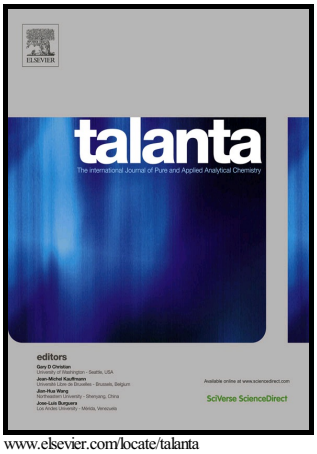

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PII: S0039-9140(17)30820-2
DOI: http://dx.doi.org/10.1016/j.talanta.2017.08.001
Reference: TAL17797

To appear in: *Talanta*

Received date: 10 April 2017
Revised date: 28 July 2017
Accepted date: 1 August 2017

Cite this article as: Ting Yu, Guoxing Yin, Tingting Niu, Peng Yin, Haitao Li, Youyu Zhang, Haimin Chen, Ying Zeng and Shouzhuo Yao, A novel colorimetric and fluorescent probe for simultaneous detection of SO_3^{2-}/HSO_3^- and HSO_4^- by different emission channels and its bioimaging in living cells *Talanta,* http://dx.doi.org/10.1016/j.talanta.2017.08.001

A novel colorimetric and fluorescent probe for simultaneous detection of SO_3^{2-}/HSO_3^- and HSO_4^- by different emission channels and its bioimaging in living cells

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Abstract

A novel fluorescent probe (*E*)-3-ethyl-2-(4-hydroxystyryl)-1,1-di-methyl-1*H*-benzo-[*e*]indolium iodide (probe EDB) based on benzo[*e*]indolium was synthesized, which provided the simultaneous detection of SO_3^{2-}/HSO_3^- and HSO_4^- ion with different emission channels. Based on the principle of ion-induced rotation-displaced H-aggregates, when treated with $NaHSO_4$, a fluorescence enhancement at 580 nm was observed with the excitation wavelength at 420 nm. While, in the advantage of the nucleophilic addition of SO_3^{2-} to the vinyl group, strong fluorescence was obtained at 455 nm when treated with Na_2SO_3 with the excitation wavelength at 320 nm, along