

## Investigation of the Infection Rate of Equine Piroplasmosis of the Thoroughbred Racehorses Raised in Jeju Island using cELISA and PCR

Hyohoon Jeong<sup>1</sup>, Youngmin Yun<sup>2</sup>, Kyoungkap Lee and Taeho Oh\*

<sup>1</sup>Department of Veterinary Internal Medicine, College of Veterinary Medicine, Kyungpook National University, Daegu, Korea, <sup>2</sup>Department of Veterinary Internal Medicine, College of Veterinary Medicine, Jeju National University, Jeju, Korea

**Purpose:** Equine piroplasmosis is an acute, subacute or chronic tick-borne disease of horses characterized by fever, anemia, icterus, hepatomegaly and splenomegaly caused by *Babesia equi* and *Babesia caballi*. This study was performed to investigate the serologic prevalence of equine piroplasmosis and to determine the carrier status of *Babesia* spp. of the Thoroughbred racehorses raised in Jeju Island using cELISA and PCR.

**Materials and Methods:** The 169 clinically healthy Thoroughbred racehorses raised in Jeju Island were subjected to this study. The whole blood was taken by jugular venipuncture. The CBC (HemaVet 950<sup>®</sup>, Drew Science, USA) and microscopic examination of the blood smear by Giemsa staining were performed to detect any sign of the babesia infection. The presence of antibodies against *B. equi* and *B. caballi* was determined in serum samples from 169 horses by cELISA (cELISA<sup>®</sup>, VMRD, USA) using the commercially available test kit. Then PCR assays were performed to detect the presence of the parasites in blood by *Babesia* specific primer sets.

**Results:** The morphological observation of piroplasm on the Giemsa stained blood smear preparations was very difficult. The CBC results were in normal range in both *B. caballi* positive and negative groups. None of the subjected sera tested positive against *B. equi* (0%) whereas 42 of 169 tested positive against *B. caballi* (25%).

**Conclusion:** Even though there has been no clinical equine piroplasmosis in Korea up to the present, the presence of antibodies against *Babesia caballi* of the Thoroughbred racehorses suggests us the possibility of *Babesia* spp. infections in horses including the carriers.

**Key words :** *Babesia* spp., cELISA, PCR, Jeju, Thoroughbred racehorse

\*Corresponding author : thoh@knu.ac.kr