

## FREQUENTLY ASKED QUESTIONS

### *Coccidioides* Testing

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#### **If I suspect coccidioidomycosis (Valley Fever), should I order the antigen or the antibody test?**

The preferred screening method for *Coccidioides* is antibody detection. We offer two antibody assays, *Coccidioides* antibody by immunodiffusion (Test Code 320; all species) and MVista *Coccidioides* canine IgG antibody EIA (Test Code 329; dogs only). The MVista *Coccidioides* **antigen** quantitative EIA (Test Code 315) has shown lower sensitivity (only ~40% in dogs with proven coccidioidomycosis), and therefore has limited utility as a screening test. Antigen testing may be useful as a follow-up if antibody tests are negative, as some cases with acute disease have detectable antigen but lack an IgG response.

#### **What is the preferred specimen for the antigen test?**

Although the overall sensitivity for antigen detection is low in dogs, serum has shown a higher sensitivity compared to urine. In rare instances, urine antigen may be positive with negative serum antigen. CSF, BAL fluid and other pipettable body fluids may also be tested.

#### **For dogs, which antibody assay is preferred? What is the difference between the antibody methods?**

- The *Coccidioides* agar gel immunodiffusion (AGID) has historically been the most commonly employed antibody detection method for dogs. This method involves visual assessment of the gel for a band of precipitation between the patient serum and F and TP antigens. If the F antigen is positive, follow-up testing is performed to provide the titer. Each test requires 3 days to obtain a result, so at least 6 days will be required to report the titer.
- The newer *Coccidioides* canine IgG EIA (Test Code 329) is an enzyme immunoassay specific for canine IgG. Results are available within a single test day, and results are reported from 10 to >80 EIA units (EU).
- We are currently comparing the sensitivity of the two antibody assays. Preliminary results show that the EIA has similar or improved sensitivity compared to AGID in dogs with pathology proven coccidioidomycosis. Specificity of both antibody assays is similar (90.6% in healthy dogs from the endemic area; 100% in clinical control dogs).
- Occasional dogs will show a positive result by only one of the antibody methods or only by antigen detection. For 21 dogs with pathology proven coccidioidomycosis, the combined sensitivity of antibody EIA, AGID and antigen was 100% (unpublished data). Testing by all 3 methods may not be feasible; therefore, we would suggest initial screening in the antibody EIA with possible sequential testing by other methods.

## Is there cross reactivity between the *Coccidioides* antigen test and other antigen tests?

Yes, there is minor cross reactivity between *Coccidioides* antigen and *Blastomyces*, *Histoplasma* and possibly *Aspergillus* antigen. Typically for a coccidioidomycosis case, the antigen result will be higher in the *Coccidioides* antigen assay compared to the other antigen assays.

## My patient has a low *Coccidioides* AGID titer. How should this be interpreted?

Many animals residing in the endemic area (desert areas of CA, AZ, NM and west TX) will retain a low AGID titer following exposure. A result of > 1:8 is supportive of active infection. Lower titers are more equivocal and require further clinical assessment to rule out other differential diagnoses.