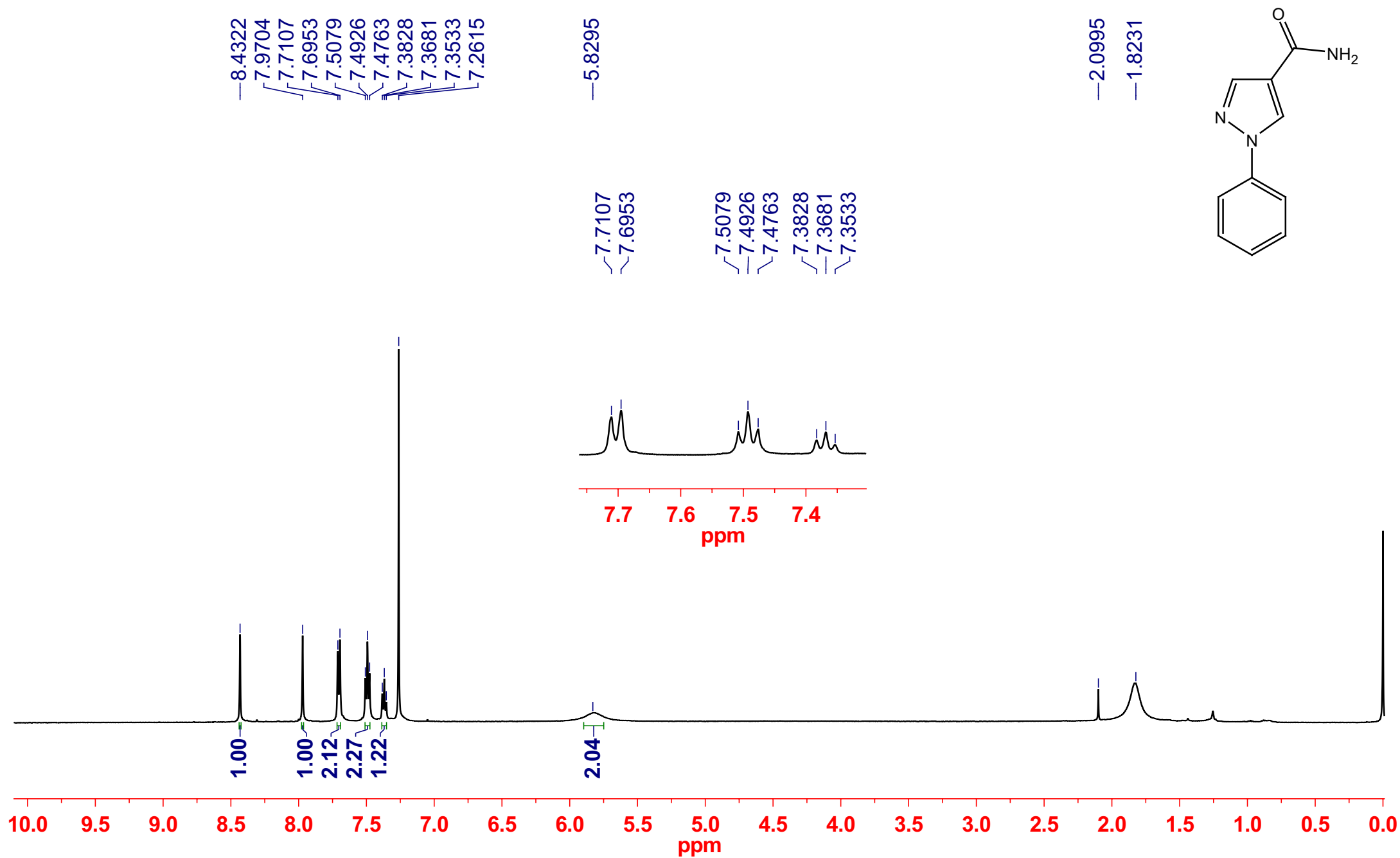
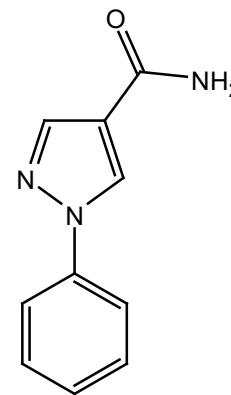
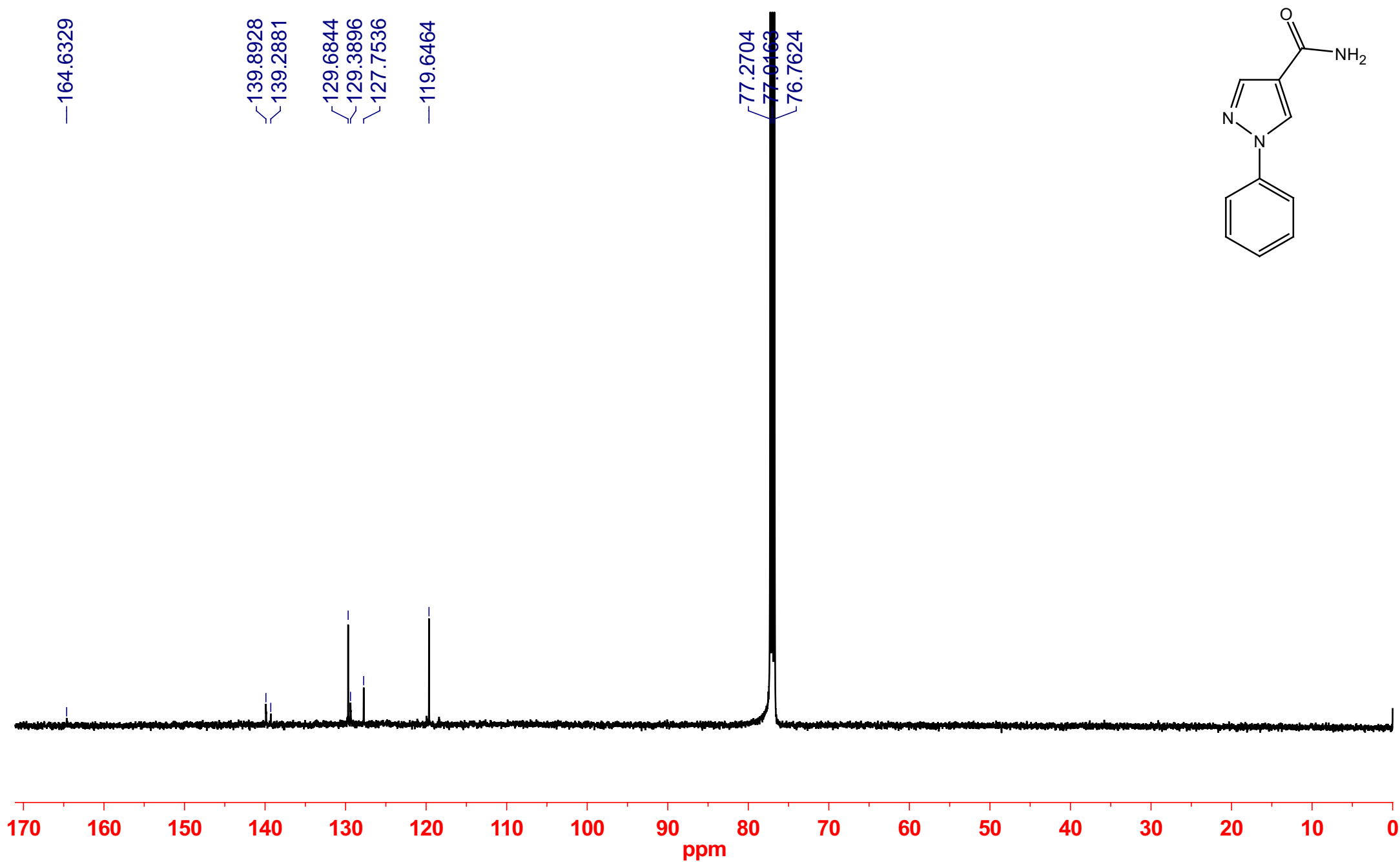


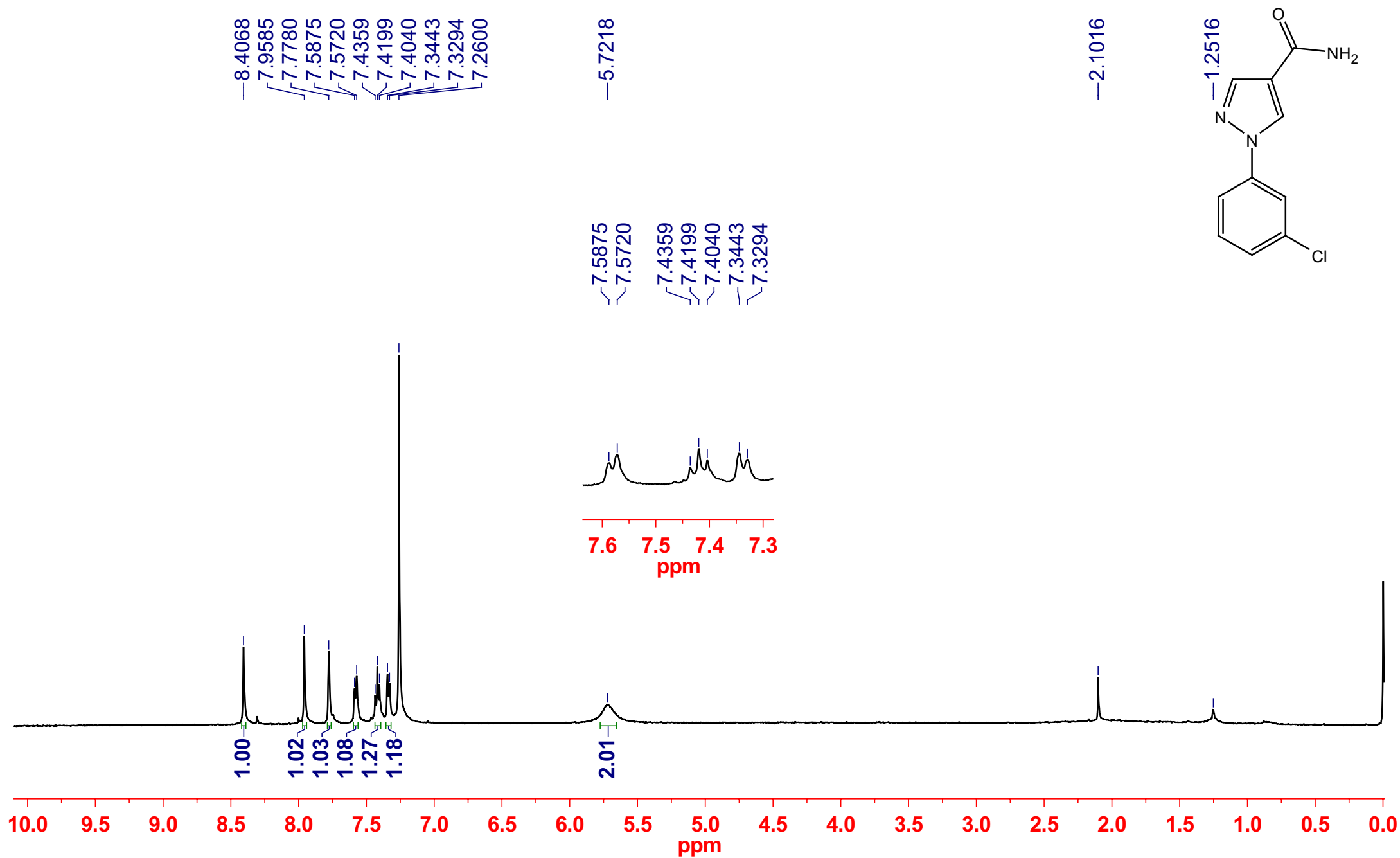
<sup>1</sup>H NMR of compound **1a**



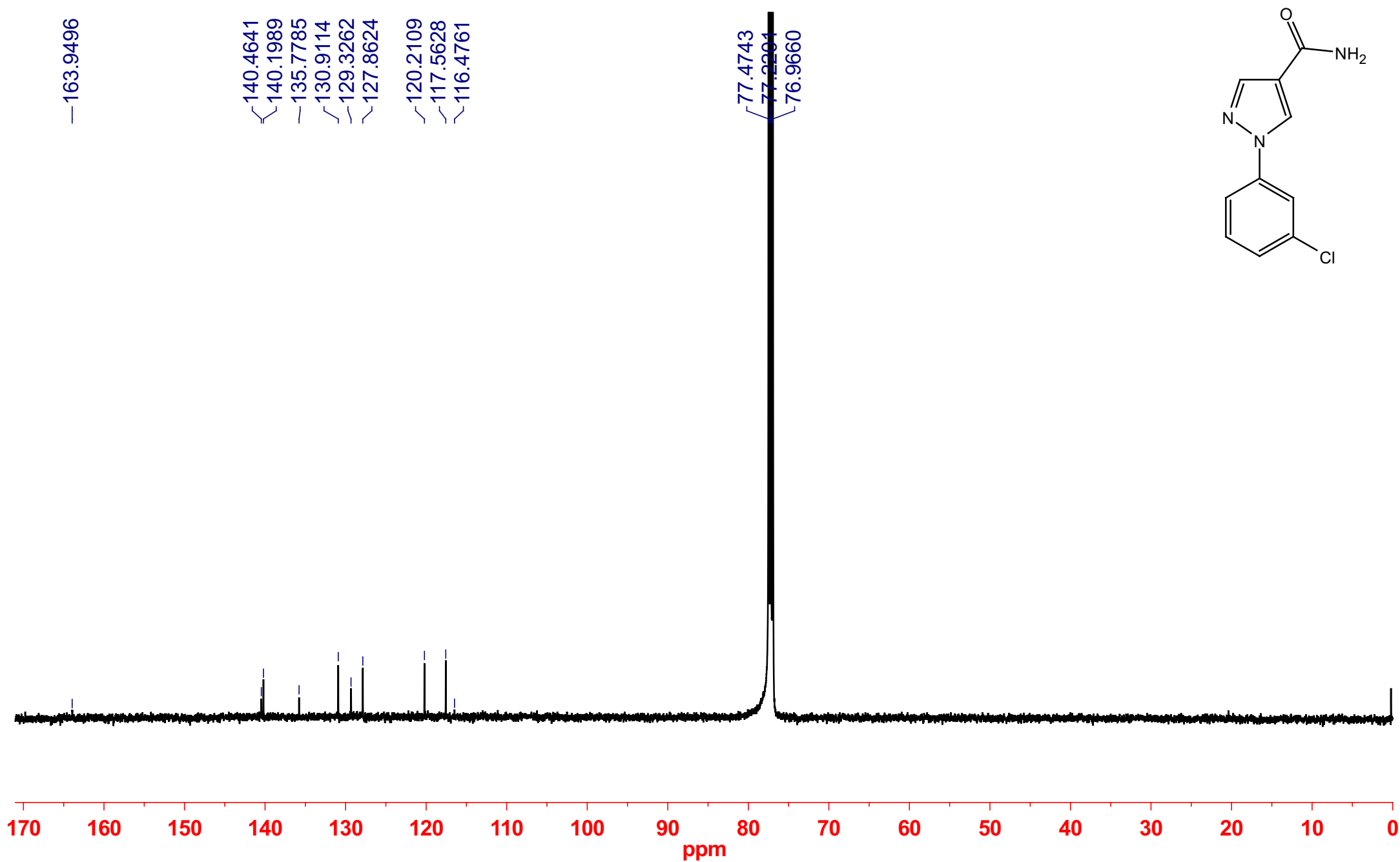
<sup>13</sup>C NMR of compound **1a**



<sup>1</sup>H NMR of compound **1b**

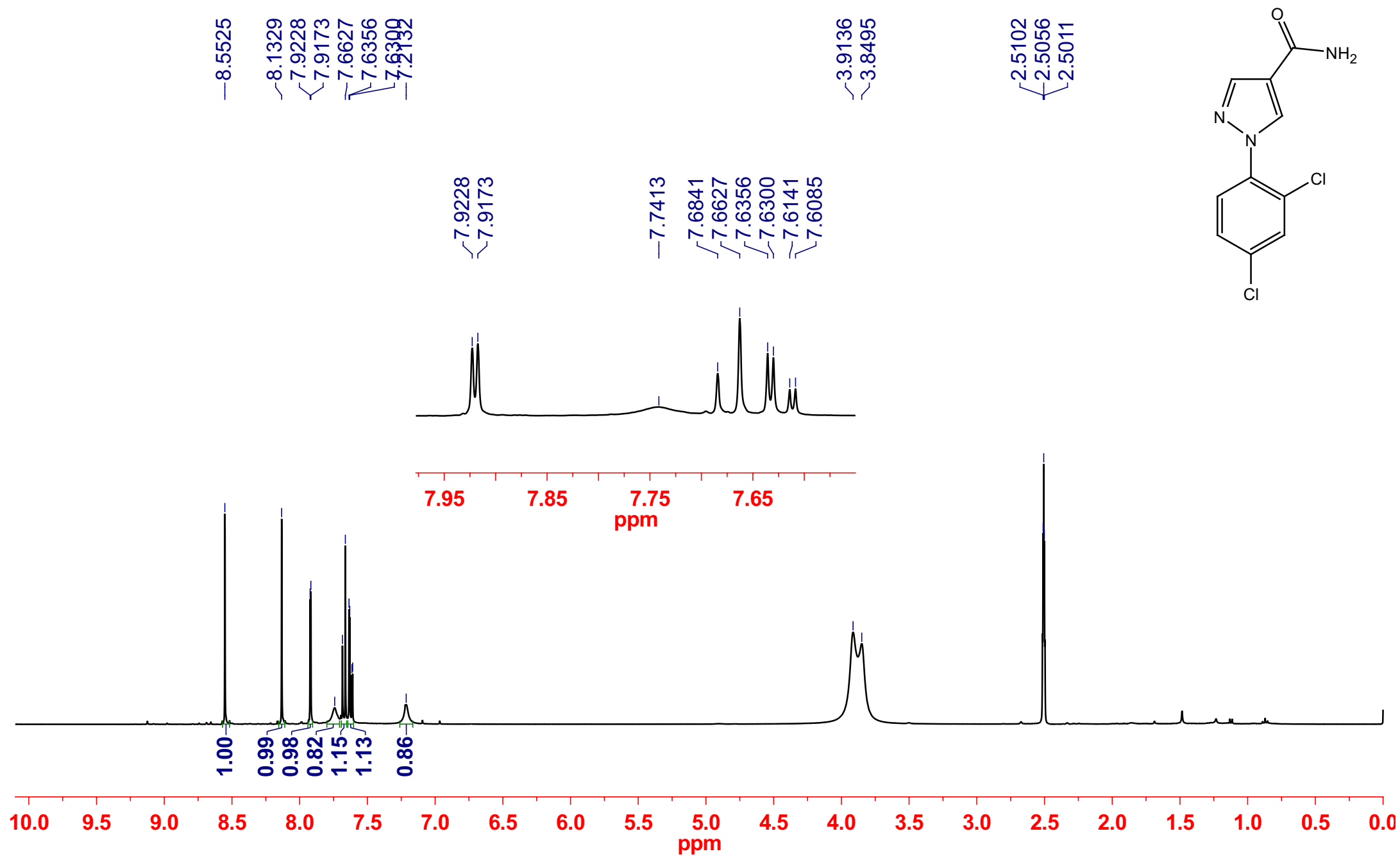


<sup>13</sup>C NMR of compound **1b**

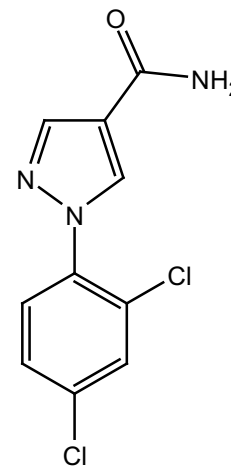
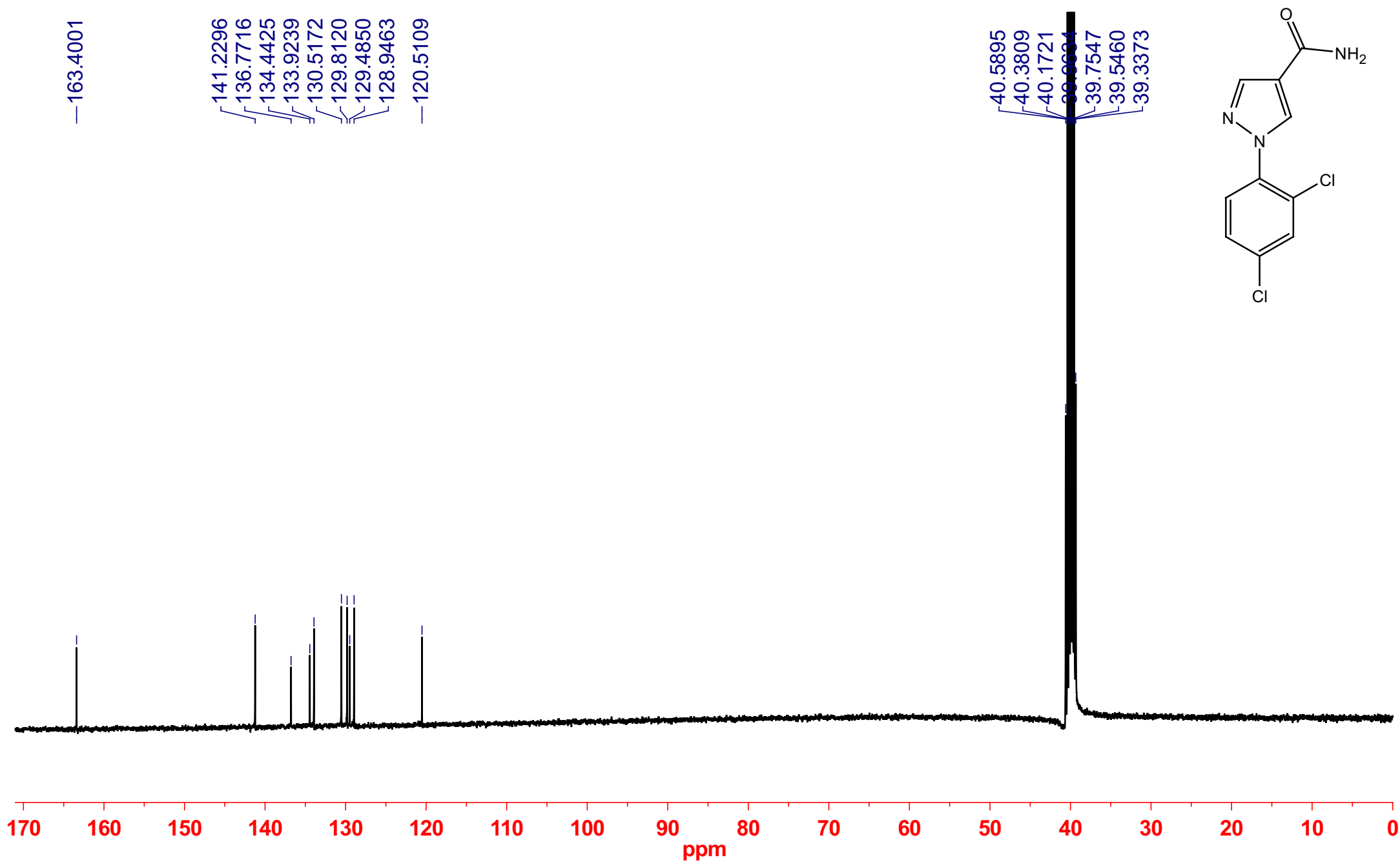




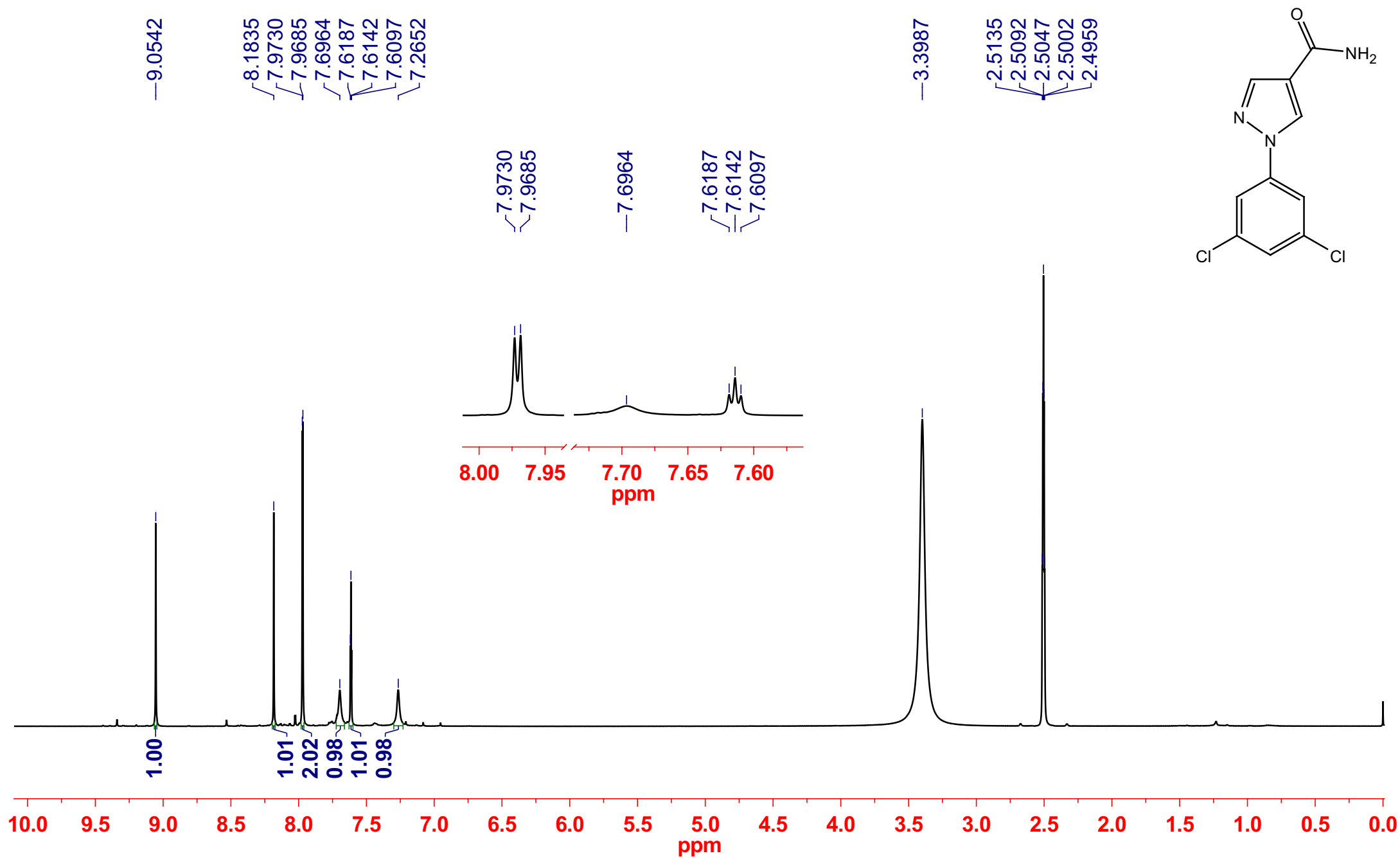
<sup>1</sup>H NMR of compound **1c**



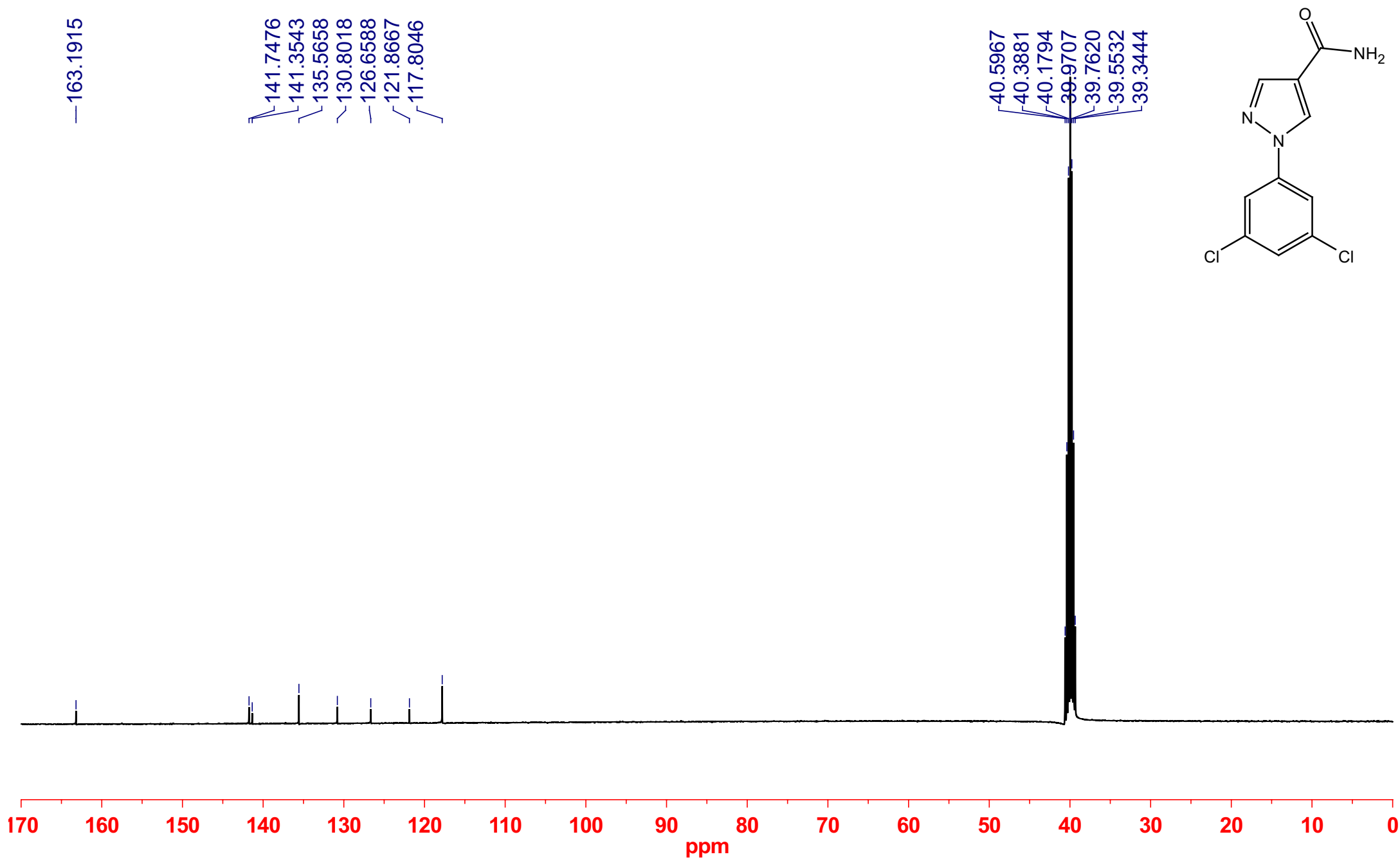
<sup>13</sup>C NMR of compound **1c**



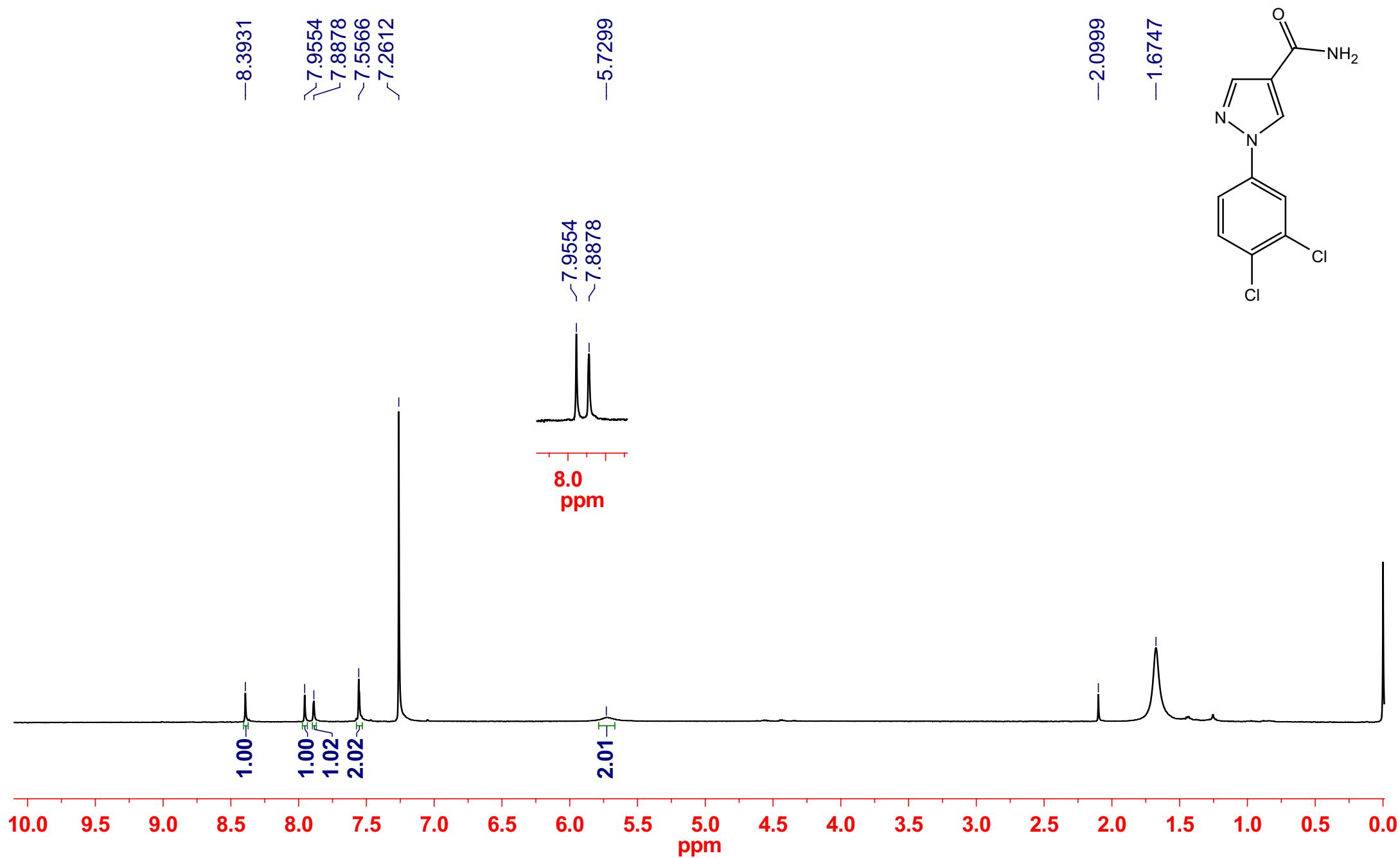
<sup>1</sup>H NMR of compound **1d**



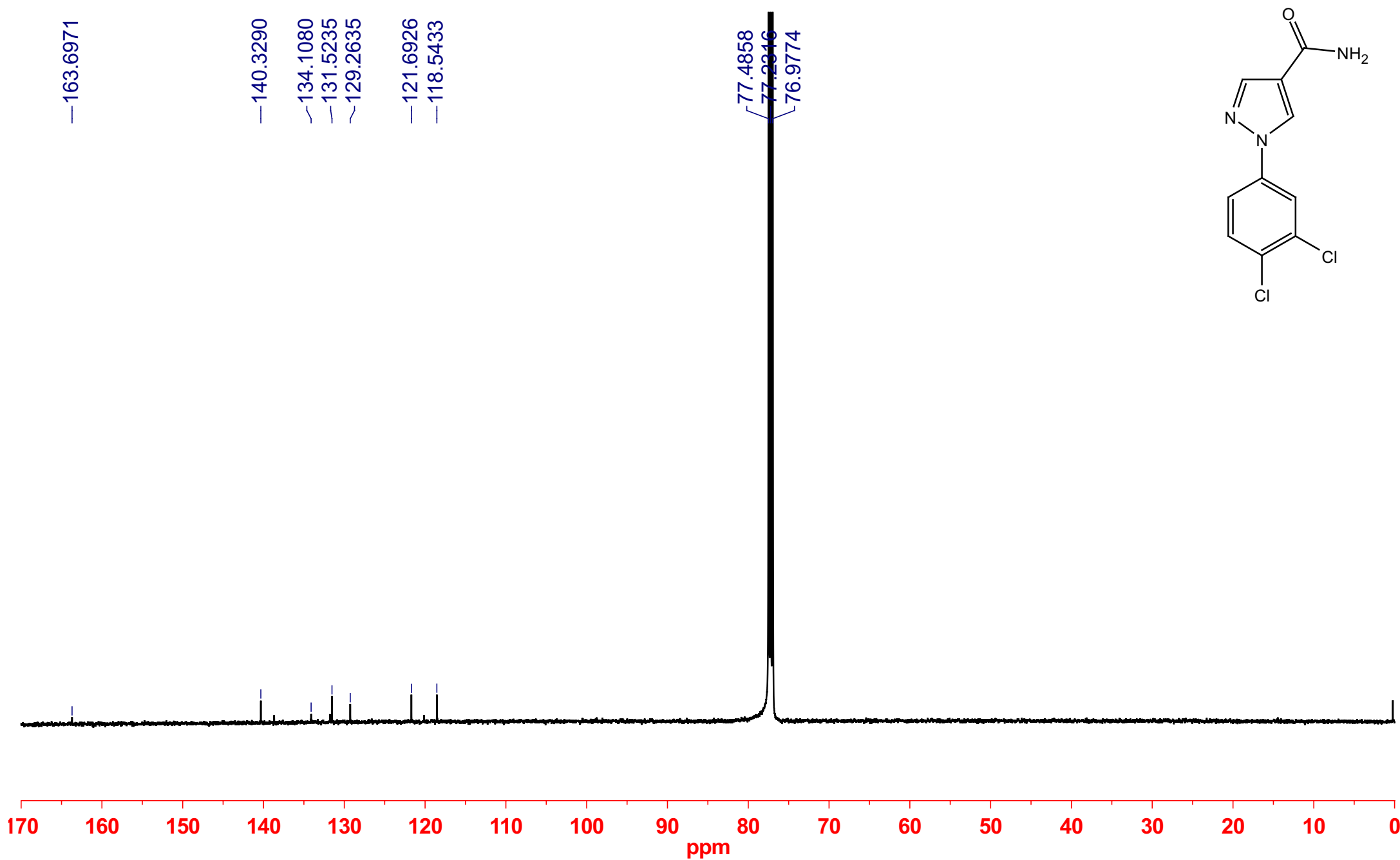
<sup>13</sup>C NMR of compound **1d**



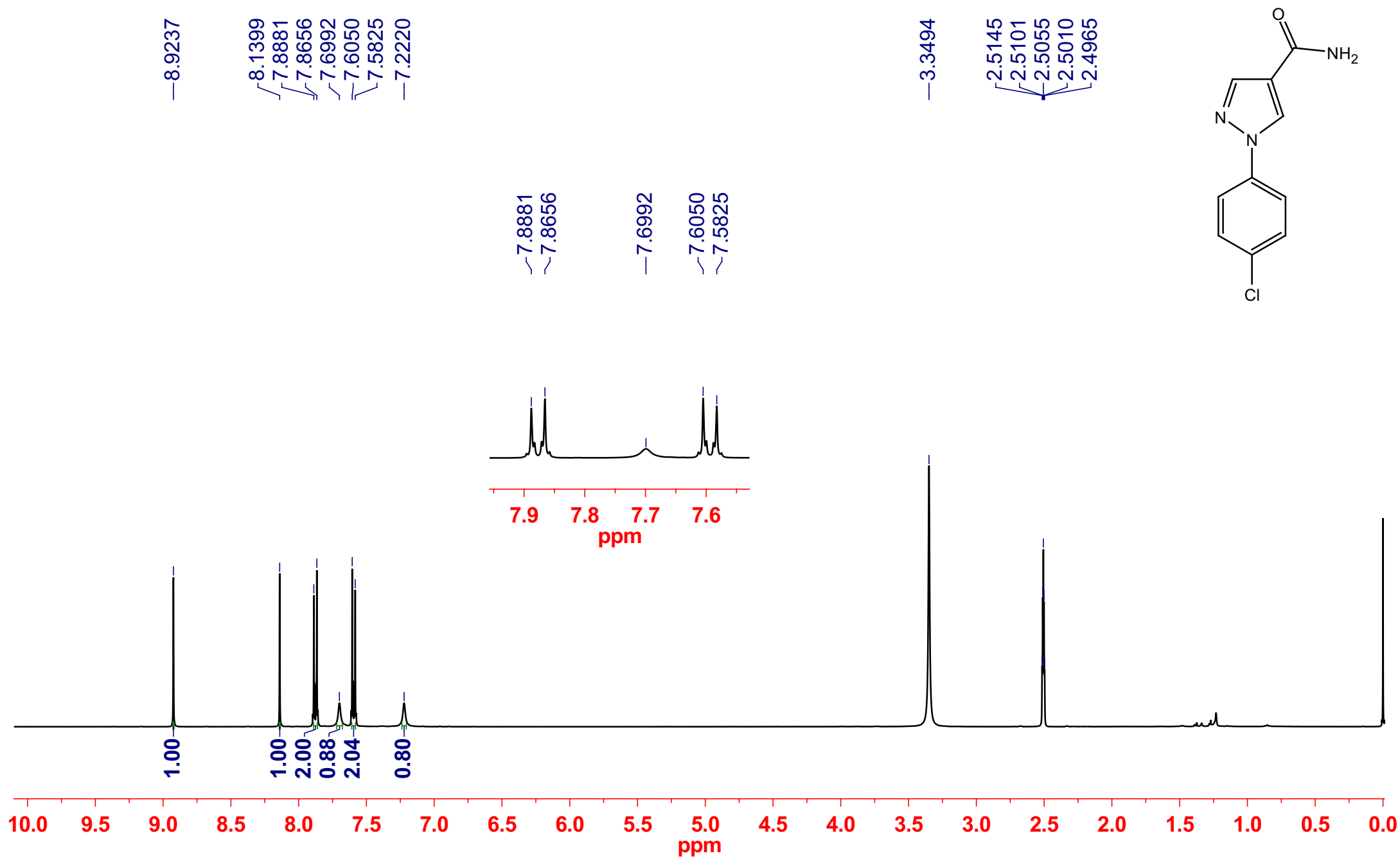
<sup>1</sup>H NMR of compound **1e**



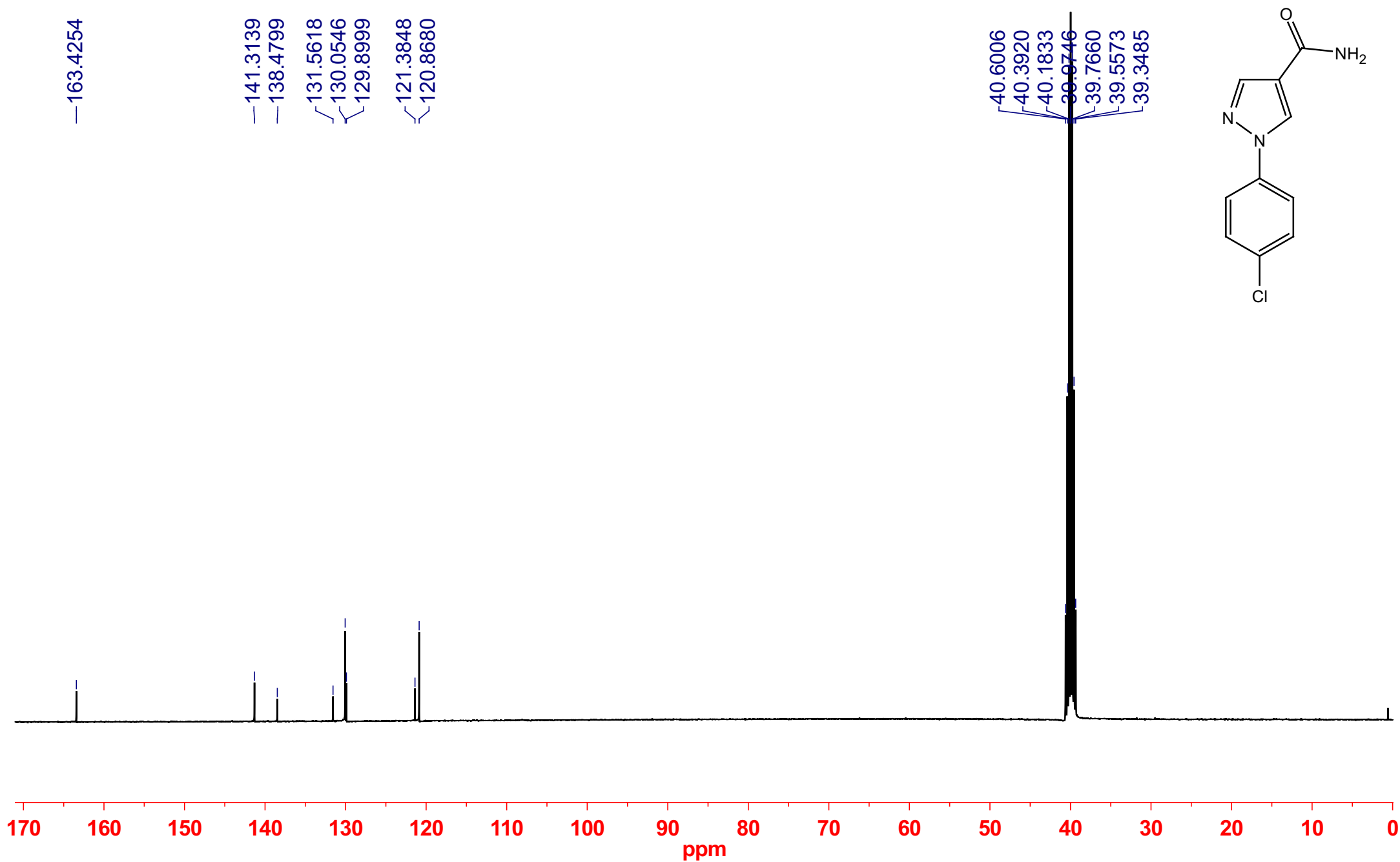
<sup>13</sup>C NMR of compound **1e**



<sup>1</sup>H NMR of compound **1f**

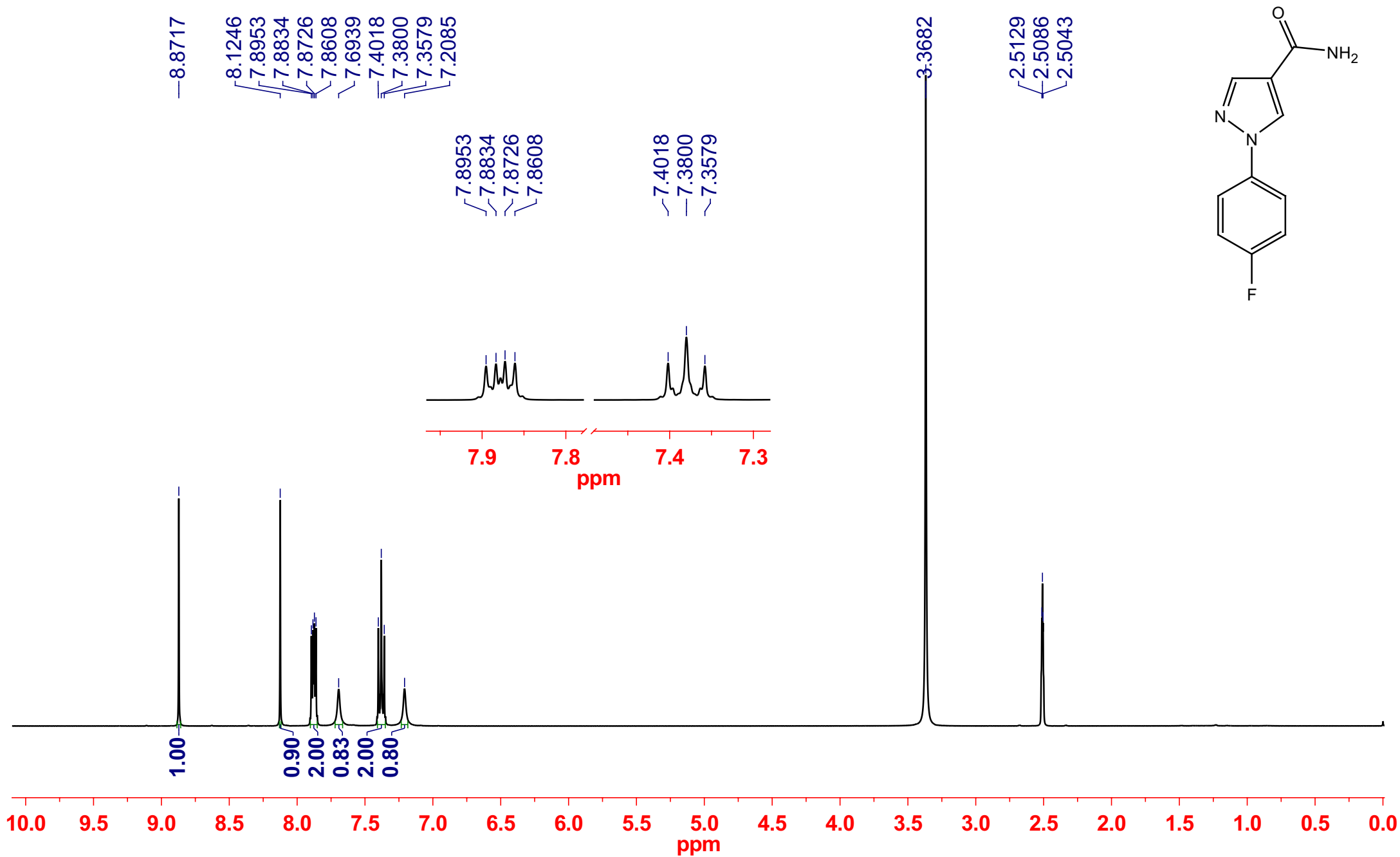


<sup>13</sup>C NMR of compound **1f**

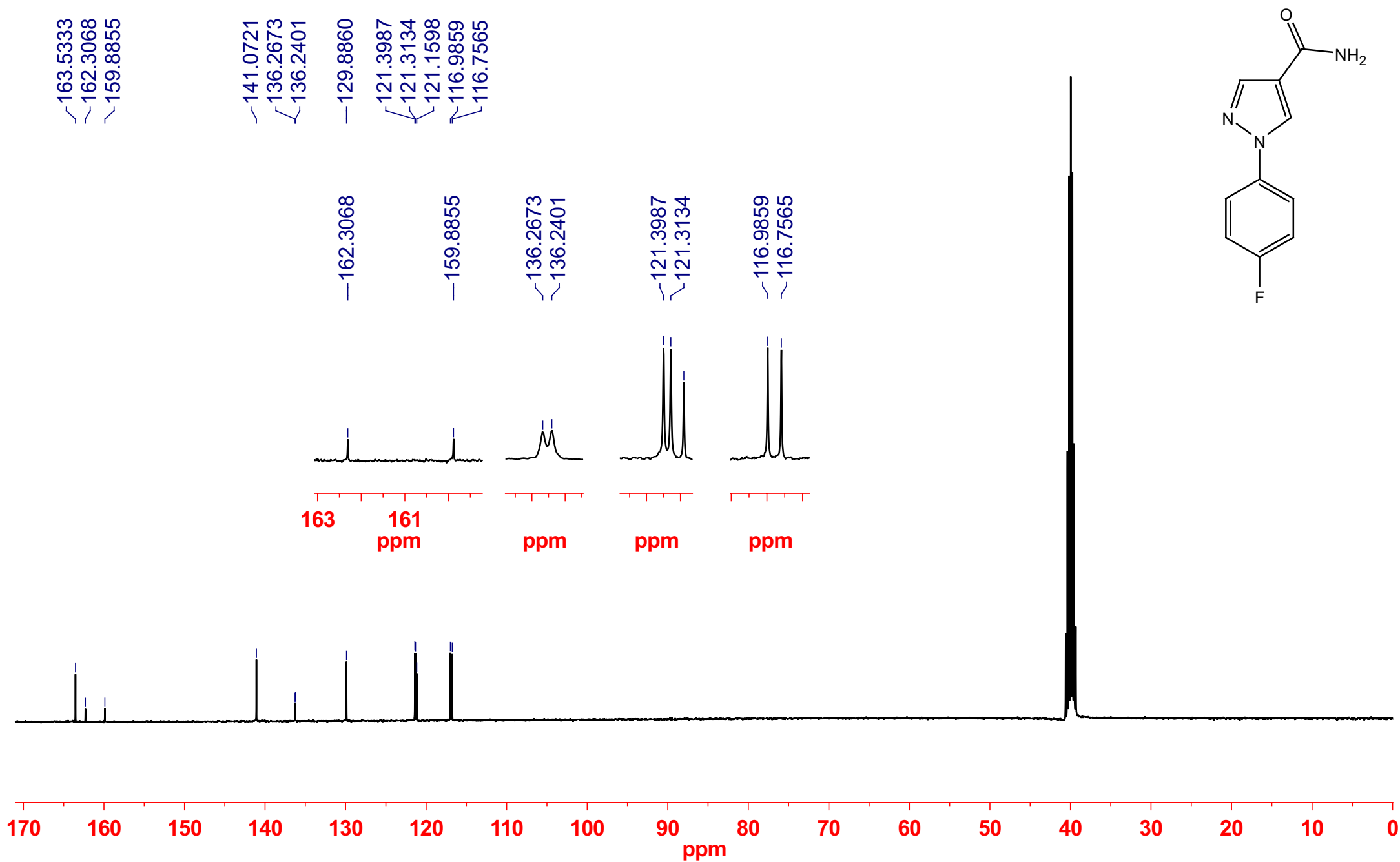




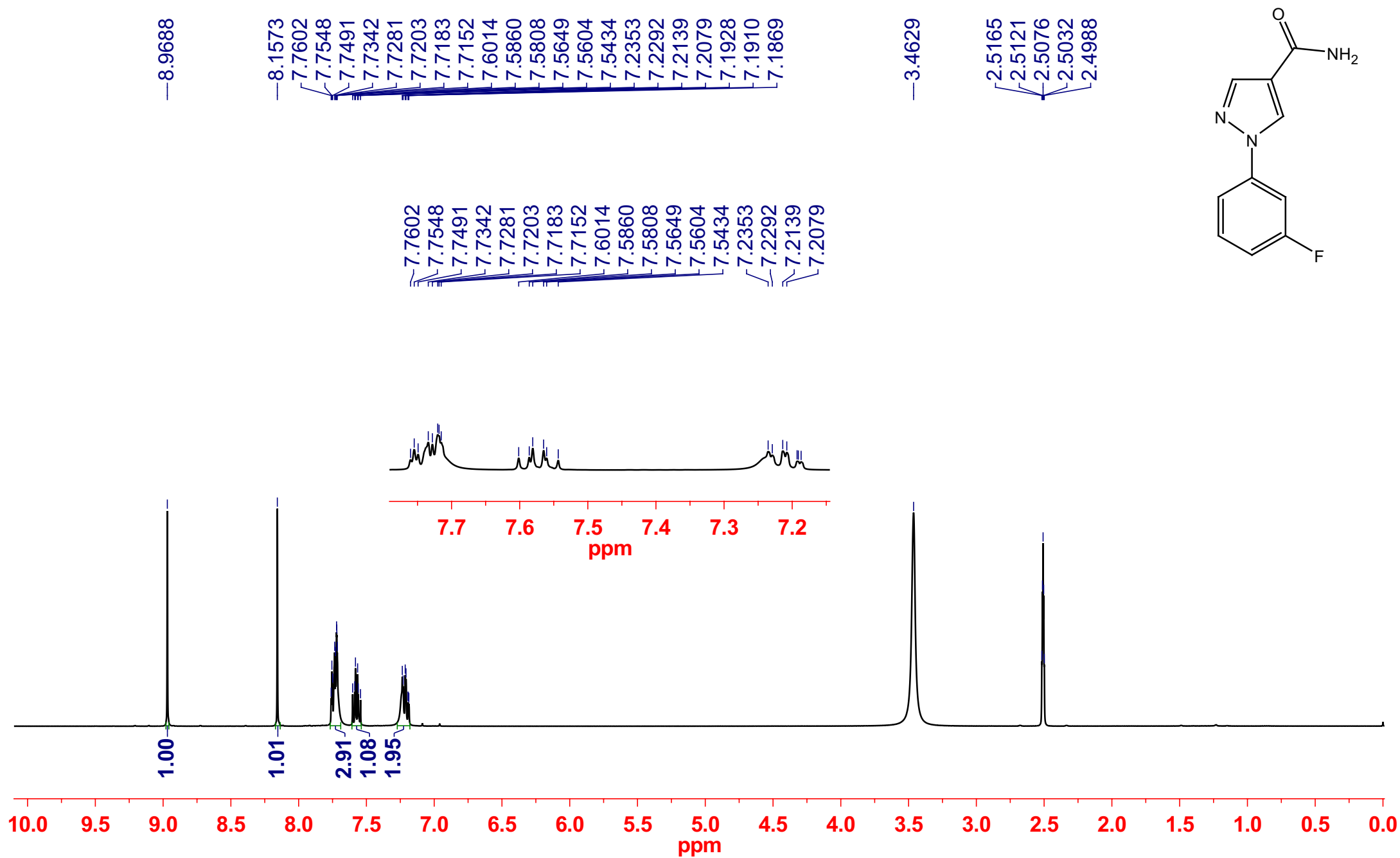
<sup>1</sup>H NMR of compound **1g**



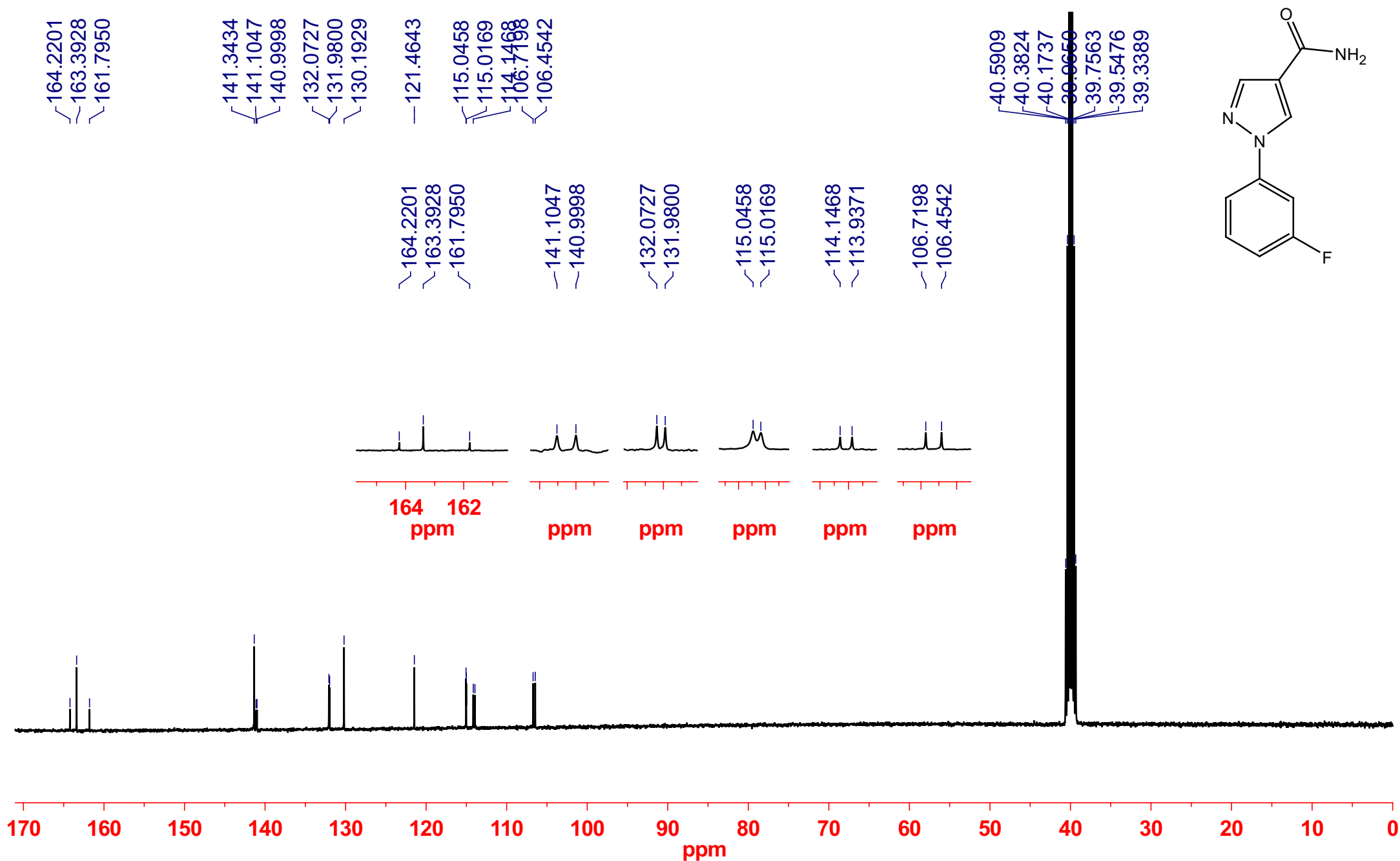
<sup>13</sup>C NMR of compound **1g**



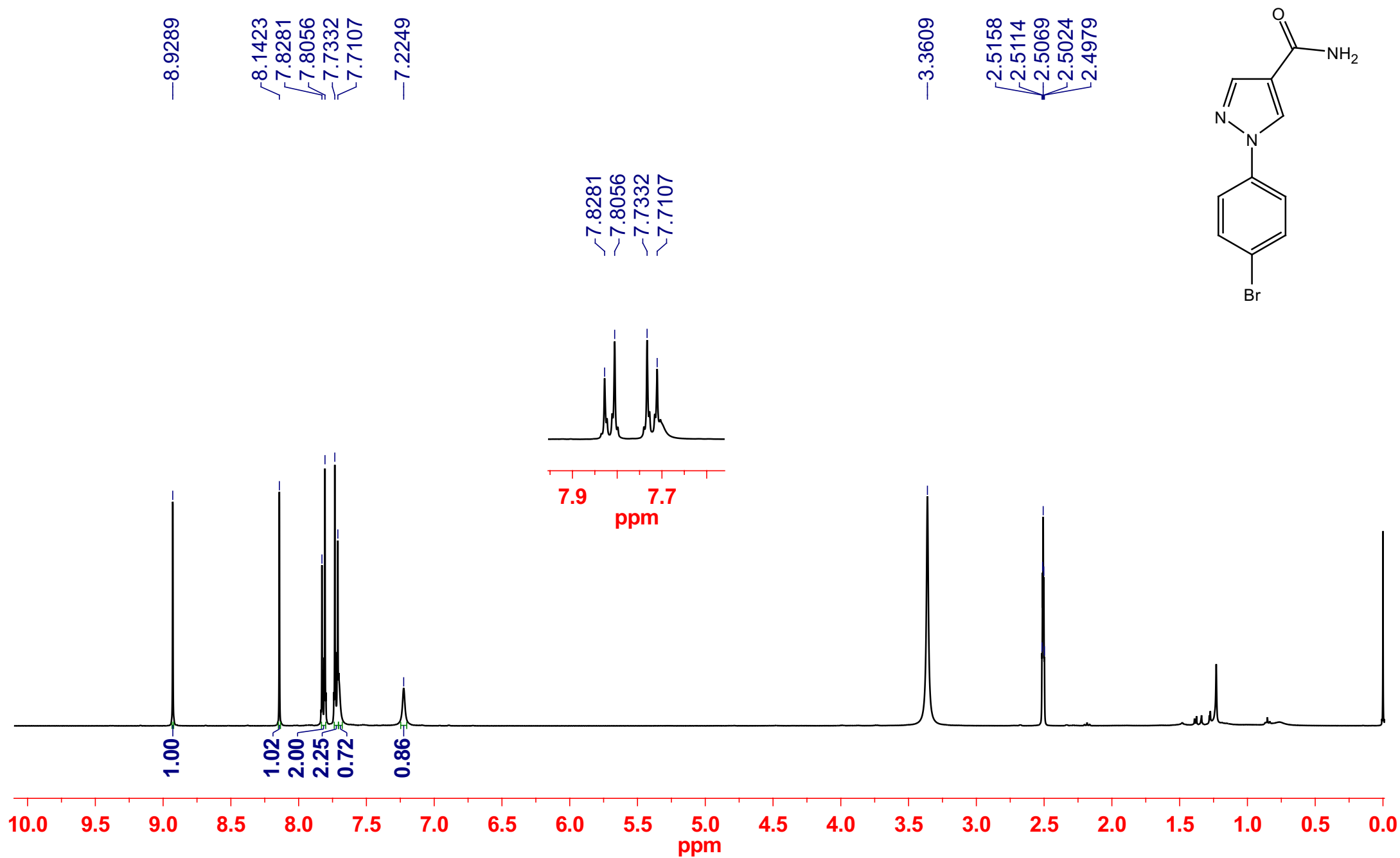
<sup>1</sup>H NMR of compound **1h**



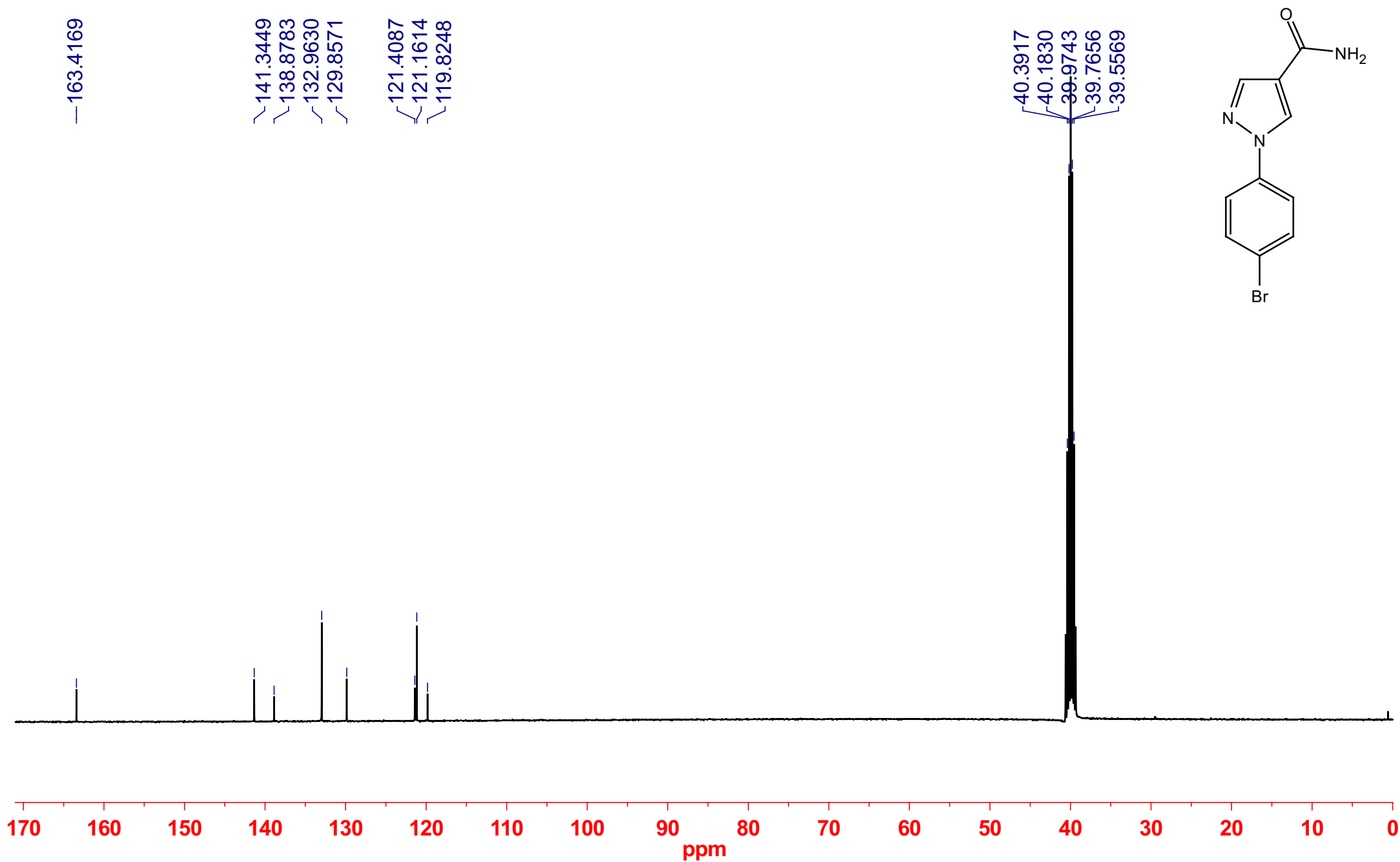
<sup>13</sup>C NMR of compound **1h**



<sup>1</sup>H NMR of compound **1i**



$^{13}\text{C}$  NMR of compound **1i**



<sup>1</sup>H NMR of compound **1j**

8.9825  
8.1498  
8.0846  
8.0798  
8.0749  
7.8965  
7.8941  
7.8912  
7.8888  
7.8762  
7.8739  
7.8710  
7.8686  
7.6868  
7.5751  
7.5726  
7.5707  
7.5682  
7.5551  
7.5526  
7.5507  
7.5483  
7.5074  
7.4872  
7.4671  
7.2340

8.0846  
8.0798  
8.0749

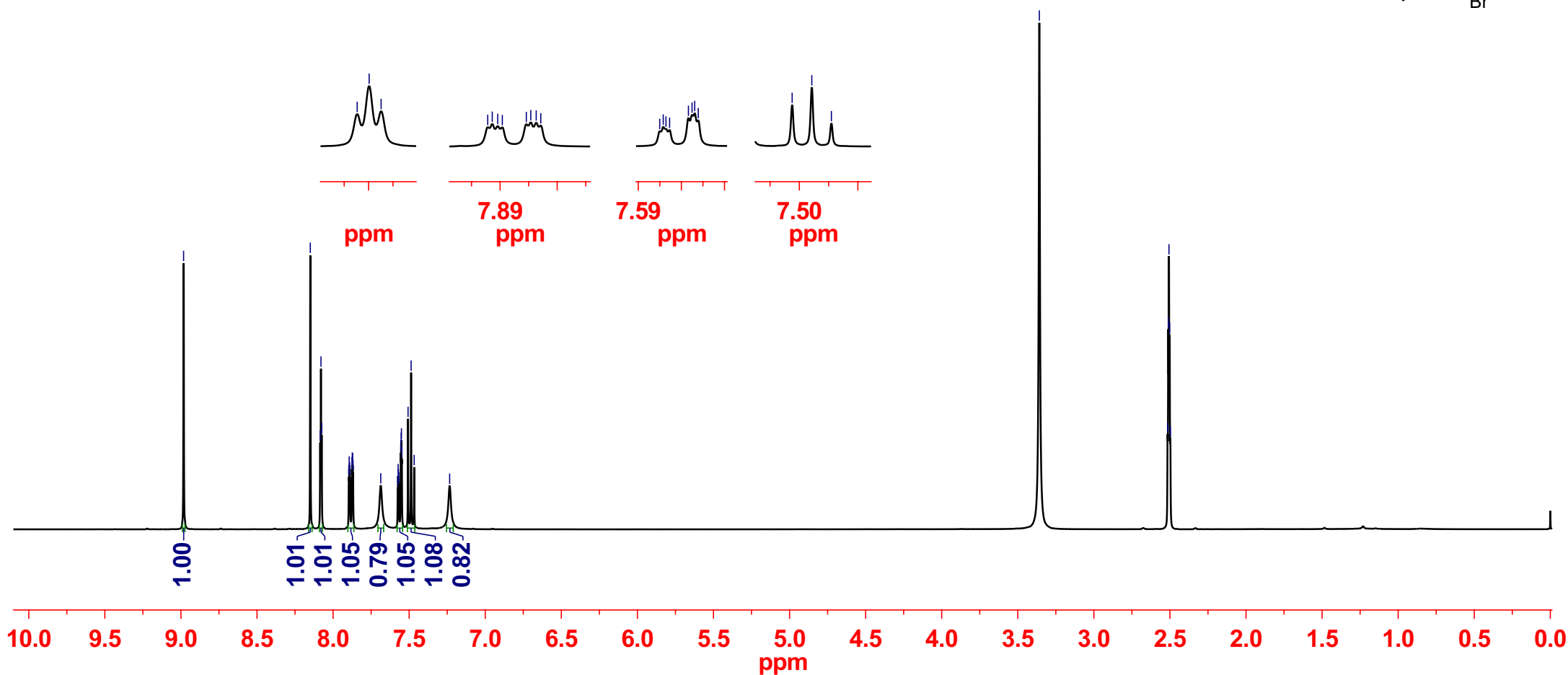
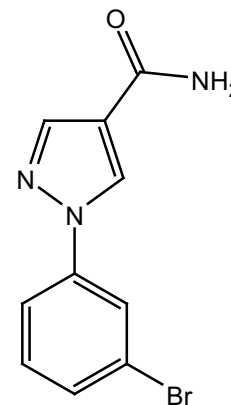
7.8941  
7.8762  
7.8739  
7.8710  
7.8686

7.5551  
7.5526  
7.5507

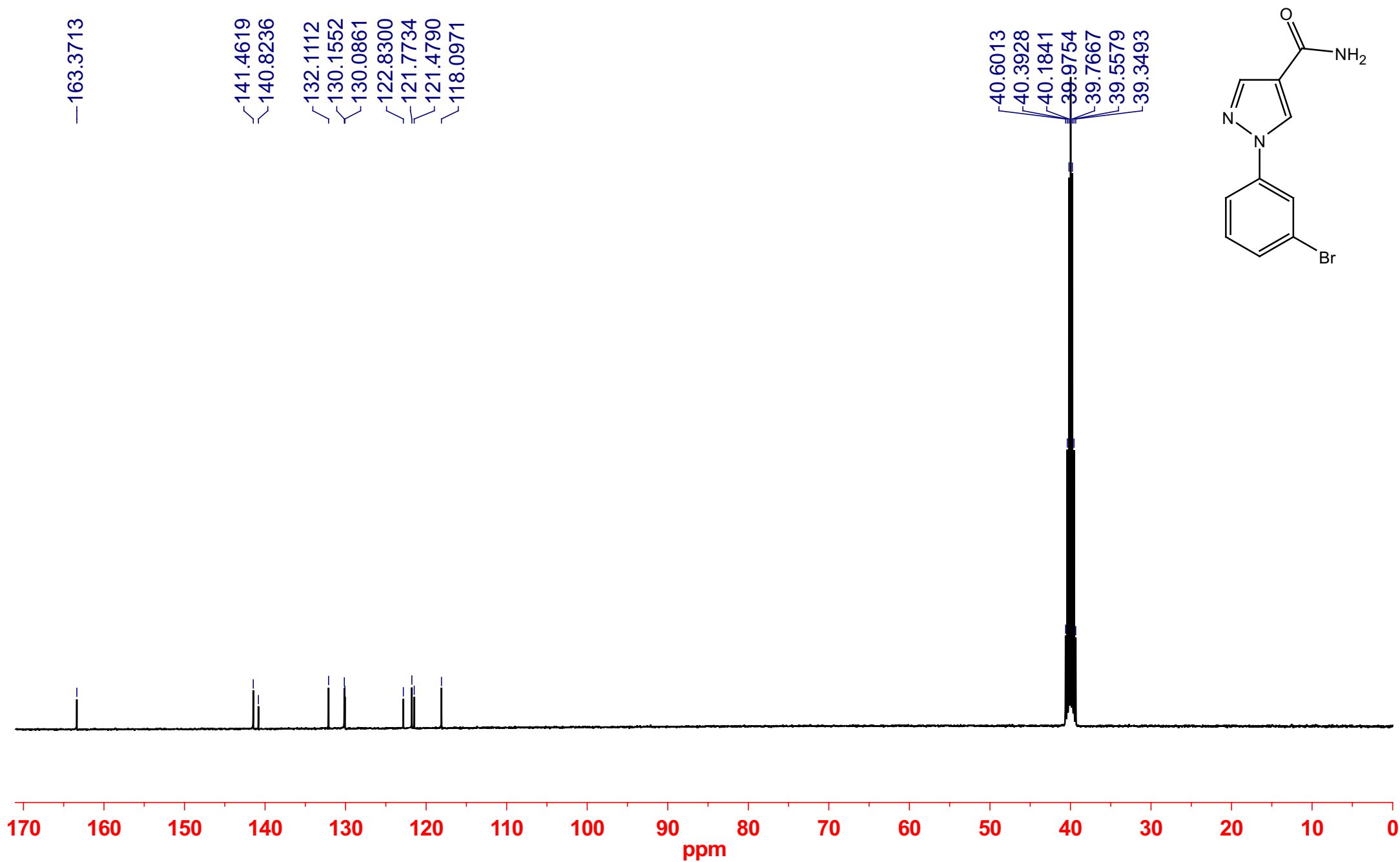
7.5074  
7.4872  
7.4671

3.3584

2.5153  
2.5109  
2.5064  
2.5019  
2.4975

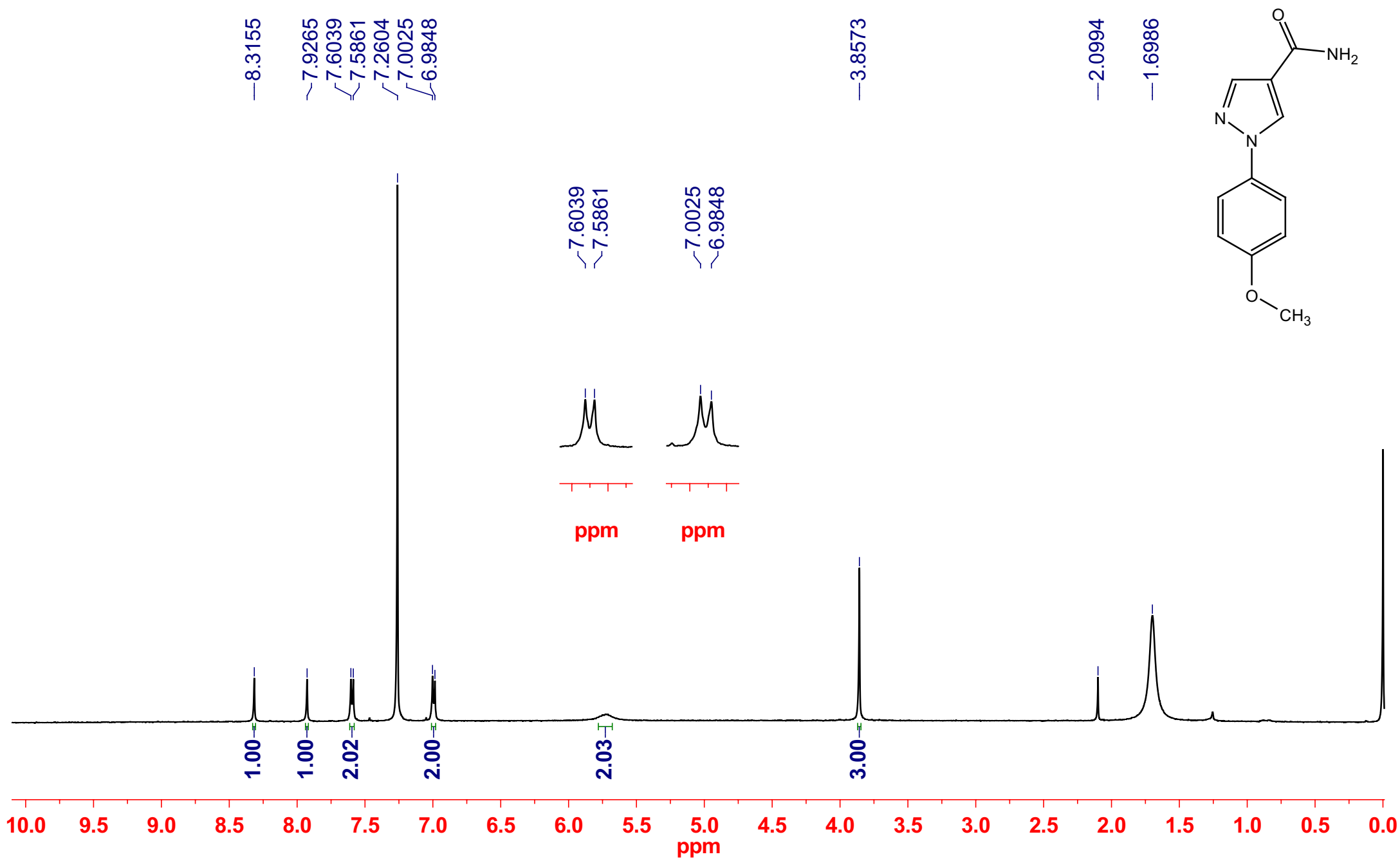


<sup>13</sup>C NMR of compound **1j**

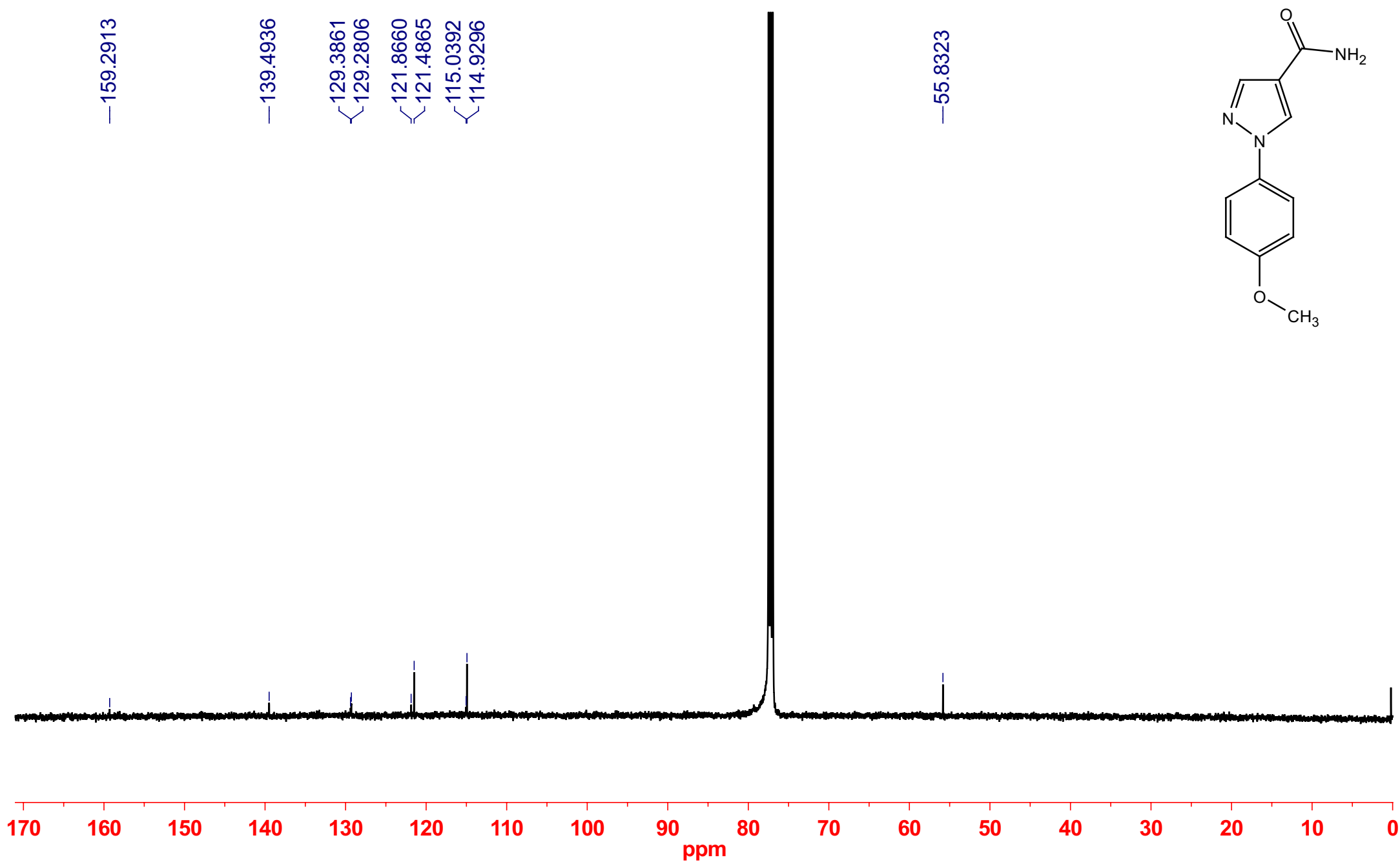




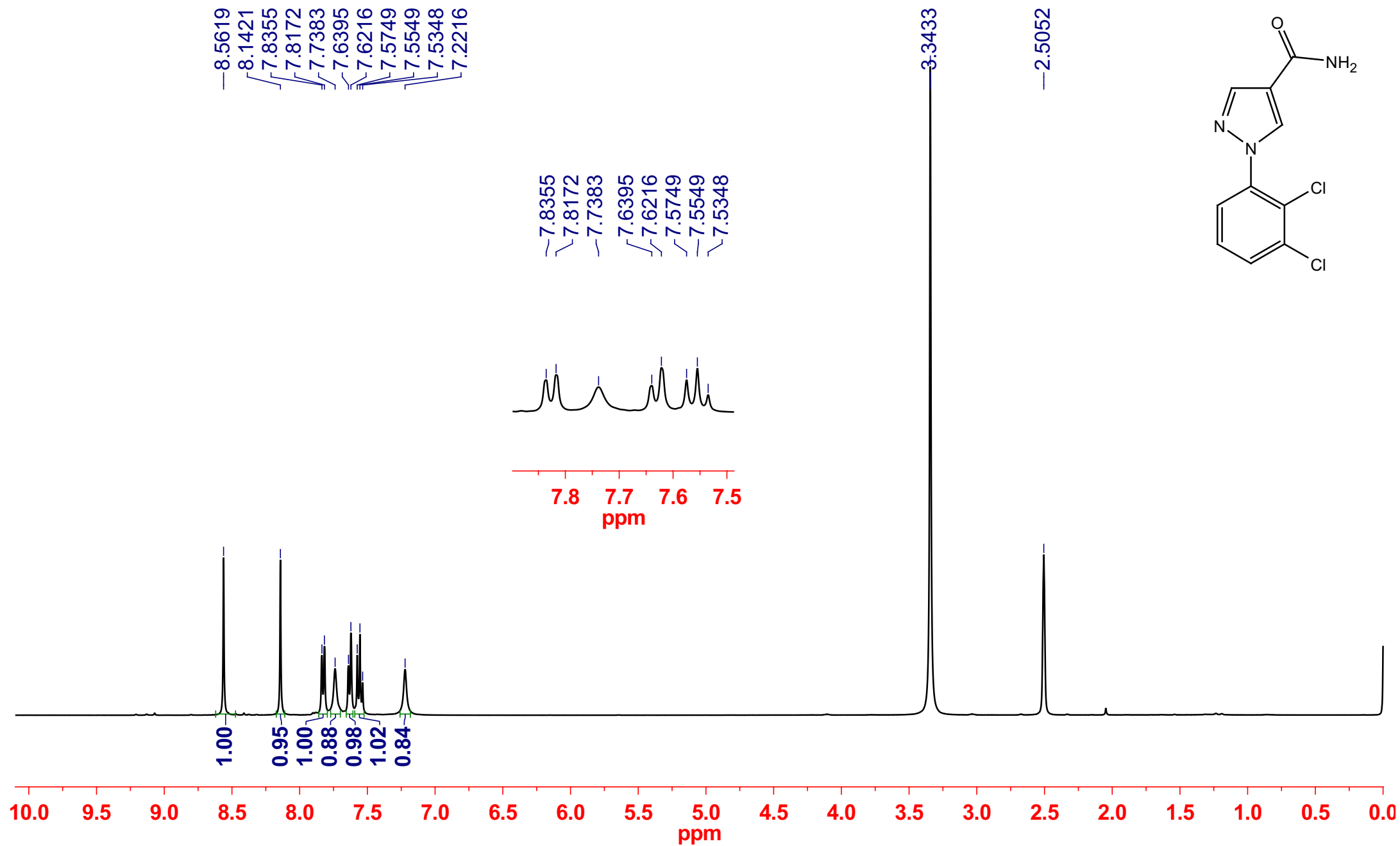
<sup>1</sup>H NMR of compound **1k**



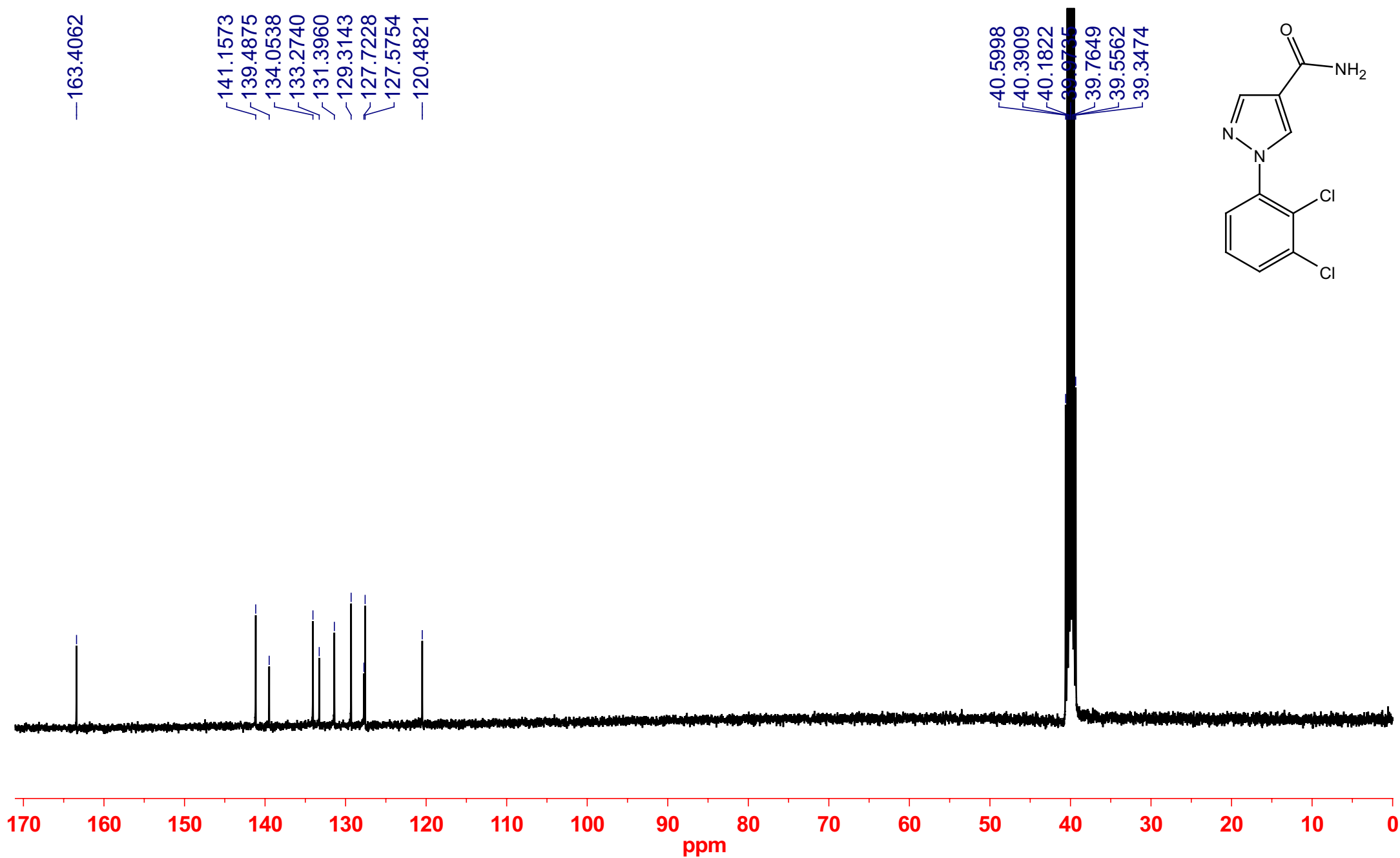
<sup>13</sup>C NMR of compound **1k**



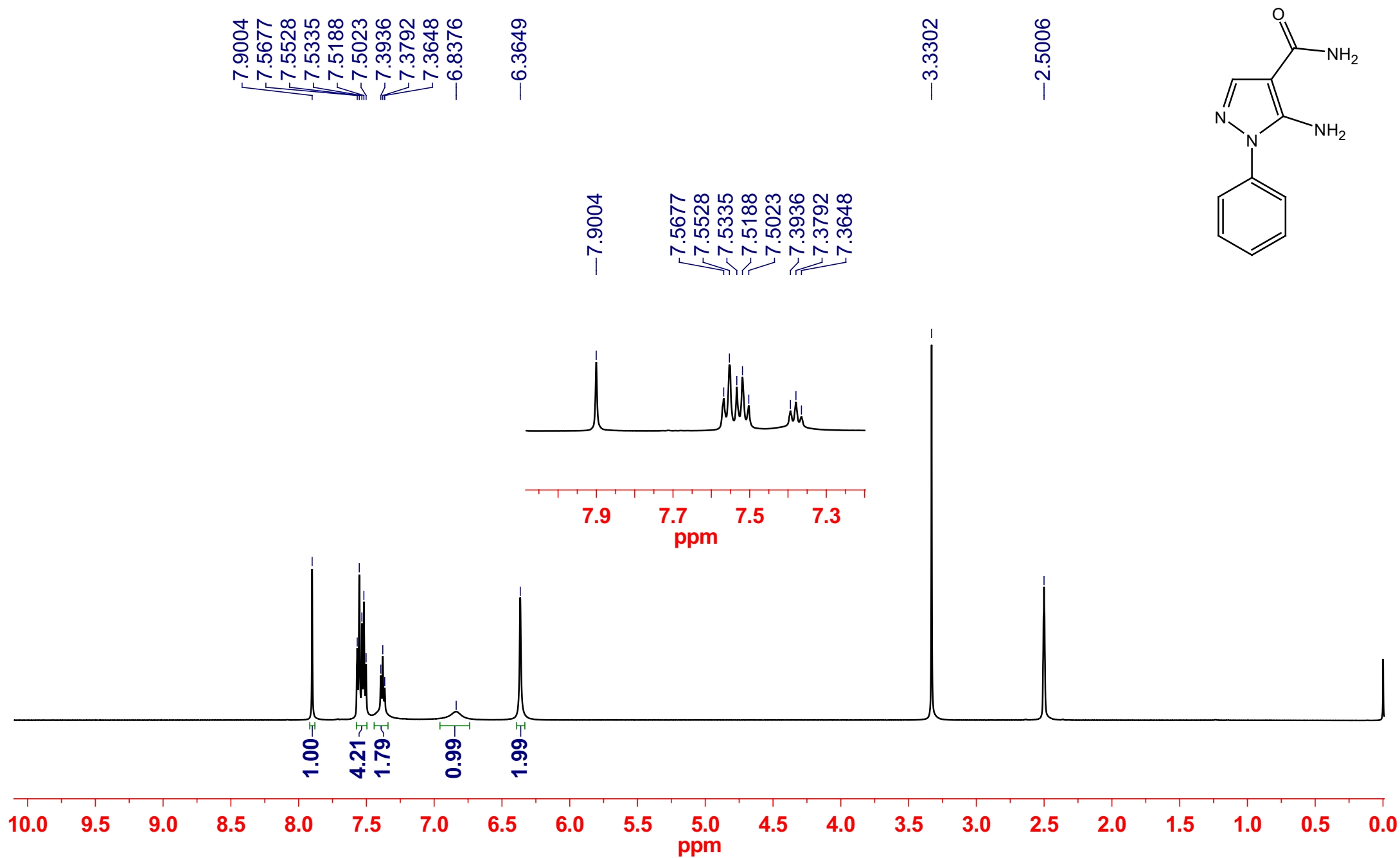
<sup>1</sup>H NMR of compound **11**



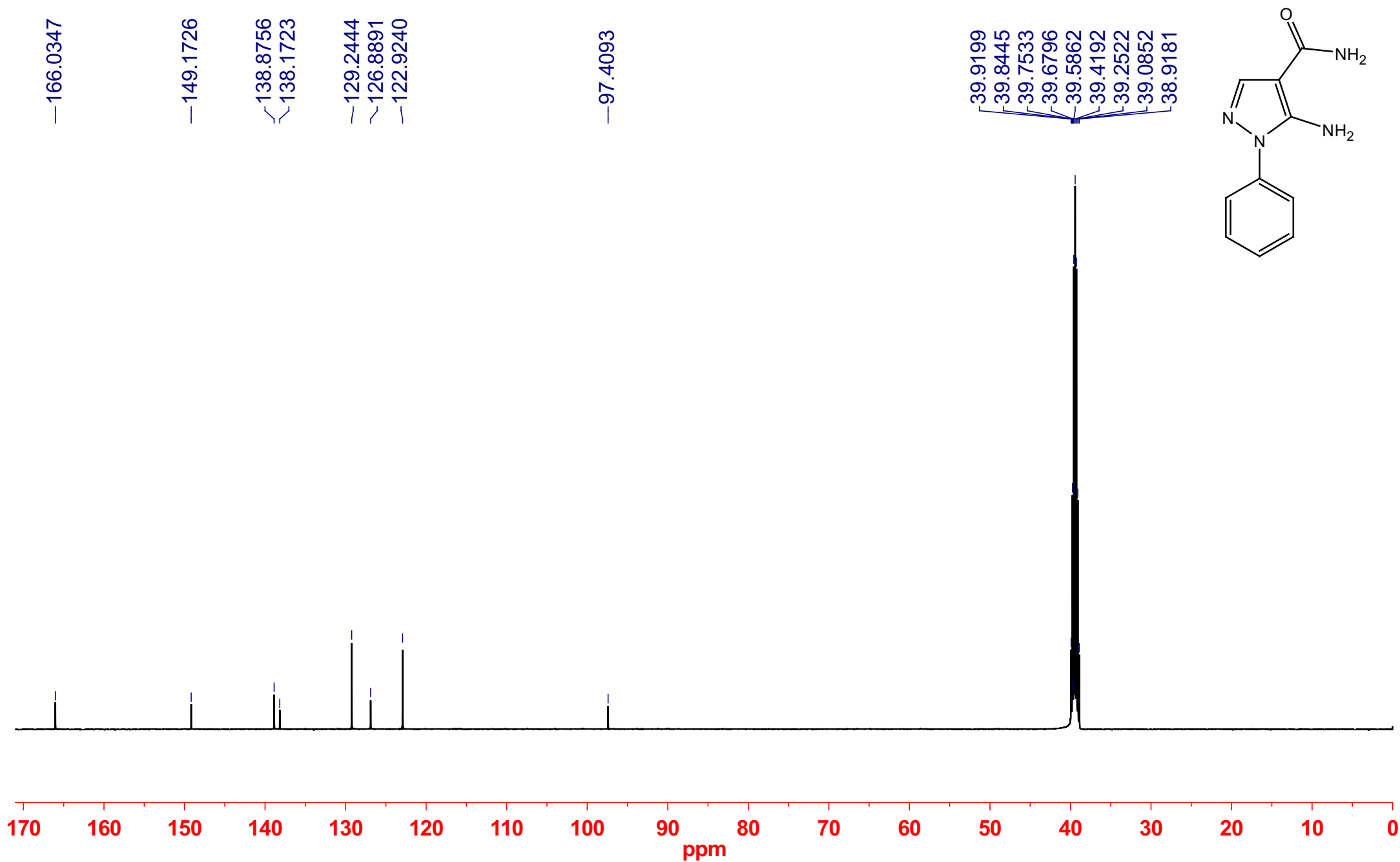
<sup>13</sup>C NMR of compound **1l**



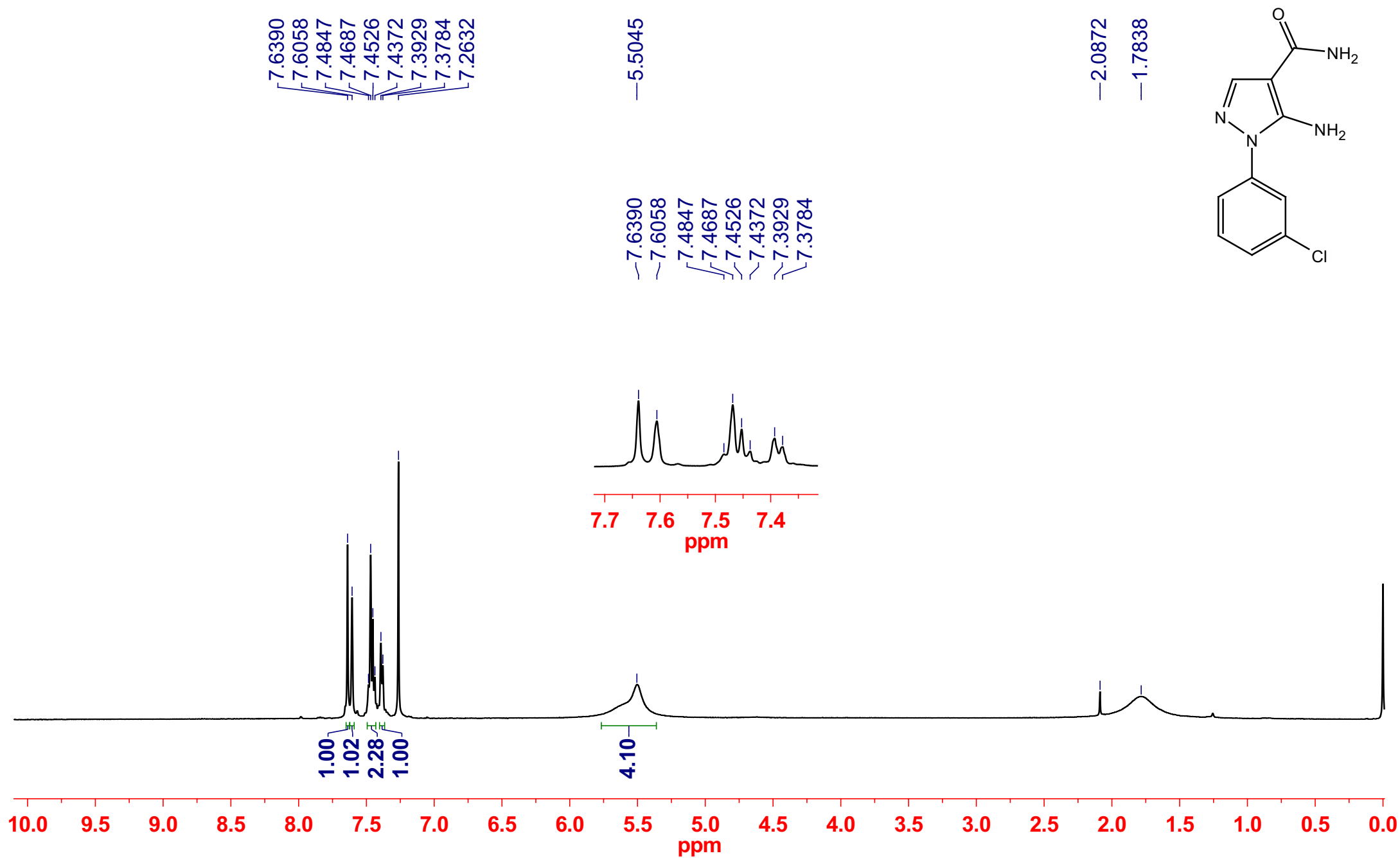
<sup>1</sup>H NMR of compound **2a**



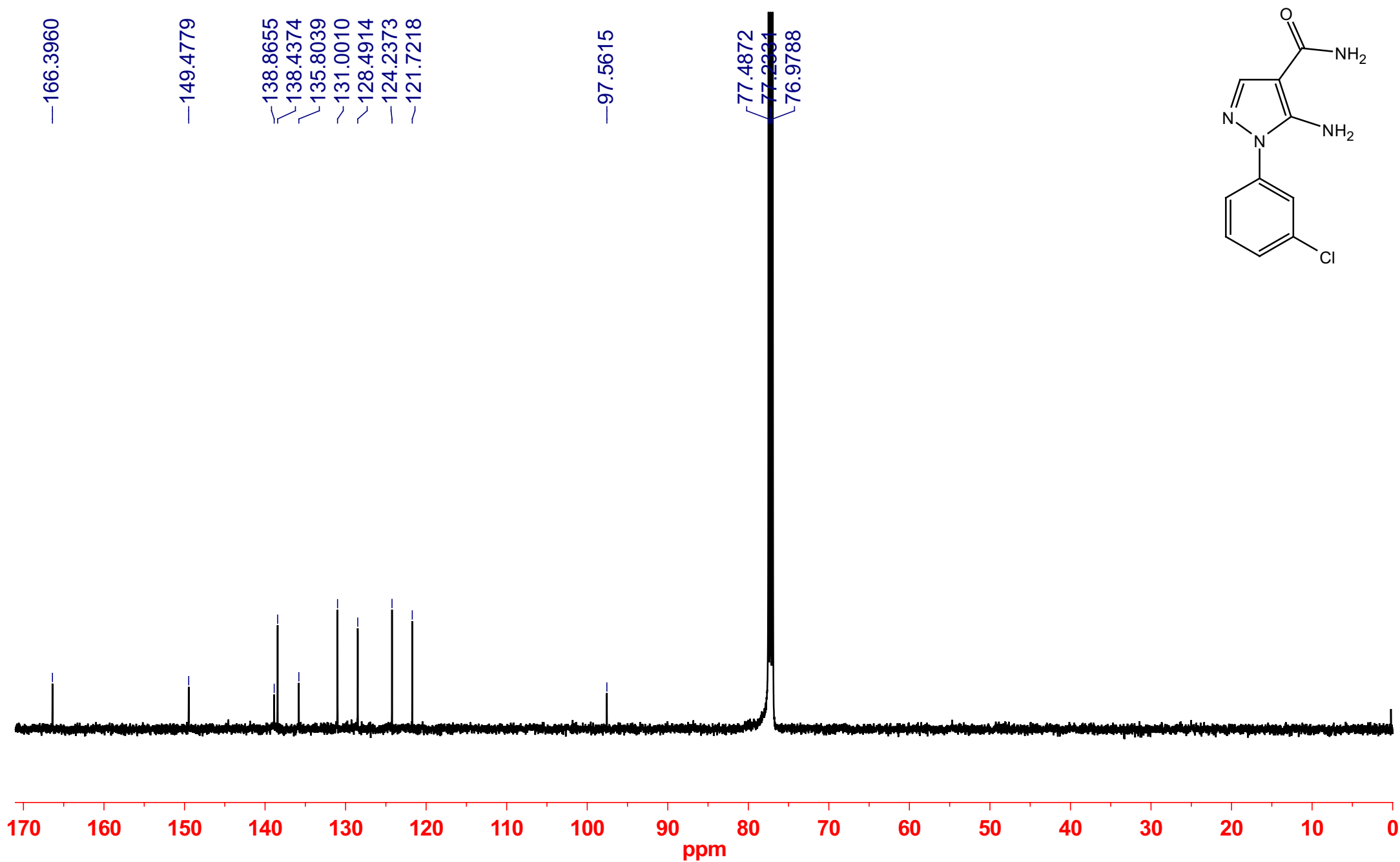
<sup>13</sup>C NMR of compound **2a**



<sup>1</sup>H NMR of compound **2b**

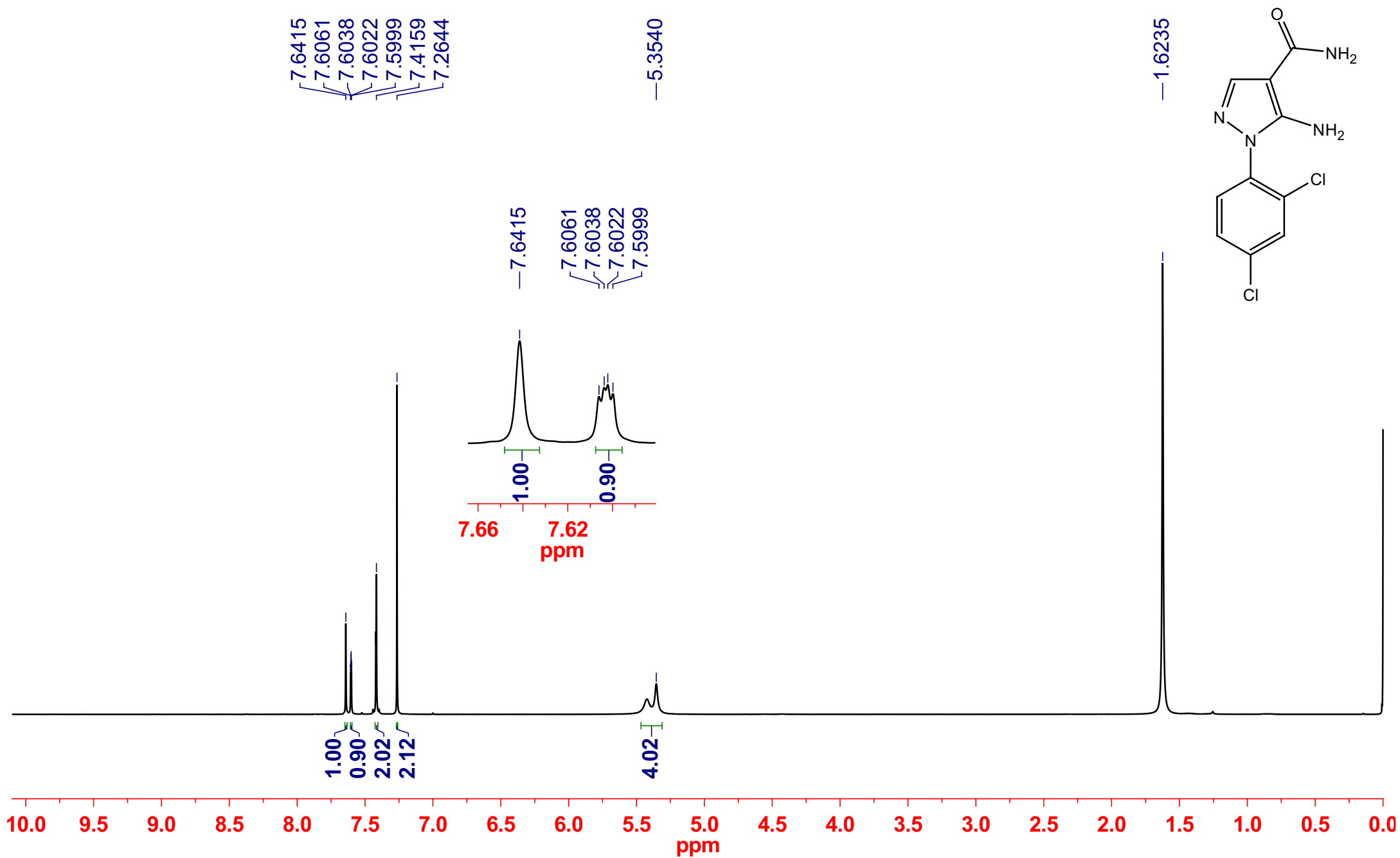


<sup>13</sup>C NMR of compound **2b**

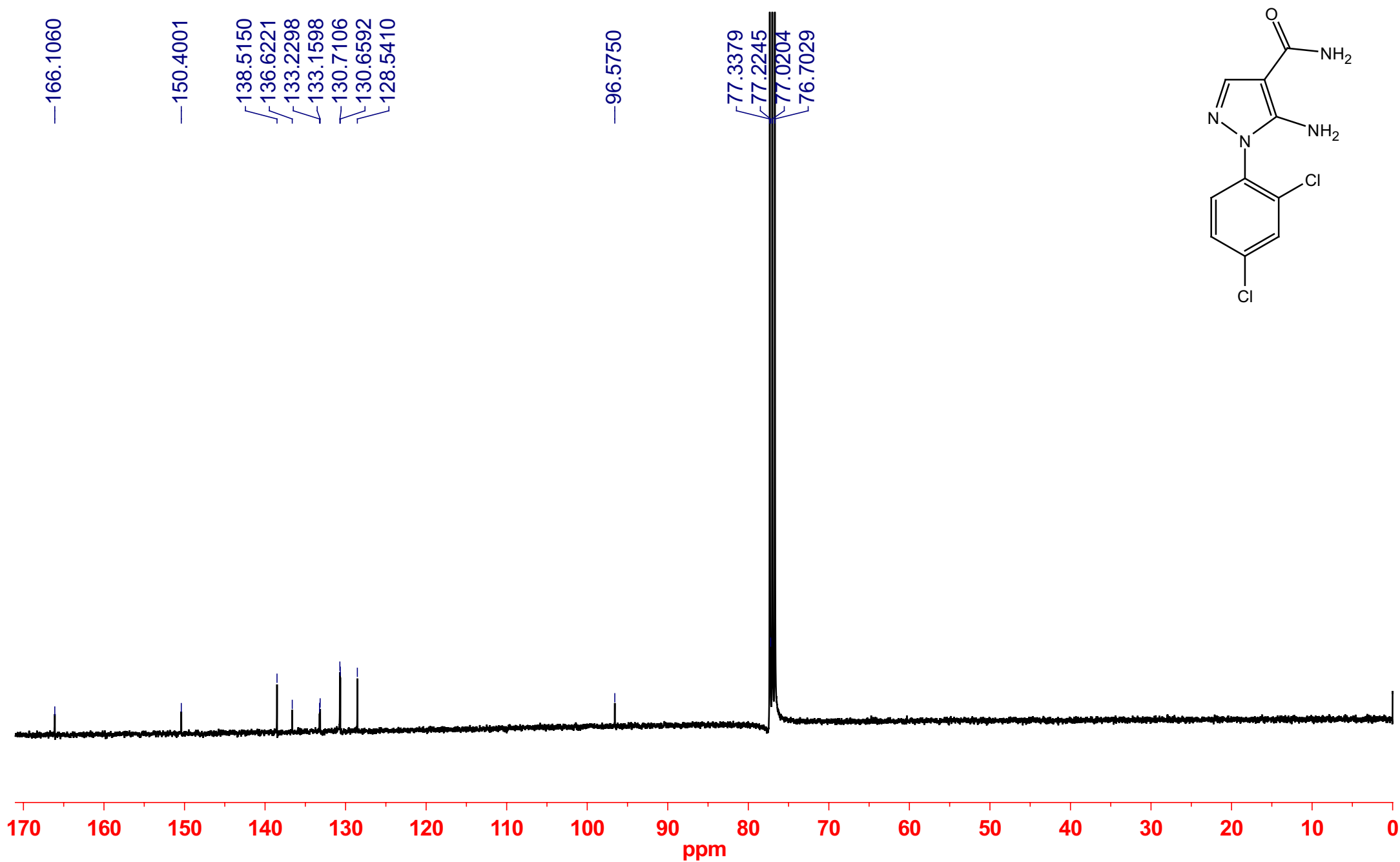




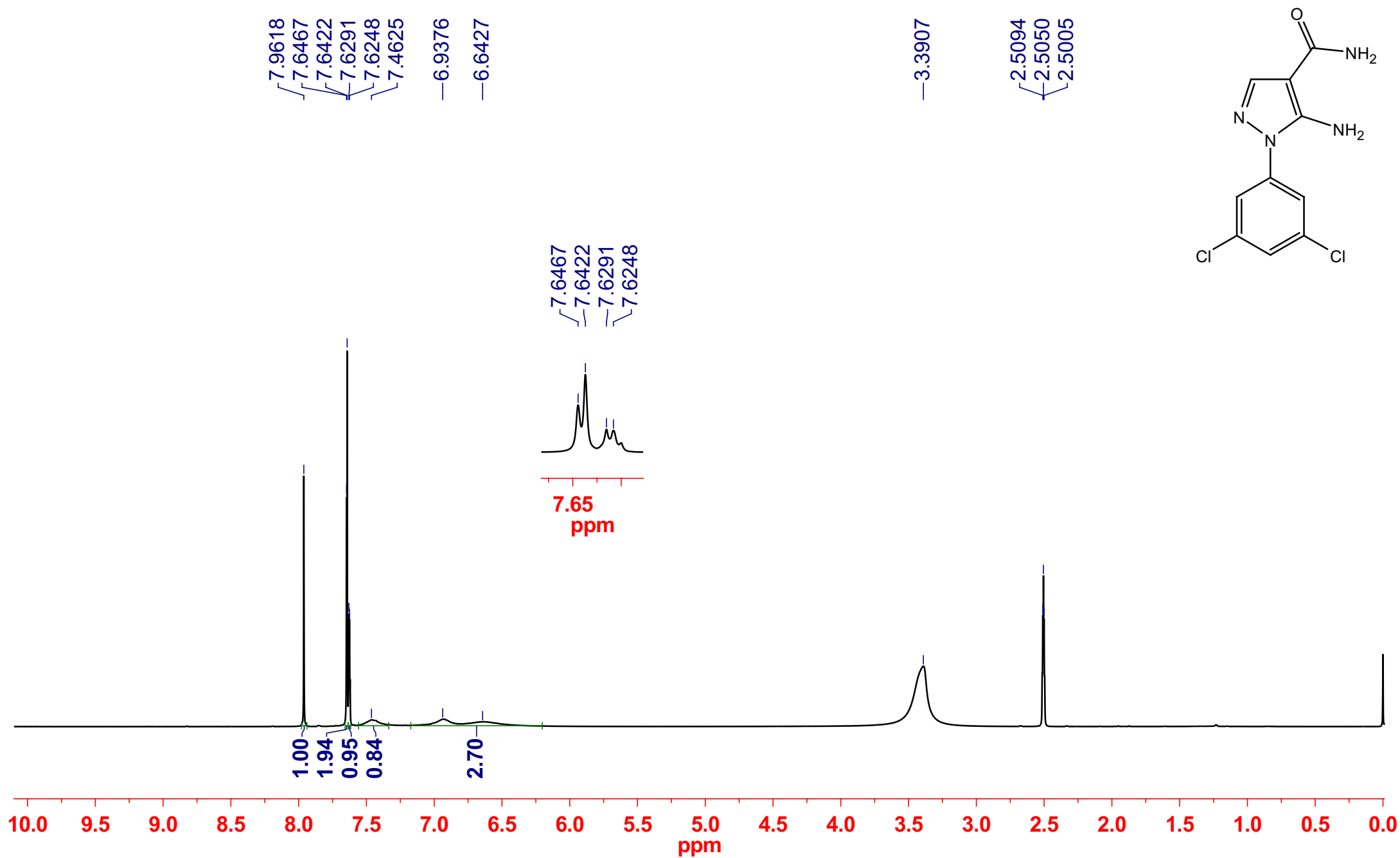
<sup>1</sup>H NMR of compound **2c**



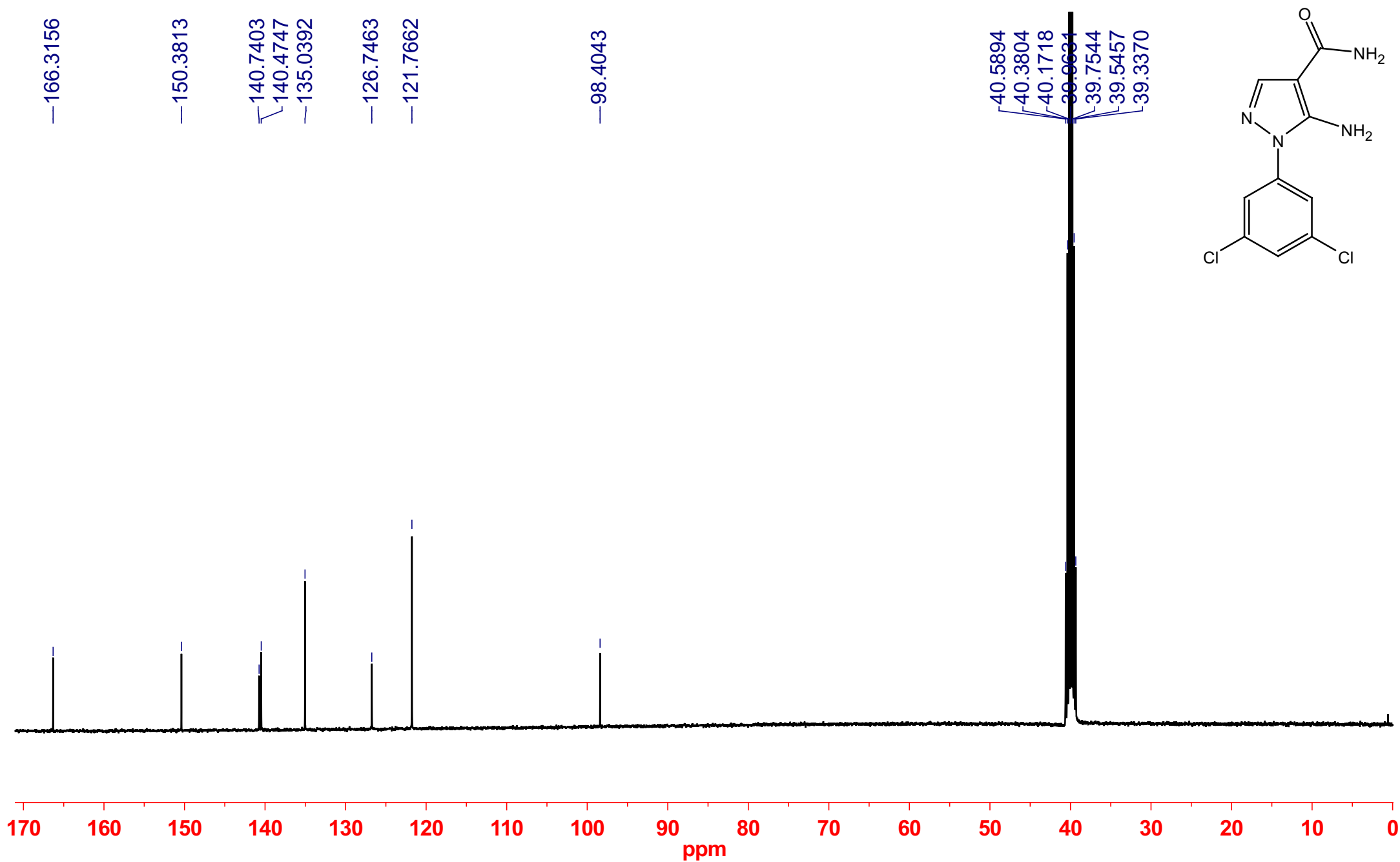
<sup>13</sup>C NMR of compound **2c**

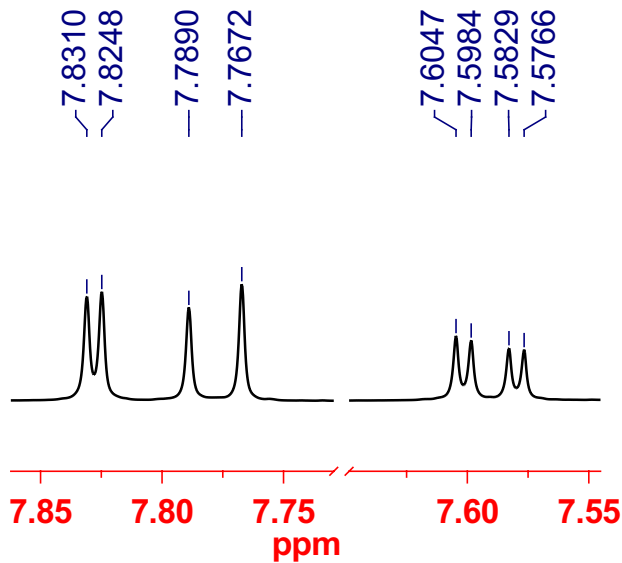
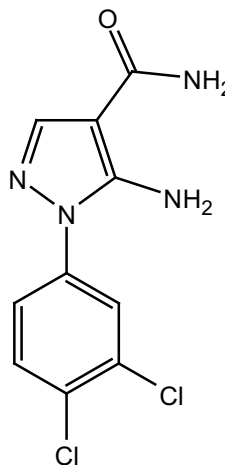


<sup>1</sup>H NMR of compound **2d**

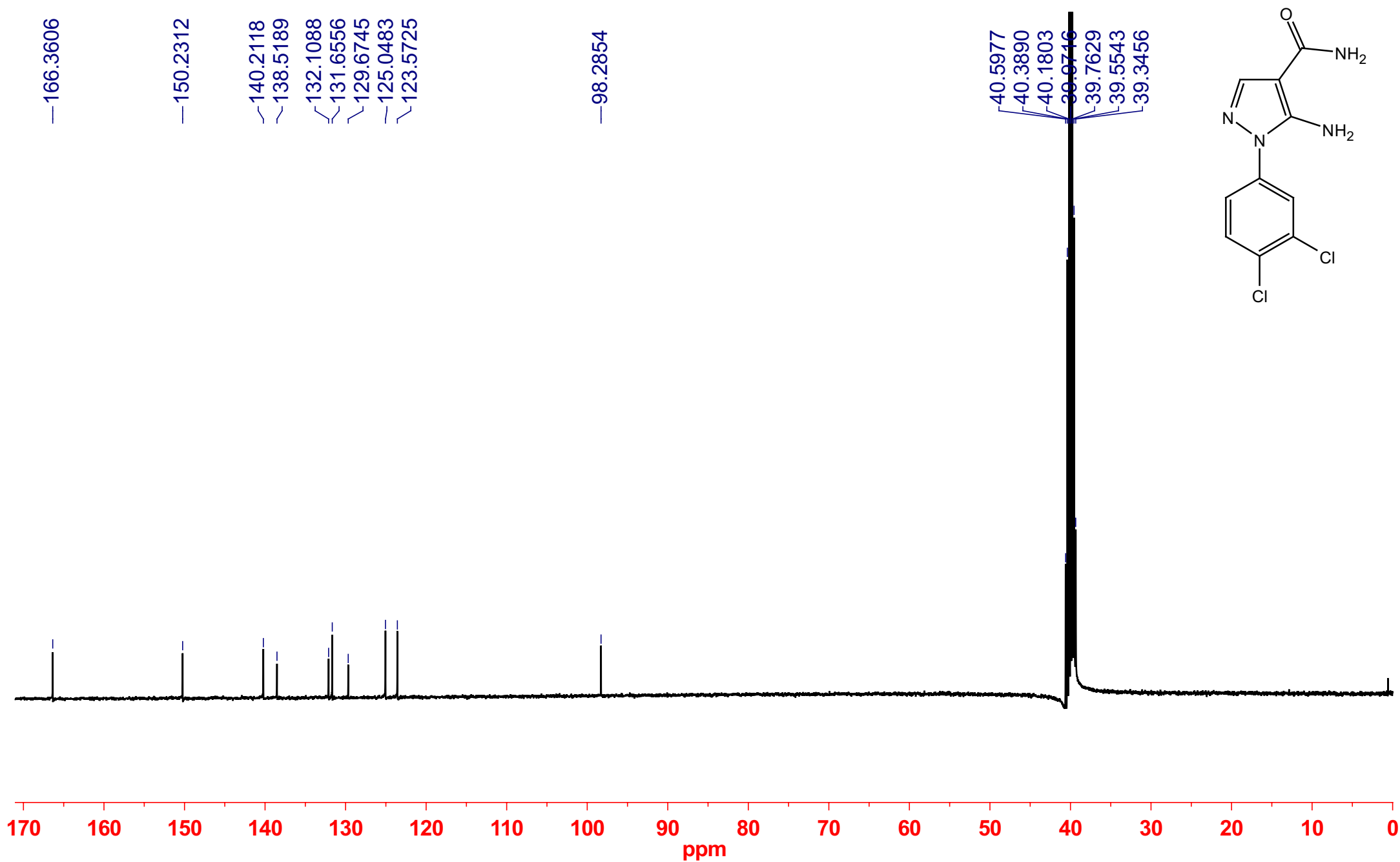


<sup>13</sup>C NMR of compound **2d**

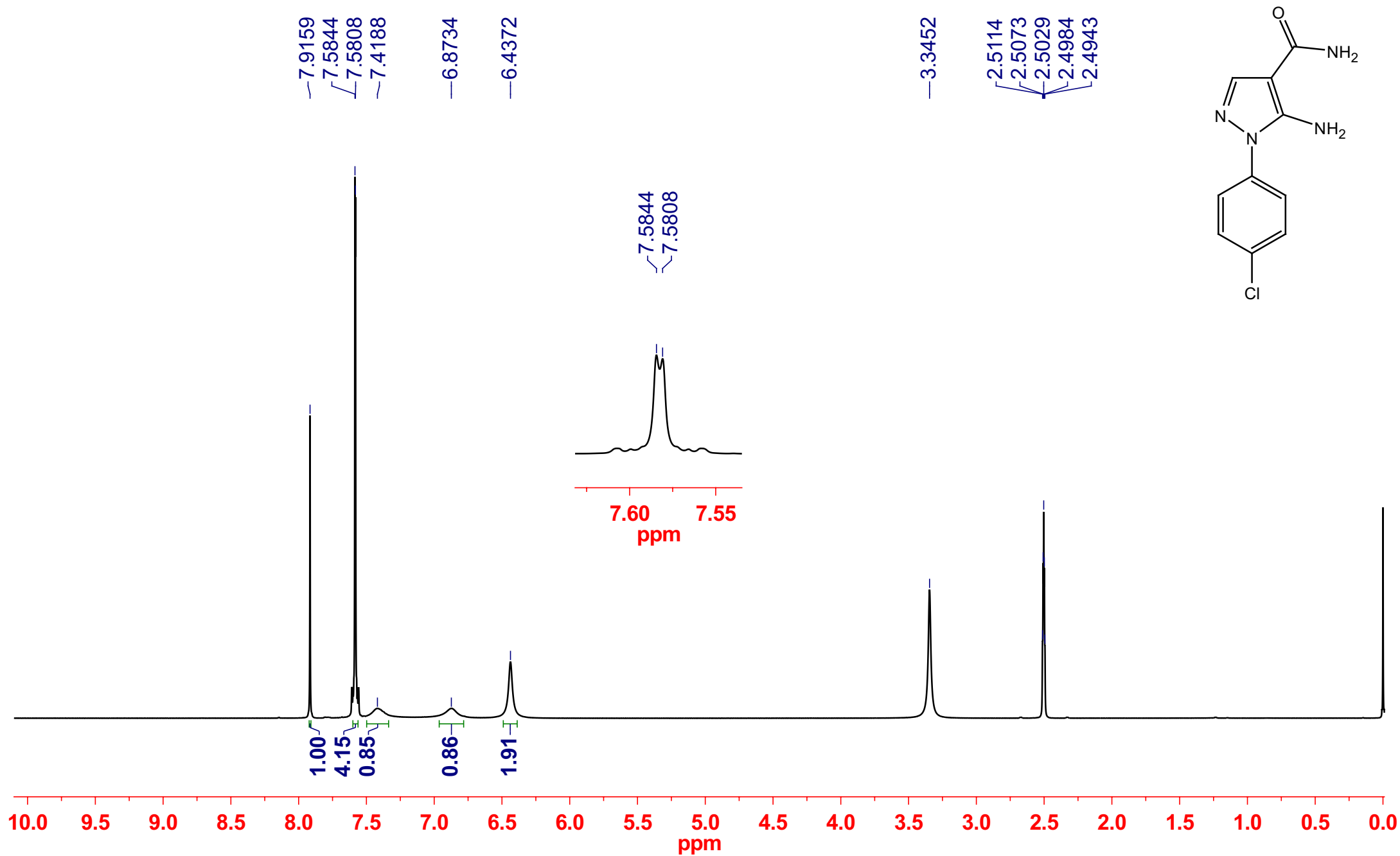


<sup>1</sup>H NMR of compound **2e**

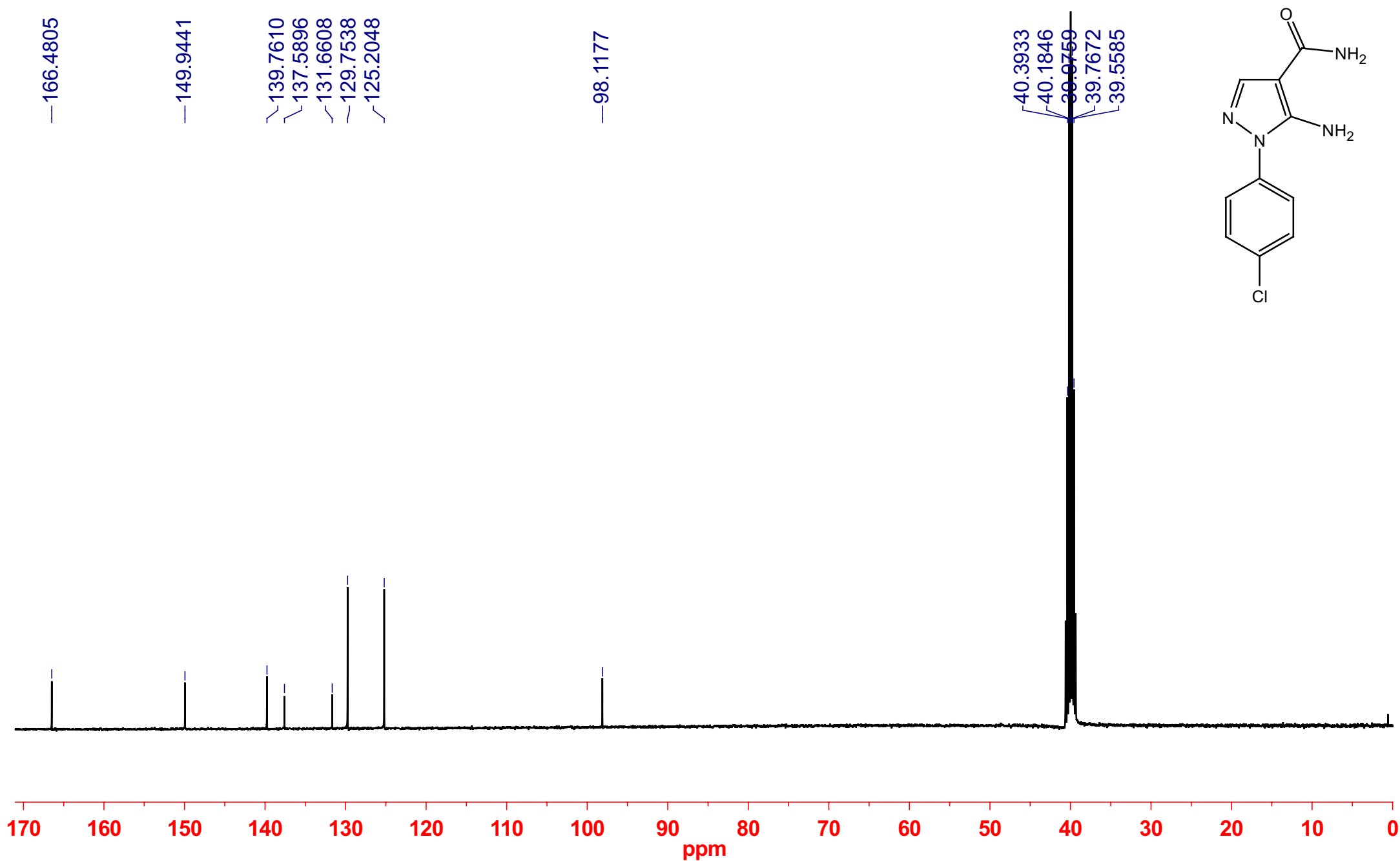
<sup>13</sup>C NMR of compound **2e**



<sup>1</sup>H NMR of compound **2f**



<sup>13</sup>C NMR of compound **2f**





<sup>1</sup>H NMR of compound **2g**

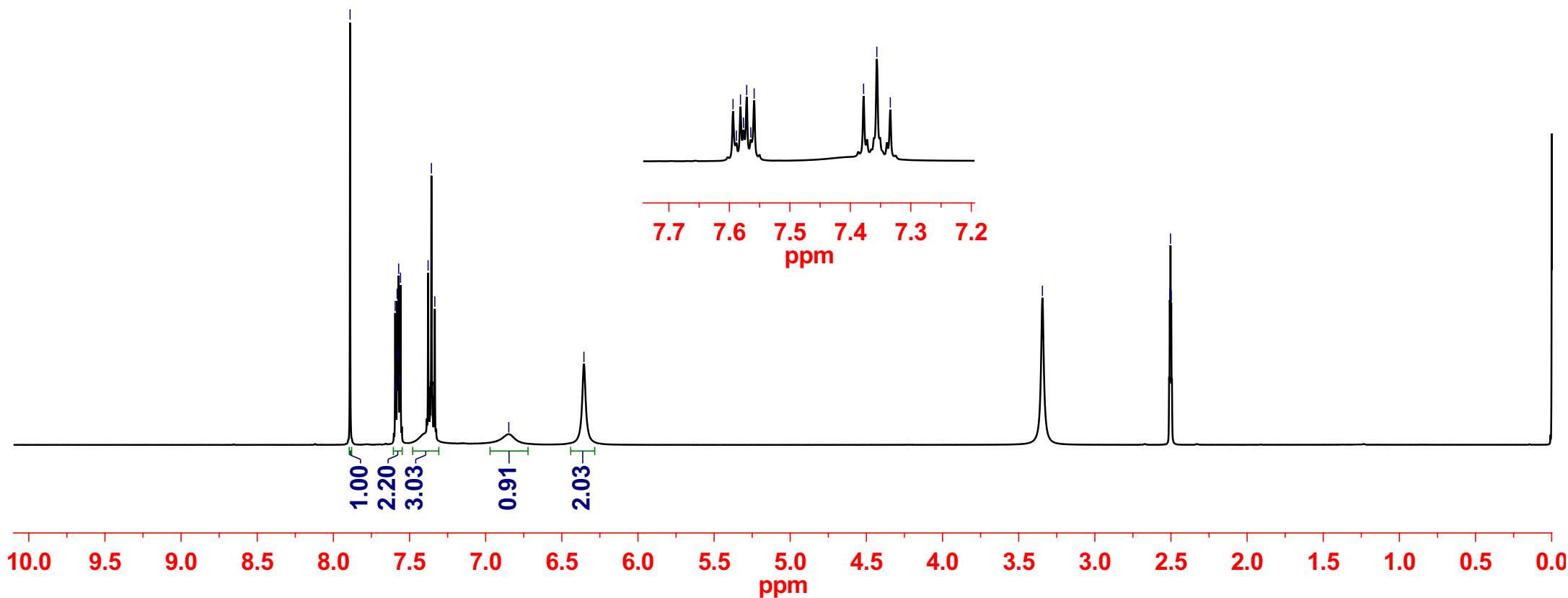
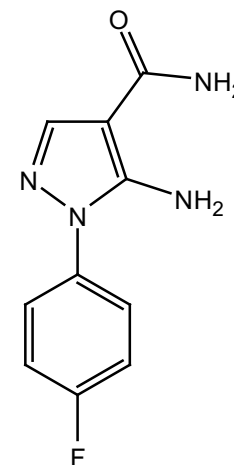
7.8903  
7.5940  
7.5885  
7.5817  
7.5767  
7.5714  
7.5646  
7.5591  
7.3781  
7.3562  
7.3339  
6.8482

6.3548

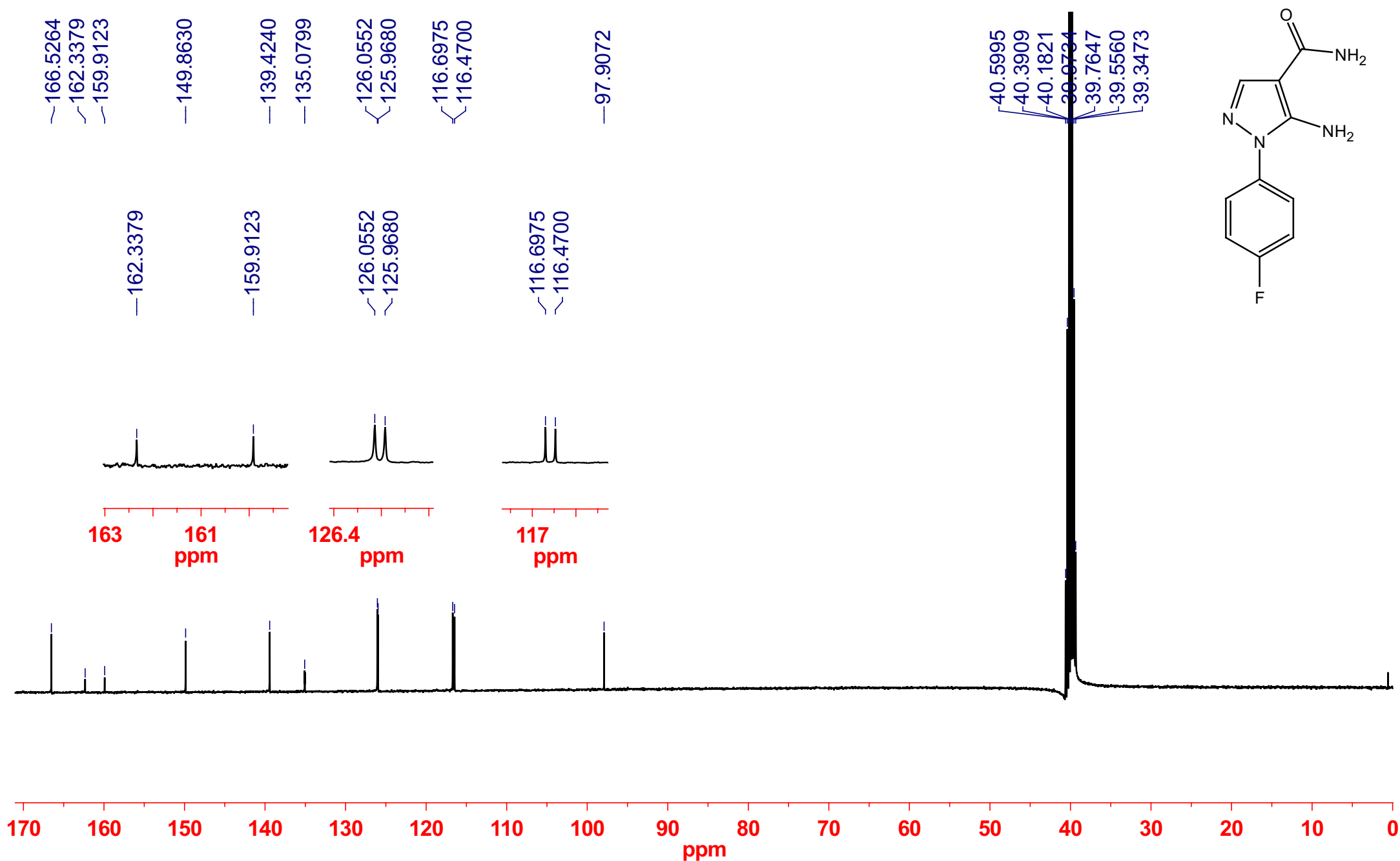
3.3441

2.5073  
2.5028  
2.4983

7.5940  
7.5885  
7.5817  
7.5767  
7.5714  
7.5646  
7.5591  
7.3781  
7.3562  
7.3339



<sup>13</sup>C NMR of compound **2g**



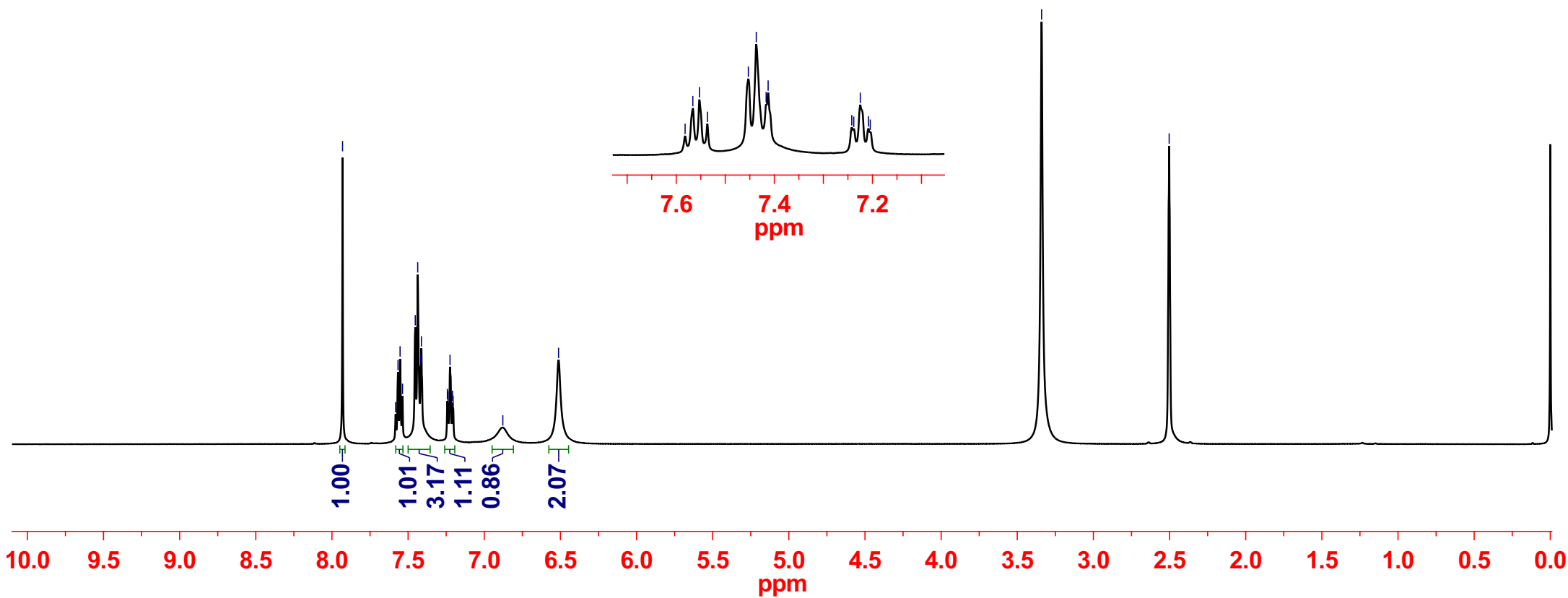
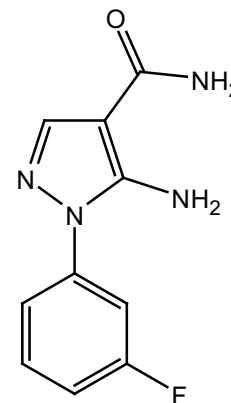
<sup>1</sup>H NMR of compound **2h**

7.9304  
7.5819  
7.5661  
7.5527  
7.5365  
7.4529  
7.4368  
7.4167  
7.4126  
7.2421  
7.2380  
7.2247  
7.2081  
7.2044  
6.8780  
6.5121

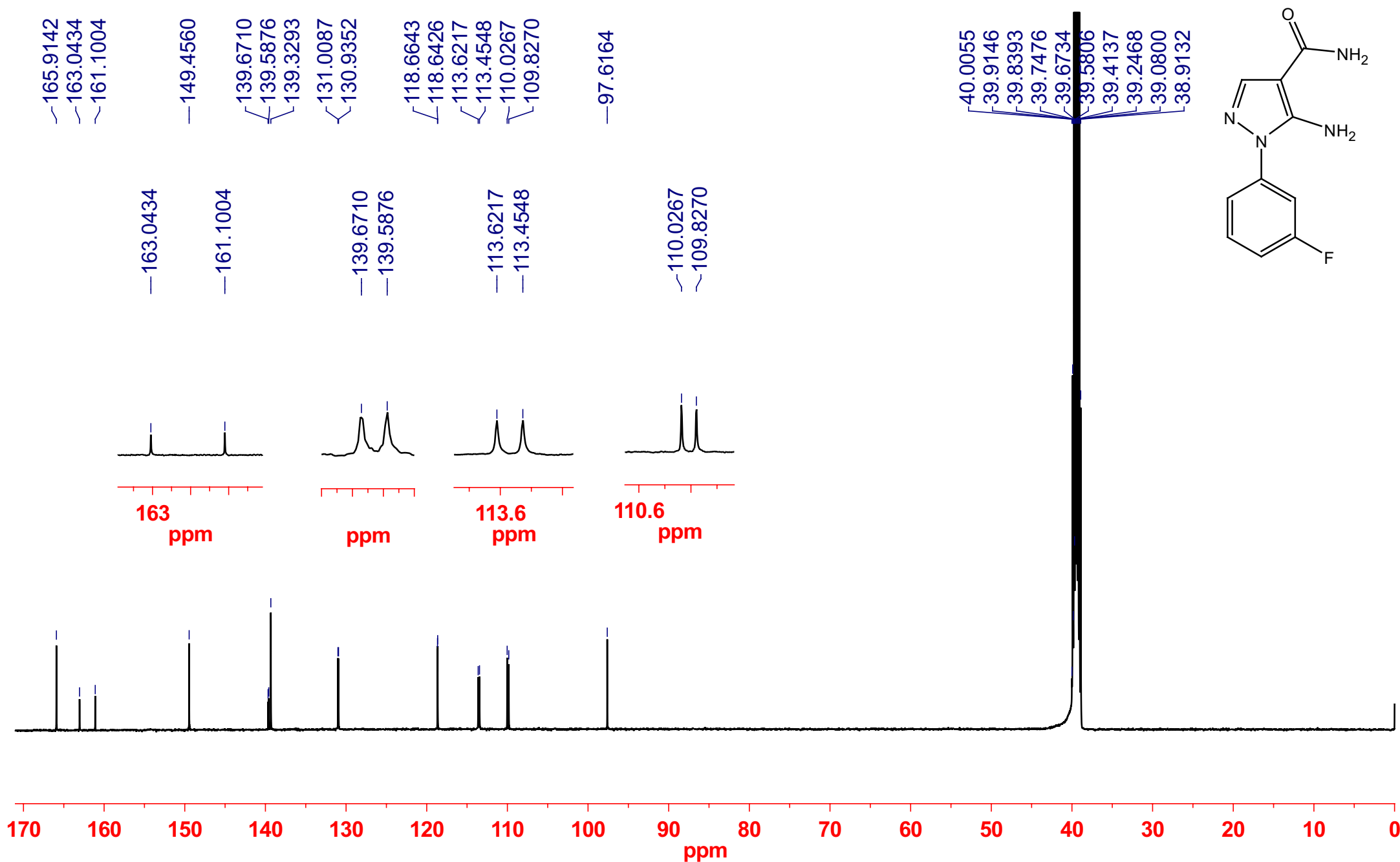
7.5661  
7.5527  
7.5365  
7.4529  
7.4368  
7.4167  
7.4126  
7.2421  
7.2380  
7.2247  
7.2081  
7.2044

3.3403

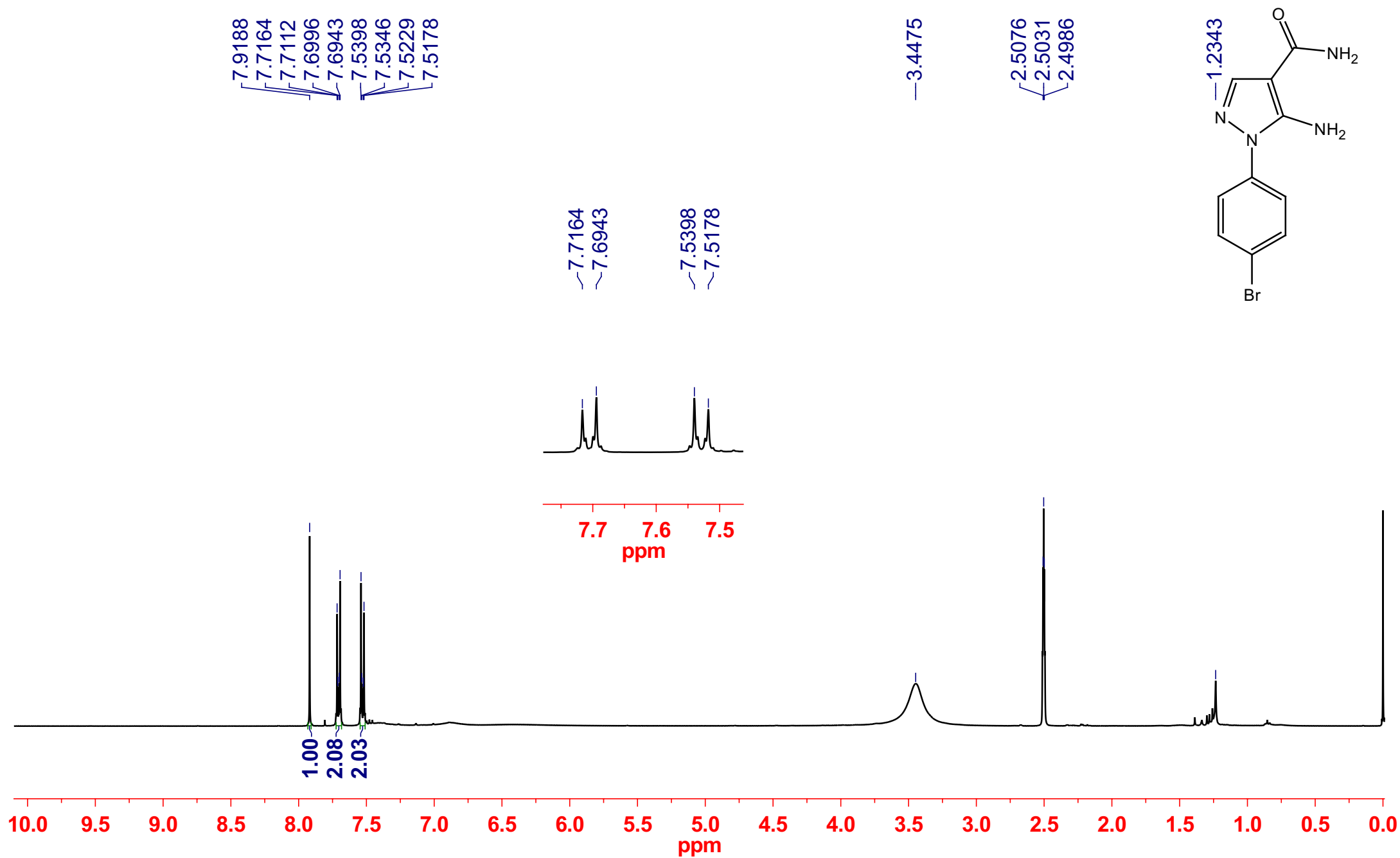
2.5026



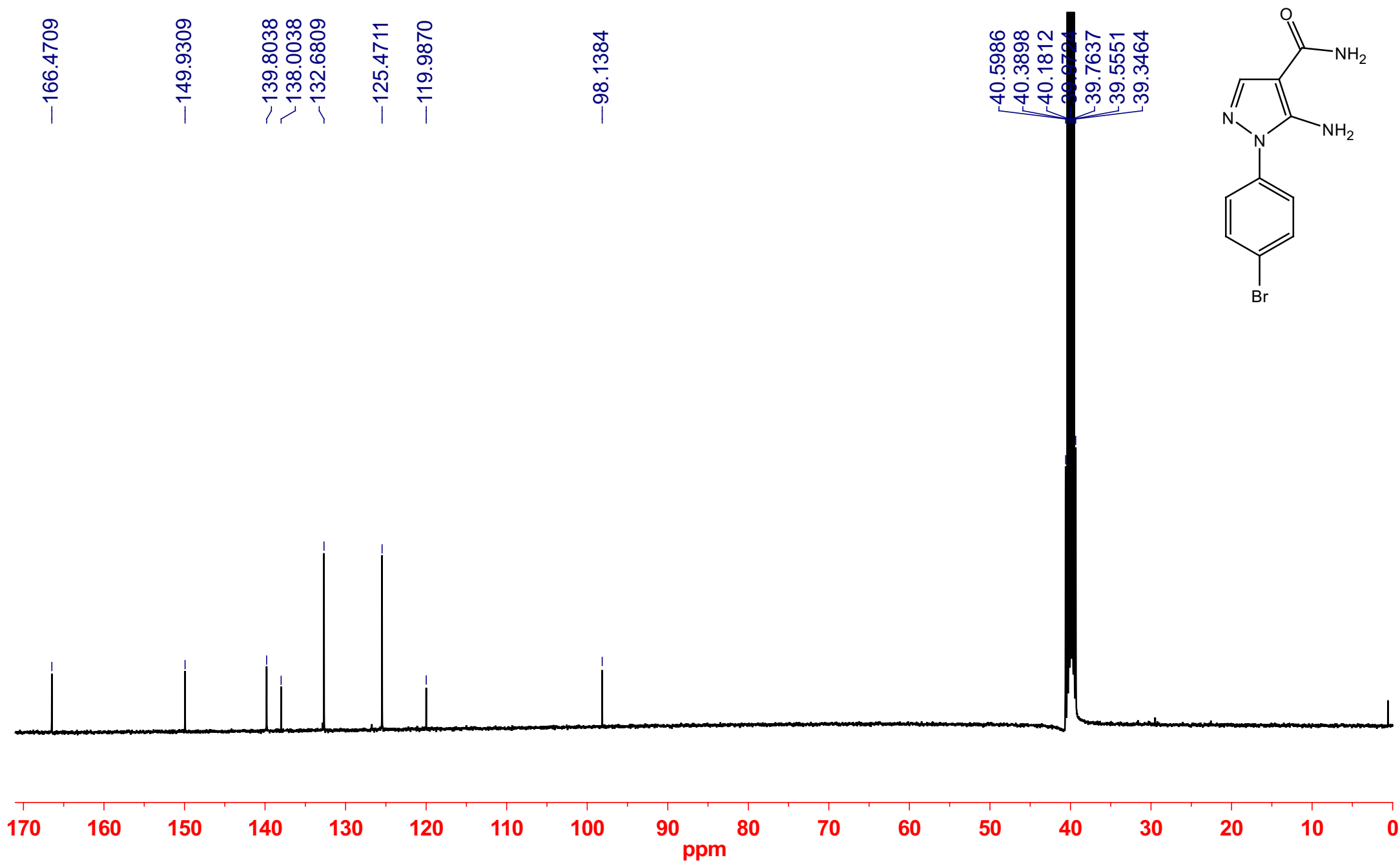
<sup>13</sup>C NMR of compound **2h**



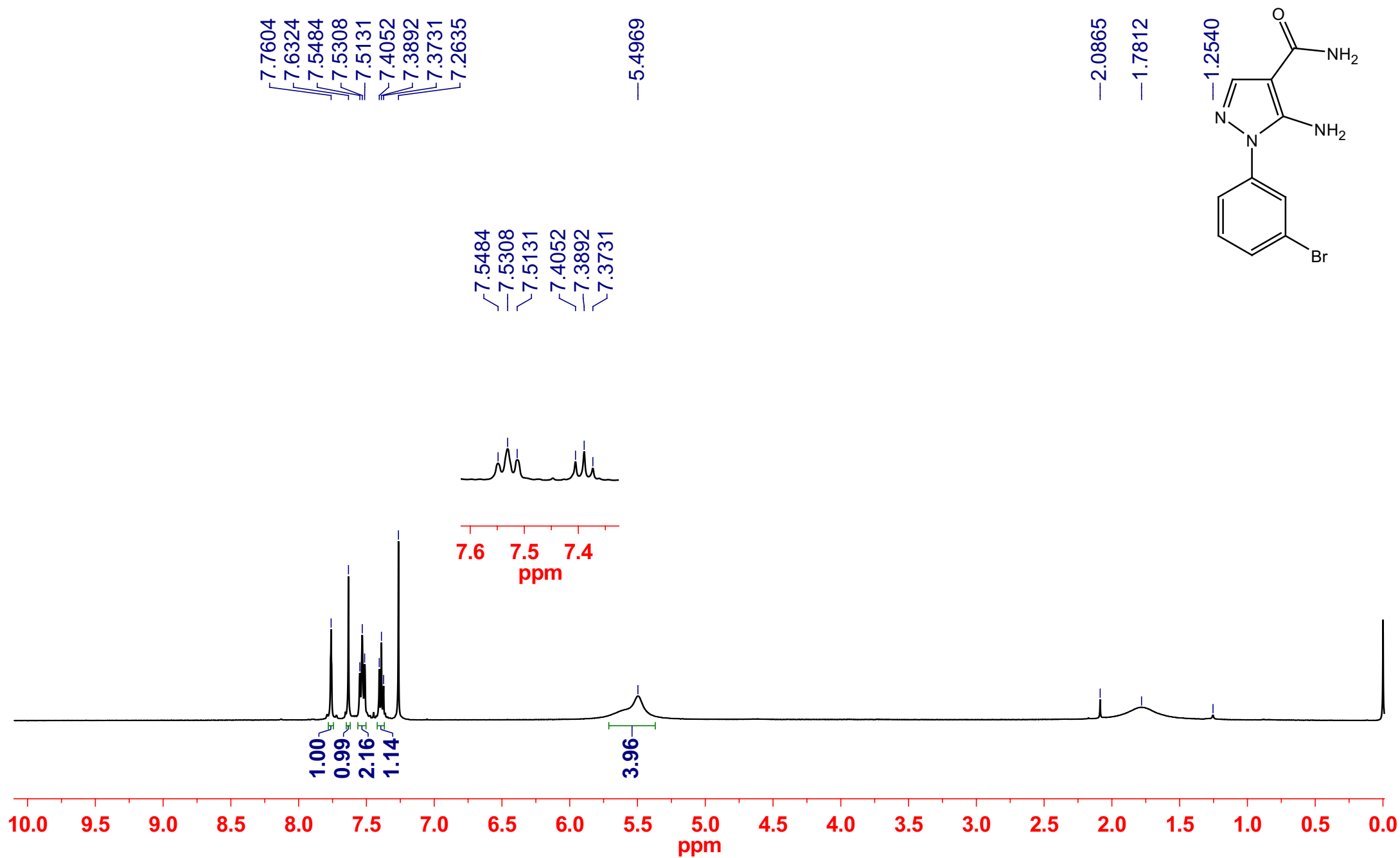
<sup>1</sup>H NMR of compound **2i**



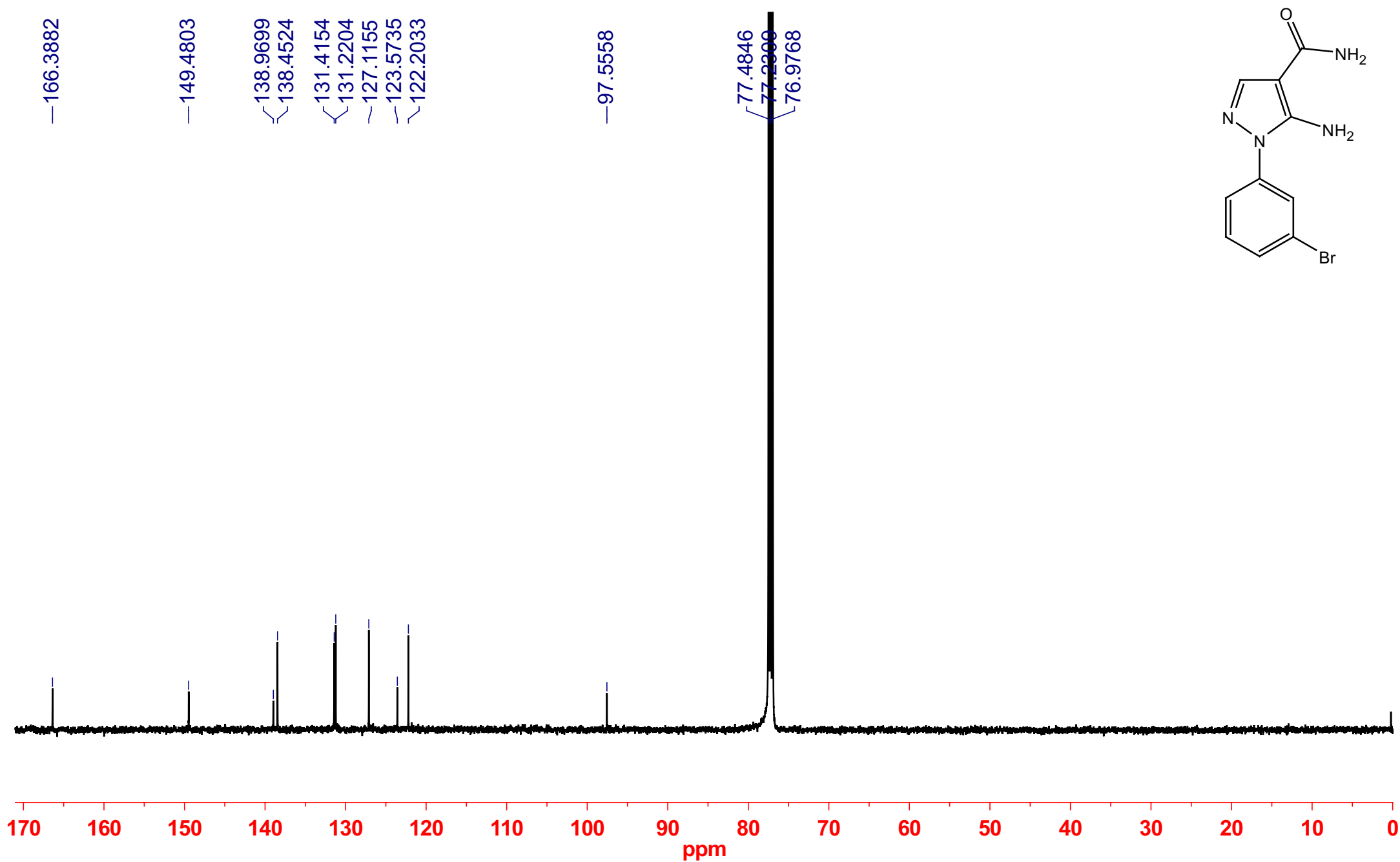
$^{13}\text{C}$  NMR of compound **2i**



<sup>1</sup>H NMR of compound **2j**

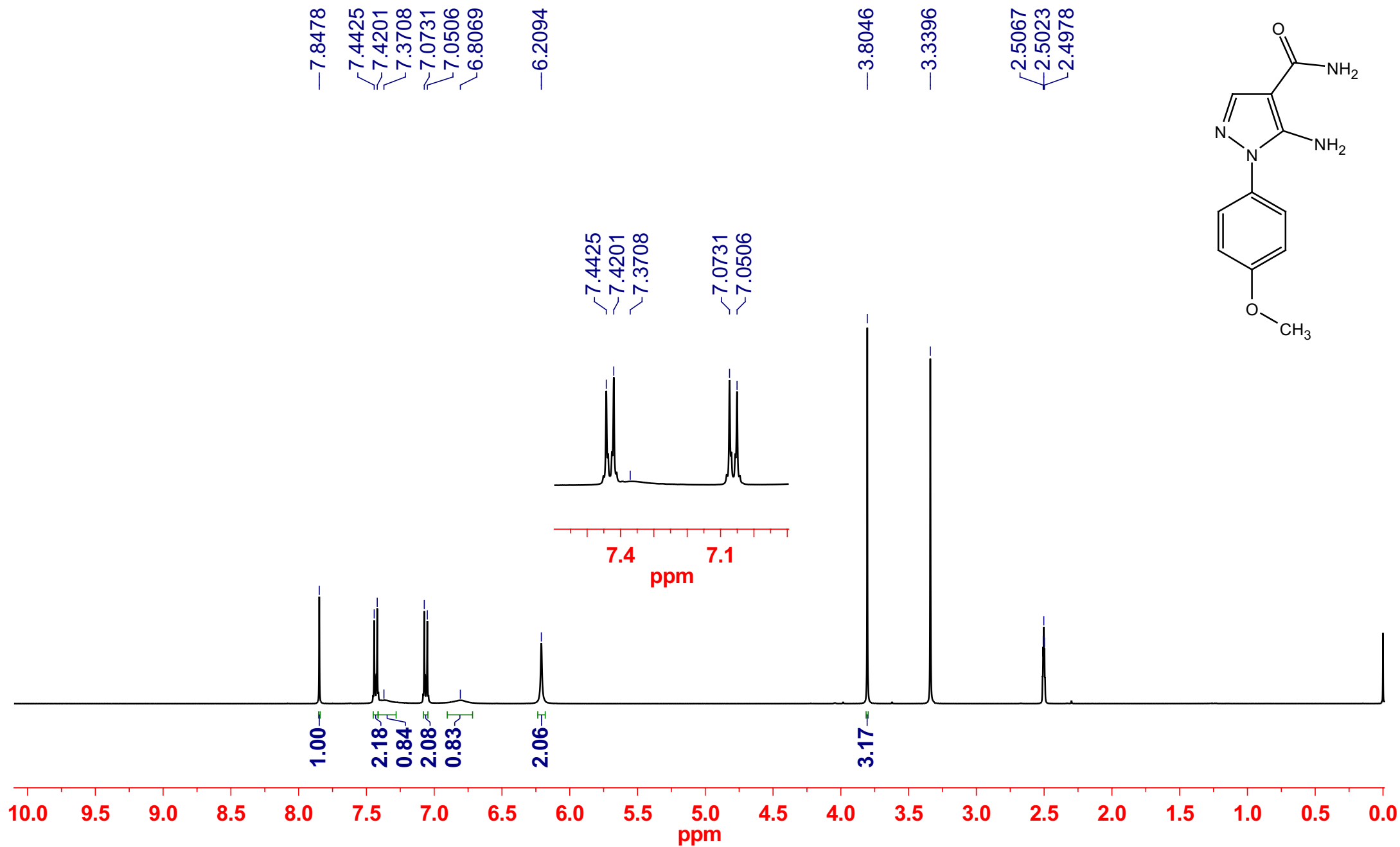


<sup>13</sup>C NMR of compound **2j**

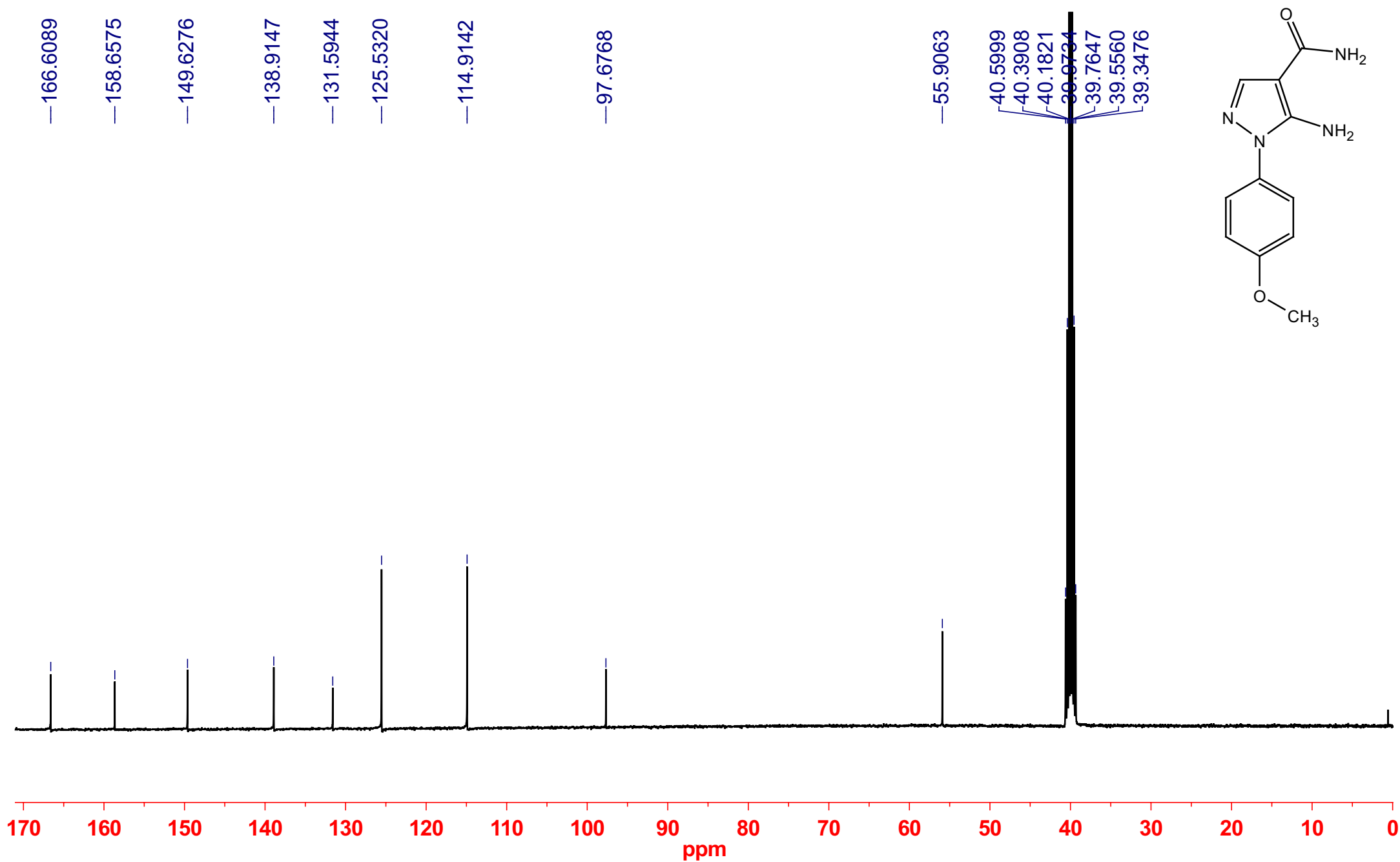




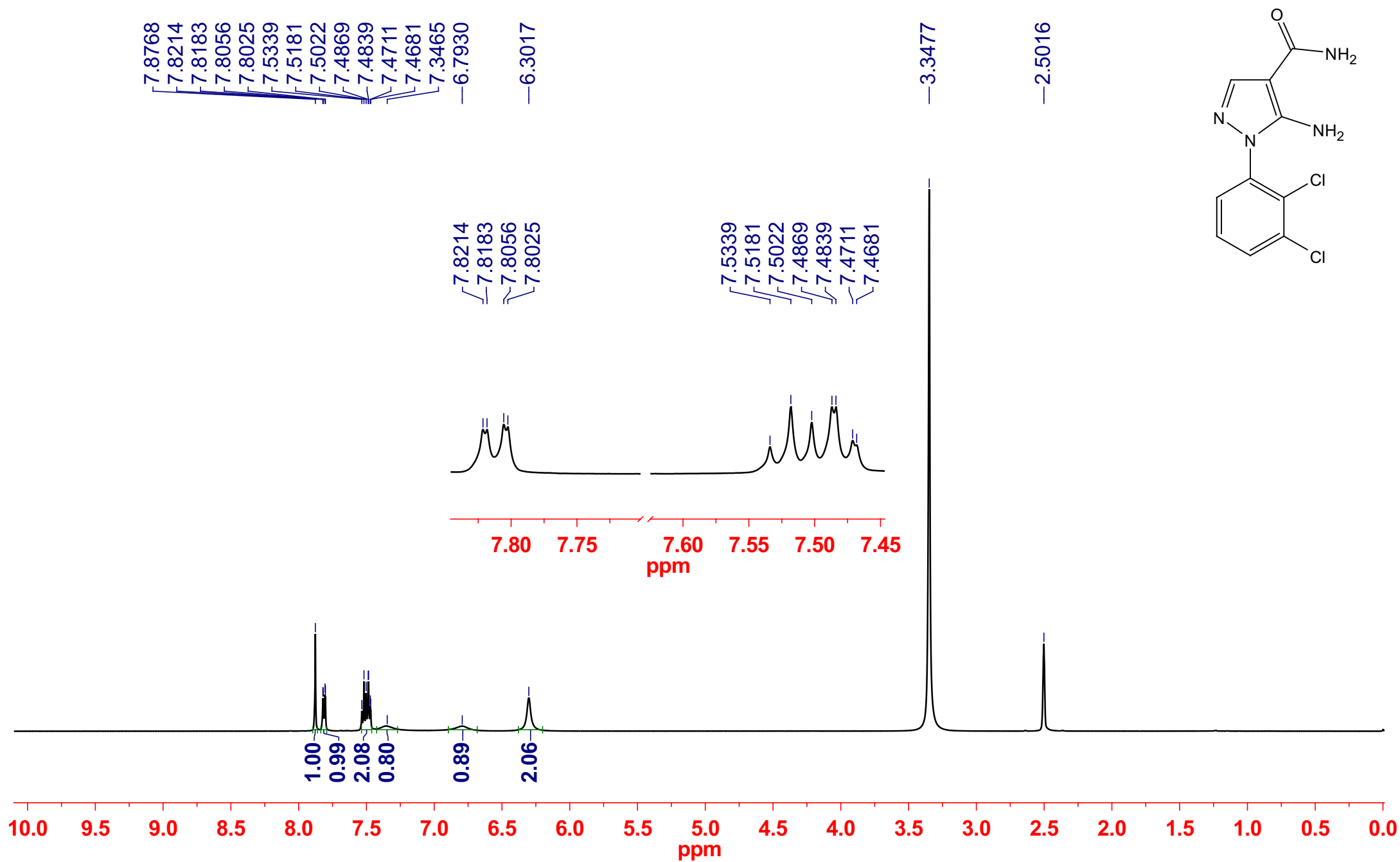
<sup>1</sup>H NMR of compound **2k**



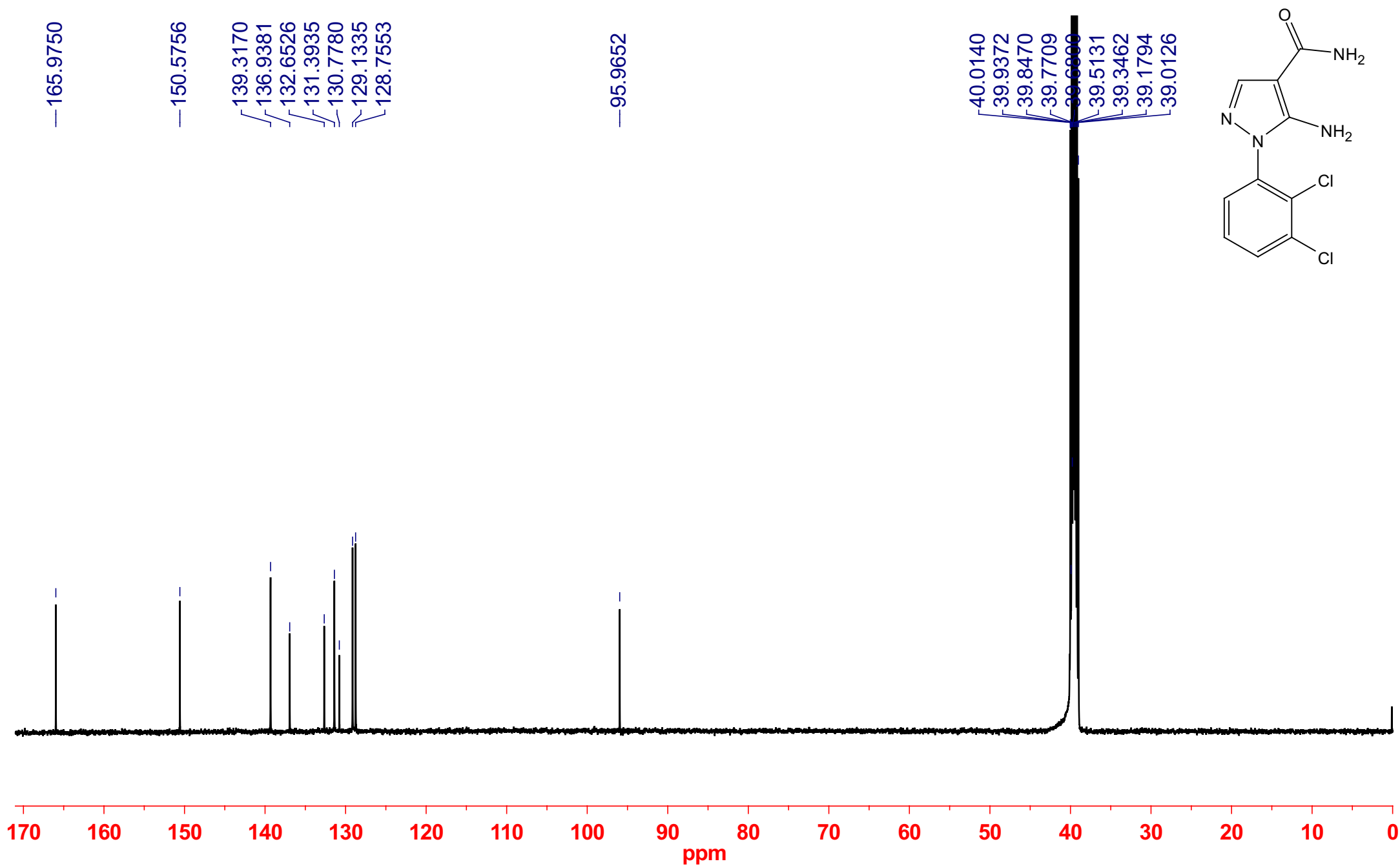
<sup>13</sup>C NMR of compound **2k**



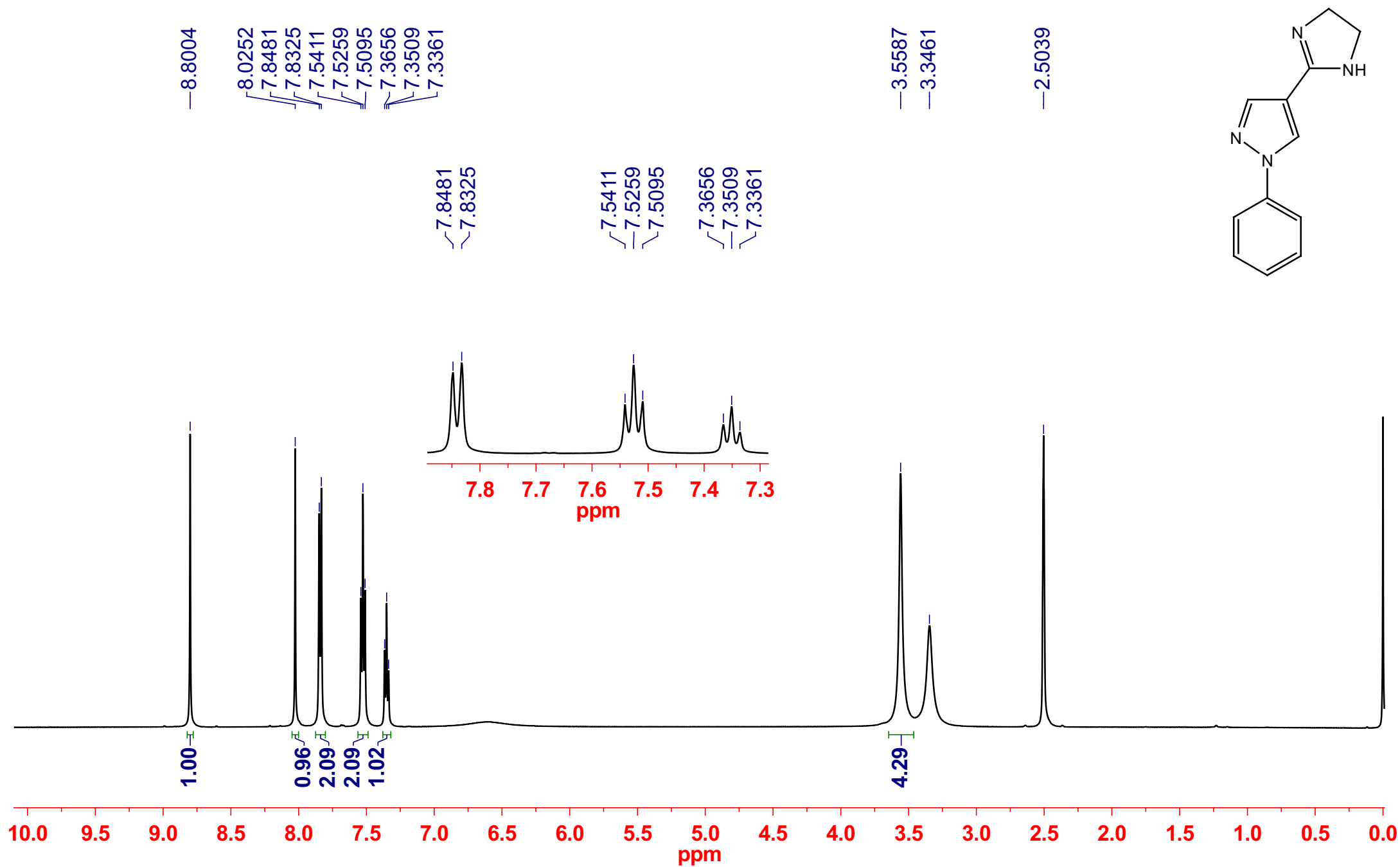
<sup>1</sup>H NMR of compound **2I**



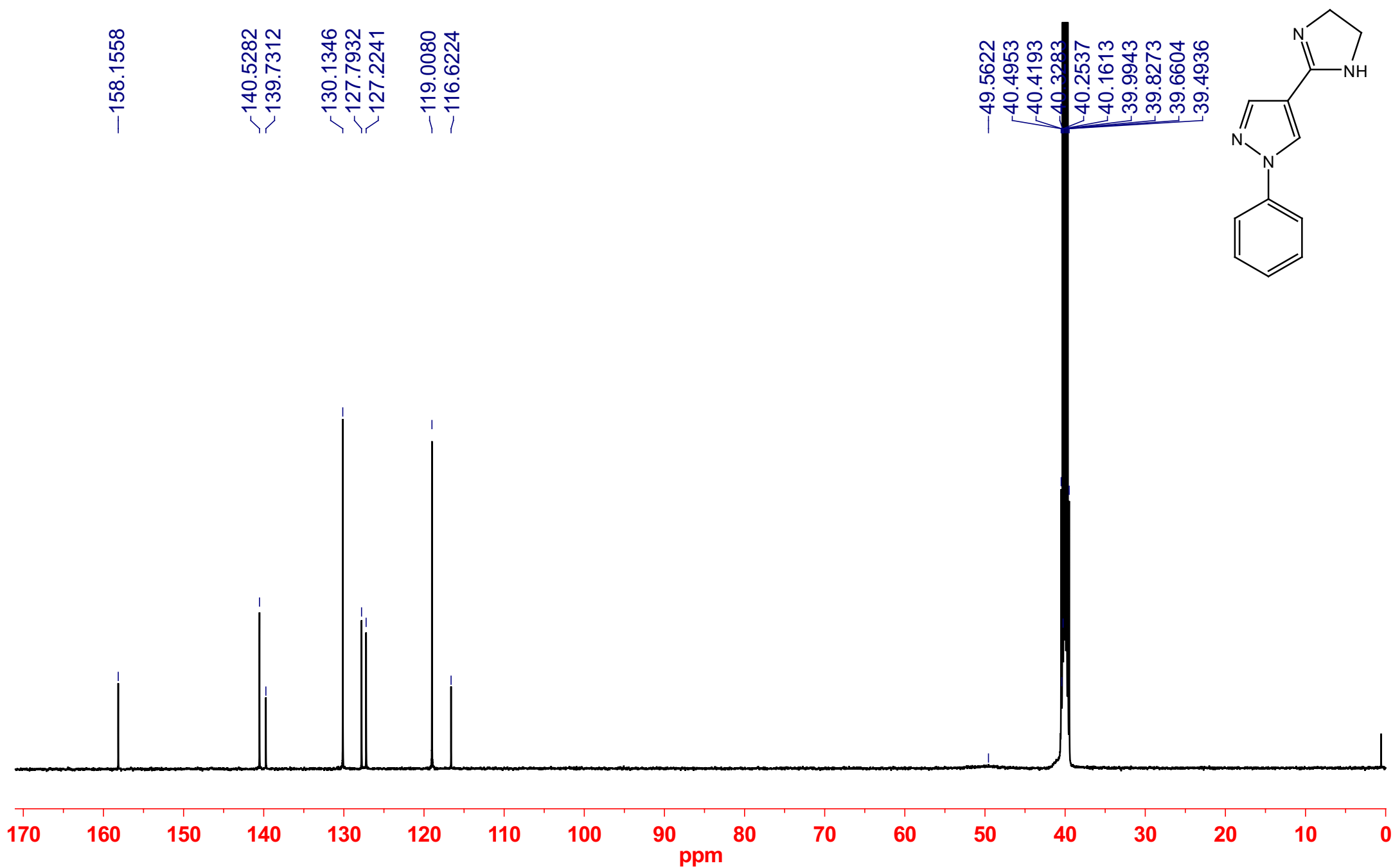
<sup>13</sup>C NMR of compound **2l**



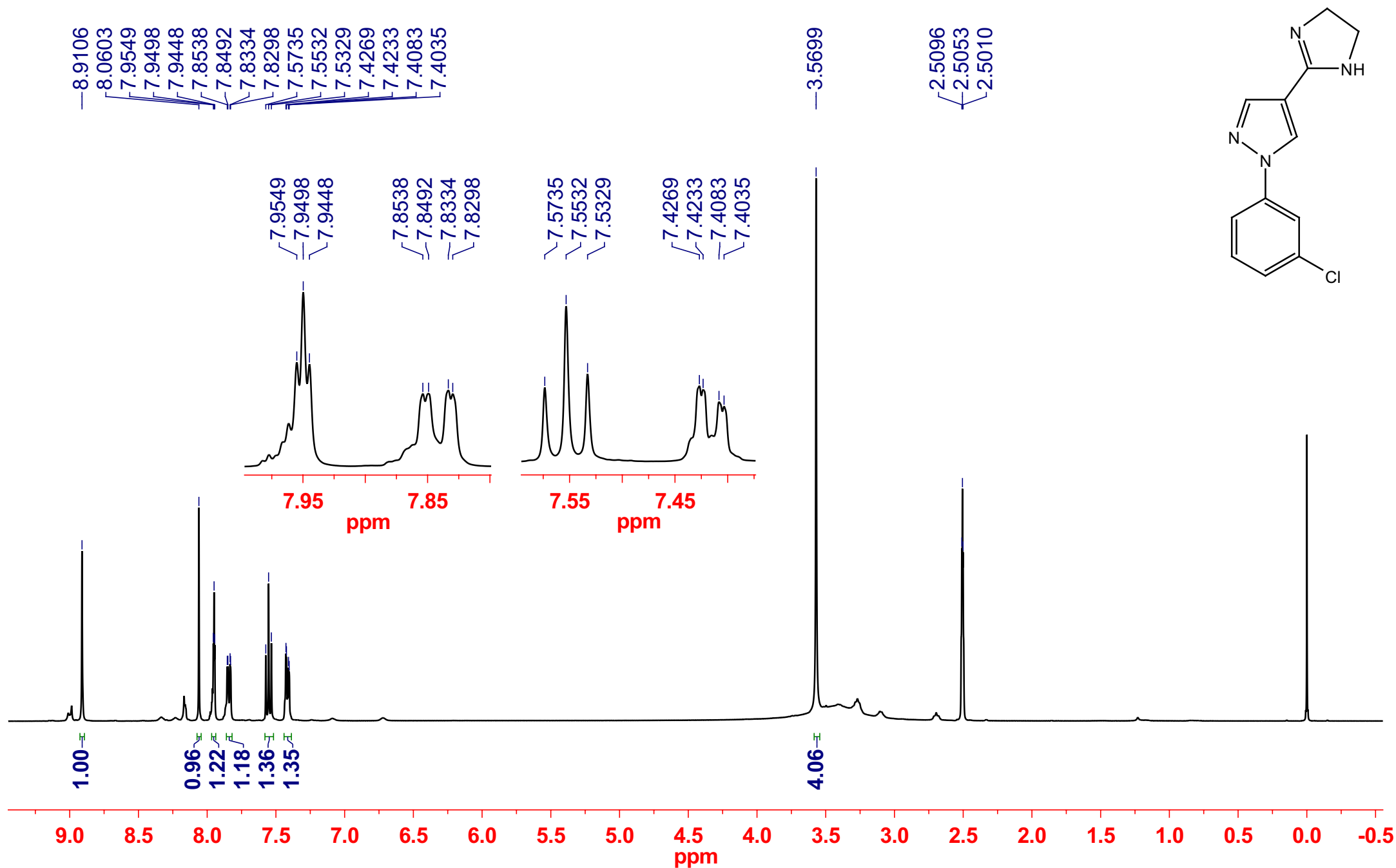
<sup>1</sup>H NMR of compound **3a**



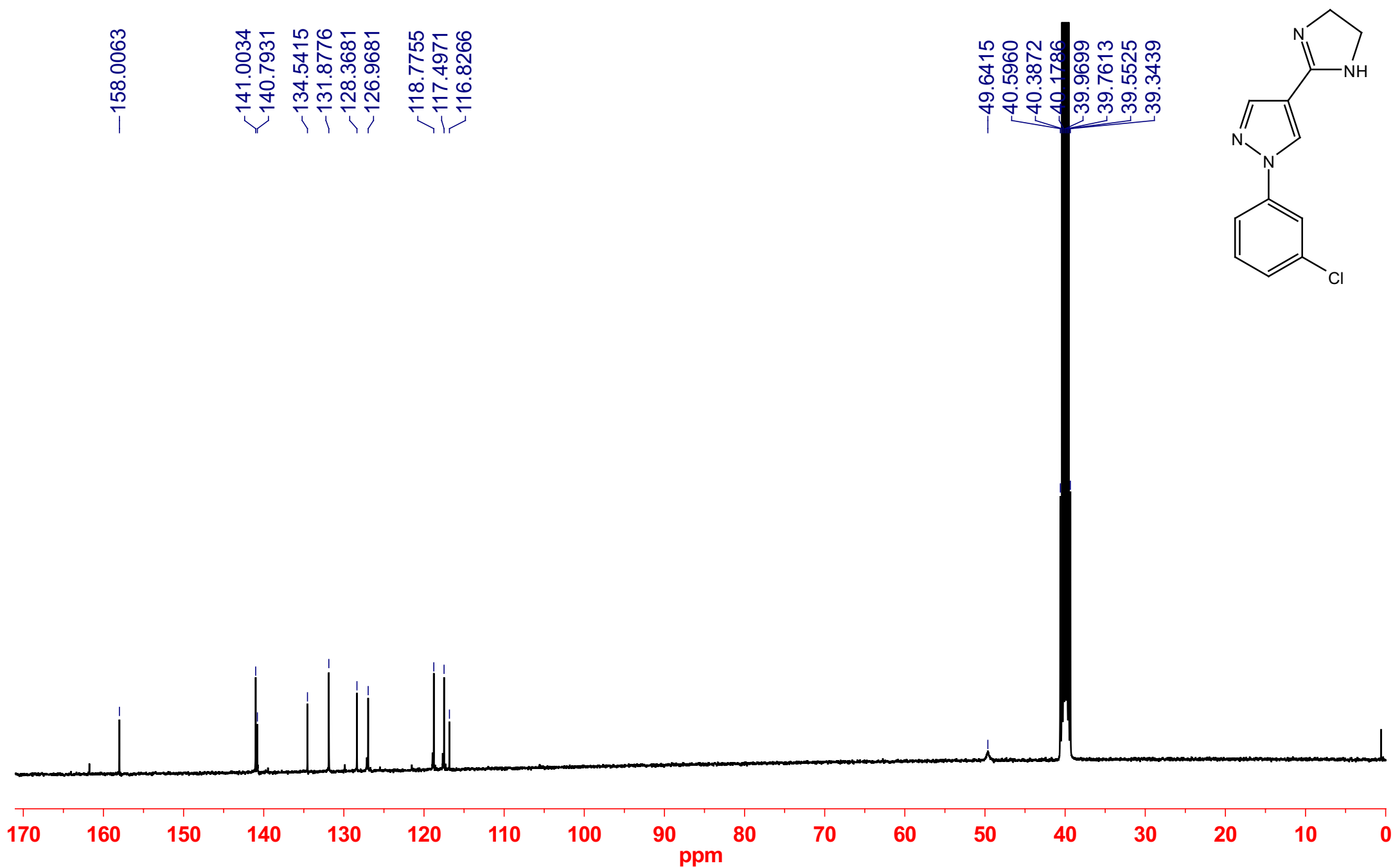
<sup>13</sup>C NMR of compound **3a**



<sup>1</sup>H NMR of compound **3b**

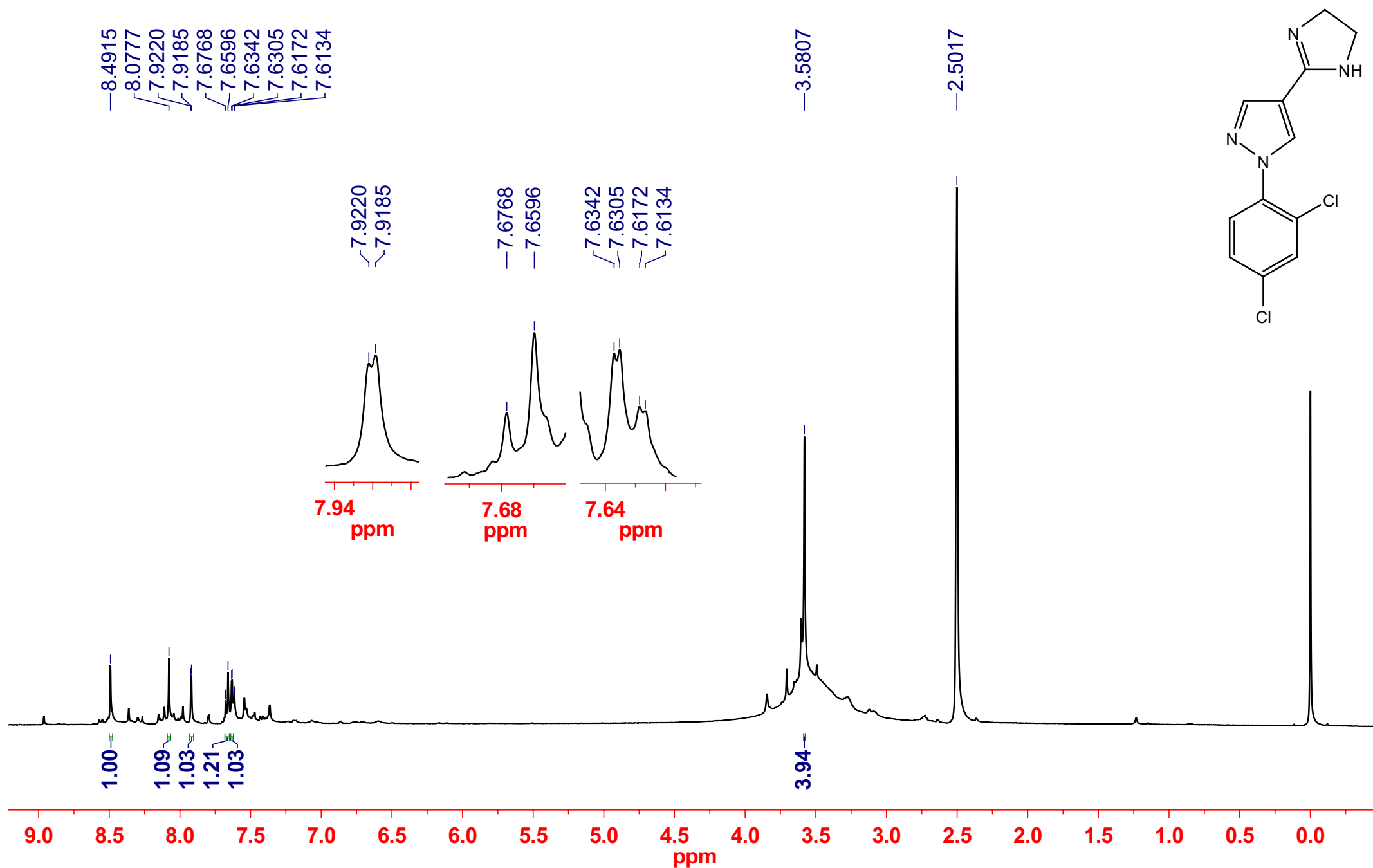


<sup>13</sup>C NMR of compound **3b**

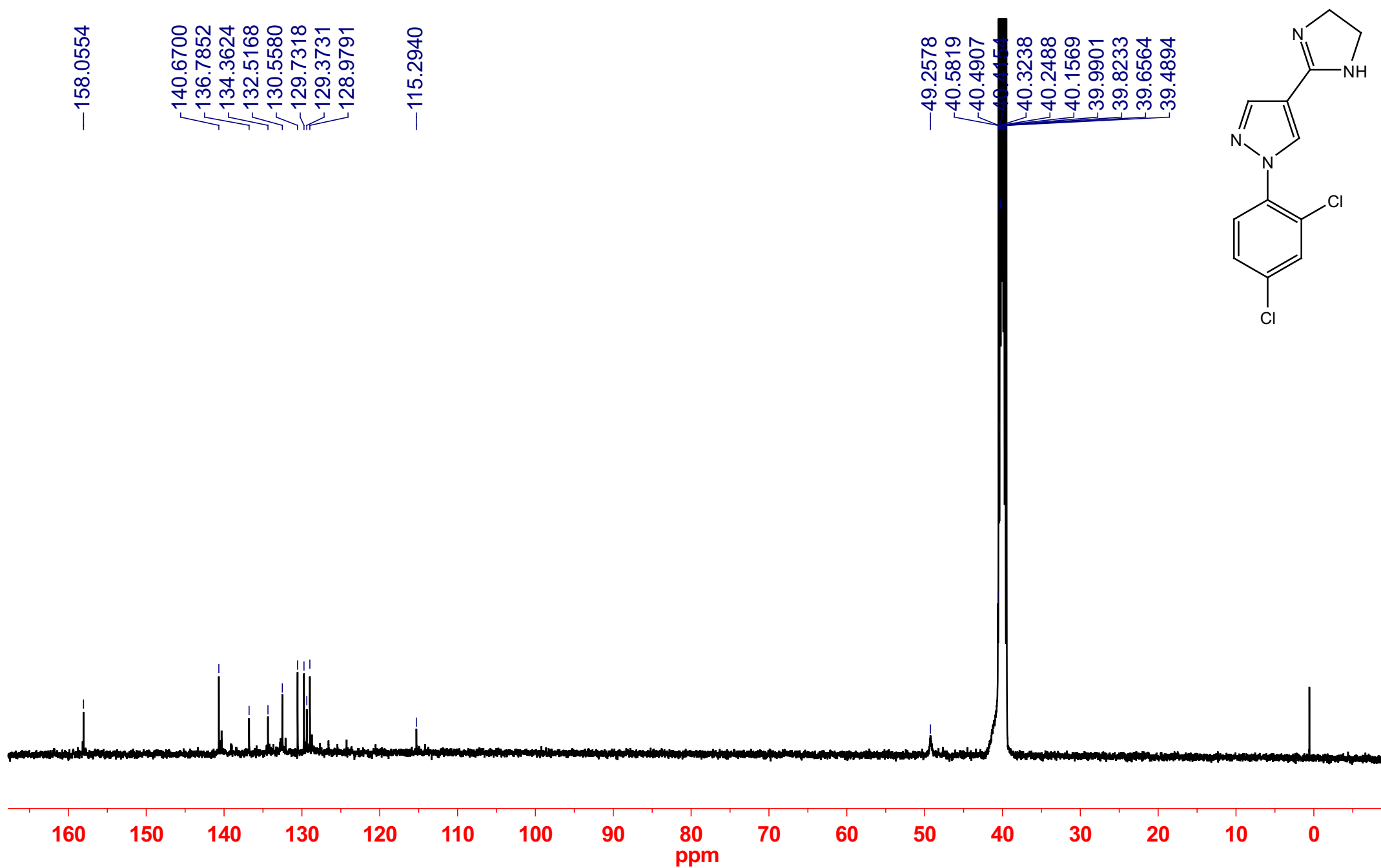




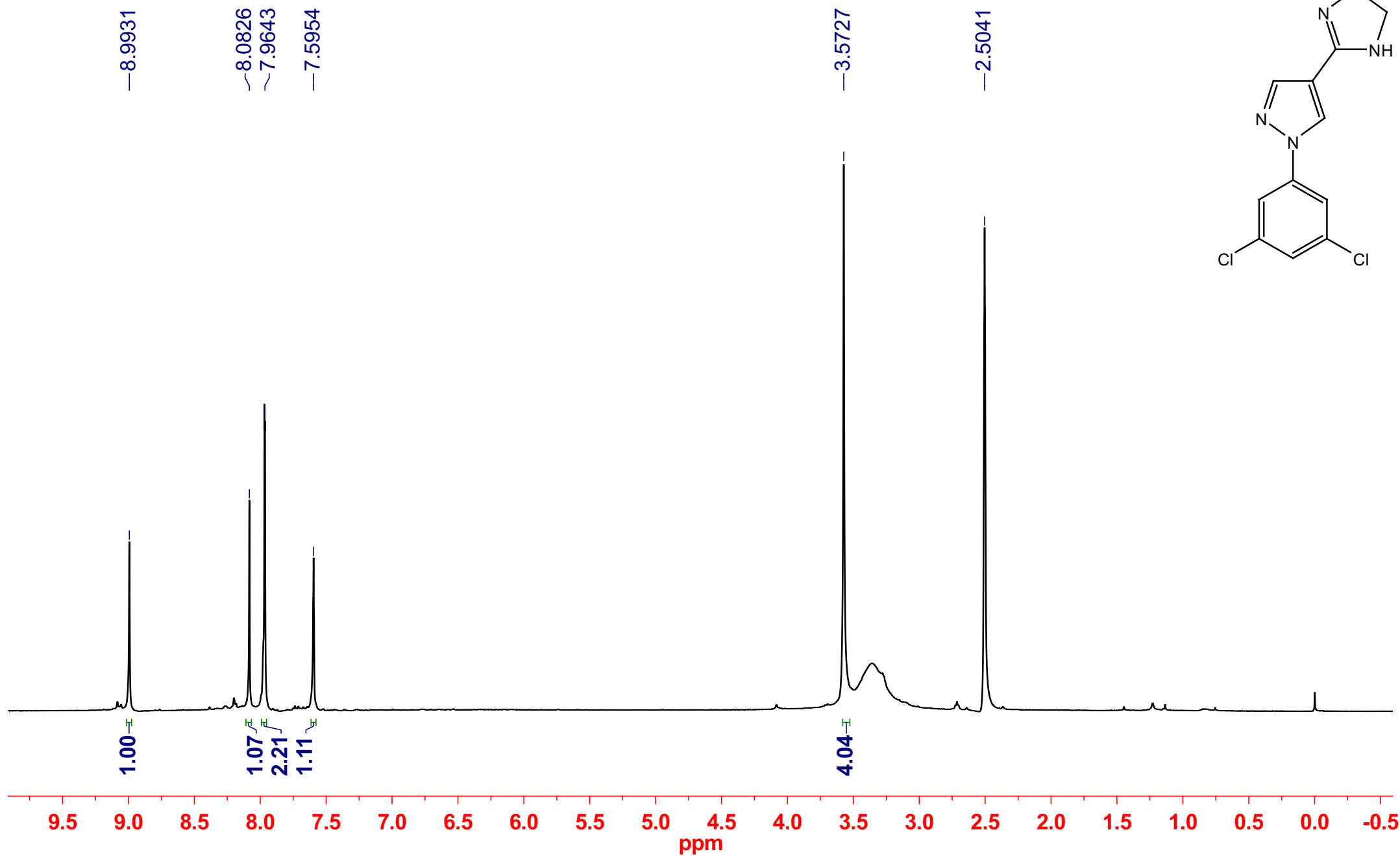
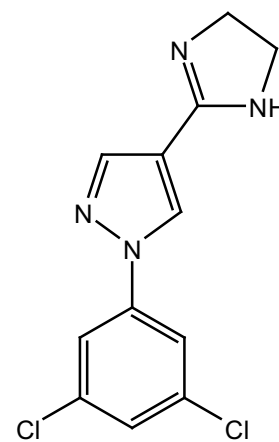
<sup>1</sup>H NMR of compound **3c**



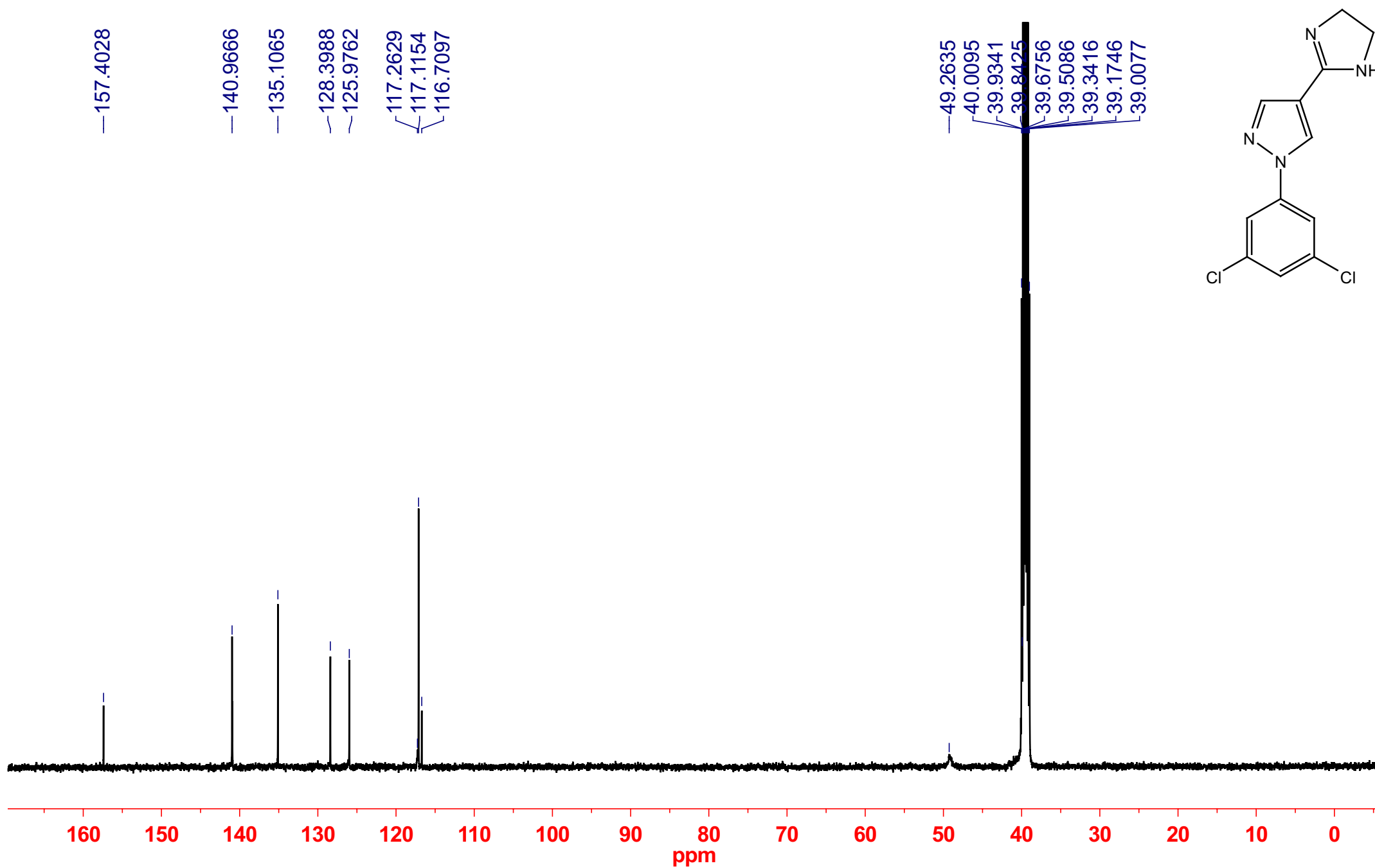
<sup>13</sup>C NMR of compound **3c**



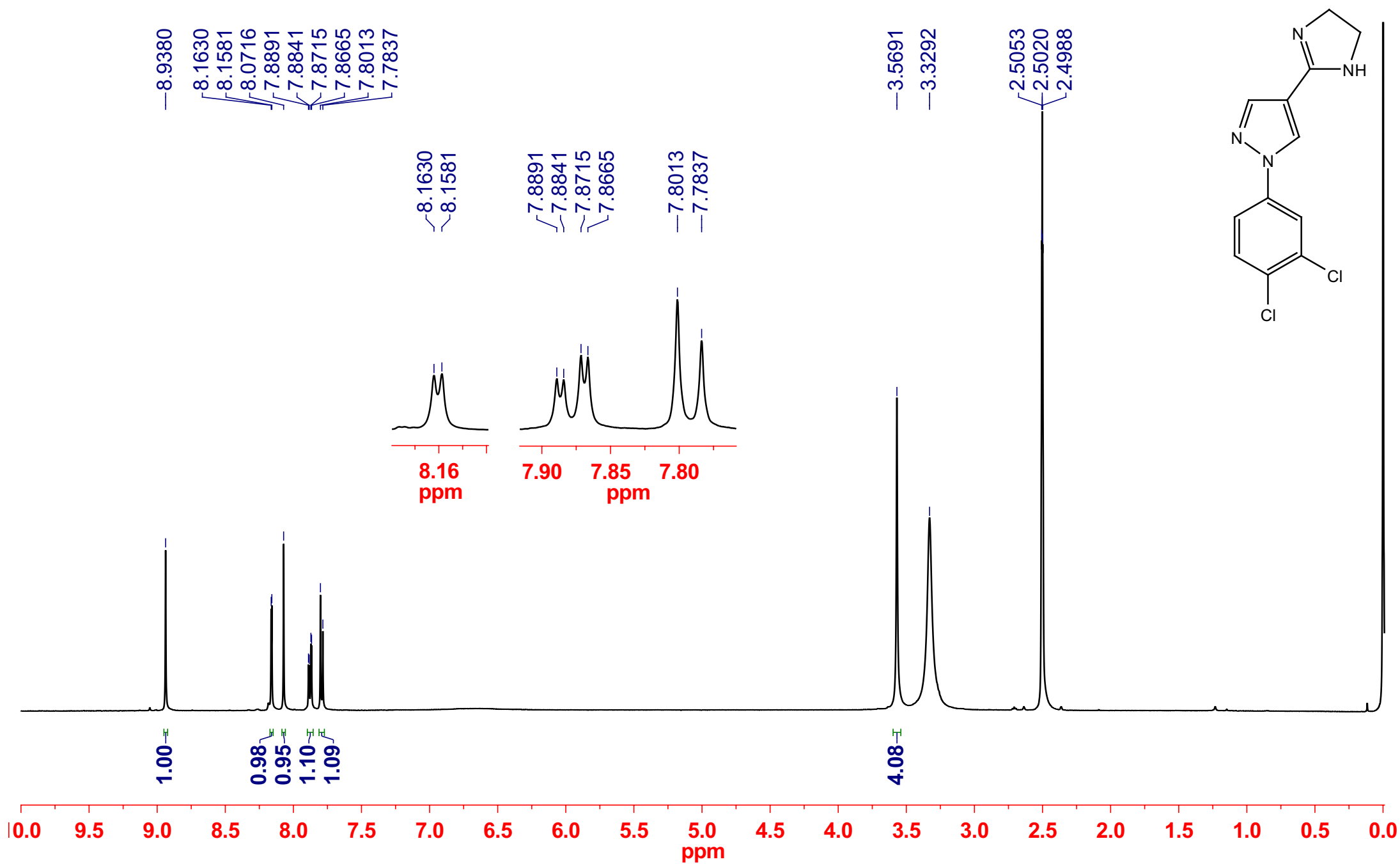
<sup>1</sup>H NMR of compound **3d**



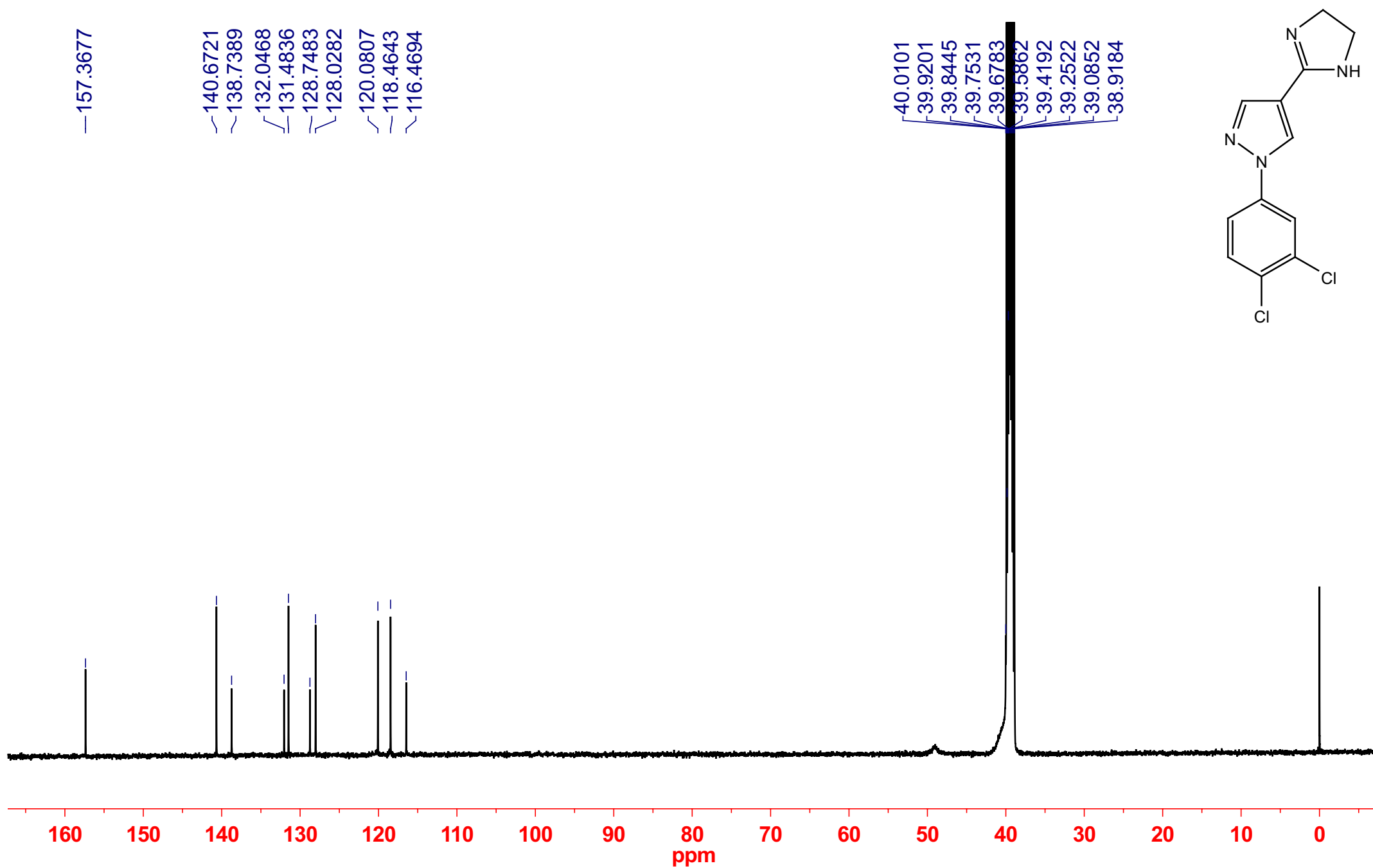
<sup>13</sup>C NMR of compound **3d**



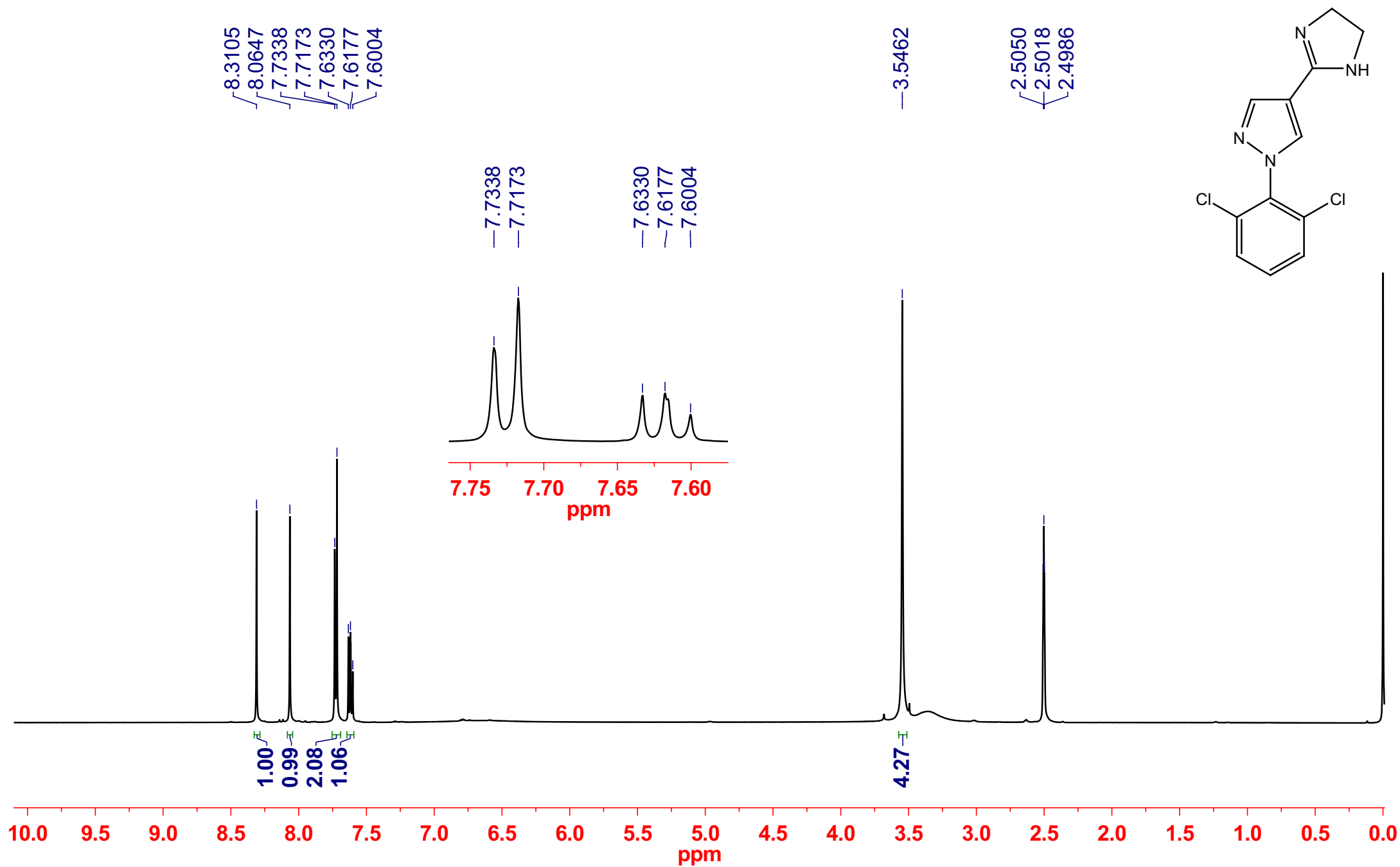
<sup>1</sup>H NMR of compound **3e**



<sup>13</sup>C NMR of compound **3e**



<sup>1</sup>H NMR of compound **3f**



8.3105  
8.0647  
7.7338  
7.7173  
7.6330  
7.6177  
7.6004

3.5462

2.5050  
2.5018  
2.4986

7.7338  
7.7173

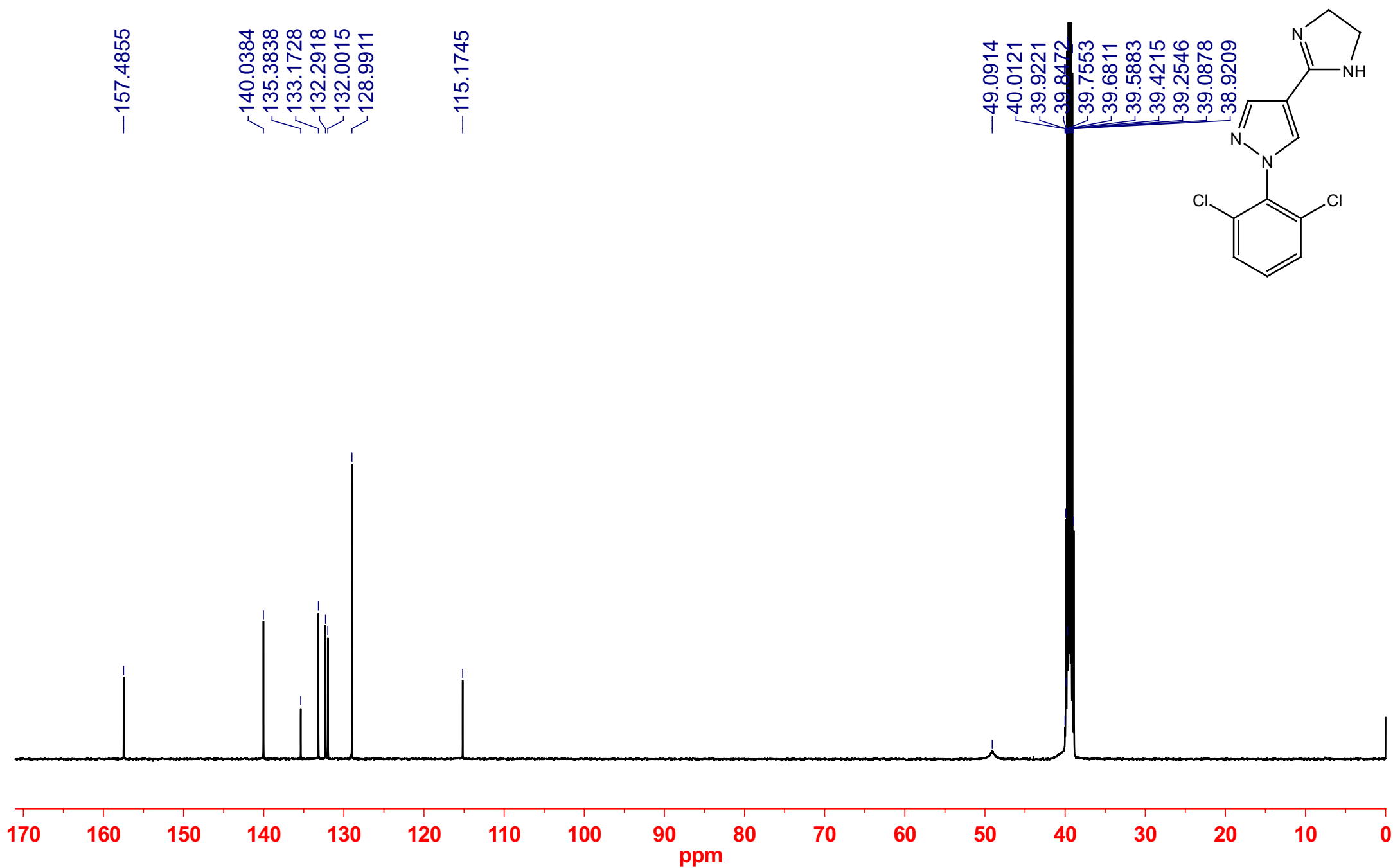
7.6330  
7.6177  
7.6004

7.75 7.70 7.65 7.60  
ppm

1.00  
0.99  
2.08  
1.06

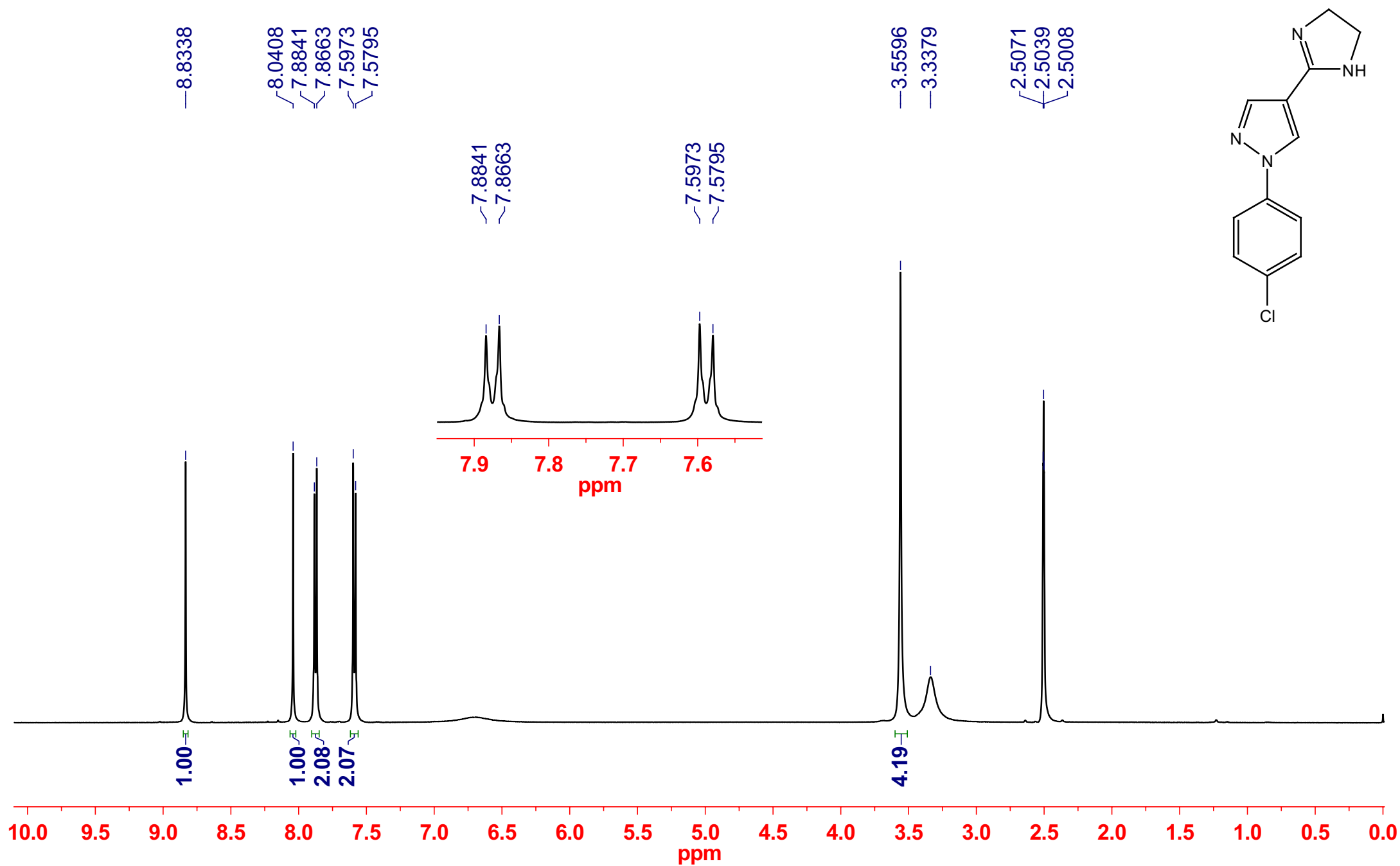
4.27

$^{13}\text{C}$  NMR of compound **3f**

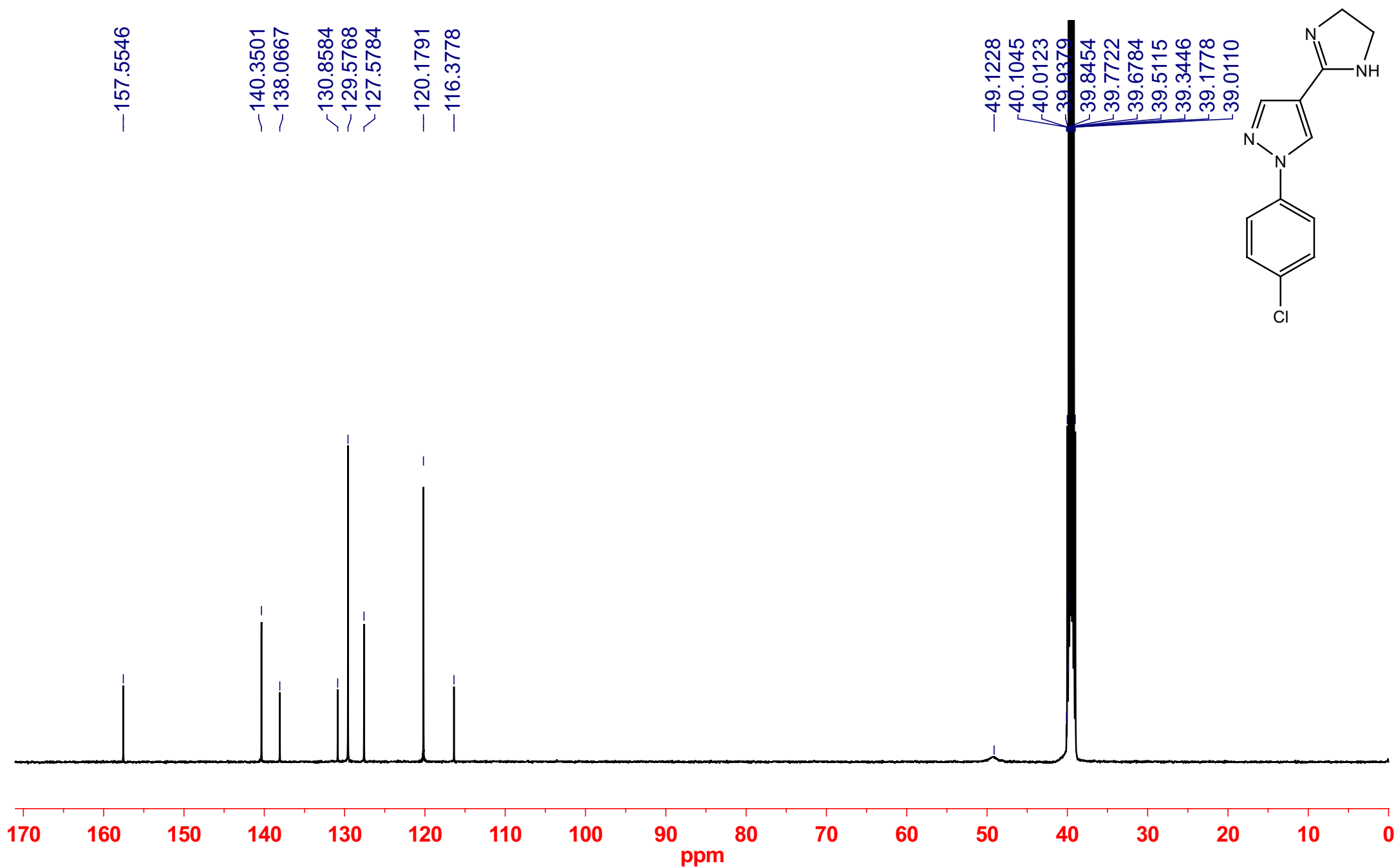




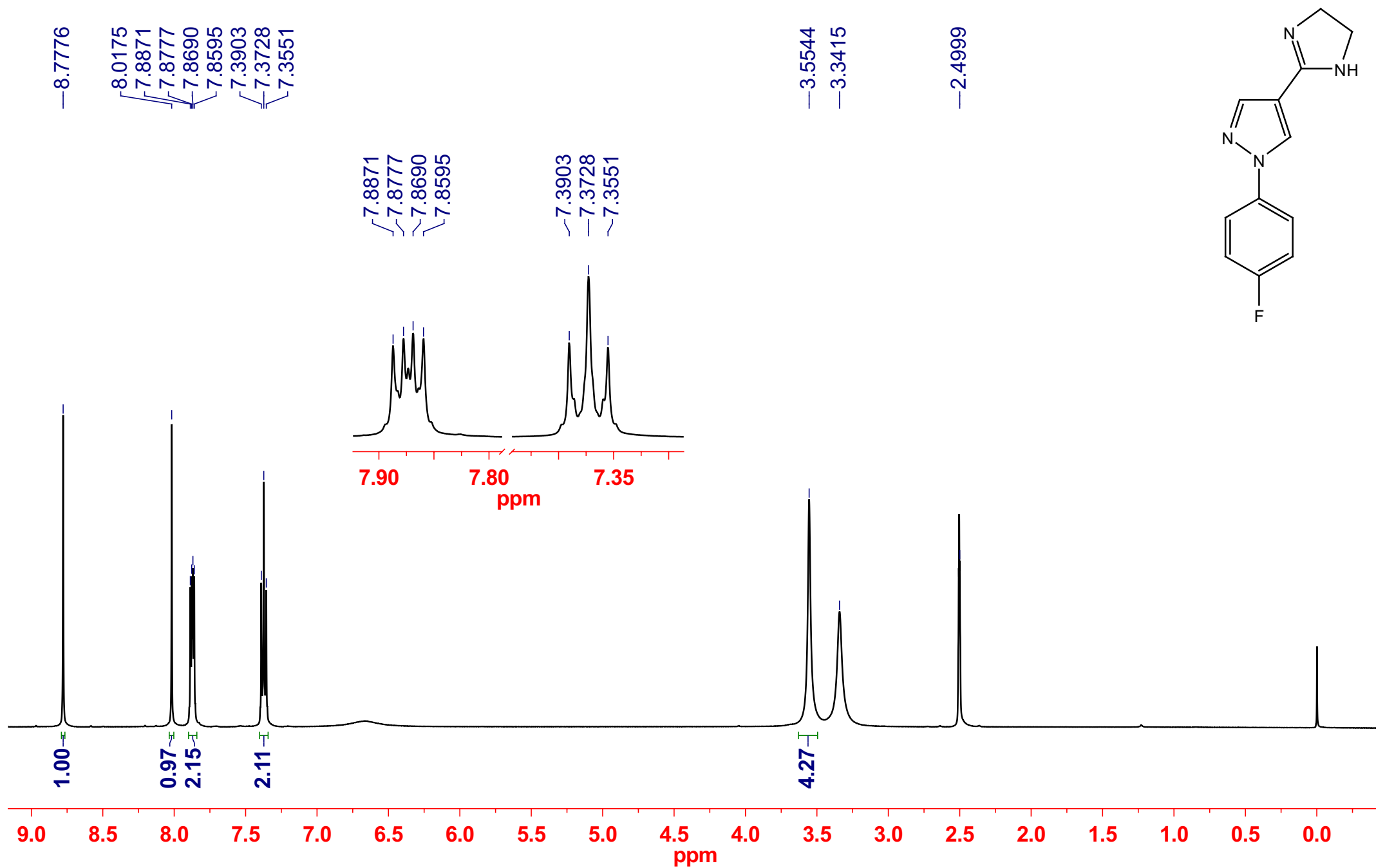
<sup>1</sup>H NMR of compound **3g**



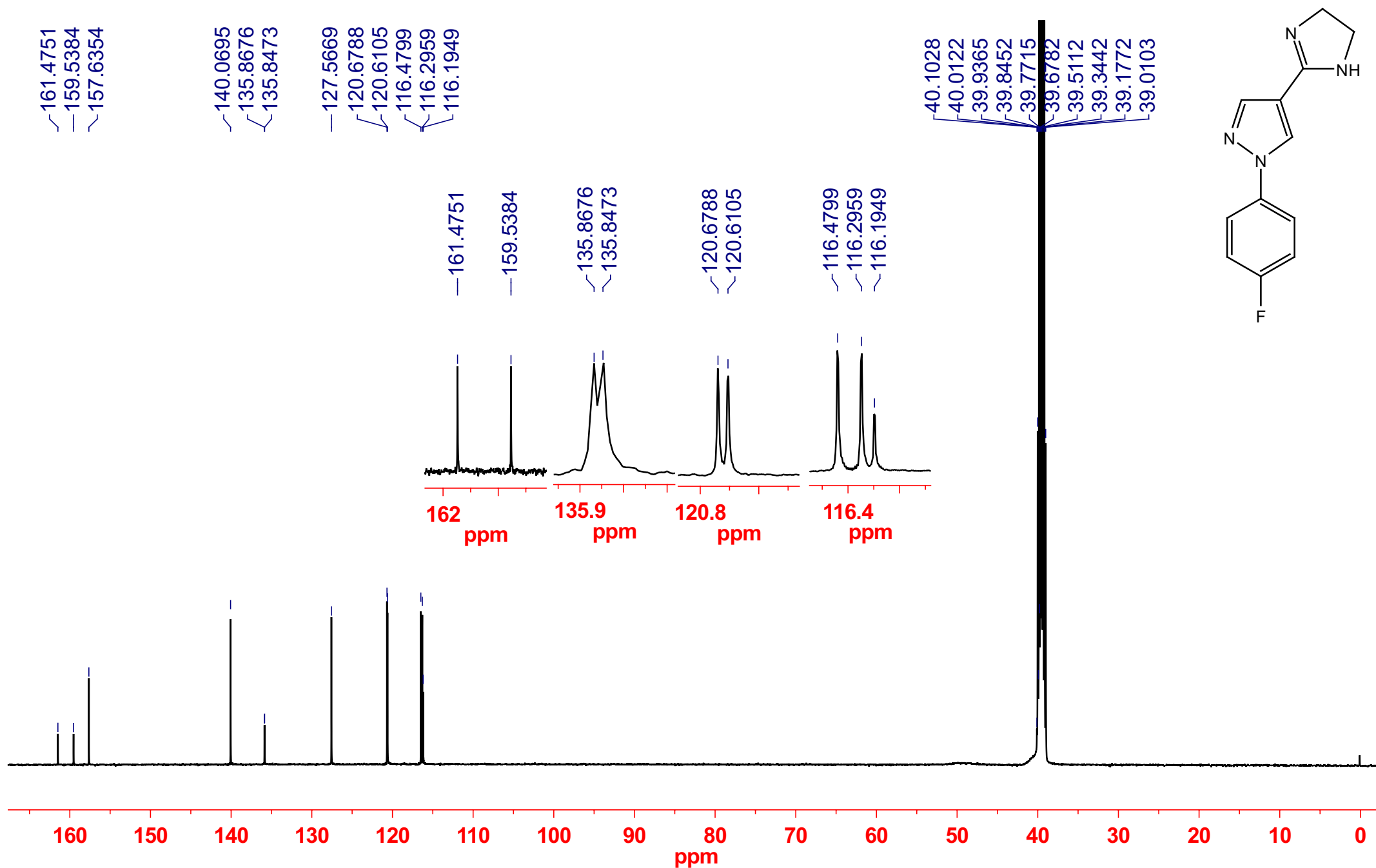
<sup>13</sup>C NMR of compound **3g**



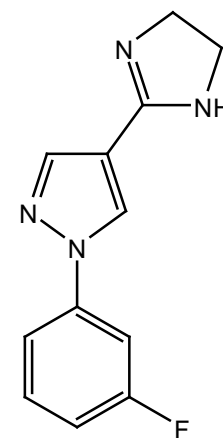
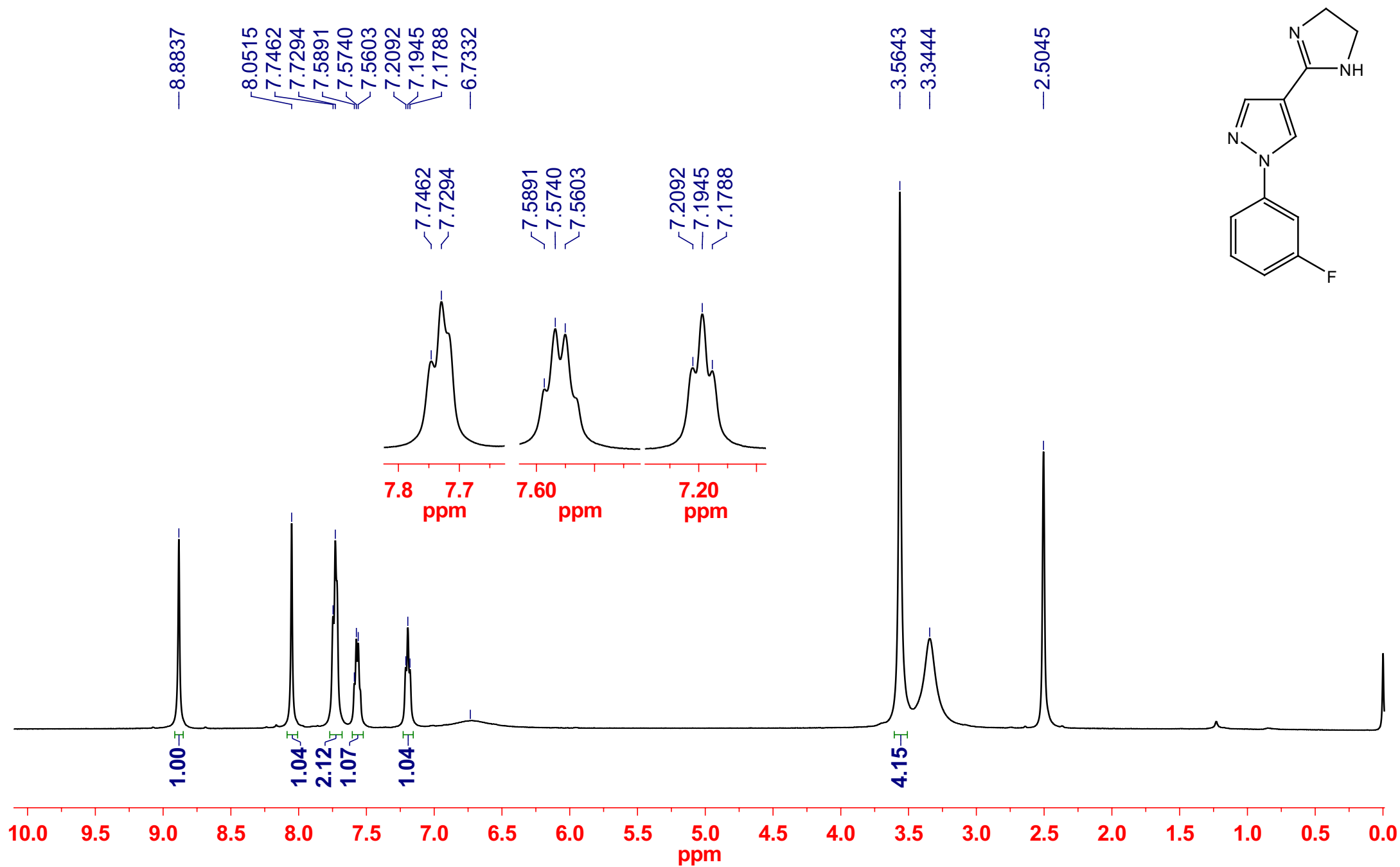
<sup>1</sup>H NMR of compound **3h**



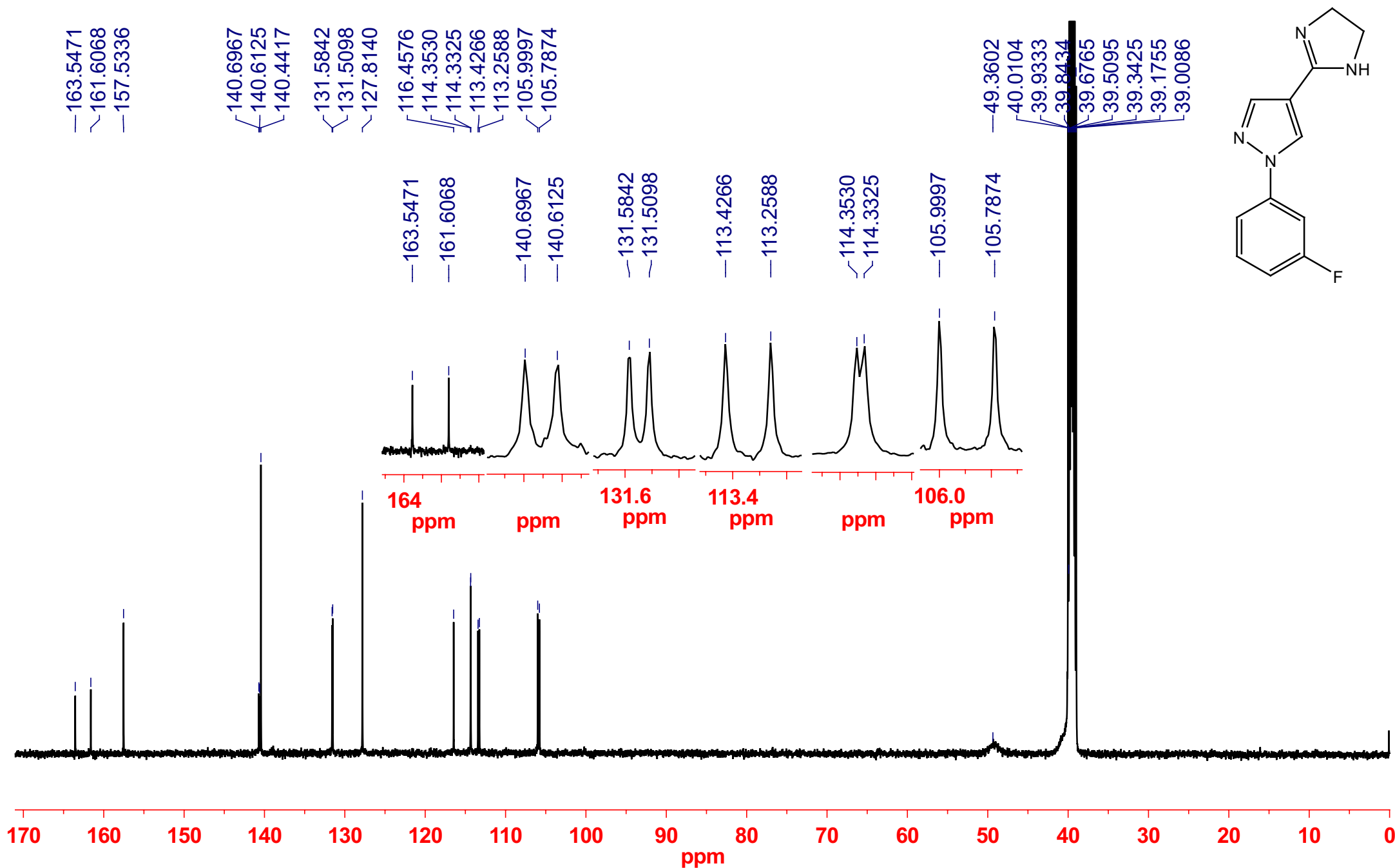
<sup>13</sup>C NMR of compound **3h**



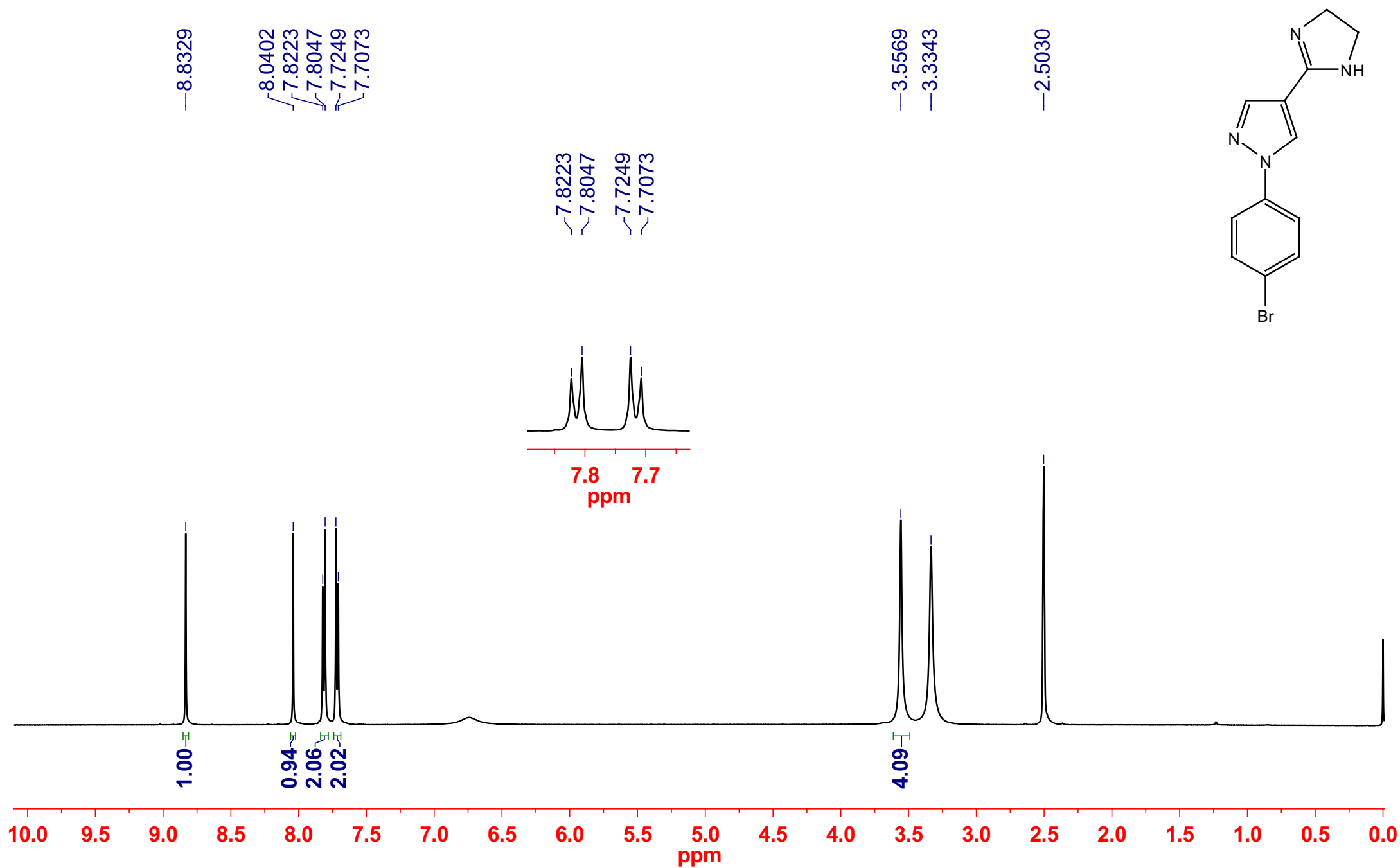
<sup>1</sup>H NMR of compound **3i**



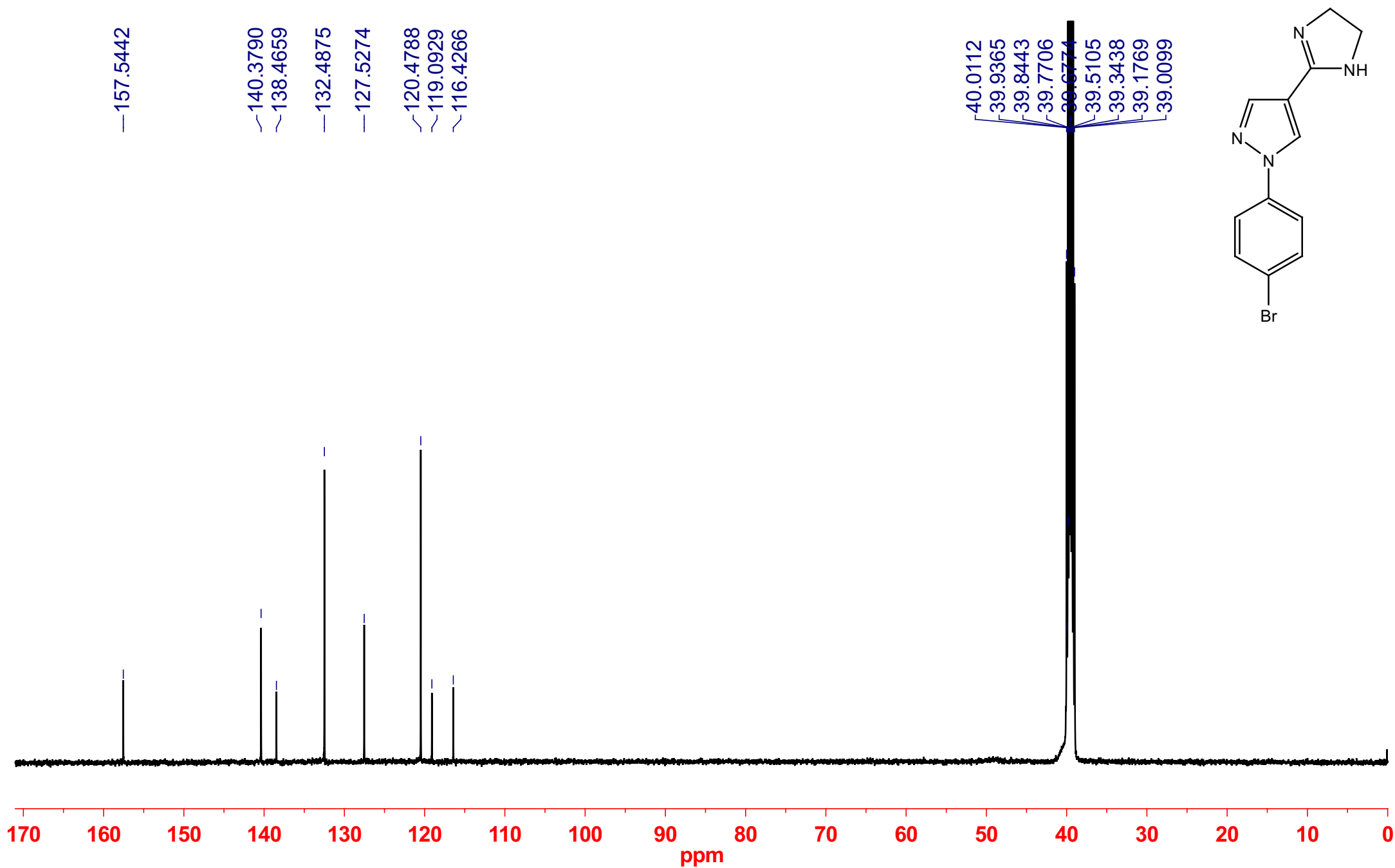
<sup>13</sup>C NMR of compound **3i**



<sup>1</sup>H NMR of compound **3j**

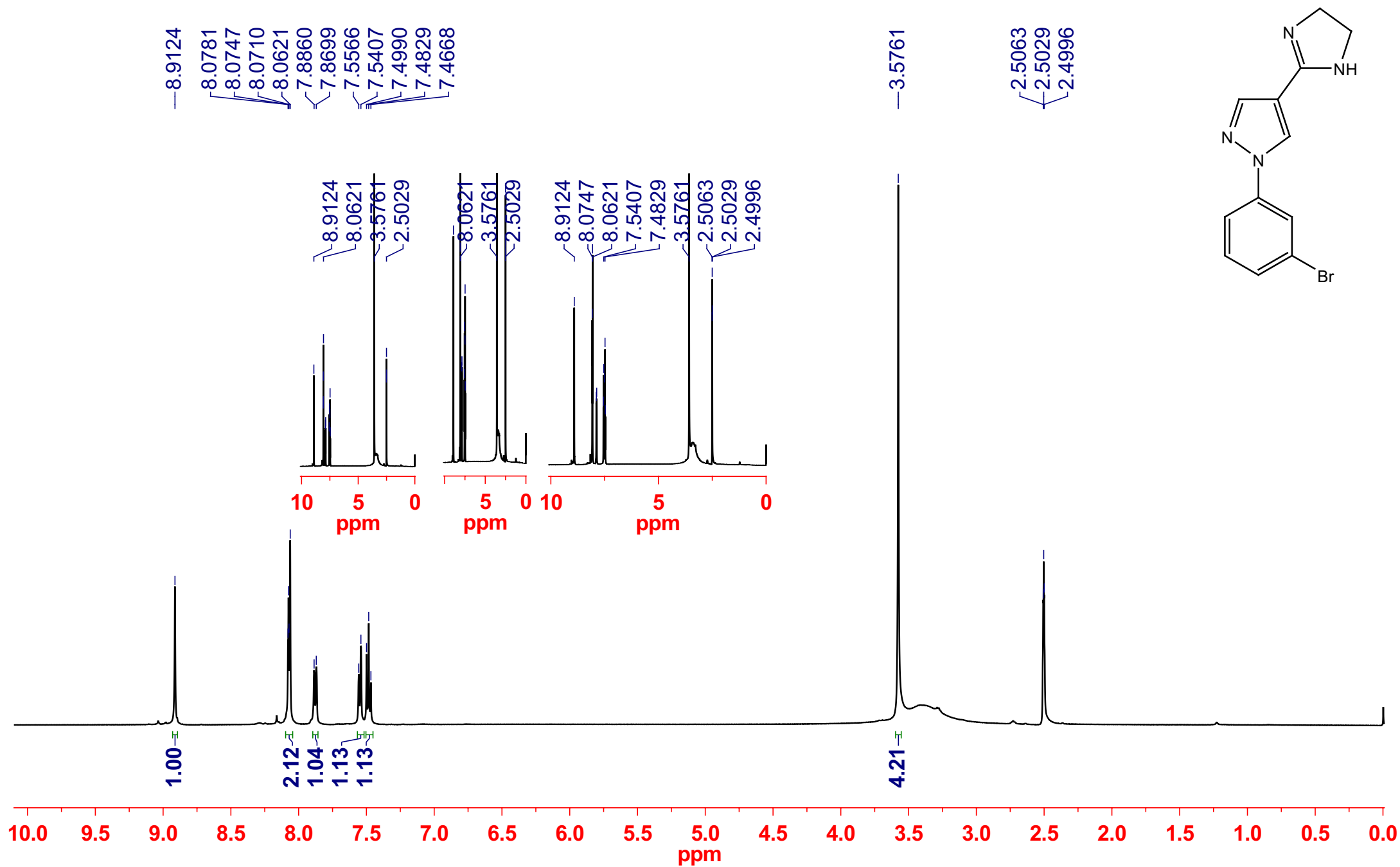


$^{13}\text{C}$  NMR of compound **3j**

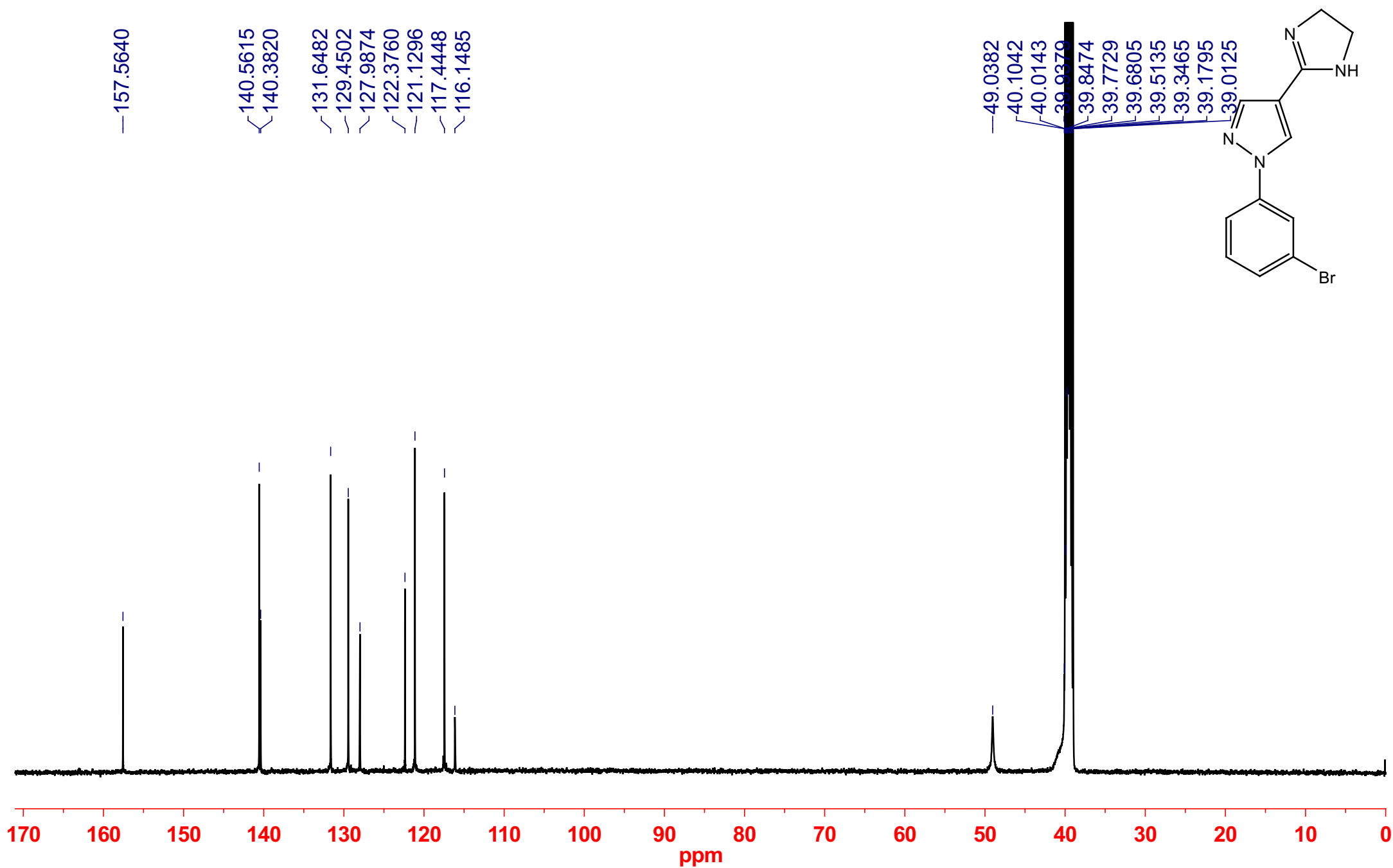




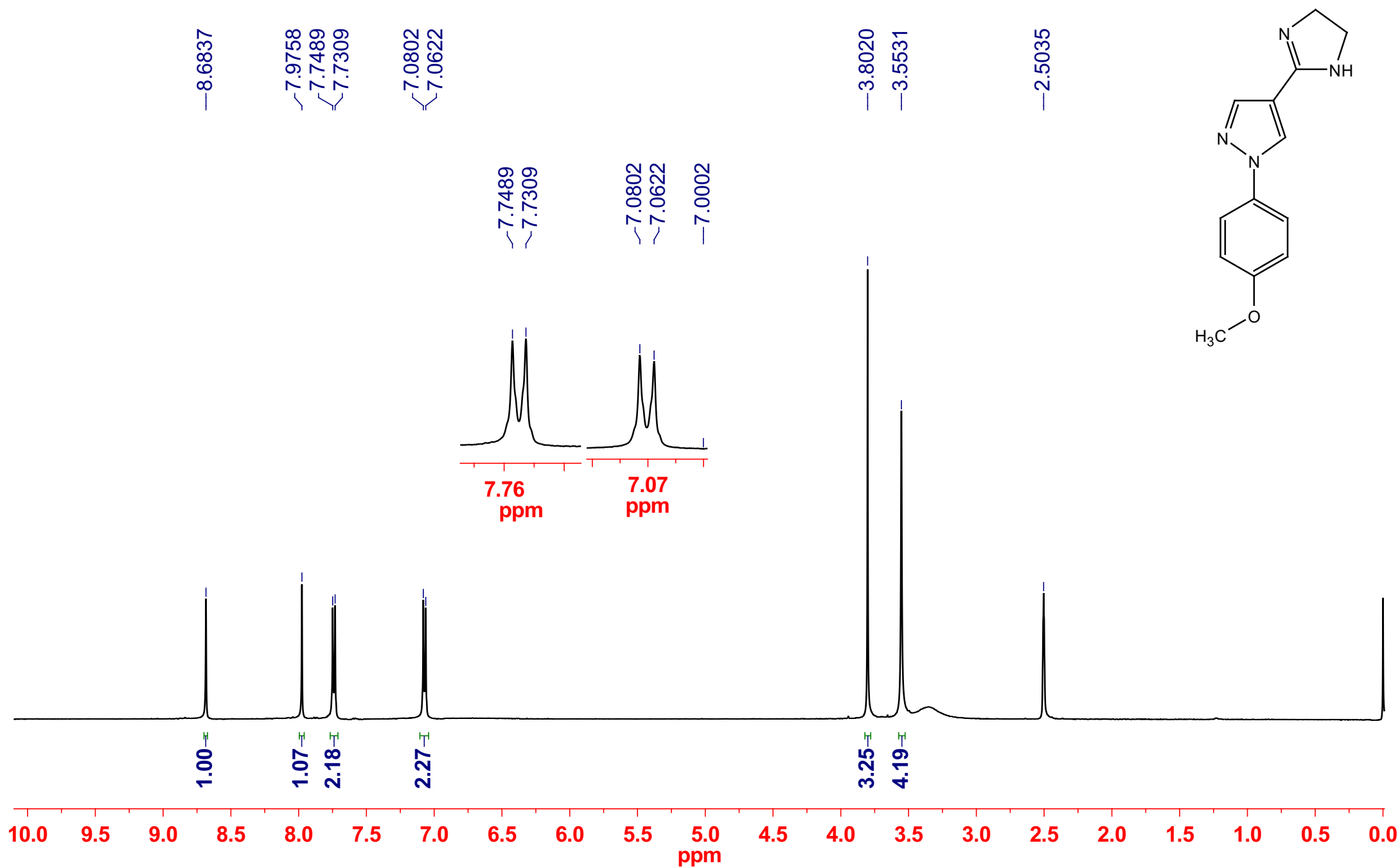
<sup>1</sup>H NMR of compound **3k**



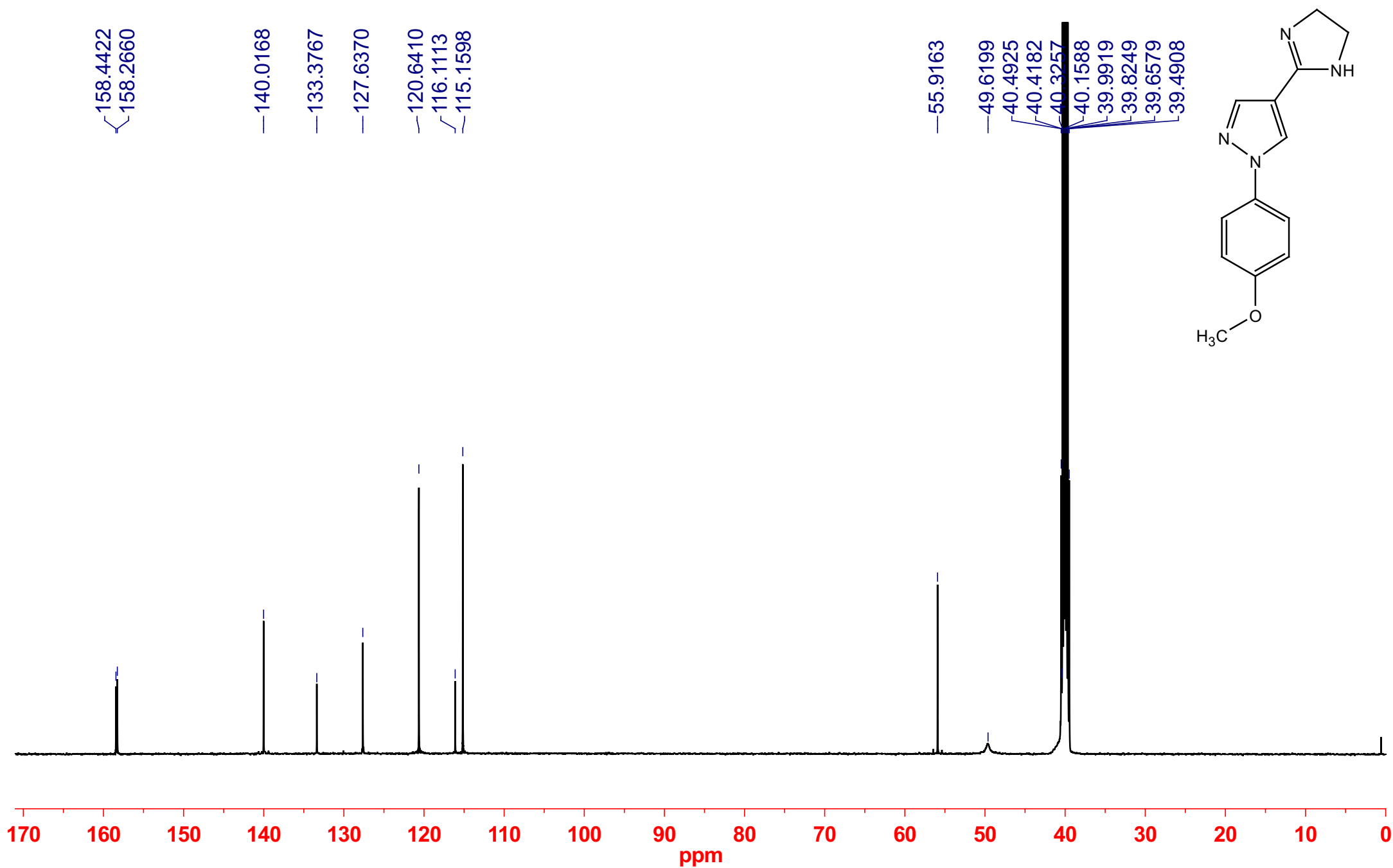
<sup>13</sup>C NMR of compound **3k**



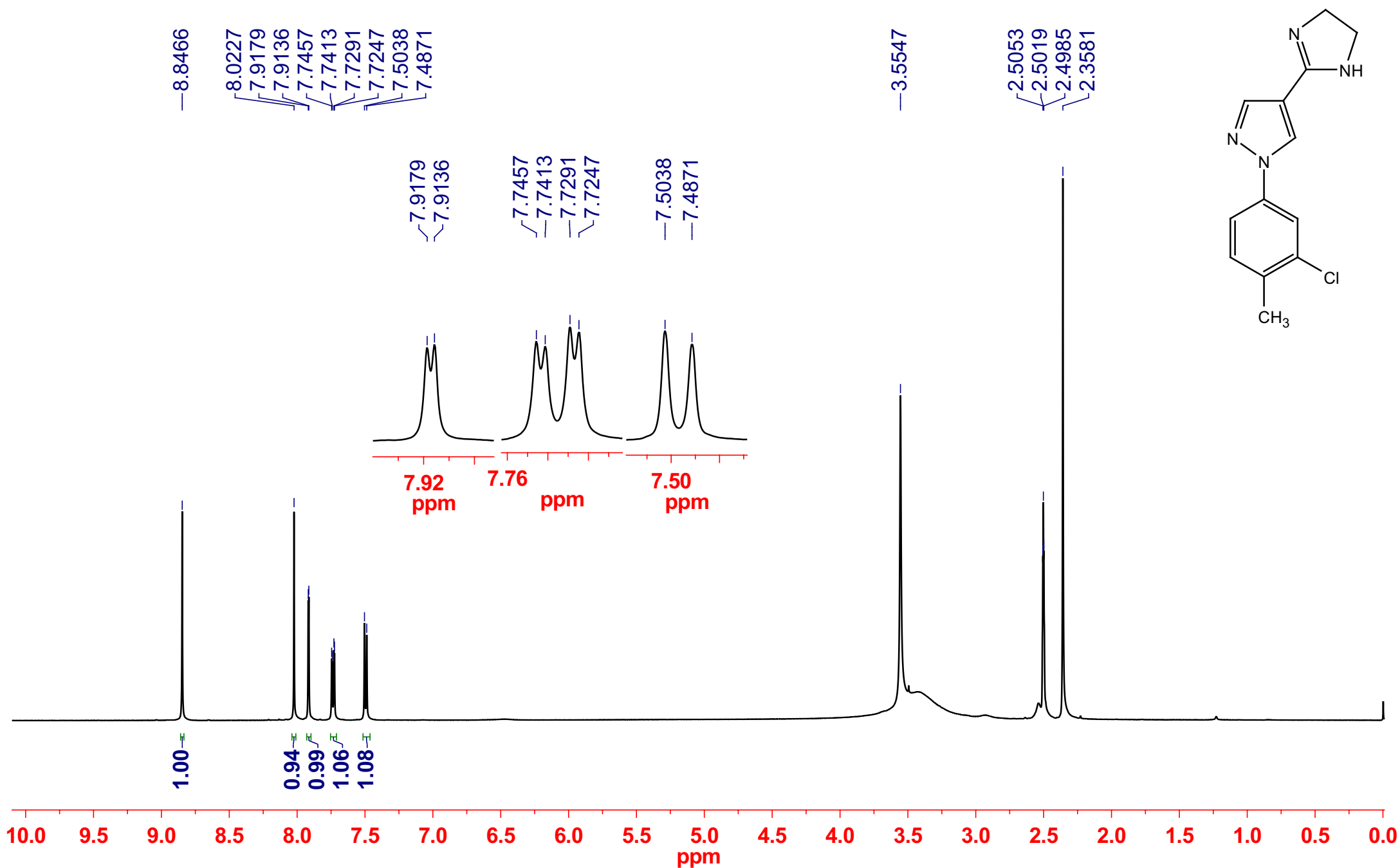
<sup>1</sup>H NMR of compound **3l**



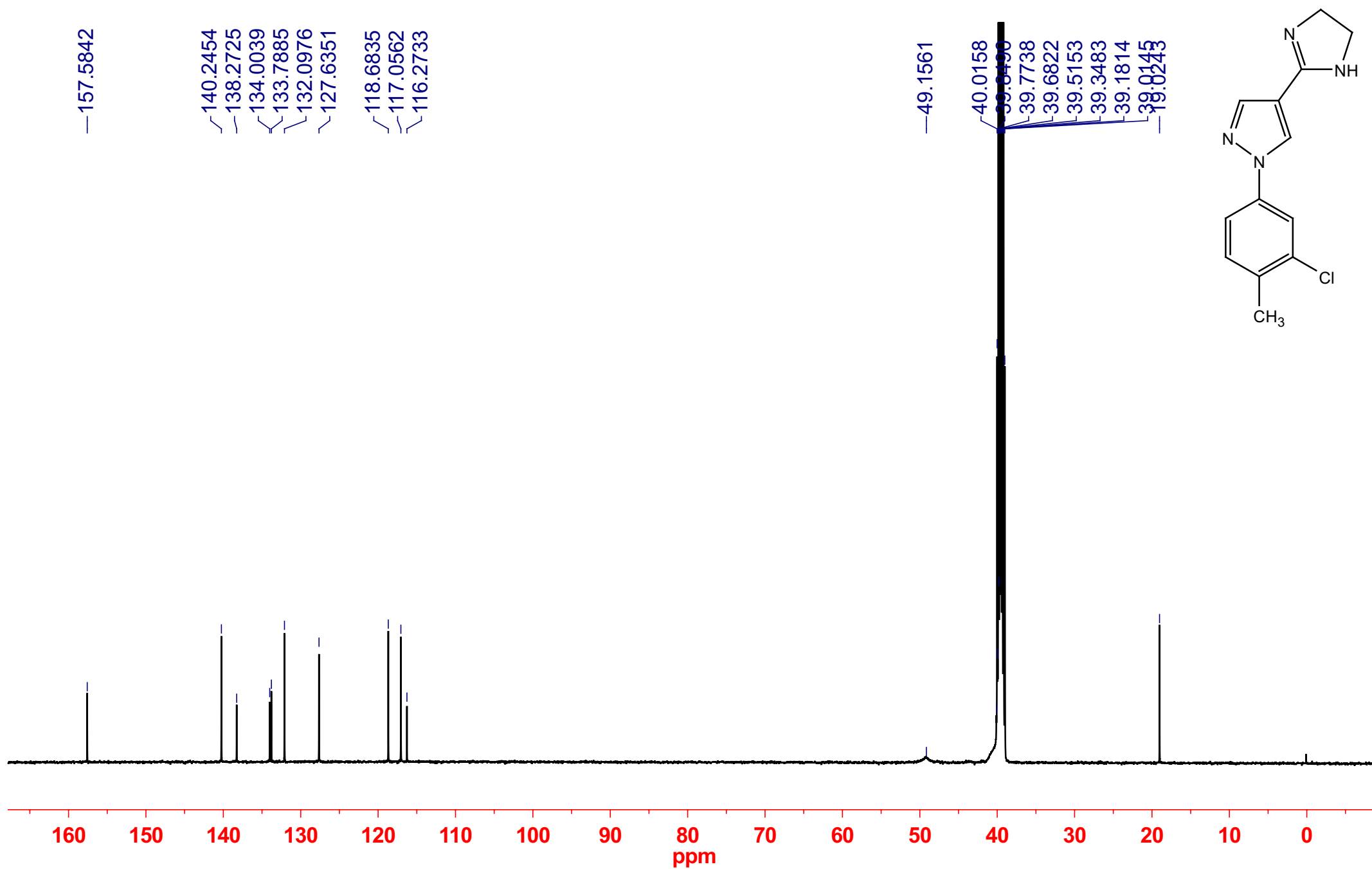
<sup>13</sup>C NMR of compound **3I**



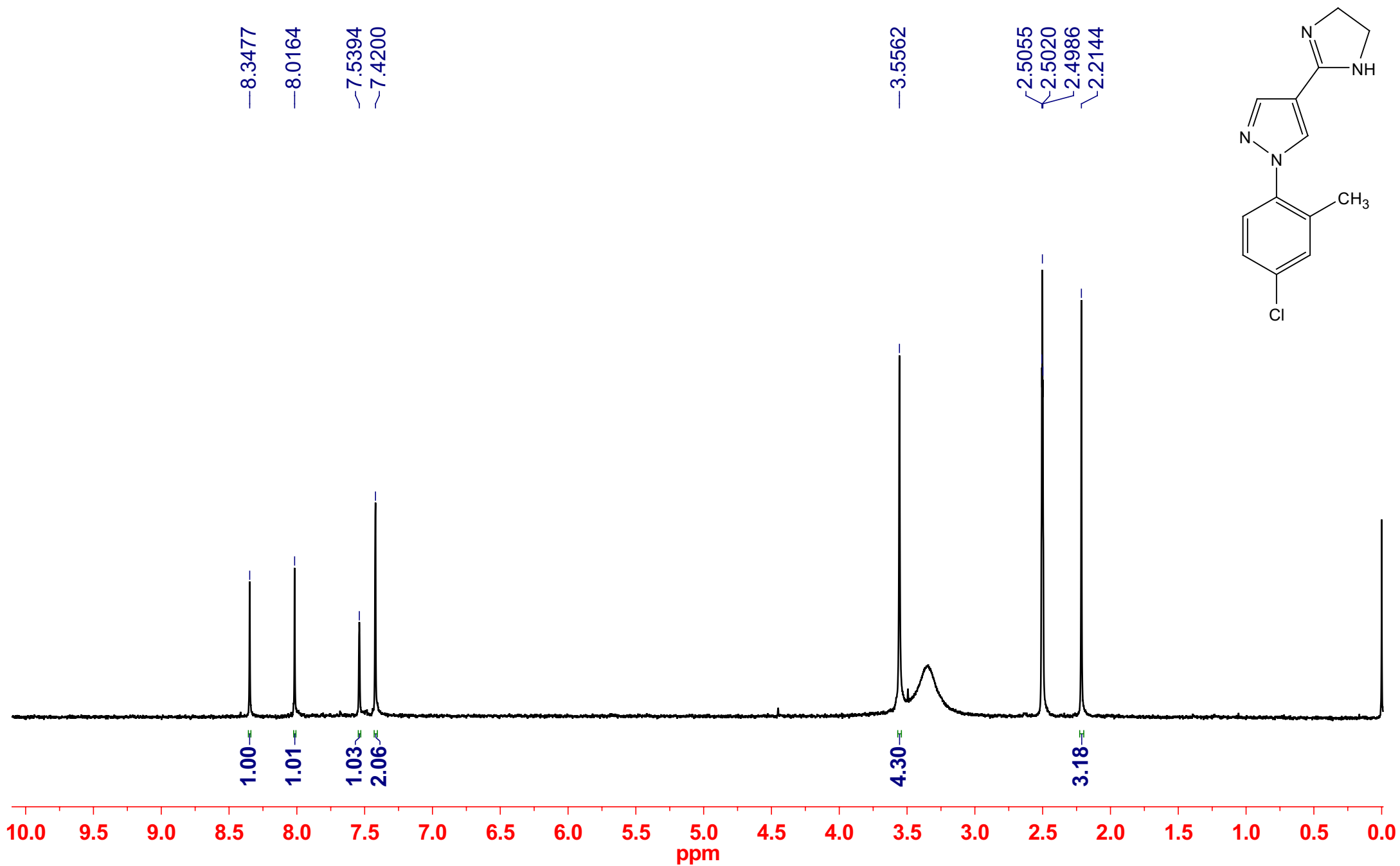
<sup>1</sup>H NMR of compound **3m**



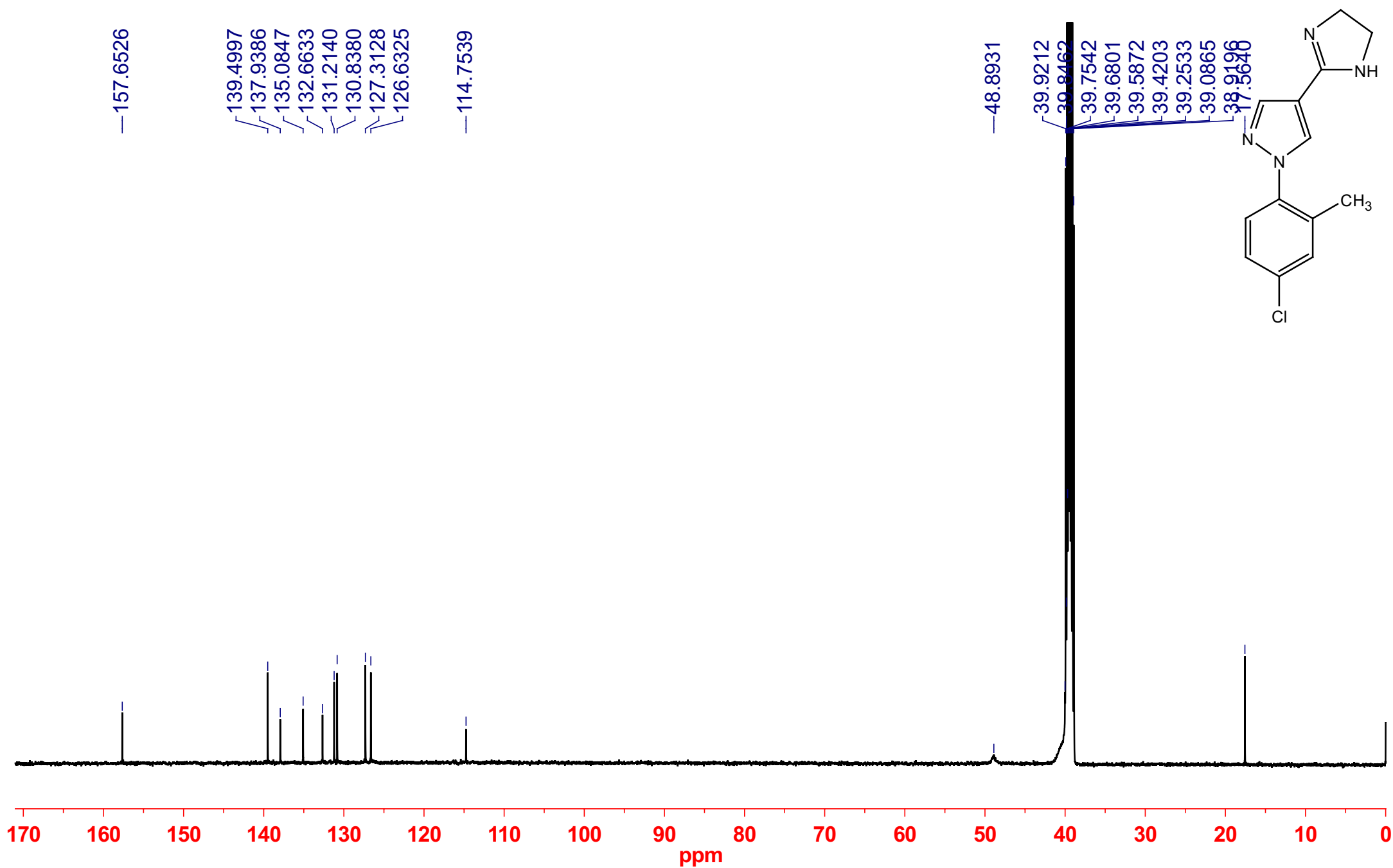
<sup>13</sup>C NMR of compound **3m**



<sup>1</sup>H NMR of compound **3n**

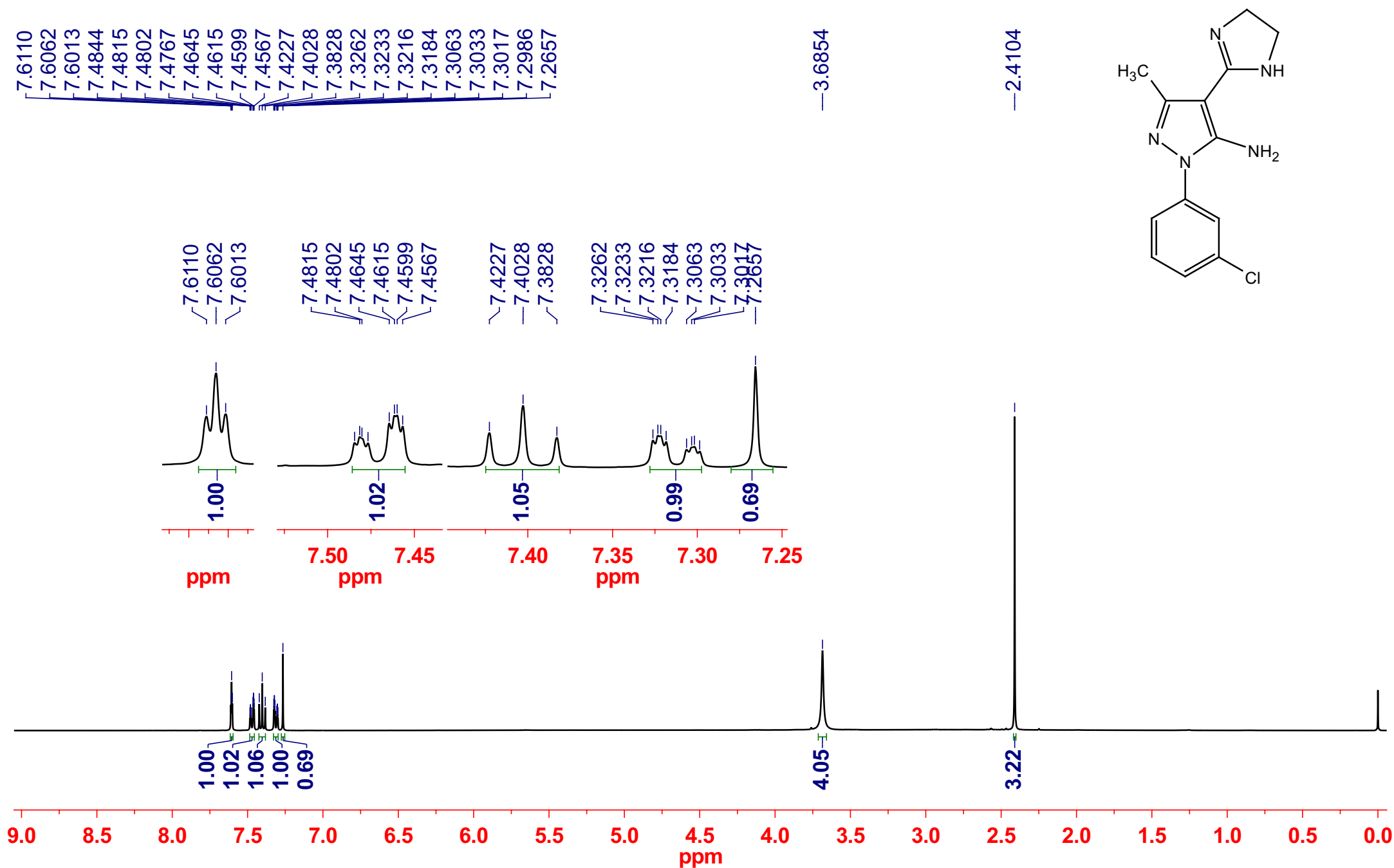


<sup>13</sup>C NMR of compound **3n**

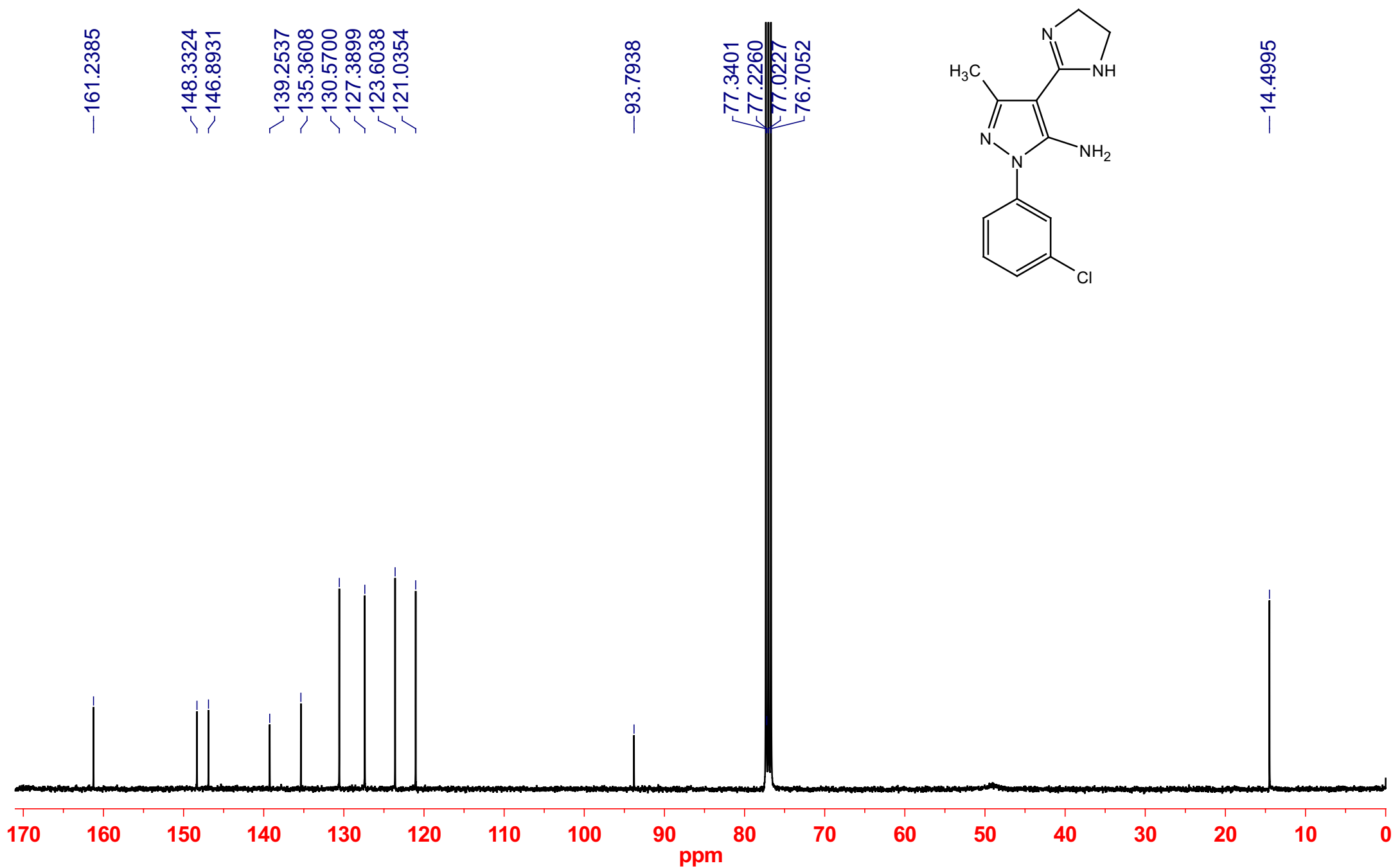




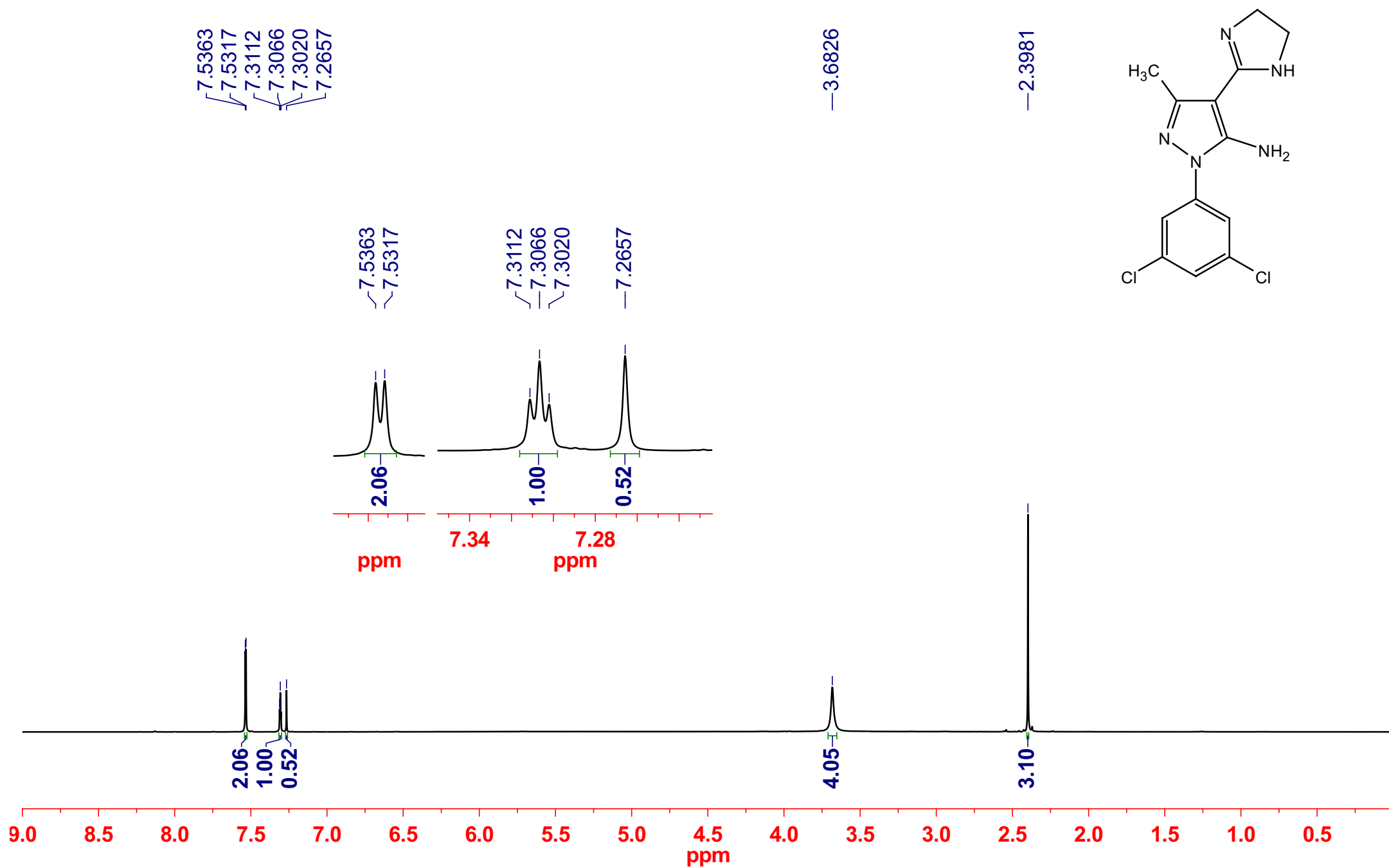
<sup>1</sup>H NMR of compound **4a**



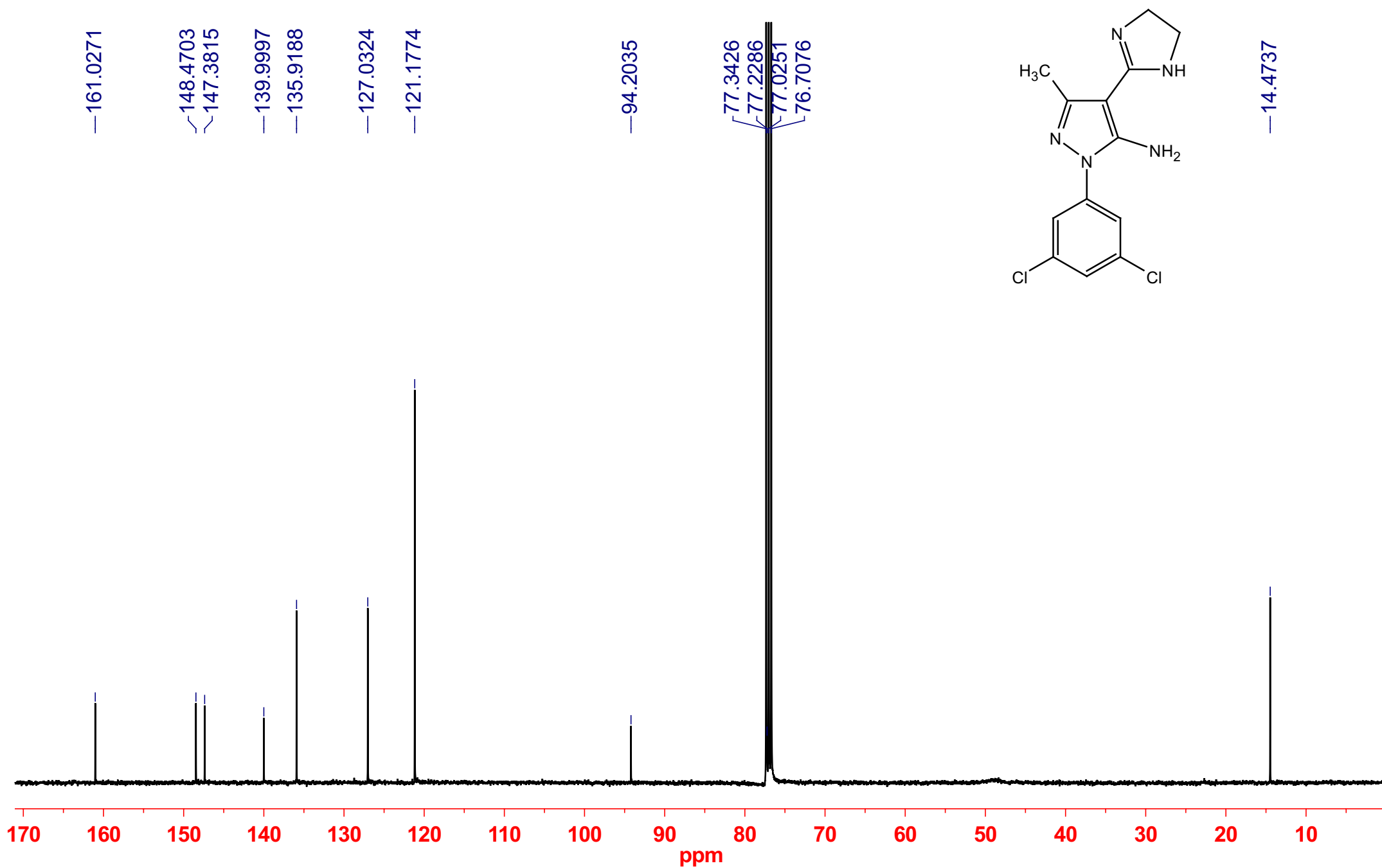
<sup>13</sup>C NMR of compound 4a



<sup>1</sup>H NMR of compound **4b**



<sup>13</sup>C NMR of compound **4b**

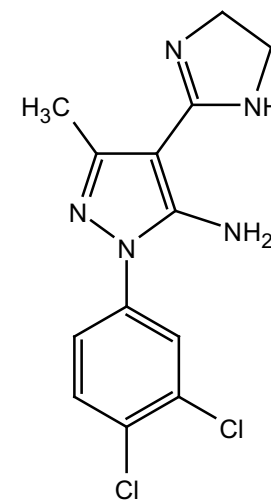


<sup>1</sup>H NMR of compound **4c**

7.7301  
7.7242  
7.5468  
7.5252  
7.4623  
7.4563  
7.4407  
7.4347  
7.2653

3.6831

2.4003

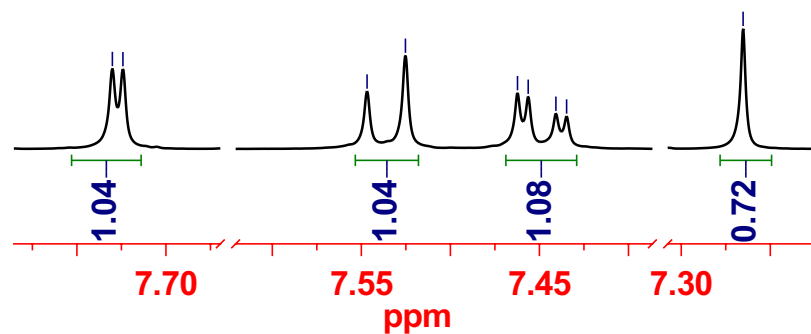


7.7301  
7.7242

7.5468  
7.5252

7.4623  
7.4563  
7.4407  
7.4347

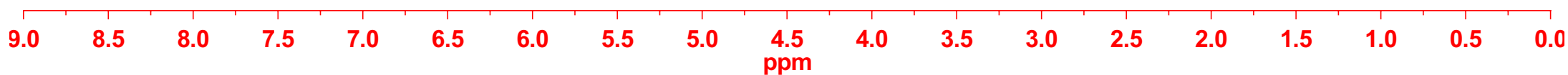
7.2653



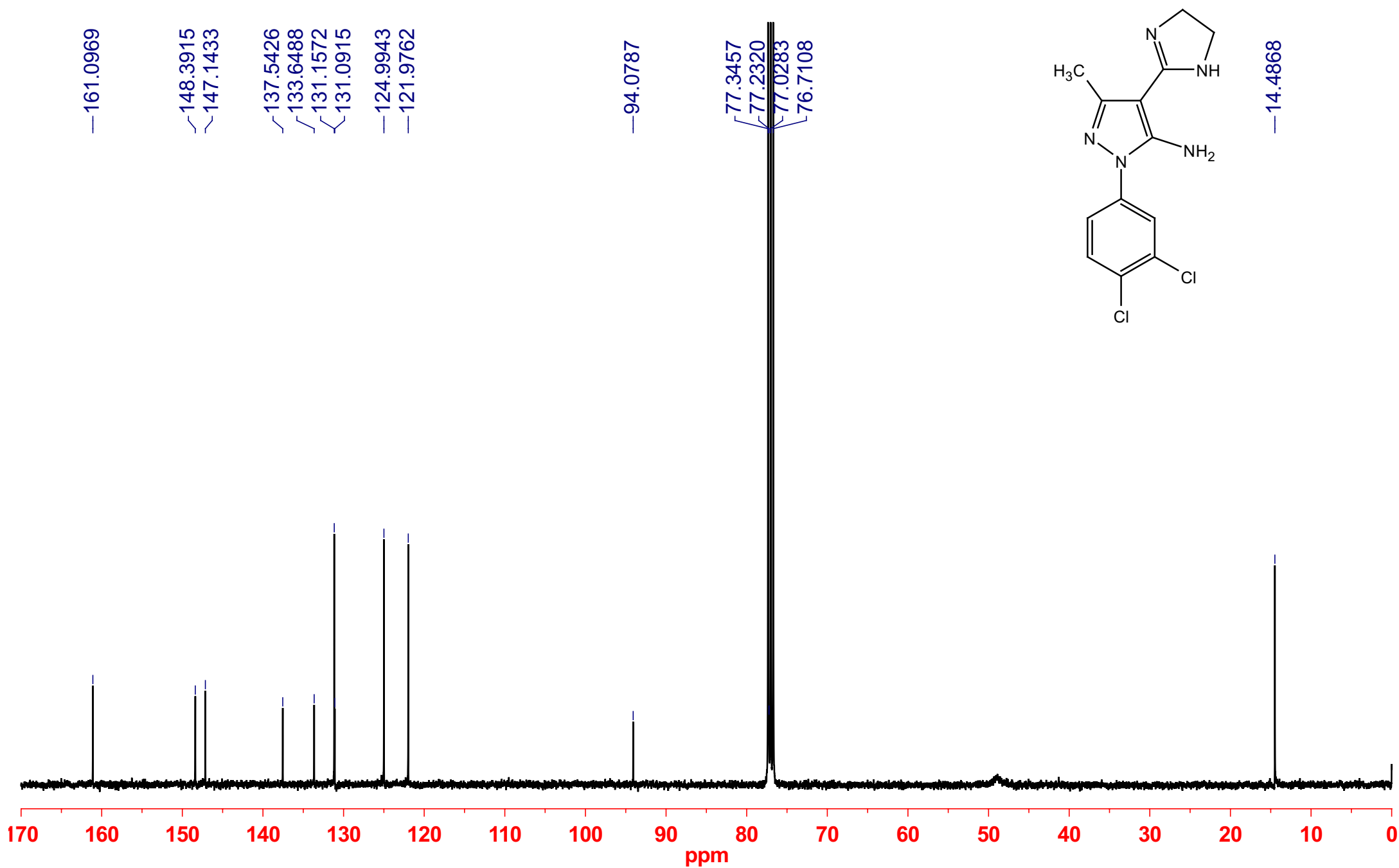
1.00  
1.04  
1.08  
0.72

4.02

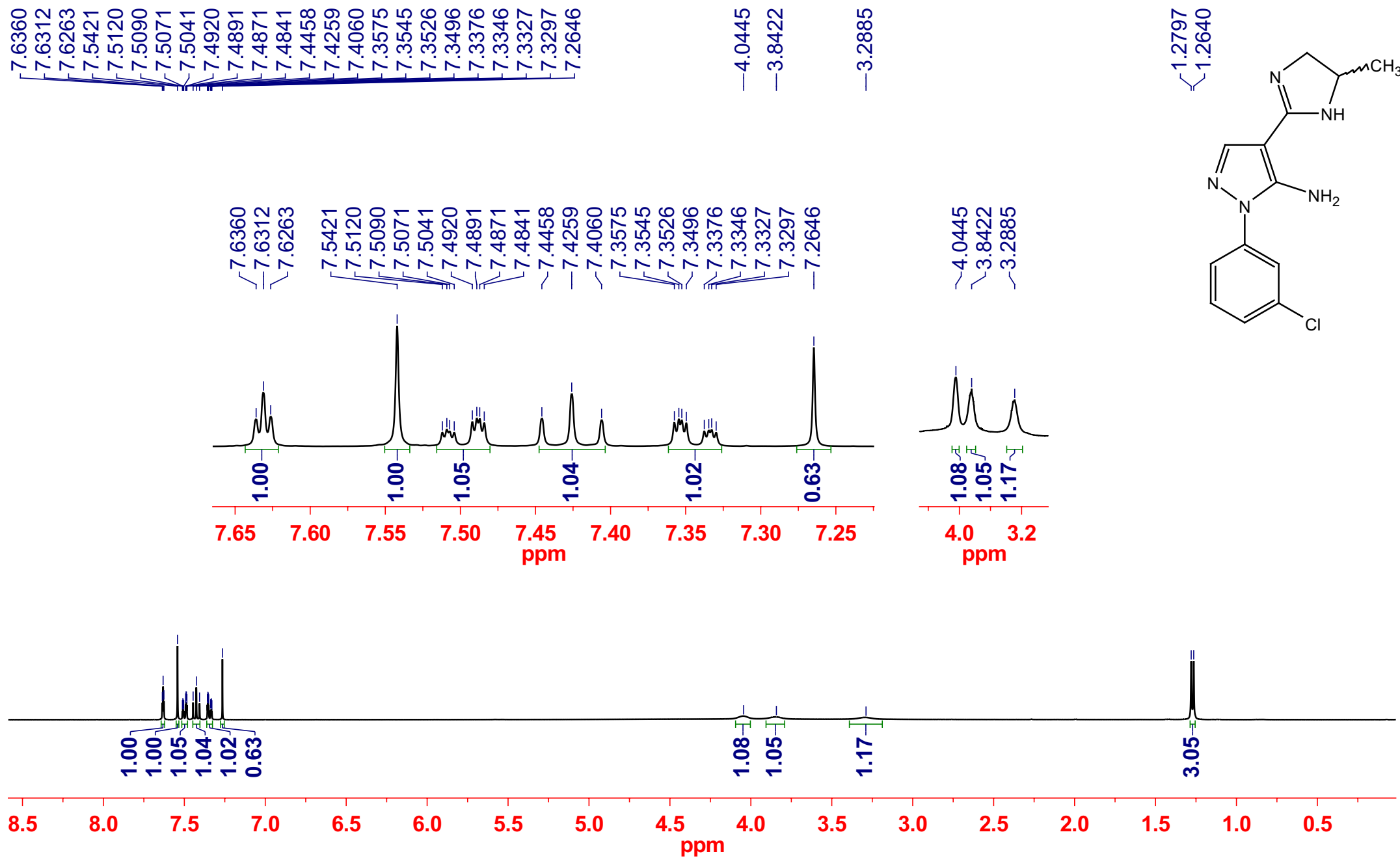
3.08



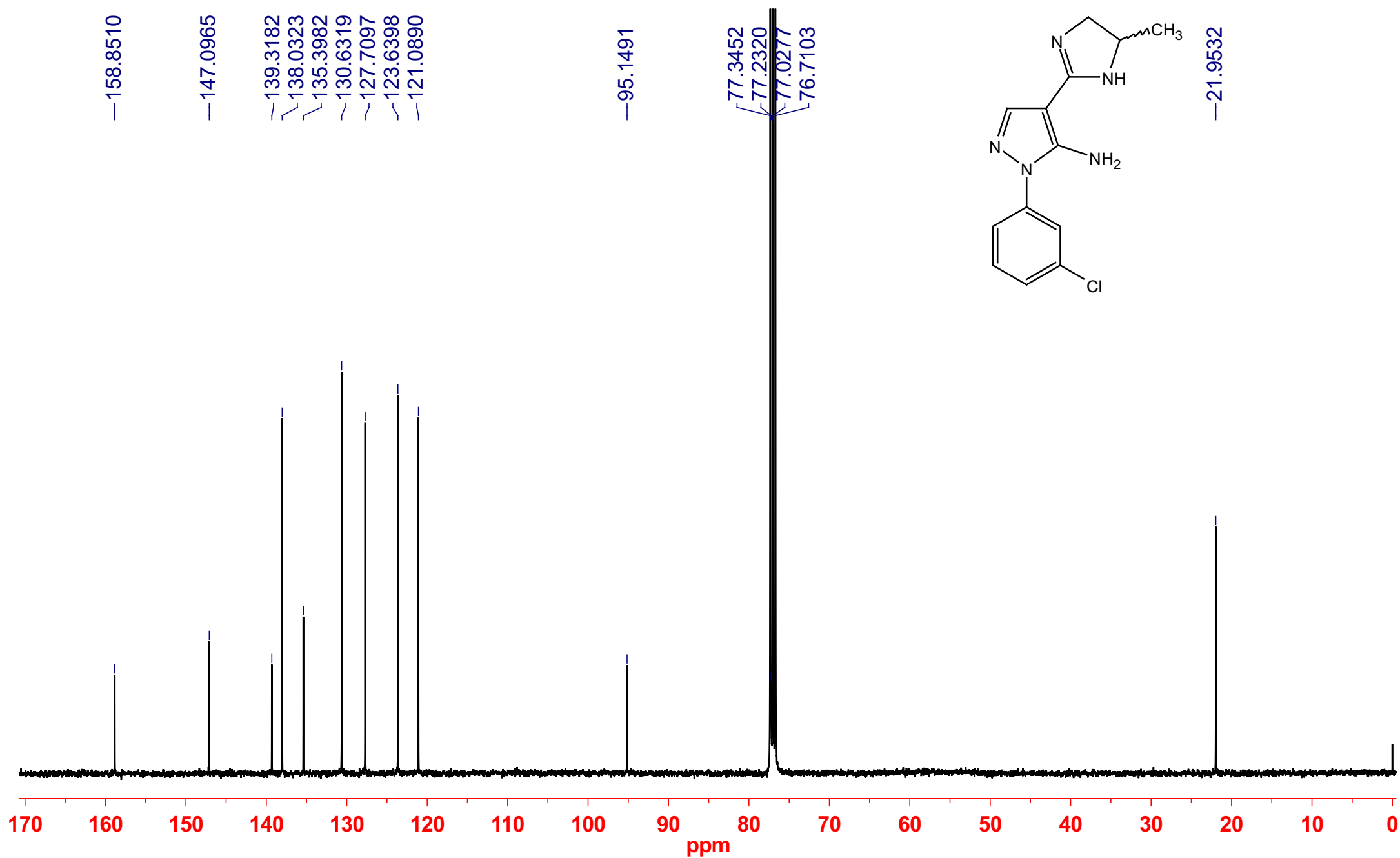
<sup>13</sup>C NMR of compound **4c**



<sup>1</sup>H NMR of compound **5a**

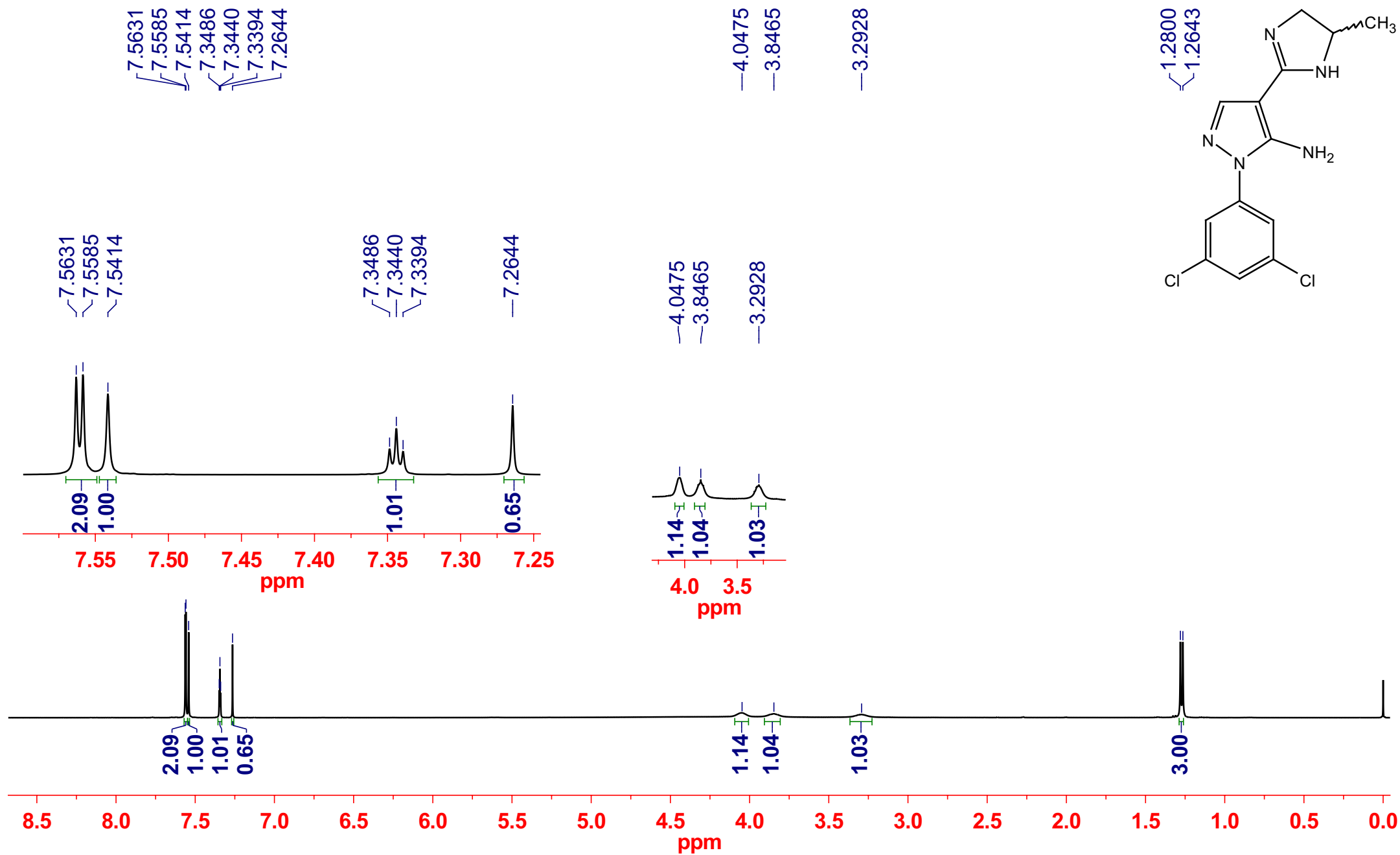


<sup>13</sup>C NMR of compound **5a**

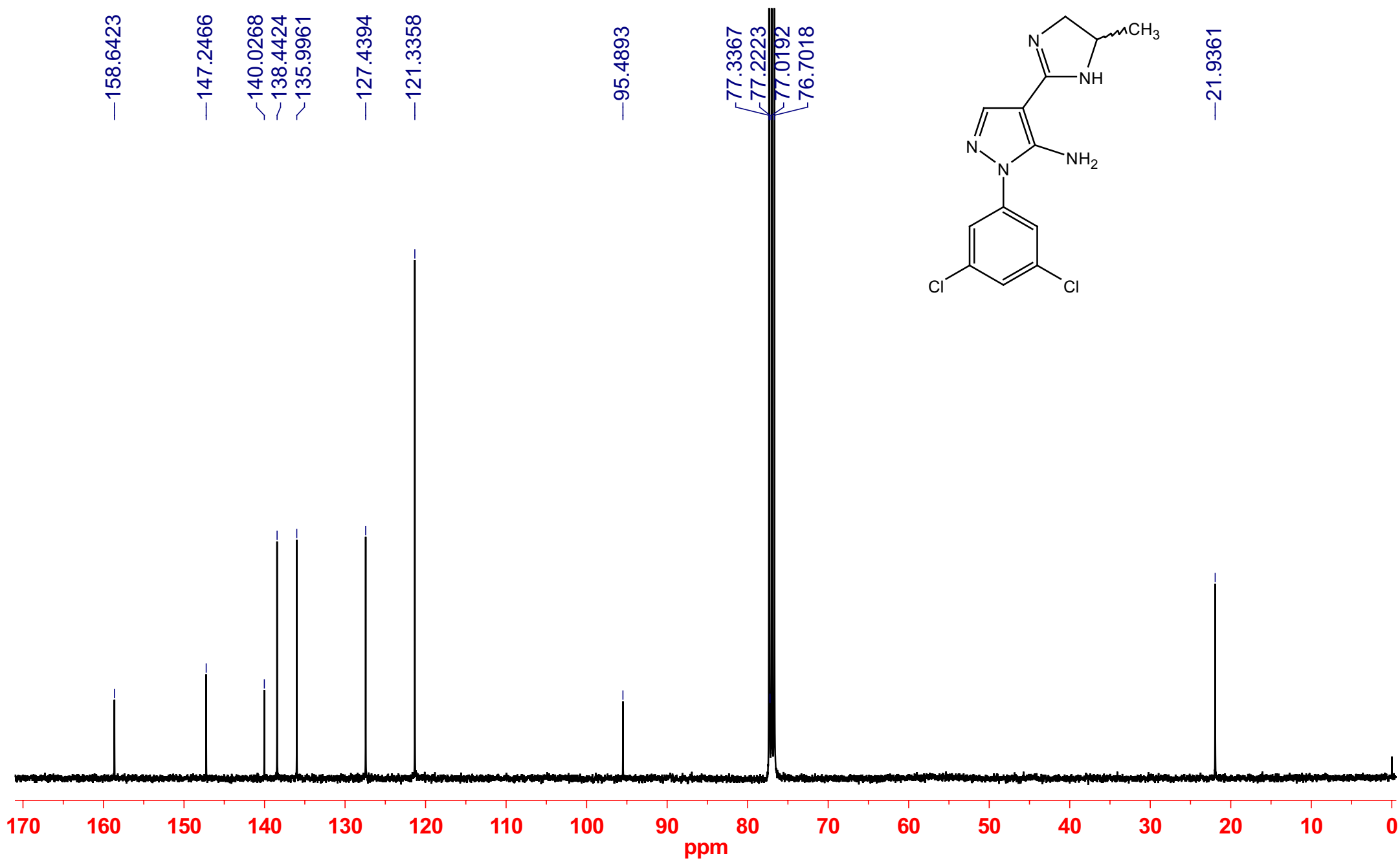




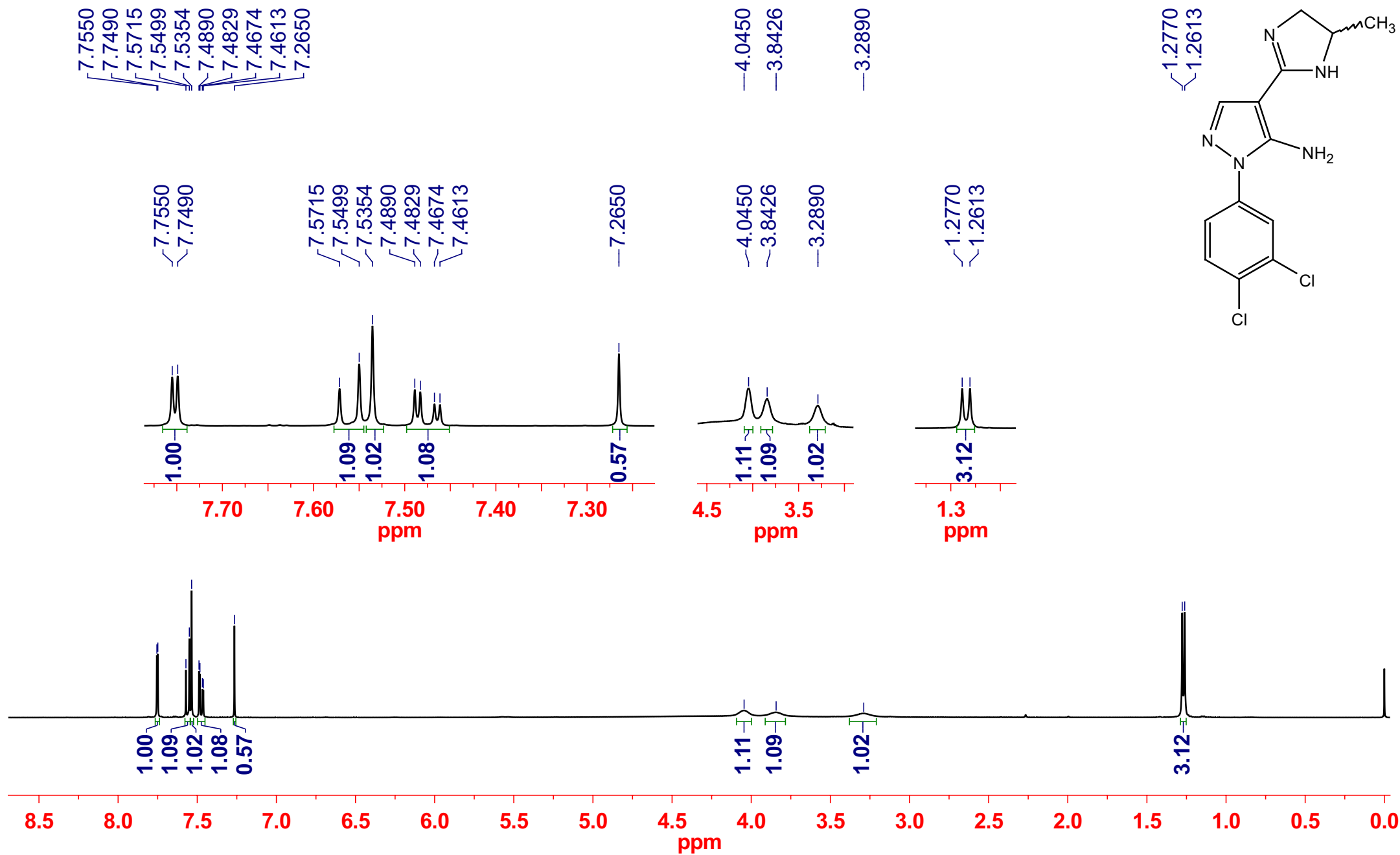
<sup>1</sup>H NMR of compound **5b**



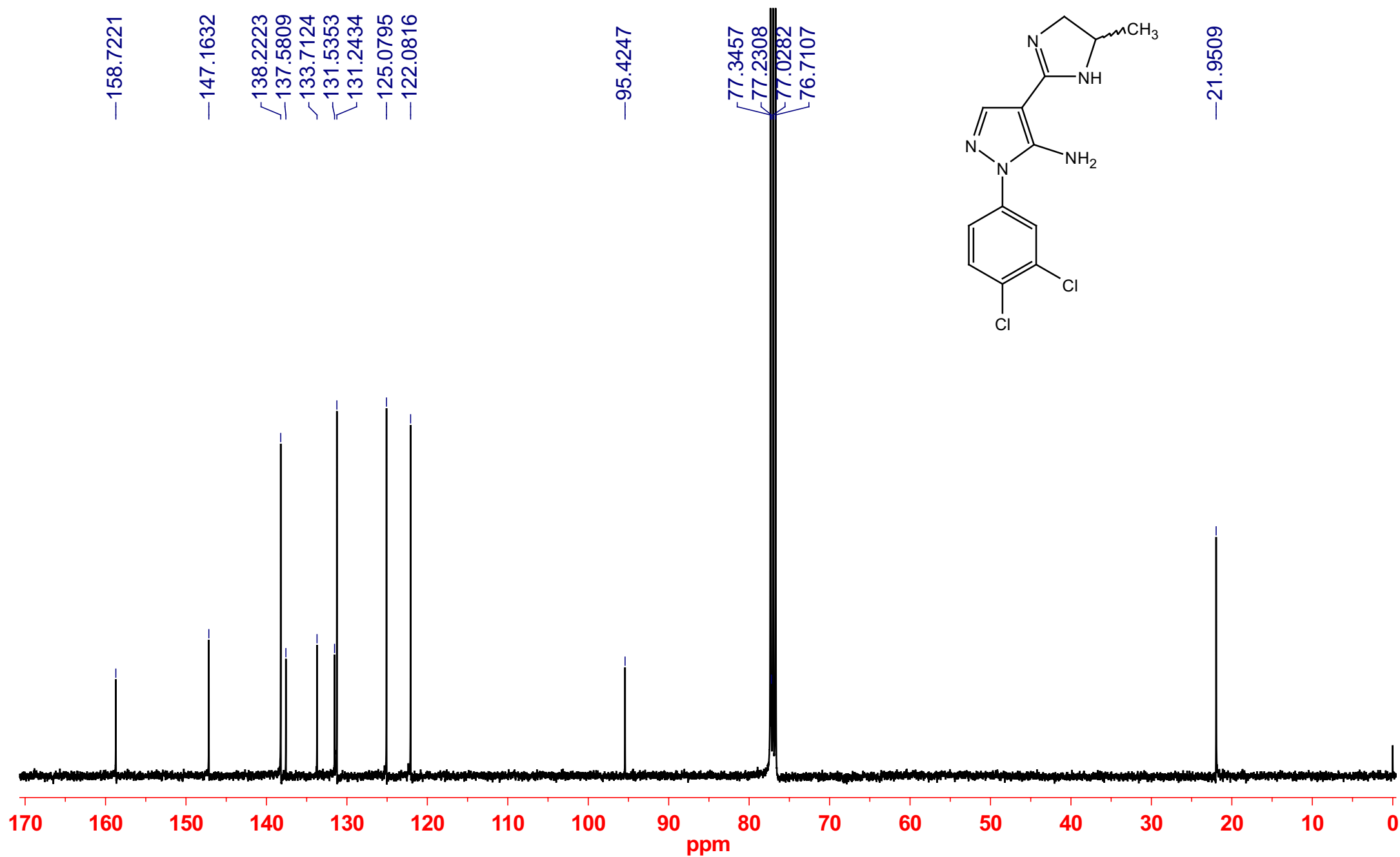
<sup>13</sup>C NMR of compound **5b**



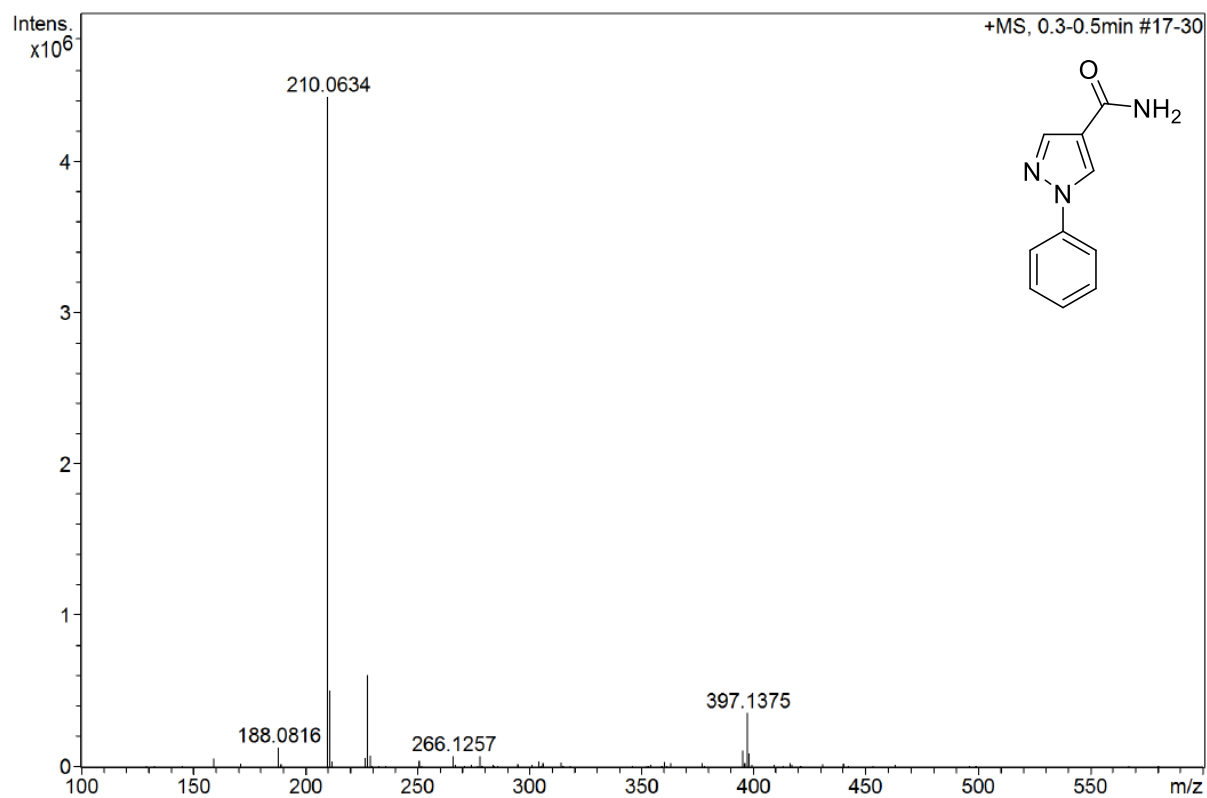
<sup>1</sup>H NMR of compound **5c**



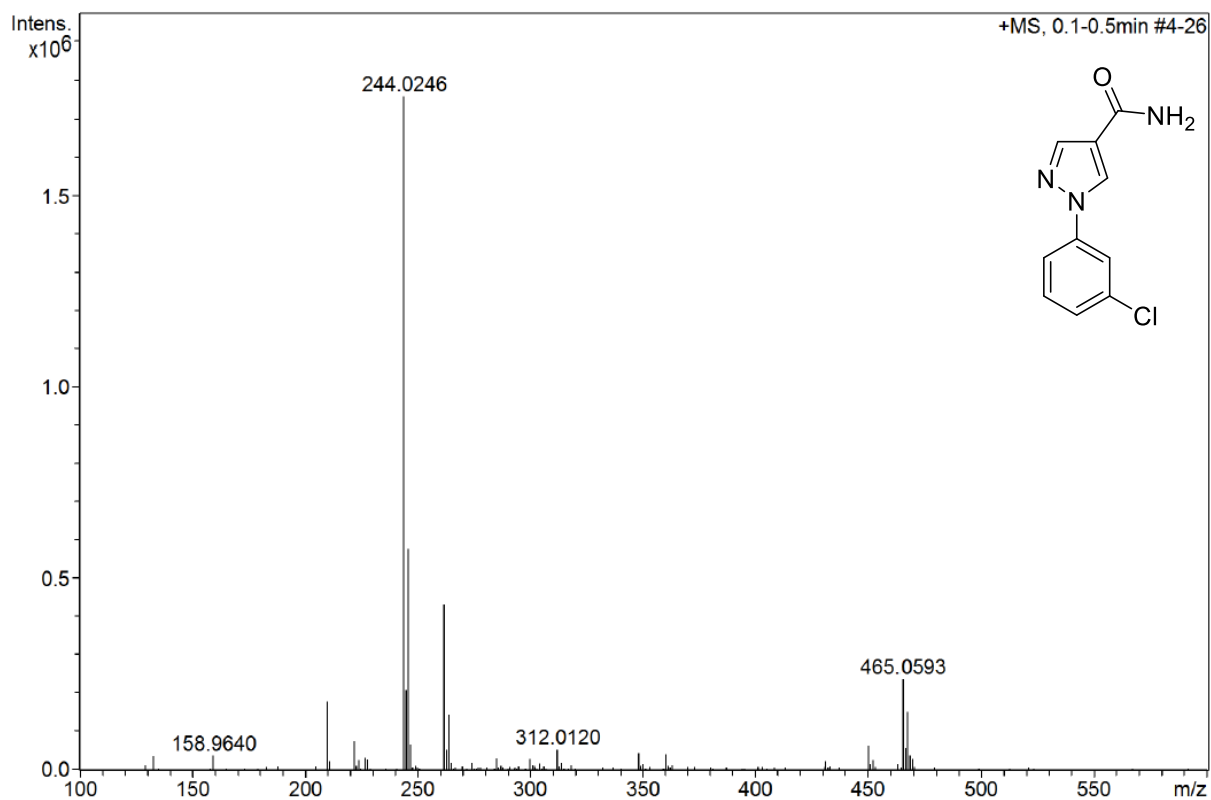
<sup>13</sup>C NMR of compound **5c**



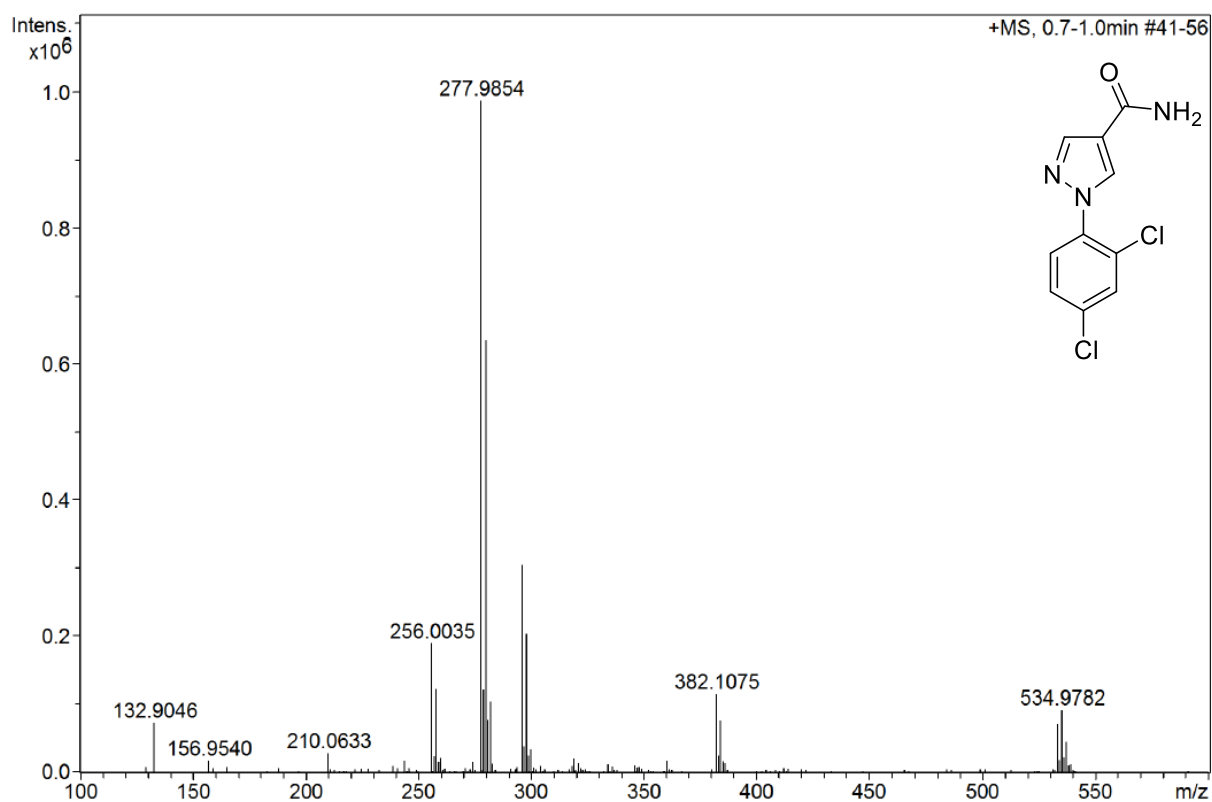
### HRMS of compound **1a**



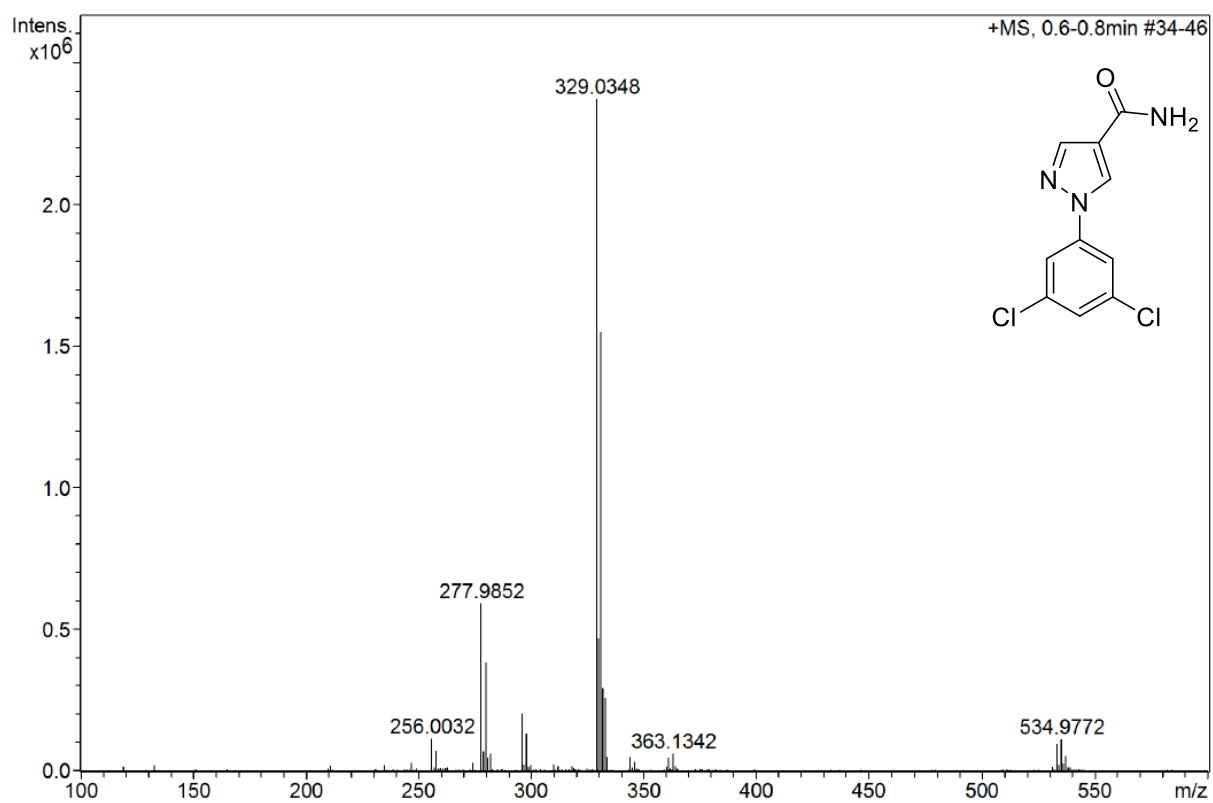
### HRMS of compound **1b**



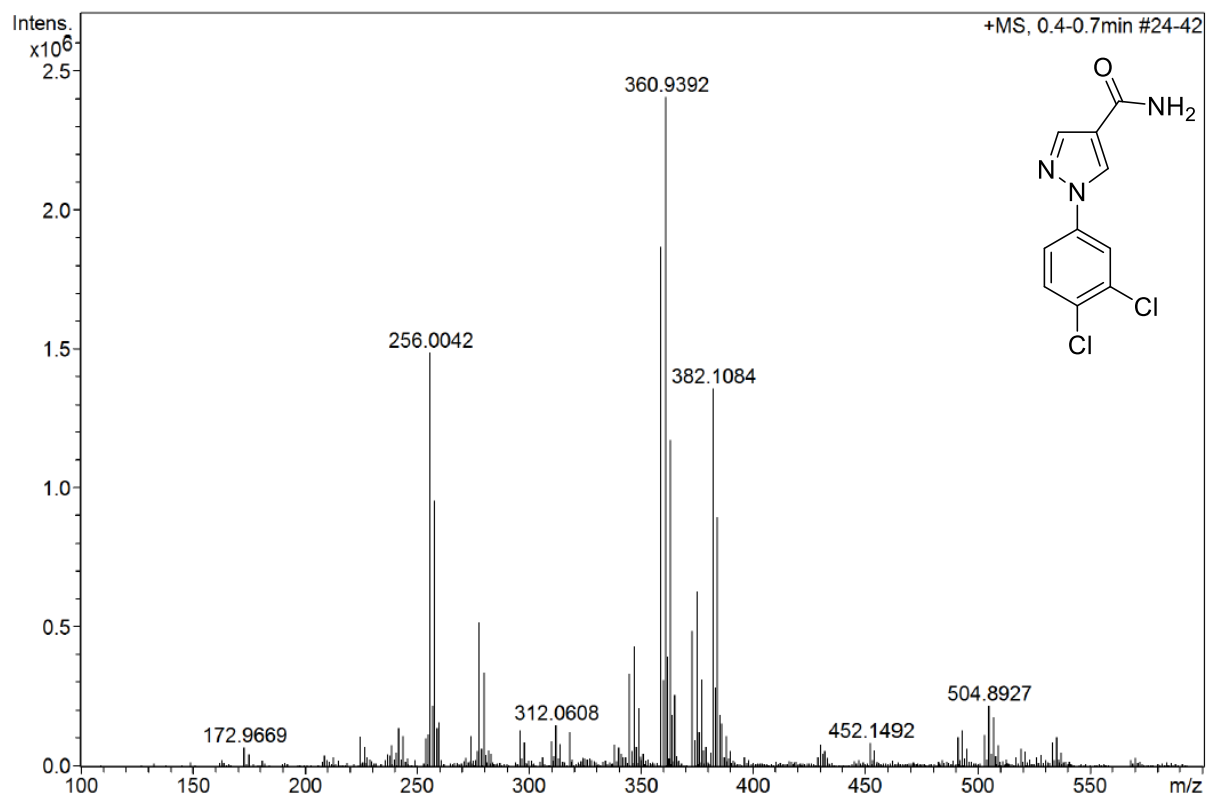
HRMS of compound **1c**



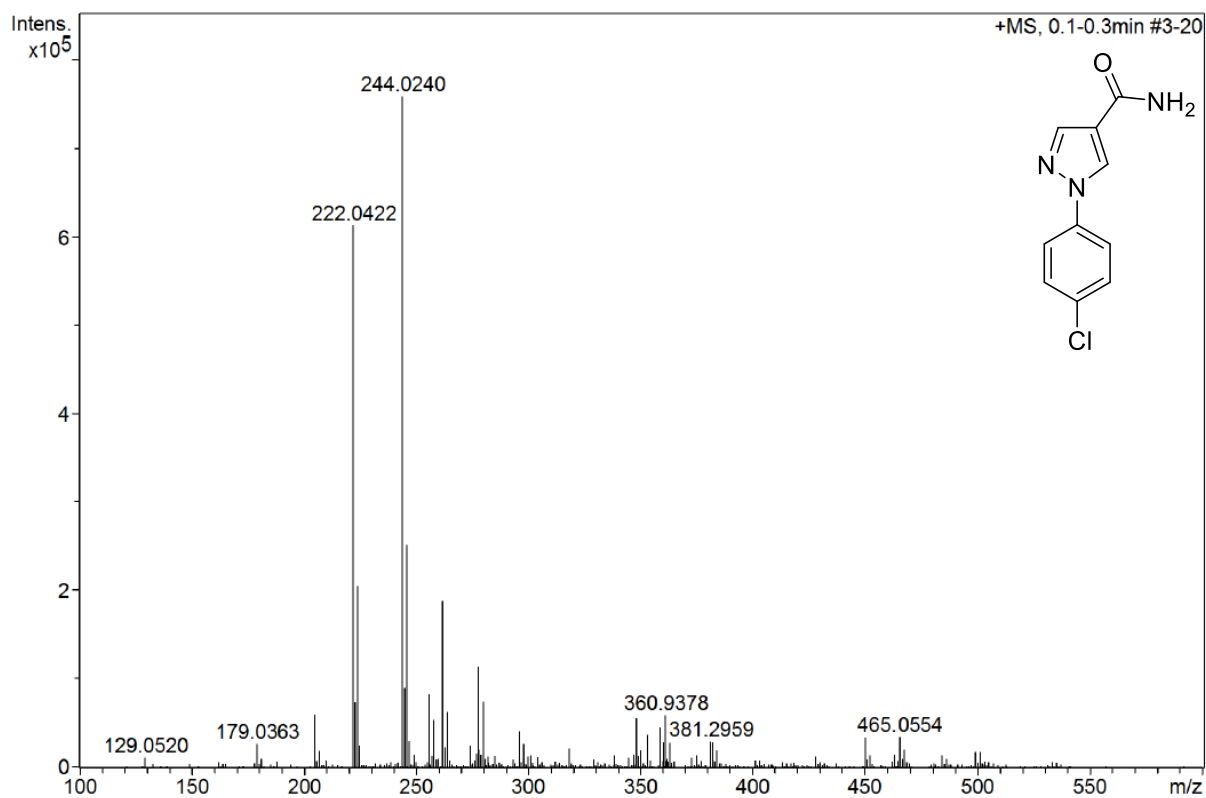
HRMS of compound **1d**



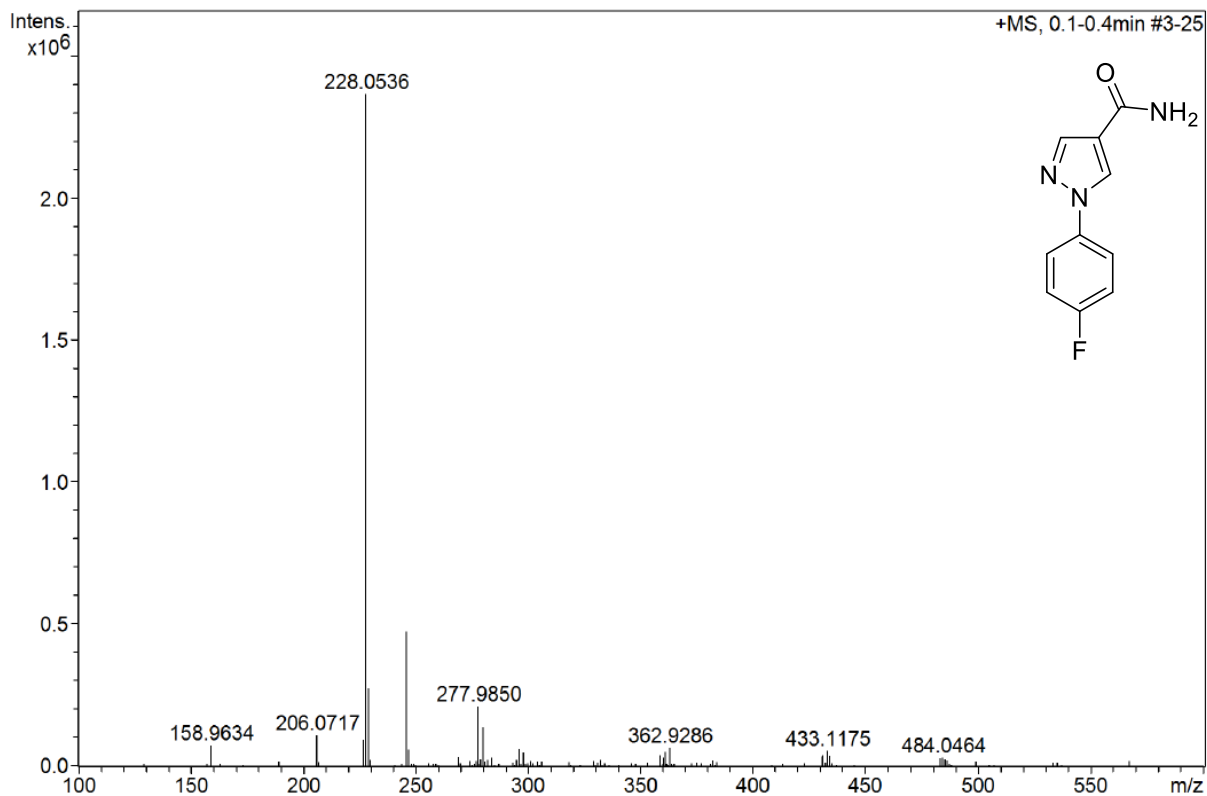
HRMS of compound **1e**



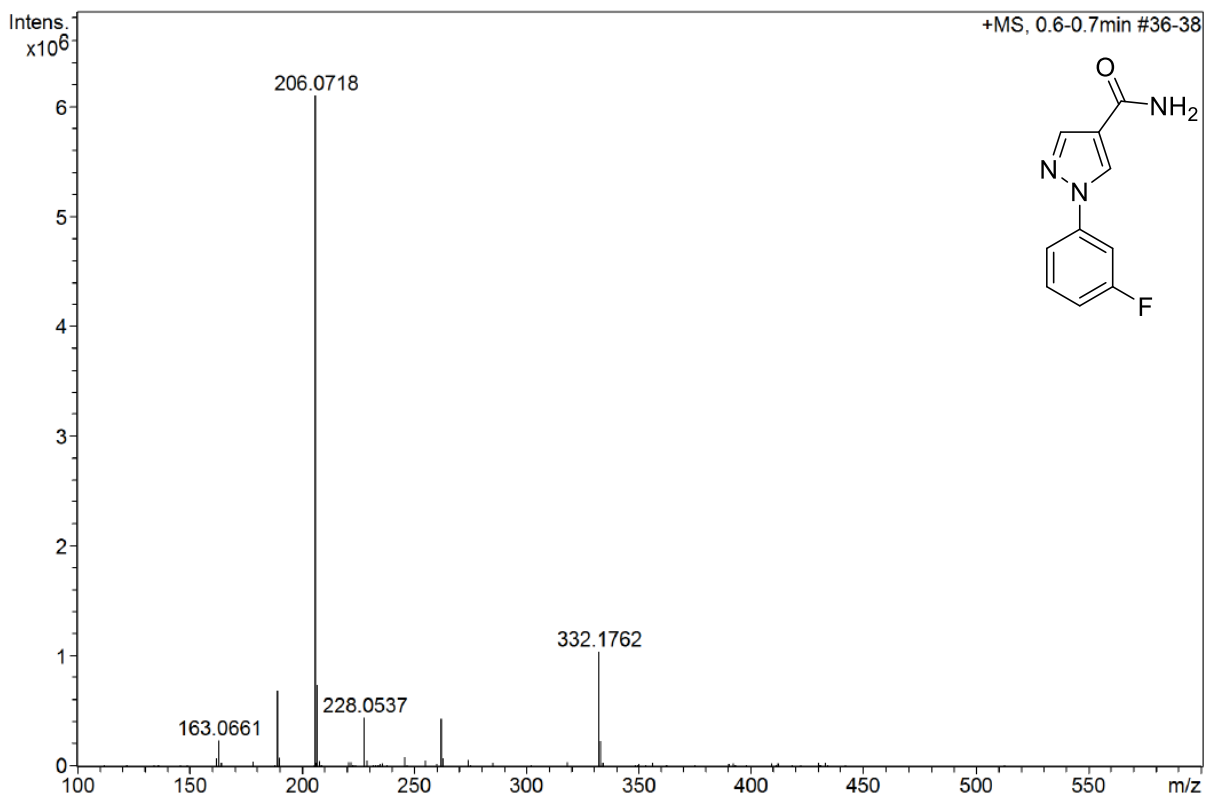
HRMS of compound **1f**



HRMS of compound **1g**

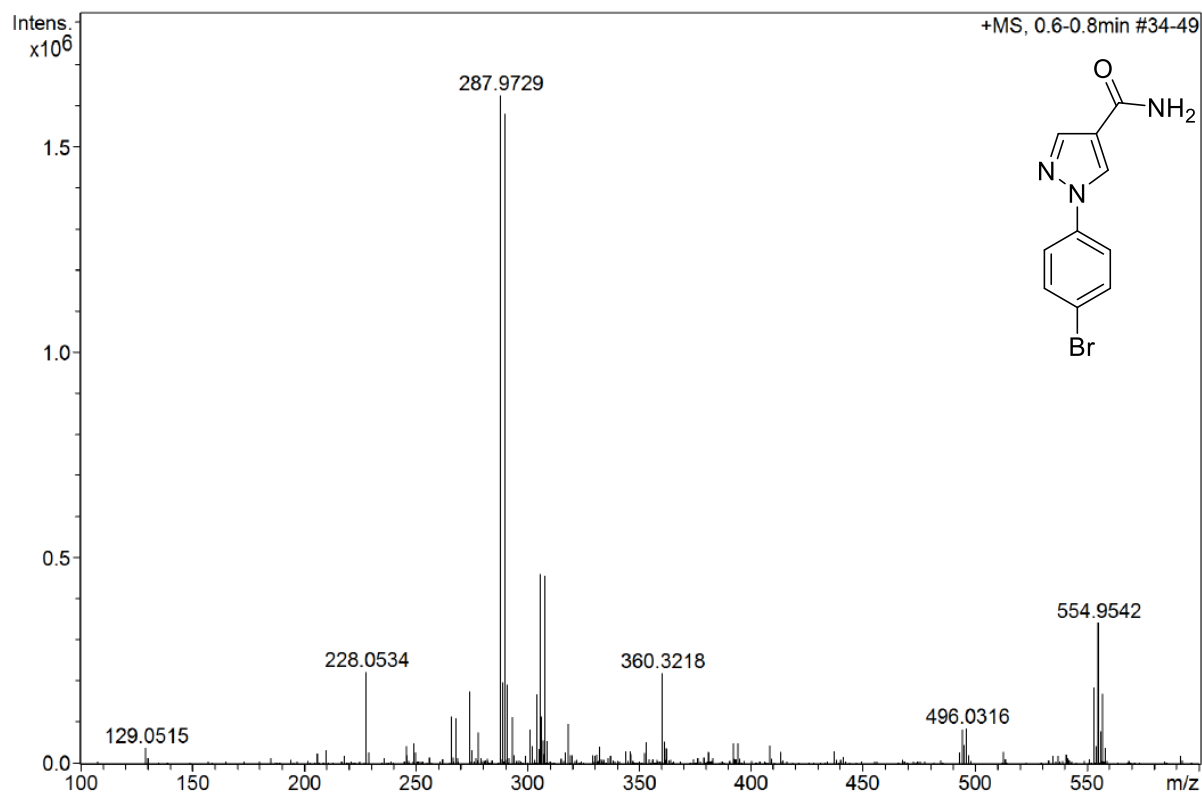


HRMS of compound **1h**

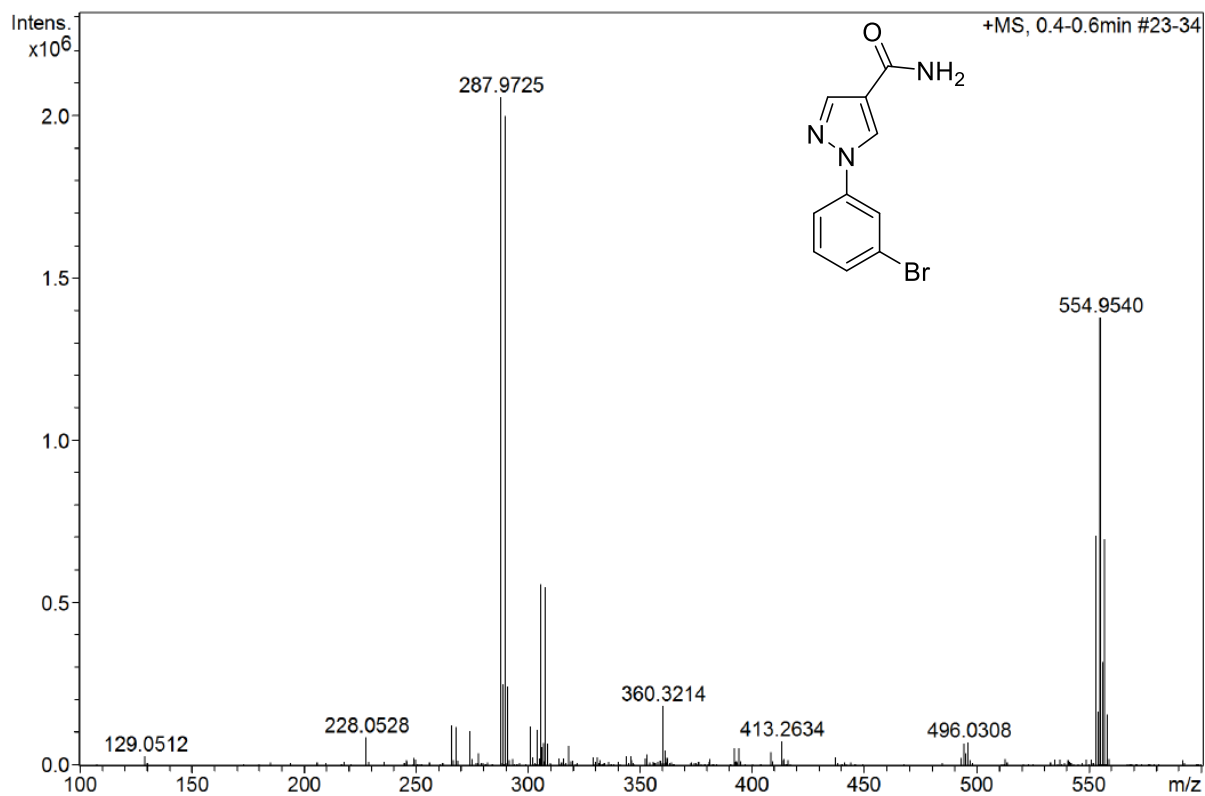




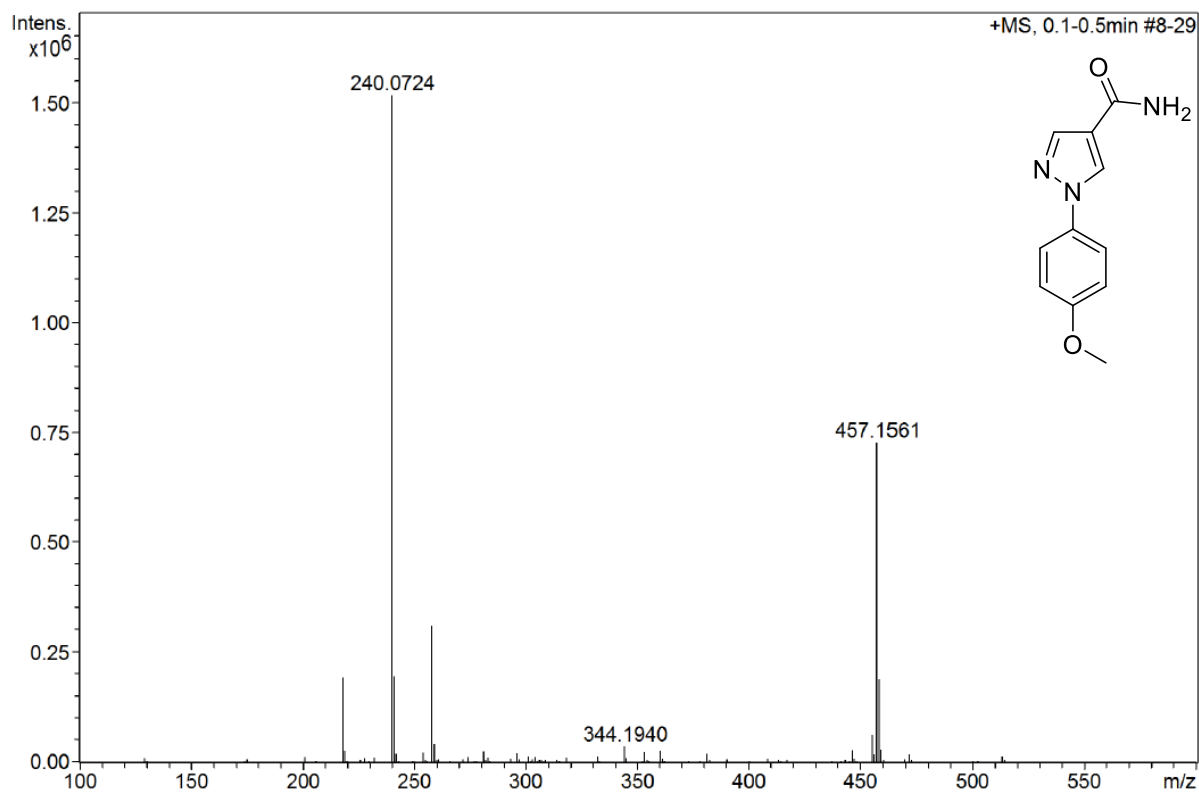
HRMS of compound **1i**



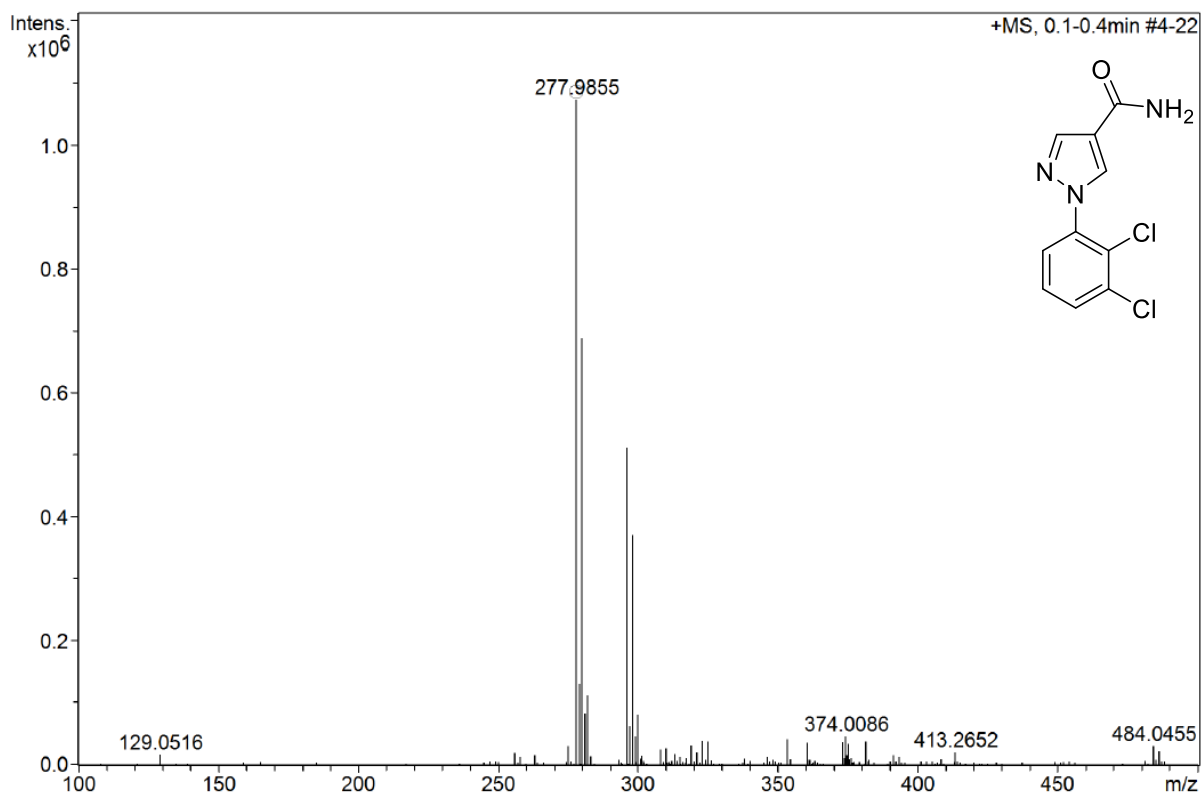
HRMS of compound **1j**



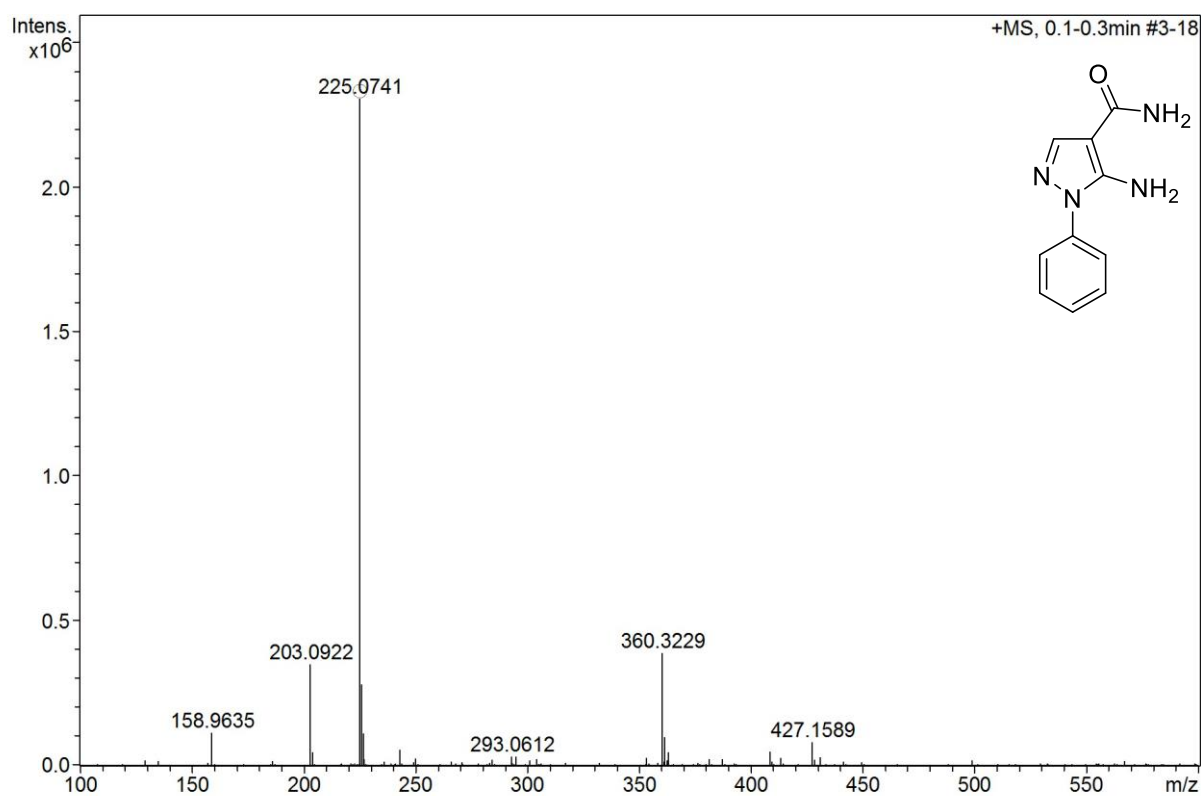
HRMS of compound **1k**



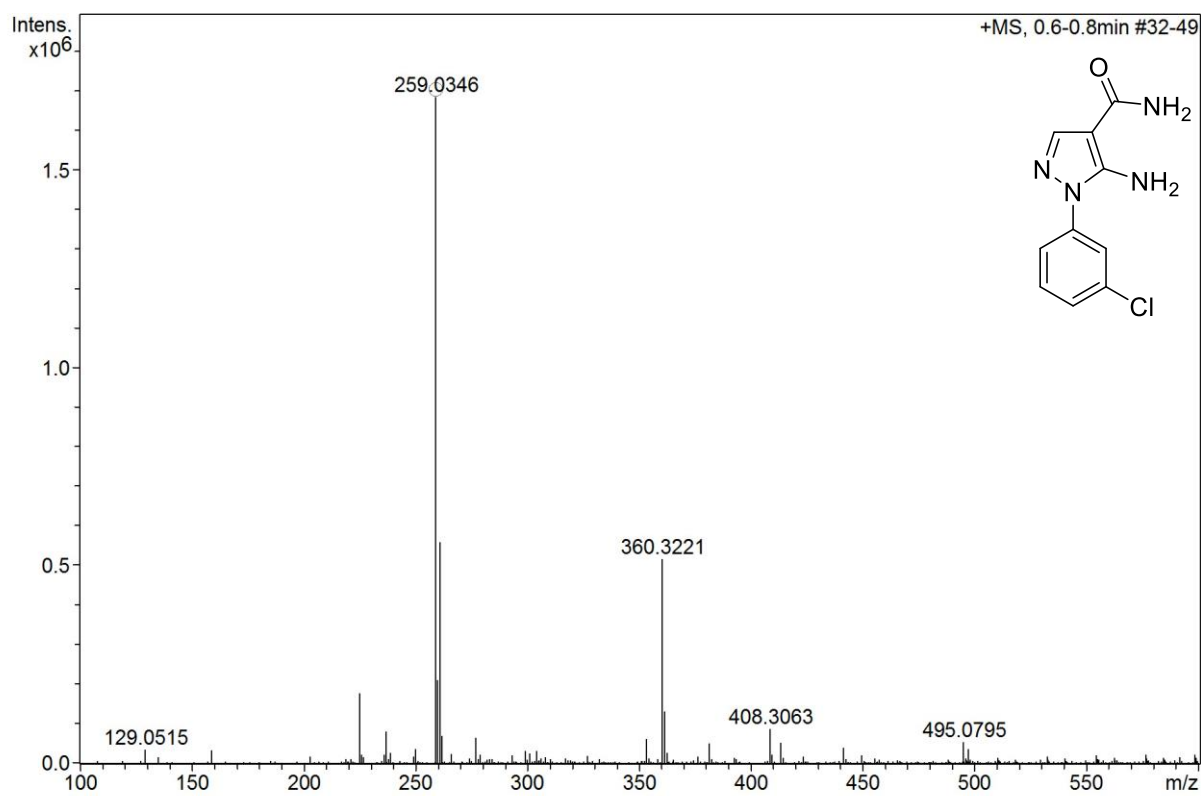
HRMS of compound **1l**



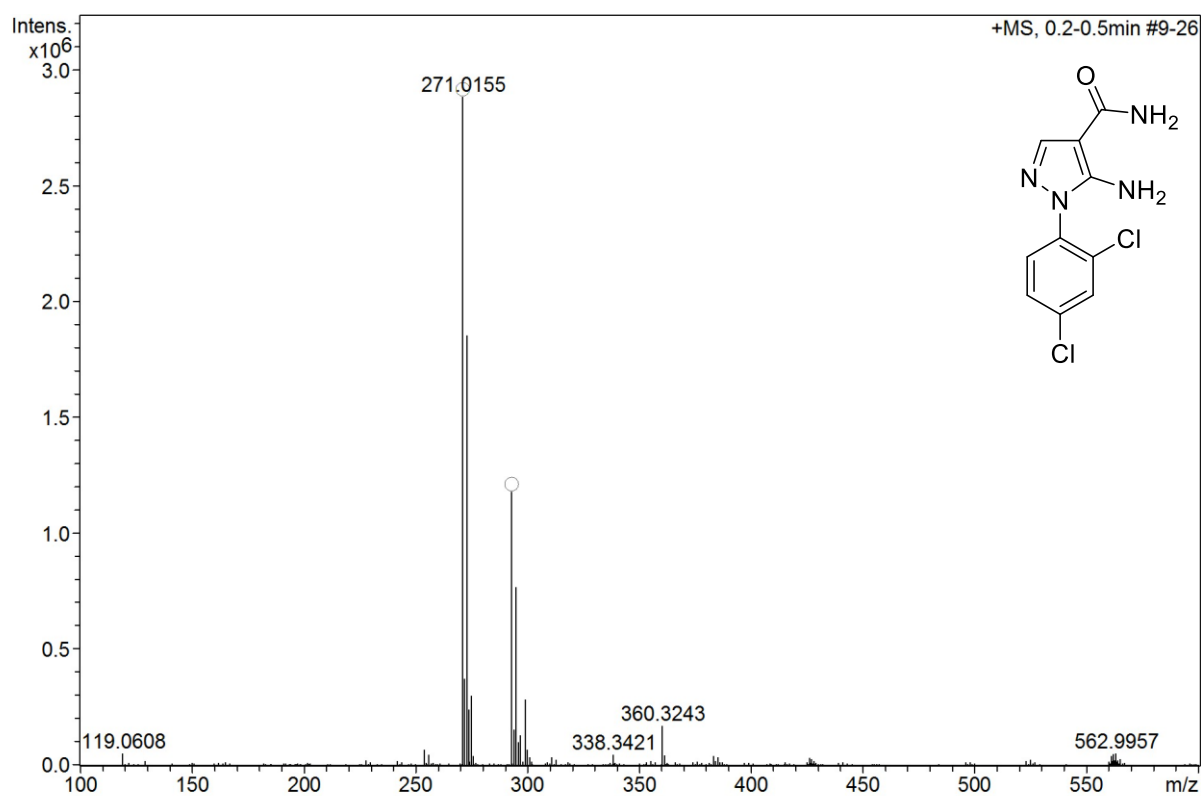
HRMS of compound **2a**



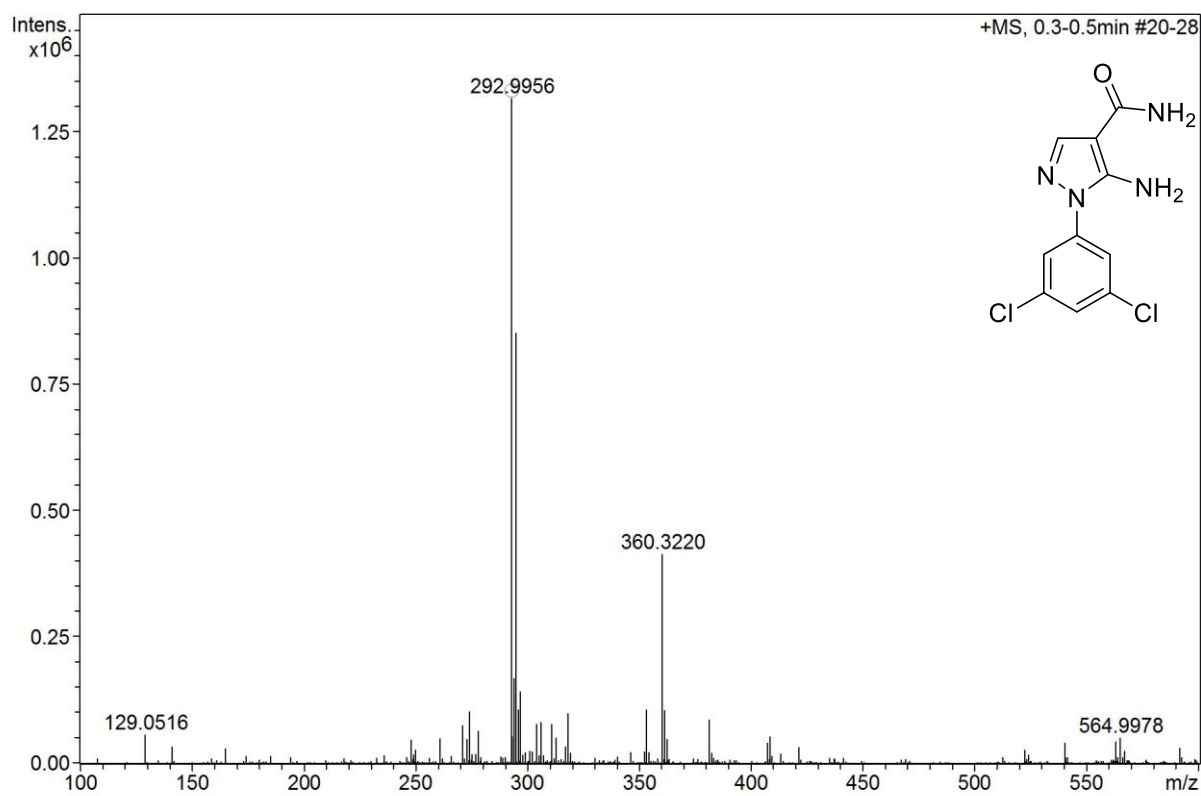
HRMS of compound **2b**



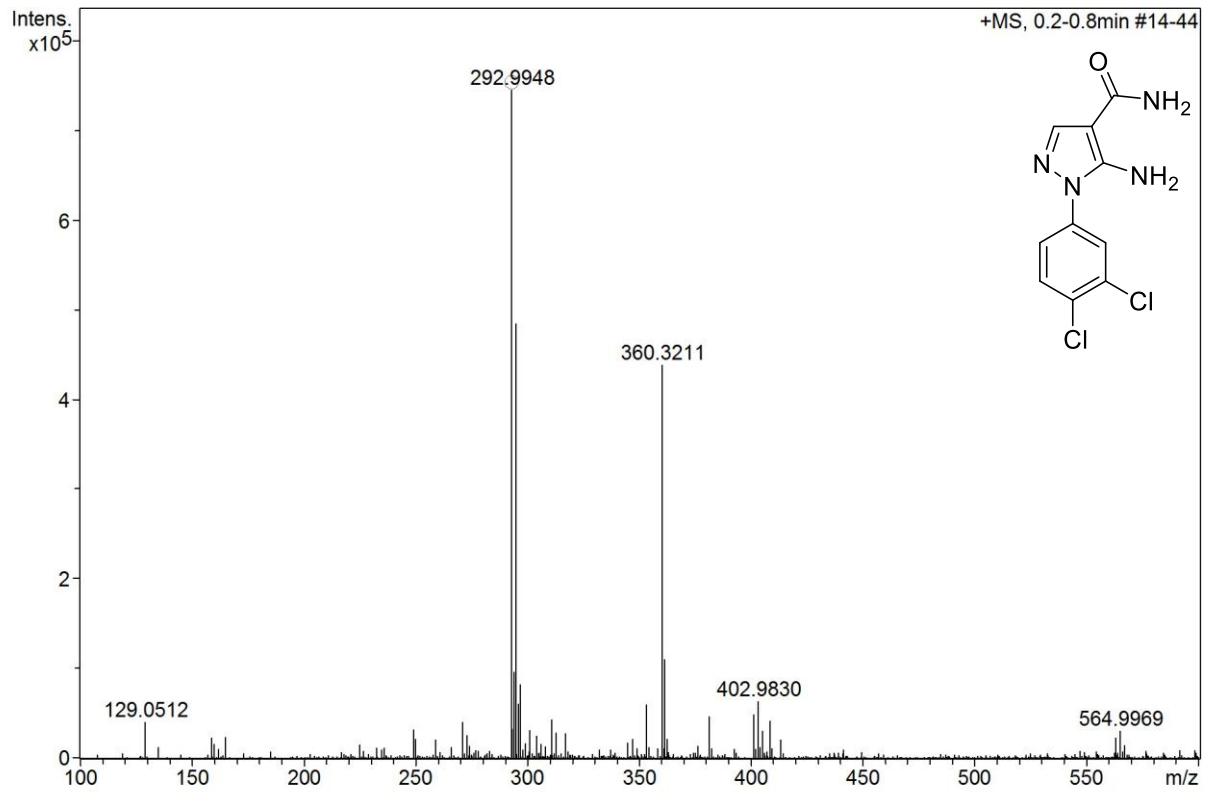
HRMS of compound **2c**



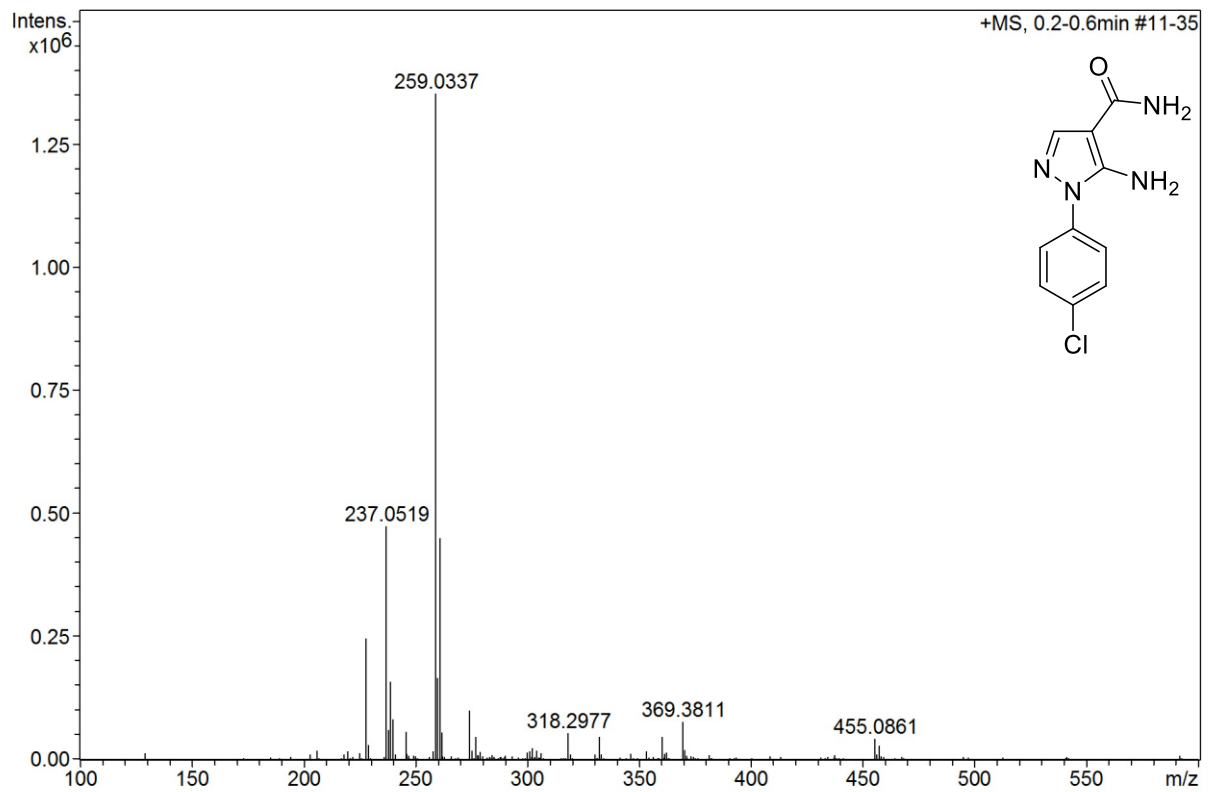
HRMS of compound **2d**



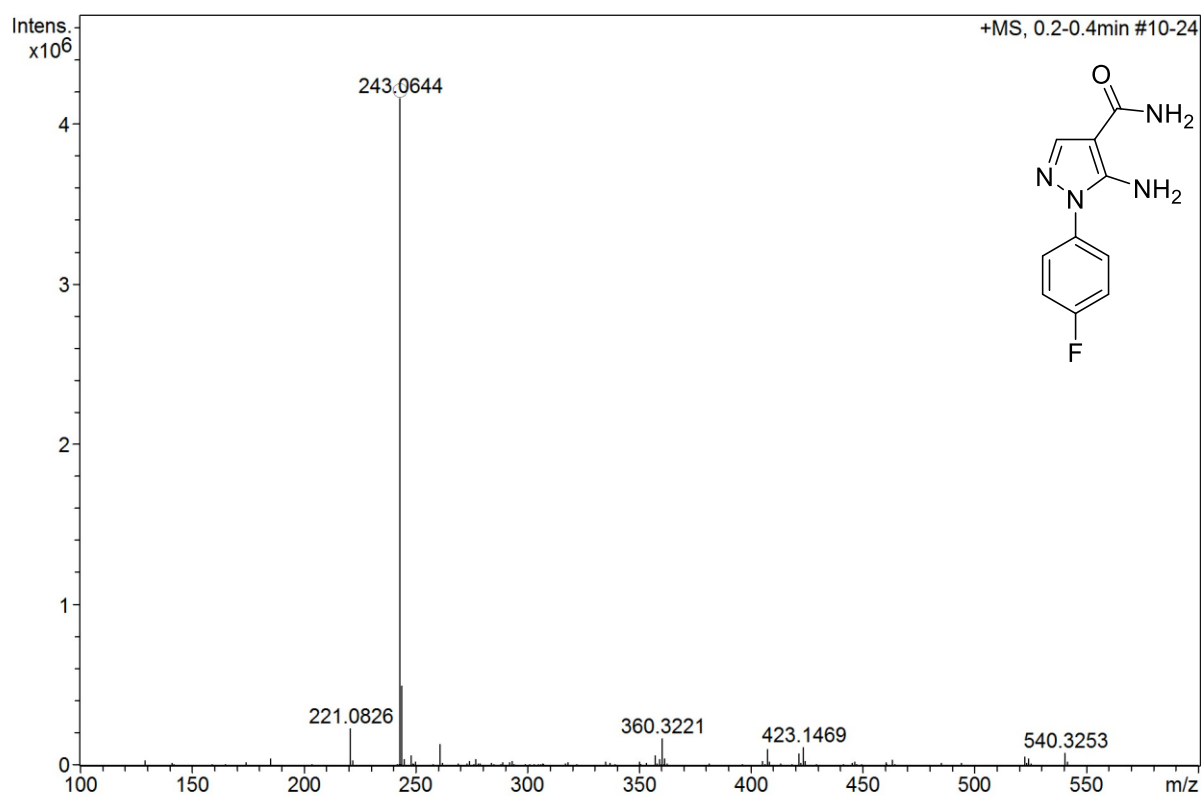
HRMS of compound **2e**



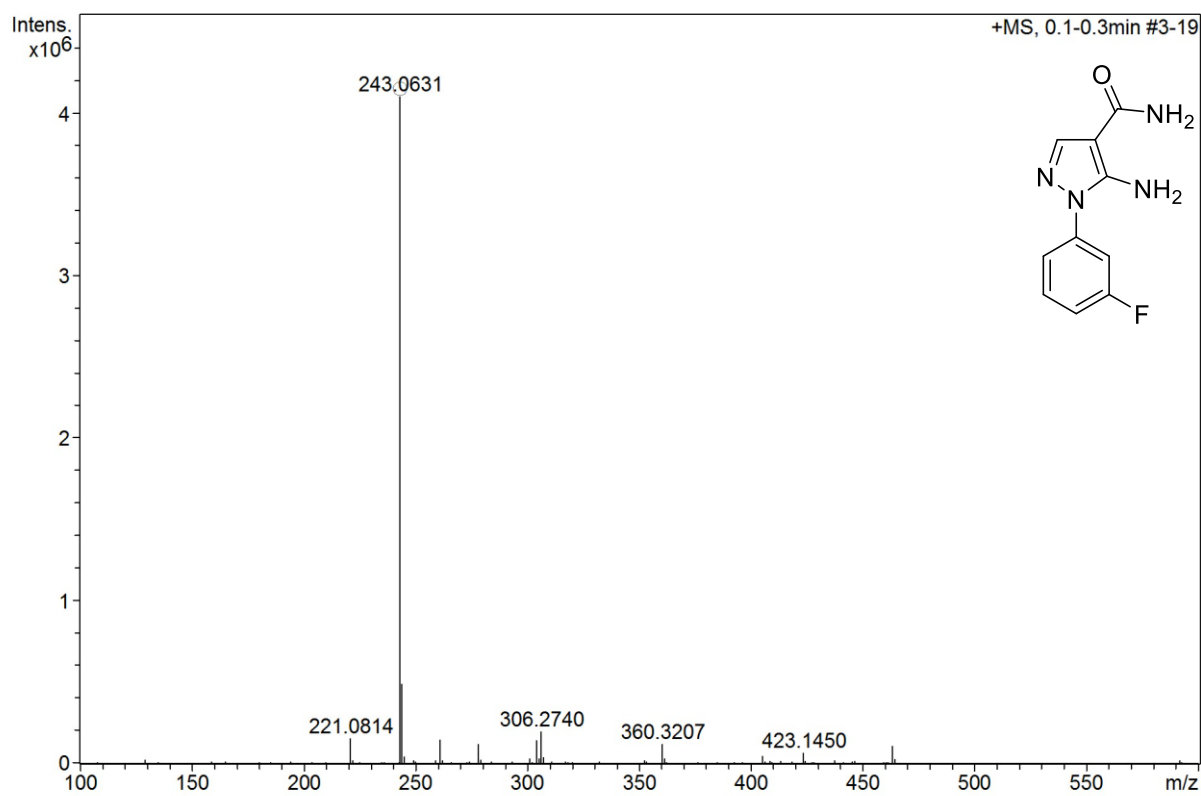
HRMS of compound **2f**



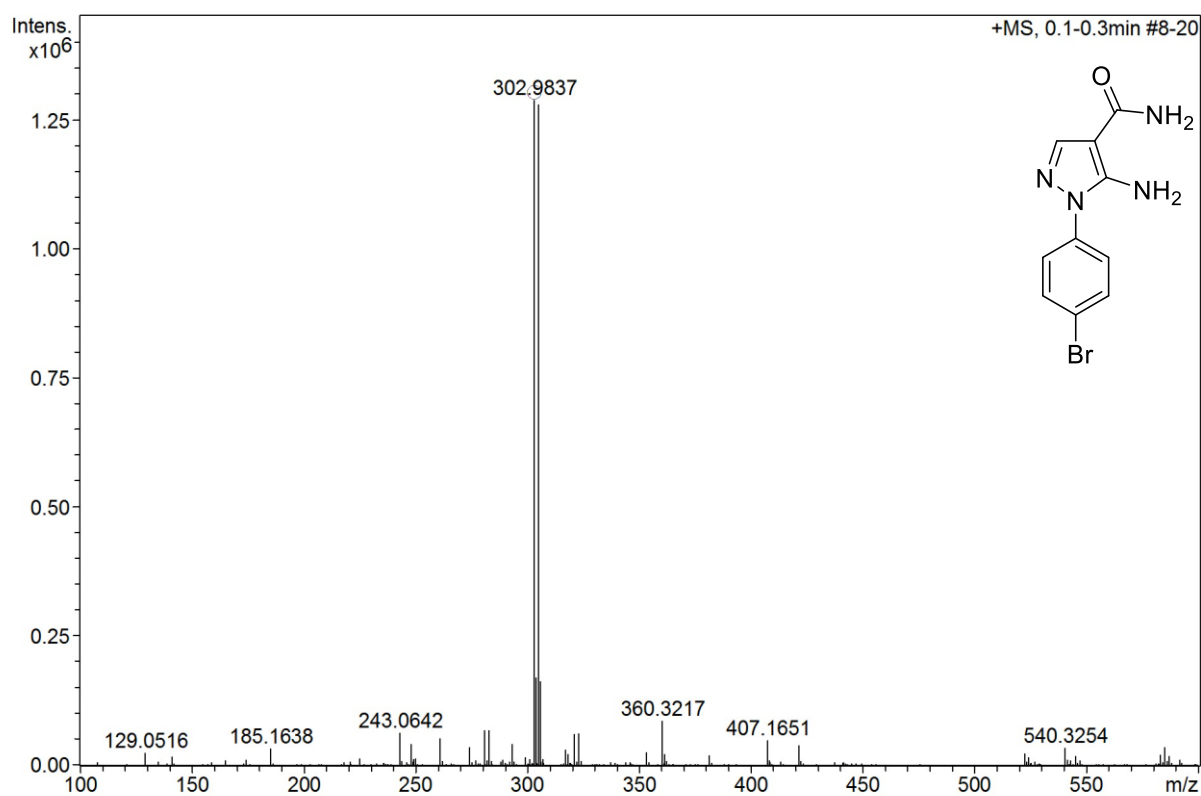
HRMS of compound **2g**



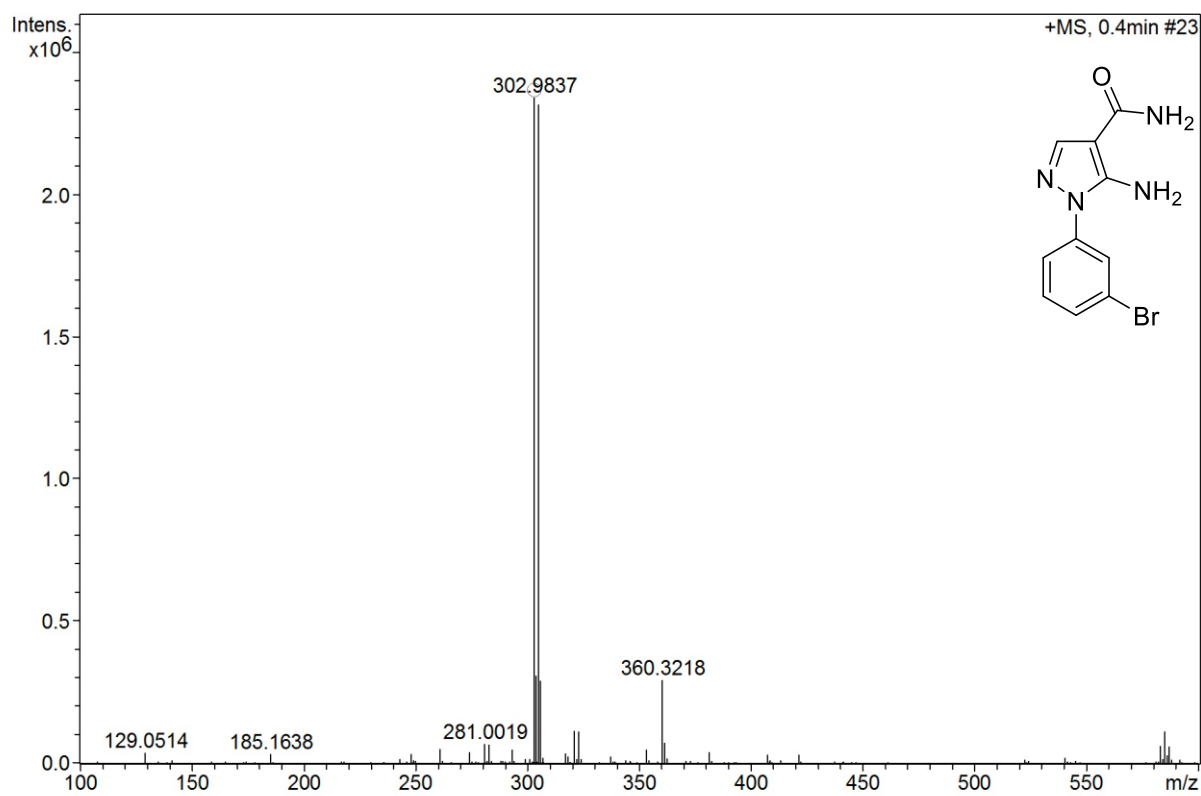
HRMS of compound **2h**



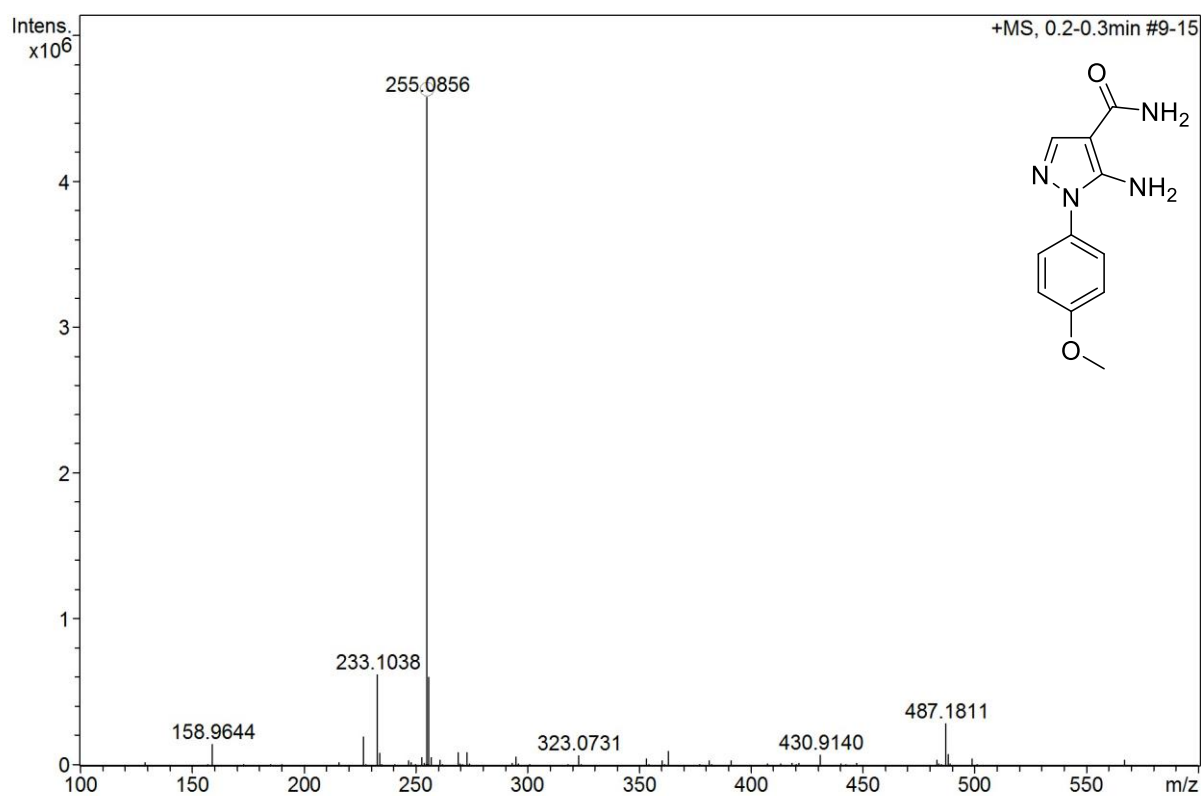
HRMS of compound **2i**



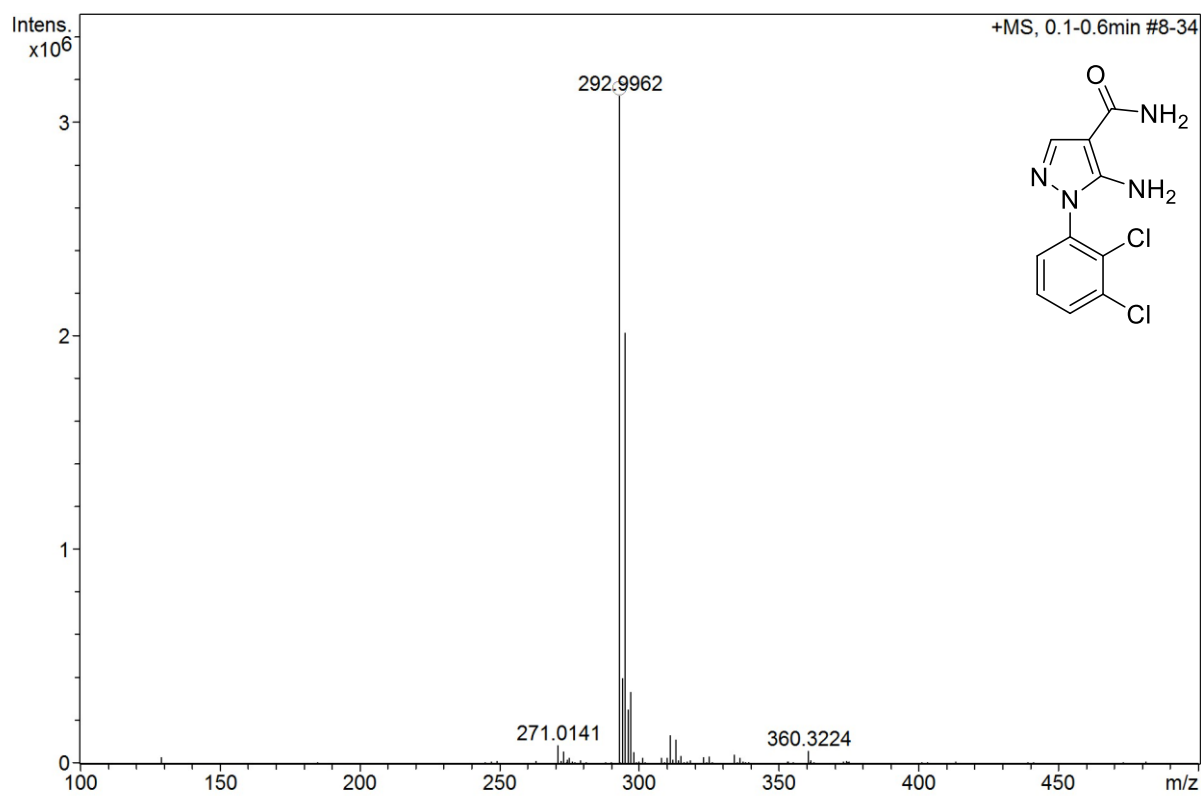
HRMS of compound **2j**



HRMS of compound **2k**

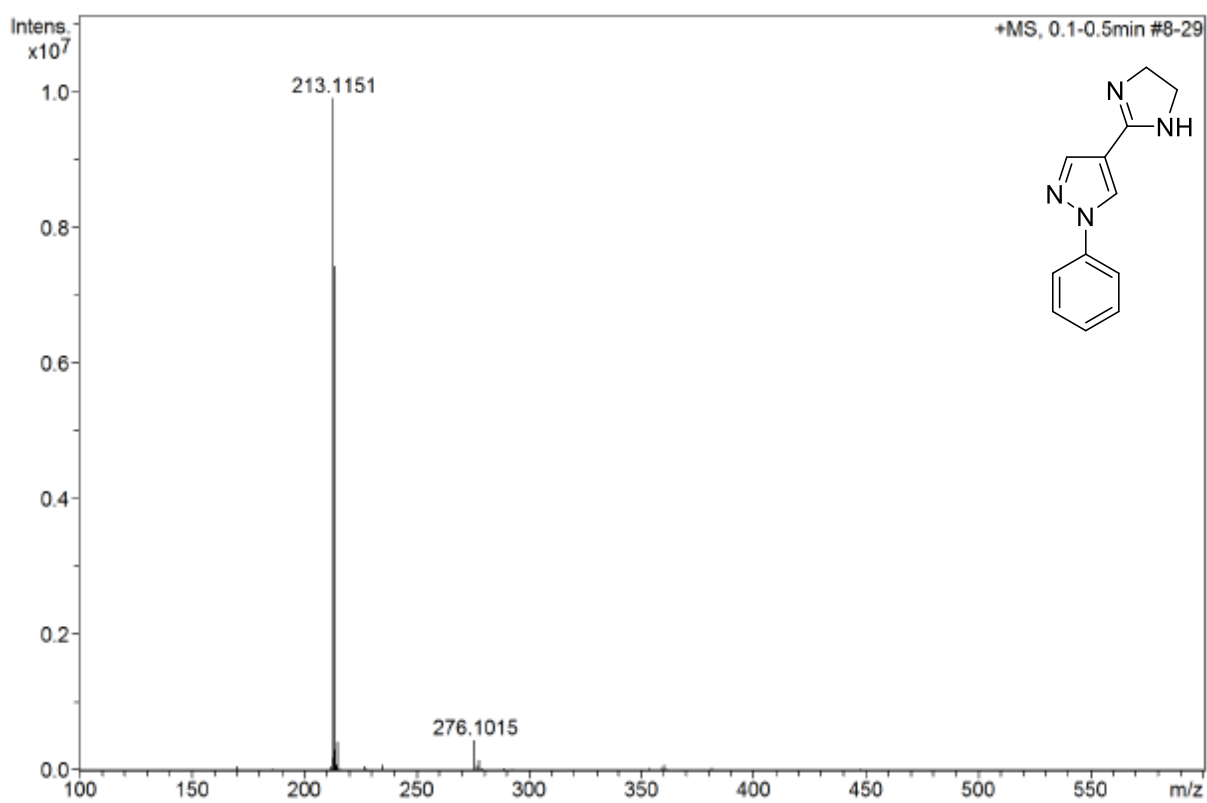


HRMS of compound **2l**

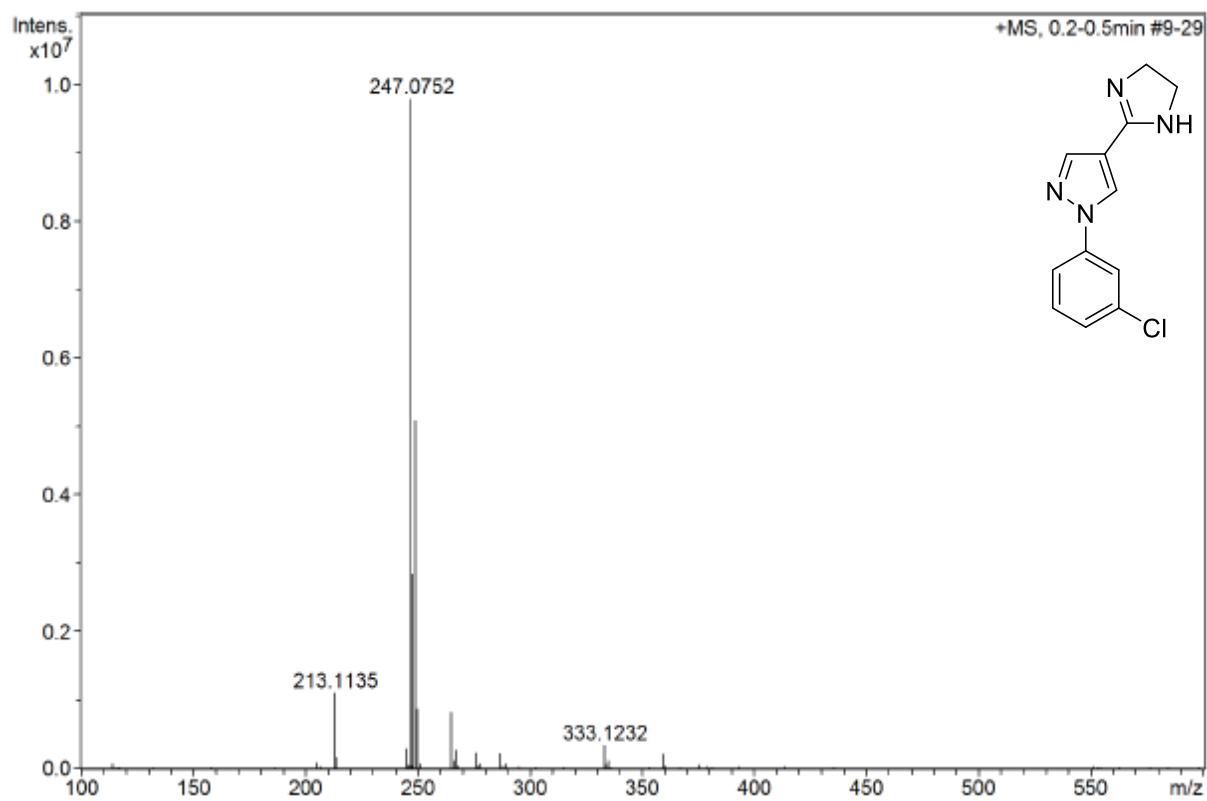




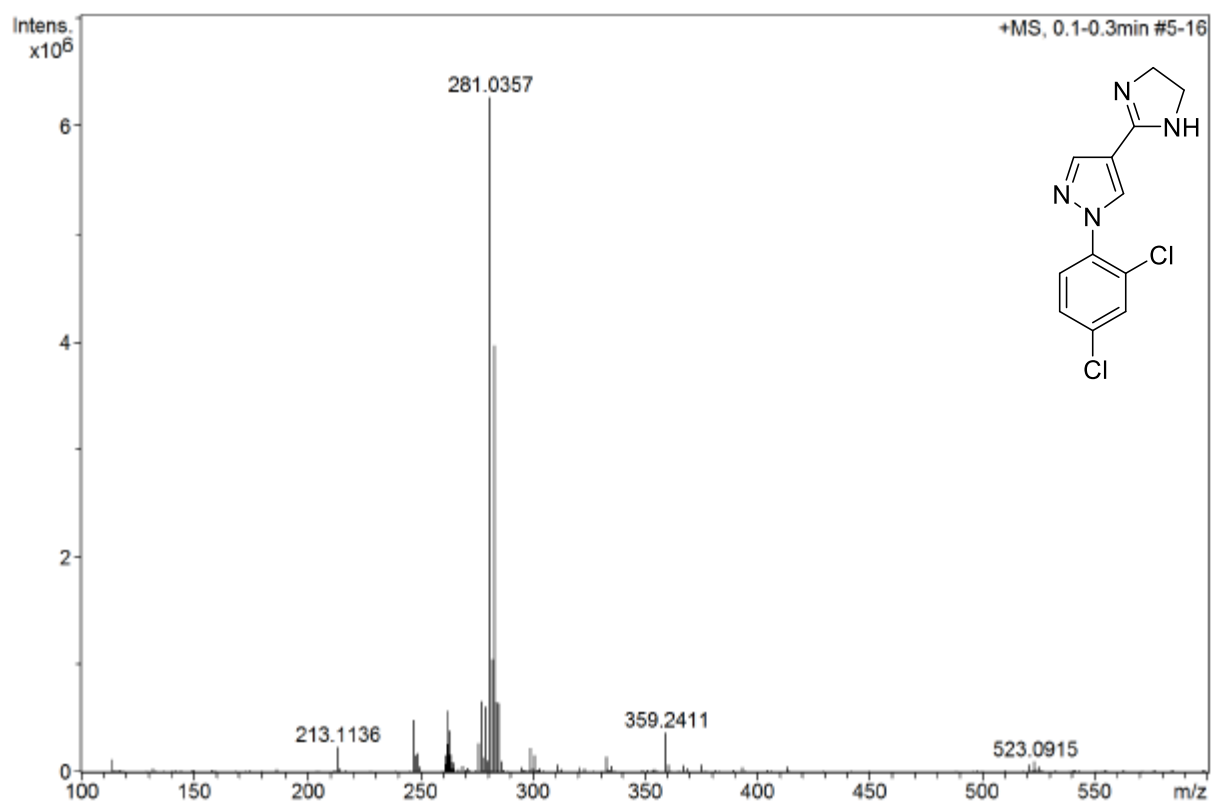
HRMS of compound **3a**



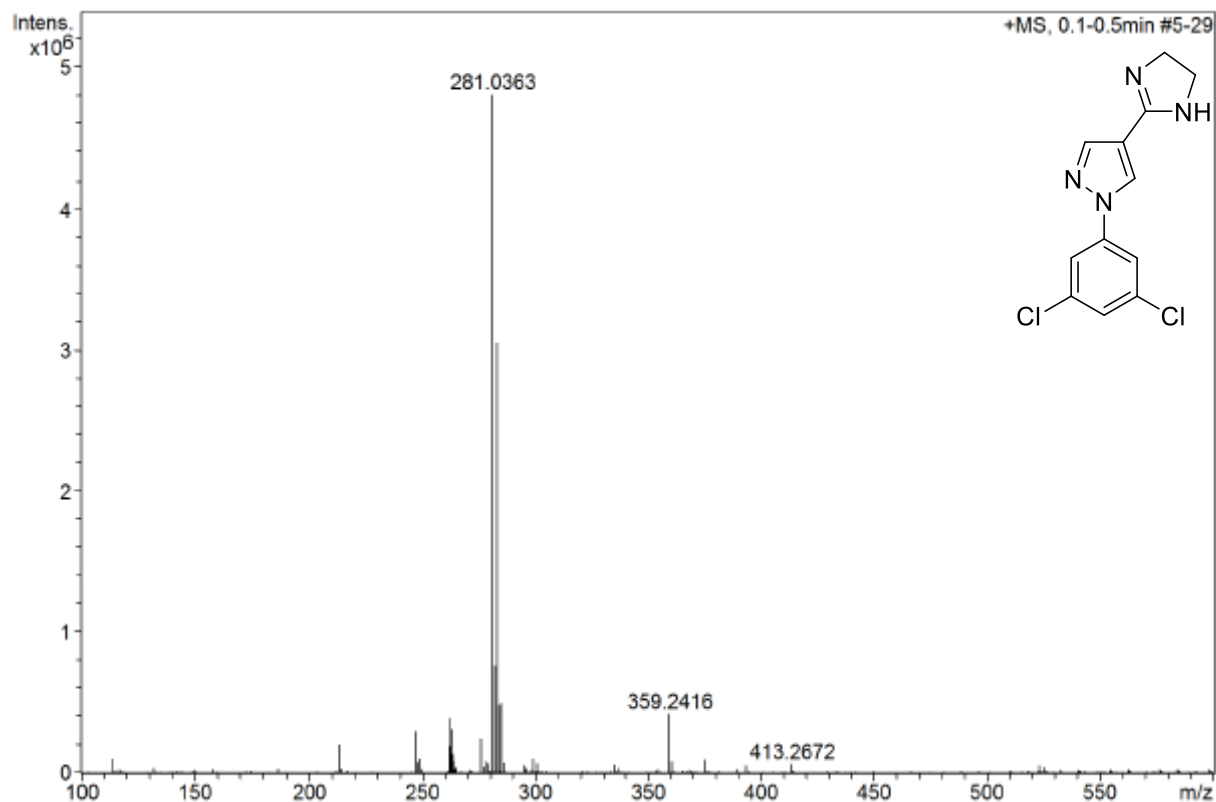
HRMS of compound **3b**



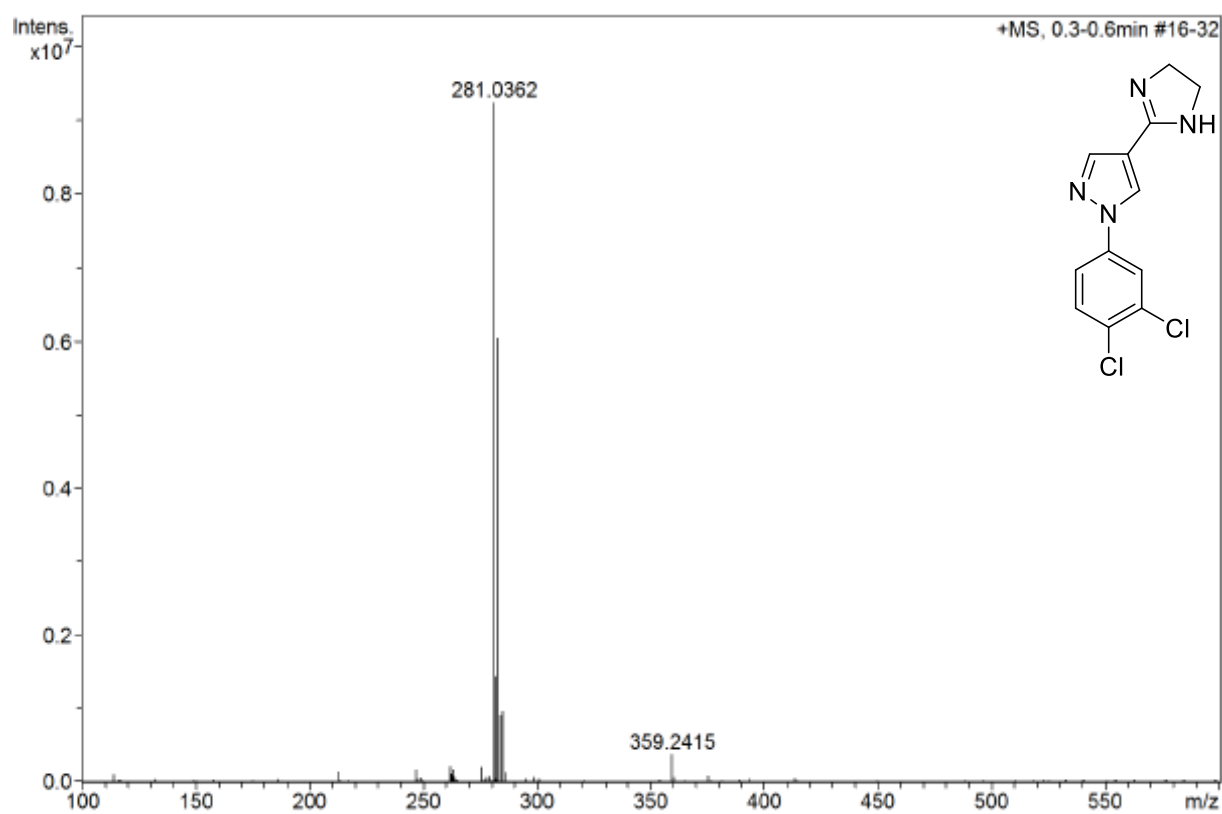
HRMS of compound **3c**



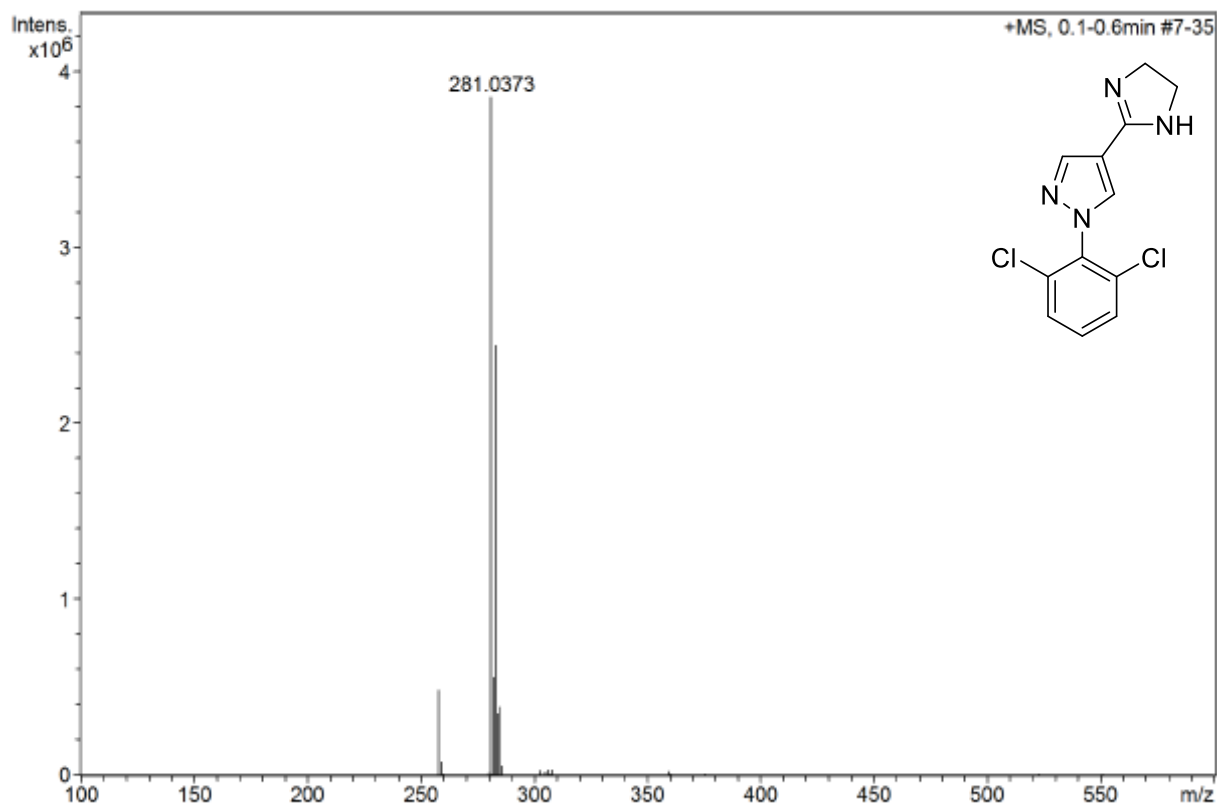
HRMS of compound **3d**



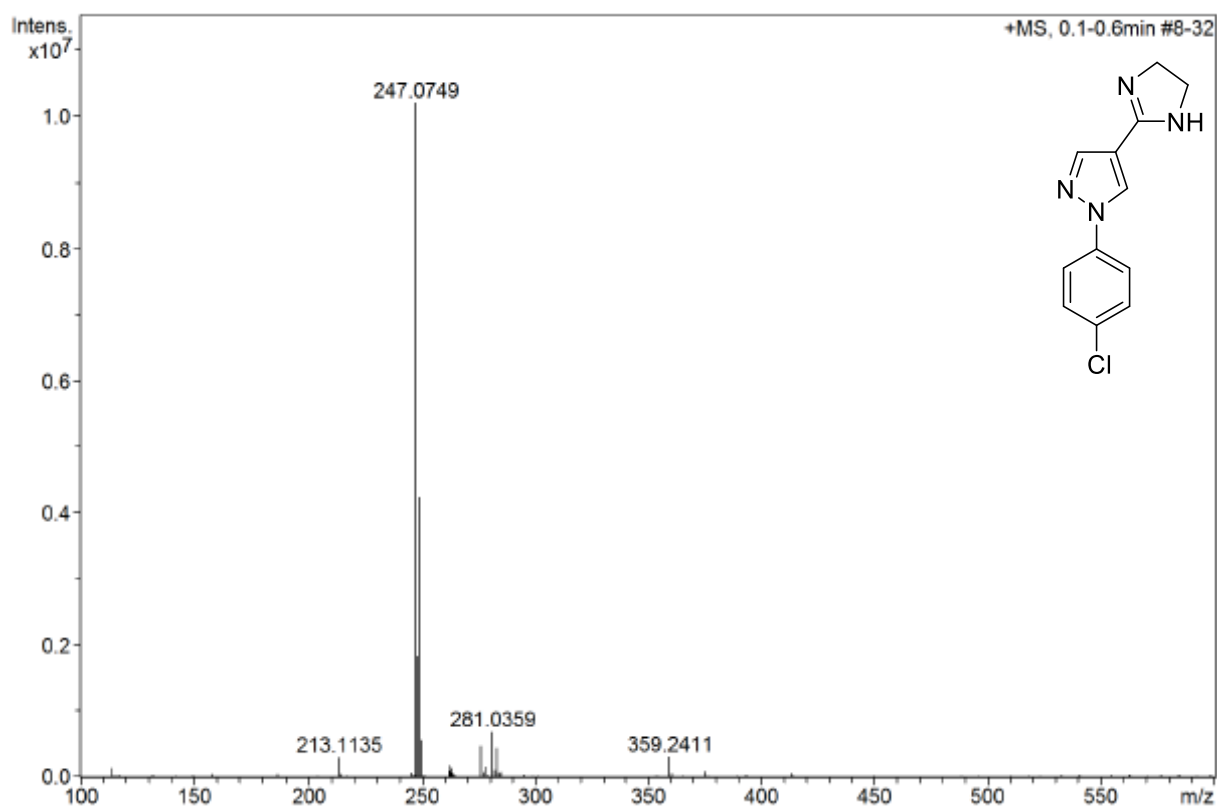
HRMS of compound **3e**



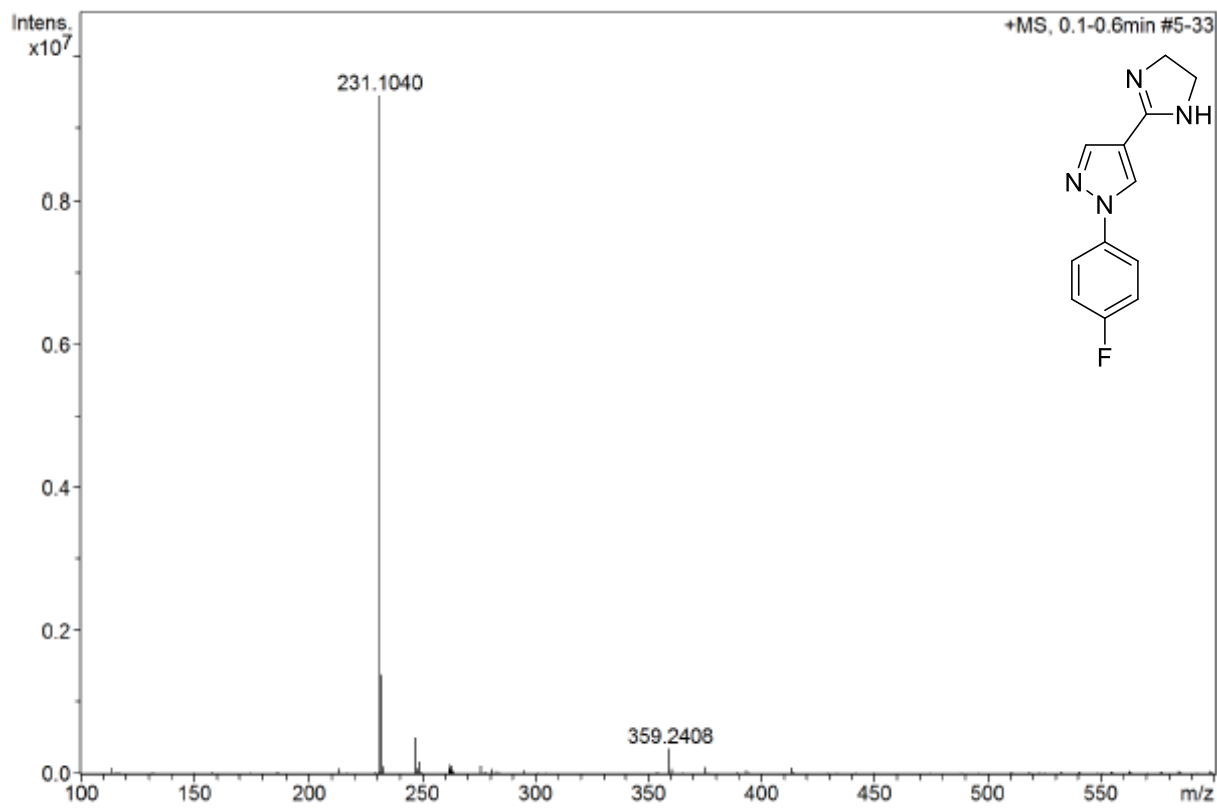
HRMS of compound **3f**



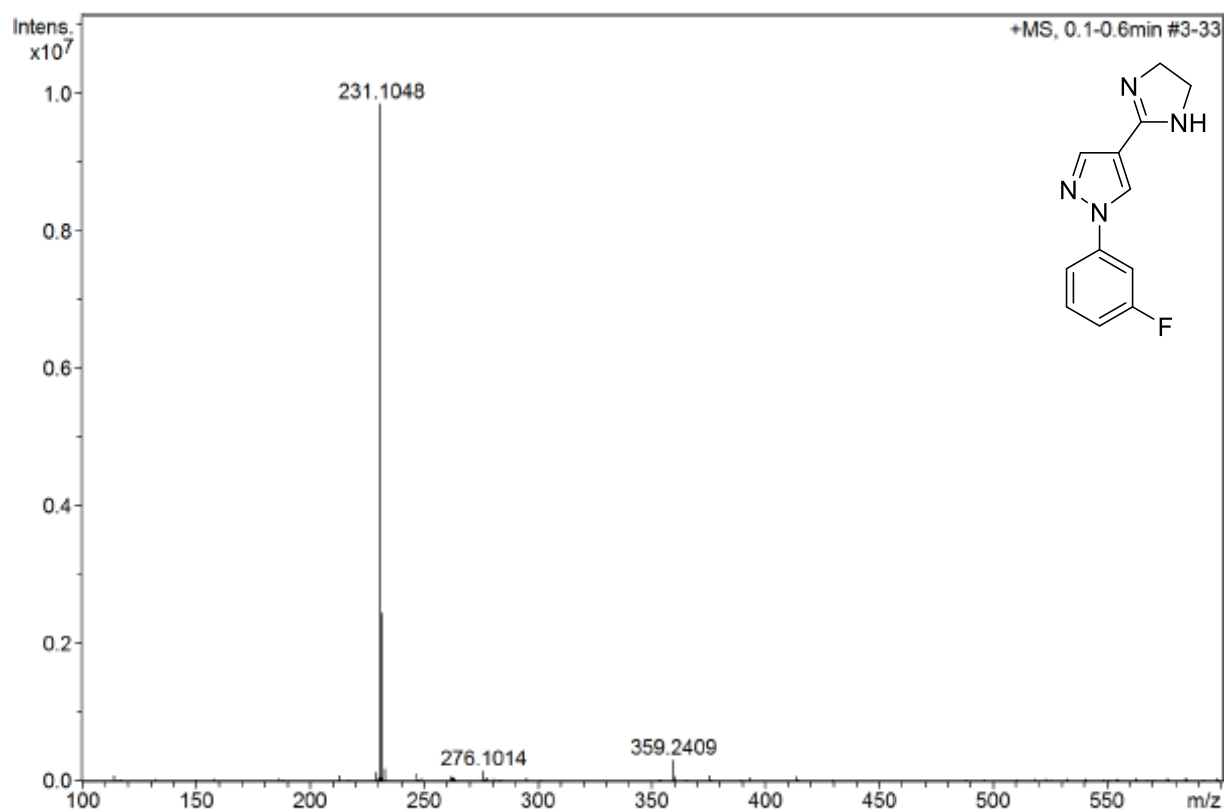
HRMS of compound **3g**



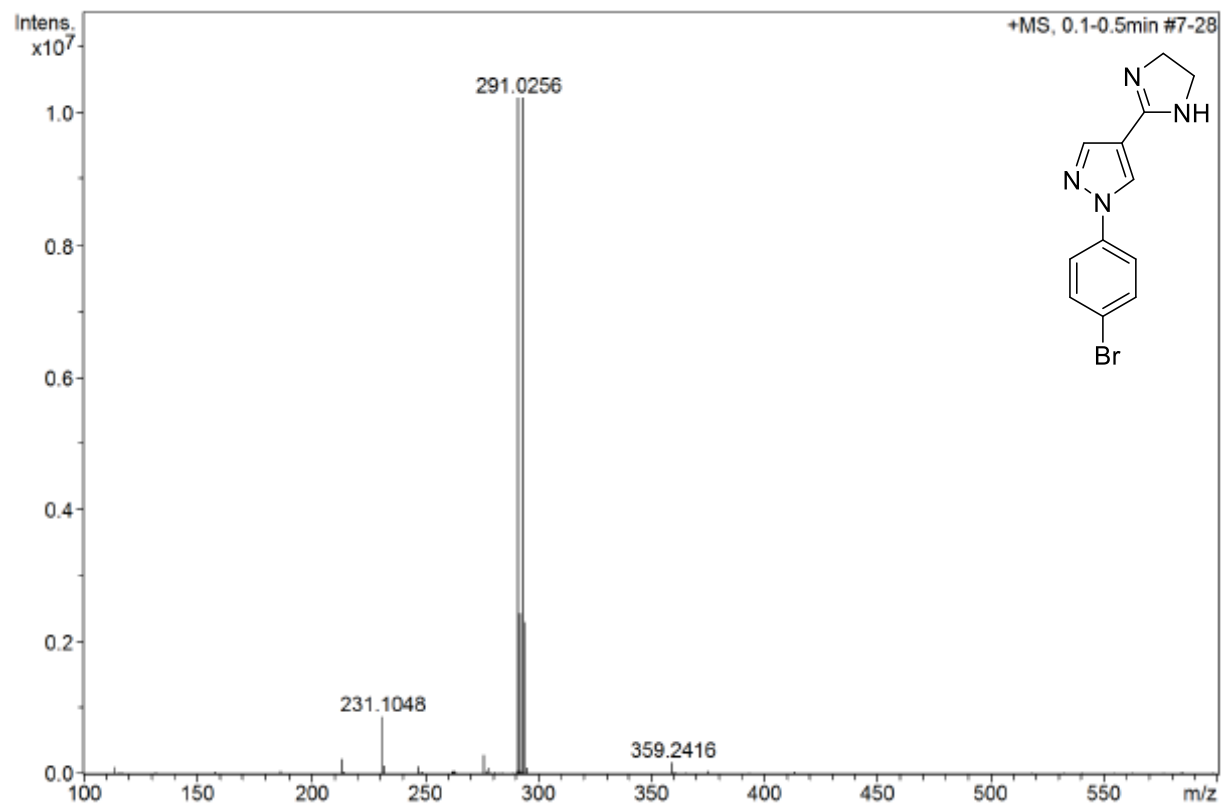
HRMS of compound **3h**



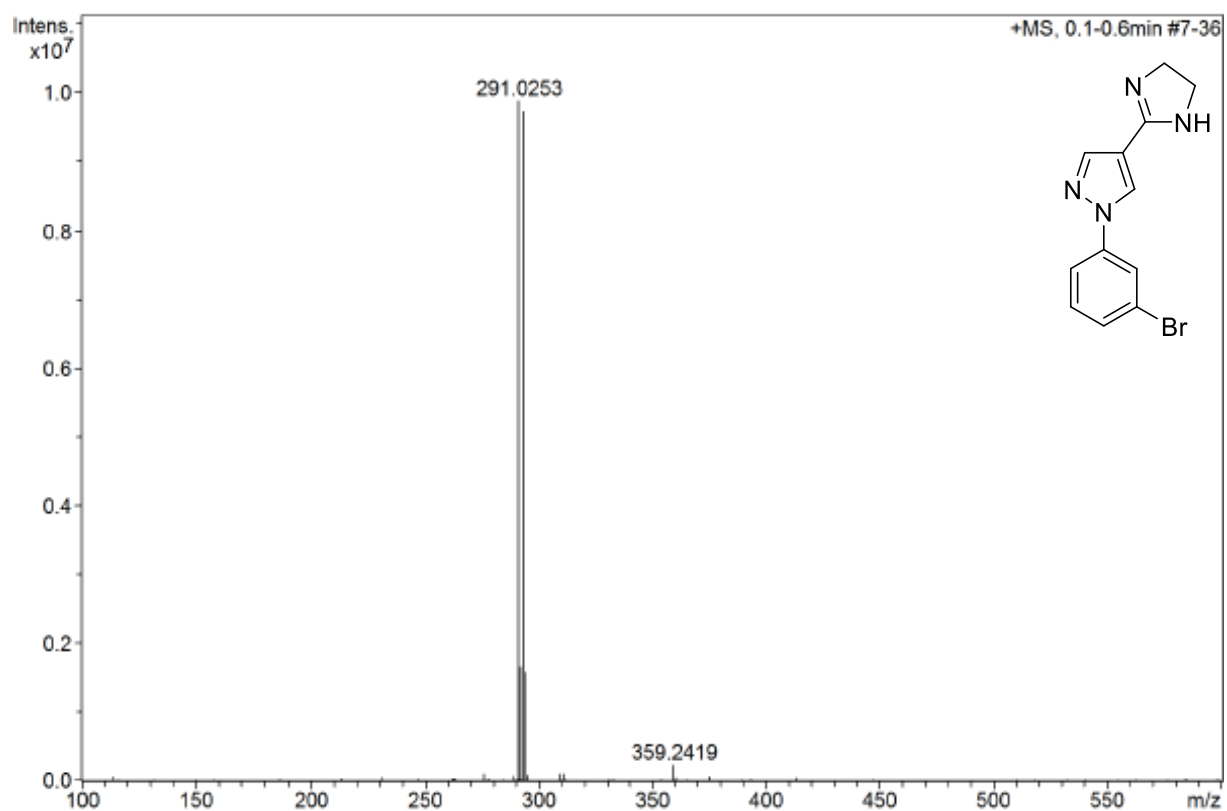
HRMS of compound **3i**



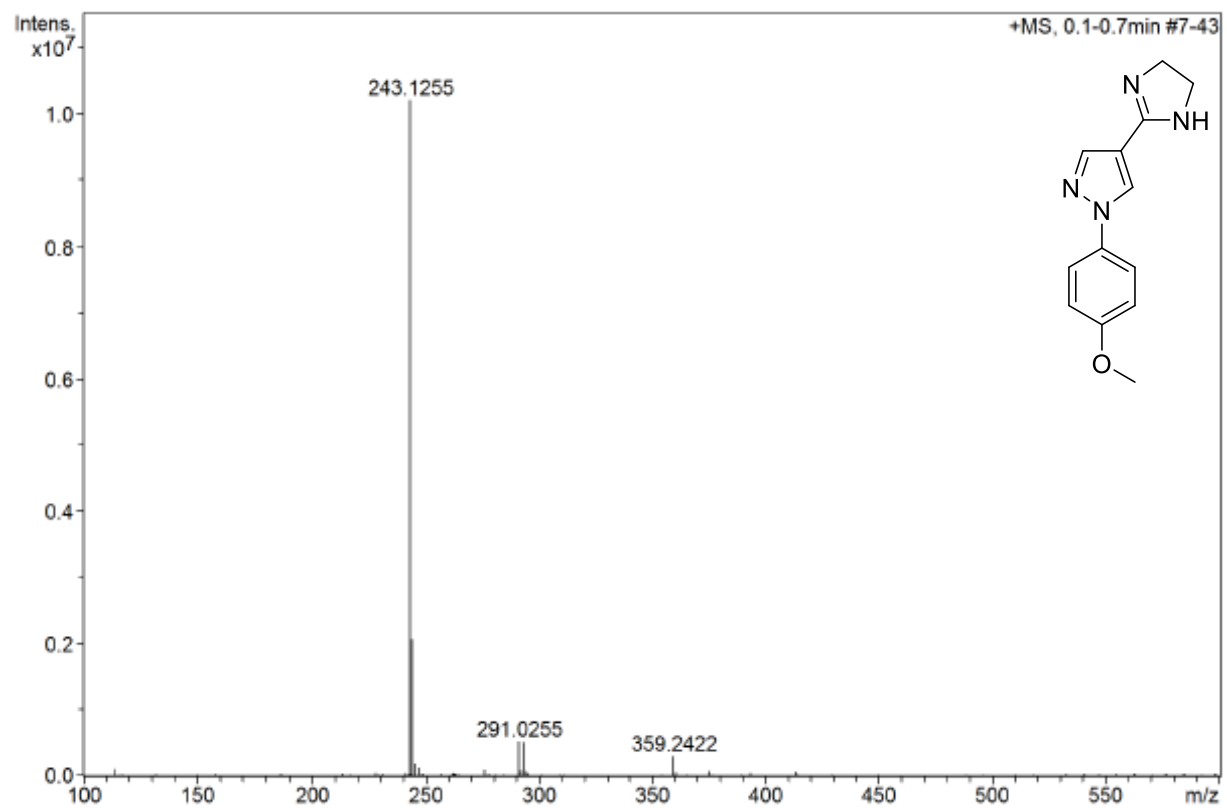
HRMS of compound **3j**



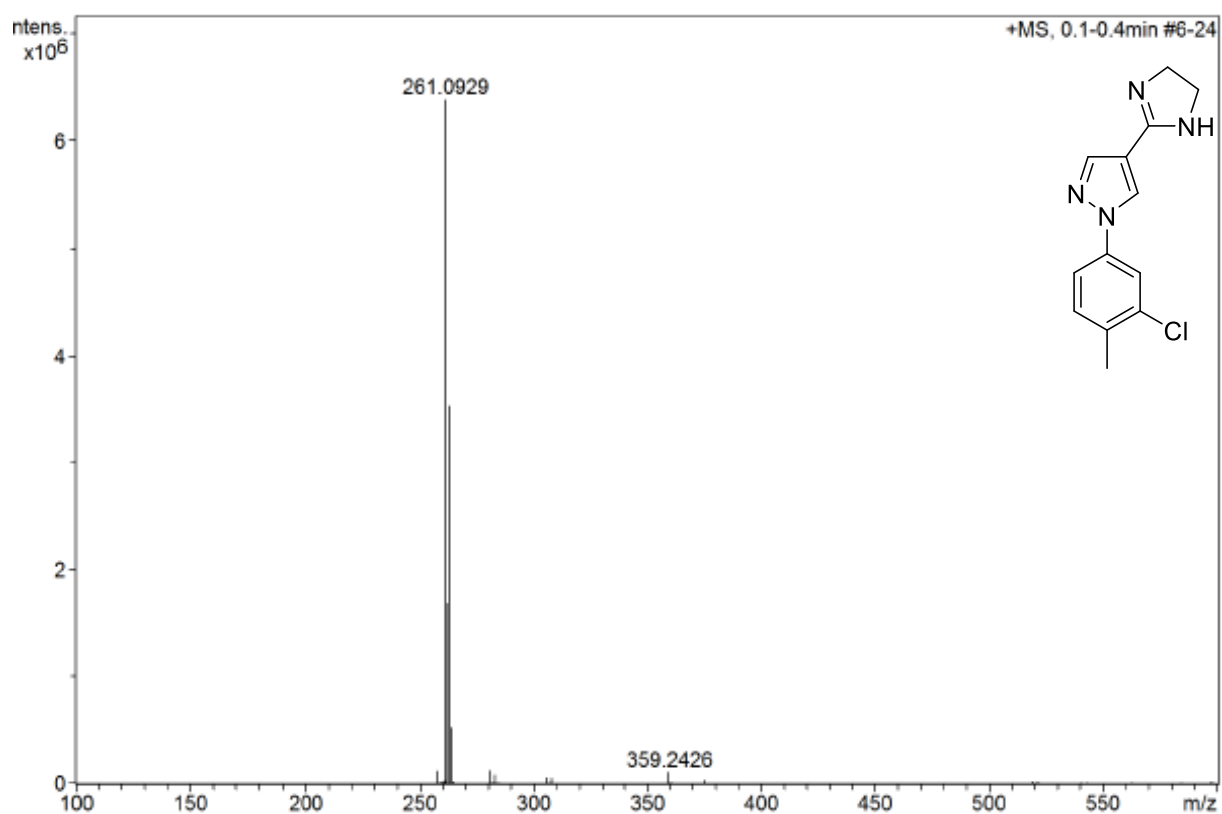
HRMS of compound **3k**



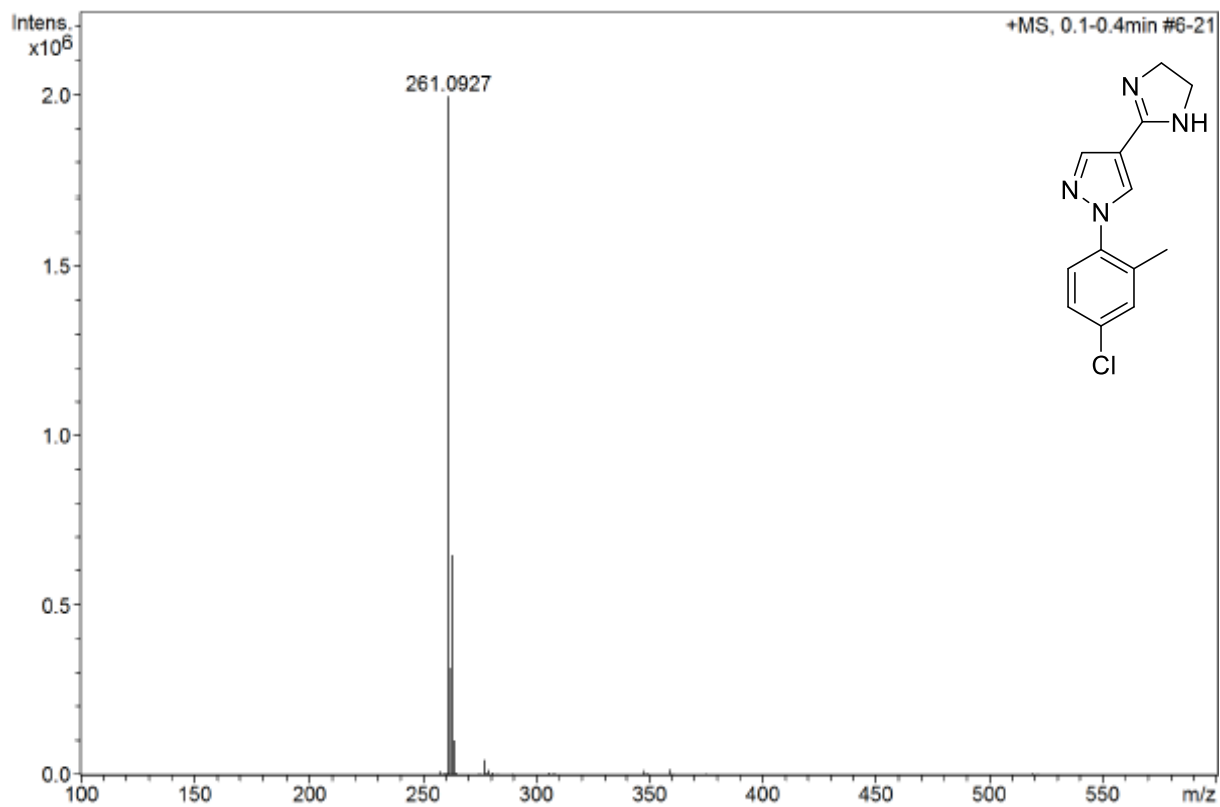
HRMS of compound **3l**



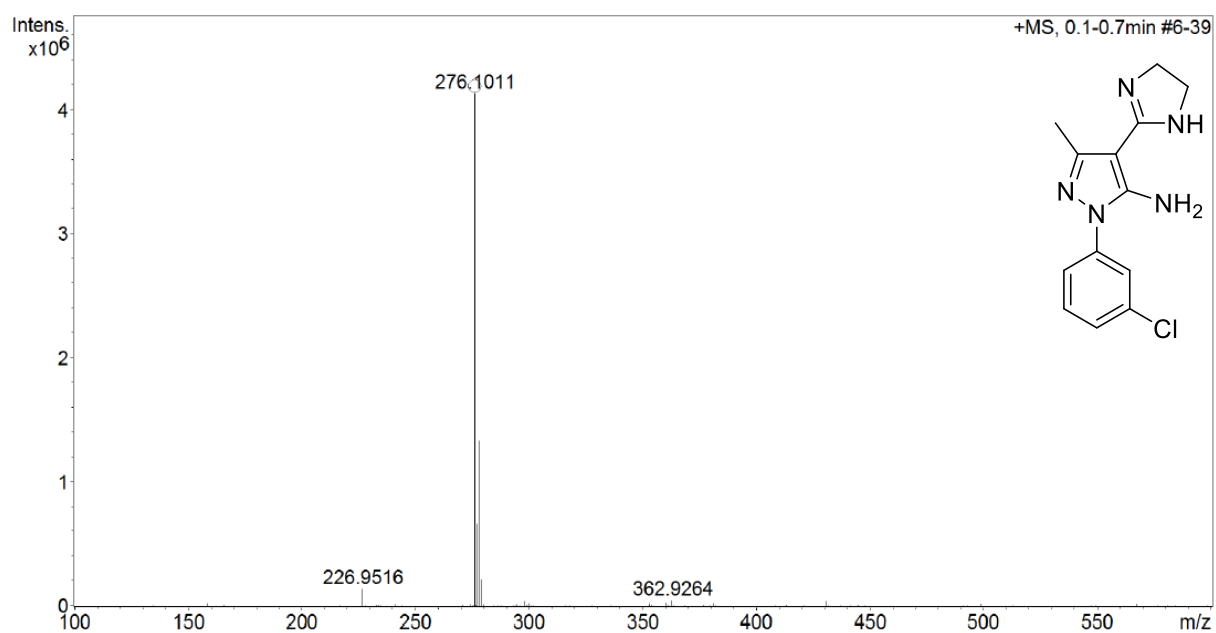
HRMS of compound **3m**



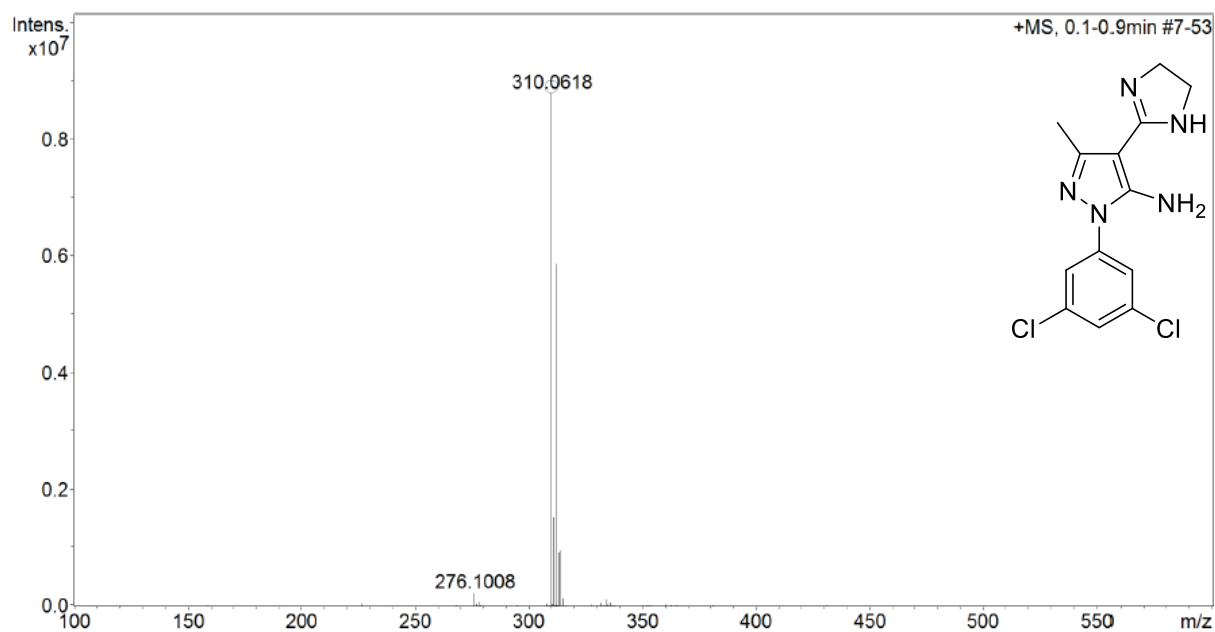
HRMS of compound **3n**



### HRMS of compound **4a**

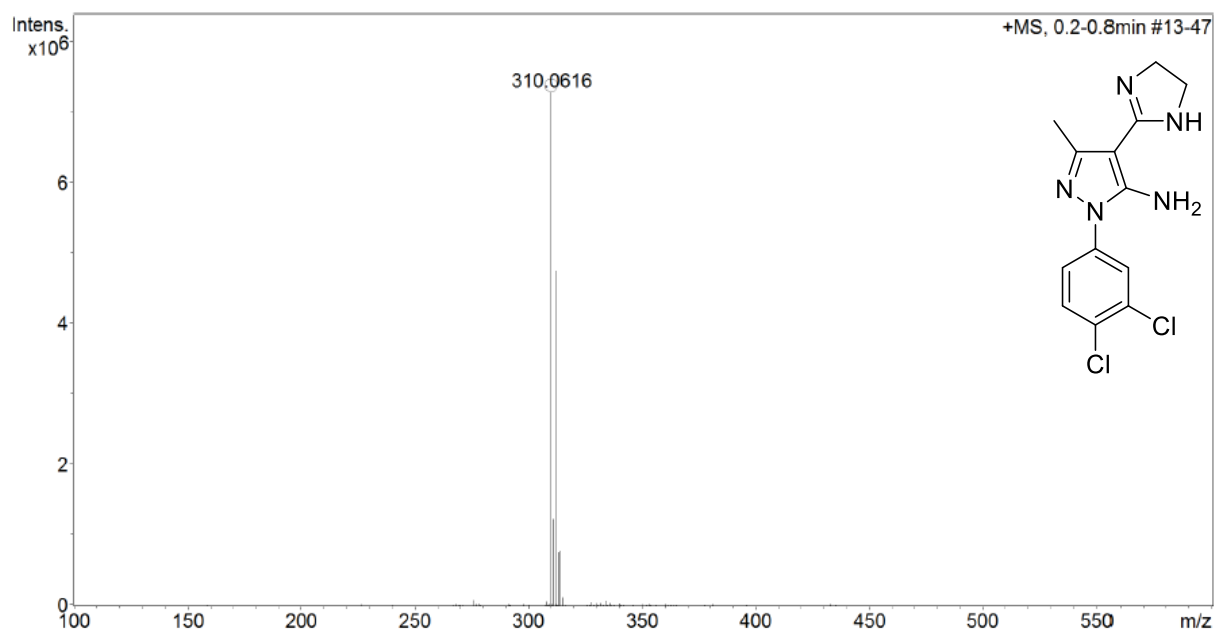


### HRMS of compound **4b**

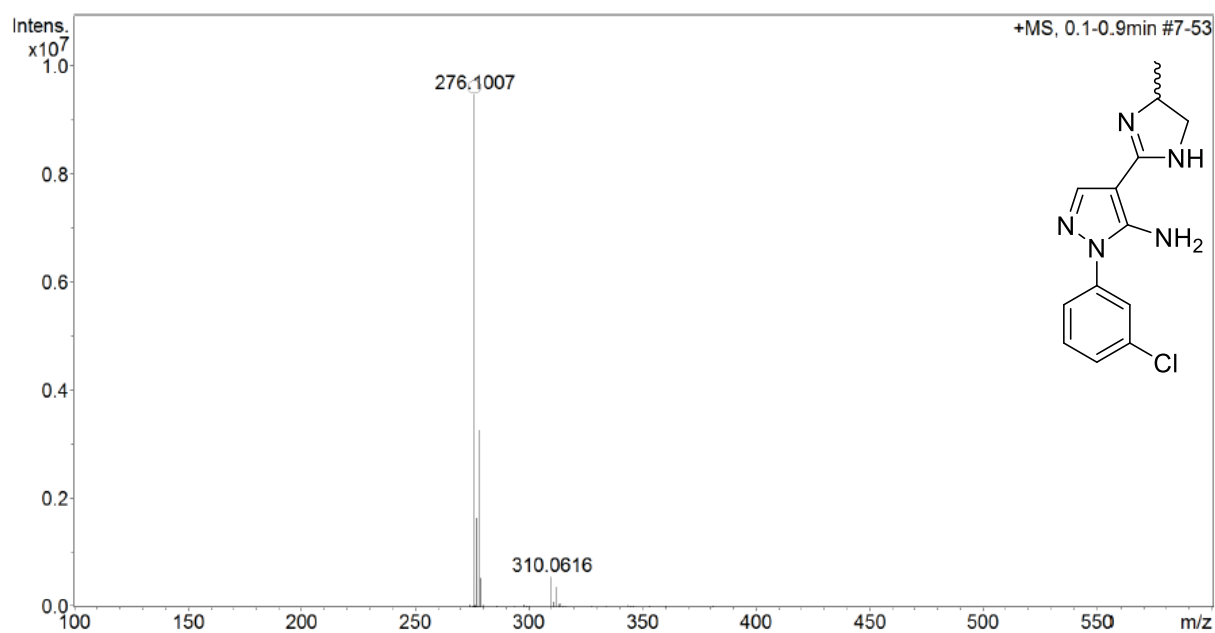




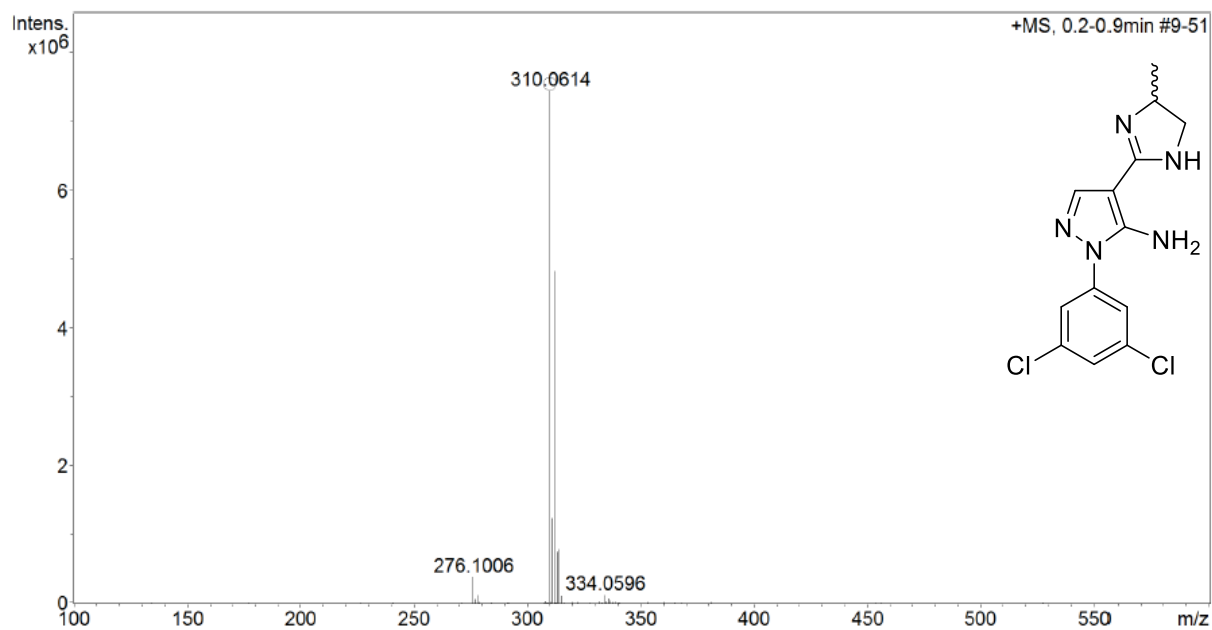
HRMS of compound **4c**



HRMS of compound **5a**



### HRMS of compound **5b**



### HRMS of compound **5c**

