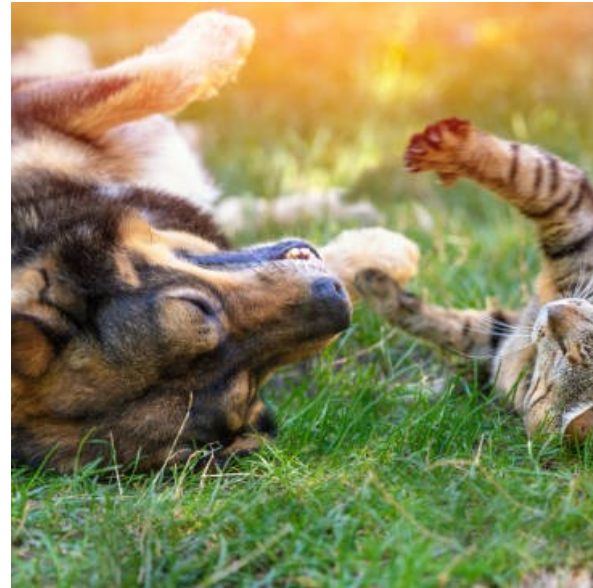


Many scientific studies have revealed chronic inflammation and oxidative stress as an important risk factor in the increasing incidences of cardiovascular, metabolic and cognitive conditions among companion animals.

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

## Canine health is impacted by nutrition intake

Stiffening of joints, loss in vitality and diminishing quality of life are the consequences of oxidative stress in dogs due to aging. Resveratrol promotes a normal inflammatory response and combats oxidative stress<sup>1</sup> in dogs. Data suggest resveratrol supplementation depresses oxidative burst reactions while promoting pro-inflammatory leukocyte cytokine production and decreasing anti-inflammatory cytokine production.



## The Supplementation with Resveratrol and $\alpha$ -Tocopherol Could Reduce the Risk of Sarcopenia in Dogs by Counteracting the Oxidative Stress

Supplementation of the diet with a formula containing resveratrol and  $\alpha$ -tocopherol acetate can modulate serum biomarkers, such as CPK and AP, which are associated with sarcopenia and increased speed of bone remodelling<sup>2</sup>

- ◇ Resveratrol supplementation decreases oxidative stress and sarcopenia by increasing mitochondrial biogenesis, an improved control of the mitochondrial fusion/fission quality - an increase of the synthesis of antioxidant enzymes via SIRT1
- ◇ Alkaline phosphatase is an indirect biomarker of bone formulation, and supplementation with resveratrol and  $\alpha$ -tocopherol acetate positively modulate these biomarkers

*22 dogs, 10 males and 12 females, averaging 5.4 years, medium-sized adults averaging 19.4 kg, 30 mg resveratrol and 20 IU  $\alpha$ -tocopherol acetate supplement /d or placebo, 45 days*

## An Antioxidant Dietary Supplement Improves Brain-Derived Neurotrophic Factor Levels in Serum of Aged Dogs

This study investigated the possible potential ability of a long-term dietary antioxidant supplementation in controlling oxidative stress and the general health status of aged dogs, and a possible modulation of BDNF serum levels by a diet with antioxidant supplementation.<sup>3</sup>

- ◇ Oxidative stress evaluation - a significant decrease of plasma levels noted in the feeding regime of dogs receiving antioxidant supplementation versus those of the control groups
- ◇ These results indicate a diet enriched with natural antioxidants may promote a decrease of reactive species in the plasma of dogs
- ◇ Natural antioxidants seemed to modulate the balance between pro- and antioxidant species through the decrease of dROMs without increasing natural antioxidant defense
- ◇ Brain-Derived Neurotrophic Factor serum levels increased in groups of dogs that received a diet enriched with antioxidants while control groups remained unchanged

*36 dogs, different breeds, divided into four groups based upon age and diet, both sexes, 7-9 years, resveratrol supplement/d or placebo, 6 months*



## References

Evolve is committed to supporting clinical trials and research studies to further understand the important benefits of resveratrol on companion animal healthy living and aging.

Below is a list of published studies supporting beneficial effects of resveratrol for dogs.

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3. Sechi S, Chiavolelli F, Spissu N, Di Cerbo A, Canello S, Guidetti G, Fiore F, Cocco R. An Antioxidant Dietary Supplement Improves Brain-Derived Neurotrophic Factor Levels in Serum of Aged Dogs: Preliminary Results. *Journal of Veterinary Medicine*. 2015;2015:412501
4. Muzzio M, Huang Z, Hu S, Johnson WD, McCormick DL, Kapetanovic IM. Determination of Resveratrol and its Sulfate and Glucuronide Metabolites in Plasma by LC-MS/MS and Their Pharmacokinetics in Dogs. *Journal of Pharmaceutical and Biomedical Analysis*. 2012;59:201-208
5. Chu Chishih, Lu Fung-Jou, Yeh Rang-Hui, Li Zih-Ling, Chen Ching-Hsein. Synergistic Antioxidant Activity of Resveratrol with Genistein in High-Glucose Treated Madin-Darby Canine Kidney Epithelial Cells. *Biomedical Reports* 4. 2016;349-354

## resveratrol re-imagined™



### Veri-te™ PETS resveratrol, the ingredient of choice to develop your business

A perfect solution for your product development needs to target joint and bone, cognitive, cardiovascular or metabolic health.

#### PURE

>98% pure *trans*-resveratrol

#### RELIABLE

Consistent from batch to batch

#### SUSTAINABLE

Veri-te™ PETS resveratrol is sustainably produced in the EU, using an innovative yeast fermentation process

#### SAFE

- ◇ NO emodin
- ◇ NO polycyclic aromatic hydrocarbons (PAHs)
- ◇ NO pesticides or herbicides
- ◇ NO aflatoxins
- ◇ NO unwanted solvents (toluene, methanol, diisopropylamine (DIPA))
- ◇ NO toxic heavy metals

### Regulatory & Quality Status

- ◇ Made under FSSC 22000 / ISO 22000 food standards
- ◇ Made under cGMP and HACCP based food safety conditions



### About Us

Veri-te™ PETS 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 developing the best ingredients that can contribute to health, wellbeing and sensory enjoyment. Find out more at [www.evolve.com](http://www.evolve.com).

### Partner With Us

We are more than an ingredients provider, we are a reliable, end-to-end, innovative partner powered by experts to deliver science-backed nutrition and health products and quality customized solutions.

Email: [res@veriteresveratrol.com](mailto:res@veriteresveratrol.com)

Evolve (U.S.A.): +1.800.250.1032

Evolve (Europe/R.O.W.): +41.61.485.2000



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