

## Supplementary Information

### Ultrasound-Assisted Synthesis of Novel 2-Aryl-3-Ethoxy-5-Methyl-3-Oxido-2*H*-Thiazolo [2,3-*e*][1,4,2]Diazaphosphole-6-Carboxylates Induce Apoptosis, Autophagy and Target Cell Cycle Progression in Anticancer Efficacy

Wafa A. Bawazir,<sup>1</sup> Tarik E. Ali,<sup>2,3\*</sup> Mohammed A. Assiri,<sup>3</sup> Ali A. Shati,<sup>4</sup> Mohammad Y. Alfaifi,<sup>4</sup> and Serag E. I. Elbehairi<sup>4</sup>

<sup>1</sup>*Chemistry Department, Faculty of Science, King Abdulaziz University, Jeddah, Saudi Arabia*

<sup>2</sup>*Central Labs, King Khalid University, AlQuraa, Abha, Saudi Arabia*

<sup>3</sup>*Department of Chemistry, Faculty of Science, King Khalid University, AlQuraa, Abha, Saudi Arabia*

<sup>4</sup>*Department of Biology, Faculty of Science, King Khalid University, AlQuraa, Abha, Saudi Arabia*

E-mail\*: [tarik\\_elsayed1975@yahoo.com](mailto:tarik_elsayed1975@yahoo.com), [tismail@kku.edu.sa](mailto:tismail@kku.edu.sa)

### Contents

**Figures S1-S40:** Copies of <sup>1</sup>H- <sup>13</sup>C-and <sup>31</sup>P-NMR and MS spectral data for the synthesized compounds **2a-j**.

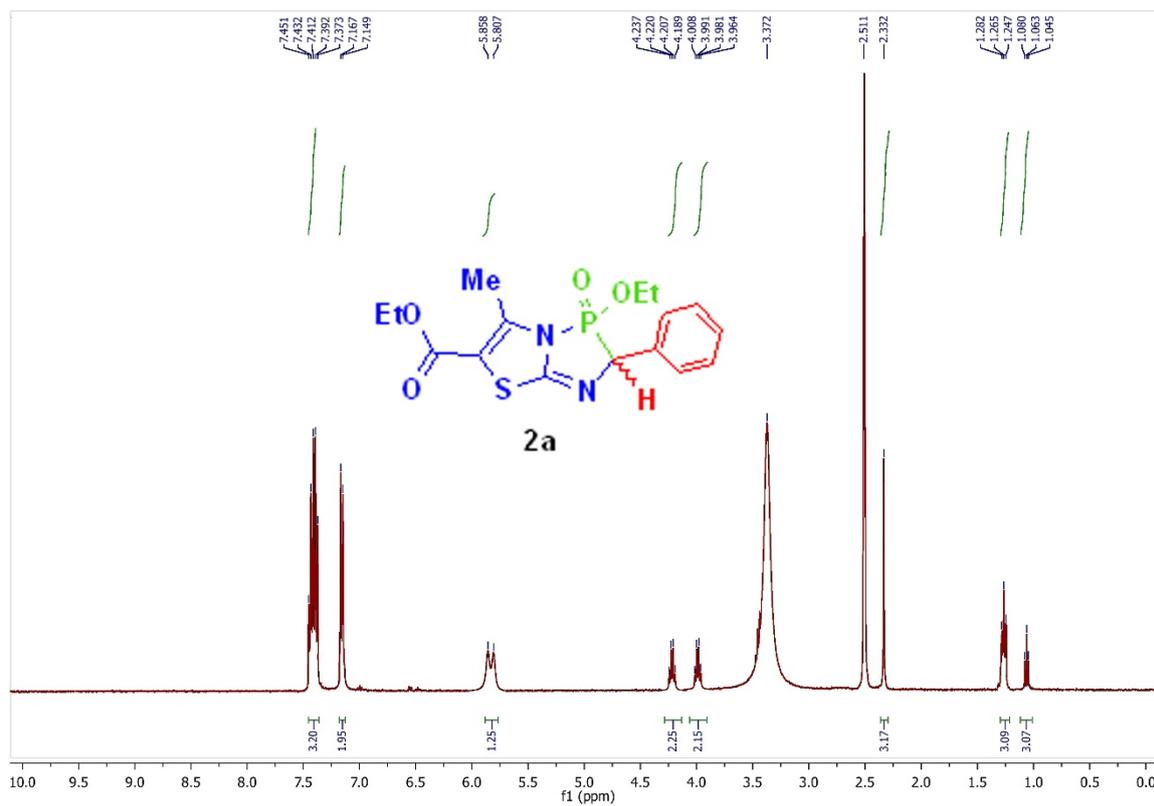


Figure S1: The  $^1\text{H}$ -NMR spectrum of compound **2a**.

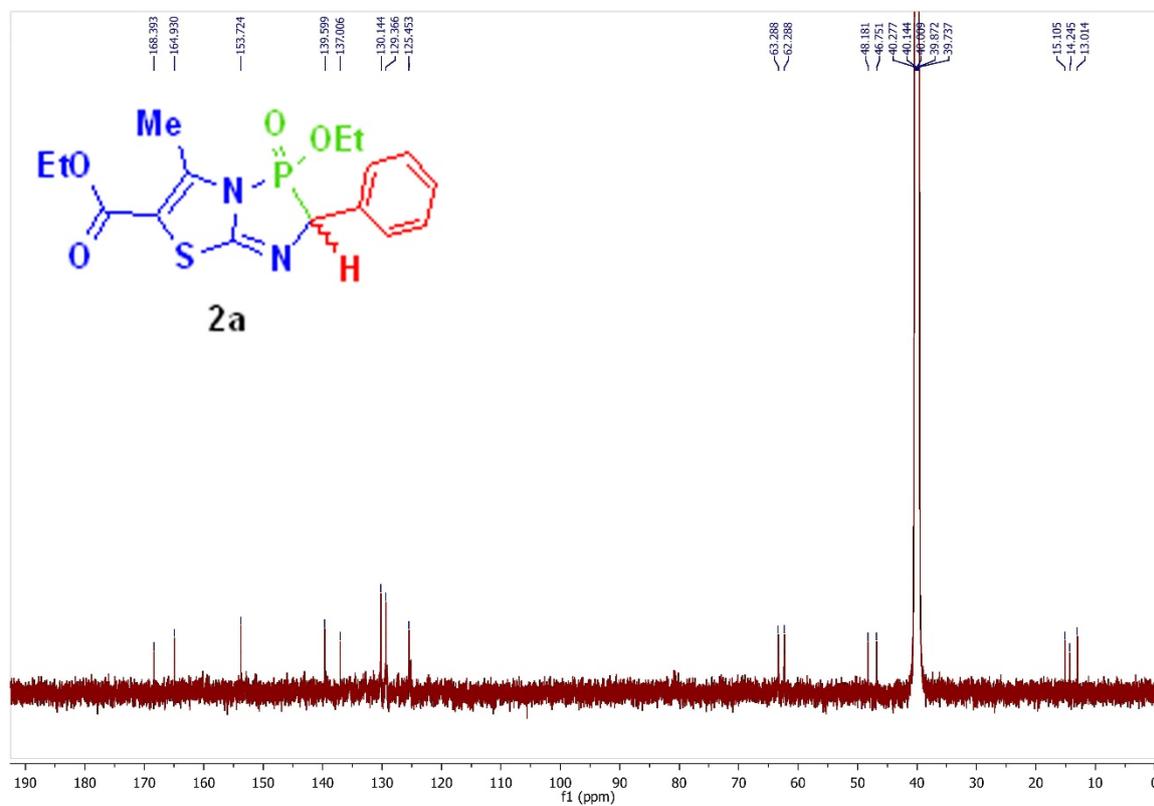


Figure S2: The  $^{13}\text{C}$ -NMR spectrum of compound **2a**.

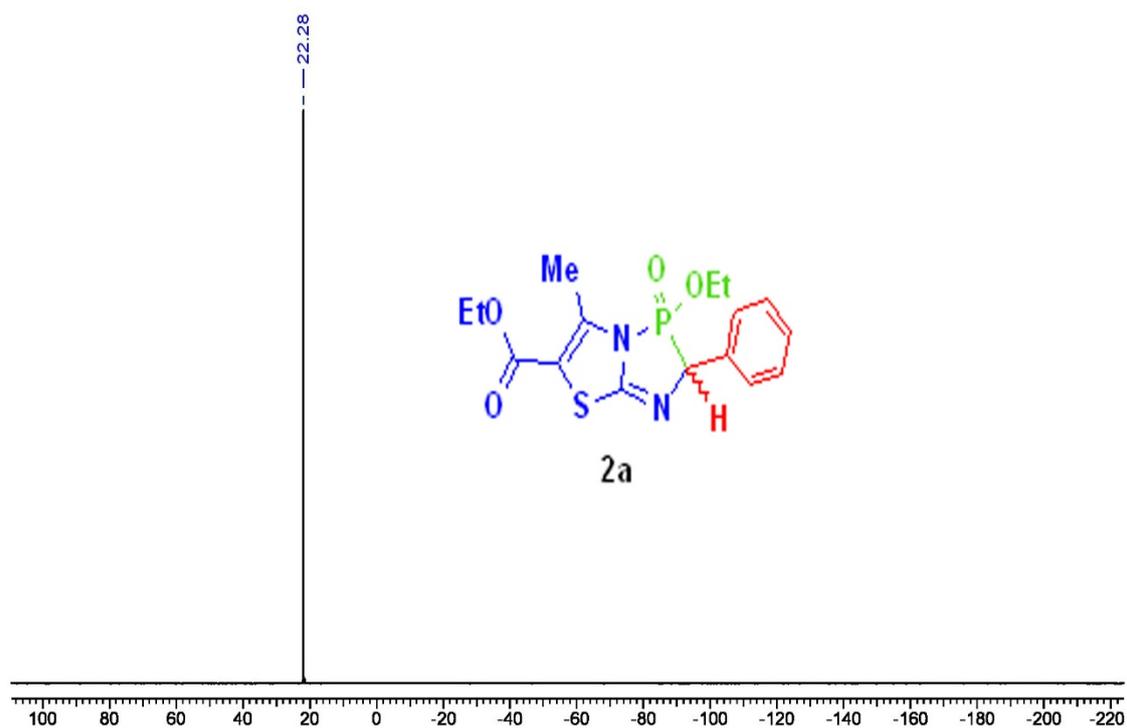


Figure S3: The  $^{31}\text{P}$ -NMR spectrum of compound 2a.

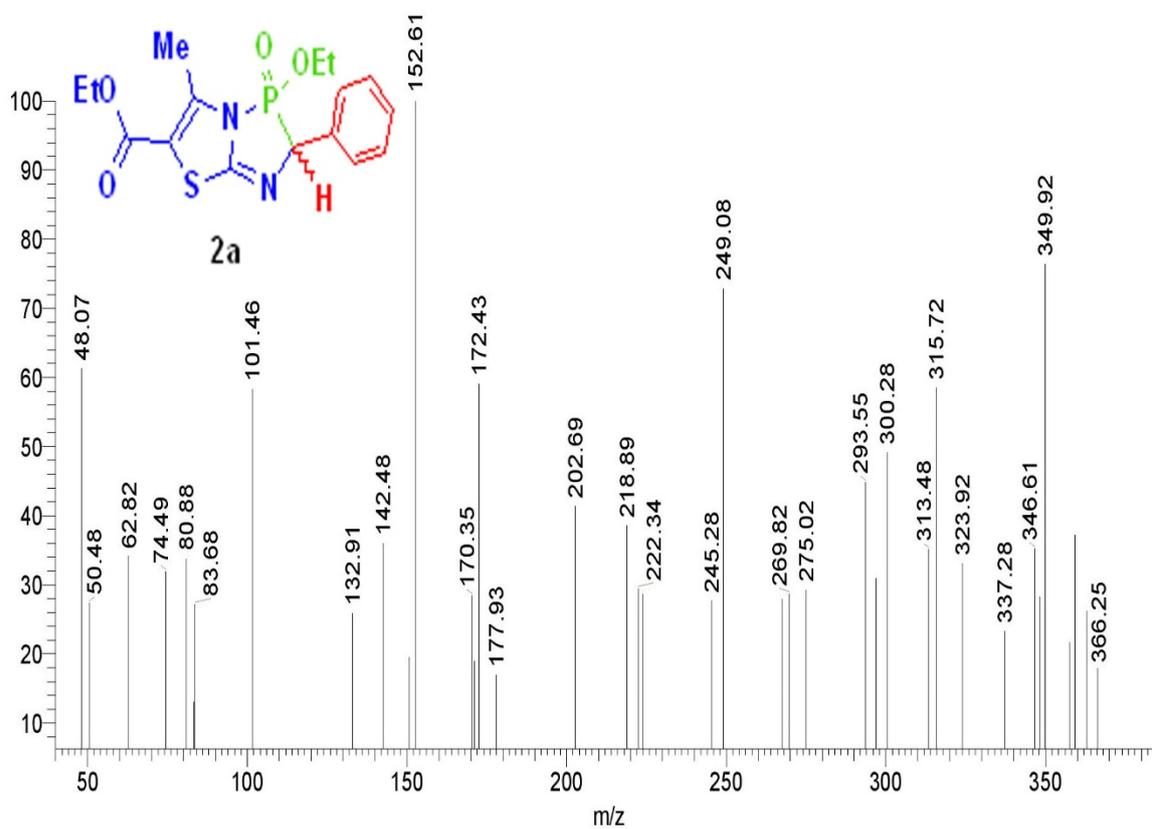


Figure S4: The mass spectrum of compound 2a.

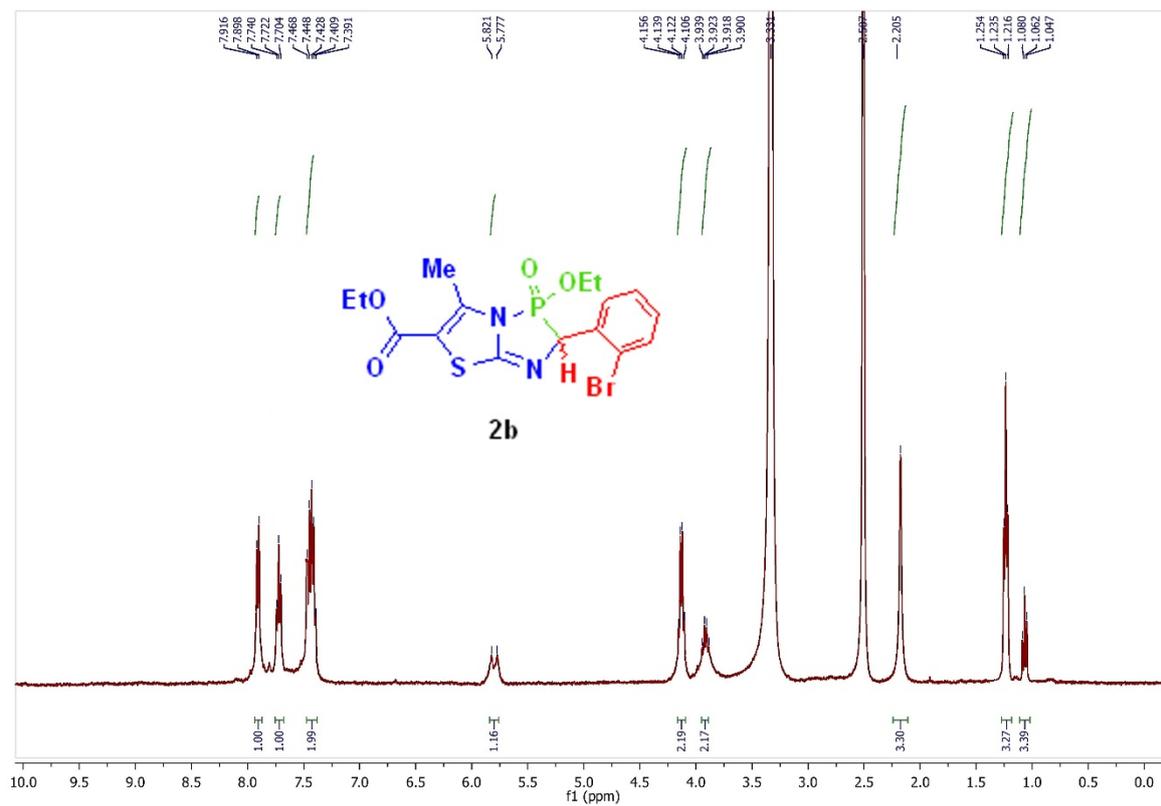


Figure S5: The  $^1\text{H}$ -NMR spectrum of compound **2b**.

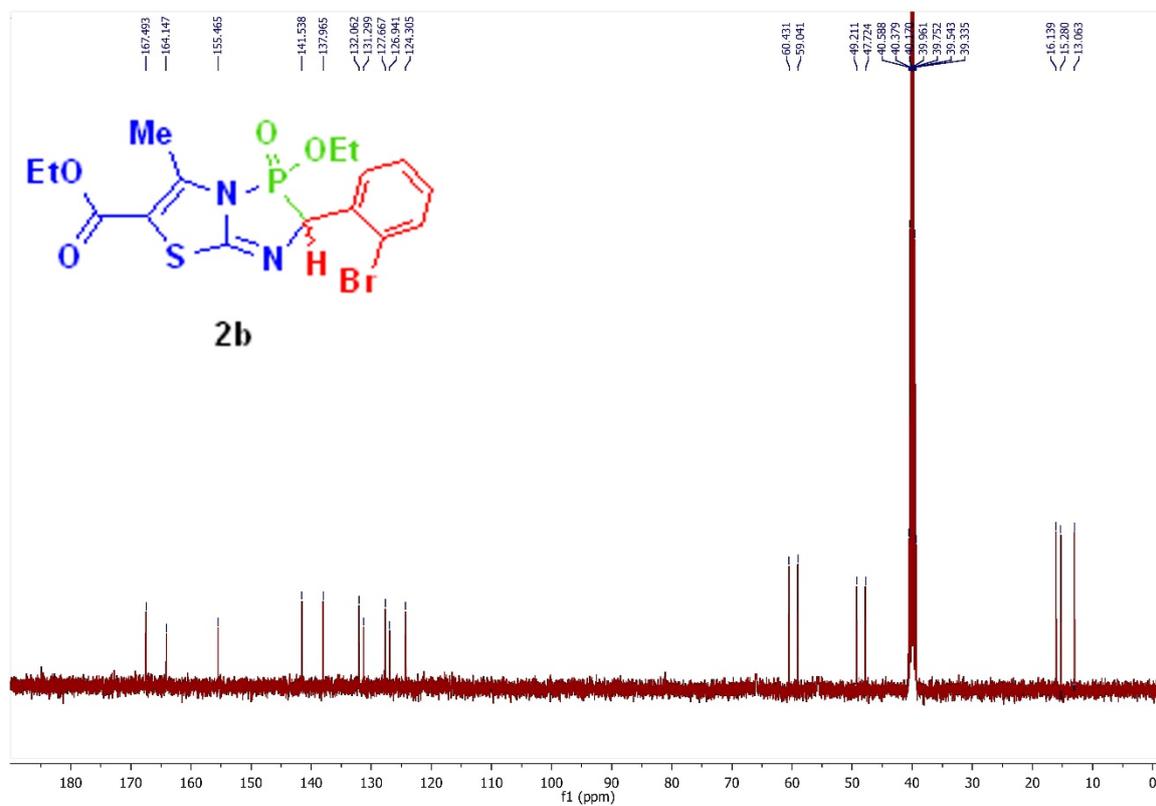


Figure S6: The  $^{13}\text{C}$ -NMR spectrum of compound **2b**.

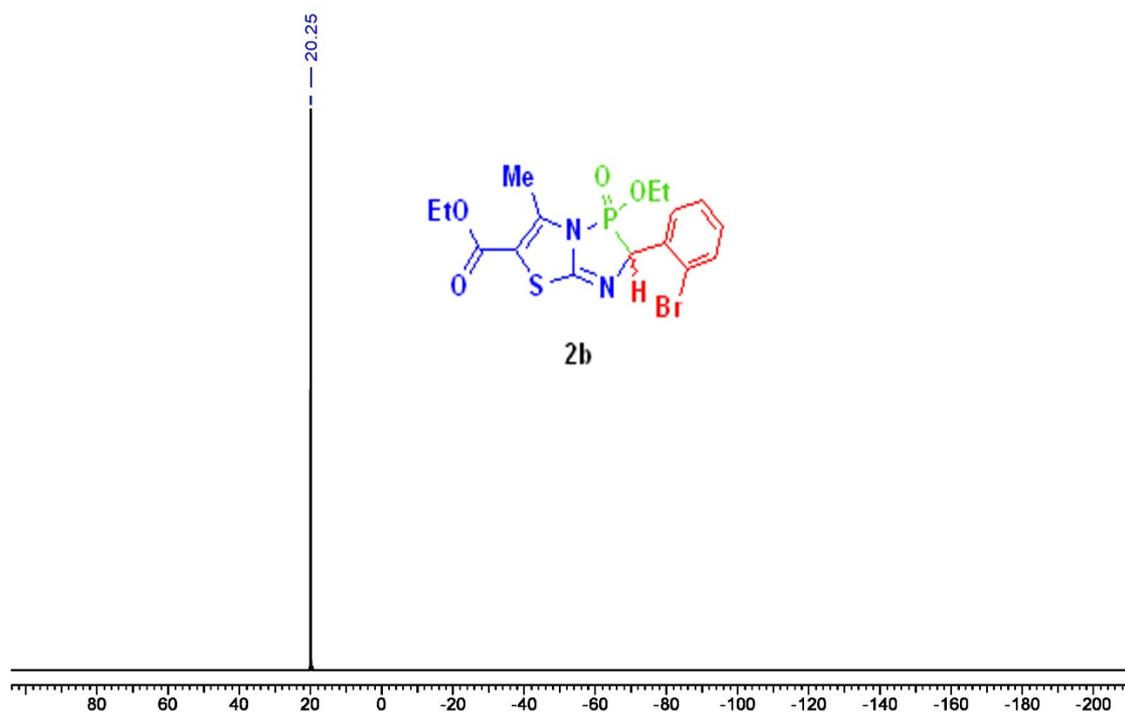


Figure S7: The  $^{31}\text{P}$ -NMR spectrum of compound 2b.

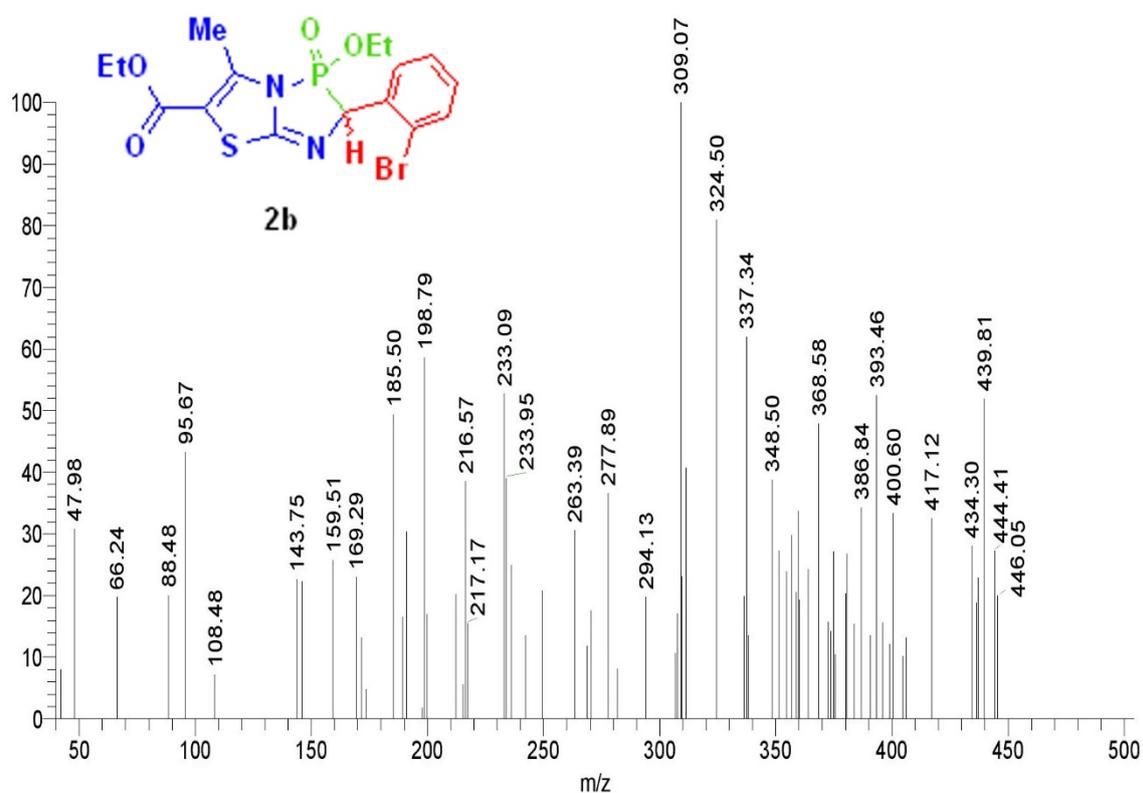


Figure S8: The mass spectrum of compound 2b.

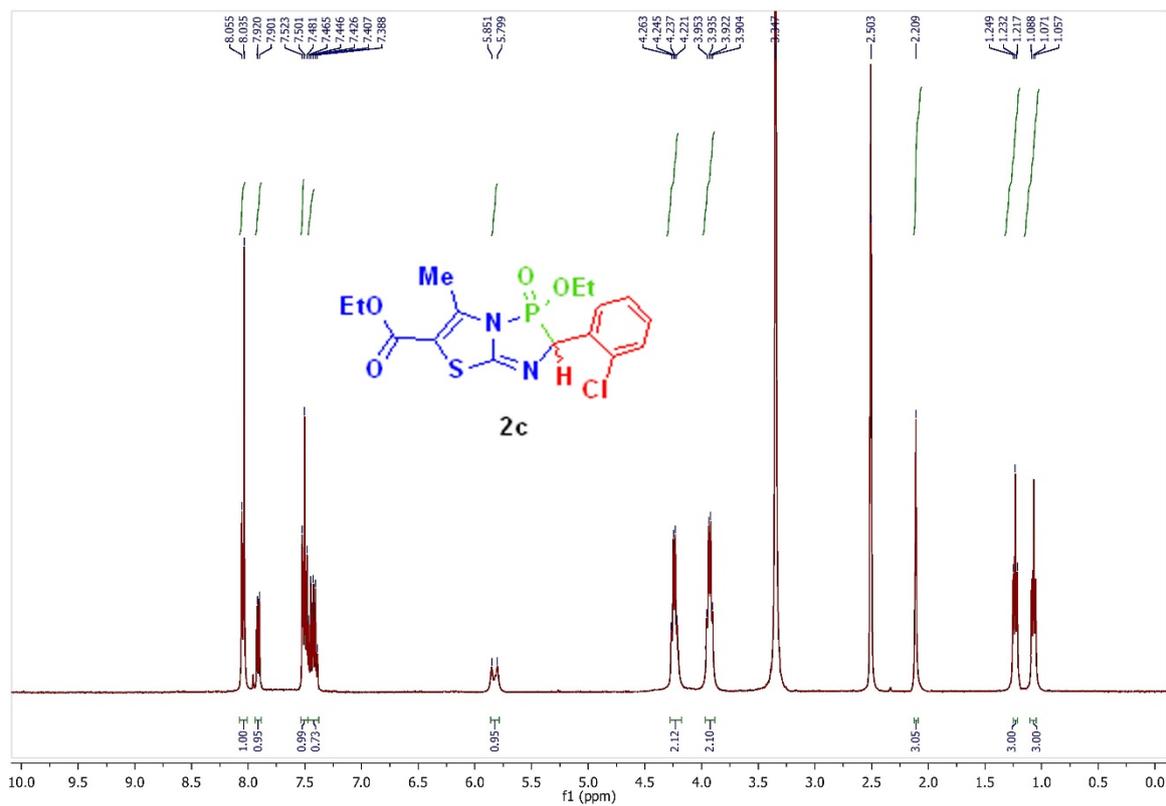


Figure S9: The  $^1\text{H-NMR}$  spectrum of compound **2c**.

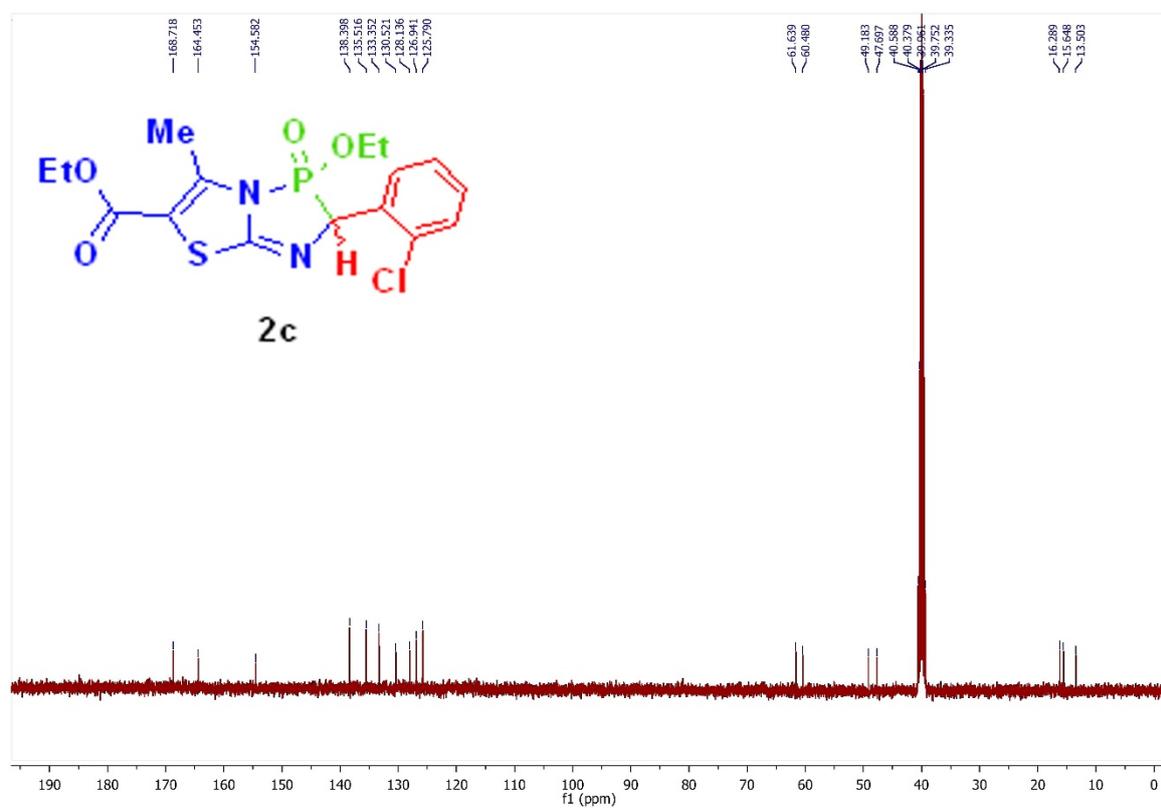


Figure S10: The  $^{13}\text{C-NMR}$  spectrum of compound **2c**.

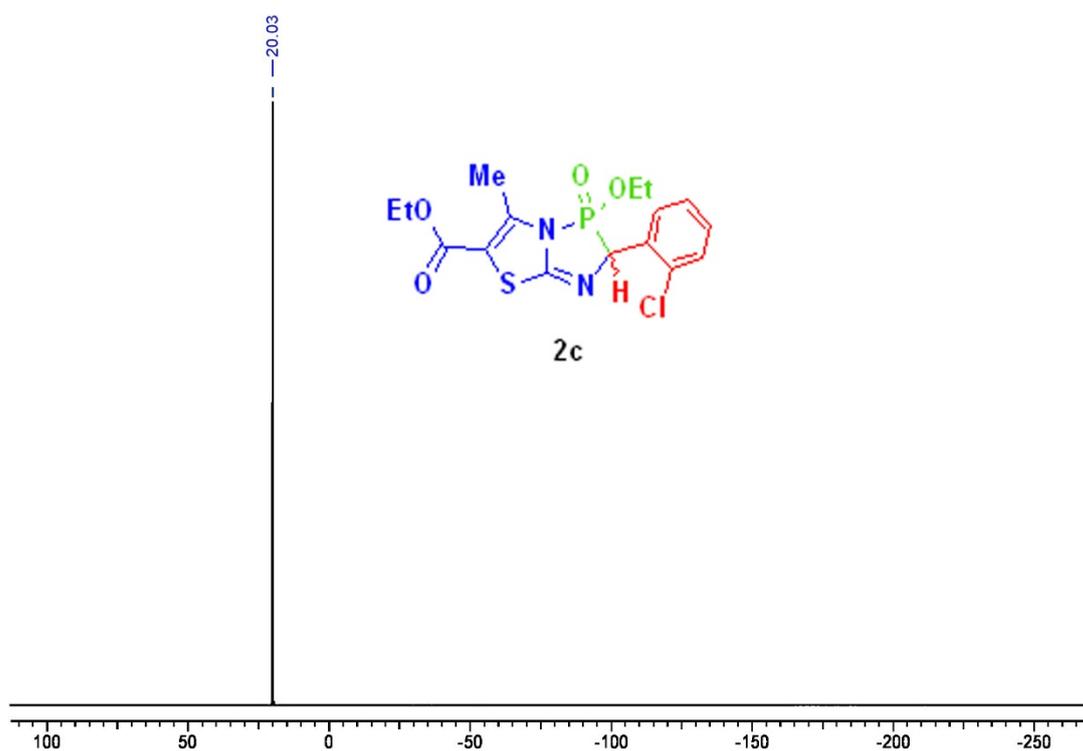


Figure S11: The  $^{31}\text{P}$ -NMR spectrum of compound **2c**.

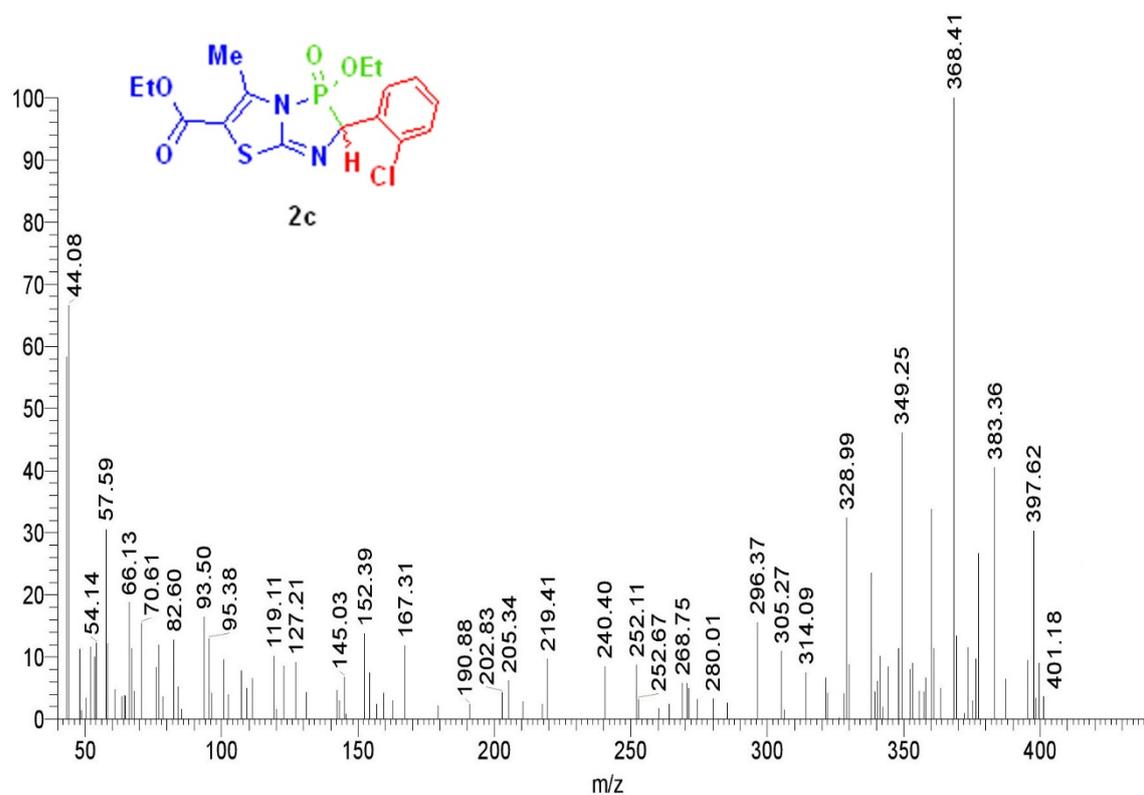
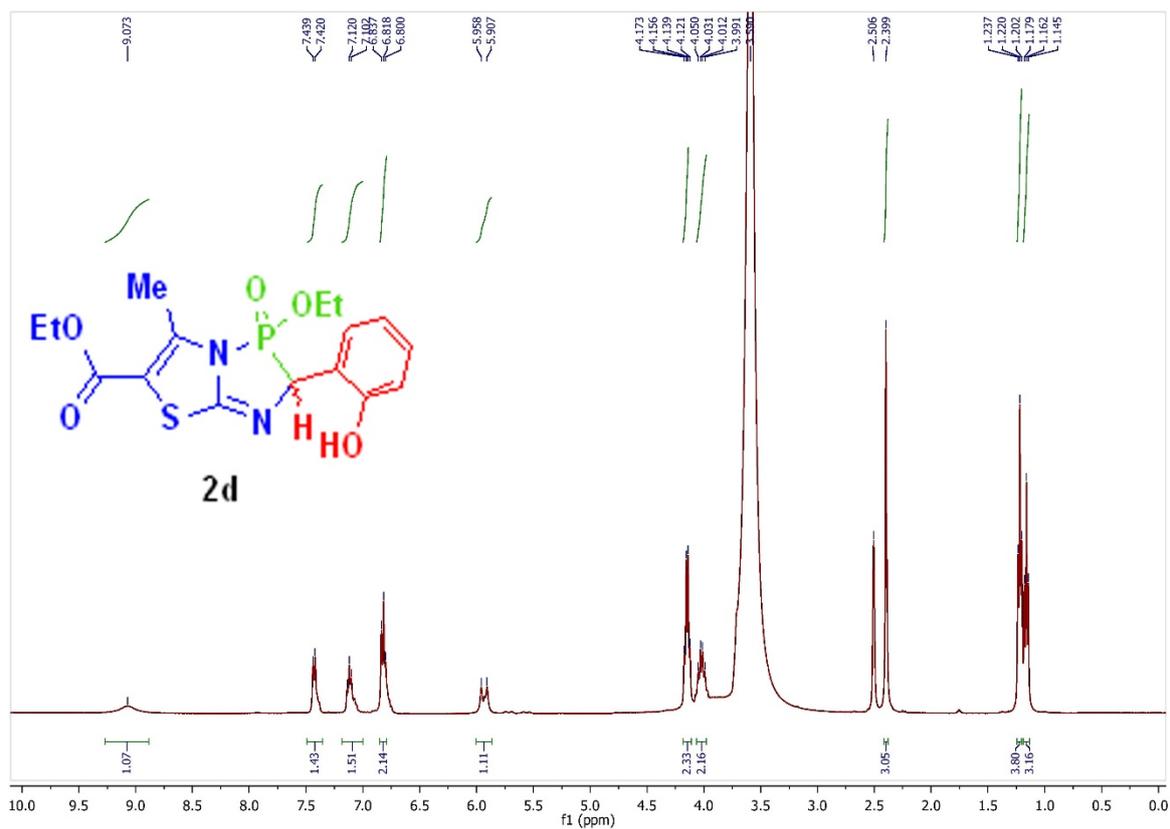
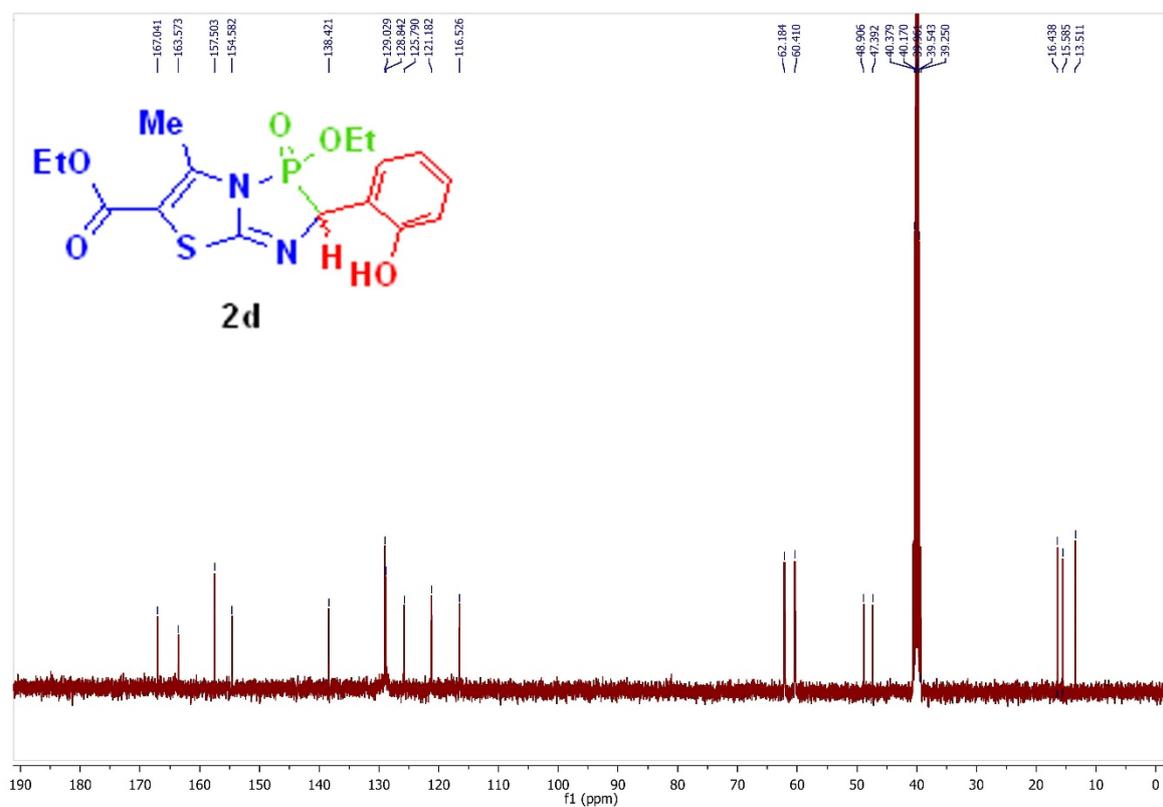


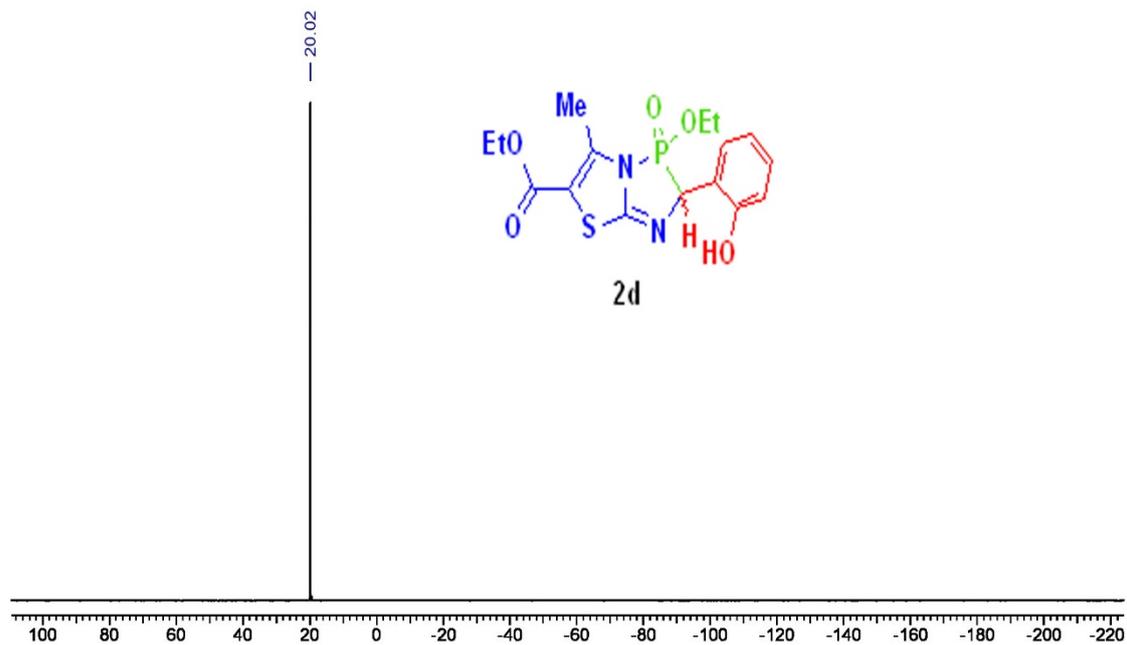
Figure S12: The mass spectrum of compound **2c**.



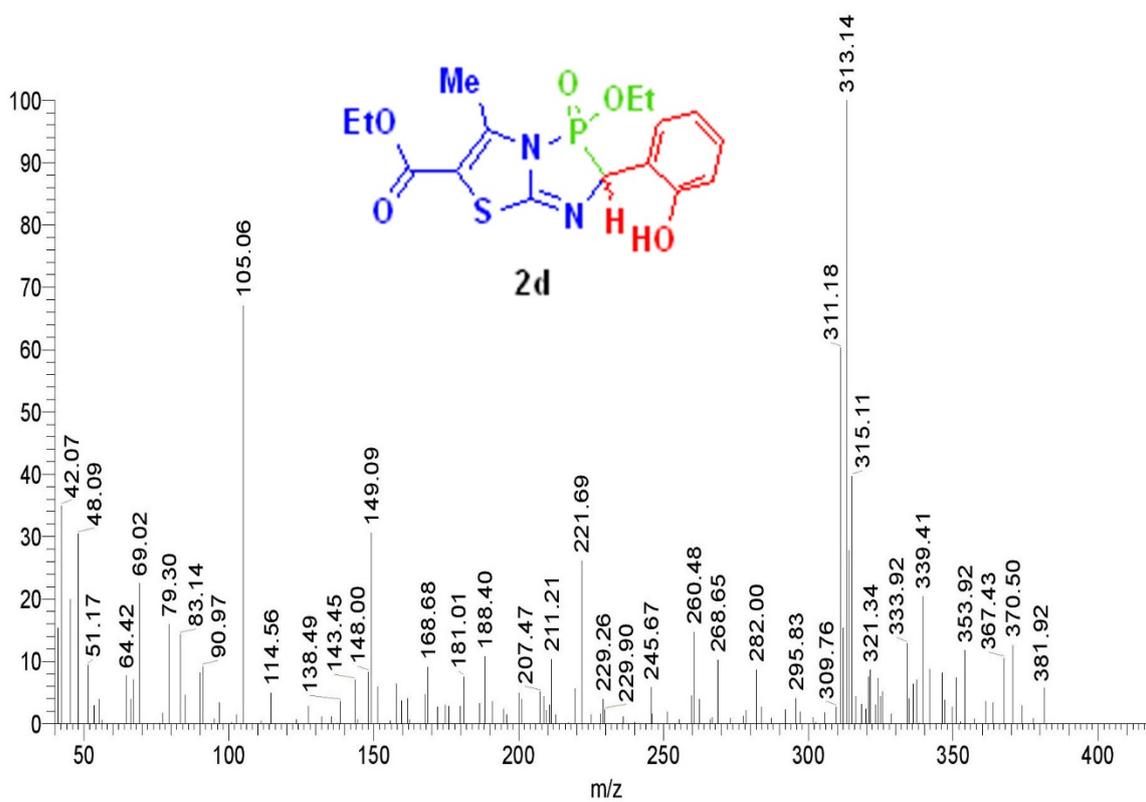
**Figure S13: The  $^1\text{H}$ -NMR spectrum of compound **2d**.**



**Figure S14: The  $^{13}\text{C}$ -NMR spectrum of compound **2d**.**



**Figure S15:** The  $^{31}\text{P}$ -NMR spectrum of compound **2d**.



**Figure S16:** The mass spectrum of compound **2d**.

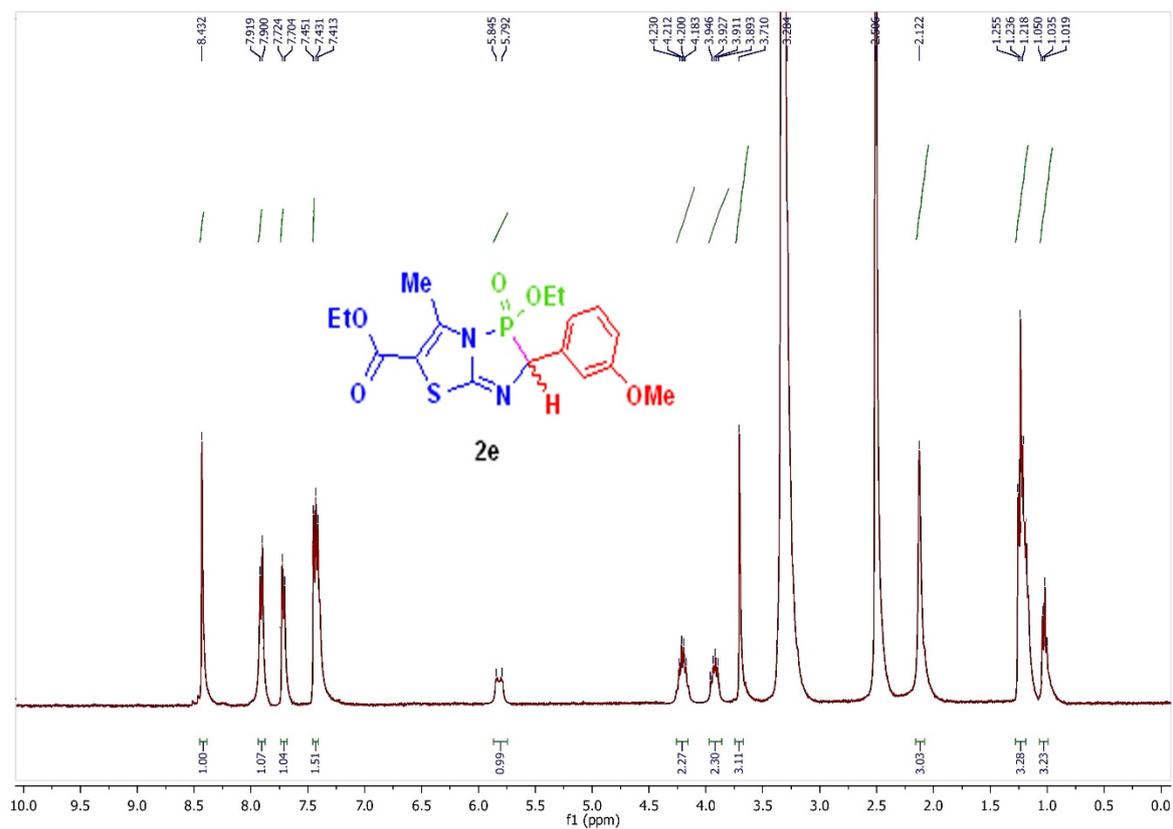


Figure S17: The  $^1\text{H}$ -NMR spectrum of compound **2e**.

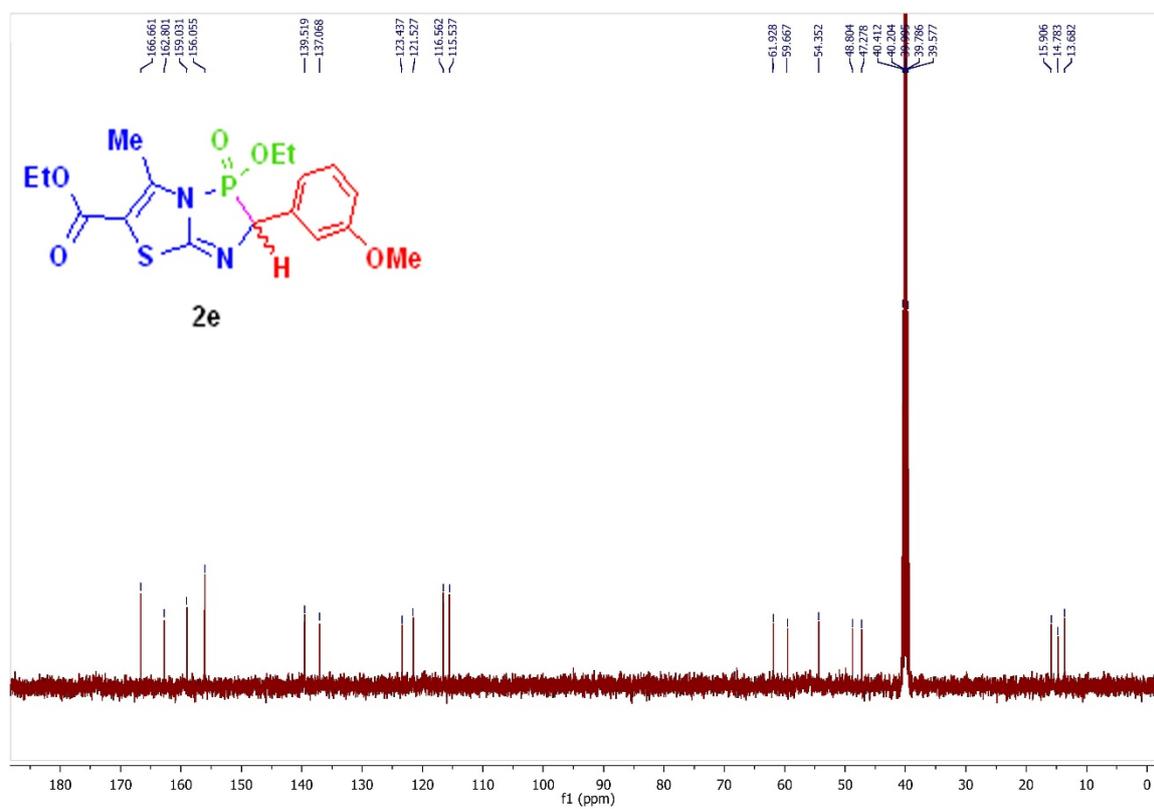


Figure S18: The  $^{13}\text{C}$ -NMR spectrum of compound **2e**.

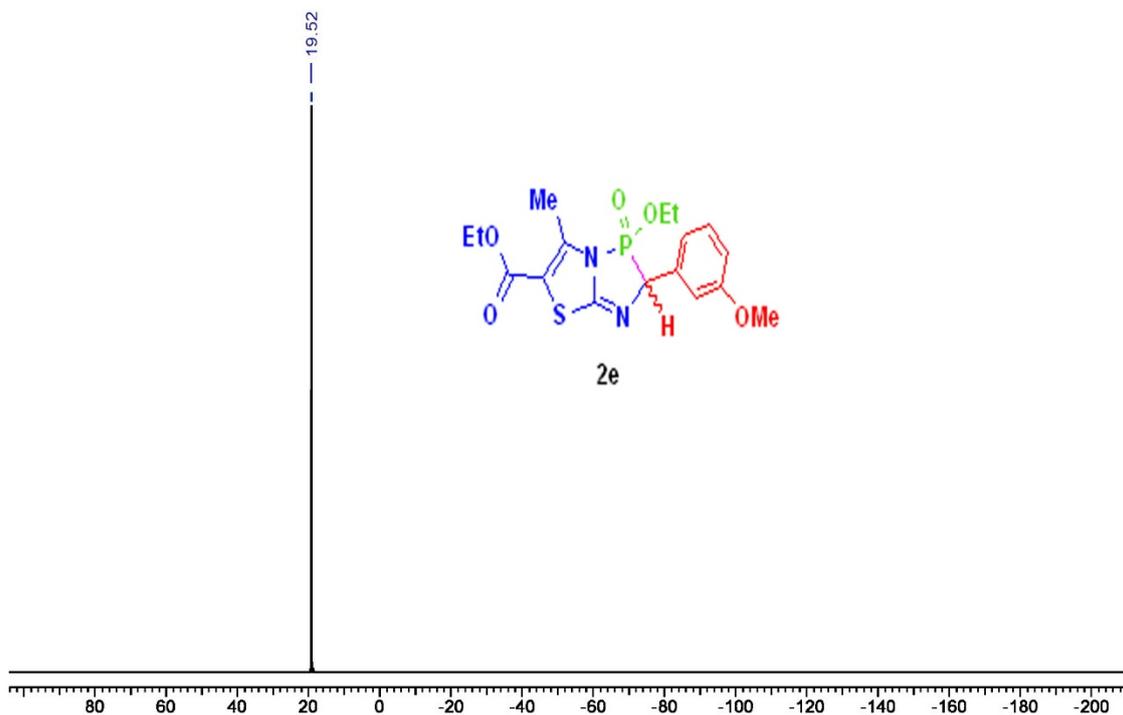


Figure S19: The <sup>31</sup>P-NMR spectrum of compound 2e.

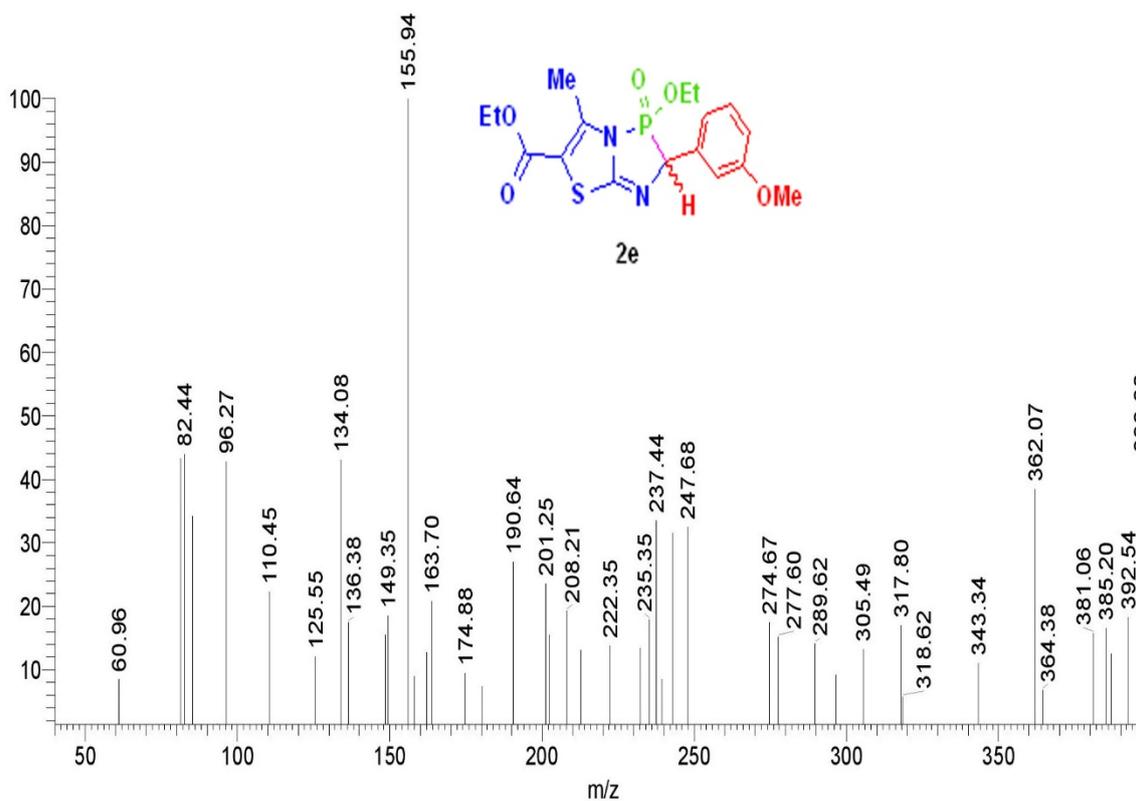


Figure S20: The mass spectrum of compound 2e.

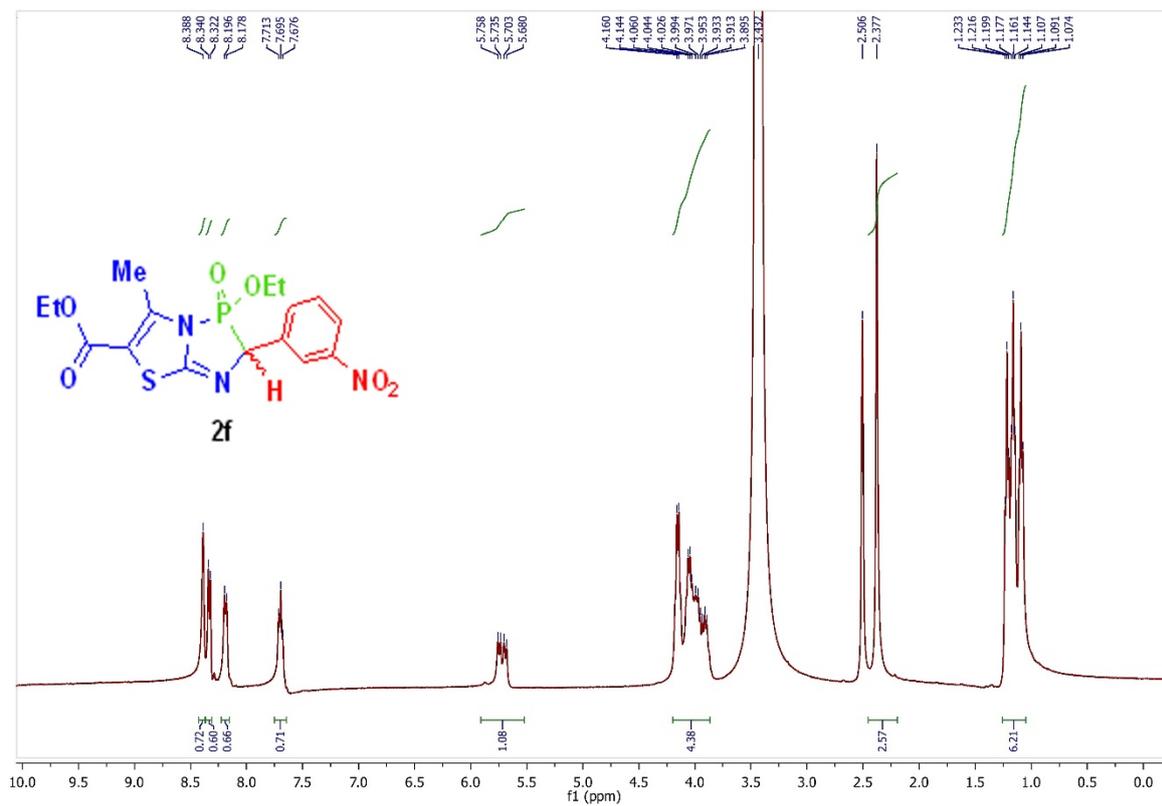


Figure S21: The  $^1\text{H}$ -NMR spectrum of compound **2f**.

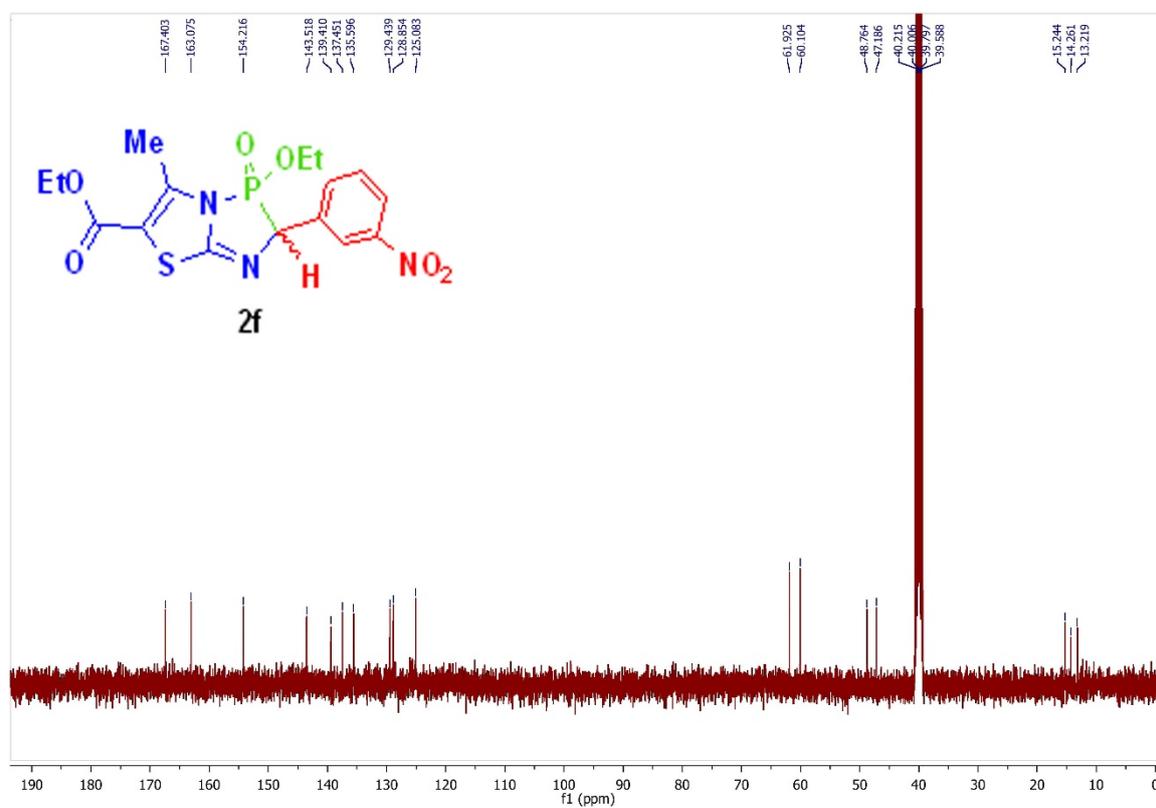
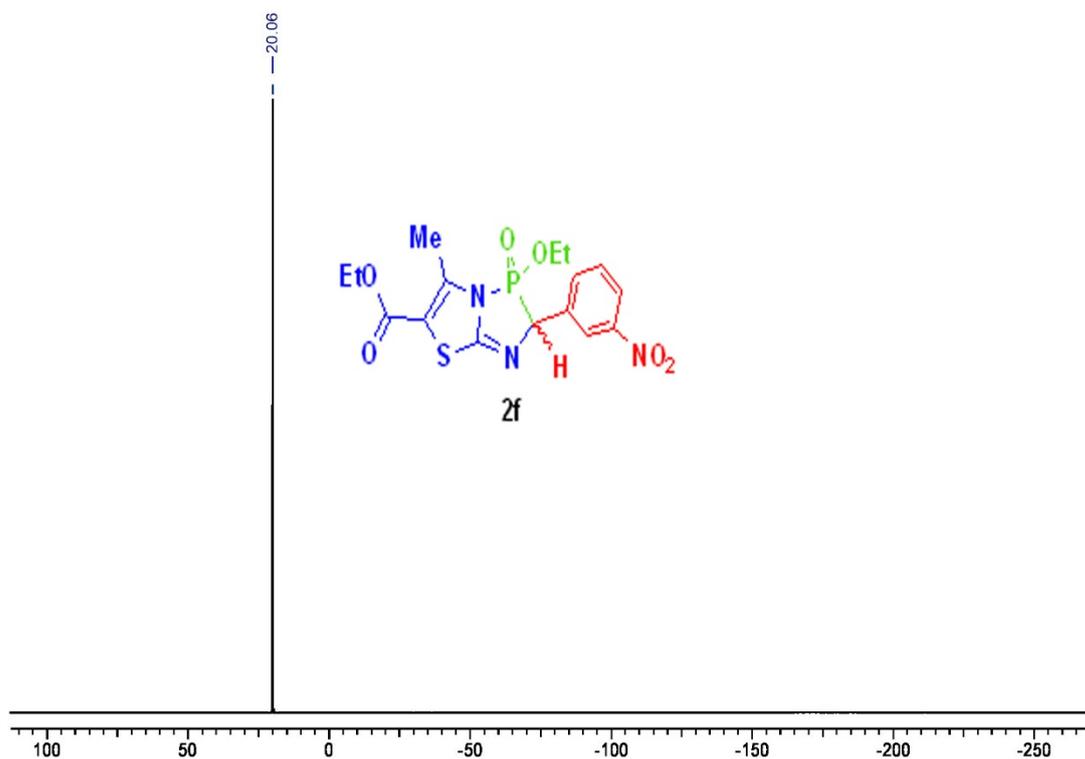
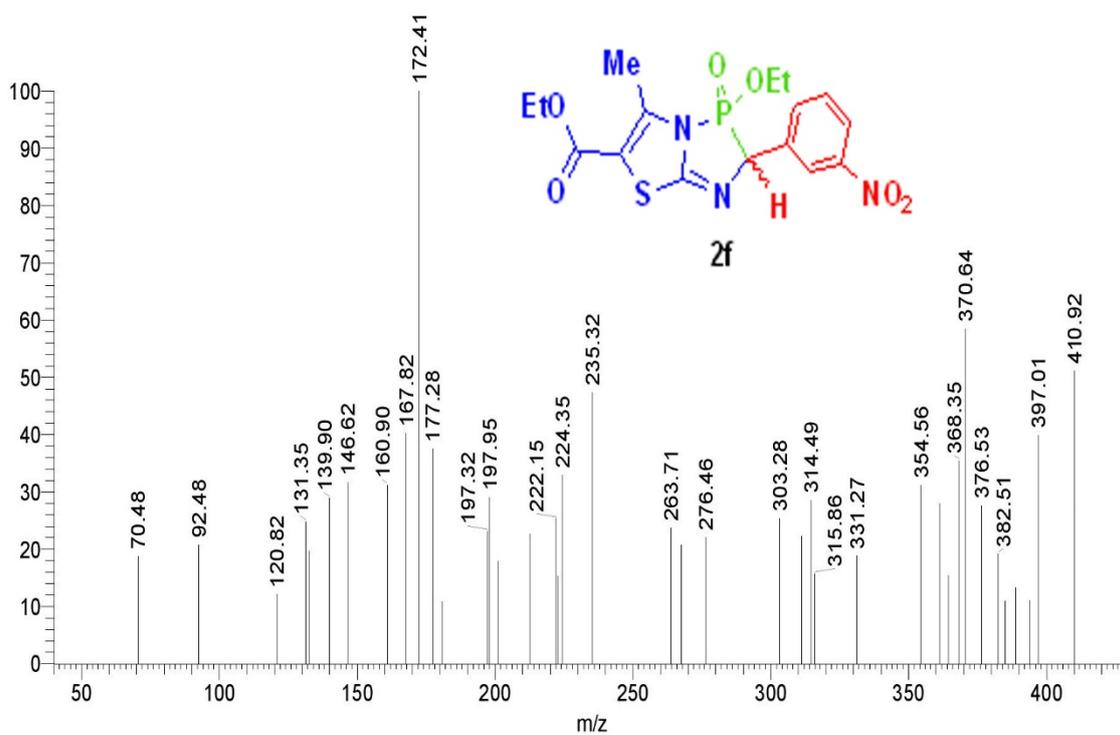


Figure S22: The  $^{13}\text{C}$ -NMR spectrum of compound **2f**.



**Figure S23:** The  $^{31}\text{P}$ -NMR spectrum of compound **2f**.



**Figure S24:** The mass spectrum of compound **2f**.

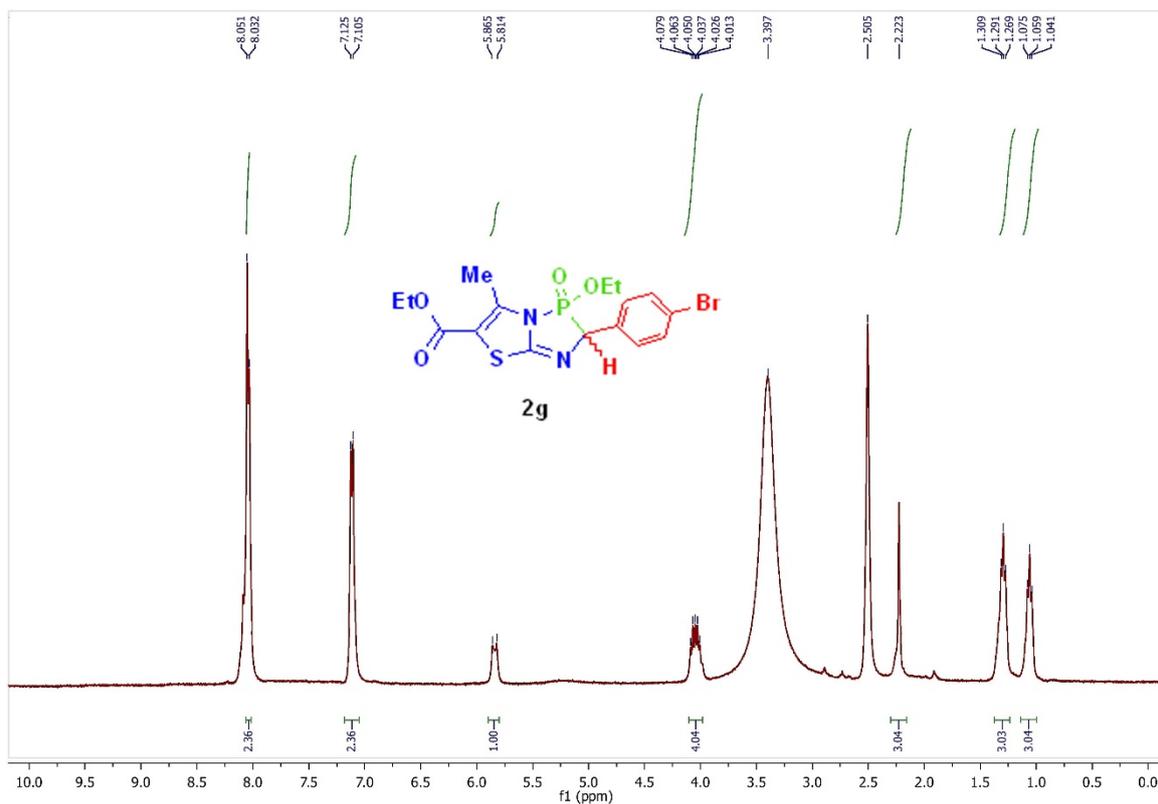


Figure S25: The  $^1\text{H}$ -NMR spectrum of compound **2g**.

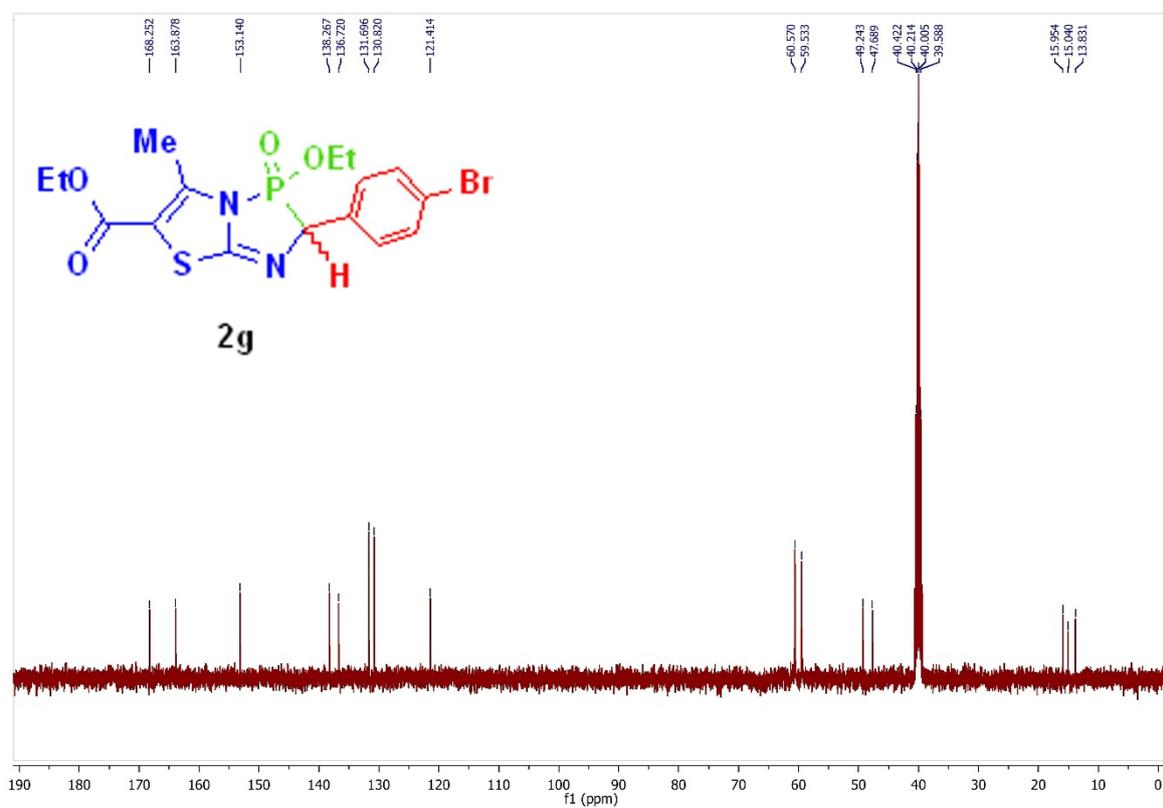


Figure S26: The  $^{13}\text{C}$ -NMR spectrum of compound **2g**.

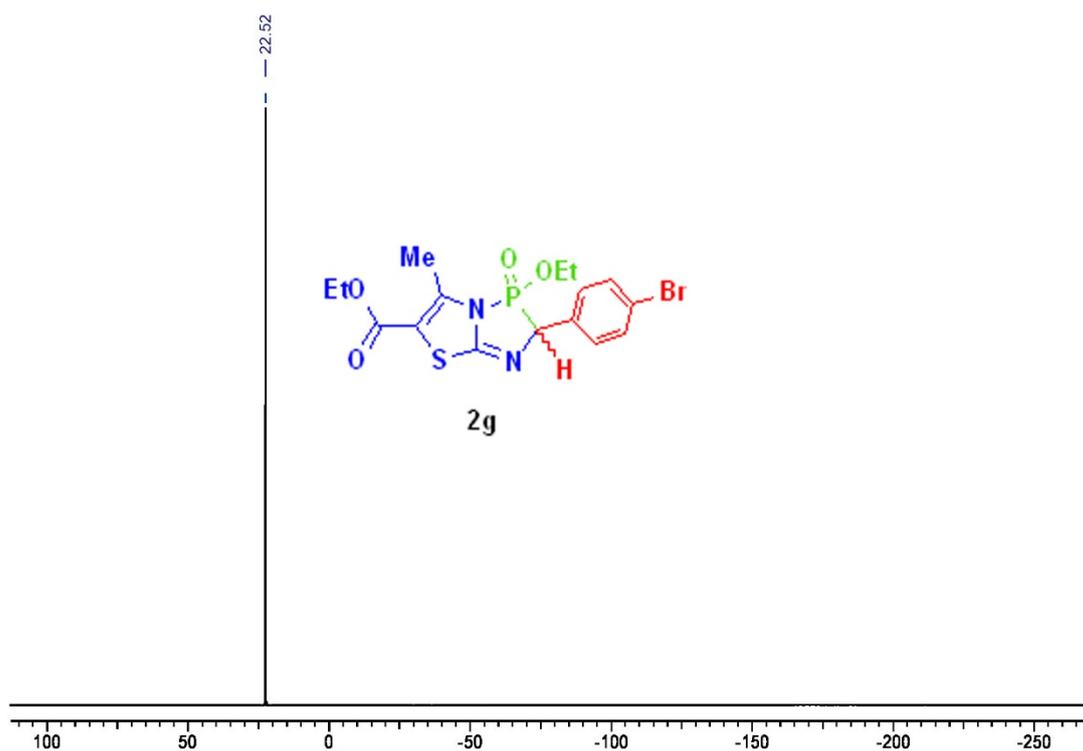


Figure S27: The  $^{31}\text{P}$ -NMR spectrum of compound 2g.

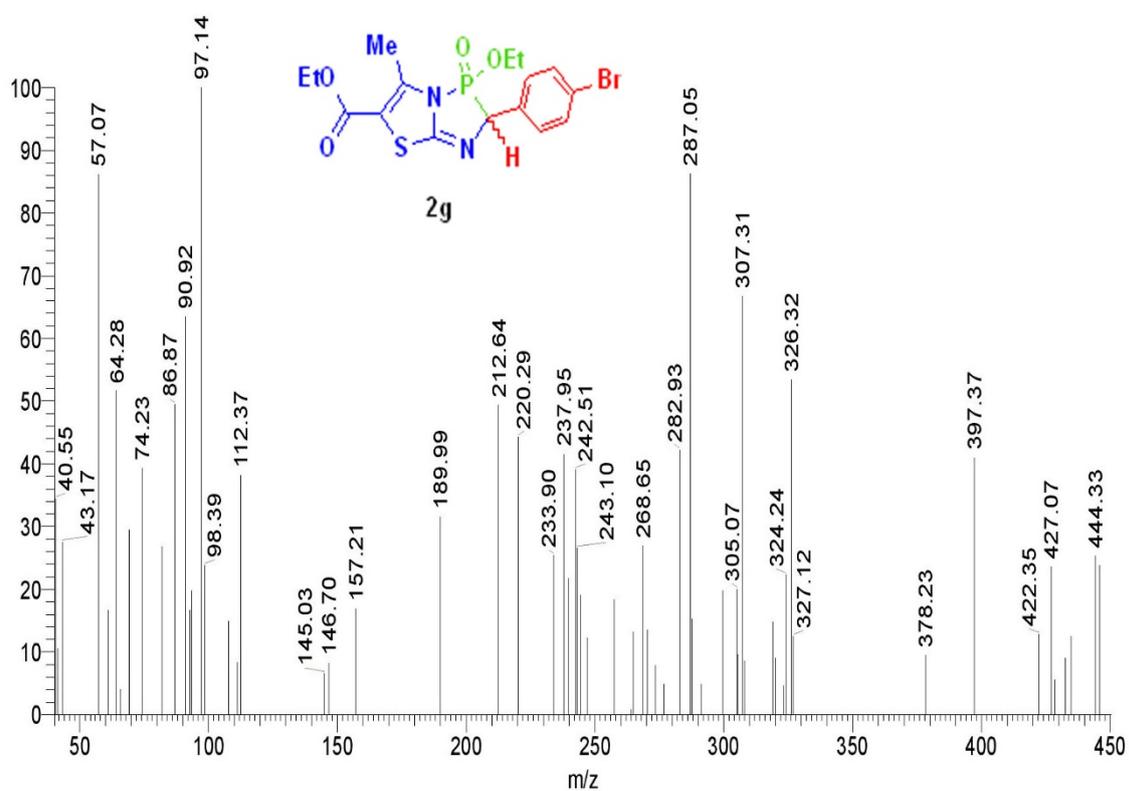


Figure S28: The mass spectrum of compound 2g.

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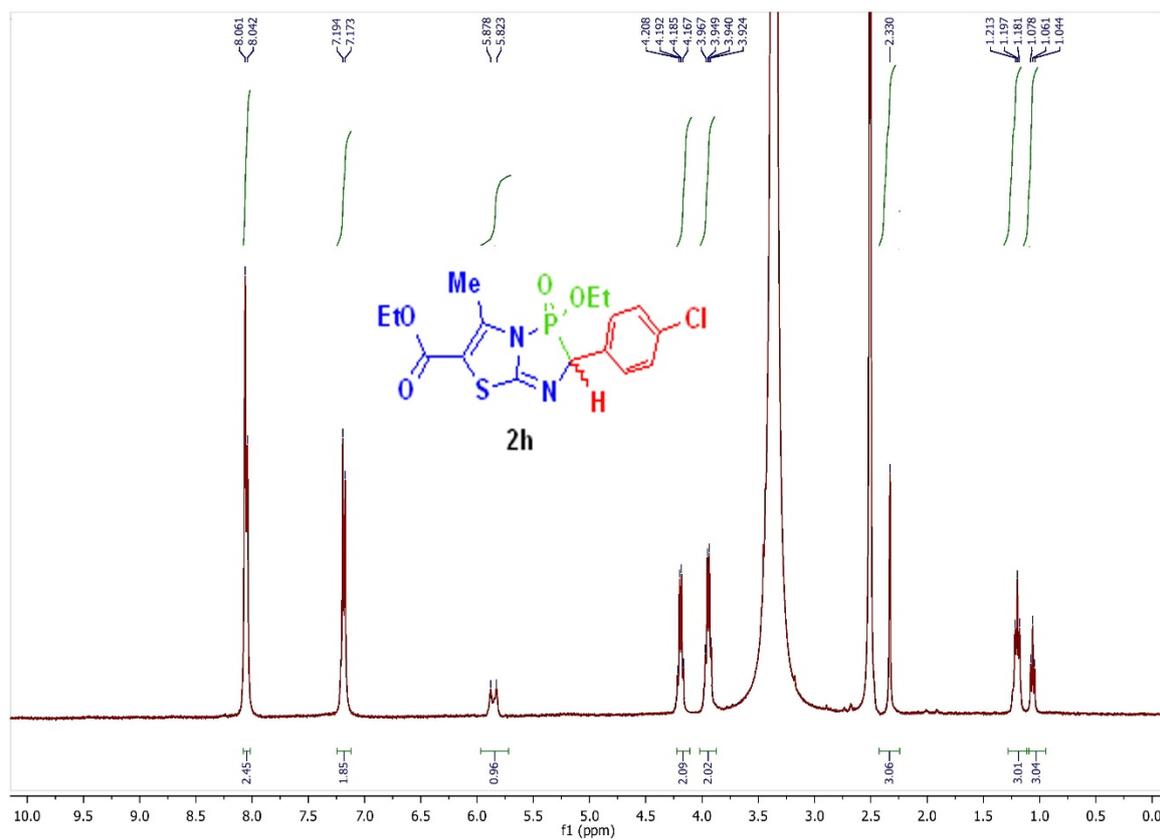


Figure S29: The  $^1\text{H-NMR}$  spectrum of compound **2h**.

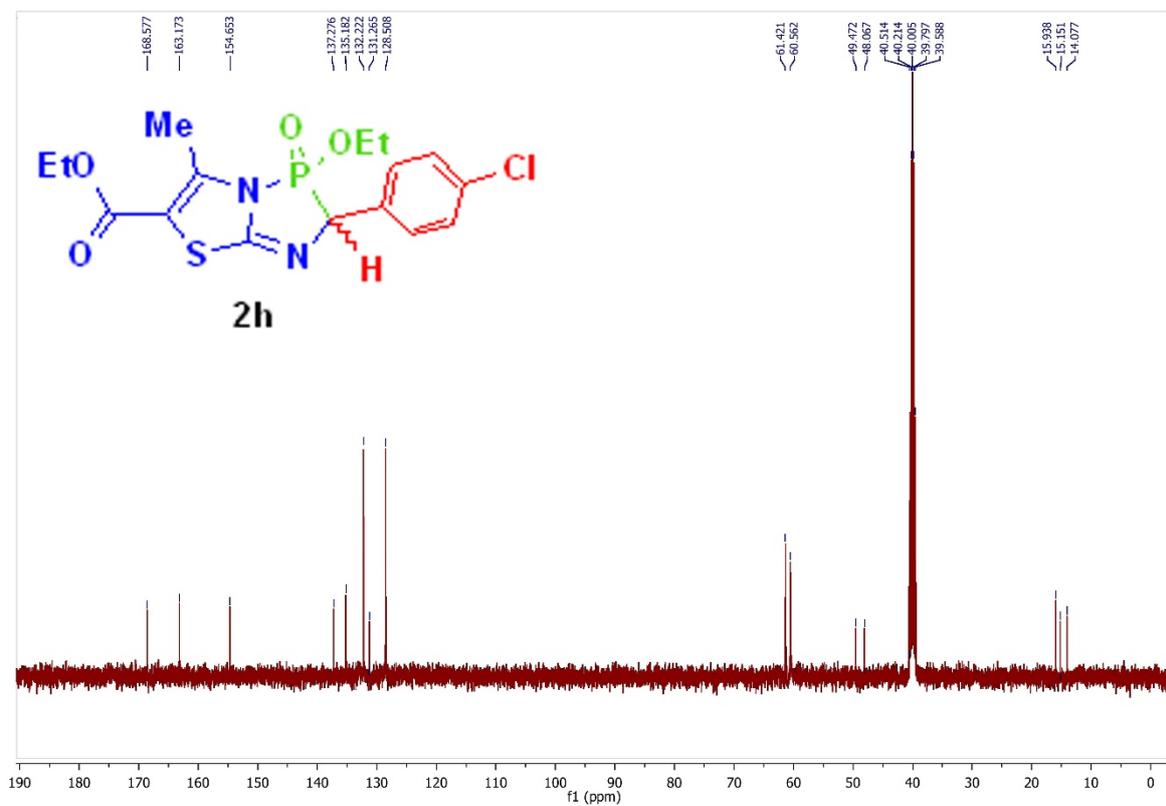
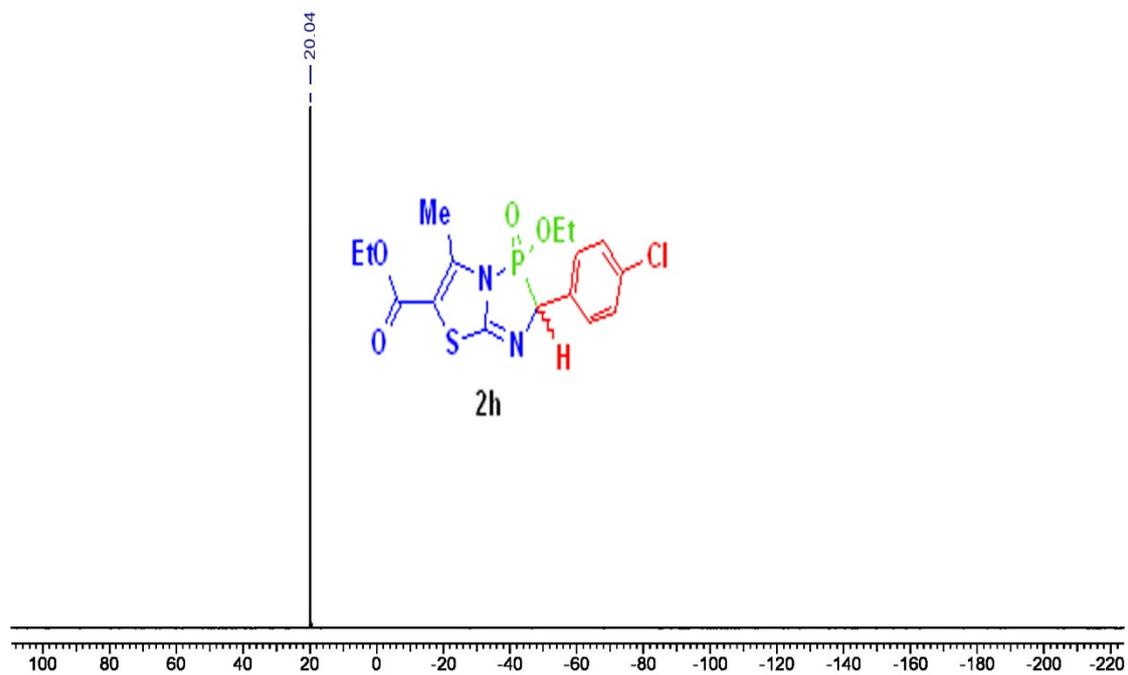
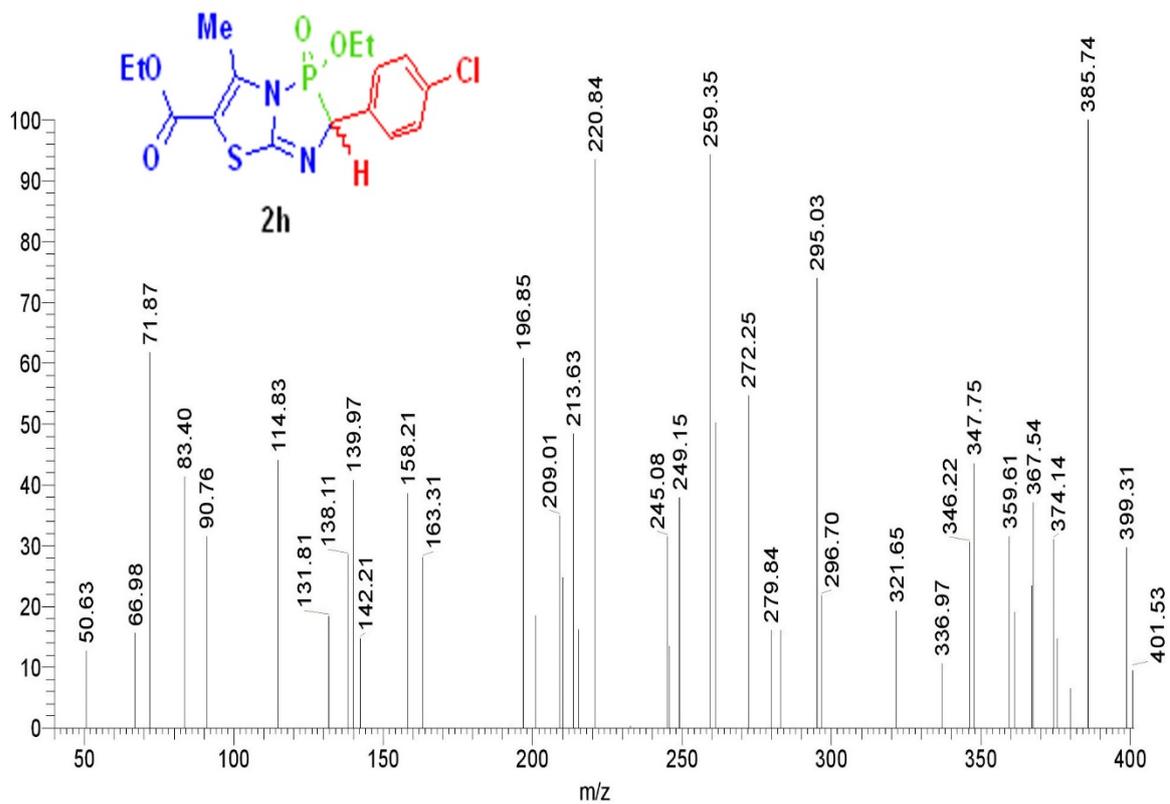


Figure S30: The  $^{13}\text{C-NMR}$  spectrum of compound **2h**.



**Figure S31:** The  $^{31}\text{P}$ -NMR spectrum of compound **2h**.



**Figure S32:** The mass spectrum of compound **2h**.

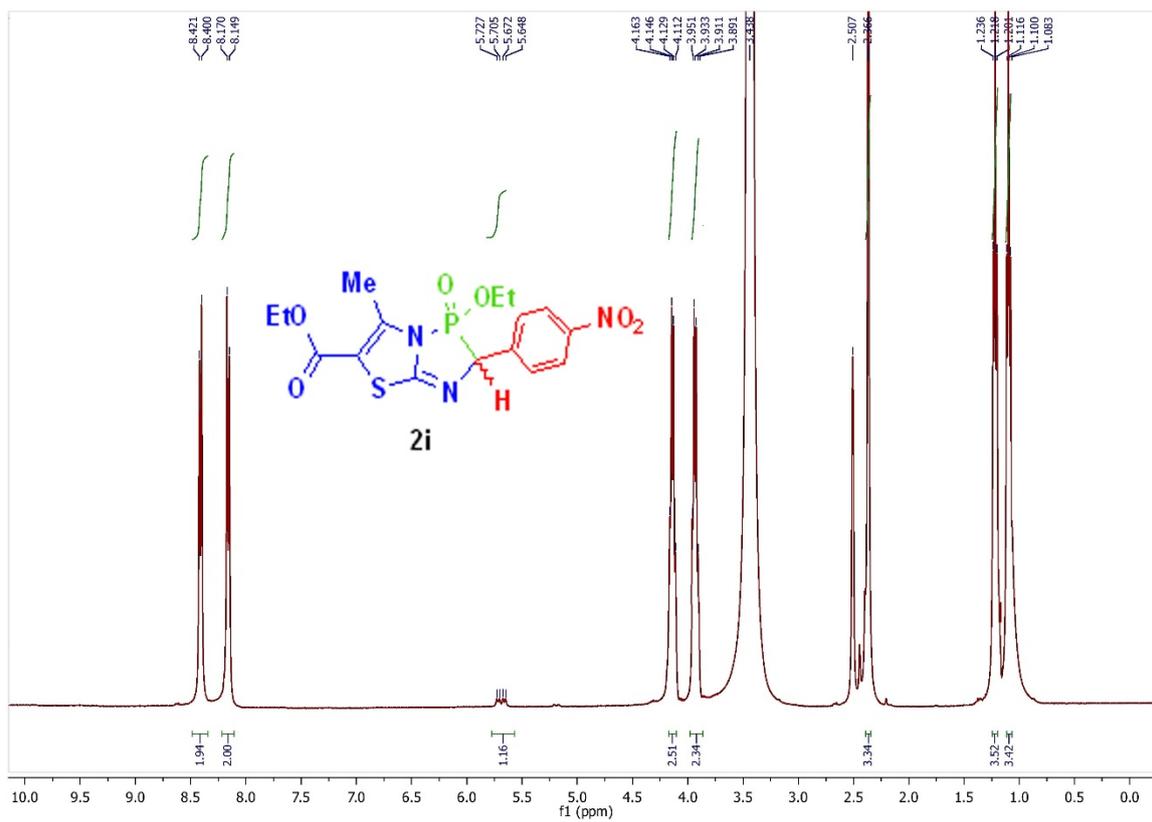


Figure S33: The <sup>1</sup>H-NMR spectrum of compound **2i**.

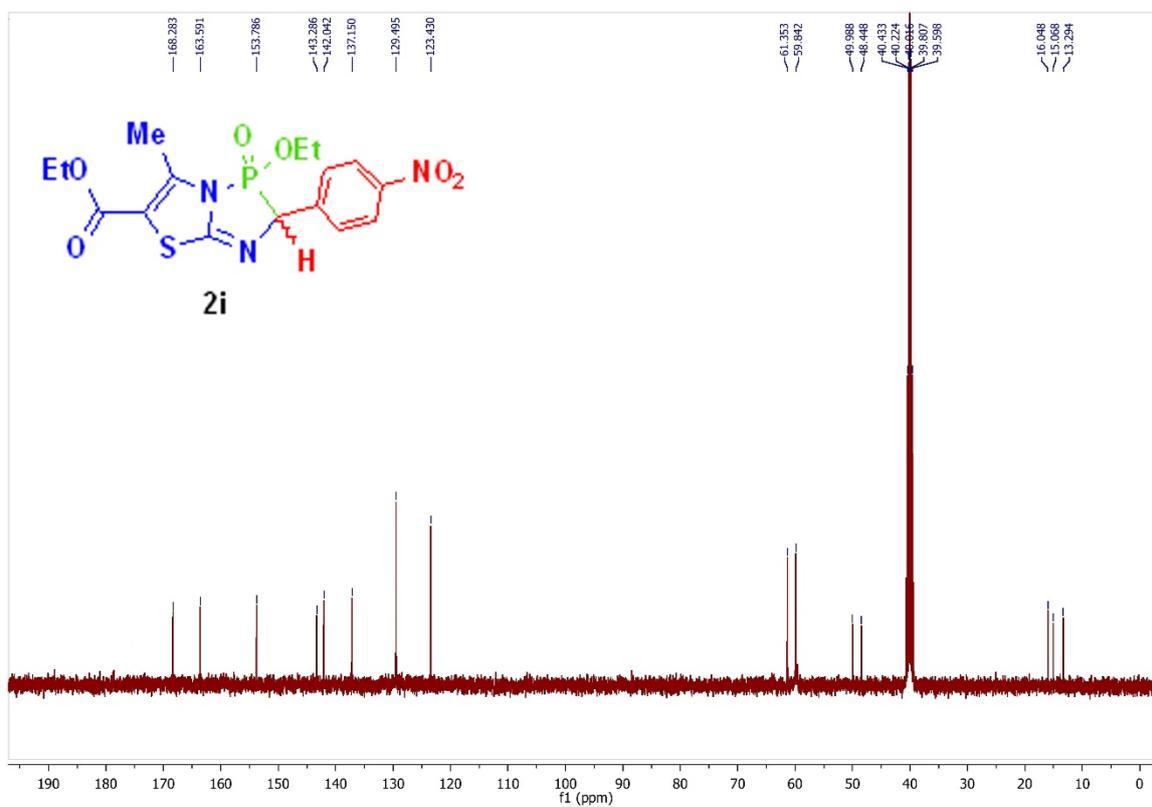


Figure S34: The <sup>13</sup>C-NMR spectrum of compound **2i**.

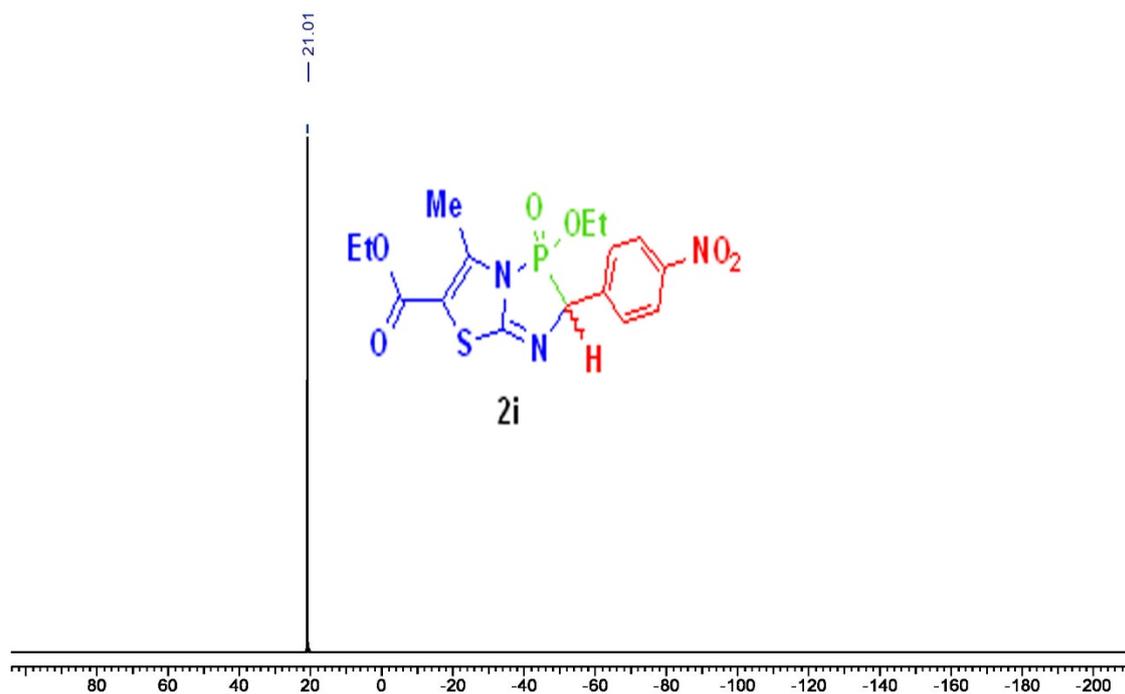


Figure S35: The  $^{31}\text{P}$ -NMR spectrum of compound **2i**.

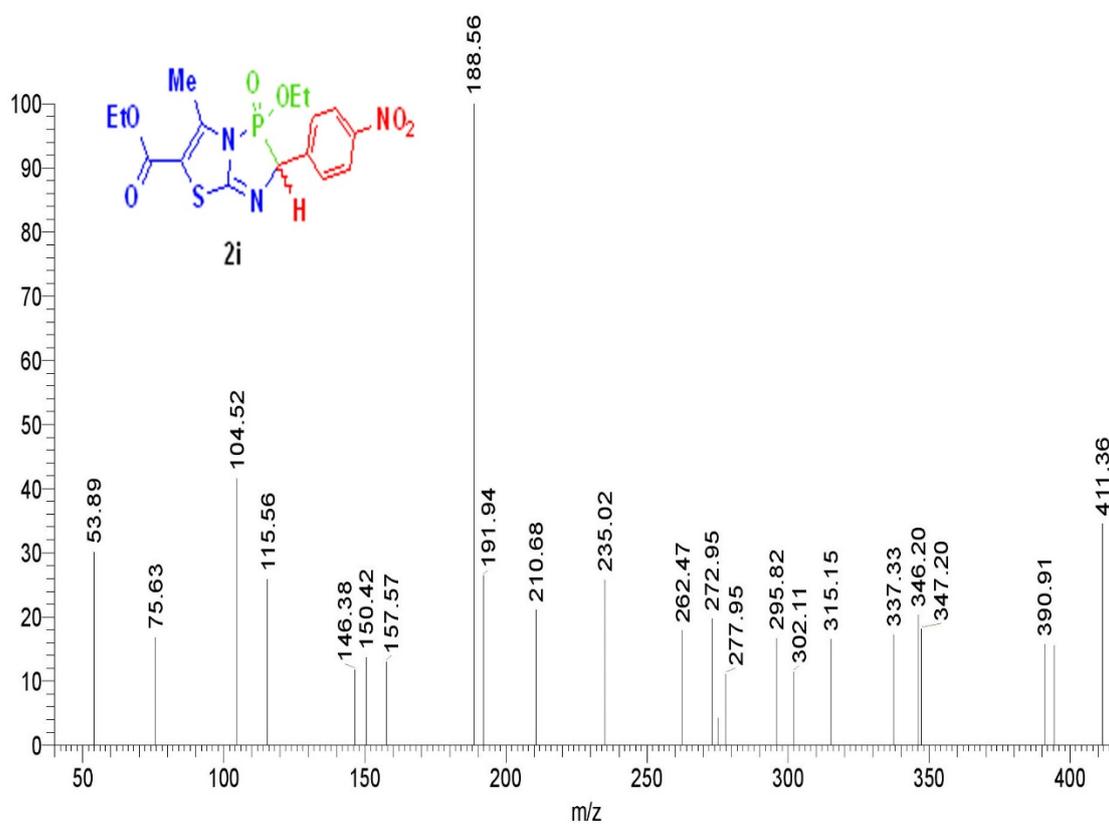


Figure S36: The mass spectrum of compound **2i**.

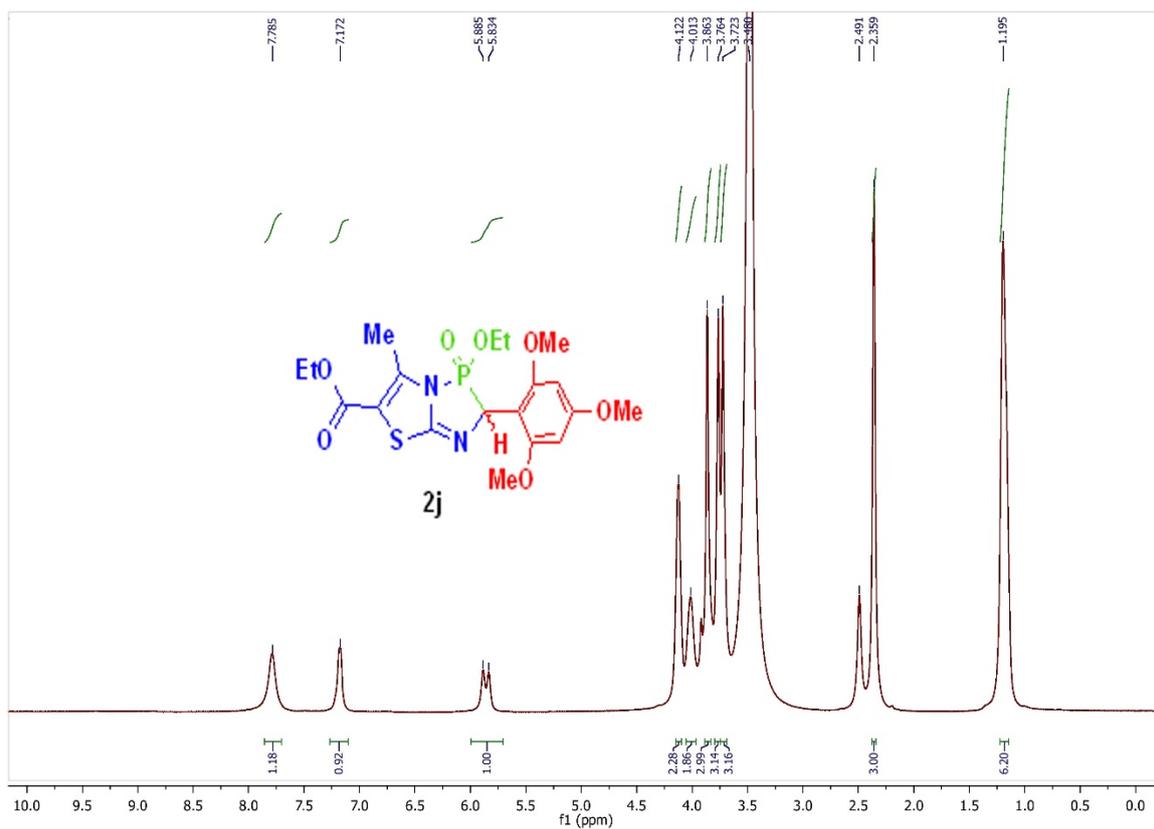


Figure S37: The  $^1\text{H-NMR}$  spectrum of compound **2j**.

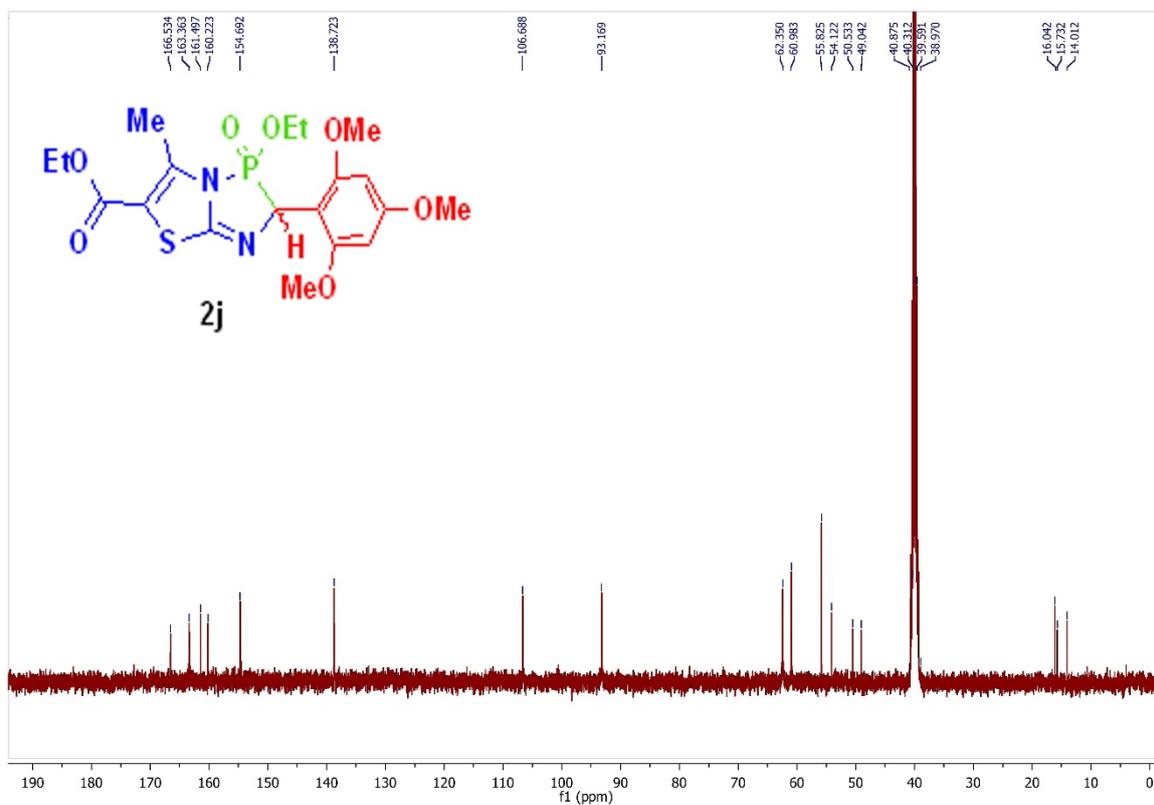


Figure S38: The  $^{13}\text{C-NMR}$  spectrum of compound **2j**.

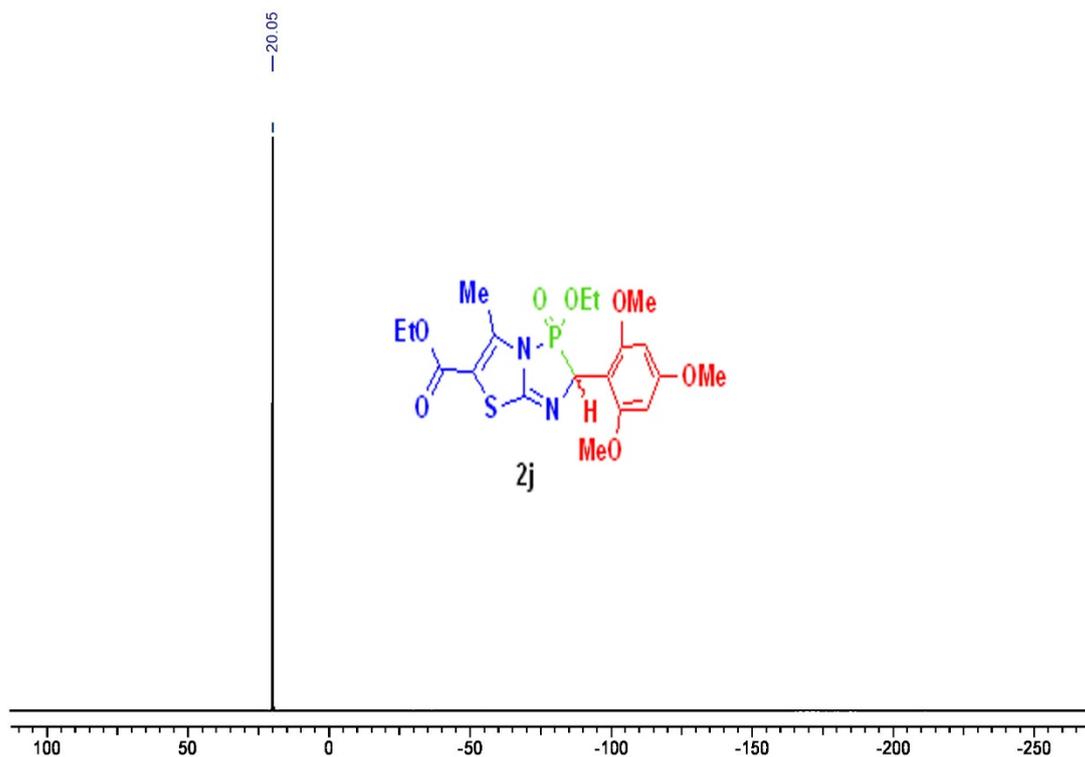


Figure S39: The  $^{31}\text{P}$ -NMR spectrum of compound 2j.

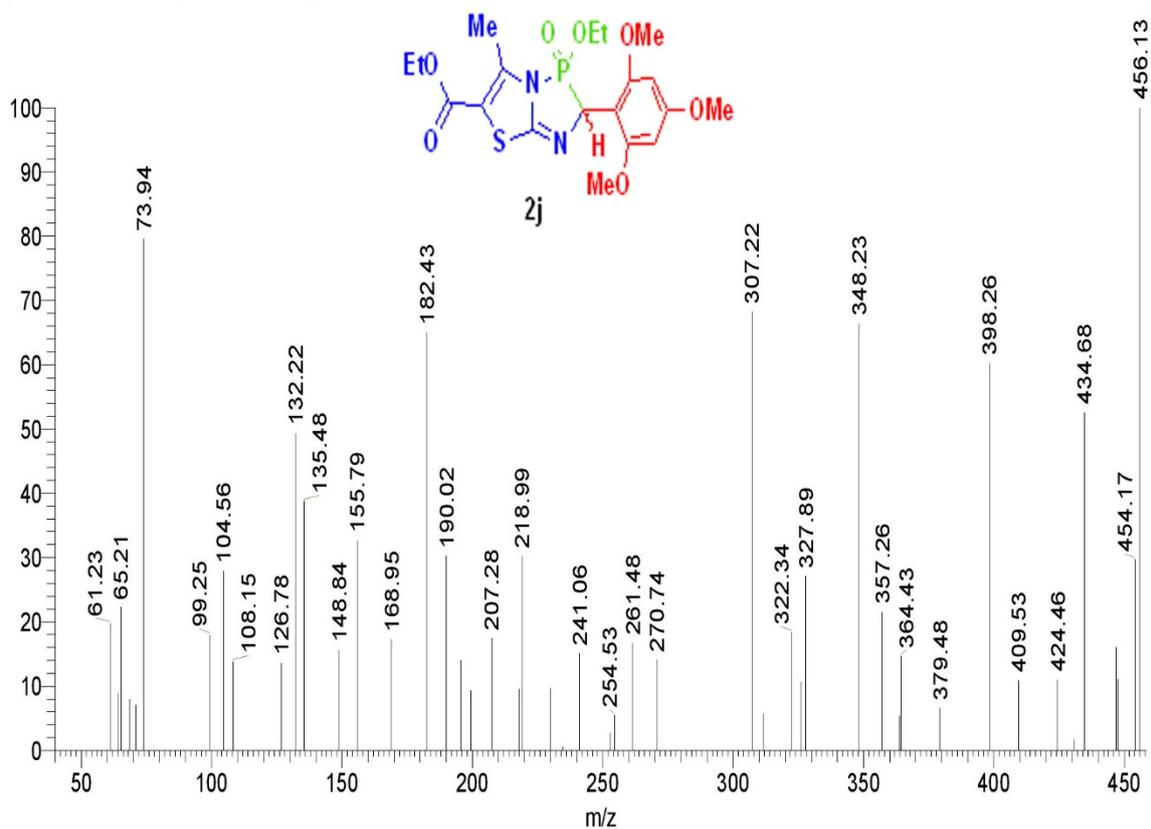


Figure S40: The mass spectrum of compound 2j.