Supporting information

A highly selective fluorescent chemosensor for Fe$^{3+}$ based on a new diarylethene with rhodamine 6G

Huitao Xu, Haichang Ding, Gang Li, Congbin Fan, Gang Liu*, Shouzhi Pu*

Jiangxi Key Laboratory of Organic Chemistry, Jiangxi Science & Technology Normal University, Nanchang 330013, PR China

*Corresponding author: E-mail address: liugang0926@163.com (G. Liu); pushouzhi@tsinghua.org.cn (S. Pu), Tel. & Fax: +86-791-83831996.

Contents

Fig. S1. $^1$H NMR (in DMSO-$d_6$) spectrum of 1O

Fig. S2. $^{13}$C NMR (in DMSO-$d_6$) spectrum of 1O

Fig. S3. ESI–MS spectrum of 1O.

Fig. S4. Changes in fluorescence (fluorescence intensity at 585 nm) of 1O to various metal ions (10.0 equiv.) in aqueous acetonitrile ($C = 2.0 \times 10^{-5}$ mol L$^{-1}$, v/v = 1:1).

Fig. S5. Upon addition of different equivalents TFA and the emission intensity curve at 584 nm

Fig. S6. The absorption intensity changes of 1O at 531 nm with different equivalents of TFA
Fig. S1. $^1$H NMR (in DMSO-\(d_6\)) spectrum of 1O

Fig. S2. $^{13}$C NMR (in DMSO-\(d_6\)) spectrum of 1O
**Fig. S3.** ESI–MS spectrum of 1O.

**Fig. S4.** Changes in fluorescence (fluorescence intensity at 585 nm) of 1O to various metal ions (10.0 equiv.) in aqueous acetonitrile (C = 2.0 × 10⁻⁵ mol L⁻¹, v/v = 1:1)
Fig. S5. Upon addition of different equivalents TFA and the emission intensity curve at 584 nm

Fig. S6. The absorption intensity changes of IO at 531 nm with different equivalents of TFA