

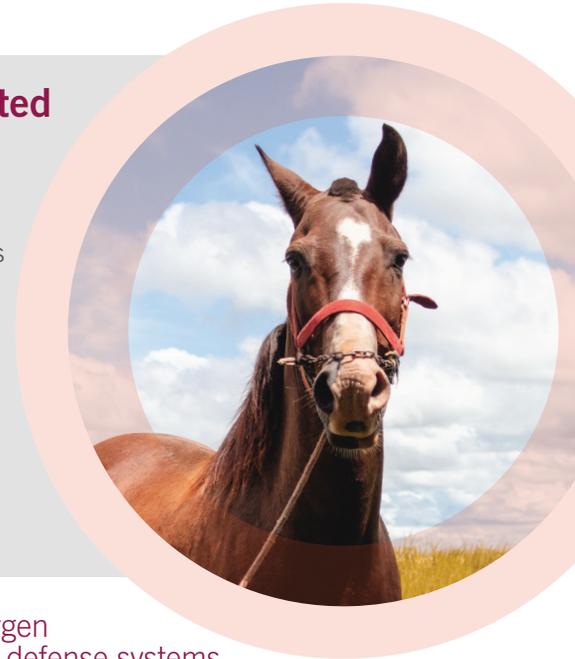
Equine Health

Horses between 15 and 20 years of age comprise the largest group of the equine population and safeguarding their health and mobility is of great importance for their wellbeing and quality of life.

Veri-te™ resveratrol is an ideal ingredient for use in equine health products to support age-related challenges.*

Equine health is impacted by nutrition intake

Stiffening of joints, loss in vitality and diminishing quality of life are the consequences of oxidative stress in horses due to aging. Resveratrol promotes a normal inflammatory response and combats oxidative stress¹ in horses.^{2,3} Erythrocyte sedimentation rate (ESR), the biomarker of most horse trainers to check the health status of their horses,⁴ can also be reduced via resveratrol administration.



Resveratrol scavenges reactive oxygen species and stimulates antioxidant defense systems

The objective of this study was to evaluate the influence of age and lameness on the antioxidant levels in horses administered a resveratrol supplement or placebo. Blood samples were collected from each horse before supplementation and at each week of this 4 week experiment.¹

- Resveratrol supplementation reduced lipid peroxidation and the level of malondialdehyde, two indirect indices of oxidative stress
- The antioxidative enzymes superoxide dismutase and catalase, which neutralize the reactive oxygen species hydrogen peroxide and the superoxide radical, were more activated than in the placebo group

16 horses, both sexes, 15 - 22 yrs., 350 - 450 kg, lameness grade 3, 2 x 15 g first half and 2 x 30 g second half of treatment resveratrol supplement/d or placebo, 4 weeks

Resveratrol reduces inflammatory intermediaries, which may help aging horses to move with greater ease

This study investigated inflammation biomarkers in horses with age-related declines in joint health and mobility before and after consumption of a resveratrol supplement.^{2,5}

- The concentration of the tumor necrosis factor-alpha (TNF- α) was reduced
- Erythrocyte sedimentation rate improved
- Reduced the amount of serum protein detected
- Reduced levels of creatine kinase and glucose responsible for deleterious effects
- Improved redox balance under acidic and low oxygen conditions

16 Equine Metabolic Syndrome (EMS) horses, both sexes, 15 - 22 yrs., 350 - 450 kg, lameness grade 3, 2 x 15 g first half and 2 x 30 g second half of treatment resveratrol supplement/d or placebo, 4 weeks

Resveratrol mimics protective mechanisms induced by caloric restriction and alleviates the challenges of EMS

The effect of a resveratrol supplement on EMS, which is characterized by the imbalance of several physiological parameters related to glucose and fatty acids metabolism, was investigated. The resveratrol therapy improved both metabolic and inflammatory biomarkers in EMS horses.⁶

- Improved the energy expenditure (leptin ↓, insulin ↓)
- Supports healthy blood glucose levels (glucose cellular uptake ↑)
- Levels of anti-oxidation and anti-inflammation biomarkers improved (ROS ↓, TNF- α ↓, IL-6 ↓)
- Sustains healthy levels of triglycerides and cholesterol (triglycerides ↓, cholesterol ↓)

15 EMS horses, both sexes, 15 ± 5 yrs., resveratrol supplement/d or placebo, 6 weeks

References

1. Ememe MU, Mshelia WP, Ayo JO. Ameliorative Effects of Resveratrol on Oxidative Stress Biomarkers in Horses. *J. Equine Vet. Sci.* 2015;35(6):518-523.
2. Ememe MU, Abdullahi US, Sackey AKB, Ayo JO, Mshelia WP, Edeh RE. Effects of a joint supplement whose main components are resveratrol and hyaluronic acid on some biochemical parameters in aged lame horses. *J. Equine Sci.* 2016;27(1).
3. Watts AE, Dabareiner R, Marsh C, Carter GK, Cummings KJ. A randomized, controlled trial of the effects of resveratrol administration in performance horses with lameness localized to the distal tarsal joints. *J. Am. Vet. Med. Assoc.* 2016;249(6):650-659.
4. Ememe AMU, Edeh RE, Abdullahi US, Sackey AKB, Ayo JO. Changes in Hematological Parameters and Erythrocyte Osmotic Fragility in Lame and Aged Horses Administered with Resveratrol Supplement. *Afr. J. Biomed. Res.* 2016;19(1).
5. Ememe MU, Abdullahi US, Sackey AKB. Modulatory Effects of Resveratrol Supplementation on Inflammatory Markers in Ageing and Lame Horses. *J. Anim. Vet. Adv.* 2015;7(4): 67-72.
6. Adams AA, Siard MH, Reedy SE, Stewart C, Betancourt A, Sanz MG and Horohov DW. Identifying the role of a "caloric restriction mimetic", resveratrol, in Equine Metabolic Syndrome and its implications for targeted therapy. *J. Equine Vet. Sci.* 2013;33(5):346-347.

resveratrol re-imagined™

Veri-te™ resveratrol is produced using an innovative yeast fermentation process.

This means our resveratrol is:

PURE: >98% pure

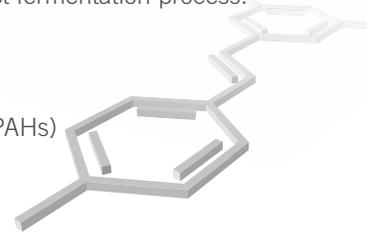
SAFE: free of contaminants (e.g. pesticides, emodin & PAHs)

RELIABLE: consistent batch to batch

VERSATILE: off-white and odorless

SCALABLE: large production capacity

Veri-te™
RESVERATROL



Our Products:

- Veri-te Food Grade 98% purity for dietary supplements and foods and beverages*
- Veri-Sperse™ 90% for when increased bioavailability and CWD are important
- Veri-te Aqua for liquid applications
- Cosmetic-Grade resveratrol with >99% purity
- API Grade resveratrol product with DMF available

Regulatory & Quality Status:

- EU Novel Foods approved and US self-affirmed GRAS
- Made under cGMP and HACCP based food safety conditions
- Halal and Kosher certified resveratrol available
- Preferred supplier by the National Animal Supplement Council (NASC)

Evolve is committed to supporting clinical trials and research studies to further understand the important benefits of resveratrol in aging.

About Evolve:

Veri-te resveratrol is produced by Evolve, a Swiss biotech company focused on the research, development and commercialization of products based on nature. We have leading businesses in Flavors and Fragrances, Health Ingredients and Health Protection. Evolve's employees are dedicated to producing the best ingredients that can contribute to health, wellbeing and sensory enjoyment. Find out more at www.evolve.com.

For more information:

We have sales offices in the US and Europe, with distribution and regulatory approvals worldwide.* Our technical team can advise on formulations and ideal combinations. Additionally, our marketing team can help you plan your marketing strategy for Veri-te resveratrol. Contact us to order free samples for evaluation.

Evolve's website: www.evolve.com

Veri-te resveratrol website: www.veriteresveratrol.com

For general inquiries and customer service inquiries please email:

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