

Fabrication of Highly Dense Protein Layers

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Protein adsorption on a gold surface is investigated by comparing the results of quartz crystal microbalance method and atomic force microscopy. The adsorption of streptavidin on functional gold surfaces is directly monitored by a quartz crystal microbalance, and confirmed by atomic force microscopy. For this investigation, a modified gold substrate is fabricated to obtain a topographic image of streptavidin molecules. Both methods show a correlation in terms of the highly dense protein single-layer formation, and the modified gold electrode shows a slightly denser protein layer formation because of the difference in substrate geometry as compared with that of a mica surface.