

THE STUDY OF KINETICS ON BIOMOLECULAR INTERACTION BY FIBER OPTIC BIOSENSOR

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A novel fiber-optic fluorescence biosensor on monitoring biomolecular interactions in real time is setup [1, 2]. The IgG and anti-IgG interactions was measured in real time. The (anti-IgG—IgG—FITC labeled anti-IgG) sandwich array is constructed on the surface of unclad plastic fiber where FITC-labeled anti-IgG is excited by evanescent wave near unclad fiber surface. Then the association (k_a) and dissociation (k_d) rate constants of IgG—anti-IgG are obtained simultaneously. In order to improve detection sensitivity, a surface plasmon coupled fluorescence fiber-optic biosensor in conjunction with FITC labeled anti-IgG on gold nanoparticles is constructed. The enhancement of detection sensitivity on kinetics of IgG—anti-IgG interaction is experimentally demonstrated and discussed.

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[2] Y. S. Chang, T. C. Chang, E. F. Kao and C. Chou. "Detection of Protein A produced by *Staphylococcus aureus* with a fiber-optic-based biosensor," *Biosci. Biotech. Biochem.*, **60**, 1571-4 (1996)