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## Detection and assessment of *Salmonella typhimurium* in food samples by conventional culture method, chromogenic, VIDAS and PCR technique

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*Salmonella* is one of the most important causes of foodborne illness associated with food and beverage. Conventional microbiological methods currently applied for detection and enumeration of *Salmonella* are time-consuming, laborious, lack specificity and sensitivity and are unable to meet the demands for rapid food testing. Therefore a rapid system for detection and isolation are essential. Molecular methods, such as PCR offer a rapid, sensitive and specific means of detecting pathogens. In this study, a comparison of conventional PCR, mPCR technique, chromogenic, VIDAS and the conventional isolation method based on biochemical tests has been conducted. DNAs were extracted and conventional PCR and multiplex polymerase chain reactions (mPCR) technique were performed using primers for *invA*, *fliC* and *Mdh* genes to detect the genus *Salmonella* and to differentiate the serovar typhimurium. Through the period extending from December 2013 till June 2014, 400 different food samples were collected; 25 samples of each street vendors, exposed foods that are sold on the sidewalks, and popular restaurants in Baghdad city. The results of this study can be summarized the results of this study revealed that the traditional method is less accurate because it detects *Salmonella* and bacteria-like *Salmonella*. VIDAS and chromogenic methods detect *Salmonella* spp. but they do not discriminate *Salmonella typhimurium*. Whilst PCR technique was a rapid and useful tool for the detection of *Salmonella typhimurium* in food and beverage samples.

### Biography

Mustafa Yasser Dawod has completed his MSc in Biotechnology from Adelaide University and also has BSc in Food Science. He has been working as Research Assistant for more than 3 years in Ministry of Agriculture with other team members leading the DNA analysis laboratory with association of Food Science Department and Biotechnology and Genetic Engineering Institute at Baghdad University. He works also as Manager of Food Safety and Quality Control Program with Ministry of Health in Iraq (2013-present) for food illness crisis.

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