

Power of Greens!

© 2014 TO YOUR HEALTH

LITERATURE EDUCATION SERIES ON DIETARY SUPPLEMENTS

To Your Health

By Chad Brey,
Research & Development Chemist



Although most of us don't have the eating habits of a typical farm animal, it's understood that mass consumption of fresh, raw agriculture would be necessary to achieve the perfect array of nutrients recommended by all the latest research. While this seems a bit absurd, what if there was a way to acquire the vast majority of phyto nutrients recommended in all of the articles we read about. Viva Vitamins' Greater Greens Powder solves this problem, providing a seemingly endless sea of nutrients, so you don't have to go out every morning and eat your lawn. With the aid of various herbs, vegetable, fruits and exotic plant extracts, Multi Greens Powder gives us the ability to improve digestion, heal visceral tissues and even help reduce the risk of certain cancers.

The Power of Produce!

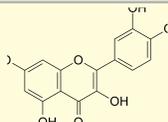
The earth we live on contains a wonderland of natural, plant-derived medicines. As advanced as we are in our exploration of this planet, we haven't even scratched the surface of uncovering the almost never ending library of nutrients available within the earth's agriculture. The diseases, disorders, and conditions that can be treated by the ingredients found on the greenery of the earth's crust are endless. This is one of the reasons why the majority of supplements and even pharmaceutical drugs are derived from this source. Perhaps even centuries from now, we may very well still not even be able to scratch the surface. The Amazing Digestive Tract When the intricate details of the human gastrointestinal tract are examined, it can be mind boggling. The precision and detail put into the construction of the housing of the digestive route is nothing less than astonishing. As food enters the stomach, gastric cells respond

immediately manufacturing and releasing calculated amounts of acid, enzymes, water, protective lipids, etc. designed to begin the digestion process. Once the foodstuff is degraded to a manageable pulp-soup, the "chyme" is then introduced into the next chamber of assembly line..the duodenum.It is in this approximately 13 inches of lumen where many of the digestive juices from the pancreas enters in and continues the disintegration of the previously digested food goo. Next comes the jejunum, which is about 15 feet long in most of us and lies between the duodenum and the ileum. With a slightly alkaline pH (~7-8), the epithelial cells that line this amazing tunnel of digestion contain villi, which greatly increase the surface area of the intestines for more absorption of food. In fact, on top of the villi is microvilli, which increases the surface area even more. It is within the jejunum that the passive transport of fructose and the active

transport of glucose, amino acids, vitamins and small peptides take place. Finally, the last 6-12 feet of small intestine is the ileum. Another slightly alkaline alimentary tissue, the ileum's main job is to absorb vitamin B12, bile salts and any other food stuff that was otherwise not transported into the blood stream from the previous small intestine. The organs that play a part in the digestive process are the liver, which among other things secretes bile salts and bile acids into the duodenum, using the gall bladder as the holding tank. Then comes the amazing pancreas. This organ secretes bicarbonate (a pH buffer), and enzymes. Enzymes are one of the most important players in the assembly line of the digestive tract. Enzymes are globular proteins that catalyze and speed up biochemical reactions by improving stearic factor. What this means is that basically enzymes speed up reaction rates that would sometimes take hours if not days. In



TO YOUR HEALTH
Literature Series
By Chad Brey



See More Research Articles:
VivaVitamins.com - click on "Education"



the digestive tract, these reactions are mainly the disintegration of food into their smallest transportable size. Interestingly, there is another key player living within the microcosmos of our digestive tract. Intestinal microflora. Some friendly, some not so friendly. There are about 500 or so different species of bacteria in the human intestines (M O'Hara et al., 2006) totaling approximately 1×10^{14} bacterial cells (Guarner F et al., 2003). That's an amazing ecosystem! It's no wonder that the gastrointestinal tract is our first line of defense of the immune system and the major route in which nutrients get extracted from food and enter our bodies. Now, if there were only a dietary supplement that could nourish and enhance the performance of this amazing organ.



What's in Greater Greens Powder? Greater Greens Powder contains a proprietary blend of herbs and vegetables hand selected to perform a myriad of different functions. For example, barley grass, barley malt, brussel sprouts, spirulina, chlorella and others all included in this proprietary blend contain a variety of minerals that act as buffers in our bodies. A slightly acidic biological system can lead to a slew of different problems. These minerals found in Greater Green's proprietary blend are ionically bound to organic/inorganic conjugate bases (ie. carbonate, sulfate, phosphate, oxalate, fumarate, etc.) which can help increase pH to its normal physiologically neutral range.

Believe it or not, these buffering minerals do wonders for decreasing the risk of certain cancers. Normal somatic cells operate under pH conditions of approximately 6.5 – 7.5. Within neoplastic tissue, however this is not the case. The biochemistry of

cancer cells is different such that when the pH is slightly above 7.5 the cancer cell can no longer proceed past the G1 checkpoint of the cell cycle and move into mitosis (Brewer AK, 1984). One way to take advantage of this is to move alkaline minerals into cancer cells. Thus, certain minerals chelated to inorganic bases have this potential to kill cancer cells (Sartori HE, 1984). The Greater Greens Powder also includes a Probiotic and Enzyme Blend, consisting of "dairy free" Lactobacillus (acidophilus, casei, and rhamnosus), the gram positive Bifidobacterium longum, and digestive enzymes. The lactobacillus family is known as "friendly bacteria" due to its "friendly" actions, which include: aiding in fat digestion (Gilliland S. et al., 1977), decreasing indigestion and diarrhea (de Roos N et al., 2007), and even lowering cholesterol (Anderson J et al., 1999). The enzyme blend portion of the Greater Greens Powder contains amylase (starch degrading enzyme), bromelain, papain, and protease (protein degrading enzymes), cellulase (cellulose degrading enzyme), and lactase (lactose degrading enzyme). Goodbye lactose intolerance.

Quercetin is a flavonol found in many citrus fruits. Included in some of these fruits are the main constituents in the herbs/vegetables portion of the Multi Greens blend. Quercetin has been shown to exhibit amazing anti-inflammatory properties (Guardia T et al., 2001), as well as helping to prevent against G1/S cell cycle progression in certain cancerous cells (Jeong JH et al., 2009). Quercetin also has the unique ability to inhibit the release of histamines and various inflammatory cytokines from mast cells (Park HH. et al., 2008) which greatly aids in reducing allergic responses. Resveratrol is a phytoalexin (an antibiotic produced by plants when under attack by invading organisms) produced primarily by the Japanese knotweed. Its many therapeutic applications has given recent rise to tons of research which include its anticarcinogenic effects (Jang M. et al., 1997), increased activation of SIRT1 genes resulting in enhanced metabolism (Wade N., 2006) and reducing neural plaques involved in

neurodegenerative disorders (Karuppagounder SS et al., 2008). Insoluble β -1, 3 glucans are polysaccharides derived from the cell walls of brewers yeast and exhibit amazing immunomodulatory properties (Miura, NN et al., 1996). They also demonstrate exemplary immunoadjuvant activity for anti-tumor and anticancer therapies (DiLuzio et al., 1980, Morikawa K et al., 1985). Other treatments with beta glucans include, but by far not limited to: arthritis (Kogan G et al., 2005), reducing tissue damage caused by radiation exposure Patchen ML et al., 1986), post surgery infections (Babineau, TJ et al., 1994), atherosclerosis and cardiac disease reduction (Keogh, GF et al., 2003) and reducing risks of Alzheimer's disease, ischemia, and multiple sclerosis via microglial cell activation (Haga S et al., 1989, Bolcal C et al., 2007), just to name a few. Chlorophyll has also been added to the formula due to its detoxifying and hepatoprotective capabilities (Hsu CY et al., 2008). All these constituents and more are what make this multi greens formula stand above and beyond the rest of the other green food powders on the market.

Purpose Viva Vitamins' Greater Greens Powder would be one of the first picks for any of us who would be interested in taking the earth's best greenery, extracting the almost countless variety of nutrients present and supplementing our diets with it. From aiding digestion, to decreasing risks of certain cancers, Greater Greens Powder takes the next step in introducing nature's pharmacy into the medicine cabinets of the novice, intermediate and advanced nutritional supplement user.



References:

Brewer AK., The high pH therapy for cancer tests on mice and humans. *Pharmacol Biochem Behav.* 1984;21 Suppl 1:1-5.

Sartori HE, Cesium therapy in cancer patients. *Pharmacol Biochem Behav.* 1984;21 Suppl 1:11-3

M O'Hara, Fergus Shanahan; The gut flora as a forgotten organ. *EMBO reports* 7, 688 - 693 (01 Jul 2006)

Guarner F and Malagelada JR. 2003. Gut flora in health and disease. *The Lancet*, Volume 361, Issue 9356, 8 February 2003, Pages 512-519

Gilliland S, Speck M (1977). "Deconjugation of bile acids by intestinal lactobacilli". *Appl Environ Microbiol* 33 (1): 15-8

de Roos N, Katan M (2000). "Effects of probiotic bacteria on diarrhea, lipid metabolism, and carcinogenesis: a review of papers published between 1988 and 1998". *Am J Clin Nutr* 71 (2): 405-11

Anderson J, Gilliland S (1999). "Effect of fermented milk (yogurt) containing *Lactobacillus acidophilus* L1 on serum cholesterol in hypercholesterolemic humans". *J Am Coll Nutr* 18 (1): 43-50

Jeong JH, An JY, Kwon YT, Rhee JG, Lee YJ., Effects of low dose quercetin: cancer cell-specific inhibition of cell cycle progression. *J Cell Biochem.* 2009 Jan 1;106(1):73-82

Guardia T, Rotelli AE, Juarez AO, Pelzer LE. Anti-inflammatory properties of plant flavonoids. Effects of rutin, quercetin, and hesperidin on adjuvant arthritis in rat. *Farmaco* . 2001;56(9):683-687

Jang M, Cai L, Udeani GO, Slowing KV, Thomas CF, Beecher CW, Fong HH, Farnsworth NR, Kinghorn AD, Mehta RG, Moon RC, Pezzuto JM (1997). "Cancer chemopreventive activity of resveratrol, a natural product derived from grapes". *Science* 275 (5297): 218-20Wade, Nicholas (November 16 2006). "Red Wine Ingredient Increases Endurance, Study Shows". *New York Times*.

Karuppagounder SS, Pinto JT, Xu H, Chen HL, Beal MF, Gibson GE (November 2008). "Dietary supplementation with resveratrol reduces plaque pathology in a transgenic model of Alzheimer's disease". *Neurochem Int.* doi:10.1016/j.neuint.2008.10.008

Miura, NN; Ohno N, Aketagawa J, Tamura H, Tanaka S, Yadomae T (January 1996). "Blood clearance of (1->3)-beta-D-glucan in

MRL lpr/lpr mice". *FEMS immunology and medical microbiology* (England: Blackwell Publishing) 13 (1): 51-57

DiLuzio, NR; Williams DL, McNamee RB, Malshet VG (1980). "Comparative evaluation of the tumor inhibitory and antibacterial activity of solubilized and particulate glucan". Recent results in cancer research. *Fortschritte der Krebsforschung. Progrès dans les recherches sur le cancer* (Germany: Springer Verlag) 75: 165-172. ISSN 0080-0015

Morikawa, K; Takeda R, Yamazaki M, Mizuno D (April 1985). "Induction of tumoricidal activity of polymorphonuclear leukocytes by a linear beta-1,3-D-glucan and other immunomodulators in murine cells". *Cancer research* (United States: American Association for Cancer Research) 45 (4): 1496-1501. ISSN 0008-5472

Kogan, G; Stasko A, Bauerova K, Polovka M, Soltes L, Brezova V, Navarova J (2005-07-04). "Antioxidant properties of yeast (1->3)-beta-d-glucan studied by electron paramagnetic resonance spectroscopy and its activity in the adjuvant arthritis". *Carbohydrate Polymers* (Elsevier) 61 (1): 18-28

Patchen, ML; MacVittie TJ (February 1986). "Comparative effects of soluble and particulate glucans on survival in irradiated mice". *Journal of biological response modifiers* (United States: Raven Press) 5 (1): 45-60 Babineau, TJ; Marcello P, Swails W, Kenler A, Bistran B, Forse RA (November 1994). "Randomized phase I/II trial of a macrophage-specific immunomodulator (PGG-glucan) in high-risk surgical patients". *Annals of surgery* (United States: Lippincott Williams & Wilkins) 220 (5): 601-609 Keogh, GF; Cooper GJ, Mulvey TB, McArdle BH, Coles GD, Monro JA, Poppitt SD (October 2003). "Randomized controlled crossover study of the effect of a highly beta-glucan-enriched barley on cardiovascular disease risk factors in mildly hypercholesterolemic men". *The American journal of clinical nutrition* (United States: American Society of Clinical Nutrition) 78 (4): 711-718

Haga, S; Akai K, Ishii T (1989). "Demonstration of microglial cells in and around senile (neuritic) plaques in the Alzheimer brain. An immunohistochemical study using a novel monoclonal antibody.". *Acta neuropathologica* (Germany: Springer Verlag) 77 (6): 569-575

Bolcal, C; Bolcal C, Yildirim V, Doganci S, Sargin M, Aydin A, Eken A, Ozal E,

Kuralay E, Demirkilic U, Tatar H (2007-05-15).

"Protective effects of antioxidant medications on limb ischemia reperfusion injury". *The Journal of surgical research* (United States: Academic Press) 139 (2): 274-279

Hsu CY, Chen YH, Chao PY, Chen CM, Hsieh LL, Hu SP; Naturally occurring chlorophyll derivatives inhibit aflatoxin B1-DNA adduct formation in hepatoma cells. *Mutat Res.* 2008 Dec 8;657(2): 98-104. Epub 2008 Aug 12

To Your Health is a free series of educational literature. Although copyrighted, this literature may be photocopied and distributed, but may not be altered in any way. To Your Health is not intended as medical advice. For diagnosis and treatment of any medical condition, consult your physician.

Chad Brey,
Research and Development Chemist
holds a B.S. degree in biochemistry from California State University, Northridge. Chad has worked as a chemist in various fields including Inorganic chemistry- U.S.Borax, pharmaceutical biochemistry research - Amgen, Analytical chemistry - Baxter Biosciences, organic/silicone chemistry