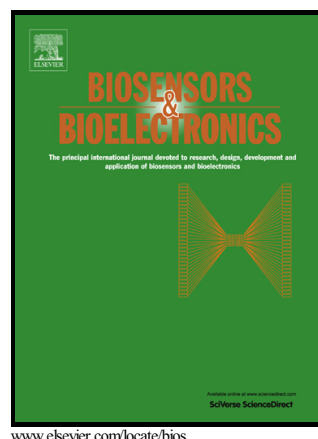


Author's Accepted Manuscript

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PII: S0956-5663(14)00737-4
DOI: <http://dx.doi.org/10.1016/j.bios.2014.09.050>
Reference: BIOS7132

To appear in: *Biosensors and Bioelectronic*

Received date: 16 June 2014
Revised date: 25 August 2014
Accepted date: 22 September 2014

Cite this article as: Zi-Ming Zhou, Zhe Feng, Jun Zhou, Bi-Yun Fang, Xiao-Xiao Qi, Zhi-Ya Ma, Bo Liu, Yuan-Di Zhao and Xue-Bin Hu, Capillary electrophoresis-chemiluminescence detection for carcino-embryonic antigen based on aptamer/graphene oxide structure, *Biosensors and Bioelectronic*, <http://dx.doi.org/10.1016/j.bios.2014.09.050>

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Capillary electrophoresis-chemiluminescence detection for carcino-embryonic antigen
based on aptamer/graphene oxide structure

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Abstract

A new strategy is proposed for determination of carcino-embryonic antigen (CEA) based on aptamer/graphene oxide (Apt/GO) by capillary electrophoresis-chemiluminescence (CE-CL) detection system. CEA aptamer conjugated with horseradish peroxidase (HRP) firstly mixes with GO, and the CL will be quenched because the stack of HRP-Apt on GO leads to chemiluminescence resonance energy transfer (CRET). When CEA exists, the specific combination of HRP-Apt and CEA can form HRP-Apt-CEA complex, which dissociates from GO. Then, the CL catalyzed by HRP-Apt-CEA complex can be detected without any CRET, and the content of CEA can be estimated by the CL intensity. It has been proved that the interference issue resulted from free

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