

Construction of a Surface Plasmon Resonance Biosensor using Gold Binding Polypeptide

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Surface plasmon resonance (SPR) is a phenomenon measured by the change of the refractive index at a metal surface. Recently, SPR biosensors were used for comprehensively understanding ligand-receptor interactions including antigen-antibody, DNA-DNA, DNA-protein, protein-protein, protein-carbohydrates, and cell adhesion interactions. Results from SPR biosensors can characterize binding reactions in real-time without labeling requirements. Contemporarily, gold binding polypeptide (GBP) was developed in an E. coli cell-surface display system on the gold metal surfaces. GBP can bind to the exposed gold crystal interfaces under high ionic strength conditions. This study presents SPR biosensors enables us to analyze ligand-receptor interactions using gold binding polypeptide. This work was supported by the Center for Ultramicrochemical Process Systems (CUPS) and the R&D program for Regional Development, which is sponsored by the Korea Ministry of Commerce, Industry and Energy.