

World Congress On

BIOSENSORS AND BIOELECTRONICS

August 20-21, 2018 | Chicago, USA

Biosensors for *Salmonella* detection in food

Melo AM¹, Alexandre DL², Furtado RF³, Borges MF³, Figueiredo EA⁴, Biswas A⁵, Cheng HN⁶ and Alves CR²¹State University of Ceara, Brazil³Embrapa Tropical Agroindustry, Brazil⁴Federal University of Ceara, Brazil⁵National Center for Agricultural Utilization Research, USA⁶USDA Agricultural Research Service, USA

Pathogen detection is a critical point for the identification and the prevention of problems related to food safety. Failures at detecting contaminations in food may cause outbreaks with drastic consequences to public health. In spite of the real need for obtaining analytical results in the shortest time possible, conventional methods may take several days to produce a diagnosis. *Salmonella* spp. is the major cause of foodborne diseases worldwide and its absence is a requirement of the health authorities. Biosensors are bioelectronic devices, comprising bioreceptor molecules and transducer elements, able to detect analytes (chemical and/or biological species) rapidly and quantitatively. Electrochemical immunosensors use antibody molecules as bioreceptors and an electrochemical

transducer. These devices have been widely used for pathogen detection at low cost. There are four main techniques for electrochemical immunosensors: amperometric, impedimetric, conductometric, and potentiometric. Almost all types of immunosensors are applicable to *Salmonella* detection. This issue sum up the developments and the applications of electrochemical immunosensors for *Salmonella* detection, particularly the advantages of each specific technique. Immunosenors serve as exciting alternatives to conventional methods, allowing "real-time" and multiple analyses that are essential characteristics for pathogen detection and much desired in health and safety control in the food industry.

airismelo@oi.com.br