



Colostrum and ITP Disease

Dear consumer,

Your inquiry regarding the potential benefits of routine dietary supplementation with a high quality bovine colostrum product, like that distributed by Immune-Tree, in a child with idiopathic thrombocytopenic purpura (ITP) has been forwarded to me. I am a business and technology consultant with extensive knowledge and experience regarding the formation of bovine colostrum and its applications in humans and animals.

Idiopathic thrombocytopenic purpura is an autoimmune disease wherein antibodies generated in the body attack platelets, the cellular structures in the blood that are involved in clotting. Acute ITP is a very common disease in children ages 2-9. It usually occurs following an acute infection and symptoms ordinarily disappear within two months. Chronic ITP usually occurs without provocation in adults 20-50 years old and symptoms persist for more than six months.

The condition can be very distressing to a parent when it occurs in a young child since blood in the urine or stool and spontaneous nosebleeds can occur because the normal blood clotting mechanism is temporarily impaired. The parent should monitor the child for symptoms very carefully while the disease is active and report them promptly to their physician. Of particular concern are blows to the head or abdomen, where small blood vessels can rupture without being apparent.

Autoimmune disease represents an immune system that is out of control and the best way to put things back into phase naturally is via colostrum. As we age, our immune system loses its ability to regulate itself efficiently, primarily because the thymus, a glandular structure in the upper chest that is considered the seat of the immune system, begins to shrink after puberty and almost disappears by the time we are 50 years old. In a young child, the immune system has been overwhelmed and is operating ineffectively. The thymus is the site where T-cells mature and prepare to defend the body against invading microorganisms. Therefore, as we age, we lose some of our inherent ability to fight off infections. It has been shown that the thymus can be restored to normal function by the growth factors in colostrum. In addition, colostrum contains specific hormones that regulate the functions of the thymus and other substances, like proline-rich peptide (PRP) that help to keep the immune system under control.

In addition, there are very small quantities of growth hormone in complete first milking colostrum, but growth hormone is an extremely potent hormone and, thus, not much is required. It directly affects almost every cell in the body and significantly influences the development of new, healthy cells, causing them to generate at a more rapid rate when a sufficient quantity of the hormone is present. Scientific studies have shown that one of the benefits of ingesting even small amounts of growth hormone is accelerated development and repair of damaged tissue.

Insulin-like growth factor-1 (IGF-1) and its closely related counterpart insulin-like growth factor-2 (IGF-2) are potent hormones that are found in association with almost every cell in the body. IGF-1 is the most potent and best described of this pair. These molecules are present in all mammals and, in every case, have a very similar chemical structure regardless of the species. IGF-1 is absolutely necessary for normal cell growth and for the development of the fetus in the uterus. Both IGF-1 and growth hormone are also required for normal development outside of the uterus and that is why they are both present in colostrum. It is now known that there are specific sites, called receptors, on almost all cells in the body capable of interacting with IGF-1. These sites have a structure that fits perfectly with part of the IGF molecule and this interaction triggers a series of chemical events within the cell. There are also 6 different proteins present inside the cell and on the surface of the cell that react to the attachment of IGF-1 to its receptor. These are called insulin-like growth factor binding proteins (IGFBP's) and they control the actions of IGF-1 on the cell. In addition, inside the cell there are at least 87 other related proteins either capable of binding to IGF-1, altering its actions, or influencing the effects of the IGFBP's. These are called insulin-like growth factor binding protein-related proteins (IGFBP-rP's). The entire collection of these proteins is referred to as the Insulin-like Growth Factor Binding Protein (IGFBP) Superfamily.

The multitude of available IGF-1 binding proteins and related proteins available in the cell is indicative of the many potential effects that the binding of IGF-1 to its specific cell-surface receptor can have on cells. To keep these many effects under control, some of the binding proteins act as checks and balances, allowing the secondary chemical switches in a cell to be turned on and then turning them off when it is appropriate. Therefore, IGF-1 is like the captain of a ship. When it binds to its specific receptor, the ship can move forward, but there are all kinds of systems in place to keep it moving at the right speed and in the right direction.

The main triggered events include activation of the process by which the cell grows and reproduces itself and maintenance of the metabolic pathways by which the cell converts glucose into glycogen and uses amino acids to create proteins. The actual pathway by which the cell uses glucose and converts it to glycogen is first switched on by the binding of insulin to its specific cell surface receptors. Glycogen is stored in the liver and muscles and is the reserve source of readily available energy when the muscles are exercised. The IGFBP Superfamily also has a direct role in how the cell uses amino acids to build proteins. Thus, by eating a well-balanced diet and maintaining a constant supply of IGF-1 in our body through routine dietary supplementation with high quality colostrum, we can keep the ship moving at the right speed and in the right direction.

Colostrum is an amazing resource of substances necessary to support the development and repair of cells and tissues, to assure the effective and efficient metabolism of nutrients and maintain a healthy immune system. It is ideally suited for consumption by humans since most of its biologically active components have essentially the same chemical structure as the same components found in humans and there are no known negative side effects to its routine consumption other than those that might be experienced by individuals who are sensitive to the lactose (milk sugar) normally found in dairy products.

It is also very, very important to recognize that all colostrum products are not the same and, despite the claims made by their manufacturers, they do not all contain every beneficial

component at an optimum concentration and, in many cases, they have been manipulated and may be missing some of the essential components. When choosing a colostrum product, you should be certain that it is made from only first milking bovine colostrum collected within 6-8 hours after birth of the calf and that the colostrum is "complete" and that none of the components have been removed, including the fat. I have personally been responsible for the testing of several different brands of colostrum for human use and can attest that the results prove that the products distributed by Immune-Tree, contain the highest quality complete bovine colostrum available today.

References:

Ansell CD, Phipps J, Young L; Thymosin alpha-1, Am J Health Syst Pharm 2001; 58(10): 879-85.

Aspinwall R, Andrew D, Pido-Lopez J; Age-associated changes in thymopoiesis, Springer Semin Immunopathol 2002; 24(1): 87-101.

Binz K, et al; Repopulation of the atrophied thymus in diabetic rats by insulin-like growth factor-1, Proc Nat Acad Sci 1990; 87(10): 3690-4.

Clark R, et al; Insulin-like growth factor-1 stimulation of lymphopoiesis, J Clin Invest 1993; 92(2): 540-8.

Fry TJ, Mackall CL; Current concepts of thymic aging, Springer Semin Immunopathol 2002; 24(1): 7-22.

Geffner M; Effects of growth hormone and insulin-like growth factor-1 on T- and B-lymphocytes and immune function, Acta Pediatr 1997; 423: 76-9.

Hwa V, Oh Y, Rosenfeld RG; The insulin-like growth factor binding protein (IGFBP) superfamily, Endocr Rev 1999; 20(6): 761-87.

LeRoith D, Insulin-like growth factor receptors and binding proteins, Clin Endocrinol Metab 1996; 10(1): 49-73.

Pawelec G, et al; T cells and aging, Front Biosci 2002; 1(7): 1056-83.

I hope that the above information gives you a better understanding of ITP and the benefits that can be realized by routinely supplementing 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.

