DETECTION METHODS OF FOODBORNE PATHOGENS

Omolara Adenaike[1]✉, Evelyn N. Fatokun[2], Grace O. Abapka[3] and Oluseye A. Ogunbayo[4]

[1]Dept. of Biological Sciences, Oduduwa University, Ipetumodu, Nigeria.
[2] Dept. of Biological Science and Biotechnology, Caleb University, Imota. Nigeria.
[3]Dept. of Microbiology, Federal University of Health Sciences, Otukpo, Nigeria.
[4]Edinburgh Surgery Online, University of Edinburgh, UK.
✉*adeoyelara2003@gmail.com*

ABSTRACT

Food borne pathogens are present in a variety of foods giving rise to foodborne illnesses that have become a major threat to human health globally. Detection of these pathogens is critical to ensure safe food supply and prevention of foodborne illnesses. There are varied ways of detection and the methods are categorized under two broad techniques which are culture dependent and culture independent. This review highlights different types of detection methods classified under culture-based and culture-independent methods namely, immunological assays, nucleic acid-based methods, biosensor-based, microarray based as well as the next generation sequencing; their strengths, limitations and challenges. Next-generation sequencing (NGS) technology has advanced our understanding of food microbiome by allowing the discovery and characterization of unculturable microbes with prediction of their function over other diagnostic assays. The need for improved, low cost, rapid and reliable detection techniques cannot be overemphasized and are highly recommended.