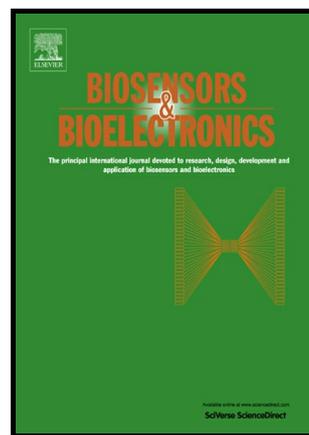


Author's Accepted Manuscript

PROGRESS AND CHALLENGES IN ELECTROCHEMILUMINESCENT APTASENSORS

Kateryna Muzyka, Muhammad Saqib, Zhongyuan
Liu, Wei Zhang, Guobao Xu



PII: S0956-5663(17)30015-5
DOI: <http://dx.doi.org/10.1016/j.bios.2017.01.015>
Reference: BIOS9480

To appear in: *Biosensors and Bioelectronic*

Received date: 16 October 2016
Revised date: 16 December 2016
Accepted date: 6 January 2017

Cite this article as: Kateryna Muzyka, Muhammad Saqib, Zhongyuan Liu, We Zhang and Guobao Xu, PROGRESS AND CHALLENGES IN ELECTROCHEMILUMINESCENT APTASENSORS, *Biosensors and Bioelectronic*, <http://dx.doi.org/10.1016/j.bios.2017.01.015>

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

ELECTROCHEMILUMINESCENT APTASENSORS

Kateryna Muzyka^{a,b}, Muhammad Saqib^{a,c}, Zhongyuan Liu^a, Wei Zhang^{a*},

Guobao Xu^{a*}

^aState Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, Jilin 130022, People's Republic of China.

^bLaboratory of Analytical Optochemotronics, Department of Biomedical Engineering, Kharkiv National University of Radio Electronics, Kharkiv 61166, Ukraine.

^cUniversity of Chinese Academy of Sciences, No. 19A Yuquanlu, Beijing 100049, China

Abstract

The importance of developing new diagnostic and detection technologies for the growing number of sensing challenges is rising each year. Here, we present a comprehensive and concise review on electrochemiluminescent (ECL) aptasensors by putting special emphasis on its characteristic features, advances, challenges, and applications of ECL based aptasensors. ECL is an ideal tool for constructing such sensors because of its inherent characteristics and can be easily integrated into aptamer based sensing platforms. This review summarizes the "synergistic benefits" of ECL aptamer-based sensors; classifications of ECL aptamer-based assay designs, and signal amplification strategies. This critical review highlights the effects of integration of nanomaterials, immobilization techniques, and amplification/detection strategies on the analytical performance of ECL based aptasensors. Moreover, several

Download English Version:

<https://daneshyari.com/en/article/5031565>

Download Persian Version:

<https://daneshyari.com/article/5031565>

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