Oriented Immobilization of Antibody Fragment for the Development of Surface Plasmon Resonance Immunosensor

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The molecular configuration of antibody on substrate is one of the most important aspects for the development of the biomedical devices with high sensitivity. In this study, for the fabrication of well-defined antibody surface for immunosensor, antibody fragment (Fab') was introduced which was made up of the only antigen recognition portion. The prepared Fab' can be self-assembled on the gold surface due to the thiol (-SH) group of hinge portion of immunoglobulin G (IgG). The prepared IgG fragment can contribute to the orientation of antibody due to the interaction between the thiol (-SH) group of IgG fragment and gold surface. The amount of protein immobilized on the surface was observed by surface plasmon resonance (Multiskop Optrel, GbR., Germany). The topographies of fabricated films were observed by atomic force microscopy (XE-100, PSIA Inc., Korea). The experimental results suggest a method of protein immobilization for high performance immunosensor or protein chip. **Acknowledgement.** This work was supported by the Korea Research Foundation Grant (KRF-2002-005-D00003).