



## Colostrum and Leukemia

**Dear consumer,**

Your inquiry regarding the use of high quality bovine colostrum, such as that distributed by Immune-Tree, for leukemia has been forwarded to me. I am a business and technology consultant with extensive knowledge regarding the formation and composition of bovine colostrum and its health-related applications in humans and animals.

As you may be aware, leukemia is a cancer of the blood and, unlike other cancers, does not produce tumors, but results in the overproduction of white blood cells. Although leukemia is often thought of as a disease of children, it actually affects far more adults. It is more common in men than women and in Caucasians than other ethnic groups.

In healthy individuals, billions of new blood cells are produced in the bone marrow every day, most of them red blood cells. In people with leukemia, the body starts producing more white blood cells than it needs, most of which do not mature normally. Despite their vast numbers, the leukemic cells are unable to fight infection the way normal cells do. If left unchecked, they accumulate and interfere with vital organ functions, including the production of healthy blood cells. Eventually, the body may not have enough red cells to supply oxygen, enough platelets to support blood clotting or enough white cells to fight infection.

Leukemias are classified as acute or chronic. While the acute forms usually develop very rapidly, the chronic forms, and particularly chronic lymphocytic leukemia (CLL), progress slowly and are the most benign. The chronic forms tend to affect middle-aged adults. CLL is the most benign of the chronic forms and can be controlled effectively with medication.

No one knows exactly what causes leukemia, but some people seem genetically predisposed to the disease. Chromosome abnormalities are associated with the disease and are neither inherited nor passed on to one's children. Environmental factors seem to influence the risk of developing these abnormalities. Tobacco smokers are more prone to certain leukemias than nonsmokers. Research also suggests that prolonged exposure to some chemicals, radiation and low-frequency magnetic fields may be associated with disease development, but there is no definitive scientific proof of this.

There is no way to substantiate that the increase in the number of white blood cells observed in your circulation recently was a response associated with your use of colostrum and an associated attempt of your body to deal with the disease. However, I strongly doubt that this is the case and believe that the observed increase was a direct manifestation of the disease itself. Since CLL can be controlled with medication, I urge you to follow your doctor's advice and to faithfully follow the drug regimens that he prescribes.

However, I also urge you to continue routinely supplementing your diet with colostrum. There are several important considerations that apply.

First, the medications prescribed to abate malignant diseases are all inhibitors of normal metabolism. The result is that individuals receiving such treatment tend to lose weight and easily become fatigued. In leukemia, this is accentuated because the generation of red blood cells is limited, which restricts the delivery of oxygen-rich blood to the tissues. The IGF-1 in high quality colostrum is the primary metabolic driving force behind the derivation of metabolic energy in the body. It acts in concert with insulin such that when these hormones bind to the receptors on cells in the body, they trigger the conversion of glucose (blood sugar) to glycogen, which is stored in the muscles and liver as a major energy source to be delivered on demand. Further, the binding of IGF-1 to a cell surface receptor also directs the assembly of amino acids into proteins. Routine use of colostrum not only provides the body with an excellent supplementary source of IGF-1 and insulin, but the casein in colostrum is a major resource for the eight essential amino acids that the body needs to assemble key proteins, but cannot make itself.

Second, at about age 13, your body's health support mechanisms began to deteriorate. Before puberty, when you were just a young child, the very foundation of your immune system was being established by a small gland-like structure in the upper chest, the thymus. It is within this structure that the cells mature that will determine the appropriate type of response that your immune system should mount after an insult and then cells from the same source will regulate the quality and intensity of that response. Cells from this gland also scan the blood for abnormal cells and remove them. After puberty, the thymus begins to shrink and ultimately almost disappears by age 50-60. So, although the immune system develops more immunologic memory with time, it gradually loses the ability to efficiently and effectively orchestrate and direct the actual immune response itself.

Scientific studies have shown that insulin-like growth factor (IGF-1), a major component of high quality bovine colostrum, and the IGF superfamily of proteins can restore and maintain a fully functional thymus, even in adults. In addition, colostrum contains the alpha and beta chains of the hormone thymosin that act independently and in concert to regulate the functions of the thymus. Further, the proline-rich peptide (PRP) in colostrum is known to down-regulate the immune system and keep the response to a foreign substance under control. Other studies have shown that including only small amounts of colostrum in the daily diet of adult animals significantly enhances the ability of their white blood cells to respond to infection and destroy invading bacteria.

### **References:**

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I hope that the above information gives you a better understanding of your condition and the benefits that can be realized by routinely supplementing your diet with colostrum.

To your good health - always.

Sincerely,  
**Alfred E. Fox, Ph.D.**

*Dr. Alfred E. Fox holds a Ph.D. from Rutgers University in Microbiology (Immunochemistry) and has more than 25 years of senior management experience at Carter-Wallace, Baxter Dade Division and Warner-Lambert, where he was responsible for research and development and regulatory affairs. He was also the founder and president of two biotechnology companies focused on agribusiness and environmental monitoring, respectively. For the past 15 years, Dr. Fox has been the President of Fox Associates, a business and technology consulting firm serving small- to mid-size companies in the human and animal healthcare fields. He focuses primarily on marketing and regulatory issues and for the past 10 years has continuously consulted to bovine colostrum manufacturers, where he has gained regulatory approval for their products, been a technical advisor, helped design and develop marketing strategies and served as an expert witness in legal matters.*

