Demonstrated efficacy in a laboratory challenge study using wild caught ticks

**Objective:** Demonstrate the ability of VANGUARD® crLyme to aid in the prevention of clinical disease and subclinical arthritis associated with *Borrelia burgdorferi*.

**Methods:** 36 healthy Beagles (8–9 weeks of age) seronegative for Lyme disease were randomized in a 155-day tick challenge study. Dogs were randomly divided into groups. Vaccinates and placebo vaccinated controls received two injections, three weeks apart, and then challenged with wild caught ticks for a total of ten days. The third group consisted of non-vaccinated, non-challenged controls that received identical care throughout the study.

**Group 1:** 16 dogs received placebo

**Group 2:** 16 dogs received VANGUARD crLyme

**Group 3:** 4 dogs in sentinel group were not vaccinated or challenged with ticks

**Study Timeline**

**C₆ Antibody Test Results**

**IDEXX** C₆ SNAP⁺ Test Results at 30, 60 and 90 Days Post-Challenge

A significant difference (p<0.0001) was noted between vaccinates and controls with respect to the prevention of *B. burgdorferi* infection:

- After challenge, all dogs in the placebo vaccinated (control) group tested positive
- All dogs in the sentinel group were negative at all time points
- One dog in the product treatment group tested positive once for *B. burgdorferi* on day 30 post-tick challenge via a C₆ SNAP test and tested negative at all other times
**Efficacy Study**

**OspA & OspC Antibody Response**¹

**VANGUARD® crLyme demonstrated a robust antibody response post-vaccination**
Vaccinations at Days 0 and 21; Wild Caught Tick Challenge from Days 42–52

**OspA Antibody Titers**
After VANGUARD crLyme vaccination, robust OspA antibody titers were observed and maintained in dogs.

**OspC Antibody Titers**
Post-challenge, there was no increase in OspC antibodies with VANGUARD crLyme vaccinates, demonstrating protection against *B. burgdorferi* infection.

**Histopathology Results**¹

VANGUARD crLyme helped prevent inflammation in the skin and joints.

**Vaccinates**

**Synovial Layer**
No inflammatory infiltrates present

**Skin**
Normal neural fiber

**Non-Vaccinates**

**Synovial Layer**
Nodular mononuclear (lymphoplasmacytic) infiltrate present

**Skin**
Nodular lymphoplasmacytic infiltrate present around neural fiber

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