

## Supporting Information

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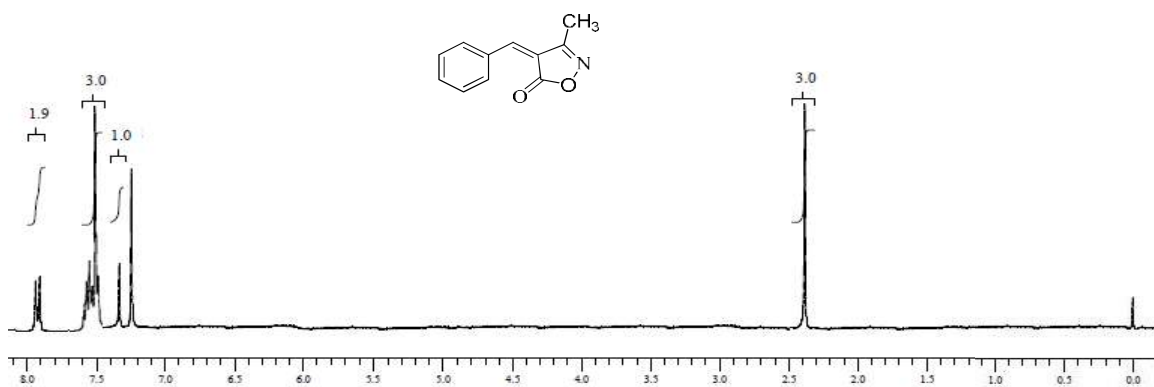
### Green synthesis of 3,4-disubstituted isoxazol-5(4*H*)-one using Gluconic acid aqueous solution as an efficient recyclable medium

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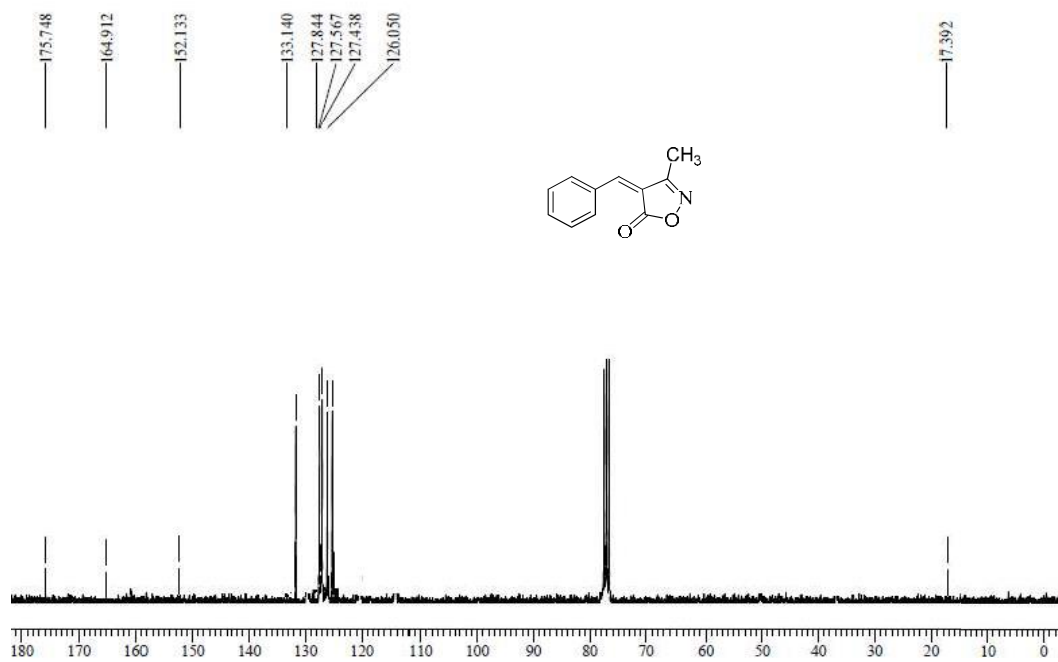
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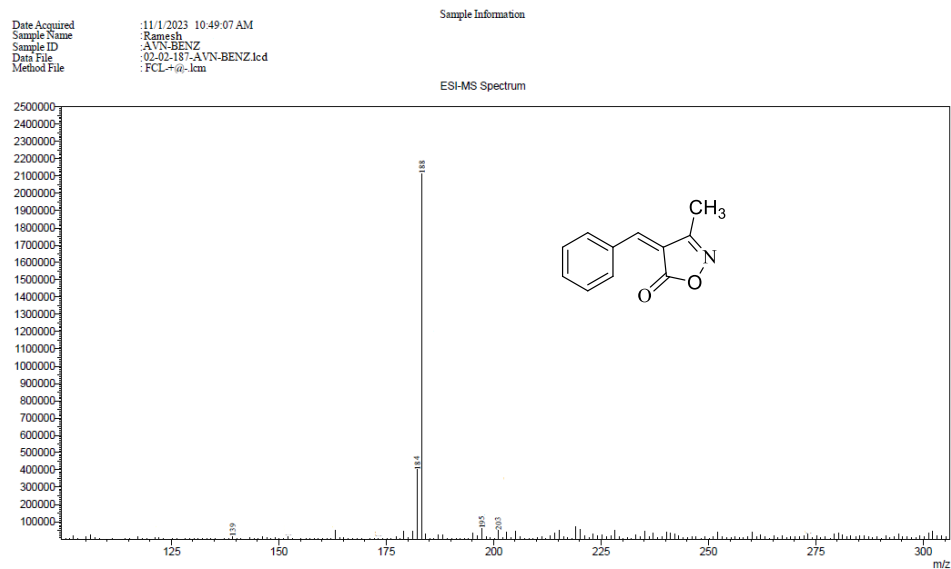


**Figure S1:**  $^1\text{H-NMR}$  (300 MHz,  $\text{CDCl}_3$ ), Spectrum of Compound **4a**

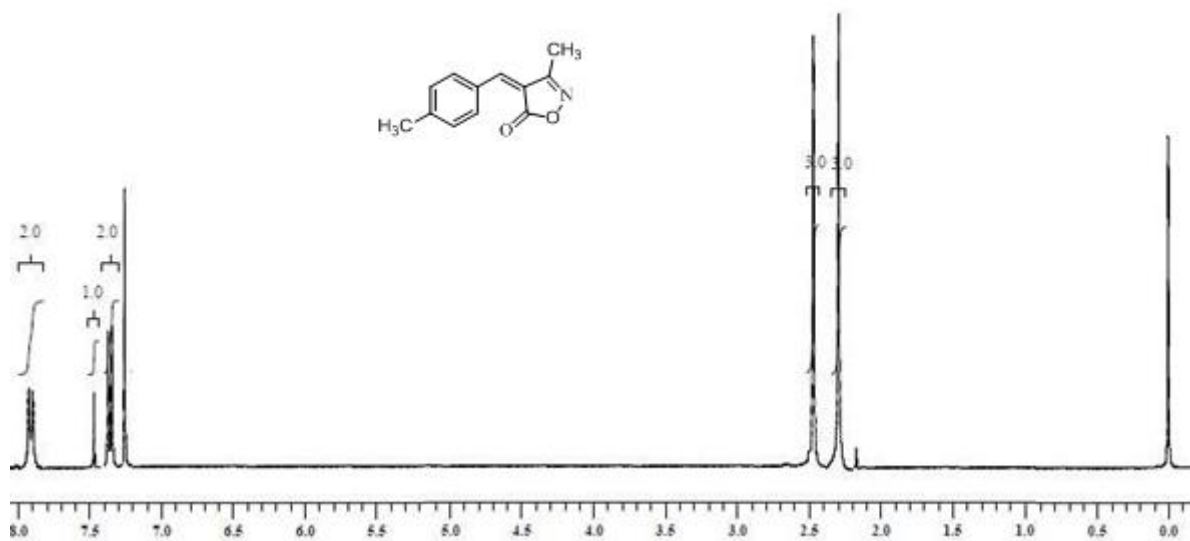


**Figure S2:**  $^{13}\text{C-NMR}$  (75 MHz,  $\text{CDCl}_3$ ) Spectrum of **4a**

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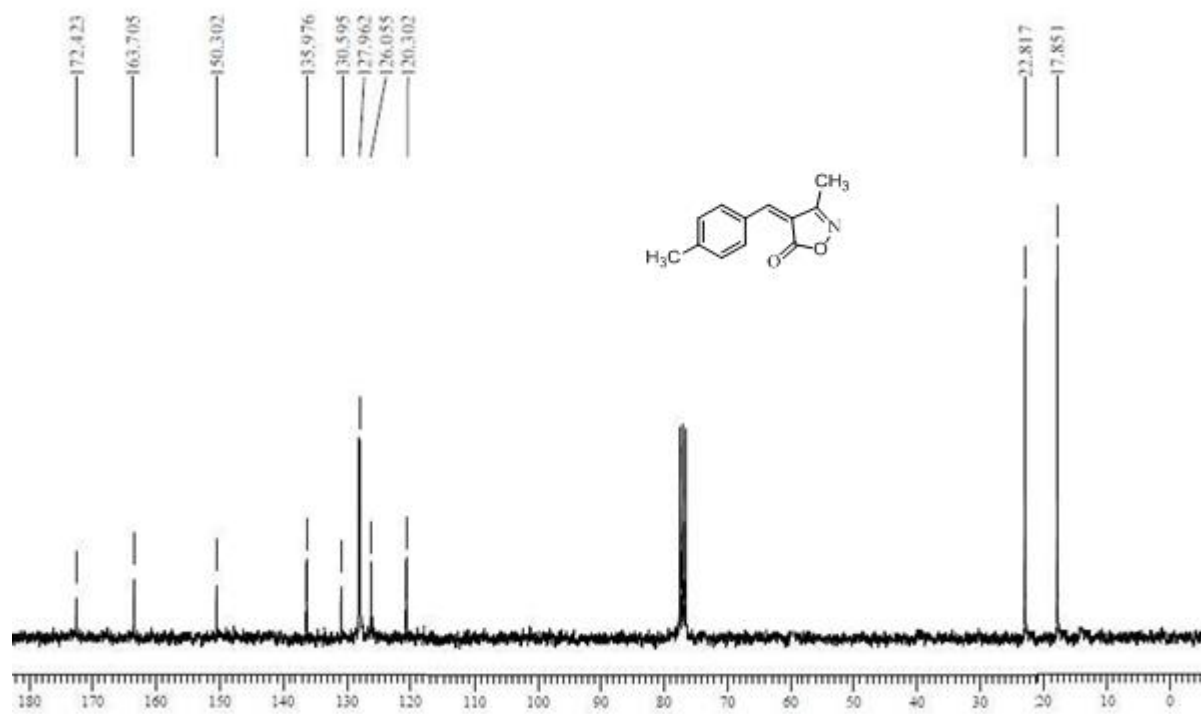


**Figure S3:** ESI-MS Spectrum of Compound **4a**



c

**Figure S4:**  $^1\text{H-NMR}$  (300 MHz,  $\text{CDCl}_3$ ), Spectrum of Compound **4b**



**Figure S5:**  $^{13}\text{C-NMR}$  (75 MHz,  $\text{CDCl}_3$ ) Spectrum of **4b**

==== Organic and Biomolecular Chemistry Division, IICT ====

Date Acquired : 11/1/2023 10:52:01 AM  
Sample Name : Ramesh  
Sample ID : AVN-4-Methyl  
Data File : 02-04-201-4-Methyl1.ced  
Method File : FCL-@-1.cem

Sample Information

ESI-MS Spectrum

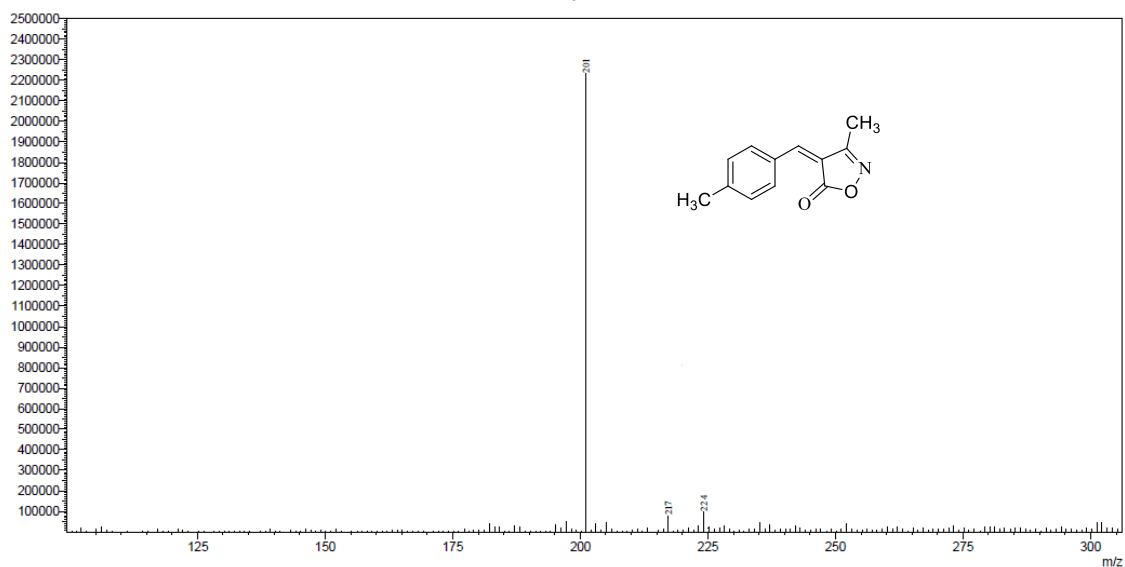
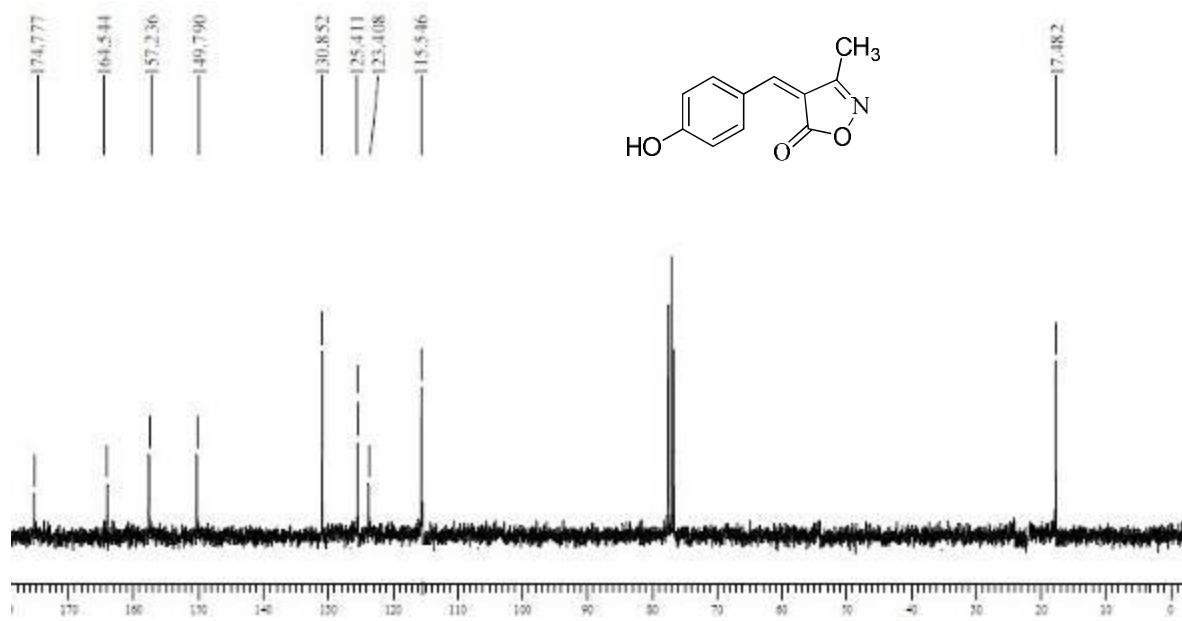
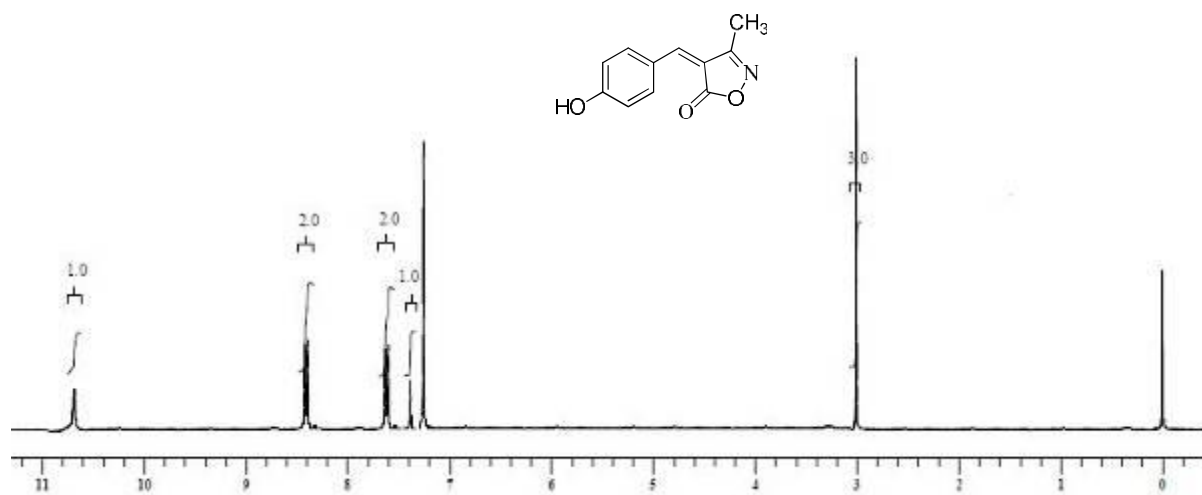


Figure S6: ESI-MS Spectrum of Compound 4b



**Figure S8:**  $^{13}\text{C-NMR}$  (75 MHz,  $\text{CDCl}_3$ ) Spectrum of 4c

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Date Acquired : 11/1/2023 10:52:10 AM  
Sample Name : Ramshah  
Sample ID : AVN-4-HYD  
Data File : 02-05-203-AVN-4-HYD.ted  
Method File : FCL-@-icm

Sample Information

ESI-MS Spectrum

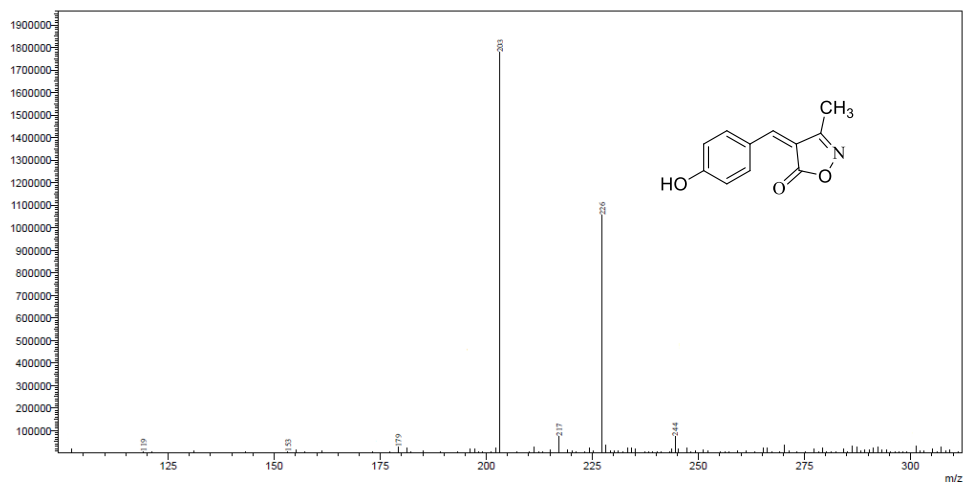


Figure S9: ESI-MS Spectrum of Compound 4c

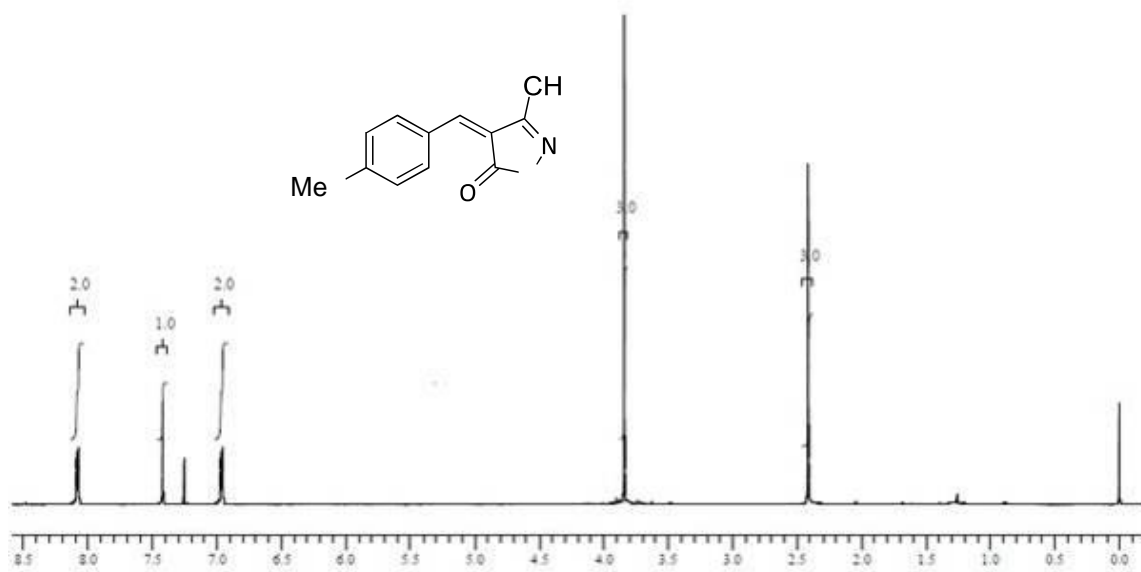


Figure S10: <sup>1</sup>H-NMR (300 MHz, CDCl<sub>3</sub>), Spectrum of Compound 4d





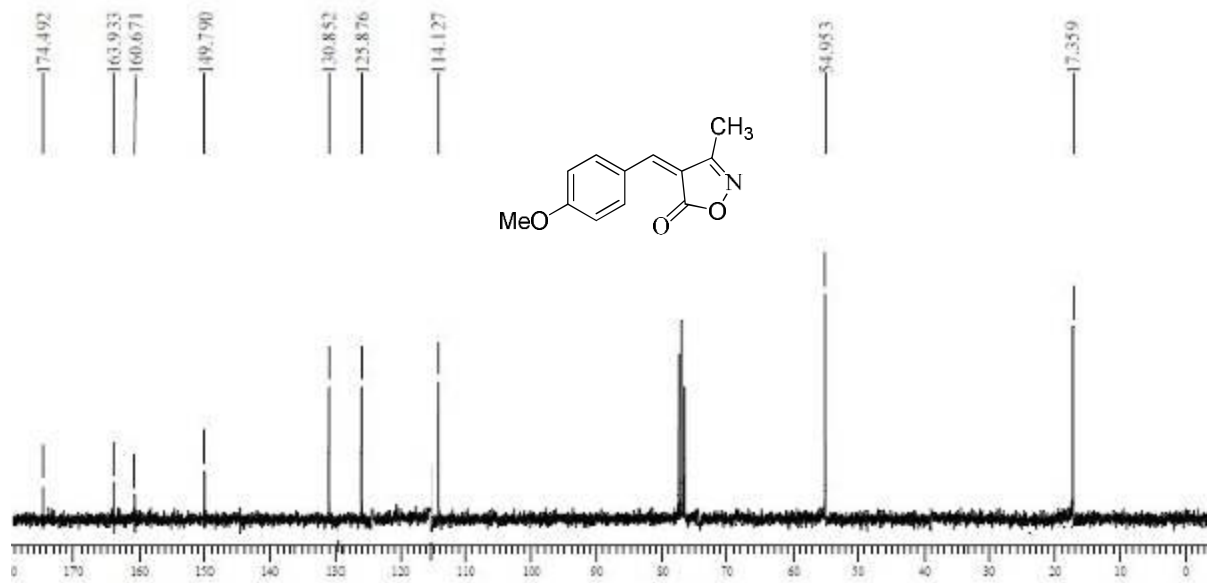


Figure S11:  $^{13}\text{C}$ -NMR (75 MHz,  $\text{CDCl}_3$ ) Spectrum of **4d**

==== Organic and Biomolecular Chemistry Division, IICT ====

Date Acquired	: 11/1/2023 10:38:14 AM	Sample Information
Sample Name	: Ramesh	
Sample ID	: AVN-methoxy	
Data File	: 02_4-217-AVN-methoxy.lcd	
Method File	: FCL-+@-.lcm	

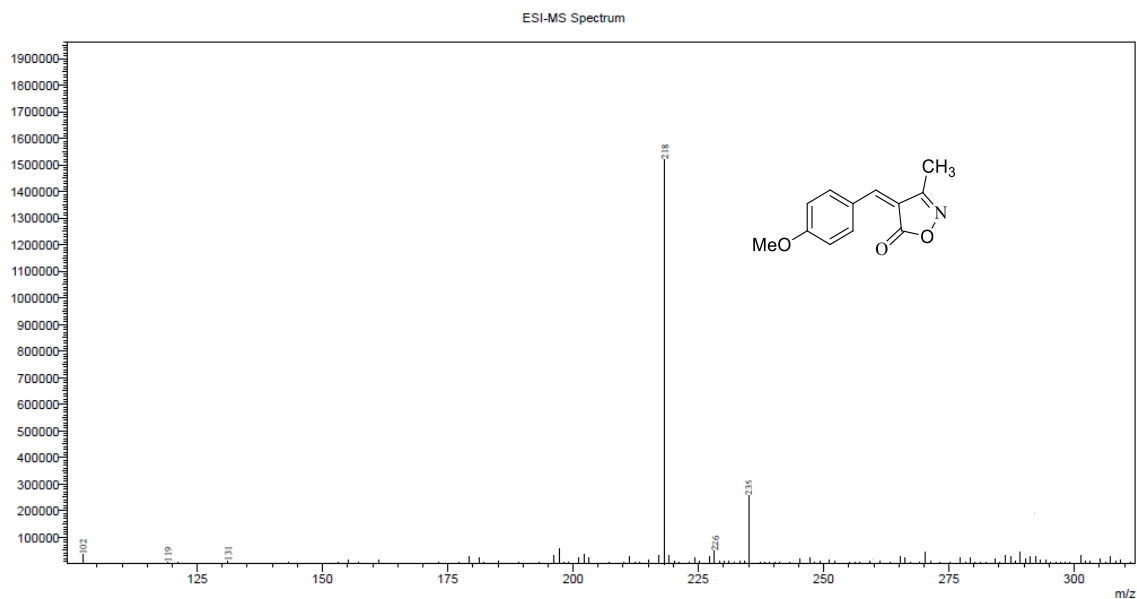
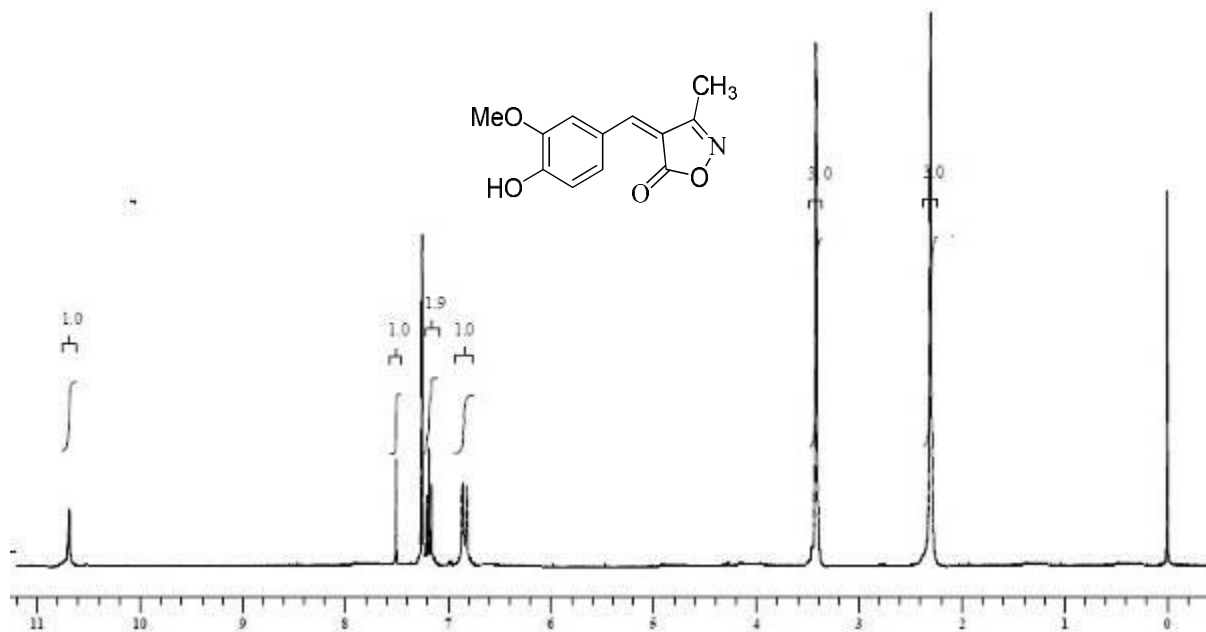
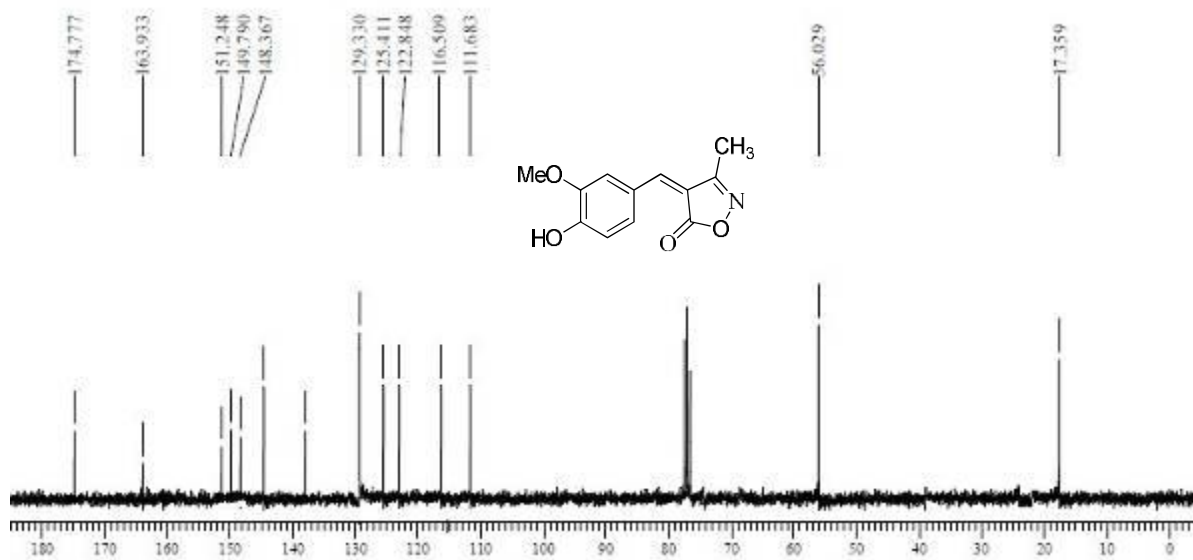


Figure S12: ESI-MS Spectrum of Compound **4d**



**Figure S13:**  $^1\text{H-NMR}$  (300 MHz,  $\text{CDCl}_3$ ), Spectrum of Compound **4e**



**Figure S14:**  $^{13}\text{C-NMR}$  (75 MHz,  $\text{CDCl}_3$ ) Spectrum of **4e**

==== Organic and Biomolecular Chemistry Division, IICT ====

Date Acquired : 11/1/2023 12:32:25 PM  
Sample Name : Ramesh  
Sample ID : AVN-3-Methoxy-4-Hydroxy  
Data File : 02-07-233-AVN-3-Methoxy-4-Hydro.lcd  
Method File : FCL-#@-.lcm

Sample Information

ESI-MS Spectrum

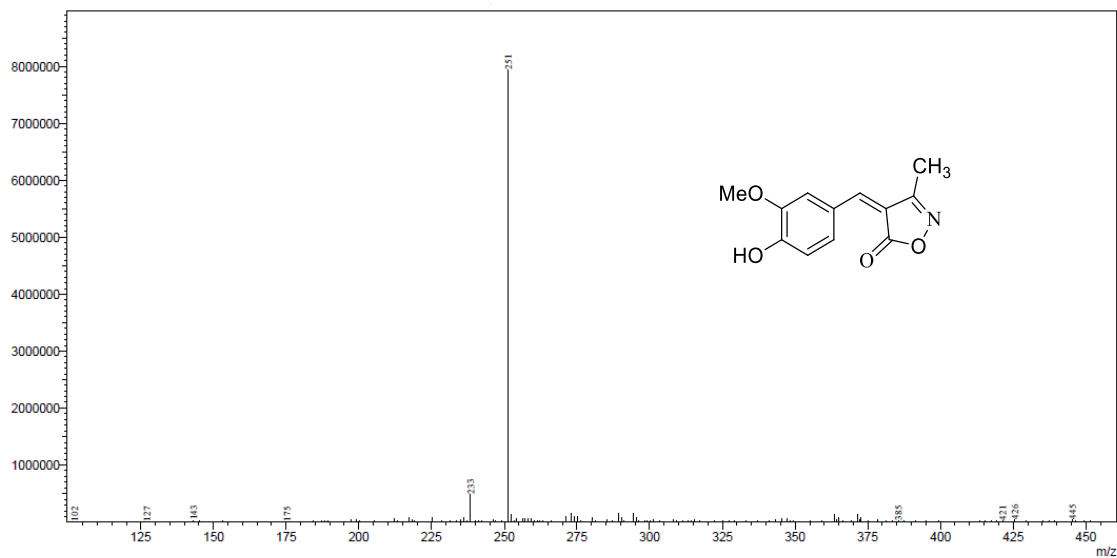
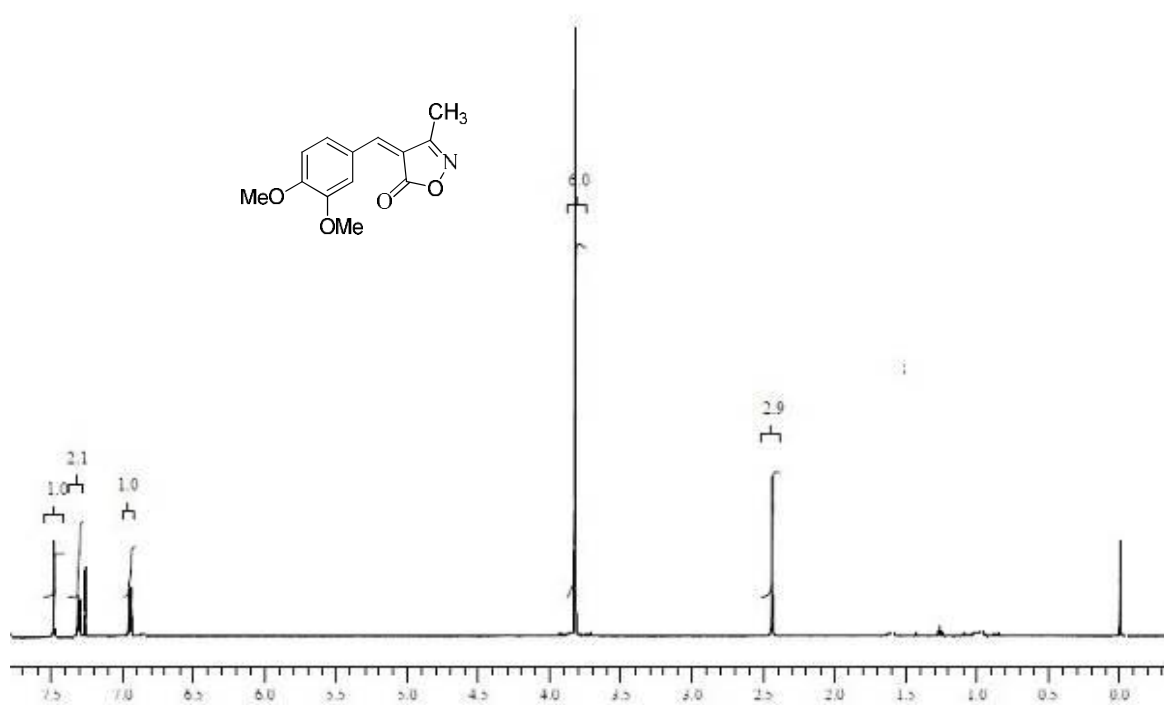
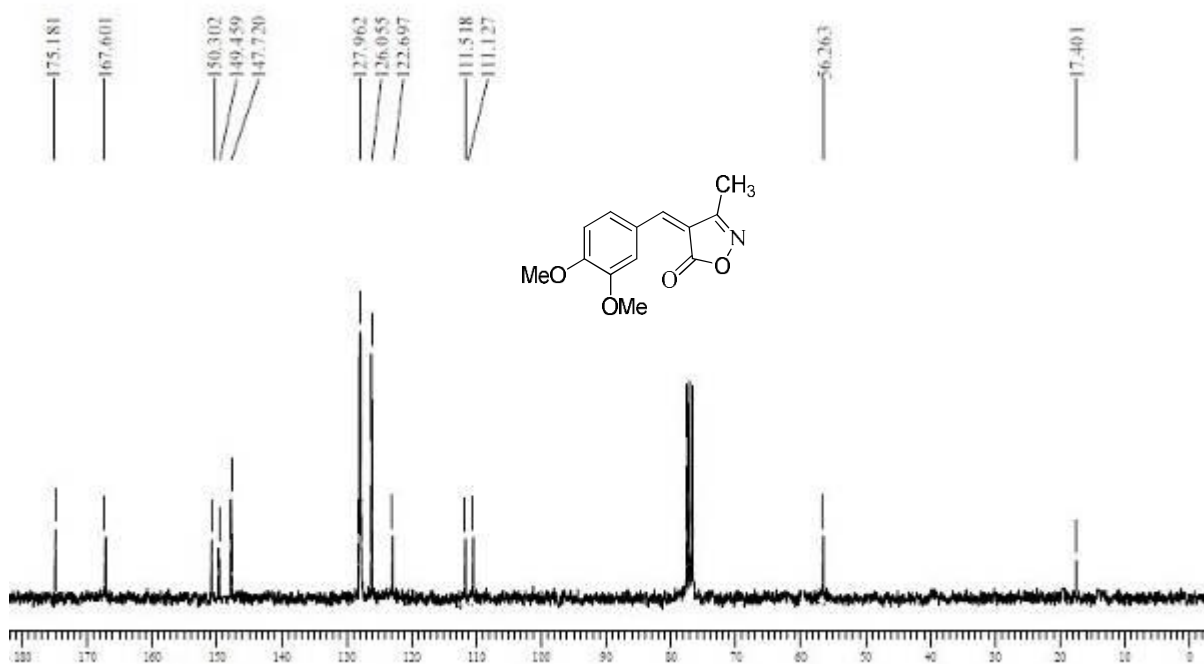


Figure S15: ESI-MS Spectrum of Compound 4e



**Figure S16:**  $^1\text{H-NMR}$  (300 MHz,  $\text{CDCl}_3$ ), Spectrum of Compound **4f**



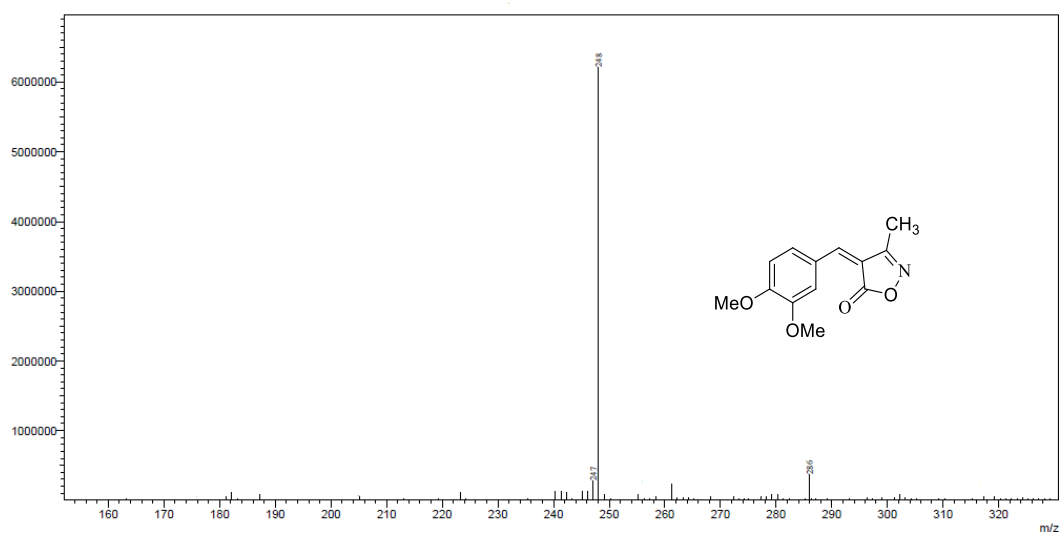
**Figure S17:**  $^{13}\text{C}$ -NMR (75 MHz,  $\text{CDCl}_3$ ) Spectrum of **4f**

==== Organic and Biomolecular Chemistry Division, IICT ====

Date Acquired : 11/1/2023 12:35:54 PM  
 Sample Name : Ramesh  
 Sample ID : AVN-3,4-dimethoxy  
 Data File : 02-9-247-AVN-3,4-dimethoxy.vcd  
 Method File : FGL- $\mu$ -1cm

Sample Information

ESI-MS Spectrum



**Figure S18:** ESI-MS Spectrum of Compound **4f**

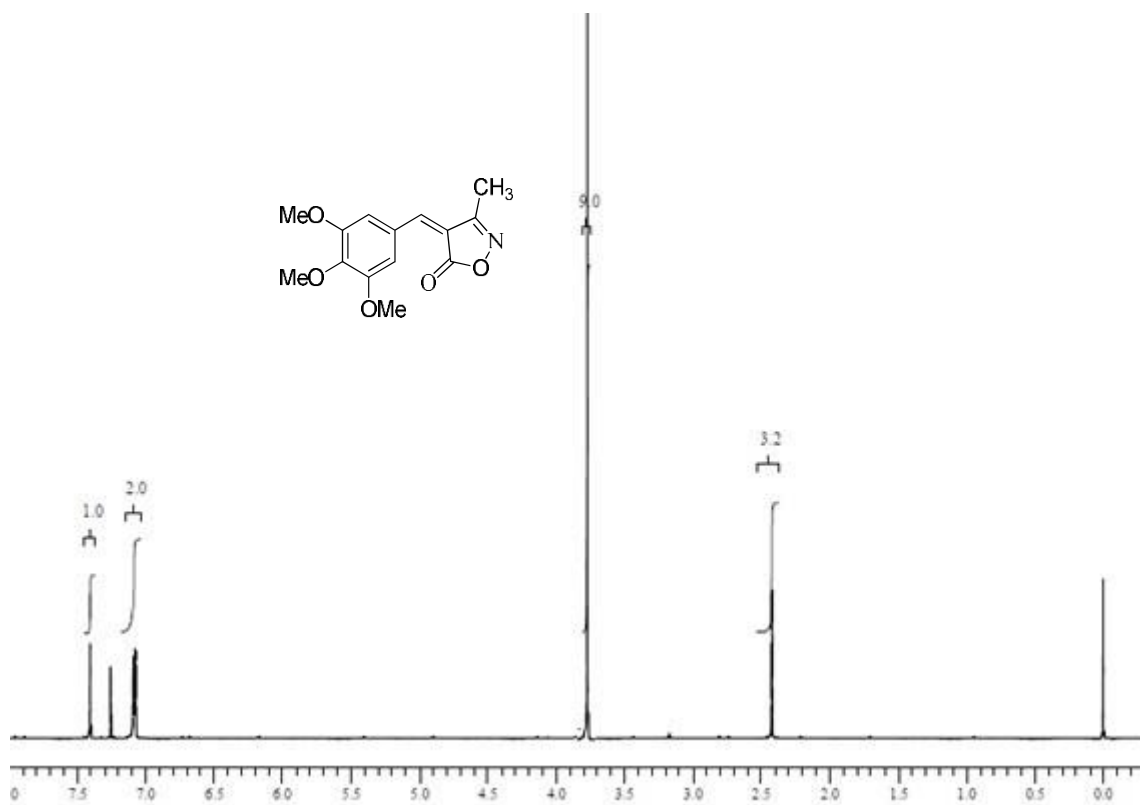


Figure S19: <sup>1</sup>H-NMR (300 MHz, CDCl<sub>3</sub>), Spectrum of Compound 4g

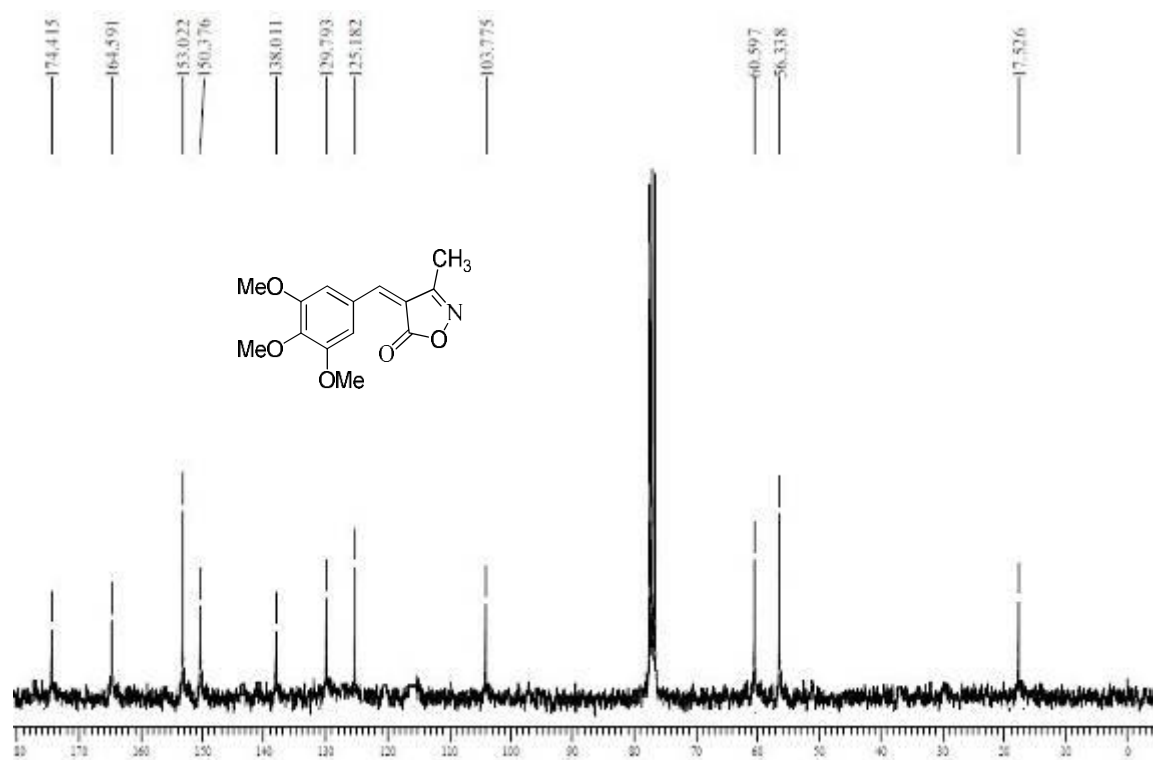


Figure S20: <sup>13</sup>C-NMR (75 MHz, CDCl<sub>3</sub>) Spectrum of 4g

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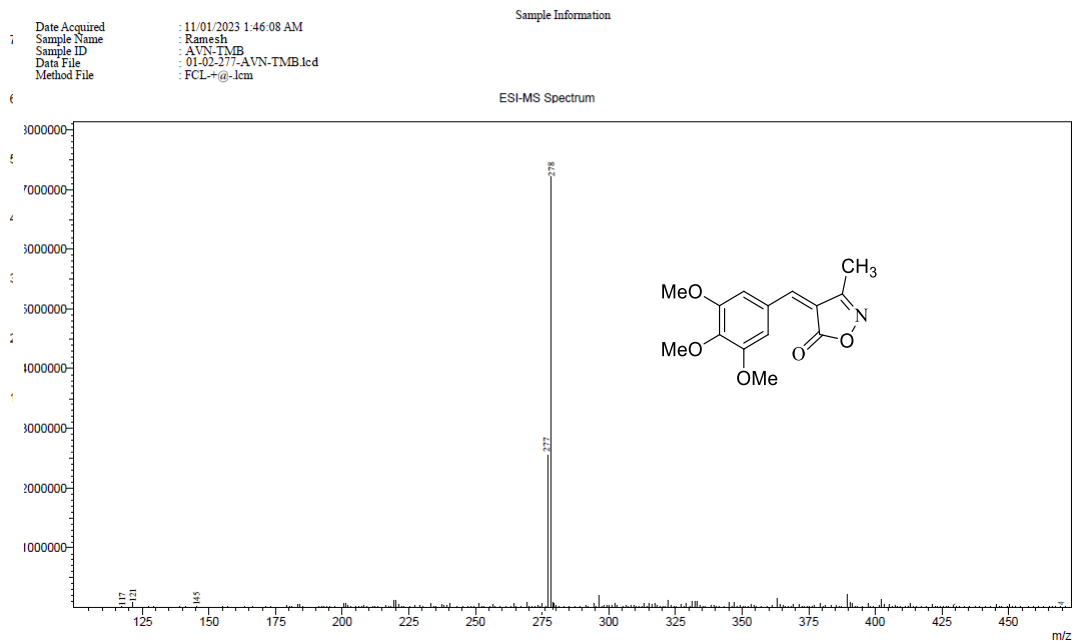


Figure S21: ESI-MS Spectrum of Compound 4g

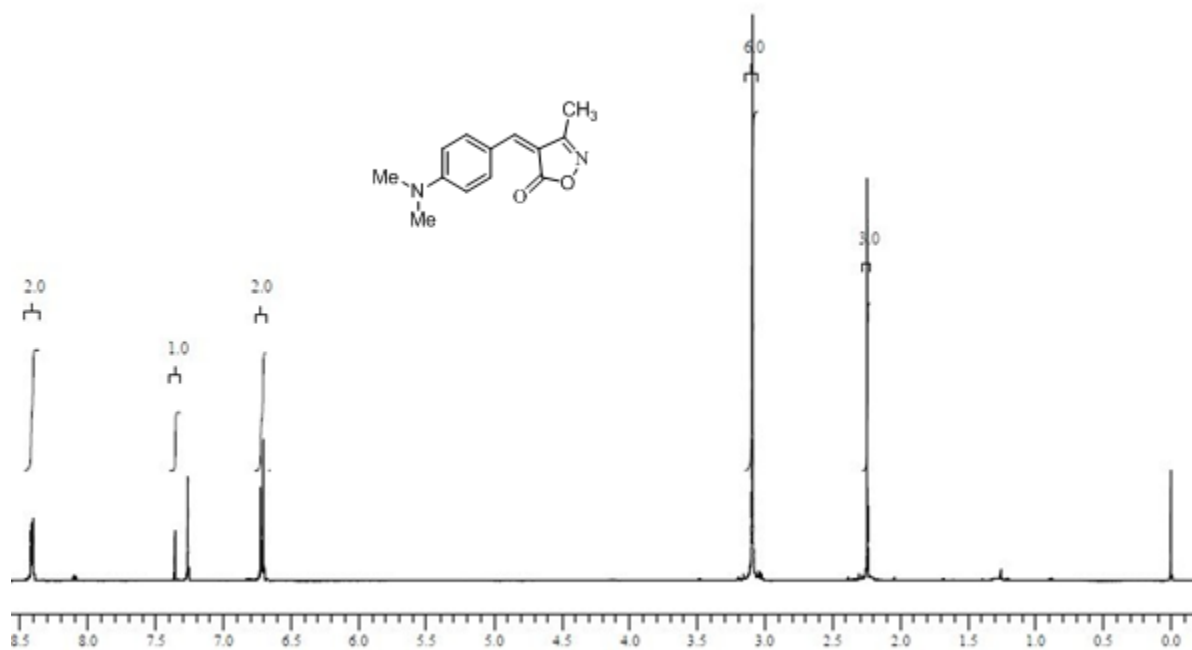
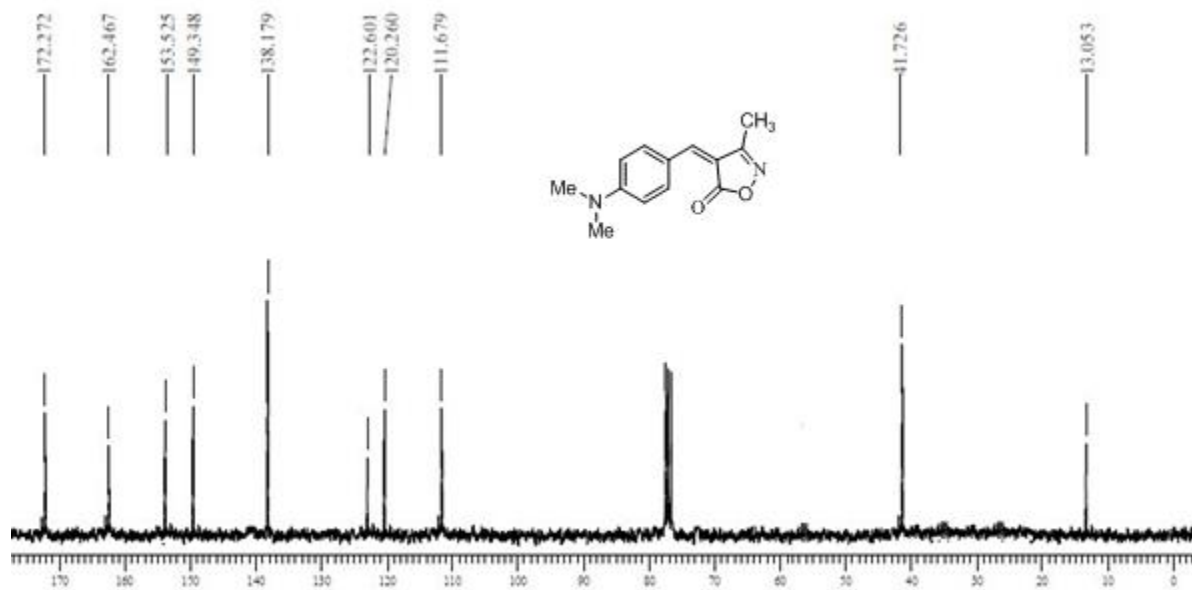


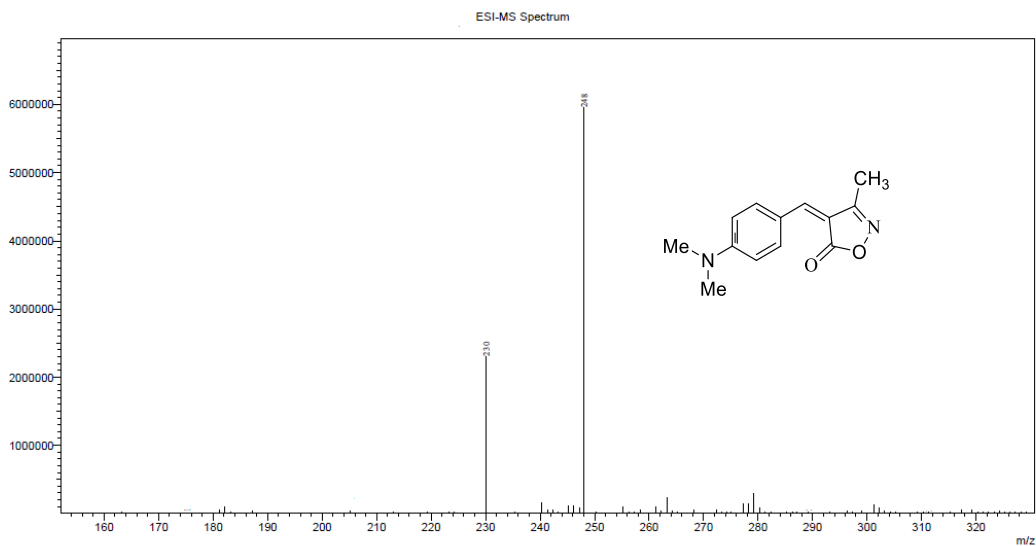
Figure S22: <sup>1</sup>H-NMR (300 MHz, CDCl<sub>3</sub>), Spectrum of Compound 4h



**Figure S23:**  $^{13}\text{C}$ -NMR (75 MHz,  $\text{CDCl}_3$ ) Spectrum of **4h**

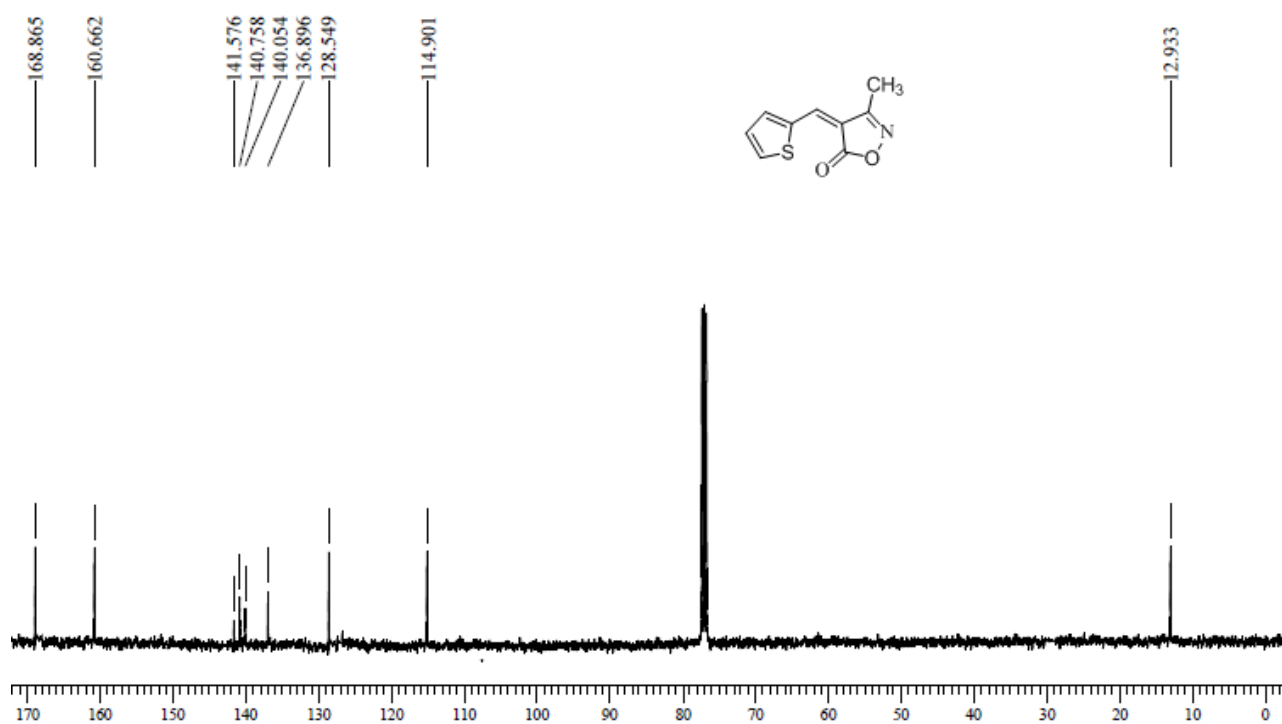
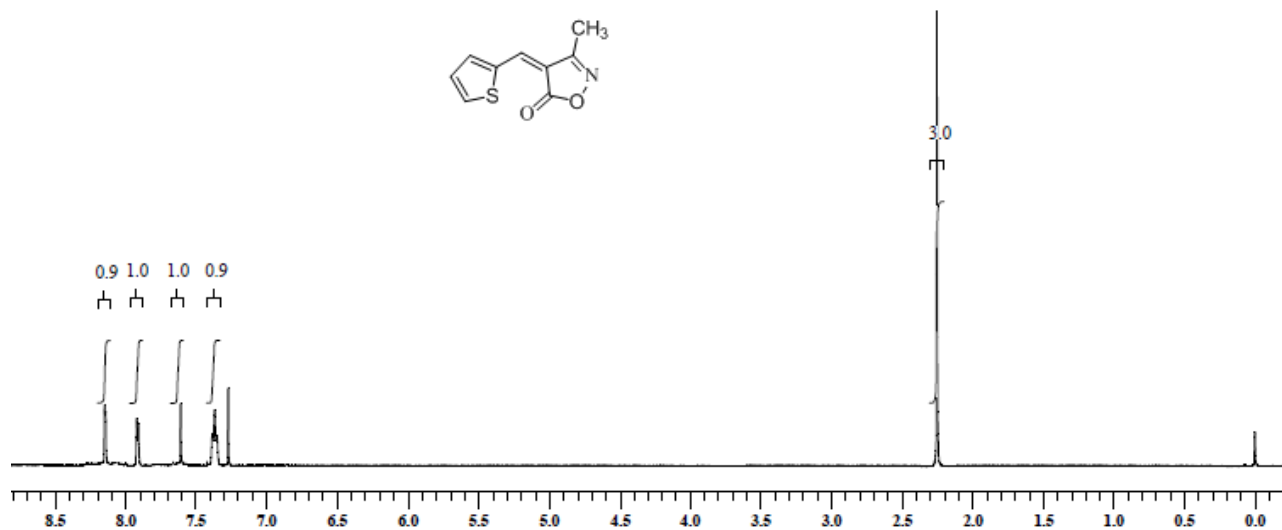
==== Organic and Biomolecular Chemistry Division, IICT ====

Date Acquired	:11/1/2023 12:55:02 PM	Sample Information
Sample Name	: Ramesh	
Sample ID	: AVN-Dimethylamino	
Data File	: 02_15_230-AVN-Dimethylamino.lcd	
Method File	: FCL+@.lcm	



**Figure S24:** ESI-MS Spectrum of Compound **4h**





**Figure S26:** <sup>13</sup>C-NMR (75 MHz, CDCl<sub>3</sub>) Spectrum of 4i

==== Organic and Biomolecular Chemistry Division, IICT ====

Date Acquired : 11/1/2023 1:26:39 PM  
Sample Name : Ramesh  
Sample ID : AVN-Thio  
Data File : 02-13-193-AVN-Thio.lcd  
Method File : FCL-+@-lcm

Sample Information

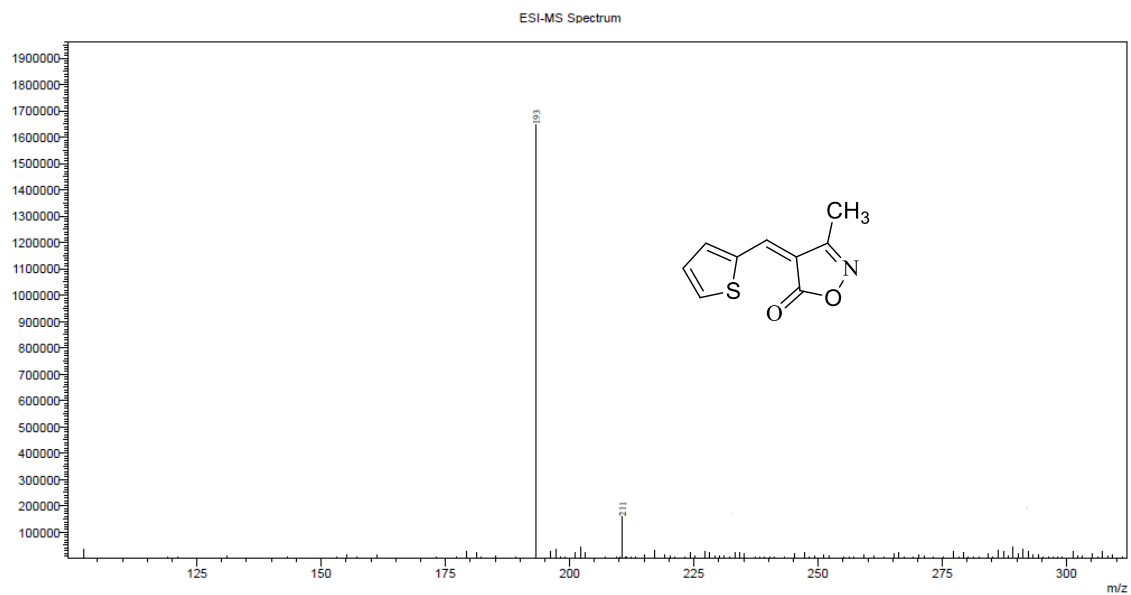


Figure S27: ESI-MS Spectrum of Compound 4i