

# Colostrum Peptides Promote Wound-Healing and Block Allergic Response

John Maher, DC, DCBCN, BCIM

In my latest articles for *Dynamic Chiropractic*, I presented some of the physiological functions of colostrum peptides and protein subfractions. In this article, I will summarize an abstract presented at the Fourth International Conference on Mechanisms of Action of Nutraceuticals, "The Science Behind Nutraceuticals: Medical and Dietary Opportunities," in Tel Aviv, Israel from Oct. 21-24, 2007. The study was conducted by Krylov, et al., at the Institute of General Pathology and Pathophysiology in Moscow.<sup>1</sup>

This study was done to estimate the biological activity of a liquid extract of proline-rich polypeptides (PRPs) on laboratory animals. PRPs are very small "info-peptide" chains of less than a dozen amino acids, especially proline, with a weight of less than 6,000 Daltons. In harvesting these PRPs, naturally occurring growth factors (epithelial, mesenchymal, endothelial) also are isolated and concentrated. Therefore, their potential was investigated as well.

PRPs are thought to balance the immune system. Specifically, they are known to promote a Th-2 to Th-1 shift. Disregarding the risk of oversimplification, allow me to represent Th-1 function as the "go button" of the immune system and Th-2 as the "stop button." Those overwhelmed by pathogens or cancer cells may do well to stimulate Th-1 function. Conversely, those with overreactive immune systems (i.e., allergy, chemical sensitivity and certain autoimmune diseases) may profit from a lessening of Th-2 activity.

To assess PRPs anti-allergic properties, two methods were used. Guinea pigs selected for their anaphylactic sensitivity to egg albumin were subjected to a one-time injection of ovalbumin and a one-time injection of histamine in both a control group and a test group. In the control group, all the guinea pigs expired from bronchospasm with either injection. In the treatment group, with PRPs added to their diet, only 28 percent died from injection of egg protein. All still died with xenogenic histamine injection. This finding suggests that the effectiveness of PRPs is not the result of an antihistamine effect, but rather its ability to lessen the inflammatory cascade that leads to histamine production, system anaphylaxis and resultant terminal bronchospasm. These findings are consistent with the above immune-modulating hypothesis.

To assess the physiological potential of the growth factors concomitant in the proline-rich polypeptide extract, mice were anesthetized. Two, full-thickness, 5-mm-diameter excisions were made on both sides of the dorsal area of mice, using surgical scissors and forceps. The bottom of the wound was panniculus carnosus (muscle), with no visible bleeding. Wounds of the mice from the first group were treated with PRP extract on the right side and with distilled water on the left. The mice of the second group were treated with distilled water on the right side and no treatment on the left side. Wounds were treated as stated, once a day for 10 days. Treatment began immediately after injury. At the end of the trial, topical application of the PRP extract improved the wound healing process in mice approximately 22 percent better, as compared to control. These findings are consistent with the potential effect of epithelial growth factor on wound-healing.

Both proline-rich polypeptides and growth factors are zoonutrients that occur naturally in colostrum. However, their density and activity is strongly dependent on proper processing methods. Generally, colostrums are processed to maximize IGG content, a protein subfraction that supplies powerful, passive immunity benefits, particularly locally in the alimentary canal, sacrifices both PRP and growth-factor content to a considerably similar extent. Today, colostrum or whey also can be fortified with PRPs if they are placed inside liposomes to protect them from deactivation in the stomach.

### *Reference*

1. Krylov A, Bogdanenko E, Bogush T, Zhdanov R. The Effects of Liquid Colostrum Extract Treatment on Wound-Healing in a Murine Skin Injury Model and Assessment of its Anti-Allergic Properties on System Anaphylaxis in Guinea Pigs. Institute of General Pathology and Pathophysiology. Moscow, Russia.

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