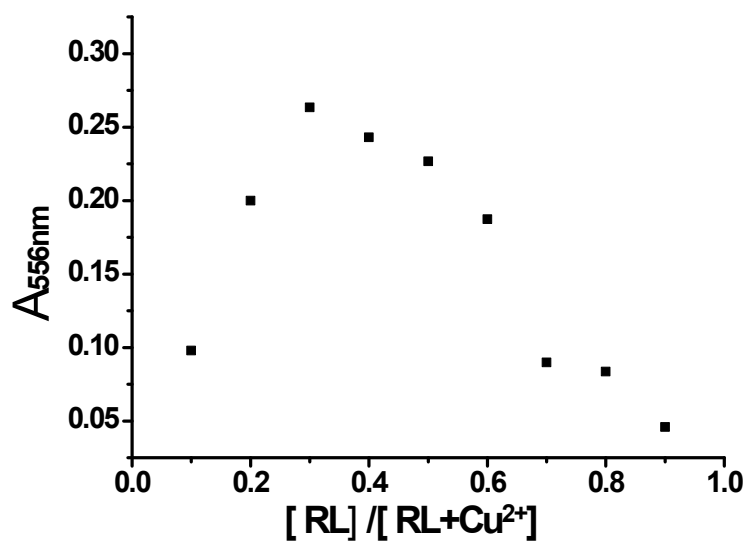


## Supporting Information

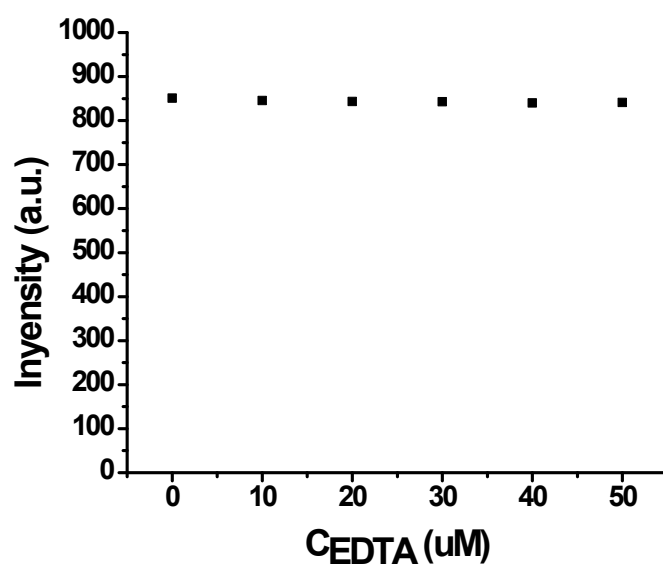
### High sensitive and selective turn-on fluorescent probe for Cu<sup>2+</sup> based on Rhodamine B

Ye Yuan , Shiguo Sun\*, Si Liu , Xinwei Song, Xiaojun Peng

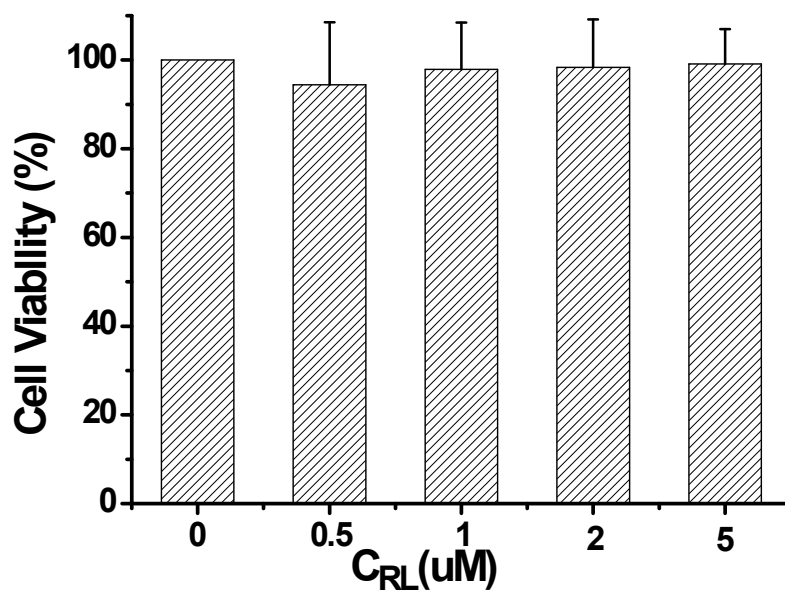
State Key Laboratory of Fine Chemicals, Dalian University of Technology, E224 West Campus, No. 2,  
Linggonglu, 116024, Dalian, China. Fax: +86 411 84986304; Tel: +86 411 84986304; E-mail:  
[shiguo@dlut.edu.cn](mailto:shiguo@dlut.edu.cn).



**Figure S1.** Job-plot for the complexation of Cu<sup>2+</sup> ion with RL determined by UV-vis method (at 556 nm). Total concentration of RL and Cu<sup>2+</sup> ions is 20  $\mu$ M.

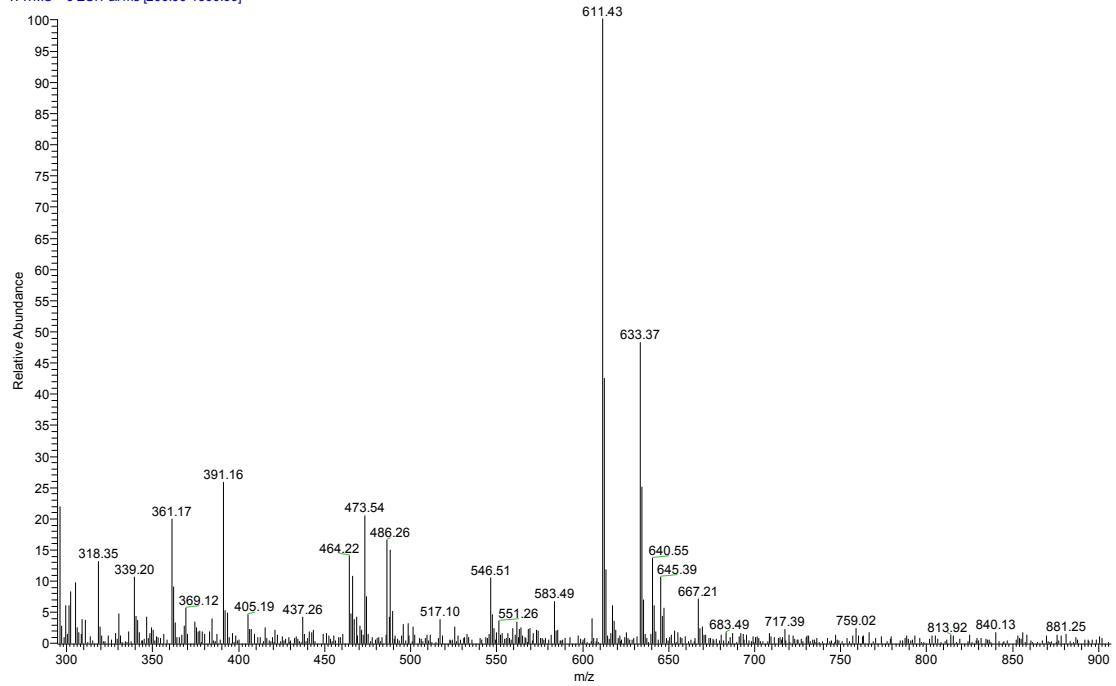


**Figure S2.** Fluorescence intensity ( $I_{582\text{nm}}$ ) of RL (10  $\mu\text{M}$ ) in the presence of  $\text{CuCl}_2$  (30  $\mu\text{M}$ ) after addition of EDTA (0-50  $\mu\text{M}$ ) in  $\text{CH}_3\text{CN}/\text{H}_2\text{O}$  (1:9, v/v) buffered with Britton-Robinson, pH = 7.02.  $\lambda_{\text{ex}} = 540 \text{ nm}$ .

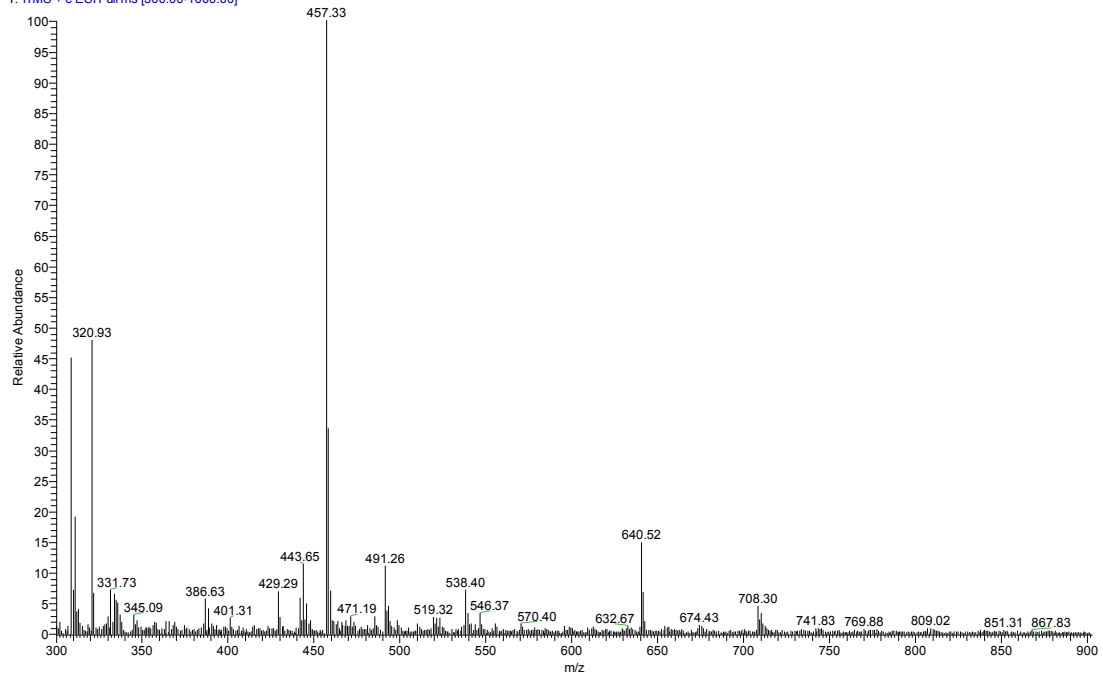


**Figure S3.** Cytotoxicity studies of RL in cancer cells by MTT analysis.

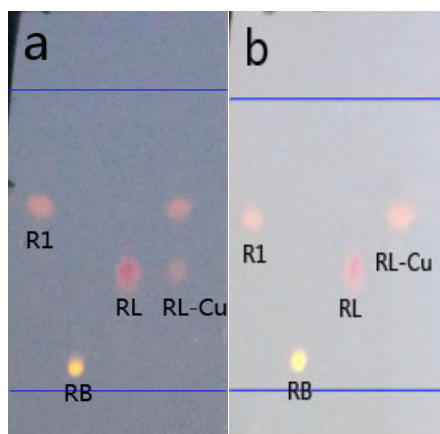
YY-M610-02 #30-31 RT: 0.11-0.12 AV: 2 SB: 9 0.01-0.04 NL: 1.53E4  
T: ITMS + c ESI Full ms [200.00-1300.00]



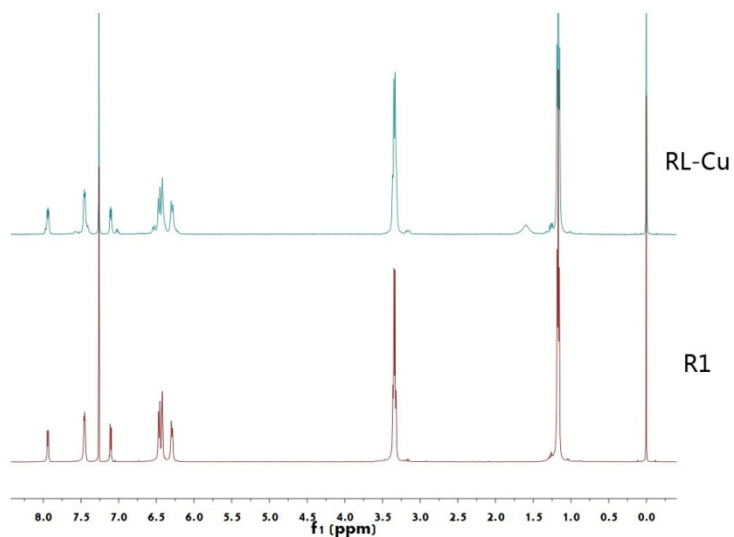
YY-M610+Cu-01 #37-47 RT: 0.12-0.14 AV: 11 SB: 11 0.88-0.92 NL: 1.20E5  
T: ITMS + c ESI Full ms [300.00-1000.00]



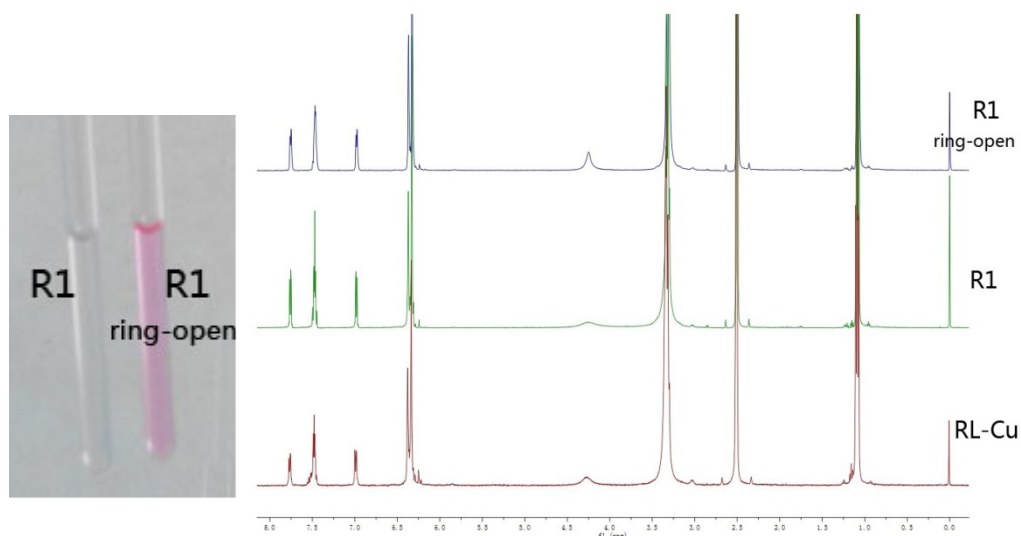
**Figure S4.** The Mass Spectra of RL before and after the addition of  $\text{Cu}^{2+}$



**Figure S5.** Photographs of the RL-Cu<sup>2+</sup> solution on silica gel GF254 plates with the methanol and dichloromethane (1:20) as eluent under irradiation of a UV 365 nm lamp.



**Figure S6.** The <sup>1</sup>H NMR Spectra of RL-Cu and R1 in CDCl<sub>3</sub>



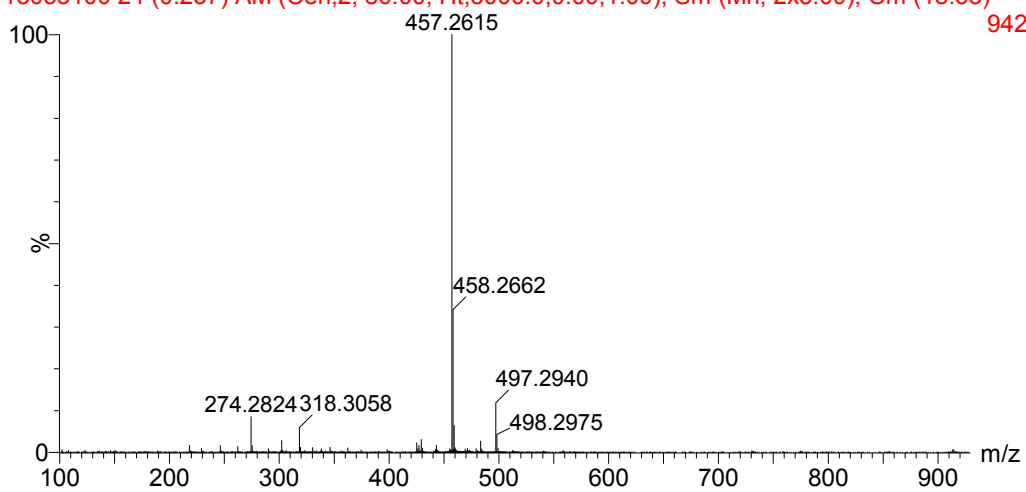
**Figure S7.** A photograph of the colorless and colored R1 in NMR tube,  $^1\text{H}$  NMR spectra of the colorless and colored R1 in comparison with RL-Cu in  $\text{DMSO-}d_6$

YY

09:27:37

15033100 24 (0.237) AM (Cen,2, 80.00, Ht,5000.0,0.00,1.00); Sm (Mn, 2x3.00); Cm (18:35)

942



**Figure S8.** The TOF-MS Spectra of RL-Cu

YY:MS6 #10-14 RT: 0.10-0.13 AV: 5 SB: 6 0.77-0.83 NL: 1.91E7  
T: FTMS + p ESI Full ms [120.00-1000.00]

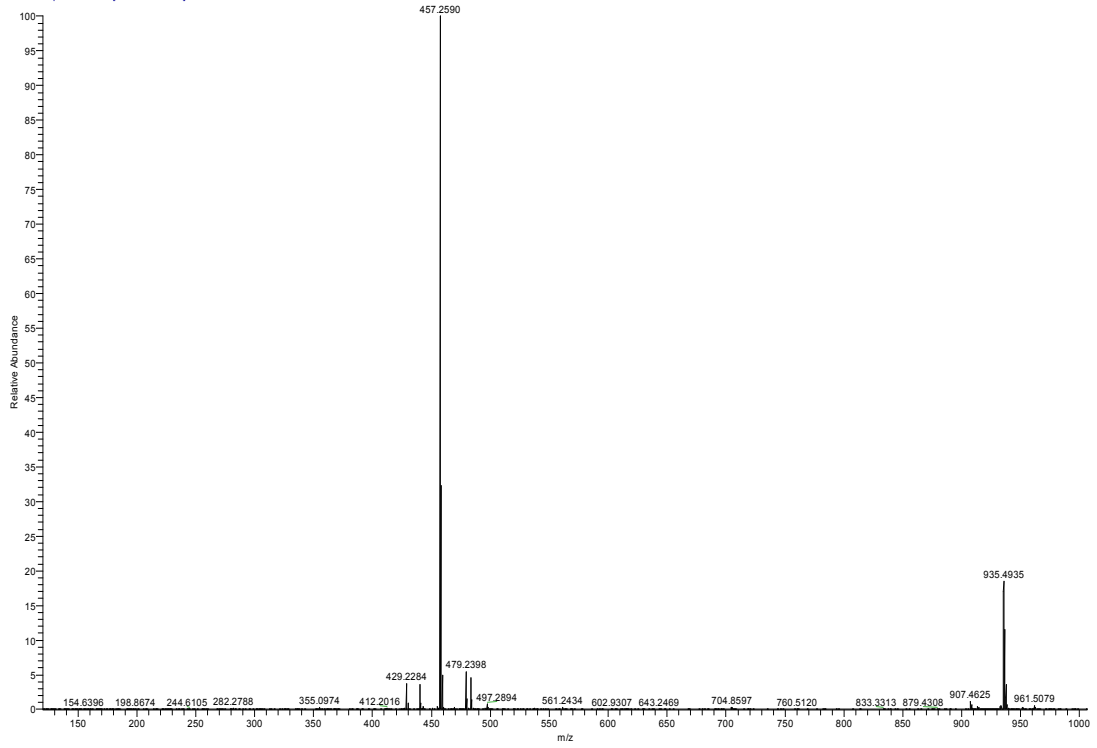


Figure S9. The HRMS of R1

YY

09:46:13

15010805 84 (0.829) AM (Cen,2, 80.00, Ht,5000.0,0.00,1.00); Sm (Mn, 2x3.00); Cm (72:99)

9.17e3

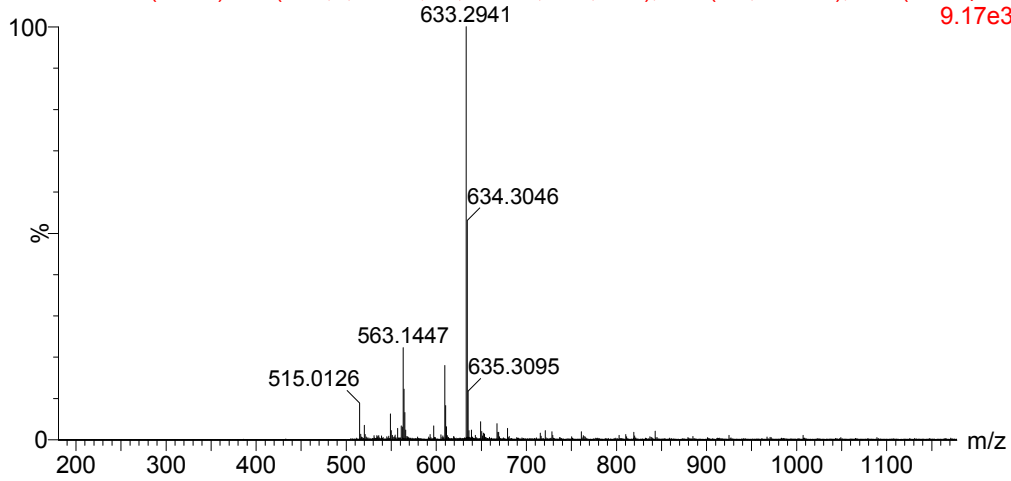


Figure S10. The TOF-MS Spectra of RL

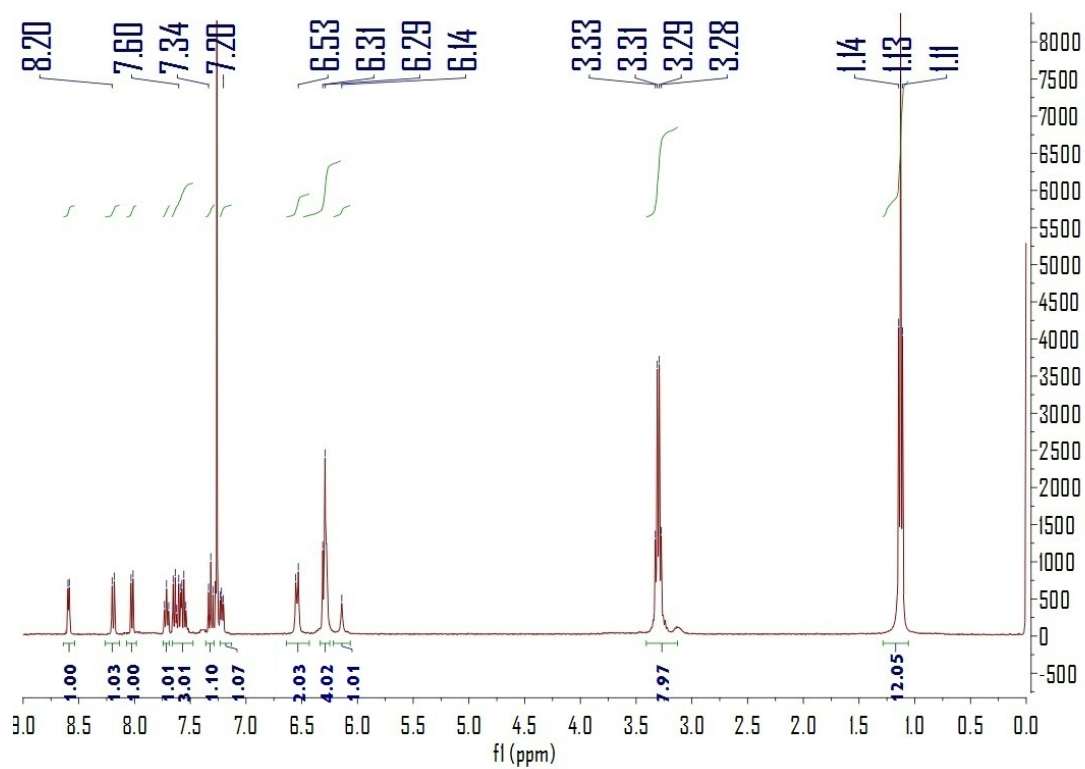


Figure S11. The  $^1\text{H}$ NMR Spectra of RL in  $\text{CDCl}_3$

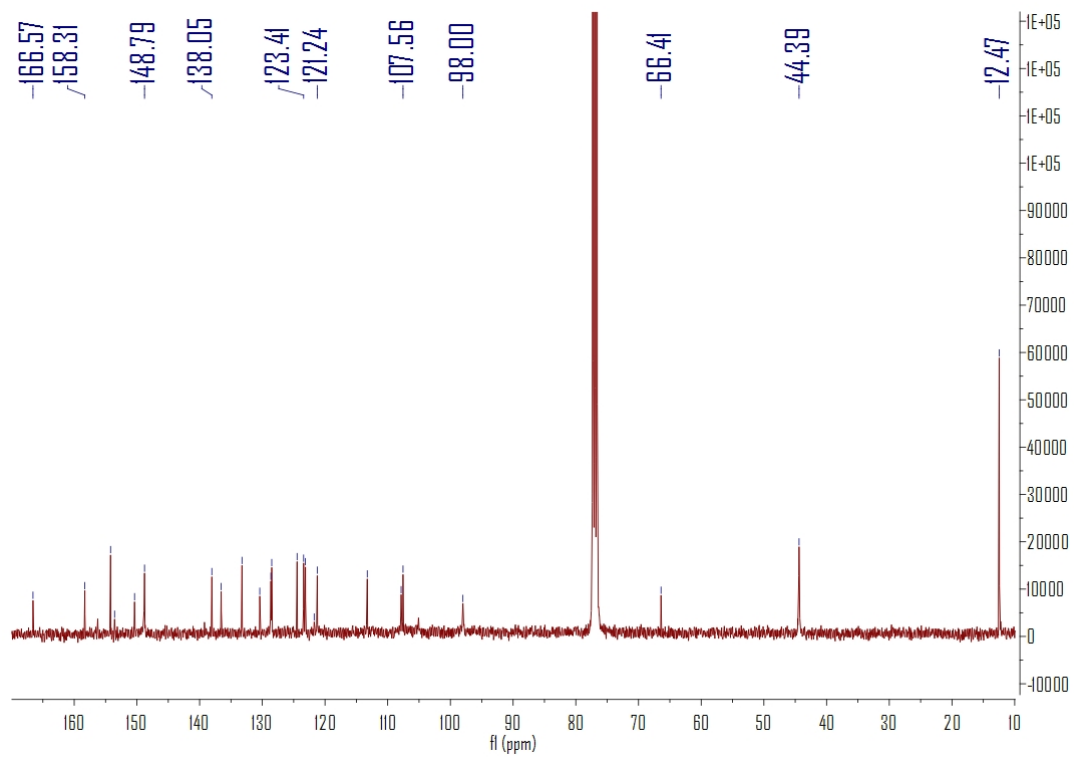


Figure S12. The  $^{13}\text{C}$  NMR Spectra of RL in  $\text{CDCl}_3$