Abstract

An immobilisation procedure based on the direct coupling of thiolated probes (Probe-C6-SH) to bare gold sensor surfaces has been compared with a reference immobilisation method, based on the coupling of biotinylated probes onto a streptavidin-coated dextran-modified surface.

The instrumentations used were a quartz crystal microbalance (QCM) and the optical instruments Biacore Xk and Spreetak based on surface plasmon resonance (SPR).

The performances of the DNA-based sensors resulting from direct coupling of thiolated DNA probes onto electrodes of quartz crystals or gold SPR-chips have been studied in terms of the main analytical parameters, i.e. selectivity, sensitivity, reproducibility, etc.

In particular, the two immobilisation approaches have been applied to the analysis of oligonucleotides, DNA amplified by polymerase chain reaction (PCR) and genomic DNA enzymatically digested.

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