Canine vector-borne diseases (CVBDs) have increasingly become a focus of interest in recent years. Ticks are epidemiologically important vectors of numerous bacterial and intracellular protozoan parasites.

The aim of this study was to evaluate the frequency of co-infections of *Babesia* spp. and Anaplasmataceae (*Anaplasma phagocytophilum* and *Candidatus Neoehrlichia mikurensis*) hemopathogens in dogs using molecular techniques.

*Babesia*-positive blood samples, identified by microscopy, were obtained from a veterinary diagnostic laboratory. Molecular confirmation of *Babesia* and the identification of co-infections in these blood samples were performed by screening all DNA samples using PCR assay. The choice of genetic markers (18S rRNA, 16S rRNA, groEL) and primers was based on literature data and our own preliminary investigations.

The presence of *Babesia canis* DNA was confirmed in all 107 blood samples. As DNA of *A. phagocytophilum* and *Candidatus Neoehrlichia mikurensis* (CNM) was also detected, co-infections of *B. canis* with representatives of the Anaplasmataceae were also recorded.