MiraVista
VETERINARY DIAGNOSTICS

FREQUENTLY ASKED QUESTIONS

Histoplasma Antigen and Antibody Testing

QUESTION: If I suspect histoplasmosis, should I order the antigen or the antibody test?

ANSWER: The MVista® *Histoplasma* Antigen Quantitative EIA test (Test Code 310) is the preferred test for diagnosis of histoplasmosis. The sensitivity of the antigen test is 90%, and the specificity is 98%[1]. Usually false positive results are low positives (less than 1ng/mL). Antigen tests are more likely to be falsely negative in cases with early infection, mild disease, or localized disease (e.g., ocular).

The antigen test may be used as a marker of therapeutic efficacy; therefore, obtaining a baseline urine antigen concentration is useful in cases in which diagnosis is established by pathology or culture.

Some antigen negative cases may be diagnosed by detecting IgG antibody in the MVista® *Histoplasma* Canine IgG Antibody EIA (test code 327) and the MVista® *Histoplasma* Feline IgG Antibody EIA (test code 328). The sensitivity of these antibody EIAs is 78%. Consider sending urine for Histoplasma antigen and serum to hold for IgG antibody testing if the antigen is negative. If blastomycosis is also endemic in your area, you should send serum for IgG antibody to both *Histoplasma* and *Blastomyces*.

QUESTION: What is the preferred specimen for the antigen tests?

ANSWER: Urine has shown the highest sensitivity in the antigen assay, 93% in cats and 89% in dogs. Serum is also an acceptable specimen, although the sensitivity is lower resulting in more false negative results. Rarely, serum antigen may be positive when the urine antigen is negative.Typically, the urine antigen concentration is higher than serum antigen concentration, in which case the urine antigen should be used to assist in determining when to stop treatment.

CSF, BAL fluid and other body fluids may also be tested.

QUESTION: Is there cross reactivity between the *Blasto* and *Histo* antigen tests?

ANSWER: Yes, nearly complete (99%) cross-reactivity occurs in histoplasmosis and blastomycosis, and the discrepancies are in the low positive range. Thus, **there is no need to order both tests.** Less cross reactivity may be seen in other mycoses: Histoplasma antigen is positive in about 10% of cases of coccidioidomycosis, and rarely in aspergillosis.

Antibody testing may assist in resolving cross-reactivity.

QUESTION: If my practice is in an area that is endemic for both blastomycosis and histoplasmosis, which antigen test should I submit?

ANSWER: Due to cross reactivity, it is unnecessary to submit both. If you see more cases of one than the other or if the clinical findings support one more than the other, order the test for the fungus that is most likely.

Follow-up testing to monitor antigen clearance should use the same antigen assay as that performed on the initial specimen.

Differentiation of the two infections is usually unnecessary, as treatment and monitoring are very similar. If you prefer to differentiate between *histo* and *blasto*, antibody testing *Histoplasma* IgG and *Blastomyces* IgG antibody is helpful as the antibody tests are specific.

FAQs continued on next page...

HEADQUARTERS
4705 Decatur Blvd. | Indianapolis, Indiana 46241, USA

888-841-8387

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FREQUENTLY ASKED QUESTIONS CONTINUED...

QUESTION: I received an antigen result that says "Positive, Below the Limit of Quantification (BLQ)". What does this mean?

ANSWER: A BLQ result is a very low positive, <0.4 ng/mL for histo and < 0.2 ng/mL for blasto. BLQ results may be falsely positive in up to half of specimens. If the clinical and radiographic findings are typical of *histo* or *blasto*, the result is more likely to be truly positive. If not, histo IgG and blasto IgG antibody testing should be performed and consultation should be considered.

Antigen concentration correlates with the severity of disease. A patient with moderately severe or severe disease should not have a low positive result. Consultation should be considered.

QUESTION: I have previously tested for histoplasmosis through antibody testing by immunodiffusion (ID) at another reference laboratory. What is the difference between that and the MVista® IgG antibody enzyme immunoassay (EIA)?

ANSWER: Most diagnostic labs perform only ID antibody testing. This is a time consuming (at least 3 days turnaround time) and insensitive method.

The MVista IgG antibody EIA is more sensitive, has a faster turnaround time, and provides quantitative results.

If you have questions, Dr. Wheat is available for a consult. 317-856-2681 ext 450

REFERENCES:

1. Wheat, L.J., et al., Clinical practice guidelines for the management of patients with histoplasmosis: 2007 update by the Infectious Diseases Society of America. Clin Infect Dis, 2007. 45(7): p. 807-825.

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