

## Supplementary data

### Selective colorimetric and “turn-on” fluorimetric detection of cyanide using an acylhydrazone sensor in aqueous media

Jing-Han Hu\*, Jian-Bin Li, Jing Qi, You Sun

*College of Chemical and Biological Engineering, Lanzhou Jiaotong University, Lanzhou, Gansu, 730070, P. R. China*

#### Supporting Information List of Figures:

**Fig. S1.**  $^1\text{H}$  NMR spectra of **L**.

**Fig. S2.** ESI-MS spectra of **L**.

**Fig. S3.** ESI-MS spectra of  $[\text{L}-2\text{H}+\text{Na}^++\text{H}]^+$ .

**Fig. S4.**  $^{13}\text{C}$  NMR spectra of **L**.

**Fig. S5.** Effect of pH on the UV-vis and fluorescence spectra of **L** and **L-CN<sup>-</sup>**.

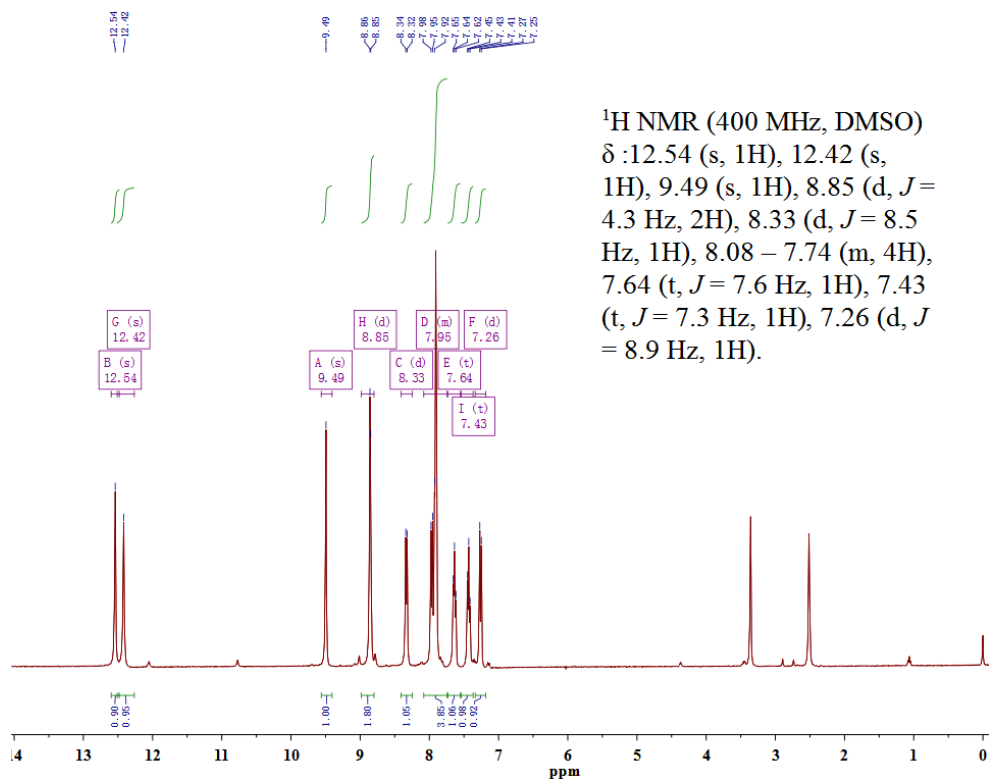
**Fig. S6.** a) UV-vis spectrum b) Fluorescence spectrum of the sensor **L** ( $2\times 10^{-5}$  M) and in presence of 50 equiv. of  $\text{F}^-$  and  $\text{CN}^-$  in the DMSO.

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\* Corresponding author: Prof. Jing-Han Hu, E-mail: [hujinghan62@163.com](mailto:hujinghan62@163.com), Tel: +86 931 18109460354

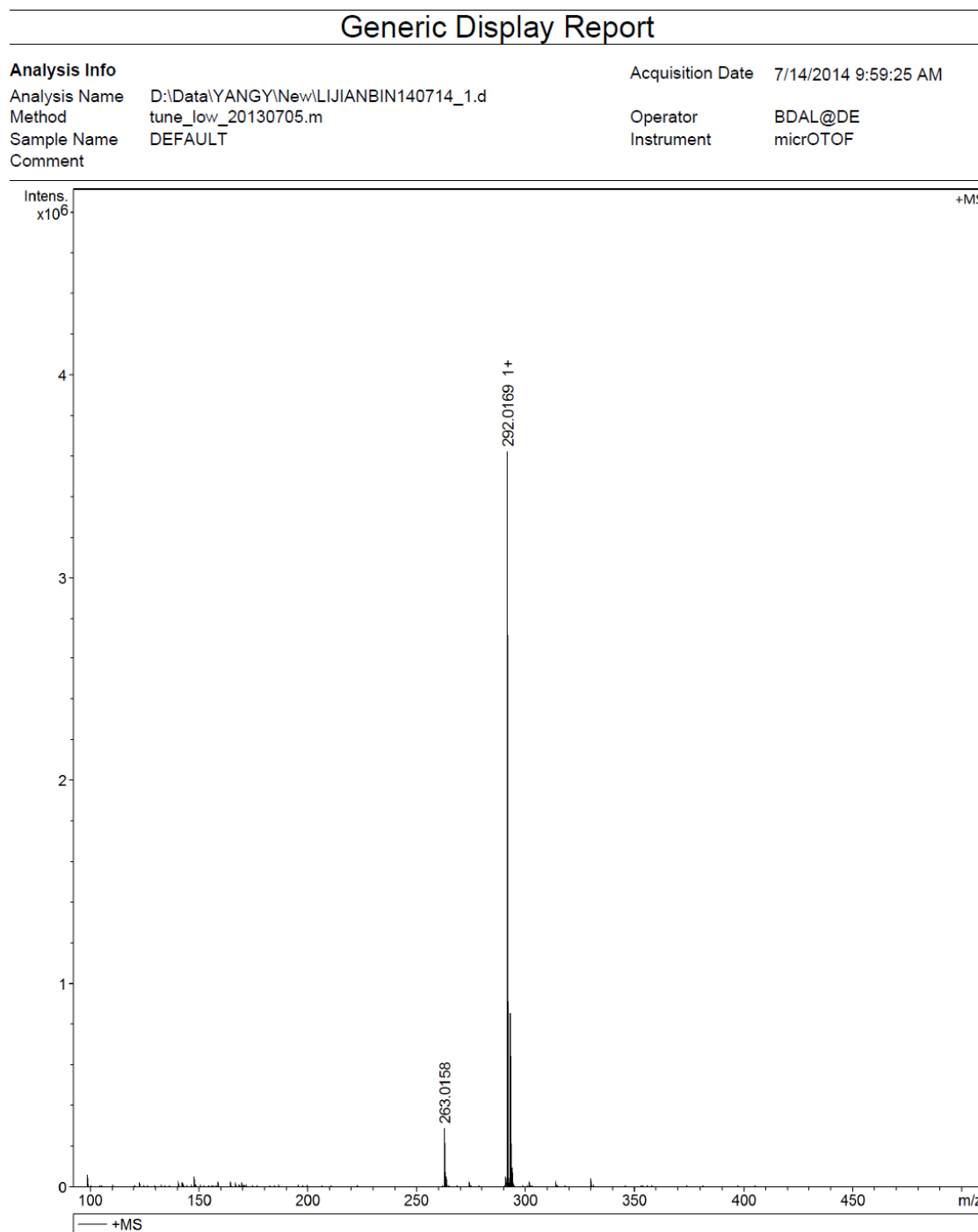
Figure S7. c) UV-vis spectrum d) Fluorescence spectrum of the sensor **L** ( $2 \times 10^{-5}$  M) and in presence of 50 equiv. of  $\text{OH}^-$  and  $\text{CN}^-$  in the DMSO/ $\text{H}_2\text{O}$  (6:4, v/v).

**Figure S1.**



**Figure S1.** <sup>1</sup>H NMR spectra of **L**.

**Figure S2.**



**Figure S2.** ESI-MS spectra of **L**.

Figure S3

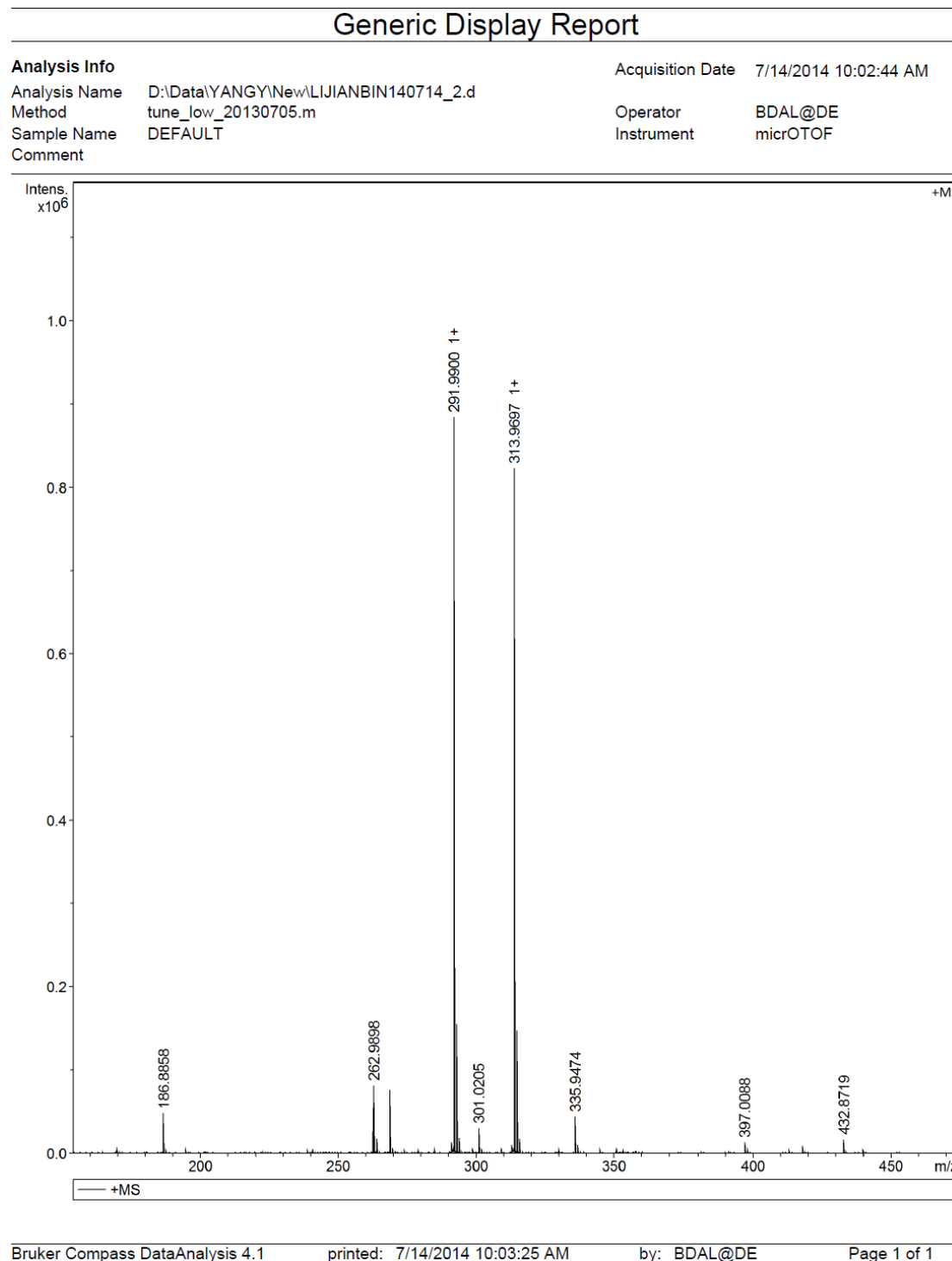
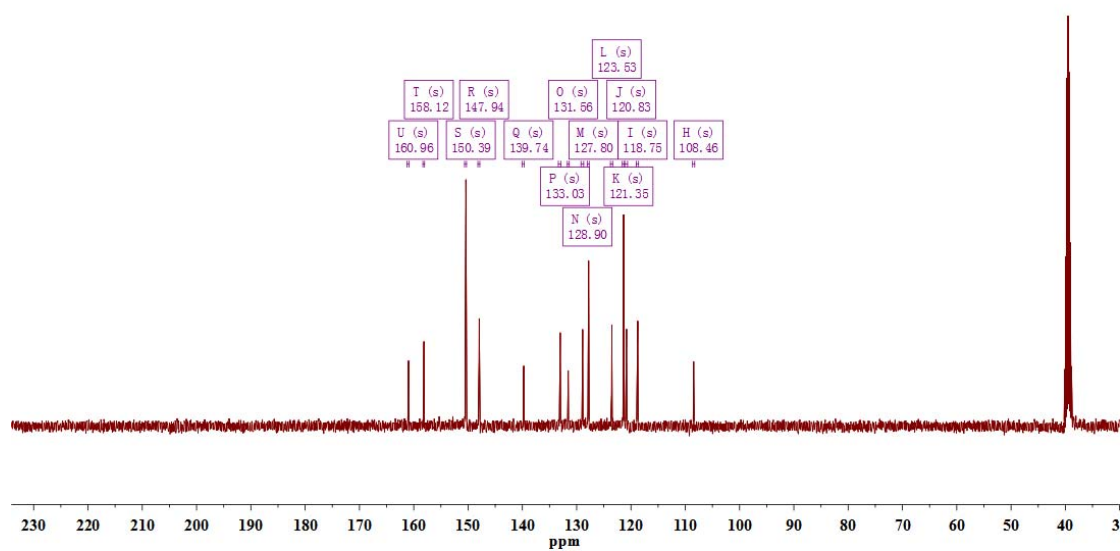


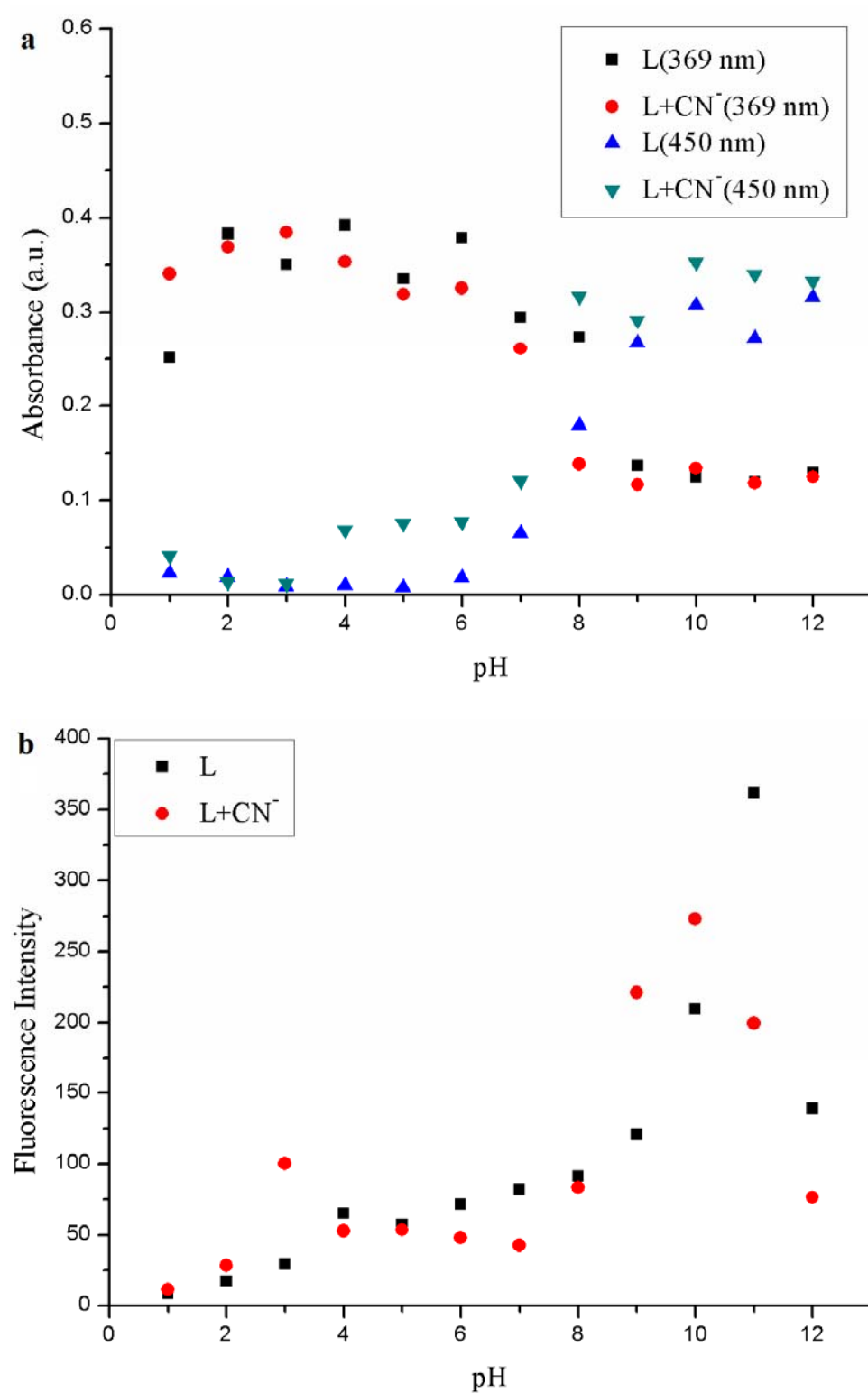
Figure S3. ESI-MS spectra of  $[L-2H+Na^+H]^+$ .

**Figure S4**



**Figure S4.**  $^{13}\text{C}$  NMR spectra of **L**.

**Figure S5**



**Figure S5.** Effect of pH on the a) UV-vis and b) fluorescence spectra of **L** ( $2.0 \times 10^{-5}$  M) and **L** in response to  $\text{CN}^-$  (50 equiv.) from 1 to 12 in DMSO/ $\text{H}_2\text{O}$  (6:4, v/v, containing 0.01 M HEPES) solution.

**Figure S6**

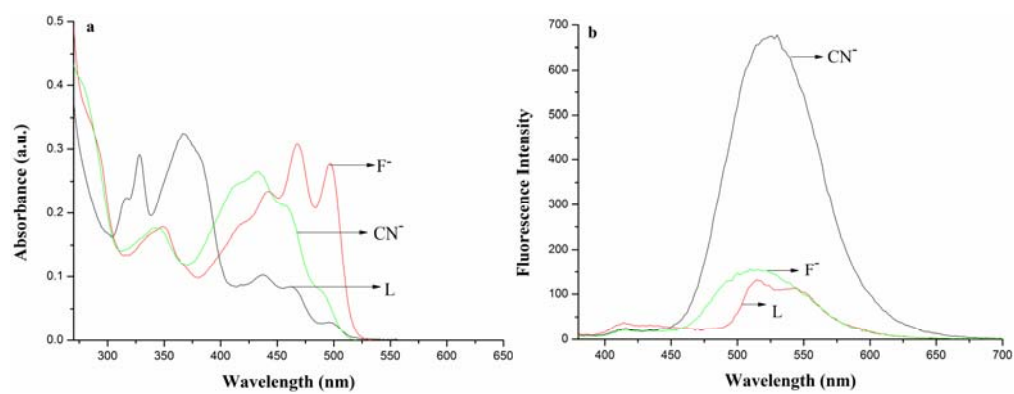


Figure S6. a) UV-vis spectrum b) Fluorescence spectrum of the sensor **L** ( $2 \times 10^{-5}$  M) and in presence of 50 equiv. of  $\text{F}^-$  and  $\text{CN}^-$  in the DMSO.



Figure S7

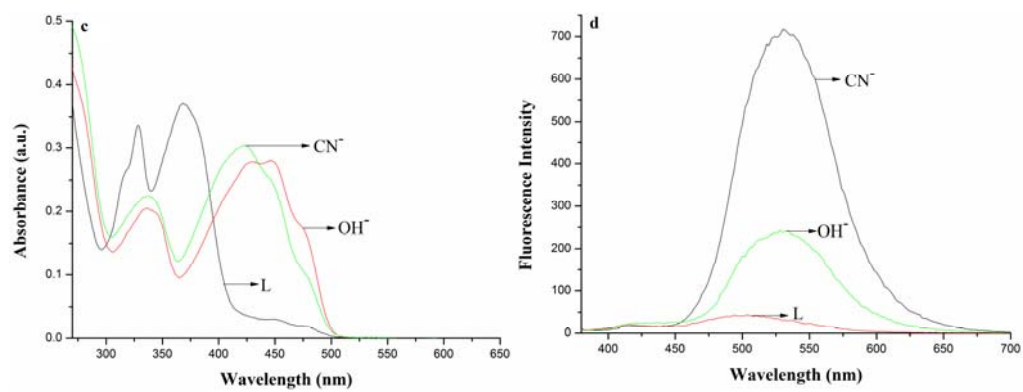


Figure S7. c) UV-vis spectrum d) Fluorescence spectrum of the sensor **L** ( $2 \times 10^{-5}$  M) and in presence of 50 equiv. of OH<sup>-</sup> and CN<sup>-</sup> in the DMSO/H<sub>2</sub>O (6:4, v/v).