Detection of diarrheagenic Escherichia coli isolated using molecular approaches.

ABSTRACT

Escherichia coli strains are among the major bacterial causes of diarrheal illness. There are now seven classes of diarrheagenic E. coli (DEC), namely enteropathogenic E. coli (EPEC), enterohaemorrhagic E. coli (EHEC), enteroinvasive E. coli (EIEC), enterotoxigenic E. coli (ETEC), enteroaggregative E. coli (EAEC), diarrhea-associated hemolytic E. coli (DHEC) and Cytolethal Distending Toxin (CDT)-producing E. coli. Due to the need for costly and labor-intensive diagnostic procedures, identification of DEC is difficult at standard laboratories. Therefore, Polymerase Chain Reaction (PCR) or dot blot has been used for genetic detection of DEC of 25 E. coli isolates from different sources. Amplification of eae (277 bp), bfp (266 bp), stx1 (154 bp), EAST (94 bp), stx2 (698 bp) and elt (450 bp) genes of a single product in separate reactions was produced. PCR showed ability to amplify and detected genes of the most common important categories of diarrheagenic E. coli isolates of different sources, it is possible implementation of this technique to diagnosis water, foodborne outbreaks related to E. coli. Dots blot and sequence analysis used to confirm the results of PCR.