

## Surface Plasmon Resonance Immunosensor Using Self-assembled Protein with Layer-by-layer Configuration

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Proper orientation of antibodies on substrate is critical to the performance of antibody-based biosensors, especially for rapid and sensitive bioassay. Surface functionalization has been one of a major trend in bioassay research because orientation and density of immobilized protein depends on the state of the processed surface. In this study, surface modification was carried out using N-succinimidyl-3-(2-pyridyldithio)propionate (SPDP). The reactive succinimide moiety in SPDP can induce a covalent bond with a protein with free amine group, resulting from the self-assembled protein surface with layer-by-layer structure. The Fc receptor of Immunoglobulin G (IgG) such as protein G and protein A was introduced for the fabrication of antibody layer. Molecular deposition on the surface was investigated using surface plasmon resonance (SPR) spectroscopy. Topographies of fabricated thin films were analyzed using atomic force microscopy (AFM). The suggested idea implicates that the bio-surface with layer-by-layer structure will be successfully applied to nano-scale protein chip.