

Supporting Information

Novel pyrazine derivative as “turn on” fluorescent sensor for the highly selective and sensitive detection of Al³⁺

**Chao-rui Li, Jing-can Qin, Guan-qun Wang, Bao-dui Wang and Zheng-yin
Yang***

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

***Corresponding author. Tel.: +86 931 8913515; Fax: +86 931 8912582; e-mail:*

yangzy@lzu.edu.cn (Z.Y. Yang)

Fig. S1 ^1H NMR spectra of **1** in DMSO-d_6 .

Fig. S2 ESI-MS spectra of **1** in ethanol.

Fig. S3 The relationship between the fluorescence emission intensity at 517 nm and the concentration of Al^{3+} .

Fig. S4 Benesi-Hildebrand plot for determination of the binding constant between **1** and Al^{3+} .

Fig. S5 Change in fluorescence spectra of **1** ($50\ \mu\text{M}$) measured in ethanol upon addition of various concentration of Al^{3+} (0.2, 0.4, 0.6, 0.8, $1.0\ \mu\text{M}$, respectively) with an excitation at 382 nm.

Fig. S6 ESI-MS spectra of **1** and Al^{3+} in ethanol.

Fig. S7 ^1H NMR spectra of **1** upon addition of Al^{3+} (1.0 *equiv.*) in DMSO-d_6 .

Fig. S8 ^1H NMR spectra of **1** upon addition of Al^{3+} (2.0 *equiv.*) in DMSO-d_6 .

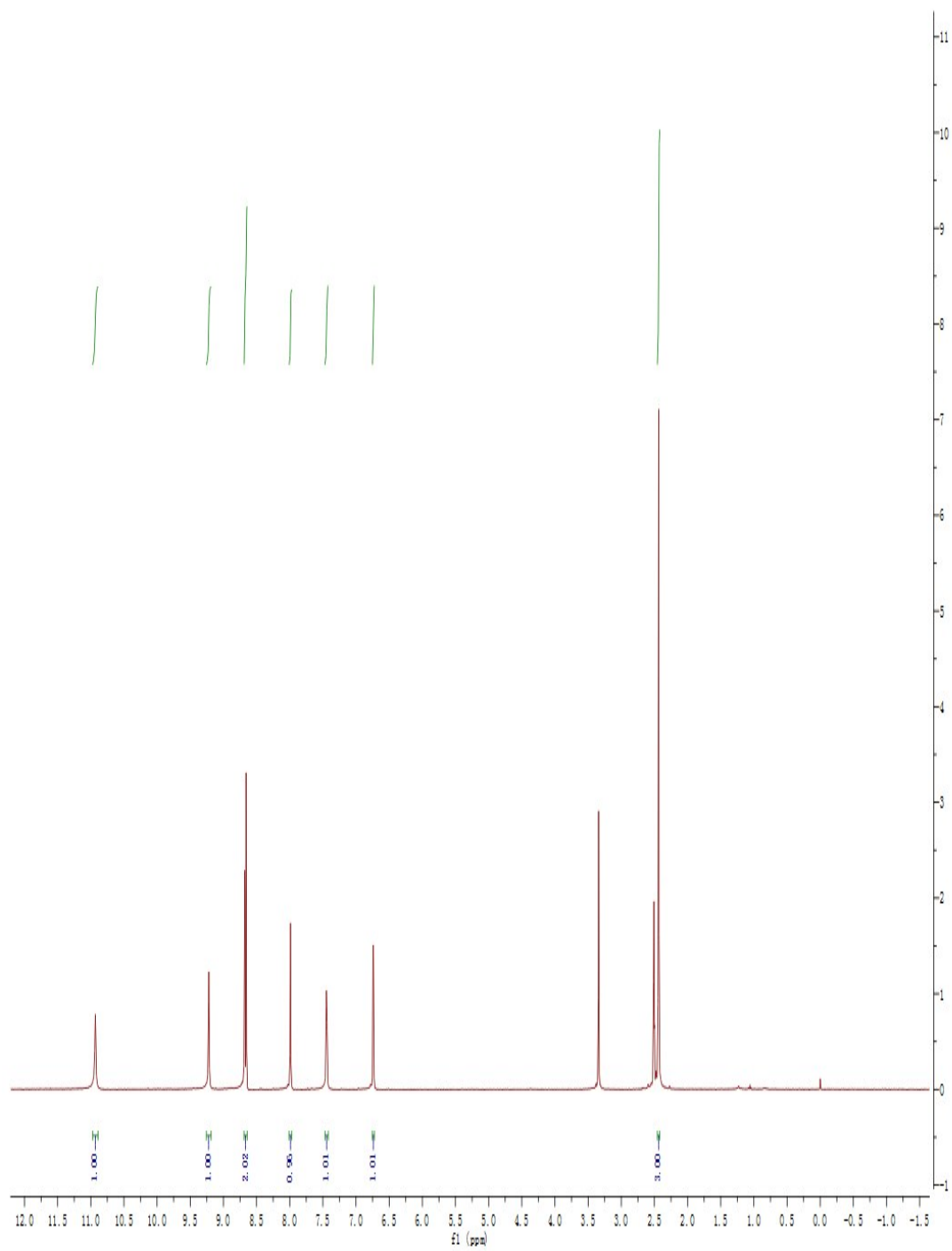


Fig. S1 ^1H NMR spectra of **1** in DMSO-d_6 .

Generic Display Report

Analysis Info

Analysis Name D:\Data\yangy\new\LICHAORUI140929_32_01_163.d
Method POS_100-1200_For LC.m
Sample Name LICHAORUI140929
Comment

Acquisition Date 9/28/2014 11:53:05 AM

Operator LZU
Instrument micrOTOF

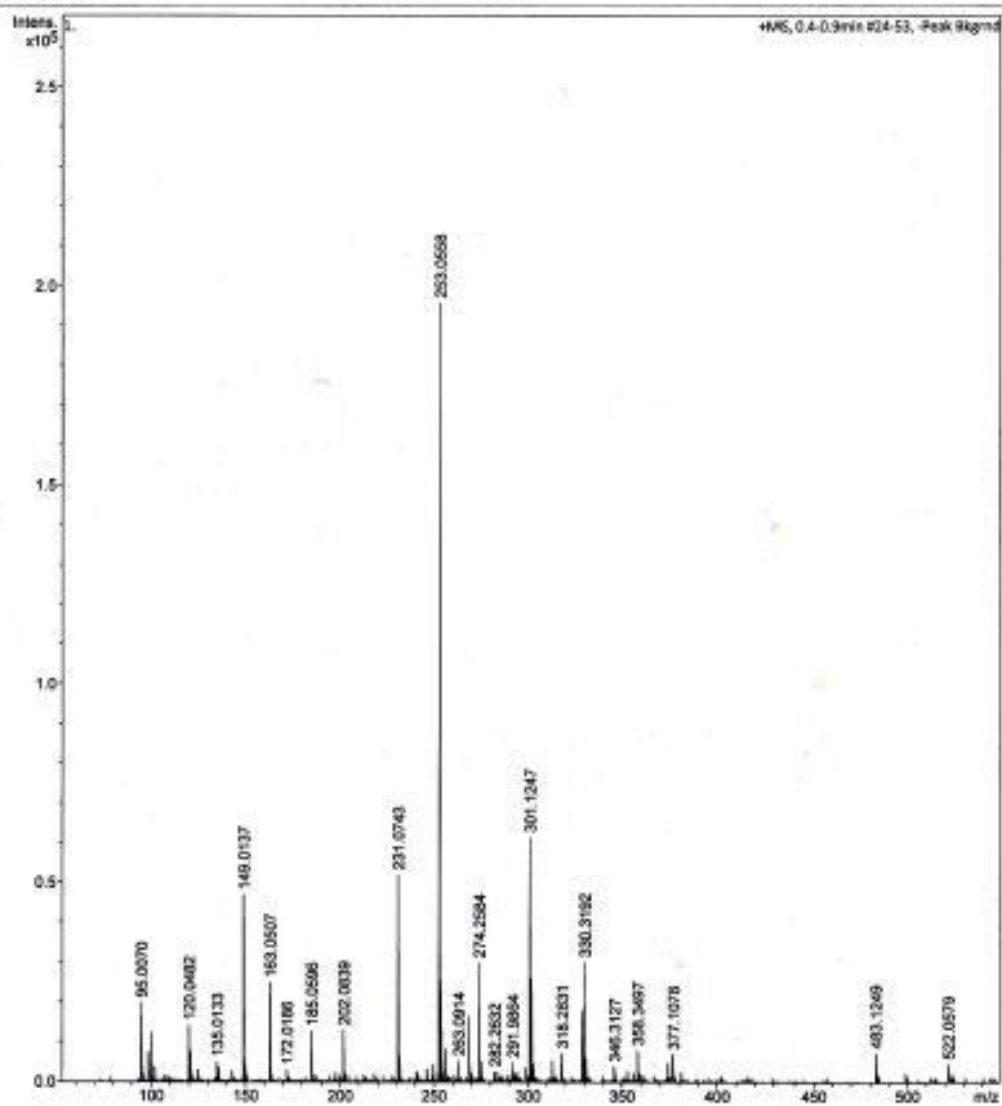


Fig. S2 ESI-MS spectra of **1** in ethanol.

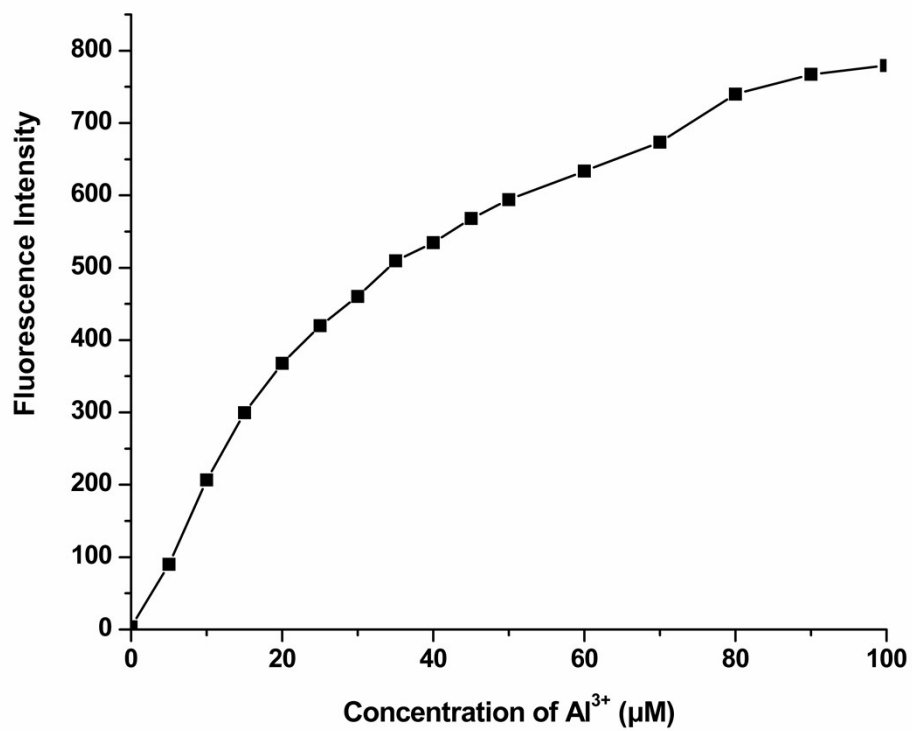


Fig. S3 The relationship between the fluorescence emission intensity at 517 nm and the concentration of Al³⁺.

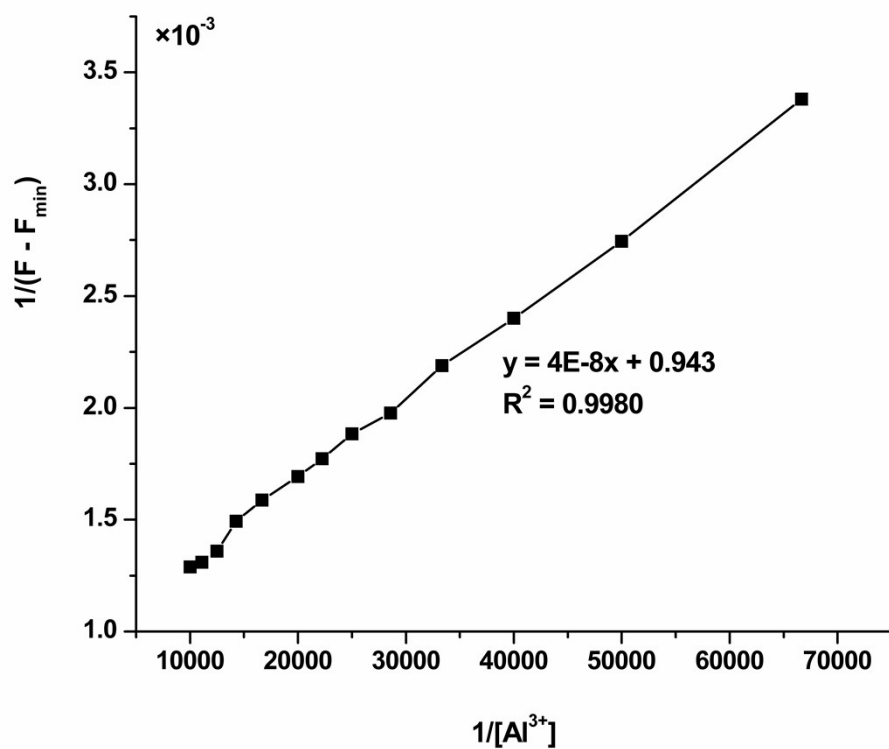


Fig. S4 Benesi-Hildebrand plot for determination of the binding constant between **1** and Al^{3+} .

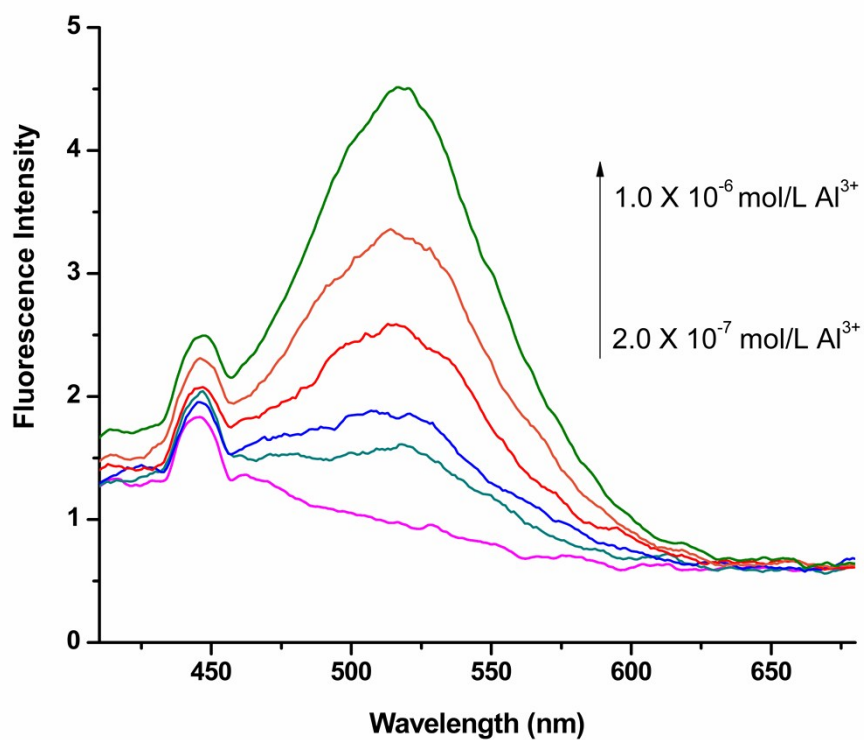


Fig. S5 Change in fluorescence spectra of **1** (50 μM) measured in ethanol upon addition of various concentration of Al³⁺ (0.2, 0.4, 0.6, 0.8, 1.0 μM, respectively) with an excitation at 382 nm.

Generic Display Report

Analysis Info

Analysis Name D:\Data\yangy\new\LIHAORUI141013_18_01_252.d
Method POS_100-1200_For LC.m
Sample Name LIHAORUI141013
Comment

Acquisition Date 10/13/2014 7:01:58 PM

Operator LZU
Instrument micrOTOF

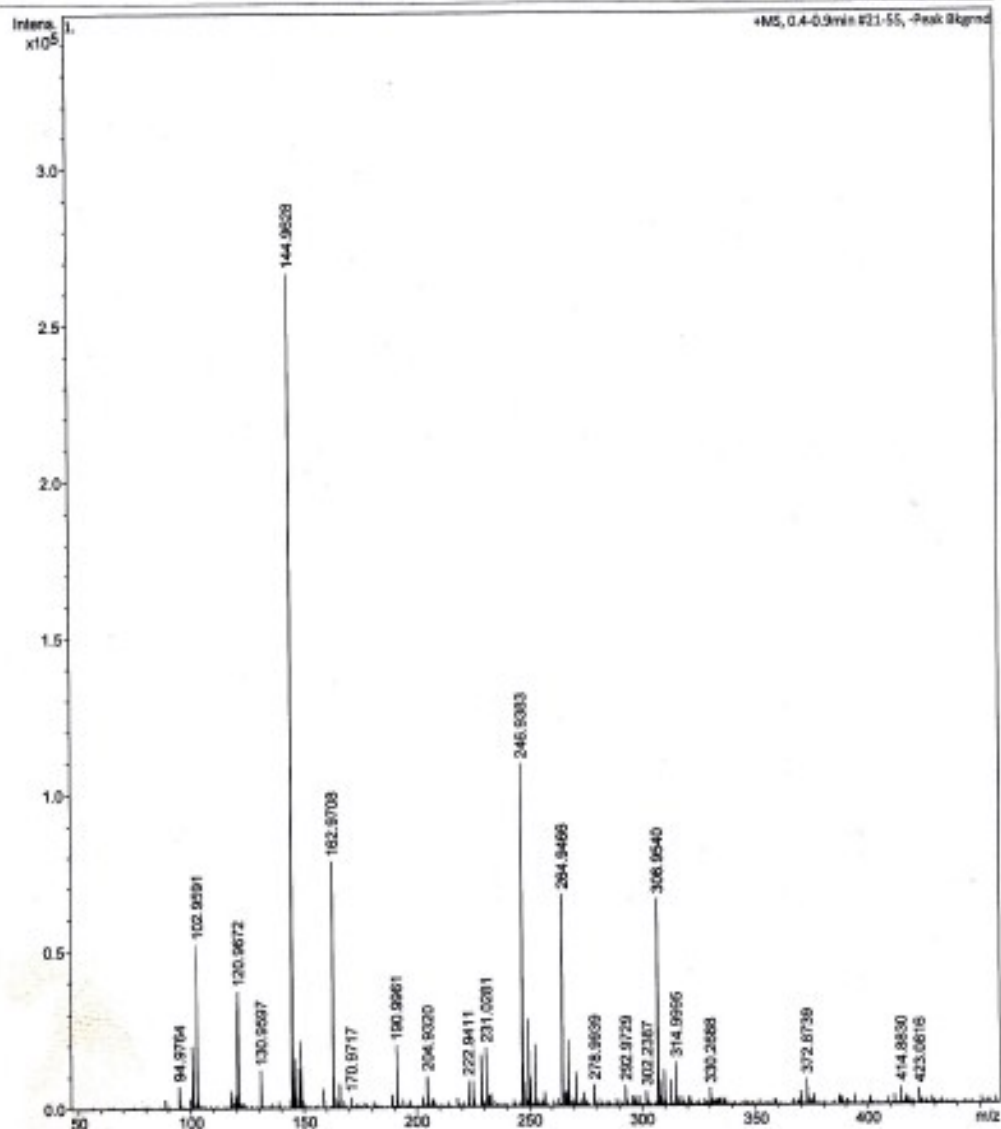


Fig. S6 ESI-MS spectra of **1** and Al³⁺ in ethanol.

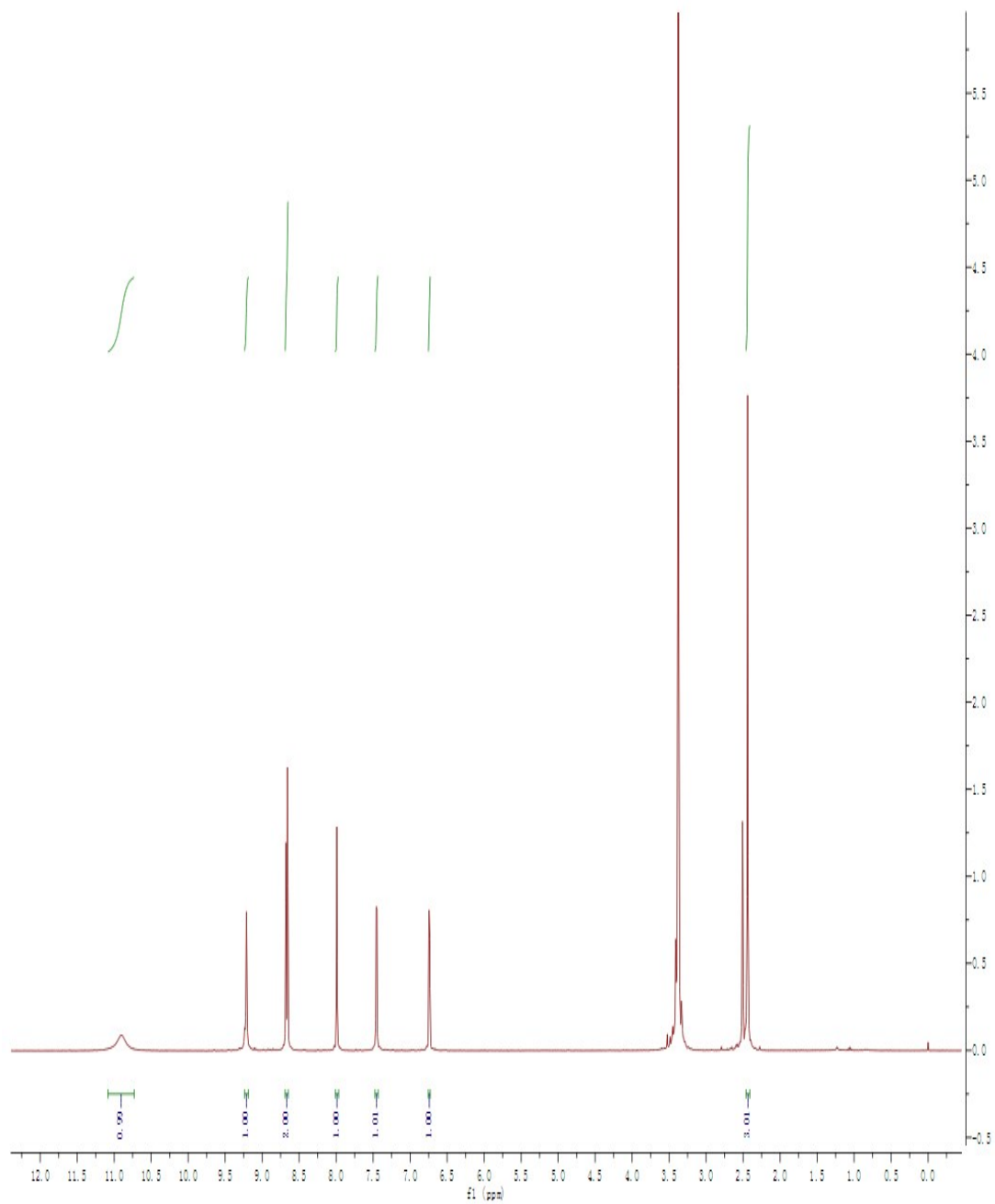


Fig. S7 ¹H NMR spectra of **1** upon addition of Al³⁺ (1.0 equiv.) in DMSO-d₆.

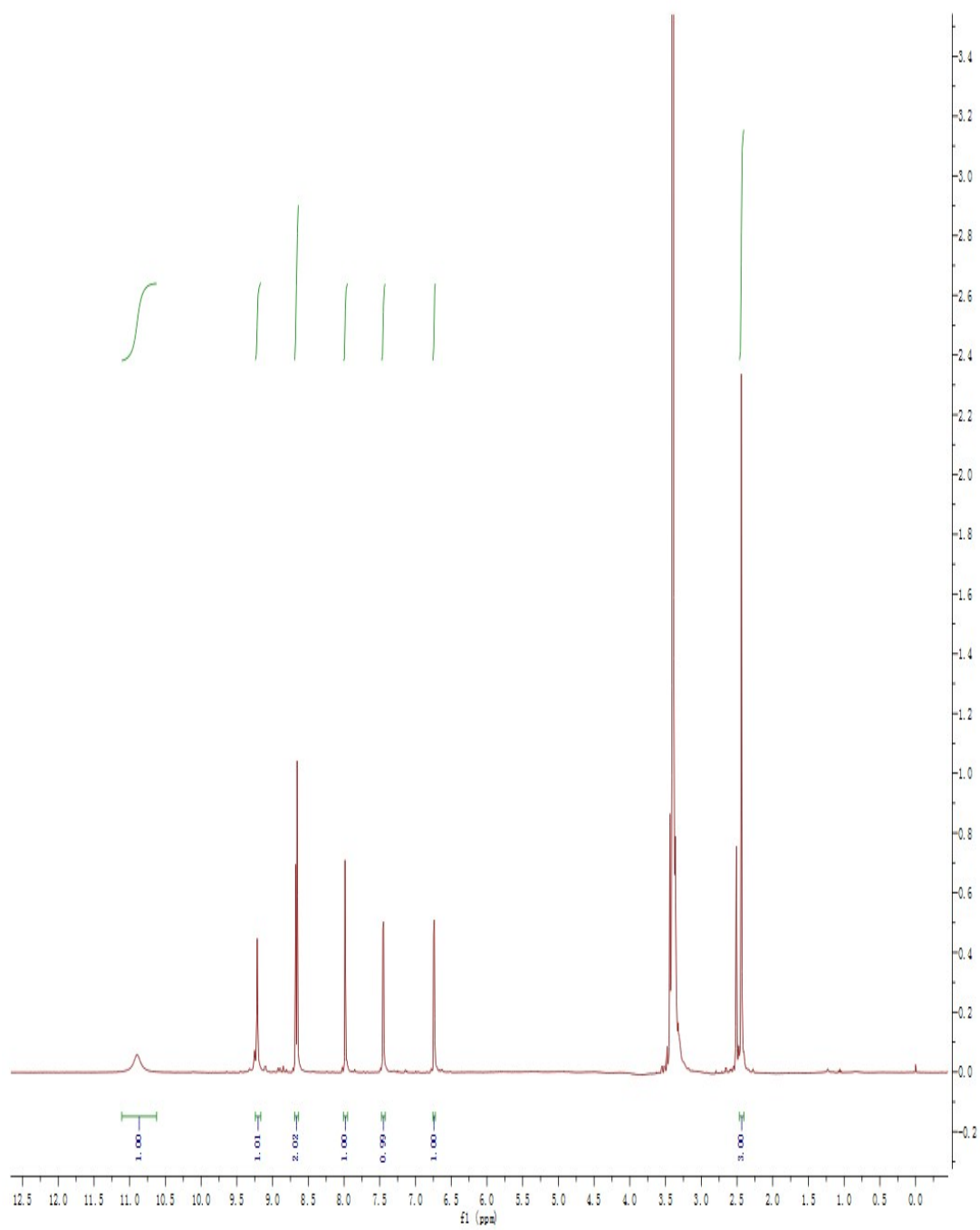


Fig. S8 ¹H NMR spectra of **1** upon addition of Al³⁺ (2.0 equiv.) in DMSO-d₆.