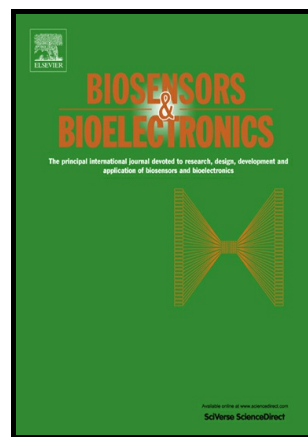


Author's Accepted Manuscript

A novel label-free electrochemical immunosensor based on the enhanced catalytic currents of oxygen reduction by AuAg hollow nanocrystals for detecting carbohydrate antigen 199

Rui Wang, Jiu-Ju Feng, Wei-Dong Liu, Liu-Ying Jiang, Ai-Jun Wang



PII: S0956-5663(17)30315-9
DOI: <http://dx.doi.org/10.1016/j.bios.2017.05.007>
Reference: BIOS9719

To appear in: *Biosensors and Bioelectronic*

Received date: 21 February 2017
Revised date: 1 May 2017
Accepted date: 3 May 2017

Cite this article as: Rui Wang, Jiu-Ju Feng, Wei-Dong Liu, Liu-Ying Jiang and Ai-Jun Wang, A novel label-free electrochemical immunosensor based on the enhanced catalytic currents of oxygen reduction by AuAg hollow nanocrystal for detecting carbohydrate antigen 199, *Biosensors and Bioelectronic* <http://dx.doi.org/10.1016/j.bios.2017.05.007>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain

**A novel label-free electrochemical immunosensor based on
the enhanced catalytic currents of oxygen reduction by
AuAg hollow nanocrystals for detecting carbohydrate
antigen 199**

Rui Wang, Jiu-Ju Feng*, Wei-Dong Liu, Liu-Ying Jiang, Ai-Jun Wang*

*College of Chemistry and Life Science, College of Geography and Environmental Science,
Zhejiang Normal University, Jinhua, 321004, China*

jifeng@zjnu.cn (J.J Feng)

ajwang@zjnu.cn (A. J. Wang)

**Corresponding author:*

Abstract

Herein, bimetallic alloyed AuAg hollow nanocrystals (AuAg HNCs) were prepared by a simple one-pot aqueous method using polycytidylic acid (PCA) as the green growth-directing agent. The novel immunosensor for carbohydrate antigen 199 (CA199) was further constructed based on the enhanced catalytic currents of oxygen reduction reaction (ORR) by AuAg HNCs. By virtue of the good biocompatibility and catalytic activity of AuAg HNCs, the immunosensor exhibited superior analytical performance for the assay of CA199 under the optimal experimental conditions, the ORR signals linearly decreased with the increased CA199 concentrations in the range of 1 ~30 U mL⁻¹, with the low detection limit of 0.228 U mL⁻¹, improved stability, reproducibility and selectivity.

Download English Version:

<https://daneshyari.com/en/article/5030851>

Download Persian Version:

<https://daneshyari.com/article/5030851>

[Daneshyari.com](https://daneshyari.com)