University of Zabol
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Faculty of Sciences
Department of Biology
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(in the field of Genetics)

Title

Molecular identification of Brucella bacteria in clinical samples of Sistan region by multiplex PCR

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Abstract

Brucellosis or malt fever (Mediterranean fever) occurs due to the growth and multiplication of the gram-negative coccobacillus brucella in mammalian cells, this disease is known as a common disease between humans and animals, so the purpose of this research is to detect and identify the bacteria molecularly. Brucella using multiple PCR technique. To do this, first raw milk samples were collected from infected animals in Sistan region, then Brucella DNA was extracted. Also, genetic investigation was done by amplifying two genes, *Omp31* and *BLS*, using multiplex PCR. The results of the molecular investigation of two genes, *Omp31* and *BLS*, showed the amplification of two bands, 347 bp and 256 bp. Examining the specificity and sensitivity of Brucella bacteria with the Multiplex PCR method revealed 100% specificity and 0.39 ng/µL sensitivity of genomic DNA. In this research, it was shown that the multiplex PCR molecular method has sufficient specificity and sensitivity to identify Brucella bacteria.

Keywords: *Brucella* bacteria, Brucellosis, Malta fever, *BLS* and *Omp31* genes, molecular identification, multiplex PCR