عنوان مقاله:

Enterobacterial Repetitive Intergenic Consensus Polymerase Chain Reaction (ERIC-PCR) Genotyping of Escherichia coli Strains Isolated from Different Animal Stool Specimens

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خلاصه مقاله:

Background: Escherichia coli is a commensal-pathogenic organism, which includes a wide range of strains. Despite several advanced molecular-genomic technologies for detecting and identifying different strains of E. coli, Enterobacterial Repetitive Intergenic Consensus Polymerase Chain Reaction (ERIC-PCR) technique is a quick, sharp and cost effective fingerprint method. The major purpose of the present study was to determine the distribution of ERICs within E. coli strains isolated from different healthy animal stool specimens including hens, sheep, and cows, as an appropriate and quick molecular-genomic tool. Methods: The animal stool samples were obtained during 1 year (October 2012 to October 2013), from animal husbandries around Tehran and Alborz provinces, Iran. After screening processes, the E. coli bacteria were isolated and cultured via standard microbiological methods. The DNA molecules of E. coli bacteria were harvested and Enterobacterial Repetitive Intergenic Consensus Polymerase Chain Reaction (ERIC-PCR) was applied for bacterial molecular genotyping. The ERIC-PCR products were run on 1% gel electrophoresis. The final images regarding gel electrophoresis banding patterns were used for dendrogram generation via the GelClust software. Results: Of 120 isolated samples, 115 different strains were recognized as E. coli. The fingerprint patterns involved 380 to 3280 bp bands. The predominant bands included 2900 bp, 1200 bp, and 1200 bp in stool samples of hens, sheep, and cows, respectively. The highest frequencies and diversities were seen among E. coli strains isolated from hens and sheep stool samples. Conclusion: The DNA profiles were clearly detectable via specific fingerprint patterns. The ERIC-PCR seemed to be a good approach for molecular typing of E. coli strains isolated from different animal sources.

کلمات کلیدی:

Escherichia coli, Consensus Sequence, Polymerase chain reaction, DNA Fingerprinting