

Symbiotics Colostrum Plus

What 3rd Party Analysis Reveals

The following is a full-scale analysis, detailing the various components contained in Immune-Tree's "first-milking" colostrum. It was performed by FPL, Food Products Laboratory, Inc., the largest private food-testing laboratory in the Northwest. FPL uses methods certified by the USDA and EPA and they participate in several verified "check sample" programs to ensure a high degree of accuracy. We invite you to compare this analysis with other colostrum products on the market. Here you will find information about:

1. **General Components (Immunoglobulins, protein, moisture, lactose, fat and ash)**
2. **Amino Acids**
3. **Minerals**
4. **Vitamins**
5. **Testing for the presence of Pesticides and Antibiotics**
6. **Testing for Microorganisms**
7. **Testing for Heavy Metals**

1. General Components

Total Immunoglobulins	22.11 %
Total Protein	53.89%
Moisture	1.6%
Lactose	10.4%
Fat	21.70%
Ash	.08%

What does it mean?

Total Immunoglobulins - Many widely marketed brands of colostrum have an immunoglobulin count ranging from 25% to 40% and for the most part these products are filtered or standardized. Some "high Ig" products (Ig = immunoglobulins) contain 30%. Immune-Tree's Natural Strength colostrum is all "Natural" meaning our colostrum has not been filtered, standardized or manipulated in any way and this we think far exceeds either filtering or standardizing because this is what Mother Nature intended. A RID test does not measure biological activity of any component identified in the RID test.

Total Protein - Total protein in the range of 40-60%, is usually indicative of colostrum, which has been taken within the first 12 hours after birth. If a colostrum product has been denatured, (portions removed), the total proteins will appear abnormally high (70-80%).

Moisture - Removal of the moisture in a low heat process ensures a longer shelf life. With a moisture level below 6%, colostrum has a shelf life of several years. Many colostrum products have moisture levels above 7%.

Lactose - Levels of lactose between 8 and 25% are indicative of colostrum taken within the first 12 hours. Since lactose levels rise quickly after the birth of the calf, low levels of lactose usually indicate colostrum, which has been taken soon after birth. Some marketers of colostrum remove the lactose to accommodate lactose intolerant individuals. However, this is typically not necessary if colostrum is collected early enough so that the lactose level is low. Levels under 15% rarely affect intolerant individuals. Immune-Tree colostrum is "whole" colostrum. Severely intolerant individuals who are concerned about the extremely low levels of lactose in Immune-Tree colostrum should consider taking an enzyme known as lactase, which neutralizes lactose in dairy products.

Fat - When the immunoglobulins are high and that there is a fat content of 15-25%, the growth factor portion will also be high. Research shows that the fat "holds" approximately 30% of the Igf-1, a growth factor involved in healing, regeneration, blood sugar balance, anti-aging and other processes. **Immune-Tree colostrum is never de-fatted.**

Ash - This can be an indicator of scorching during the drying process, and may indicate that excessive temperatures have been used during the drying process. Look for an ash content under 1%.

2. Amino Acid Profile

Amino Acids are the "building blocks" of the body. They form proteins for building cells and repairing tissue. They also form antibodies (immunoglobulins) to combat invading bacteria and viruses. They are part of the enzyme and hormonal system. They build nucleoproteins (RNA and DNA), they carry oxygen throughout the body and they participate in muscle activity. A large portion of the amino acids in colostrum are found in antibodies or immunoglobulins.

There are 22 known amino acids, 8 of which cannot be manufactured in the human body. These 8 amino acids are called **essential** and they must be supplied in some dietary form. The other 14 amino acids are classified as **non-essential** and can be manufactured by the body. All 8 of the essential amino acids are found in Immune-Tree colostrum. 9 of the other 14 non-essential amino acids are also found in colostrum. The following is a complete amino acid profile on Immune-Tree colostrum:

Amino Acid Amount contained in 2 capsules (1000 mg) Immune-Tree colostrum

Essential Amino Acids

Isoleucine	24.0 mg.
Leucine	48.3 mg.
Lysine	27.9 mg.
Methionine	1.0 mg.
Phenylalanine	24.0 mg.
Threonine	35.5 mg.
Tryptophan	.8 mg.
Valine	38.8 mg.

Non-essential Amino Acids

Alanine	21.4 mg.
Arginine	24.3 mg.
Aspartic Acid	45.3 mg.
Glycine	15.6 mg.
Glutamic Acid	95.1 mg.
Histidine	14.6 mg.
Proline	51.5 mg.
Serine	42.4 mg.
Tyrosine	28.4 mg.

More about Amino Acids and what they do

Essential Amino Acids

Isoleucine - provides ingredients for the manufacture of numerous biochemical components in the body. It is involved in muscle development, blood-sugar regulation, energy regulation and hemoglobin development.

Deficiency can cause dizziness, headaches, fatigue, depression, confusion and irritability.

Daily-recommended intake is based on age and weight. Adults should consume a minimum of 22 mg/lb.

Leucine - and isoleucine are both involved in energy regulation, blood-sugar regulation and muscle growth and repair. Leucine is necessary for proper wound healing and in hormone production.

Deficiency can result in hypoglycemia in infants. In the adult, deficiency can cause headaches, fatigue, depression and irritability.

Daily-recommended intake is based on age and weight. Adults should consume approximately 31 mg/lb.

Lysine - Ensures the adequate absorption of calcium and helps with the formation of collagen (which makes up bone, cartilage and connective tissue). Lysine is involved in the formation of hormones and enzymes. Recent studies indicate it may be effective against herpes. Lysine works with tryptophan in helping to reduce cholesterol levels.

Deficiency results in loss of energy, inability to concentrate, irritability, hair loss, anemia, retarded growth and reproductive disorders.

Daily-recommended intake is based on age and weight. Adults should consume approximately 26 mg/lb.

Methionine - is an antioxidant and a principle supplier of sulfur, which prevents disorders of the hair, skin, and nails. It is involved in the lowering of cholesterol, reduction of liver fat and reduction of heavy metals. It protects the kidneys and regulates the formation of ammonia - creating ammonia-free urine, which reduces bladder irritations.

Deficiency can cause slowed growth, weakness, edema, skin lesions and liver damage.

Daily-recommended intake is based on age and weight. Adults should consume approximately 29 mg/lb.

Phenylalanine - is used by the brain to produce norepinephrine, a chemical that transmits signals between nerve cells and the

brain. It helps improve memory; it functions as an antidepressant and helps with alertness and other mental functions.

Deficiency is rare.

Daily-recommended intake is based on age and weight. Adults should consume approximately 31 mg/lb.

Threonine - helps the digestive and intestinal tracts function more smoothly and assists metabolism and assimilation. It is an important constituent of collagen, elastin and enamel proteins.

Deficiency causes skin disorders and weakness. Deficiency is rare.

Daily-recommended intake is based on age and weight. Adults should consume approximately 15 mg/lb.

Tryptophan - is a precursor for serotonin, which aids in normal sleep. It is a natural relaxant, which helps with anxiety, depression and insomnia. It helps reduce the risk of artery and heart spasms and works with lysine in reducing cholesterol levels.

Deficiency causes stunted growth.

Daily-recommended intake is based on age and weight. Adults should consume approximately 8 mg/lb.

Valine - Promotes mental vigor, muscle coordination and emotional stability.

Deficiency - none known

Daily-recommended intake is based on age and weight. Adults should consume a minimum of 22 mg/lb.

Non-essential Amino Acids*

Alanine - is an important source of energy for muscle tissue, the brain and central nervous system. It also helps in the metabolism of sugars and organic acids.

Arginine - is glycogenic, which means that it helps the body burn calories more efficiently. It is considered crucial for optimal muscle growth and tissue repair. It stimulates the release of growth hormones and promotes wound healing and regeneration of the liver.

Aspartic Acid - aids in the expulsion of ammonia from the circulatory system. It is involved in RNA synthesis and recent studies show it to be involved in endurance and resistance to fatigue.

Glycine - helps trigger the release of oxygen to the energy requiring cell-making process. It is important in the manufacture of hormones involved in immune function and in glycogen storage.

Glutamic Acid - is considered to be nature's "Brain Food." It improves mental capacities and transports potassium to the brain. It helps with the healing of ulcers and is also involved in releasing the craving for sugar and alcohol.

Histidine - is found abundantly in hemoglobin and has been used in the treatment of anemia, ulcers and allergic diseases.

Proline - helps maintain and strengthen heart muscles. It is important for the proper functioning of joints and tendons because of its involvement in collagen synthesis.

Serine- is involved in the storage of glucose in the liver and muscles. It is also important in the synthesis of a fatty acid sheath around nerve fibers.

Tyrosine - transmits nerve impulses to the brain. It improves mental functions like memory and alertness and helps overcome depression. It promotes the healthy functioning of the thyroid, adrenal and pituitary glands.

*Since the body can produce the non-essential amino acids, deficiencies are rare and recommendations for daily intake are not available.

3. Mineral Profile

Mineral Amount contained in 1000mg (2 capsules) of Immune-Tree colostrum

Calcium	6.34 mg
Chromium	.0007 mg
Iron	.014 mg
Magnesium	1.19 mg
Phosphorus	4.94 mg
Potassium	8.39 mg
Sodium	3.44 mg
Zinc	.081 mg

More about Minerals and what they do

As important as vitamins are, they can do nothing without minerals. Vitamins cannot be assimilated without the aid of minerals. And though the body can manufacture a few vitamins, it cannot manufacture any of the minerals. All tissues and internal fluids of our body contain varying quantities of minerals. Minerals are constituents of the bones, teeth, soft tissue, muscle, blood and nerve cells. They are vital to overall mental and physical well-being.

Calcium - is essential for healthy bones and teeth. It is important for muscle integrity, nerve function, blood clotting, blood pressure and intercellular regulation.

Deficiency results in muscle cramps, softening of the bones (osteoporosis) tooth decay and depression.

Chromium - is involved in the release of energy, and is important with sugar and fat metabolism as well as the action of insulin.

Deficiency may result in glucose intolerance in diabetics, heart disease, obesity and fatigue.

Iron - The major function of iron is to combine with protein and copper in the making of hemoglobin. Hemoglobin transports oxygen in the blood. Iron prevents fatigue and is important for proper immune function.

Deficiency results in weakness, anemia, depressed immunity, reduced cognitive function and constipation.

Magnesium - plays an important role in regulating the neuromuscular activity of the heart. It is also necessary for calcium and vitamin metabolism.

Deficiency may result in muscle spasms, confusion, hypertension and suppressed pancreatic function.

Phosphorus - is important for proper pH balance in the body. It is important in bone formation and is found in every cell. It is involved in the structure of DNA and enzyme co-factors.

Deficiency is unknown

Potassium - Works with sodium to regulate the flow of water and nutrients on a cellular level. It stimulates the kidneys and assists in reducing high blood pressure. It is also involved in heart, brain and skin functions.

Deficiency results in poor reflexes, nervous disorders, and muscle damage.

Sodium - Works with potassium to maintain hydration at the cellular level. It is critical in nerve impulse transmission and in maintaining the acid-base balance within the body.

Deficiency results in a suppression of appetite, cramping and depression.

Sulfur - serves numerous functions within the body. It links proteins together, and is important for healthy skin, hair and nails. Sulfur is part of the vitamins, biotin and thiamin (B1), and also part of the hormone insulin. It aids detoxification by combining with toxins to form harmless compounds, which the body can dispose of. Sulfur has been shown to restore flexibility to the protein layers of cell walls, allowing fluids to pass through tissue more easily. This softens the tissue and helps to equalize pressure thereby reducing or eliminating the cause of many kinds of pain. Sulfur is important for those with allergies, joint pain, muscle cramps, skin disorders and numerous other health conditions. Colostrum is a good source of sulfur.

Deficiency shows as dry skin and other skin disorders, joint pain, allergies and a reduction in cognitive function.

Zinc - is necessary for protein synthesis, wound healing, and reproductive development and in the metabolism of phosphorus. **Deficiency** results in poor wound healing, reduced immune function, growth failure and delayed reproductive organ development.

Trace Minerals

Colostrum also contains appropriate amounts (traces) of the trace minerals, which play a major role in health since even small portions of them can powerfully affect health. They are essential in the assimilation and utilization of vitamins and other nutrients. They aid in digestion and provide the catalyst for many hormones, enzymes and essential body functions.

4. Vitamin Profile

Vitamin Amount contained in 1000 mgs (2 capsules) of Immune-Tree Colostrum

Vitamin A	IU
Vitamin A from beta carotene	2.7 IU
Vitamin C	.027 mg
Vitamin E	.037 IU

Vitamins from the B-complex family:

Folic Acid	.0002 mg
Vitamin B-5 (pantothenic acid)	.019 mg
Vitamin B-2 (riboflavin)	.047 mg
Vitamin B-1 (thiamin)	.003 mg
Vitamin B-6	.0024 mg
Vitamin B12	.0475 mcg

More about Vitamins and what they do

All natural vitamins are organic food substances found in plants and animals. With few exceptions, vitamins must be supplied in the diet or in dietary supplements. They are necessary for our growth, vitality and general well-being. A lot of people think that vitamins can replace food. They cannot. And vitamins cannot be assimilated without food. That is why it is suggested that they be taken with a meal.

Vitamin A - is necessary for growth and repair. It helps maintain smooth, soft skin; it protects the mucous membranes of the mouth, nose, lungs and throat; it counteracts night blindness and weak eyesight; it aids in bone and teeth formation. Current research indicates that it helps reduce the risk of certain cancers.

Deficiency may result in night blindness, susceptibility to infections, loss of appetite, fatigue, gum disease and retarded growth.

Beta Carotene - is a form of vitamin A (see above)

Vitamin C - is essential for healthy teeth, gums and bones; it helps heal wounds and scar tissue; it aids in the prevention and treatment of infections and gives strength to blood vessels. As an antioxidant, it aids in the absorption of iron and it prevents the conversion of nitrates into cancer-causing substances. According to Dr. Linus Pauling, vitamin C will decrease the risk of getting certain cancers by up to 75%.

Deficiency may lead to bleeding gums, swollen joints, slow healing, nosebleeds, tooth decay, and impaired digestion.

Vitamin E - is a major antioxidant. It retards cellular aging, strengthens capillary walls and prevents blood clots. It is used by doctors to prevent sterility, muscular dystrophy, calcium deposits in the blood and for numerous heart conditions.

Deficiency may lead to the rupture of red blood cells, lack of sexual vitality, degenerative conditions of the heart and other muscles and dry skin.

Folic Acid - is necessary for RNA and DNA synthesis, which is essential for the growth and reproduction of all body cells. It aids in amino acid metabolism and in the formation of red blood cells in the bone marrow.

Deficiency may result in gastrointestinal disorders, anemia, vitamin B-12 deficiency and pre-mature grey hair.

Vitamin B-5 (pantothenic acid) - participates in the release of energy from carbohydrates, fats and protein; aids in the utilization of vitamins; improves the body's resistance to stress; helps in cell building and the development of the central nervous system. It is involved in the making of antibodies and so it helps fight infection.

Deficiency may lead to dizziness, digestive disturbances, and skin abnormalities.

Vitamin B-2 (riboflavin) - is necessary for carbohydrate metabolism. It helps maintain cell respiration, healthy vision, skin, hair and nails.

Deficiency results in itching and burning eyes, sores in the mouth, dermatitis, and oily skin.

Vitamin B-1 (thiamin) - is essential for the normal functioning of the nervous system, muscles and heart. It stabilizes the appetite and plays a key role in the metabolic cycle for generating energy.

Deficiency may lead to nervousness and irritability, insomnia, loss of weight, depression and gastrointestinal problems.

Vitamin B-6 - is necessary for the synthesis and breakdown of amino acids. It aids in fat and carbohydrate metabolism, in the formation of antibodies, in the maintenance of the central nervous system and in the maintenance of the sodium and phosphorous balance in the body.

Deficiency symptoms are nervousness, insomnia, anemia, muscular weakness, muscle cramps and water retention.

Vitamin B-12 - helps in the formation and regeneration of red blood cells, thus preventing anemia. It is necessary for carbohydrate, fat and protein metabolism and it maintains a healthy nervous system. It promotes growth in children and increases energy needed for calcium absorption.

Deficiency leads to anemia, poor appetite, fatigue, brain damage, nervousness and irritability.

5. Pesticides and Antibiotic Analysis

Testing includes methods for the detection of more than 65 different pesticides and all antibiotics used in the dairy industry. Immune-Tree maintains a zero tolerance for these substances.

Organophosphate pesticides	none detected	(detection limit = .05 ppm)
Chlorinated Pesticides	none detected	(detection limit = .005 ppm)
Carbamates	none detected	(detection limit = .02 ppm)
Antibiotics	negative	

6. Microbial Analysis

Coliform count	negative
E. Coli	negative
Salmonella	negative
Mycobacterium paratuberculosis	negative

7. Heavy Metal Analysis

Arsenic	< .05 ppm
Cadmium	< .05 ppm
Lead	.30 ppm
Mercury	< .10 ppm