

Performance of the Abaxis VetScan® Canine Giardia Rapid Test

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Introduction

Giardia is a parasitic infection in dogs and cats that produces a malabsorption syndrome causing diarrhea, occasional vomiting, and if chronic, debilitation. It is diagnosed in up to 50% of canines, and up to 100% of kennel canines. Giardia can live in two forms, the trophozoite that is a motile active form found in the small intestines, and the resistant cyst form that is predominantly responsible for transmission.¹ Diagnosis of Giardia is one of the most commonly misdiagnosed parasites as normal fecal contents (pseudo-parasites, yeast) can be easily mistaken for Giardia. Further, cysts are shed intermittently throughout an infection, so multiple fecal examinations may be needed to isolate the Giardia cyst.²

Good sensitivity and specificity are important for all infectious disease testing, but especially for this disease state. Poor sensitivity (leading to a false negative result) can lead to misdiagnosis as well as the possibility of spreading Giardia to the environment where it can infect other patients and potentially humans. Poor specificity (high number of false positive results) can cause unnecessary treatment.

Study Design

Abaxis performed a clinical trial to obtain the data necessary for approval by the United States Department of Agriculture (USDA) for the Canine Giardia Rapid Test. 240 samples were obtained from veterinary facilities and shelters across the country. Samples were tested by Fecal Wet Mount (FWM), and in discrepant samples tested by Immunofluorescence (IFA) and Western Blot (WB).

Analysis of Data

For Abaxis test approval and for this comparison (per requirements of USDA), samples were considered positive if fecal wet mount was positive. Results are listed in Table 1.

Table 1:

| N = 240 | FWM + | FWM - |
|--|-------|-------|
| VetScan Canine Giardia Rapid Test Positive | 106 | 1 |
| VetScan Canine Giardia Rapid Test Negative | 2 | 134 |

Sensitivity = $106/108 \times 100 = 98.1\%$
Specificity = $134/135 \times 100 = 99.3\%$

Conclusions and Discussion

All veterinary point-of-care infectious disease tests must be approved by the USDA before being sold. The clinical trial data presented here was collected for the approval of the Abaxis Rapid Canine Giardia Test. By comparing the Abaxis test against multiple methods (Fecal Wet Mount, Immunofluorescent Antibody Test, and WB) the sensitivity and specificity could truly be determined. In this comparison both the sensitivity and specificity of the Abaxis test are considered excellent.

No point-of-care test is perfect. All tests will have occasional false positive and false negative results. Clinical signs and confirmation testing must always be included in the determination of disease and treatment protocols. The data presented indicates the Abaxis VetScan Canine Giardia Rapid Test provides excellent results and the fact remains that the Abaxis test is a reliable and accurate option for effective diagnosis and treatment of infected patients.

¹ Tilley, Larry P and Smith, Francis W.K. (2015). *The Five-Minute Veterinary Consult: Canine and Feline 6th Edition*. Ames, Io: Wiley

² Green, Craig, E. (2012). *Infectious Diseases of the Dog and Cat 4th Edition*. Athens, Ga: Elsevier.