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www.elsevier.com/locate/talanta

PII: S0039-9140(16)31022-0
DOI: http://dx.doi.org/10.1016/j.talanta.2016.12.073
Reference: TAL17163

To appear in: *Talanta*

Received date: 23 September 2016
Revised date: 23 December 2016
Accepted date: 26 December 2016

Cite this article as: Jin Shen, Chongmei Sun and Xia Wu, Silver Nanoprisms Based Tb(III) Fluorescence Sensor for Highly Selective Detection of Dopamine *Talanta,* http://dx.doi.org/10.1016/j.talanta.2016.12.073

TAL-D-16-02484 Revised Manuscript

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Jin Shen, Chongmei Sun, Xia Wu*

School of Chemistry and Chemical Engineering, Shandong University, Key Laboratory of Colloid and Interface Chemistry (Shandong University), Ministry of Education, Jinan 250100, P. R. China

*Corresponding Author

Prof. Xia Wu

School of Chemistry and Chemical Engineering, Shandong University, Jinan 250100, P. R. China

Tel.: +86-531-88365459, Fax: +86-531-88564464

E-mail: wux@sdu.edu.cn

ABSTRACT: Dopamine (DA) is one of catecholamines and related to several neurological diseases. The selective determination for DA against other catecholamines is crucial in clinical diagnoses. In this work, a simple and reliable Tb(III)-based fluorescence sensor was constructed for the highly selective and sensitive detection of DA. Silver nanoprisms (AgNPrs) with suitable localized surface plasmon resonance bands were controllably synthesized to act as optimal platforms for surface enhanced fluorescence (SEF), while acetate was adopted to be a distance adjusting spacer for SEF and a recognizing component for DA. A fluorescence-enhanced Tb(III) composite sensor via the synergistic action of AgNPrs