

The comparison of PCR technique and API-20E kit with the conventional biomedical methods for the identification of Salmonella species in laboratory

Soltan Dallal MM (PhD)

Professor in Microbiology, Department of Pathobiology, School of Public Health, Tehran University of Medical Sciences. Tehran, Iran

Rahimi Forushani A (PhD)

Associate professor, Department of Epidemiology and Biostatistics, School of Public Health, Tehran University of Medical Sciences. Tehran, Iran

Sadigh Maroufi S (MSc)

Instructor of Anesthesia, Department of Anesthesia, School of Paramedic, Tehran University of Medical Sciences, Tehran, Iran.

Sharifi Yazdi K (PhD)

Professor in Microbiology, Department of Medical Laboratory Sciences, School of Paramedic, Tehran University

Corresponding Author:

Sharifi Yazdi MK

E-mail: mksharifi@tums.ac.ir

Abstract

Background and objectives: Salmonella is one of the most important agents of gastrointestinal infection and diarrhea in our country. Misdiagnosis of these bacteria leads to treatment failure. The aim of this study was to make a comparison between PCR and the API-20E and conventional biochemical tests carried out for the identification of Salmonella.

Material and Methods: In this study, 470 specimens were taken from children, with acute gastroenteritis, referred to teaching hospitals called Imam, Shariati and children medical centre. The specimens were transferred to microbiology laboratory in public health school for identification of Salmonella with PCR and API-20E methods.

Results: Of 470 specimens, 65(13.8%) are positive for salmonella in hospital laboratory, while 37 (7.9%) for API-20E and 39 (8.3%) for PCR are positive. The results of antibiotic sensitivity tests on 39 salmonella isolated from diarrhea specimens show that 73.3% of them are resistance to at least one of the sixteen antibiotics tested.

Conclusion: Based on the the results, there is significant difference ($P<0.05$) between conventional method, API-20E and PCR

Key words: Salmonella, conventional identification, molecular identification