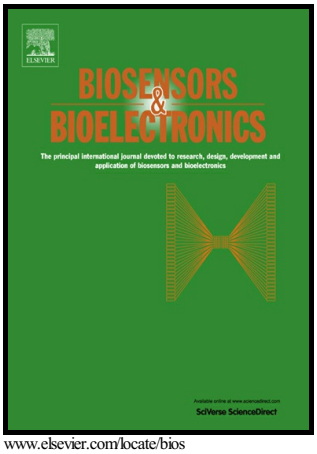

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Highly sensitive label-free amperometric immunoassay of prostate specific antigen using hollow dendritic AuPtAg alloyed nanocrystals

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Abstract:

Herein, well-defined hollow dendritic AuPtAg alloyed nanocrystals (ANCs) were synthesized by a simple *L*-proline-mediated one-pot aqueous method. More importantly, the synthesized hollow dendritic architectures provide a suitable platform for immobilization of anti-prostate specific antigen (PSA). The resultant label-free immunosensor exhibited the improved performance for highly sensitive detection of PSA based on the enhanced catalytic currents of $K_3[Fe(CN)_6]$ as a signal probe. Impressively, the immunosensor showed the wide linear range of 0.05-50 ng mL^{-1} and low detection limit of 0.017 ng mL^{-1} under optimal conditions for the assay of PSA, couple with the improved stability, reproducibility and selectivity. It provides a promising platform for clinical research and diagnosis.