| Comparison of Diagnostic Procedures for *B. canis* | | | | |
|---|---|---|---|---|
| **Antibody Detection Methods** | | | | |
| **Test** | **Sample** | **Earliest Detection (weeks PI)** | **Advantages** | **Disadvantages** |
| Rapid Slide Agglutination Test (RSAT) | Serum | 1- 4 weeks*<br>3-4 weeks** | Quick, high sensitivity, few false negatives. Good Screening Test. | False positives possible, must confirm by other tests. |
| Mercaptoethanol (ME) rapid slide agglutination test (ME-RSAT) | Serum | 3 – 4 weeks*** | Quick, high sensitivity, few false negatives. Increased specificity over RSAT. | False positives possible, must confirm by other tests. |
| Tube agglutination test (TAT) | Serum | 2-4 weeks**<br>3-6 weeks*** | Semiquantitative titer. Good Screening Test. | False positives possible, must confirm by other tests. |
| ME-TAT | Serum | 2-4 weeks**<br>5-8 weeks*** | Semiquantitative titer. Increased specificity over TAT | Longer testing time (2 day test). |
| Agar-gel immunodiffusion (AGID) cell wall (somatic) antigen | Serum | 8-12 weeks**<br>5 – 10 weeks*** | Positive earlier than CPAg<br>Very sensitive test. | Procedure and interpretation complex, nonspecific reactions, poor availability. |
| Internal cytoplasmic protein antigen (CPAg)-AGID | Serum | 8 – 12 weeks*** | Highly specific confirmatory test utilizing highly purified cytoplasmic protein devoid of contamination with LPS. | Maternal antibodies prevent seroconversion in puppies; so not useful until 6 months post weaning. Complex procedure. |
| Indirect Fluorescent antibody | Serum | Unknown | Available and convenient for diagnostic labs ***<br>Good Screening Test. | May be less sensitive than ME-TAT as screening test ***<br>False Positives Possible. |
| ELISA | Serum | 30 days*** | Good results with mutant (M-) B canis for cell wall extracts, or B abortus for CPAg *** | Antigen purity and preparation critical*** |

* D-Tec® CB Canine Brucellosis Antibody Test Kit directions insert; Zoetis Animal Health, Florham Park NJ, USA

** Hollett, R.B., 2006; Canine Brucellosis: Outbreaks and Compliance; *Theriogenology* 66: 575-587

*** Greene, Craig E. and Leland E. Carmichael, 2012: Chapter 38: Canine Brucellosis; in *Infectious Diseases of the Dog and Cat*, Fourth Edition, Craig E. Greene (editor).

| Comparison of Diagnostic Procedures for *B. canis* | | | | |
|---|---|---|---|---|
| **Organism/Antigen Detection Methods** | | | | |
| **Test** | **Sample** | **Earliest Detection (weeks PI)** | **Advantages** | **Disadvantages** |
| Blood or tissue culture | Whole Blood/ FULL Blue Top Tube, or vaginal swab | Bacteremia detectable, 2-4 weeks PI.** | Low cost. Can identify actual organism for antimicrobial sensitivity testing and/or DNA profiling | Fastidious organism. False negative results possible. Requires sterile technique of blood collection. Contaminant overgrowth can lead to false negative results. Intermittent bacteremia may require serial blood cultures. POOR SCREENING TEST. |
| PCR | Whole Blood/ FULL Blue Top Tube, or vaginal swab | 1.5 CFU/ml detected.**** | 5x more sensitive than culture | False negative results possible. Requires sterile technique of blood collection. POOR SCREENING TEST. |

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