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MiraVista Diagnostics Strives to Continually Improve Veterinary Fungal Testing

Coming Soon - Improved MVista® *Histoplasma* Antigen Quantitative EIA

Key Points – At a Glance

1. MiraVista Diagnostics will soon transition to an improved *Histoplasma* antigen test
2. Urine, serum, plasma, BAL fluid, and CSF can all be tested
3. An expanded quantifiable concentration range (0.2 – 20.0 ng/ml) without a 'below the limit of quantification' result facilitates treatment monitoring
4. The test is run twice daily M-F and once Saturday providing quick turnaround times (>90% of samples are tested in ≤24 hours)

The MVista® *Histoplasma* antigen test is highly sensitive and specific

The MVista® *Histoplasma* Antigen Quantitative EIA (MVista® *Histo* Ag EIA, test code 310), has changed how we diagnose and monitor treatment of histoplasmosis in dogs and cats. For initial testing, urine is the sample of choice, which has the advantages of being available in abundance with non-invasive collection. When urine is tested, the MVista® *Histo* Ag EIA is highly sensitive (95% cats, 90% dogs) and specific (97% cats, 94% dogs) [1-3]. It is also useful for guiding treatment [4]. Less commonly, the urine antigen test is negative in a dog or cat with histoplasmosis. Most of these animals will be positive on serum antigen or antibody testing.

The improved MVista® *Histo* Ag EIA provides an extended quantifiable antigen concentration range, 0.2 – 20.0 ng/mL, which eliminates positive below the limit of quantification (BLQ) results. The extended range removes ambiguity and expands the capabilities of the MVista® *Histo* Ag EIA to guide treatment monitoring. With the new test, an antigen concentration >20.0 ng/mL is reported as positive above the limit of quantification (ALQ). If urine antigen concentration is ALQ, serum antigen concentrations can be used for treatment monitoring until urine concentrations decrease into the quantifiable range.

The extended quantifiable range will facilitate treatment monitoring

The improved MVista® *Histoplasma* Ag EIA, retains all of the advantages of the older assay, including a quick turnaround time with greater than 90% of all samples tested ≤24 hours after arrival to MiraVista. Results are reported the same day. Moreover, the improved test has the same impressive robustness (stability) over a wide range of conditions. The sample is stable in high temperatures (boiling), low temperatures (≤10 freeze-thaw cycles) and can be stored for 14 days at room temperature (or in refrigeration) before testing.

MVista® *Histoplasma* antigen samples are stable across a wide range of conditions

The improved MVista® *Histo* Ag EIA has undergone rigorous validation testing, and results are impressive. For example, it was validated for antigen detection in urine, serum, plasma, BAL fluid and CSF. The new test was shown to

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be 99% sensitive and 100% specific. Over 30 interfering substances were investigated (bilirubin, blood, cholesterol, boric acid (gray top tub), etc.) and none were found to affect test results. As expected, there is cross-reactivity with very closely related fungi such as *Blastomyces*, *Taloromyces*, and *Paracoccidioides*. Lesser cross-reactivity might be seen with coccidioidomycosis, but further investigation is needed.

At MiraVista, quality-control goes beyond test development and validation. There are many layers of safe-guards built into the daily testing protocols to ensure results are highly accurate. A free veterinary consultation service is provided for any questions including, but not limited to, recommended fungal testing, interpretation of test results, or treatment recommendations. For consultation call: 888-841-8387 or email: labsupport@miravistalabs.com.

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2. Rothenburg L, Hanzlicek AS and Payton ME. *A monoclonal antibody-based urine Histoplasma antigen enzyme immunoassay (IMMY(R)) for the diagnosis of histoplasmosis in cats. J Vet Intern Med* 2019; 33: 603-610. 2018/12/18. DOI: 10.1111/jvim.15379.
3. Cook AK, Cunningham LY, Cowell AK, et al. *Clinical evaluation of urine Histoplasma capsulatum antigen measurement in cats with suspected disseminated histoplasmosis. J Feline Med Surg* 2012; 14: 512-515. 2012/05/26. DOI: 1098612X12450121
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