

Petandim® Clinical Study Summary

Supporting Antioxidant Defenses, Mobility, and Healthy Aging in Dogs

Objective: Effect of an antioxidant formulation on clinical, hematological, and oxidative markers in healthy and arthritic dogs.

Sponsor: LifeVantage Corp.

Principal Investigator: Craig Woods, Animal Health Consulting, LLC (AHC)

Date of Report: January 13, 2013

Objective

To evaluate the effects of daily Petandim® supplementation on antioxidant activity, owner- and veterinarian-reported measures of mobility and behavior, and markers of safety in healthy dogs and dogs with arthritis.

Introduction

Oxidative stress occurs when reactive oxygen species accumulate faster than the body can neutralize them. These reactive compounds are produced through normal metabolism and may also be influenced by age, activity, diet, and environmental exposure.

Dogs have natural antioxidant defenses that help manage oxidative stress. One of these defenses is the production of catalase, an enzyme that helps convert hydrogen peroxide into water and oxygen. By helping remove this reactive byproduct, catalase supports healthy cellular function throughout the body.

Petandim is a daily health supplement formulated specifically for dogs. It combines a proprietary botanical blend of milk thistle, bacopa, ashwagandha, green tea, and turmeric with omega-3 fatty acids and type II collagen. The formula is designed to reduce oxidative stress while supporting mobility, joint health, and healthy aging.*

Petandim is intended for daily use in dogs 12 weeks and older, with serving amounts based on body weight. Because oxidative stress may influence cellular health and the way dogs move, behave, and age, a clinical study was conducted to evaluate Petandim in both healthy dogs and dogs with arthritis.

Clinical Study

The study evaluated both laboratory and everyday measures of canine health.

CATALASE ACTIVITY

Catalase is an antioxidant enzyme that helps protect cells from hydrogen peroxide, a reactive compound produced during normal cellular activity. Measuring catalase activity in blood provides insight into one part of the body's natural antioxidant defense system.

OWNER OVERALL DISABILITY

Owners of dogs with arthritis evaluated how their dogs performed common daily activities, including:

- Walking and running
- Jumping
- Rising and lying down
- Using stairs
- Squatting
- Moving on slippery surfaces
- Morning and evening stiffness
- Willingness to play

These observations were combined into an Owner Overall Disability score. Lower scores represented fewer reported difficulties.

Owner observations are especially relevant because pet parents repeatedly see how their dogs move and behave in familiar, real-world settings. Owners also assessed additional measures, including energy, social behavior, cognitive behavior, skin, coat, and overall improvement.

Veterinarians evaluated lameness, pain, range of motion, and overall disability.

* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.



Methods

This was a 60-day, multisite, randomized, double-blind, placebo-controlled clinical field study conducted at two veterinary clinics in Arizona.

Eighty client-owned dogs were enrolled. Forty-eight had arthritis or another musculoskeletal disability (e.g., lameness, etc.), and 32 were considered healthy. Dogs represented different breeds, sizes, and ages, with an average age of 8.6 years. Seventy-six dogs completed the study.

Dogs were randomly assigned to receive either Petandim or placebo once daily. Serving amounts were based on body weight. Owners and veterinary personnel were blinded to treatment assignment throughout the study.

Evaluations were performed at baseline, Day 30, and Day 60. Blood samples were analyzed for catalase activity. Owners and veterinarians completed clinical and behavioral assessments, and blood chemistry and complete blood counts were used to evaluate safety.

Results and Discussion

CATALASE ACTIVITY

After 60 days, dogs receiving Petandim showed 47% higher catalase activity compared with dogs receiving placebo.*

From baseline to Day 60, catalase activity increased by 36% in the Petandim group. Over the same period, catalase activity decreased by 11% in the placebo group. **(Figure 1)***

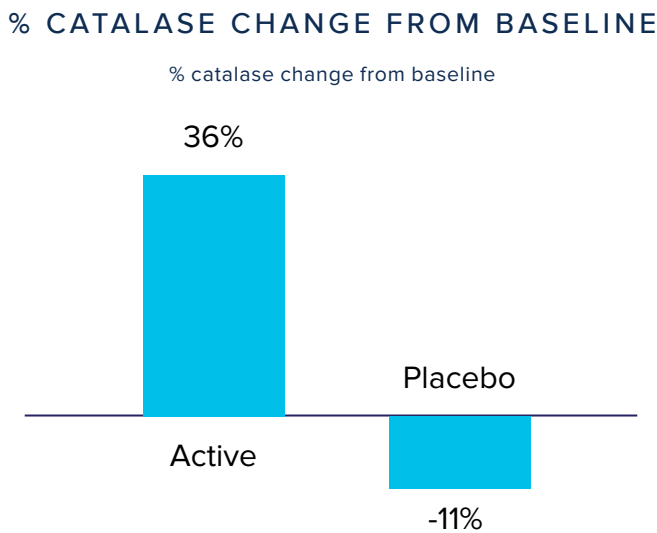


Figure 1. % average changes in catalase activity (U) from baseline in active and placebo groups.

Because catalase is an important part of the body’s antioxidant defense system, this directional difference is encouraging. It suggests that Petandim may support the body’s ability to manage reactive oxidative byproducts.*

The difference in catalase activity did not reach statistical significance. This means the study could not rule out the possibility that normal variability contributed to the result. However, with the directional increase in catalase amounts after use of Petandim and the decrease in the placebo group (difference of 47%), the researchers nevertheless described the shift as strongly suggestive of a potential effect on antioxidant capacity.*

* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

OWNER-REPORTED MOBILITY AND EVERYDAY FUNCTION

Among dogs with arthritis, Petandim showed a statistically significant result in owner-reported everyday function, with a significantly lower average Owner Overall Disability ($p<0.027$) score than dogs receiving placebo. **(Figure 2)***

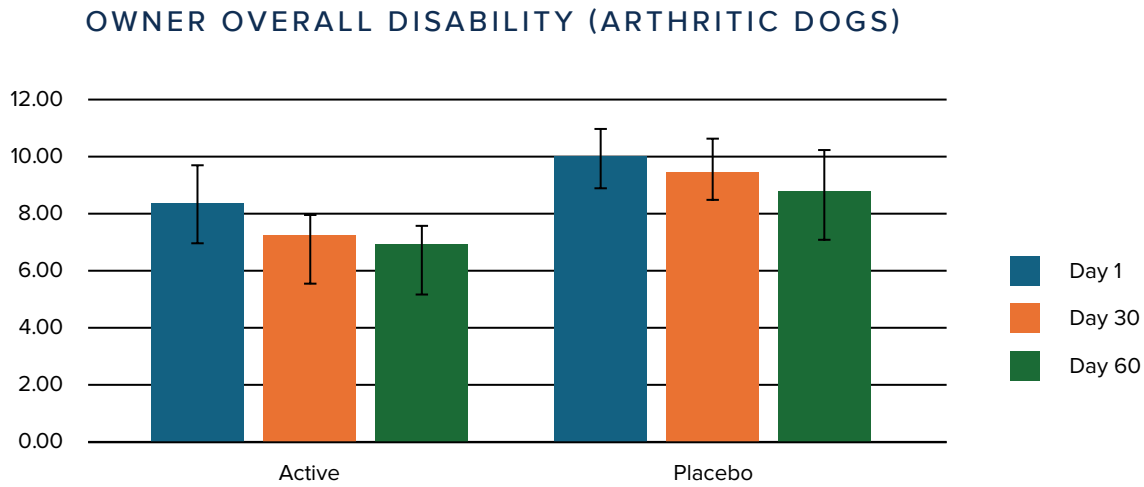


Figure 2. Active treatment showed a decrease in owner reported disability compared to the placebo group.

Because the score reflected daily activities such as walking, running, jumping, rising, using stairs, stiffness, and willingness to play, the finding suggests that owners perceived fewer everyday mobility challenges in arthritic dogs receiving Petandim.*

DOGS WITH BILATERAL HIP INVOLVEMENT

A notable result was also observed in the subgroup of arthritic dogs with disability involving both hips.*

Over 60 days, owner-reported disability scores decreased by 27% in dogs receiving Petandim, compared with a 2% decrease in dogs receiving placebo. **(Figure 3)***

OWNER OVERALL DISABILITY SCORE IN DOGS WITH HIP INVOLVEMENT

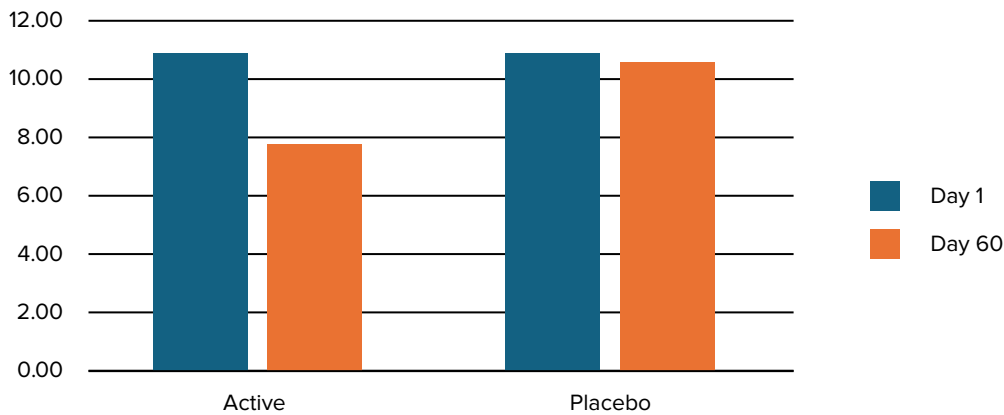


Figure 3. Owner Overall Disability in dogs with hip disabilities over 60 days.

* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

This was a subgroup observation rather than a primary statistically significant outcome. However, it supports the broader owner-reported mobility finding and suggests that future studies focused specifically on dogs with hip-related disability may be valuable.*

ENERGY, PLAYFULNESS, AND ALERTNESS

Before the study groups were unblinded, owners and veterinary technicians reported that the dogs they thought were receiving Petandim appeared more energetic, playful, and alert. At one investigative site, veterinary staff said the differences were noticeable enough that they believed they could identify which dogs were receiving Petandim.*

These observations were encouraging, although the formal energy and cognitive measures did not show statistically significant differences between groups.

SAFETY AND TOLERABILITY

Petandim was well tolerated during the 60-day study.

Researchers reported no clinically significant changes in blood chemistry or complete blood counts. There was no evidence of toxicity, no severe adverse events attributed to Petandim, and no product-related adverse events in the treatment group.

Three dogs did not complete the study. The reasons included renal failure unrelated to the product, removal because of inadequate pain control, and euthanasia for reasons unrelated to the study.

One dog experienced diarrhea associated with the placebo tablet. No comparable product-related event was reported in the Petandim group.

These findings support the safety and tolerability of Petandim when administered according to label directions.

STUDY CONSIDERATIONS

The study included dogs of different breeds, ages, weights, health conditions, diets, and activity levels. This reflects a real-world population of companion dogs, but it may also have increased variability in the laboratory and clinical results.

Oxidative measurements may also be influenced by diet, exercise, metabolism, time of day, and differences in sample collection. The researchers suggested that larger sample sizes, longer study periods, or more narrowly defined groups of dogs could help clarify the observed catalase response and identify additional differences between Petandim and placebo.

Conclusion

Petandim was evaluated in a randomized, double-blind, placebo-controlled clinical study involving healthy dogs and dogs with arthritis.

After 60 days, dogs receiving Petandim showed an encouraging directional increase in catalase activity, with levels 47% higher than placebo. Although this result did not reach statistical significance, it suggests a potential effect on an important component of the body's natural antioxidant defense system.*

Among arthritic dogs, Petandim was associated with significantly lower average owner-reported disability scores. A subgroup of dogs with bilateral hip involvement also showed a notable 27% improvement in owner-reported disability, compared with 2% in the placebo group.*

Owners are well positioned to detect these changes because they observe their dogs throughout the day and across a variety of familiar activities.

Owners and veterinary staff additionally observed greater energy, playfulness, and alertness in dogs receiving Petandim before treatment groups were revealed. These observations provide useful context for how dogs appeared and behaved in everyday settings, although they were not confirmed as statistically significant outcomes.*

Petandim was well tolerated, with no clinically significant changes in blood chemistry or hematology and no product-related adverse events in the treatment group.*

Together, these findings support Petandim as a daily supplement designed to reduce oxidative stress while supporting mobility and healthy aging in dogs.*

* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

