عنوان مقاله:

Genetic Diversity and Phylogenetic Relationship of Clinical Isolates of Brucella melitensis Based on Gene Polymorphism of β Subunit of RNA Polymerase (rpoB) Gene in Iran

محل انتشار:

فصلنامه میکروب شناسی پزشکی ایران, دوره 14, شماره 5 (سال: 1399)

تعداد صفحات اصل مقاله: 16

نویسندگان:

Nasim Bazrgari - *Agricultural Biotechnology Department, Faculty of Engineering & Technology, Imam Khomeini International University, Qazvin, Iran*

Ghasem Ali Garoosi - *Agricultural Biotechnology Department, Faculty of Engineering & Technology, Imam Khomeini International University, Qazvin, Iran*

Maryam Dadar - *Brucellosis Department, Razi vaccine and serum Research Institute (RVSRI), Agricultural Research, .Education and Extension Organization (AREEO), Karaj, Iran*

خلاصه مقاله:

Background: The prevalence of Brucella infections in animals and humans has indicated the important need for different regional/local reference laboratories to use valid species-determining approaches to facilitate and compare data exchange. The purpose of current study was to evaluate the RNA Polymerase Beta Subunit (rpoB) as a molecular marker in Brucella species differentiation and to determine the genotype of Brucella melitensis species using single-nucleotide polymorphism (SNP) analysis. Materials & Methods: In this study, blood and cerebrospinal fluid (CSF) samples were taken from 108 patients with brucellosis. After culturing the samples insupplemented Brucella agar, eleven isolates of Brucella bacteria were isolated and identified by classical and molecular biotyping methods. Then the complete sequence of their rpoB gene was multiplied and sequenced. Sequencing results were analyzed by Mega6 program. Results: According to the results, the rpoB gene was able to differentiate between Brucella species and other bacteria.Moreover, the rpoB typing grouped the majority of Iranian isolates in the rpoB type 2, while only one strain belonged to the rpoB type 1. Among the 10 isolates of rpoB type 2, there are six different isolates with only one unique type-2 SNPs in codon 985, which gives rise to new genotype 2 variants. Conclusion: Our results shown a high discriminative power of rpoB gene among B. melitensis strains from some regions of Iran, .which leads to accurate genotype and identification of these bacteria

کلمات کلیدی:

RpoB, Brucella melitensis, SNP analysis, Phylogenetic, تب مالت, بروسلا
ملی تنسیس, چندشکلی تک نوکلئوتیدی, rpoB