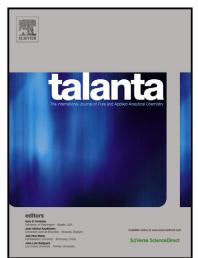
## Author's Accepted Manuscript

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www.elsevier.com/locate/talanta

 PII:
 S0039-9140(15)00032-6

 DOI:
 http://dx.doi.org/10.1016/j.talanta.2015.01.018

 Reference:
 TAL15343

To appear in: Talanta

Received date: 23 October 2014 Revised date: 6 January 2015 Accepted date: 10 January 2015

Cite this article as: Yabin Chen, Wei Shi, Yonghai Hui, Xinhua Sun, Linxian Xu, Lei Feng, Zhengfeng Xie, A new highly selective fluorescent turn-on chemosensor for cyanide anion, *Talanta*, http://dx.doi.org/10.1016/j.talan-ta.2015.01.018

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### A New Highly Selective Fluorescent Turn-On Chemosensor

for Cyanide Anion

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#### Abstract

A new simple molecule, 2-((2-phenyl-2H-1,2,3-triazol-4-yl)methylene)malononitrile (**M1**), was synthesized successfully by the Knoevenagel condensation reaction between 2-phenyl-1,2,3-triazole-4-carboxaldehyde and malononitrile. The receptor **M1** is highly sensitive and selective to cyanide anion due to the nucleophilic addition of cyanide anion with **M1**. Distinct changes on UV-Vis and fluorescence spectra can be detected with the addition of cyanide anion to the DMSO solution of **M1**. Optical properties of **M1** was scarcely affected by the addition of other common background anions (F<sup>-</sup>, Cl<sup>-</sup>, Br<sup>-</sup>, I<sup>-</sup>, SCN<sup>-</sup>, OH<sup>-</sup>, CO<sub>3</sub><sup>2-</sup>, H<sub>2</sub>PO<sub>4</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, HSO<sub>4</sub><sup>-</sup>, AcO<sup>-</sup>, NO<sub>3</sub><sup>-</sup>) under the same condition. The detection limit of CN<sup>-</sup> reaches ~ 1.43  $\mu$ M by **M1** and the presence of background anions brought very slight interference for the detection of CN<sup>-</sup>.

Keywords: Fluorescence; Nucleophilic addition; Cyanide anion; Interference

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