Nanosensors based detection of foodborne pathogens

ABSTRACT

Contaminated food cause by pathogens is one of the main reasons incidences of human diseases cases all around the world. Typically, most foodborne contaminants caused by bacteria, parasites and virus that have a major economic impact. It is important to restrain them, thus early detection system is very crucial. Several methods have been explored for the detection and identification of these microorganisms in food samples. However, some of these methods are involves complicated sample pre-treatment, laborious, time-consuming and are not suitable for on-site applications. Therefore, it is very important to develop rapid, sensitive, selective and more approachable detection methods. Recently, biosensors have been explored as alternative approach method and considered as one of most rapid and on-site applicable methods. Advancements in nanotechnology have provided biosensor with novel architecture by using nanoscaled materials and structures for enhance the biosensing performance. This article highlights the significant progress of nanosensor based on electrochemical and optical, and other types of nanosensors with the focus on the foodborne pathogen detection.

Keywords ; Nanobiosensor; Nanomaterial; Electrochemical; Optical; Food pathogen