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Myeongjin Kim, Naveen Mergu, Young-A. Son



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Imidazole-containing ratiometric receptor for the selective and sensitive detection of cyanide and fluoride via deprotonation and a receptor-anion ensemble for Cu²⁺ sensing

Myeongjin Kim¹, Naveen Mergu¹, Young-A. Son*

Department of Advanced Organic Materials Engineering, Chungnam National University,
220 Gung-dong, Yuseong-gu, Daejeon 305-764, South Korea

*Corresponding author. Tel.: +82 42 821 6620; Fax: +82 42 821 8870.

E-mail addresses: yason@cnu.ac.kr (Y.-A. Son).

¹These authors contributed equally to this work.

Abstract

A novel imidazole-functionalized receptor, **M**, containing anthraquinone as a signaling unit was synthesized and characterized. Its potential application to detect CN⁻ and F⁻ ions in DMSO was investigated using UV-Vis and fluorescence spectroscopy. A color change and bathochromic shift corresponding to the intramolecular charge transfer (ICT) transition in the absorption spectra were observed upon addition of CN⁻ and F⁻ ions. Fluorescence enhancement and quenching at 532 and 581 nm, respectively, were observed in the emission spectra of **M** upon addition of CN⁻ and F⁻. The receptor senses cyanide and

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