

عنوان مقاله:

Distribution of Genes Encoding Iron Uptake Systems among the Escherichia coli Isolates from Diarrheal Patients of Iran

محل انتشار:

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خلاصه مقاله:

Introduction: Diarrheagenic Escherichia coli (DEC) including enteropathogenic (EPEC), enteroaggregative (EAEC), enterotoxigenic (ETEC), and shiga toxin producing E. coli are among the most common agents of diarrhea. There are various classes of iron uptake receptors, but there is not much data on the presence of these iron receptors in DEC isolates. The present study aimed to evaluate the presence of iron receptor genes and also hemolysis activity in these isolates. **Methods:** Totally, 11 DEC isolates (EAEC, ETEC, STEC, and EPEC) from a previous microbial collection were included in this study. The isolates were tested for the production of hemolysin on blood agar plates. Then, Polymerase Chain Reaction (PCR) was used for detection of iron acquisition genes, including chuA, hma, iroN, fyuA, iutA and ireA. **Results:** Our results showed that 8 (۶۶.۷%), ۲۵ (۸۹.۳%), ۱۷ (۴۴.۴%) and ۱۰ (۸۳.۴%) of EPEC, STEC, ETEC and EAEC isolates, respectively had hemolytic activity. All the EPEC isolates were negative for hma gene, and iroN and ireA genes were absent in the EAEC isolates. The frequency of chuA, hma and fyuA genes in the STEC and EAEC isolates was higher, whereas EPEC and ETEC isolates revealed a higher frequency of iroN gene than the STEC and EAEC isolates. **Conclusion:** This study reports the presence of various iron receptor genes with a significant hemolysin activity in DEC isolates from Iran. The presence of these genes may contribute to the increased pathogenesis of these isolates in the intestinal tract.

کلمات کلیدی:

Diarrheagenic, Escherichia coli, Iron receptors, Hemolysin, PCR

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