

Detection for the Agents of Tick-borne Disease from Farmed Deer in Jeonbuk

Ying-Hua Li, Mi-Jin Lee, Do-Hyeon Yu, Atul R. Desai, In-Ae Han, Kang-Kook Kim,
Joon-Seok Chae, and Jinho Park*

*Department of Veterinary Internal Medicine, College of Veterinary Medicine,
Chonbuk National University*

Introduction: Ticks cause economic losses to the deer industry by decreasing the growth and production of the farmed animals. The mediation of ticks affects humans and animals by causing contagious disease both directly and indirectly. Blood from farmed deer in Jeonbuk was collected for screening of infectious protozoal and rickettsial diseases.

Materials and methods: A total of 40 deer blood samples were collected from the east area of Jeonbuk. Genomic DNA from these samples was extracted and then used for PCR analysis. Target genes for the PCR detection were 16S rRNA gene of *Anaplasma phagocytophilum* and *Ehrlichia chaffeensis*, *mspβ1* gene of *Anaplasma marginale*, and 18S rRNA gene of *Theileria orientalis*.

Results: Results showed all blood sample negative for *A. phagocytophilum* and *A. marginale*, whereas some samples were positive for *E. chaffeensis* and *T. orientalis*. Sequencing results correlated with the PCR results.

Clinical relevance: In this study, we confirmed the presence of tick-borne disease (*A. phagocytophilum*, *A. marginale*, *E. chaffeensis* and *T. orientalis*) and the management of the deer on the breeding farm. From the study, it can be suggested that consumption of raw deer blood can cause transmission of the tick-borne and rickettsial disease. We must be cautious in intake of untreated blood of deer.

*Corresponding author: jpark@chonbuk.ac.kr