Lactoferrin-250

Your Immune System's Best Kept Secret

- Superior immune system support
- Clinically proven safe in infants, the elderly, and the immune-compromised
- Improves iron absorption
- Sourced from New Zealand dairy

Gluten Free  Non-GMO  Vegetarian  Cold & Flu Immunity

AOR Code  Variant
AOR04110  60 VEGI-CAPS

Details
Lactoferrin is an iron-binding glycoprotein found in human and bovine milk that has powerful immune boosting effects. Its multifunctional role also encompasses antibacterial, antiviral, antifungal, antioxidant, and immune-regulating activities. Lactoferrin has been used successfully with chemotherapy to improve the immunity of cancer patients and to reduce the treatment side effects. Neonatal units successfully use lactoferrin to help reduce infection in hospitals, and baby formulas manufactured in China are now being supplemented with lactoferrin. Being an immunomodulator, lactoferrin helps manage the inflammatory response. Inflammatory conditions that can benefit from lactoferrin include high cholesterol, gastrointestinal inflammation, respiratory tract inflammation and acne. Lactoferrin may also stimulate the cells responsible for bone growth, and helps improve the absorption of iron from the diet for people with iron deficiency.

Anyone who wants to boost their immunity can take this supplement for extra protection against illness and infection. Lactoferrin contains no lactose and little to no casein, so it is safe for those with a lactose intolerance who want to reap its benefits without having to consume dairy products.

Label Info

Discussion
Lactoferrin-250 is an iron transporter protein sourced from bovine milk. Lactoferrin is naturally found in mammalian milk, tears and saliva and provides important antioxidants for the maintenance of good
Product Variation

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**Supplements Facts**

**Serving Size:** 1 Capsule

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<th>Amount</th>
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<td>Lactoferrin (bovine milk) 250 mg</td>
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Non-medical ingredients:


**Guarantees**

AOR™ guarantees that all ingredients have been declared on the label. Contains no wheat, gluten, corn, nuts, peanuts, sesame seeds, sulphites, mustard, soy, eggs, fish or shellfish.

**Adult Dosage**

Take 1-6 capsules daily in divided doses with meals and a few hours before or after taking other medications, or as directed by a qualified health care practitioner.

**Cautions**

Consult a health care practitioner prior to use if you are allergic to dairy products.

**Source**

New Zealand bovine milk

**Main Application**

- Immune support
- Anti-Inflammatory
- Iron deficiency
- Antioxidant
- Anti-tumour

**Disclaimer**

The information and product descriptions appearing on this website are for information purposes only, and are not intended to provide or replace medical advice to individuals from a qualified health care professional. Consult with your physician if you have any health concerns, and before initiating any new diet, exercise, supplement, or other lifestyle changes.

**Research**
Background

A Miniscule but Mighty Molecule

Lactoferrin is an iron transporter glycoprotein belonging to the transferrin family, originally isolated from bovine milk. It has a very high affinity for iron and 1 g of the protein can bind 1.4 g of iron. It is present in epithelial secretions and in neutrophils. Human colostrum has the highest concentration of lactoferrin followed by human milk and bovine milk. Bovine milk contains 1% lactoferrin while mother’s milk contains up to 15% of the protein. It is the second most abundant protein found in colostrum. Bovine lactoferrin is capable of interacting with human lactoferrin binding sites. The activity of lactoferrin is conferred by the 52 first amino acids in the peptide sequence. The sequence is identical for bovine and human lactoferrin.

First-Line Defense

Lactoferrin is important for the proper development of the intestinal flora, skeletal structure and the immune system of the newborn. Lactoferrin is also extremely resistant to degradation in the gastrointestinal tract, being effective both in acidic or alkaline pH, and is absorbed by a specific receptor found in the intestinal brush border. It is part of our defense system, especially at mucous membranes and supplementation leads to immuno-stimulation.

Immunity

There are several pools for lactoferrin in the body: the neutrophils in serum, mucous membranes and in various biological fluids. Evidence suggests that supplementation with lactoferrin increases the phagocytic activity of immune cells known as leukocytes and stimulates the production of natural killer cells and cytokines in the immune system. Lactoferrin also modulates the inflammatory response, which is part of the immune system. Lactoferrin has been used successfully as an adjunct to chemotherapy to improve the immunity of cancer patients undergoing treatment and to reduce the side effects of the chemo. Neonatal units have also successfully used lactoferrin to help reduce neonate infection in hospitals.

Anti-Bacterial

Neutrophils contain lactoferrin to bind iron, an essential nutrient for bacterial growth. Lactoferrin’s anti-inflammatory and anti-bacterial activities come from its capacity to bind iron. The combined action of transferrin and lactoferrin restrict the amount of free iron available. Levels become insufficient for bacterial growth. This suppresses free radical formation (free iron is an oxidant) and deprives bacteria of a mineral essential for their growth and multiplication. The action of pepsin on lactoferrin leads to the formation of compounds that have an even greater anti-microbial activity.

Antiviral

Lactoferrin’s antiviral activity is thought to be caused by the molecule itself and not by the molecule’s affinity for iron because no other transferrin molecule with an affinity for iron exhibits antiviral activity.

Iron Transportation

Lactoferrin is a useful transport molecule for the supplementation of iron and is helpful when
combined with iron supplements or foods high in iron when trying to avoid deficiency. Lactoferrin can also act as an iron chelator.

**Bone Health**

Lactoferrin stimulates the proliferation of chondrocytes and the activity of osteoblasts, which contributes to bone growth.

**Research**

**Bone Health**

Lactoferrin was shown to increase bone formation through the stimulation of osteoblasts. The molecule increased osteoblast differentiation and reduced osteoblast cellular death by 50-70%. Studies have shown that lactoferrin binds to cultured osteoblastic cells and leads to their proliferation and cellular division.

**Infections**

The consumption of lactoferrin assists the body with its ability to fight infections. According to research studies including one conducted by the Morinaga Milk Industry Co. Ltd., it has been shown that lactoferrin can not only help to prevent infections in the digestive system but also in other parts of the body. The study showed that the consumption of lactoferrin is able to combat infections caused by hepatitis C and the Helicobacter pylori bacteria. Other studies have shown that Lactoferrin inhibited the infection of human embryonic lung cells by both herpes and cytomegaloviruses.

In a study using mice, 70% of the lactoferrin-pretreated mice survived the intravenous administration of E coli if they were 1st given lactoferrin, in the control group, only 4% of the animals survived.

**Inflammation**

Lactoferrin is able to reduce inflammation due to its unique and potent inflammatory properties. As an essential protein with multiple functions, lactoferrin provides the immune systems with a first line of protection. At local infection sites, the protein has proved that it can reduce inflammation in both the respiratory and gastrointestinal tracts.

**Acne**

Reduced levels of lactoferrin may fuel the inflammatory processes involved with acne. According to research studies, it was found that patients who were affected from seborrheic blepharitis and acne rosacea, possessed a lowered concentration of lactoferrin within their tears. Blepharitis is an itchy, inflamed condition that causes red eyelids along with the presence of scales appearing like dandruff on the eyelashes. If lactoferrin prevents the bacteria causing the acne from receiving necessary iron, the bacteria starve and acne shows an overall improvement.
Market Trends

Lactoferrin is most commonly used for enhancing the immune system. It is found in small concentrations in whey proteins and breast milk.

Recently, the Chinese market for lactoferrin has skyrocketed as baby formula companies have been adding lactoferrin to their products due to its proven health benefits. Lactoferrin’s safety and effectiveness has been proven by its use to prevent infections in hospital neonatal units.

AOR Advantage

AOR’s Lactoferrin-250 is one of a few standalone lactoferrin products, highlighting the benefits of this miniscule but mighty molecule.

References


Abstract

The clinical efficacy of a bovine lactoferrin/whey protein Ig-rich fraction (Lf/IgF) for the common cold: a double blind randomized study.


Vitetta L, Coulson S, Beck SL, Gramotnev H, Du S, Lewis S.

OBJECTIVE: The aim of the study was to determine if a bovine lactoferrin/whey protein Ig-rich fraction (Lf/IgF) combination was effective in reducing the number of colds and in turn improving symptom recovery in a cohort of males and females that reported frequently contracting a cold.

DESIGN: A double blind randomized placebo-controlled clinical trial.
SETTING: One-hundred and twenty-six participants matched by age, BMI, dietary and physical parameters with self-reported frequent upper respiratory tract symptoms and infections were randomly assigned to receive 600 mg of Lf/IgF or a placebo daily for 90 days.

MAIN OUTCOME MEASURES AND RESULTS: A total of 90 participants (47 receiving the active and 43 placebo) completed the 90 day trial and 15 completed 45 days participation (6 in the active and 9 in the placebo group). The total number of colds recorded over the study period was 48 for the treatment group versus 112 for the placebo group (p < 0.001). The significant trend was retained when the data was corrected for medications returned (p < 0.001) and for guessing treatment allocations (p < 0.001). Non-parametric analysis demonstrated that the total number of cold-associated symptoms reported by participants that received Lf/IgF was significantly less than those in the placebo group (p < 0.05). Also, total days sick with a cold and cold severity were reduced over the clinical trial period for Lf/IgF over placebo, but the trend was not significant.

CONCLUSIONS: These findings demonstrate that the Lf/IgF combination significantly decreased the incidence of colds and the cumulative number of cold-related symptoms over placebo. This therapeutic combination may be indicated for the prevention of colds and its most common symptoms in the general population when administered as a preventative supplement.

Effects of a composition containing lactoferrin and lactoperoxidase on oral malodor and salivary bacteria: a randomized, double-blind, crossover, placebo-controlled clinical trial.


Shin K, Yaegaki K, Murata T, Li H, Tanaka T, Aoyama I, Yamauchi K, Toida T, Iwatsuki K.

We report a clinical trial of the effects of test tablets containing bovine lactoferrin and lactoperoxidase on oral malodor and salivary bacteria. Fifteen subjects with volatile sulfur compounds (VSCs) in mouth air above the olfactory threshold (H(2)S >1.5 or CH(3)SH >0.5 ng/10 ml) as detected by gas chromatography were enrolled in the trial. Either a test or a placebo tablet was ingested twice at 1-h intervals in two crossover phases. Mouth air was monitored for VSC levels at the baseline before ingestion of a tablet, 10 min after the first ingestion, 1 h (just before the second ingestion), and 2 h after the first ingestion. Whole saliva was analyzed at the baseline and at 2 h for bacterial numbers. At 10 min, the level of CH(3)SH was significantly lower in the test group (median [interquartile range]? =?0.28 [0.00-0.68]?ng/10 ml) compared to that in the placebo group (0.73 [0.47-1.00]?ng/10 ml; P=?0.011). The median concentration of CH(3)SH in the test group was below the olfactory threshold after 10 min until 2 h, whereas the level in the placebo group was above the threshold during the experimental period. No difference in the numbers of salivary bacteria was detected by culturing or quantitative PCR, but terminal restriction fragment length polymorphism detected one fragment with a significantly lower copy number at 2 h in the test group (mean ± standard error, 4.89±0.11 log(10) copies/10 µl) compared to that in the placebo group (5.38±0.15 log(10) copies/10 µl; P=?0.033). These results indicate a suppressive effect of the test composition on oral malodor and suggest an influence on oral bacteria.

Potent anti-obesity effect of enteric-coated lactoferrin: decrease in visceral fat accumulation in Japanese men and women with abdominal obesity after 8-week administration of enteric-
Lactoferrin (LF), a multifunctional glycoprotein in mammalian milk, is reported to exert a modulatory effect on lipid metabolism. The aim of the present study was to elucidate whether enteric-coated LF (eLF) might improve visceral fat-type obesity, an underlying cause of the metabolic syndrome. Using a double-blind, placebo-controlled design, Japanese men and women (n 26; aged 22-60 years) with abdominal obesity (BMI>25 kg/m2, and visceral fat area (VFA)>100 cm2) consumed eLF (300 mg/d as bovine LF) or placebo tablets for 8 weeks. Measurement of the total fat area, VFA and subcutaneous fat area from computed tomography images revealed a significant reduction in VFA (– 14.6 cm2) in the eLF group, as compared with the placebo controls (– 1.8 cm2; P = 0.009 by ANCOVA). Decreases in body weight, BMI and hip circumference in the eLF group (– 1.5 kg, – 0.6 kg/m2, – 2.6 cm) were also found to be significantly greater than with the placebo (1.0 kg, 0.3 kg/m2, – 0.2 cm; P = 0.032, 0.013, 0.041, respectively). There was also a tendency for a reduction in waist circumference in the eLF group (– 4.4 cm) as compared with the placebo group (– 0.9 cm; P = 0.073). No adverse effects of the eLF treatment were found with regard to blood lipid or biochemical parameters. From these results, eLF appears to be a promising agent for the control of visceral fat accumulation.

Dietary effect of lactoferrin-enriched fermented milk on skin surface lipid and clinical improvement of acne vulgaris.


Kim J, Ko Y, Park YK, Kim NI, Ha WK, Cho Y.

OBJECTIVE: Lactoferrin, a whey milk protein after removing precipitated casein, has a prominent activity against inflammation in vitro and systemic effects on various inflammatory diseases have been suggested. The objective was to determine dietary effects of lactoferrin-enriched fermented milk on patients with acne vulgaris, an inflammatory skin condition.

METHODS: Patients 18 to 30 y of age were randomly assigned to ingest fermented milk with 200 mg of lactoferrin daily (n = 18, lactoferrin group) or fermented milk only (n = 18, placebo group) in a 12-wk, double-blind, placebo-controlled study. Acne lesion counts and grade were assessed at monthly visits. The condition of the skin by hydration, sebum and pH, and skin surface lipids was assessed at baseline and 12 wk.

RESULTS: Acne showed improvement in the lactoferrin group by significant decreases in inflammatory lesion count by 38.6%, total lesion count by 23.1%, and acne grade by 20.3% compared with the placebo group at 12 wk. Furthermore, sebum content in the lactoferrin group was decreased by 31.1% compared with the placebo group. The amount of total skin surface lipids decreased in both groups. However, of the major lipids, amounts of triacylglycerols and free fatty acids decreased in the lactoferrin group, whereas the amount of free fatty acids decreased only in the placebo group. The decreased amount of triacylglycerols in the lactoferrin group was significantly correlated with
decreases in serum content, acne lesion counts, and acne grade. No alterations in skin hydration or pH were noted in either group.

CONCLUSION: Lactoferrin-enriched fermented milk ameliorates acne vulgaris with a selective decrease of triacylglycerols in skin surface lipids.