

Identification of Anaplasma Species in Cattle of Khuzestan Province from Iran by PCR

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Abstract : The aim of this study was to determinate the variety of Anaplasma species among cattle of Khuzestan province, Iran. From April 2013 to June 2013, a total of 200 blood samples were collected via the jugular vein from healthy cattle (100), randomly. The extracted DNA from blood cells were amplified by Anaplasma-all primers, which amplify an approximately 1468bp DNA fragment from region of 16S rRNA gene from various members of the genus Anaplasma. For raising the test sensitivity, the PCR products were amplified with the primers, which were designed from the region flanked by the first primers. The amplified nested PCR product had an expected PCR product with 345 nucleotides in length. 44 out of 100 cattle blood samples were Anaplasma spp. positive by first PCR and nested PCR. All cattle positive samples were further analyzed for the presence of A. centrale, A. bovis and A. phagocytophilum by specific nested PCR. A.phagocytophilum was identified by specific nested PCR in 3% of cattle blood samples. The extracted DNA from positive Anaplasma spp. samples were amplified by Anaplasma marginale/ovis specific primers, which amplify an approximately 866bp DNA fragment from region of msp4 gene. 41 out of 100 cattle blood samples (41%) were positive for Anaplasma marginale and Anaplasma ovis, respectively.

Keywords : Iran, Khuzestan, Anaplasma species, Cattle, A. marginale, A. ovis, A. phagocytophilum, PCR

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