

<p>Introduction</p>	<p>Brand Name: Sporlac Plus Capsules and Powder</p> <p>Therapeutic Category: General Health & Immunity</p> <p>The use of combination probiotics is not a new phenomena. Although a single probiotic may be effective in most cases, the newer trends are to use compatible combi-probiotics either in the capsule or powder form for treatment of GI disorders ranging from acute diarrhea, IBS, IBD, constipation, bacterial vaginosis, etc. Compatibility, does not mean just co-existence, but also utility of the metabolic products of one another for exerting the beneficial pharmacological benefits on the host.</p>	
<p>Bacillus coagulans</p>	<p>Sporlac was the first probiotic containing Bacillus coagulans launched in India in the year 1974. Sporlac is considered to be most prescribed probiotic by the health practitioners which was expected to be sold by more than 4 million pharmacies (retail chemists) across India. Sporlac contains gram positive microorganism Bacillus coagulans (MTCC strain no: SNZ-1969) which is considered to have tremendous resistance against temperature upto 90°C, can survive in acidic environment upto pH-2 and could survive in 2% Bile. The formation of spores help these bacilli withstand the acidic environment of the stomach to reach the intestine where they germinate and proliferate, producing the favored L (+) optical isomer of lactic acid.</p> <p>In addition to lactic acid, these microbes produce bacetriocins, a natural antibiotic that prevents the overgrowth of opportunistic bacteria. Other cytokines are produced which have a beneficial effect on the human physiological systems. The lactic acid produced by this microbe is used by Bifidobacterium species for its survival in the colon.</p> <p>Once active in the small intestine after germination, B. coagulans may aid in digestion of proteins and sugars from the diet. This may be beneficial to the host, especially in the case of lactose and fructose intolerance: once the sugars are digested in the upper gastro-intestinal (GI) tract, they will no longer cause the symptoms associated with the intolerance in the lower part of the gut, such as bloating, diarrhea and other symptoms. B. coagulans is considered a transient colonizing probiotic, indicating it takes up only temporary residence in the human intestines. Spores of B. coagulans are excreted slowly via the feces for approximately seven days after discontinuation of administration.</p>	
<p>Lactobacillus Species</p>	<p>Lactobacillus acidophilus</p>	<p>Lactobacillus acidophilus is a species of gram positive bacteria in the genus Lactobacillus. L. acidophilus, ferments sugars into lactic acid, and grows readily at rather low pH values (below pH 5.0). L. acidophilus occurs naturally in the human and animal gastrointestinal tract and mouth. Strains of L. acidophilus have been studied extensively for health effects. Many antibiotics kill the Lactobacillus species and needs to be replaced post antibiotic therapy for recolonization.</p> <p>L. acidophilus produces bacteriocin that is both antibacterial and inhibitory against certain yeasts and molds and is effective against both Salmonella typhimurium and Campylobacter jejuni. It has been shown to improve bowel regularity and has shown to be effective against traveler's diarrhea and Antibiotic-Associated Diarrhea because of its relation to gut-associated lymphoid tissue (GALT), L. acidophilus has been associated with positive effects on the immune system such as increased cytokine, phagocytic activity and antibody production, and phagocytosis of Salmonella.</p>
	<p>Lactobacillus rhamnosus</p>	<p>Lactobacillus rhamnosus was isolated in 1983 from the intestinal tract of a healthy human being. L. rhamnosus strain produces lactic acid. Lactobacillus rhamnosus is able to survive the acid and bile of the stomach and intestine and is able to colonize the digestive tract and maintain a balance of intestinal microflora. Scientific evidence suggests that Lactobacillus rhamnosus is a temporary resident of the human GIT and is excreted once treatment is stopped. Lactobacillus rhamnosus is beneficial in the prevention of rotavirus diarrhea in children. Clinical studies have shown that L. rhamnosus can be used for prevention and treatment of various types of diarrhea both in children and in adults.</p> <p>The clinical benefits of L. rhamnosus have been studied, and rhamnosus appears to protect the urogenital tract due to production of bio-surfactants, inhibiting the adhesion of vaginal and urinary pathogens to the mucosal surfaces.</p>
<p>Bifidobacterium Species</p>	<p>Bifidobacterium longum</p>	<p>Bifidobacterium longum is a gram-positive, catalase-negative, rod-shaped bacterium present in the human gastrointestinal tract and one of the 32 species that belong to the genus Bifidobacterium. It is a micro-aerotolerant anaerobe and considered to be one of the earliest colonizers of the gastrointestinal tract of infants. When grown on general anaerobic medium, B. longum forms white, glossy colonies with a convex shape. While B. longum is not significantly present in the adult gastrointestinal tract, it is considered part of the gut flora and its production of lactic acid is believed to prevent growth of pathogenic organisms. B. longum is non-pathogenic and is often added to food products for its beneficial probiotic health effects</p> <p>B. longum is considered to be a scavenger, possessing multiple catabolic pathways to utilize a large variety of nutrients in order to increase its competitiveness among the gut flora. Up to 19 types of permease exist to transport various carbohydrates. Furthermore, B. longum possesses hydrolases, deaminases, and dehydratases in order to ferment amino acids. B. longum also have bile salt hydrolases to hydrolyze bile salts into amino acids and bile acids. The function of this is not clear, although it is suggested that B. longum could use the amino acids products for better tolerance to bile salts.</p> <p>As an important organism involved in the maintenance of the human gastrointestinal tract, B. longum is commonly used as a probiotic in various dairy products. Its presence has been associated with many health benefits, including improving lactose tolerance and preventing diarrhea, food allergies, and colonization by pathogens.</p> <p>These beneficial microbes, either singly or in combination, are being used in a number of conditions that include:</p> <ol style="list-style-type: none"> 1. Diarrhea of varied etiology 2. Bacterial Vaginosis 3. IBS & IBD

		<p>4. Immunoregulation 5. Atopic Dermatitis</p>
	<p>Bifidobacterium bifidum</p>	<p>Bifidobacterium bifidum is a bacterial species of the Bifidobacterium genus. B. bifidum is one of the most common probiotic bacteria that can be found in the body of mammals, including humans. The majority of the population of B. bifidum is found in the colon, lower small intestine, breast milk, and often in the vagina.</p> <p>B. bifidum helps the gastrointestinal tract function better since it is part of the microflora. This reduces the chances of acute diarrhea and even helps fight E. coli infections. Long and short chains of simple sugars that can be found in the GI tract are broken down and absorbed by B. bifidum. Increasing the amount of B. bifidum in the body will also increase the immunity function such as lowering the severity of symptoms and decreasing the days infected with the common cold. Since B. bifidum can be found in the vagina, the bacteria can fight Candida and other yeast overgrowths if present.</p>
<p>Saccharomyces boulardii</p>		<p>Saccharomyces boulardii is a non-pathogenic yeast which was isolated from lychees in Indochina, and which grows at the unusually high temperature of 37°. It is commercially available as a freeze-dried viable preparation and is the only yeast with which double-blind studies have been carried out.</p> <p>Saccharomyces boulardii survives gastric acid and bile and can be detected alive throughout the entire digestive system if it is given daily in its freeze-dried form. Two to five days after administration, the yeast becomes undetectable in the feces. Saccharomyces boulardii is intrinsically resistant to antibacterial antibiotics. Concomitant administration of Ampicillin, Nystatin and Clindamycin in human volunteers increase the fecal concentration of yeast cells recovered.</p> <p>The pharmacodynamics of Saccharomyces boulardii involve three different aspects: a direct antagonistic effect, an antisecretory effect, by acting specifically on the binding of toxins to intestinal receptors, and a trophic effect, by stimulating enzymatic activities and intestinal defense mechanisms. Oral Saccharomyces boulardii induces several cellular and humoral immunologic changes in the peripheral blood of healthy volunteers.</p> <p>Saccharomyces boulardii is a non-bacterial biotherapeutic agent and is the only biotherapeutic agent with systematic convincing data from double-blind studies. Results show significant efficacy in the prevention and treatment of acute diarrhea. The WHO considers Saccharomyces boulardii to be a possible treatment for recurrent Clostridium difficile colitis.</p>
<p>Mechanism of Action</p>		<ul style="list-style-type: none"> ▲ Traveler's Diarrhea & Antibiotic Associated Diarrhea <ul style="list-style-type: none"> ▲ Prevents pathogenic colonization ▲ Competitive inhibition for nutrients & receptor sites ▲ Inhibits adhesion of pathogens ▲ Releases Biosurfactants ▲ Inhibits the growth of pathogenic bacteria ▲ Releases lactic acids & bacteriocins ▲ Short Chain Fatty Acids are released by Bifidobacterium species ▲ Prevents colonization of Clostridium difficile bacteria 1. Inflammatory Bowel Disease [IBD] / Irritable Bowel Syndrome [IBS] <ul style="list-style-type: none"> ▲ Alters the mucosal flora, which is thought to play a role in IBS & IBD ▲ Strengthens integrity of mucosal bacteria ▲ Prevents pathogenic bacterial colonization & Prevents bacterial translocation ▲ Improves the colonization of Probiotics ▲ Competitive inhibition for Receptor sites & Nutrients ▲ Improves GI Mucosal Immunity- Immunoglobulins and Cytokines 2. Urinary Tract Infections [UTI's] & Recurrent Bacterial Vaginitis [BV] <ul style="list-style-type: none"> ▲ Prevents the growth & Colonization of Uropathogens [bacteria in urinary tract] ▲ Competitive inhibition of genito urinary pathogens for adhesion/ binding sites ▲ Release of lactic acids & H₂O₂ (Hydrogen peroxide) ▲ Normalizes the pH of the vagina [3.8 – 4.5], which prevents the growth of candida and other bacterial pathogens
<p>Dosage</p>		<ul style="list-style-type: none"> i. Diarrhea of Varied Etiology <ul style="list-style-type: none"> ▲ Adults – 1 Capsule BID for at least 7 days along with other anti-diarrheals and thereafter to be continued for at least another 7 days to prevent recurrence ▲ Children – 1 Sachet BID to be taken for at least 7 days along with other anti-diarrheals and thereafter to be continued for another 7 days to prevent recurrence ii. In IBD & IBS <ul style="list-style-type: none"> ▲ As these are chronic conditions, the duration of treatment is prolonged and must be continued for at least 8 – 12 weeks or until resolution of symptoms, as there are altered states of diarrhea and constipation accompanied by flatulence, abdominal cramps and pain. The suggested dosage is 1 Capsule BID or as advised by the treating Physician Treatment must be carried out under the supervision of a Physician iii. Urinary Tract Infections [UTIs] & Recurrent Bacterial Vaginitis [BV] <ul style="list-style-type: none"> ▲ Urinary Tract Infections <ul style="list-style-type: none"> ▲ Adults – 1 Capsule BID along with antibacterial therapy for at least 7-10 days and thereafter to be continued for at least 2-3 weeks to prevent recurrent infections

	<ul style="list-style-type: none"> ⌘ Children – 1 Sachet BID along with antibacterial therapy for at least 7-10 days and thereafter to be continued for at least 2-3 weeks to prevent recurrence ⌘ Bacterial Vaginosis – 1 Capsule BID for at least 3-4 weeks along with the required antibacterial therapy and thereafter till the vaginal pH is normalized with no discharge. Incomplete treatment may lead to recurrent infections. Treatment must be continued under the supervision of a Physician
Storage	The box containing the Strips of Capsules / Sachets of Sporlac Plus must be stored in a cool dry place away sunlight and out of the reach of children.
Presentation	<ol style="list-style-type: none"> 1. Each Hard Gelatin Capsule contains: Probiotics Not Less Than 2.5 Billion CFU <ul style="list-style-type: none"> ⌘ Lactobacillus species (Lactobacillus acidophilus, Lactobacilus rhamnosus and Bacillus coagulans} ⌘ Bifidobacterium Species (Bifidbacterium bifidum,Bifidobacterium longum) ⌘ Saccharomyces boulardii 2. Each Sachet contains: Probiotics Not Less Than 2.5 Billion CFU <ul style="list-style-type: none"> ⌘ Lactobacillus species (Lactobacillus acidophilus, Lactobacilus rhamnosus and Bacillus coagulans ⌘ Bifidobacterium Species (Bifidbacterium bifidum,Bifidobacterium longum) ⌘ Saccharomyces boulardii <p>Each Strip contains 10 Hard Gelatin Capsules and Each box Contains 10 Strips of 10 Capsules.</p>

