

◆ **Proline-rich polypeptides (PRPs)** are another class of small colostrum-derived proteins that have ability to modulate certain immune processes.^{1,2} Like TF, they are not species specific.³ Scientific studies have shown PRPs': 1) demonstrate immunomodulatory effects on both innate and adaptive immune responses;⁴ 2) enhance the maturation and function of thymus gland T-cells, important role-players in immune health;^{5,6} 3) inhibit initiation of immune system overreaction or misdirection;^{7,8} 5) modulate the production of cytokines [regulatory messaging proteins of the immune system];^{9,10} and 6) are of value in the maintenance of healthy physiological processes in which oxidative stress contributes to age-related health challenges.^{11,12}

¹ **A proline-rich polypeptide complex (PRP) isolated from ovine colostrum. Modulation of H2O2 and cytokine induction in human leukocytes.** Zablocka A, Janusz M, Macala J, et al. *Int Immunopharmacol.* 2007 Jul;7(7):981-8. <http://www.ncbi.nlm.nih.gov/pubmed/17499201>

² **[Therapeutic properties of proteins and peptides from colostrum and milk].** Zimecki M, Artym J. *Postepy Hig Med Dosw (Online).* 2005;59:309-23. <http://www.ncbi.nlm.nih.gov/pubmed/15995598>

³ **Proline-rich polypeptide (PRP)—an immunomodulatory peptide from ovine colostrum.** Janusz M, Lisowski J. *Arch Immunol Ther Exp (Warsz).* 1993;41(5-6):275-9. <http://www.ncbi.nlm.nih.gov/pubmed/8010865>

⁴ **Cytokine-inducing activity of a proline-rich polypeptide complex (PRP) from ovine colostrum and its active nonapeptide fragment analogs.** Zablocka M, Janusz K, Rybka I, et al. *European Cytokine Network.* Volume 12, Number 3, 462-7, September 2001. <http://www.ncbi.nlm.nih.gov/pubmed/11566627>; Free full text: http://www.john-libbey-eurotext.fr/en/revues/bio_rech/ecn/e-docs/00/01/60/E3/article.phtml

⁵ **Proline-rich polypeptide (PRP)—an immunomodulatory peptide from ovine colostrum.** Janusz M, Lisowski J. *Arch Immunol Ther Exp (Warsz).* 1993;41(5-6):275-9. <http://www.ncbi.nlm.nih.gov/pubmed/8010865>

⁶ **The effect of a proline-rich polypeptide (PRP) on the humoral immune response. II. PRP induces differentiation of helper cells from glass-nonadherent thymocytes (NAT) and suppressor cells from glass-adherent thymocytes (GAT).** Zimecki M, Lisowski J, Hraba T, et al. *Arch Immunol Ther Exp (Warsz).* 1998;42(2):197-201. <http://www.ncbi.nlm.nih.gov/pubmed/6237628>

⁷ **Colostrinin decreases hypersensitivity and allergic responses to common allergens.** Boldogh I, Aguilera-Aguirre L, Bacsı A, et al. *Int Arch Allergy Immunol.* 2000;146(4):298-306. Epub 2008 Mar 26. <http://www.ncbi.nlm.nih.gov/pubmed/18367843>

⁸ **Milk-derived proteins and peptides of potential therapeutic and nutritive value.** Zimecki M, Kruzel ML. *J Exp Ther Oncol.* 2007;6(2):89-106. <http://www.ncbi.nlm.nih.gov/pubmed/17407968>

⁹ **Cytokine-inducing activity of a proline-rich polypeptide complex (PRP) from ovine colostrum and its active nonapeptide fragment analogs.** Zablocka M, Janusz K, Rybka I, et al. *European Cytokine Network.* Volume 12, Number 3, 462-7, September 2001. <http://www.ncbi.nlm.nih.gov/pubmed/11566627>

¹⁰ **Colostrinin: a proline-rich polypeptide from ovine colostrum is a modest cytokine inducer in human leukocytes.** Ingłot A, Janusz M, Lisowski J. *Arch Immunol Ther Exp (Warsz).* 1996;44(4):215-224. <http://www.ncbi.nlm.nih.gov/pubmed/9017161>

¹¹ **Colostrinin: an oxidative stress modulator for prevention and treatment of age-related disorders.** Boldogh I, Kruzel M. *J Alzheimers Dis.* 2008 Apr;13(3): 303-321. <http://www.ncbi.nlm.nih.gov/pubmed/18430998>

¹² **Colostrinin proline-rich polypeptide complex from ovine colostrum—a long-term study of its efficacy in Alzheimer's disease.** Leszek J, Ingłot A, Janusz M, et al. *Med Sci Monit.* 2002 Oct;8(10):193-6. <http://www.ncbi.nlm.nih.gov/pubmed/12388930>