

Vector-borne disease testing

helpful questions to ask yourself

Which organisms should I include?

- What are the clinical signs?
- How long have clinical signs been present?
- Does the organism cause acute disease, chronic disease, or both?
- Which organisms are common in this geographic locale?
- Is there a breed predisposition for the organism in question?
- Should I test using both PCR and serology?
- Are there financial considerations that preclude using both?

Should I test using PCR?

- Does the PCR have a high absolute sensitivity for the organism in question?
- Does the PCR have a clinical sensitivity for this patient?
 - Will organisms be present in peripheral blood at the time of sampling?
 - What cell type does it infect?
 - Is this possibly a chronic infection in which the number of circulating organisms may be low?
 - Does the PCR target the species of interest?
 - Has the animal been receiving a drug that will decrease number of circulating organisms?

Should I test using serology?

- Is antibody likely to have formed at the time of presentation?
 - Could this be a peracute presentation?

- Does the presence of antibody mean active infection is likely/possible?
- Do all animals seroconvert to the organism in question or could the animal be infected and never be seroconverted?
- Does the type of serologic test (ELISA vs. IFA) affect the sensitivity of the assay?
- Am I concerned with a species within a genus that may or may not cross-react with the species used in the test?

Should I perform acute and convalescent serology?

- Is it possible that I will need to demonstrate a fourfold change in titer to demonstrate active infection?
 - Could this be an acute presentation in which antibody might not be formed yet?
 - Is this an endemic area where a low titer may mean previous exposure or exposure to nonpathogenic species within the same genus?
 - Is it possible that PCR results may be negative in the face of active acute infection?

Should I test using PCR on multiple samples taken at the same or different time points?

- Does the organism cause chronic infection?
- Is this a clinical scenario in which the likelihood of infection is high?
- Does the organism circulate intermittently or in low numbers?