

# Supplementary Information

## Nano Fe<sub>2</sub>O<sub>3</sub>, Clinoptilolite and H<sub>3</sub>PW<sub>12</sub>O<sub>40</sub> as Efficient Catalysts for Solvent-Free Synthesis of 5(4*H*)-Isoxazolone under Microwave Irradiation Conditions

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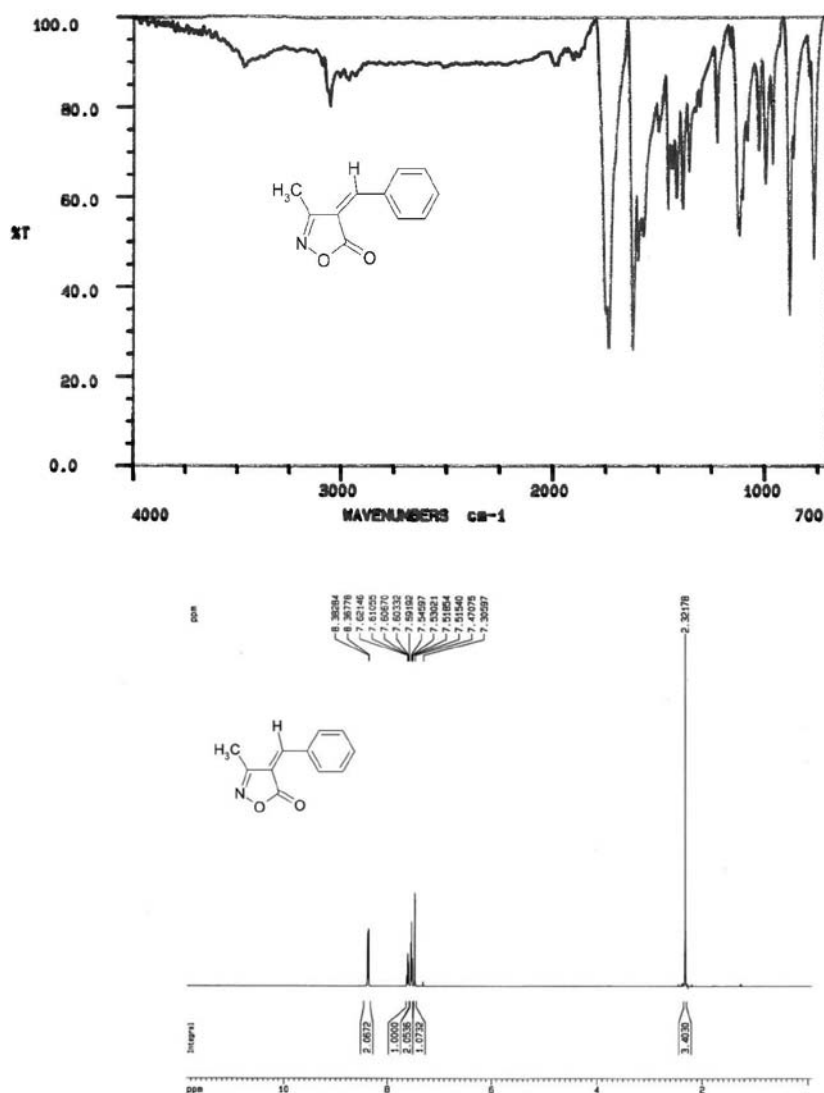
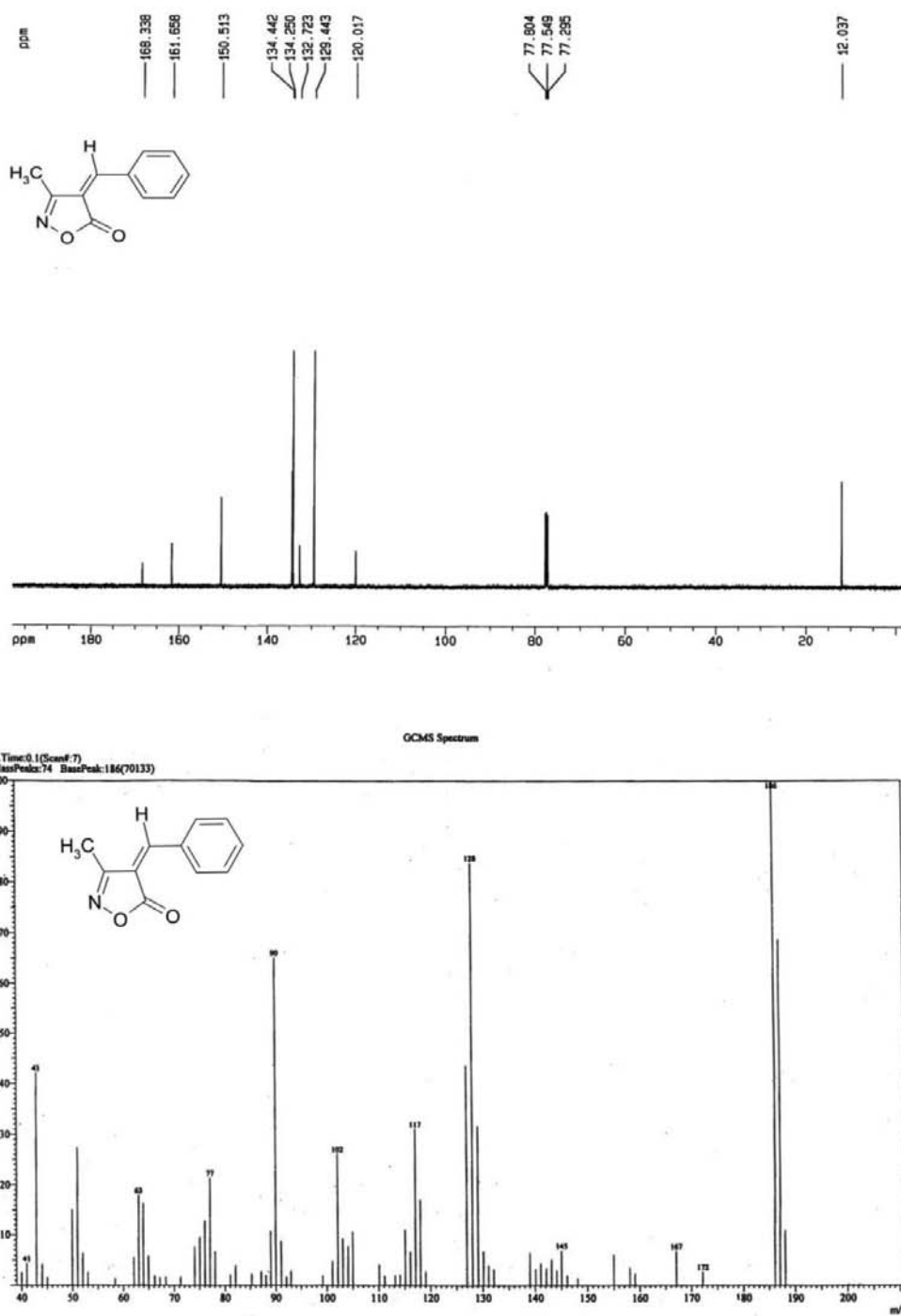
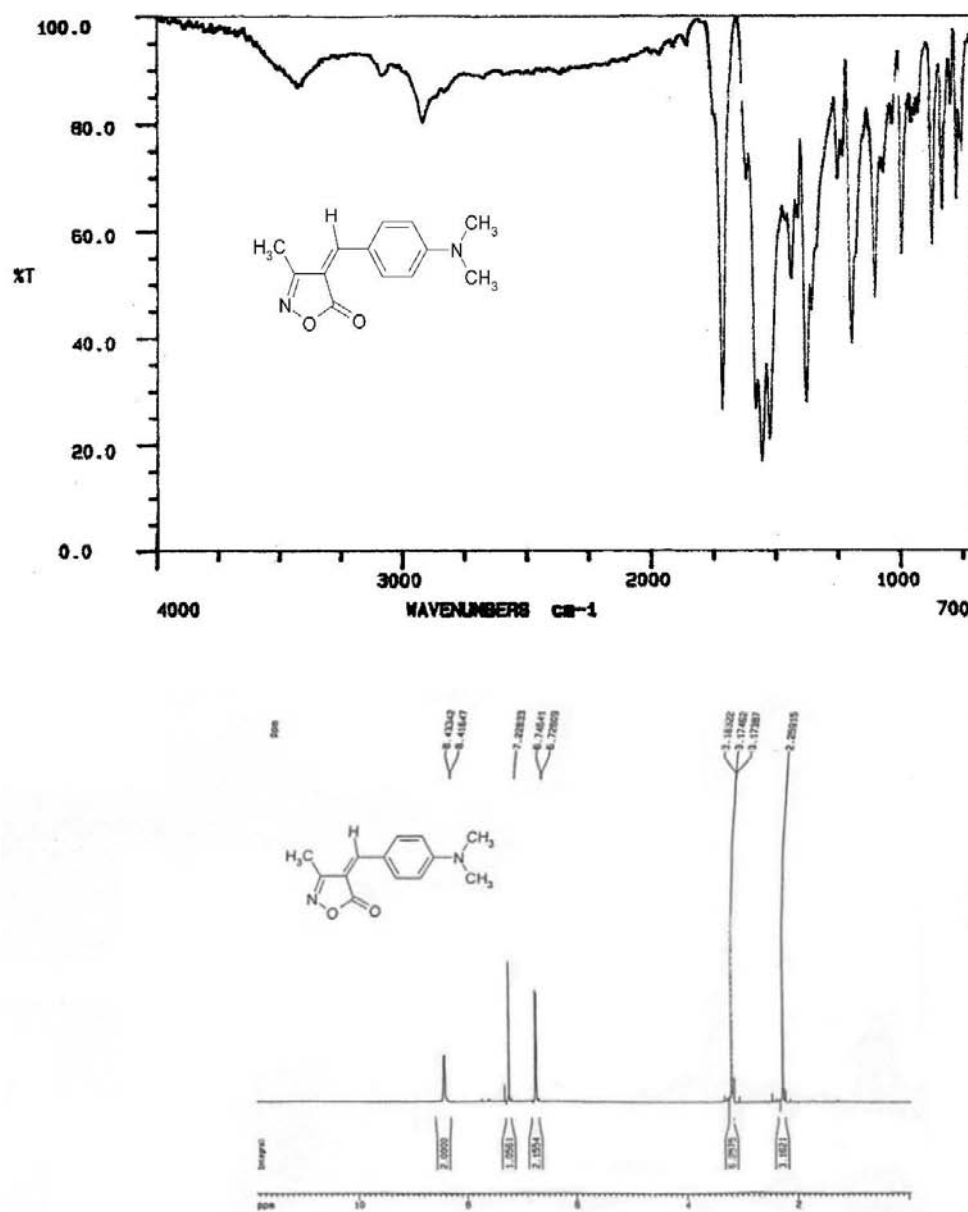


Figure S1. IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound 3a.

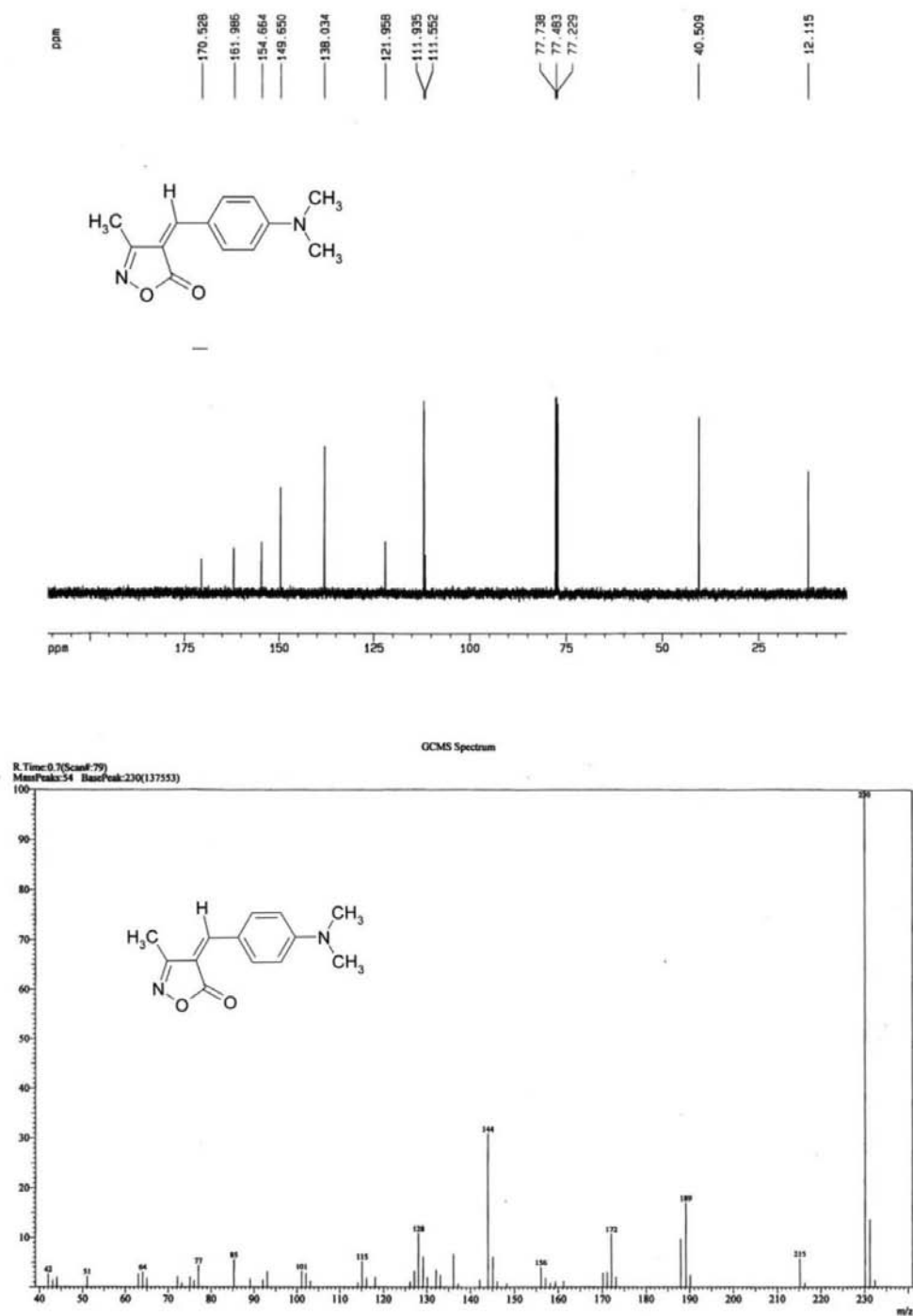
\*e-mail: samieh.fozooni@uk.ac.ir, s\_fozooni@yahoo.com



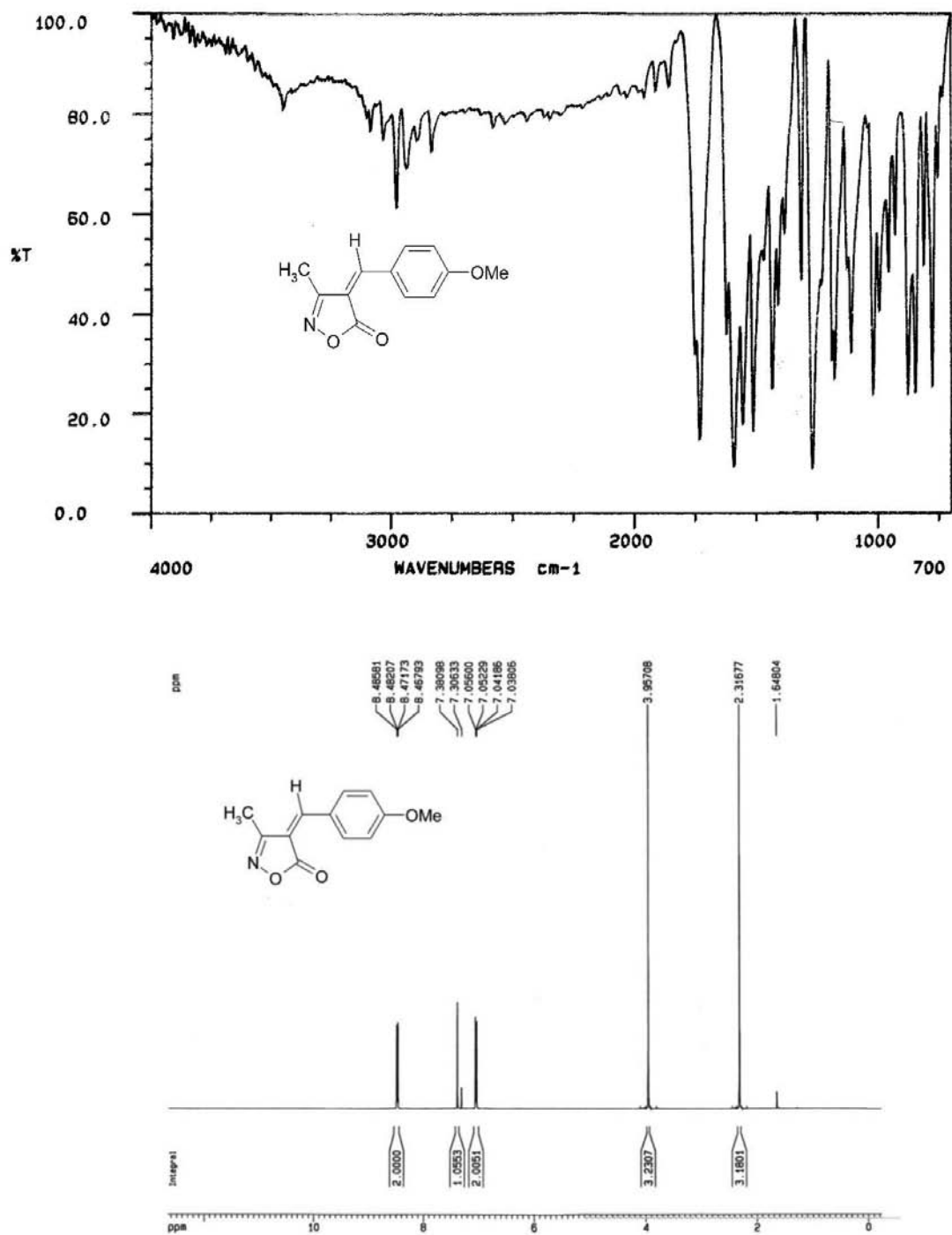
**Figure S2.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3a**.



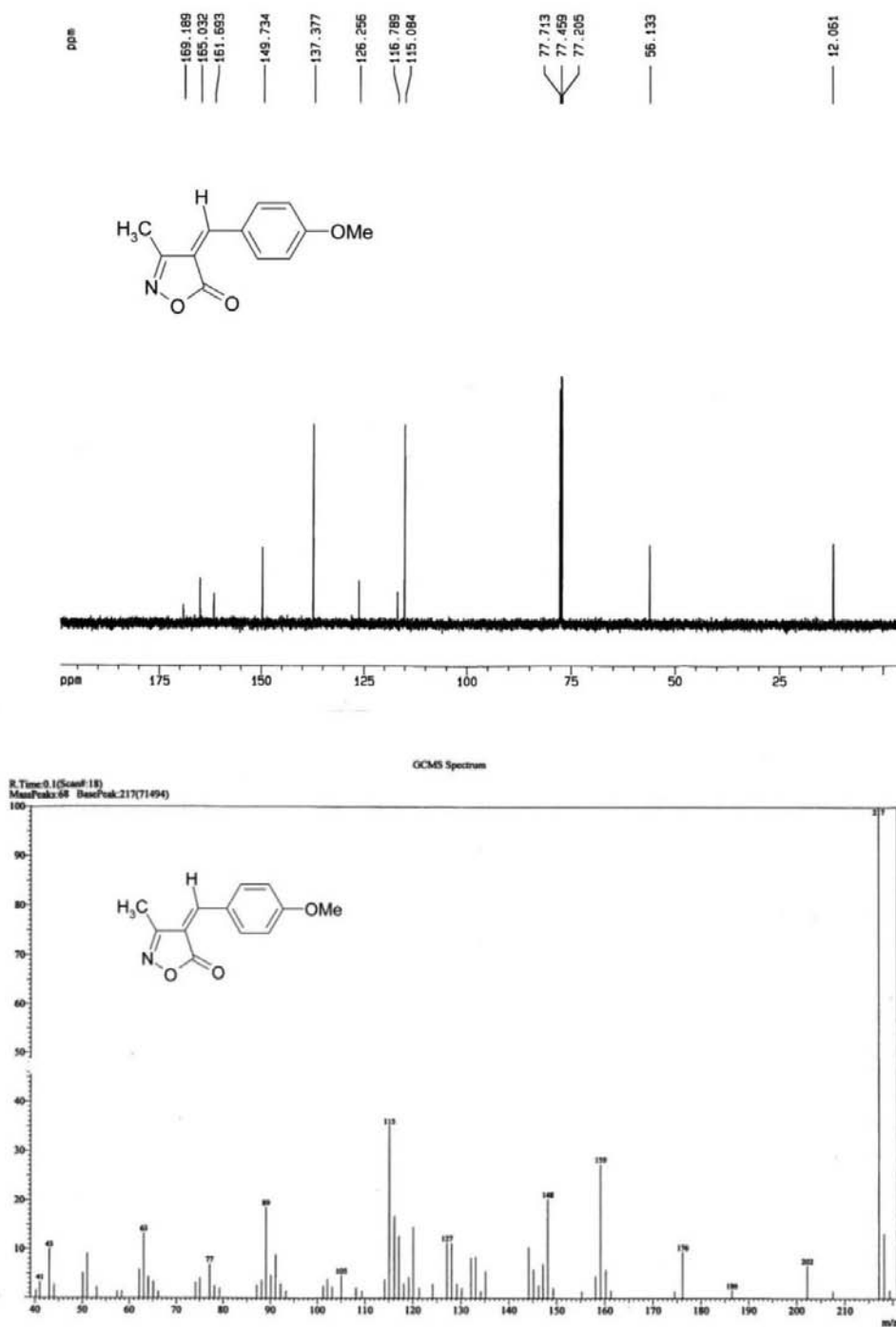
**Figure S3.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound 3b.



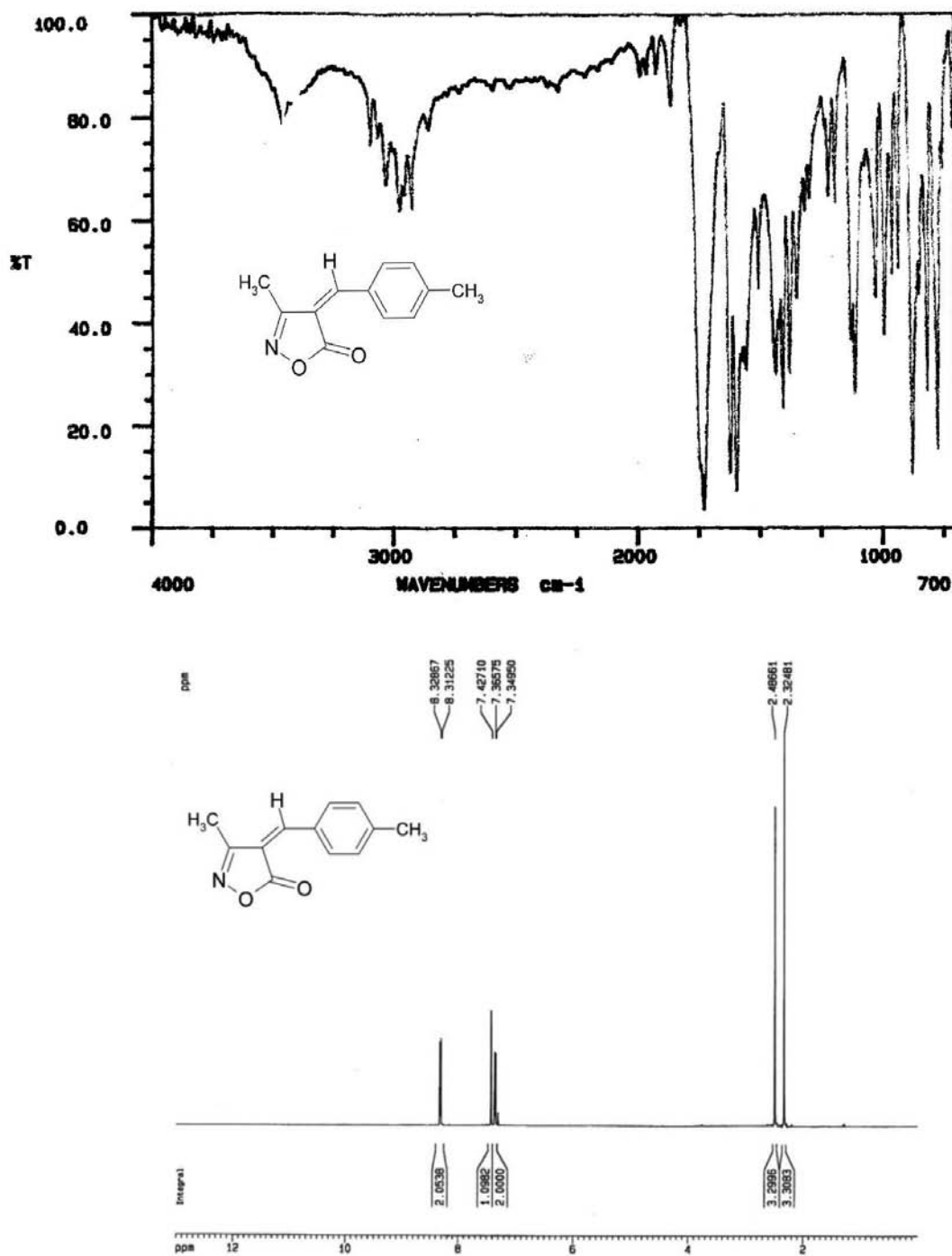
**Figure S4.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3b**.



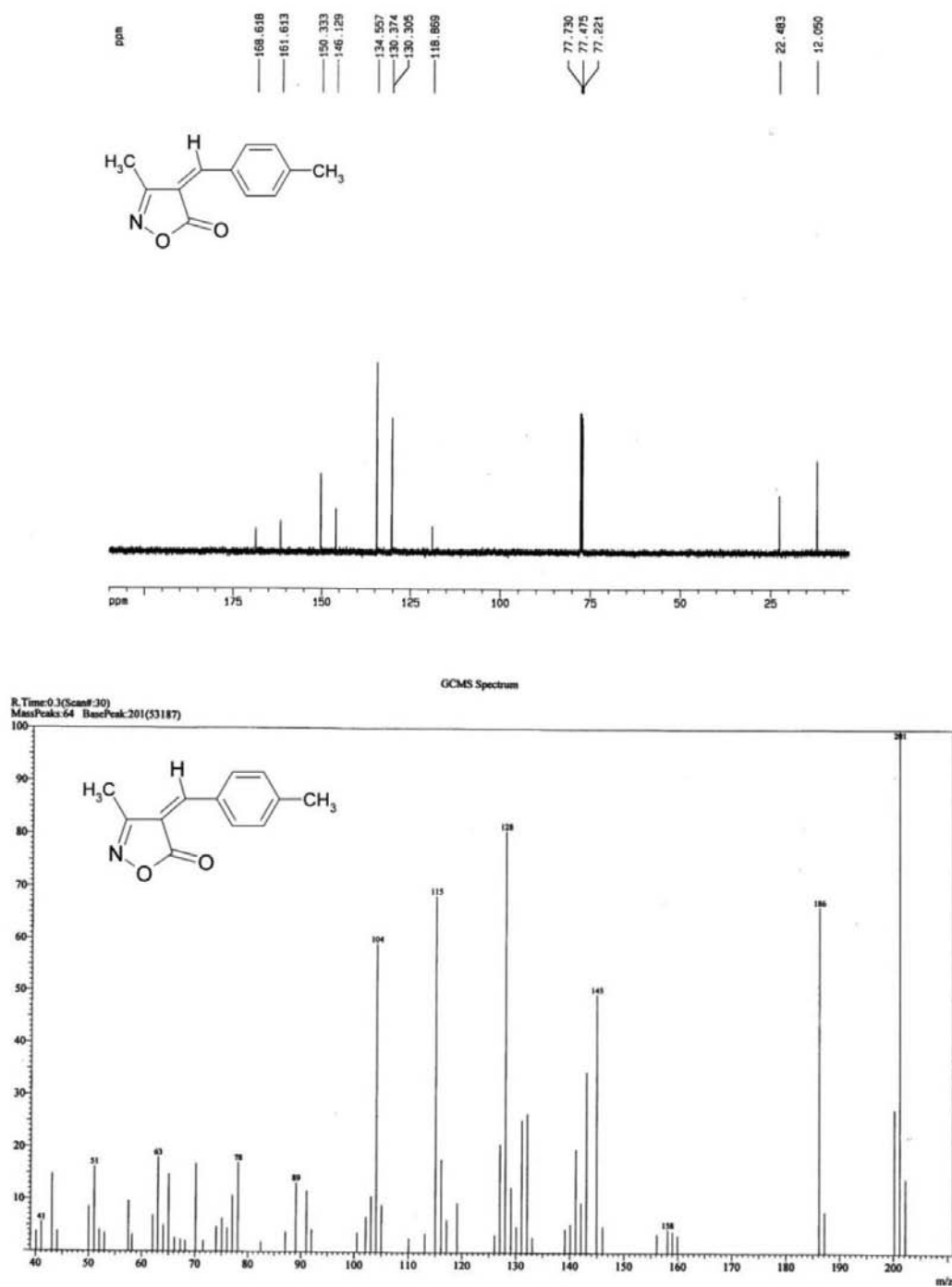
**Figure S5.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound **3c**.



**Figure S6.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3c**.

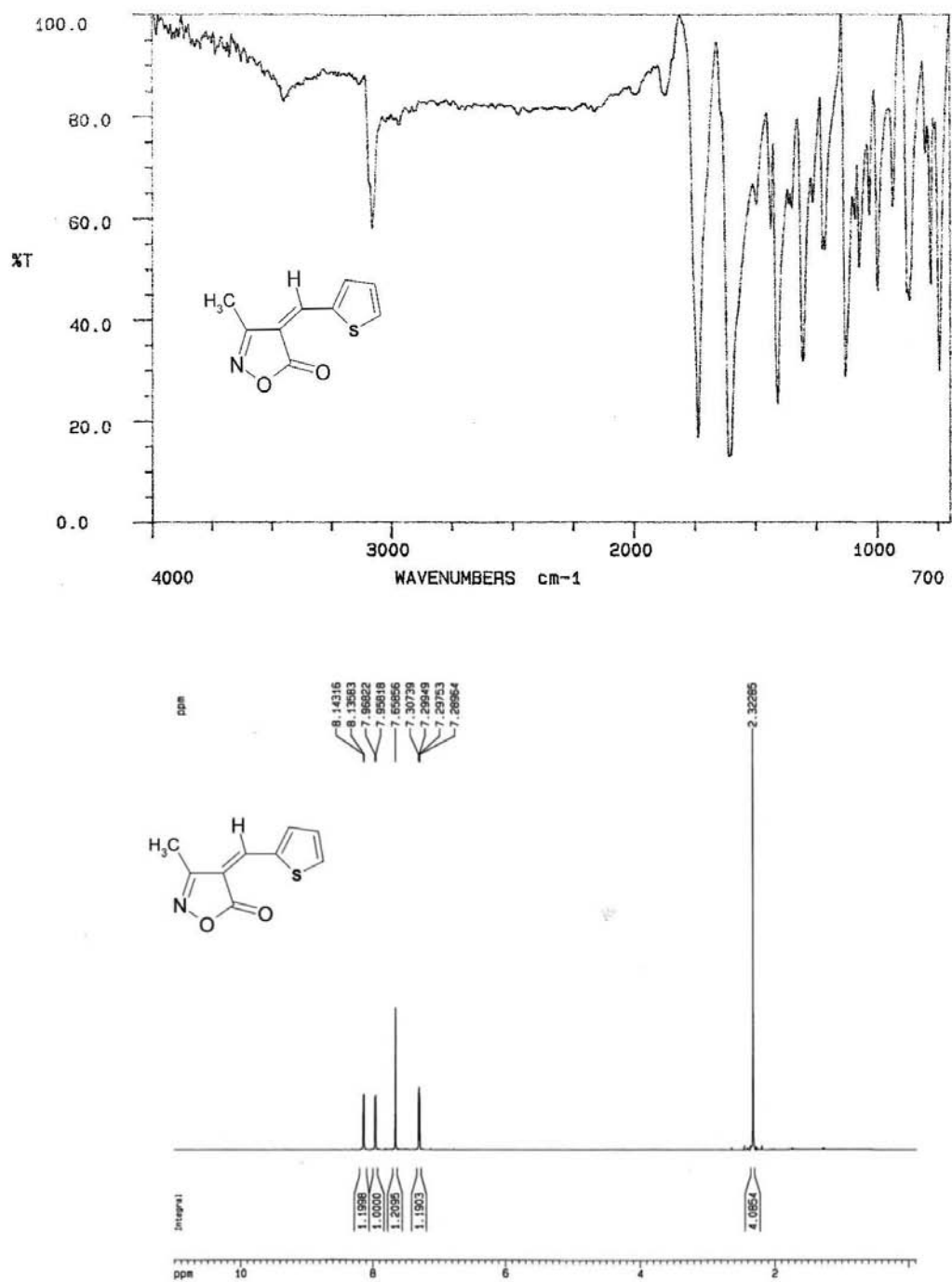


**Figure S7.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound **3d**.

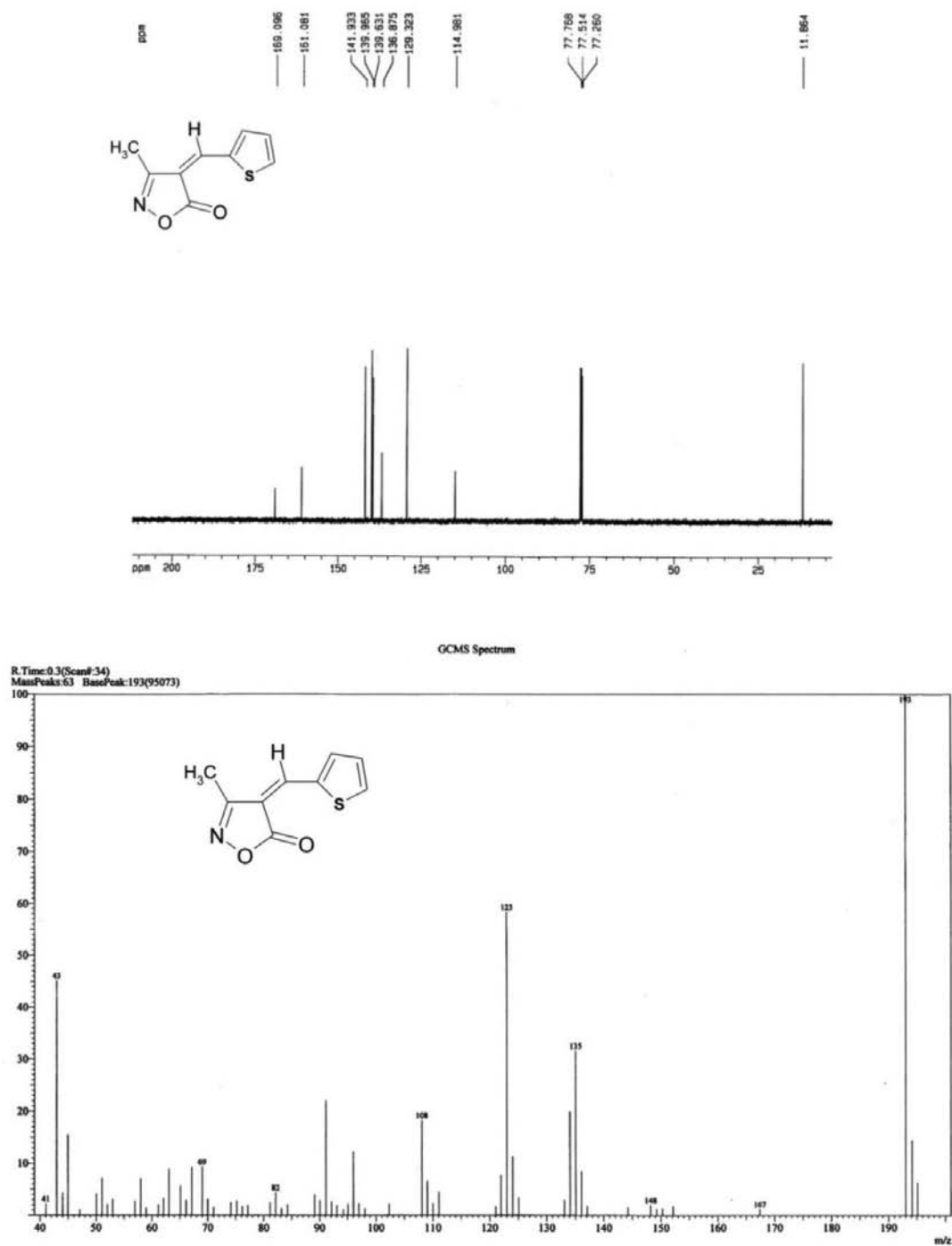


**Figure S8.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3d**.

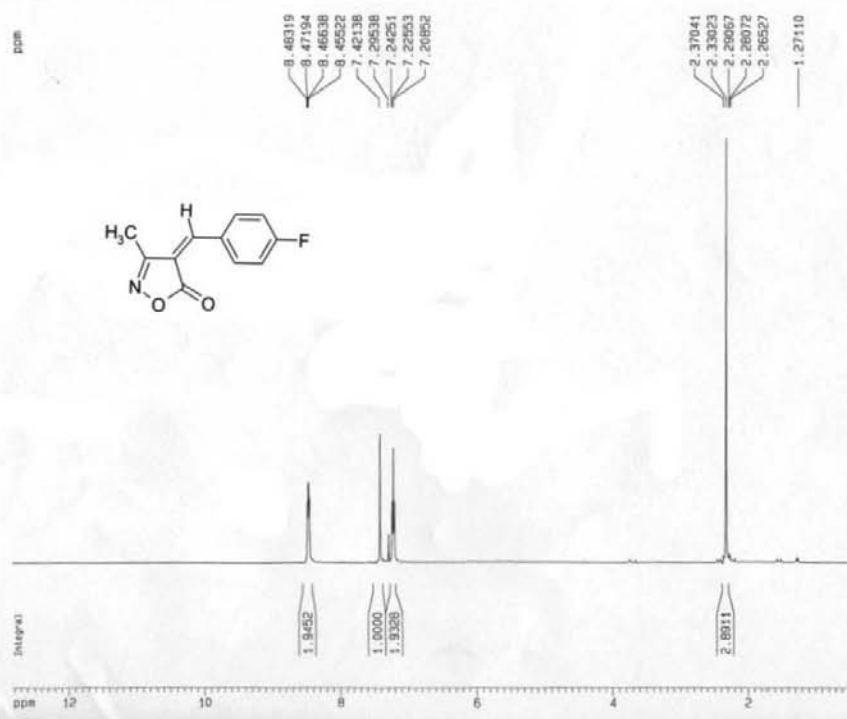
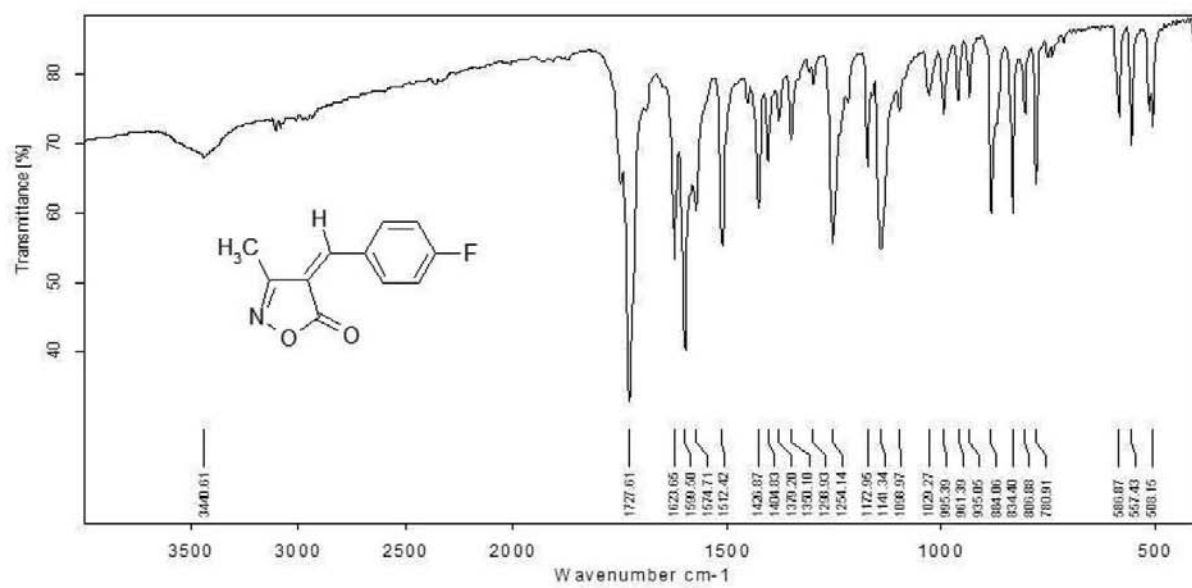




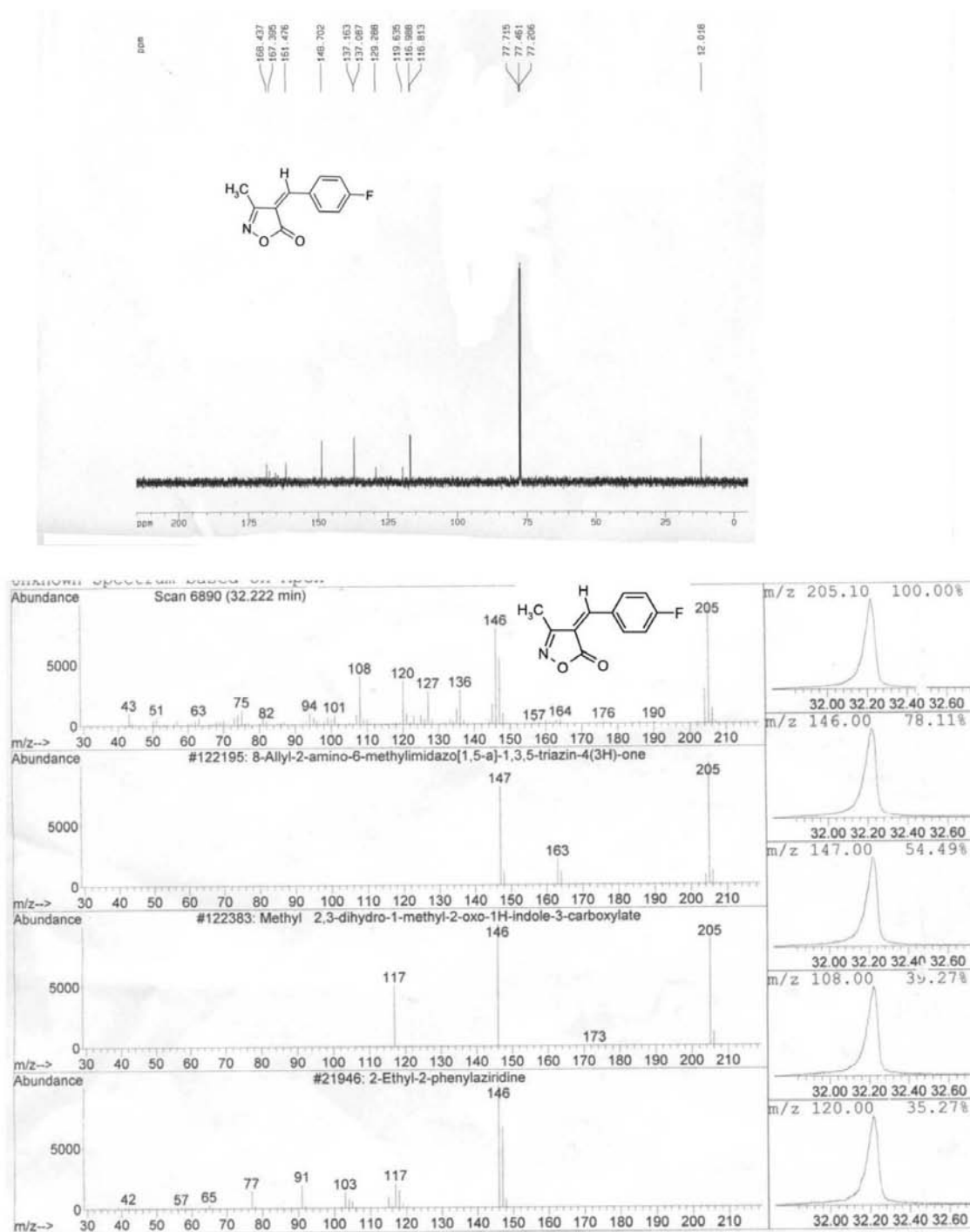
**Figure S9.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound **3e**.



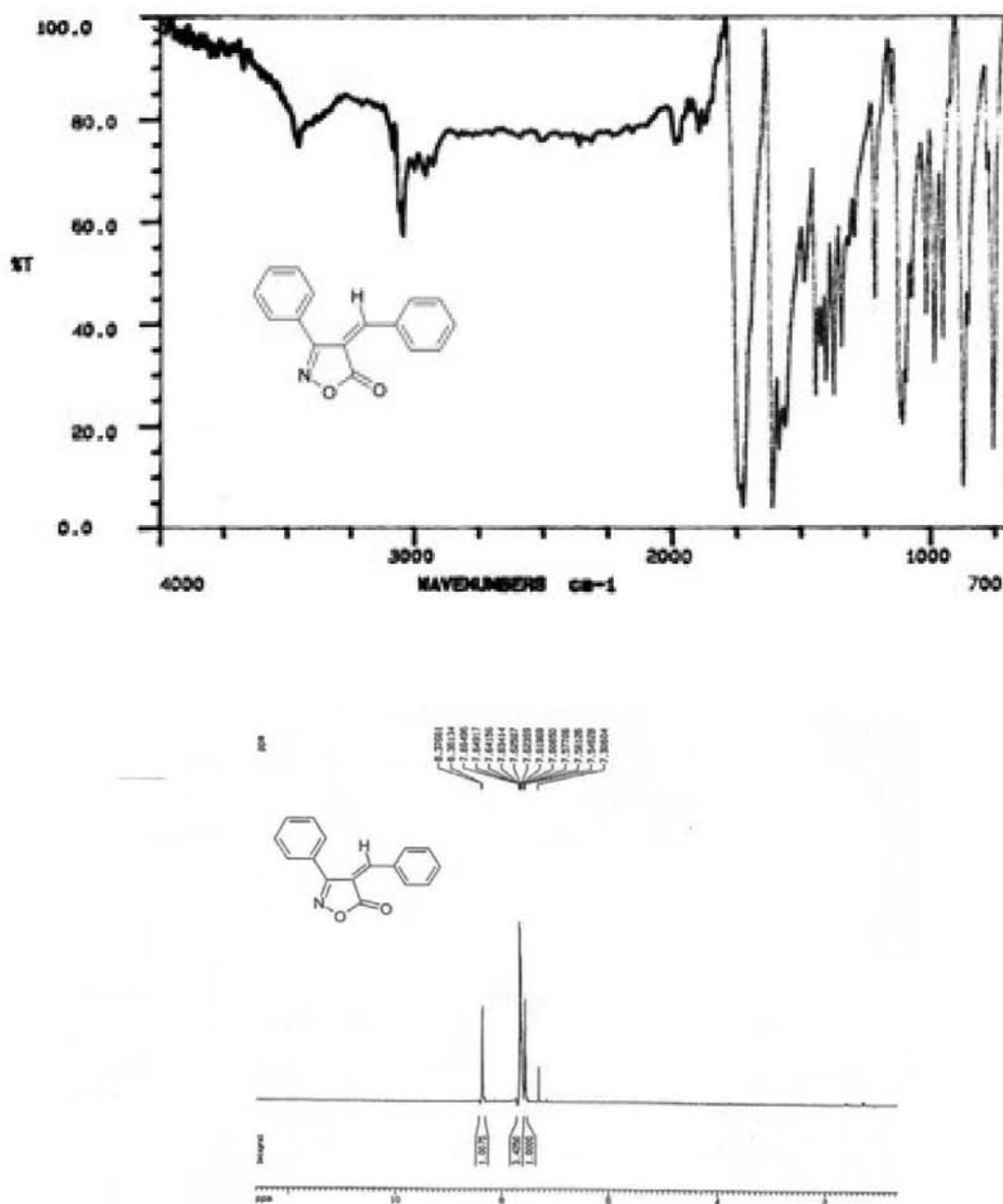
**Figure S10.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3e**.



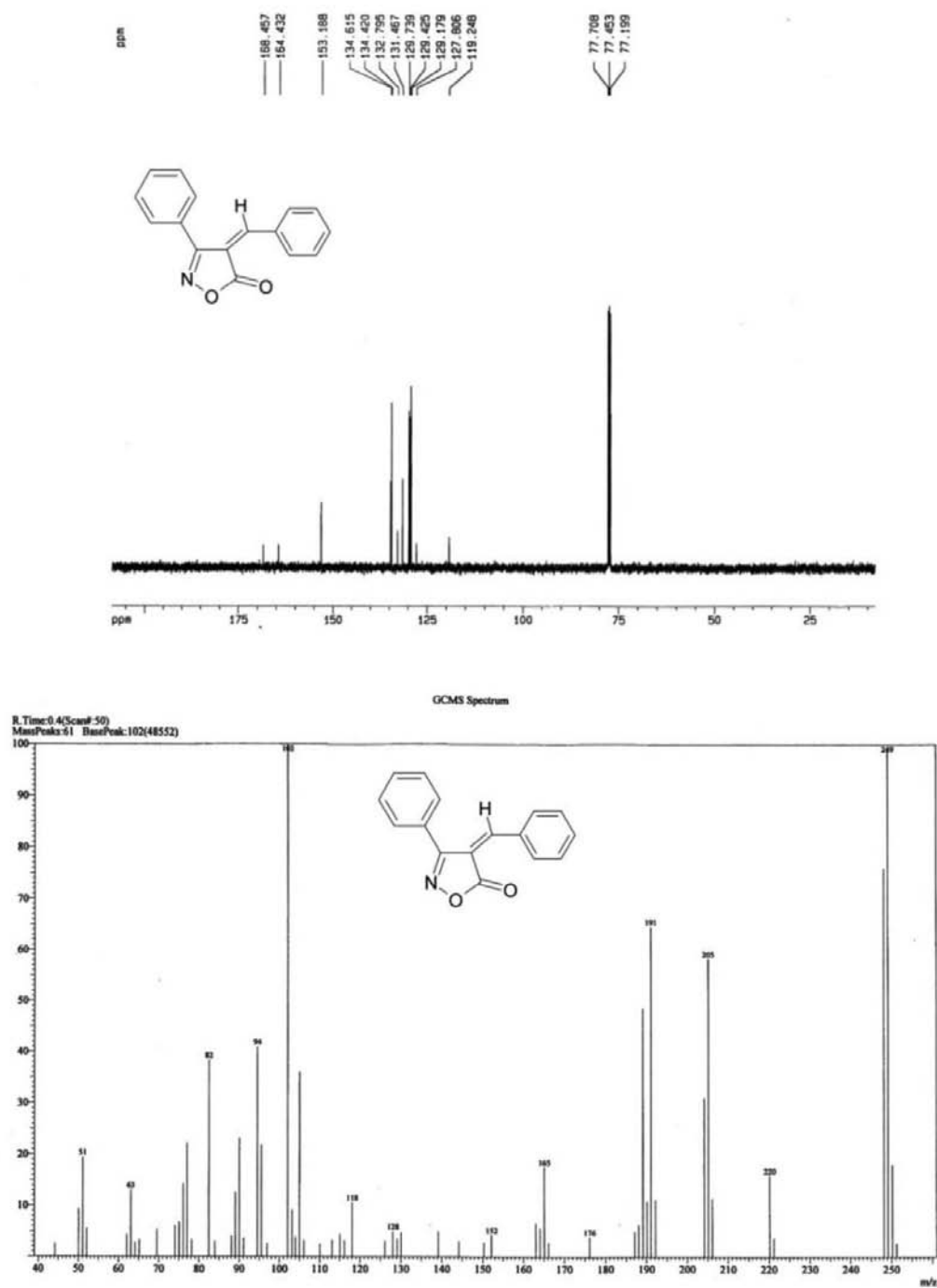
**Figure S11.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound **3f**.



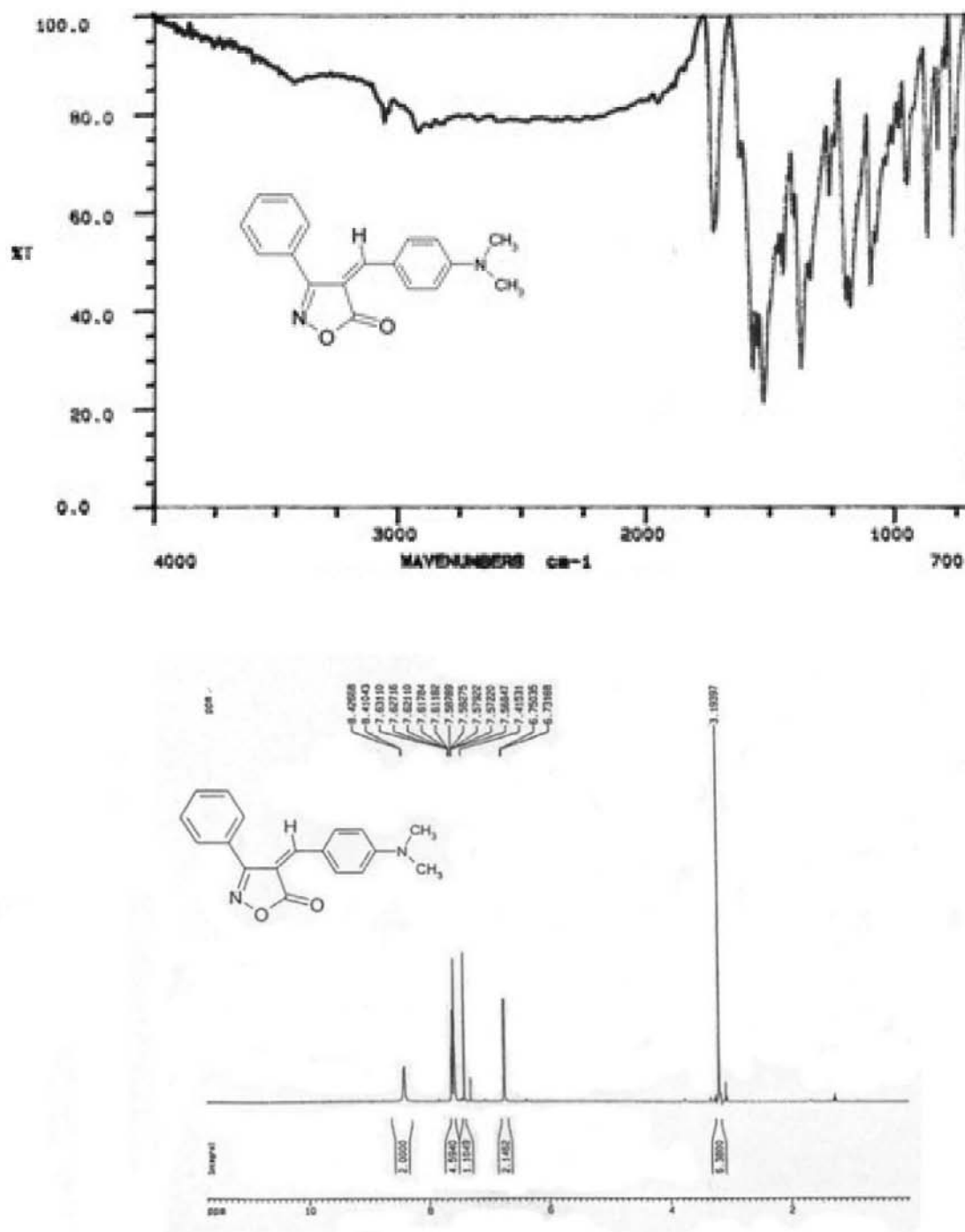
**Figure S12.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3f**.



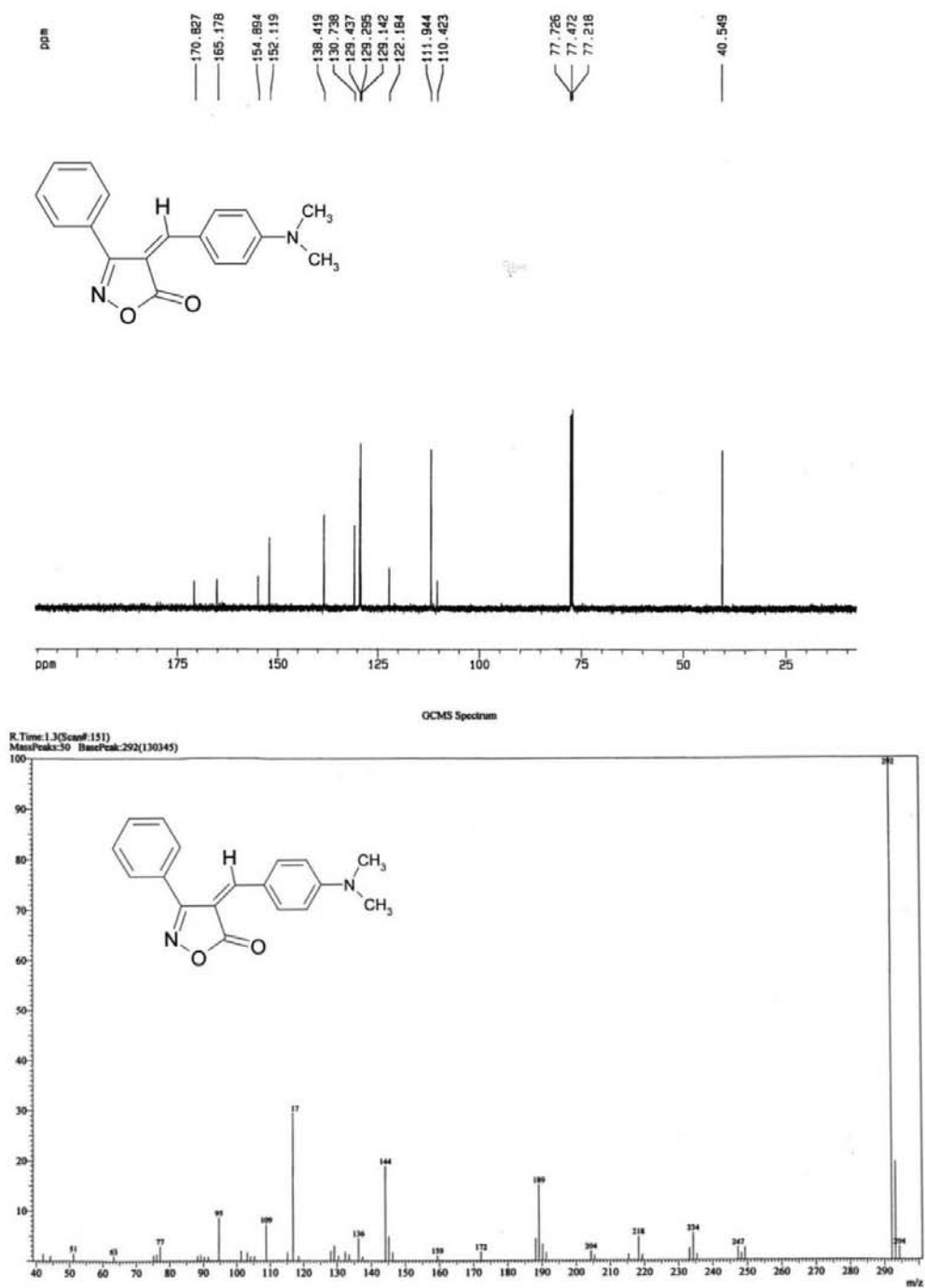
**Figure S13.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound **3g**.



**Figure S14.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3g**.

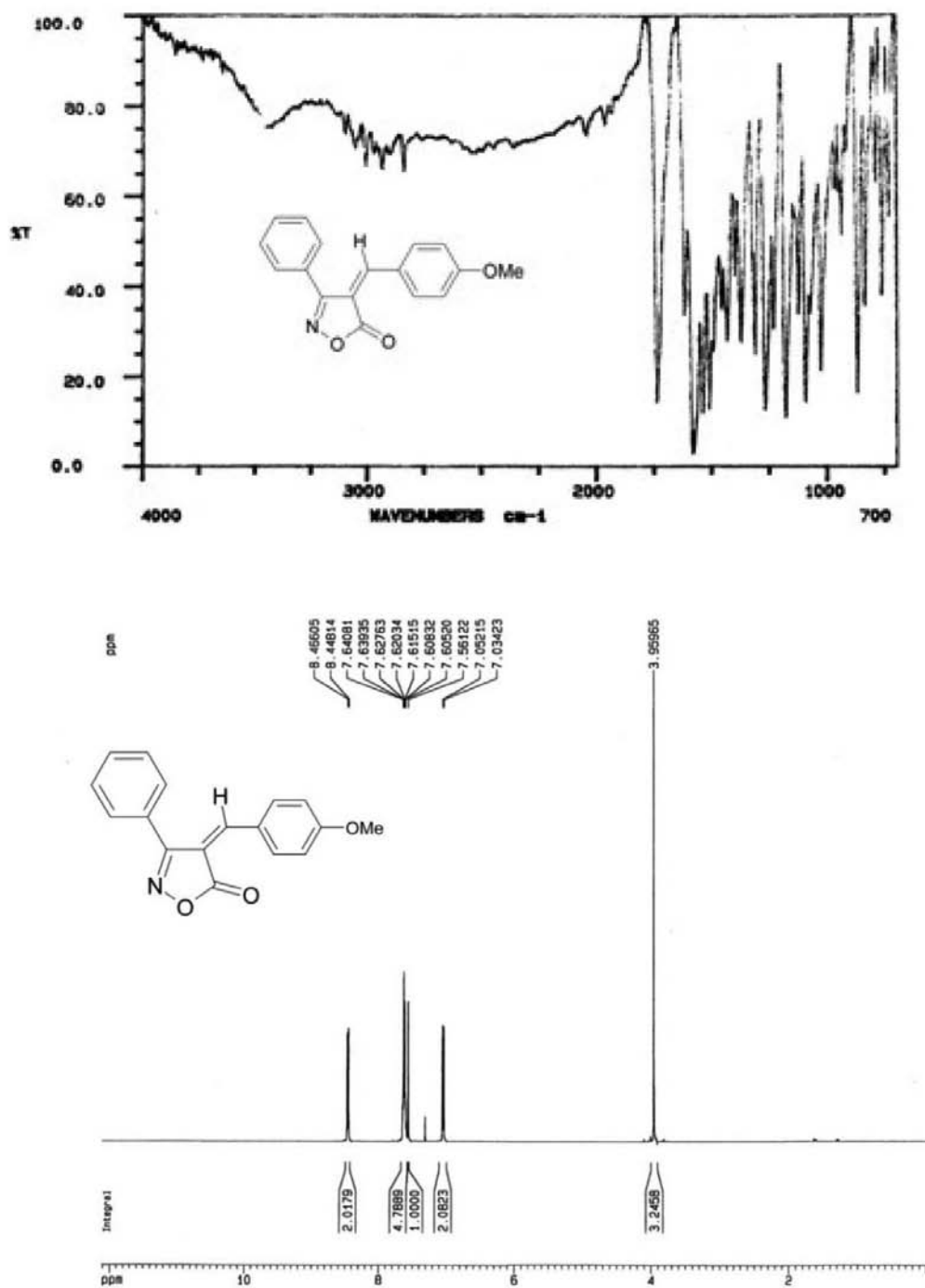


**Figure S15.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound **3h**.

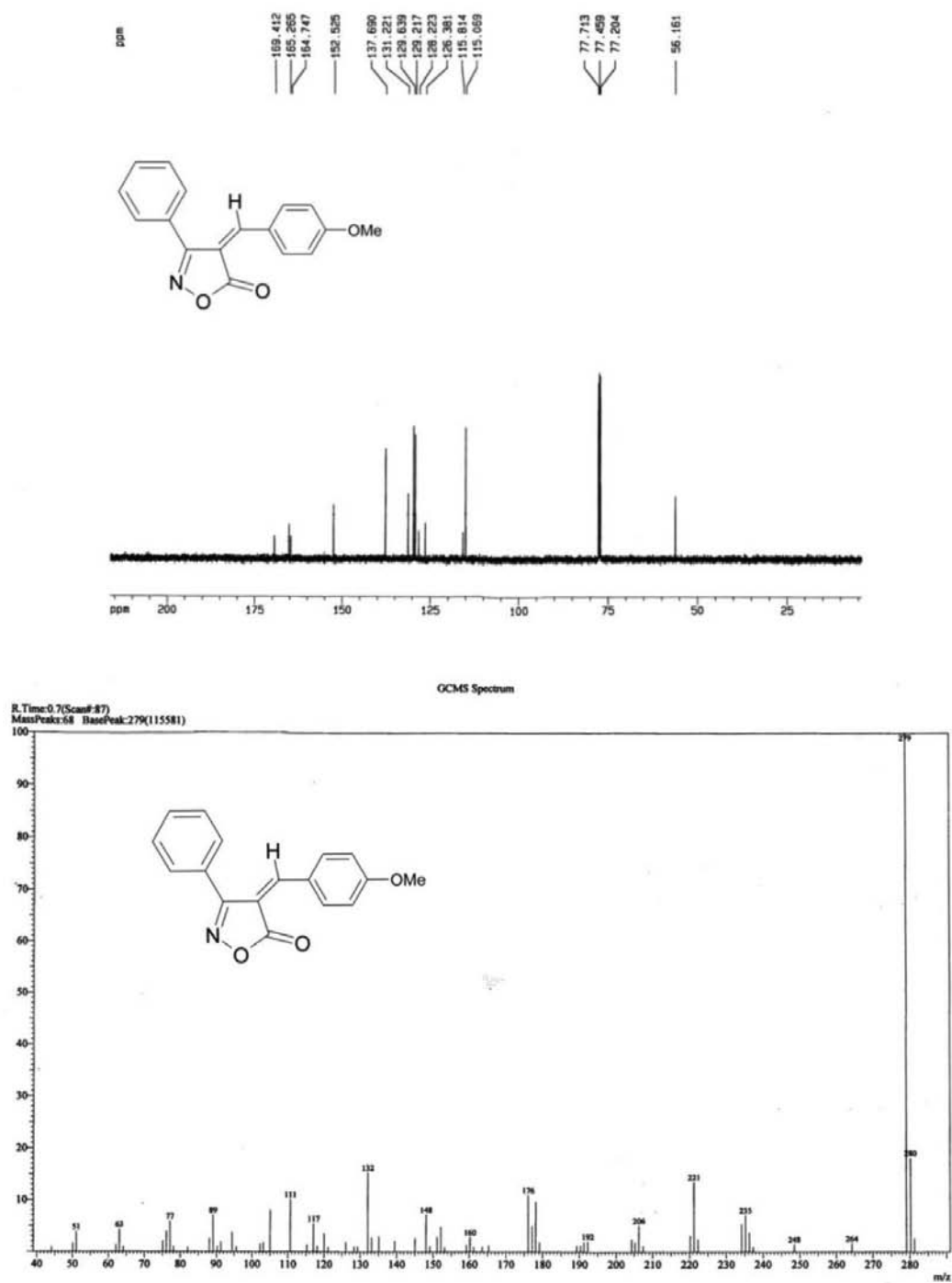


**Figure S16.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3h**.

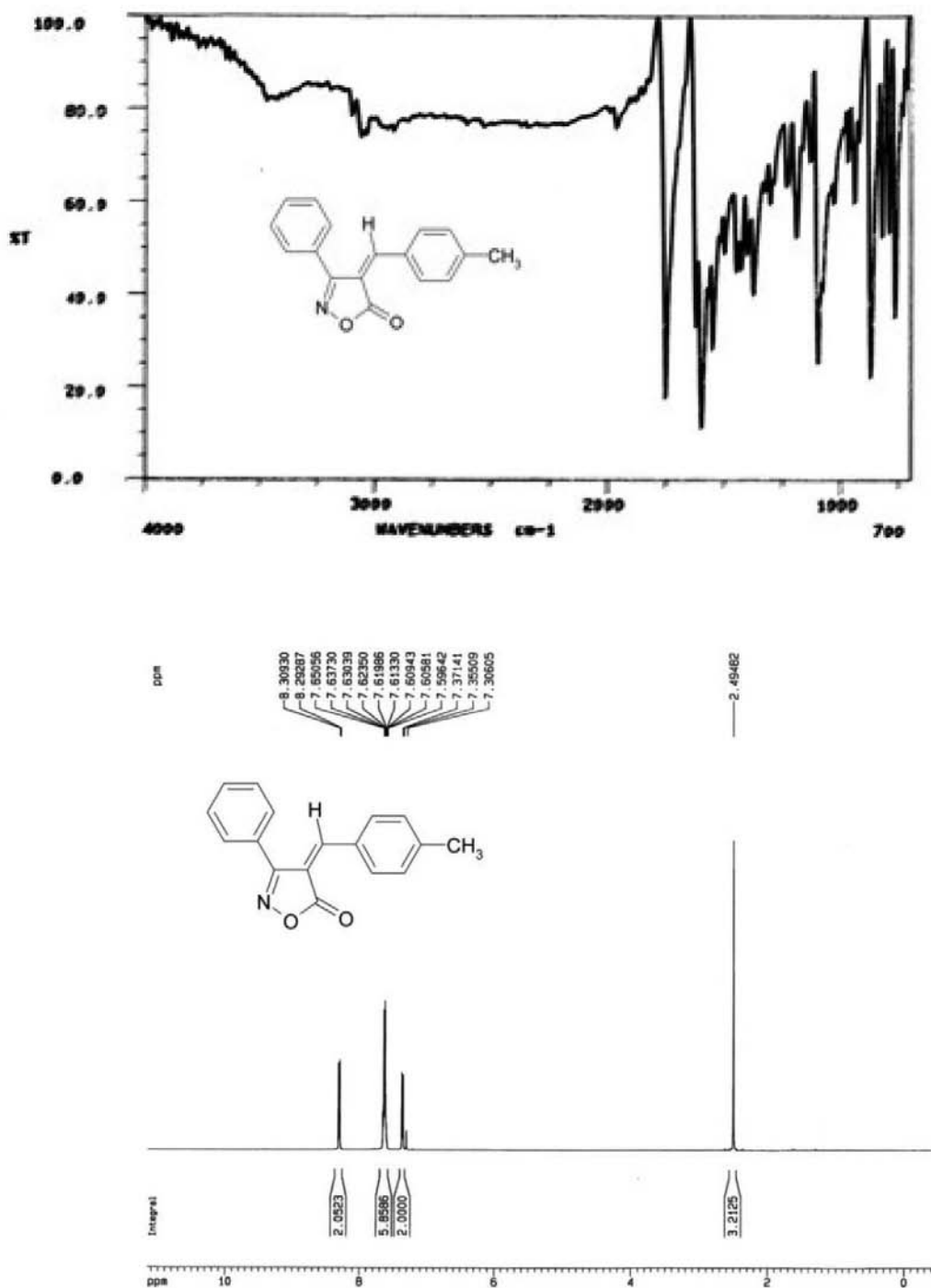




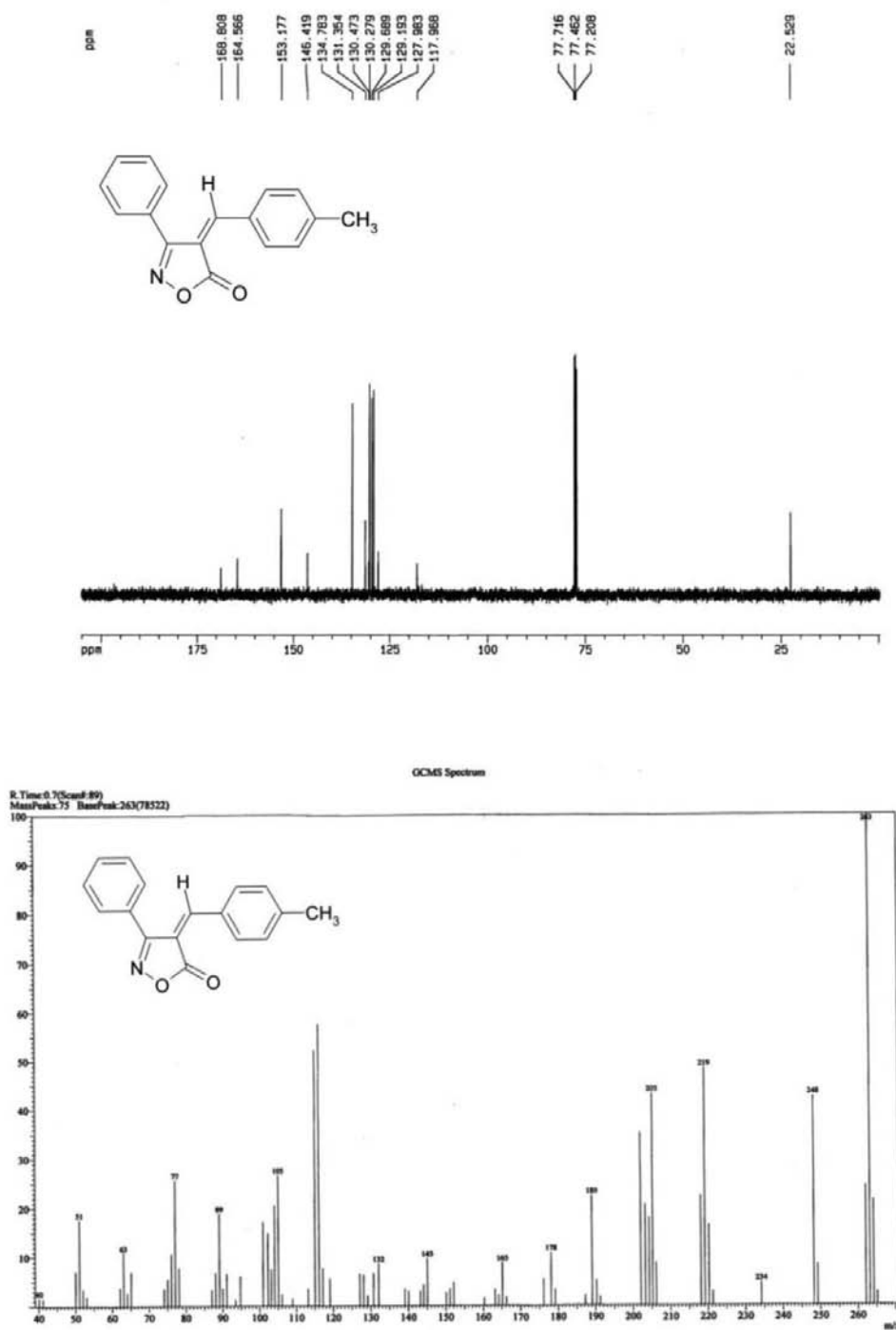
**Figure S17.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound **3i**.



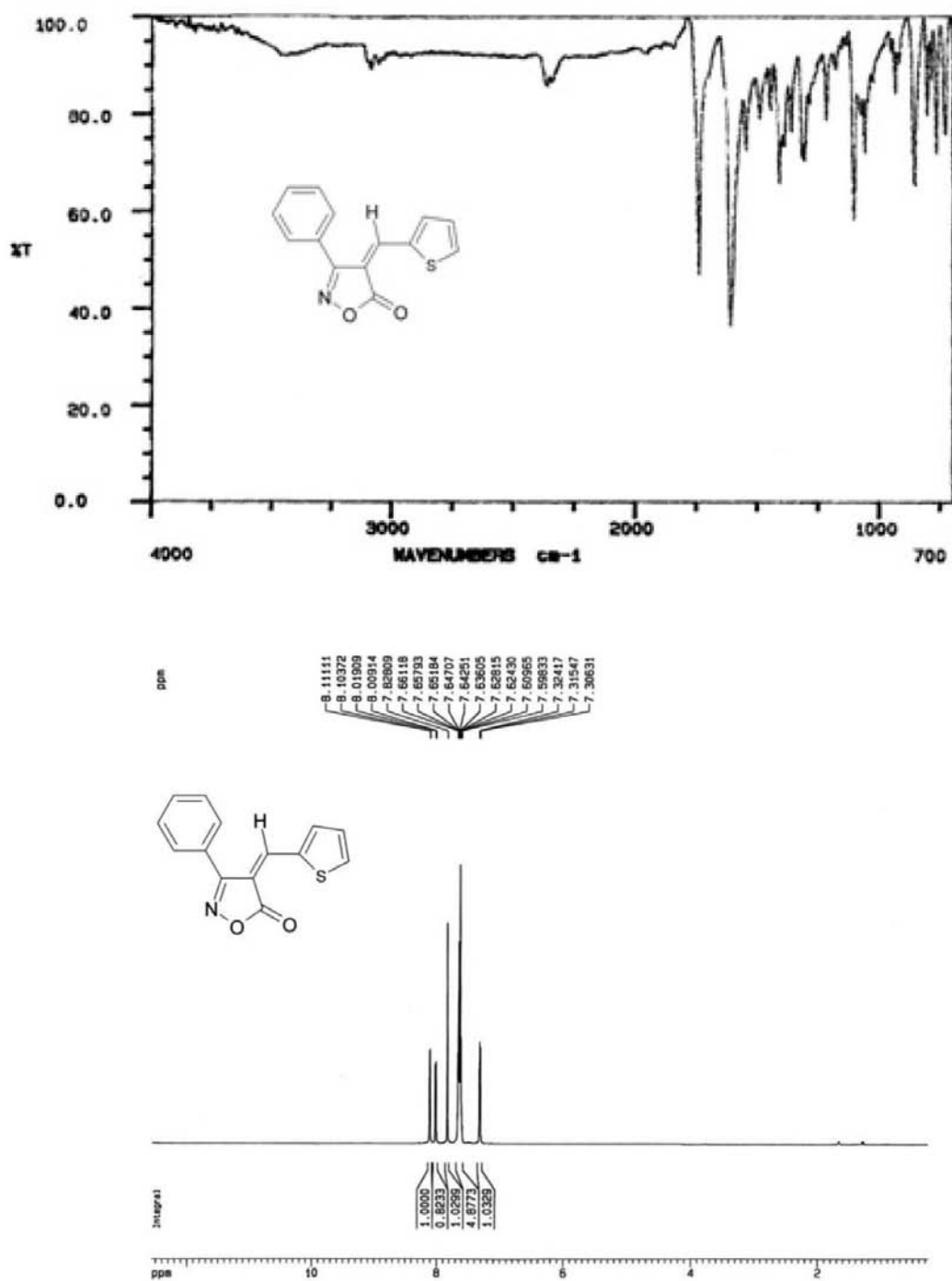
**Figure S18.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3i**.



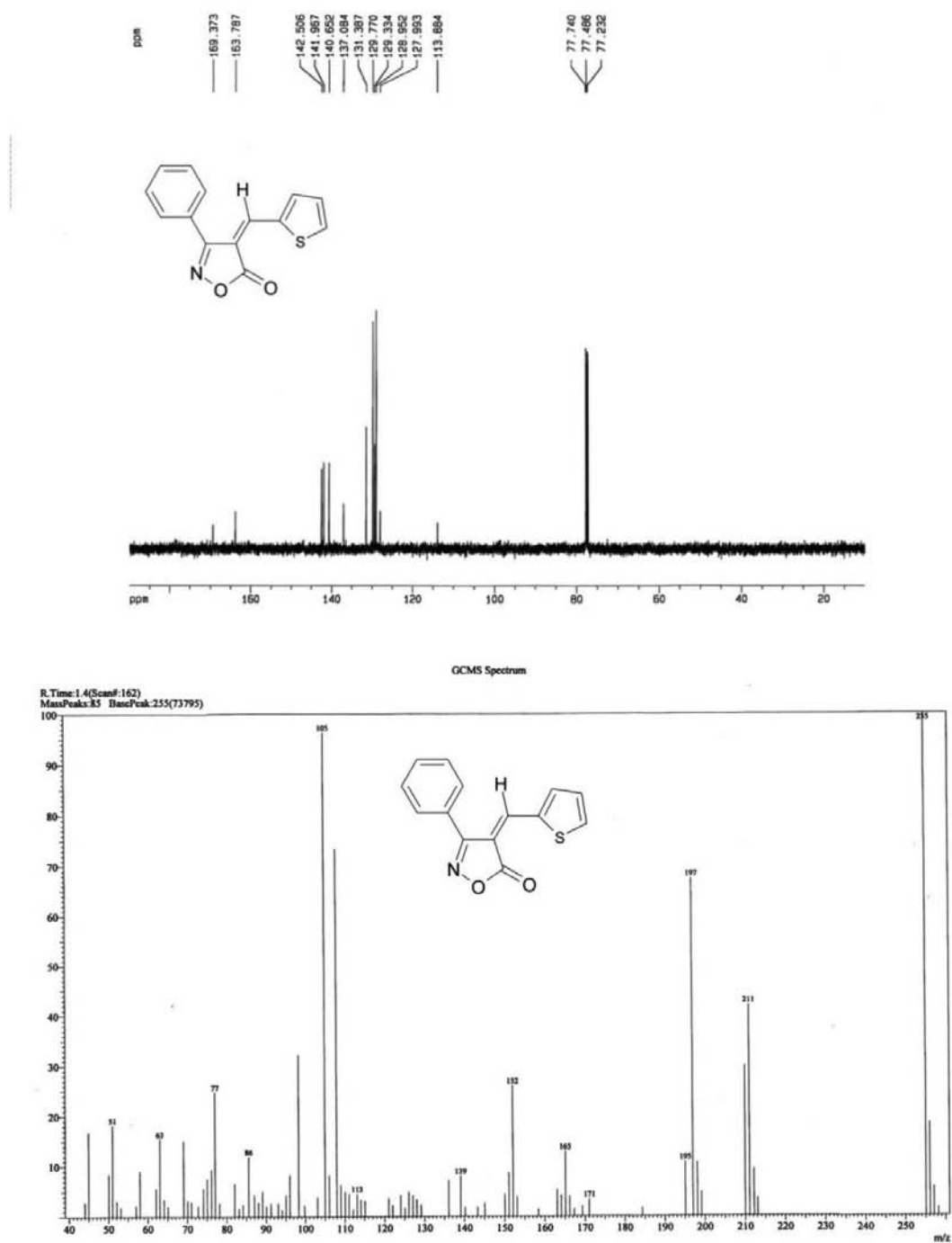
**Figure S19.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound **3j**.



**Figure S20.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3j**.



**Figure S21.** IR spectrum and <sup>1</sup>H NMR spectrum (500 MHz, CDCl<sub>3</sub>) of compound **3k**.



**Figure S22.** <sup>13</sup>C NMR spectrum (126 MHz, CDCl<sub>3</sub>) and mass spectrum of compound **3k**.