

**Abstract**

One of main roadblocks in today's medical measurements is increased antibiotic resistance among different human populations mediated by bacteria. This has led to the emergence and dissemination of resistant pathogens and resistance genes in them. Plasmids play a vital role in horizontal gene transfer and are carriers of the resistance genes in the *Enterobacteriaceae* family. Due to the epidemiological importance of pathogenic bacteria, identification and classification them based on plasmid replicon is very important in order to analyze their distribution. The most commonly used for this kind of studies is categorizing Replicon based on PCR (PBRT). PBRT is a plasmid Categorizing method Based on the incompatible groups. With this method, the most common incompatible plasmid groups Among the Enterobacteriaceae family can be identified and categorized. The main objective of this research is to classify the serotypes of O2, O6 and O157 of the *E. coli* bacteria based on plasmid Replicon by Multiplex-PCR method. Overall, among 40 studied *E. coli* isolates, Frep Replicon by 88% had the greatest diversity of plasmid Replicon. the FIC and FIIA Replicons were not observed in any of the samples. Diversity of Replicon plasmids of N, I1, B/O, FIA, FIB, was respectively 25%, 50%, 53%, 60% and 78%. It was noted that 95% of investigated isolates contain at least one type of plasmid Replicon.

**Keywords:** *Escherichia coli*, Serotypes, plasmid, Replicon



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**Classification of O2 , O6 , and O157  
serotypes of *Escherichia coli* based on  
plasmid replicon**

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