

Summary:

Brucellosis is a zoonotic disease caused by a gram-negative and facultative intracellular pathogen called *B. canis*. *Brucella canis* is mainly responsible for causing brucellosis in dogs. *B. canis* infection can lead to abortion in female dogs and epididymitis and prostatitis in males. *B. canis* can be distinguished from other *Brucella* species mainly through PCR-based methods and tandem repeat analysis methods. It is done with variable number (MLVA). This study was conducted in order to determine the genetic pattern of *B. canis* isolates from the blood samples of dogs infected with *B. canis* in Iran by the (MLVA) method. In this study, 400 blood samples were randomly collected from dogs, and the study areas include (Urmia and Tabriz cities as representative of western Iran), Mazandaran province and Sari city in the north of the country, Tehran (representative) Central part), Ahvaz and Mashhad were the representatives of Khuzestan and Khorasan provinces respectively. First, blood samples were used for DNA extraction using the company's kit (Gene All cell SV mini 250p, South Korea) and according to the existing protocol. Then, in the next step, specific primers for 16SrRNA of *B. canis* were used for genomic detection. In the next step, two cultivation methods were used, including 1-cultivation in BHI broth medium and then transfer to blood agar medium, 2-cultivation in BHI broth medium and transfer to *Brucella* agar medium. The results of this study based on PCR and culture showed that none of the collected samples were infected with *B. canis*. It was concluded that one of the reasons for the negative of the samples could be the low amount of bacteria in the samples taken, because in order to detect with the PCR method, approximately 600 bacteria should be present in the sample to extract DNA. Also, the results showed that another reason for the negative of the examined samples based on two molecular and culture methods could be the absence of bacteremia in the studied domestic dogs. Finally, the reason for the negative results of culture and PCR in this study can be attributed to the errors that occurred in the culture of bacteria and the media used. Because in new studies, it has been proven that the best method for isolating and cultivating this bacterium is the BACTEC method.

Key words: *Brucella canis*, dog, Blood sample, Genotyping, multilocus variable-number tandem-repeat analysis (MLVA) assay