

As a veterinarian, a horse owner, and an equestrian competitor, I am commonly asked, "How can I make my horse feel better?" There are many products on the market that claim to offer anti-inflammatory benefits; however, many products have unwanted side effects. In this article, I am going to review the process of inflammation, discuss anti-inflammatory medications, and introduce a new product, Equithrive™, which contains the active ingredient resveratrol.

INFLAMMATION

In order for a horse to move, muscles must contract, enabling tendons and ligaments to move the joints and bones of the skeleton. The body's natural system of "checks and balances" is the inflammation cycle. Inflammation is the body's protective mechanism against harmful stimuli such as pathogens, damaged cells, or irritants. Inflammation is necessary to heal wounds and clear infections. This being said, it is also a fact that chronic or uncontrolled inflammation can lead to the destruction of healthy cells and tissues, leading to conditions such as arthritis, allergies, and muscle disorders. Thus, inflammation must be closely regulated or it can lead to pain and decreased performance by the animal.

REVIEW OF ANTI-INFLAMMATORIES

The most commonly prescribed medications in human medicine and veterinary medicine are anti-inflammatories. Commonly used non-steroidal anti-inflammatory drugs (NSAIDs) on the human side of medication include aspirin, ibuprofen, and acetaminophen. In equine medicine, commonly used NSAIDs include phenylbutazone (Bute) and flunixin meglumine (Banamine). These NSAIDs control

inflammation by inhibiting the action of the cyclooxygenase-2 (COX-2) enzyme, thereby reducing the body's production of inflammatory prostaglandins. NSAIDs have the benefit of stopping the painful process of inflammation. Unfortunately, they also reduce the stomach's production of gastric secretions that protect the stomach lining from stomach acid. That is why long-term use of NSAIDs can cause stomach ulcers. Firocoxib (Equioxx) has recently been approved for use in horses as an anti-inflammatory. It is a more selective COX-2 inhibitor than Bute or Banamine, and thus is more protective of the stomach. However, long-term use or high doses of this drug can cause oral ulcers, kidney and liver damage.

RESVERATROL

What is safe and effective to use on a horse to control inflammation? There is a new product on the equine market called Equithrive™. The active ingredient in this product is resveratrol. Resveratrol is a molecule that is naturally found in grapes, berries, and nuts. This molecule has been studied extensively in human medicine and found to be a safe and effective anti-inflammatory agent. It is unique in that it works much earlier in the inflammation cycle. Resveratrol inhibits a nuclear cofactor (NF-kappa B) that is involved in gene expression of inflammatory enzymes, including COX-2, peroxidases and lipoxygenases. Thus, the production of the inflammatory enzymes is reduced, decreasing their levels in the body's circulation. Conventional anti-inflammatories must stop the action of inflammatory enzymes that are already in circulation and may have already caused cellular damage. Resveratrol does not affect the production of the gastroprotective COX-1 enzymes and

is therefore safe for daily, long-term use. Current studies of resveratrol in human medicine show promise for this compound as an anti-cancer agent and for the management of metabolic diseases such as type II diabetes.

Resveratrol has been studied in geriatric horses at the University of Kentucky's Gluck Equine Research Center. The horses were split into a control group and a treatment group. Blood was drawn on the horses at weekly intervals and the inflammatory mediators were monitored. The treatment group showed significant reductions in the circulating levels of inflammatory cytokines, Tumor Necrosis Factor alpha (TNF-a) and Interferon gamma (IFNg).

EQUITHRIVE™

The benefit of Equithrive™ is that it can be administered on a daily long-term basis without negative side effects such as ulcers. It is also permitted in all competitions, including FEI-sanctioned events. Equithrive™ has proven to be very effective in horses experiencing stiffness or soreness from competition and training and in older arthritic horses. The product is not a treatment for lameness or acute injuries.

The parent company of Equithrive™, Biological Prospects, has a patent-pending process for the manufacturing of resveratrol. The company's resveratrol is synthesized in an FDA-regulated manufacturing facility in the US. It is free of the impurity emoden, which is present in natural sources of resveratrol and causes gastrointestinal side effects. The company also tests each lot of Equithrive™ to ensure the resveratrol concentration is at the target level.

For more information about the product, contact your veterinarian or visit www.Equithrive.com.