

Development of multiple biomedical nanodevices by using antimicrobial peptides

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Hospital infections associated with surgical procedures and implants still present a severe problem in modern societies. As expected, new strategies to combat bacterial infections mainly caused by microorganisms resistant to conventional antibiotics are necessary. Of note, the immobilization of antimicrobial peptides onto solid surfaces is an excellent alternative for the development of new biodevices. In addition, the action mechanism is a key-point to obtain success in the development of new devices. In this talk, we will discuss the use of electrical impedance spectroscopy as an effective technique to investigate the possible mechanism of action of peptides by using models of bilayer lipid membranes supported on solid substrates. On the other hand, unusual methods for specific detection of pathogenic bacteria are becoming key points for control and identification of problems related to health and (bio)safety. Thus, new approaches for the development of nanostructured biosensors based on nanosystems and antimicrobial peptides for bacterial detection will be discussed.