

Molecular Survey of *Babesia gibsoni* and *Hepatozoon canis* Infection in Dogs from Jeju Island

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Purpose: *Babesia gibsoni* and *Hepatozoon canis* are a tick-borne protozoan that infected dogs and have been reported throughout the world. Manifestation of their infection varies from being sub-clinical in apparently healthy dogs to severe illness (body weight loss, anemia, lethargy and death). In order to survey the infection of *Babesia* and *Hepatozoon* spp., we have screened 184 dogs in Jeju island.

Materials and Method: Blood samples were collected from 184 dogs in Jeju island. We have examined the CBC, Giemsa staining and DNA analysis. We extracted the genomic DNA from blood using the genomic DNA extraction kit (G-DEX II b, iNtRON Bio, Korea). Five pairs of primer sets were designed to amplify 18S rRNA DNA fragments of *Babesia* and *Hepatozoon* spp.. And nested PCR, PCR-RFLP and PCR product sequencing analysis were performed for the detection and differentiation of the them.

Results: Of the 184 dogs, 14(7.6%) were *B. gibsoni*, 16(8.7%) were *H. canis*, and 6 dogs(3.3%) were co-infection.

Conclusion: There have been few clinical case reports for the *Hepatozoon canis* in Korea. More epidemiological data obtained using molecular methods is needed to understand canine *Hepatozoon* spp..

Key words: *Babesia gibsoni*, *Hepatozoon canis*, Dog, Jeju

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