

# Supplementary Information

## Cascade Synthesis of Thieno[2,3-*b*]pyridines by Using Intramolecular Cyclization Reactions of 3-Cyano-2-(organylmethylthio)pyridines

Fatemeh Alinaghizadeh,<sup>a</sup> Mahboobeh Zahedifar,<sup>b</sup> Mohammad Seifi<sup>a</sup> and Hassan Sheibani\*<sup>a</sup>

<sup>a</sup>Department of Chemistry, Shahid Bahonar University of Kerman, 76169 Kerman, Iran

<sup>b</sup>Department of Chemistry, Faculty of Science, University of Jiroft, 364 Jiroft, Iran

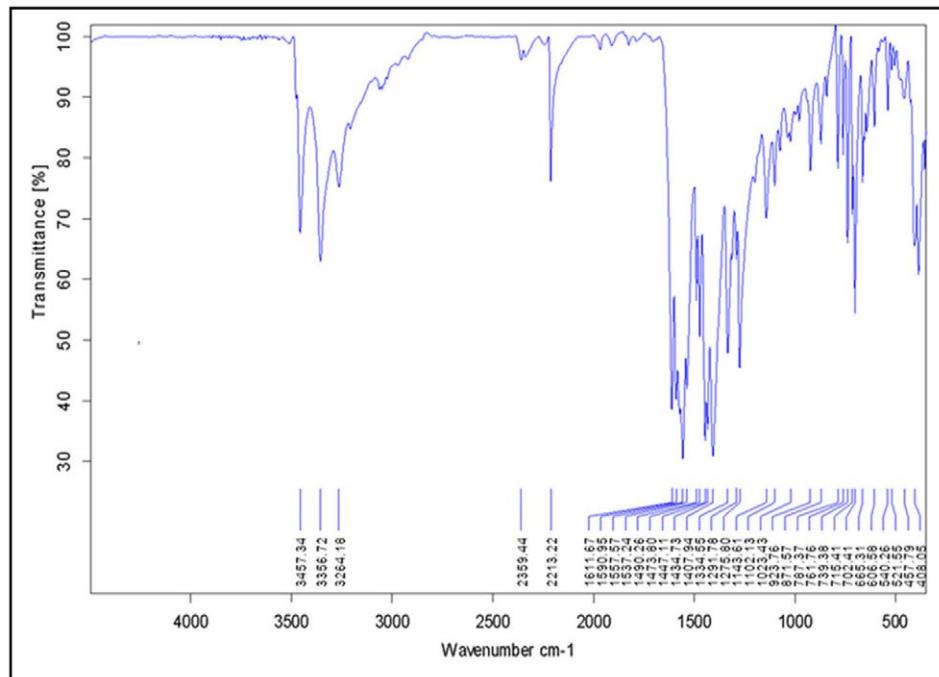
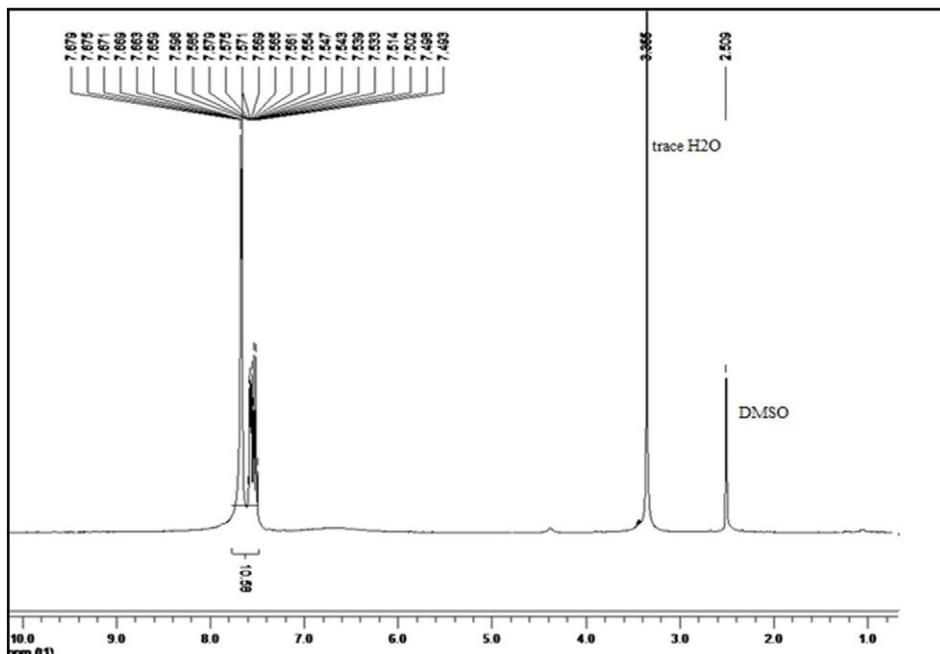
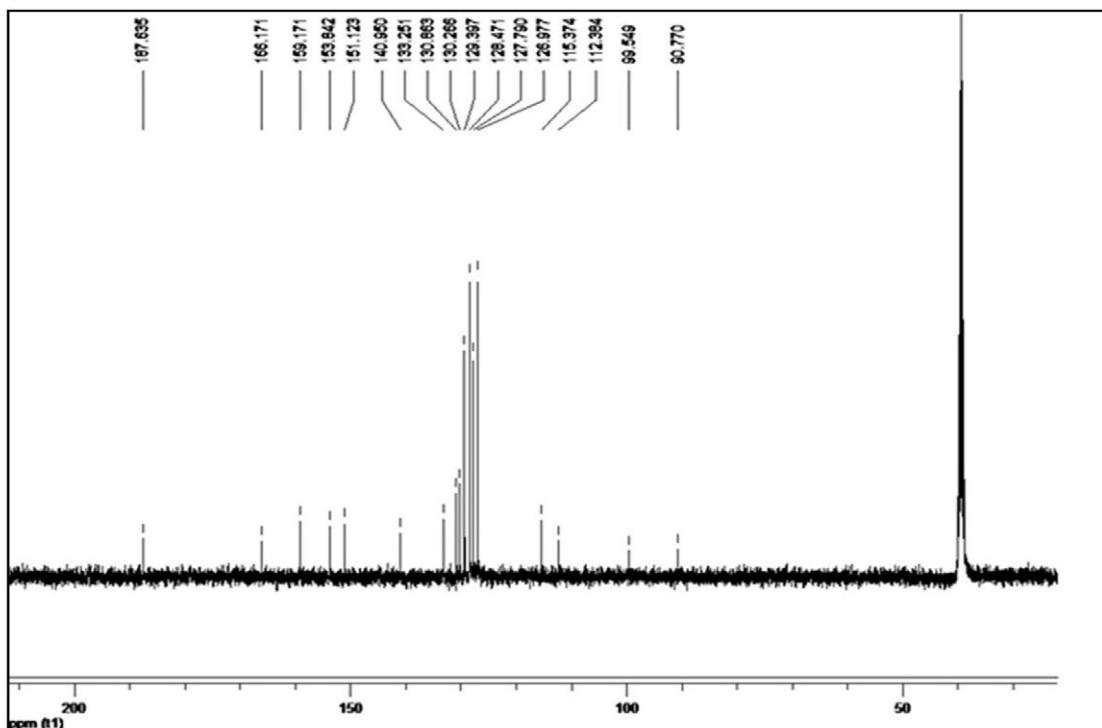


Figure S1. FTIR (KBr) spectrum of compound 6a.



**Figure S2.**  $^1\text{H}$  NMR spectrum (400 MHz,  $\text{DMSO}-d_6$ ) of compound **6a**.



**Figure S3.**  $^{13}\text{C}$  NMR spectrum (100 MHz,  $\text{DMSO}-d_6$ ) of compound **6a**.

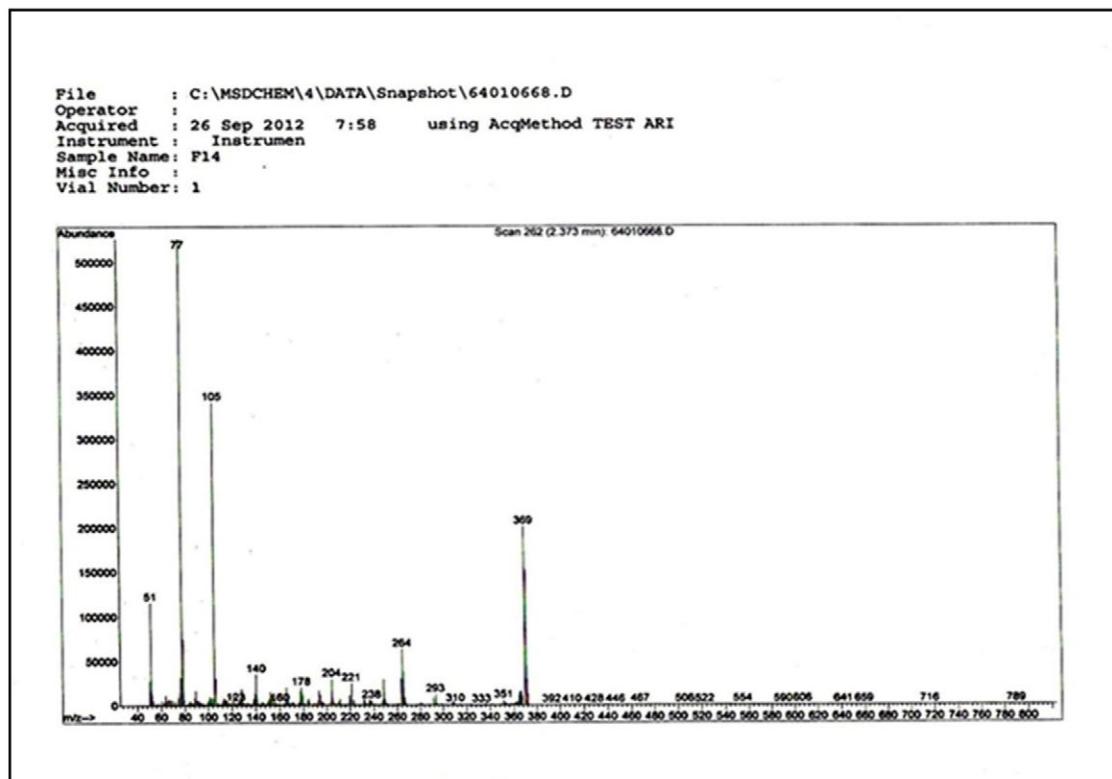


Figure S4. Mass spectrum of compound 6a.

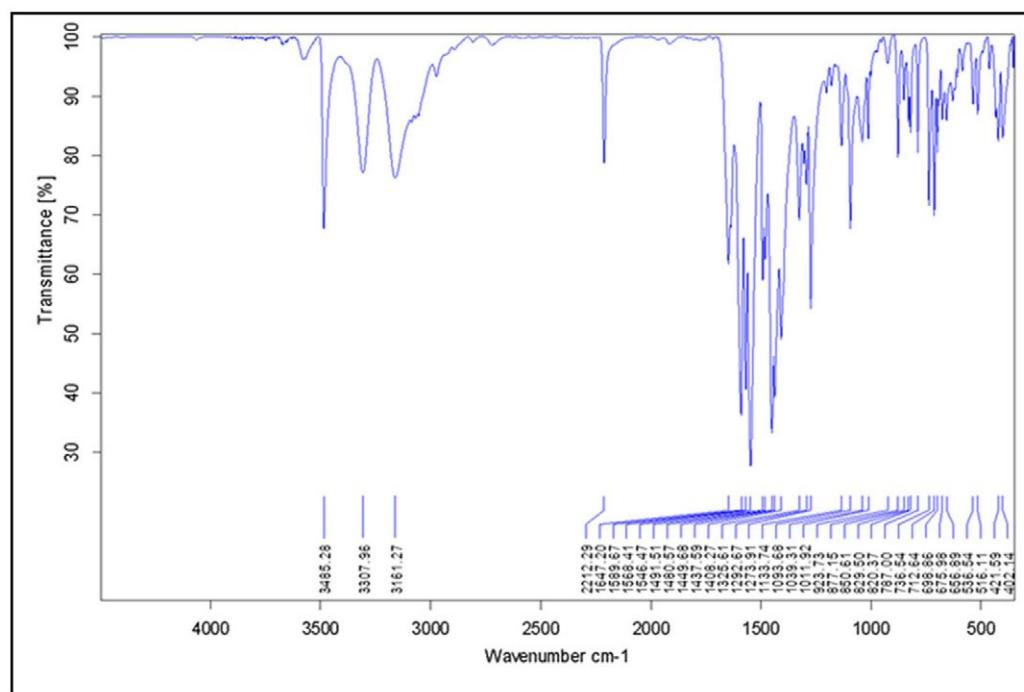


Figure S5. FTIR (KBr) spectrum of compound 6b.

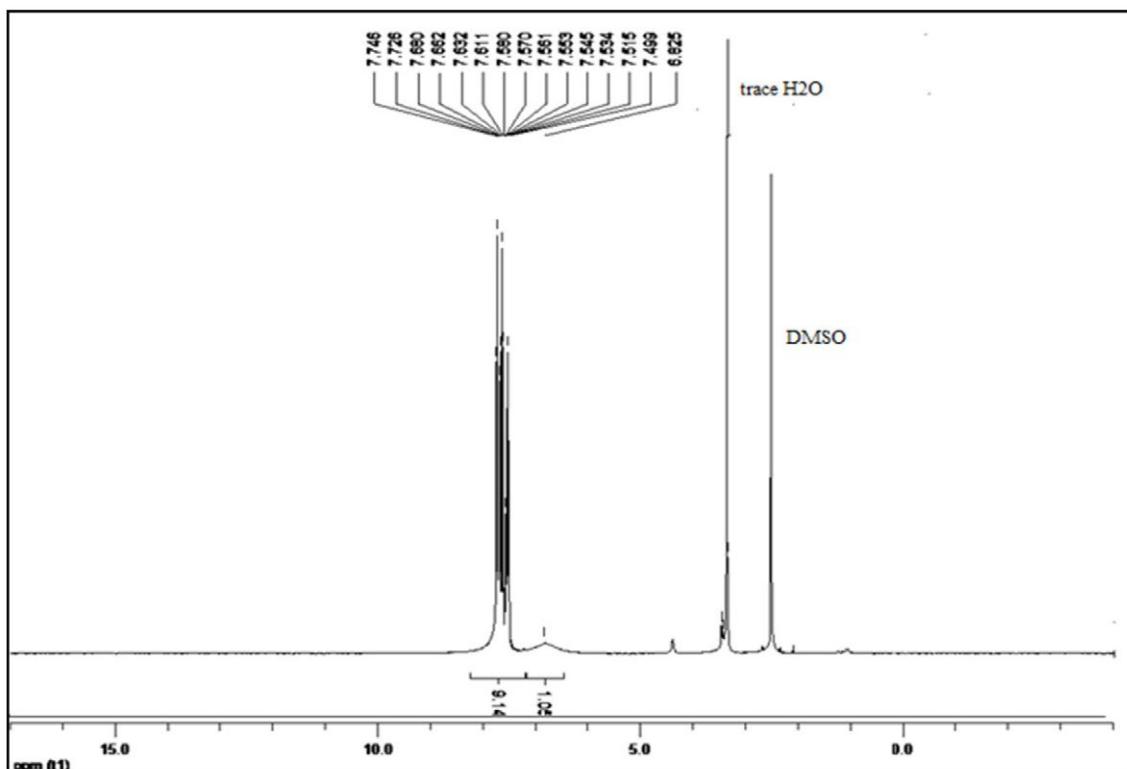


Figure S6.  $^1\text{H}$  NMR spectrum (400 MHz,  $\text{DMSO}-d_6$ ) of compound **6b**.

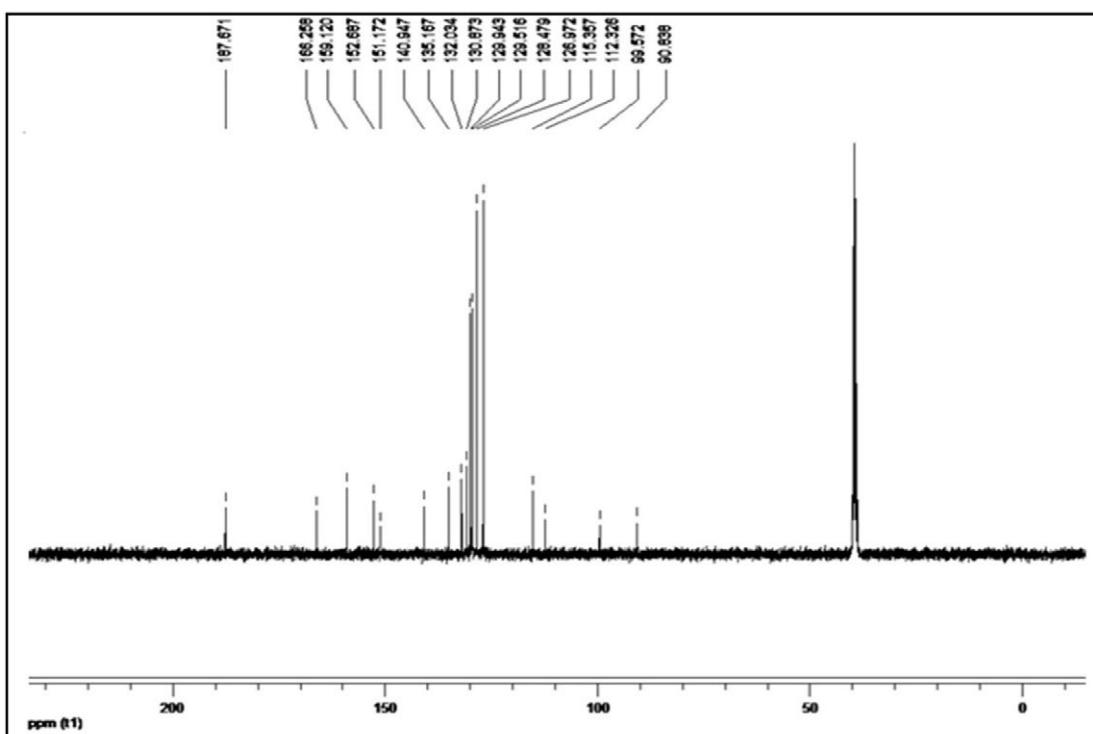
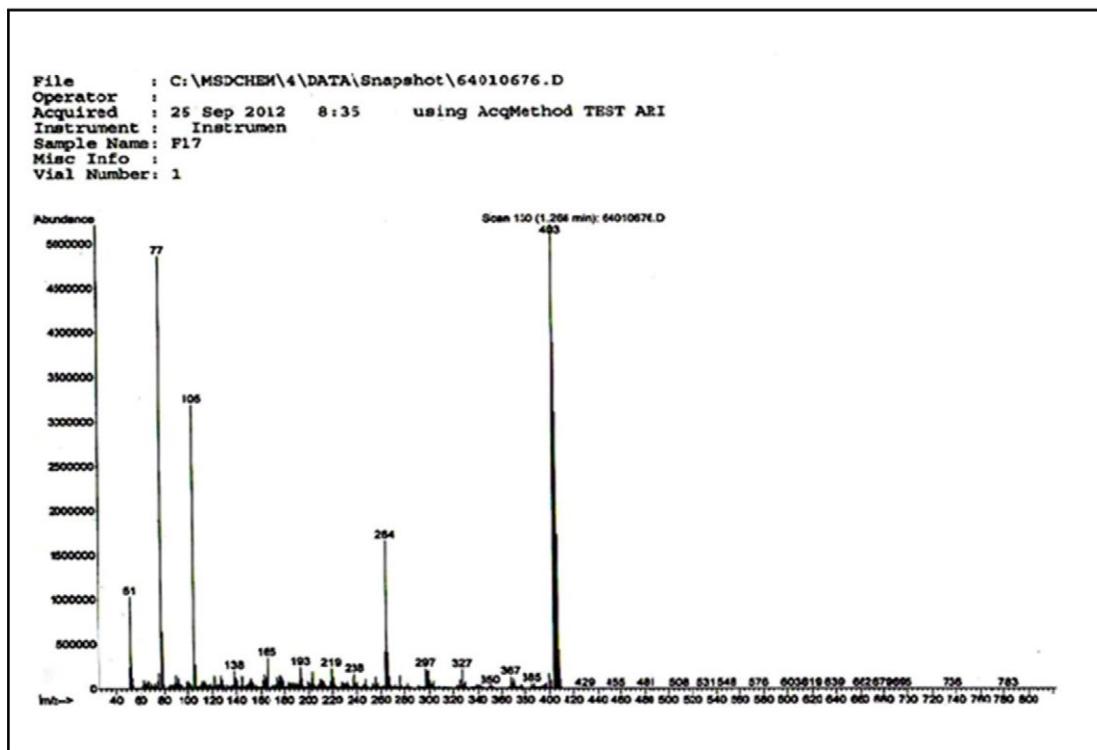
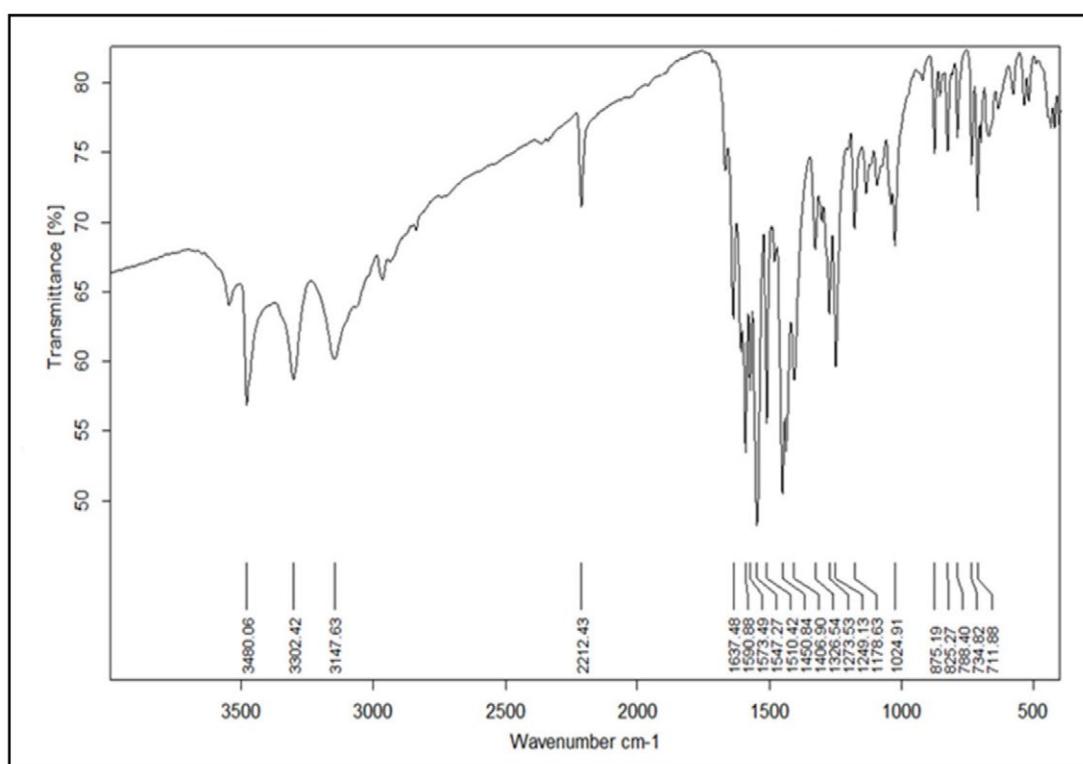


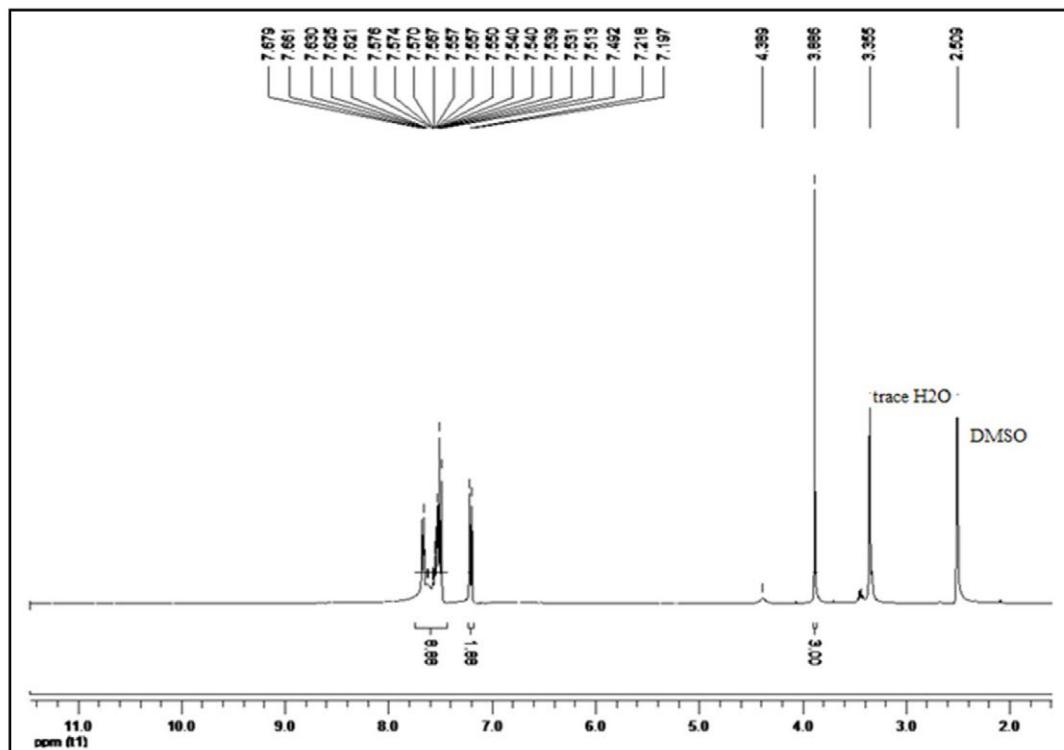
Figure S7.  $^{13}\text{C}$  NMR spectrum (100 MHz,  $\text{DMSO}-d_6$ ) of compound **6b**.



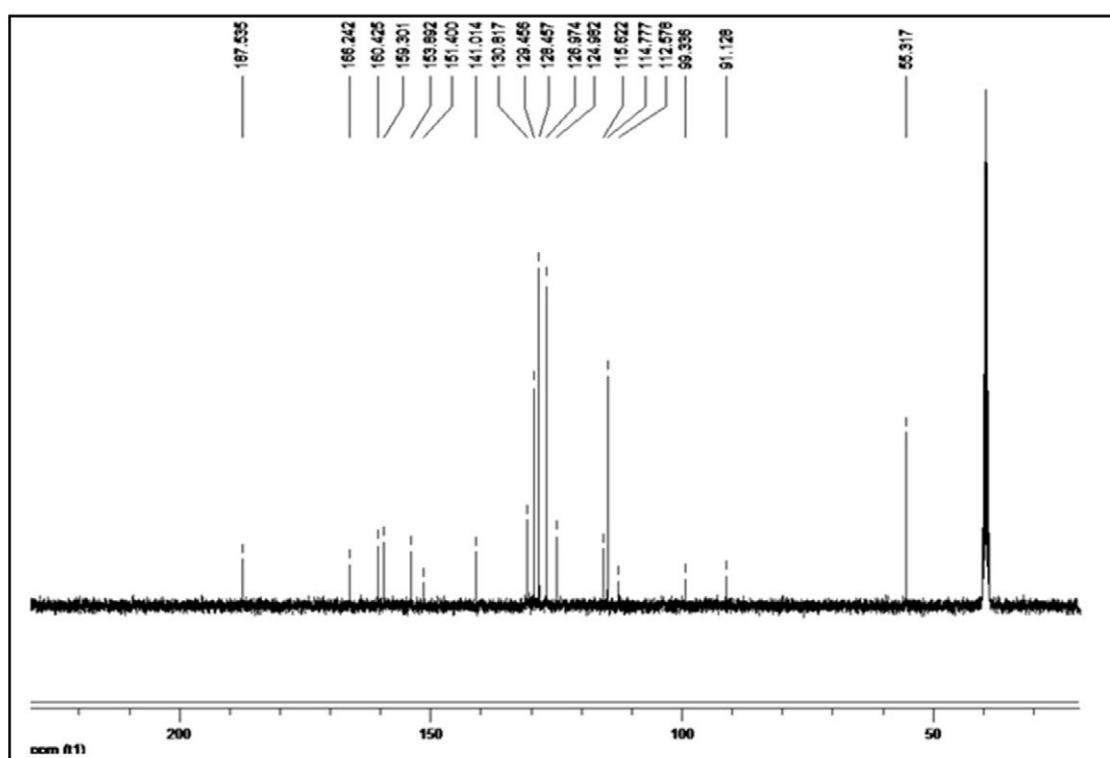
**Figure S8.** Mass spectrum of compound **6b**.



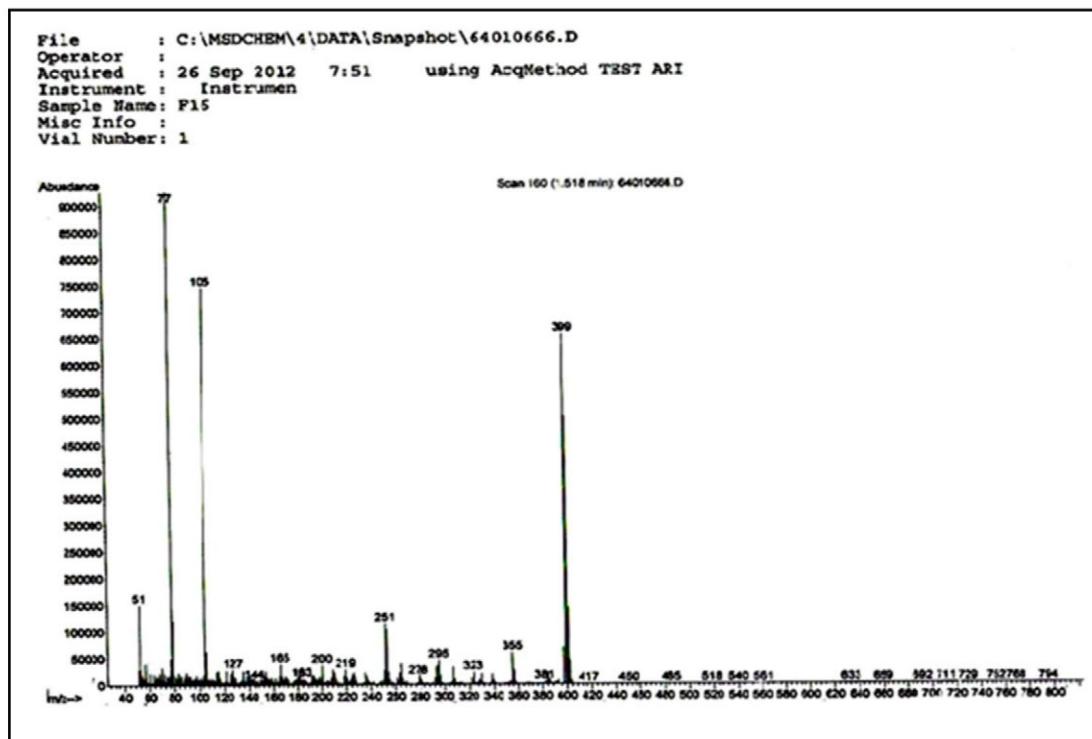
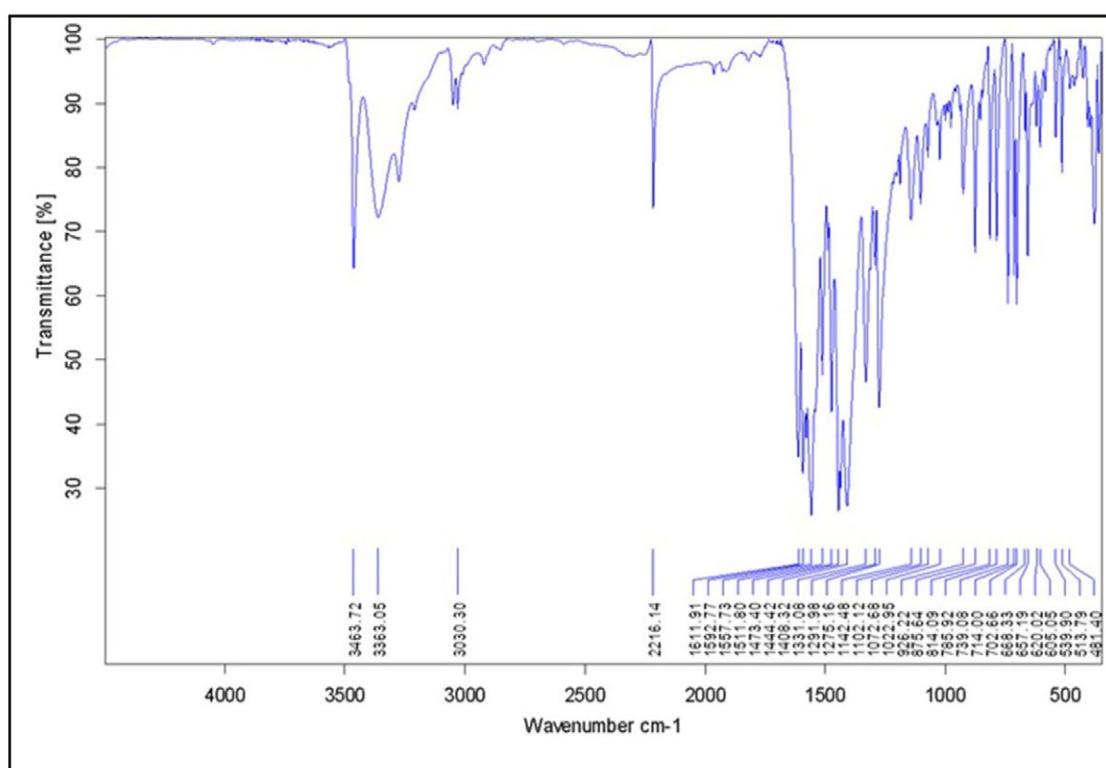
**Figure S9.** FTIR (KBr) spectrum of compound **6c**.



**Figure S10.**  $^1\text{H}$  NMR spectrum (400 MHz,  $\text{DMSO}-d_6$ ) of compound **6c**.



**Figure S11.**  $^{13}\text{C}$  NMR spectrum (100 MHz,  $\text{DMSO}-d_6$ ) of compound **6c**.

**Figure S12.** Mass spectrum of compound 6c.**Figure S13.** FTIR (KBr) spectrum of compound 6d.

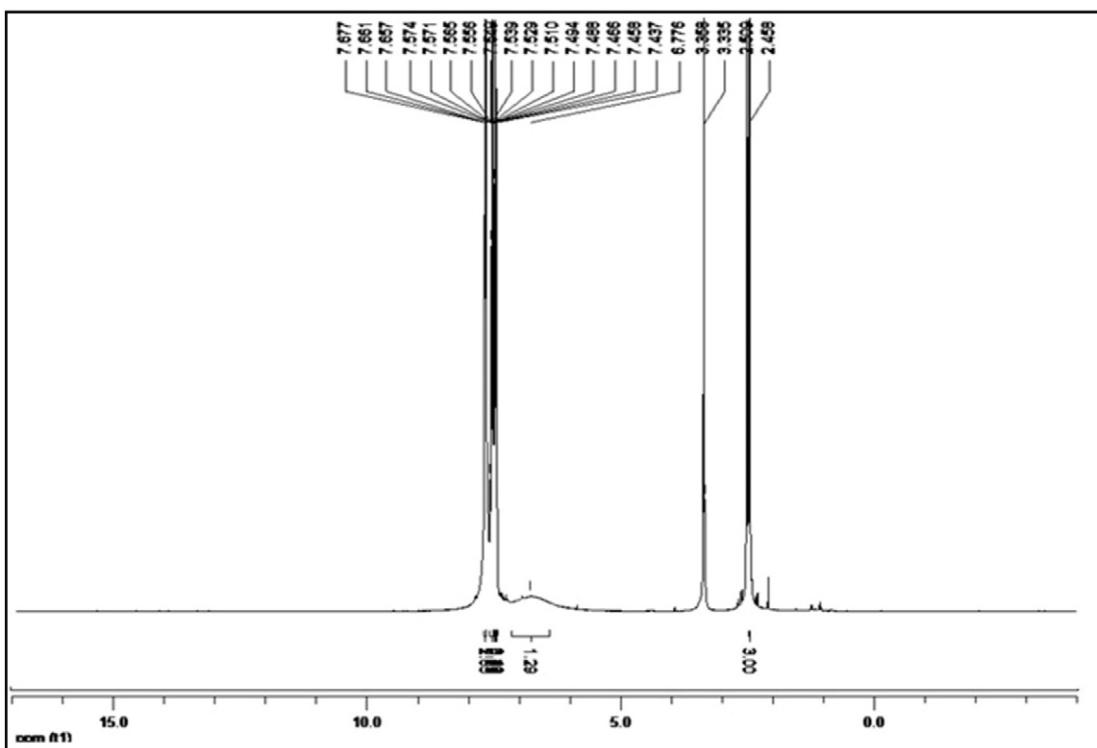


Figure S14. <sup>1</sup>H NMR spectrum (400 MHz, DMSO-*d*<sub>6</sub>) of compound 6d.

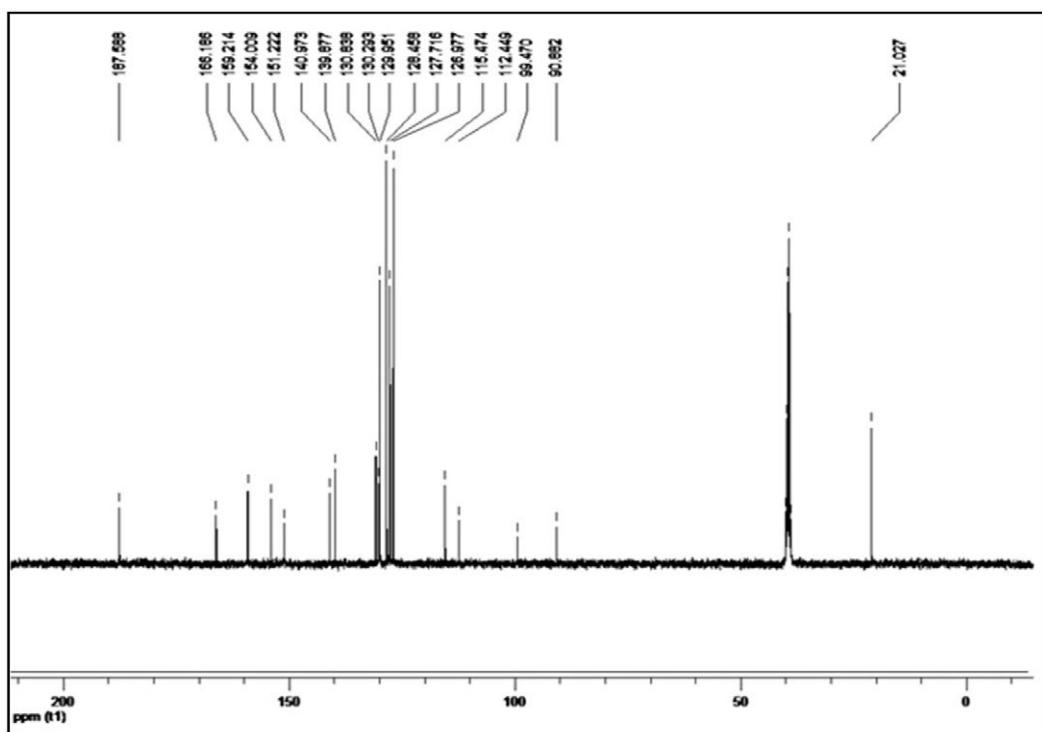


Figure S15. <sup>13</sup>C NMR spectrum (100 MHz, DMSO-*d*<sub>6</sub>) of compound 6d.

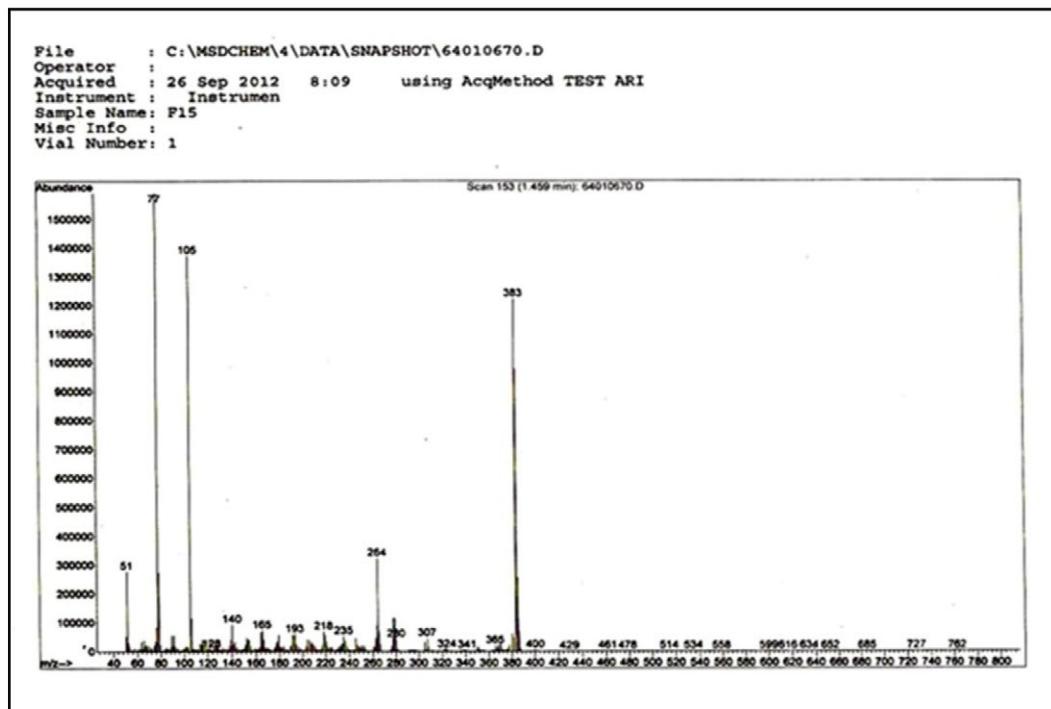


Figure S16. Mass spectrum of compound 6d.

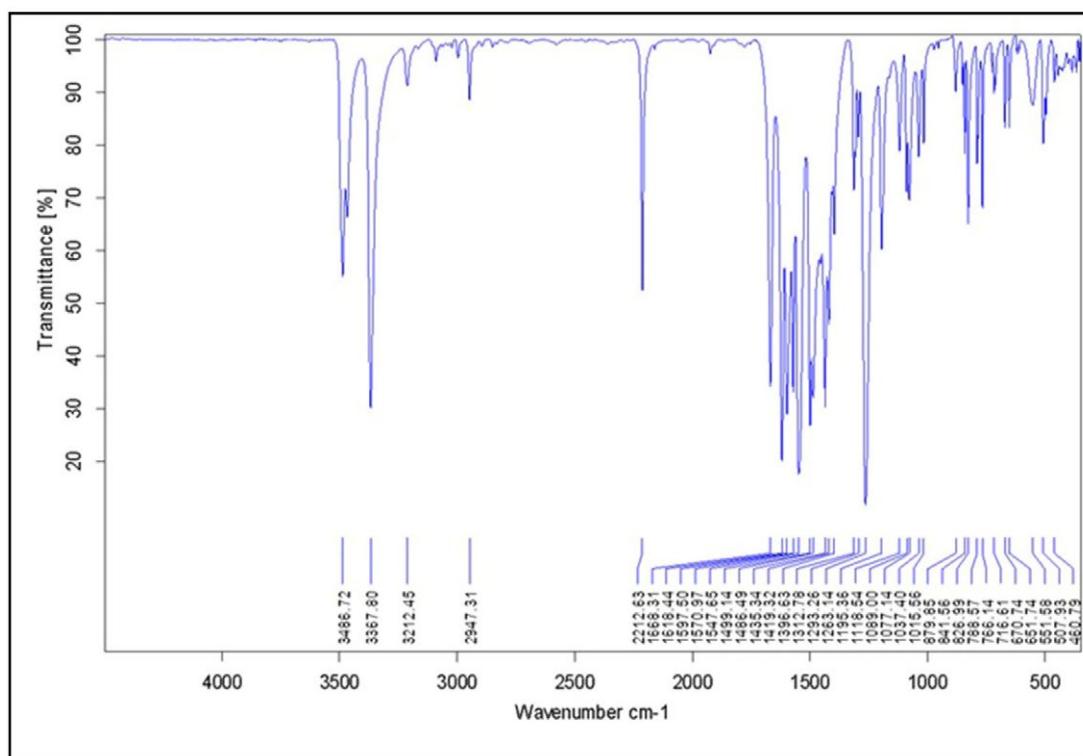


Figure S17. FTIR (KBr) spectrum of compound 6e.

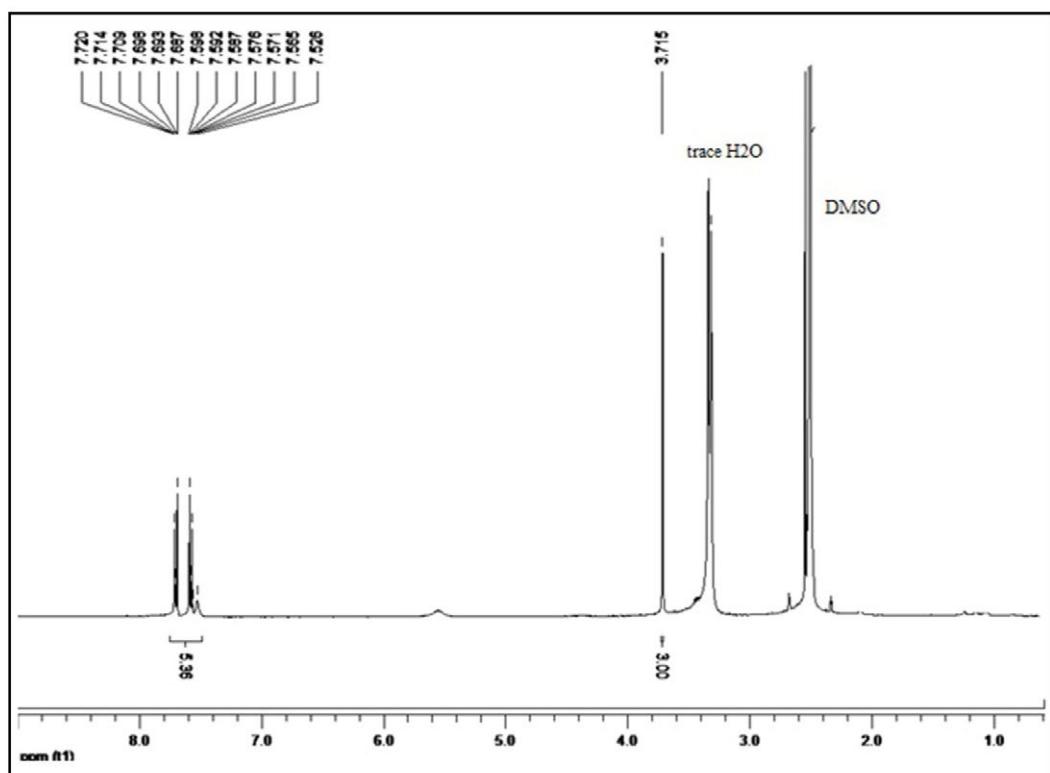


Figure S18.  $^1\text{H}$  NMR spectrum (400 MHz,  $\text{DMSO}-d_6$ ) of compound 6e.

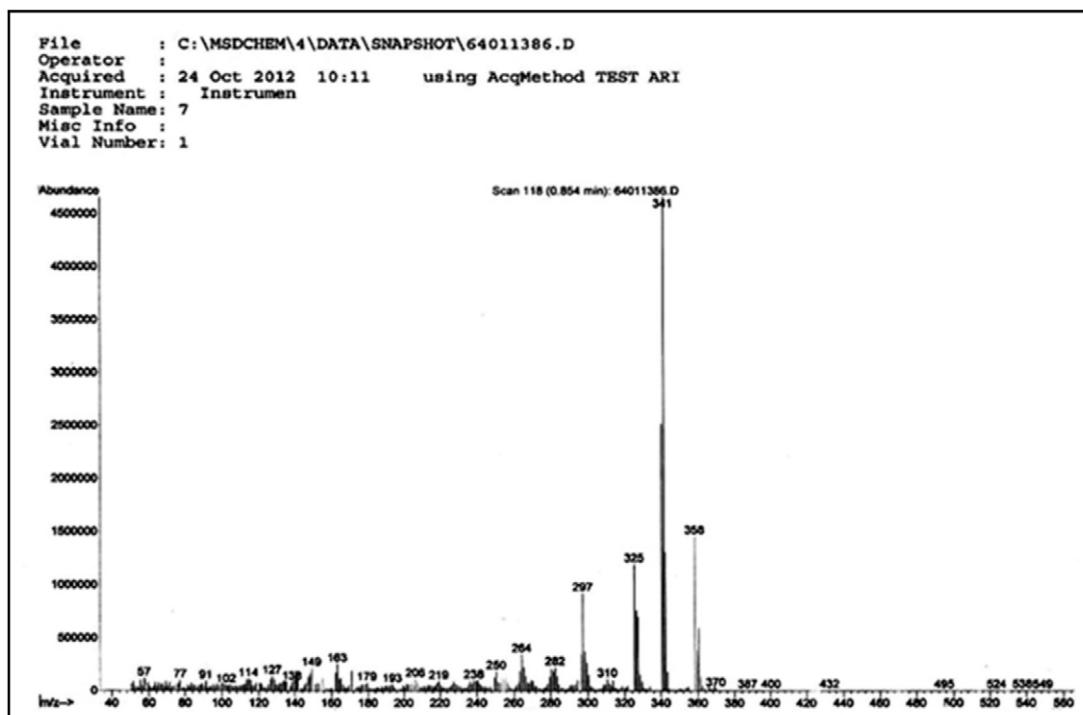


Figure S19. Mass spectrum of compound 6e.

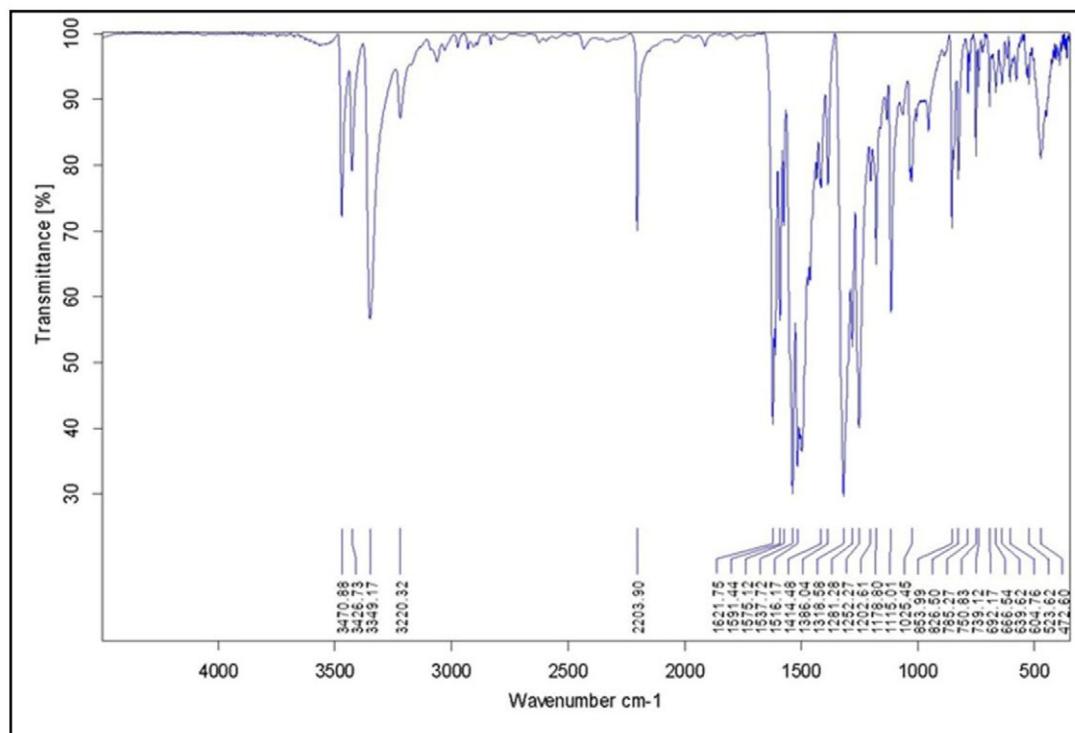


Figure S20. FTIR (KBr) spectrum of compound 6f.

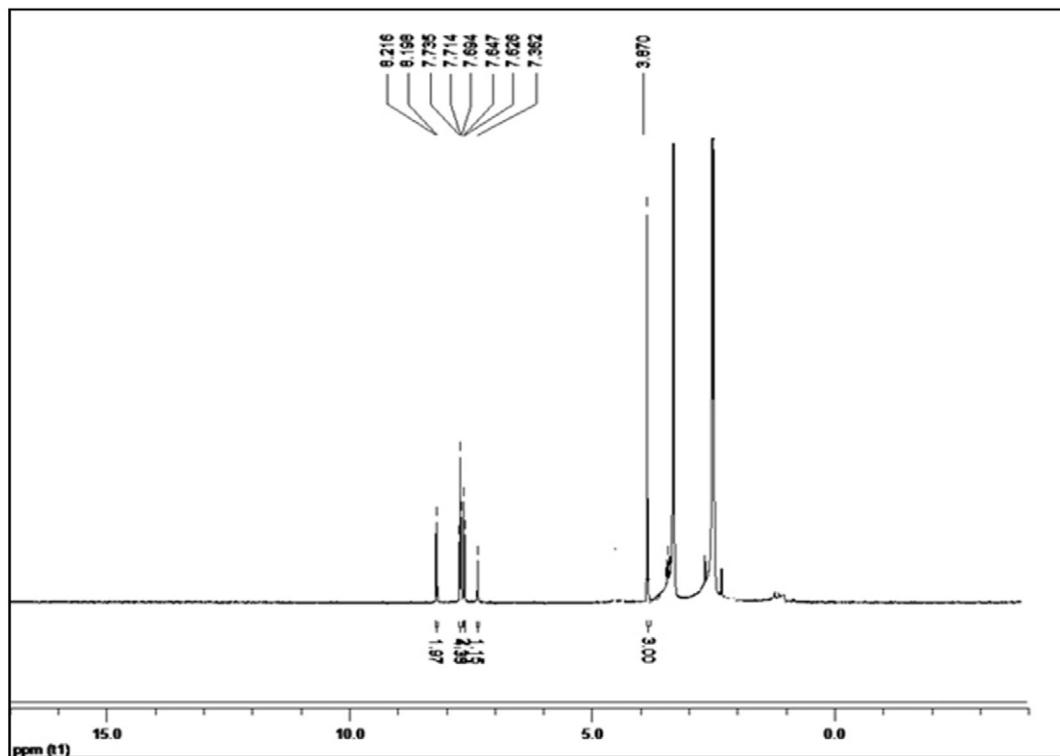


Figure S21. <sup>1</sup>H NMR spectrum (400 MHz, DMSO-*d*<sub>6</sub>) of compound 6f.

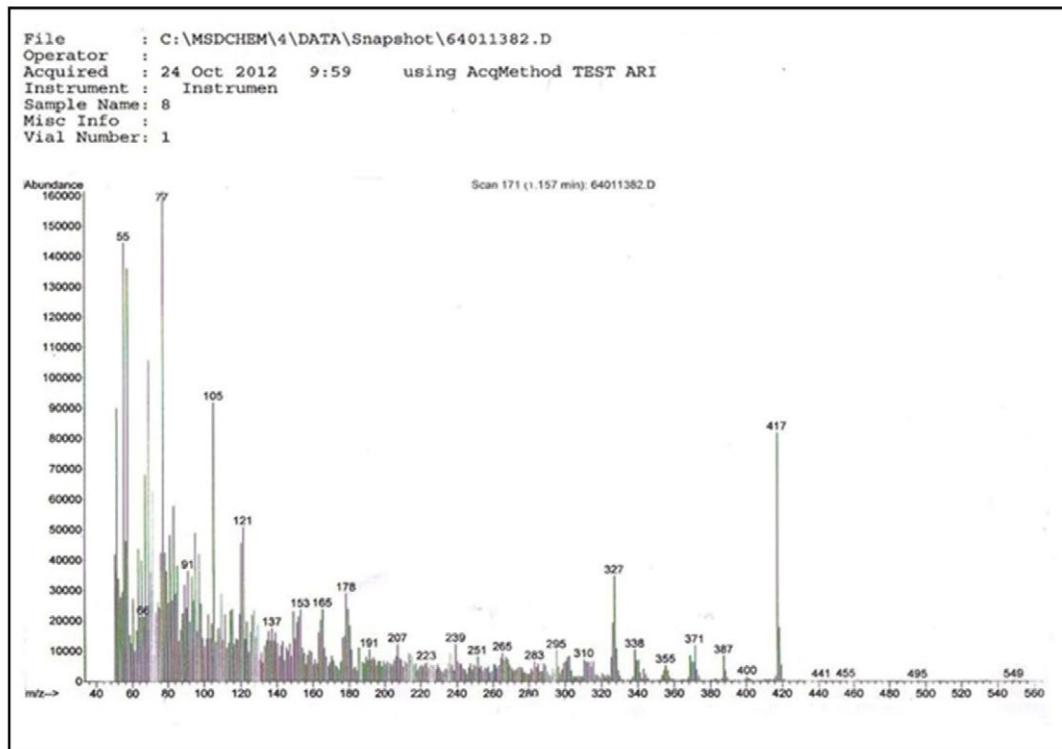


Figure S22. Mass spectrum of compound 6f.