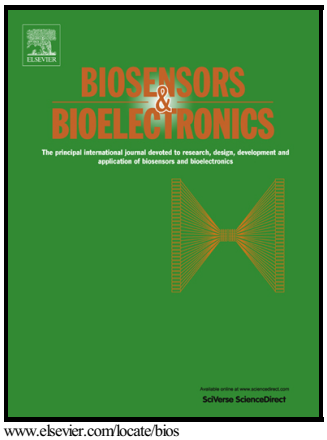


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# Capillary electrophoresis-chemiluminescence detection for carcino-embryonic antigen based on aptamer/graphene oxide structure

Zi-Ming Zhou [a+], Zhe Feng [a+], Jun Zhou [b], Bi-Yun Fang [a], Xiao-Xiao Qi [a], Zhi-Ya Ma [a], Bo Liu [a], Yuan-Di Zhao [a]*, Xue-Bin Hu [c]*

[a] *Britton Chance Center for Biomedical Photonics at Wuhan National Laboratory for Optoelectronics – Hubei Bioinformatics & Molecular Imaging Key Laboratory, Department of Biomedical Engineering, College of Life Science and Technology, Huazhong University of Science and Technology, Wuhan 430074, P. R. China*

[b] *Department of Clinical Laboratory, Wuhan Commercial Staff Hospital, Wuhan 430021, P. R. China.*

[c] *Union Hospital, Tongji Medical College of Huazhong University of Science & Technology, Wuhan 430022, P. R. China.*

+ Z-M Zhou and Z. Feng contributed equally to this work.
* To whom correspondence should be addressed.Fax: +86-27-87792202. Email: zydi@mail.hust.edu.cn (Y.D. Zhao), hxb7276@163.com (X.B. Hu)



**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