

Original Paper

Detection of heat-labile toxin in enterotoxigenic *Escherichia coli* using PCR-ELISA technique

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Abstract

Background and Objective: Enterotoxigenic *Escherichia coli* (ETEC) are the most common agent which causes diarrhea, worldwide. ETEC is colonized along the cells and then producing heat-labile (LT) and heat-stable enterotoxigenic which enter into intestinal epithelial cells and causes water and electrolyte loss from intestinal epithelial cells and eventually cause diarrhea. This study was done to detect the heat-labile toxin in Enterotoxigenic *Escherichia coli* using PCR-ELISA technique.

Methods: In this descriptive study, DIG-labeled PCR products were bounded to streptoavidin-coated wells of a microtiter plate and detected by anti-DIG–peroxidase conjugate. The biotin-labeled internal probe was used for verification of PCR products.

Results: Heat-labile toxin was detected by PCR-ELISA method. The sensitivity of heat-labile toxin was 1.9 ng. This method did not cross-react with bacteria from this variety.

Conclusion: PCR-ELISA method is 100 times more sensitive than conventional PCR method and due to lack of agarose gel and electrophoresis device it can be a good alternative to traditional method.

Keywords: Enterotoxigenic *Escherichia coli*, PCR-ELISA, Heat-labile enterotoxin

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