**Immunocal® Contains Cell Health-Boosting Cysteine (a Whey Protein)**

by Ken Rabas

This summer, my good friend Gearld Frye – a grass-fed genetics consultant – told me about a recent, health problem with which he’d been diagnosed. Gearld chose to fight that health problem with the help of a Naturopathic Physician, using a complete nutrition program that included a product called Immunocal®. When I passed along Gearld’s story – and others’ similar experiences – to the editor of The Milkweed, he challenged me to report on these incidents. I am not a journalist, but will give it a try. I will tell several personal health stories that have been shared with me. Let’s briefly summarize the science that underlines the common links to all of the following persons’ health matters. That common link is a specific product: Immunocal® – a bioactive, non-denatured whey protein isolate that supplies the needed building blocks for increased glutathione production within the human body’s cells.

The main source of information is the Web site: www.immunocal.co.uk/author/glutathione/

The firm that produces and markets Immunocal® is Immunotec – based in Quebec, Canada. The glutathione story at the Immunocal® Web site, on the Immunocal® product is amazing. I have just started, but expect to be studying the Immunocal® Web site for years to come. John Molson (vp of research and development at Immunotec) was very helpful and shared even more medical and scientific studies.

Interested readers may take the time to look up the Physician’s Desk Reference (PDR) for Immunocal®. The PDR Web site is provided at the conclusion of this article. PDR – a respected medical reference tool – explains Immunocal® quite well. This PDR even mentions, by name, the serious disease referred to in this article.

**Personal health anecdotes**

Let’s start with Gearld Frye’s story. Persons who follow the grass-fed or organic agriculture movements may know Gearld. In February 2013, Gearld lost his wife Paula over 50 years to a very serious, long-term, health condition. In July of this year, Gearld found himself diagnosed with a very similar health condition. When Gearld shared his story with me, he was very open to providing the kind of data that such knowledge could be. I think if the medical community couldn’t help him, his spirit would have me mention this side note for anyone reading this that I think you would do better with challenges. As hard as it may seem, you may see your own thoughts and beliefs as important as any medicine. Gearld explained whom he had learned to trust, a Naturopathic Physician whom he knew and trusted. Gearld was on Immunocal® and other supporting nutritional supplements. Gearld is feeling very good, but it will be several months before any follow up testing will be done. Frye continues working with his doctor, with the help of a Naturopathic Physician, as well as the Immunocal® product. He is not to be deterred by challenges. As hard as it may seem, your own thoughts and beliefs are as important as any medicine. Gearld also related another story to me, involving a farm family that he works with (folks that I also know). Two members of that extended family also have the same illness, Gearld and his wife Paula. Both those persons had the same Naturopathic Physician as well as the Immunocal® product. Both persons have enjoyed good health for the past several years.

Gearld also referred me to Dr. Don Huber. Dr. Huber retired from Purdue University in 2006 and now lives in Idaho, near Boise. In recent years, Huber has become known for his warnings regarding glyphosate herbicide. I had the privilege of speaking to Dr. Huber, and he shared his wife Paula’s health story. In July of this year, Dr. Huber was himself diagnosed with a very similar health condition. When Gearld shared his story with me, he was very open to providing the kind of data that such knowledge could be. I think if the medical community couldn’t help him, his spirit would have me mention this side note for anyone reading this that I think you would do better with challenges. As hard as it may seem, you may see your own thoughts and beliefs as important as any medicine. Gearld explained whom he had learned to trust, a Naturopathic Physician whom he knew and trusted. Gearld was on Immunocal® and other supporting nutritional supplements.

**IMMUNOCAL® – Description and Clinical Pharmacology**

"IMMUNOCAL® is a U.S. patented natural food protein isolate in the FDA category of GRAS (generally recognized as safe) which assists the body in maintaining optimal concentrations of glutathione (GS) by supplying the precursors required for extracellular glutathione synthesis. It is clinically proven to raise glutathione values. "The cysteine is a fragile disulfide, extracellularly from its constituent group (SH) of cysteine is responsible for the biological activity of glutathione. Provision of this amino acid is the rate-limiting factor in glutathione synthesis by the cells since bioavailability is an essential requirement for food cysteine. "IMMUNOCAL® is a bovine whey protein isolate specially prepared so as to provide a rich source of bioavailable cysteine. Immunocal® can thus be viewed as a cysteine delivery system. The disulfide bond in cysteine is pepin and trypsin resistant but may be split by heat, low pH of mechanical stress releasing free cysteine. When subject of heat or shearing forces (inherent in most extraction processes), the fragile disulfide bonds within the peptides are broken and the bioavailability of cysteine is greatly diminished.

"Glutathione is a tightly regulated intracellular constituent and is limited in its production by negative feedback mechanisms of its synthesis through the enzyme gamma-glutamylcysteine synthetase, thus greatly minimizing any possibility of oversynthesis.

"Glutathione has multiple functions: 1. It is the major endogenous antioxidant produced by the cells, participating directly in the neutralization of oxidative stress in the cell. 2. Through direct conjugation, it detoxifies many xenobiotics (foreign compounds) and carcinogens, both organic and inorganic.

**INDICATIONS AND USAGE**

"IMMUNOCAL® is a natural food supplement and as such is limited from stating medical claims per se. Statements have not been evaluated by the FDA. As such, this product is thus not intended to diagnose, cure, prevent or treat any disease. "Glutathione augmentation is a strategy developed to address states of glutathione deficiency, high oxidative stress, immune deficiency, and xenobiotic overload in which glutathione plays a part in the detoxification of the xenobiotic in question. Glutathione deficiency states include, but are not limited to: HIV/AIDS, infectious hepatitis, certain types of cancers, cataracts, Alzheimer’s Disease, Parkinson’s, chronic obstructive pulmonary disease, asthma, radiation, poisoning by acetamino-phene and related agents, malnutritive states, arduous pathologies are associated with oxidative stress.

"Glutathione cannot be orally supplemented; it needs to be manufactured within the cells of the body. Glutathione is a tri-peptide, a small protein made up of three amino acids: cysteine (SH), glycine (NH2), and alanine (CH3CO2).""Sulfur containing cysteine is typically in short supply at the cell, and is the most challenging ingredient for the cell to find, as it tries to produce the much needed glutathione. Cysteine is also difficult to supplement, because it is easily broken down in digestion.

"The food sources of cysteine are eggs, raw milk, and bio-available, non-denatured whey. The best of pasteurization will denature much of the protein in dairy. Further, the high speed separators and pumps associated with modern dairy processing will shear the disulfide bonds off the cysteine molecule.

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Yogurt has a well-deserved healthful reputation. But a new report accuses Danone, Yoplait, Chobani and other major marketers of misleading parents, who are looking for healthier foods for their families, into purchasing yogurts loaded with sugar and a myriad of questionable safe artificial sweeteners, colors and emulsifiers.

Culture Wars: How the Food Giants Turned Yogurt, a Health Food, into Junk Food

A few months ago, Dr. Qing Yang, a professor of molecular, cellular and developmental biology at Yale University, “a rise in the percent of the population who are obese coincides with the increase in the widespread use of non-calcific artificial sweeteners such as aspartame and sacralose.” The use of aspartame is controverisal and has been linked to brain tumors and neurological diseases in laboratory animals. Non-calcific sweeteners are not the only con-traversial materials found in many popular brands of yogurt. Another, carrageenan, a bioactive ingredient derived from seaweed, has been linked in published research to serious gastrointestinal inflammation and disease. Some of the yogurts specifically aimed at young children, in squeezeable tubes, are among the offerings containing carrageenan.

“It’s gut-wrenchingly ironic,” observes Kastel, “that some people with inflammatory bowel disease (IBD), or other intestinal maladies, eat yogurt because it is cultured with beneficial bacteria. Carrageenan, included as a thickener in some yogurt, can greatly exacerbate the conditions.”

Some manufacturers, including WhiteWave (Horizon), have recently announced that they are removing carrageenan from their natural and organic products. While they will not acknowledge potential health problems, they are responding to a steady drumbeat of consumer feedback on the carrageenan ingredient issue.

Cornucopia also alleges that some of the ingredient manufacturers use to produce yogurt, such as milk protein concentrate (MPC), typically imported from countries like India, may not meet yogurt’s current legal standard of identity. As Greek yogurt has become popular, one of the ways that companies have cheapened the manufacturing process is by adding MPCs to increase the protein level and improve what the industry calls “mouth feel.”

The results of its investment led Cornucopia to file a formal complaint with the Food and Drug Administration (FDA) in October asking the agency to investigate whether or not certain yogurts on the market, manufactured by such companies as Yoplait, Danone, and many store brands including Walmart’s Great Value, violate the legal standard of identity for products labeled as yogurt. Cornucopia asked the agency that the legal definition of “yogurt” be enforced for product labeling, just as it is for products labeled “cheese.”

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Carrageenan is an active ingredient derived from seaweed, has been linked in published research to serious gastrointestinal inflammation and disease. Some of the yogurts specifically aimed at young children, in squeezeable tubes, are among the offerings containing carrageenan.

In order to assess the labeling campaign, Cornucopia purchased yogurt samples directly from grocery stores’ dairy cases, and shipped them to an independent lab at the University of Nebraska’s Food Processing Center for testing. Lab analyses revealed that many of the top-ranked organic brands found in Cornucopia’s buyer’s guide – that are not part of the industry’s Live and Active Cultures marketing campaign – actually contain higher levels of beneficial bacteria than some of the most popular brands displayed in the seal.

“Our laboratory analysis also showed that there are nutritional benefits to eating whole milk, organic yogurt,” said Dr. Linley Dixon, one of Cornucopia’s researchers.

Despite other recent peer-reviewed and published findings, Cornucopia additionally found that organic yogurt had more advantageous ratios of omega-3 to omega-6 fatty acids and higher levels of beneficial fats, including conjugated linoleic acid (CLA).

Another ingredient many yogurt manufacturers add to their products is artificial coloring. The theory that artificial food colors are detrimental to children’s behavioral development, while attacked by the food industry and other bodies by scientific research. Scientists have linked artificial colors to attention deficit hyperactivity disorder in children. Organic yogurt products are prohibited from using artificial colors.

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