TruActive™'s immune active protein benefits specific to sports nutrition

Introduction
TruActive™ MPC 85 contains more immune active proteins than any other food ingredient available today. These proteins provide a wide array of health related effects, and the literature below details benefits specific to athletic performance, recovery and immune health. While most of these studies utilized extracted compounds, TruActive™ MPC 85 contains significant quantities of each of these immune active proteins.

Improved athletic performance:
- Cyclists who supplemented their diet with a milk product rich in immunoglobulins (such is IgA, IgM, IgG), lactoferrin, and lactoperoxidase, improved their performance and reduced their fatigue levels during high intensity training [1].
- Supplementation with a milk product rich in immunoglobulins (such is IgA, IgM, IgG), lactoferrin, and lactoperoxidase significantly improved peak anaerobic power in male subjects undergoing resistance and plyometric training [2].

Enhanced recovery:
- Enhanced recovery of muscle force-generating capacity following eccentric exercise was shown following supplementation with a milk product containing high amounts of immunoglobulins such as those found in milk [3].
- Oral supplementation of immunoglobulins have been shown to decrease perceived delayed onset muscle soreness (DOMS) coincidentally with the decrease in the muscle damage marker creatine kinase (CK) [4], and decrease in TNF-alpha, another marker which is elevated from muscle damage [5].

Effects on musculoskeletal stress:
- Exercise, especially high intensity or resistance training, imparts large demands on the musculoskeletal system of the body. The protein osteopontin, an abundant protein in the bone matrix which is required for the proper transduction of mechanical stress on bone [6], has been shown to promote signaling cascades necessary for tissue remodeling and regeneration following injury [7].
- Osteopontin also plays an important role in the effects of unloading-induced alterations of differentiation of bone marrow into osteoblasts and osteoclasts [6]
- Lactoferrin exerts a powerful bone regenerating stimulus to aid the mechanical loading stresses brought on by training by enhancing the differentiation and expression of bone forming cells and inhibiting the bone resorbing cells [8].

Influence on body composition:
- Exercise in itself alters body composition though training alone is insufficient for complete changes. Milk proteins such as cathelicidin inhibit the CD36 fat receptor and substantially decrease lipid accumulation in adipocytes and hepatocytes. This results in a reduction of fat mass and hepatic steatosis or fatty liver [9] which offers beneficial effects on athletic performance.
- Oral supplementation with lactoferrin decreased visceral fat accumulation in both men and women without any other dietary or lifestyle changes [10].

- Supplementation with a milk product rich in immunoglobulins (such is IgA, IgM, IgG), lactoferrin, and lactoperoxidase in healthy active subjects resulted in increases in lean body mass without increases in fat mass [11].

Boosting suppressed immune function resulting from training:

- With endurance training, there is an increased risk of upper respiratory tract infections. The protein cathelicidan is important for enhancing monocyte and macrophage effectiveness in killing microbes to decrease the incidence and severity of upper respiratory infections that commonly affect endurance training athletes [12].
- Aerobic exercise results in oxidant stress-induced inflammation throughout the body including the intestinal lymphocytes in the colon. Lactoferrin, a protein found in milk, protects against this by decreasing the expression of pro-inflammatory signaling molecules such as TNF-alpha and NF-kB [13].

References:

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