

A HERBAL REMEDY DERIVED FROM SUBSPECIES OF ROSA CANINA,  
IMPROVES THE IMMUNE RESPONSE, WORKING CAPACITY AND WELL-  
BEING OF DOGS?

A PARALLEL, PLACEBO-CONTROLLED, DOUBLE-BLIND, RANDOMIZED  
STUDY.

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## PURPOSE

LITOPET® a standardised powder made from sub-species of rose hip (Rosa Canina), produced by Hyben Vital®, Langeland, Denmark, has shown anti-inflammatory properties and improves the flexibility of joints and well-being in humans with osteoarthritis as well as in racing horse.

It has also been demonstrated that the present powder improves the quality of human cartilage cells. The present study aimed to test whether the same powder might improve the immune response, working capacity and well-being of dogs.

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## METHODS I

68 Greyhounds represented by both sexes mean age 4.25 years +/- 1.75 and weight 30.95 kg +/- 4.0 were randomly allocated to either LITOPET® or placebo treatment for a three-month period.

The animals were randomized in blocks of three with two dogs given LITOPET® 10 gram daily as a dry powder added to the food and one dog given the same amount of placebo powder with a similar taste, odour and colour.

Both groups were then treated for a three-month period.

## METHODS II

The anti-inflammatory capacity was estimated as chemotaxis of peripheral blood neutrophil leucocytes using a Boyden chamber and opsonized zymosan as a trigger and by estimating the total leucocyte count.

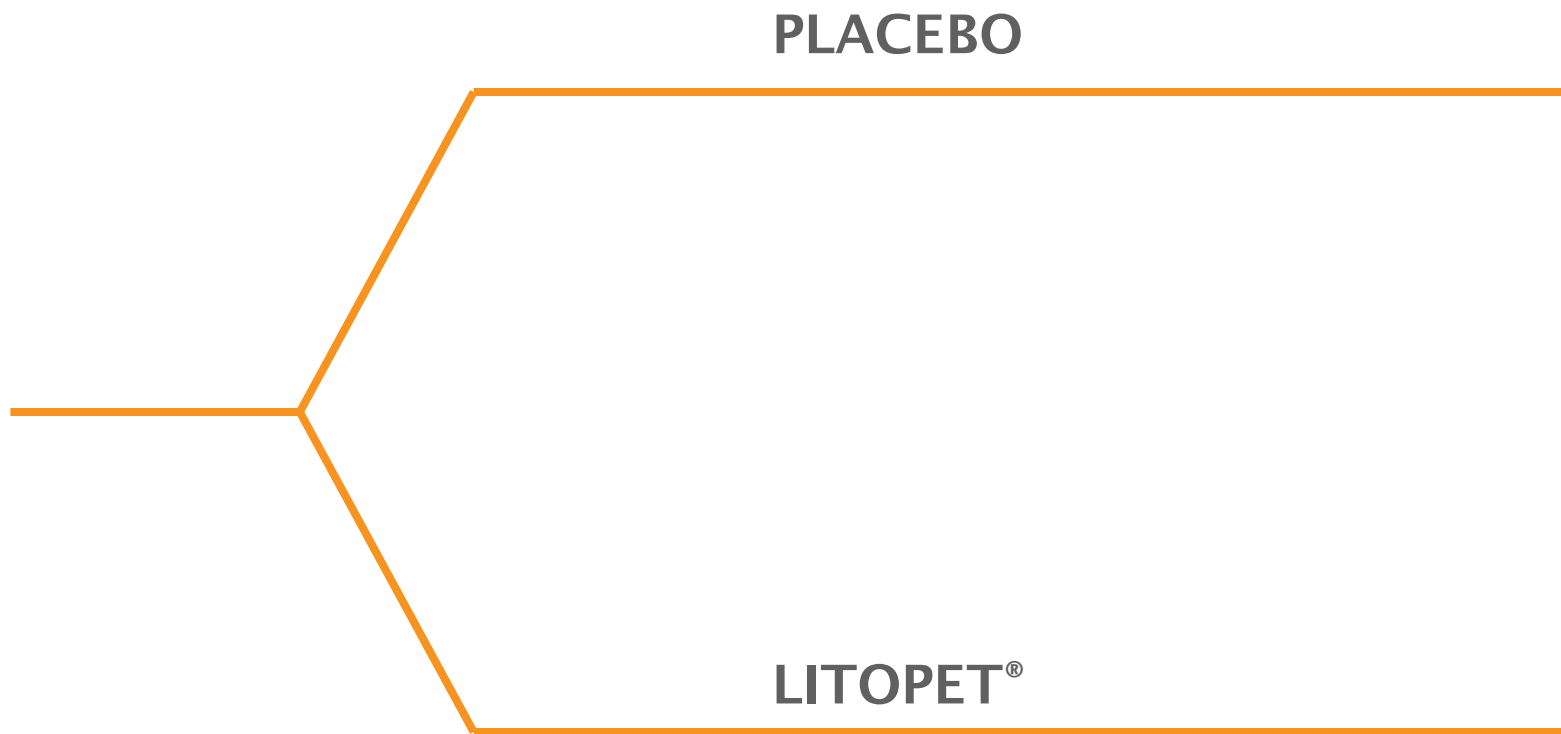
Anti-oxidative capacity was estimated by using chemiluminescence.

## METHODS III

Working capacity, endurance, motivation for different activities including training, liveness, speed, mood and quality of the fur was evaluated by the staff training the dogs by using standardised questionnaires after 6 and 12 weeks, respectively.

In addition speed was estimated as meter/second in hounds during competition. LITOPET® and placebo treated dogs were compared using Mann-Whitney. A p value of 0.050 or less was regarded as statistically significant.

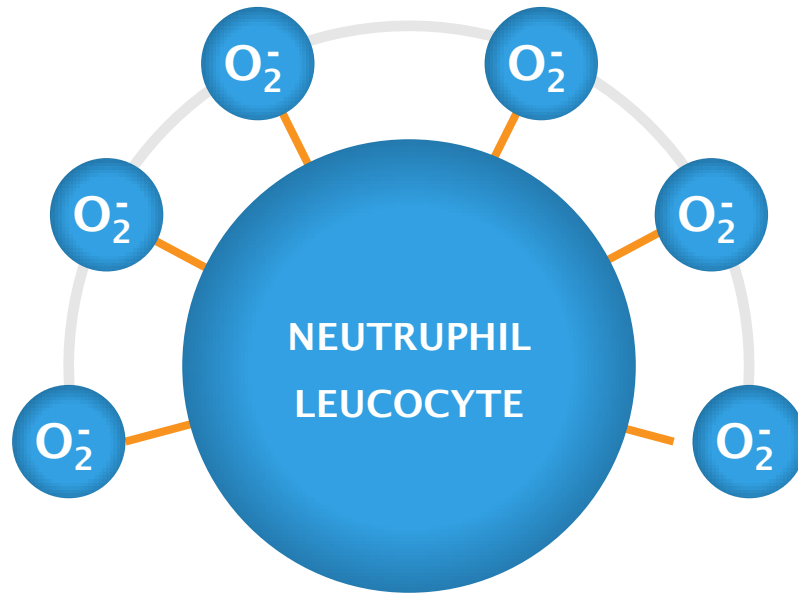
# FLOW CHART



# OXIDATIVE DEGRADATION

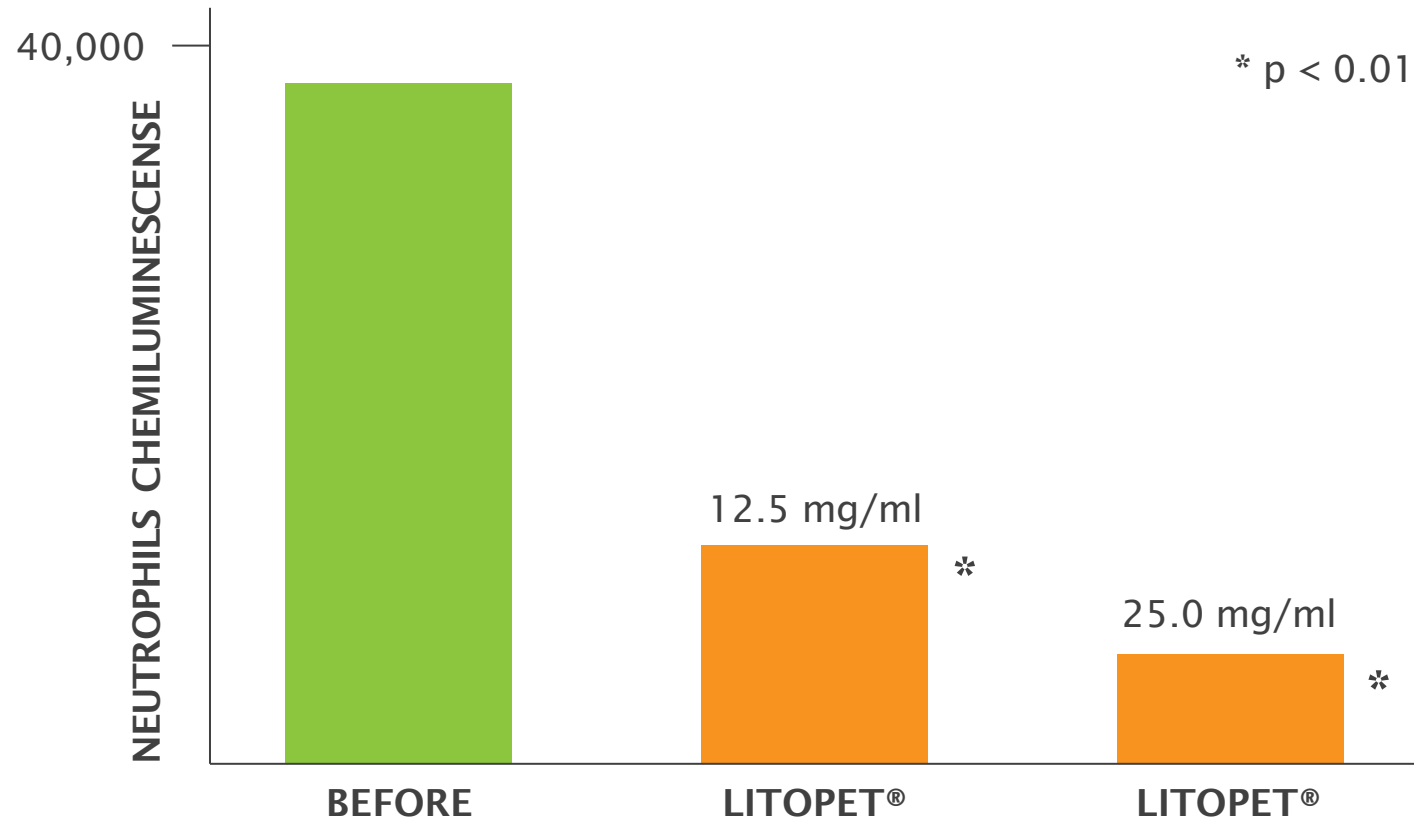
**OXIDATIVE DEGRADATION:** Iron can rust and desintegrate  
oxidative anions are liberated from leucocytes

- a) Proteins (enzymes), fatty acids and DNA are degraded
- b) Cells and tissue are destroyed



# CHEMILUMINESCENCE

In vitro chemiluminescence from neutrophils (released of oxidative anions) before and after the addition of LITOPET®.

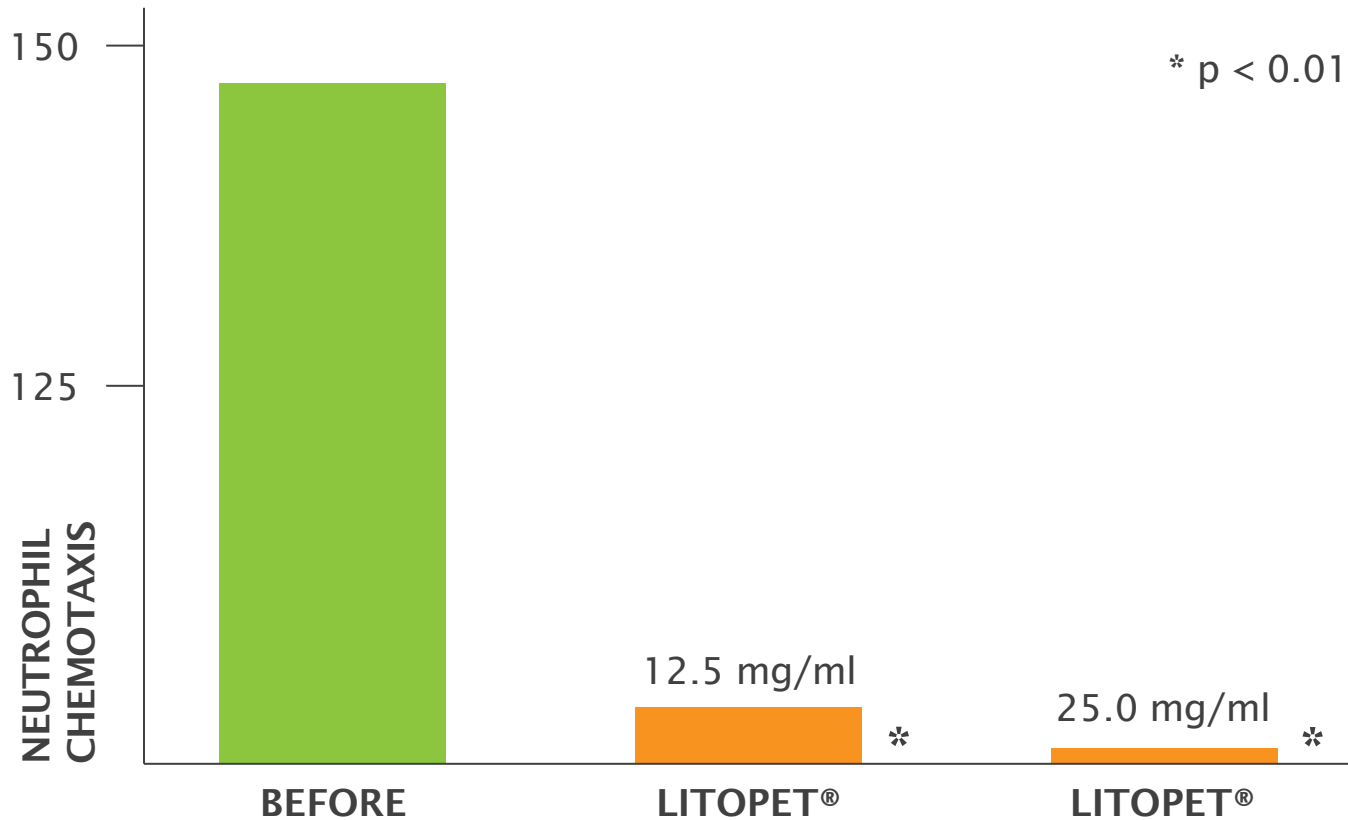


“The release of antioxidative anions was strongly abolished by LITOPET®.”



# CHEMOTAXIS

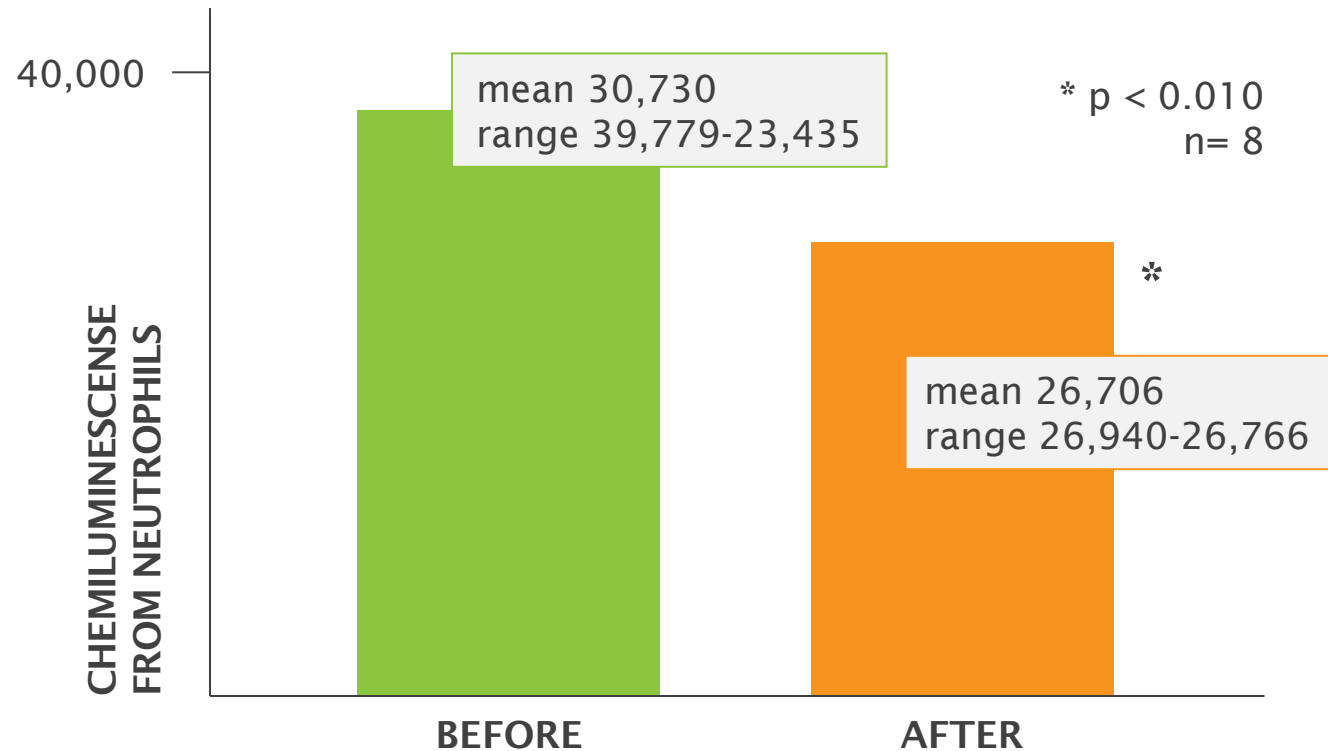
In vitro neutrophil chemotaxis before and after the addition of LITOPET®



“LITOPET® strongly inhibits chemotaxis in neutrophils.”

# CHEMILUMINESCENCE

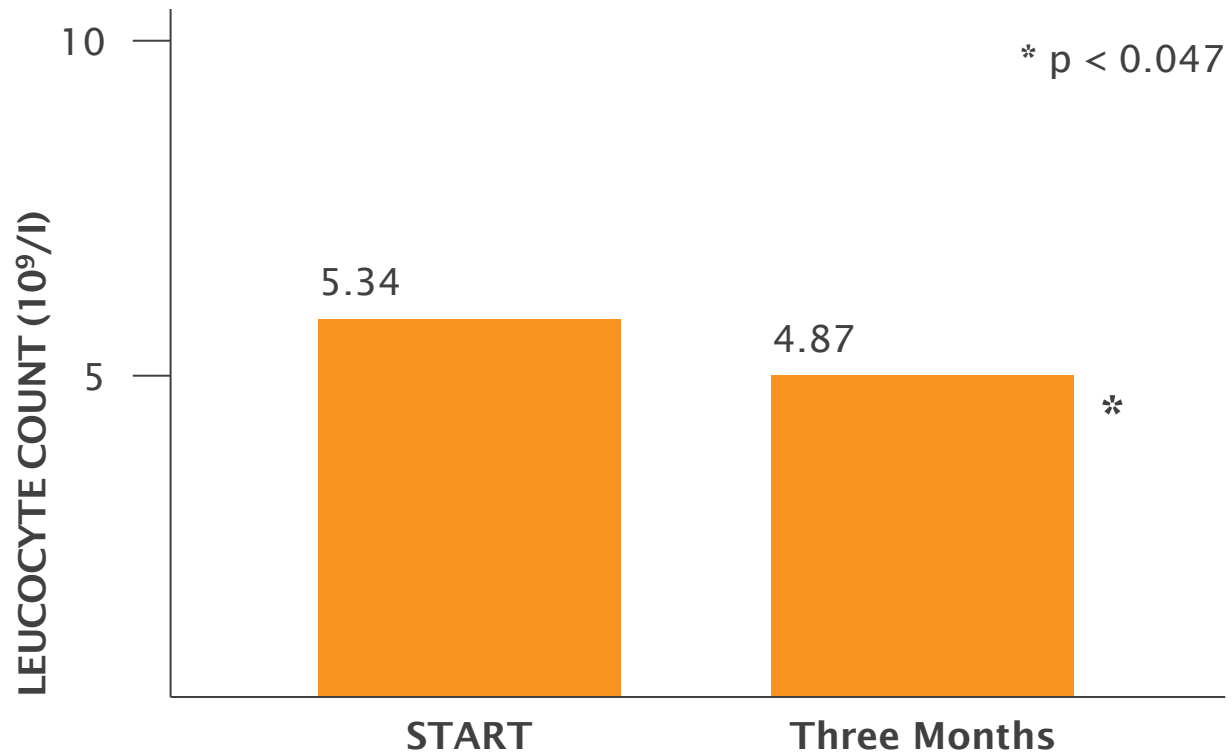
Chemiluminescence from neutrophils (release of oxidative anions) in greyhounds before and after three months treatment with 10 g daily LITOPET®.



“LITOPET® significantly reduced the release of oxidative anions.”

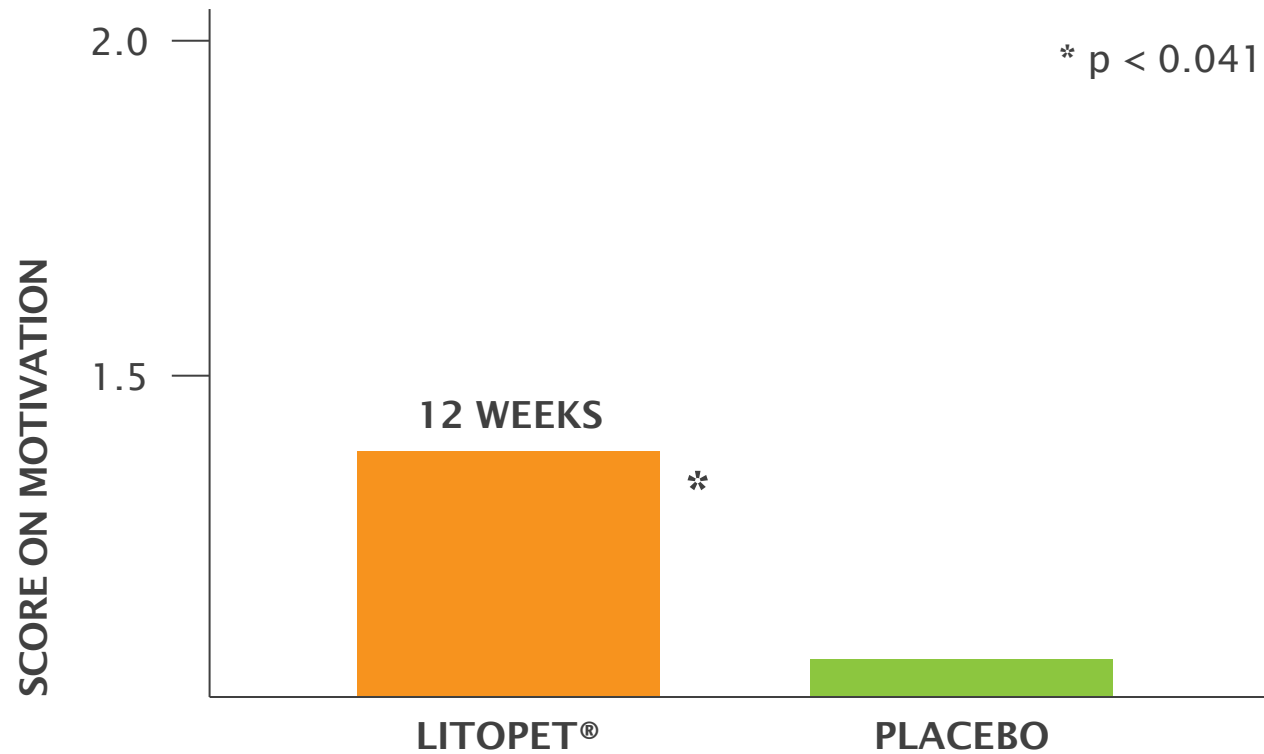
## LEUCOCYTE COUNT

Influence of three month treatment with LITOPET® on leucocytes.



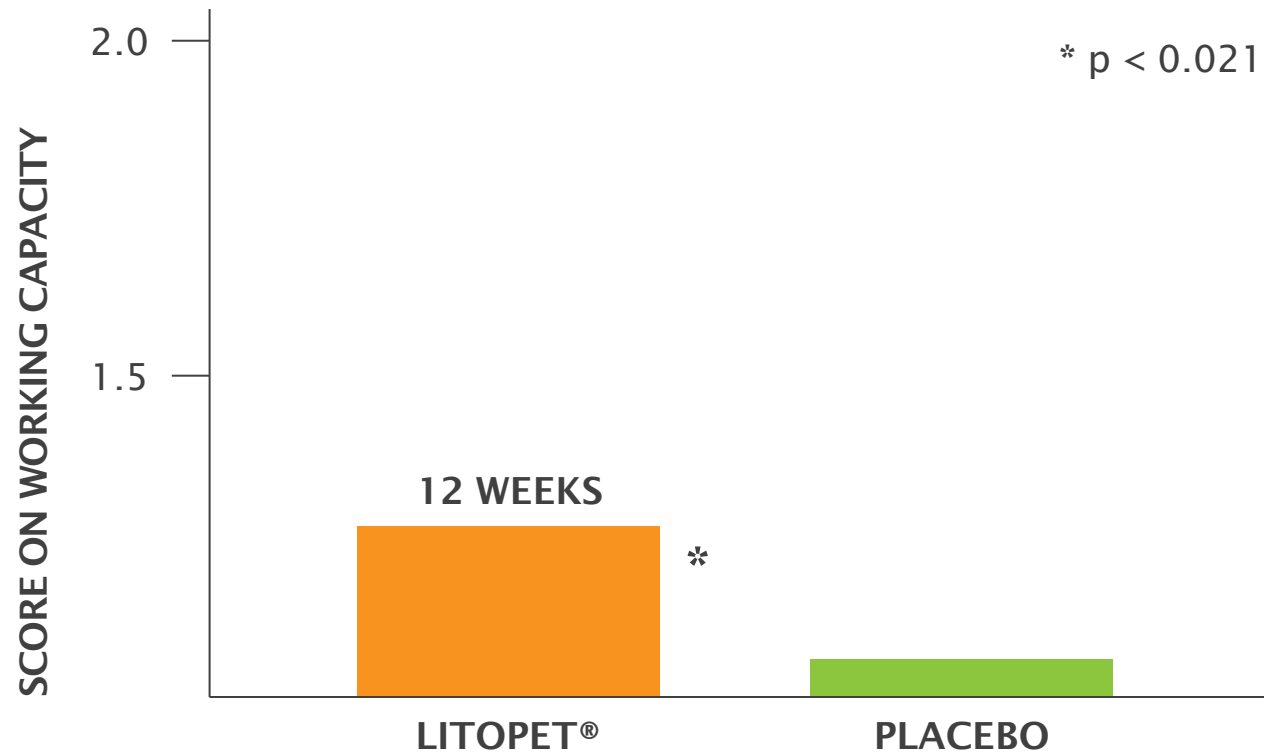
"Three month treatment resulted in a significant decline in total leucocyte count ( $p < 0.047$ )."

# MOTIVATION



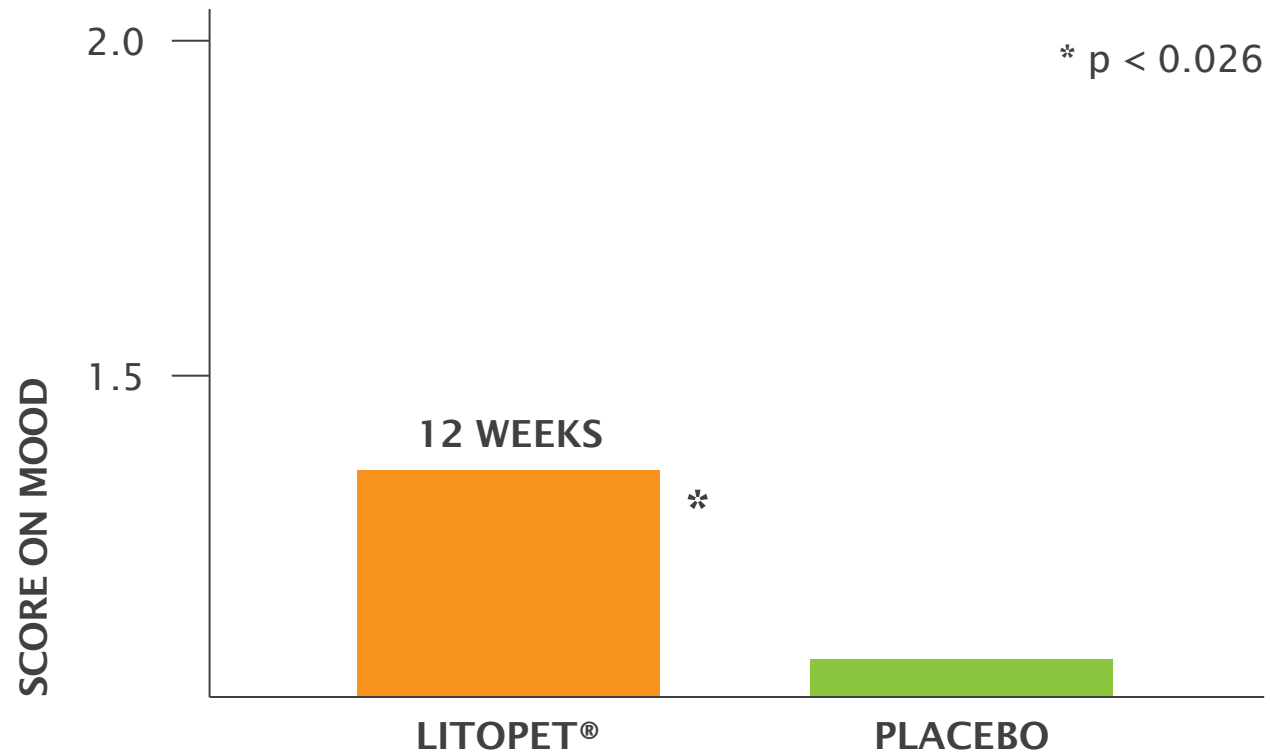
“Twelve weeks of LITOPET® treatment resulted in improved motivation.”

# WORKING CAPACITY



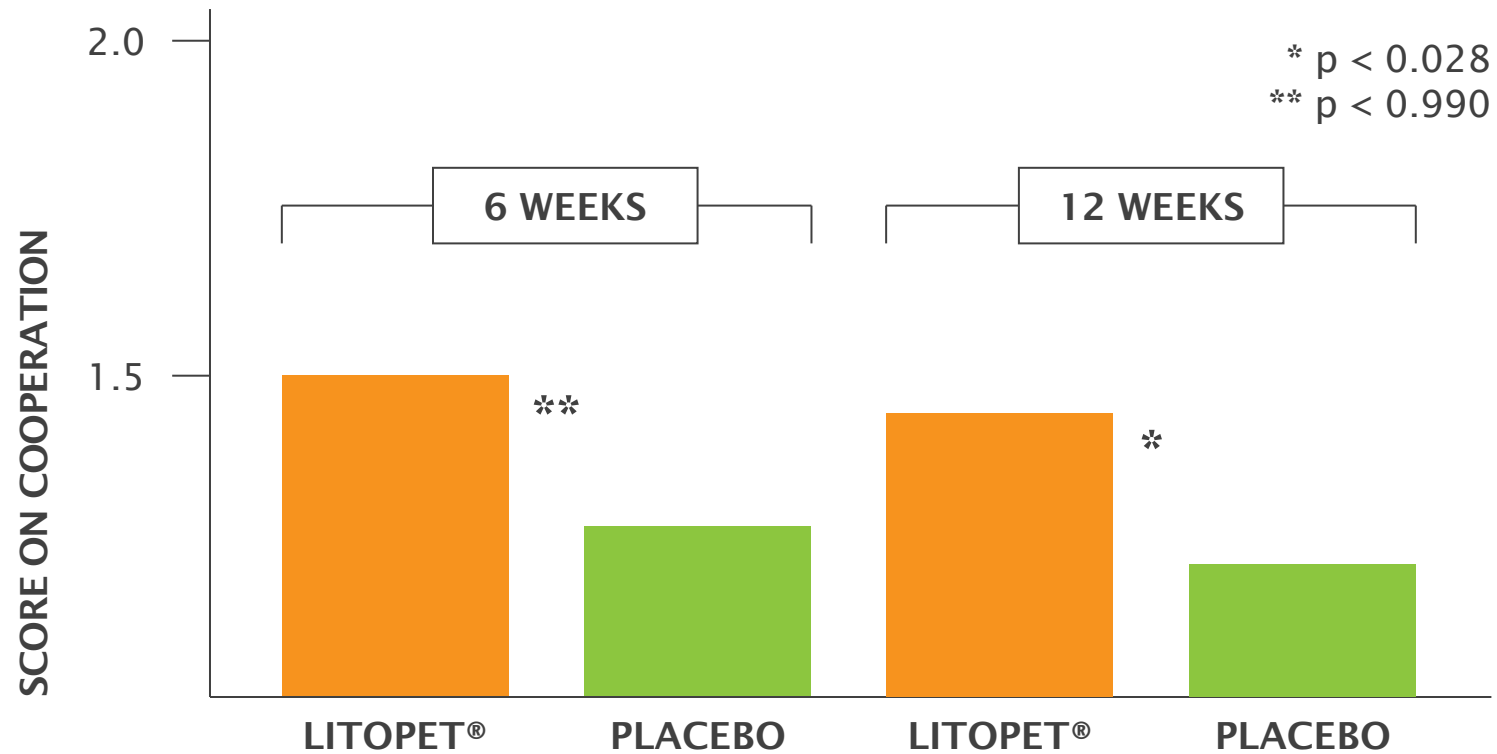
”Working capacity improved after 12 weeks of treatment.”

# MOOD



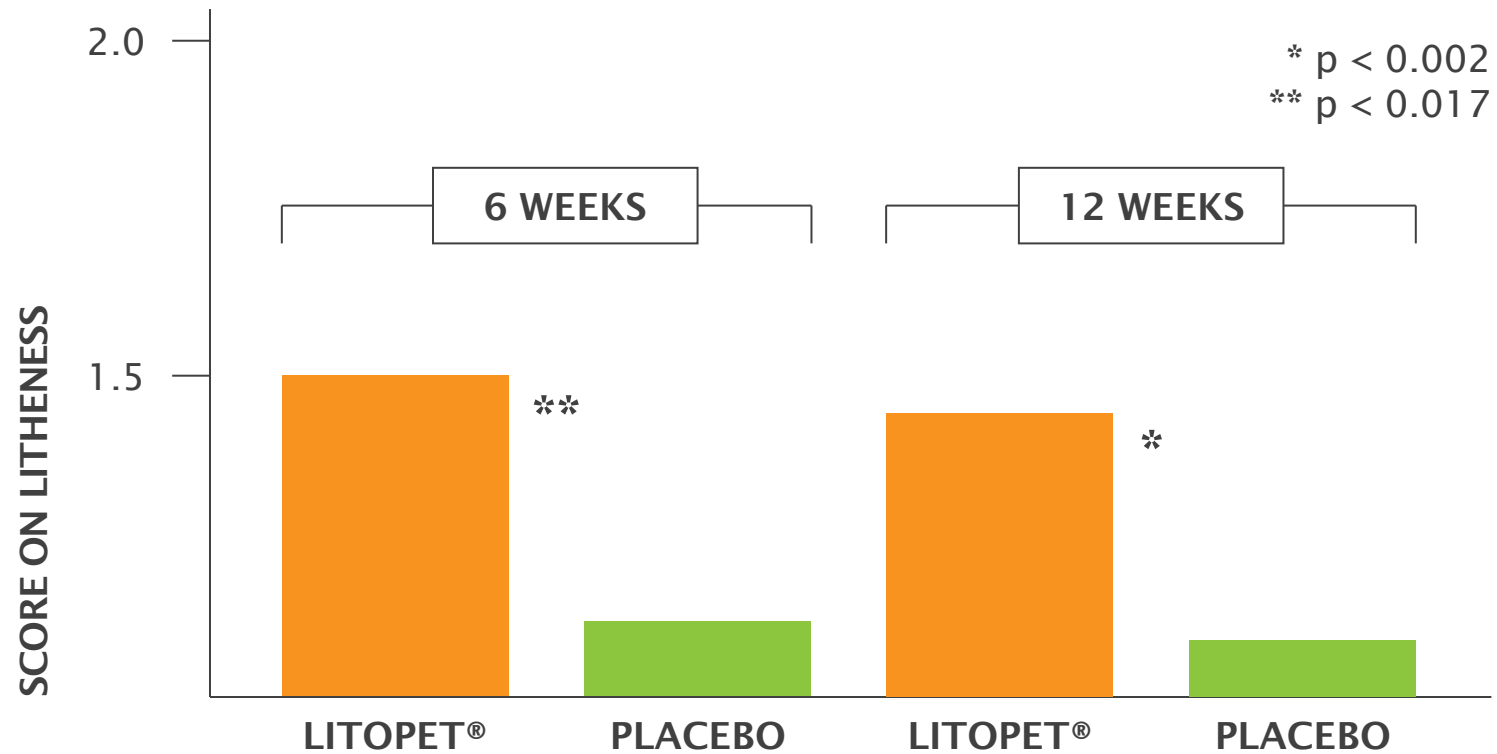
”Mood significantly improved after 12 weeks on LITOVET®.“

# COOPERATION



”The dogs ability to cooperate improved as a result of treatment.”

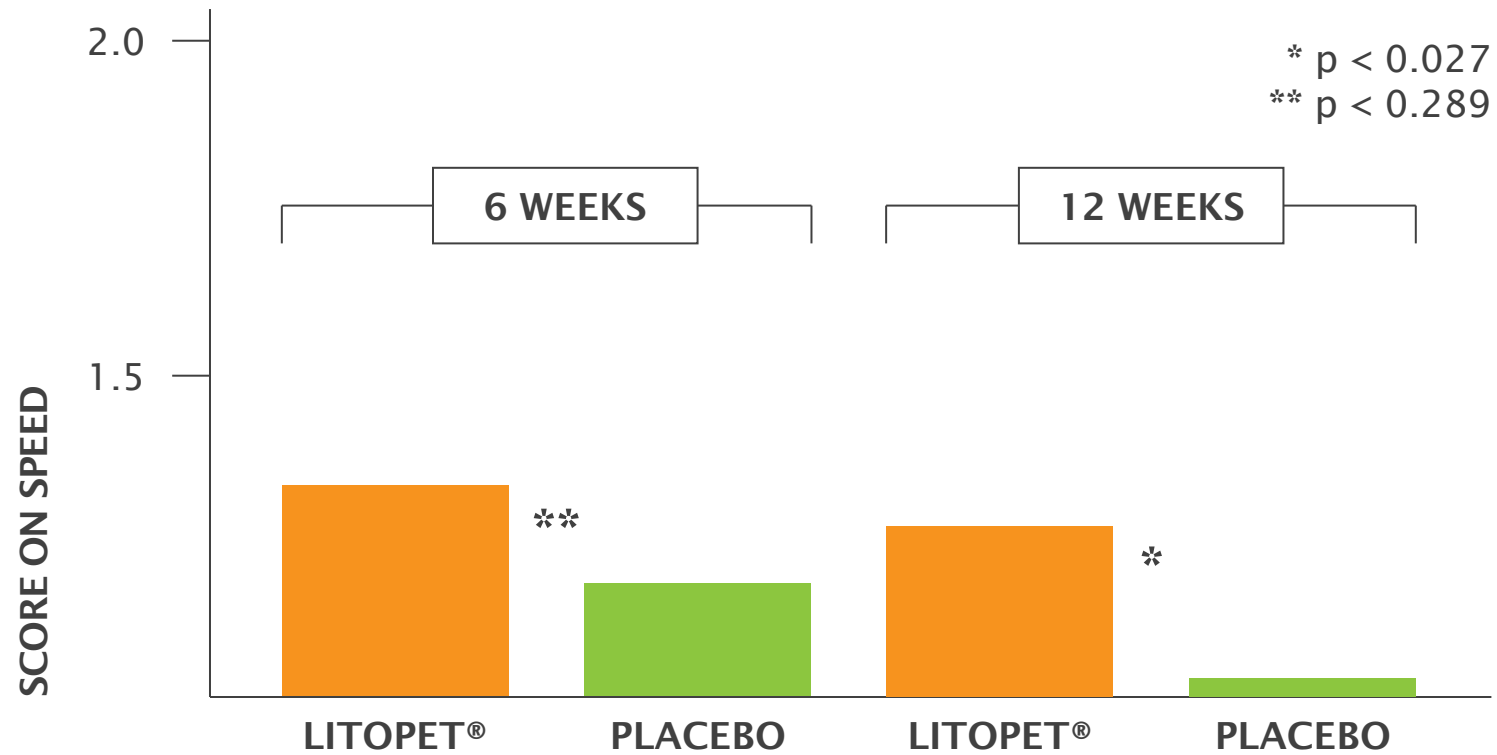
# LITHENESS



"Dogs were more lithe after treatment with LITOPET®."

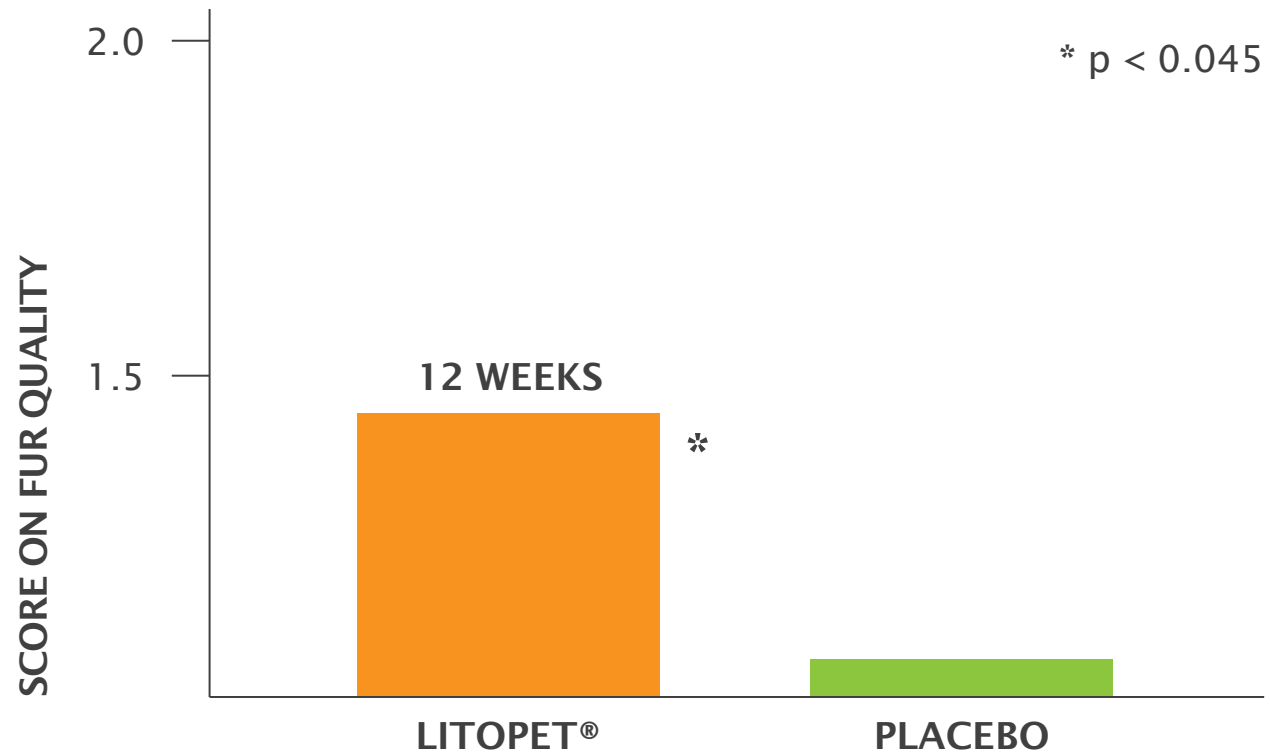


# SPEED



”Speed significantly improved from 3 months on LITOPET® treatment.”

# FUR QUALITY



”Quality of the fur improved from 3 months LITOPET® treatment.”

## CONCLUSION

The present data suggest that LITOPET® exhibits anti-inflammatory properties in dogs and works as a strong antioxidant.

This can explain why the actively treated group of dogs showed an improvement in so many different activities as working capacity, litheness, speed and quality of the fur.

