

## Notes Regarding *Blastomyces* and *Histoplasma* AGAR Gel Immunodiffusion (AGID)

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- There is very limited clinical utility for these assays, as the **sensitivity is very low** which will result in many false negatives.
- For Blasto AGID, previous studies showed only 17-65% sensitivity in dogs with proven blastomycosis.<sup>1,2</sup> In comparison, the MVista *Blastomyces* canine IgG antibody EIA had a sensitivity of 95% with concurrent high specificity (95% in healthy dogs, 100% in control dogs with nonfungal pulmonary disease).<sup>2</sup>
- Histo AGID results from previous studies have been inconsistent, and AGID has been considered an unreliable diagnostic tool.<sup>3</sup> Studies are currently ongoing to determine the sensitivity of the MVista *Histoplasma* canine and feline IgG assays; however, preliminary results at MVD suggest ~72% sensitivity in dogs and ~85% sensitivity in cats with proven histoplasmosis. Specificity is predicted to be high (100% in healthy control dogs and cats, 85-89% in clinical controls). As has been shown in humans,<sup>4</sup> the combined sensitivity of antigen and antibody EIA testing appears to have the highest overall sensitivity for diagnosis of histoplasmosis.
- AGID tests are not reported as a titer and provide only “positive” or “negative” results. The newer antibody EIAs are quantitative and provide results in EIA units (EU) from 10 to >80 EU.
- AGID requires three days for visual assessment of the gel, whereas the newer antibody EIAs are assessed by an instrument in a single testing day (resulting in faster turnaround time).
- The only advantage of AGID is that the assay is not species-specific; therefore, it may be of use for marine mammals, horses, birds or other infrequently tested species. Although Blasto and Histo AGID no longer appear on the vet test menu, they may be done by special request.

### References

1. Spector D, Legendre AM, Wheat J, et al. Antigen and antibody testing for the diagnosis of blastomycosis in dogs. *J Vet Intern Med* 2008; 22:839-843.
2. Mourning A, Patterson E, Kirsch E, et al. 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; 247:1133-1138.
3. Bromel C and Sykes J. Histoplasmosis in dogs and cats. *Clin Tech Small Anim Pract* 2005; 20:227-232.
4. Richer S, Smedema M, Durkin M, et al. Improved diagnosis of acute pulmonary histoplasmosis by combining antigen and antibody detection. *Clin Infect Dis* 2016; 62:896-902.