

Electrochemical biosensors for pathogen detection

Jahir Orozco

Max Planck Tandem Group in Nanobioengineering, Universidad de Antioquia. Complejo Ruta N, Calle 67, N° 52-20, Medellín, Colombia.

Grupotandem.nanobioe@udea.edu.co

Diagnostic tests and devices based on electrochemical biosensors are being increasingly exploited as a valuable alternative to standard laboratory instrumentation for clinical diagnosis and as simple, inexpensive and point-of-care testing systems. Electrochemical biosensors are usually highly specific, sensitive, portable, and easy to operate. They are often designed to be affordable and to have a fast response that correlates well to different pathogen concentrations in different matrixes. Therefore, electrochemical biosensors hold the potential to contribute to the solution of a pandemic like we are living nowadays, especially regarding timely real-time detection, screening and diagnosis of pathogen-triggered diseases in working conditions, closer to the patient, in a reduced time-scale of testing and with minimal requirements of samples volume.

This talk is aimed to discuss novel electrochemical biosensors that have been developed in our group for diagnosis and monitoring of pathogens, including viruses, bacteria and parasites. It will highlight innovative approaches regarding i) Biosensors for the specific and highly sensitive detection of *Streptococcus agalactiae*, in a straightforward format [2], ii) Nanogenosensors for differential diagnosis of Zika virus and its discrimination among related viruses such as dengue and chikungunya and iii) Nobel bioreceptors based on glycans for the detection of *Toxoplasma gondii*. The talk will highlight the enormous potential of electrochemical biosensors for tackling real problems in today's world and will remark their opportunities for multiple applications in clinical diagnosis and monitoring.

REFERENCES

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