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Nannan Chen, Wenjing Guo, Zhixiang Lin, Qiaohua Wei, Guonan Chen

www.elsevier.com/locate/talanta

PII: S0039-9140(18)30315-1
DOI: https://doi.org/10.1016/j.talanta.2018.03.075
Reference: TAL18509

To appear in: *Talanta*

Received date: 23 July 2017
Revised date: 12 March 2018
Accepted date: 24 March 2018

Cite this article as: Nannan Chen, Wenjing Guo, Zhixiang Lin, Qiaohua Wei and Guonan Chen, Label-free sensitive luminescence biosensor for immunoglobulin G based on Ag_6Au_6 ethisterone cluster-estrogen receptor α aggregation and graphene, *Talanta,* https://doi.org/10.1016/j.talanta.2018.03.075

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Nannan Chen[a], Wenjing Guo[a], Zhixiang Lin[a], Qiaohua Wei[a,b*] , Guonan Chen[a]

[a] *MOE Key Laboratory for Analytical Science of Food Safety and Biology, Fujian Provincial Key Laboratory of Analysis and Detection Technology for Food Safety, College of Chemistry, Fuzhou University, Fuzhou, Fujian 350108, China.*

[b] *State Key Laboratory of Structural Chemistry, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou, Fujian 350002, China.*

qhw76@fzu.edu.cn

Abstract

A specific and label-free "on-off-on" luminescence biosensor based on a novel heterometallic cluster [Ag_6Au_6(ethisterone)$_{12}$]-estrogen receptor α (Ag_6Au_6Eth-ERα) aggregation utilizing graphene oxide (GO) as a quencher to lead a small background signal was firstly constructed to detect immunoglobulin G (IgG) with a simple process and high selectivity. The efficient photoluminescent (PL) Ag_6Au_6Eth-ERα aggregation is strongly quenched by GO. In the presence of IgG, the PL of this system will be restored, and perceivable by human eyes under