

C-Reactive protein detection based on surface plasmon resonance and electrochemical analysis

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We demonstrate here the detection of C-Reactive Protein (CRP) in two way-surface plasmon resonance (SPR) and electrochemical analysis. In both cases, we applied self-assembly monolayer (SAM) to immobilize CRP antibody onto the gold surface. Subsequently, linker, Protein A-cSA, BSA, CRP antibody type-6 (C6), CRP and CRP antibody type-2 (C2) were attached, in which the highly sensitive detection of CRP is based on sandwich-type. First of all, we used SPR to optimize the concentration of CRP antibody to give the best limit of detection of CRP to be detected. The concentration of CRP antibody was determined and then applied to the modification of the gold electrode in electrochemical detection. Step by step modification could be successfully characterized the detection limit as low as 0.5 $\mu\text{g/ml}$. [Our work was supported in part by MIC & IITA through IT Leading R&D Support Project and by the KOSEF through the Center for Ultramicrochemical Process Systems.]