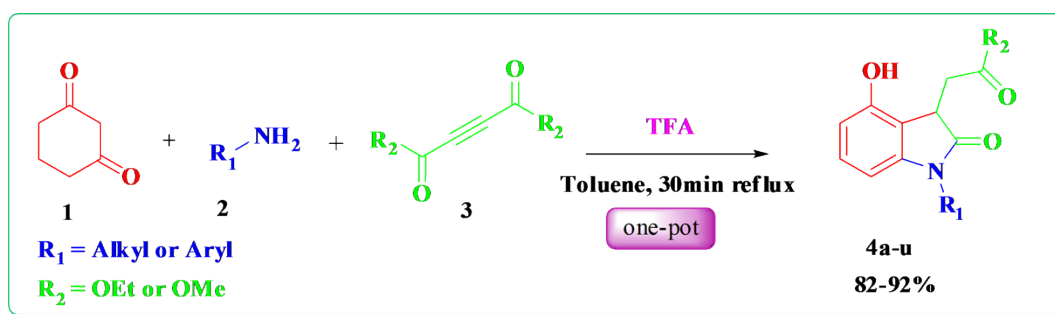


## SUPPORTING INFORMATION

### Three component synthesis of 2-oxindole *via* sequential Michael addition, intramolecular cyclization and aromatization

Muthusamy Boominathan, Muthupandi Nagaraj, Shanmugam Muthusubramanian,\*  
and Nattamai Bhuvanesh



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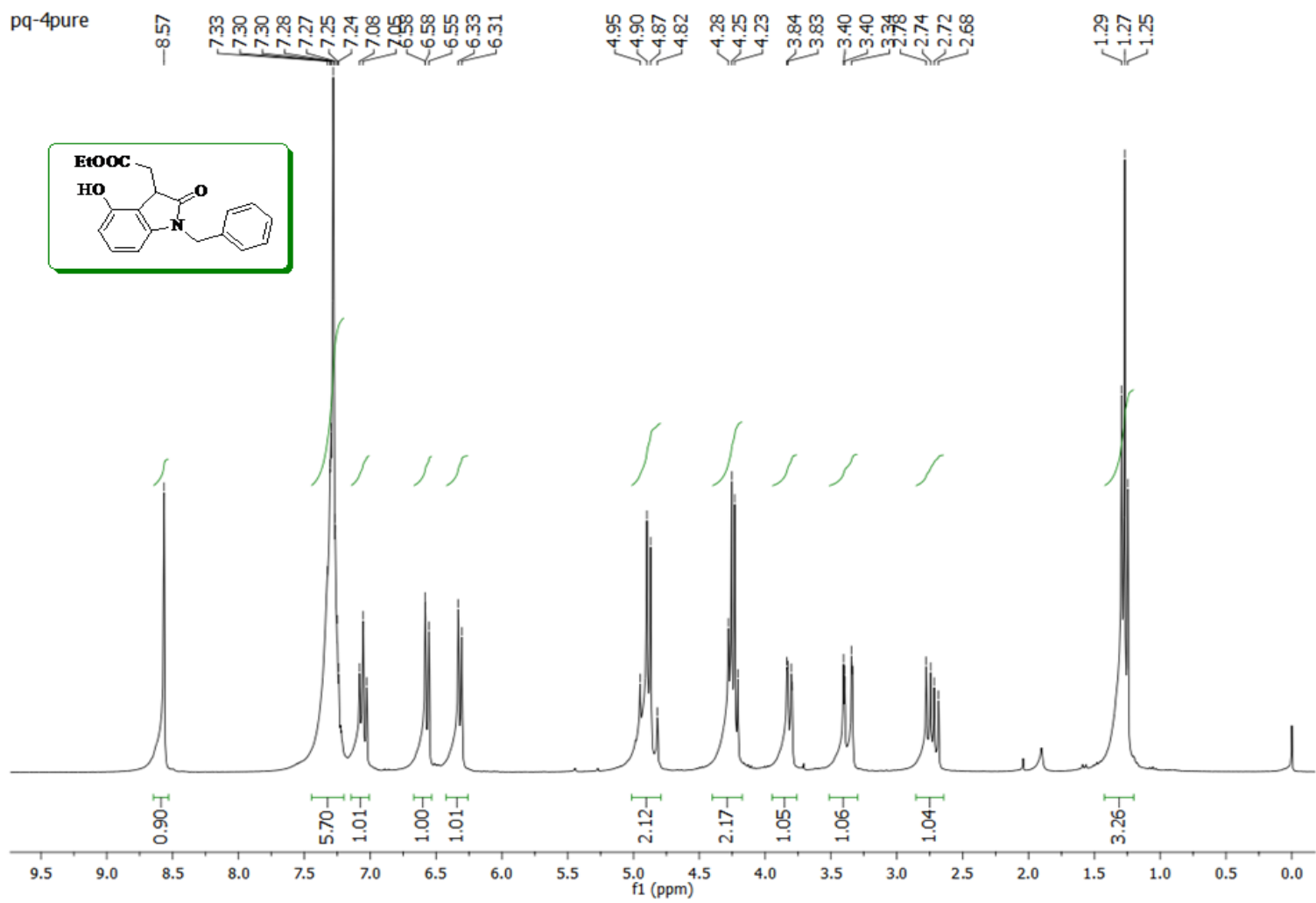


Figure S1.  $^1\text{H}$  NMR spectrum of 4a

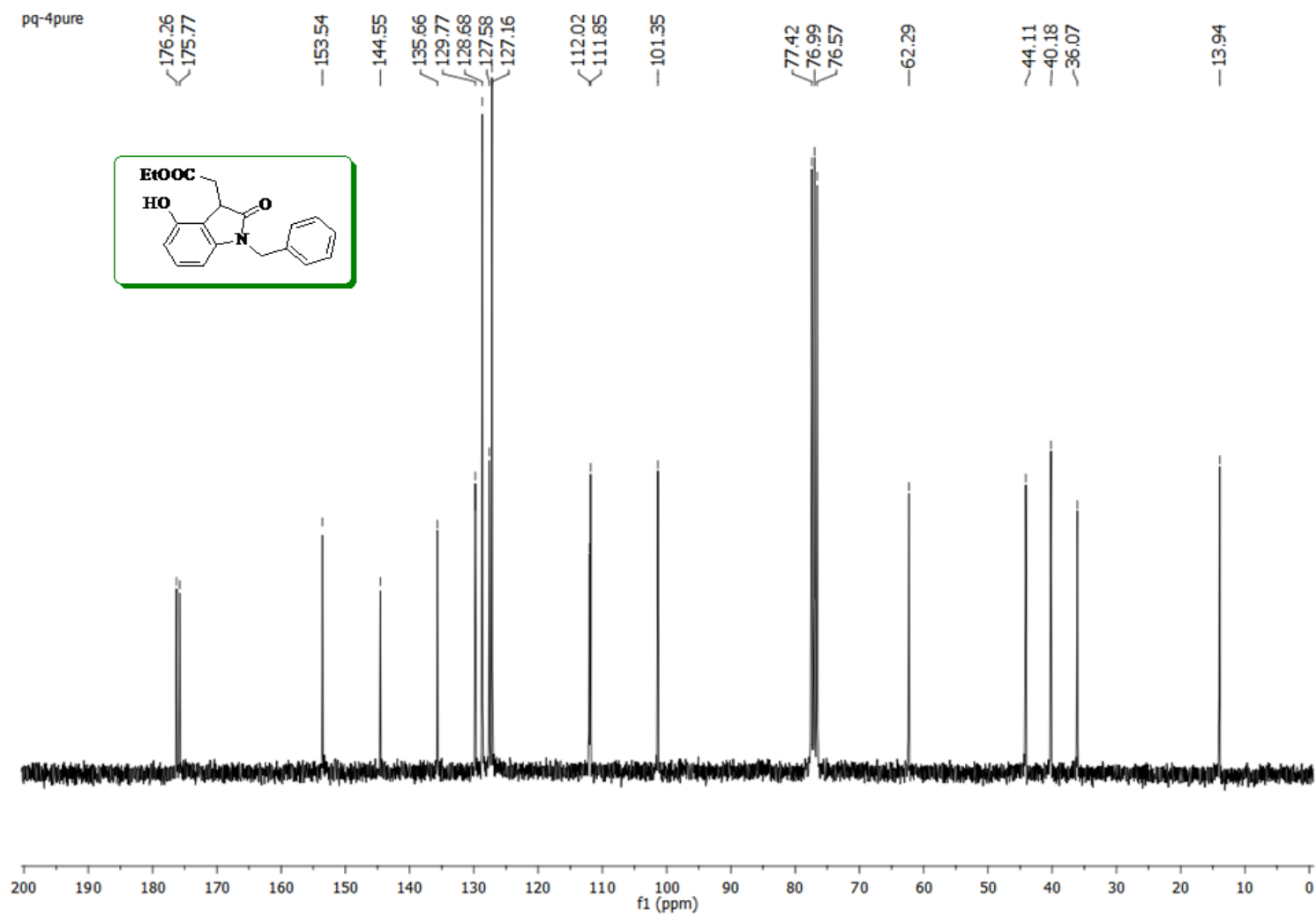


Figure S2.  $^{13}\text{C}$  NMR spectrum of 4a

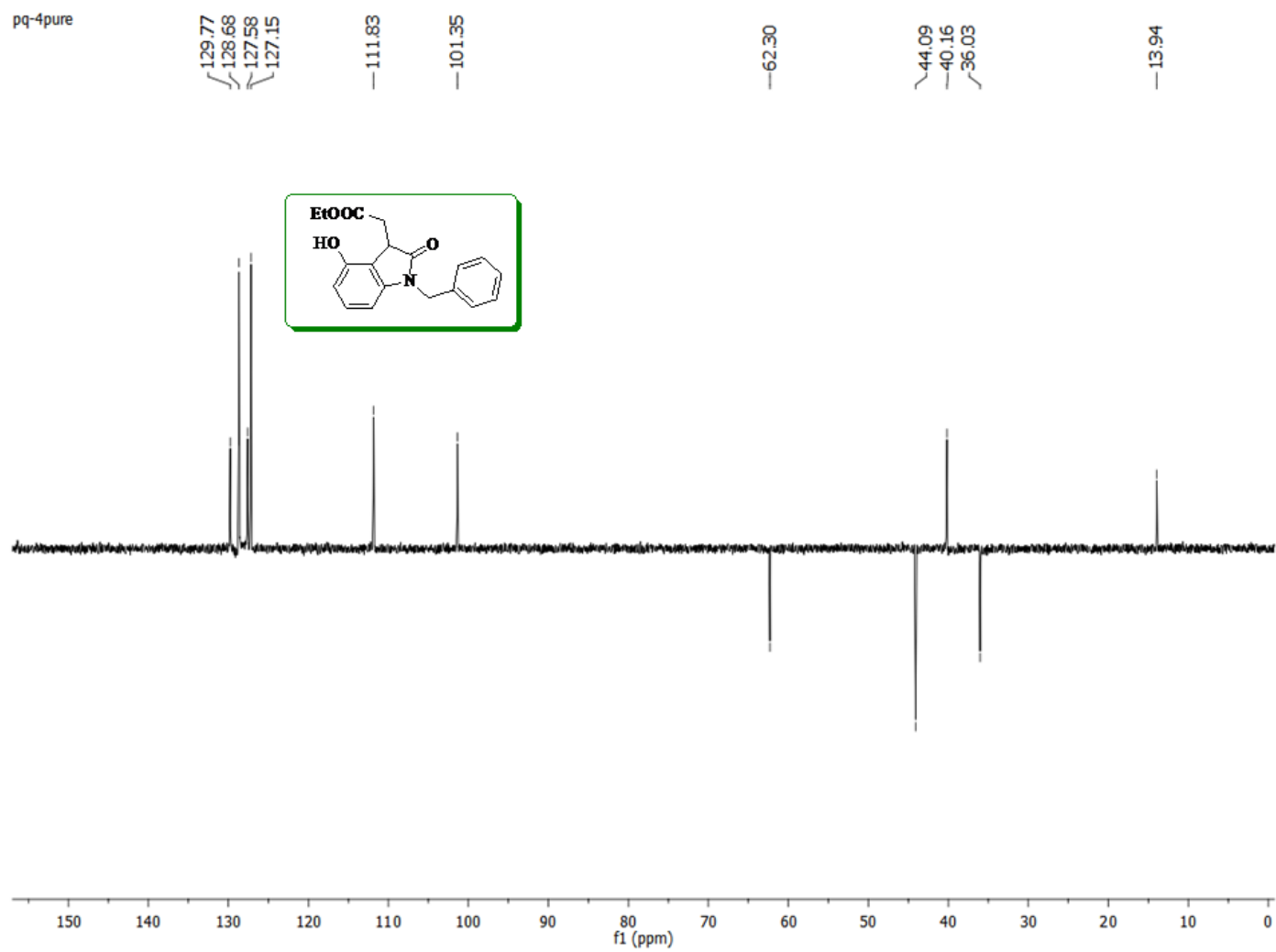


Figure S4. DEPT-135 spectrum of **4a**

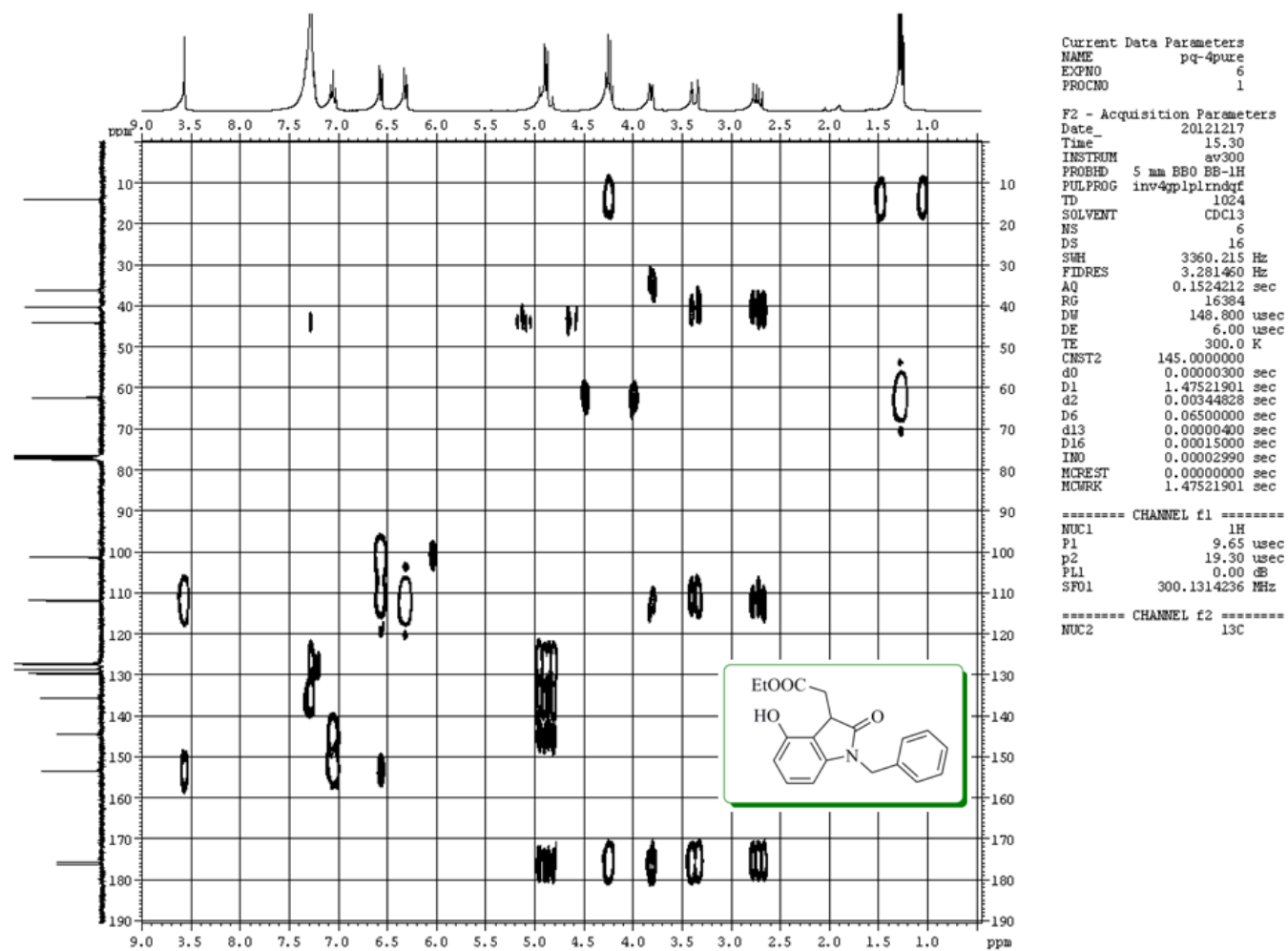
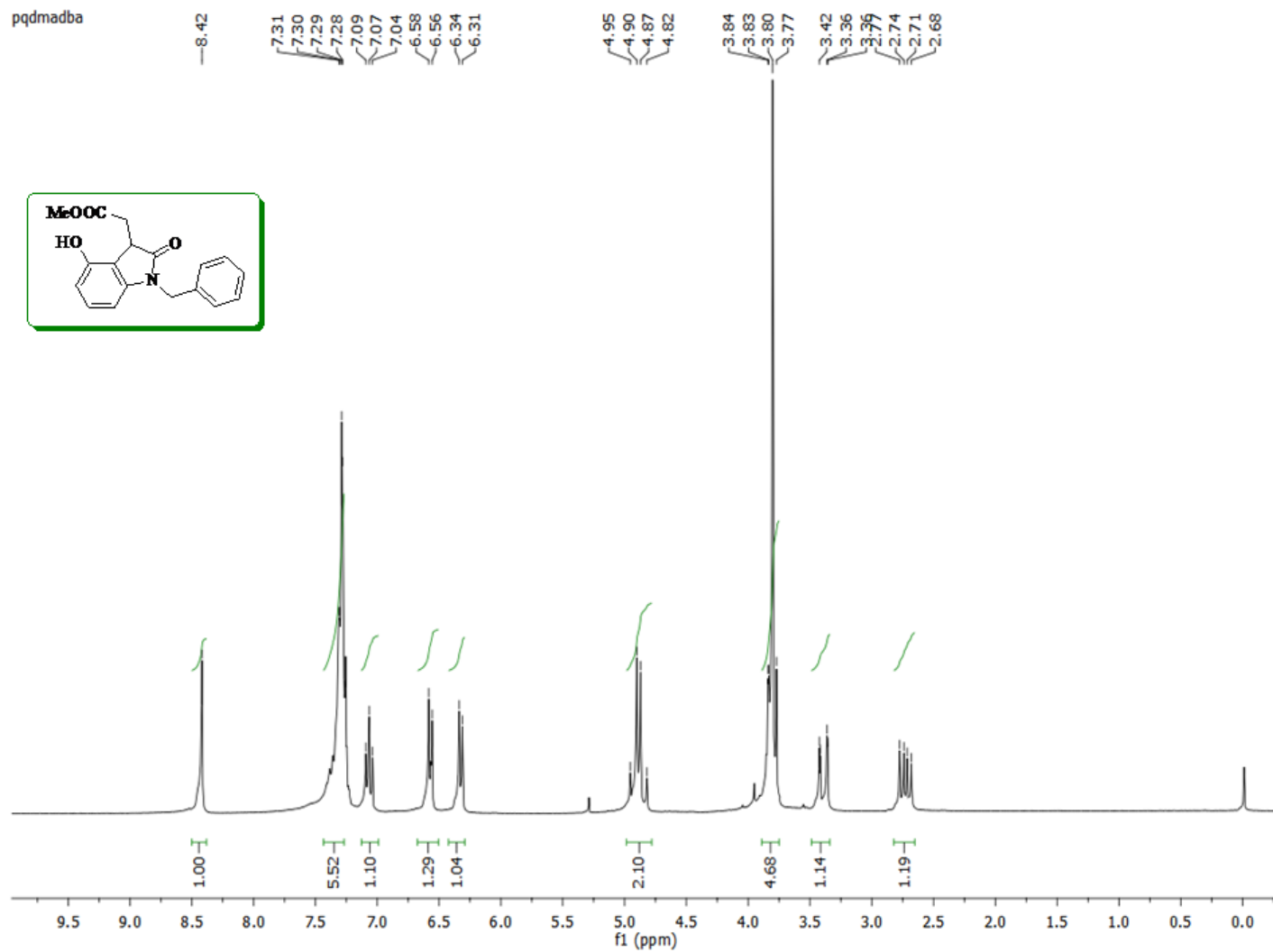


Figure S4. HMBC spectrum of 4a



**Figure S5.**  $^1\text{H}$  NMR spectrum of **4b**

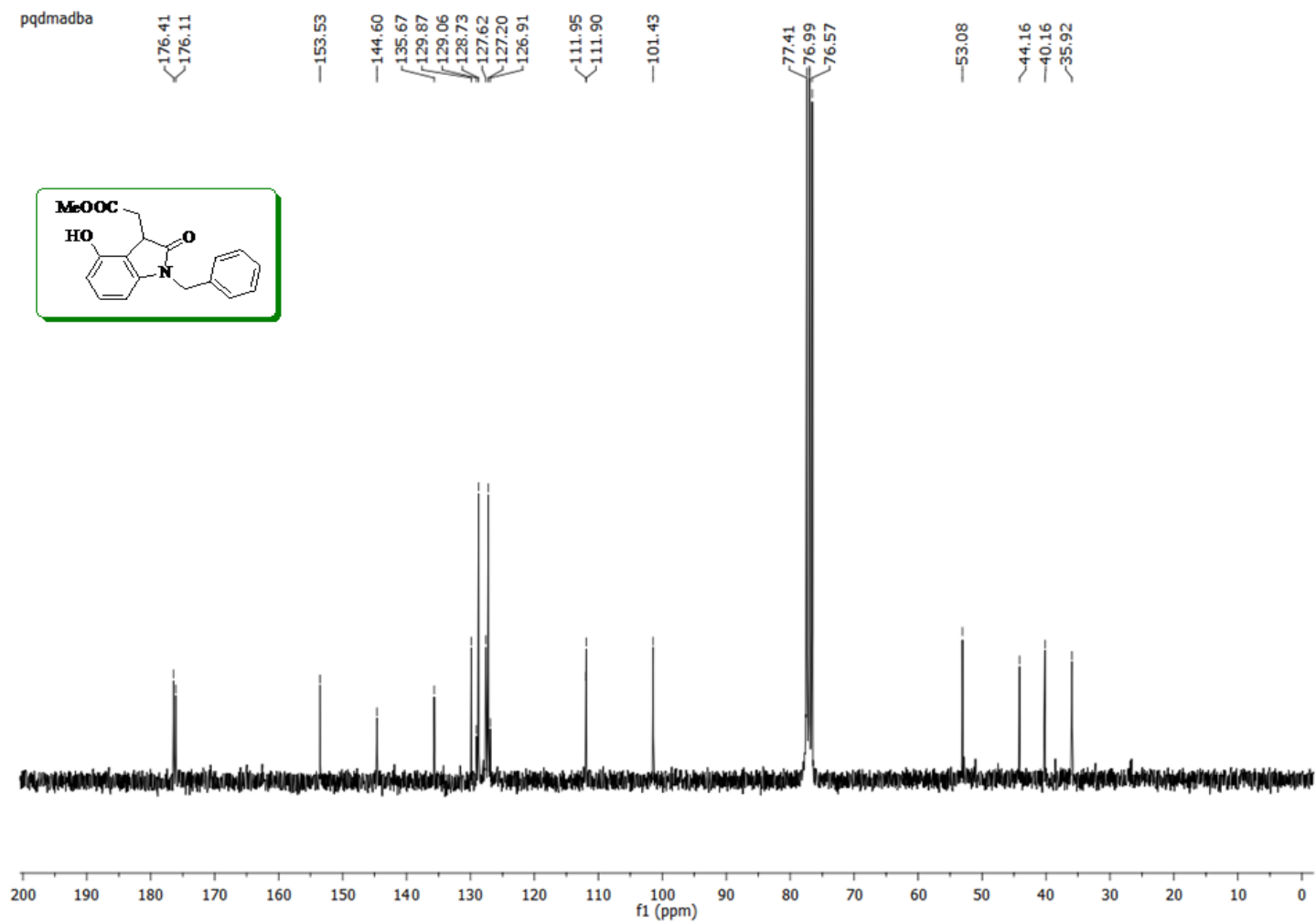


Figure S6.  $^{13}\text{C}$  NMR spectrum of **4b**

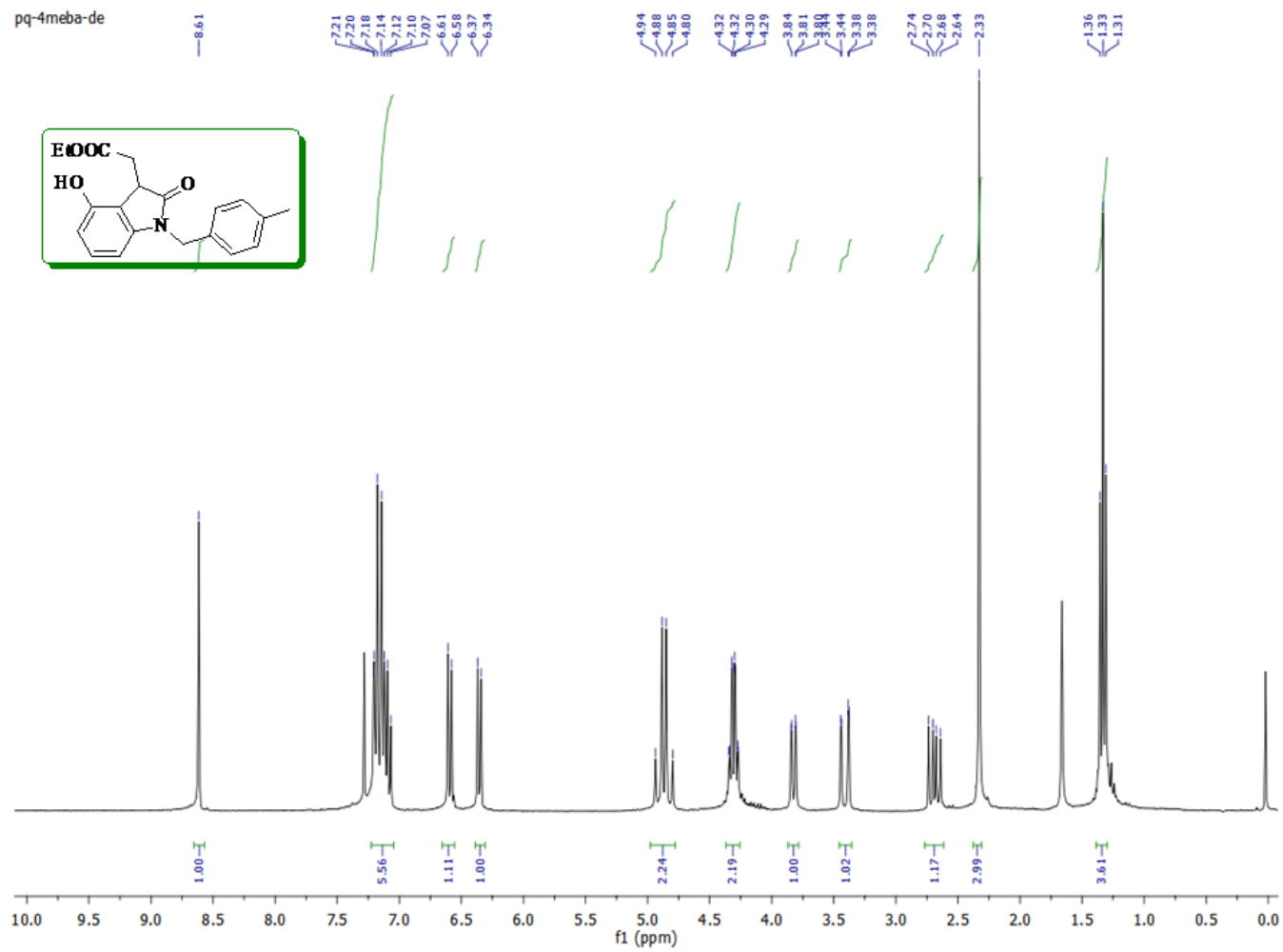
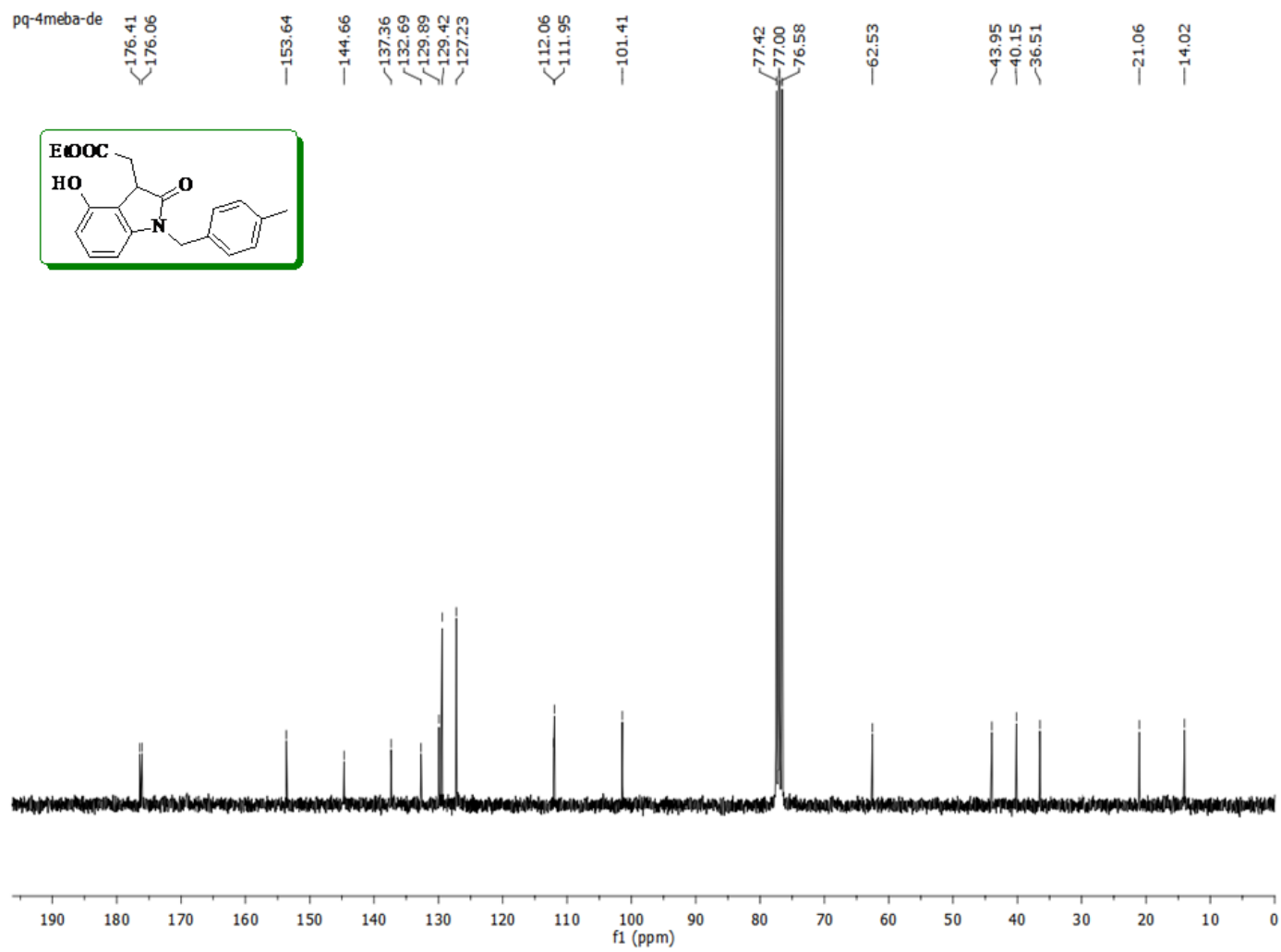
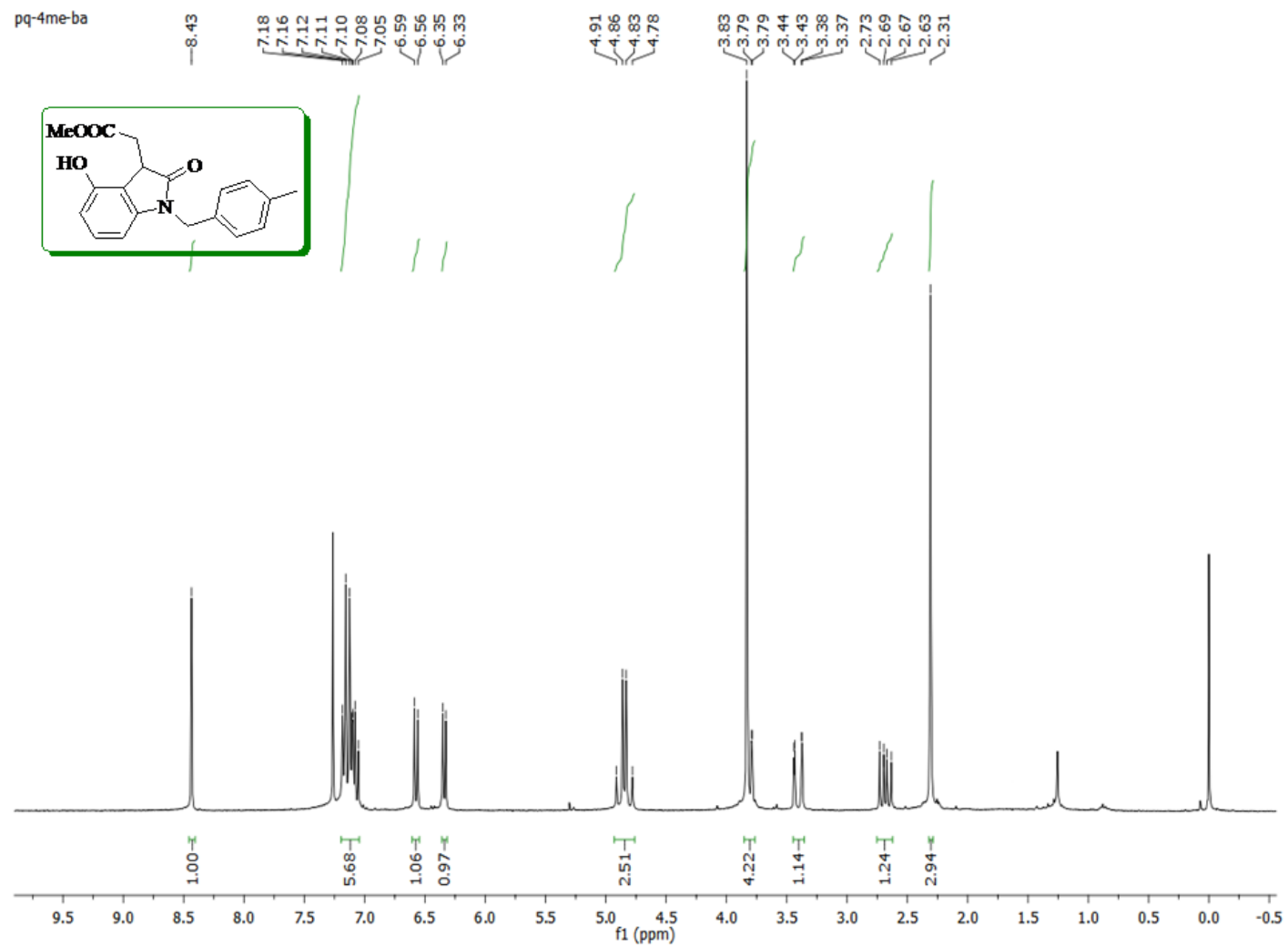


Figure S7. <sup>1</sup>H NMR spectrum of **4c**

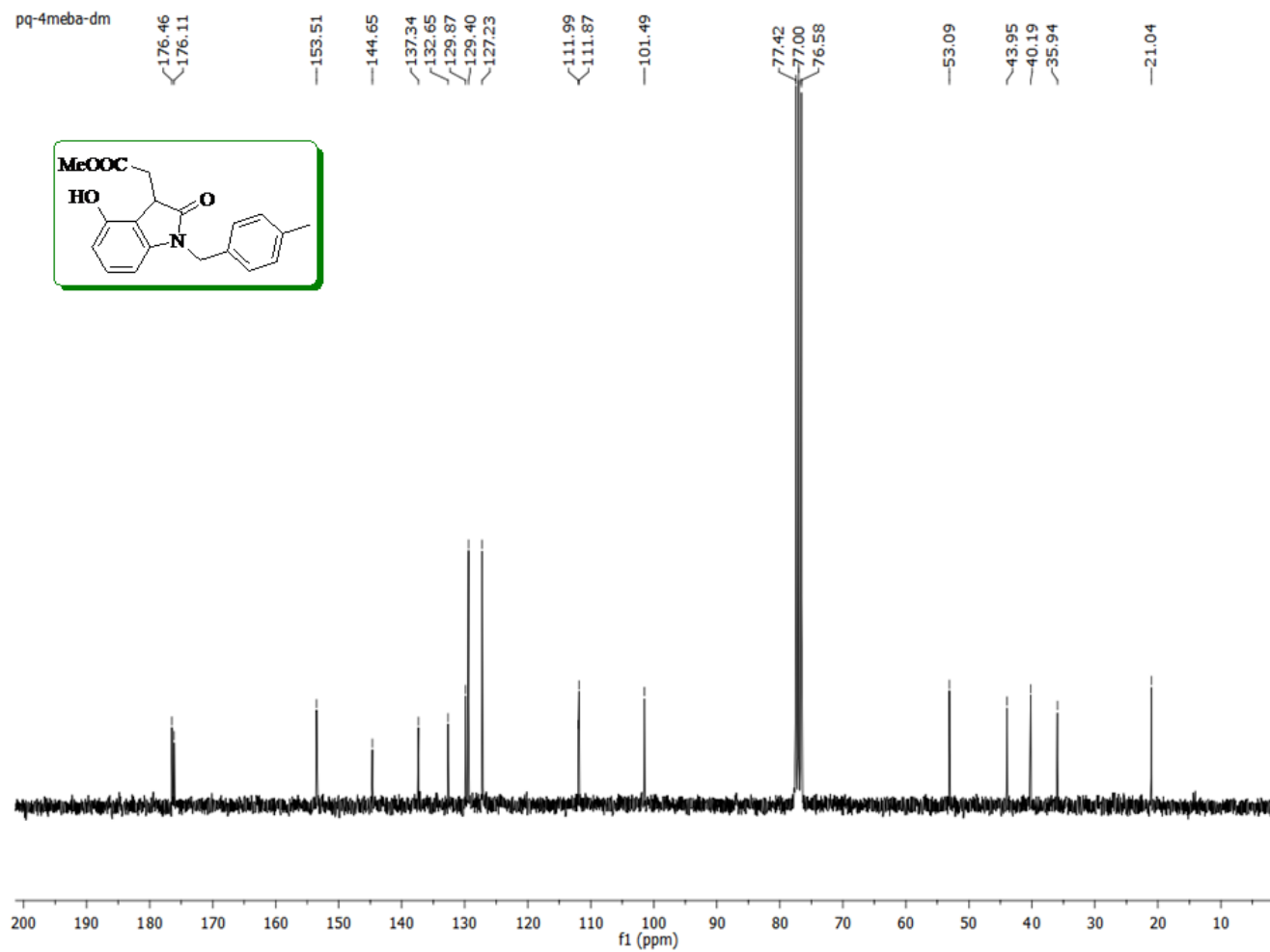




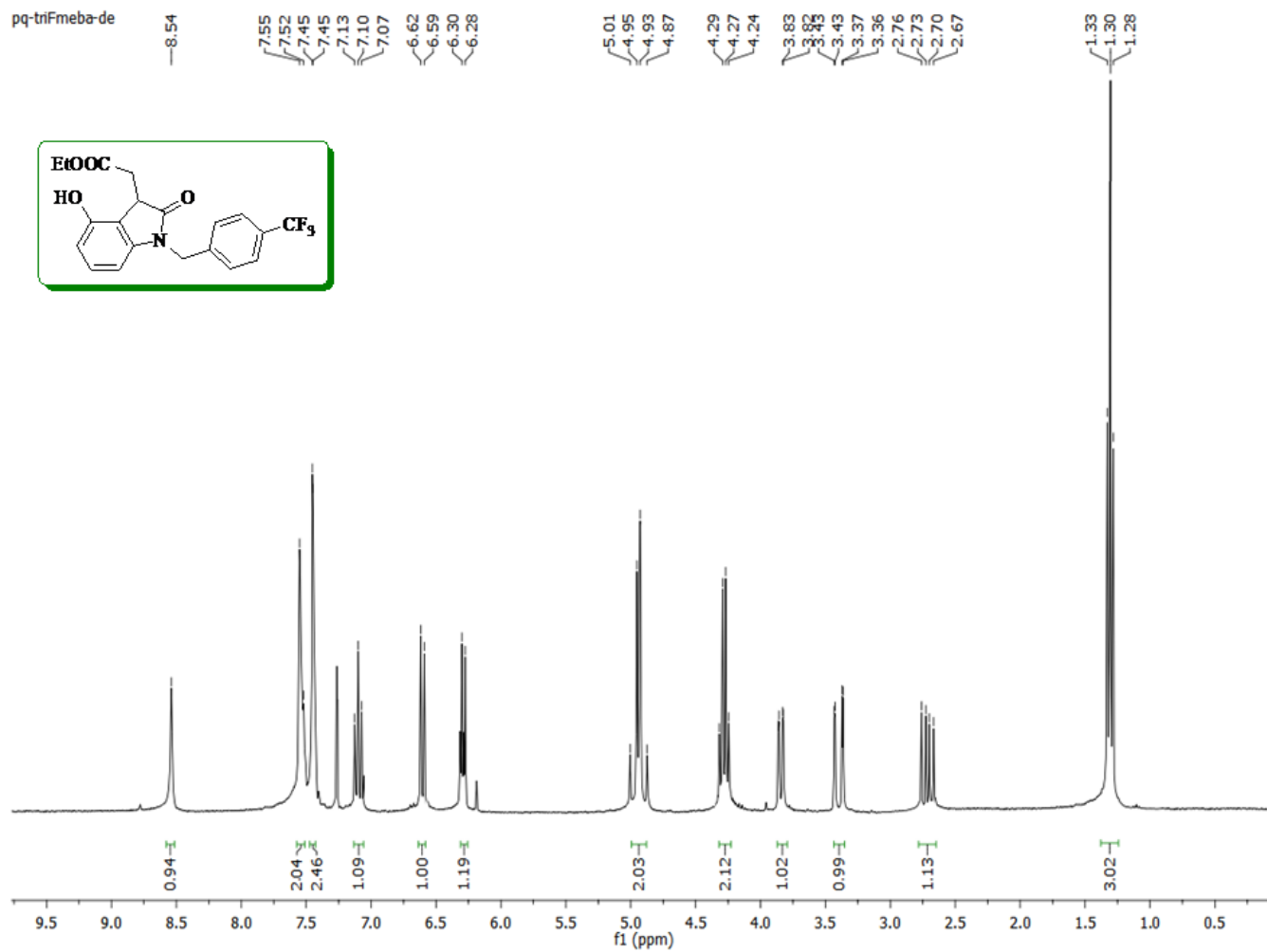
**Figure S8.**  $^{13}\text{C}$  NMR spectrum of **4c**



**Figure S9.**  $^1\text{H}$  NMR spectrum of **4d**



**Figure S10.**  $^{13}\text{C}$  NMR spectrum of **4d**



**Figure S11.** <sup>1</sup>H NMR spectrum of **4e**

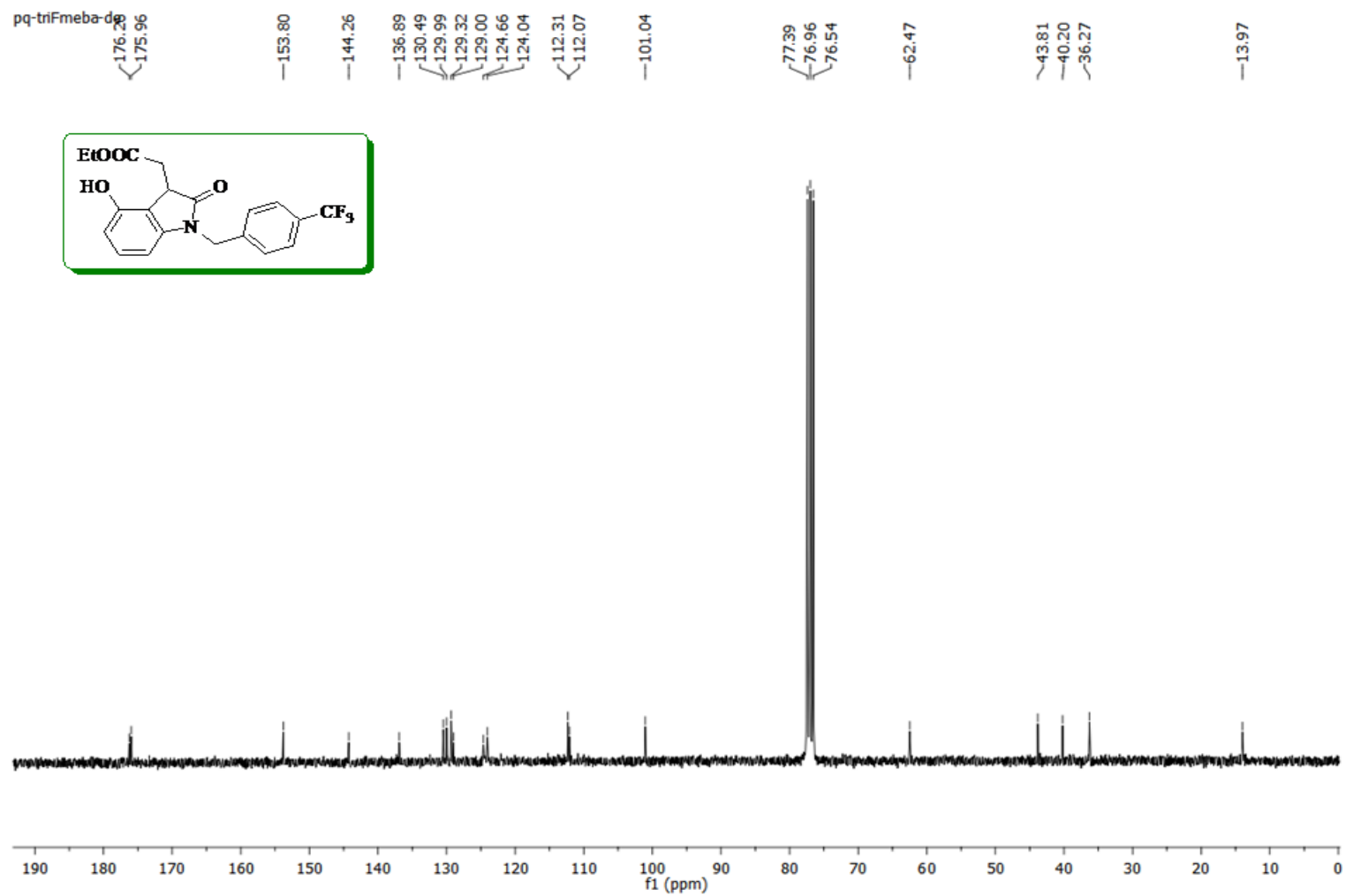
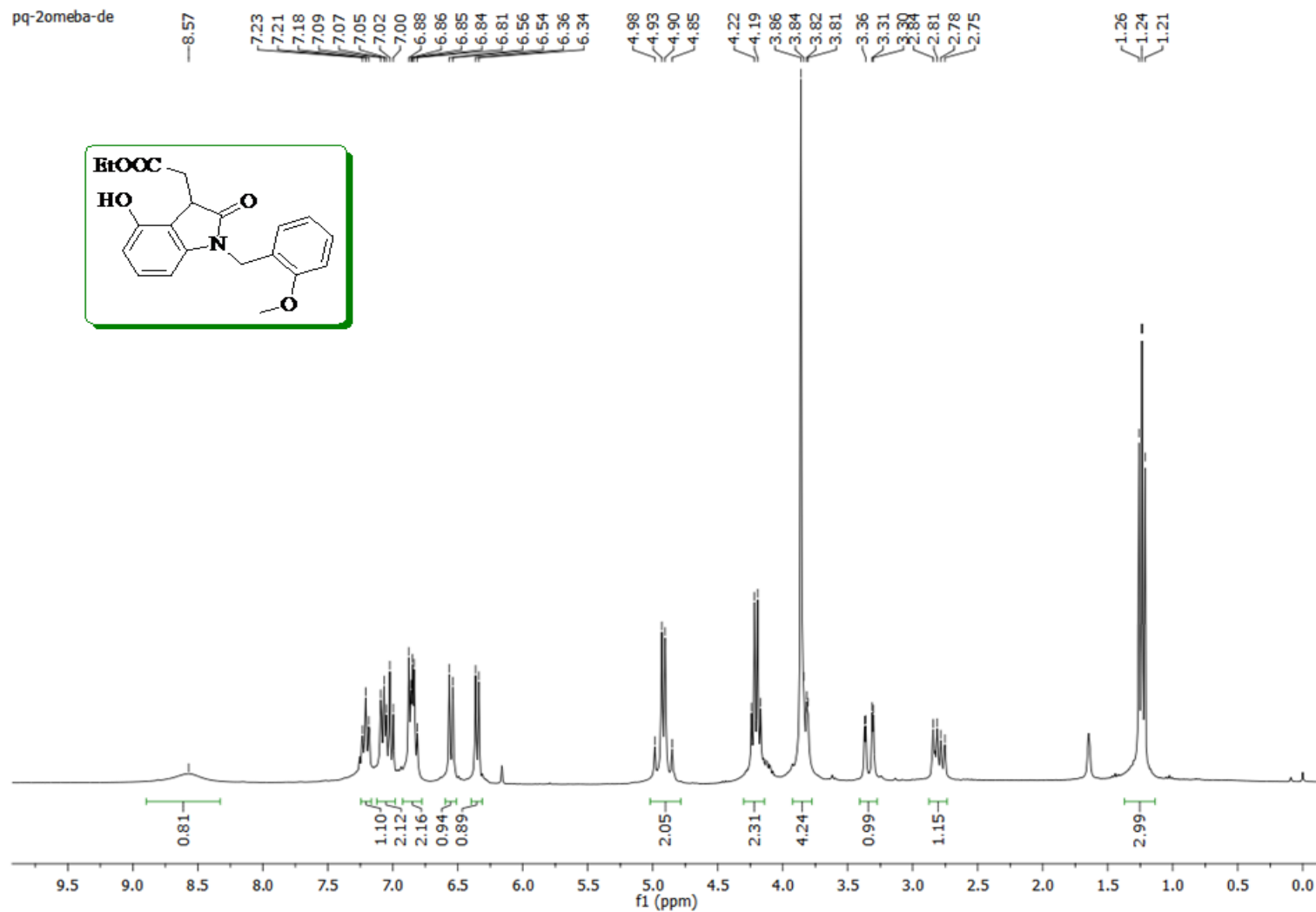


Figure S12. <sup>13</sup>C NMR spectrum of **4e**



**Figure S13.** <sup>1</sup>H NMR spectrum of **4f**

pq-2omeba-de

~176.62  
~175.05

~156.82  
~153.28

~144.76

~129.57  
~128.50  
~127.79  
~123.48  
~120.47

~111.98  
~111.47  
~110.17

~101.45

~77.43  
~77.00  
~76.58

~61.94

~55.18

~40.31  
~38.80  
~35.57

~13.85

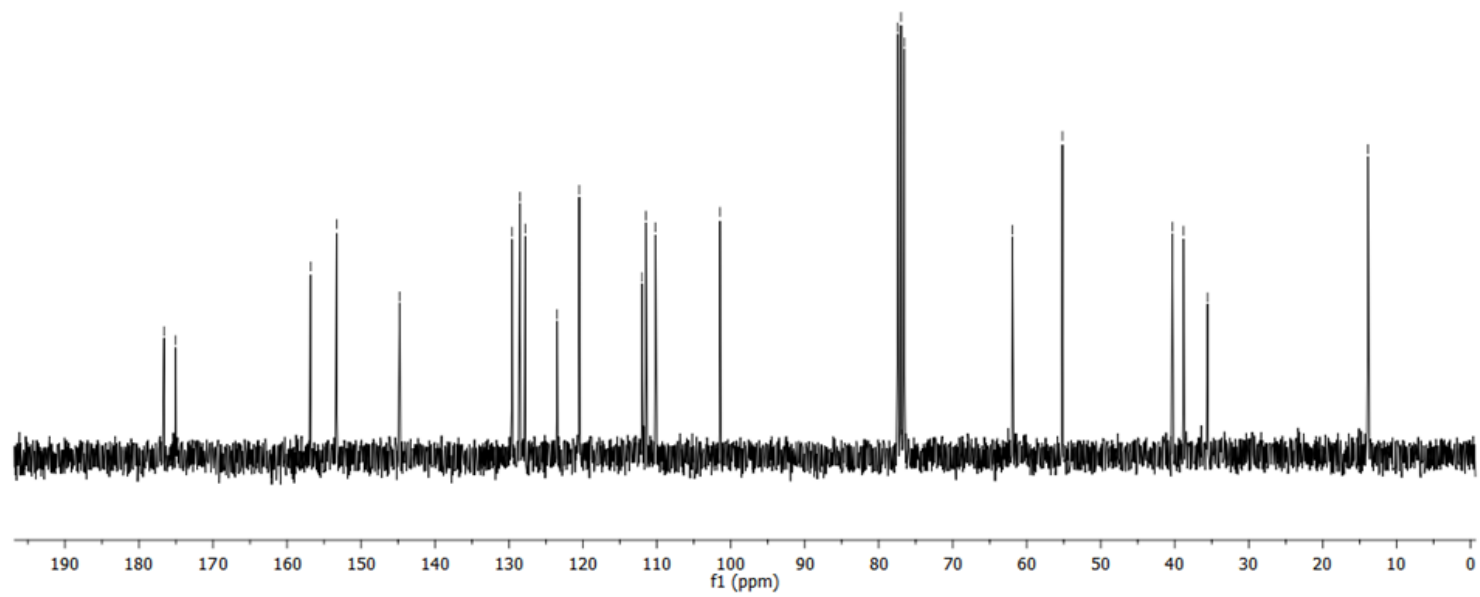
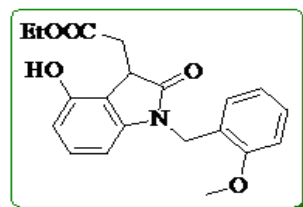
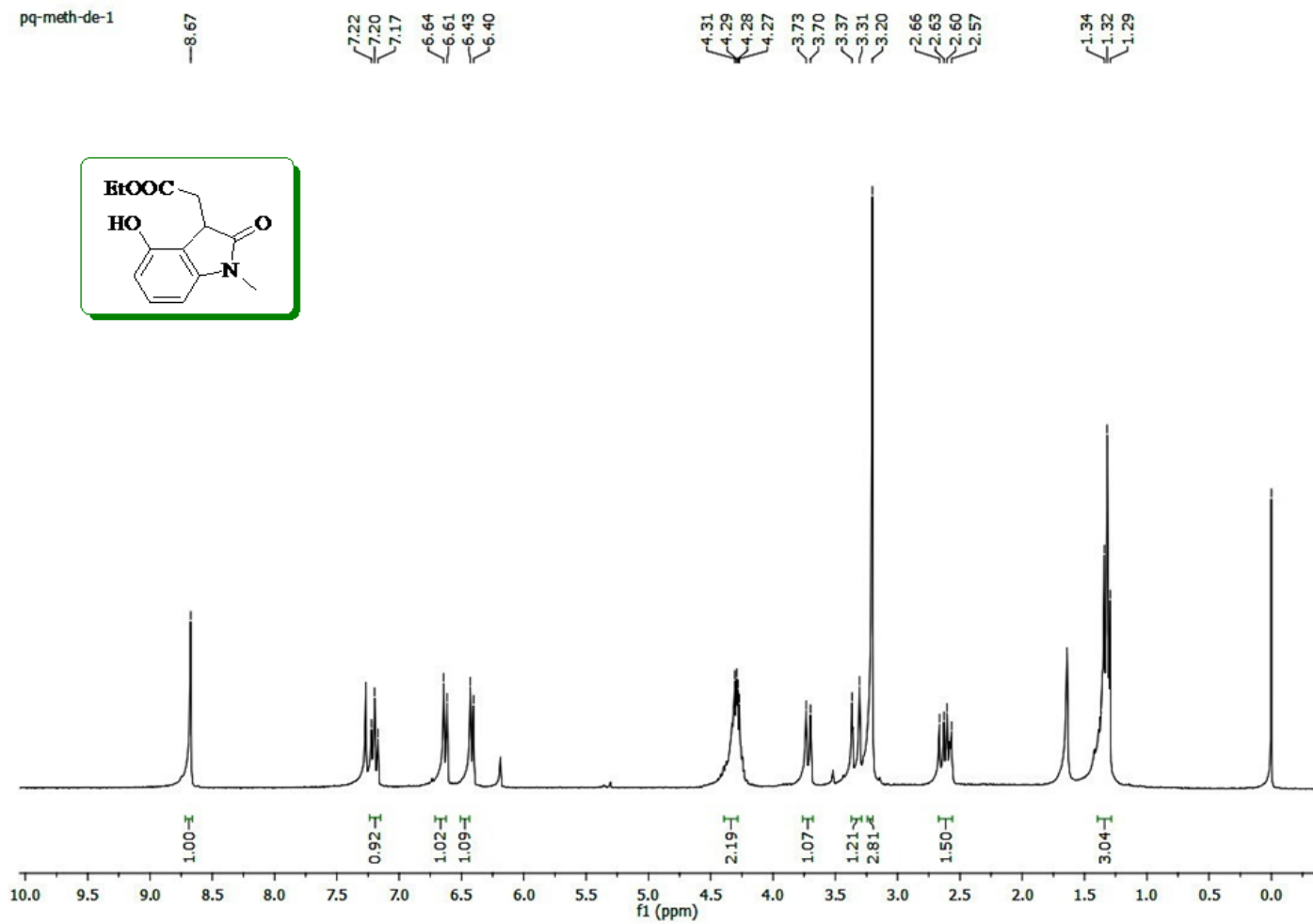


Figure S14.  $^{13}\text{C}$  NMR spectrum of **4f**



**Figure S15.** <sup>1</sup>H NMR spectrum of **4g**



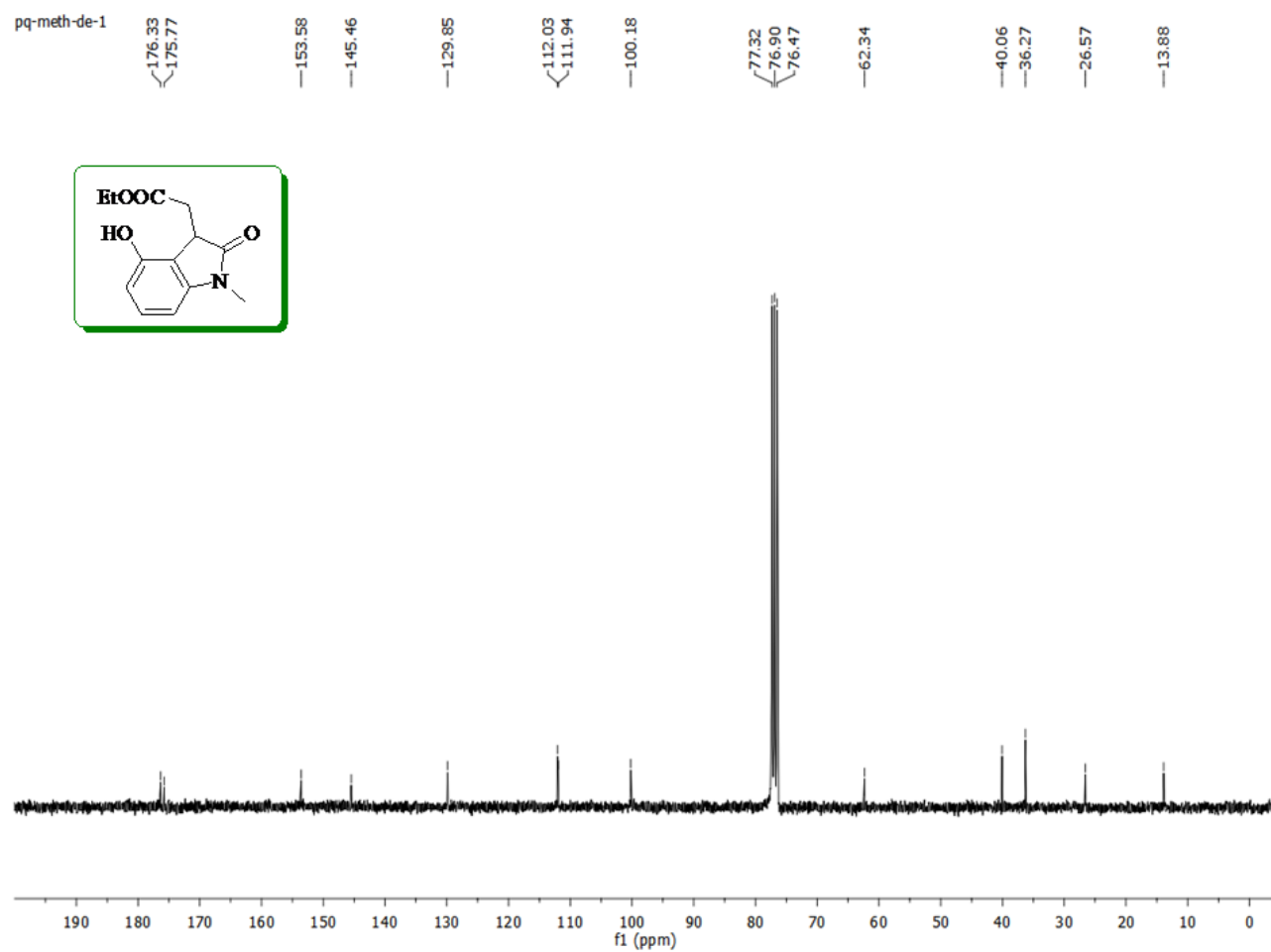
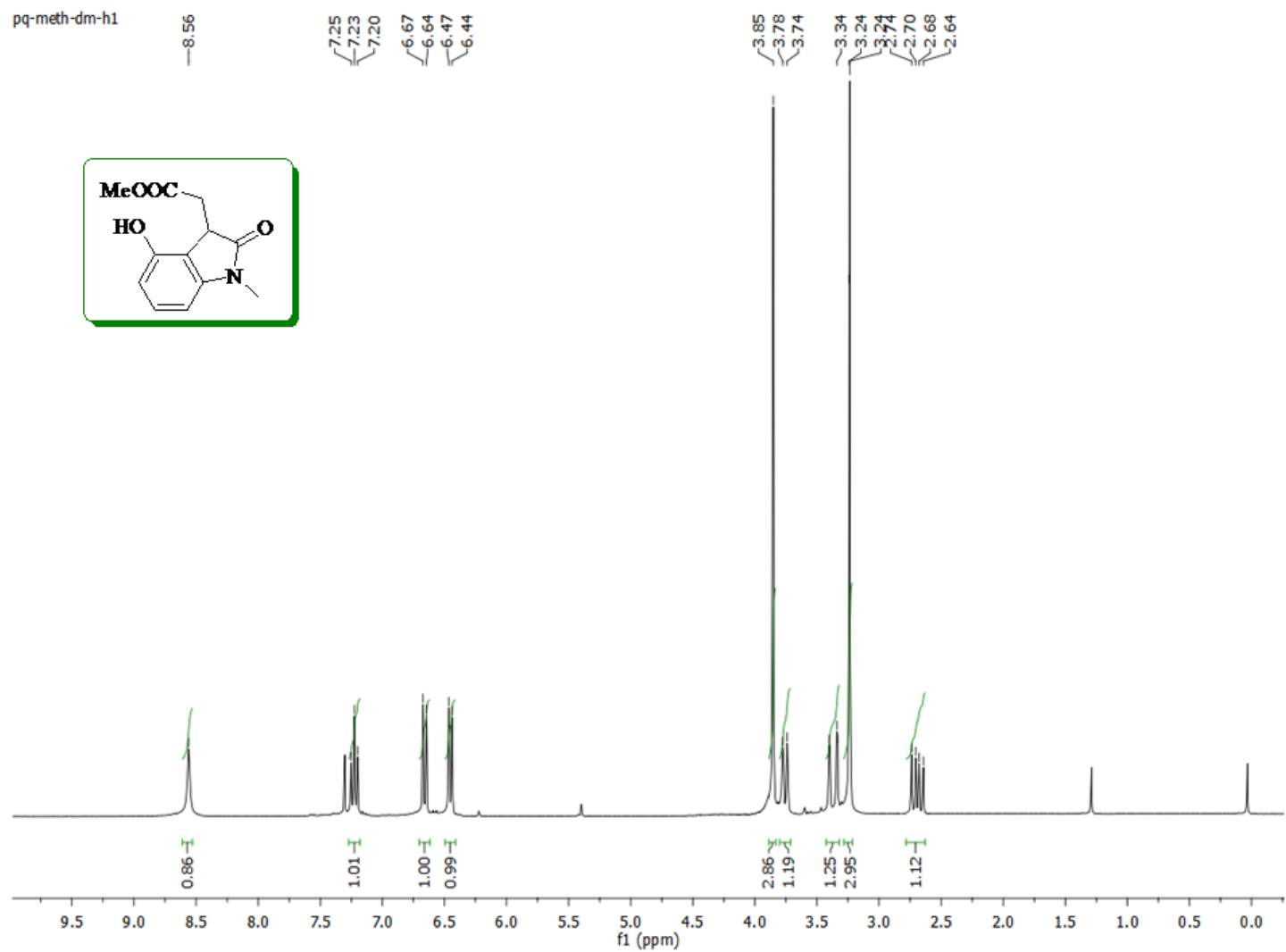
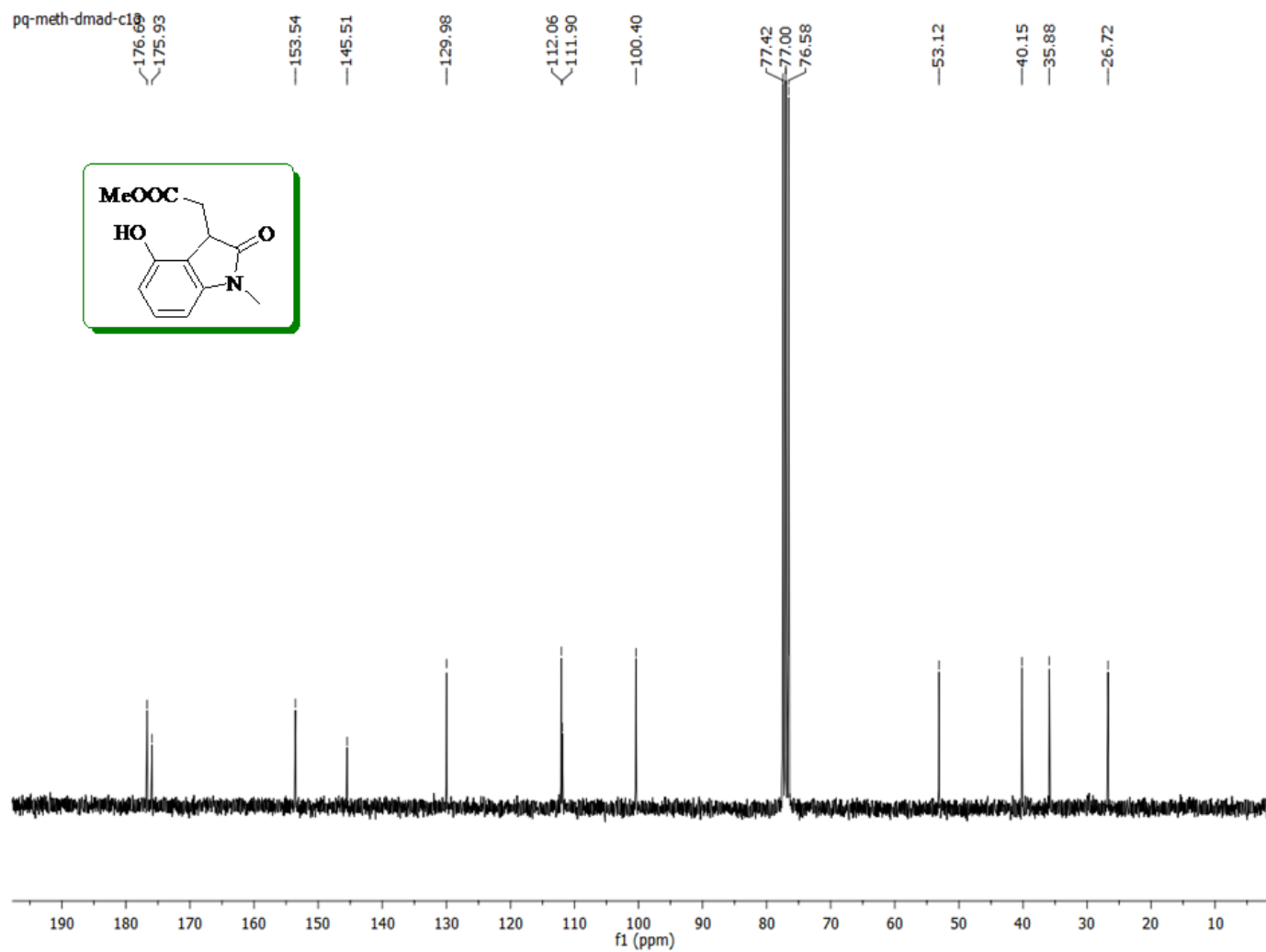


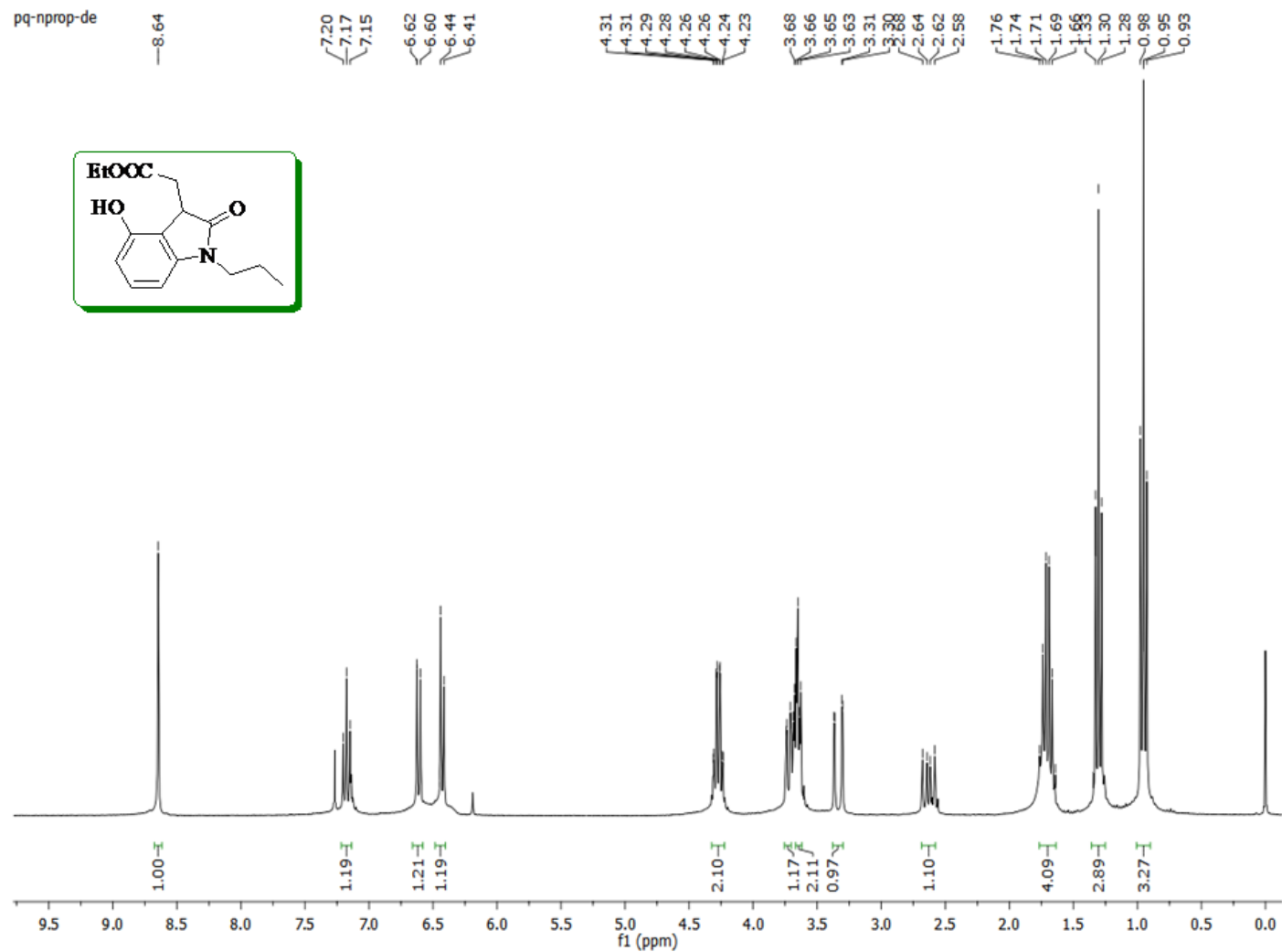
Figure S16.  $^{13}\text{C}$  NMR spectrum of **4g**



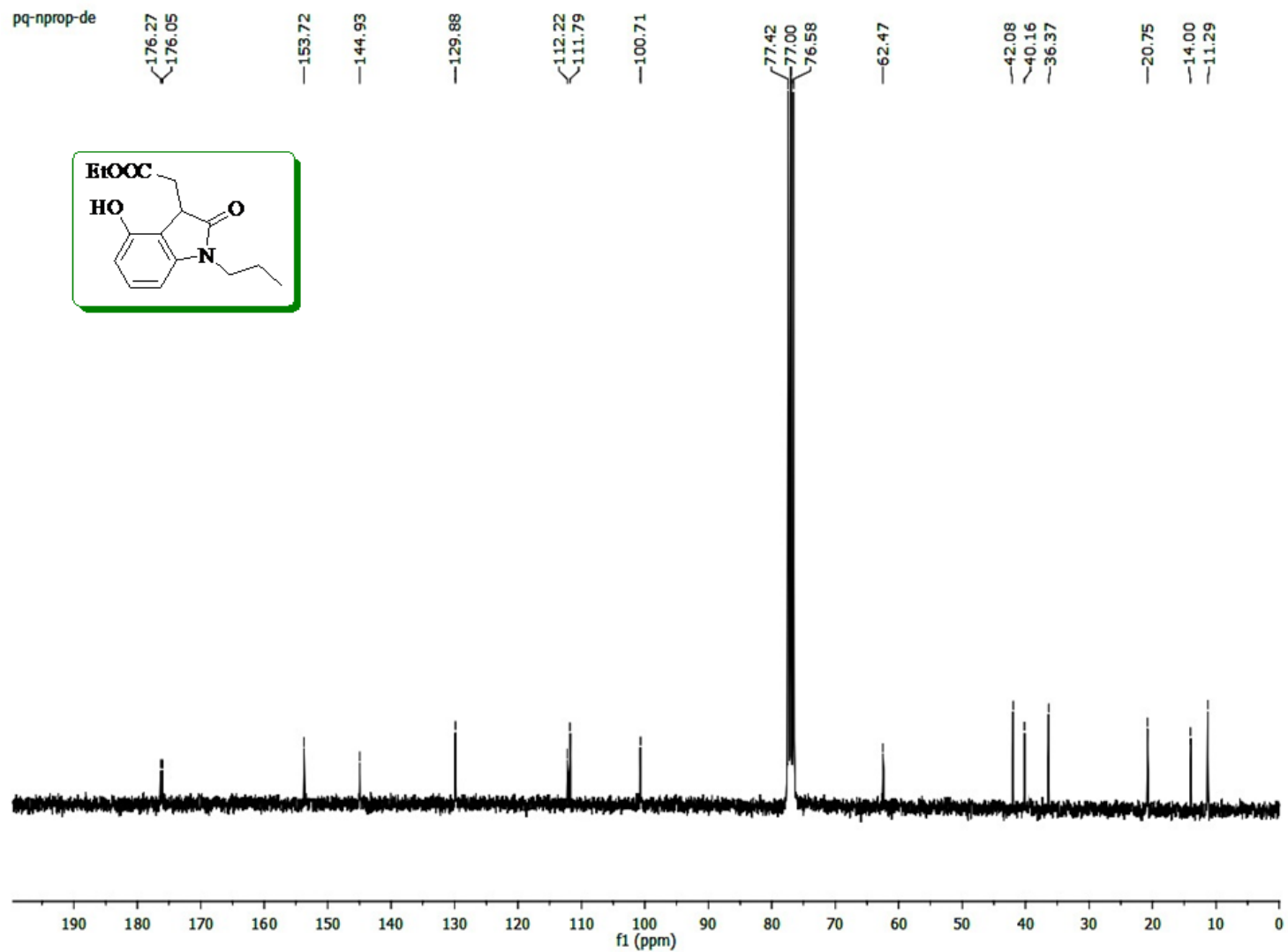
**Figure S17.**  $^1\text{H}$  NMR spectrum of **4h**



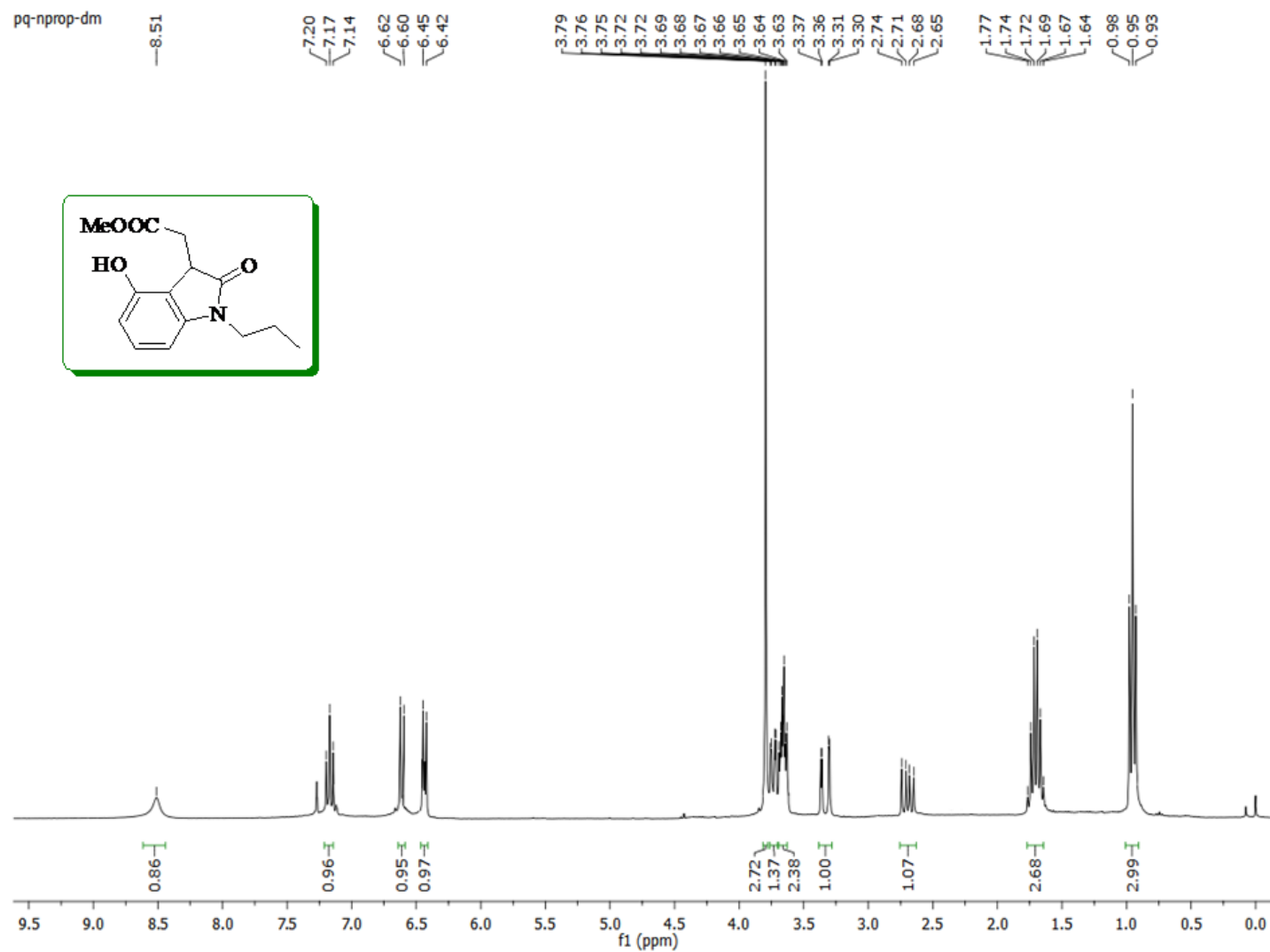
**Figure S18.**  $^{13}\text{C}$  NMR spectrum of **4h**



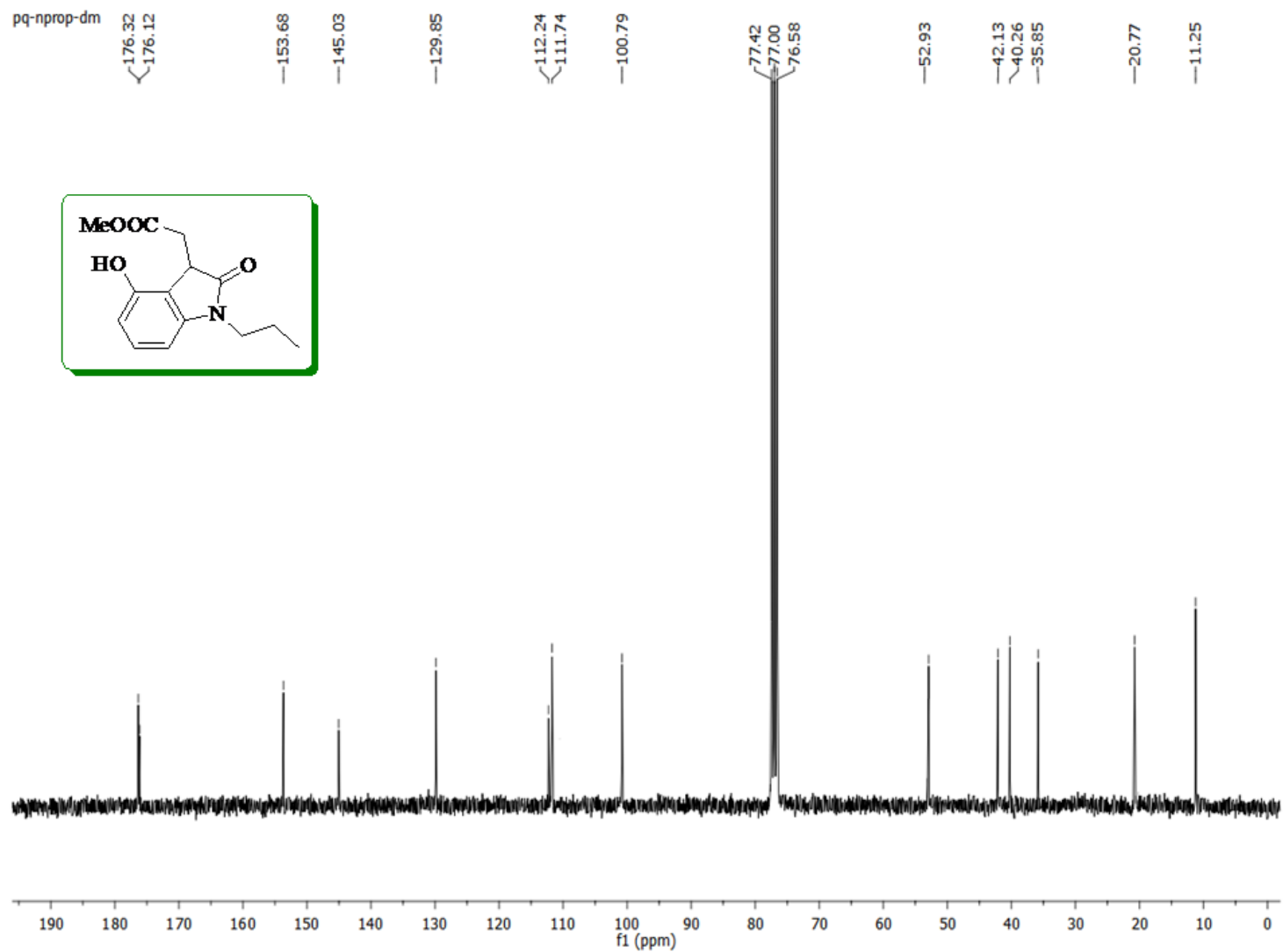
**Figure S19.** <sup>1</sup>H NMR spectrum of **4i**



**Figure S20.**  $^{13}\text{C}$  NMR spectrum of **4i**



**Figure S21.** <sup>1</sup>H NMR spectrum of **4j**



**Figure S22.** <sup>13</sup>C NMR spectrum of **4j**

pq-nbut

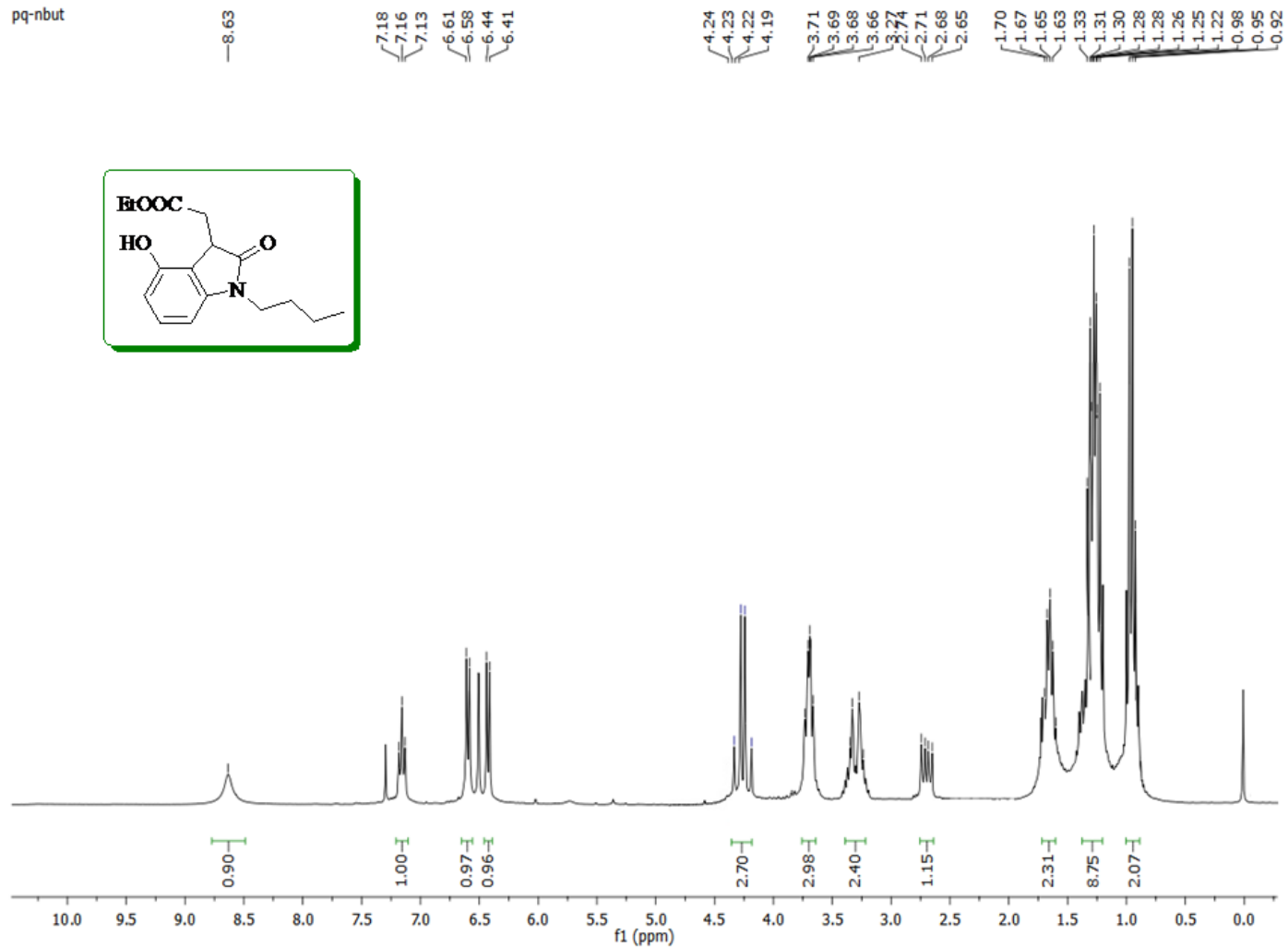


Figure S23. <sup>1</sup>H NMR spectrum of 4k



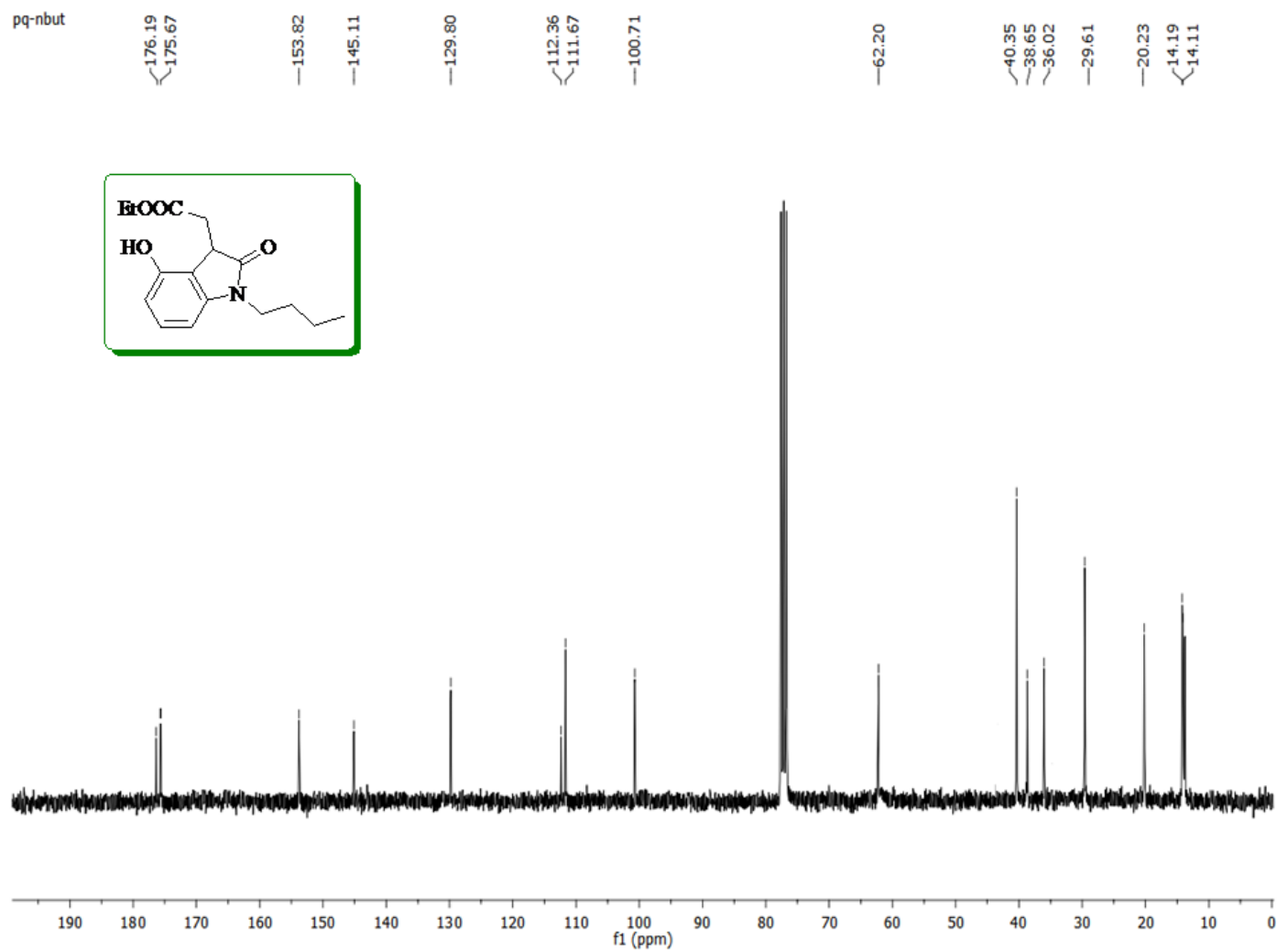
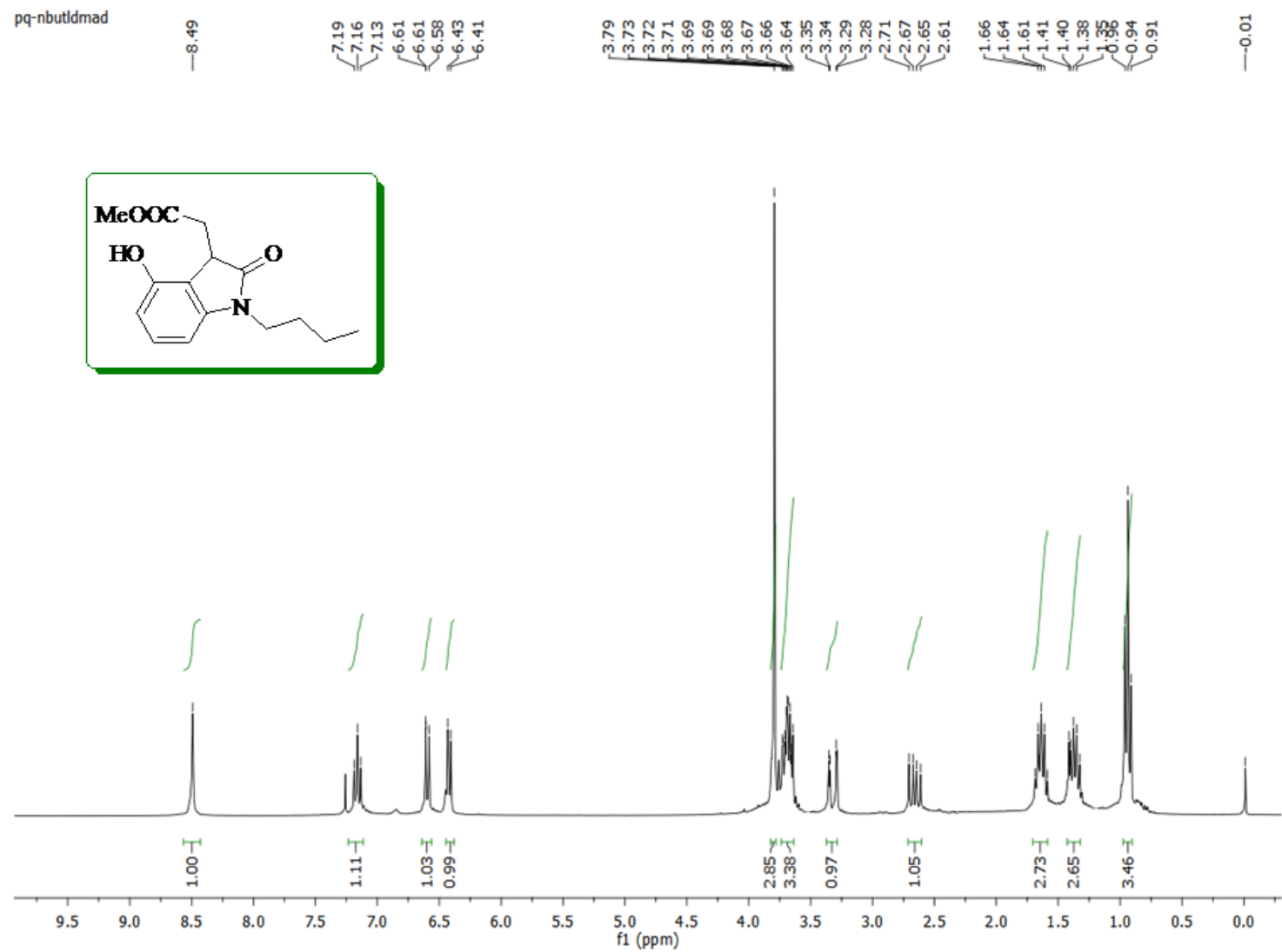


Figure S24.  $^{13}\text{C}$  NMR spectrum of **4k**



**Figure S25.** <sup>1</sup>H NMR spectrum of **4I**

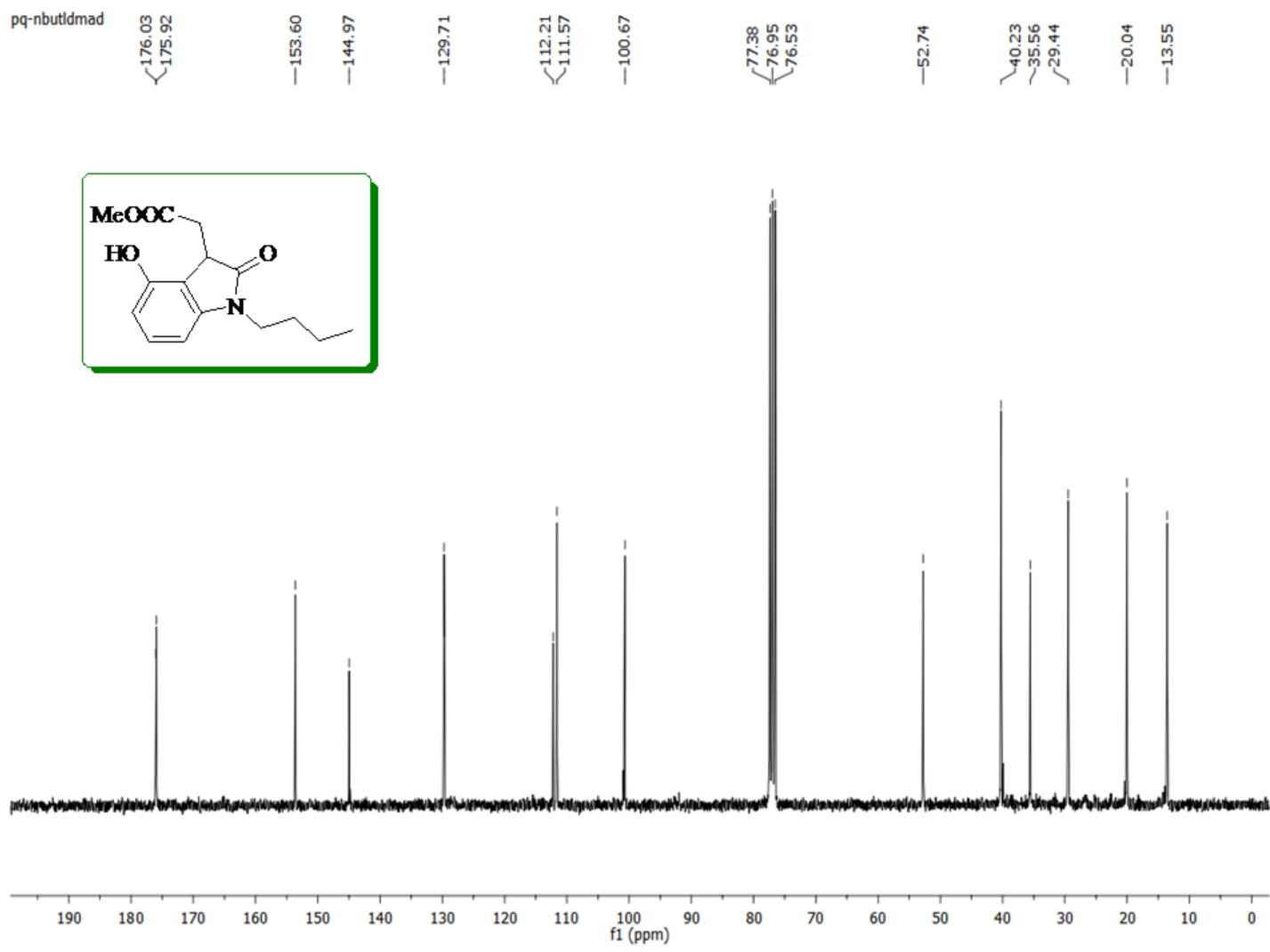


Figure S26. <sup>13</sup>C NMR spectrum of 41

pq-hexd-de

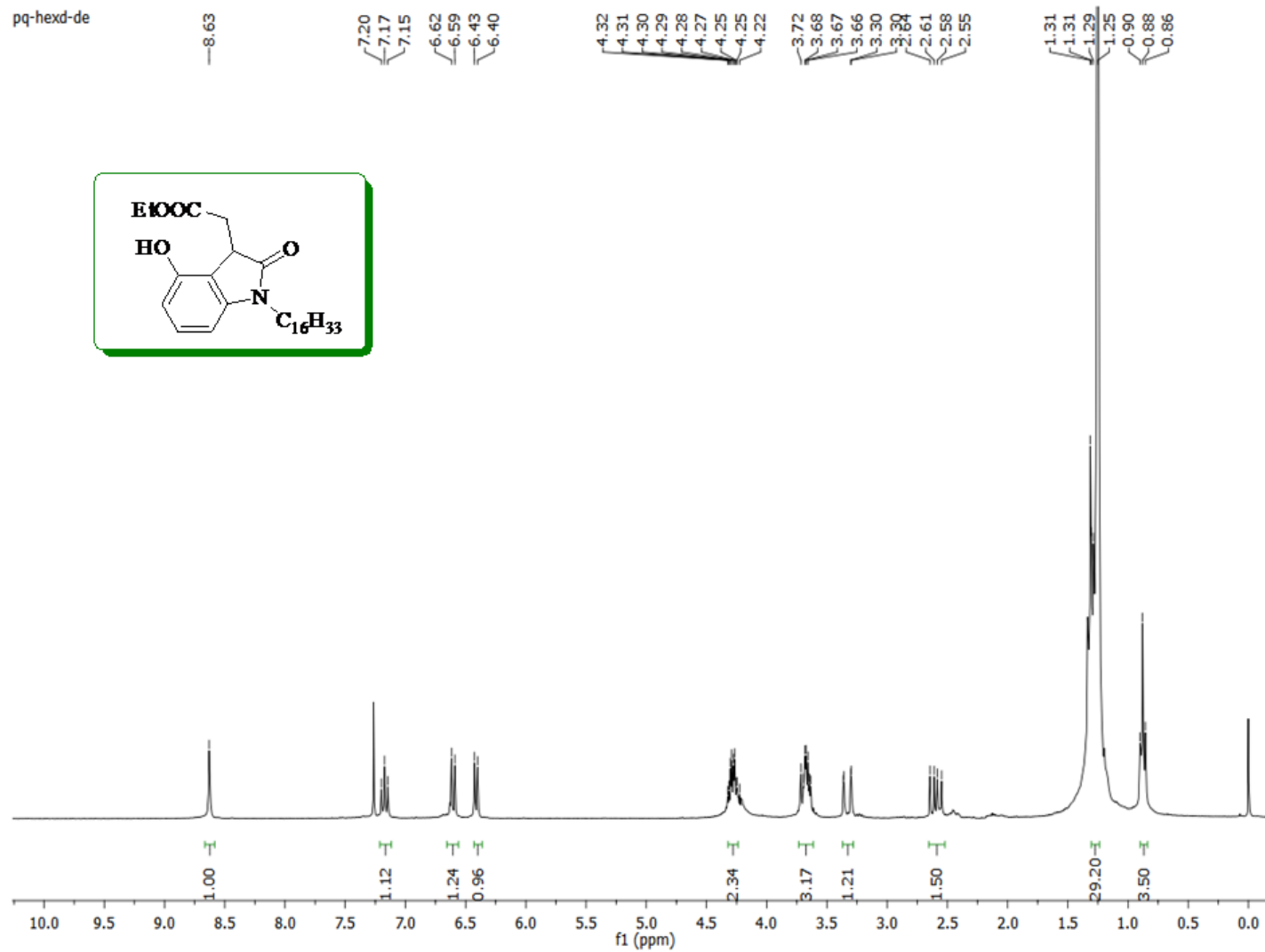
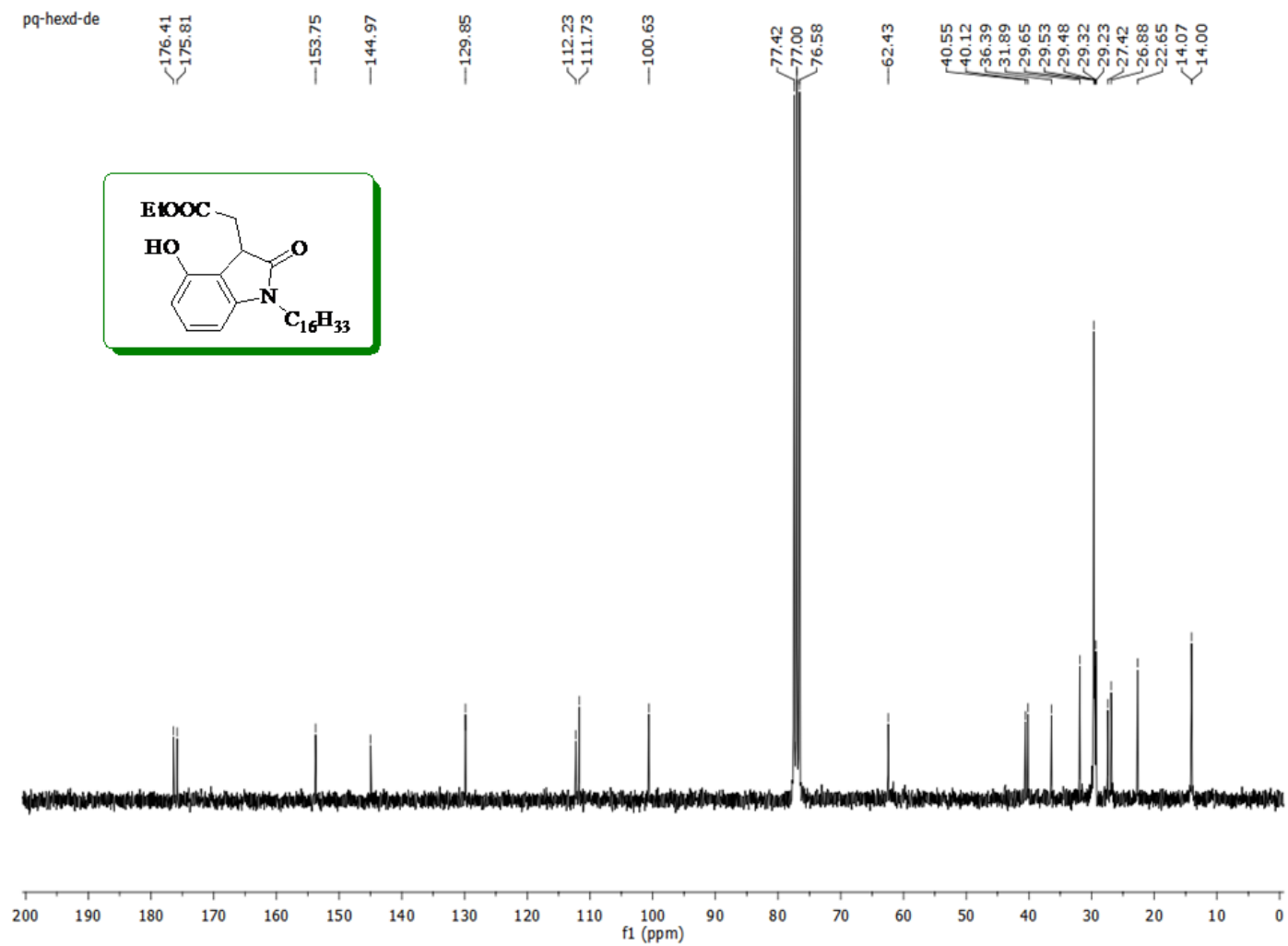
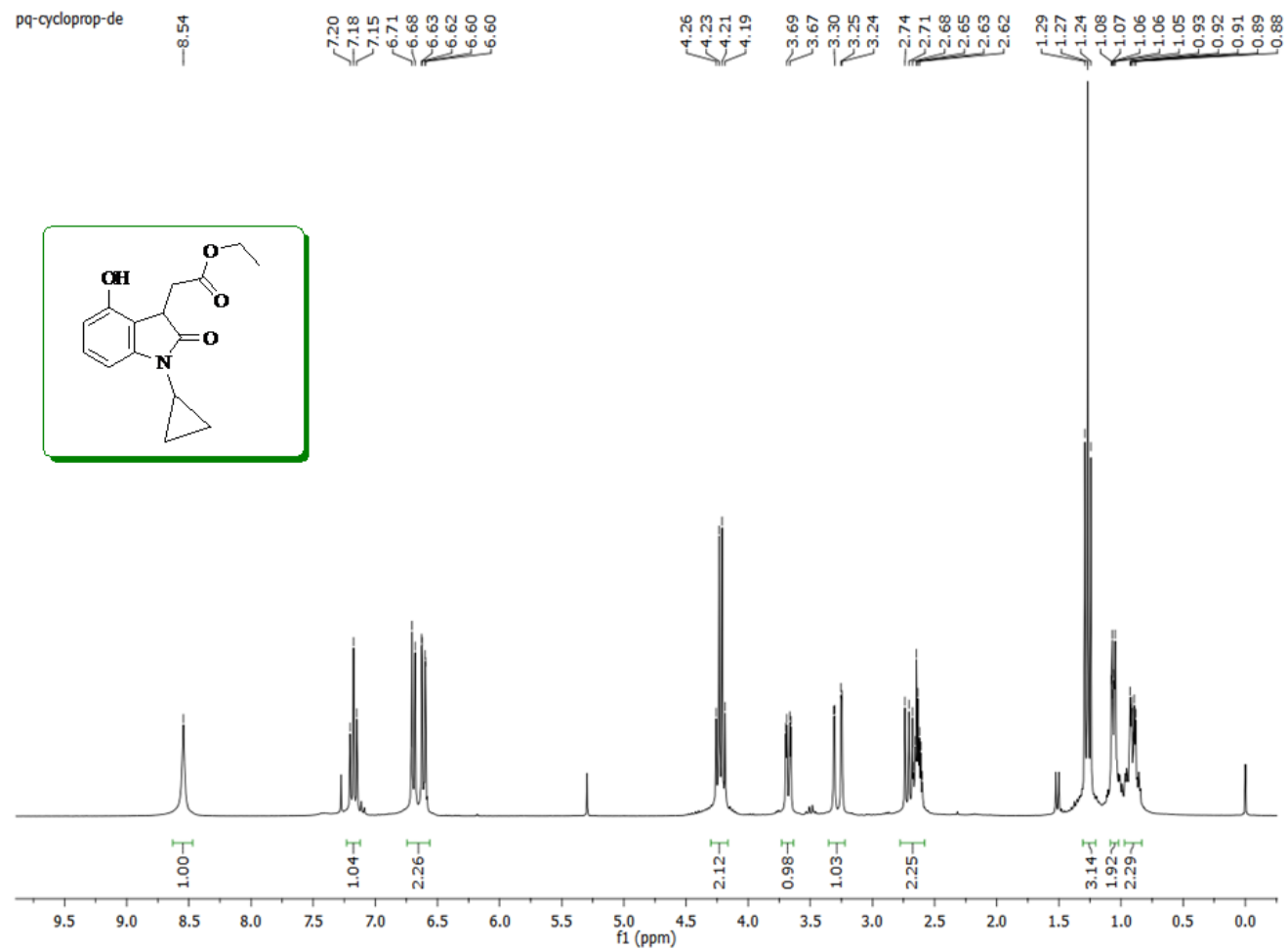


Figure S27.  $^1\text{H}$  NMR spectrum of 4m



**Figure S28.**  $^{13}\text{C}$  NMR spectrum of **4m**



**Figure S29.**  $^1\text{H}$  NMR spectrum of **4n**

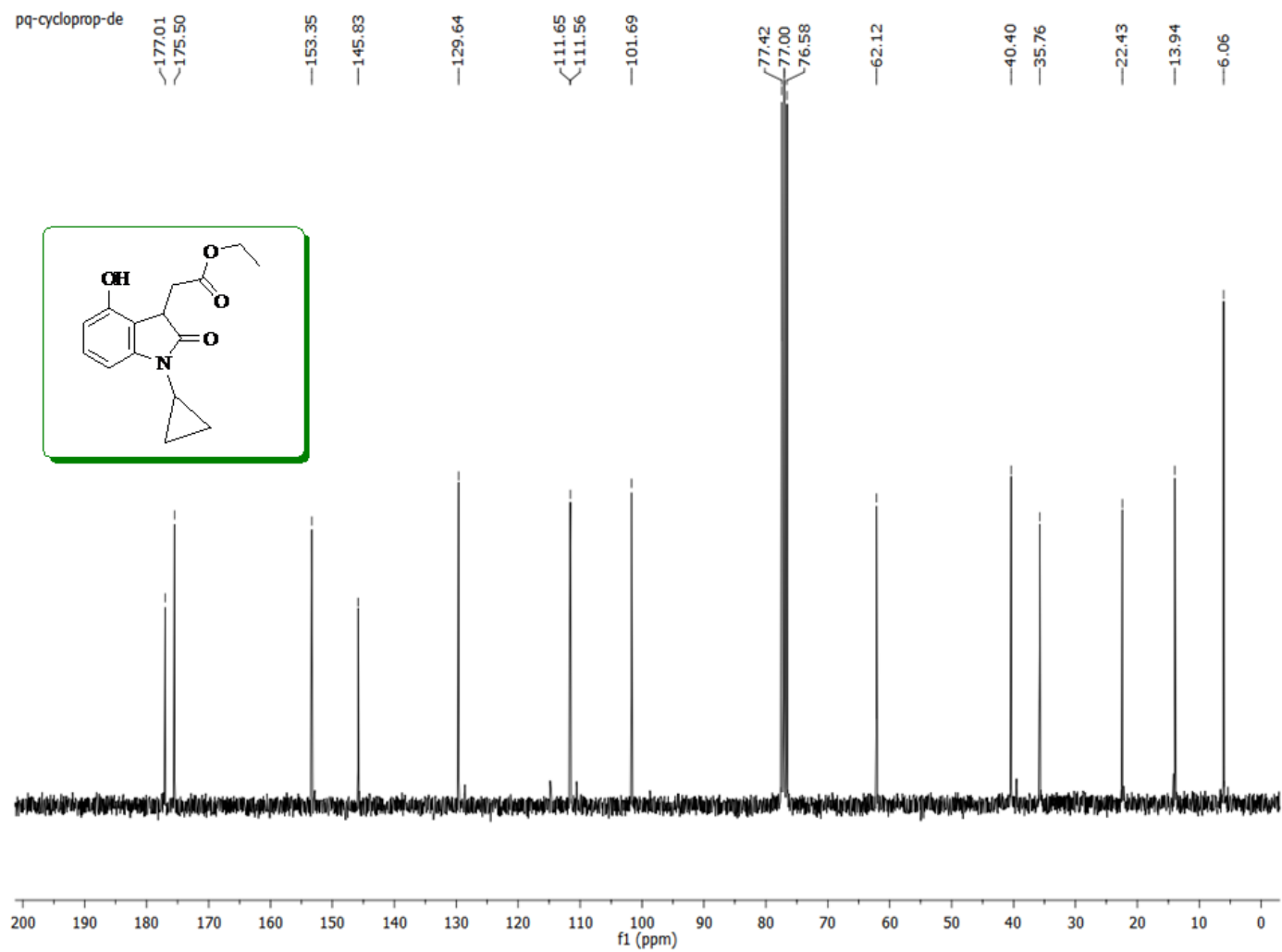
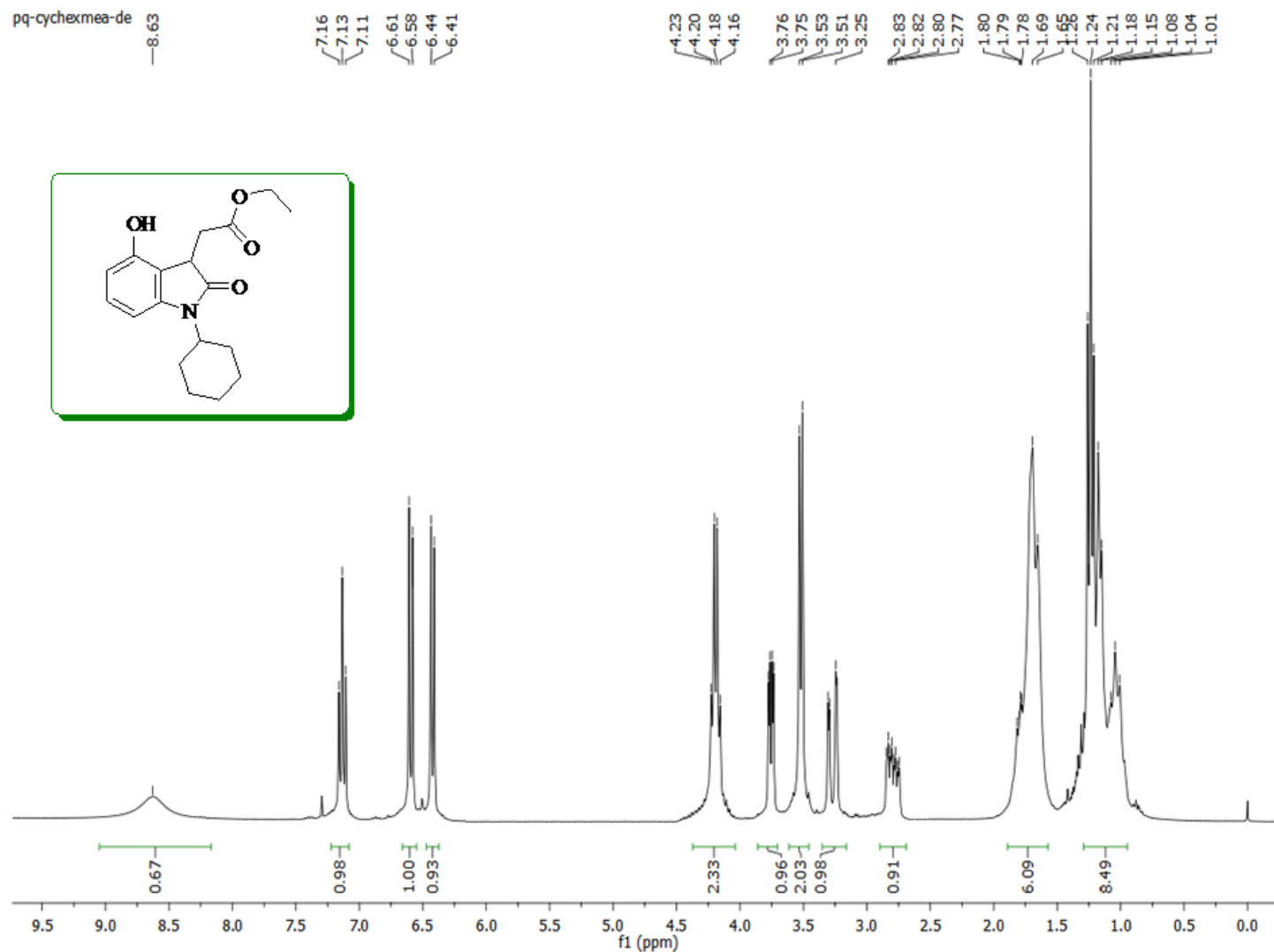


Figure S30.  $^{13}\text{C}$  NMR spectrum of **4n**



**Figure S31.** <sup>1</sup>H NMR spectrum of **4o**



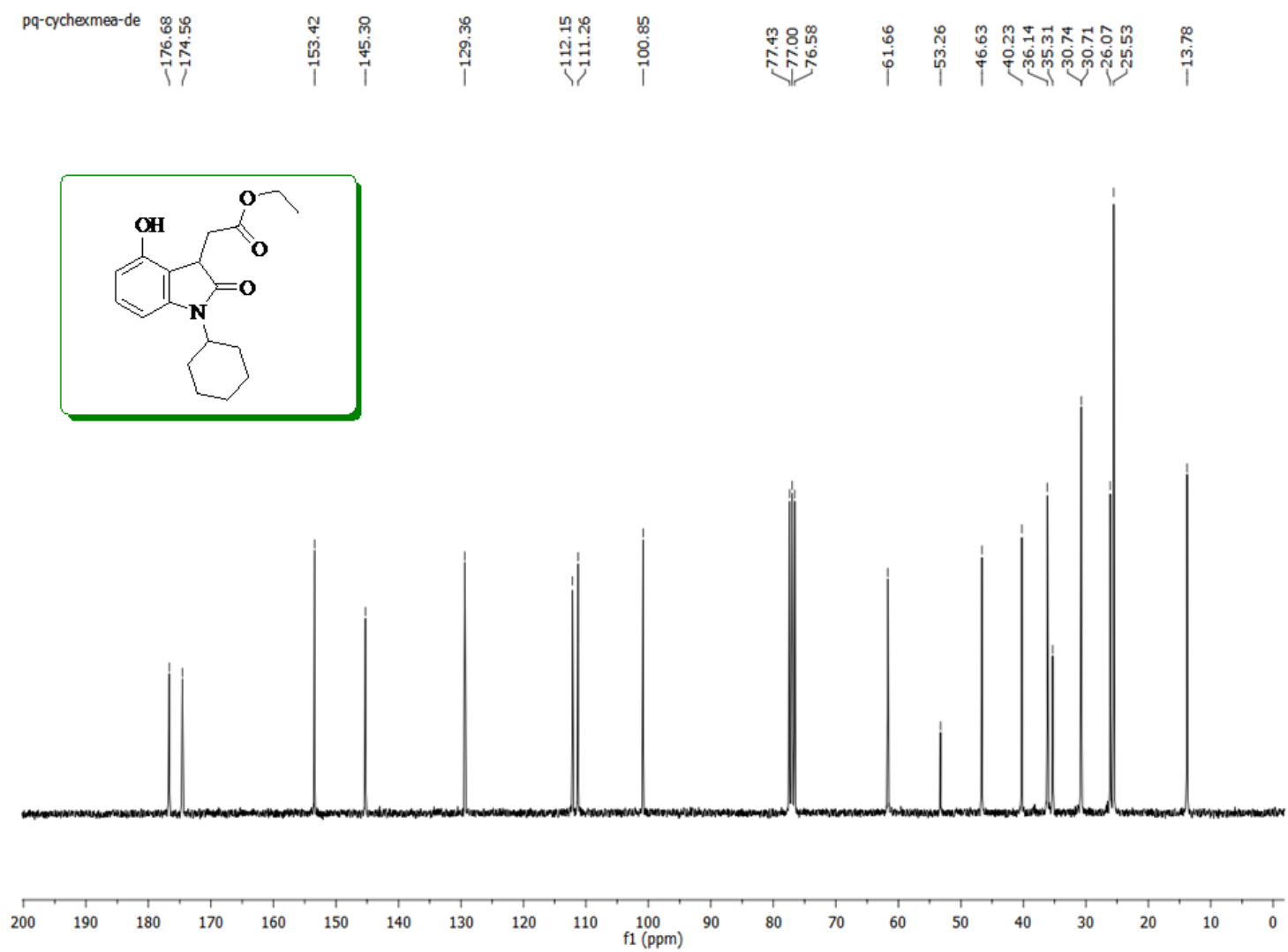
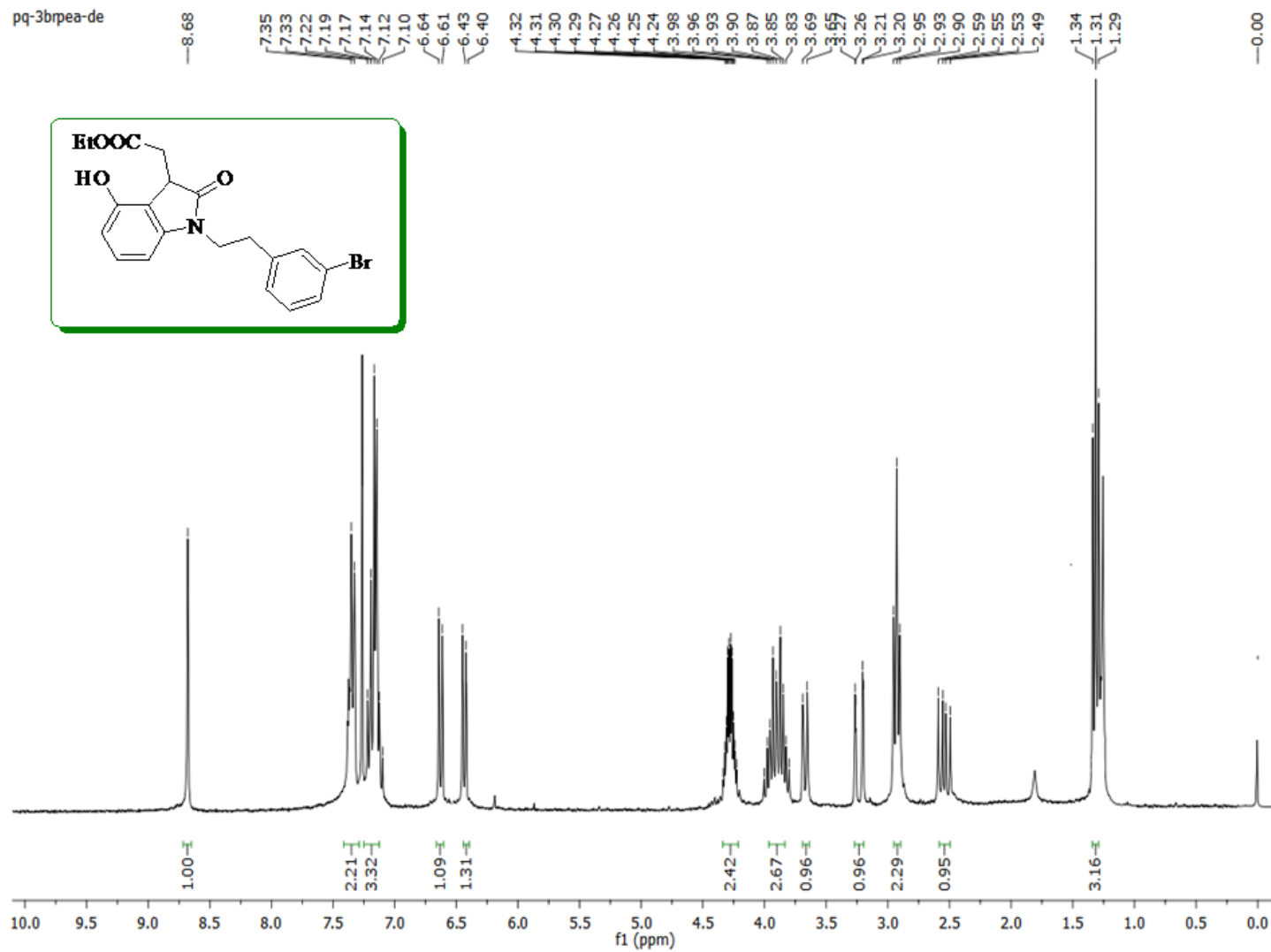


Figure S32.  $^{13}\text{C}$  NMR spectrum of **4o**



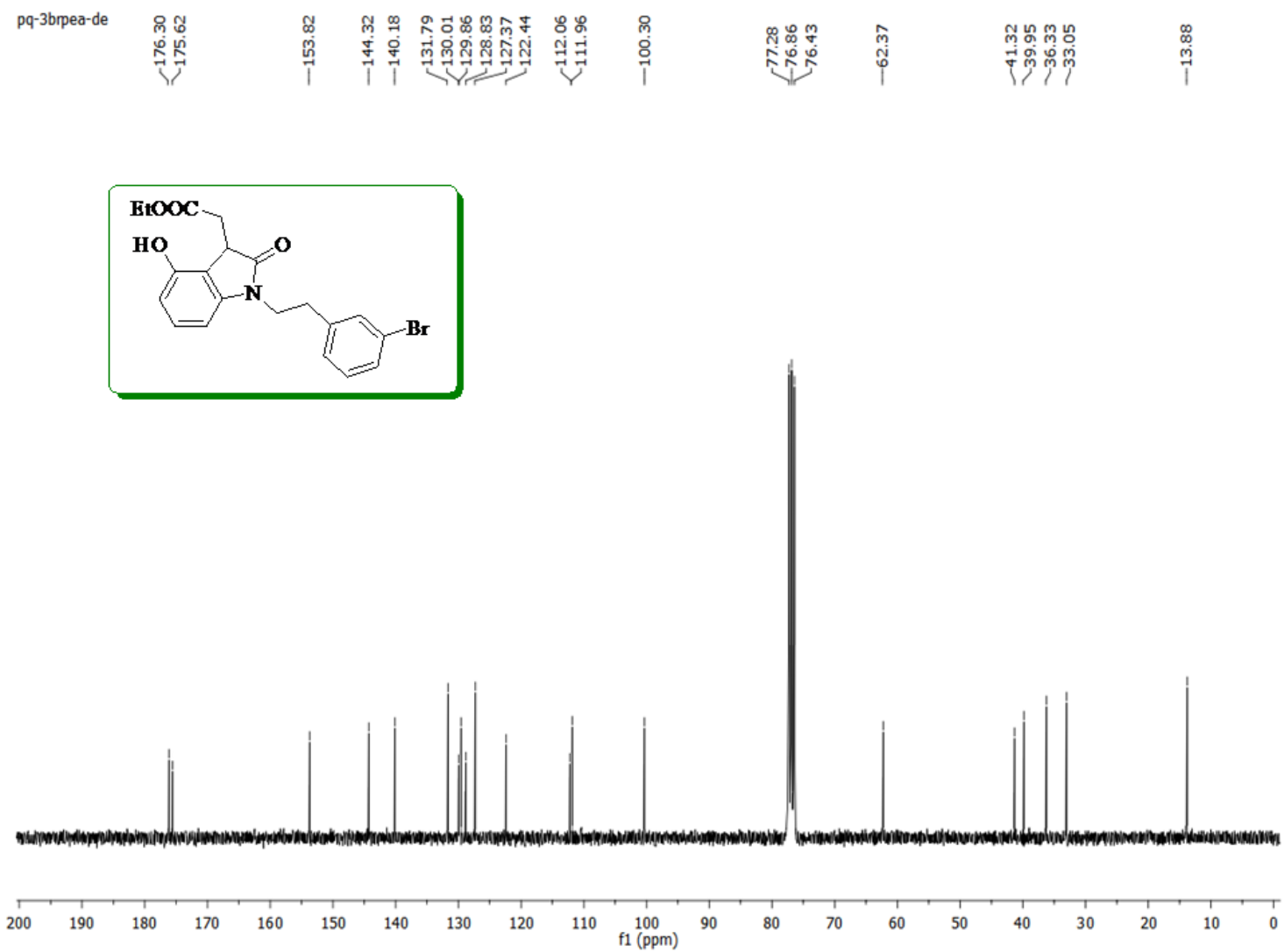
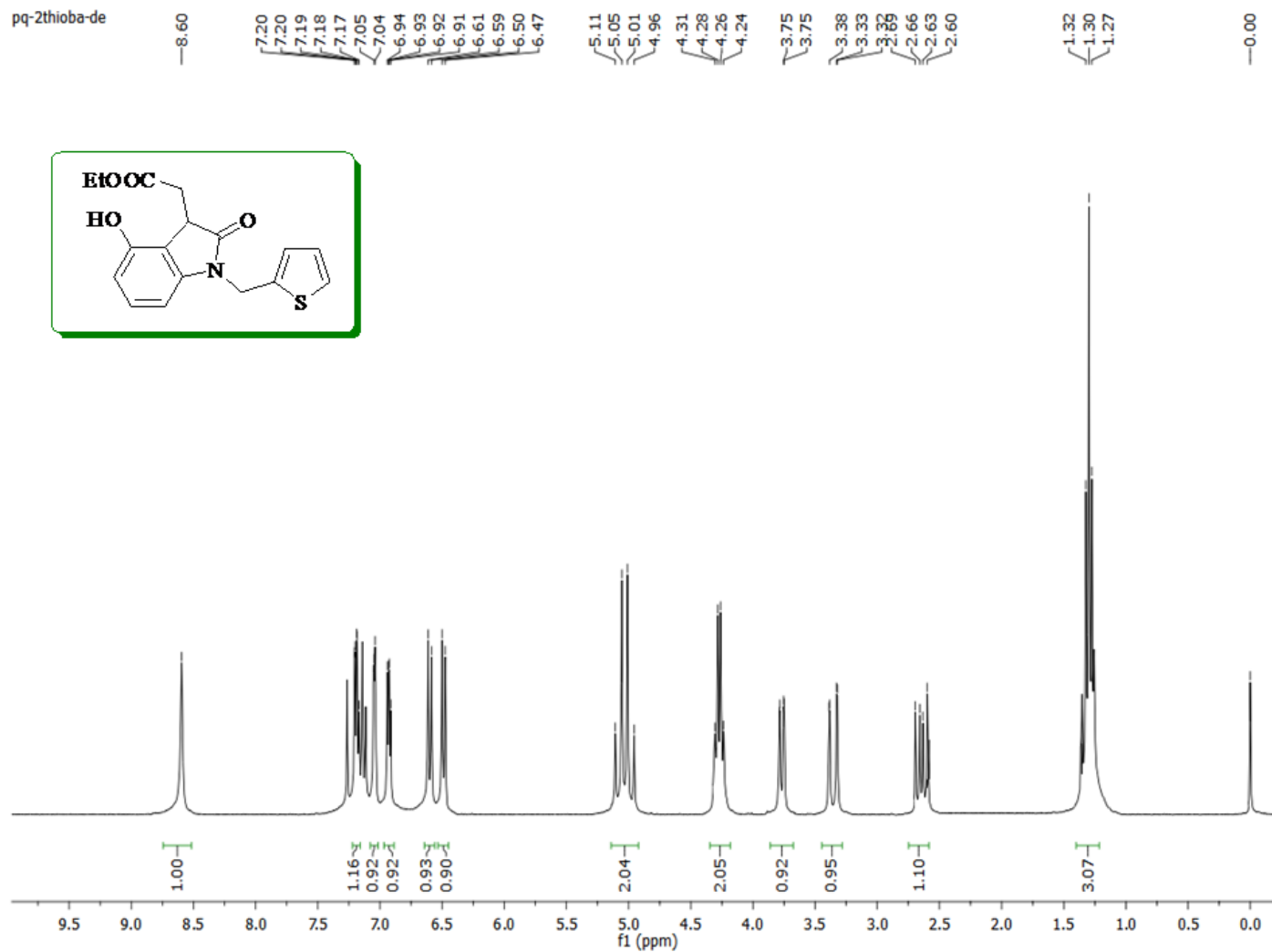
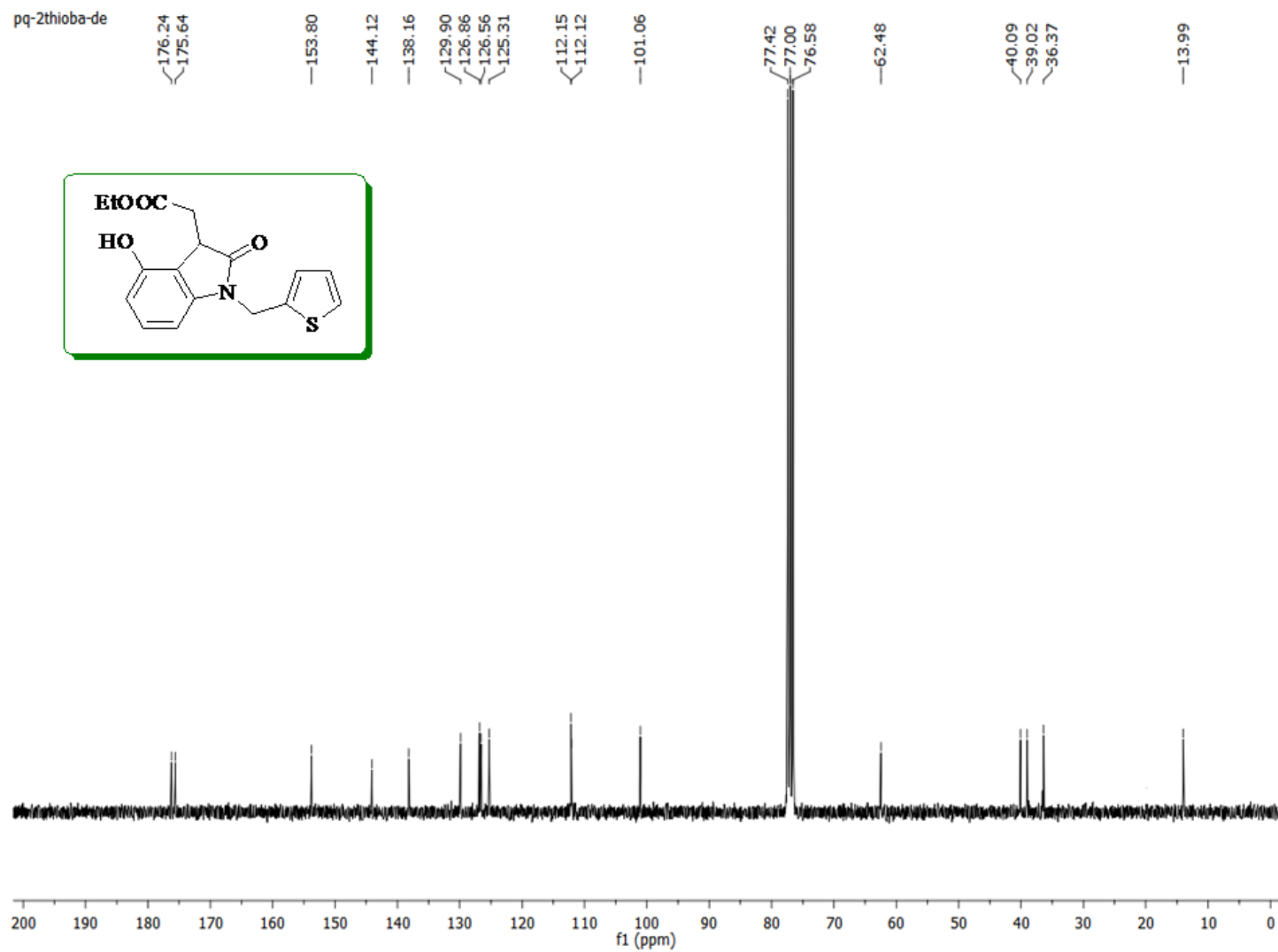


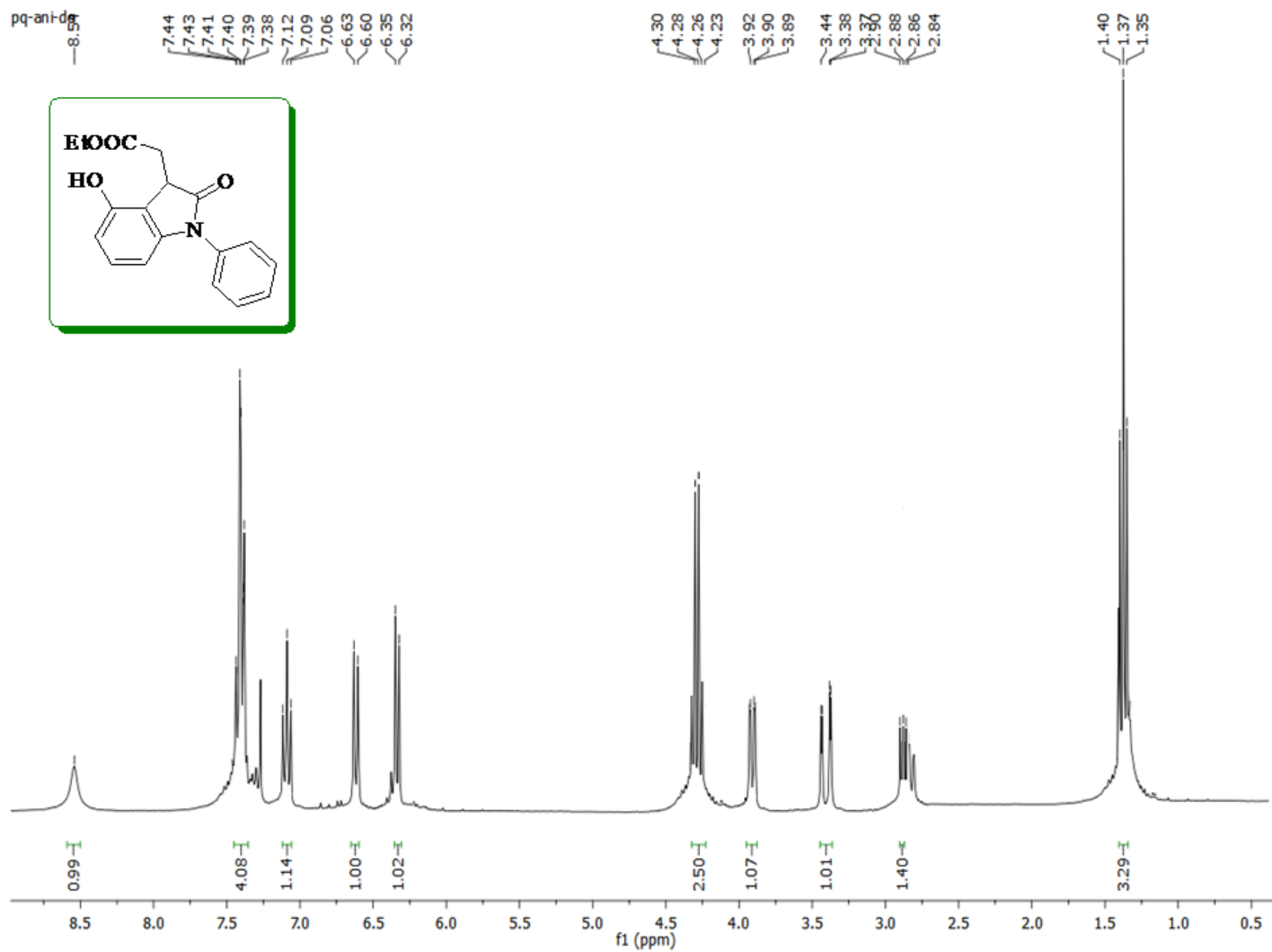
Figure S34.  $^{13}\text{C}$  NMR spectrum of **4p**



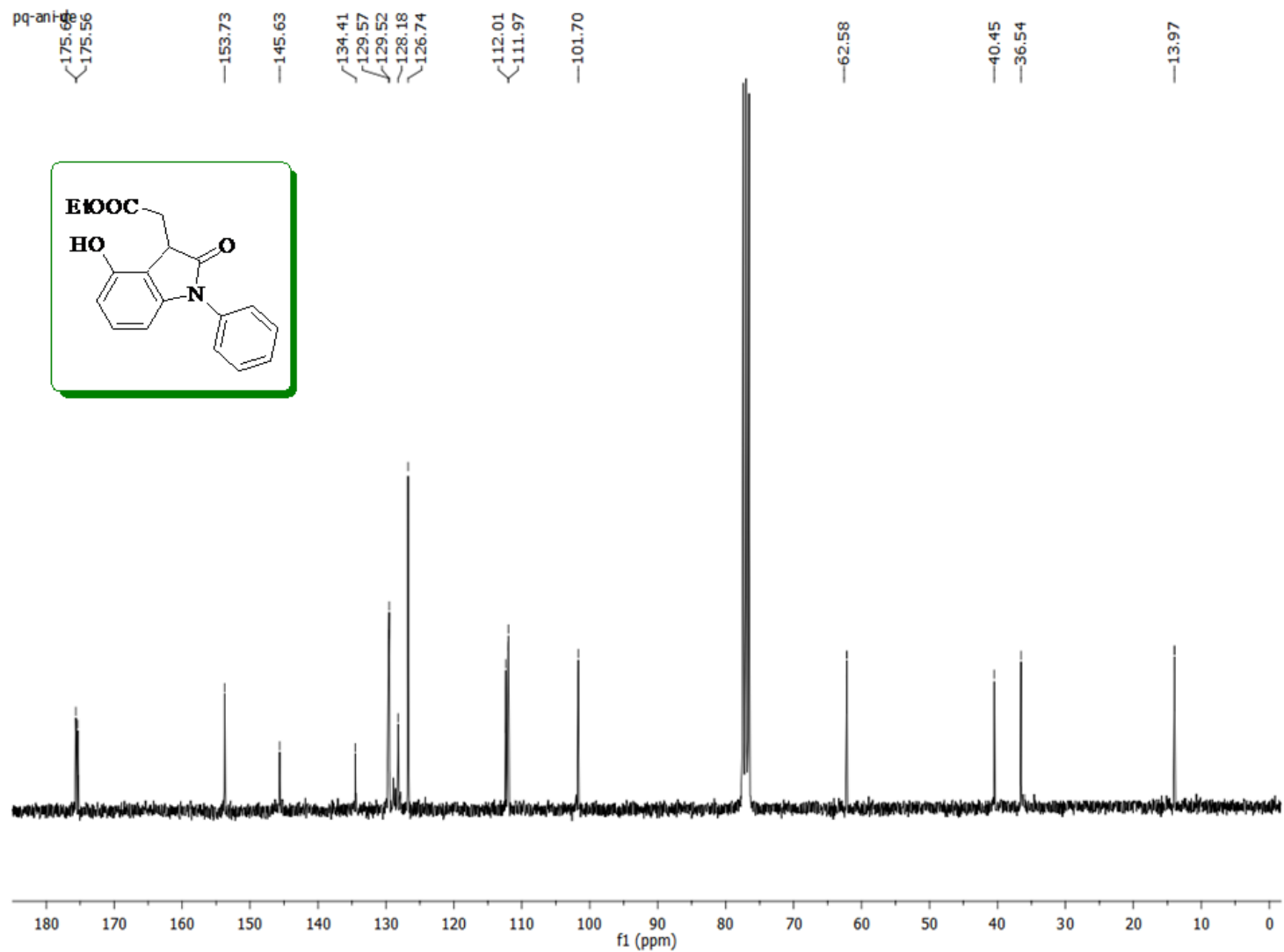
**Figure S35.** <sup>1</sup>H NMR spectrum of **4q**



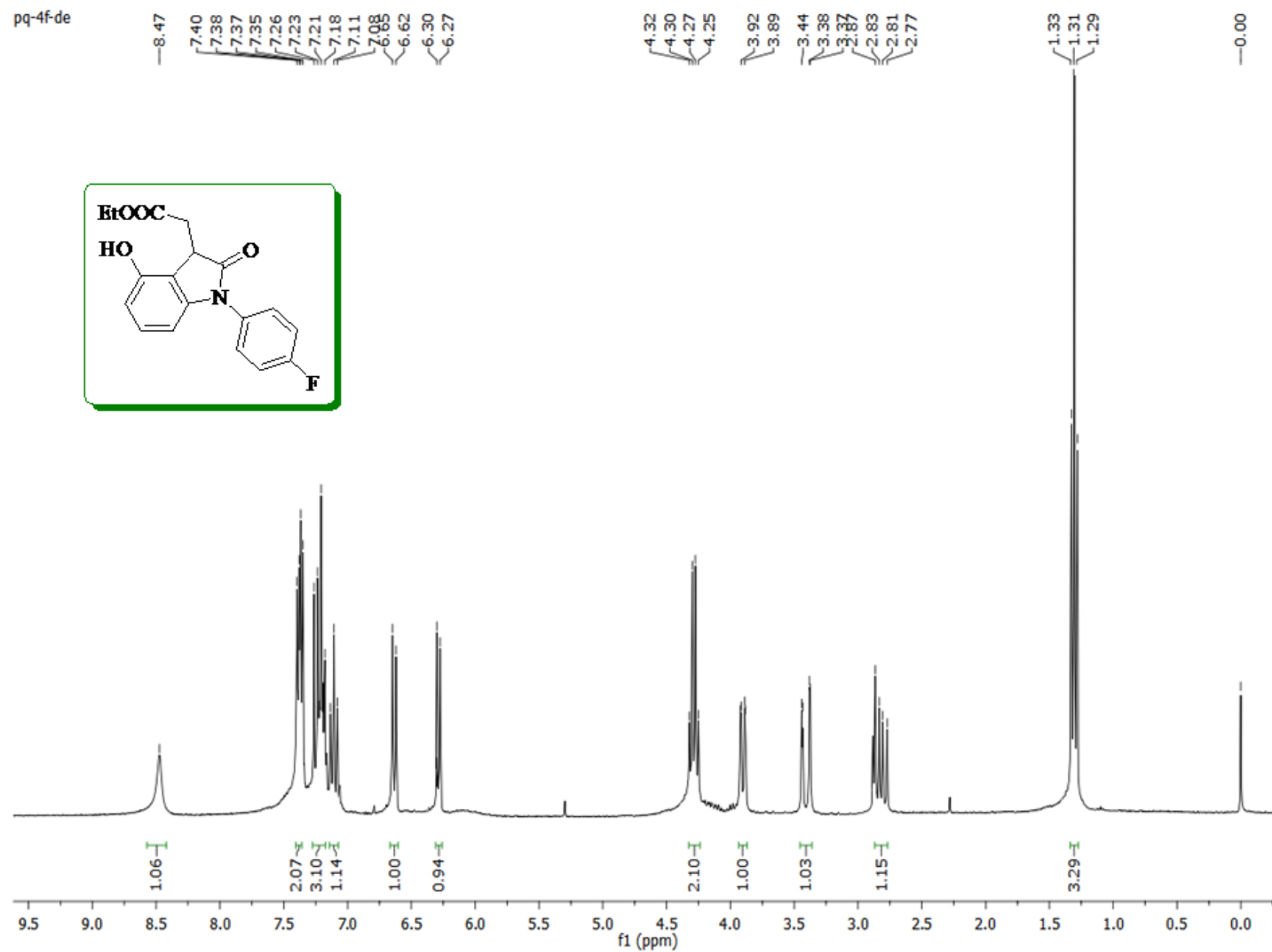
**Figure S36.**  $^{13}\text{C}$  NMR spectrum of **4q**



**Figure S37.**  $^1\text{H}$  NMR spectrum of **4r**



**Figure S38.** <sup>13</sup>C NMR spectrum of **4r**



**Figure S39.** <sup>1</sup>H NMR spectrum of **4s**



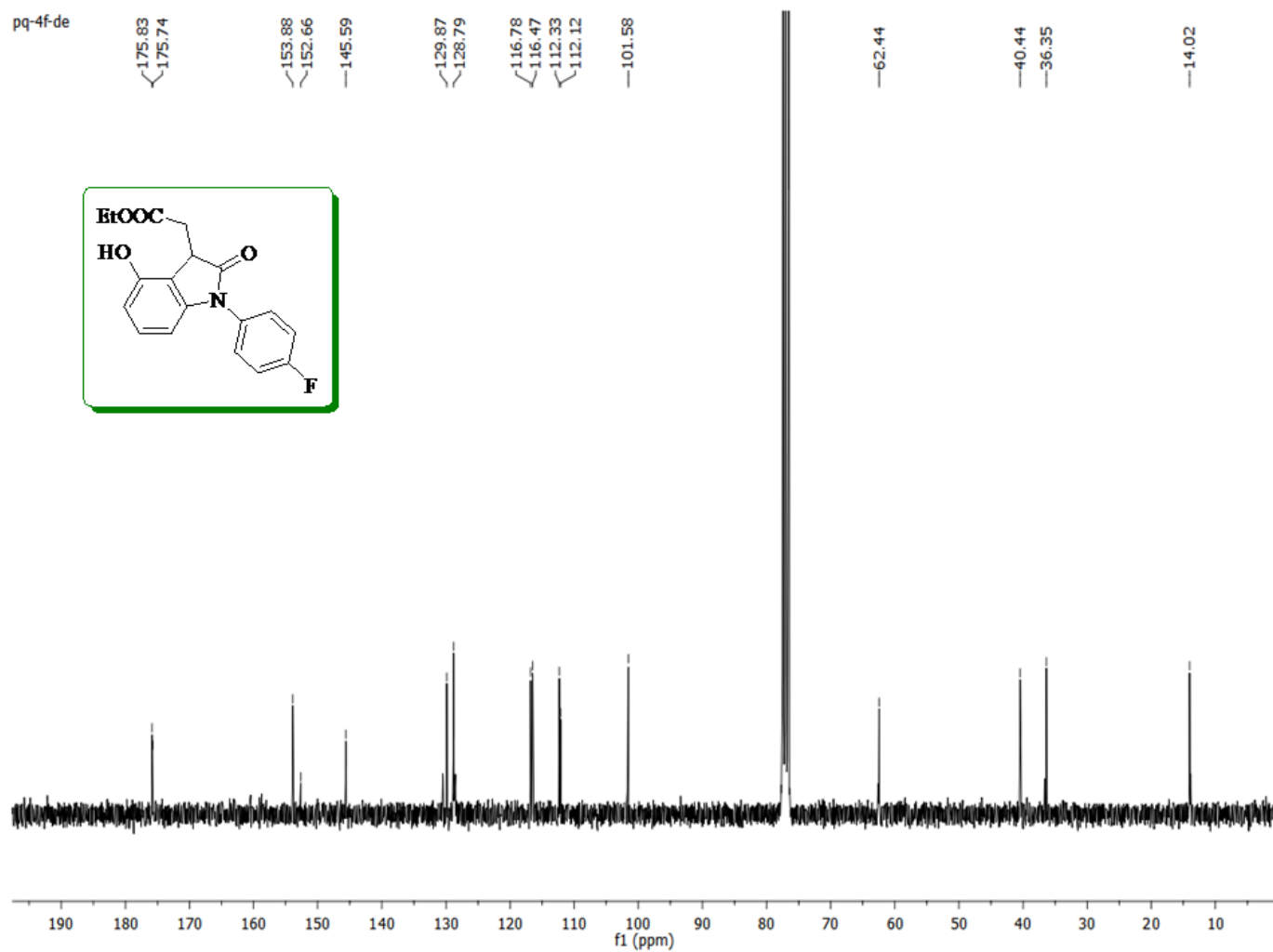


Figure S40.  $^{13}\text{C}$  NMR spectrum of **4s**

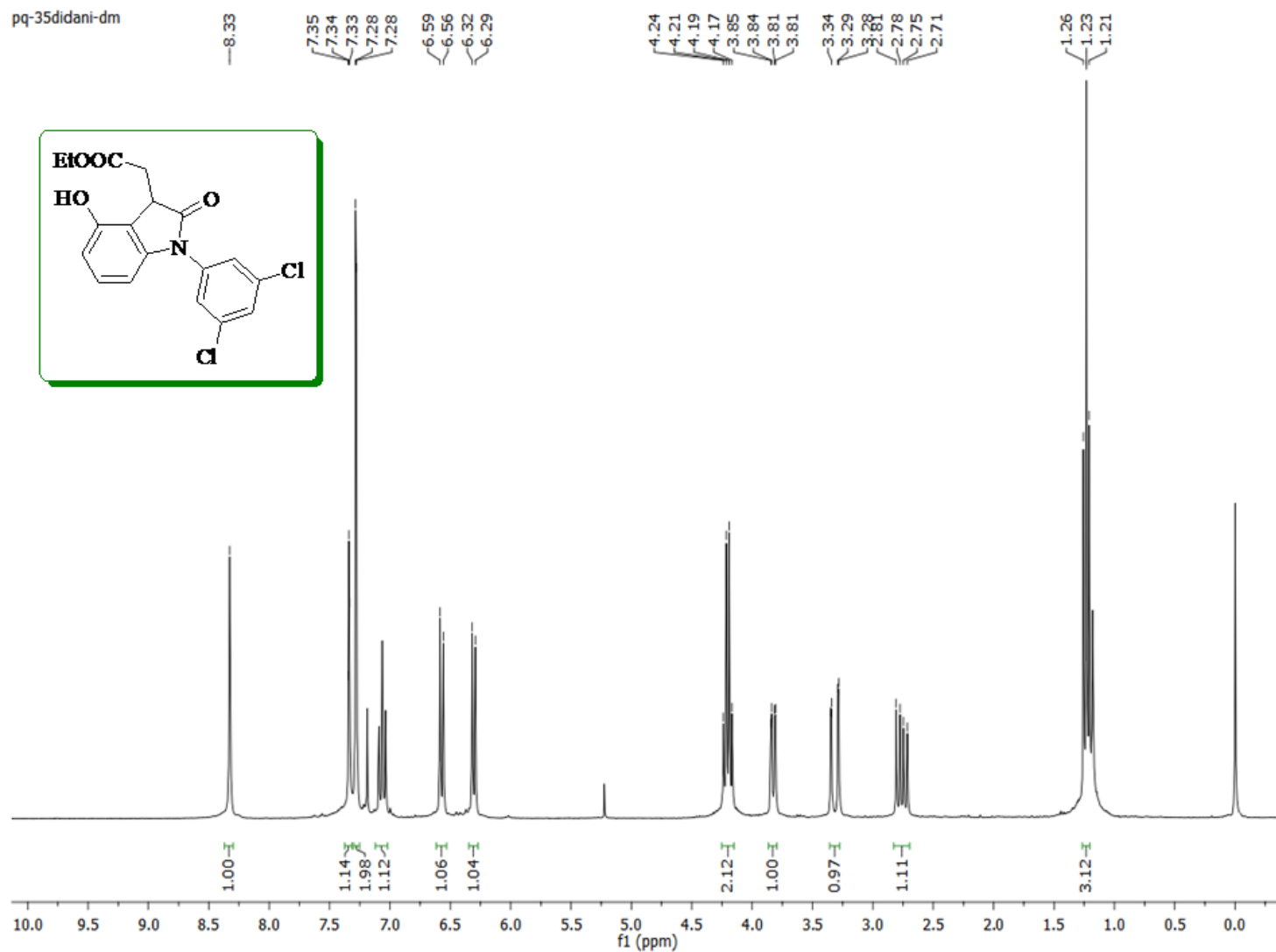


Figure S41.  $^1\text{H}$  NMR spectrum of 4t

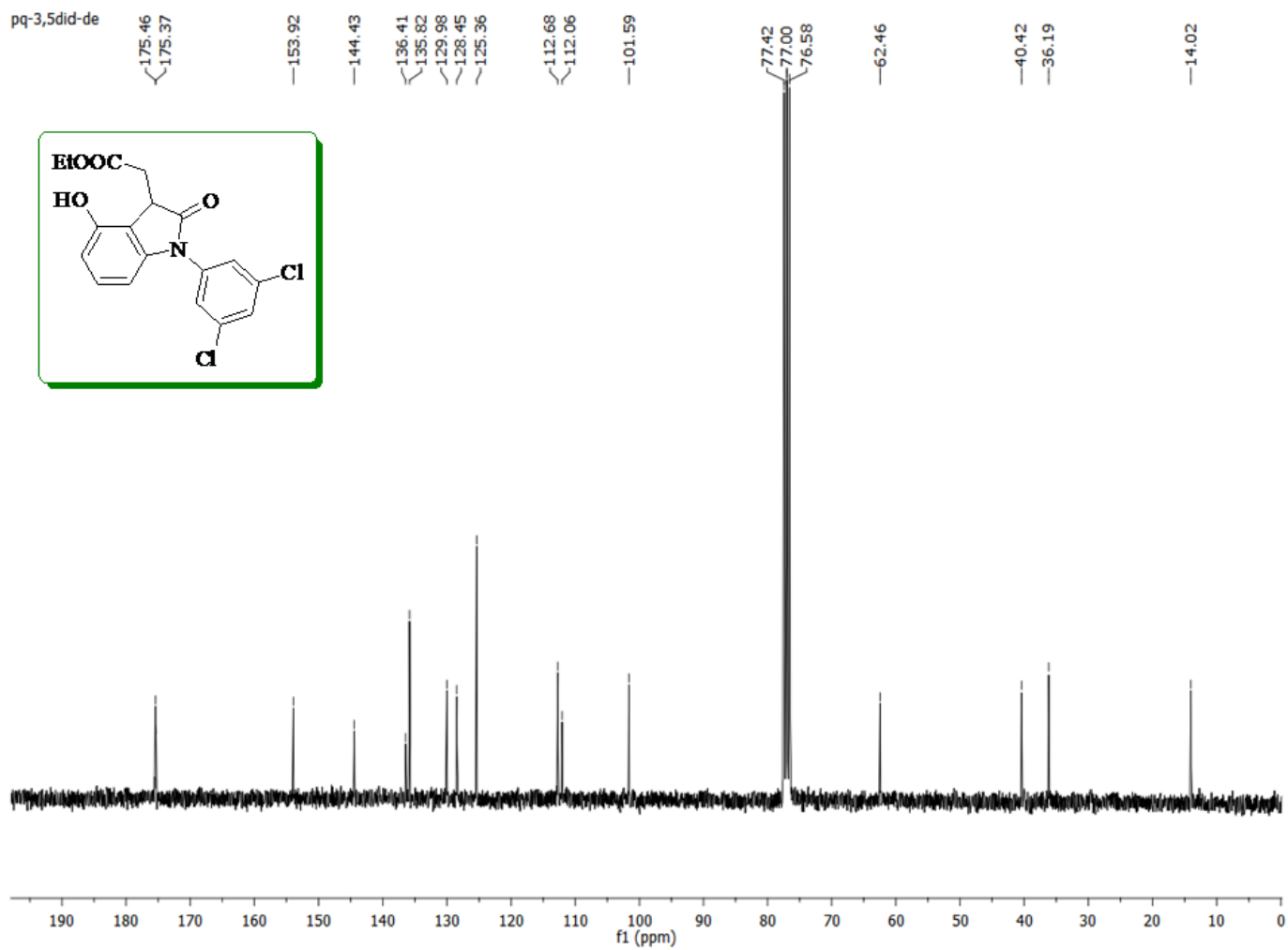
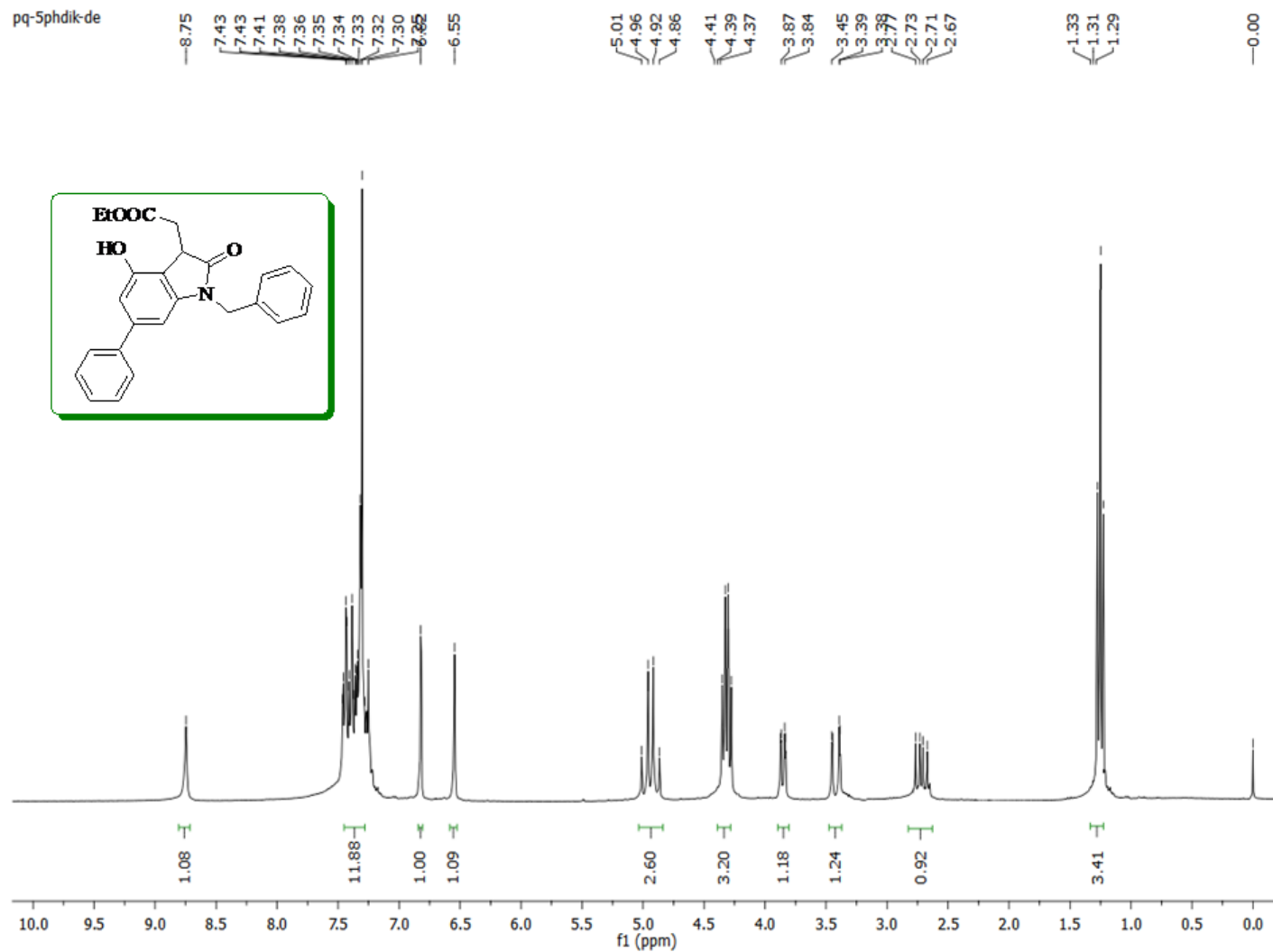
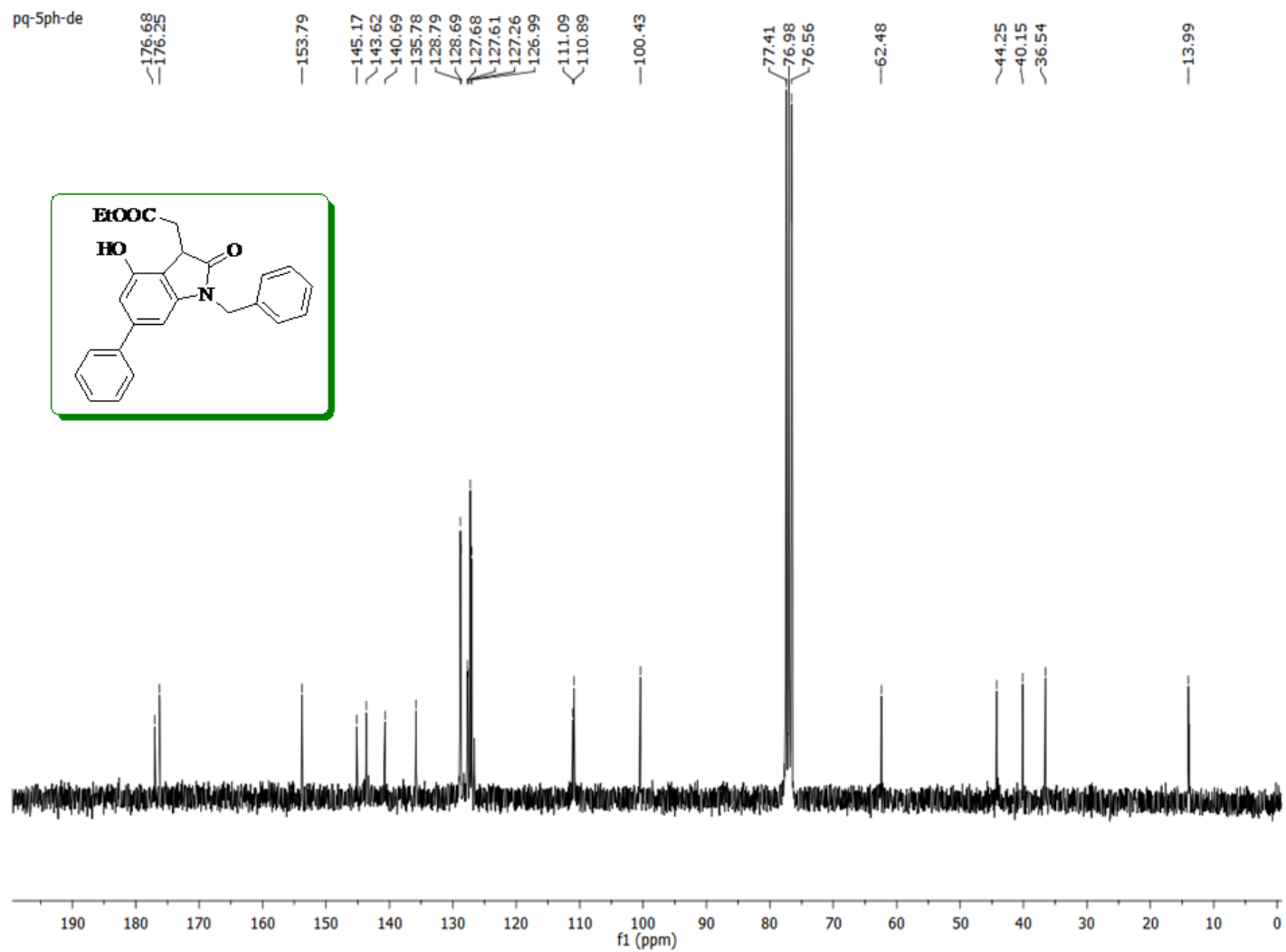


Figure S42.  $^{13}\text{C}$  NMR spectrum of **4t**



**Figure S43.** <sup>1</sup>H NMR spectrum of **4u**



**Figure S44.** <sup>13</sup>C NMR spectrum of **4u**

pq-3pure

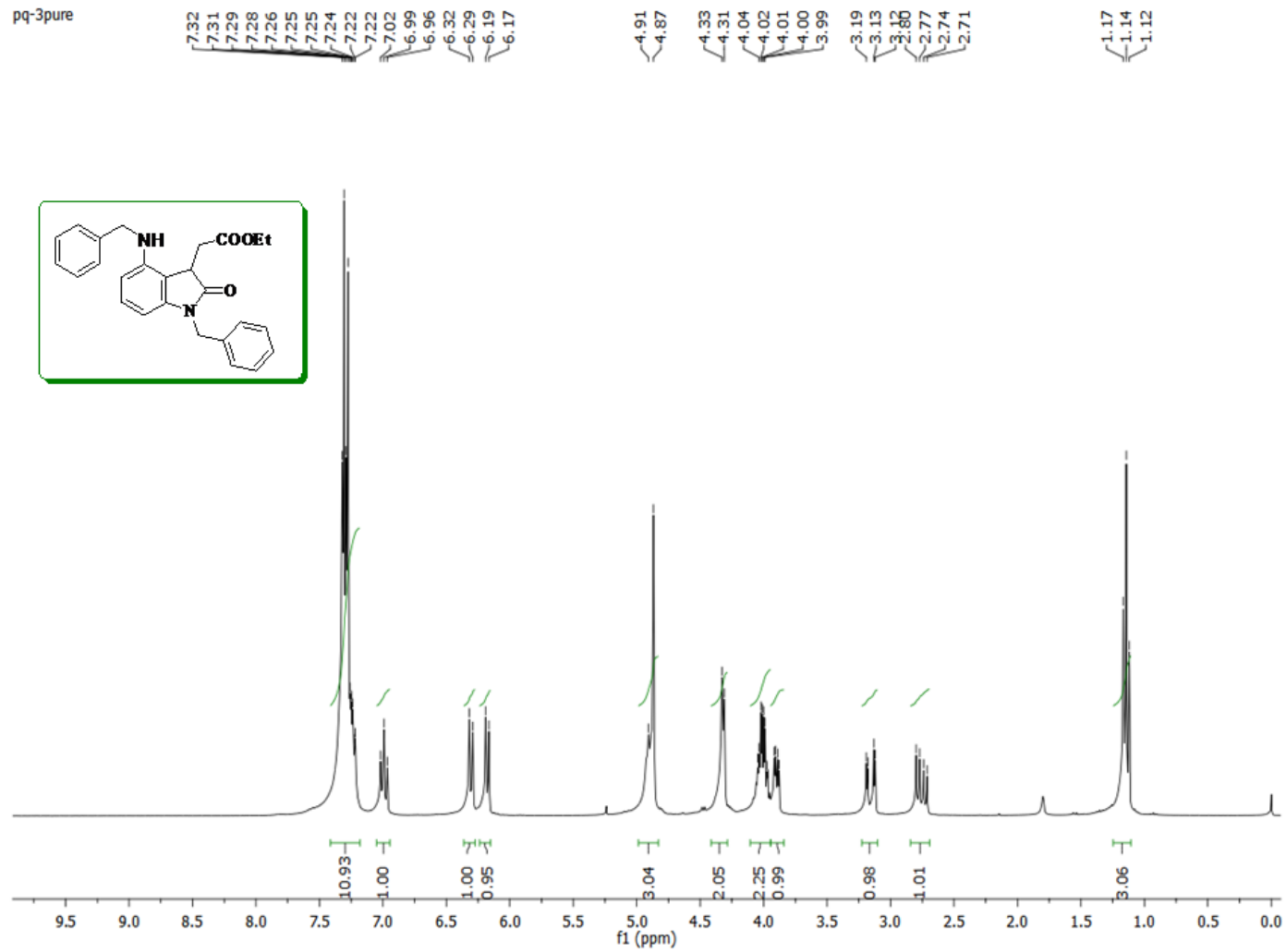


Figure S45.  $^1\text{H}$  NMR spectrum of **5**

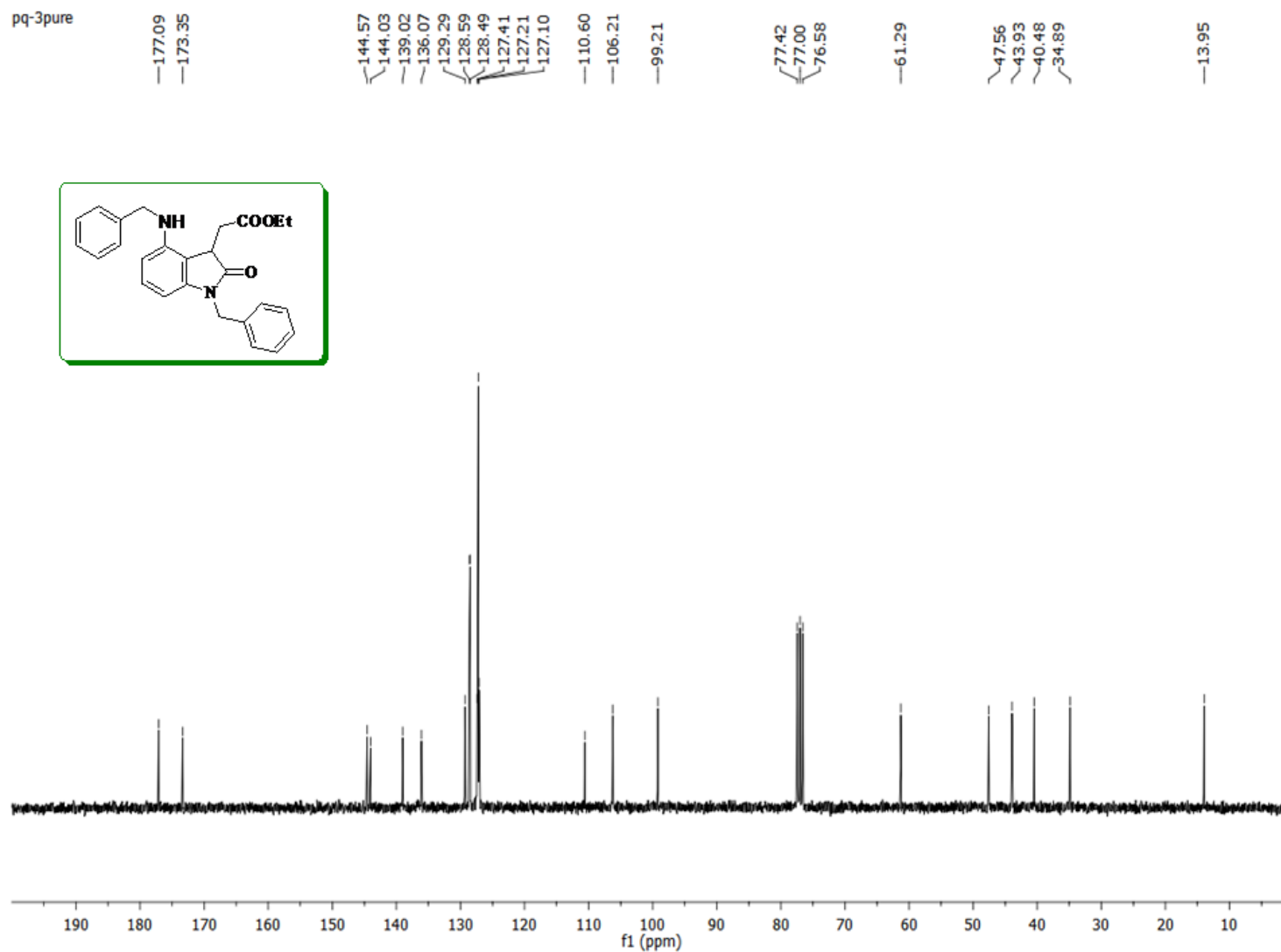


Figure S46.  $^{13}\text{C}$  NMR spectrum of **5**

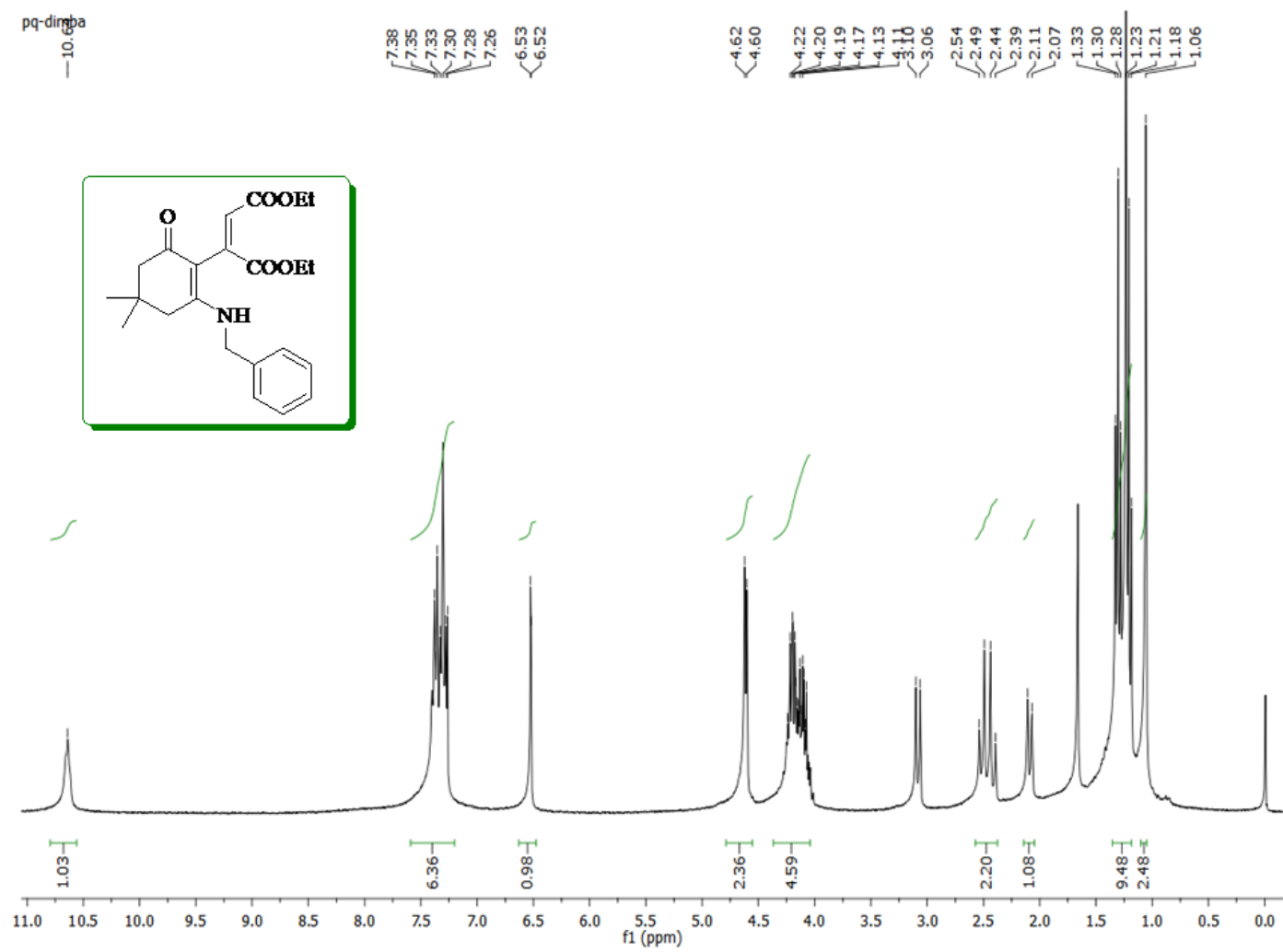
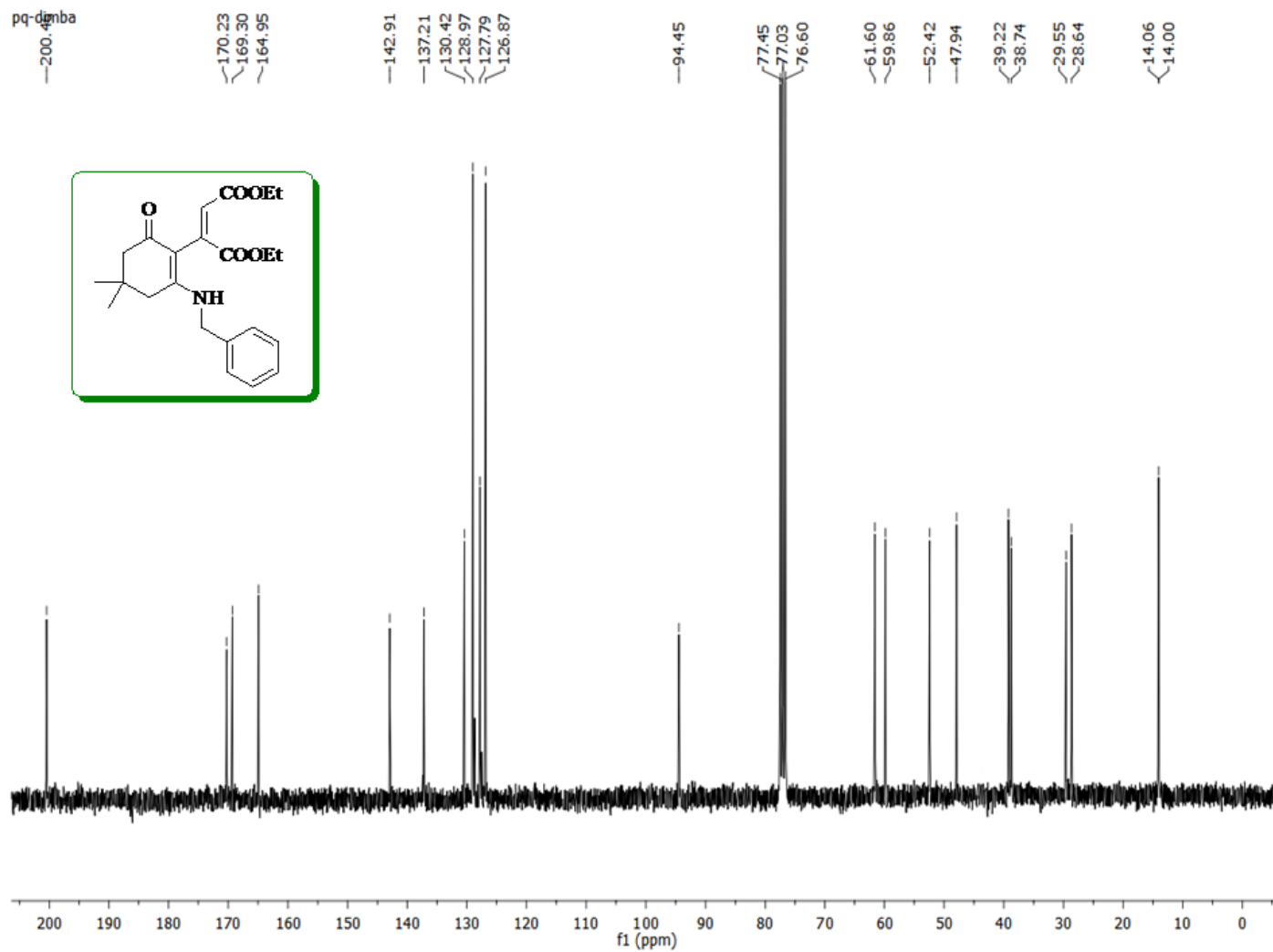
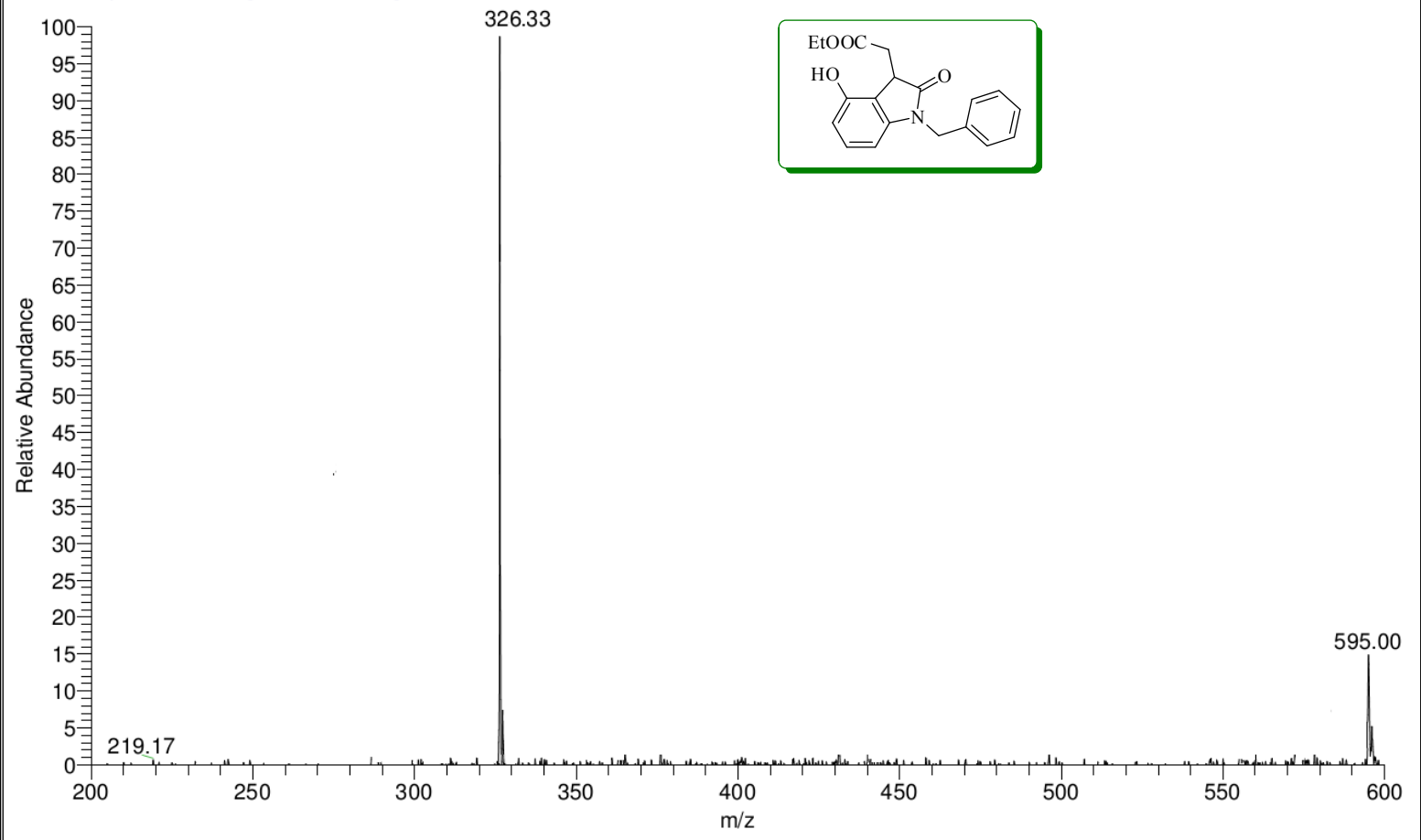


Figure S47. <sup>1</sup>H NMR spectrum of **8a**





one\_111117191635 #291 RT: 0.65 AV: 1 NL: 7.64E3  
T: ITMS + p ESI Full ms [200.00-600.00]



**Figure S49.** Mass spectrum of **4a**

5\_111117191633 #293 RT: 0.65 AV: 1 NL: 5.63E3  
T: ITMS + p ESI Full ms [200.00-600.00]

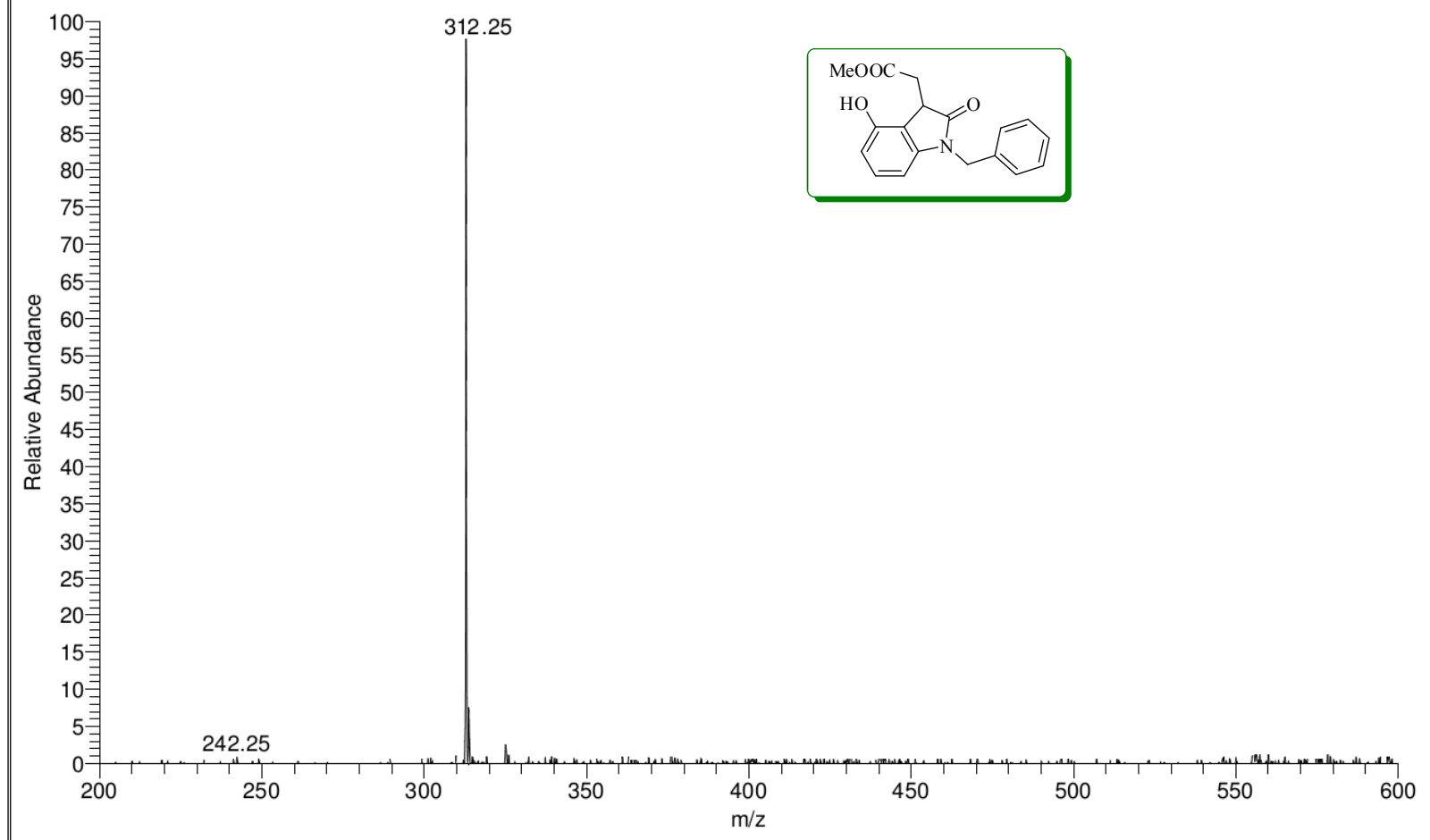


Figure S50. Mass spectrum of **4b**

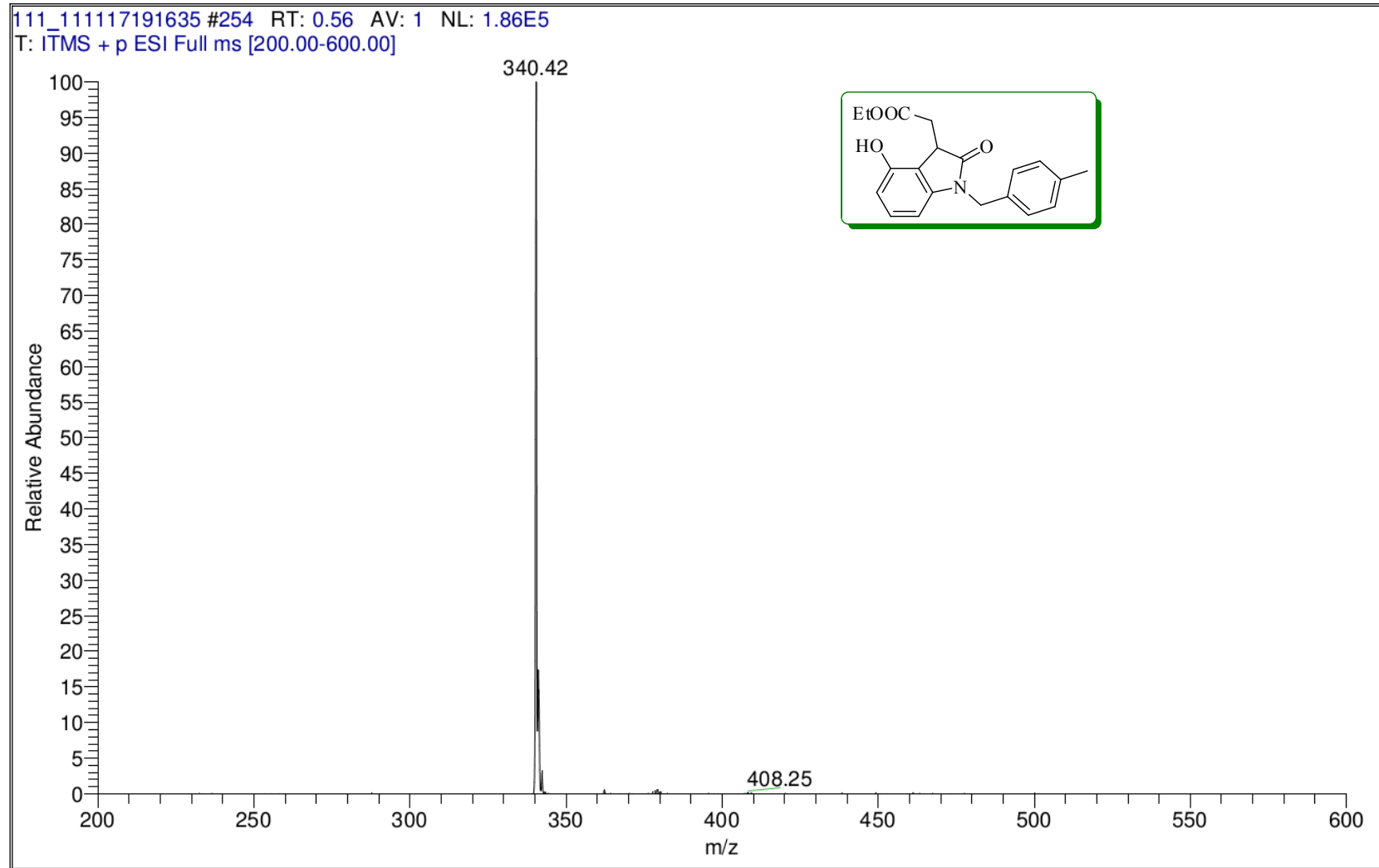
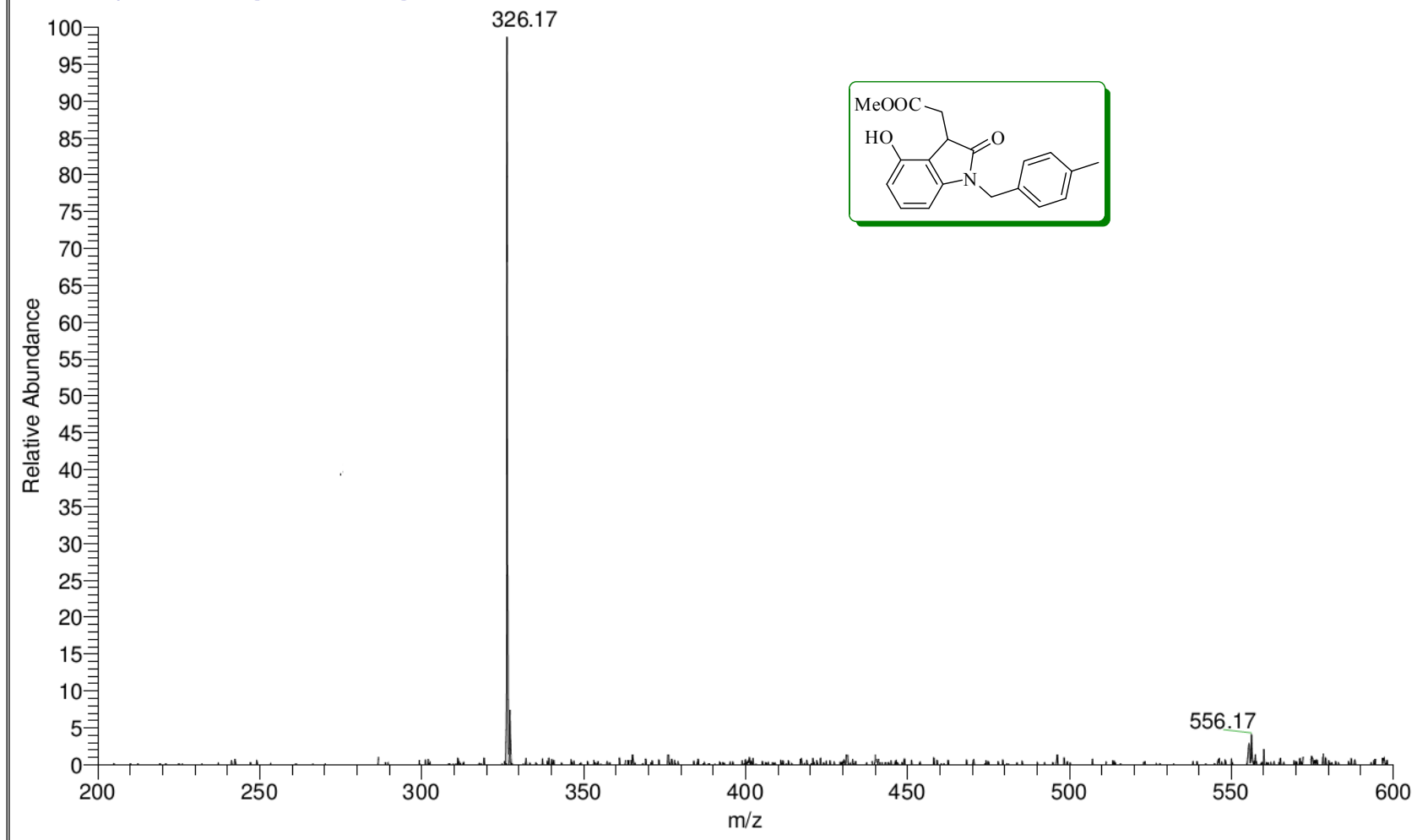


Figure S51. Mass spectrum of **4c**

7\_111117191635 #291 RT: 5.65 AV: 1 NL: 9.64E3  
T: ITMS + p ESI Full ms [200.00-600.00]



**Figure S52.** Mass spectrum of **4d**

6\_111117191635 #300 RT: 0.67 AV: 1 NL: 3.63E3  
T: ITMS + p ESI Full ms [200.00-600.00]

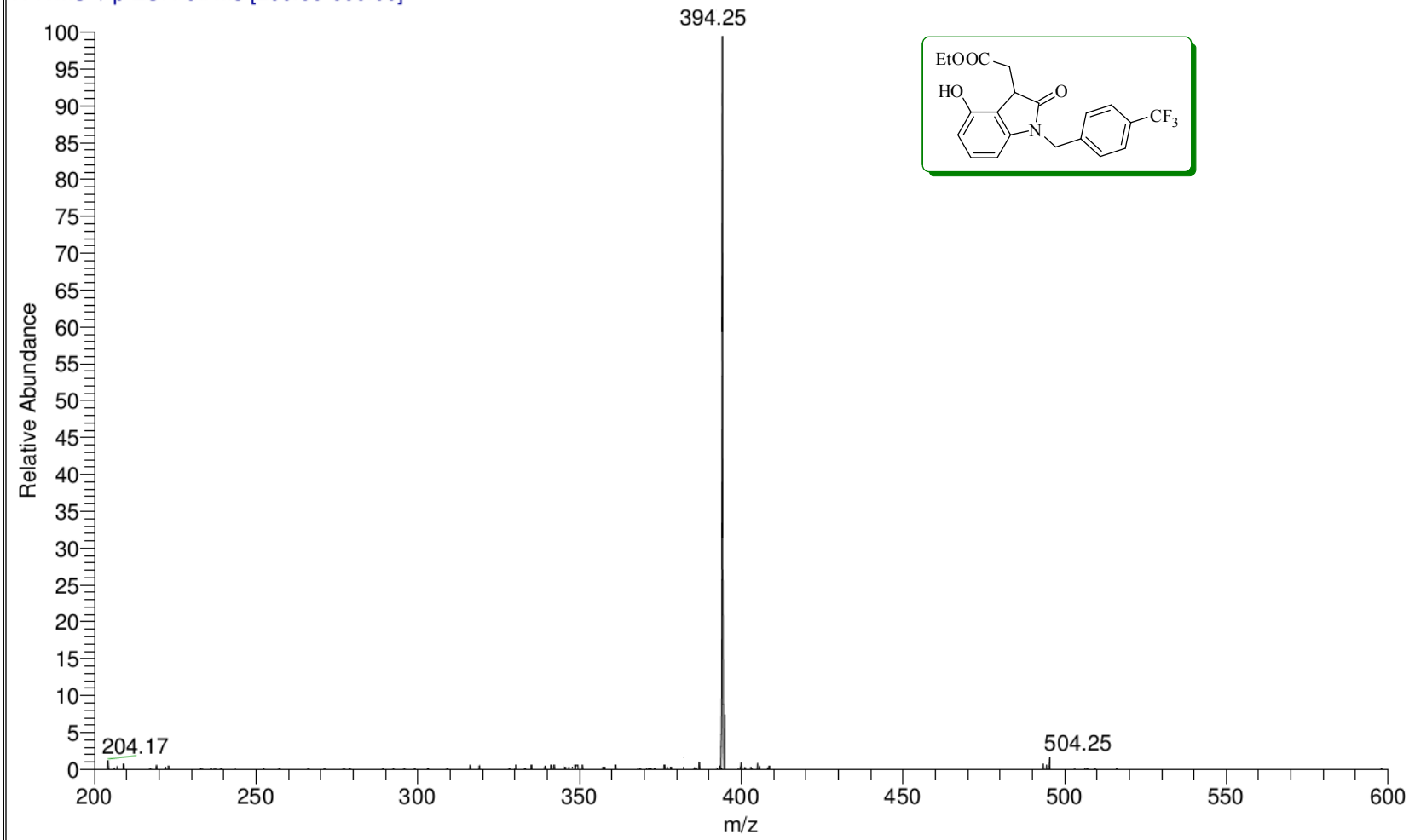


Figure S53. Mass spectrum of 4e

9\_111117191635 #313 RT: 0.70 AV: 1 NL: 5.79E4  
T: ITMS + p ESI Full ms [200.00-600.00]

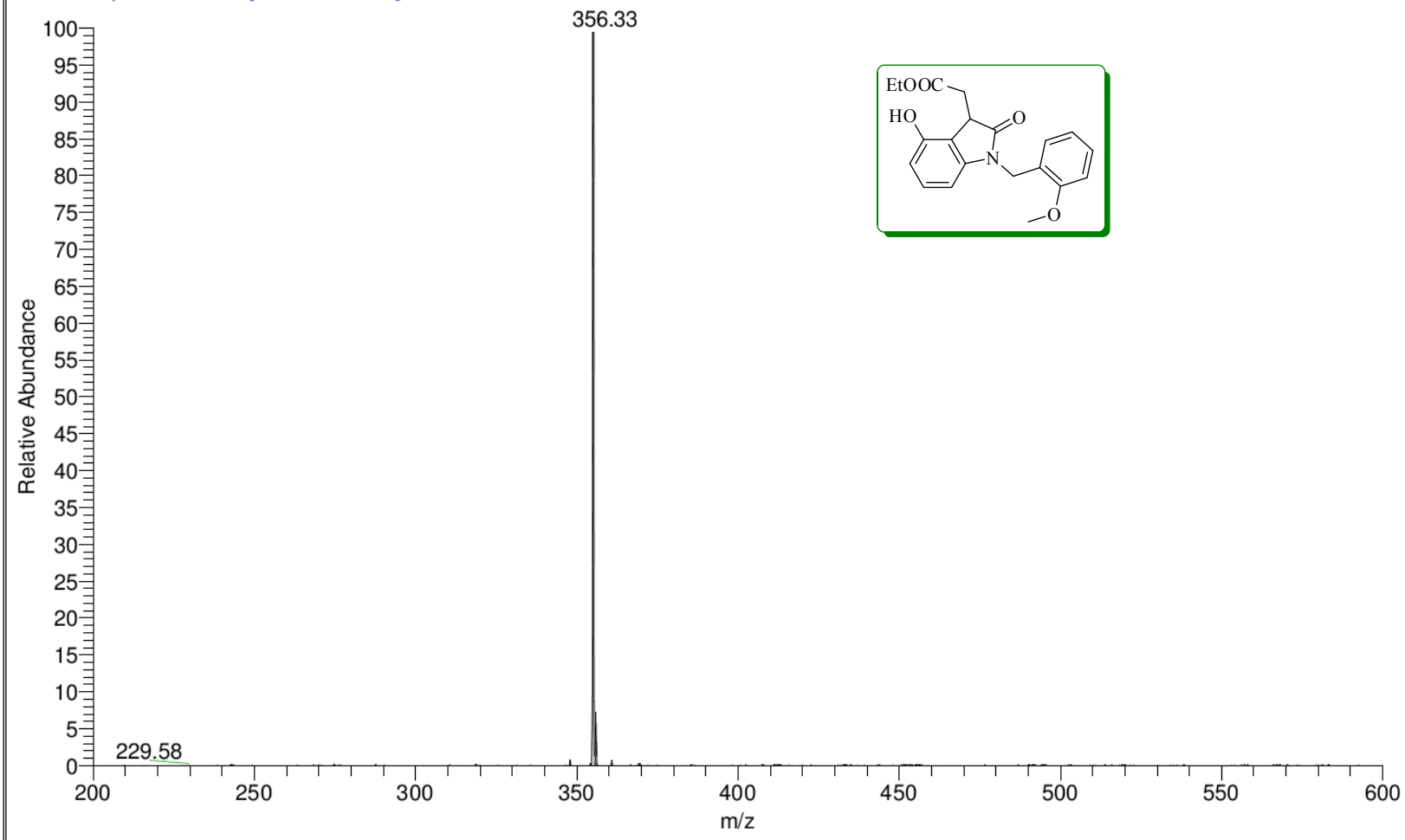


Figure S54. Mass spectrum of 4f

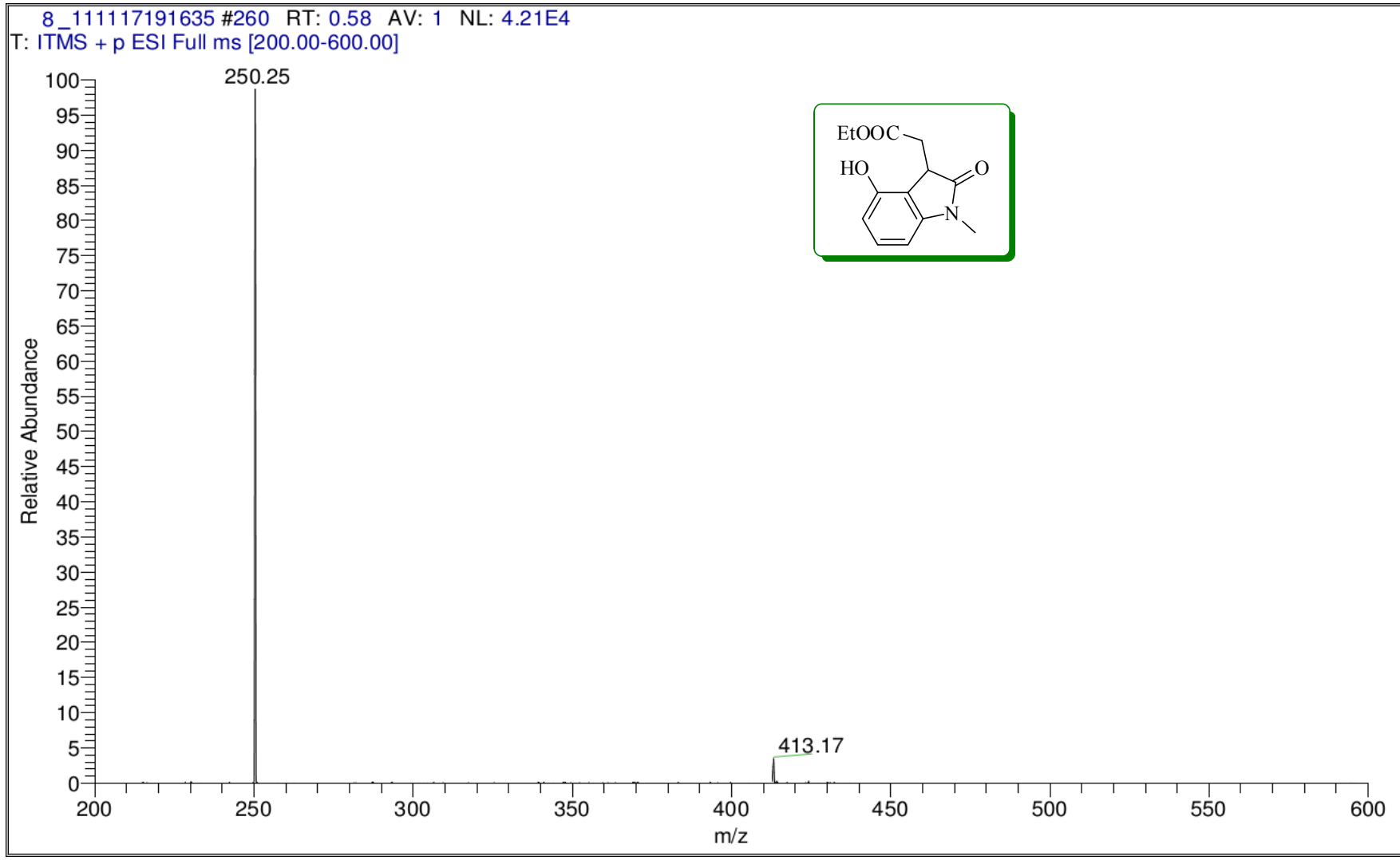
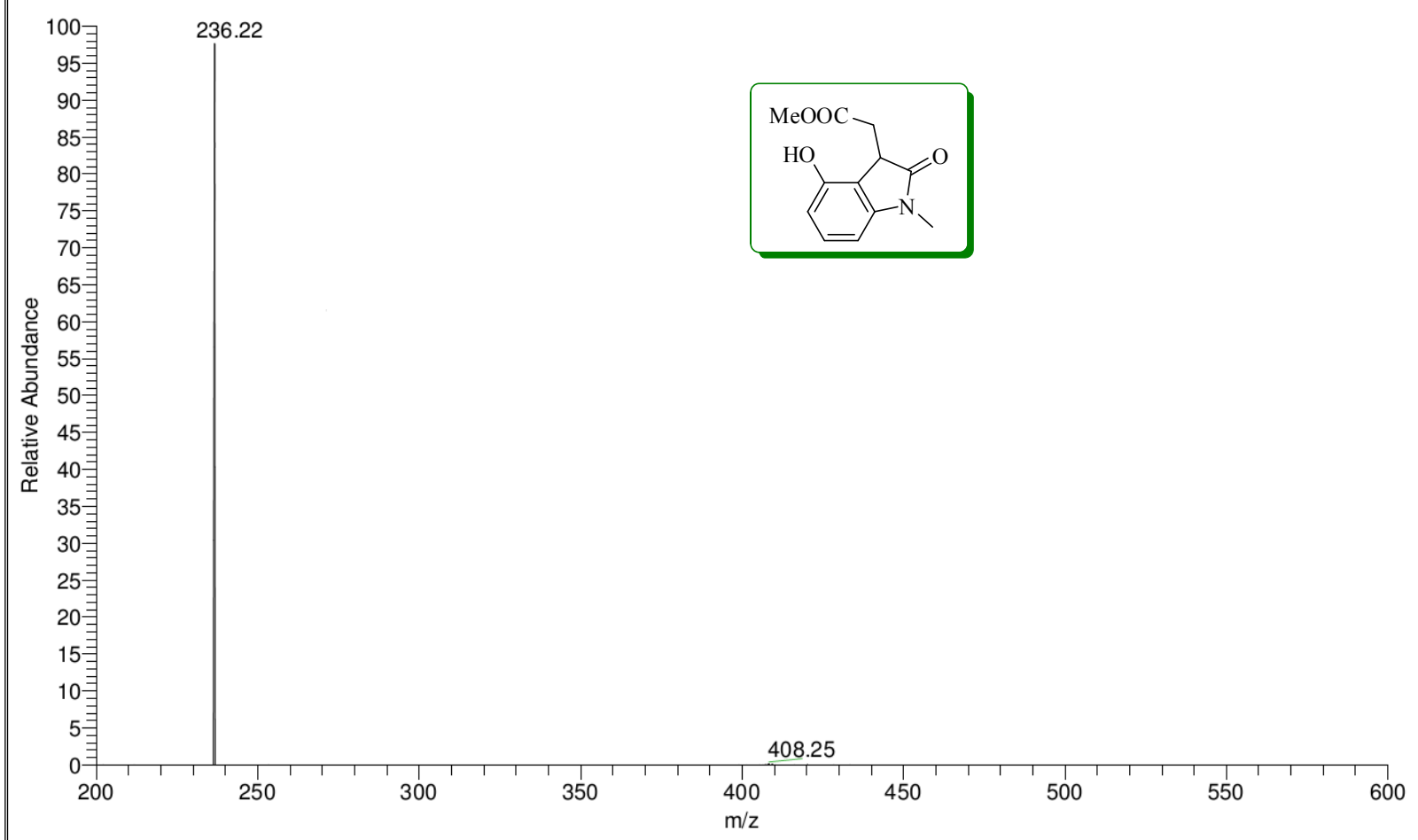


Figure S55. Mass spectrum of 4g

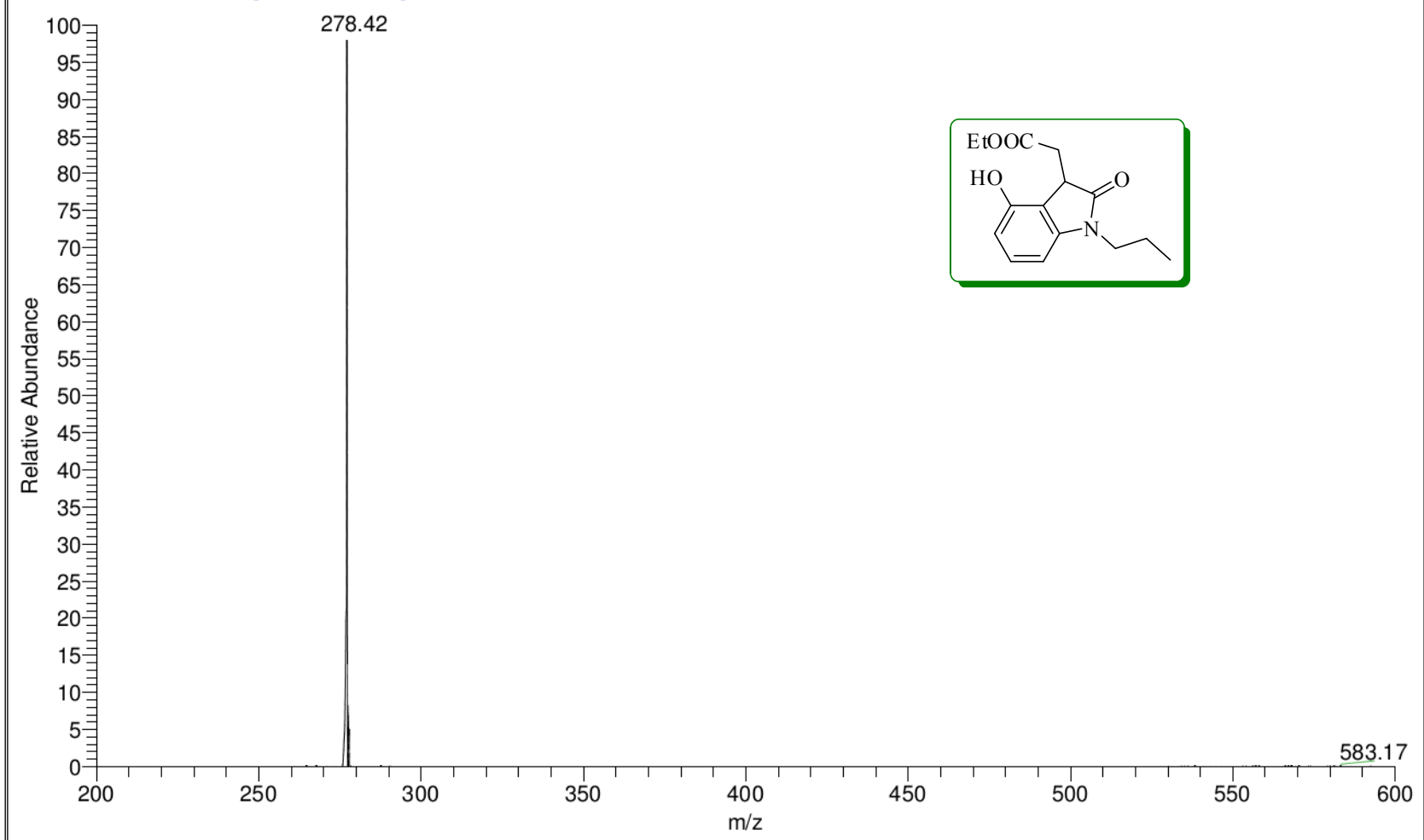


10\_11117191635 #254 RT: 0.56 AV: 1 NL: 1.86E5  
T: ITMS + p ESI Full ms [200.00-600.00]

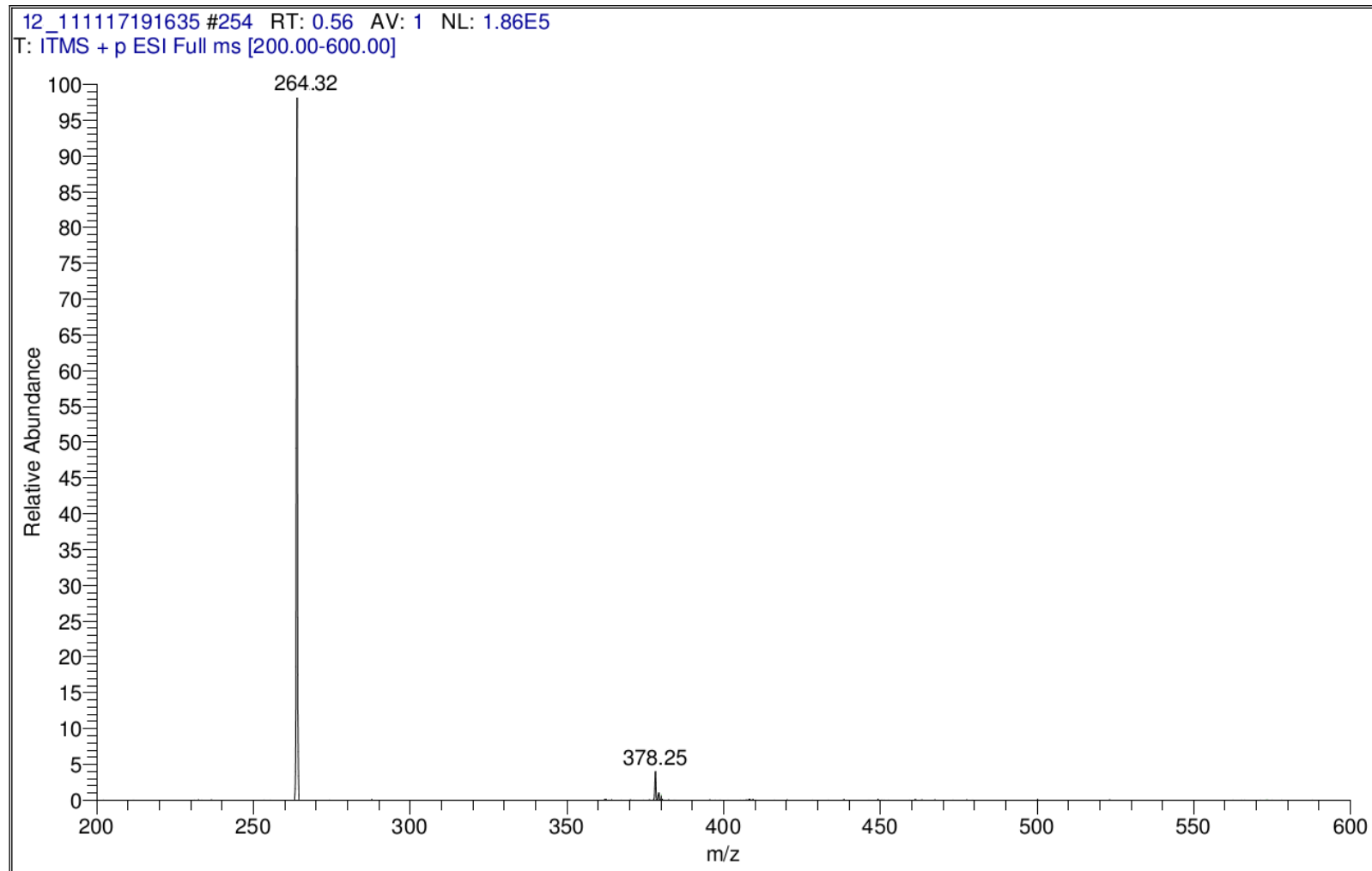


**Figure S56.** Mass spectrum of **4h**

11\_111117191635 #313 RT: 3.70 AV: 1 NL: 9.79E4  
T: ITMS + p ESI Full ms [200.00-600.00]



**Figure S57.** Mass spectrum of 4i



**Figure S58.** Mass spectrum of **4j**

### Selected Crystallographic Data for 4a

Empirical formula	C <sub>19</sub> H <sub>19</sub> N O <sub>4</sub>	
Formula weight	325.35	
Temperature	110(2) K	
Wavelength	1.54178 Å	
Crystal system	Triclinic	
Space group	P-1	
Unit cell dimensions	a = 8.4369(10) Å	α = 75.851(6)°.
	b = 12.6589(13) Å	β = 89.973(7)°.
	c = 15.5346(16) Å	γ = 83.469(7)°.
Volume	1597.7(3) Å <sup>3</sup>	
Z	4	
Density (calculated)	1.353 Mg/m <sup>3</sup>	
Absorption coefficient	0.779 mm <sup>-1</sup>	
F(000)	688	
Crystal size	0.08 x 0.07 x 0.03 mm <sup>3</sup>	
Theta range for data collection	2.93 to 60.00°.	
Index ranges	-9 ≤ h ≤ 9, -13 ≤ k ≤ 14, 0 ≤ l ≤ 17	
Reflections collected	6568	
Independent reflections	6577 [R(int) = 0.0000]	
Completeness to theta = 60.00°	88.6 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.9770 and 0.9403	
Refinement method	Full-matrix least-squares on F <sup>2</sup>	
Data / restraints / parameters	6577 / 0 / 438	
Goodness-of-fit on F <sup>2</sup>	1.073	
Final R indices [I > 2σ(I)]	R1 = 0.0571, wR2 = 0.1642	
R indices (all data)	R1 = 0.0825, wR2 = 0.1867	
Largest diff. peak and hole	0.354 and -0.357 e.Å <sup>-3</sup>	