

Molecular survey and sequence analysis of Anaplasma spp. in cattle and ticks in a Malaysian farm

ABSTRACT

This study was conducted to determine the occurrence of *Anaplasma* spp. in the blood samples of cattle, goats, deer and ticks in a Malaysian farm. Using polymerase chain reaction (PCR) and sequencing approach, *Anaplasma* spp. was detected from 81(84.4%) of 96 cattle blood samples. All blood samples from 23 goats and 22 deer tested were negative. Based on the analysis of the *Anaplasma* partial 16S ribosomal RNA gene, four sequence types (genotypes 1 to 4) were identified in this study. Genotypes 1-3 showed high sequence similarity to those of *Anaplasma platys*/ *Anaplasma phagocytophilum*, whilst genotype 4 was identical to those of *Anaplasma marginale*/ *Anaplasma centrale*/ *Anaplasma ovis*. *Anaplasma* DNA was detected from six (5.5%) of 109 ticks which were identified as *Rhipicephalus* (formerly known as *Boophilus*) *microplus* ticks collected from the cattle. This study reported for the first time the detection of four *Anaplasma* sequence types circulating in the cattle population in a farm in Malaysia. The detection of *Anaplasma* DNA in *R. microplus* ticks in this study provides evidence that the ticks are one of the potential vectors for transmission of anaplasmosis in the cattle.