

Supporting Information

To prenylcoumarins in one or two steps by microwave promoted tandem Claisen rearrangement / Wittig olefination / cyclization sequence

*Christiane Schultze and Bernd Schmidt**

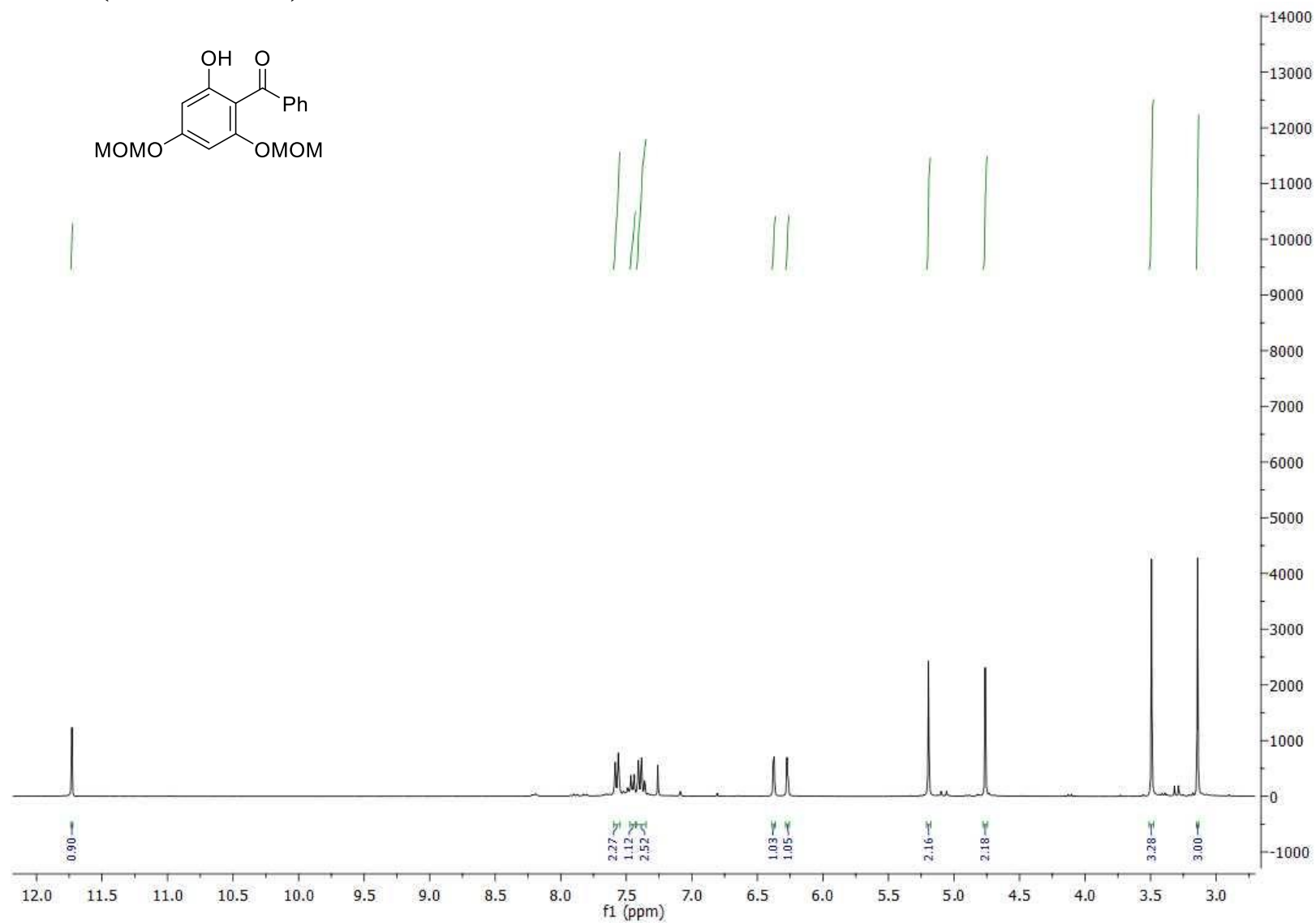
Universitaet Potsdam, Institut fuer Chemie (Organische Synthesechemie), Karl-Liebknecht-Strasse 24-25, D-14476 Potsdam-Golm, Germany

bernd.schmidt@uni-potsdam.de

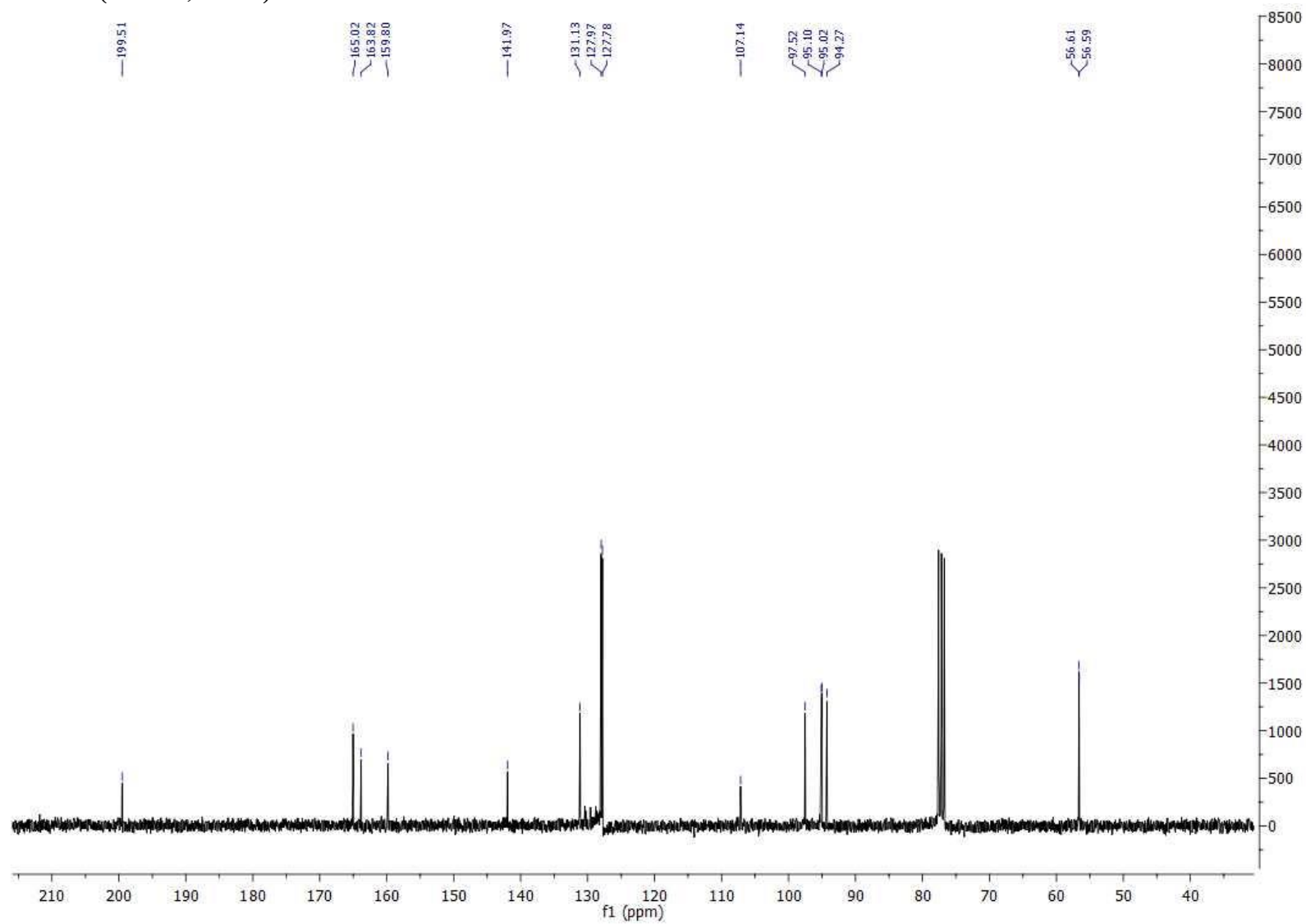
Contents: copies of ^1H and ^{13}C -NMR spectra

compound	page	compound	page	compound	page	compound	page
1b	S2	11h	S32	8j	S62	12b	S92
1k	S4	11j	S34	7k	S64	12h	S94
1p	S6	11k	S36	8k	S66	12k	S96
1q	S8	11l	S38	7l	S68	12l	S98
1r	S10	11o	S40	8l	S70	12n	S100
3a	S12	11p	S42	7n	S72	12o	S102
3e	S14	11q	S44	7o	S74	12p	S104
3f	S16	11r	S46	7r	S76	12q	S106
3g	S18	7a	S48	7a'	S78	12r	S108
3i	S20	7e	S50	7b'	S80	12o'	S110
3j	S22	7f	S52	7k'	S82	13	S112
3k	S24	7g	S54	7o'	S84	14	S114
3l	S26	7h	S56	7p'	S86		
3n	S28	7i	S58	7q'	S88		
11b	S30	7j	S60	12a	S90		

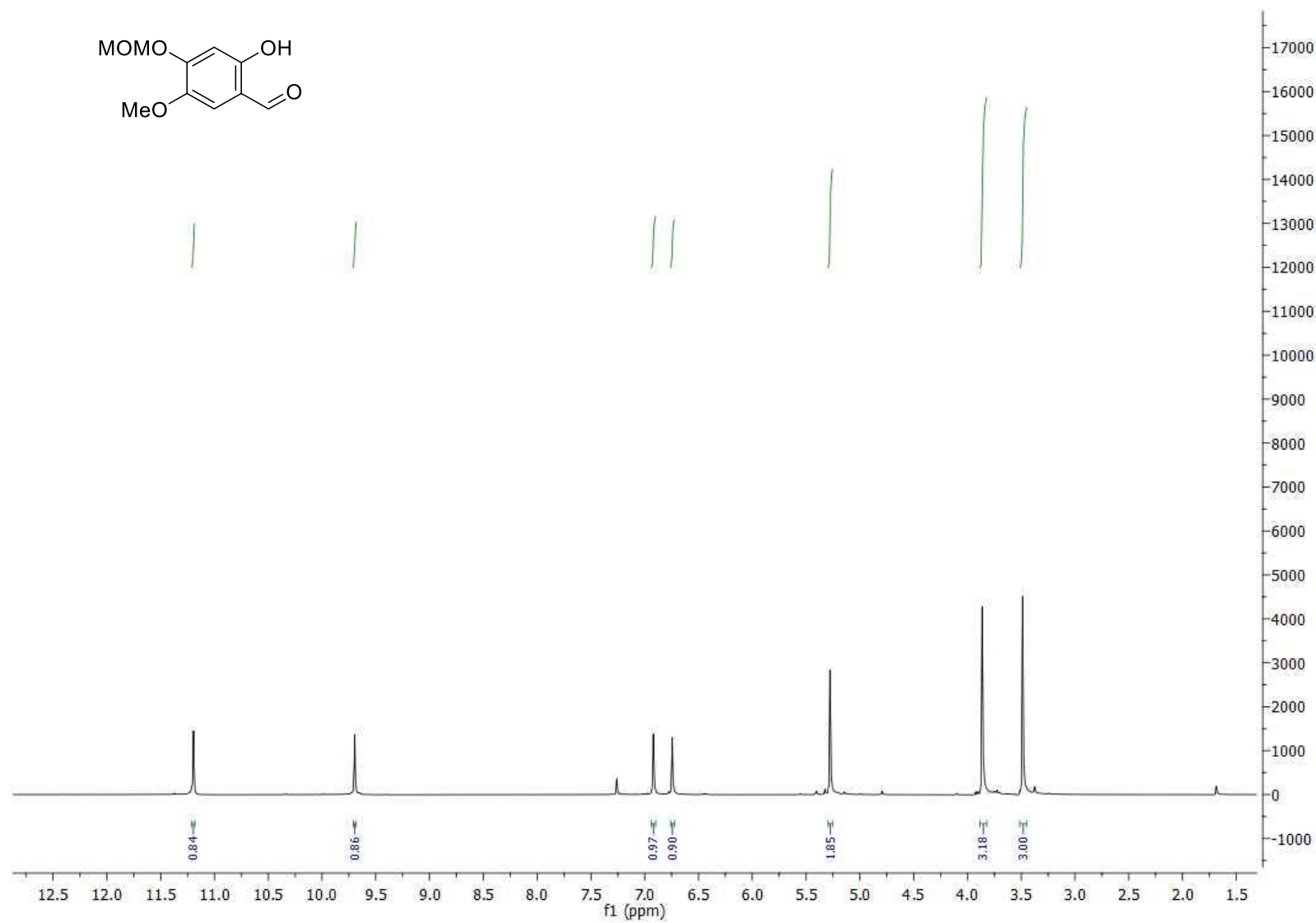
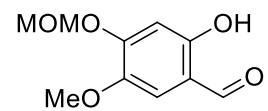
^1H NMR (300 MHz, CDCl_3) of **1b**



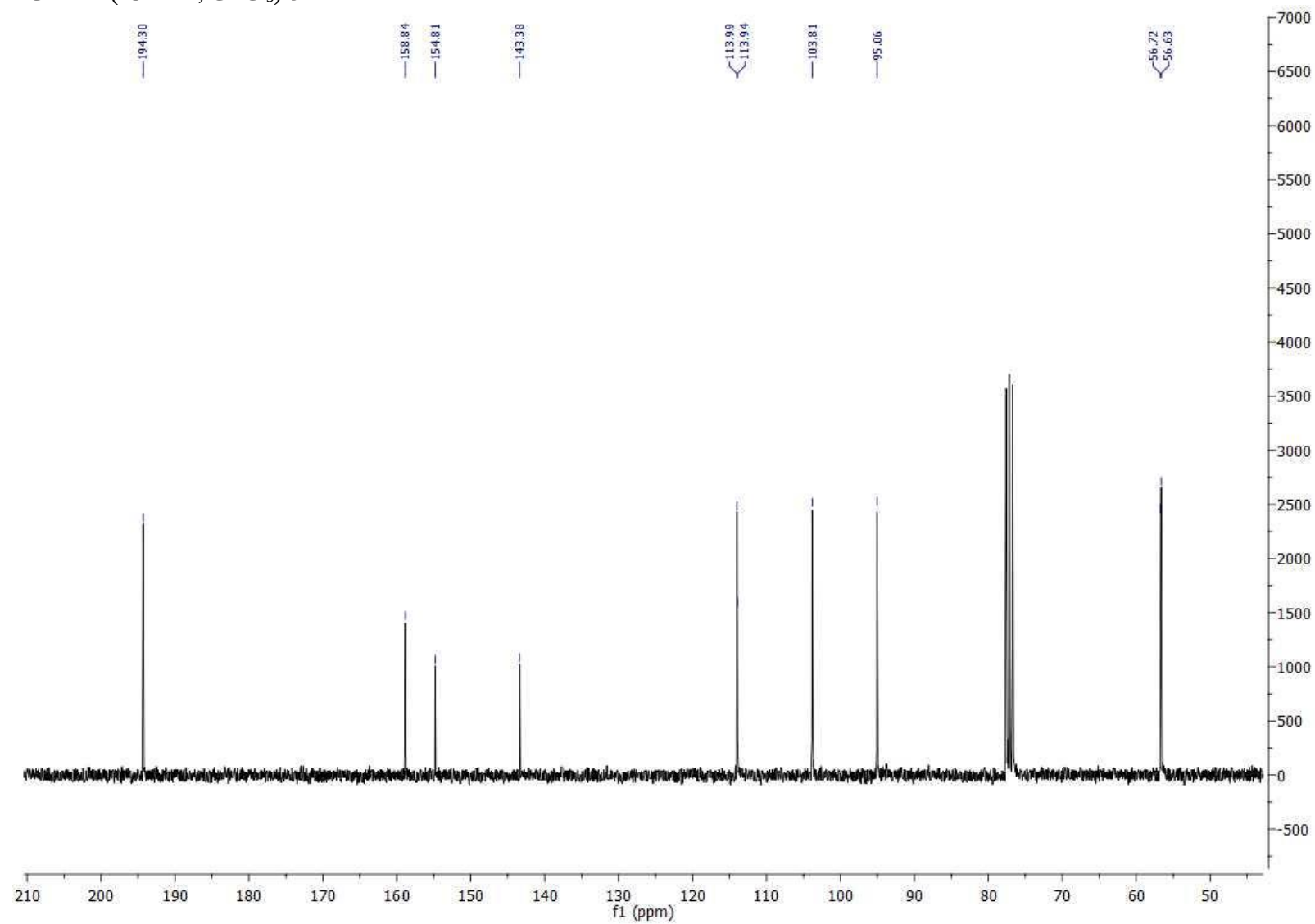
^{13}C NMR (75 MHz, CDCl_3) of **1b**



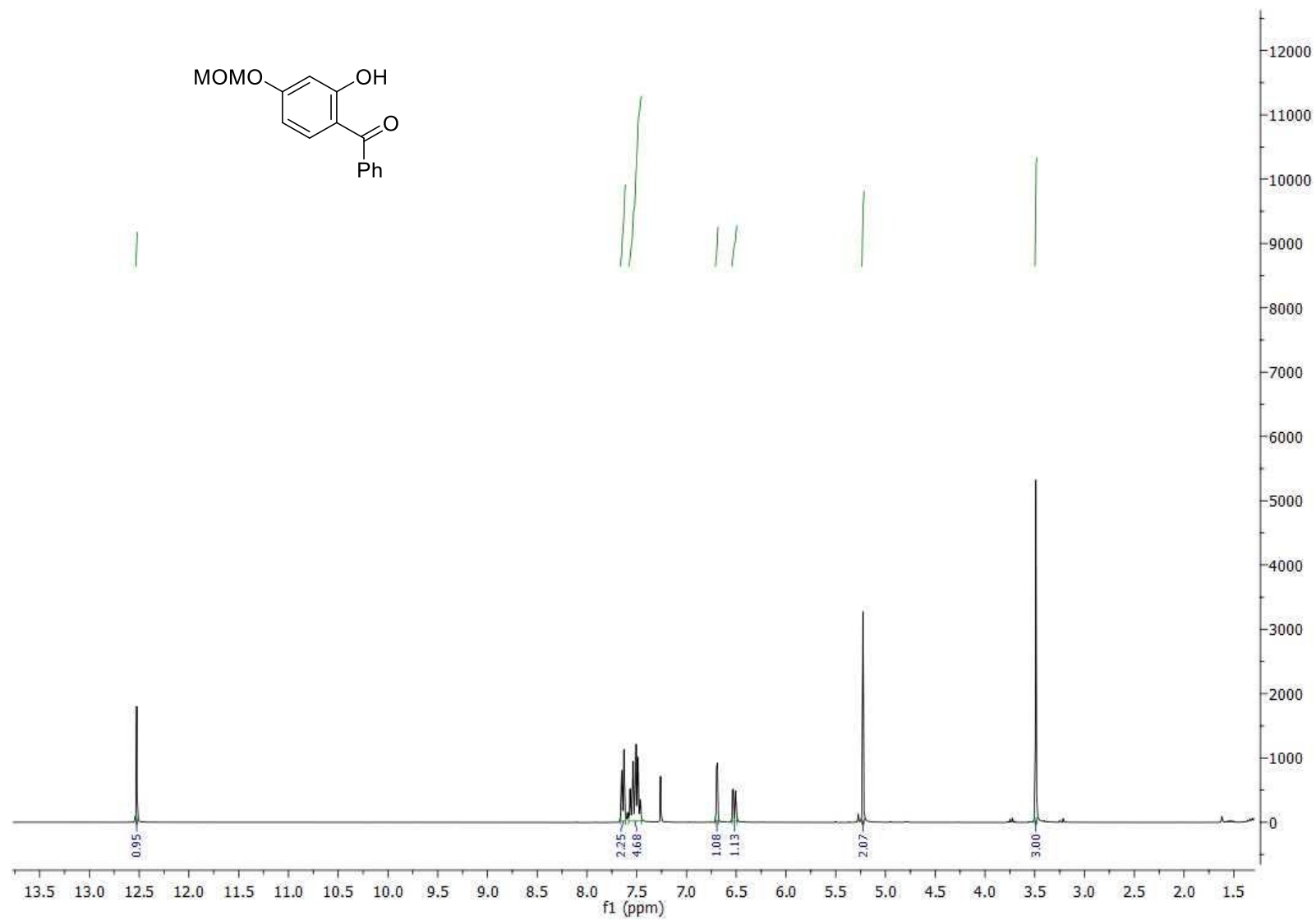
^1H NMR (300 MHz, CDCl_3) of **1k**



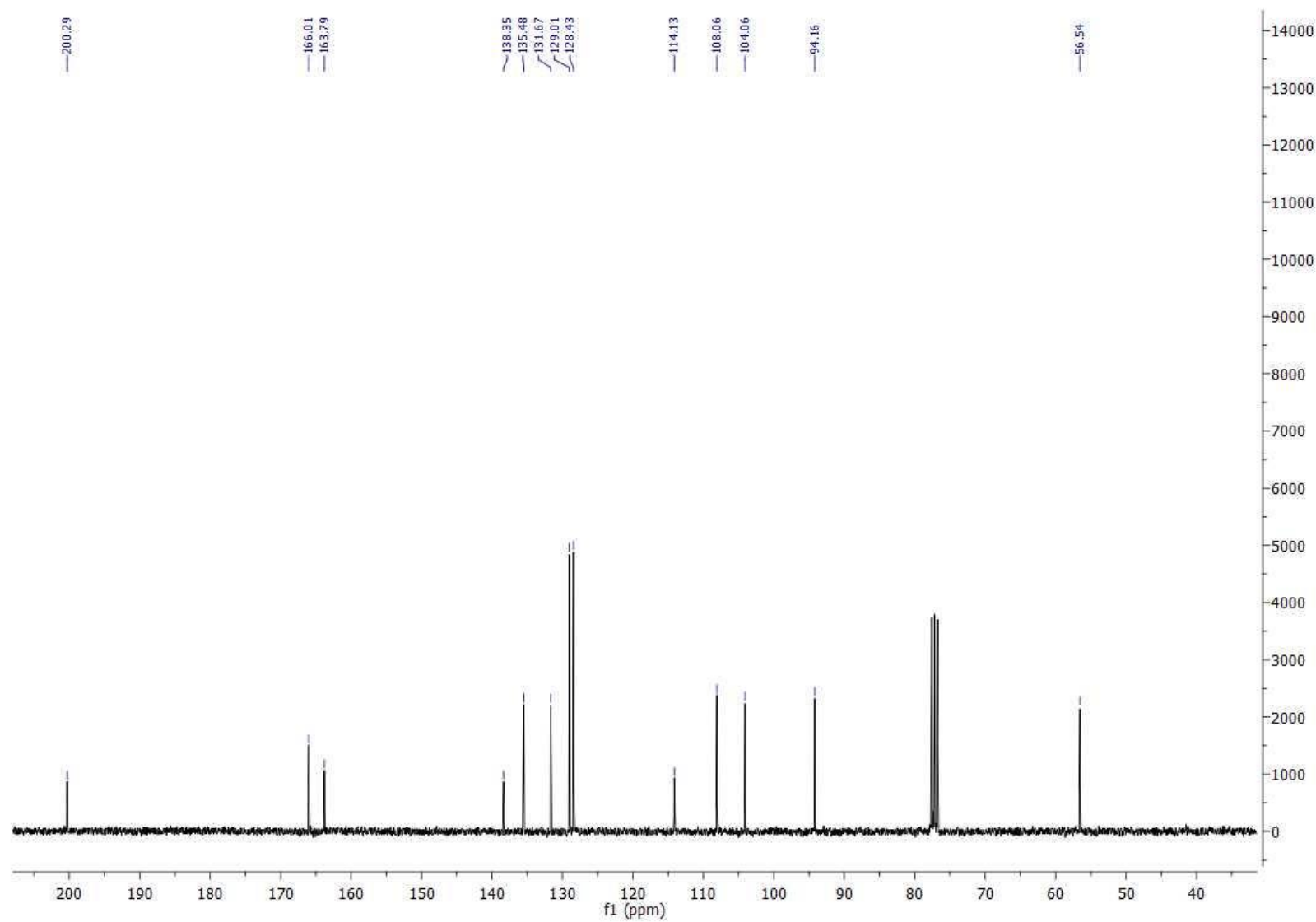
^{13}C NMR (75 MHz, CDCl_3) of **1k**



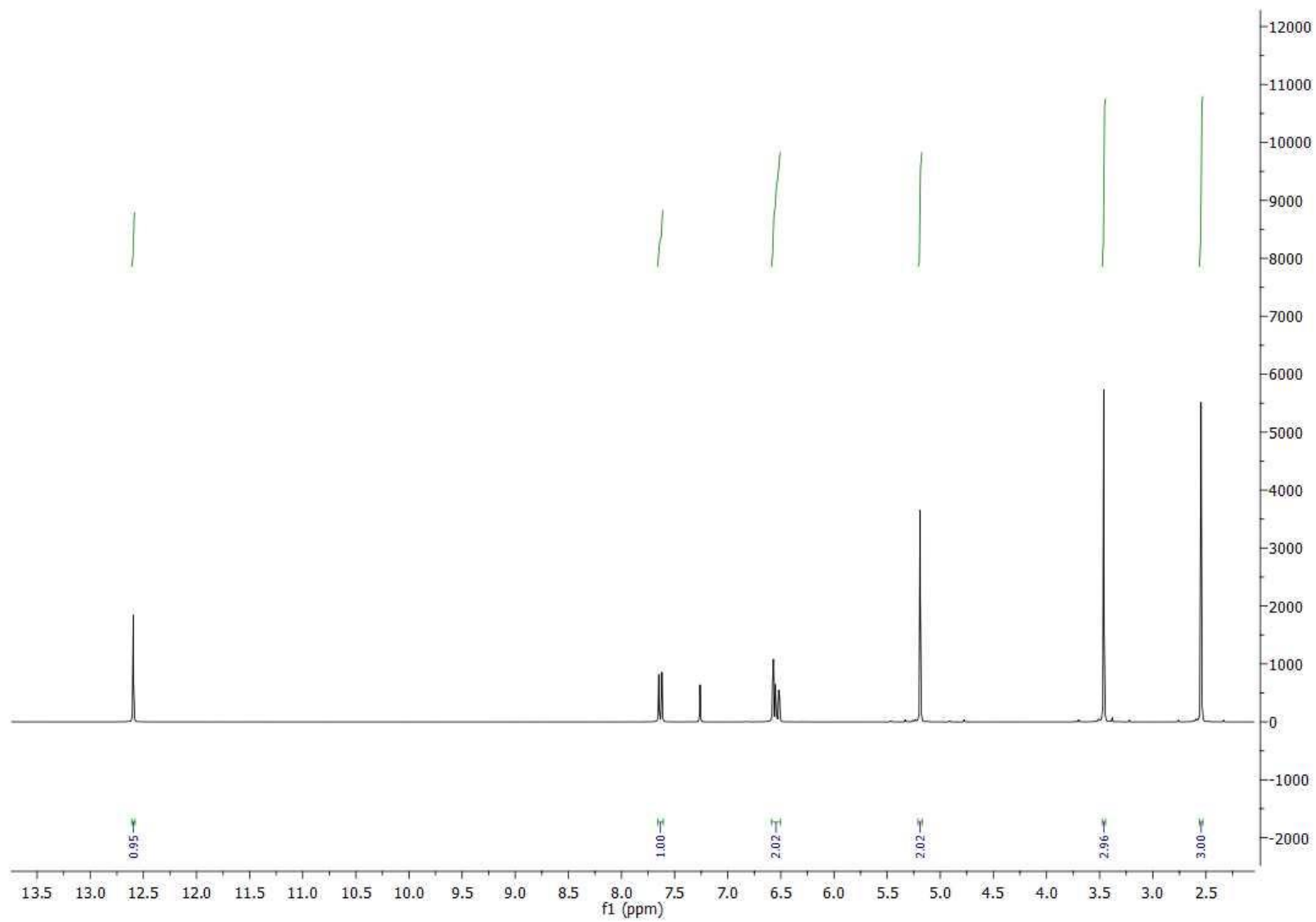
^1H NMR (300 MHz, CDCl_3) of **1p**



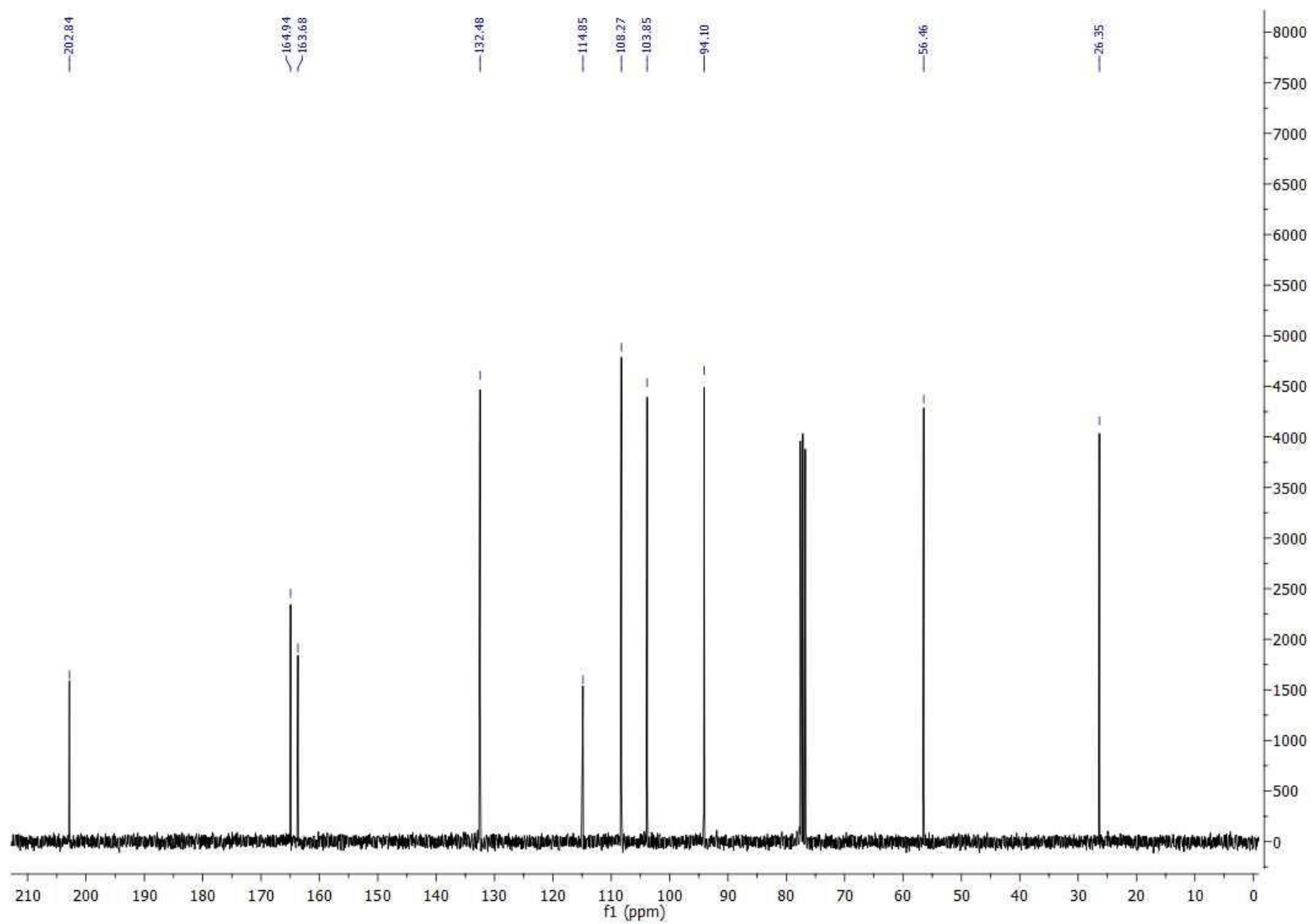
^{13}C NMR (75 MHz, CDCl_3) of **1p**



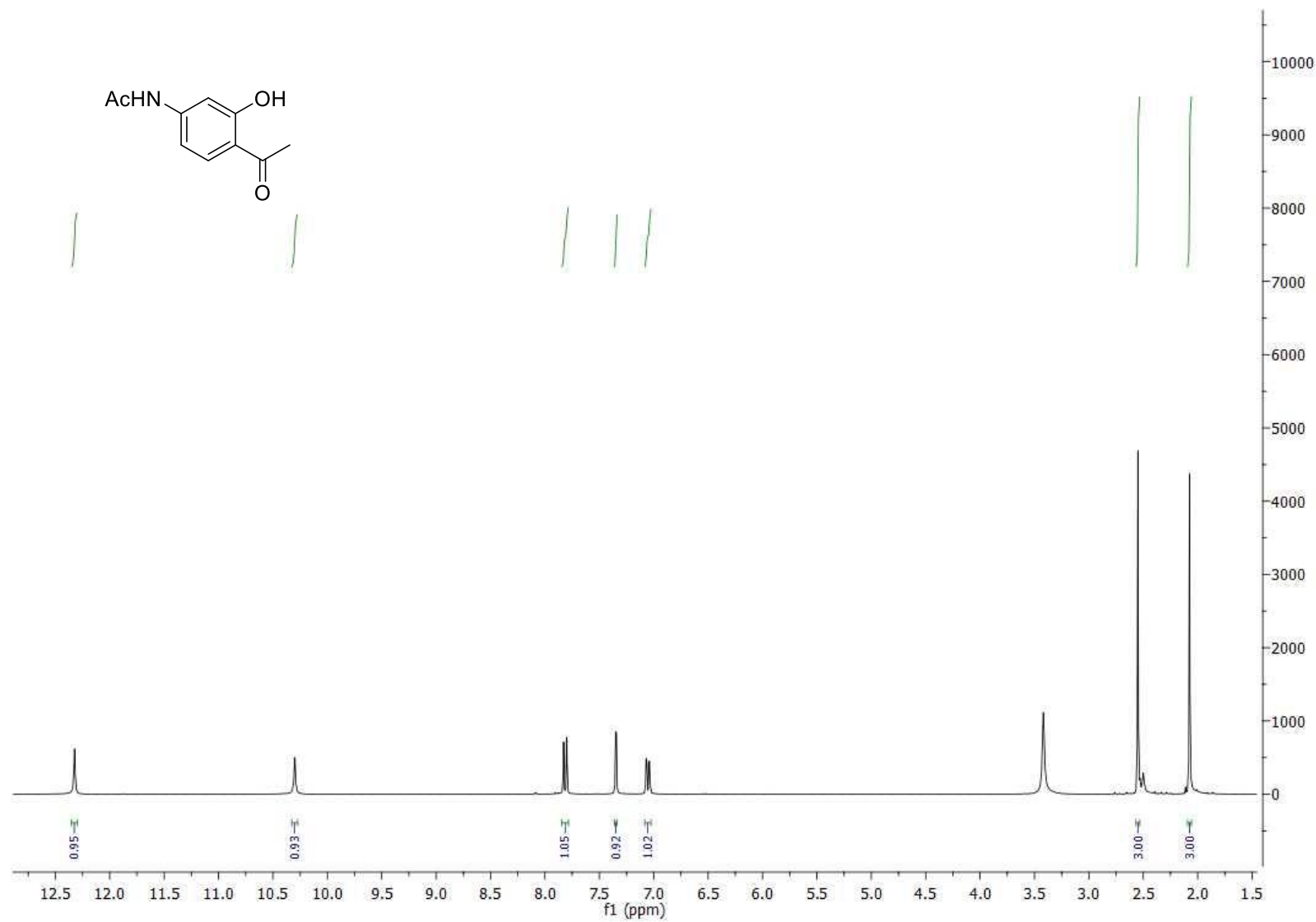
^1H NMR (300 MHz, CDCl_3) of **1q**



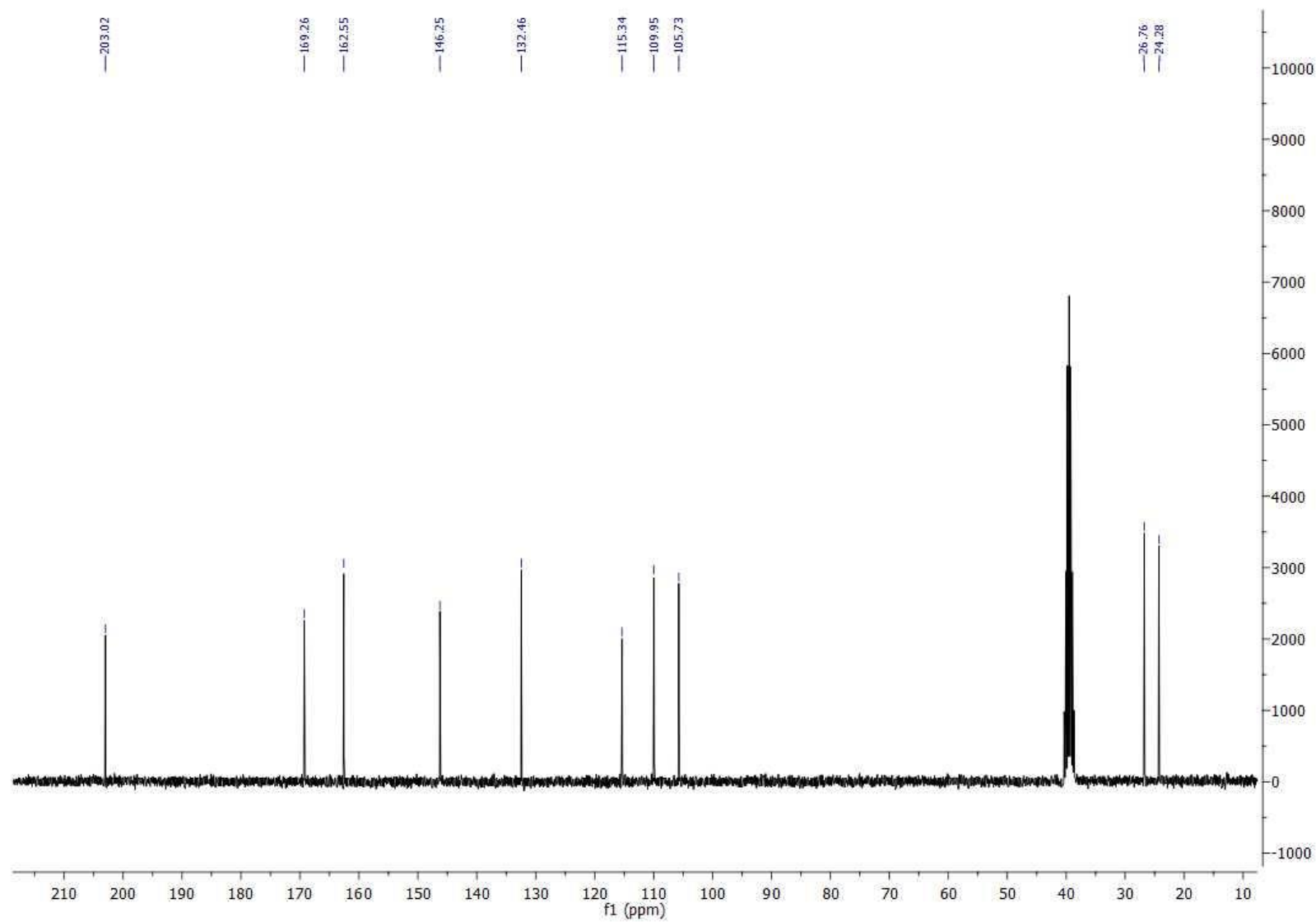
^{13}C NMR (75 MHz, CDCl_3) of **1q**



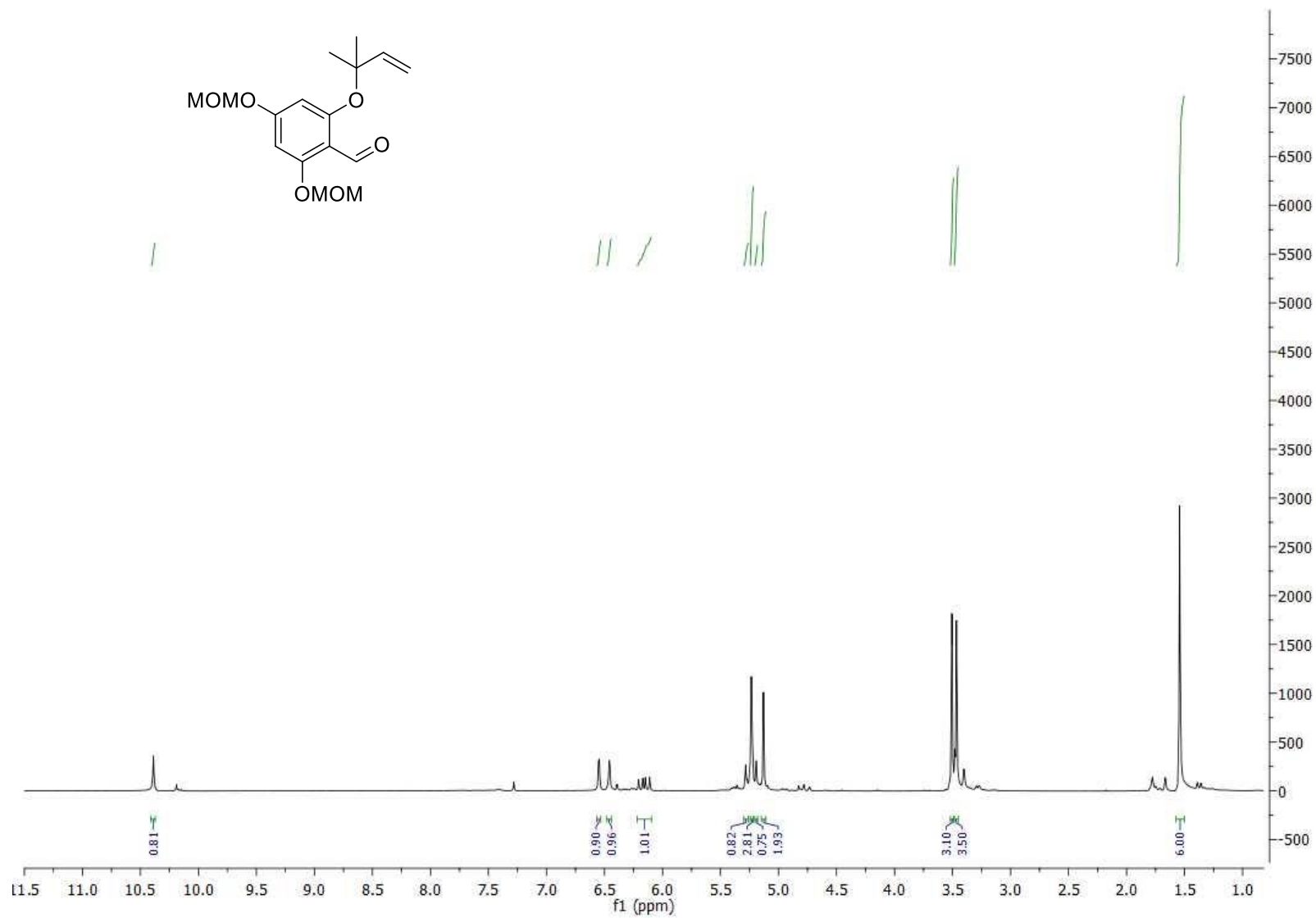
^1H NMR (300 MHz, $\text{DMSO}-d_6$) of **1r**



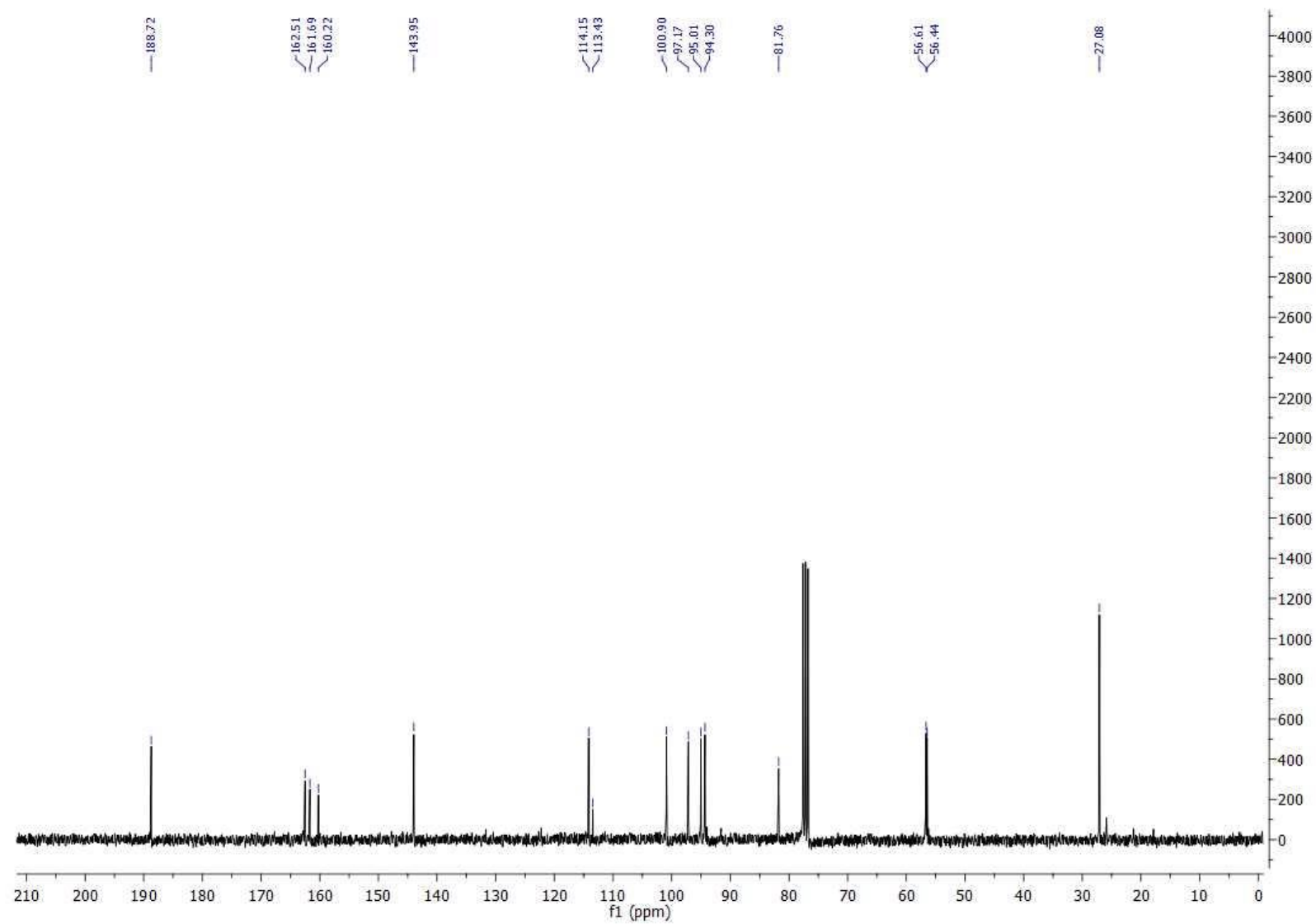
^{13}C NMR (75 MHz, DMSO- d_6) of **1r**



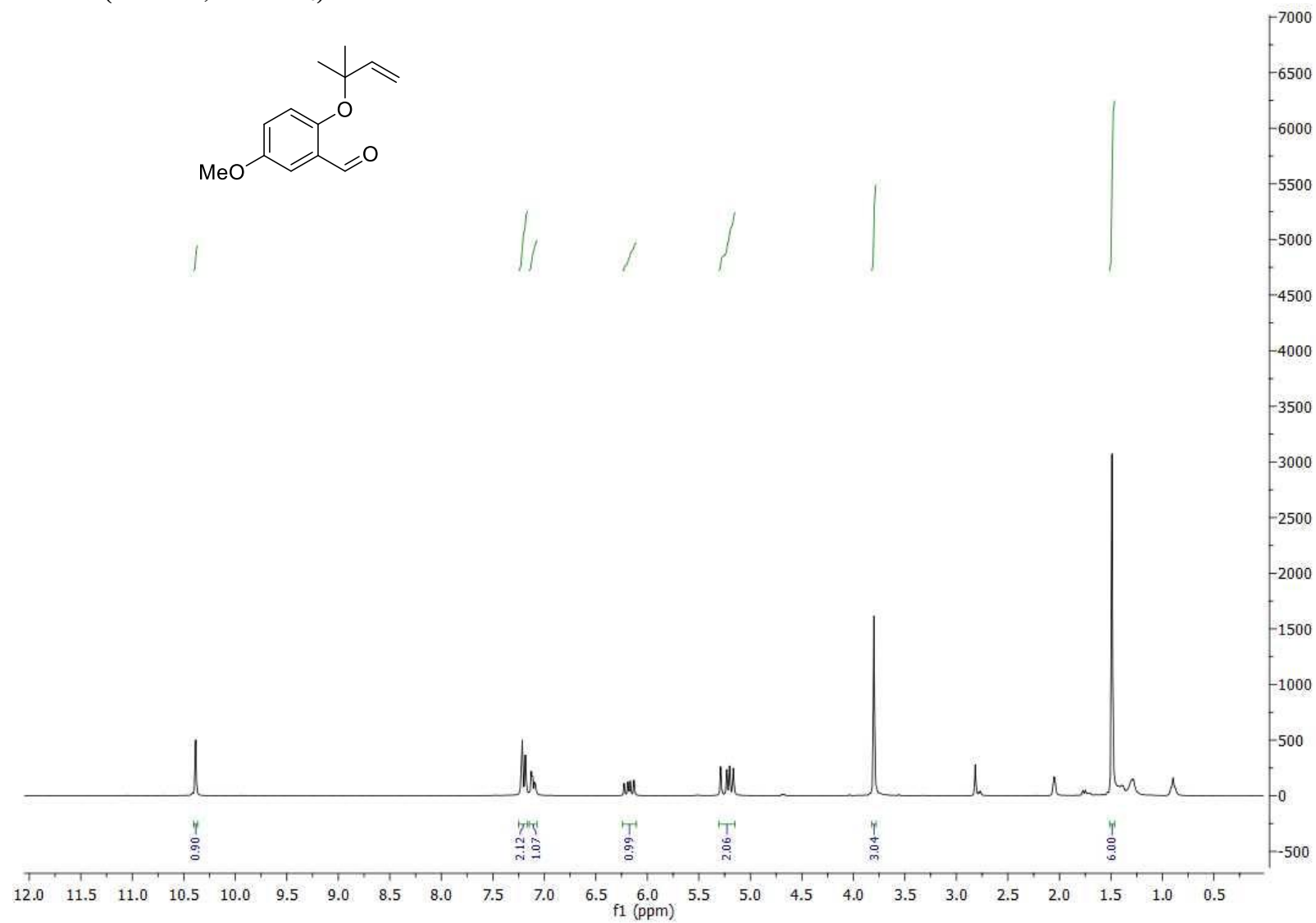
^1H NMR (300 MHz, CDCl_3) of **3a**



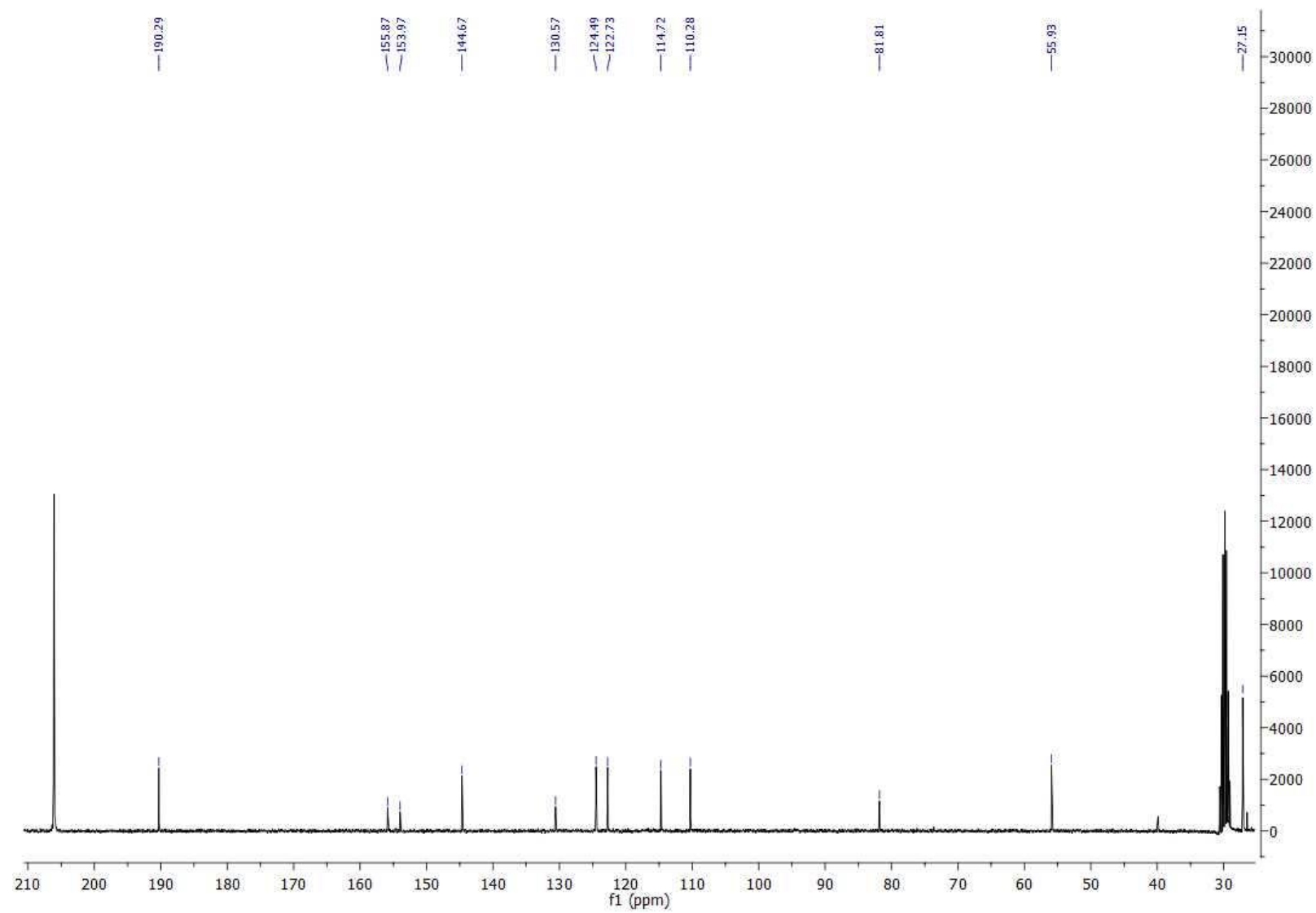
^{13}C NMR (75 MHz, CDCl_3) of **3a**



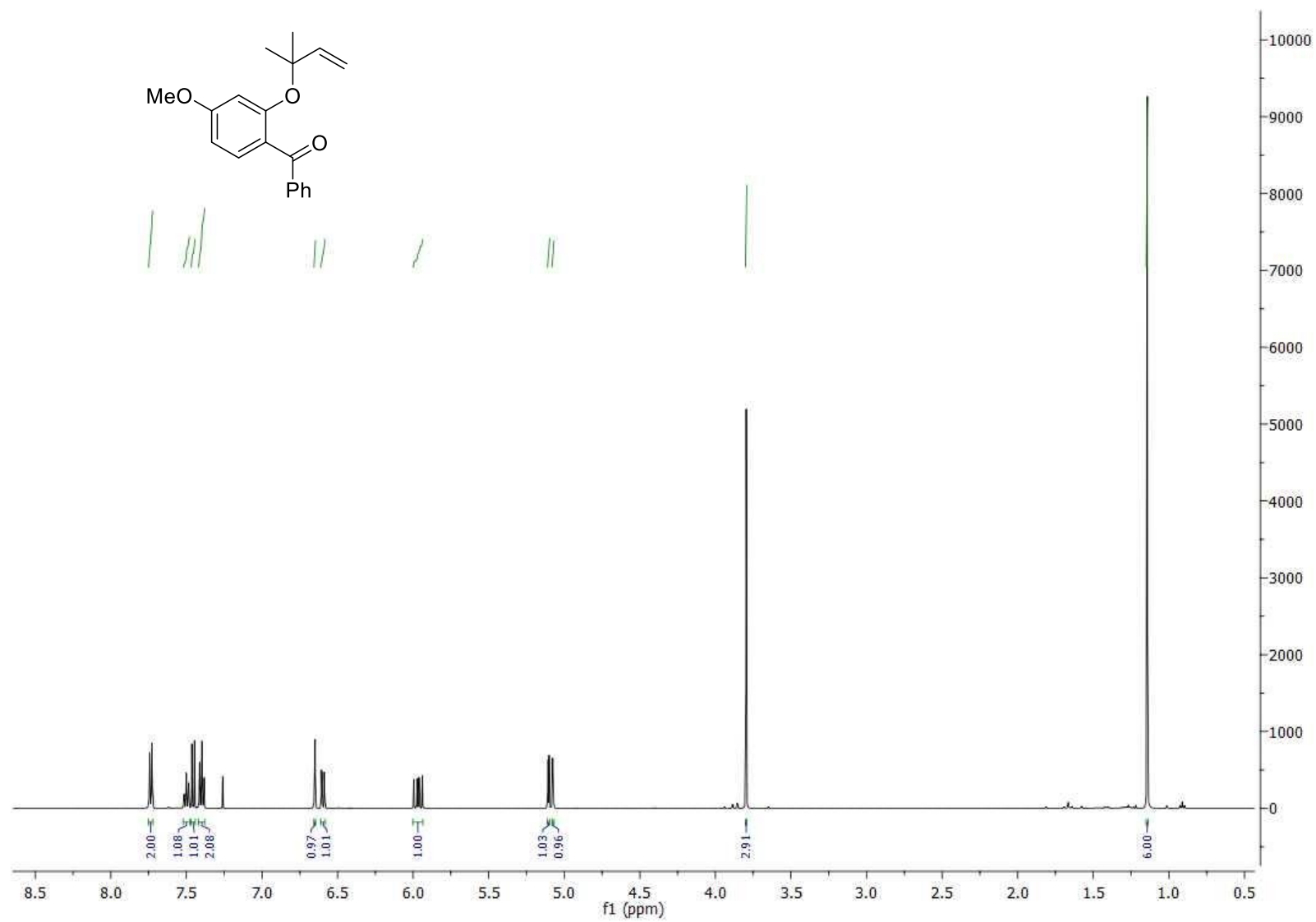
^1H NMR (300 MHz, acetone- d_6) of **3e**



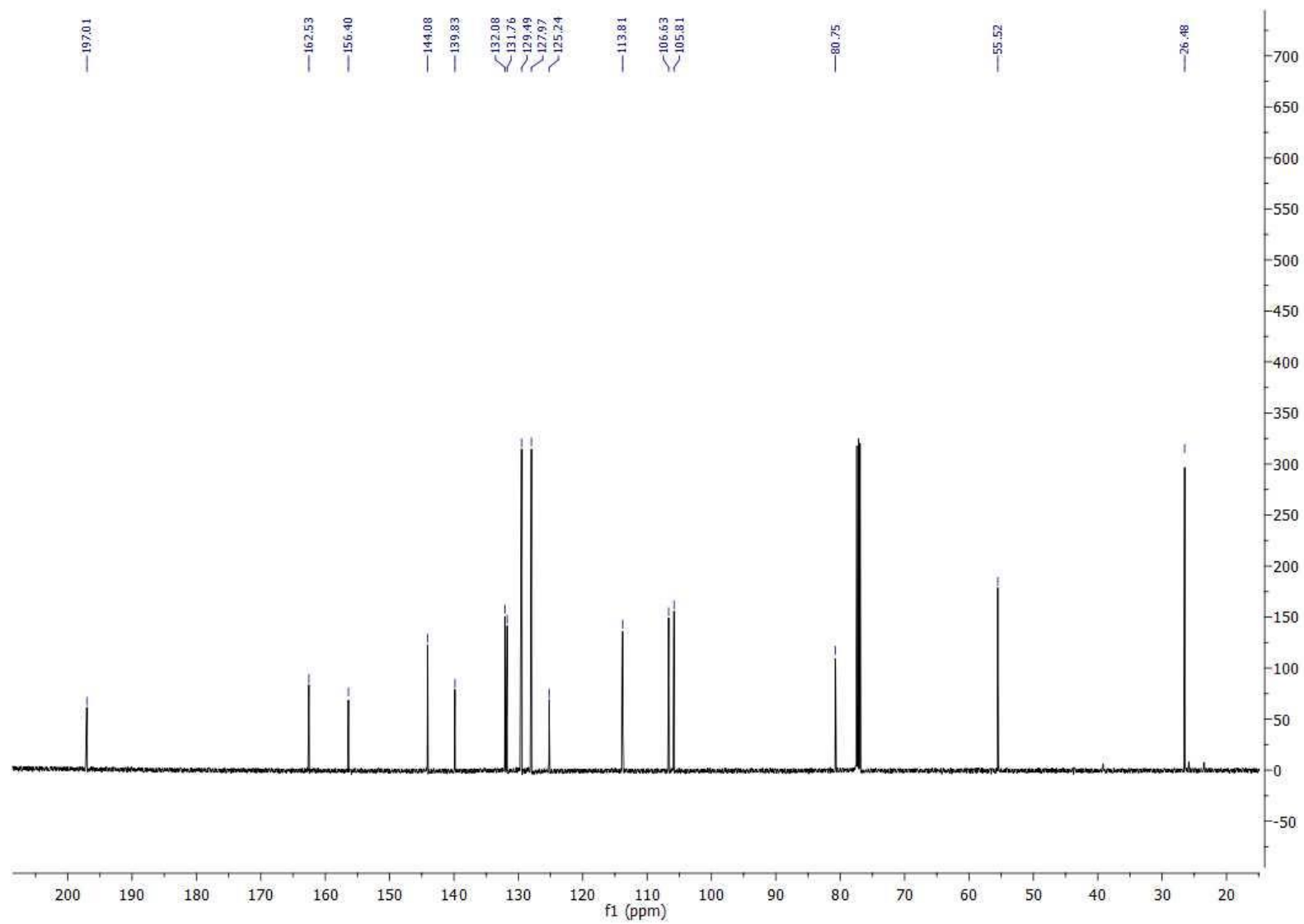
^{13}C NMR (75 MHz, acetone- d_6) of **3e**



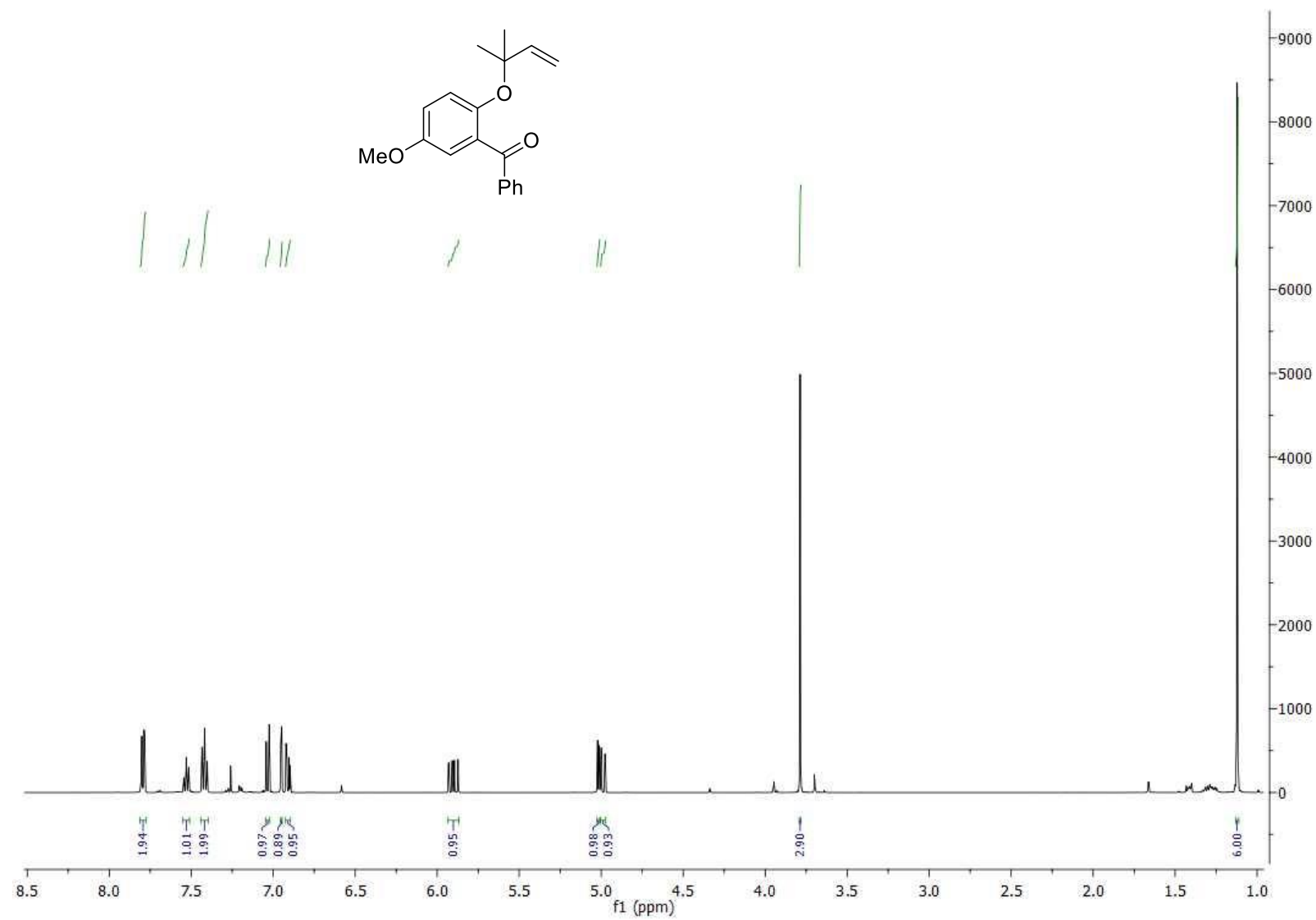
^1H NMR (300 MHz, CDCl_3) of **3f**



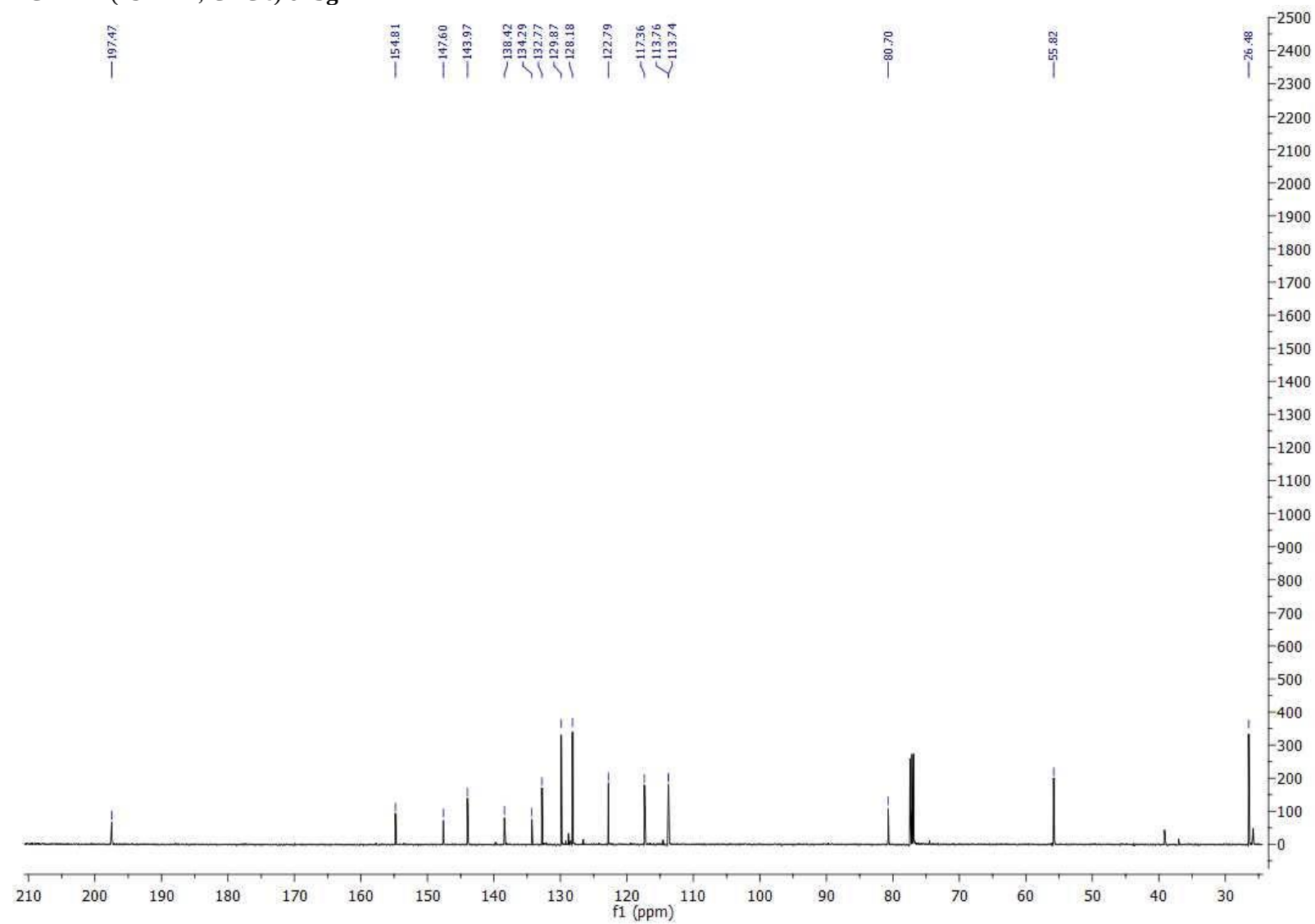
^{13}C NMR (75 MHz, CDCl_3) of **3f**



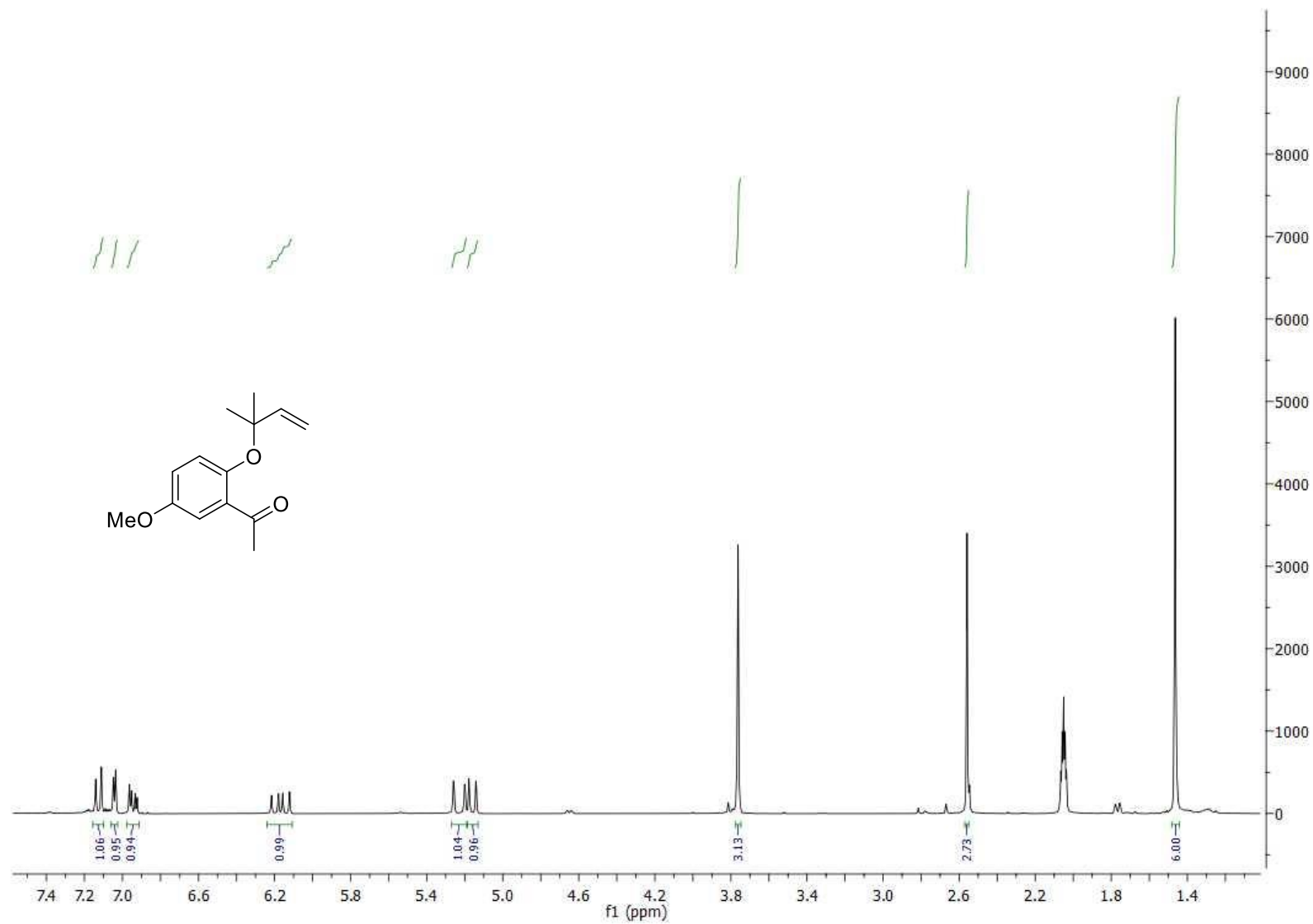
^1H NMR (300 MHz, CDCl_3) of **3g**



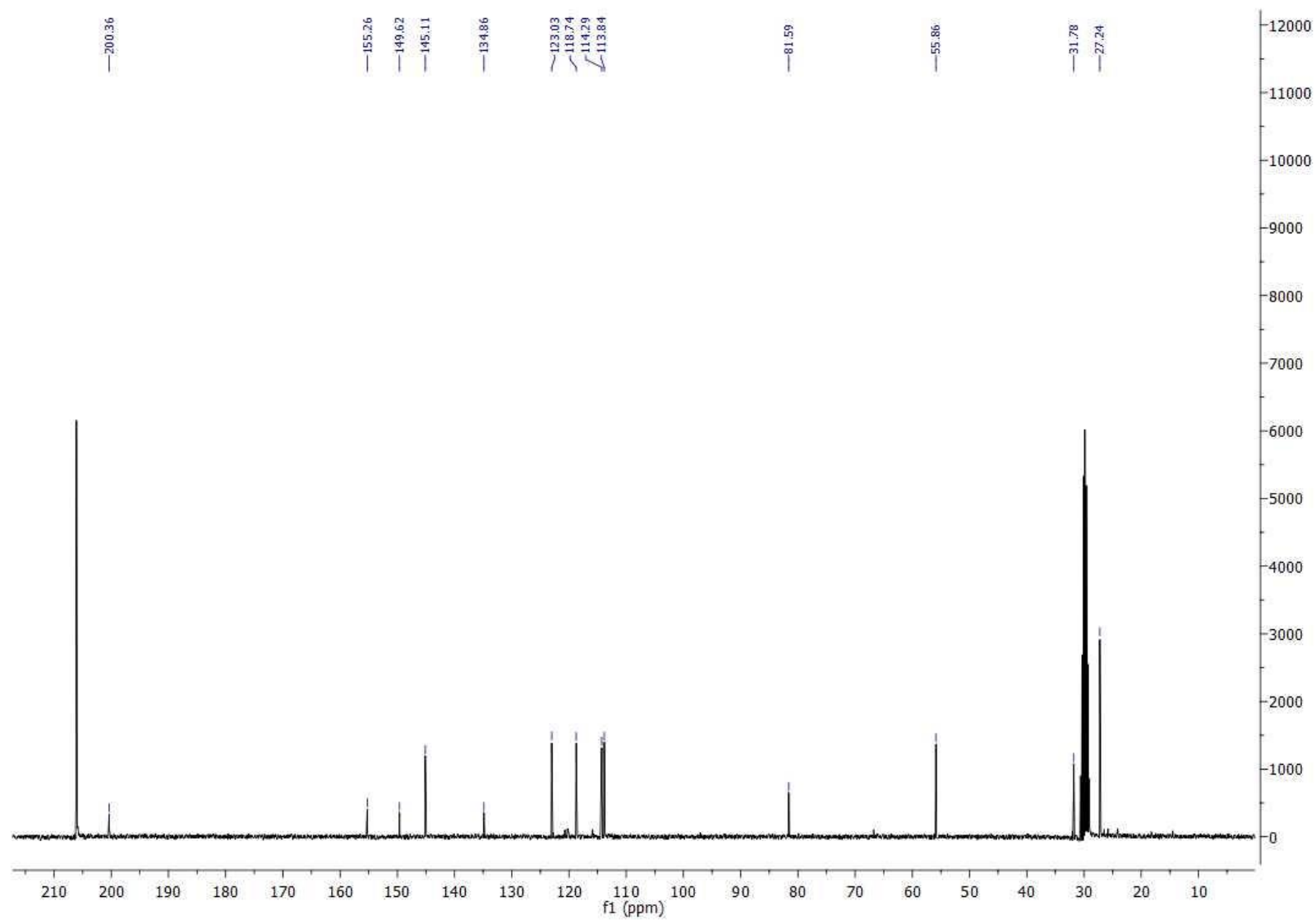
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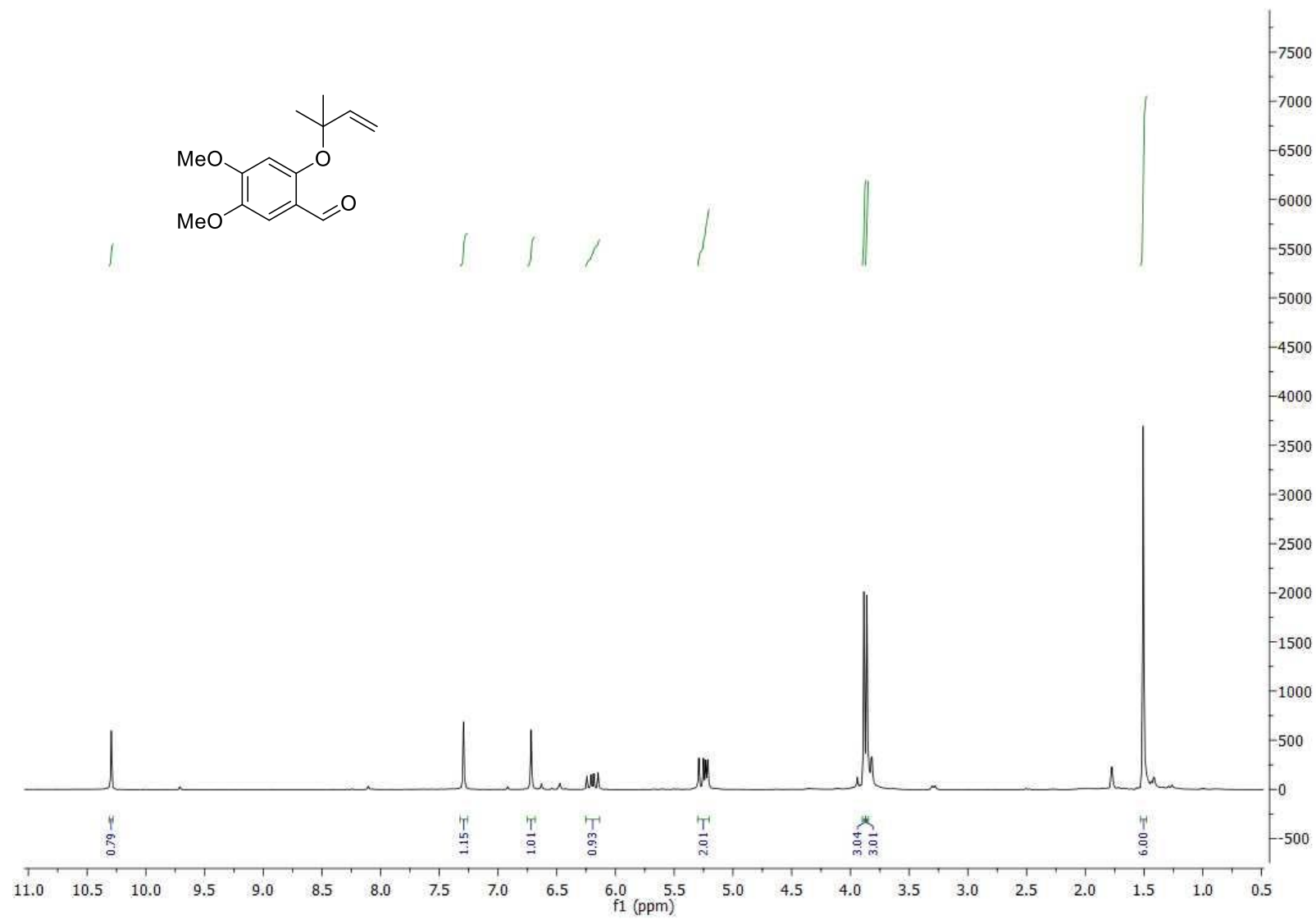
^1H NMR (300 MHz, acetone- d_6) of **3i**



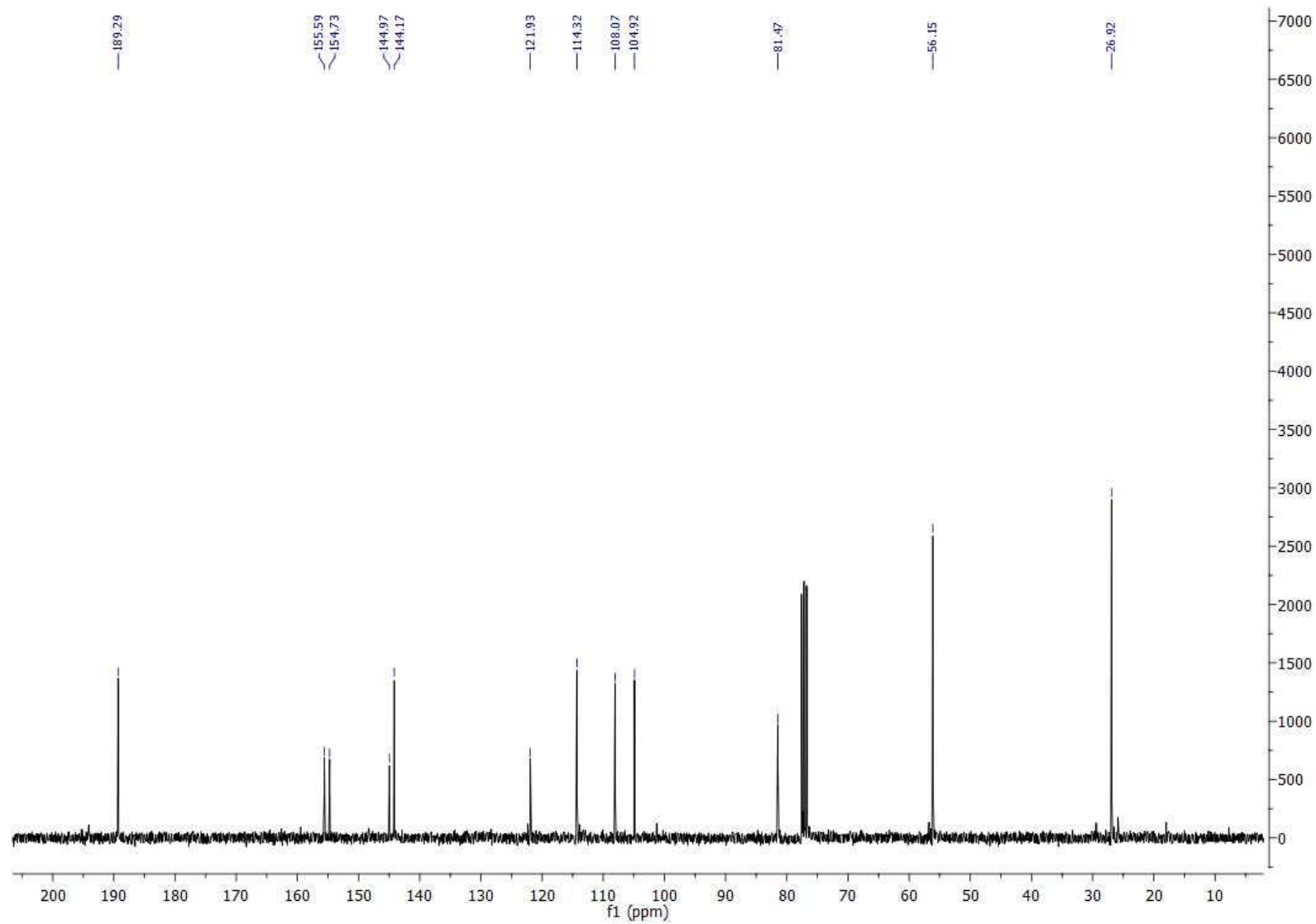
^{13}C NMR (75 MHz, acetone- d_6) of **3i**



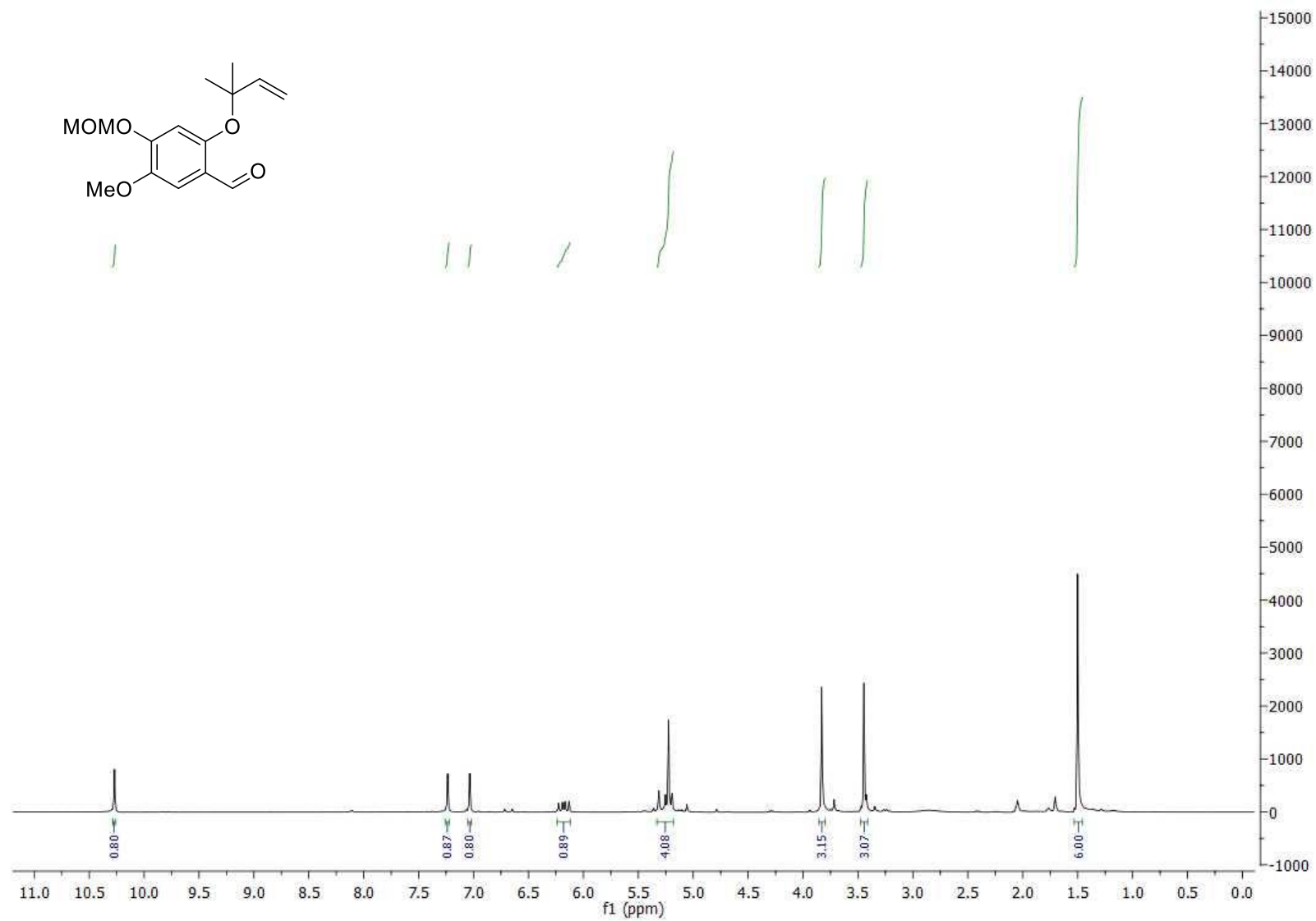
^1H NMR (300 MHz, CDCl_3) of **3j**



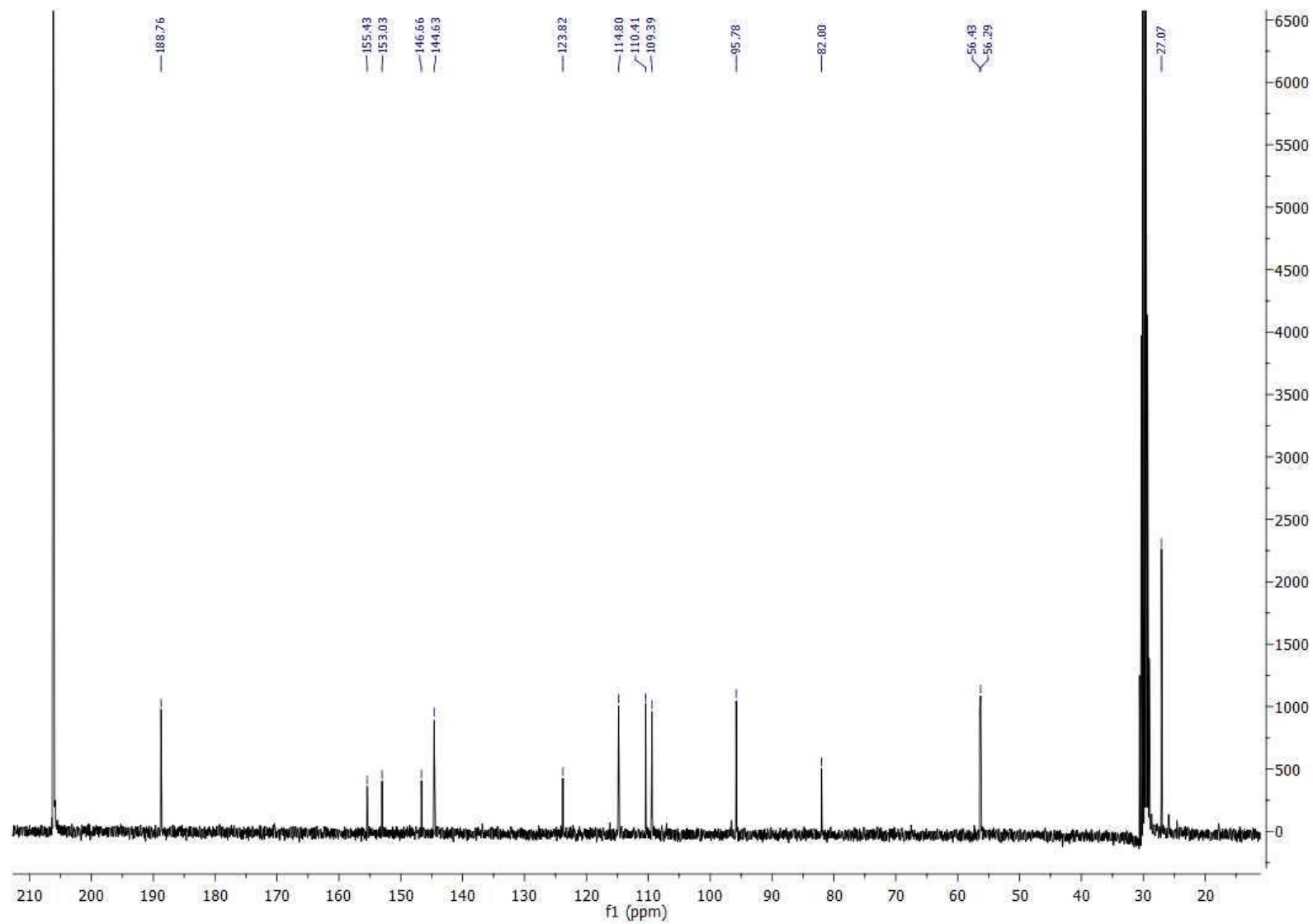
^{13}C NMR (75 MHz, CDCl_3) of **3j**



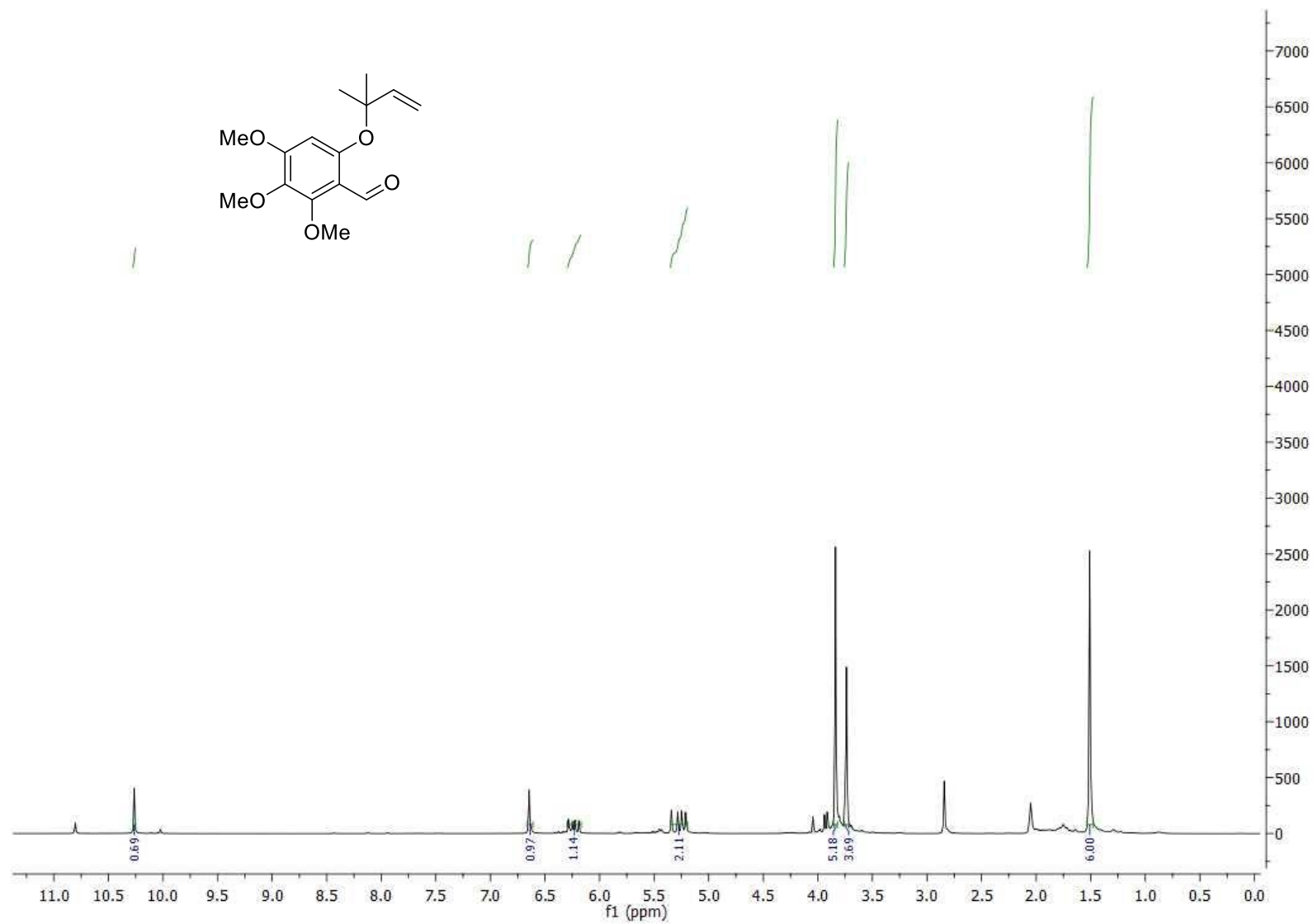
^1H NMR (300 MHz, acetone- d_6) of **3k**



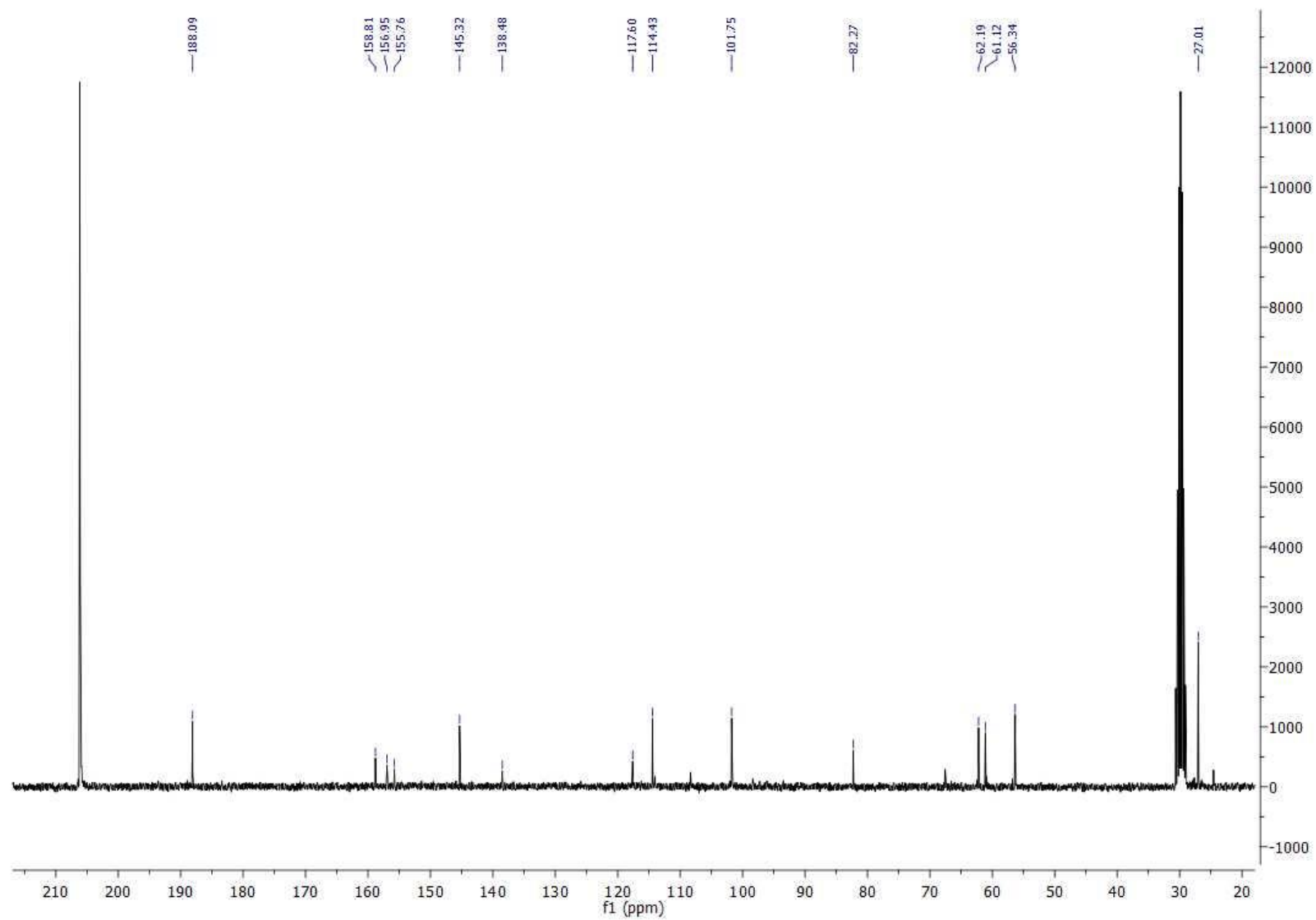
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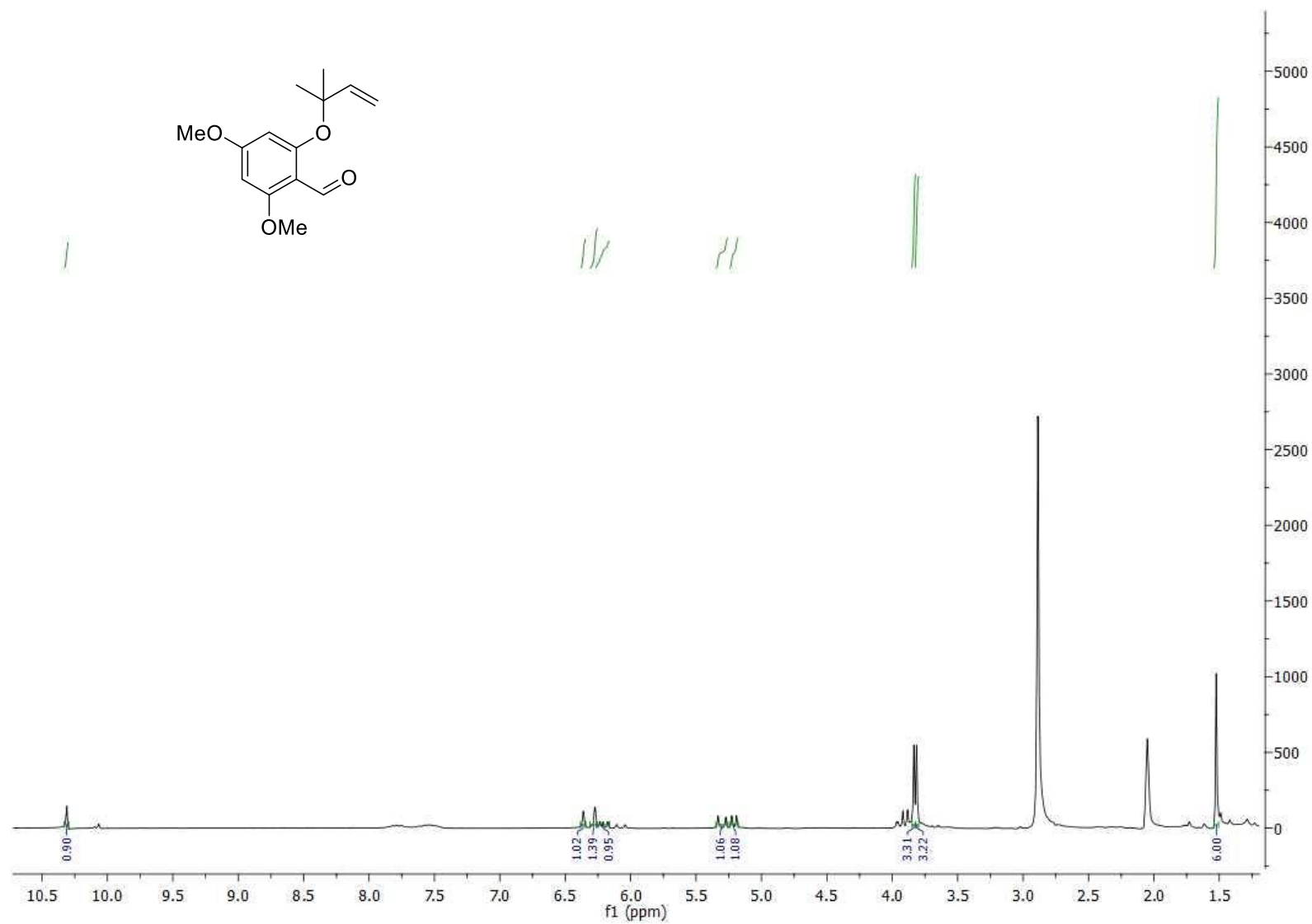
^1H NMR (300 MHz, acetone- d_6) of **31**



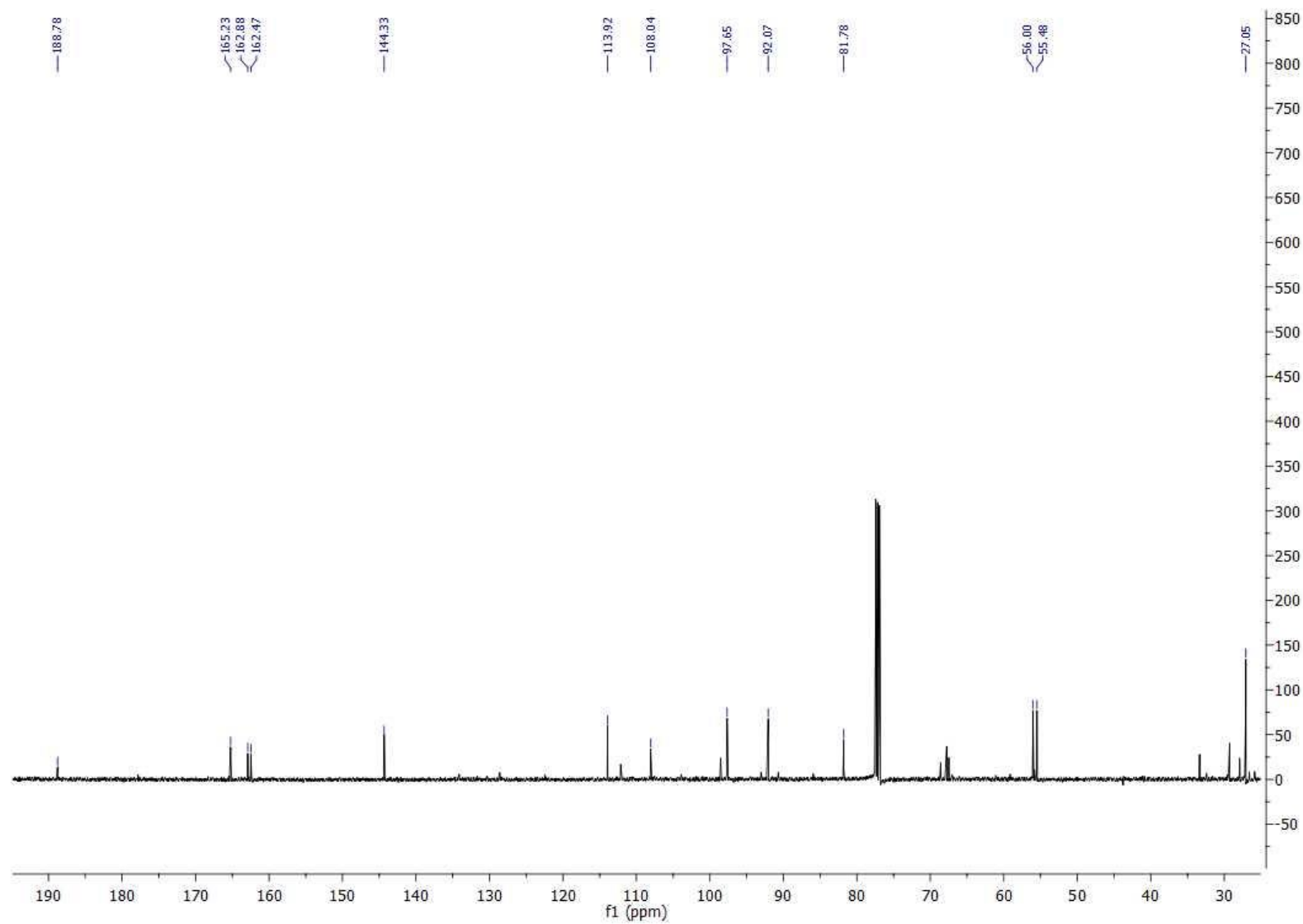
^{13}C NMR (75 MHz, acetone- d_6) of **3l**



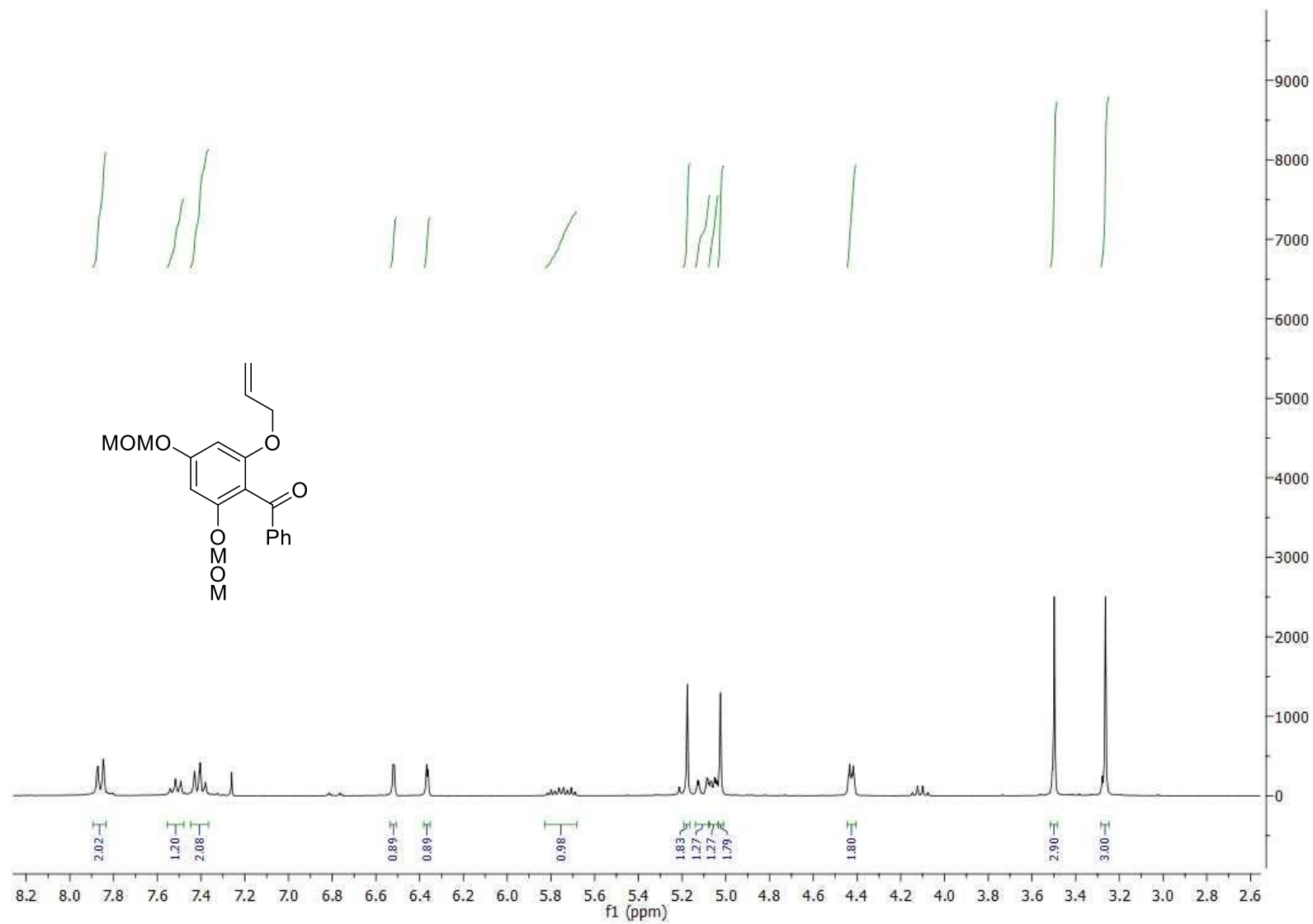
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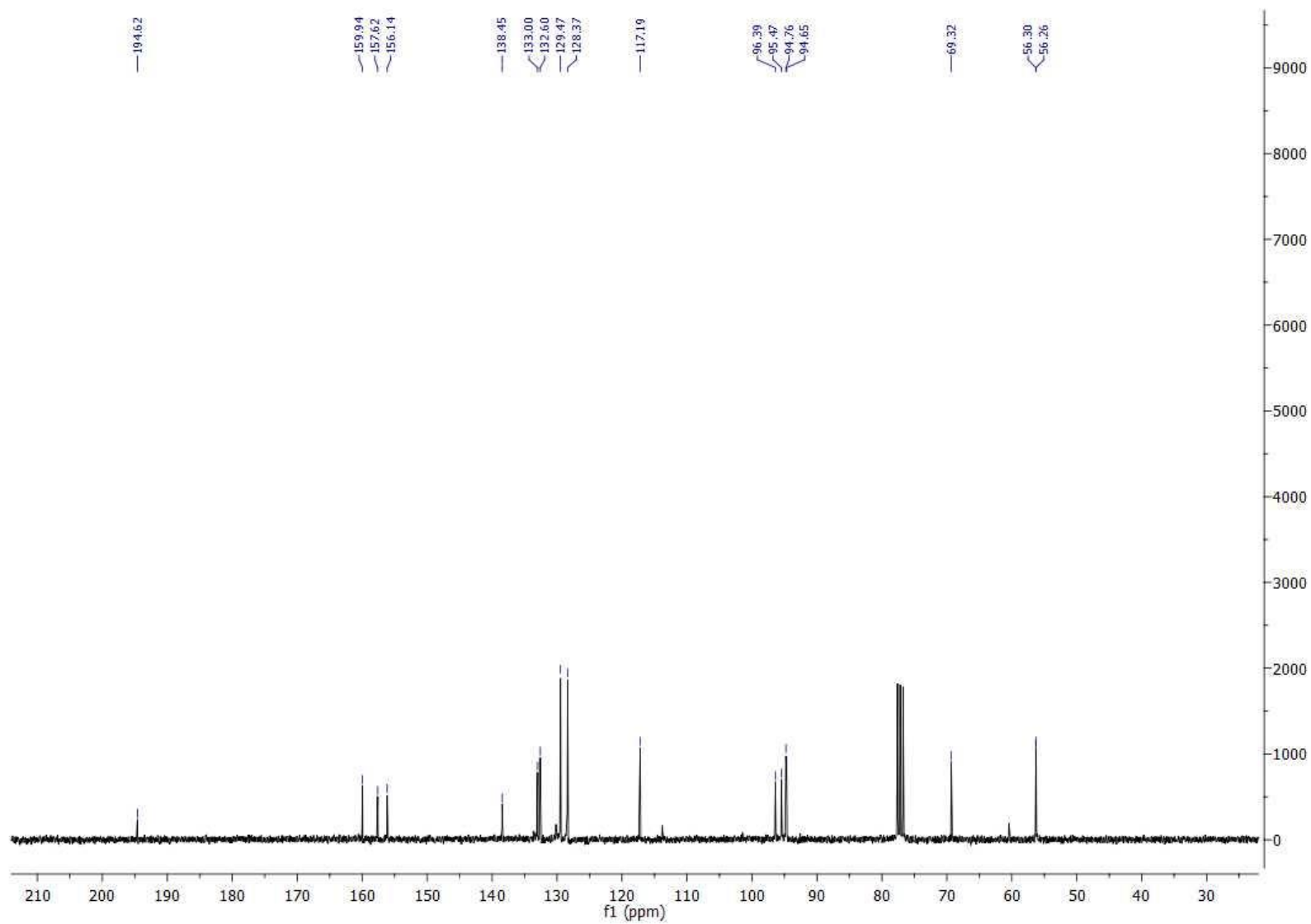
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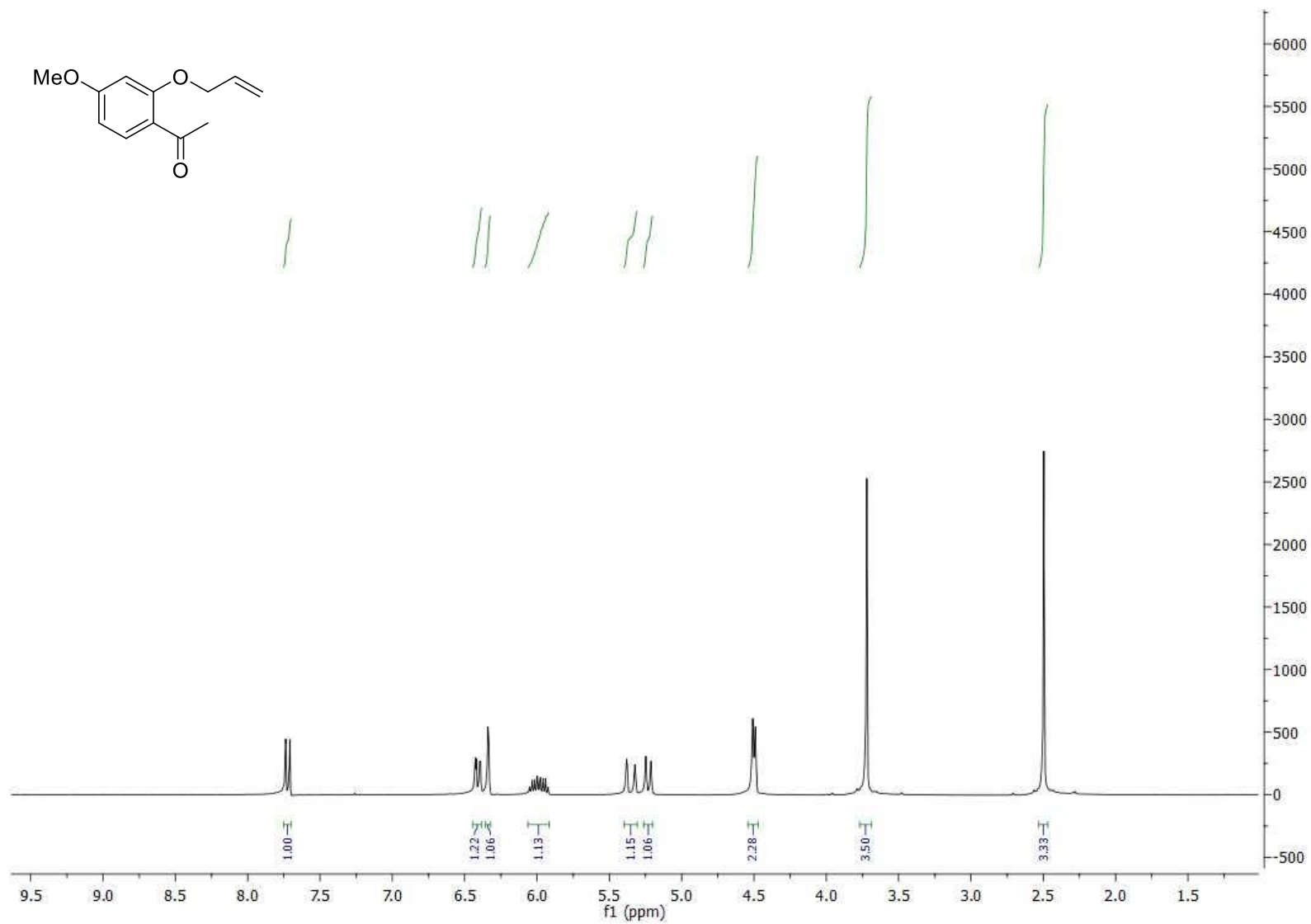
^1H NMR (300 MHz, CDCl_3) of **11b**



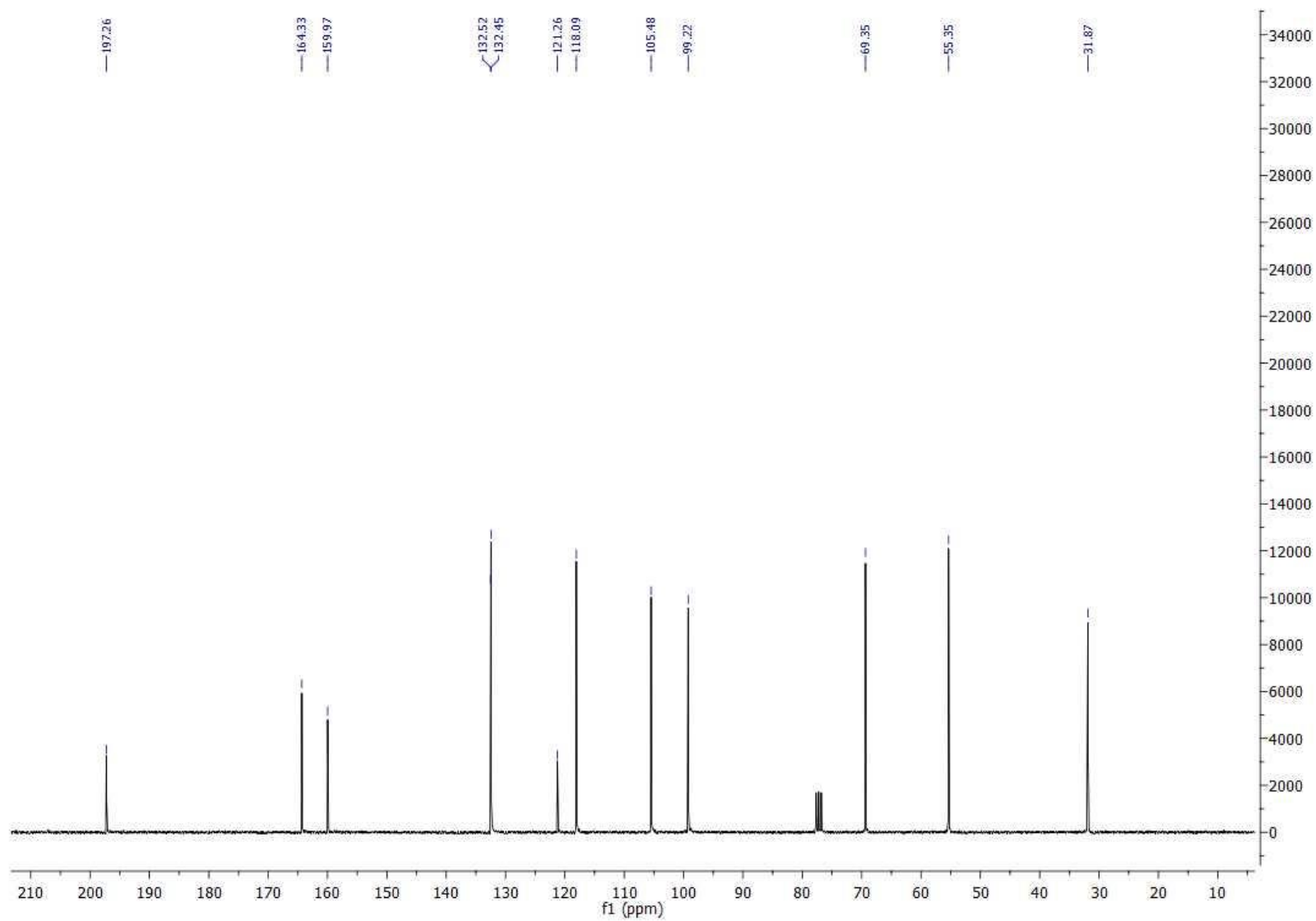
^{13}C NMR (75 MHz, CDCl_3) of **11b**



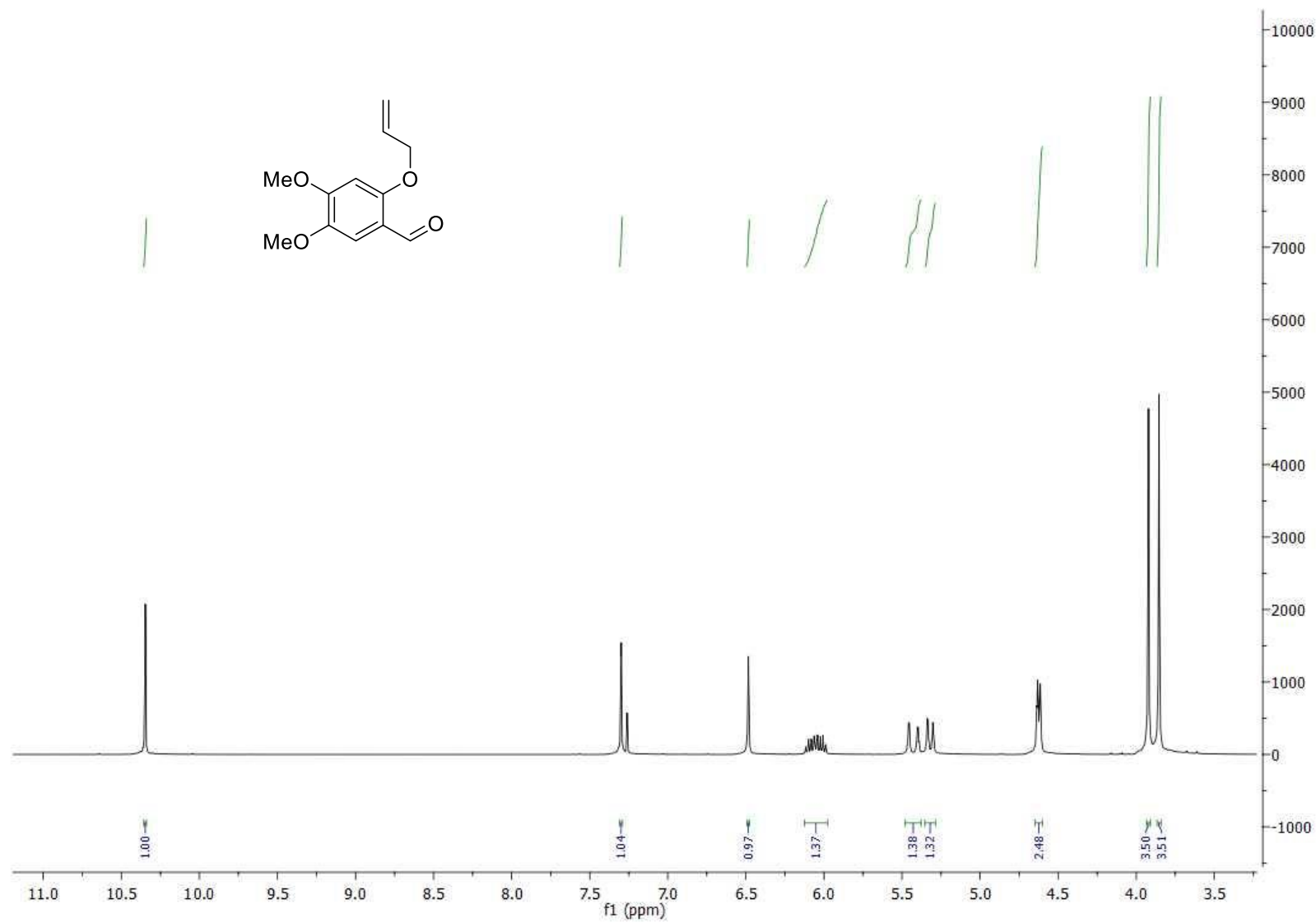
^1H NMR (300 MHz, CDCl_3) of **11h**



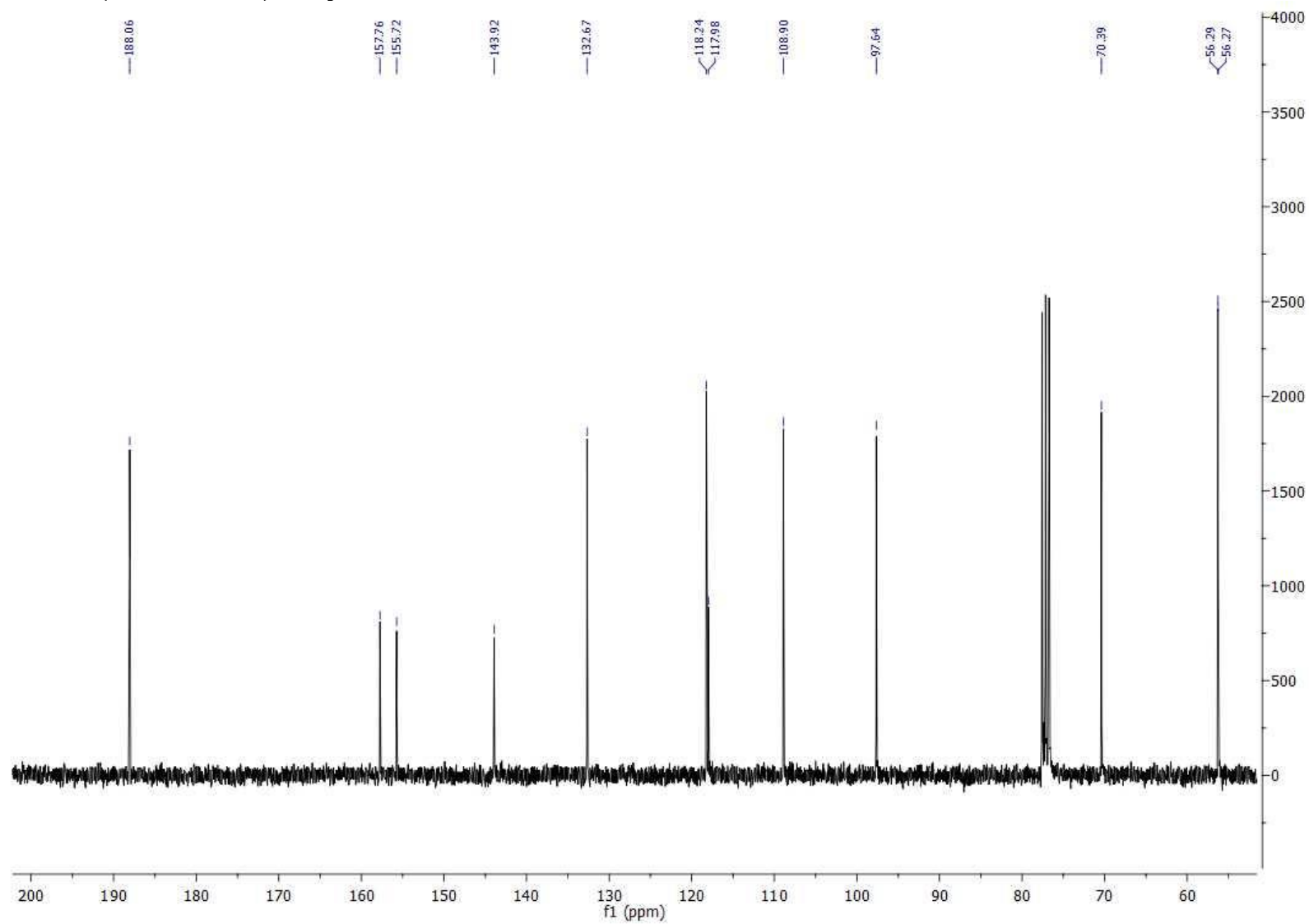
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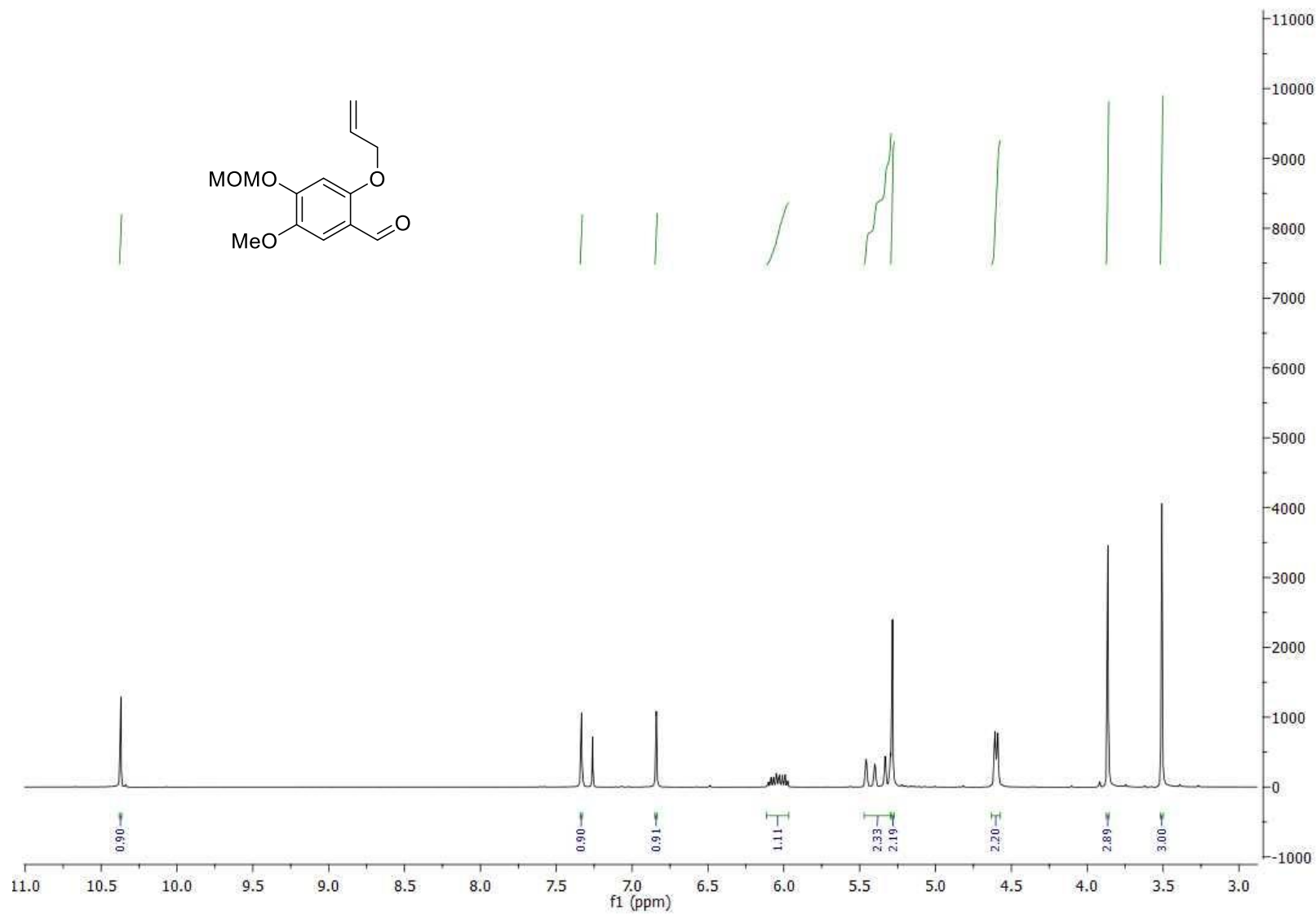
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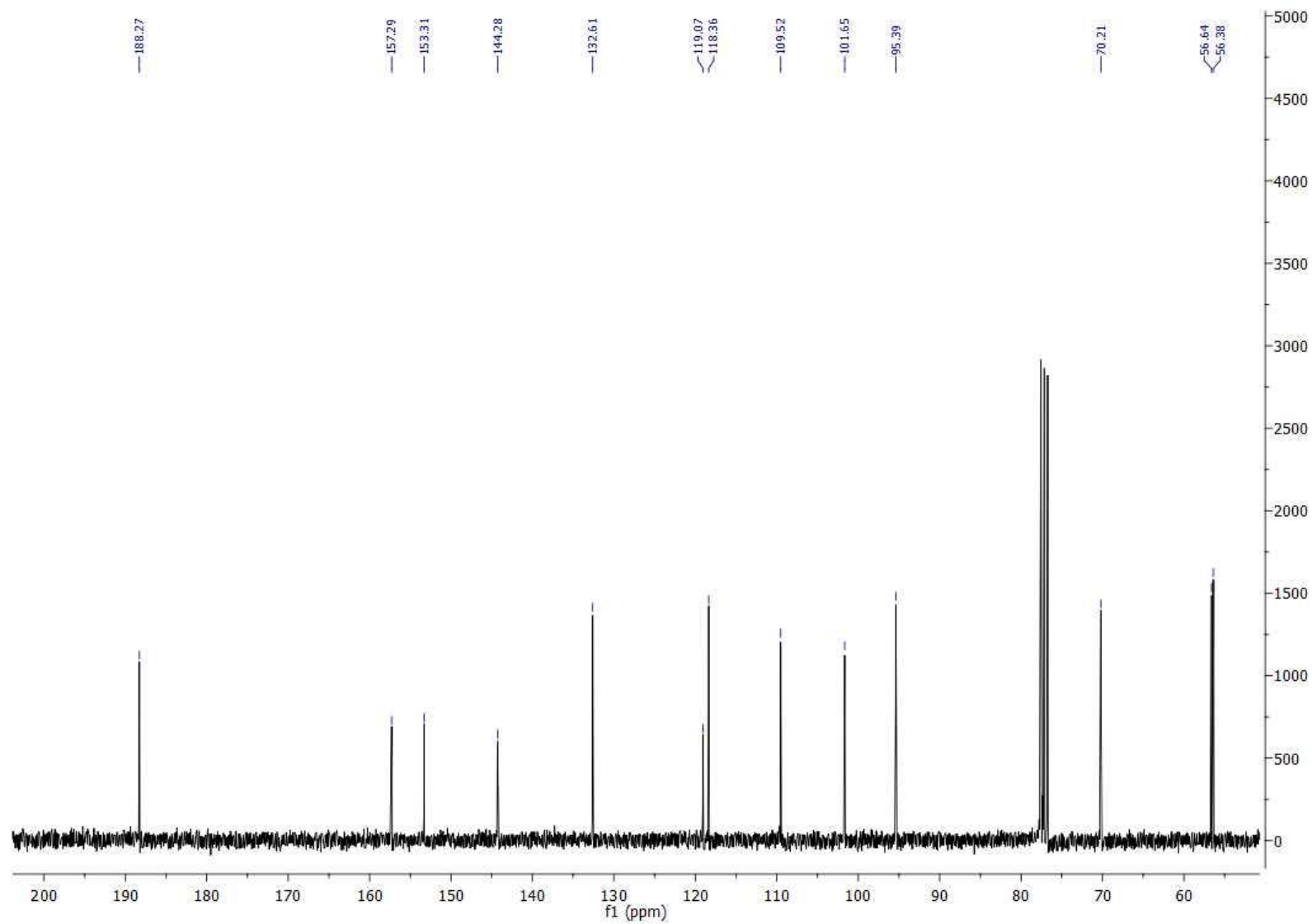
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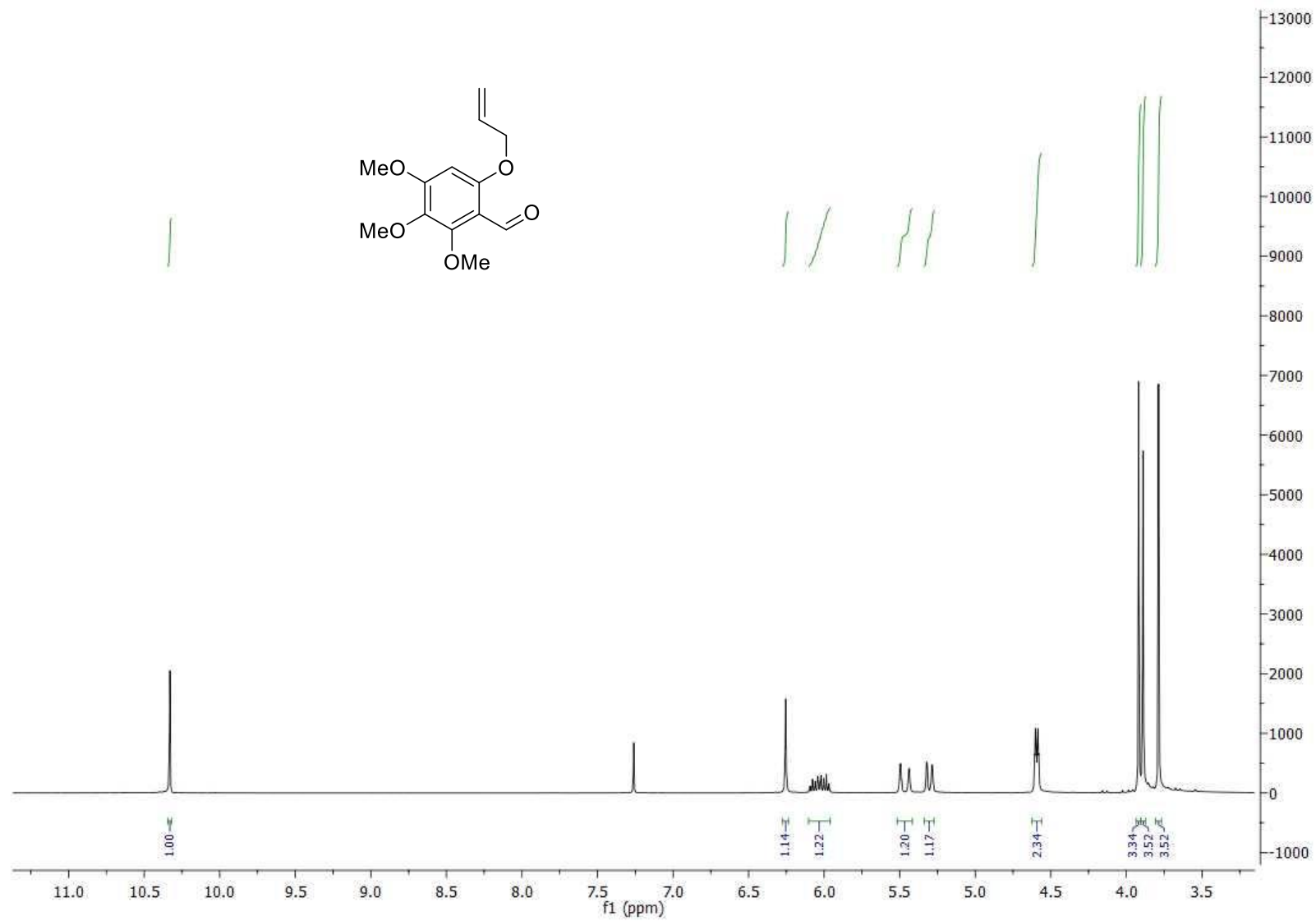
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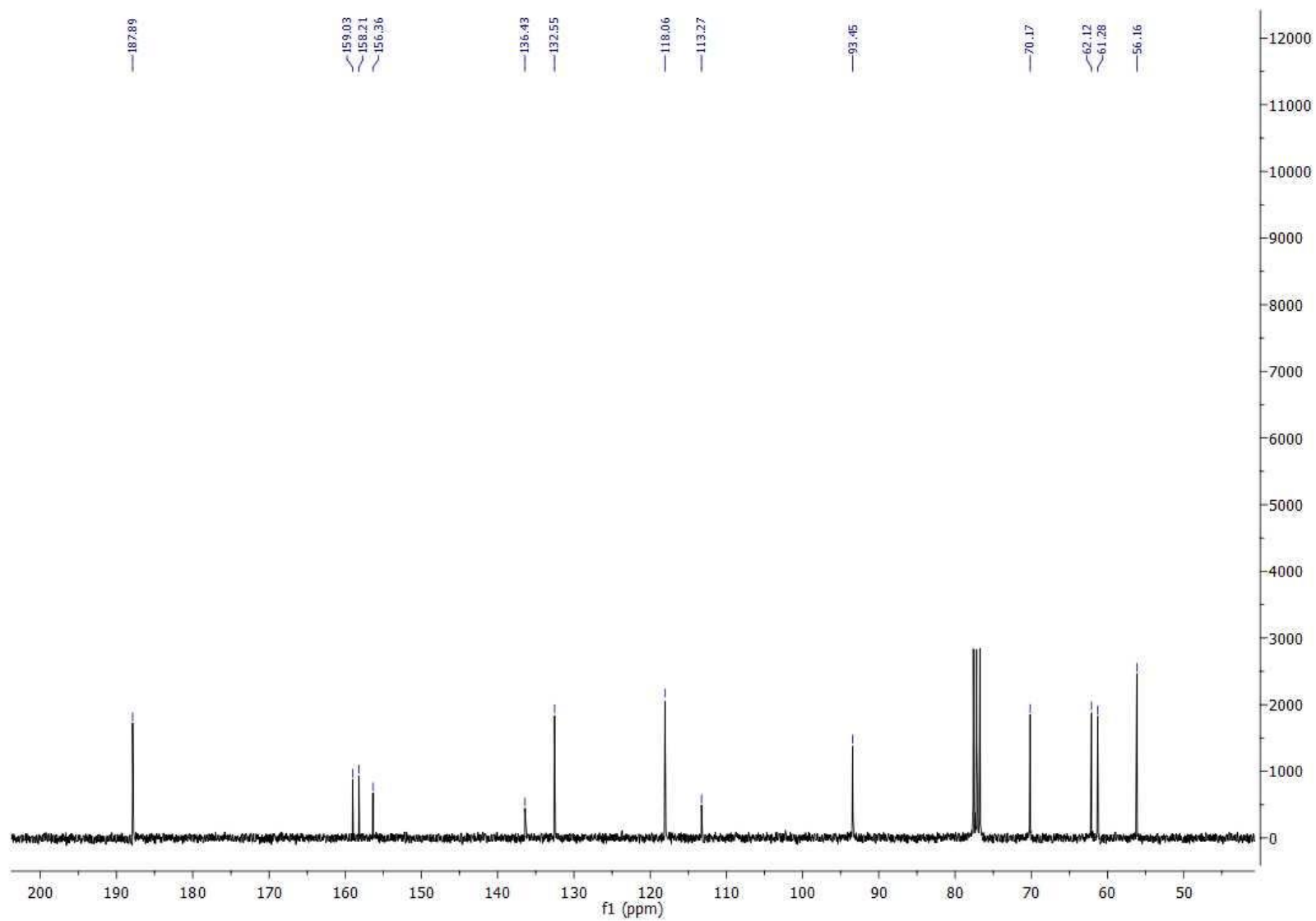
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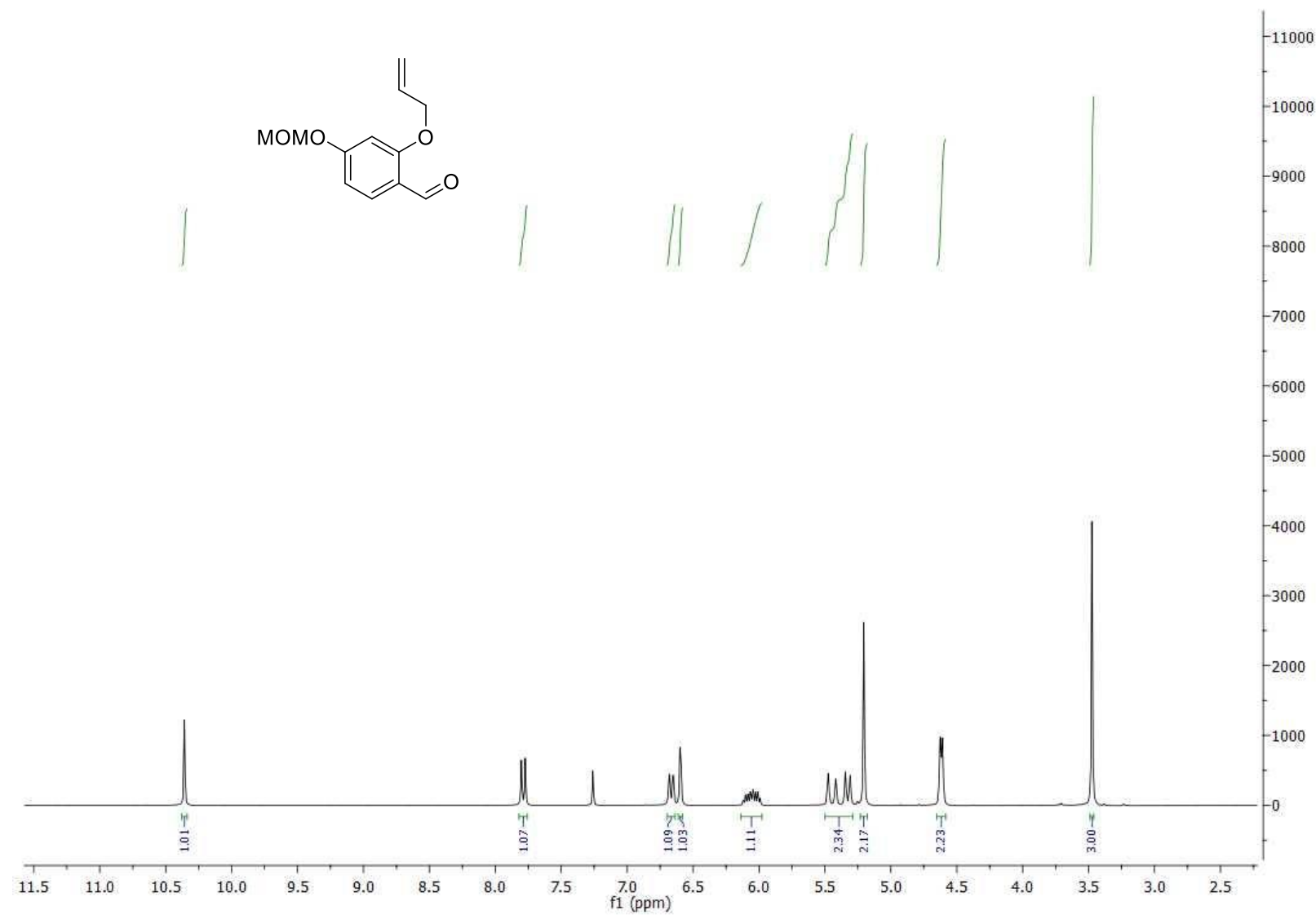
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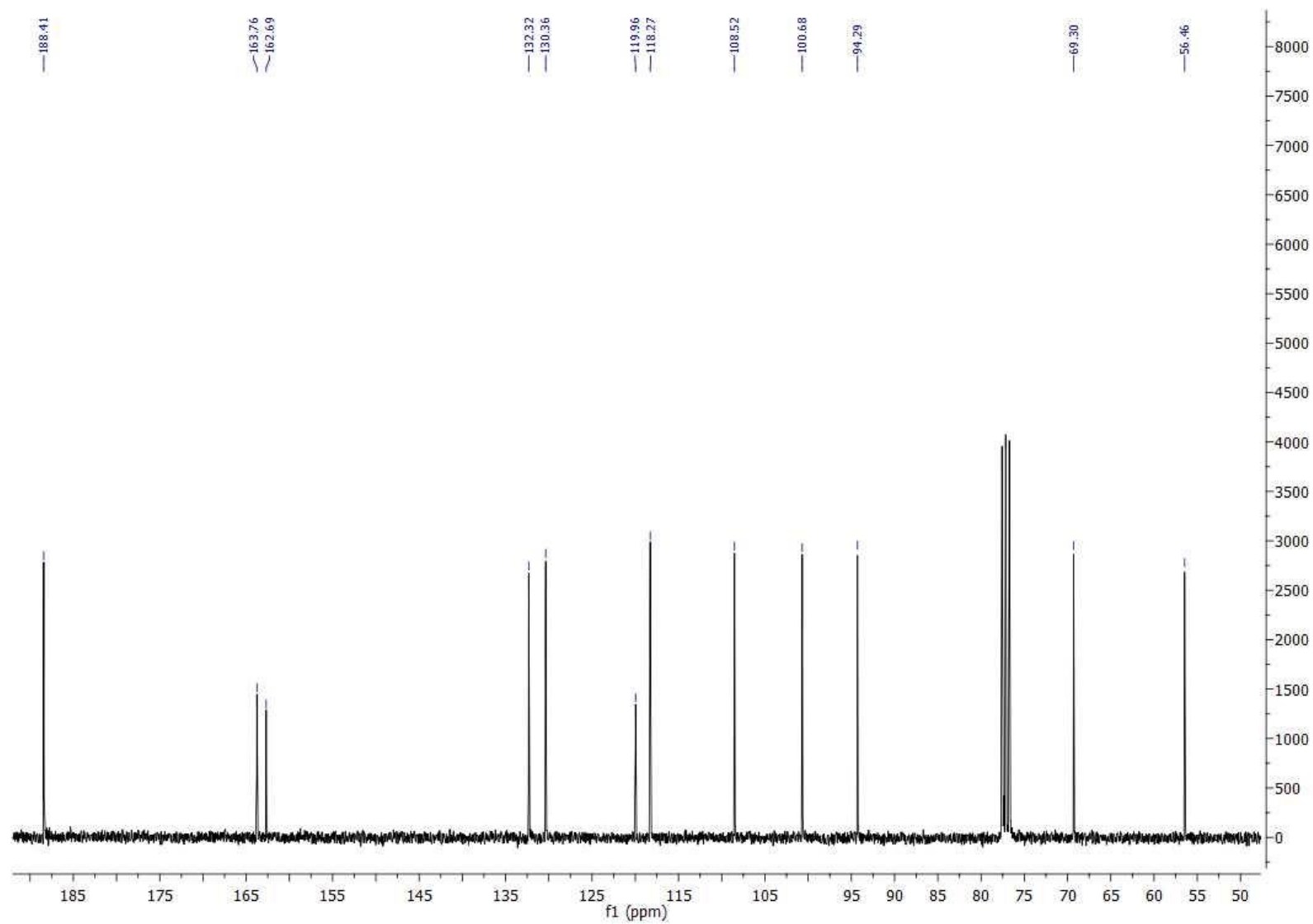
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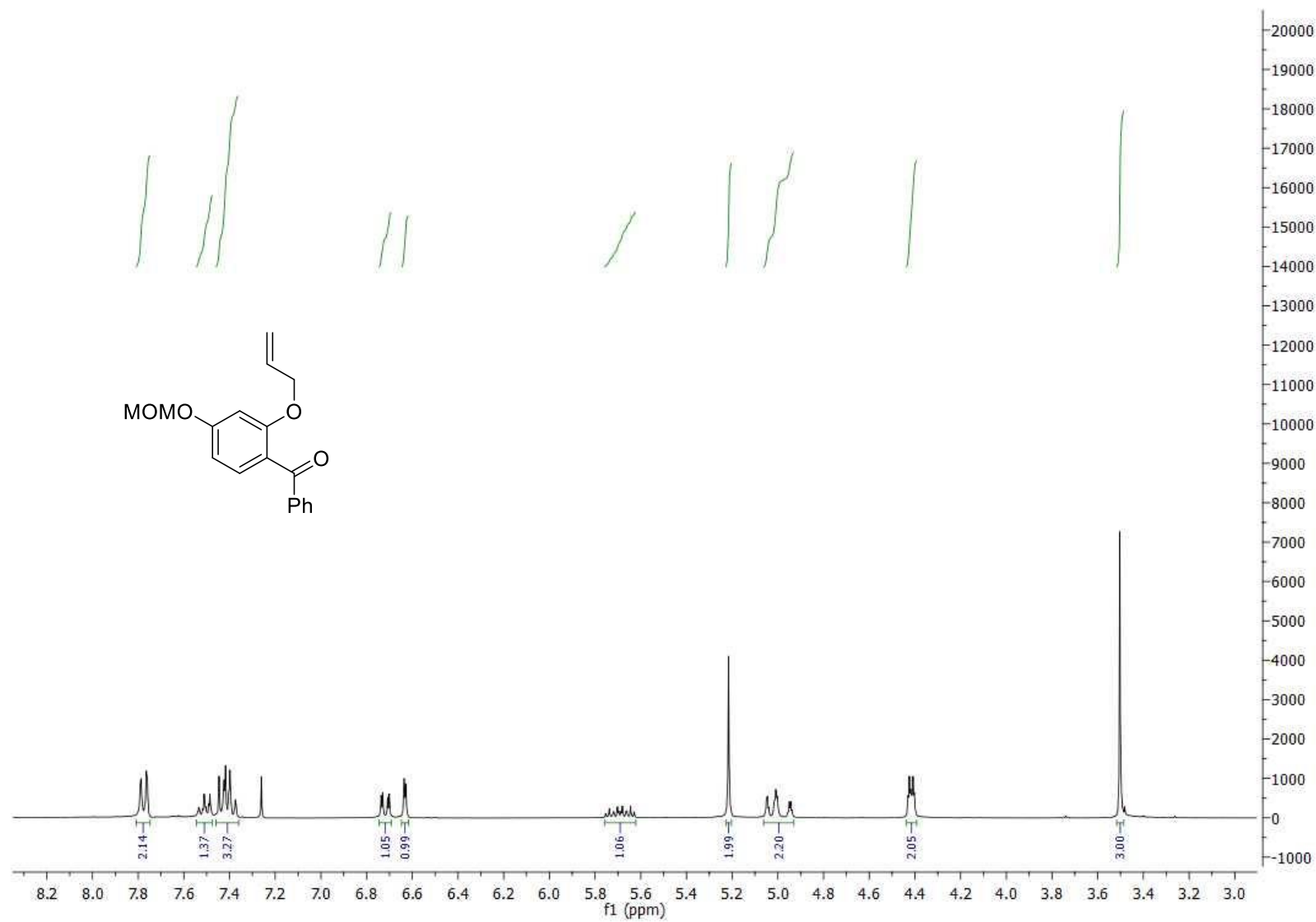
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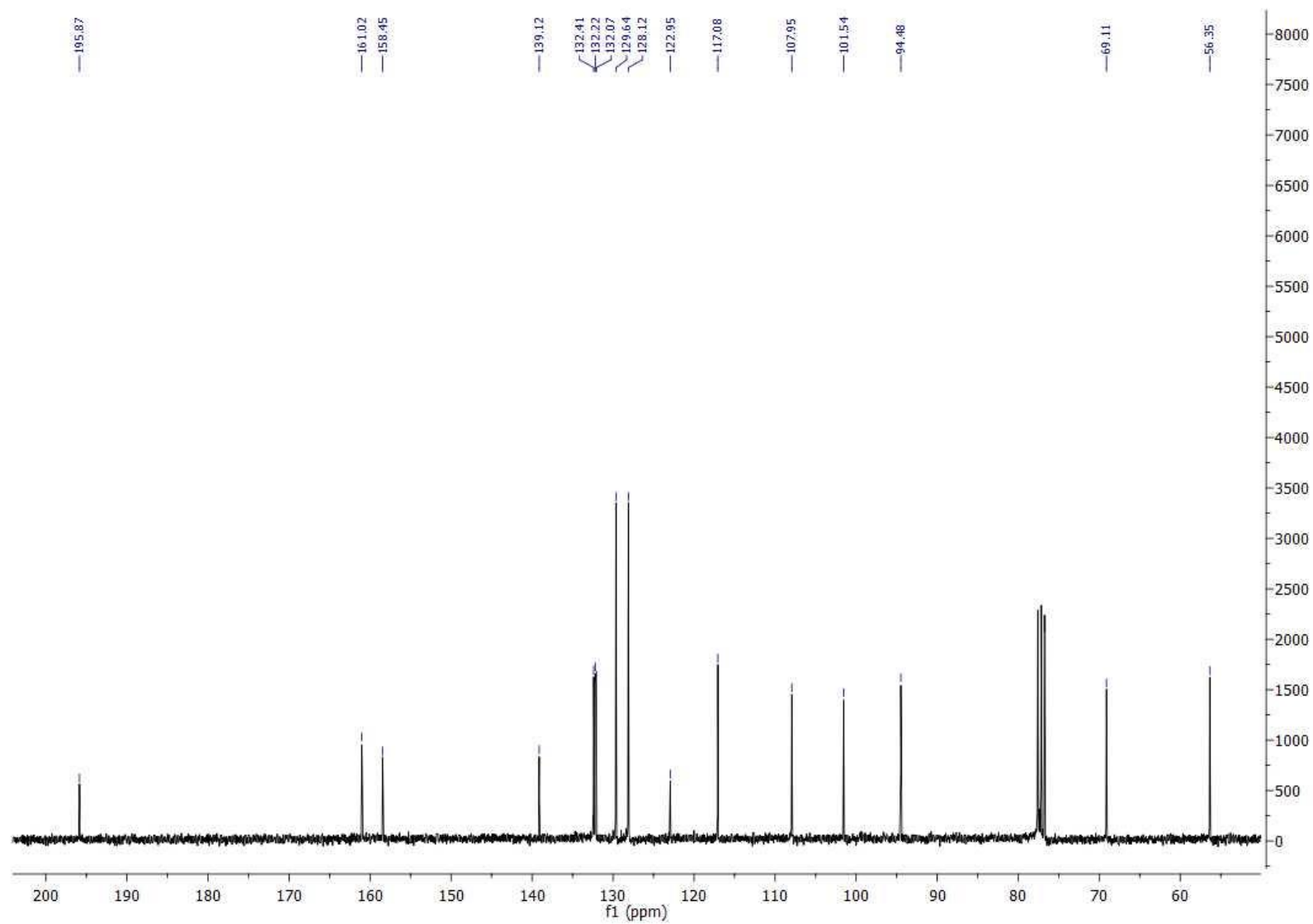
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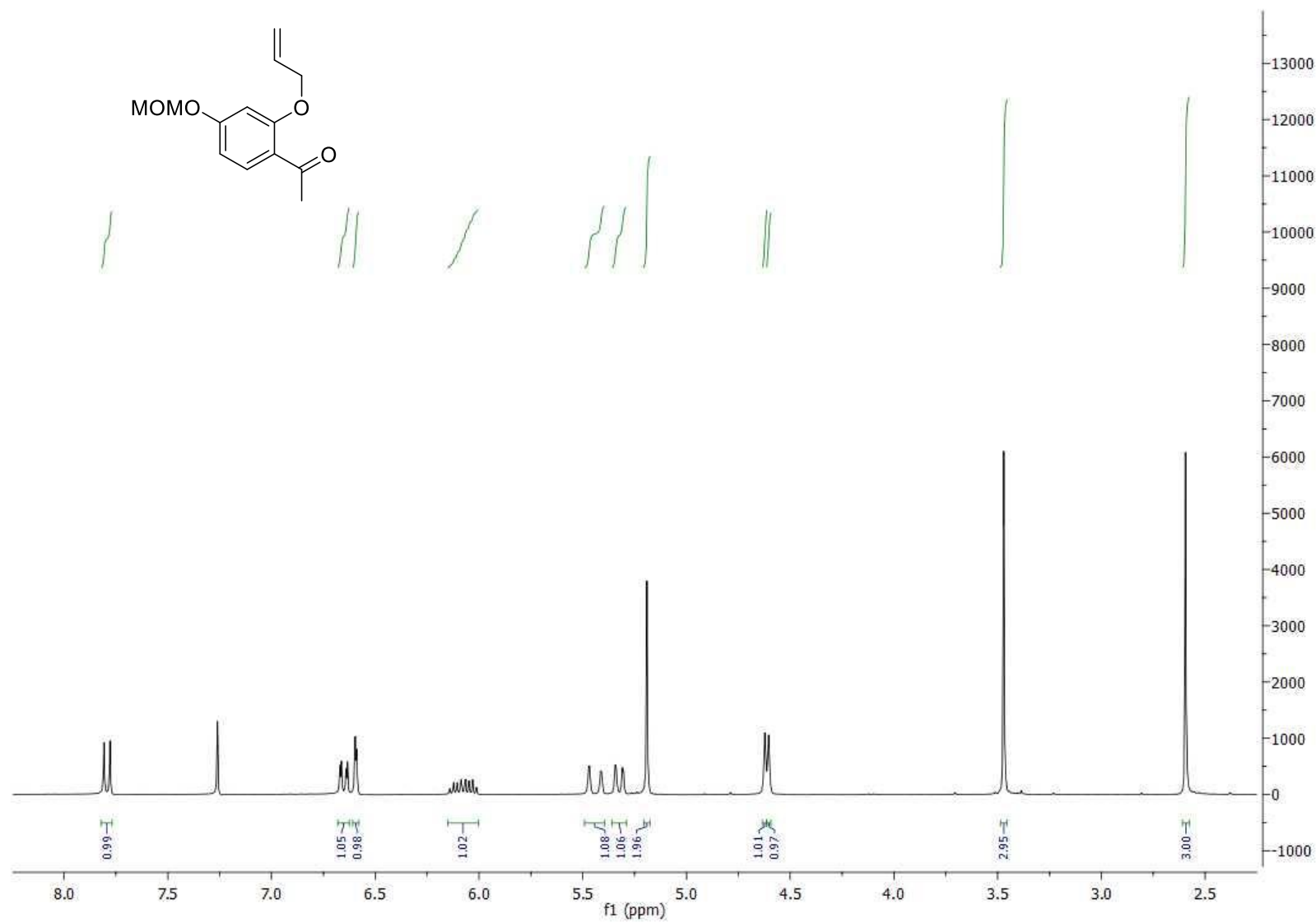
^1H NMR (300 MHz, CDCl_3) of **11p**



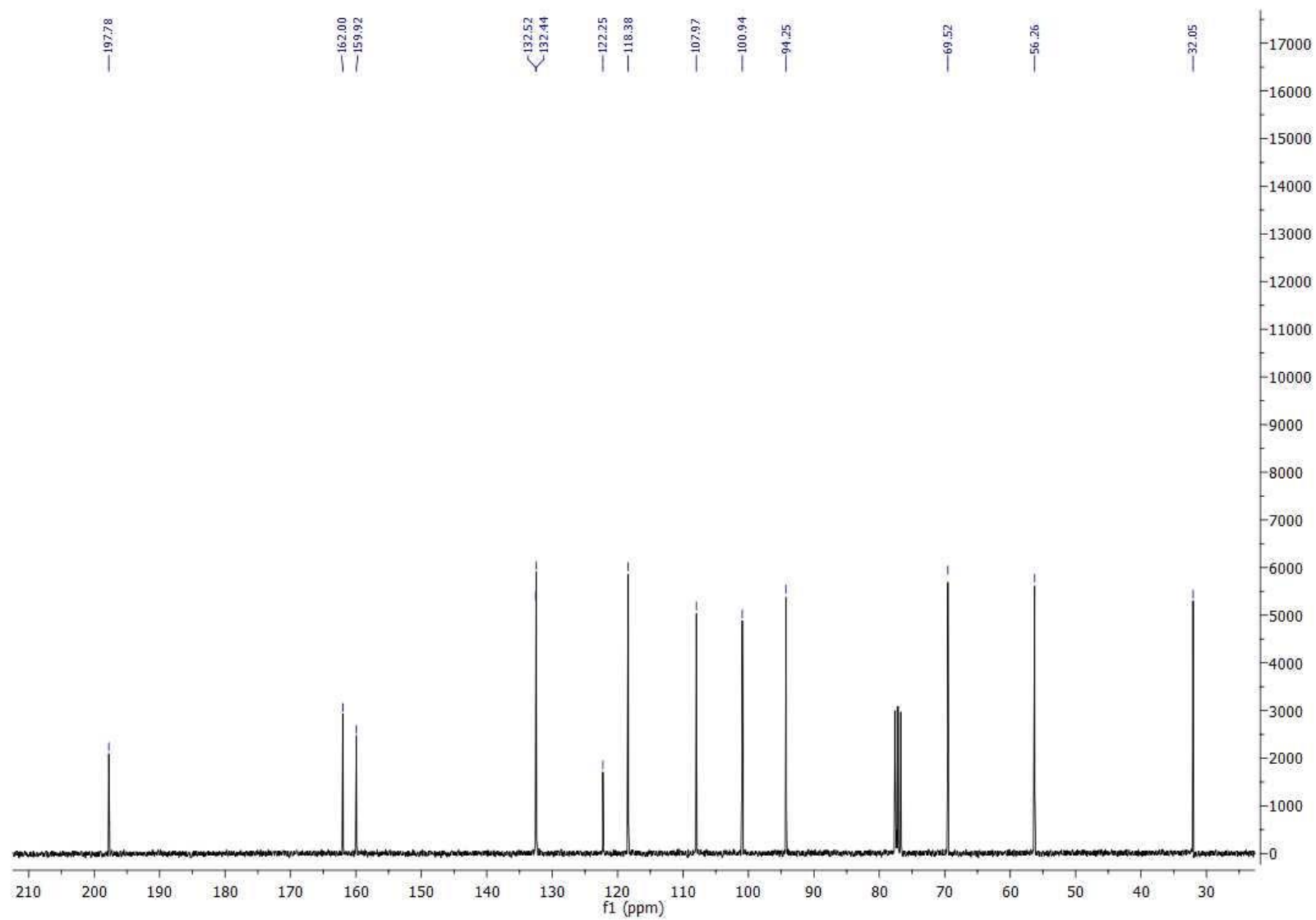
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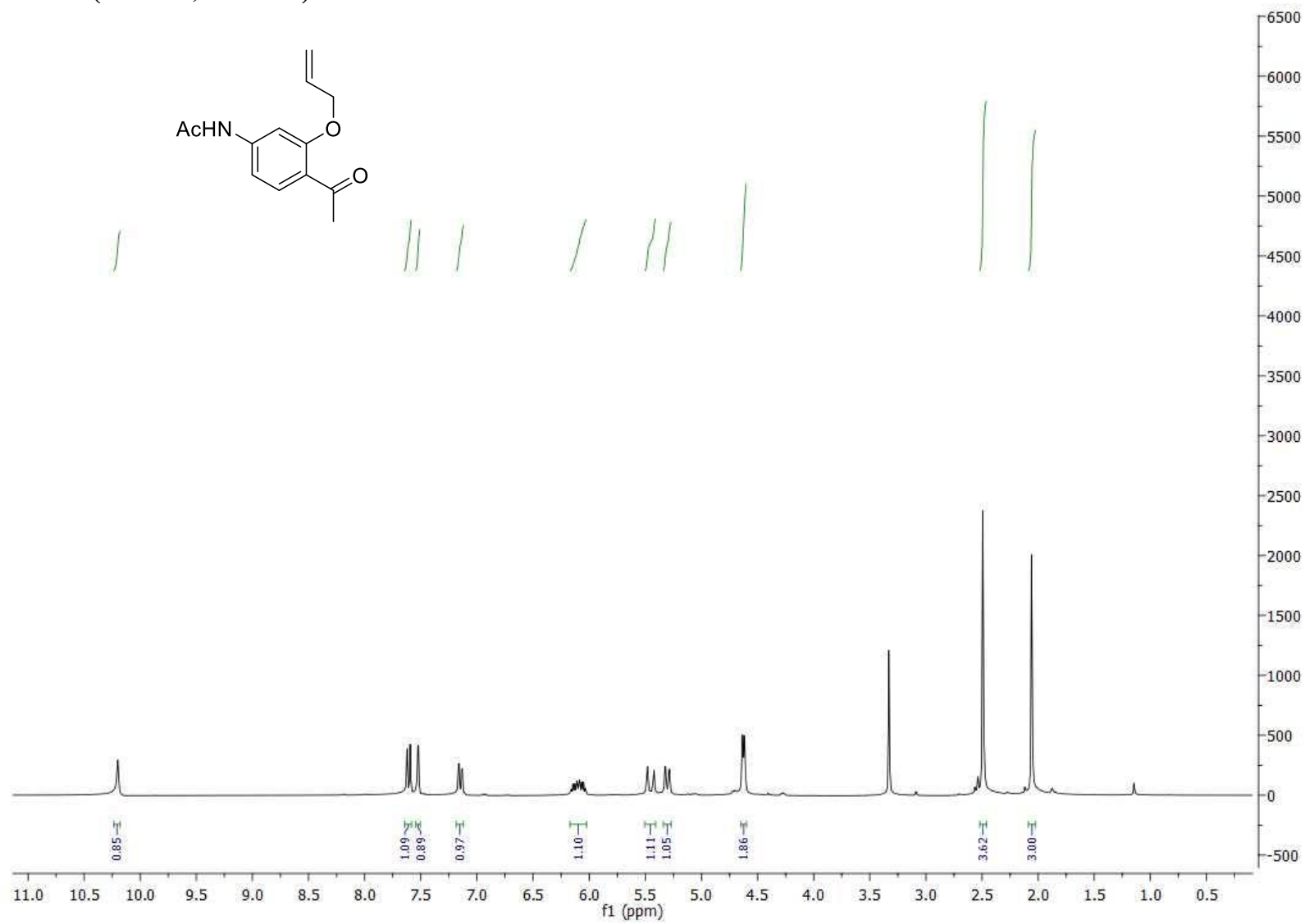
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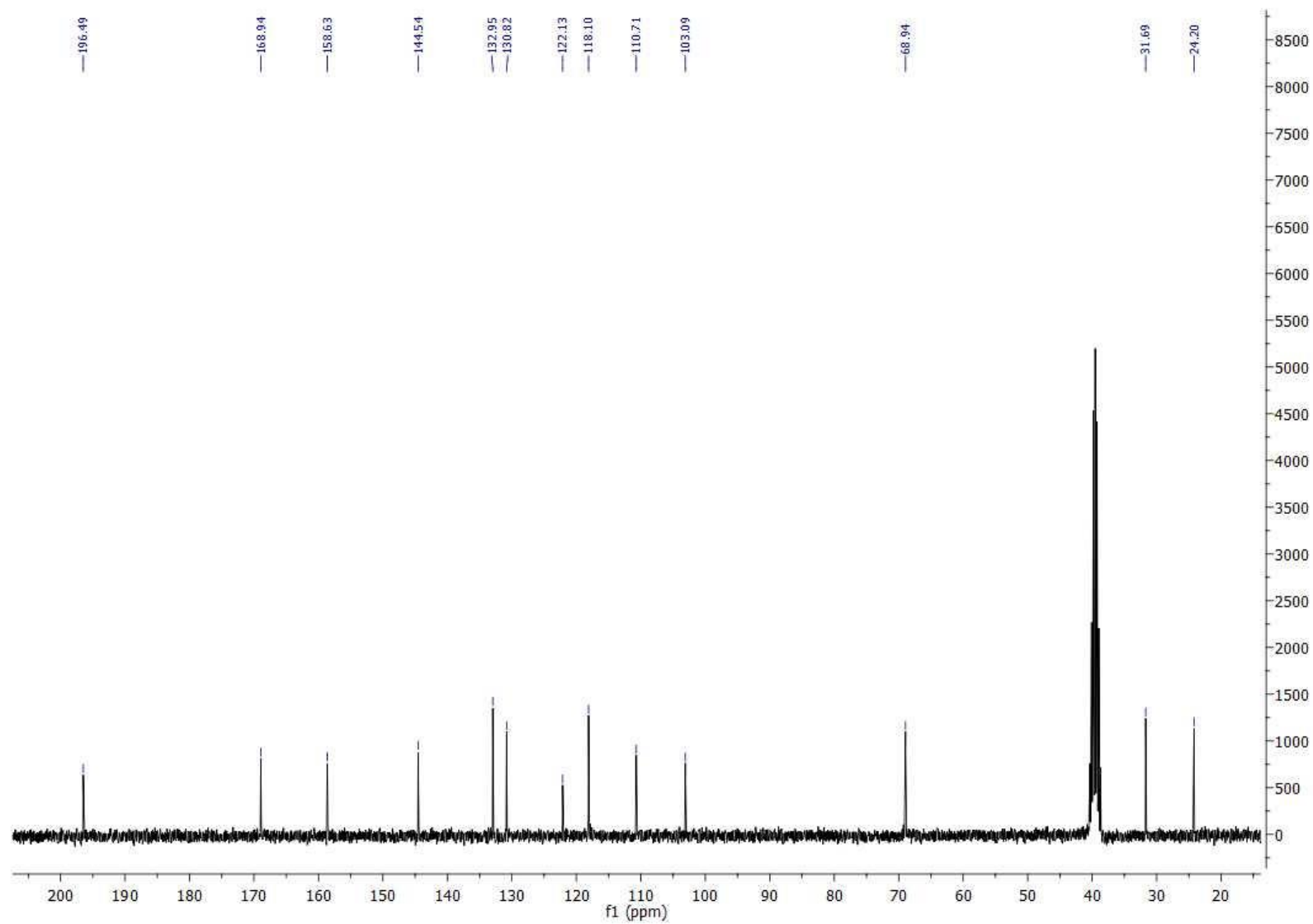
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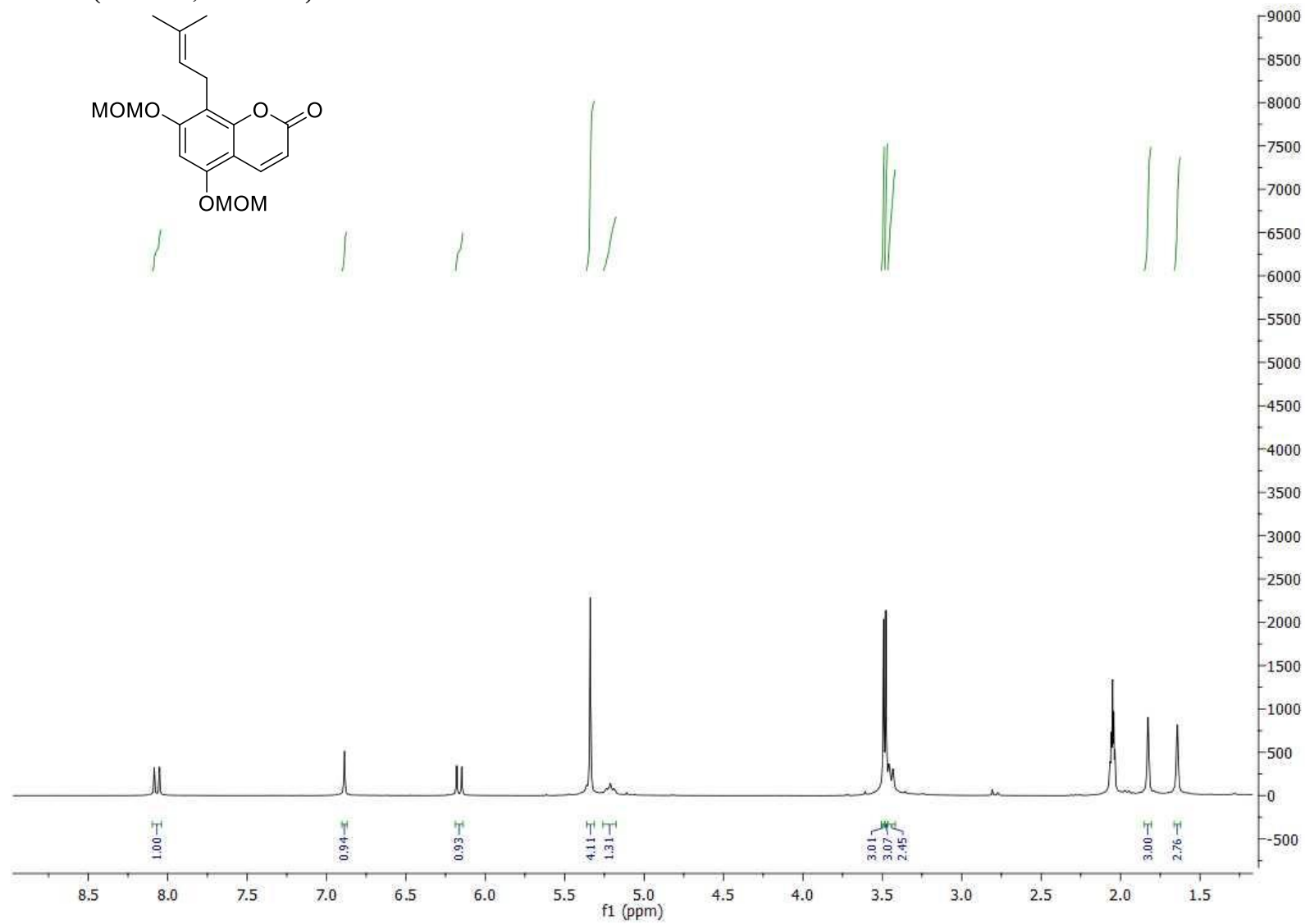
^1H NMR (300 MHz, $\text{DMSO}-d_6$) of **11r**



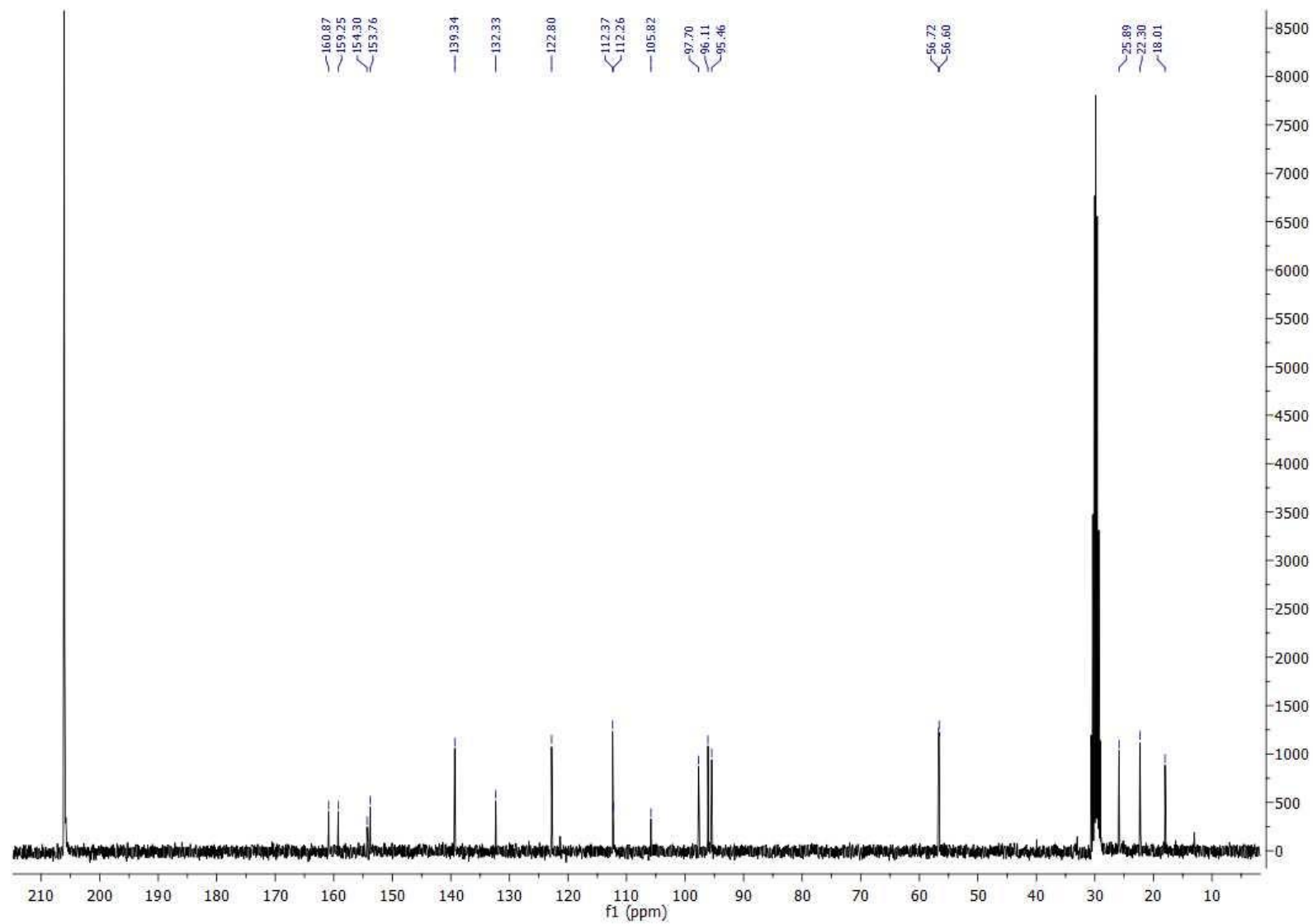
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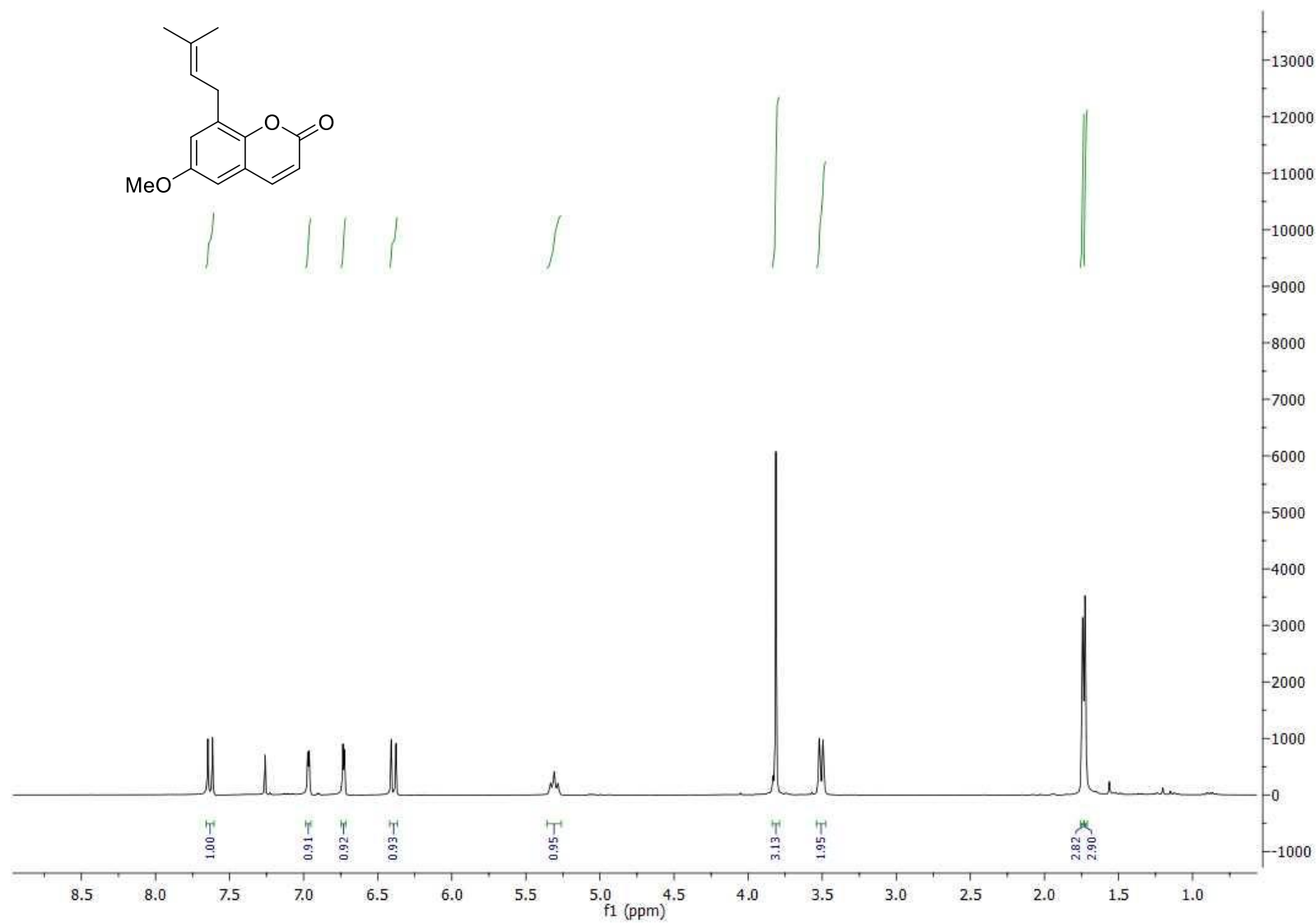
^1H NMR (300 MHz, acetone- d_6) of **7a**



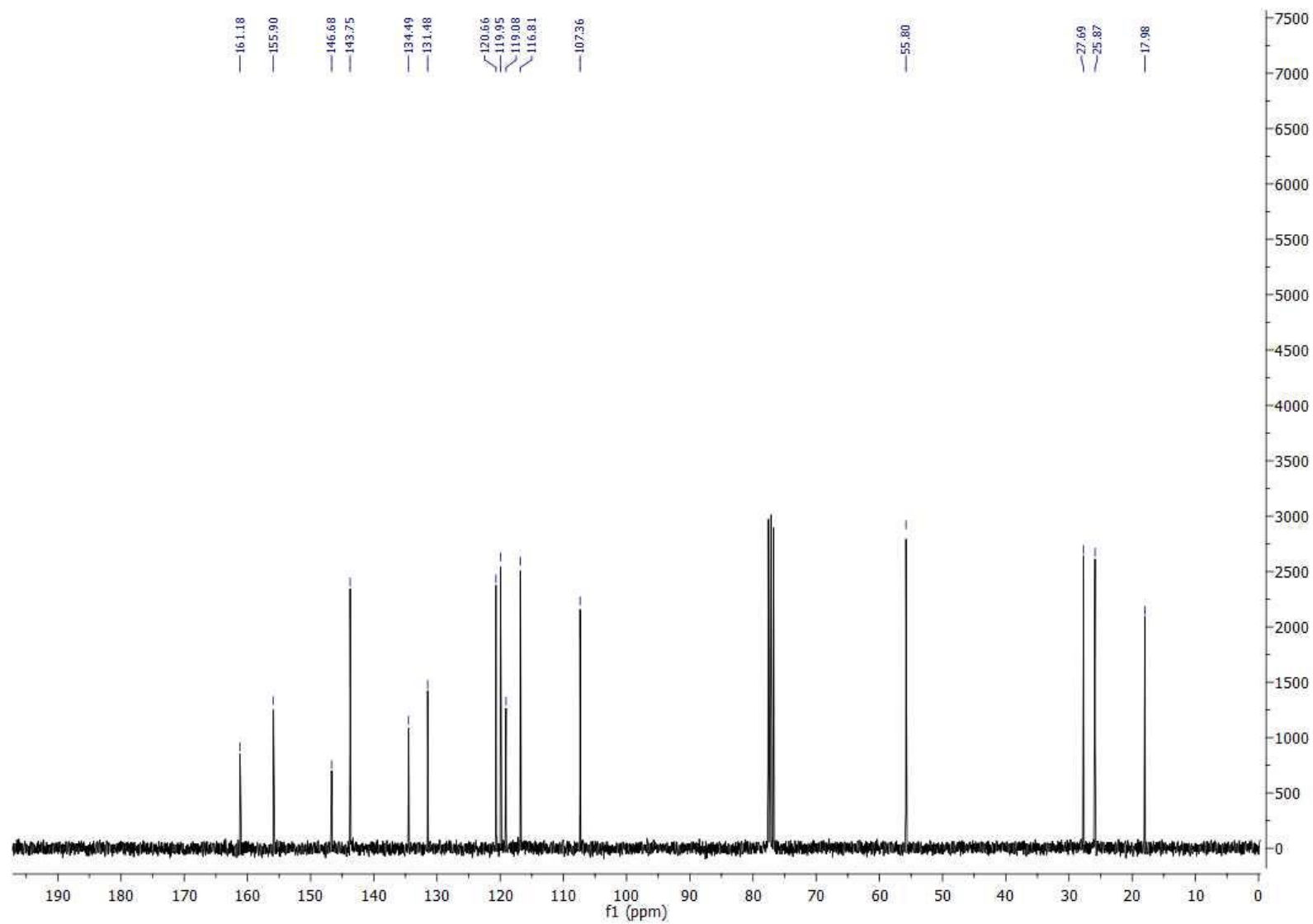
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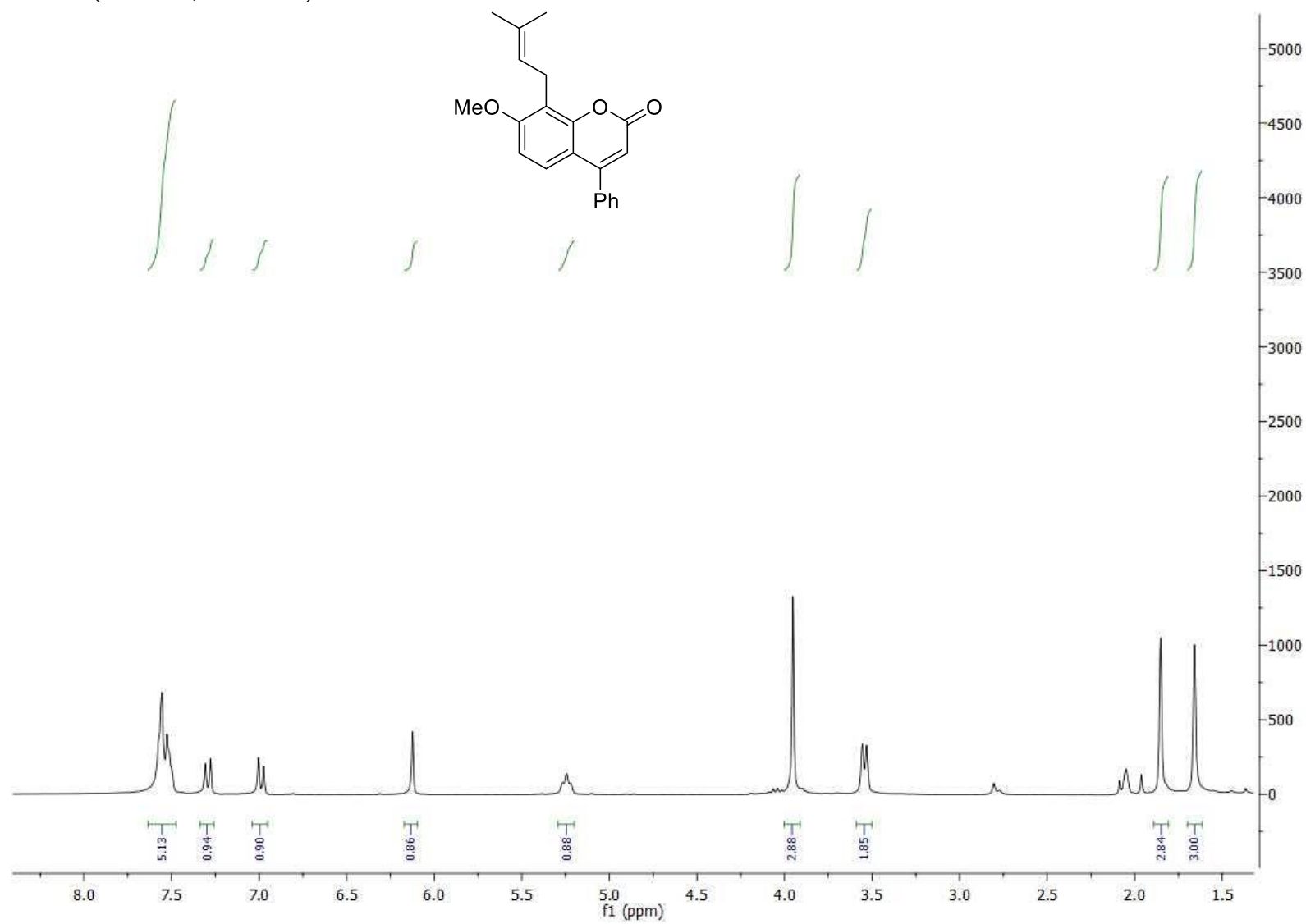
^1H NMR (300 MHz, CDCl_3) of **7e**



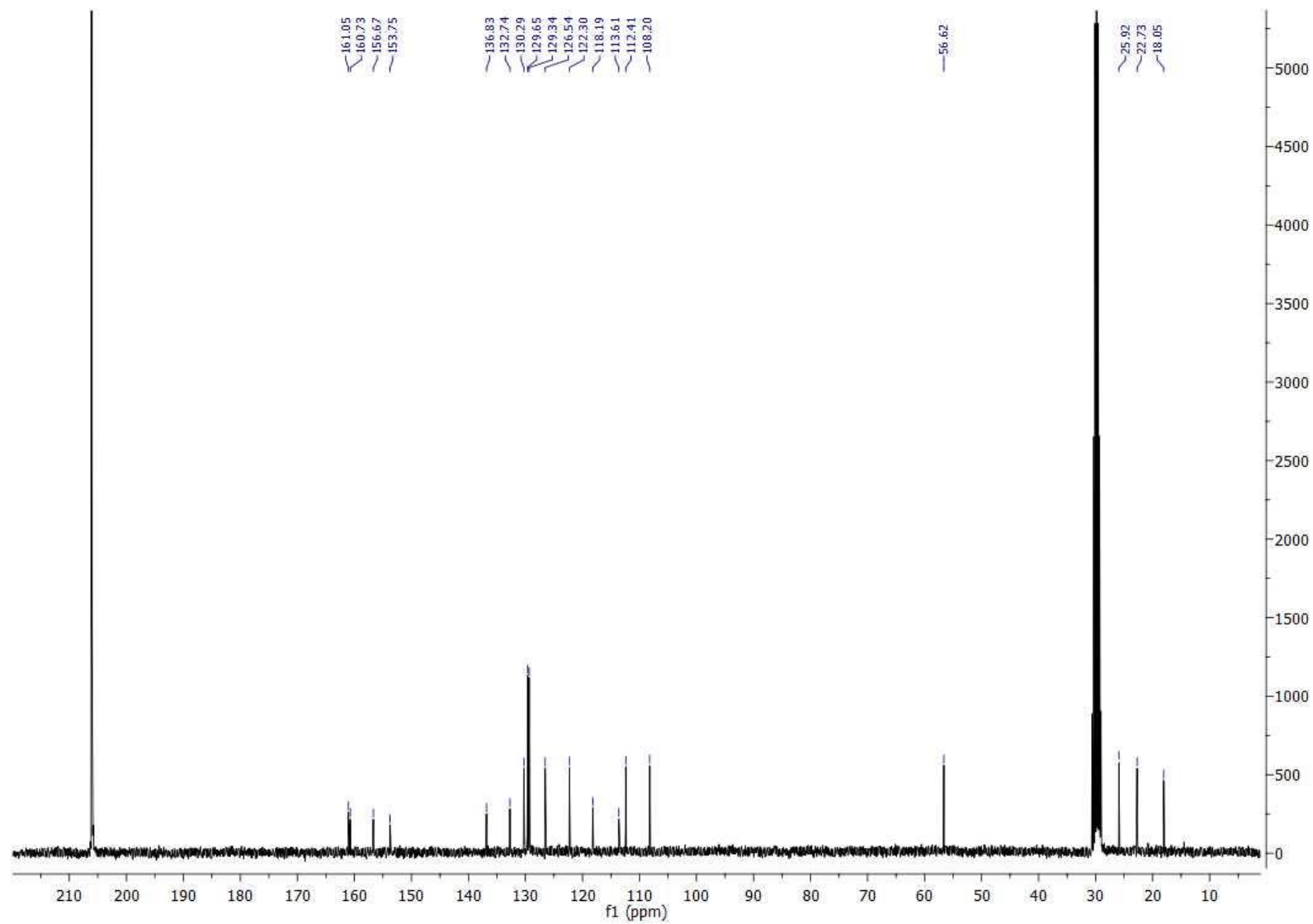
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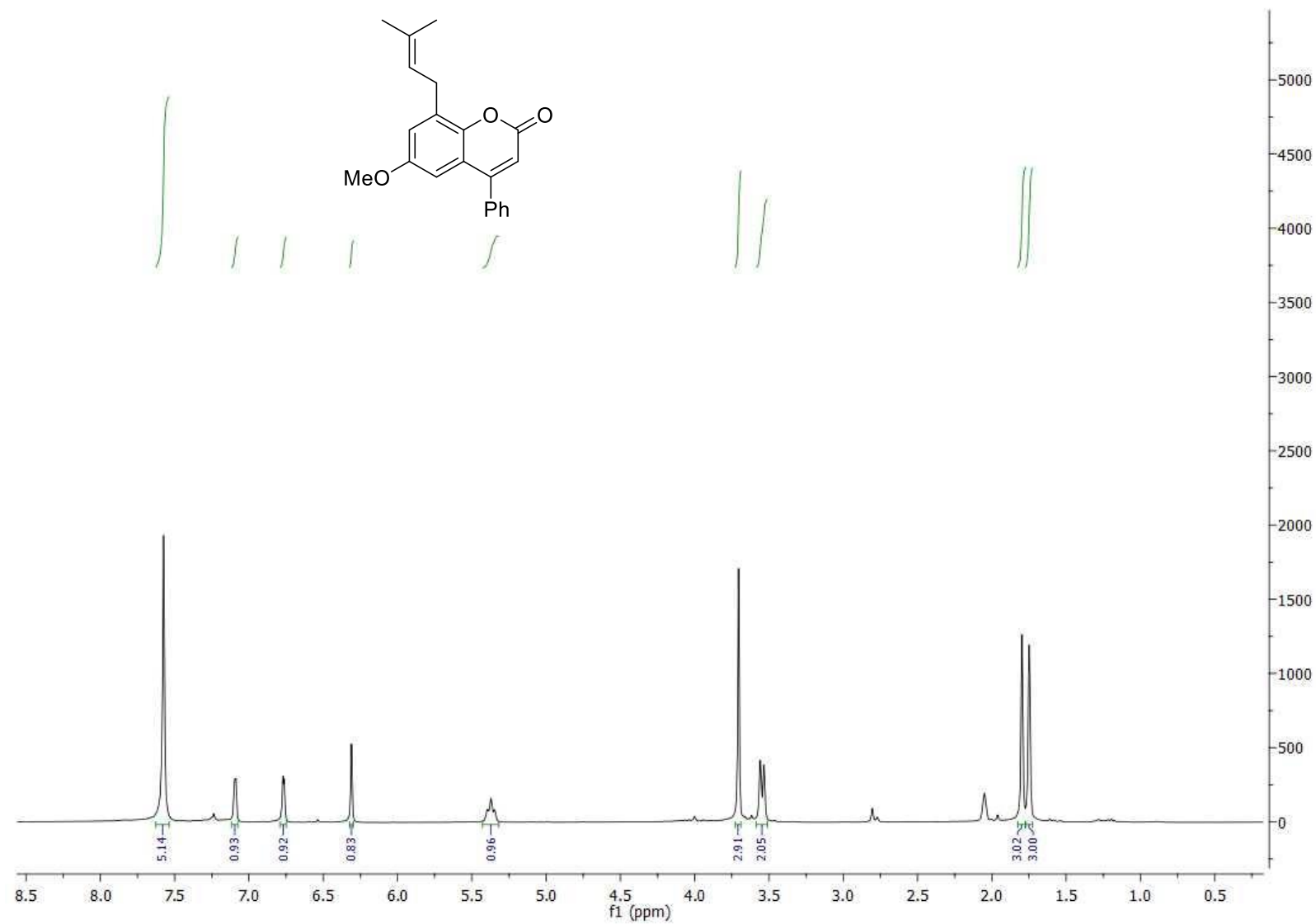
^1H NMR (300 MHz, acetone- d_6) of **7f**



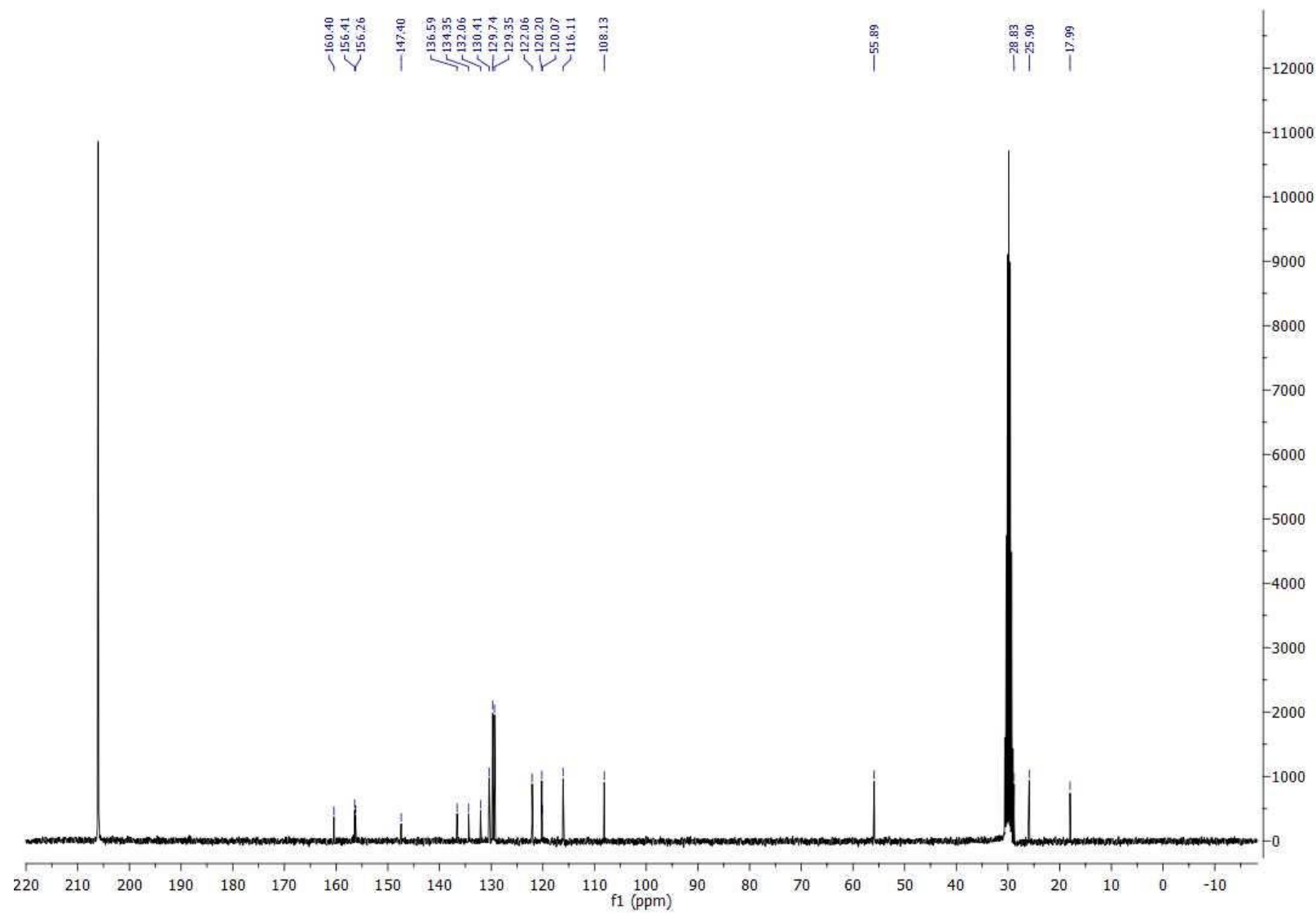
^{13}C NMR (75 MHz, acetone- d_6) of **7f**



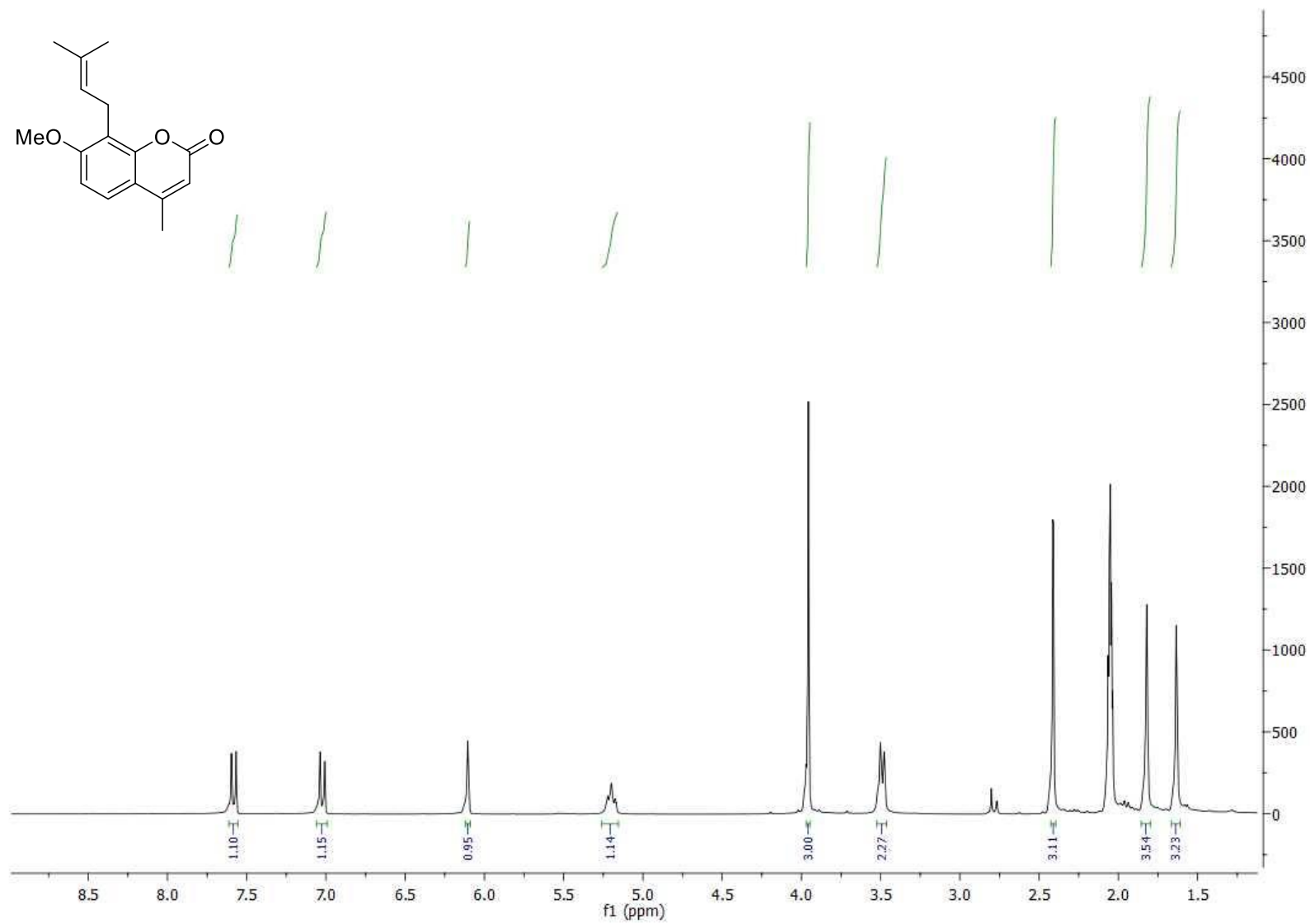
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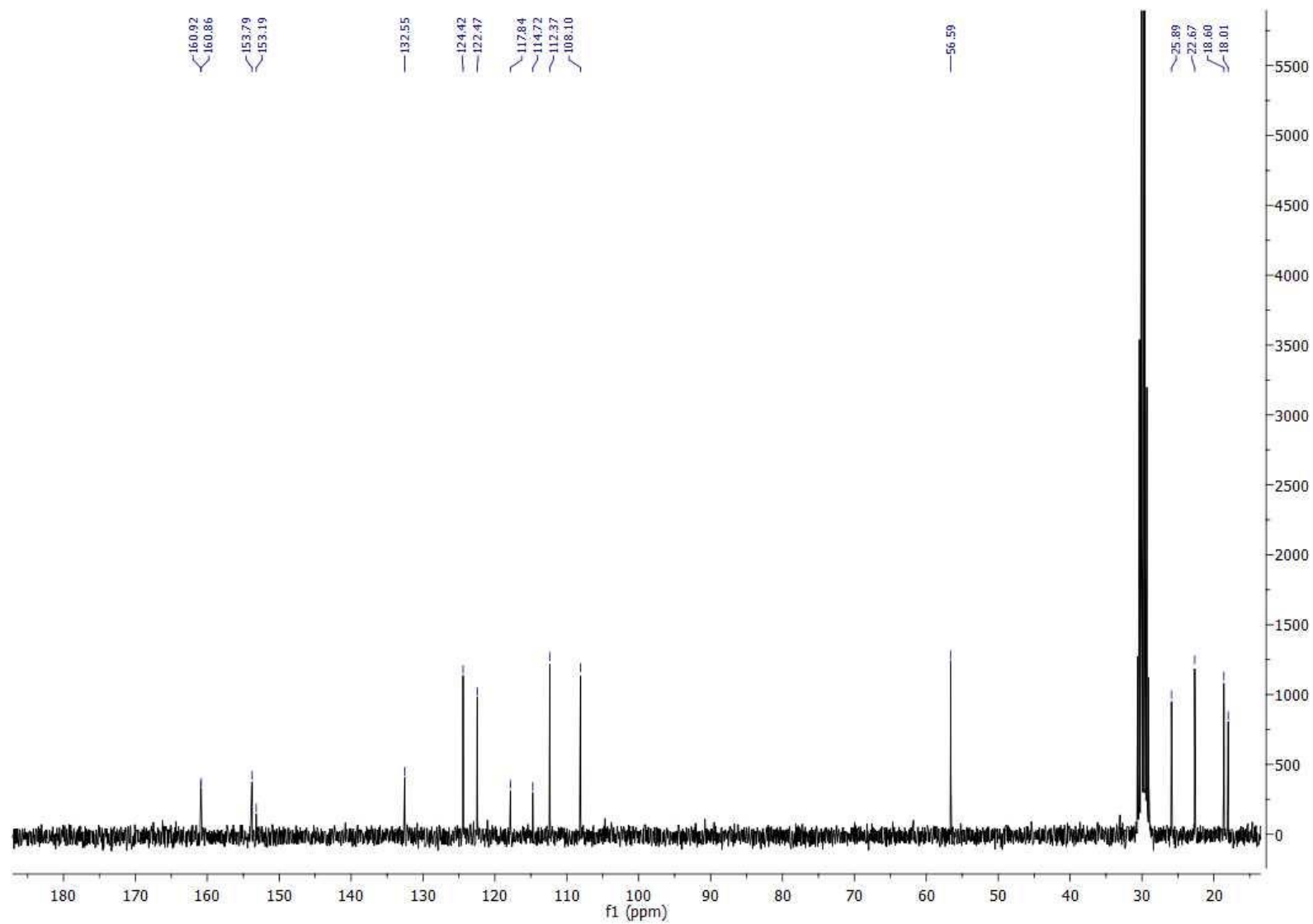
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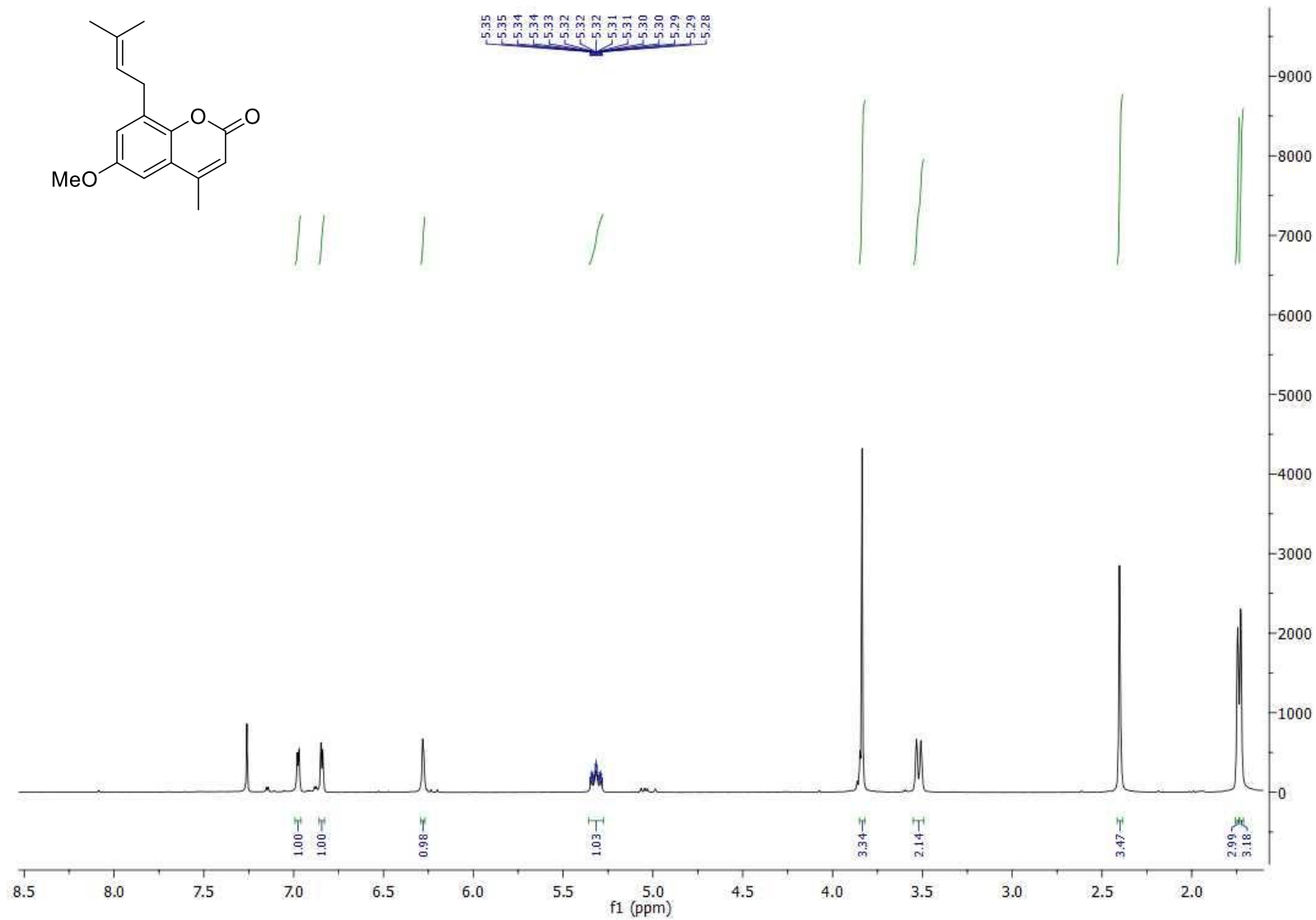
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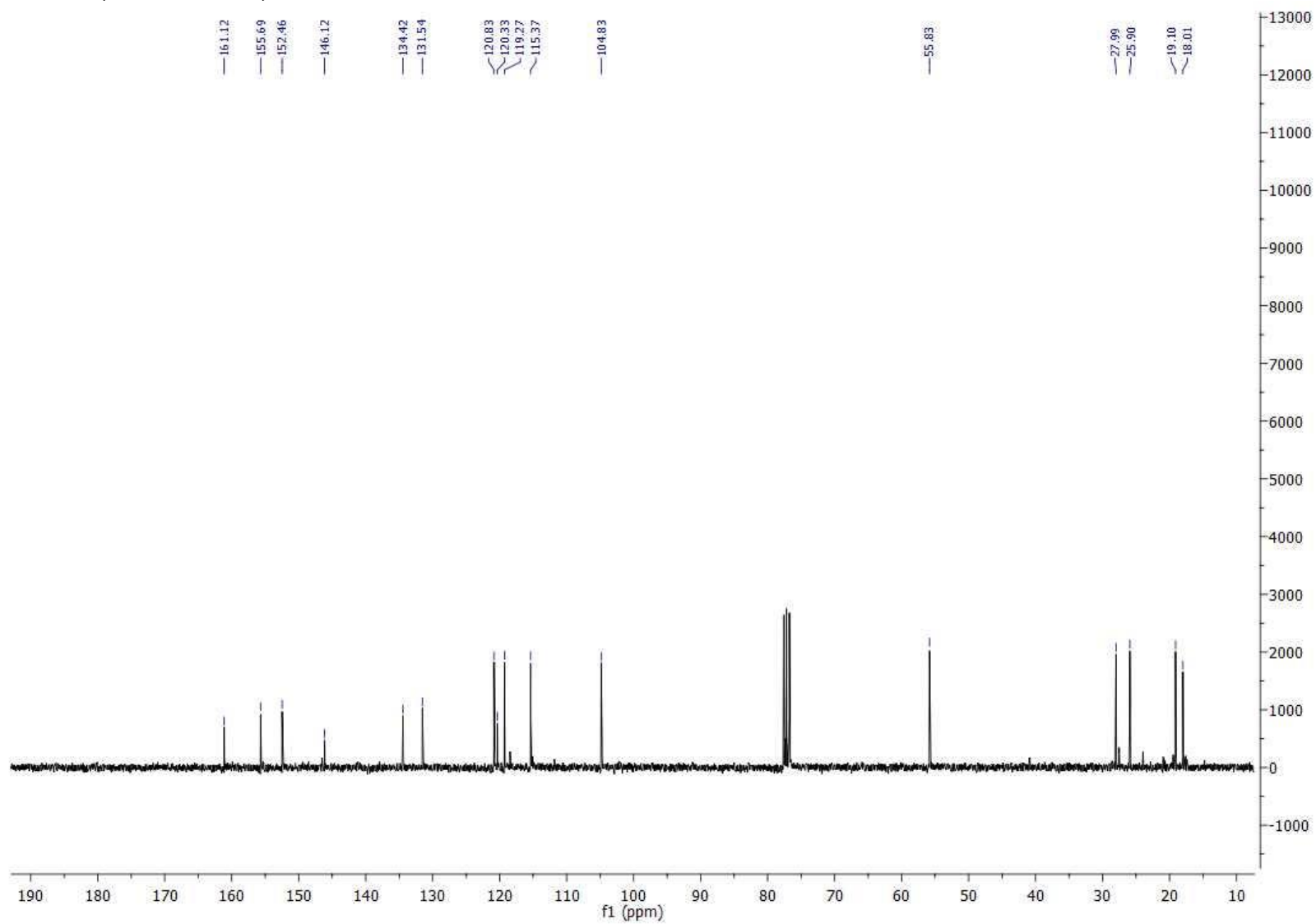
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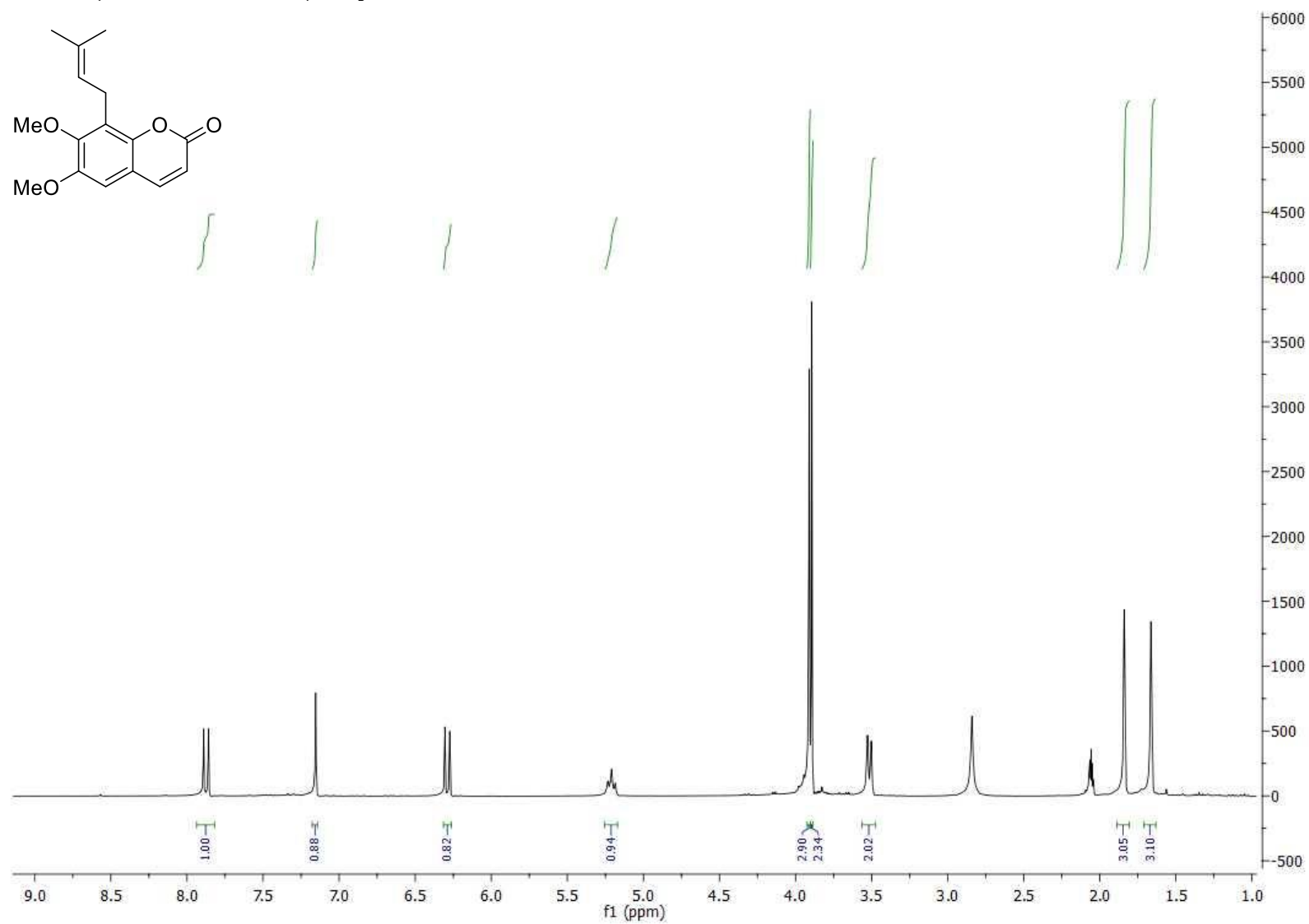
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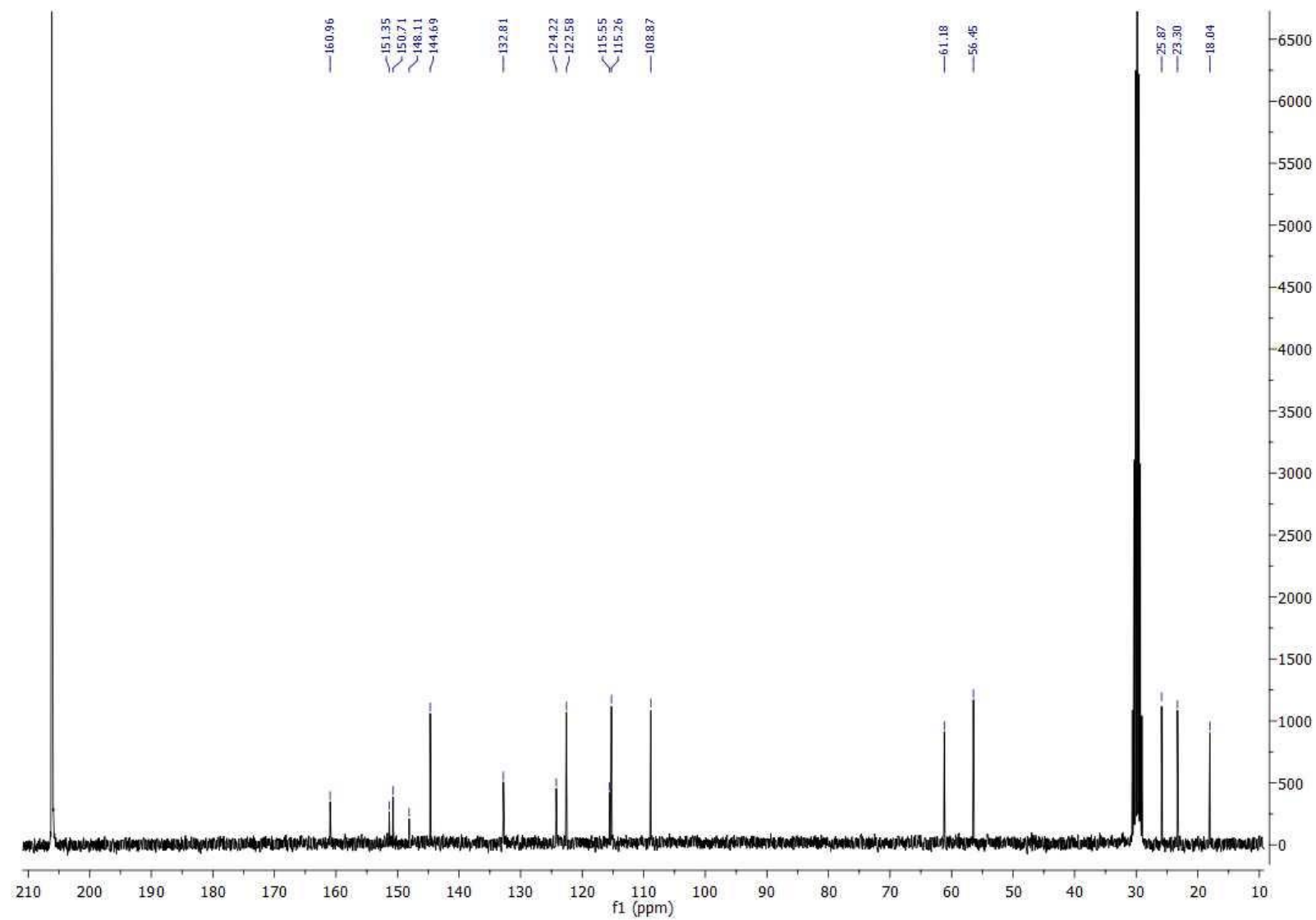
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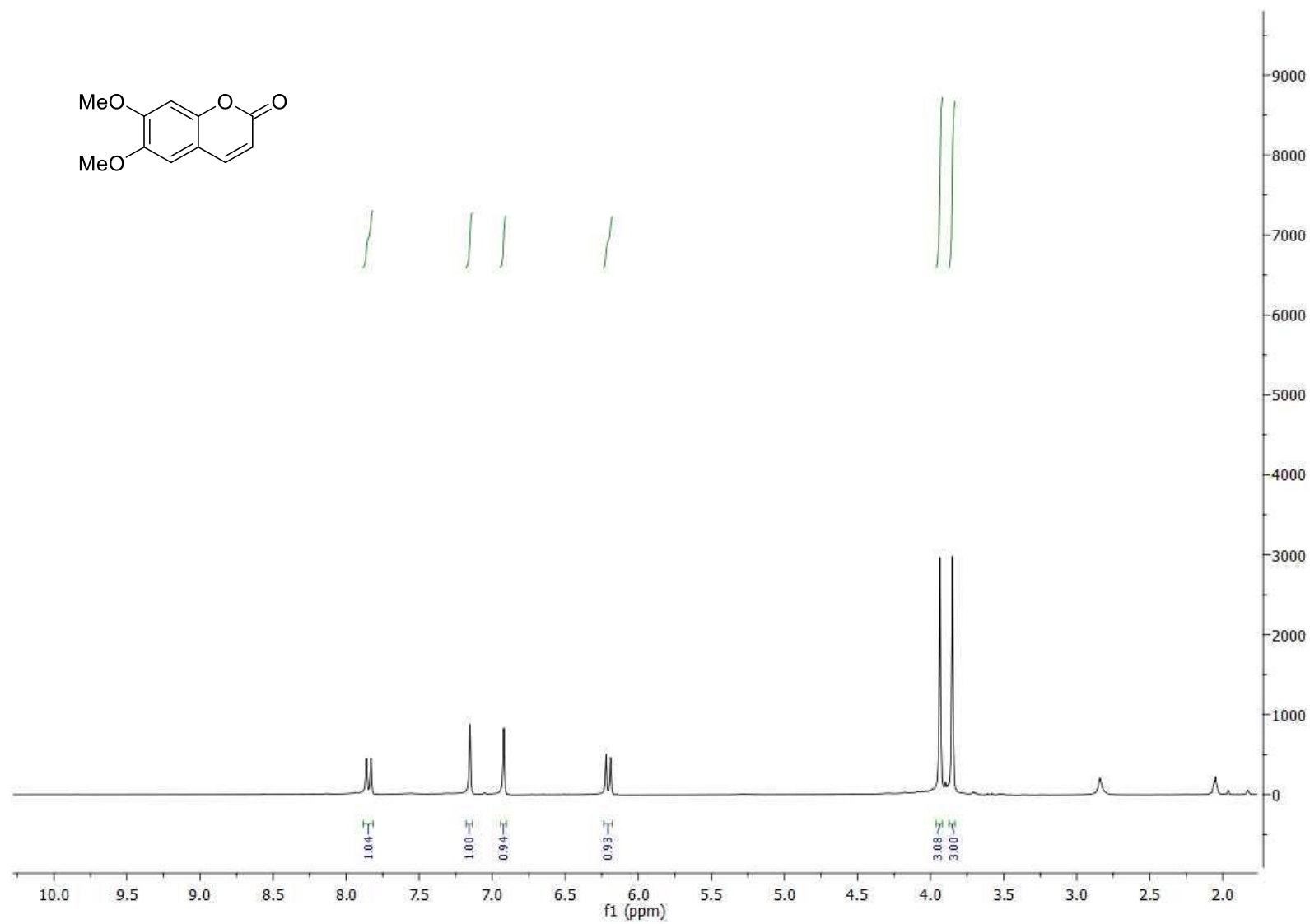
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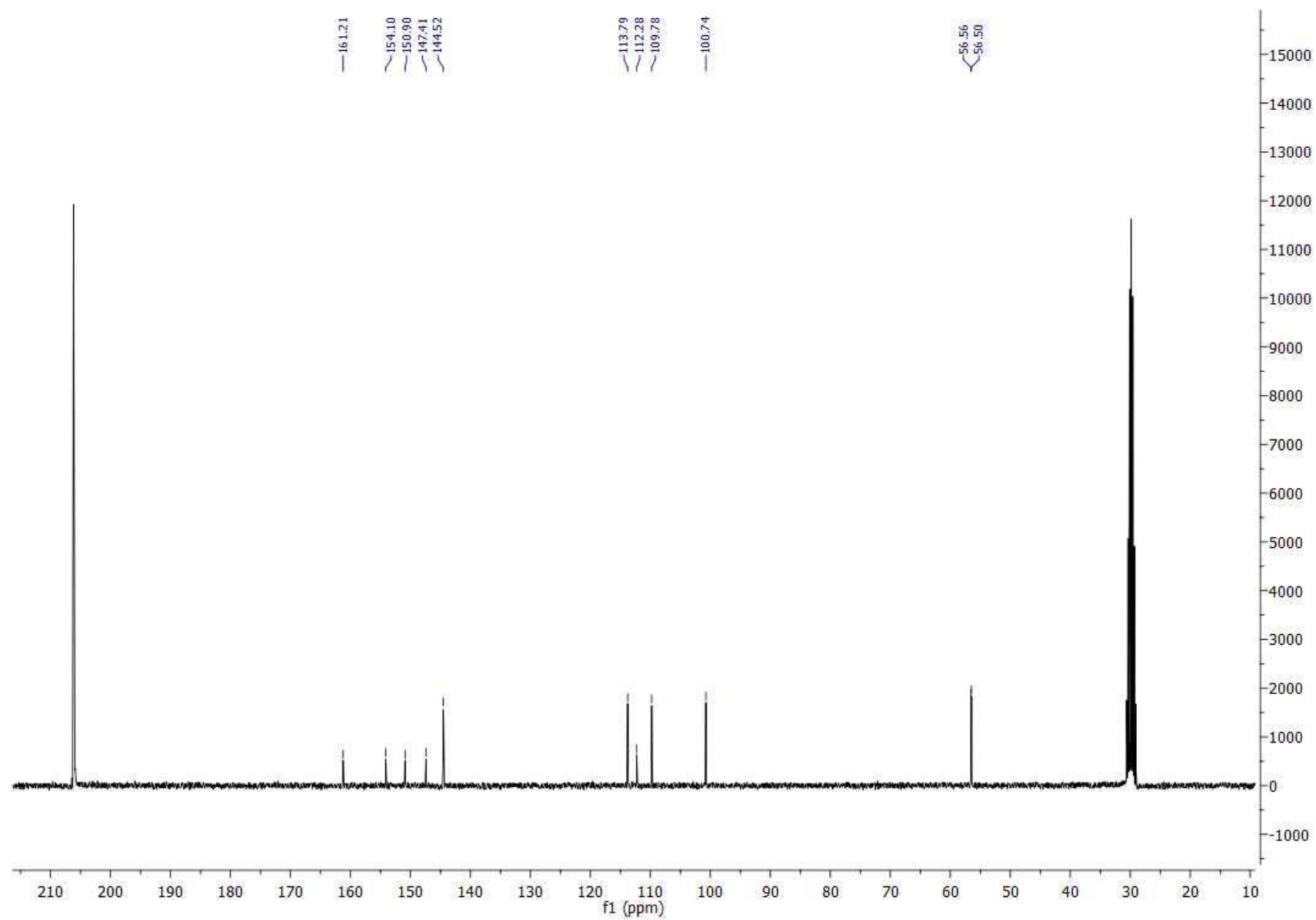
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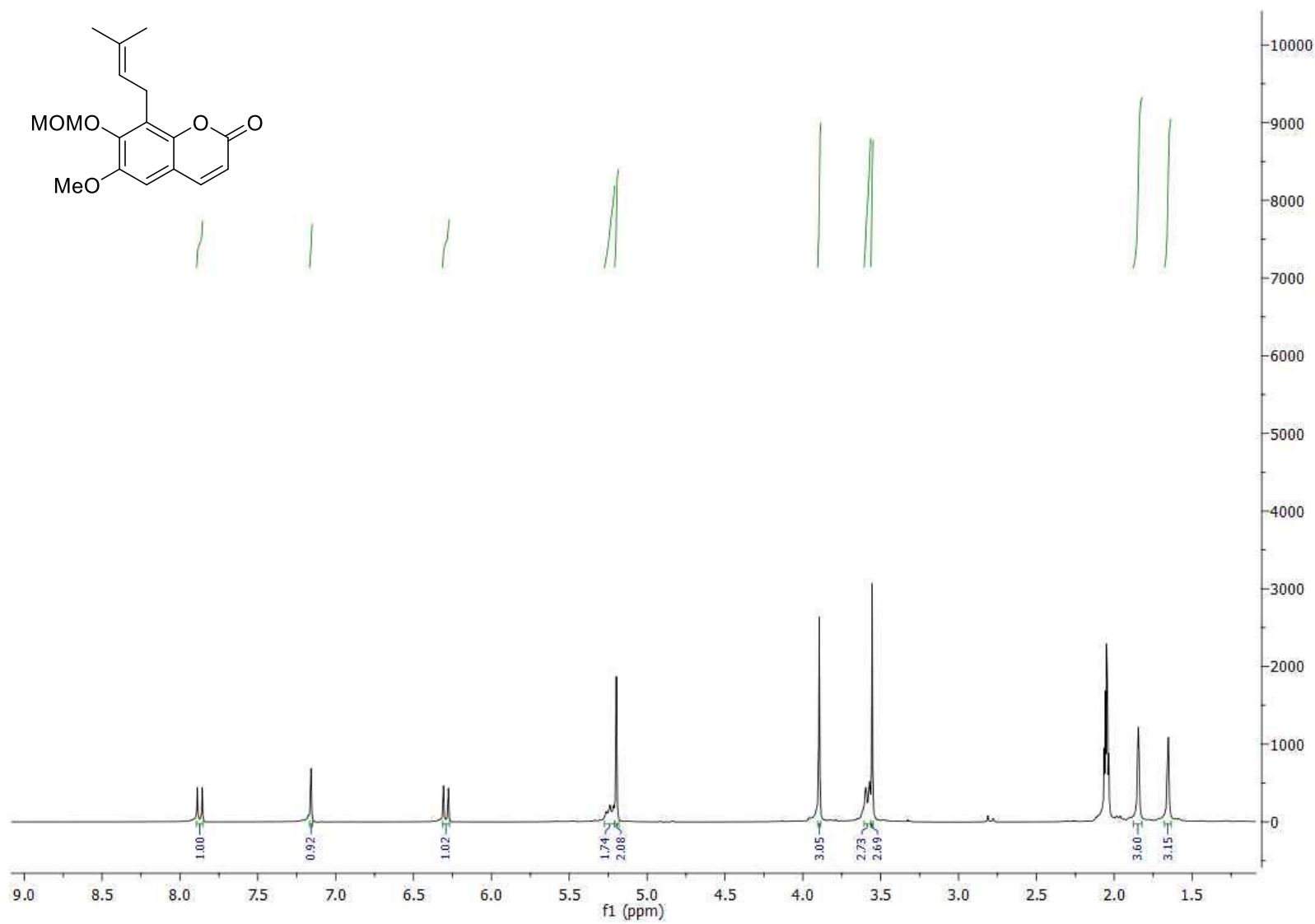
^1H NMR (300 MHz, acetone- d_6) of **8j**



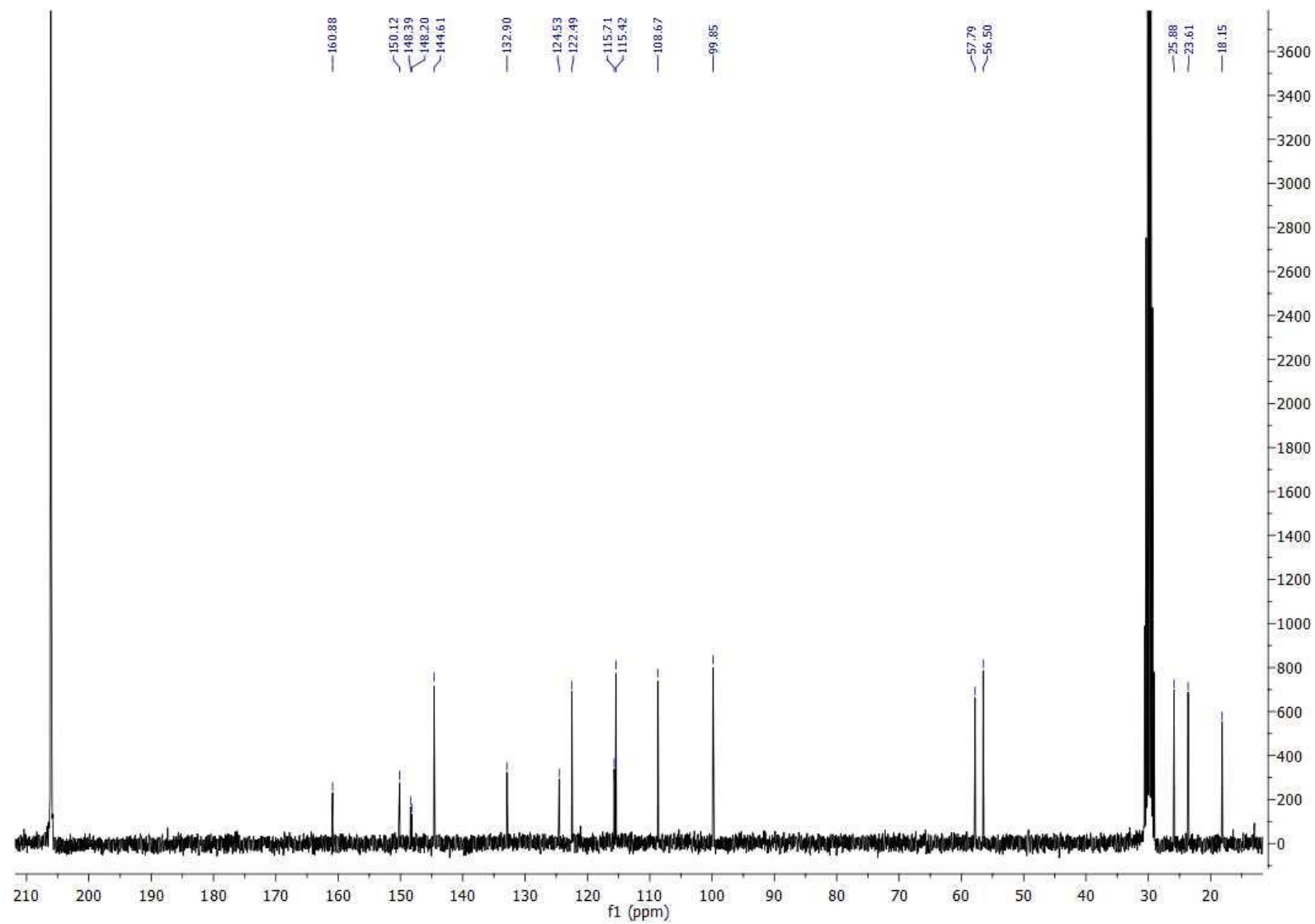
^{13}C NMR (75 MHz, acetone- d_6) of **8j**



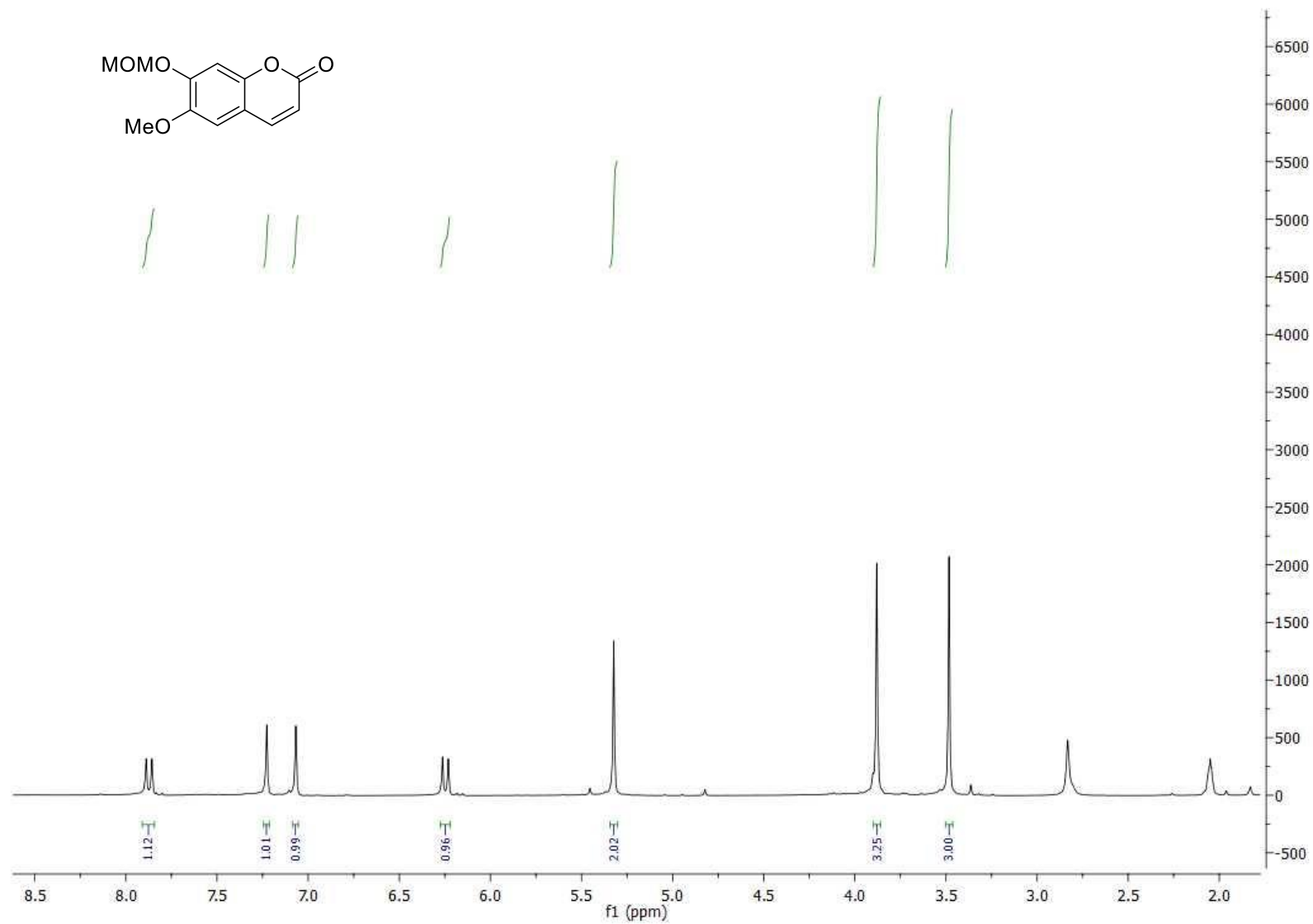
^1H NMR (300 MHz, acetone- d_6) of **7k**



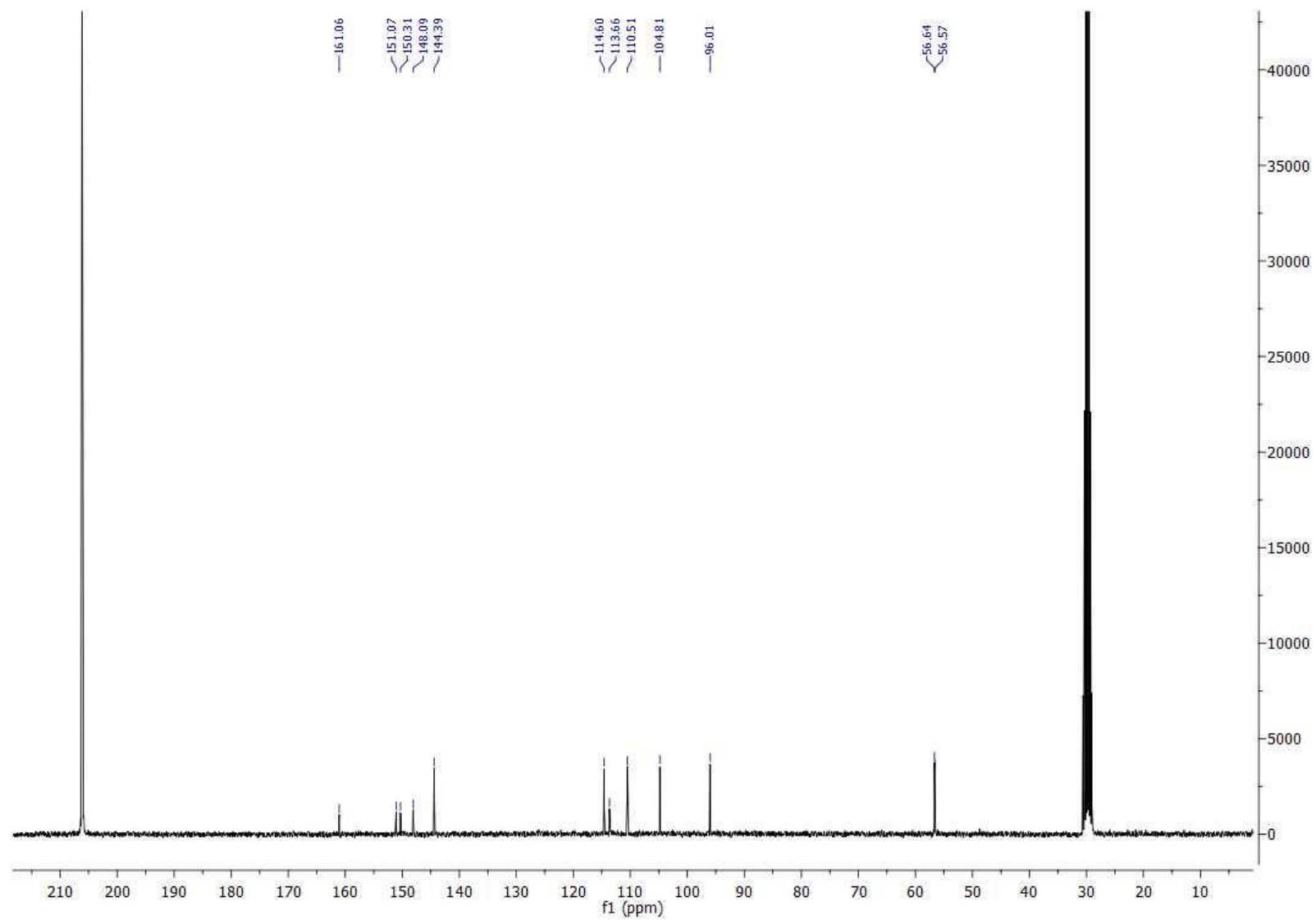
^{13}C NMR (75 MHz, acetone- d_6) of **7k**



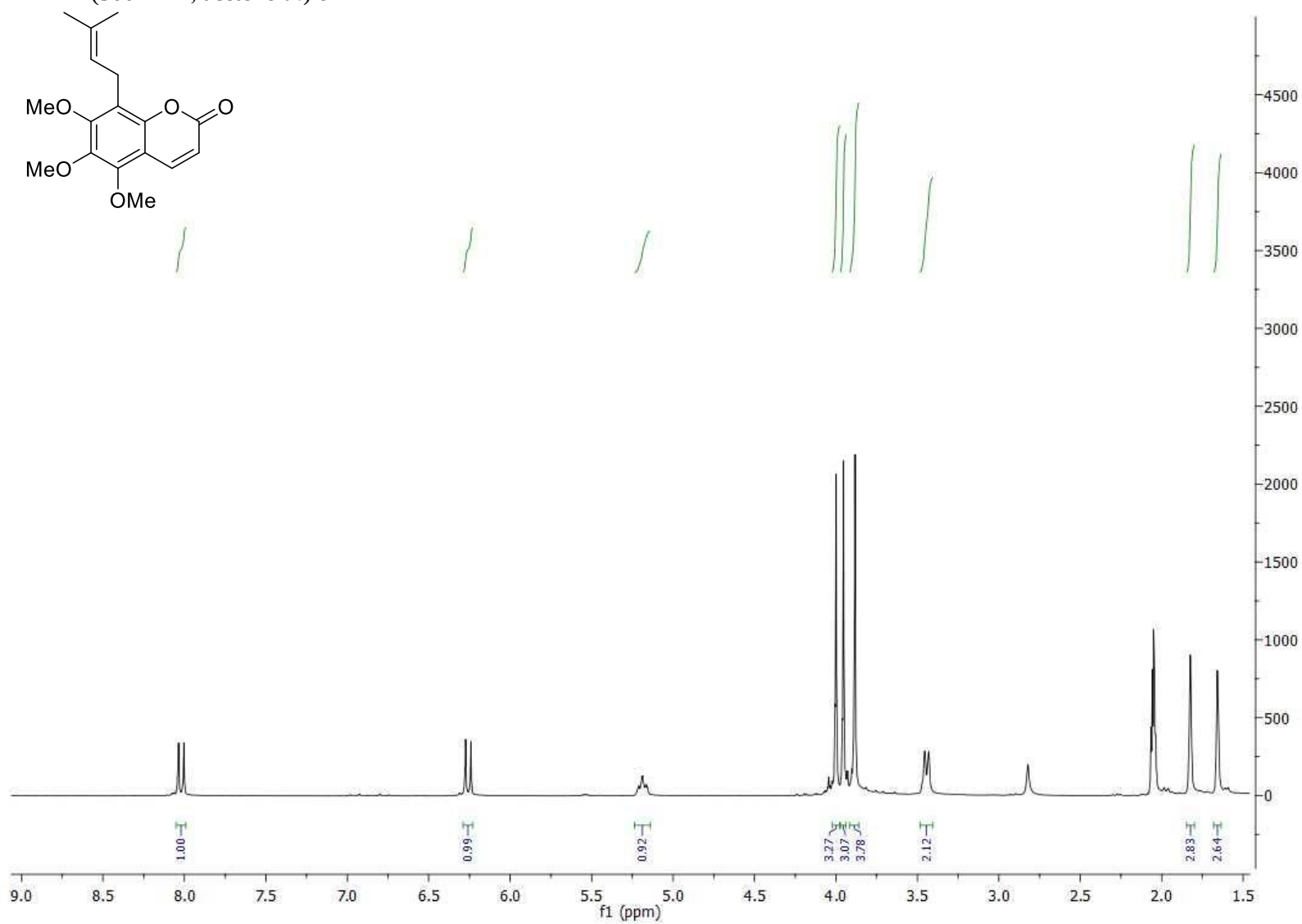
^1H NMR (300 MHz, acetone- d_6) of **8k**



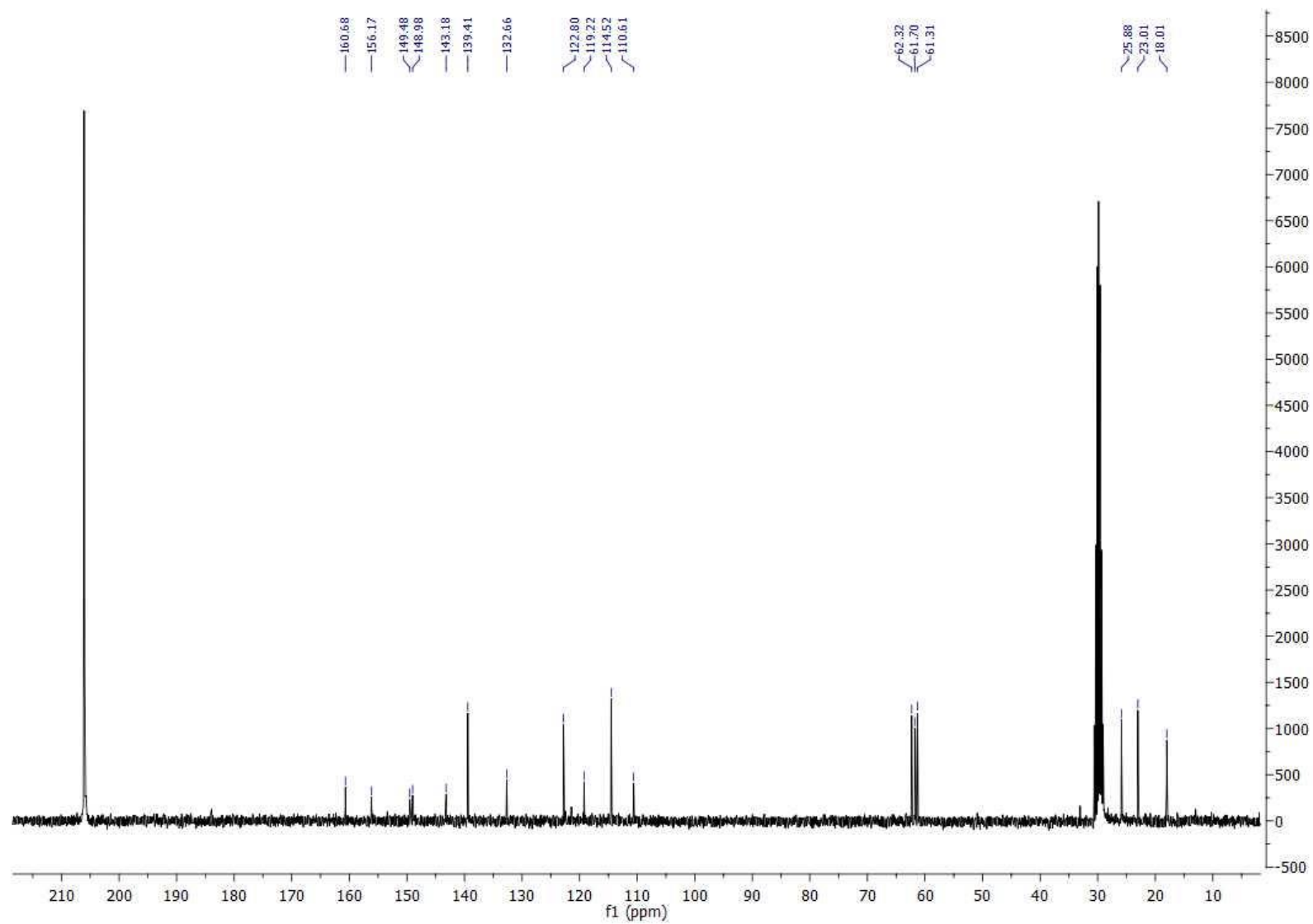
^{13}C NMR (75 MHz, acetone- d_6) of **8k**



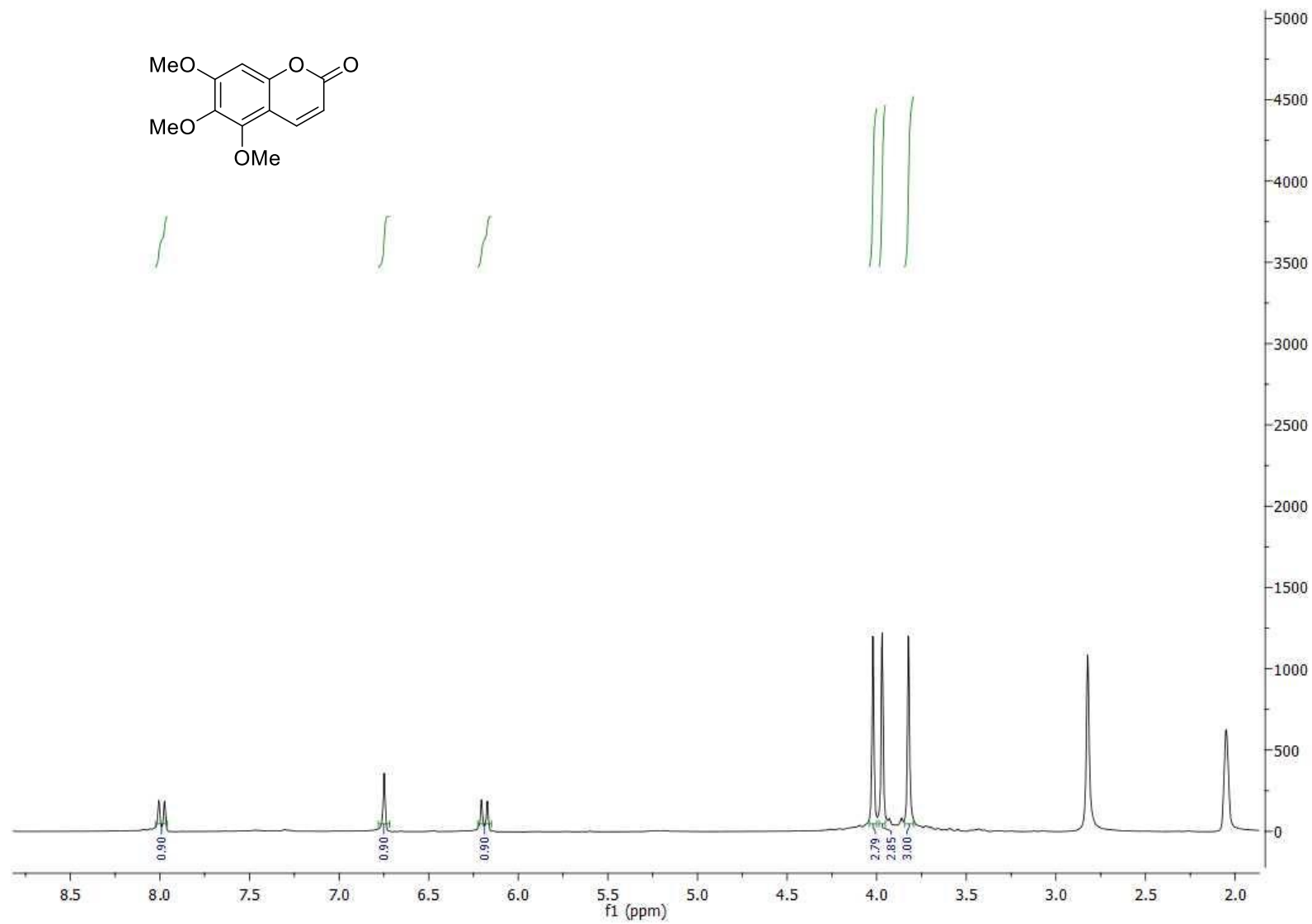
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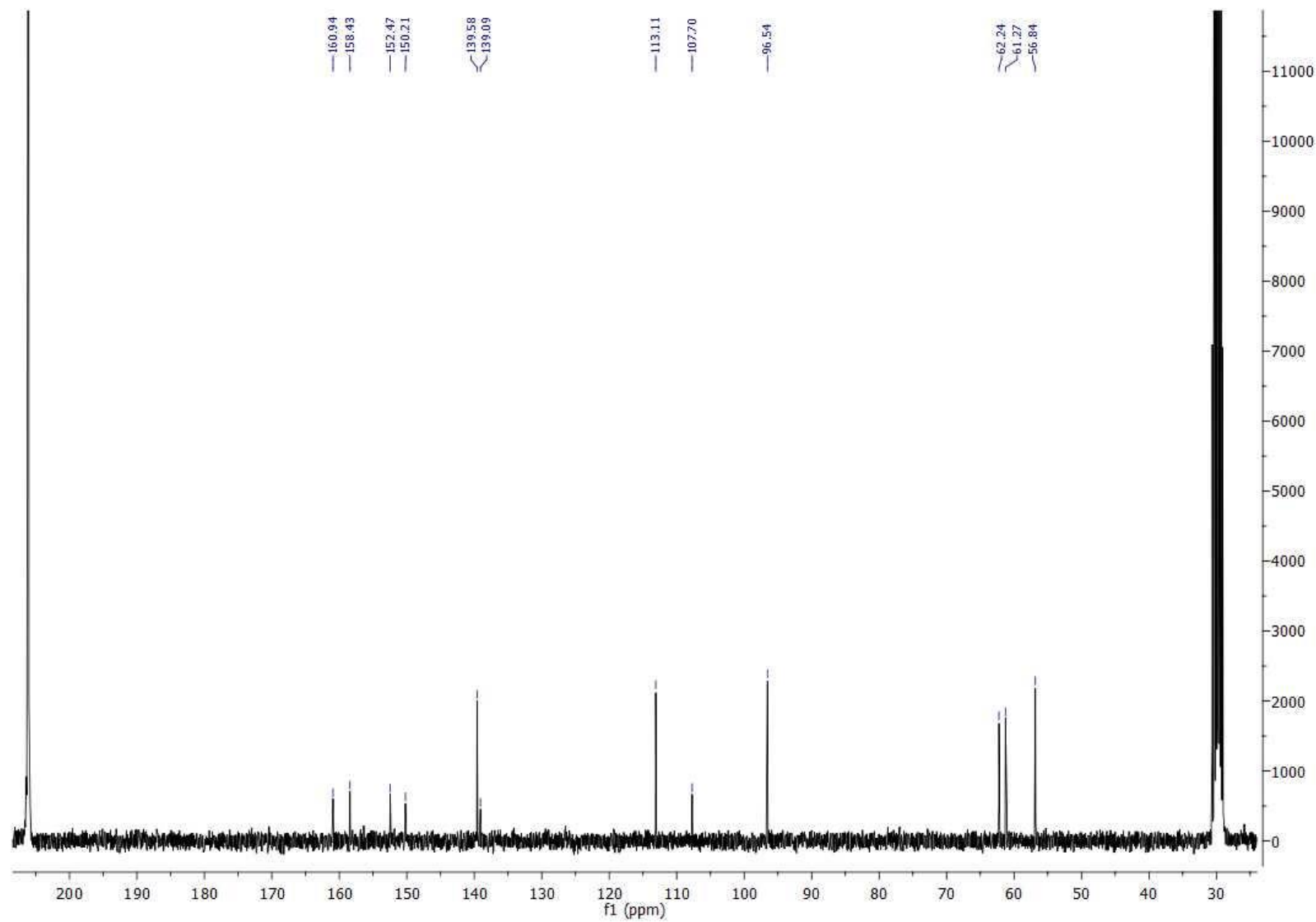
^{13}C NMR (75 MHz, acetone- d_6) of **7I**



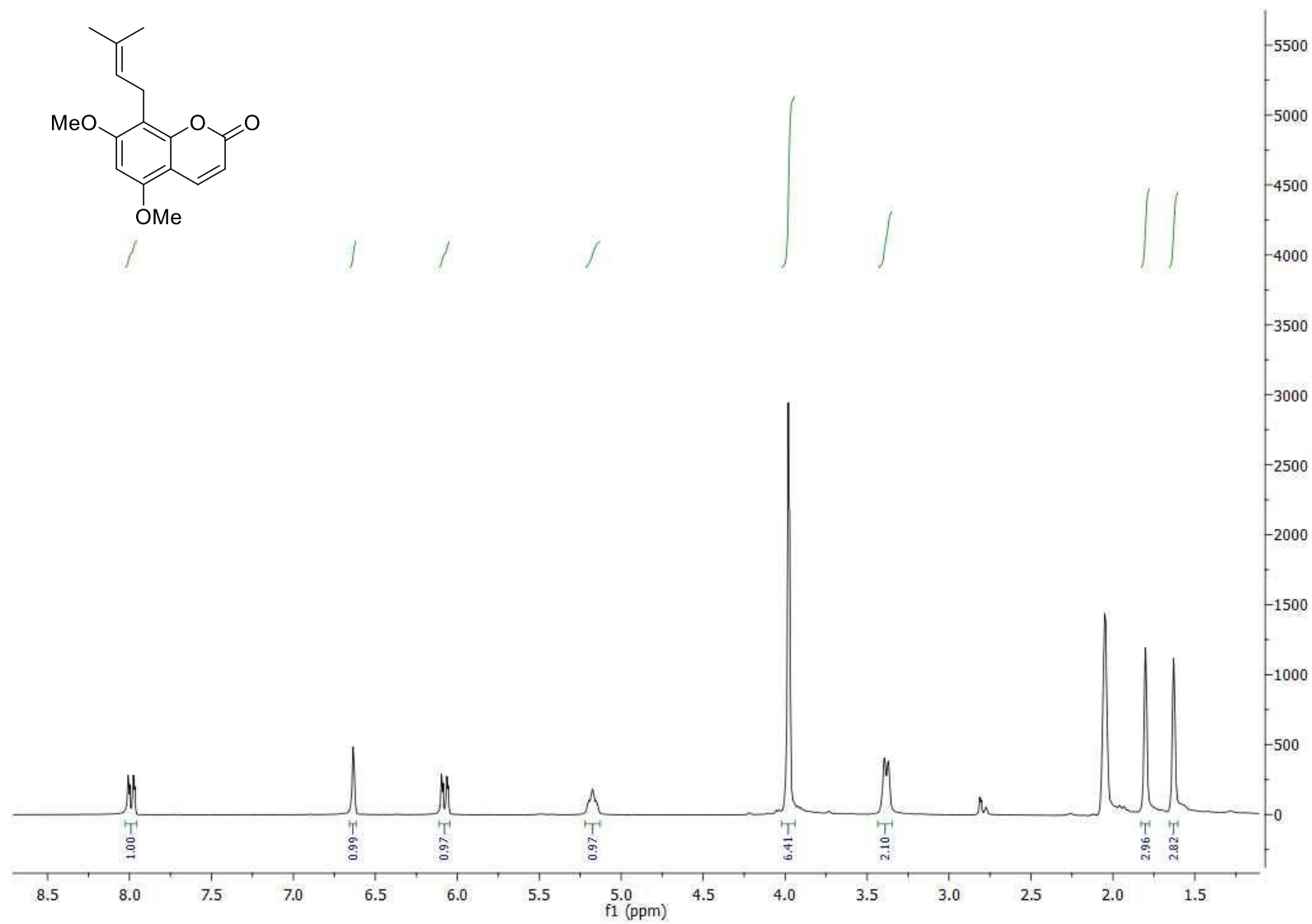
^1H NMR (300 MHz, acetone- d_6) of **81**



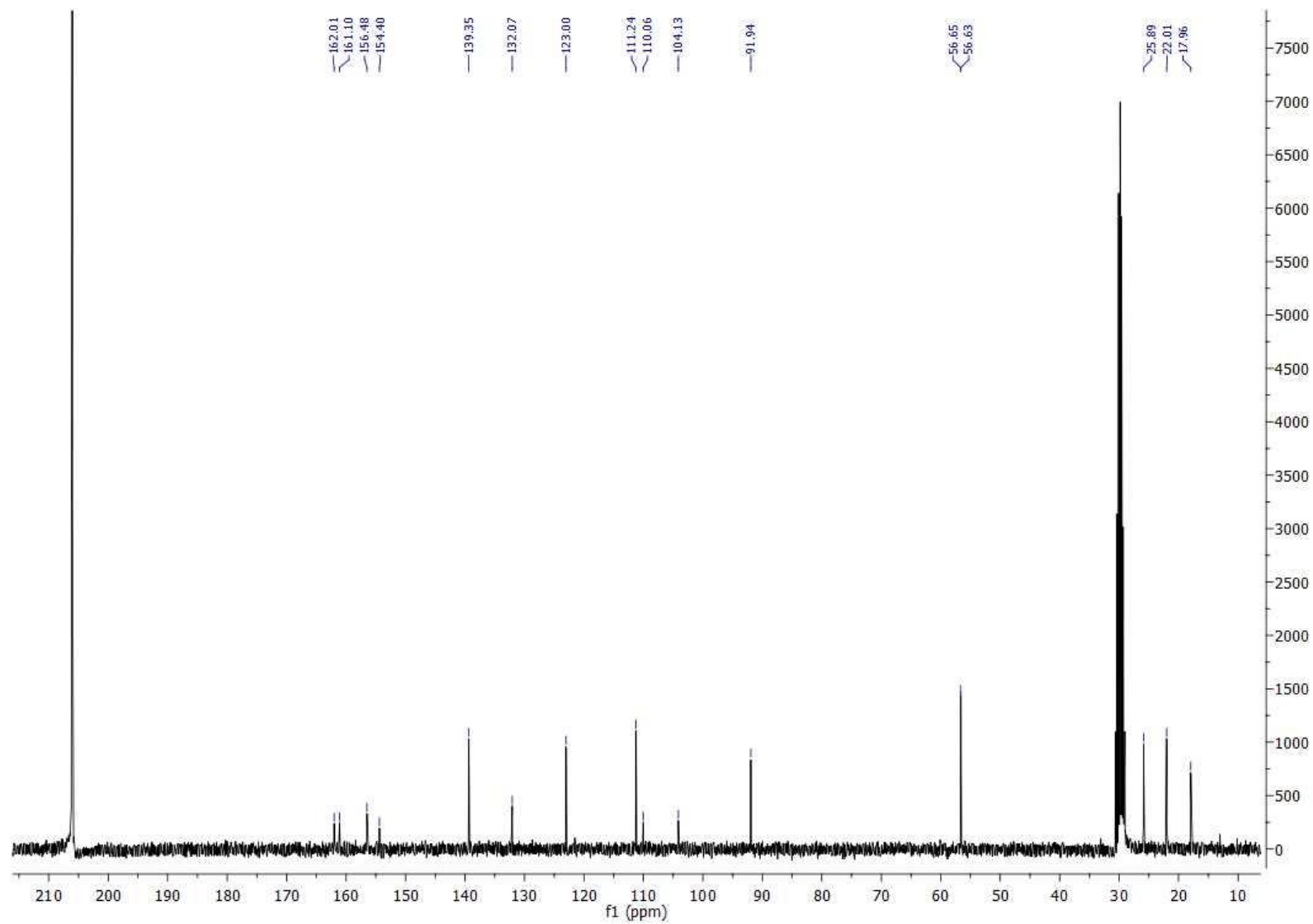
^{13}C NMR (75 MHz, acetone- d_6) of **8l**



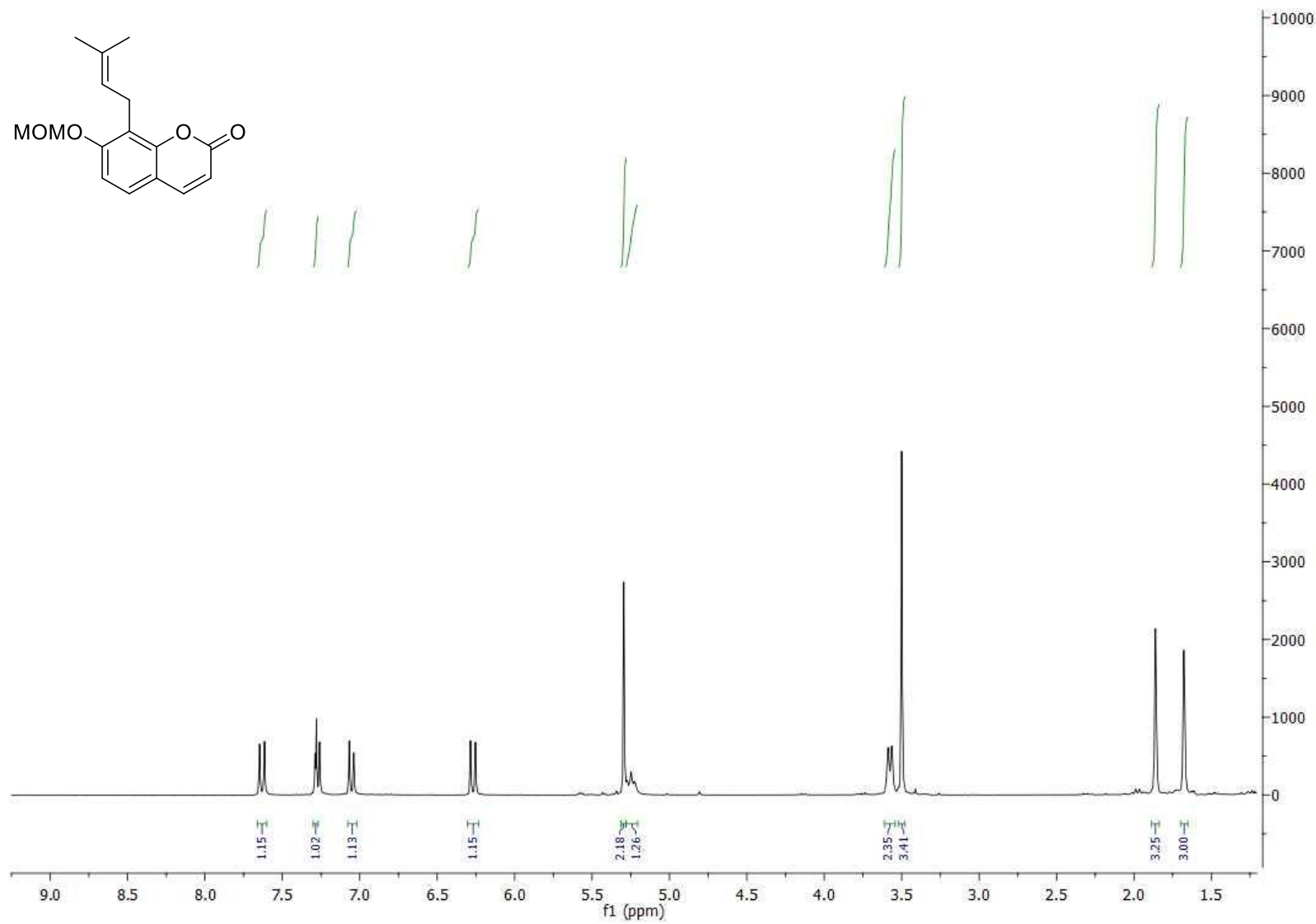
^1H NMR (300 MHz, acetone- d_6) of **7n**



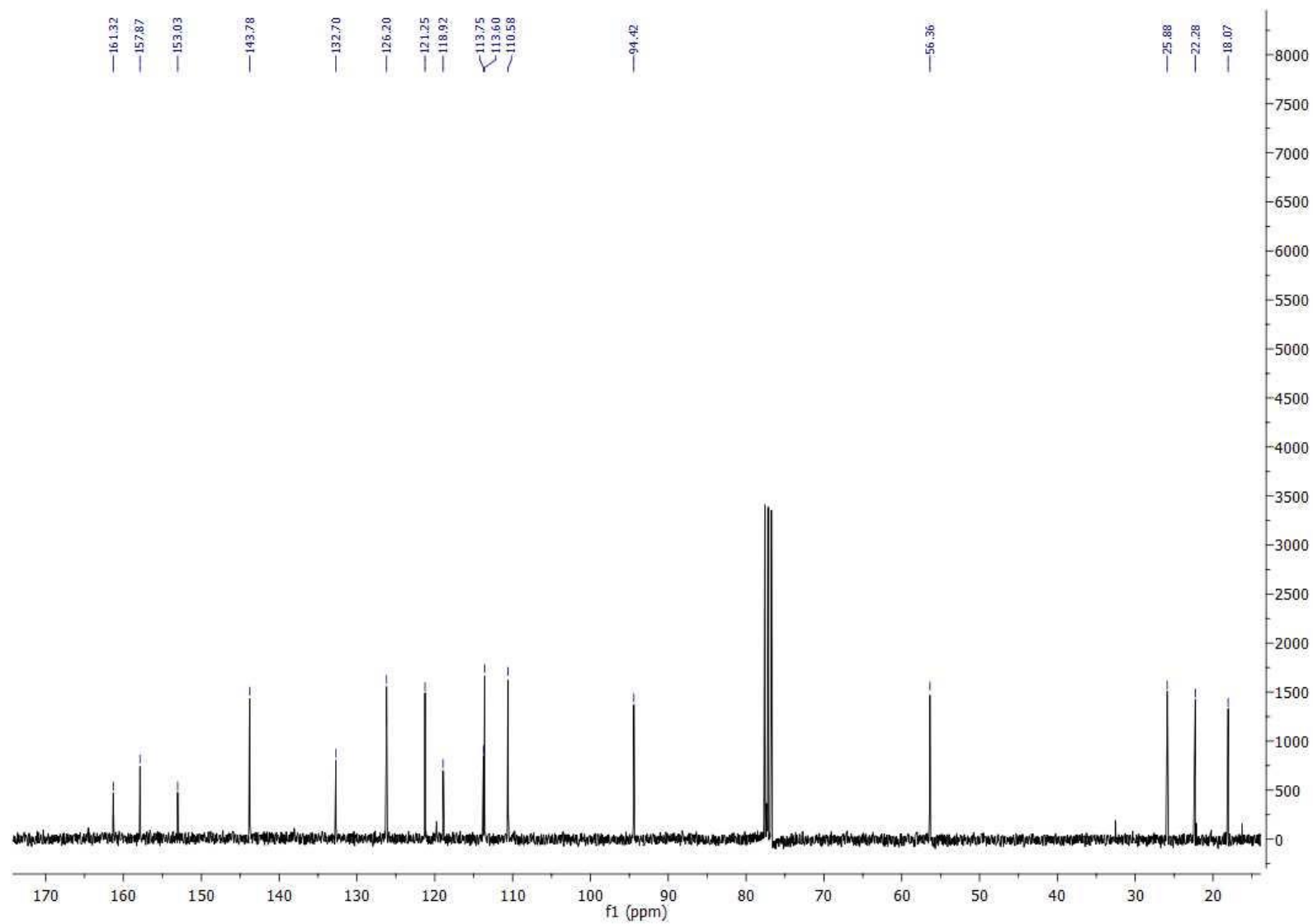
^{13}C NMR (75 MHz, acetone- d_6) of **7n**



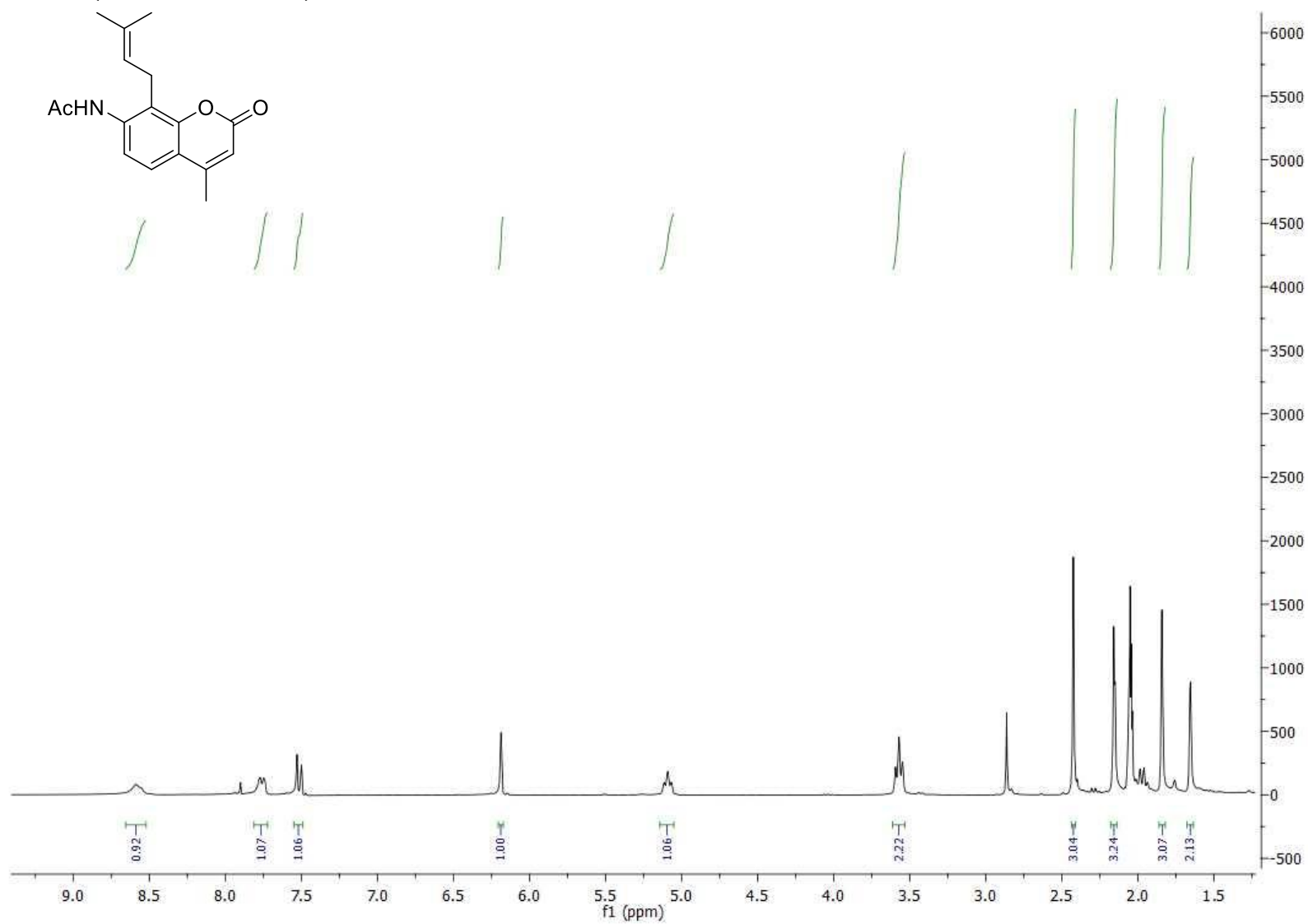
^1H NMR (300 MHz, CDCl_3) of **7o**



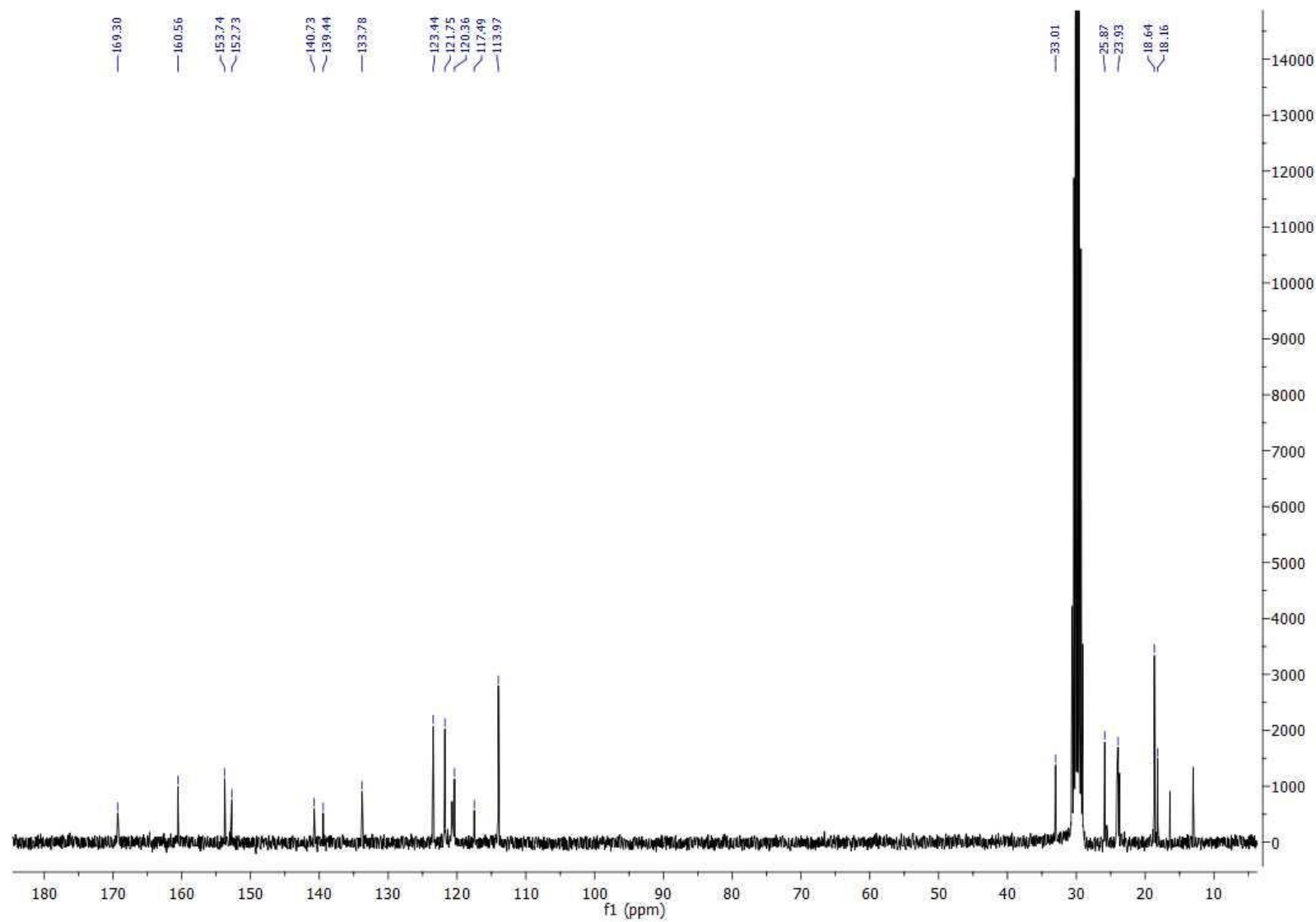
^{13}C NMR (75 MHz, CDCl_3) of **7o**



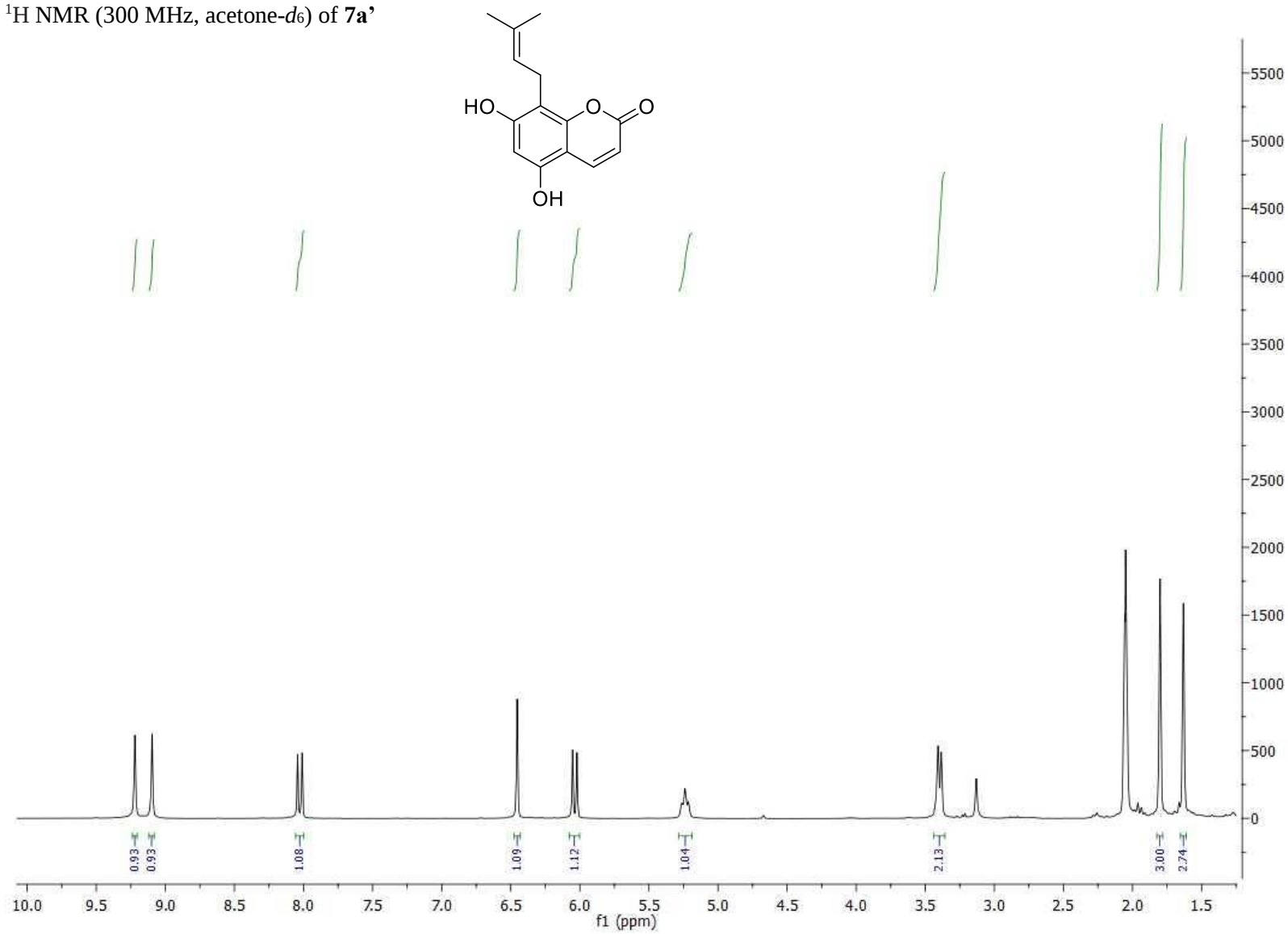
^1H NMR (300 MHz, acetone- d_6) of **7r**



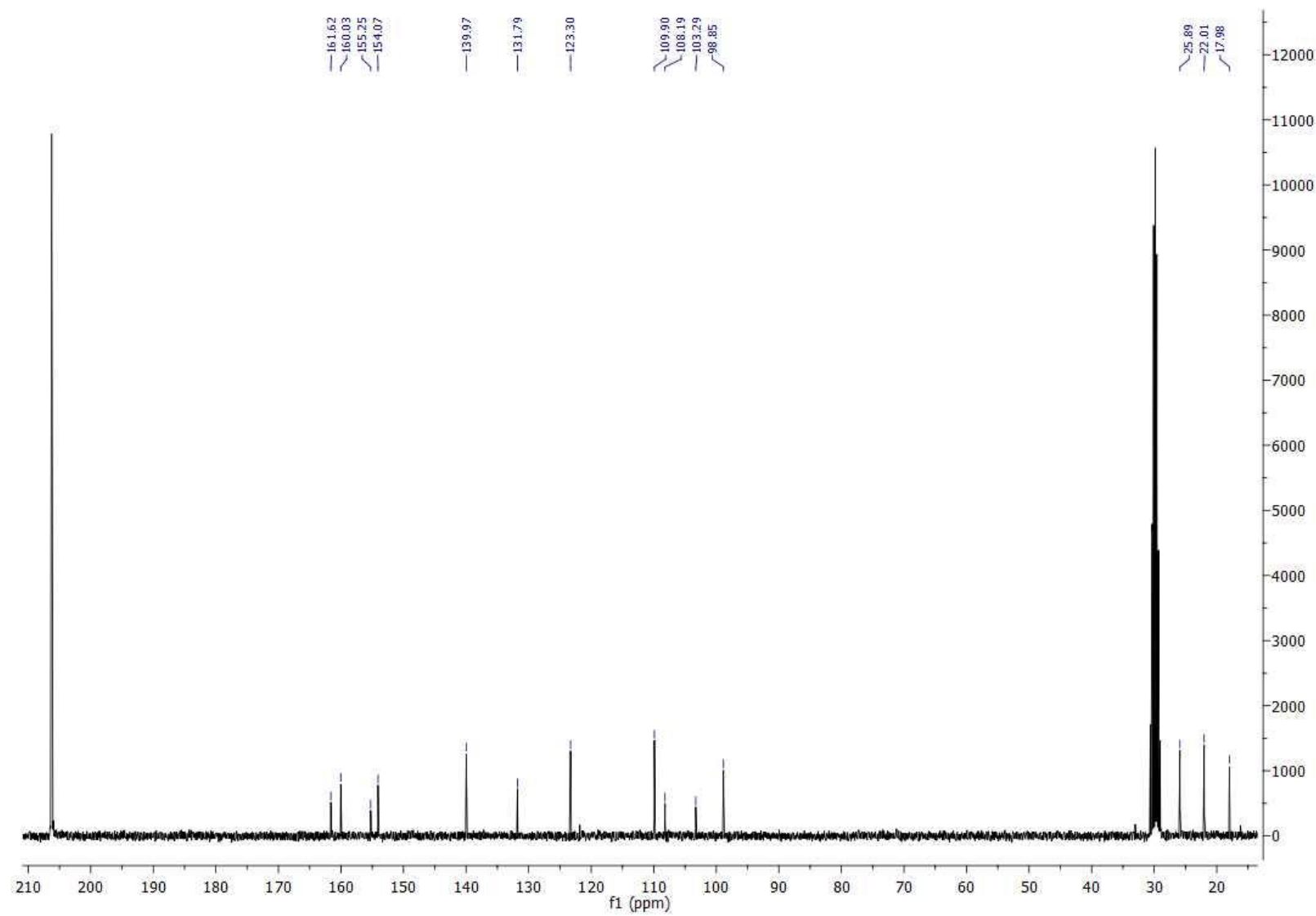
^{13}C NMR (75 MHz, acetone- d_6) of **7r**



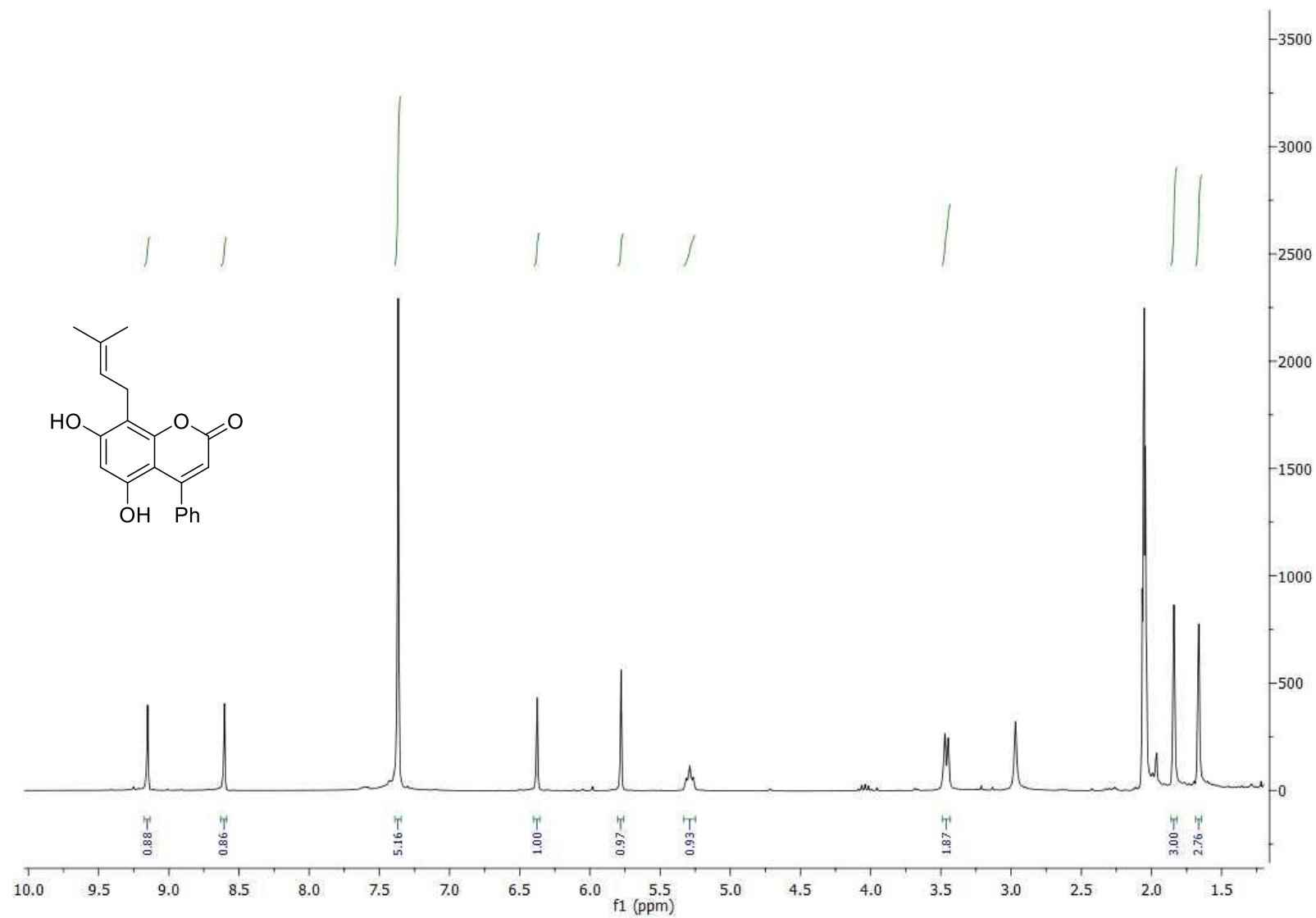
^1H NMR (300 MHz, acetone- d_6) of **7a'**



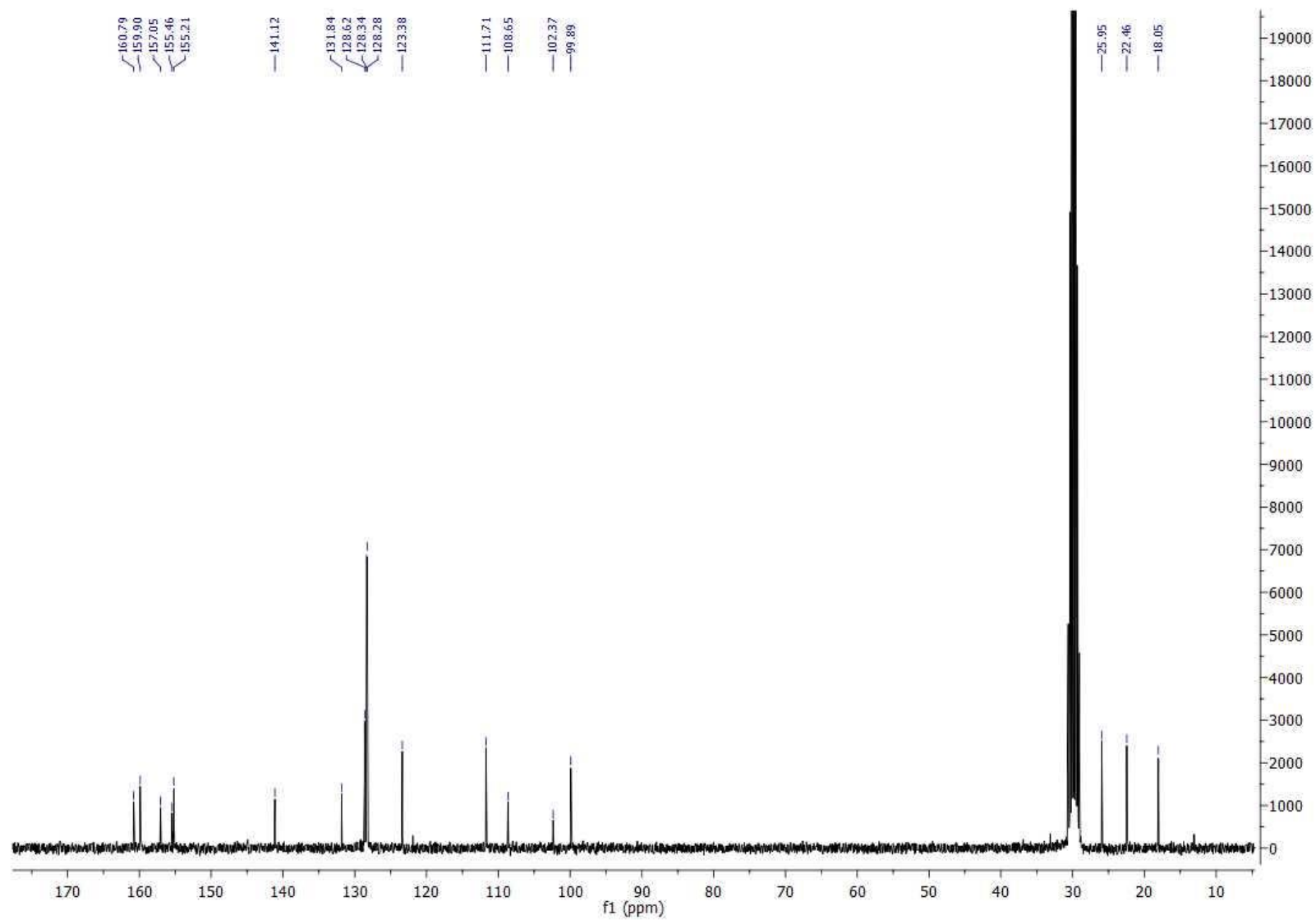
^{13}C NMR (75 MHz, acetone- d_6) of **7a'**



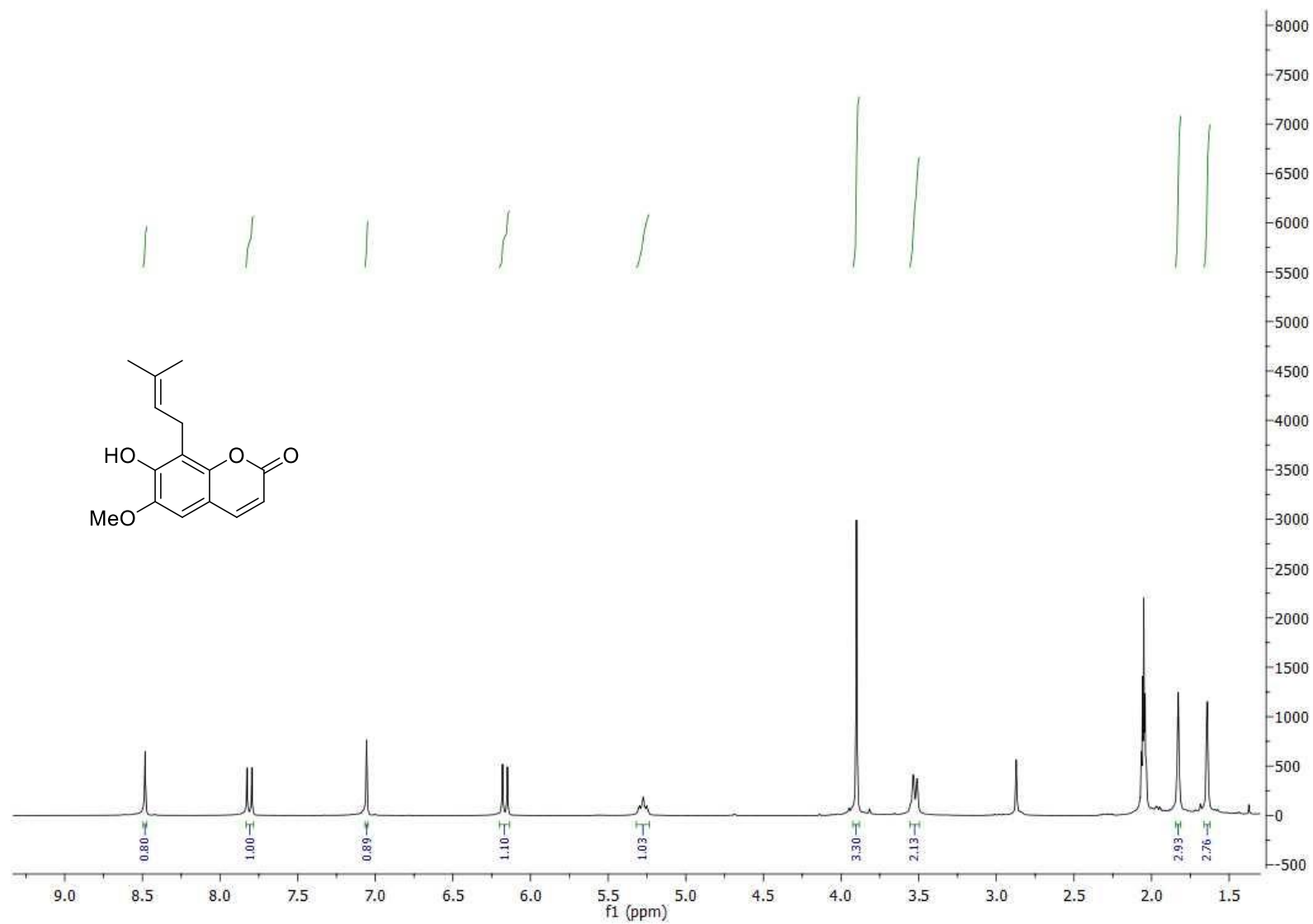
^1H NMR (300 MHz, acetone- d_6) of **7b'**



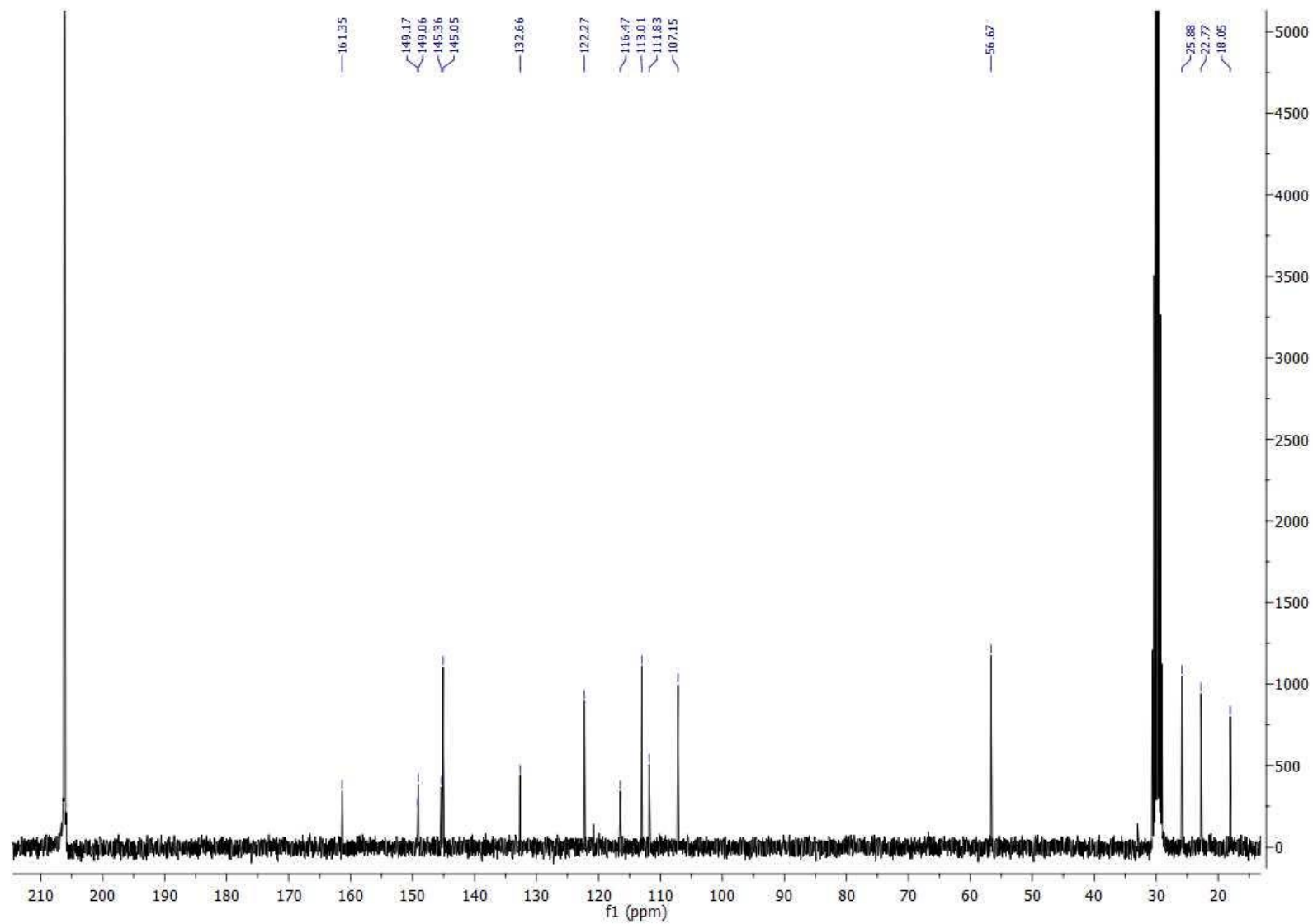
^{13}C NMR (75 MHz, acetone- d_6) of **7b'**



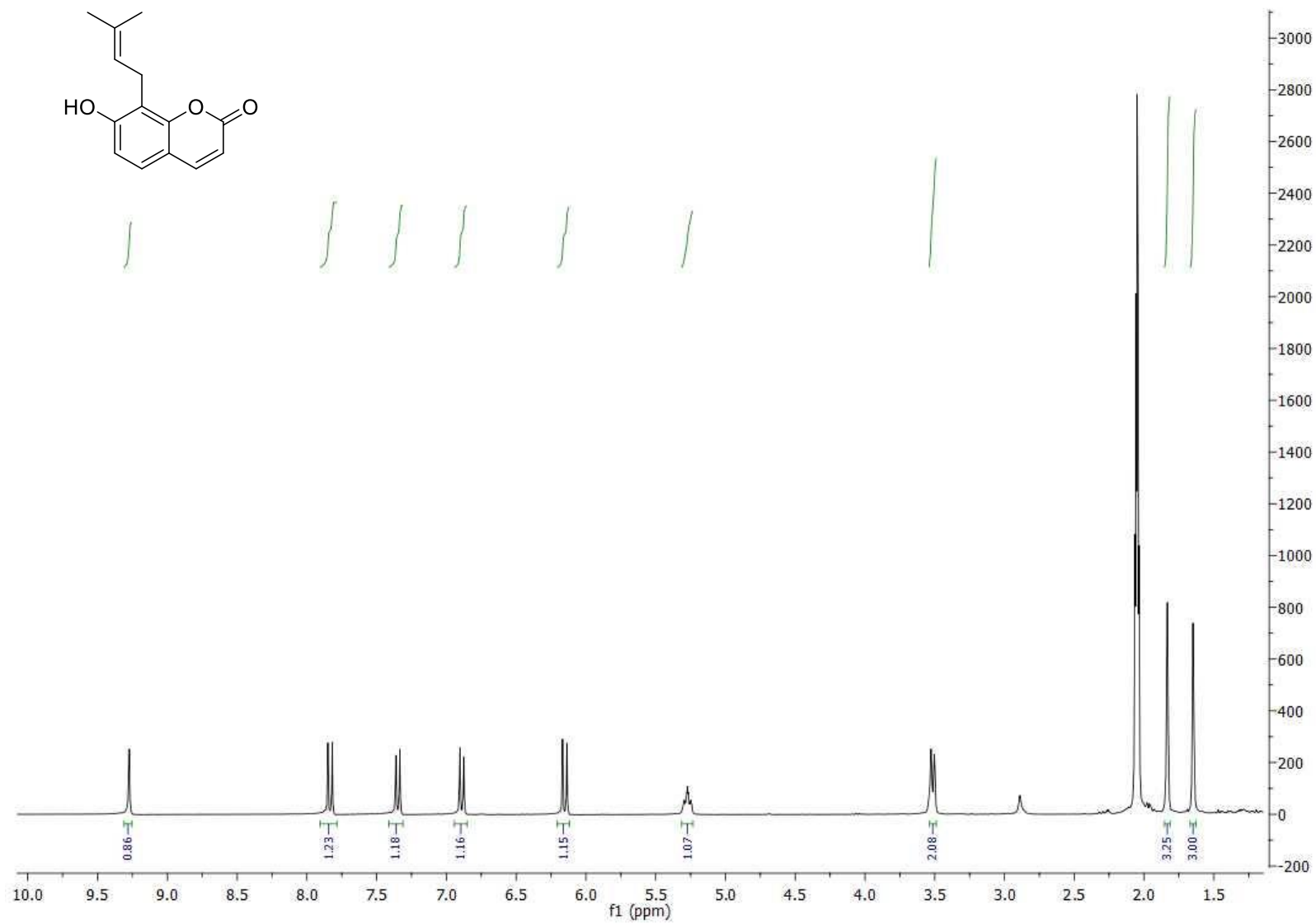
^1H NMR (300 MHz, acetone- d_6) of **7k'**



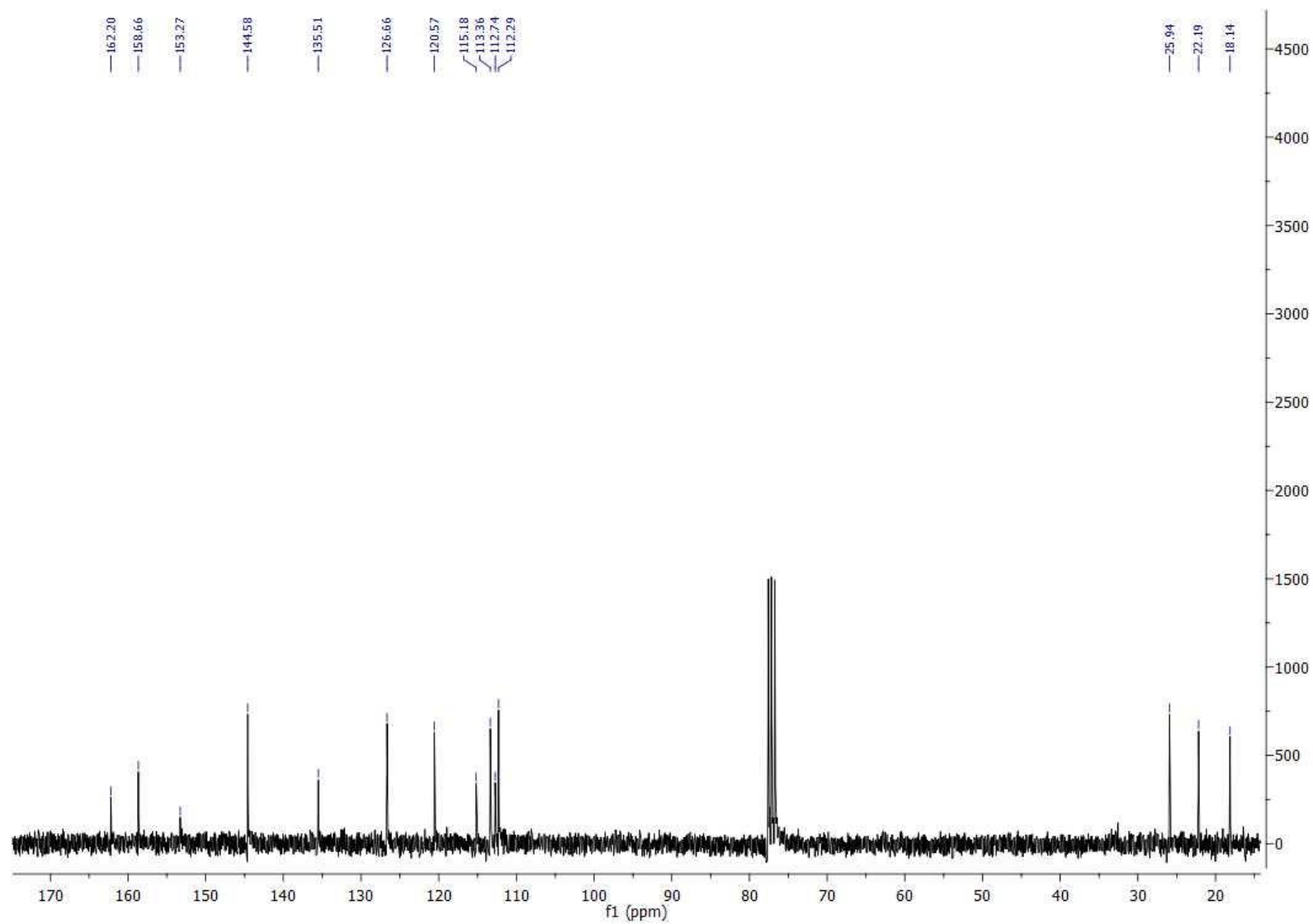
^{13}C NMR (75 MHz, acetone- d_6) of **7k'**



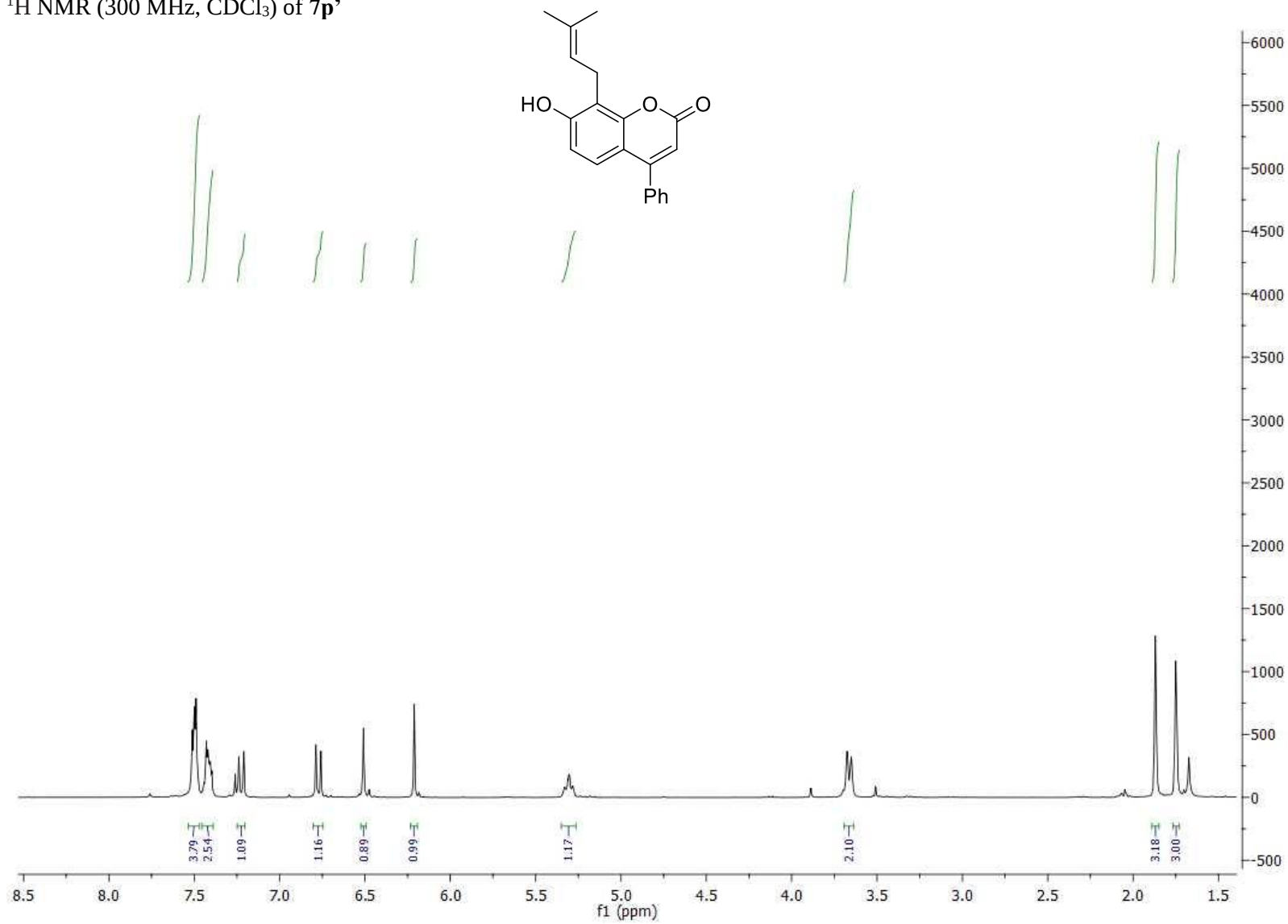
^1H NMR (300 MHz, acetone- d_6) of **7o'**



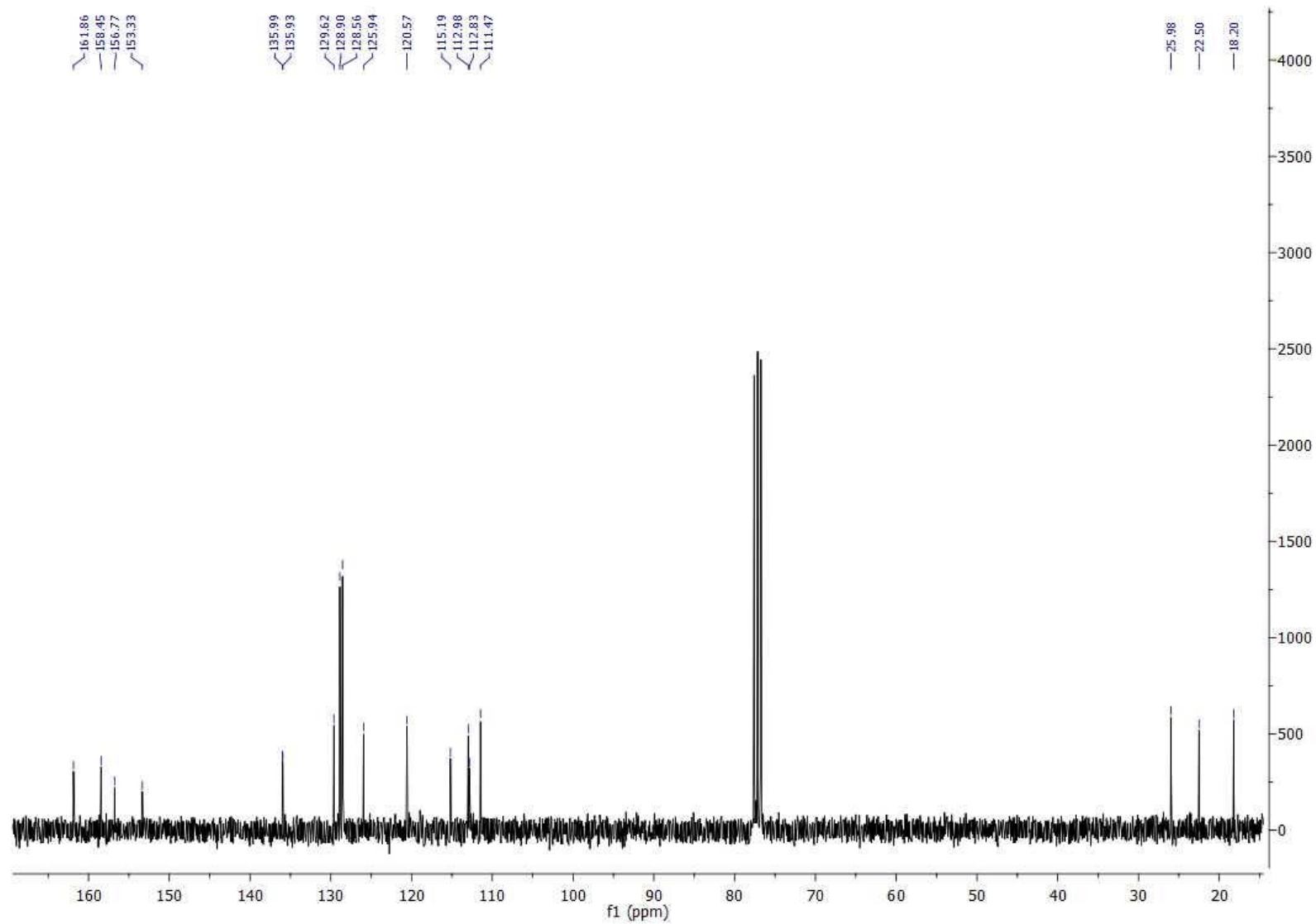
^{13}C NMR (75 MHz, acetone- d_6) of **7o'**



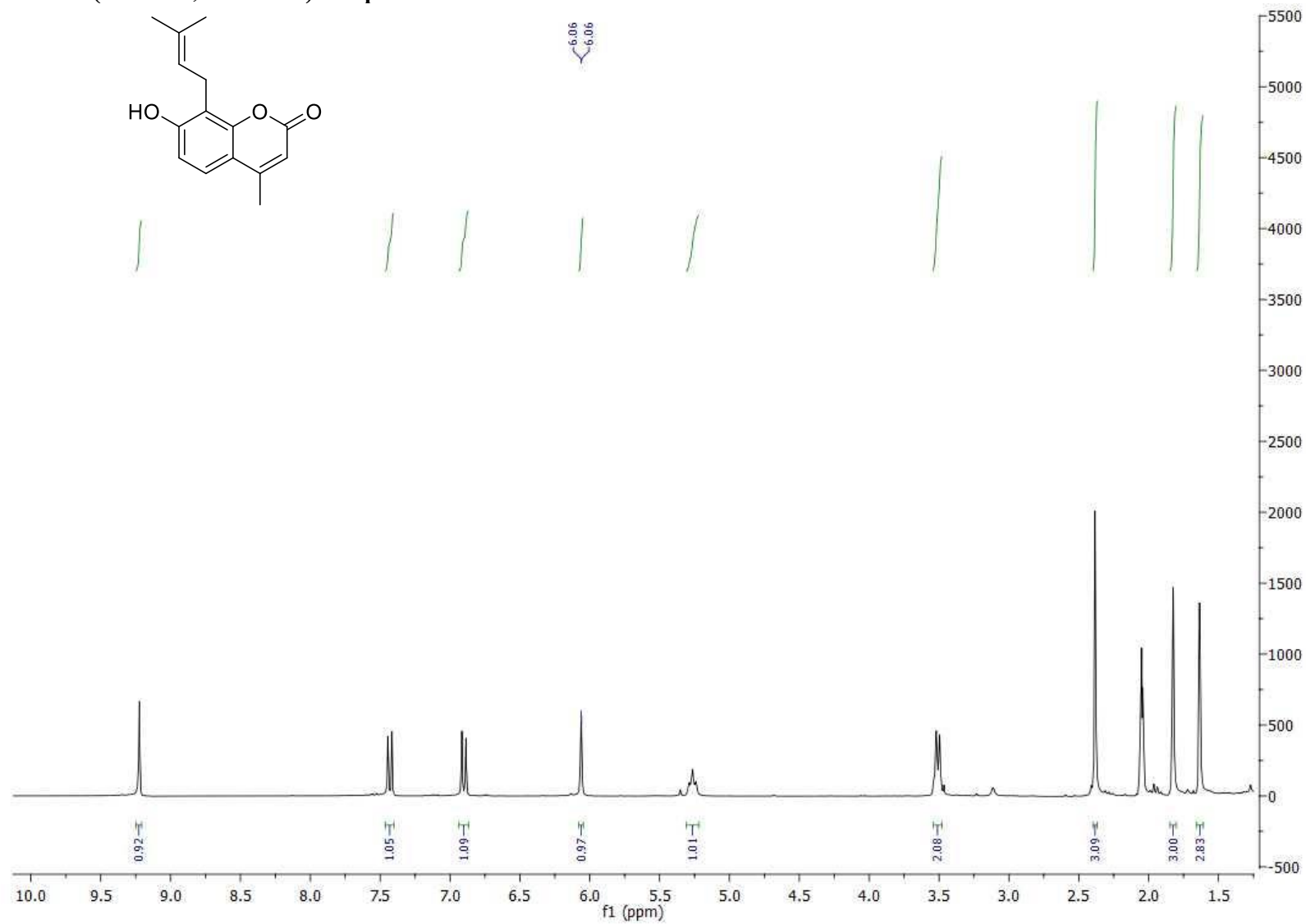
^1H NMR (300 MHz, CDCl_3) of **7p'**



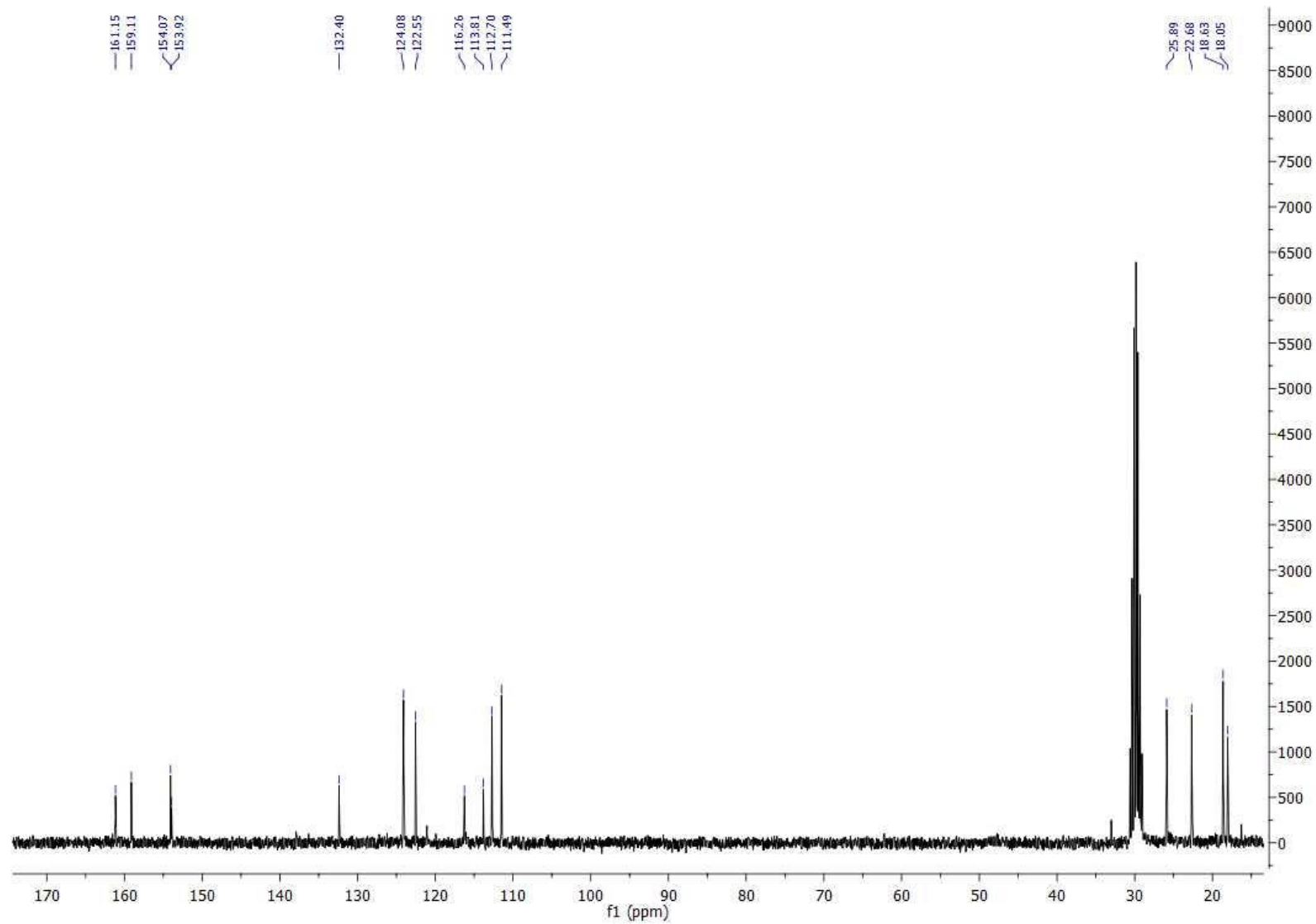
^{13}C NMR (75 MHz, CDCl_3) of **7p'**



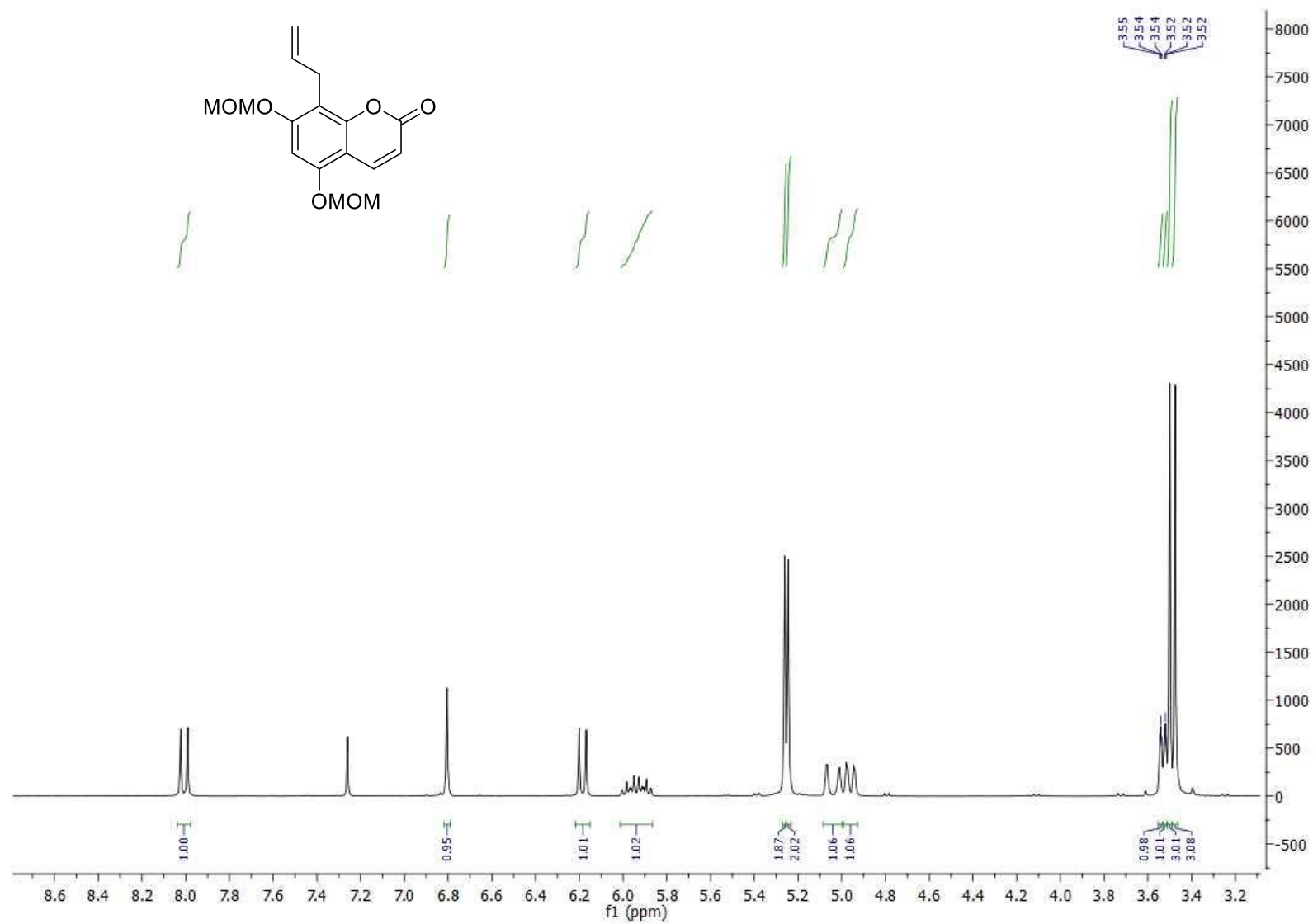
^1H NMR (300 MHz, acetone- d_6) of **7q'**



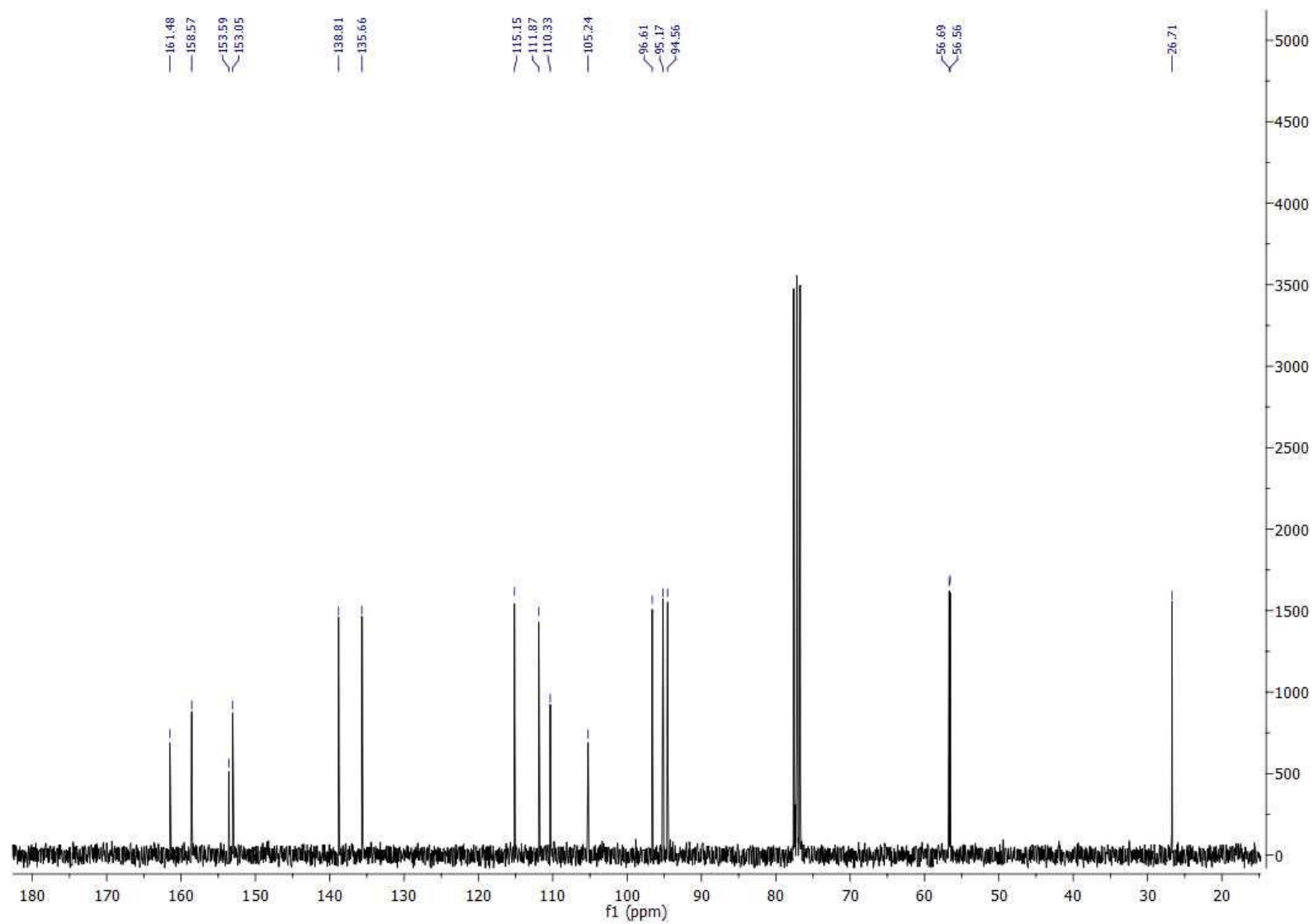
^{13}C NMR (75 MHz, acetone- d_6) of **7q'**



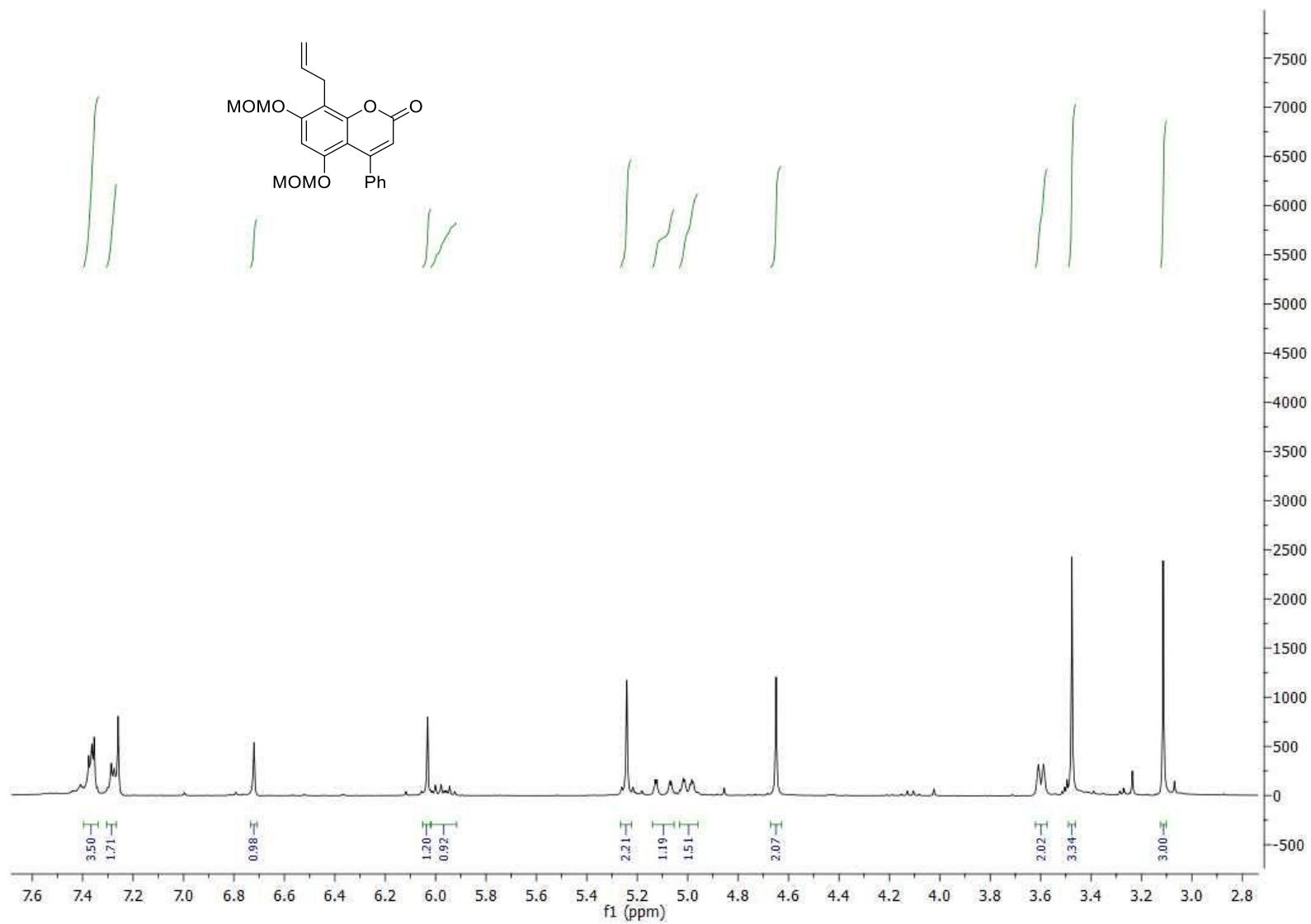
^1H NMR (300 MHz, CDCl_3) of **12a**



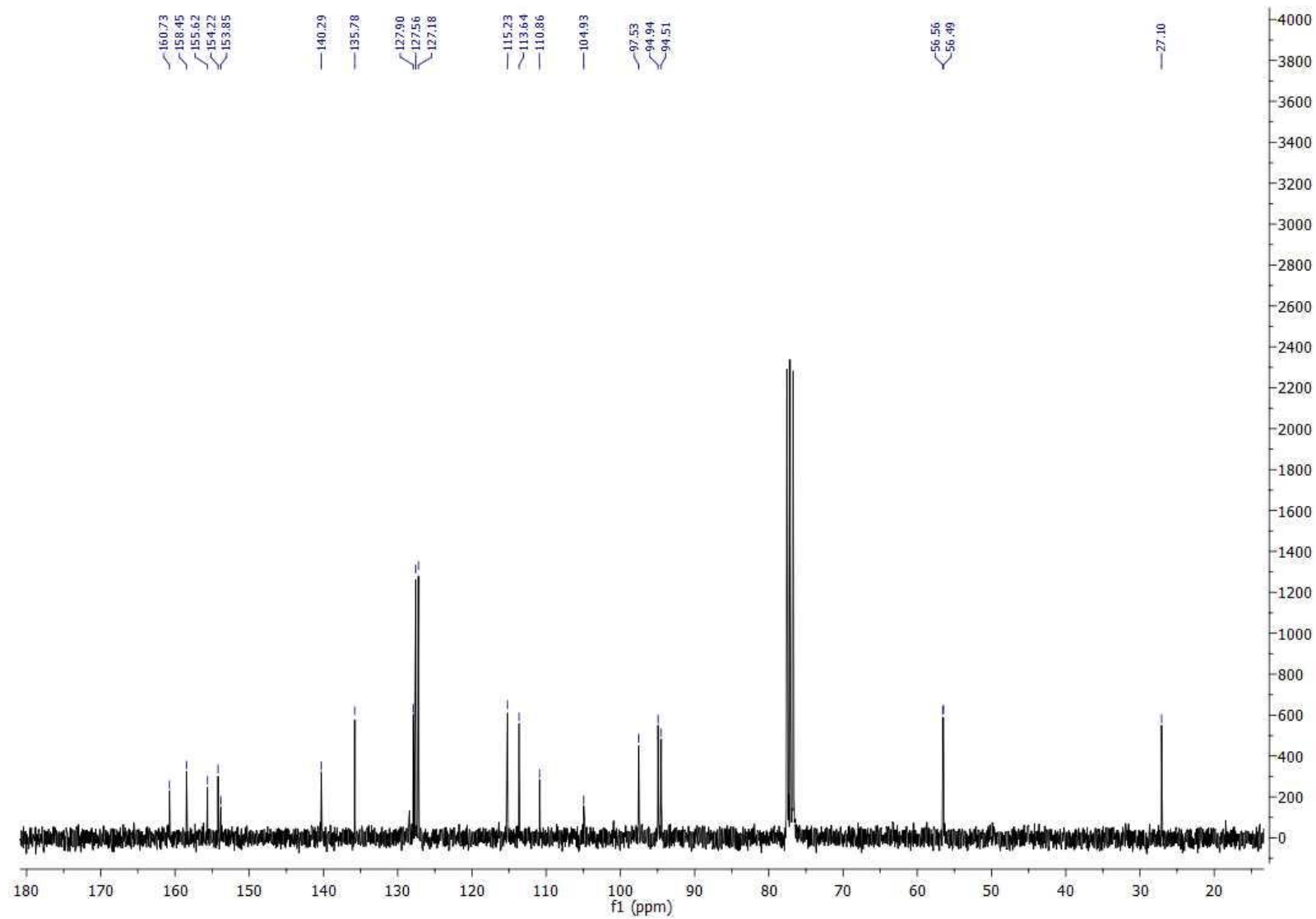
^{13}C NMR (75 MHz, CDCl_3) of **12a**



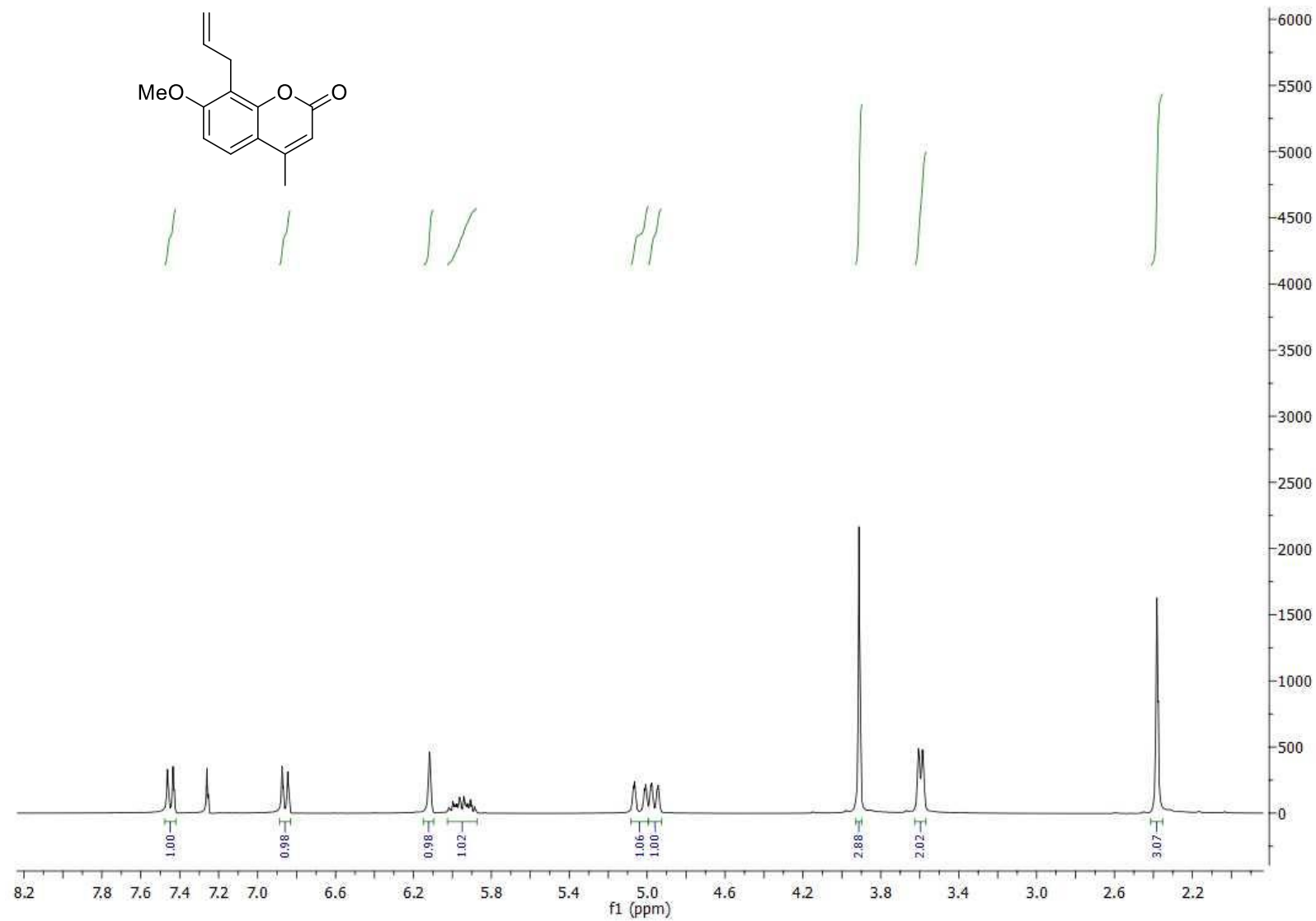
^1H NMR (300 MHz, CDCl_3) of **12b**



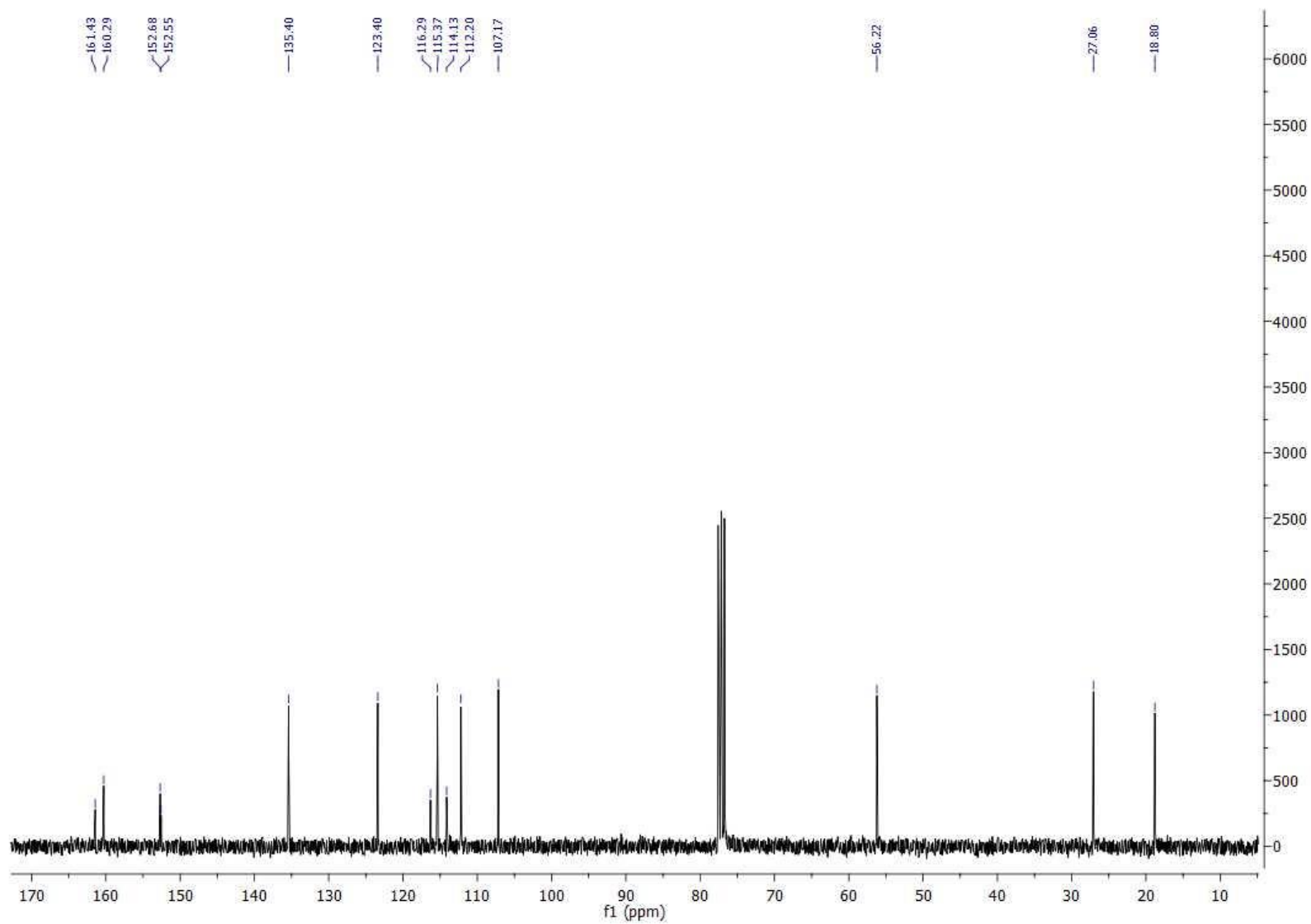
^{13}C NMR (75 MHz, CDCl_3) of **12b**



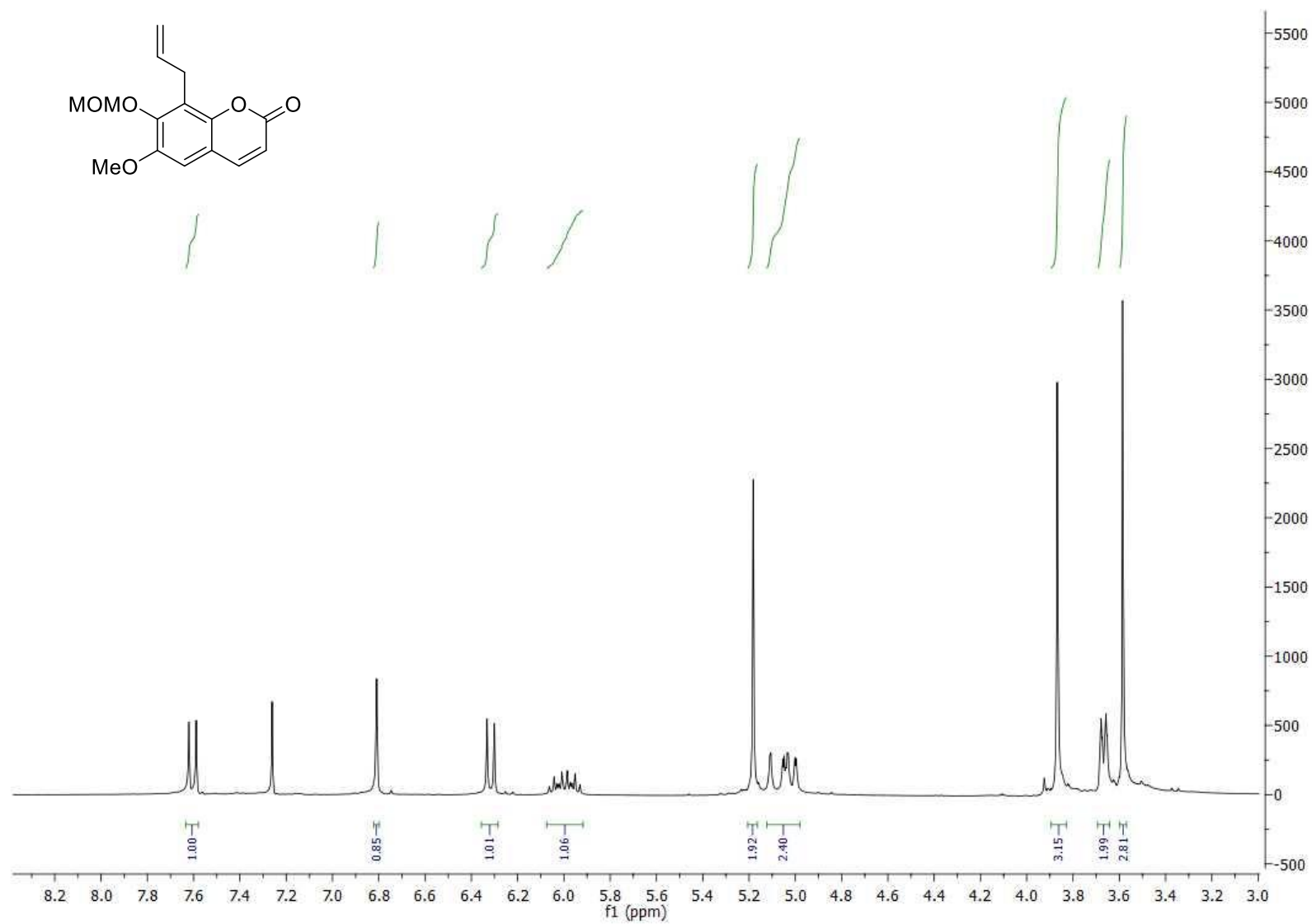
^1H NMR (300 MHz, CDCl_3) of **12h**



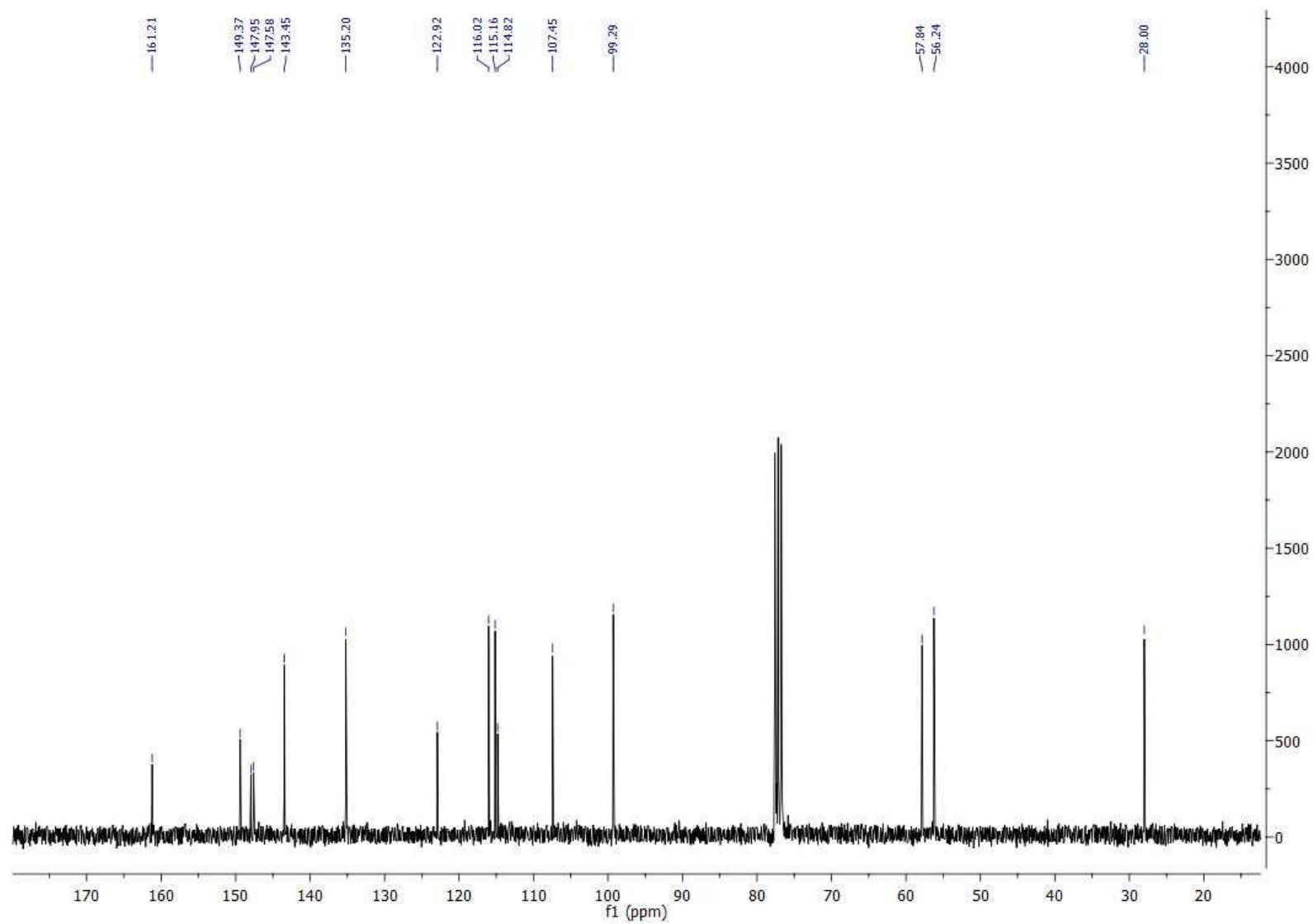
^{13}C NMR (75 MHz, CDCl_3) of **12h**



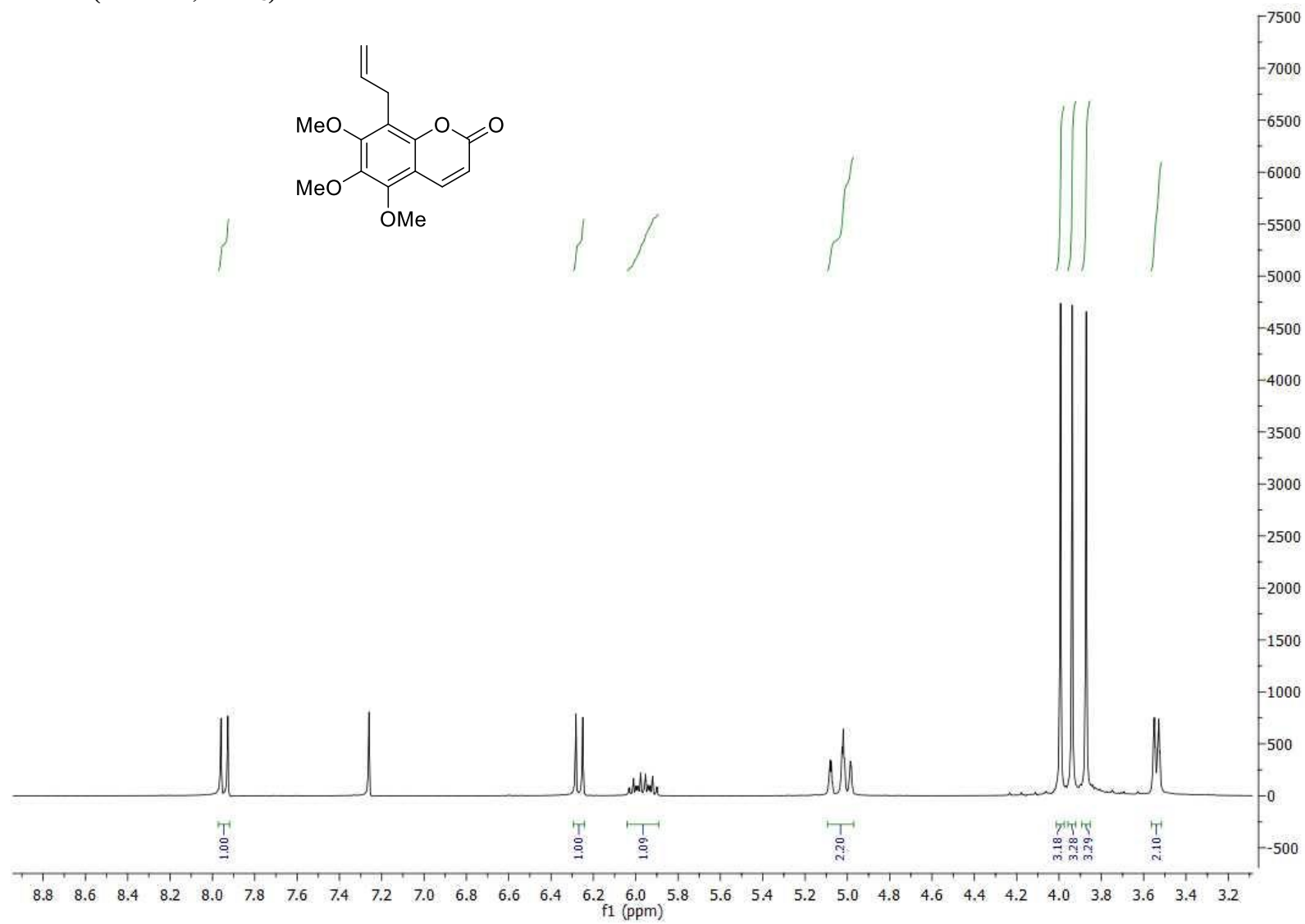
^1H NMR (300 MHz, CDCl_3) of **12k**



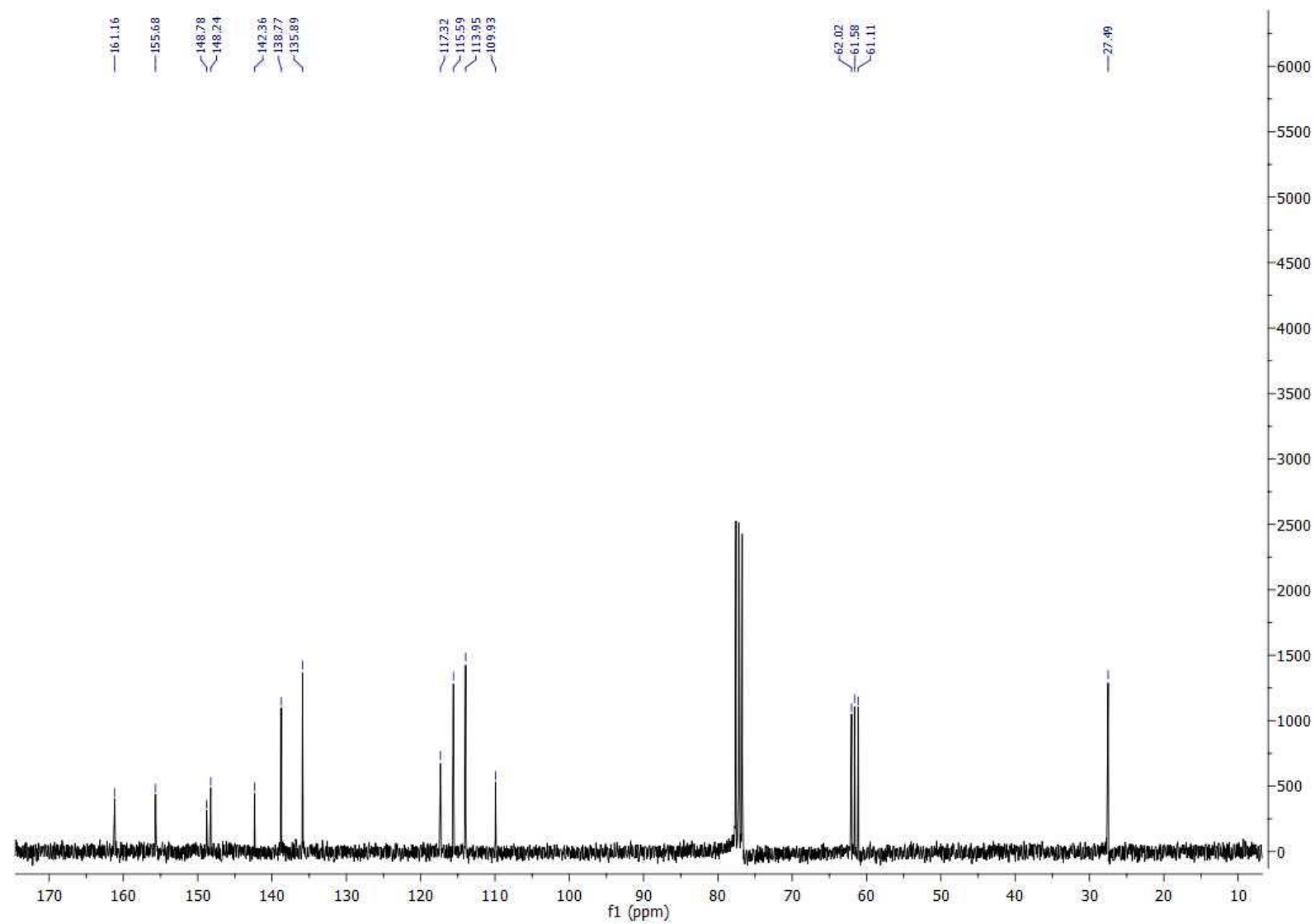
^{13}C NMR (75 MHz, CDCl_3) of **12k**



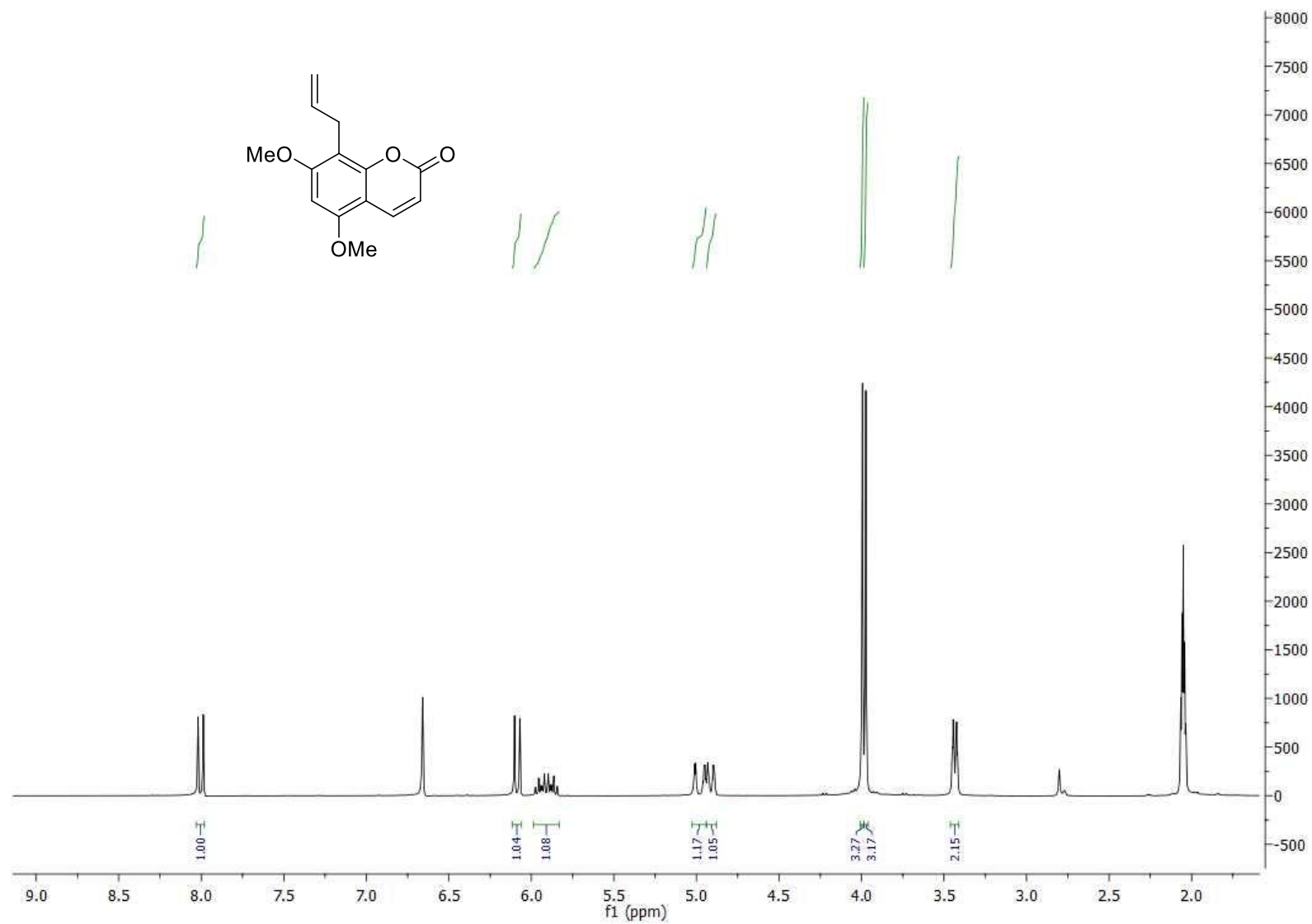
^1H NMR (300 MHz, CDCl_3) of **121**



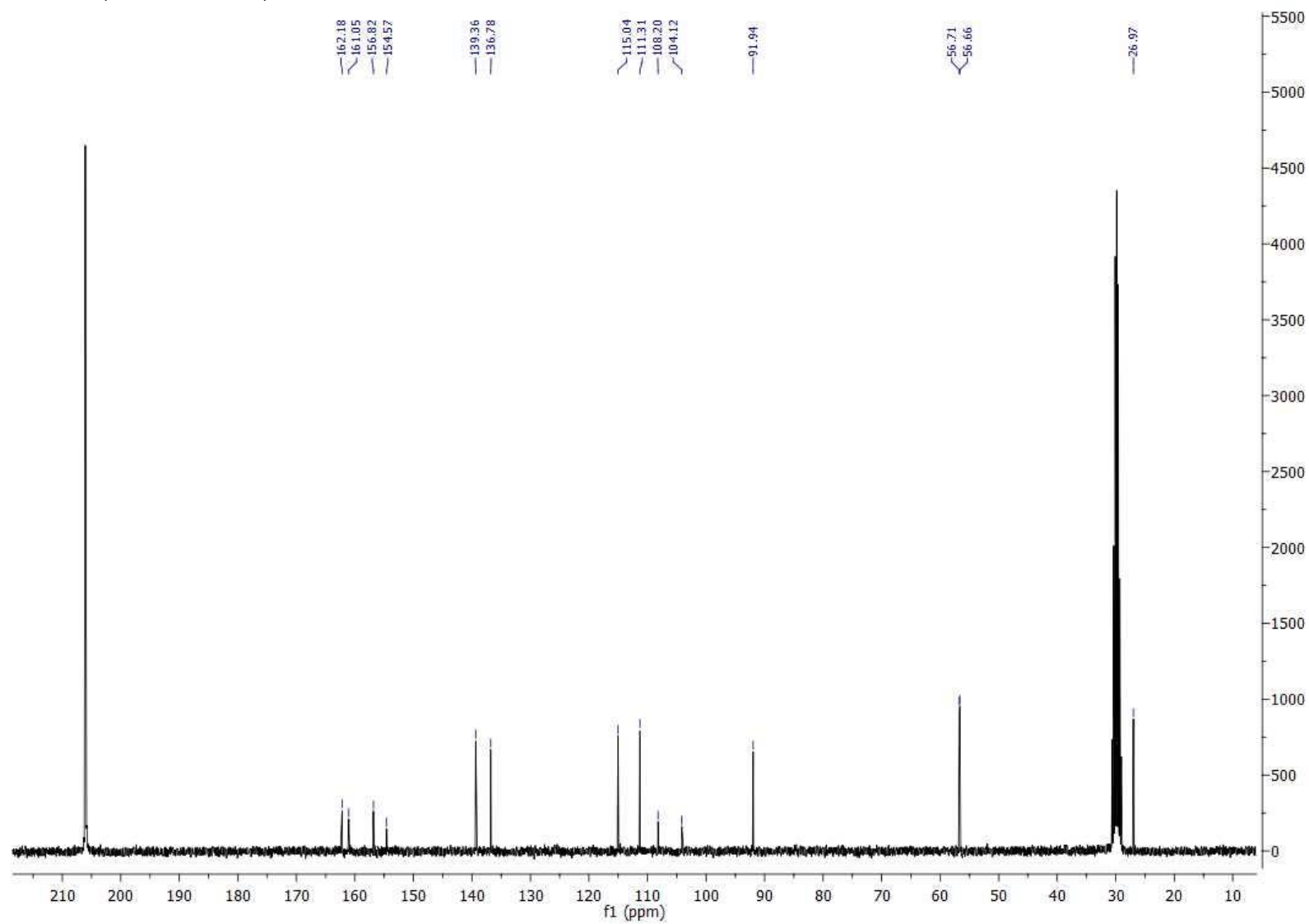
^{13}C NMR (75 MHz, CDCl_3) of **12I**



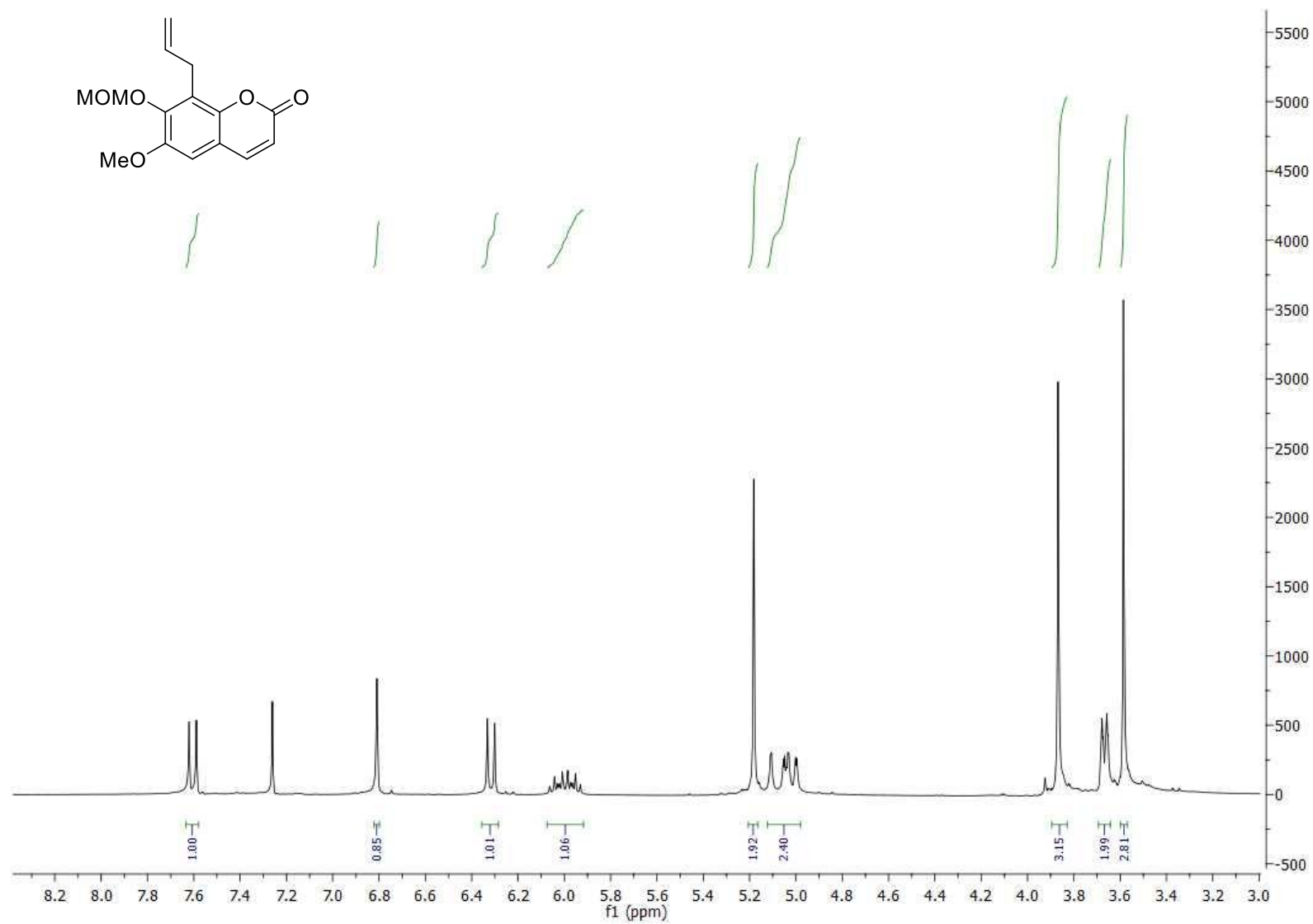
^1H NMR (300 MHz, CDCl_3) of **12n**



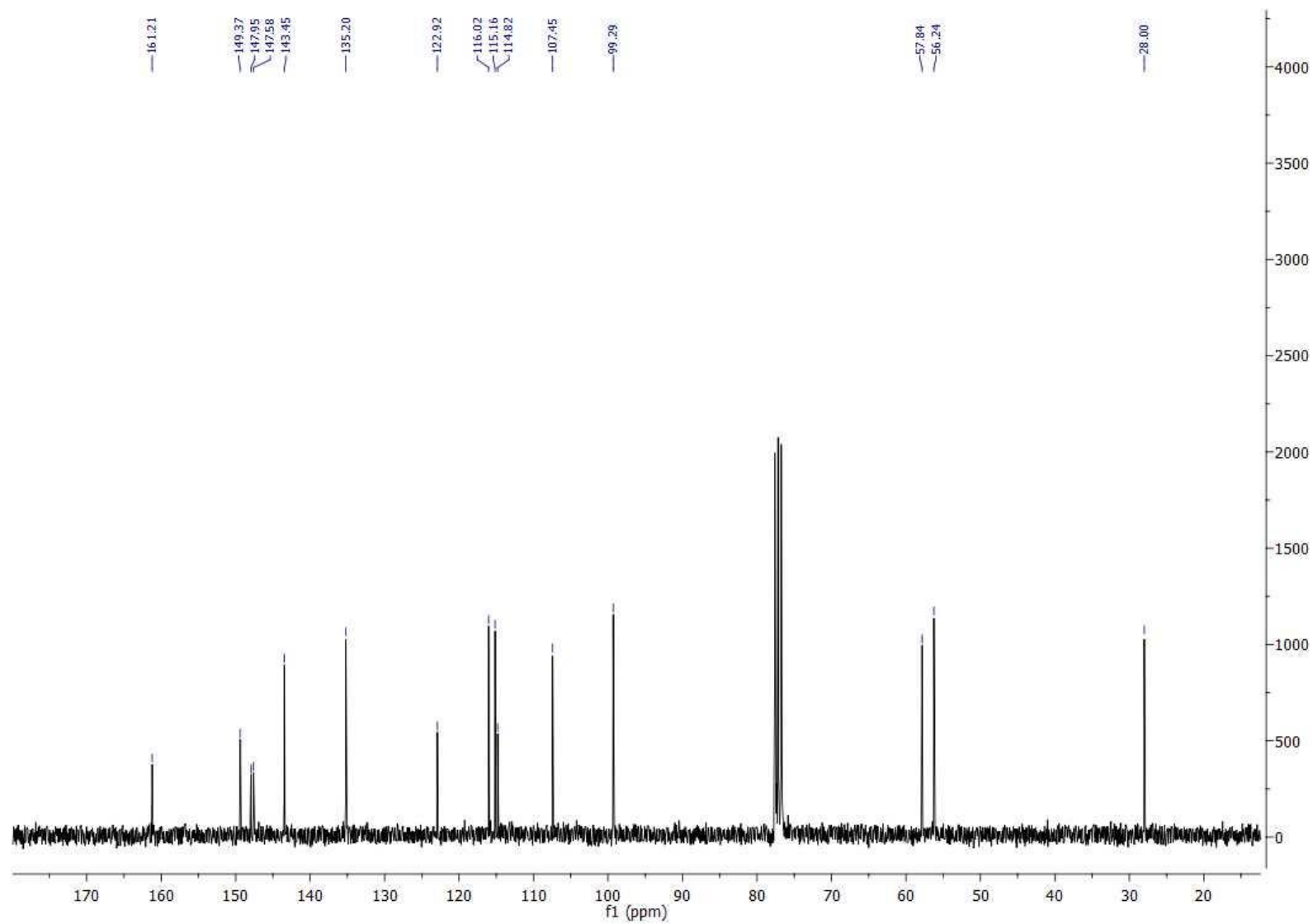
^{13}C NMR (75 MHz, CDCl_3) of **12n**



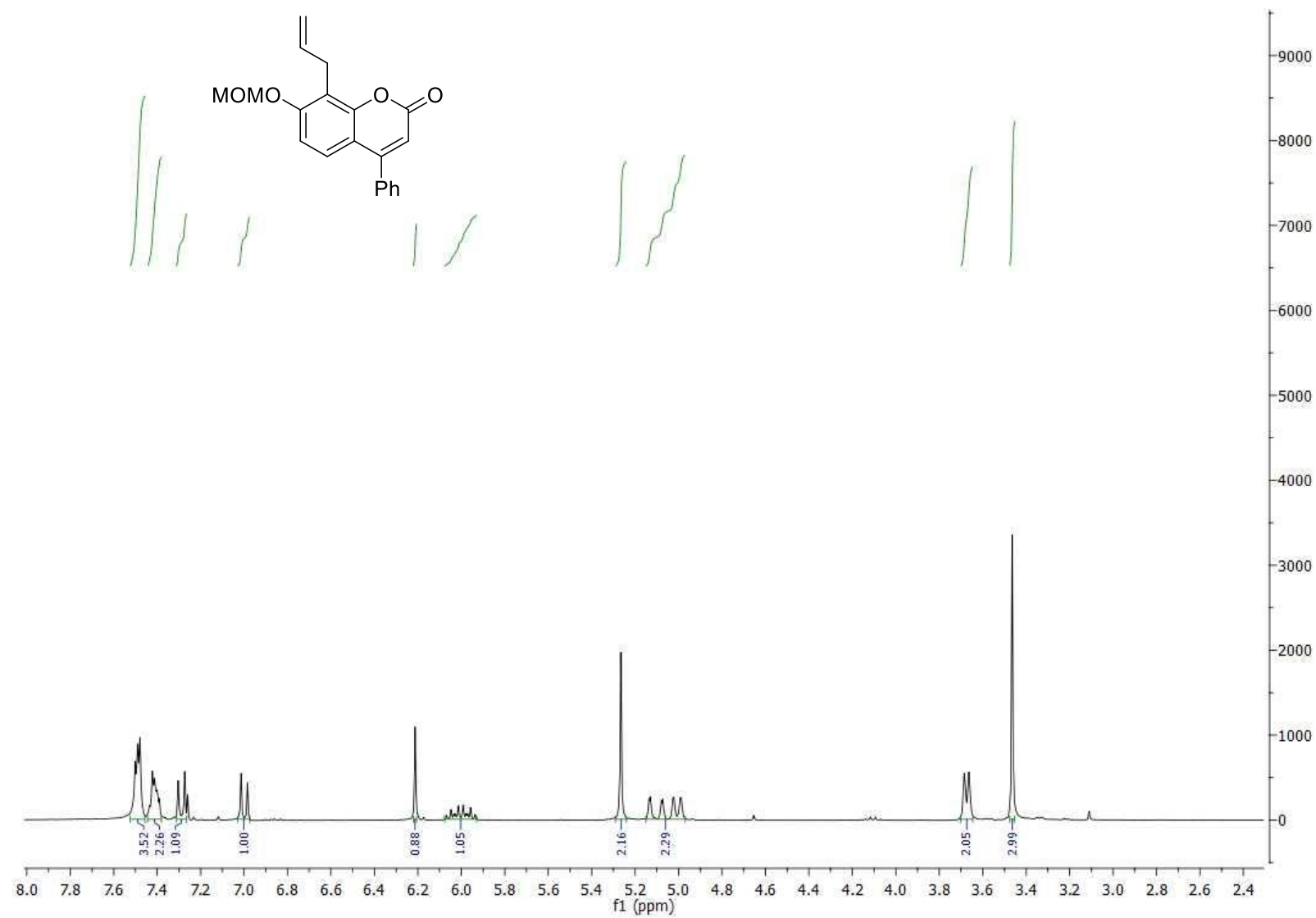
^1H NMR (300 MHz, CDCl_3) of **12o**



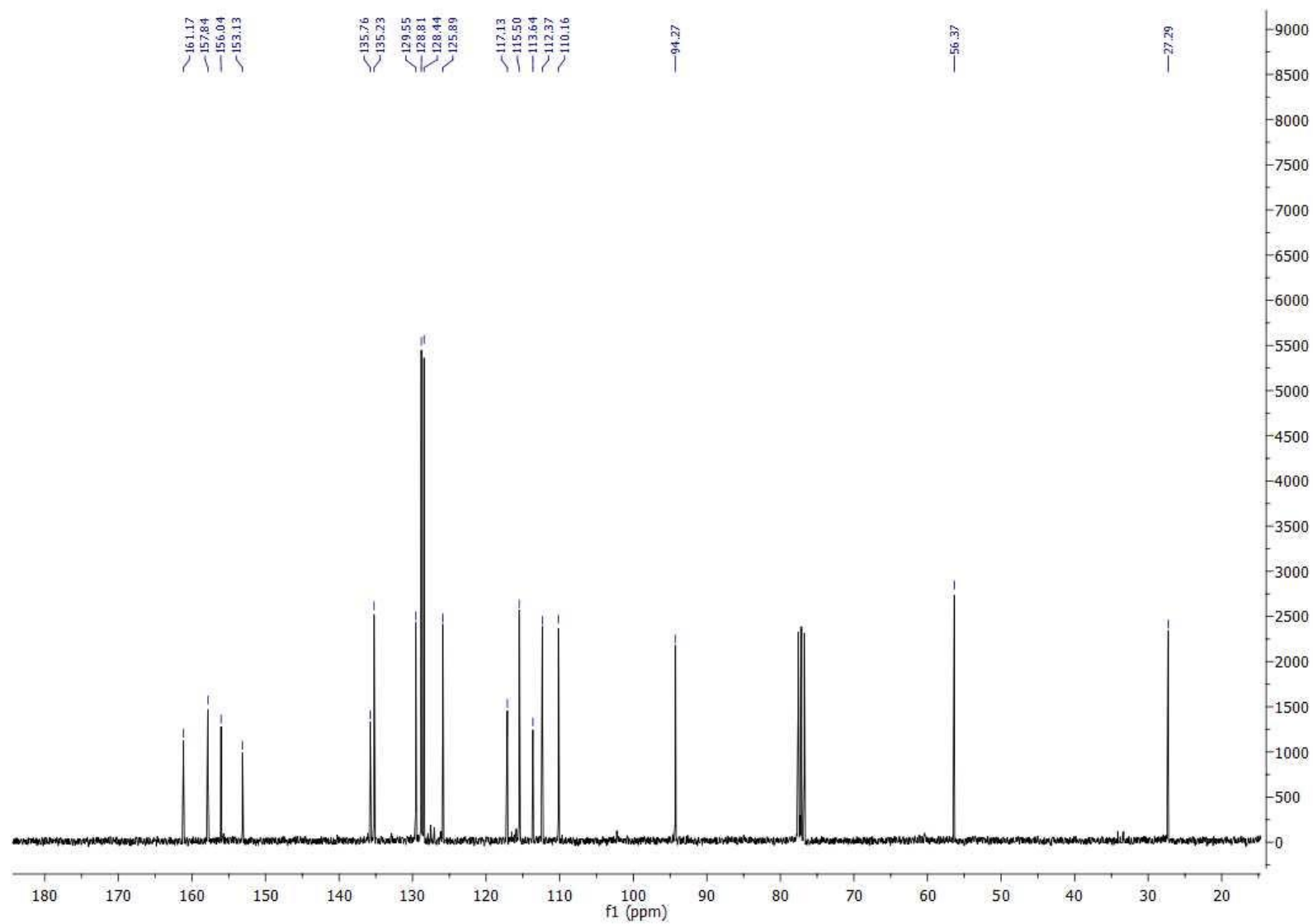
^{13}C NMR (75 MHz, CDCl_3) of **12o**



^1H NMR (300 MHz, CDCl_3) of **12p**



^{13}C NMR (75 MHz, CDCl_3) of **12p**

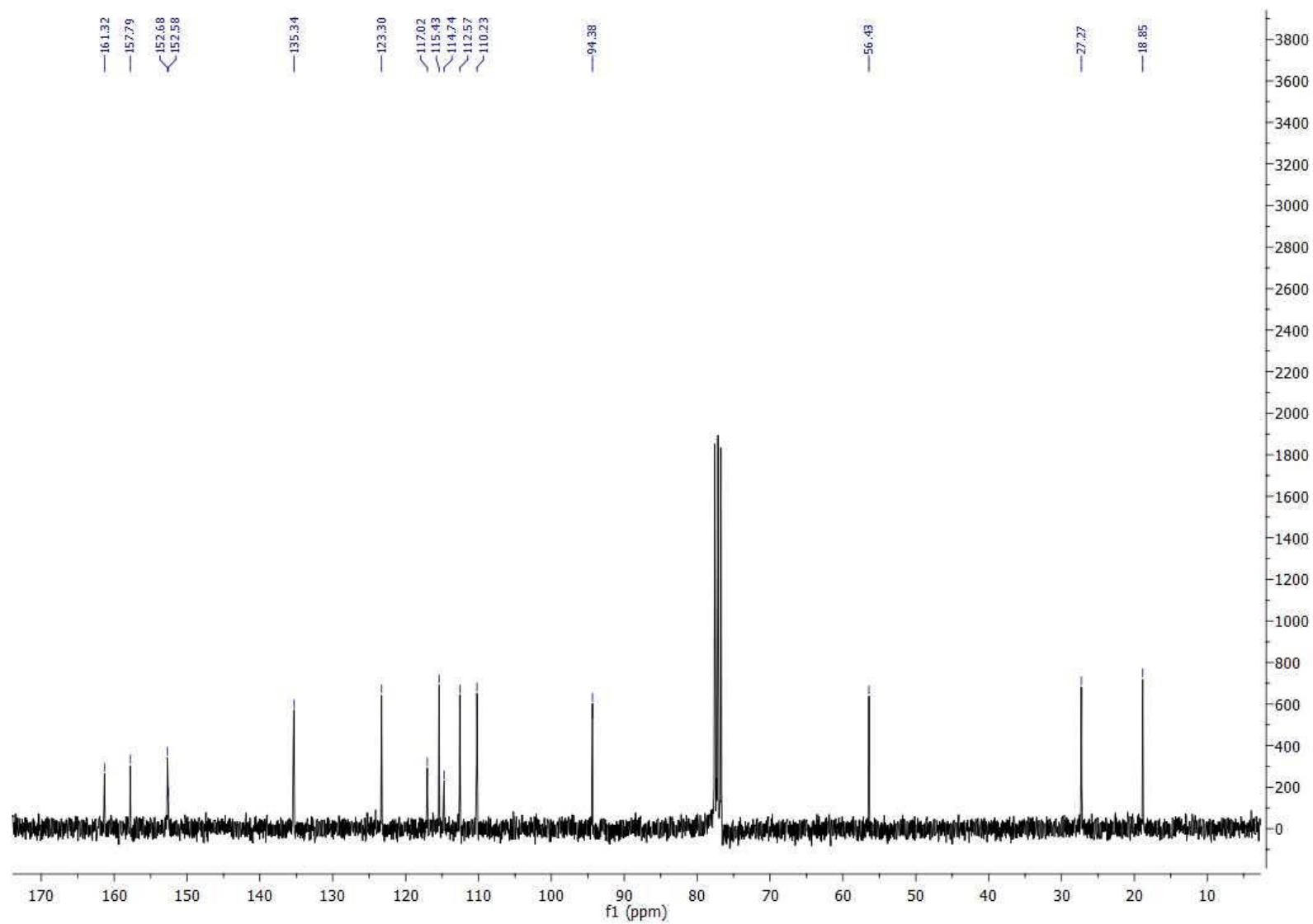


Chemical structure: CC1=C(C=C(C=C1C(=O)OC)C=C)C=C

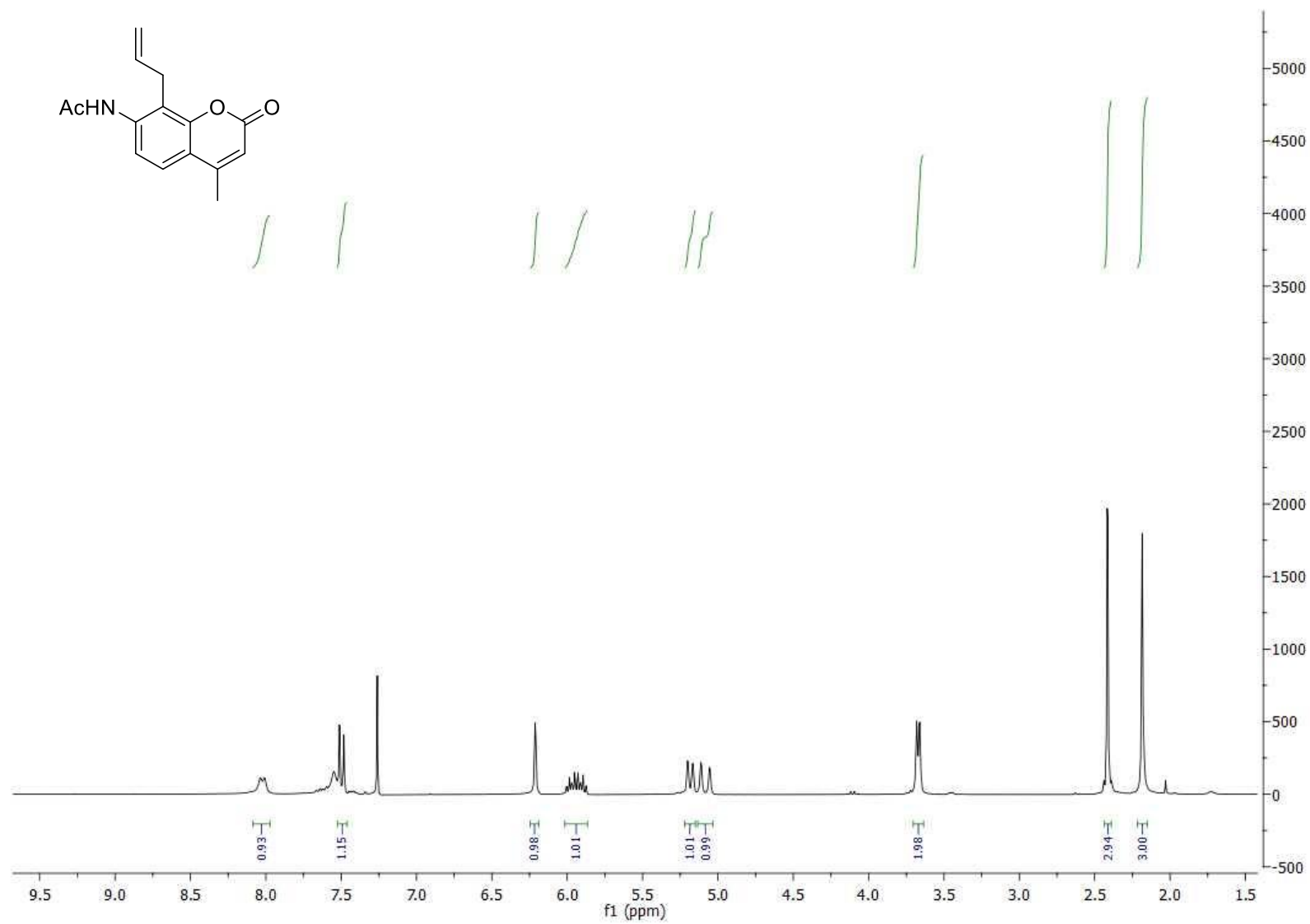
¹H NMR spectrum (ppm):

- 7.45 (d, 1H, integration 1.00)
- 7.35 (d, 1H, integration 1.01)
- 7.15 (d, 1H, integration 1.00)
- 7.05 (d, 1H, integration 1.13)
- 6.15 (s, 1H, integration 2.00)
- 5.15 (m, 1H, integration 1.16)
- 5.05 (m, 1H, integration 1.07)
- 3.65 (s, 2H, integration 2.08)
- 3.55 (s, 3H, integration 3.30)
- 2.45 (s, 3H, integration 3.33)

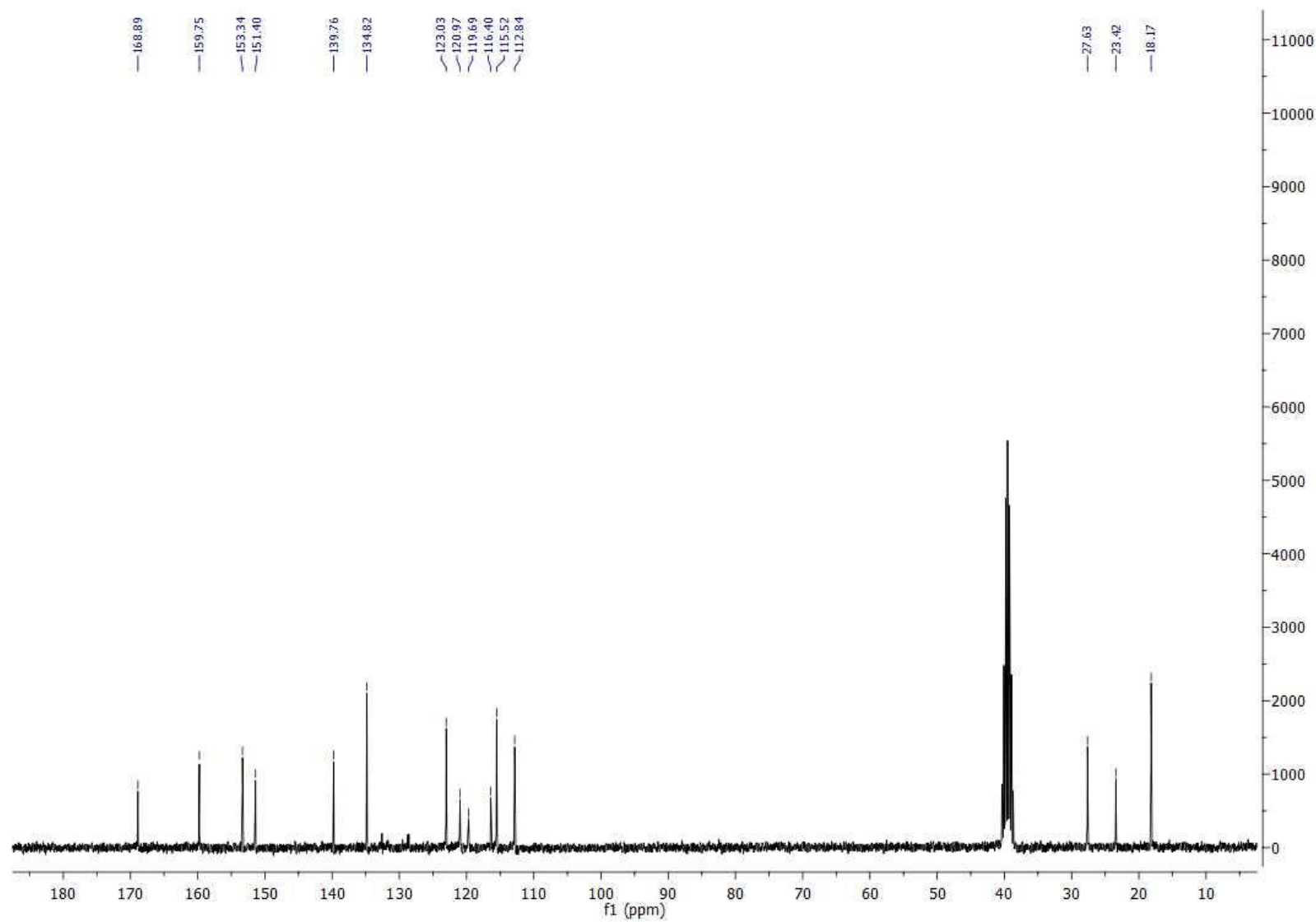
^{13}C NMR (75 MHz, CDCl_3) of **12q**



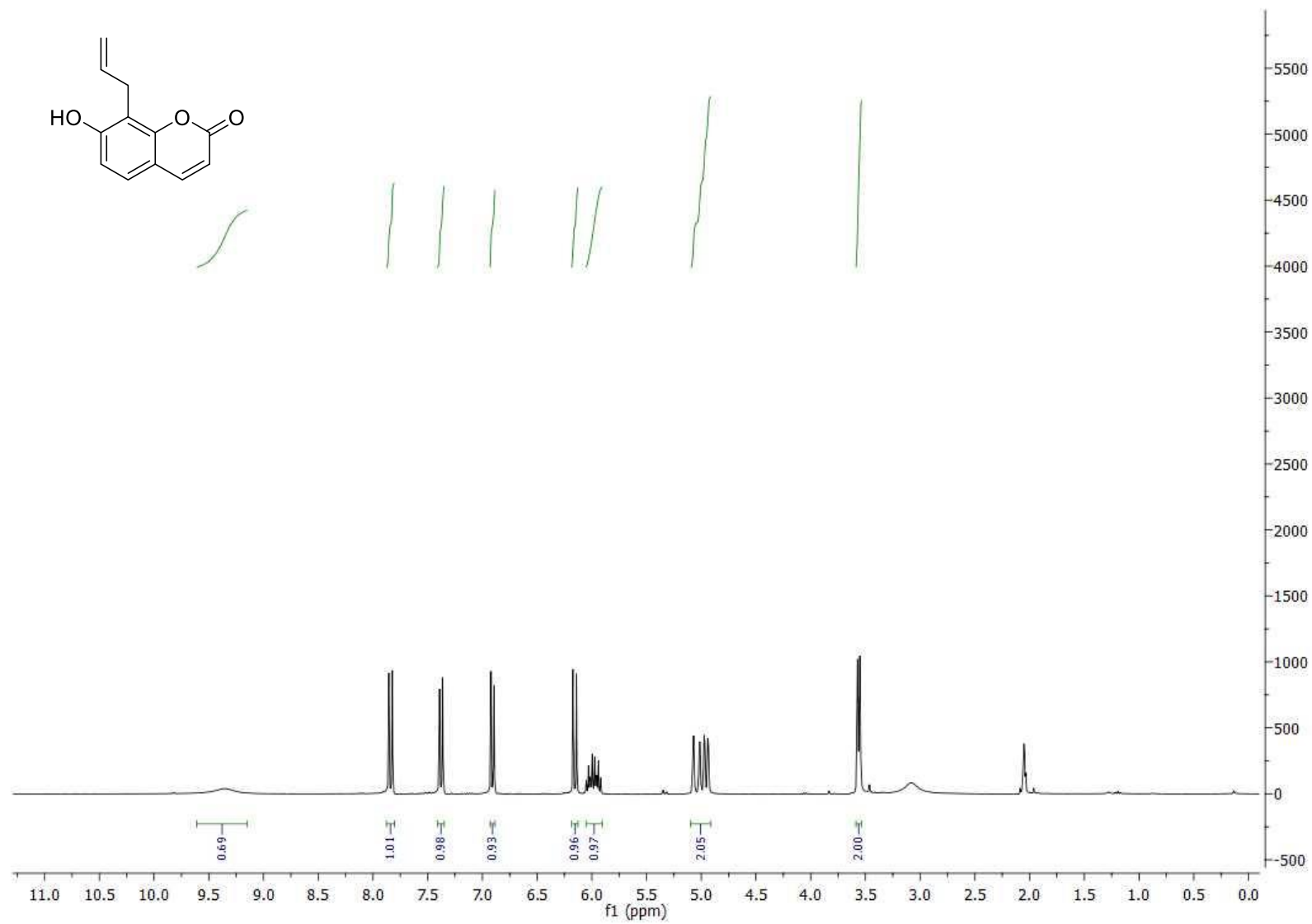
^1H NMR (300 MHz, CDCl_3) of **12r**



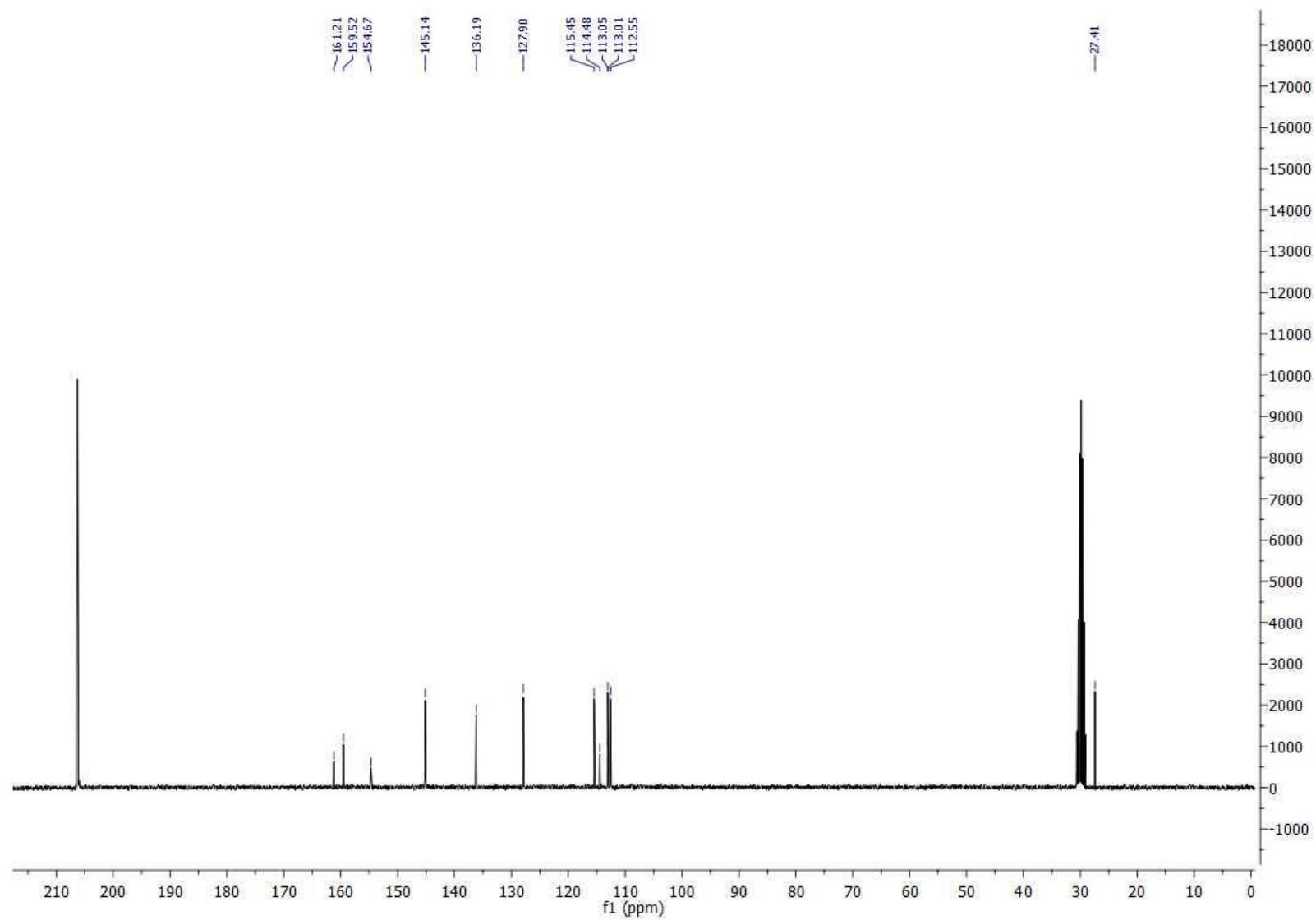
^{13}C NMR (75 MHz, CDCl_3) of **12r**



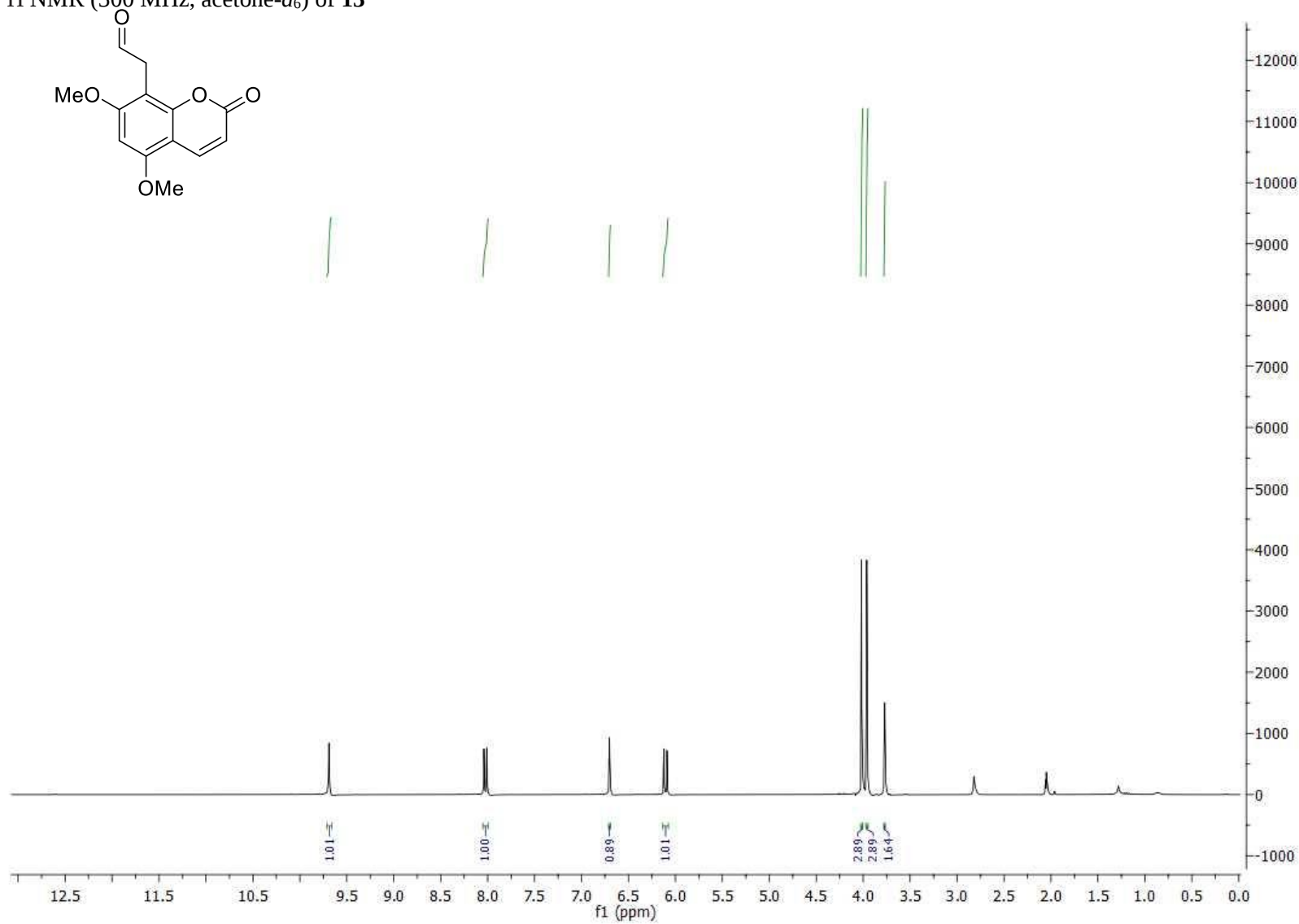
^1H NMR (300 MHz, CDCl_3) of **12o'**



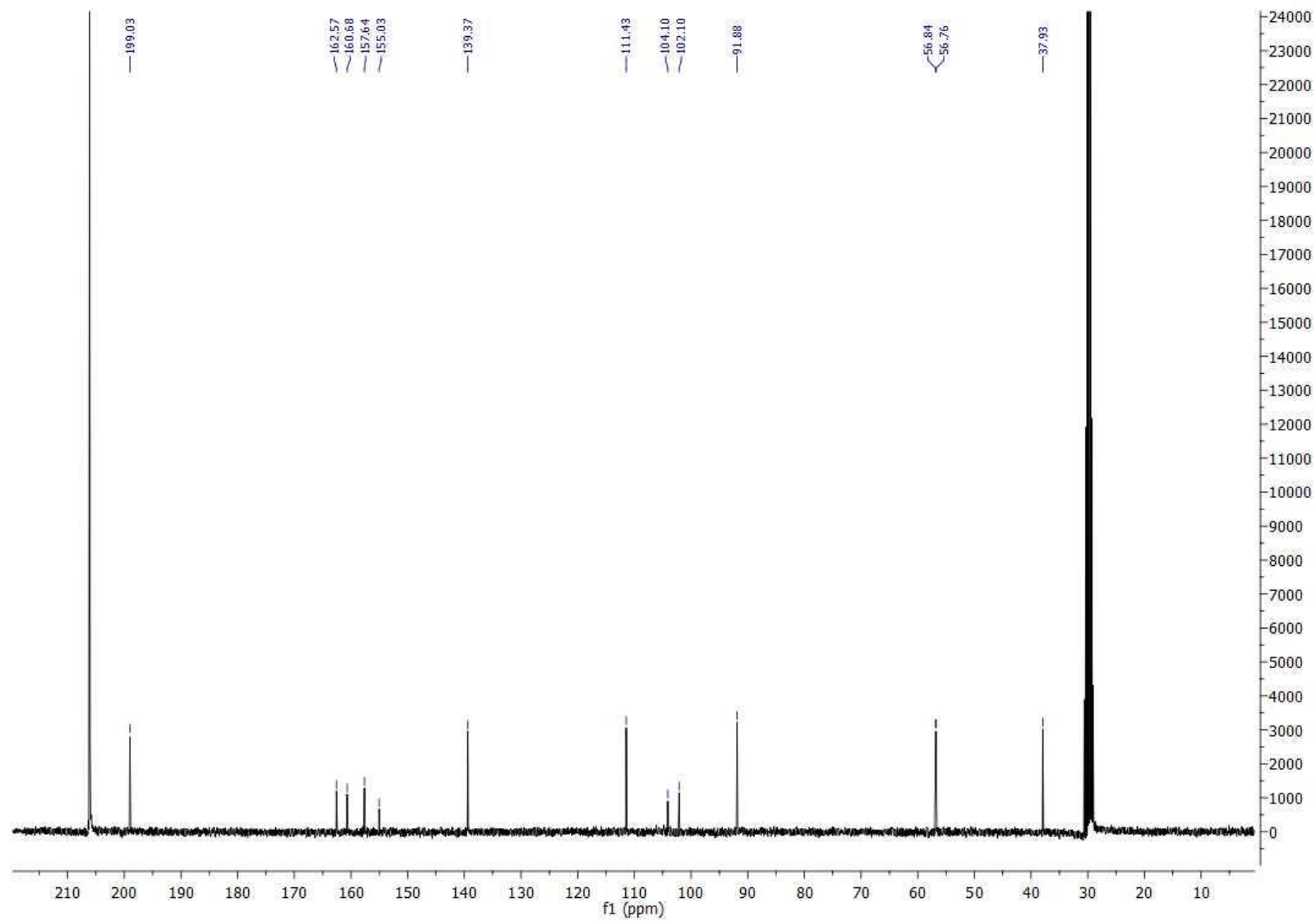
^{13}C NMR (75 MHz, CDCl_3) of **12o'**



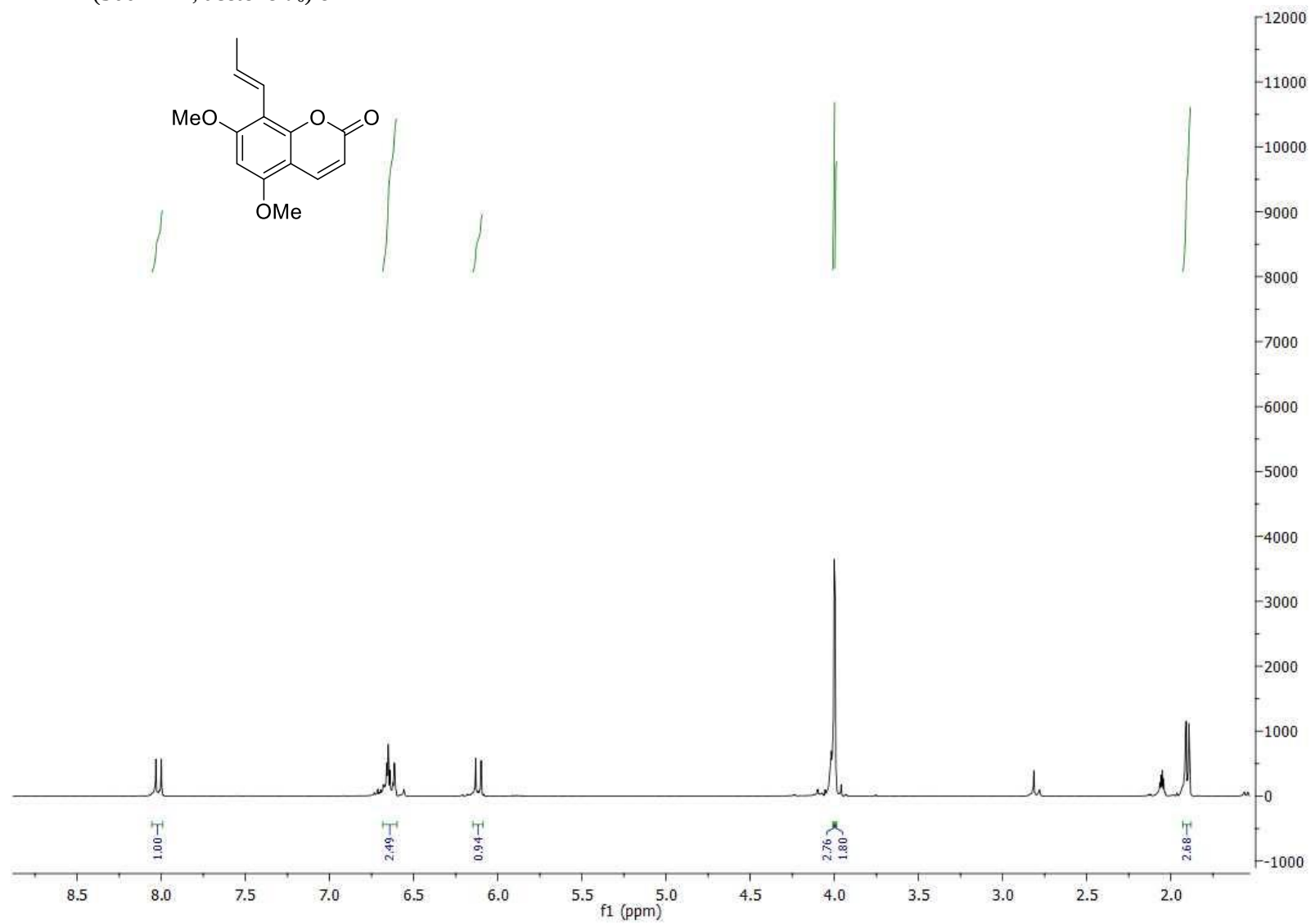
^1H NMR (300 MHz, acetone- d_6) of **13**



^{13}C NMR (75 MHz, acetone- d_6) of **13**



^1H NMR (300 MHz, acetone- d_6) of **14**



^{13}C NMR (75 MHz, acetone- d_6) of **14**

