SIgN Immunology Seminar

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Peregrinacion across continents developing tools to monitor the environment and medical diagnostics

Host
Dr Katja Fink
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Date
Wednesday 21 May 2014

Time
11am – 12pm

Venue
SIgN Seminar Room
Immunos Building
Level 4
Biopolis

We describe here the development of various technologies developed in our laboratory over the years, which are mostly multi-disciplinary in scope (chemistry, molecular biology, physics, data mining and chemical engineering). Most have been validated using real-life samples from various continents. The biosensors are divided into two categories, one based on affinity bioreceptors and the other on live cells. The main transducers discussed are optical while other systems will be mentioned. Some of the devices are meant for point-of-care, on-site or flow-through sensing. Examples given are those established in our lab such as chemiluminescence-based fiber-optic immunosensors to viral pathogens (Ebola, Dengue, Hepaptitis C, West Nile virus, Rift Valley fever) – the BioPen concept; biochip immunosensors based on electrogenerated films deposited on ITO chip surfaces; magnetic liquid fiber guide immunosensors; diagnostic phagocytic chemiluminescent imprints to identify clinical ailments or other techniques still in development such as the detection of negative stranded RNA viruses (CCHF, influenza) using reverse genetics cell sensors or use of nanosructures for enhanced immunosensors or metal enhanced bioluminescence. We have several techs in the pipeline including lateral flow immunoassay modified with an electrochemical device to produce a quantitative assay, or stilebene-aptamer complexes etc...