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Title: Serologic responses to peptides of *Anaplasma phagocytophilum* and *Borrelia burgdorferi* in dogs infested with wild-caught *Ixodes scapularis*

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Original Article

Serologic responses to peptides of *Anaplasma phagocytophilum* and *Borrelia burgdorferi* in dogs infested with wild-caught *Ixodes scapularis*

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Highlights:

- Evaluated antibody levels to VlsE of *B. burgdorferi* and p44 of *A. phagocytophilum*
- Antibiotic treatment reduced C6 antibody levels within 12 weeks
- Antibodies to the APH-4 peptide of p44 could be detected earlier post-infection
- *phagocytophilum* DNA was detected in peripheral blood 77 days post-infection
- Decreasing C6 antibody levels may help indicate control of *B. burgdorferi* infection

Abstract

Anaplasma phagocytophilum and *Borrelia burgdorferi* are both transmitted by *Ixodes* spp. and are associated with clinical illness in some infected dogs. This study evaluated canine antibody responses to the *A. phagocytophilum* p44 peptides APH-1 and APH-4 as well as the *B. burgdorferi* C6 peptide before and after doxycycline treatment. A total of eight dogs were infested with wild-caught *I. scapularis* for 1 week. Blood was collected prior to tick attachment and from Days 3-77 and 218-302 with doxycycline treatment beginning on Day 218. Blood was assayed for *A. phagocytophilum* DNA by PCR assay. Sera was assessed for antibodies by IFA and ELISA.

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