

“Beneficial Bacteria”

(The body’s new *WELCOMED* guest)

Viva Vitamins’ **bacti balance**

Whether we realize it or not, there is a war going on in the warm, moist ecosystem of our bodies that is...our intestines. Like armies of soldiers on the battlefield, colonies of microorganisms (good and evil) compete for rule over our gastrointestinal territory. In the never-ending battle over good vs. evil, who wins depends on what there is more of; supplementation with "friendly" bacteria (probiotics), or supplementation with "unfriendly" bacteria (a bad fish taco). If our bacterial allies dominate the field, we reap the benefits of more than just the havoc wreaked by E.Coli et al. Viva Vitamins now presents...Bacti Balance.

What is “Friendly Flora”?

Intestinal flora (or gut flora) are the microorganisms that live together within the intestines of animals. Considering the average human has about 30 feet of intestines and such a large surface area of colon (in which the majority of microflora reside), it is no wonder that the average human gut contains about 10^{14} (100,000,000,000,000) of these little bacterial cells (Björkstén B et al., 2001). Scientists have estimated that there are somewhere around 500 different species of bacteria that reside in the human digestive tract (Ann M et al., 2006) and some have even estimated more. It is well known now to microbiologists that the coexistence between these microorganisms is not only non-threatening, but symbiotic. While it is true that humans can in fact survive without intestinal flora, it would be a foolish thing to do so. The bacteria in our digestive tract perform an awesome array of beneficial functions. Some species of bacterium have been known to increase immune function, produce certain vitamins for us to absorb and utilize, and initiate the production of beneficial hormones, just to name a few. Alternatively, under certain conditions, there are some species of not-so-friendly bacteria that can do more harm than good, such as bringing out infections or even causing cancer (Guarner F, Malagelada JR, 2003). The fascinating thing about friendly flora is the very idea of the “friendly” bacteria protecting us from the “unfriendly” bacteria. It is known that certain species of bacteria in our gut can actually suppress the growth of harmful organisms (Sears CL, 2005) thus protecting us from certain health risks.

One such species of helpful bacteria is *Lactobacillus acidophilus*. This amazing microorganism is a genus of gram-positive anaerobic bacteria. They are a major part of lactic acid bacteria due to their ability to catalyze the degradation of lactose and other sugars to lactic acid. Although in humans they make up only a small majority of the gut flora, they are extremely beneficial.

What does Bacti Balance provide?

Bacti Balance contains a very unique microorganism genus called *Lactobacillus*. Per their metabolism, there are three main groups of this species: Group I, the obligately homofermentative, Group II, the facultatively heterofermentative, and Group III, also obligately homofermentative. The species *Lactobacillus acidophilus* belongs to Group I. The etymology of this interesting little guy’s name comes from *lacto* meaning “milk”, *bacillus* meaning “rod-like”, and *acidophilus* meaning acidophile (acid-loving). As the name implies, this species’ metabolism is most stable and optimum under acidic conditions (pH ~4-5). One way *L. acidophilus* works its magic is through the byproducts of its metabolism. For example, hydrogen peroxide and lactic acid are two of the metabolic end products *L. acidophilus* produces that are toxic to certain harmful bacteria. *L. acidophilus* also competes for nutrient uptake with other harmful bacteria, thus starving the bad flora of food and nutrients. *L. acidophilus* can also take the food we eat and produce certain B vitamins for us to then absorb and utilize. This is also evident in earlier research that demonstrates *L. acidophilus*’ keen

ability to pluck off amino acid residues from bile salts and kindly donate them to us for our metabolism (Gilliland S, Speck M, 1977). In fact, more recent research has indicated *L. acidophilus* may be helpful reducing serum cholesterol (Anderson J, Gilliland S, 1999).

One thing to be aware of, however, is antibiotic use during probiotic supplementation. Oral antibiotics can also kill beneficial bacteria, including *L. acidophilus*. After a cycle of antibiotics, patients are usually instructed to take an *L. acidophilus* supplement in order to recolonize the gastrointestinal tract.

Bacti Balance also comes with 500mg of a polysaccharide called *fructoligosaccharides*. This is the sugar produced by either the transfructosylation process or the hydrolysis of inulin. As a dietary sweetener, these fructose oligomers serve as food for the microflora in our gut.

Purpose

Bacti Balance is a probiotic formula designed to not only provide our intestines with massive amounts of the friendly bacteria it needs to maintain its health and optimal function, but also the food to allow the friendly flora to multiply. As most of us who maintain healthy diets are aware that even from the very foods we eat, lies the potential for unkind microorganisms to enter in, wreaking all sorts of mischief on our intestinal tract, and robbing us of digestive comfort, intestinal and overall health. Bacti Balance makes sure the fight against these microscopic predators stays well within check, and that the gut stays predominated by our little allies, the Friendly Flora.

References

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