

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* 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** 3-6 weeks***	Semiquantitative titer. Good Screening Test.	False positives possible, must confirm by other tests.
ME-TAT	Serum	2-4 weeks** 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** 5 – 10 weeks***	Positive earlier than CPAg 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 *** Good Screening Test.	May be less sensitive than ME-TAT as screening test *** False Positives Possible.
ELISA	Serum	30 days***	Good results with mutant (M-) <i>B. canis</i> for cell wall extracts, or <i>B. abortus</i> 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).

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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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