

## The study of optimization of self-assembled alkanethiol monolayers on gold surface for biosensor

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Recently, a large number of studies using surface plasmon resonance (SPR) biosensor have demonstrated for measurement of immune response of antibody-antigen. Since the principle of SPR biosensor is based on the change in refractive index on a thin gold film surface modified with various organic or biomolecular layers, the construction of the suitable surface monolayer on gold films is important. Therefore, to enhance the response sensitivity, we fabricated several gold surface which were constructed by the different thiol mixture. We chose streptavidin and glutamic acid decarboxylase 65 (GAD65) as a target protein. The sensor surfaces were constructed by the different thiol mixture, which was prepared by different molar ratio of 3-mercaptopropionic acid (3-MPA) to 11-mercaptoundecanoic acid (11-MUA). The kinetic analysis of adsorption and desorption of streptavidin onto self-assembled monolayer (SAM) of thiol was performed using 1:1 Langmuir binding model. The extent of immobilization of streptavidin and biotin-GAD, and immune response of anti-GAD antibody against GAD were investigated by SPR biosensor.