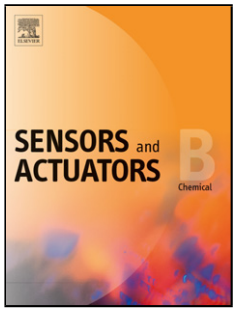

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PII: S0925-4005(18)31780-5
DOI: https://doi.org/10.1016/j.snb.2018.10.017
Reference: SNB 25450

To appear in: *Sensors and Actuators B*

Received date: 19-4-2018
Revised date: 3-10-2018
Accepted date: 4-10-2018

Please cite this article as: Li H, Sun X, Zheng T, Xu Z, Song Y, Gu X, Coumarin-based multifunctional chemosensor for arginine/lysine and Cu^{2+}/Al^{3+} ions and its Cu^{2+} complex as colorimetric and fluorescent sensor for biothiols, *Sensors and amp; Actuators: B. Chemical* (2018), https://doi.org/10.1016/j.snb.2018.10.017

Coumarin-based multifunctional chemosensor for arginine/lysine and Cu^{2+}/Al^{3+} ions and its Cu^{2+} complex as colorimetric and fluorescent sensor for biothiols

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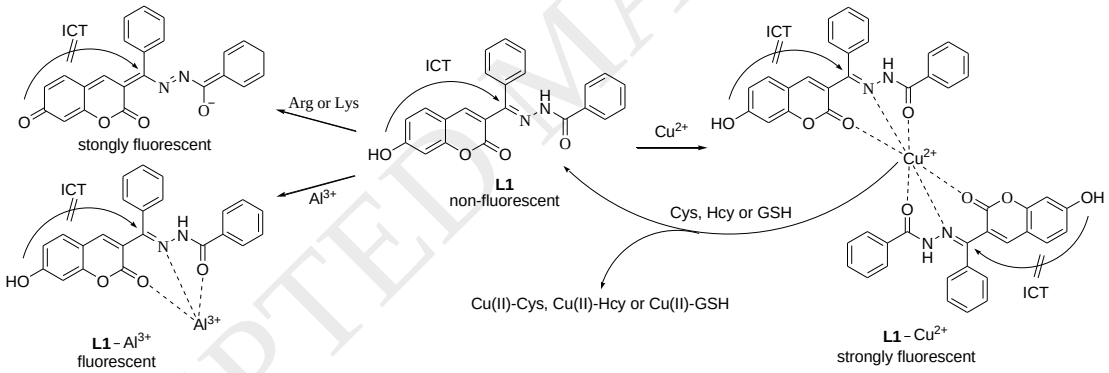
Graphical Abstract

A coumarin-based multifunctional sensor has been developed for colorimetric and fluorogenic dual-signal sensing of arginine, lysine and Cu^{2+} and fluorescent detection of Al^{3+}. Its Cu^{2+} complex serves as colorimetric and fluorometric probe for highly selective and sensitive detection of cysteine, homocysteine and glutathione over other common amino acids.



Highlights

- A coumarin-based multifunctional chemosensor has been developed.
- It is useful for chromogenic and fluorogenic detection of Arg and Lys.
- It serves as colorimetric and fluorimetric probe for selective detection of Cu^{2+}.
- It can be utilized for fluorescent sensing of Al^{3+}.