

capacitive aptasensor for label-free detection of the Nampt(PBEF/Visfatin)

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Adipokines are signaling proteins secreted by adipose tissue in people with obesity. NAMPT (visfatin/PBEF) is one of adipokines that is related to various diseases, such as type 2 diabetes, chronic kidney dysfunction, inflammation and cancer. Therefore, in this study, a capacitive aptasensor was developed for the detection of NAMPT as a model adipokine. The detection of the aptamer-NAMPT complex formed on the surface of the electrode is based on dielectric properties, charge distribution and conductivity on the surface. This signal change was successfully measured by using gold interdigitated capacitor arrays onto which DNA aptamers were immobilized to detect various concentrations of NAMPT. Here, we demonstrate that specific ssDNA aptamer can be used as a powerful recognition molecule to the capacitor based label-free, non-invasive biosensors that has great potential for the early diagnosis of the adipokines related diseases.