传感技术学报
中国微米纳米技术学会
全国高校传感技术研究会 主办

一种验证SPR传感器金膜表面固定蛋白质分子有效性的简易途径

作　者：刘国华，李智梁，张维，靳昊宇，姜平，王程，杨锶毅，牛文成

单　位：南开大学 信息技术科学学院，天津 300071

基金项目：

摘　要：

利用表面等离子共振传感器进行免疫检测的实验中，需要在化学性质稳定的金膜表面固定蛋白质分子探针。如何验证一种方法是否能够成功固定蛋白质分子具有非常重要的现实意义。本文提出的验证方法采用酶反应作为标志，如果某种方法确实能有效固定蛋白质分子，那么它也能固定酶。将固定好酶的金膜浸入相应的底物溶液中发生变色反应，测量底物溶液的吸收光谱，即可根据结果判断是否有效固定了酶，同时达到判断这种方法是否可固定蛋白质的目的。具有快速、方便、低成本等优点。采用经过验证的方法固定抗IgG后通入IgG，实验响应良好。

关键词：表面等离子共振传感器；验证蛋白质固定方法；酶反应

A simple way to validate the efficiency of immobilization of proteins on gold surface in SPR

Author's Name: Liu Guo-hua, Li Zhi-liang, Zhang Wei, Jin Hao-yu, Jiang Ping, Wang Cheng, Yang Si-yi, Niu Wen-cheng

Institution: College of Information Technology and Science, Nankai University, Tianjin 300071, China

Abstract:

Immobilizing proteins on gold surface is very important for the immunological detection with Surface Plasmon Resonance Sensors. It is practical to investigate how to validate that a method can effectively immobilize proteins on thegold surface. A method using enzyme (IgG-HRP) as a flag is presented. If a method can immobilize proteins, it can also immobilize enzyme. The IgG-HRP linked gold surface is treated with the solution of TMB and H2O2. The spectrum of the solution can tell whether the enzyme is successfully immobilized and whether that method can effectively immobilize proteins. Terminate the reaction with HCl, there will be a peak at 450nm if the IgG-HRP is indeed immobilized. One immobilizing method was tested in this way. Anti-IgG was immobilized with this tested method, and the result was satisfied after the IgG was combined.

Keywords: Surface Plasmon Resonance Sensor；Validation for immobilizing proteins；Enzyme reaction

投稿时间：**2010-04-26**

查看pdf文件