STRIDE® Animal Health

TECHNICAL BULLETIN

LIFELINE + EQUINE®

BIOACTIVE PROTEINS

StrideAnimalHealth.com

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Purpose

LIFELINE+ Equine® delivers serum-derived biologically active proteins, plus a unique fermentable fiber, to horses in a convenient pellet form. Bioactive proteins work together to support the gut, lungs, and immune system of horses by providing peptides, immunoglobulins (IgA, IgG, and IgM), albumin and growth factors.

Common Mucosal Immune System

Bioactive proteins are effective in multiple areas of the body through the common mucosal immune system. The gut acts as a portal of entry to the mucosal system which then connects to peripheral sites via gut-associated lymphoid tissues (GALT). Thus, ingestion of bioactive proteins benefits multiple soft tissues in the body such as the gut, lungs, and uterus.

Lung Health

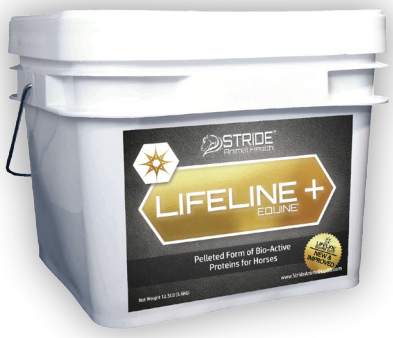
Dietary supplementation of bioactive proteins can trigger a reduction in inflammatory mediators responsible for acute lung injury. Lower levels of pro-inflammatory cytokines may be especially helpful in horses with chronic airway conditions such as allergies, recurrent airway obstruction (heaves) or exercise induced pulmonary hemorrhage (bleeding).

The mechanism of action involves a reduction in the pro-inflammatory to anti-inflammatory cytokine ratios in both Peyer's patches and the mucosa.

Pregnancy Rates

Research shows dietary bioactive proteins reduce inflammatory immune responses of females after breeding. This contributes to a sharp increase in pregnancy rate. Furthermore, by reducing overstimulation of the immune response, more of the available energy and nutrients can be used for growth and other reproductive functions, rather than being diverted to support the immune response.

Bioactive proteins may improve the chance of establishing pregnancy by helping reduce inflammation in the uterine mucosa.



Gait Kinematics

Researchers found that feeding biologically active proteins on a daily basis improved gait kinematics in horses.

Improvements were found in stride length and range of motion in the hocks.

The mode of action is not yet clearly understood, but researchers believe serum-derived proteins help ease soreness from daily exercise.

Immune Support

Approximately 70% of the immune system resides in the digestive tract of the horse. A key function of the intestinal lining is to serve as a selective barrier allowing uptake of nutrients while excluding toxins and harmful microorganisms. The intestinal lining is not completely impermeable to components in the digestive tract. Therefore, it depends on the capacity of tight junctions to efficiently seal the apical poles of epithelial cells. The space between cells contains interlocking proteins called claudins. These proteins are essential for a proper seal of tight junctions. Dietary bioactive proteins are capable of reducing intestinal permeability, thus preventing toxins from penetrating the tight junctions.

Since gut-associated lymphoid tissue (GALT) is an inductive site that connects both local and peripheral sites (i.e. respiratory tract, glandular tissues and uterine mucosa), it can be further hypothesized that bioactive proteins from plasma will reduce overstimulation of the broader common mucosal immune system.

Gastric Ulcers

The addition of bioactive proteins to the diet has been shown to promote healing of gastric ulcers in monogastric species. Horses experiencing stress from exercise or training programs are prone to developing gastric ulcers. Feeding a horse bioactive proteins derived from serum/plasma is an effective, drug-free method for preventing ulcers. In a recent study, horses not receiving bioactive proteins were twice as likely to develop gastric ulcers compared to horses that did receive bioactive proteins fed orally at 80g/day. Furthermore, increasing the dosage of bioactive proteins to 210g/day significantly (P=0.0001) reduced formation of squamous gastric ulcers in stressed horses.

The exposure of squamous mucosa to hydrochloric, valeric, and other volatile fatty acids initiates cellular damage, cellular swelling, and barrier disruption in the non-glandular portion of the stomach. The prevention of ulcer development in horses fed bioactive proteins is likely the result of less inflammation within the gastric mucosa as seen in other species.

Pathogen Defense

The digestive tract is one of the first lines of defense against pathogenic organisms. Maintaining a healthy digestive tract enhances nutrient absorption, energy metabolism, immune response, and reduces susceptibility to mycotoxins which lowers incidences of diarrhea. LIFELINE+ Equine® contains a unique fermentable fiber that acts as a stimulant to the beneficial microorganisms residing in the digestive tract, and thus has prebiotic properties.

The intestinal tract does much more than just absorb nutrients. Researchers describe the gastrointestinal tract as an ecosystem, and suggest that fermentable fiber in the diet can be used as a “management tool” to affect the resident microbiological population. Fermentable fiber is capable of reducing pathogenic organisms that occur during diarrhea. In addition, fermentable fiber increases the production of metabolites (such as acetate, propionate, and butyrate) while also reducing growth of pathogenic organisms.

The digestive tract is a complex, highly organized system, and maintaining the health of the digestive tract has a direct impact on the whole animal. The unique fermentable fiber in LIFELINE+ Equine® has been shown to stimulate growth rate and enzyme activity of the naturally occurring, beneficial microorganisms in the digestive tract, and also increase the short-chain fatty acid production by those microorganisms. Therefore, LIFELINE+ Equine® is a tool to help horses fend off pathogens and maintain a fully functioning digestive tract.

Research & Efficacy

Ingredient efficacy is as important to us as it is to you. Stride Animal Health® uses sound scientific research when formulating each product. From basic concepts to the finished product, our goal is to provide solutions that actually work.

RESEARCH REFERENCES

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