EARLY DETECTION OF SALMONELLA ENTERICA SEROTYPE INFANTIS

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Background: Salmonellosis is one of the most common food-induced diseases which is widely distributed all over the world and is known as one of the most serious public health concerns. Therefore, it is necessary to obtain developed methods in order to achieve a quick response in identifying *Salmonella* bacterium. This study aimed to evaluate hisD genes as a potential tool for early recognition of *Salmonella enterica* serotype Infantis.
Methods: Examined isolates in this study were separated from patients with *Salmonella enterica* serotype Infantis infection in several hospitals of Tehran and were prepared for polymerase chain reaction following bacteriological and biological tests. Afterward, a specific pair of primer was designed for hisD gene amplification by means of related software. Following isolates` genome extraction, PCR was done in order to identify *Salmonella enterica* serotype Infantis.
Results: Following the experiments above, the results of PCR product electrophoresis revealed a 651bp bond for hisD gene and primers didn't make a bond with enterobacteriacea strains such as *Shigella* and E.coli.
Conclusion: According to the results, hisD gene has the ability to recognize and identify *Salmonella enterica* serotype Infantis strains and it is also able to differentiate it from the rest of enterobacteriacea strains.

Keywords: *Salmonella infantis*, Hisd Gene, PCR

COMPARISON OF FOUR DIAGNOSTIC METHODS FOR DETECTION OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS

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Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) is a well-known pathogen with a worldwide distribution. Due to the increasing rate of MRSA infections, implementing of reliable, accurate and rapid testing for diagnosis of MRSA is necessary. The aim of this study was to compare four diagnostic methods for detection of MRSA isolates.
Methods: From December 2012 to April 2014, we collected 120 *S. aureus* isolates from three hospitals affiliated with Tehran University of Medical Sciences. MRSA isolates were detected by four different methods including cefoxitin disc diffusion test, oxacillin disc diffusion test, minimum inhibitory concentration (MIC) of oxacillin as determined by MIC test strip, and mecA detection by PCR.
Results: Out of 120 *S. aureus* isolates, cefoxitin disc diffusion test, oxacillin disc diffusion test and MIC test strip identified 60 (50%), 48 (40%), 55 (45.83%) isolates as MRSA, respectively. The sensitivity and specificity for oxacillin disc diffusion, cefoxitin disc diffusion and MIC of oxacillin were 80% and 100%, 100% and 100%, and 91.6% and 100%, respectively.
Conclusion: Cefoxitin disc diffusion test is a reliable substitute for detection of MRSA in clinical laboratory where MIC detection and molecular methods are not accessible.

Keywords: *Staphylococcus aureus*, Methicillin Resistance, Microbial Sensitivity Tests