

Biosensor for foodborne pathogen detection

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Abstract

Outbreaks of foodborne disease remain a major public health and food safety concern. By assuring the safety of food before it is distributed to the public, customers can be protected from foodborne infections. The development of quick, competent, and reliable technologies for direct detection and identification of foodborne pathogens is urgently needed. Traditional methods for detecting bacterial infections and toxins are time-consuming and labor-intensive, necessitating the use of specialized apparatus and skilled workers. To overcome these limitations, an immediate need for the development of some edge alternative succeeded with an analytical approach. A biosensor-based process is robust state-of-art for broad practical applications in diverse pathogenic bacteria detection. For the quick detection of food-borne diseases, microbe-based biosensing technologies such as optical, surface plasmon resonance (SPR), amperometric, potentiometric, whole-cell, electrochemical, impedimetric, and piezoelectric have been used.

These methodologies will be discussed, as well as future developments in biosensor research activities, in order to pave the road for fresh and nutritious food proposals.

Biography

Nasim Cheraghi received her B.Sc. (in General Biology) from Razi university, Iran, in 2012. She then completed her M.Sc. work (in Biophysics) at the Institute for Advanced Studies in Basic Sciences in 2017 as a top student. During her M.Sc. work she studied the interaction between antimicrobial peptides with lipid membrane by molecular modeling. She is currently pursuing a PhD. in Dr. Hedayatollah Ghourchian lab at university of Tehran with a research focus on multiplex biosensors for foodborne pathogen detection. Ms Cheraghi's research interests cover molecular biotechnology and electrochemical biosensors for pathogen detection.