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Rapid Detection of Different Serovares of Salmonella entrica by Multiplex PCR

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Abstract:

Background: Typhoid fever is still one of the serious public health problems in many geographic areas and is endemic in most countries. Aim of current study was to evaluate a shortened time –Multiplex PCR for rapid detection of different Sal¬monella enterica serovars. Methods: The PCR primers for three target genes tyv, prt and invA were subjected for amplification by PCR. By using sim¬ple DNA extraction method, rapid PCR cycles and rapid electrophoresis procedure with simple and very cheap buffer were utilized in 200 to 300 volts for 15 minutes to separate the PCR products. Results: The results showed that all reference and clinical isolates of S. enterica were accurately identified by this as¬say with no cross reaction with other enterobacterial strains tested. Detection limit of the reaction was to be fewer than 10-1 colony forming unit. Conclusion: These data indicate that the optimized rapid cycle multiplex PCR is a potentially valuable tool for rapid diagno¬sis of S. enterica using a conventional thermal cycler. This method reduced the reaction time of PCR from 3.5 h to less than 1 h.

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