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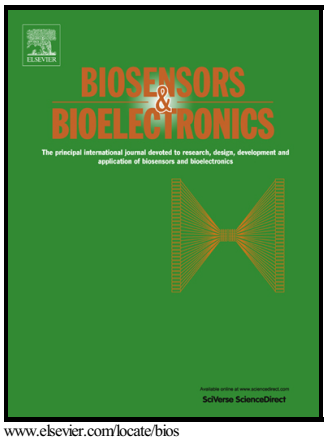

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Construction of A Biotinylated Cameloid-like Antibody for Lable-Free Detection of Apolipoprotein B-100

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ABSTRACT

Nanobodies (Nbs), also known as the variable domain of the heavy-chain-only antibody (VHH), are single-domain antigen-binding fragments derived from heavy-chain antibodies that occur naturally in sera of camelids. Due to their unique properties of small size (15kD), intrinsic stability, high affinity and specificity, Nbs are suitable for detecting clinical relevant antigens. Apolipoprotein B-100 (ApoB-100) is a highly predictive marker for coronary artery disease (CAD), which is frequently detected in clinical diagnosis. Herein, we successfully obtained anti-ApoB-100 Nbs for the first time and further fabricated a label-free and sensitive immunosensor for ApoB-100 based on isolated anti-ApoB-100 nanobody (Nb) using the electrochemical impedance spectroscopy (EIS) technique. We have generated an immunized