

SPR-based immunosensor functionalized with ovalbumin conjugate for determination of methyl anthranilate

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In the beverage industry, the same automated bottle-filling line is routinely used for various beverages. After packing one kind product into bottles, the beverage production line is extensively cleaned to remove characteristic fragrant molecules for the next different kind. After the cleaning process, the presence of the trace amounts of fragrances residue needs to be examined in order to ensure high-quality products. Therefore, the development of automated sensitive and selective analytical systems is demanded in the food and beverage industry. We, hence, present here an SPR-based immunosensor for determination of a low-molecular-weight (LMW) fragrant, methyl anthranilate (MA) that is of fruity grape smell used for flavoring of candies, soft drinks, etc. For functionalizing the SPR sensor surface, physical adsorption of a conjugate of an MA derivative, 1-methyl 2-aminophthalate (MAT) has been employed and it has provided highly stable sensing layer. And indirect inhibition principle that assures sensitive determination of LMW compounds has been applied through the experiment. As a result, we observed that the SPR sensor could detect MA sensitively with high stability.