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Histoplasma Antigen Detection for Diagnosis of Histoplasmosis in Cats: Comparison of the MiraVista and ImmunoMycologics [IMMY(R)] Enzyme Immunoassays

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Antigen detection for diagnosis of histoplasmosis in veterinary patients was first offered at MiraVista Diagnostics in 2004. The MiraVista enzyme immunoassay (EIA) has been refined to improve sensitivity and permit quantification [1]. The MiraVista EIA has since become a leading method for diagnosis of progressive histoplasmosis in veterinary patients [2-4]. The MiraVista EIA is also used for monitoring response to treatment [4].

A monoclonal antibody-based *Histoplasma* antigen EIA [IMMY(R)] was introduced by ImmunoMycologics in 2019. This assay was evaluated in cats at Oklahoma State University (OSU) [5]. Urine samples were tested from 40 cats with cytopathology or histopathology proven histoplasmosis and 59 controls cats. The specimens were tested at OSU using the IMMY(R) EIA and at MiraVista using the MiraVista EIA. Results are presented in the table. Specimens containing less than 1.1 ng/mL were negative in the IMMY(R) EIA and positive in the MiraVista EIA. Attempts were made to increase the sensitivity of the IMMY(R) EIA by lowering the cut off for positivity and heating the urine at 120°C for 3 minutes, without improvement.

The authors concluded that "the diagnostic performance of the IMMY(R) EIA is inferior to the commercially available MV EIA" [5]. The IMMY Analyte Specific Reagent (ASR) EIA, a non-FDA cleared version of the IMMY(R) EIA was also evaluated in humans with culture proven disseminated histoplasmosis as a complication of AIDS, and the reported sensitivity was 56.4% [6].

Performance	MiraVista EIA	IMMY ASR EIA	*P* value
Sensitivity	94% (30/32)	77% (27/35)	.01
Specificity	97% (59/61)	97% (57/59)	.65

These study results suggest that many cases with a lower antigen burden would have false negative results with the IMMY(R) EIA. Cats with lower detectable antigen tend to be the more difficult cases to diagnose anyway, such as those with chronic GI disease. Use of a less accurate assay would only prolong the diagnostic investigation and lead to higher cost for the client, delays in treatment, and potentially unnecessary invasive tests.

The MVD test has the following benefits:

- Highest diagnostic accuracy, sensitivity, and specificity
- Daily testing Monday through Saturday with same-day (or next-day) results
- High quality control standards, continual assay improvement, and testing by expert clinical laboratory scientists focused on fungal diagnostics

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