MiraVista
VETERINARY DIAGNOSTICS

Improve Canine Blastomycosis Diagnosis with the *Blastomyces* Antibody EIA

MVISTA® *Blastomyces* Canine Antibody IgG EIA

Bd
Blastomyces

Clinical Spotlight

An 8 year old Pomeranian with a solitary bone lesion had a low positive *Blastomyces* urine antigen result (0.27 ng/mL). This result is near the cutoff for the assay and the submitting DVM considered the possibility of a false positive result. The patient displayed no other clinical signs of blastomycosis and spent the majority of her time indoors. A bone biopsy yielded a non-diagnostic result. The MVista® *Blastomyces* Canine Antibody IgG EIA result was moderately positive (25 units), indicating recent exposure or active infection with *Blastomyces*. By combining the positive results in both antigen and antibody tests, the DVM made a presumptive diagnosis of blastomycosis and successfully treated the dog with itraconazole.

Evaluation of an Enzyme Immunoassay for Antibodies to a Recombinant *Blastomyces* Adhesin-1 Repeat Antigen as an Aid in the Diagnosis of Blastomycosis in Dogs

A 2015 study published in JAVMA[1] evaluated the rBAD-1 antibody EIA (precursor to the MVista® *Blastomyces* Canine IgG Antibody EIA). Antibody results are shown in Fig.1. Specificity was 88% in dogs with histoplasmosis, 95% in healthy dogs from a blastomycosis endemic region and 100% in control dogs with non-fungal pulmonary disease. Antibody EIA was significantly more sensitive compared to the A-antigen AGID antibody assay (95% vs 65%).

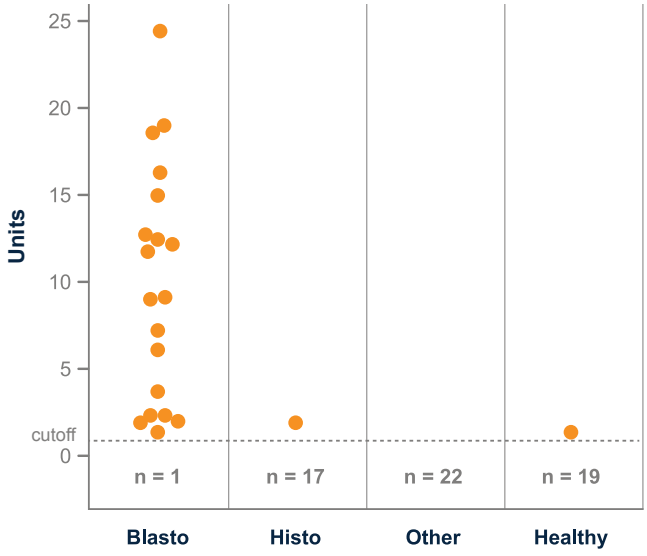


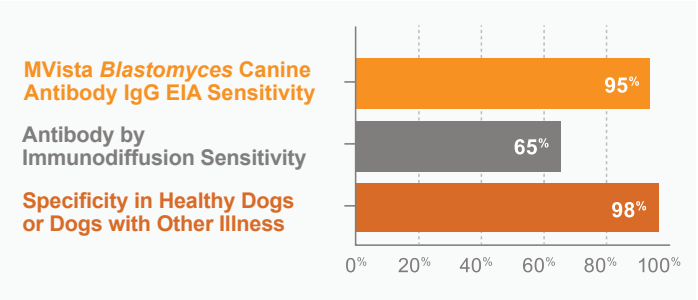
Fig. 1. *Blastomyces* IgG results in EIA units for dogs with blastomycosis, histoplasmosis, other nonfungal disease, or healthy controls. Numbers below the cutoff line indicate negative cases. Note: scale of reporting was different from the current commercial assay.

Current Challenge

Although the sensitivity of the MVista® *Blastomyces* Antigen EIA in dogs is high [2], false-negative results are observed in ~10% of cases. In those cases, empirical treatment is often prescribed without establishing a diagnosis. Adjunctive tests may assist clinicians in diagnosing antigen negative cases. Defining a diagnosis is also problematic in patients with low-level positive (≤1 ng/mL) antigen results, as some of these results may be false positive. This may result in unnecessary, expensive and potentially toxic antifungal therapy. Tests to strengthen the diagnosis in such cases would be useful. Antibody testing for blastomycosis previously had limited utility due to low sensitivity of immunodiffusion methods.

The MVista® Advantage

MVista® *Blastomyces* Antibody IgG EIA offers increased sensitivity compared to immunodiffusion, and high specificity in control dogs.



- MVista® *Blastomyces* Canine Antibody IgG EIA showed 95% sensitivity compared to 65% in the antibody by immunodiffusion assay
- The specificity was 98% in healthy dogs or dogs with other diseases [1]
- Antibody has been detected in cases with negative antigen results and can provide additional diagnostic support for equivocal, low positive antigen results

MVista® *Blastomyces* Antibody IgG EIA

TEST CODE: 330

CPT CODE: N/A:

CLINICAL SIGNIFICANCE: IgG antibodies to *Blastomyces* antigen appear to be associated with active infection, especially in dogs with moderate to high positive (20 EU or greater) results. Antibodies may also be detected in a small percentage of healthy dogs as a result of sub-clinical infection within the last 2 years; however, results of preliminary studies show high specificity of the assay (>90%) in healthy animals from *Blastomyces*-endemic areas. IgG may be detected in blastomycosis cases with falsely-negative antigen results (especially with localized disease; e.g., ocular or bone infections) and combined antibody and antigen testing increases the overall sensitivity. Intermediate results (8-9.9 EU) typically reflect either rising or falling IgG, and retesting the patient in several weeks may be beneficial.

SPECIMEN COLLECTION:
Serum: Collect serum specimens in serum separator or red top tube. Allow blood to clot for 30 minutes, then centrifuge. Pipette serum into a plastic screw cap vial.
CSF: Sterile transport tube

MINIMUM SPECIMEN REQUIREMENTS
Serum: 0.25ml

SPECIMEN STABILITY:
- Refrigerated: 14 Days
- Frozen: 14 Days

SPECIMEN REJECTION: Any specimen type >14 days old other than serum or CSF

TRANSPORT TEMPERATURE: Refrigerated/Frozen

SHIPPING: Ship on dry ice or frozen packs for next day service. Monday - Friday delivery.

TURNAROUND:
Serum or CSF: Testing is performed on Mondays and Thursdays. Results released the same day.

REFERENCE RANGE: Antibody Not Detected

INTERPRETATIVE INFORMATION:
- Negative: <8.0 EU
- Indeterminate: 8.0 - 9.9 EU
- Positive: 10.0 EU - 80.0 EU
- ALQ: >80.0 EU

METHODOLOGY: Enzyme Immunoassay

LIMITATIONS:
- May cross-react with other fungi.
- The reference range and other method performance specifications have not been established for this test in CSF.
- The test results should be integrated into the clinical context for interpretation.

Reference List

(1) Mourning AC, Patterson EE, Kirsch EJ, Renschler JS, Wolf LA, Paris JK, Durkin MM and Wheat LJ. Evaluation of an enzyme immunoassay for antibodies to a recombinant Blastomyces adhesin-1 repeat antigen as an aid in the diagnosis of blastomycosis in dogs. J Am Vet Med Assoc 2015 Nov:247(10):1133-38.

(2) Spector D, Legendre AM, Wheat J, et al. Antigen and antibody testing for the diagnosis of blastomycosis in dogs. J Vet Intern Med 2008 Jul;22(4):839-43.

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