

Author's Accepted Manuscript

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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 Ag₆Au₆ ethisterone cluster-estrogen receptor α aggregation and graphene, *Talanta*, <https://doi.org/10.1016/j.talanta.2018.03.075>

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Label-free sensitive luminescence biosensor for immunoglobulin G based on Ag_6Au_6 ethisterone cluster-estrogen receptor α aggregation and graphene

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Abstract

A specific and label-free “on-off-on” luminescence biosensor based on a novel heterometallic cluster $[\text{Ag}_6\text{Au}_6(\text{ethisterone})_{12}]$ -estrogen receptor α ($\text{Ag}_6\text{Au}_6\text{Eth-ER}\alpha$) 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) $\text{Ag}_6\text{Au}_6\text{Eth-ER}\alpha$ 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

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