Supplementary Material (ESI) for Dalton Transactions

Selective Colorimetric and Fluorescent Detection of HSO_4^- with Sodium(I), Magnesium(II), Aluminium(III) Xanthone-Crown Ether Complexes

Rui Shen, Xiaobo Pan, Huifang Wang, Lihui Yao, Jincai Wu* and Ning Tang*

College of Chemistry and Chemical Engineering, State Key Laboratory of Applied Organic Chemistry, Lanzhou University, Lanzhou 730000, P R China

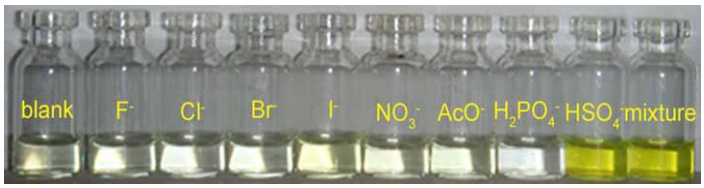
Corresponding author, E-mail: tangn@lzu.edu.cn; wujc@lzu.edu.cn.

Supplementary Information

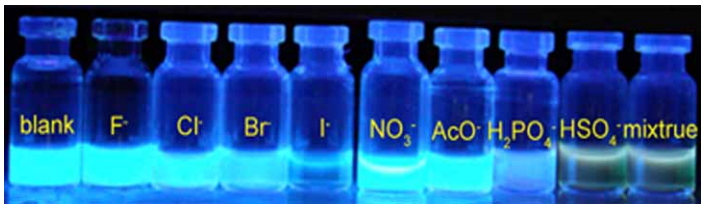
Fig. S1 (a) Color changes induced by the addition of anions. (b) Fluorescence changes induced by the addition of anions.

Fig. S2 ^{1}H NMR spectra of **3** in acetone-d6 with the presence of 1.0 equiv of HSO_4^-.

Fig. S3 (a) ESI-MS spectrum of **3** in acetonitrile showing signals for $[\mathbf{1}+H]^+$ at *m/z* = 387.14, $[\mathbf{3}\text{-}2ClO_4+\mathbf{1}]^{2+}$ at *m/z* = 398.13, $[\mathbf{3}\text{-}ClO_4]^+$ = at *m/z* 509.07. (b) ESI-MS spectrum of HSO_4^- : **3** (1:1) in acetonitrile showing signals for $[(C_4H_9)_4N]^+$ at *m/z* = 242.28, $[\mathbf{1}+H]^+$ at *m/z* = 387.14, $[\mathbf{1}+Na]^+$ at *m/z* = 409.12, $[\mathbf{1}+K]^+$ at *m/z* = 425.09.



(a)



(b)

Fig. S1 (a) Color changes induced by the addition of anions. (b) Fluorescence changes induced by the addition of anions.

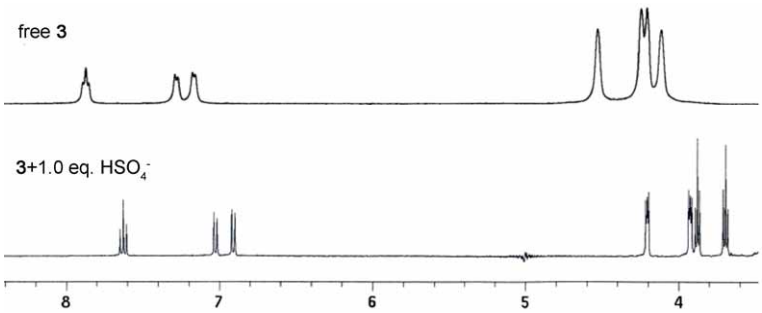
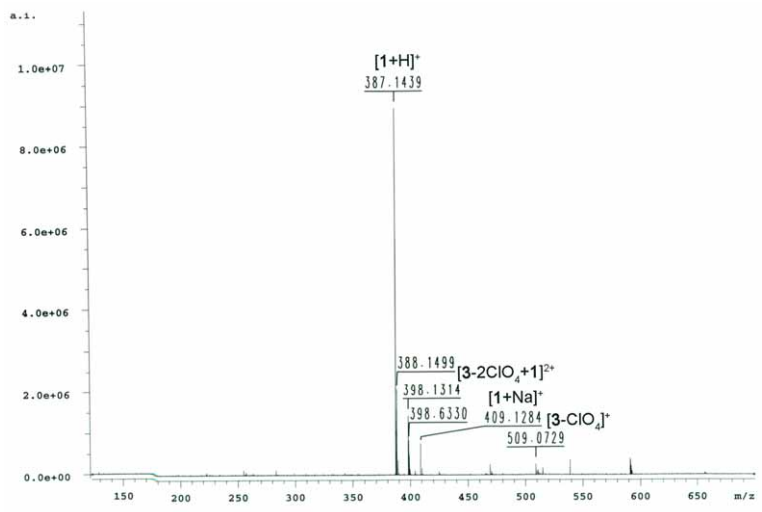
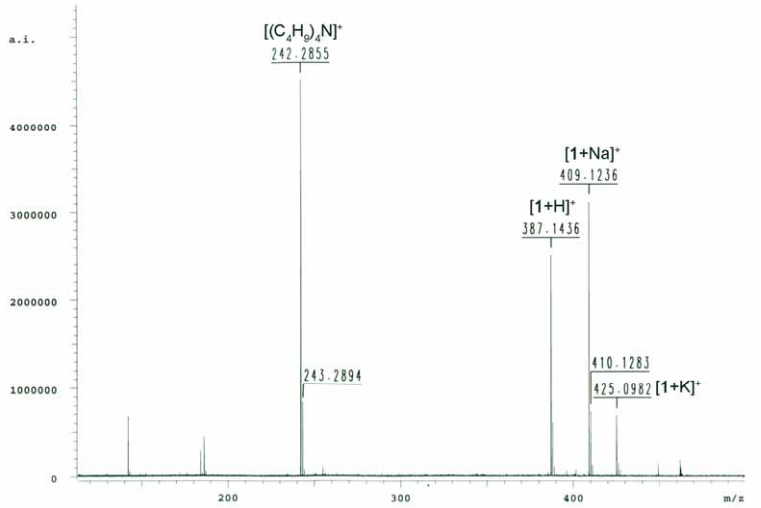


Fig. S2 ^{1}H NMR spectra of **3** in acetone-d6 with the presence of 1.0 equiv of HSO_4^-.



(a)



(b)

Fig. S3 (a) ESI-MS spectrum of **3** in acetonitrile showing signals for [**1**+H]$^+$ at *m/z* = 387.14, [**3**-2ClO_4+**1**]$^{2+}$ at *m/z* = 398.13, [**3**-ClO_4]$^+$ = at *m/z* 509.07. (b) ESI-MS spectrum of HSO_4^- : **3** (1:1) in acetonitrile showing signals for $[(C_4H_9)_4N]^+$ at *m/z* = 242.28, [**1**+H]$^+$ at *m/z* = 387.14, [**1**+Na]$^+$ at *m/z* = 409.12, [**1**+K]$^+$ at *m/z* = 425.09.