

Ehrlichia canis IFA Kit

(Catalog ECG-120)

Performance Characteristics

SENSITIVITY

The indirect immunofluorescence antibody assay (IFA) for *Ehrlichia canis* was described in the literature in 1972¹ and has served thereafter as a gold standard for serodiagnosis. The Fuller Laboratories test uses the Oklahoma/LSU isolate, grown in the DH82 canine macrophage cell line, as substrate.

Antibody detection becomes detectable at approximately the time most dogs begin showing clinical signs, 21-40 days post infection¹⁻² Due to the wide variety of antigen present on the whole organism by the IFA technique, sensitivity is approximately equal to Western immunoblot assay using whole cell lysates²⁻⁵.

SPECIFICITY

There exists modest to strong crossreactivity with this procedure for the related species *Ehrlichia chaffeensis* and *Ehrlichia ewingii*. These three species cannot be positively differentiated by IFA titer or Western Immunoblot comparisons⁴. Another close relative, *Anaplasma phagocytophila*, is generally 4-16-fold less reactive than against *Ehrlichia canis*. However, tests with high titer sera against other canine bacterial and viral pathogens show no cross reactivity at any level. Rickettsia positive sera show no cross reactivity at any level.

Sera from non-endemic regions were tested in-house, 159 from New York and 120 from Southern California. There were no positives. (100% specific). As the New York sera were from an endemic region for *Anaplasma phagocytophila*, there were found 14 dogs (8.8%) seropositive for this related organism.

References

- Ristic, M., D.L. Huxsoll, Weisiger, R.M., Hildebrandt, P.K., and Nyindo, M.B.A. 1972. Serological Diagnosis of tropical Canine Pancytopenia by Indirect Immunofluorescence. Infect. Immun. 6:226-231.
- McBride, J.W., Corstvet, R.E., Gaunt, S.D., Boudreaux, C, Guedry, T, and Walker, D.H. 2003. Kinetics of Antibody Response to *Ehrlichia canis* Immunoreactive proteins. Infect. Immun. 71:2516-2524.
- Ohashi, N., Unver, A., Zhi, N., and Rikihisa, Y. 1998. Cloning and Characterization of Multigenes Encoding the Immunodominant 30-Kilodalton Major outer membrane Proteins of *Ehrlichia canis* and Application to the Recombinant Protein for Serodiagnosis. J. Clin. Microbiol. 36:2671-2680.
- Unver, A., Rikihisa, Y., Ohashi, N., Cullman, L., Buller, R., and Storch, G.A. Western and Dot Blotting Analyses of *Ehrlichia chaffeensis* Indirect Fluorescent-Antibody Assay-Positive and -Negative Human Sera by Using native and Recombinant *E. chaffeensis* and *E. canis* Antigens. J. Clin. Microbiol. 37:3888-3895.
- 5. Breitschwerdt, E.B., Hegarty, B.C. and 1998. Sequential Hancock. S.I. Evaluation of Dogs Naturally Infected with Ehrlichia canis. Ehrlichia chaffeensis. Ehrlichia ewinaii. or Bartonella vinsonii. J. Clin. Microbiol. 36:2645-2651.