

Recent advances and future prospects in
molecularly imprinted polymers-based
electrochemical biosensors

Rijun Gui, Hui Jin, Huijun Guo, Zonghua Wang



PII: S0956-5663(17)30593-6
DOI: <http://dx.doi.org/10.1016/j.bios.2017.08.058>
Reference: BIOS9968

To appear in: *Biosensors and Bioelectronics*

Received date: 3 June 2017
Revised date: 8 August 2017
Accepted date: 27 August 2017

Cite this article as: Rijun Gui, Hui Jin, Huijun Guo and Zonghua Wang, Recent advances and future prospects in molecularly imprinted polymers-based electrochemical biosensors, *Biosensors and Bioelectronics*, <http://dx.doi.org/10.1016/j.bios.2017.08.058>

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.

Recent advances and future prospects in molecularly imprinted polymers-based electrochemical biosensors

Rijun Gui^{*}, Hui Jin, Huijun Guo, Zonghua Wang^{*}

College of Chemistry and Chemical Engineering, Shandong Sino-Japanese Center for Collaborative Research of Carbon Nanomaterials, Laboratory of Fiber Materials and Modern Textile, The Growing Base for State Key Laboratory, Qingdao University, Shandong 266071, PR China

guirijun@163.com (R. Gui)

wangzonghua@qdu.edu.cn (Z. Wang)

^{*} Corresponding authors. Fax: +86 532 85950873; Tel.: +86 532 85953981.

Abstract

Molecularly imprinted polymers (MIPs)-based electrochemical biosensors (ECBSs) have many advantages from MIPs and ECBSs, such as high selectivity and sensitivity, chemical/mechanical stability, reusability, low limit of detection, facile preparation and low cost. MIPs-based ECBSs attract much attention in medical diagnose, biological analysis, environmental monitoring, food safety evaluation, etc. Due to the capacity of highly specific recognition for target biomolecules, MIPs-based ECBSs have been smartly designed and extensively used for electrochemical sensing applications in recent years, exhibiting obvious superiority over other analytical techniques. In this review, firstly we systematically summarize the recent advances of MIPs-based ECBSs reported in recent years, referring to the preparation, structures and components of sensing systems. Secondly, we highlight the sensing applications for various significant biomolecules (proteins, antibiotics, pesticide, neurotransmitter, hormone, etc.), and demonstrate the sensing mechanism and detection performance. Finally, the rational summaries, present challenges and future prospects in the field of MIPs-based ECBSs have been discussed reasonably.

Keywords: molecularly imprinted polymers; electrochemical sensors; biosensors; biomolecules

Download English Version:

<https://daneshyari.com/en/article/5030757>

Download Persian Version:

<https://daneshyari.com/article/5030757>

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