L. acidophilus*. *L. bulgaricus* has been demonstrated to have high immunopotentiating activity and yogurt fermented with *L. bulgaricus* stimulates the systemic immune system. In a model of inflammatory bowel disease, *L. bulgaricus* significantly repressed secretion of proinflammatory cytokines IL-8 and NF- $\kappa$ B by intestinal epithelial cells. Ileal specimens from patients with Crohn's disease had significantly reduced levels of the proinflammatory cytokine TNF- $\alpha$  and CD4 lymph cells when cultured with *L. bulgaricus*. In patients with acute mild-to-moderate ulcerative colitis, a probiotic formula including *L. bulgaricus* in combination with conventional treatment was significantly superior in obtaining remission, reducing stool frequency, and improving endoscopic and histological disease-rating scores.

## INULIN OLIGOSACCHARIDE BASE

Inulin is a natural, non-digestible oligosaccharide derived from the chicory root vegetable. Inulin is known as a prebiotic, a material that is used as a fuel source by beneficial bacteria stimulating their growth. Inulin is especially used by the *Bifidobacterium* species that vie for predominance in the colon antagonizing the growth of pathogenic microbes. Inulin is difficult for pathogens to metabolize and, unlike some highly processed, long chain fructooligosaccharides, less likely to be used as a food source by pathogenic bacteria. This naturally-derived base ingredient is generally well-tolerated by the highly sensitive patient. It is used in place of corn- or wheat-derived maltodextrin, commonly used as a base ingredient in the majority of probiotic supplements.

## INDICATIONS

Ther-Biotic® Complete is indicated as the foundation to support gastrointestinal health to reestablish or maintain a normally balanced, healthful intestinal microflora. Anyone primarily consuming a standard Western diet should consider supplementing with Ther-Biotic® Complete. As individuals age, there is loss of essential probiotic bacteria. Ther-Biotic® Complete can support a normal intestinal microflora against age-related changes. Ther-Biotic® Complete may be used in conjunction with medications known to adversely affect the intestinal microflora such as antibiotics, immunosuppressant, and agents blocking stomach acid production. Ther-Biotic® Complete may be used to support maintenance and reestablishment of the intestinal microflora during the management of intestinal dysbiosis, increase intestinal permeability ("leaky gut"), viral and bacterial gastroenteritis, diarrhea syndromes (antibiotic-associated, traveler's, *C. difficile*), constipation, food allergies, sinusitis, eczema, yeast vaginitis, vaginal dysbiosis, recurrent urinary tract infections, and interstitial cystitis.

## FORMULA

Supplement Facts	
Serving Size 1 Capsule	
Amount Per Capsule	
Probiotic Blend (25+ billion CFUs)	160 mg*
<i>Lactobacillus rhamnosus</i>	6.0+ billion CFUs*
<i>Bifidobacterium bifidum</i>	5.0+ billion CFUs*
<i>Lactobacillus acidophilus</i>	3.0+ billion CFUs*
<i>Lactobacillus casei</i>	2.5+ billion CFUs*
<i>Lactobacillus plantarum</i>	2.0+ billion CFUs*
<i>Lactobacillus salivarius</i>	2.0+ billion CFUs*
<i>Bifidobacterium longum</i>	1.0+ billion CFUs*
<i>Streptococcus thermophilus</i>	1.0+ billion CFUs*
<i>Lactobacillus bulgaricus</i>	1.0+ billion CFUs*
<i>Lactobacillus paracasei</i>	0.5+ billion CFUs*
<i>Bifidobacterium lactis</i>	0.5+ billion CFUs*
<i>Bifidobacterium breve</i>	0.5+ billion CFUs*

\*Daily Value not established.

Other Ingredients: Inulin base derived from chicory root, InTactic® proprietary polysaccharide complex, vegetarian capsule (hydroxypropyl methylcellulose, water), and L-leucine.

Supplement Facts	
Serving Size 1/4 Teaspoon (1g) • Servings Per Container 60	
Amount Per Serving	
Probiotic Blend (100+ billion CFUs)	640 mg*
<i>Lactobacillus rhamnosus</i>	24.0+ billion CFUs*
<i>Bifidobacterium bifidum</i>	20.0+ billion CFUs*
<i>Lactobacillus acidophilus</i>	12.0+ billion CFUs*
<i>Lactobacillus casei</i>	10.0+ billion CFUs*
<i>Lactobacillus plantarum</i>	8.0+ billion CFUs*
<i>Lactobacillus salivarius</i>	8.0+ billion CFUs*
<i>Bifidobacterium longum</i>	4.0+ billion CFUs*
<i>Streptococcus thermophilus</i>	4.0+ billion CFUs*
<i>Lactobacillus bulgaricus</i>	4.0+ billion CFUs*
<i>Lactobacillus paracasei</i>	2.0+ billion CFUs*
<i>Bifidobacterium lactis</i>	2.0+ billion CFUs*
<i>Bifidobacterium breve</i>	2.0+ billion CFUs*

\*Daily Value not established.

Other Ingredients: Inulin base derived from chicory root and InTactic® proprietary polysaccharide complex.

## SUGGESTED USE

One capsule daily or 1/4 teaspoon of the Ther-Biotic® Complete powder daily or as directed by a physician or health practitioner. The capsules may be pulled apart and the contents taken separately as a powder if so desired.

## ADVERSE REACTIONS

None reported.

## DRUG INTERACTIONS

None reported.

## CONTRAINDICATIONS

Individuals sensitive to chicory root, the source of inulin, may wish to avoid this product.

## HOW SUPPLIED

Capsule: 60 or 120 vegetarian capsules per blue glass bottle. Packaged 12 bottles per case.

Powder: Powder net weight 2.1 ounces (60 grams) per blue glass bottle. Packaged 12 bottles per case.

## STORAGE

Probiotics are sensitive to warm temperatures and moisture. Keep refrigerated with the lid tightly shut to minimize entry of moisture into the bottle. Ther-Biotic® Complete is shipped with cold packs to minimize exposure to high temperatures during transit. There is no loss of potency when the package is received with the cold packs no longer cold as loss of potency with high temperatures occurs over weeks and not hours or days.

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