

◆ **Lactoferrin (LF)** belongs to the family of iron-binding proteins. The LF found in the colostrum (first milk) of mammals offers many significant cross-species benefits.¹ Twenty-five years of research have shown LF to have a wide spectrum of immune-function enhancing properties.^{2,3,4} When taken orally, lactoferrin: 1) enhances both local and systemic immune response;⁵ 2) demonstrates an array of immunomodulating abilities, including enhancement of NK cell activity; 3) deprives microbes of iron essential for growth through its iron-binding ability;⁶ 4) enhances gut health by stimulating the growth of gut-associated lymphatic follicles;⁷ 5) promotes growth of “good” bacteria in the gut;⁸ 6) protects against the toxicity of reactive oxygen radicals;^{9, 10} and 7) promotes bone growth.¹¹

¹ **A structural framework for understanding the multifunctional character of lactoferrin.** Baker E, Baker H. *Biochimie* 91 (2009) 3-10. <http://www.ncbi.nlm.nih.gov/pubmed/18541155>

² **Immunomodulatory effects of lactoferrin on antigen presenting cells.** Puddu P, Valenti P, Gessani S. *Biochemi* 91 (2009) 11-18. <http://www.ncbi.nlm.nih.gov/pubmed/18539153>

³ **Antimicrobial properties of lactoferrin.** Jenssen H, Hancock R. *Biochimie* 91 (2009) 19-29. <http://www.ncbi.nlm.nih.gov/pubmed/>

⁴ **Twenty-five years of research on bovine lactoferrin applications.** Tomita M, Wakabayashi H, Shin K, et al. *Biochimie* 91 (2009) 52-57. <http://www.ncbi.nlm.nih.gov/pubmed/18573312>

⁵ **The role of lactoferrin in the proper development of newborns.** Artym J, Zimecki M. *Postepy Hig Med Dosw (Online)* 2005; 59:421-32 (online article in Polish) <http://www.ncbi.nlm.nih.gov/pubmed/16106243>

⁶ **Iron-binding Proteins in Milk and Resistance of Escherichia coli Infection in Infants.** Bullen j, Rogers H, Leigh L. *Brit Med J* 8 Jan 1972. <http://www.ncbi.nlm.nih.gov/pubmed/4550126>; Full text access: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1789269/?tool=pubmed>

⁷ **The role of lactoferrin in the proper development of newborns.** Artym J, Zimecki M. *Postepy Hig Med Dosw (Online)* 2005; 59:421-32 (online article in Polish) <http://www.ncbi.nlm.nih.gov/pubmed/16106243>

⁸ **The role of lactoferrin in the proper development of newborns.** Artym J, Zimecki M. *Postepy Hig Med Dosw (Online)* 2005; 59:421-32 (online article in Polish) <http://www.ncbi.nlm.nih.gov/pubmed/16106243>

⁹ **The role of lactoferrin in the proper development of newborns.** Artym J, Zimecki M. *Postepy Hig Med Dosw (Online)* 2005; 59:421-32 (online article in Polish) <http://www.ncbi.nlm.nih.gov/pubmed/16106243>

¹⁰ **Lactoferrin in Infant Formulas: Effect on Oxidation.** Satué-Gracia M, Frankel E, Rangavajhyala N, German B. *J Agric Food Chem.* 2000, 48, 4984-4990. <http://www.ncbi.nlm.nih.gov/pubmed/11052766>

¹¹ **Lactoferrin is a potent regulator of bone cell activity and increases Bone formation in vivo.** Cornish J, Callon K, Naot D, et al. *Endocrinology* 145(9):4366–4374. <http://www.ncbi.nlm.nih.gov/pubmed/15166119>; Full text access: <http://endo.endojournals.org/cgi/content/full/145/9/4366>