

## SYNOVIUM GINGER+MSM LINEMENT

Synovium Ginger + MSM is a linement for tired and stiff muscles, joints and tendons. GINGER MSM gives firstly a cooling and soothing effect, which helps in inflammation prevention. After the cooling effect Ginger MSM gives a warming and relaxing effect. Try this yourself by applying the product to your skin.

These effects are also proven in scientific studies, which shows that a lasting recovery of oxidative stress is achieved and that the anti-inflammatory properties are clearly present.

The data from these studies between 2005 and 2008 written by independent research groups. During the composition of the two products, it was not easy to combine the positive effects till Scandinavian scientist offered us a solution.

In the following years, we have tested the absorption of the product through the skin of the horse. This eventually led to an innovative composition that combines both positive effects.

SYNOVIUM is innovative in its products and cares about the health of your horse.

1) J Med Food, 2005, Summer;8(2):125-32.

### **Ginger MSM, an herbal medicinal product with broad antiinflammatory actions.**

Author information: Grzanna R, Lindmark L, Frondoza CG.

#### **Abstract**

The anti-inflammatory properties of ginger have been known and valued for centuries. During the past 25 years, many laboratories have provided scientific support for the long-held belief that ginger contains constituents with antiinflammatory properties. The original discovery of ginger's inhibitory effects on prostaglandin biosynthesis in the early 1970s has been repeatedly confirmed. This discovery identified ginger as an herbal medicinal product that shares pharmacological properties with non-steroidal anti-inflammatory drugs. Ginger suppresses prostaglandin synthesis through inhibition of cyclooxygenase-1 and cyclooxygenase-2. An important extension of this early work was the observation that ginger also suppresses leukotriene biosynthesis by inhibiting 5-lipoxygenase. This pharmacological property distinguishes ginger from nonsteroidal anti-inflammatory drugs. This discovery preceded the observation that dual inhibitors of cyclooxygenase and 5-lipoxygenase may have a better therapeutic profile and have fewer side effects than non-steroidal anti-inflammatory drugs. The characterization of the pharmacological properties of ginger entered a new phase with the discovery that a ginger extract (EV.EXT.77) derived from *Zingiber officinale* (family Zingiberaceae) and *Alpina galanga* (family Zingiberaceae) inhibits the induction of several genes involved in the inflammatory response. These include genes encoding cytokines, chemokines, and the inducible enzyme cyclooxygenase-2. This discovery provided the first evidence that ginger modulates biochemical pathways activated in chronic inflammation. Identification of the molecular targets of individual ginger constituents provides an opportunity to optimize and standardize ginger products with respect to their effects on specific biomarkers of inflammation.

2) Acta Vet Scan, 2008 Nov 7;50:45. doi: 10.1186/1751-0147-50-45.

### **The effect of methyl sulphonyl methane supplementation on biomarkers of oxidative stress in sport horses following jumping exercise.**

Author information: Marañón G, Muñoz-Escassi B, Manley W, García C, Cayado P, de la Muela MS, Olábarri B,

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#### **BACKGROUND:**

Exercise induces changes in several organs and tissues, and this process might be due to oxidative damage caused by free radicals and inflammatory mediators. Methyl Sulphonyl Methane, better known as MSM, is a naturally occurring sulphur compound with well-known antioxidant properties. On the other hand, Vitamin C is important in limiting free radical damage in the aqueous phase of the cell, and cellular vitamin C status may be linked to the mechanisms involved in quenching cellular reactive oxygen species. The aim of this study was to determine if supplementation with MSM and vitamin C could alleviate exercise-induced oxidative stress in horses undergoing jumping competition.

#### **METHODS:**

Twenty four jumping horses involved in competition were used. Horses were given the following three treatment diets: control (without supplementation), MSM 8 mg/kg, and combined supplements (MSM 8 mg/kg

+ Vit-C 5 mg/kg). EDTA blood samples were collected before exercise, upon arrived to the schooling area (control), and each week after last show. Nitric oxide, carbon monoxide, lipid hydroperoxides and the antioxidant enzymes, glutathione peroxidase, glutathione transferase and glutathione reductase, plasma levels were determined.

**RESULTS:**

Competition induced a significant increase in lipid peroxidation, nitric oxide and carbon monoxide. By contrary, reduced glutathione as well as antioxidant enzyme activities, were decreased. MSM administration significantly ameliorated all these exercise-related changes, and this effect was potentiated by Vit C reaching values in some of the parameters similar to those found before competition.

**CONCLUSION:**

These results suggest that jumping exercise could induce harmful effects on horses, probably due to an increase in oxidative damage and proinflammatory molecules. In addition, we have demonstrated that MSM could exert some protective effect on oxidative and inflammatory exercise-induced injury.