

Supplementary Materials: Zosteropenillines: Polyketides from the Marine-derived Fungus *Penicillium thomii*

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Contents

Figure S1. ^1H NMR spectrum (700.13 MHz) of **1** in CDCl_3

Figure S2. ^{13}C NMR spectrum (176.04 MHz) of **1** in CDCl_3

Figure S3. DEPT-135 spectrum (176.04 MHz) of **1** in CDCl_3

Figure S4. DEPT-90 spectrum (176.04) of **1** in CDCl_3

Figure S5. HSQC spectrum of **1** in CDCl_3

Figure S6. HMBC spectrum of **1** in CDCl_3

Figure S7. ^1H - ^1H COSY spectrum of **1** in CDCl_3

Figure S8. NOESY spectrum of **1** in CDCl_3

Figure S9. X-Ray data for **1**

Figure S10. ^1H and ^{13}C NMR Spectroscopic data for S-MTPA ester of **1** (**1a**) and R-MTPA ester of **1** (**1b**)

Figure S11. ^1H NMR spectrum (500.13 MHz) of **2** in CDCl_3

Figure S12. ^{13}C NMR spectrum (125.77 MHz) of **2** in CDCl_3

Figure S13. DEPT-135 spectrum (125.77 MHz) of **2** in CDCl_3

Figure S14. DEPT-90 spectrum (125.77 MHz) of **2** in CDCl_3

Figure S15. HSQC spectrum of **2** in CDCl_3

Figure S16. HMBC spectrum of **2** in CDCl_3

Figure S17. ^1H - ^1H COSY spectrum of **2** in CDCl_3

Figure S19. NOESY spectrum of **2** in CDCl_3

Figure S20. ^1H NMR spectrum (500.13 MHz) of **3** in CDCl_3

Figure S21. ^{13}C NMR spectrum (125.77 MHz) of **3** in CDCl_3

Figure S22. DEPT-135 spectrum (125.77 MHz) of **3** in CDCl_3

Figure S23. DEPT-90 spectrum (125.77 MHz) of **3** in CDCl_3

Figure S24. HSQC spectrum of **3** in CDCl_3

Figure S25. HMBC spectrum of **3** in CDCl_3

Figure S26. ^1H - ^1H COSY spectrum of **3** in CDCl_3

Figure S27. NOESY spectrum of **3** in CDCl_3

Figure S28. ^1H NMR spectrum (700.13 MHz) of **4** in CDCl_3

Figure S29. ^{13}C NMR spectrum (176.04 MHz) of **4** in CDCl_3

Figure S30. DEPT-135 spectrum (176.04 MHz) of **4** in CDCl_3

Figure S31. DEPT-90 spectrum (176.04 MHz) of **4** in CDCl_3

Figure S32. HSQC spectrum of **4** in CDCl_3

Figure S33. HMBC spectrum of **4** in CDCl_3

Figure S34. ^1H - ^1H COSY spectrum of **4** in CDCl_3

Figure S35. NOESY spectrum of **4** in CDCl_3

Figure S36. ^1H NMR spectrum (700.13 MHz) of **5** in CDCl_3

Figure S37. ^{13}C NMR spectrum (176.04 MHz) of **5** in CDCl_3

Figure S38. DEPT-135 spectrum (176.04 MHz) of **5** in CDCl_3

Figure S39. HSQC spectrum of **5** in CDCl_3

Figure S40. HMBC spectrum of **5** in CDCl_3

Figure S41. ^1H - ^1H COSY spectrum of **5** in CDCl_3

Figure S42. NOESY spectrum of **5** in CDCl_3

Figure S43. ^1H NMR spectrum (500.13 MHz) of **6** in CDCl_3

Figure S44. ^{13}C NMR spectrum (125.77 MHz) of **6** in CDCl_3

Figure S45. DEPT-135 spectrum (125.77 MHz) of **6** in CDCl_3

Figure S46. DEPT-90 spectrum (125.77 MHz) of **6** in CDCl_3

Figure S47. HSQC spectrum of **6** in CDCl_3

Figure S48. HMBC spectrum of **6** in CDCl_3

Figure S49. 1H-1H COSY spectrum of **6** in CDCl_3

Figure S50. NOESY spectrum of **6** in CDCl_3

Figure S51. ^1H NMR spectrum (500.13 MHz) of **13** in DMSO-d_6

Figure S52. ^{13}C NMR spectrum (125.77 MHz) of **13** in DMSO-d_6

Figure S53. DEPT-135 spectrum (125.77 MHz) of **13** in DMSO-d_6

Figure S54. HSQC spectrum of **13** in DMSO-d_6

Figure S55. HMBC spectrum of **13** in DMSO-d_6

Figure S56. 1H-1H COSY spectrum of **13** in DMSO-d_6

Figure S57. NOESY spectrum of **13** in DMSO-d_6

Figure S58. ^1H NMR spectrum (500.13 MHz) of **13** in CDCl_3

Figure S59. ^{13}C NMR spectrum (125.77 MHz) of **13** in CDCl_3

Figure S60. DEPT-135 spectrum (125.77 MHz) of **13** in CDCl_3

Figure S61. DEPT-90 spectrum (125.77 MHz) of **13** in CDCl_3

Figure S62. HSQC spectrum of **13** in CDCl_3

Figure S63. HMBC spectrum of **13** in CDCl_3

Figure S64. 1H-1H COSY spectrum of **13** in CDCl_3

Figure S65. NOESY spectrum of **13** in CDCl_3

Figure S66. ^{13}C NMR spectrum (125.77 MHz) of **13** and **6** in CDCl_3

Figure S67. DEPT-135 spectrum (125.77 MHz) of **13** and **6** in CDCl_3

Figure S68. ^1H NMR spectrum (125.77 MHz) of **13** and **6** in CDCl_3

Figure S69. ^1H NMR spectrum (500.13 MHz) of **7** in CDCl_3

Figure S70. ^{13}C NMR spectrum (125.77 MHz) of **7** in CDCl_3

Figure S71. DEPT-135 spectrum (125.77 MHz) of **7** in CDCl_3

Figure S72. DEPT-90 spectrum (125.77 MHz) of **7** in CDCl_3

Figure S73. HSQC spectrum of **7** in CDCl_3

Figure S74. HMBC spectrum of **7** in CDCl_3

Figure S75. ^1H - ^1H COSY spectrum of **7** in CDCl_3

Figure S76. NOESY spectrum of **7** in CDCl_3

Figure S77. NOESY spectrum of **7** in DMSO-d_6

Figure S78. ^1H NMR spectrum (700.13 MHz) of **8** in CDCl_3

Figure S79. ^{13}C NMR spectrum (176.04 MHz) of **8** in CDCl_3

Figure S80. DEPT-135 spectrum (176.04 MHz) of **8** in CDCl_3

Figure S81. DEPT-90 spectrum (176.04) of **8** in CDCl_3

Figure S82. HSQC spectrum of **8** in CDCl_3

Figure S83. HMBC spectrum of **8** in CDCl_3

Figure S84. ^1H - ^1H COSY spectrum of **8** in CDCl_3

Figure S85. NOESY spectrum of **8** in CDCl_3

Figure S86. ^1H NMR spectrum (500.13 MHz) of **9** in CDCl_3

Figure S87. ^{13}C NMR spectrum (125.77 MHz) of **9** in CDCl_3

Figure S88. DEPT-135 spectrum (125.77 MHz) of **9** in CDCl_3

Figure S89. DEPT-90 spectrum (125.77 MHz) of **9** in CDCl₃

Figure S90. HSQC spectrum of **9** in CDCl₃

Figure S91. HMBC spectrum of **9** in CDCl₃

Figure S92. 1H-1H COSY spectrum of **9** in CDCl₃

Figure S93. NOESY spectrum of **9** in CDCl₃

Figure S94. ¹H NMR spectrum (700.13 MHz) of **10** in CDCl₃

Figure S95. ¹³C NMR spectrum (176.04 MHz) of **10** in CDCl₃

Figure S96. DEPT-135 spectrum (176.04 MHz) of **10** in CDCl₃

Figure S97. DEPT-90 spectrum (176.04) of **10** in CDCl₃

Figure S98. HSQC spectrum of **10** in CDCl₃

Figure S99. HMBC spectrum of **10** in CDCl₃

Figure S100. 1H-1H COSY spectrum of **10** in CDCl₃

Figure S101. NOESY spectrum of **10** in CDCl₃

Figure S102. ¹H NMR spectrum (500.13 MHz) of **11** in CDCl₃

Figure S103. ¹³C NMR spectrum (125.77 MHz) of **11** in CDCl₃

Figure S104. DEPT-135 spectrum (125.77 MHz) of **11** in CDCl₃

Figure S105. DEPT-90 spectrum (125.77 MHz) of **11** in CDCl₃

Figure S106. HSQC spectrum of **11** in CDCl₃

Figure S107. HMBC spectrum of **11** in CDCl₃

Figure S108. 1H-1H COSY spectrum of **11** in CDCl₃

Figure S109. NOESY spectrum of **11** in CDCl₃

Figure S110. ¹H NMR spectrum (500.13 MHz) of **12** in CDCl₃

Figure S111. ¹³C NMR spectrum (125.77 MHz) of **12** in CDCl₃

Figure S112. DEPT-135 spectrum (125.77 MHz) of **12** in CDCl₃

Figure S113. DEPT-90 spectrum (125.77 MHz) of **12** in CDCl₃

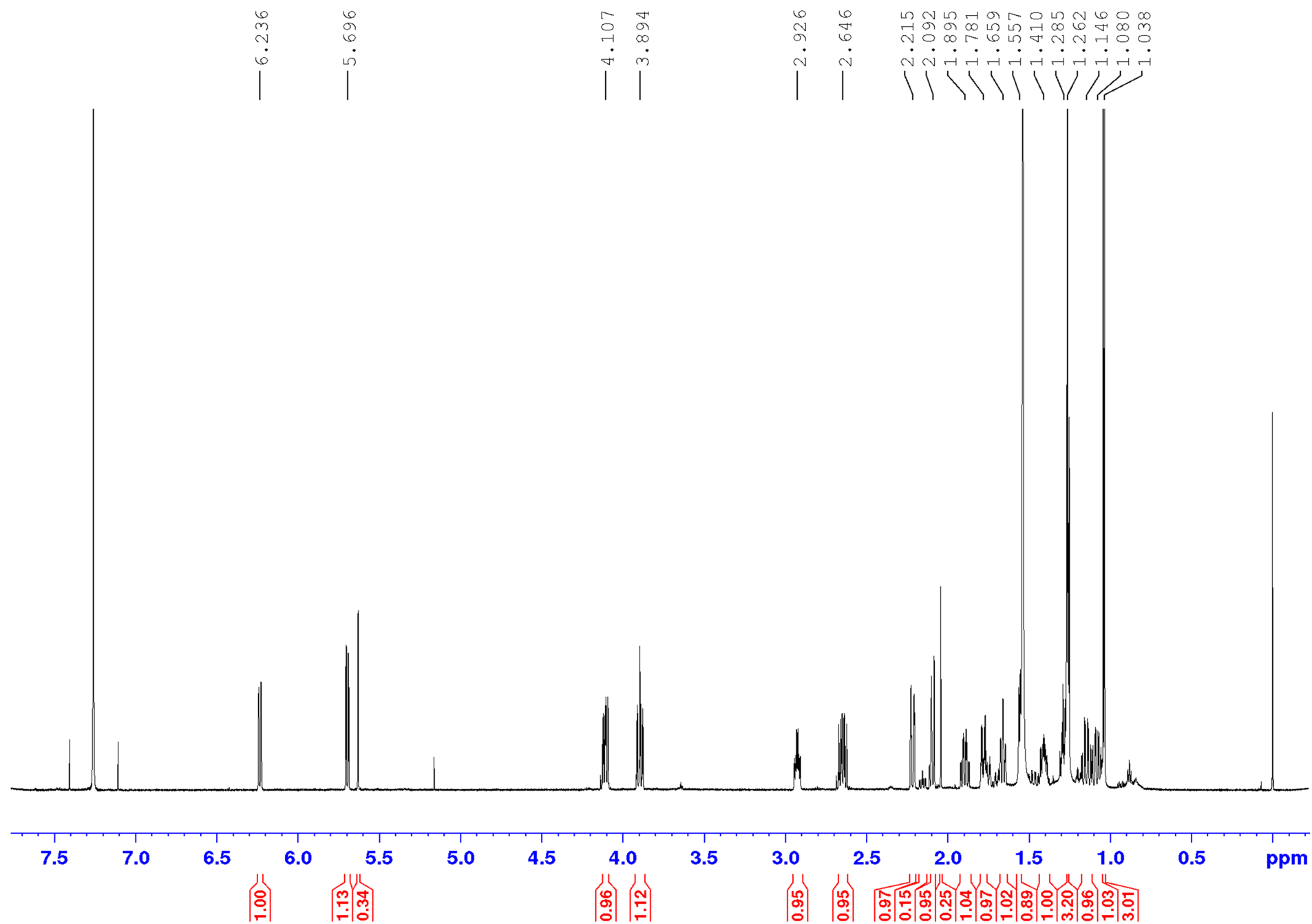
Figure S114. HSQC spectrum of **12** in CDCl₃

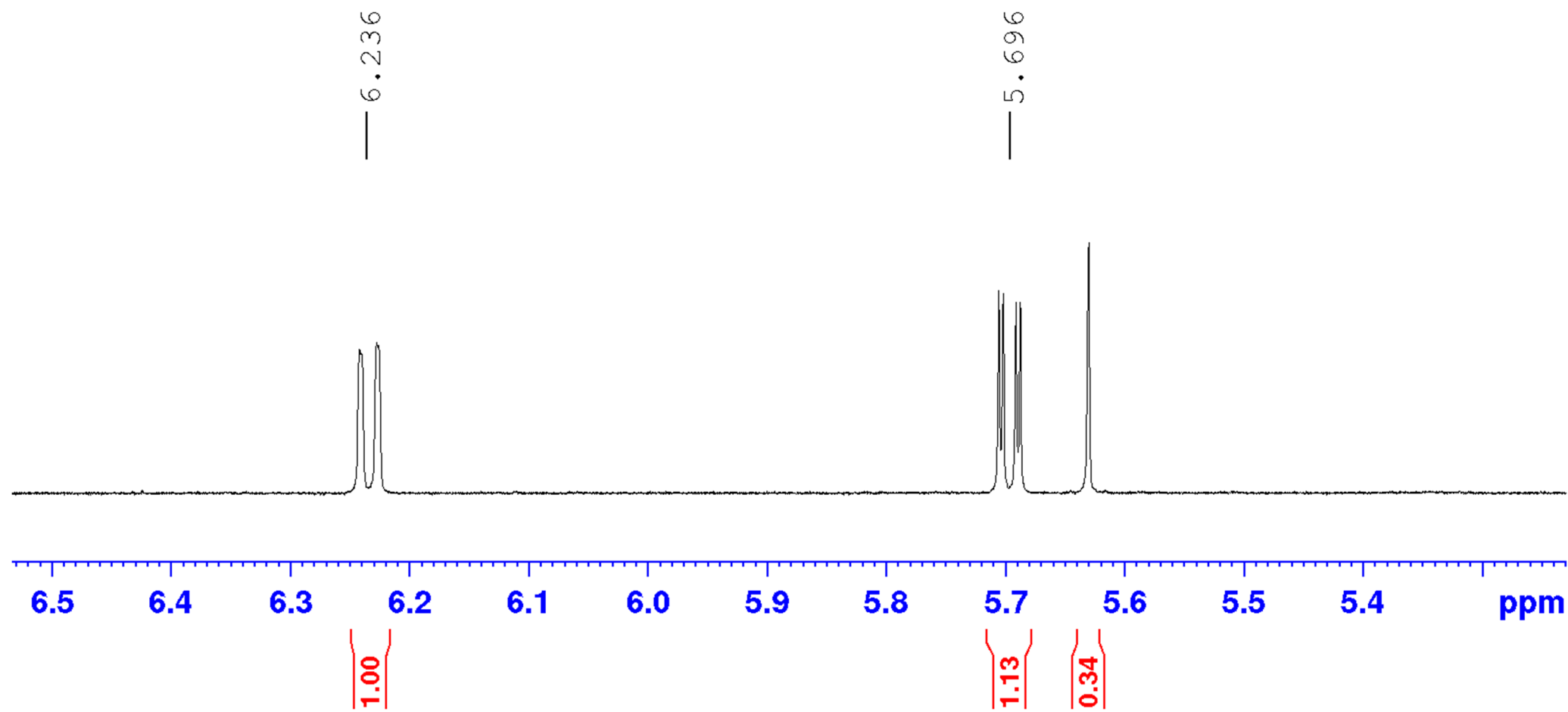
Figure S115. HMBC spectrum of **12** in CDCl₃

Figure S116. 1H-1H COSY spectrum of **12** in CDCl₃

Figure S117. NOESY spectrum of **12** in CDCl₃

Figure S1. ^1H NMR spectrum (700.13 MHz) of **1** in CDCl_3





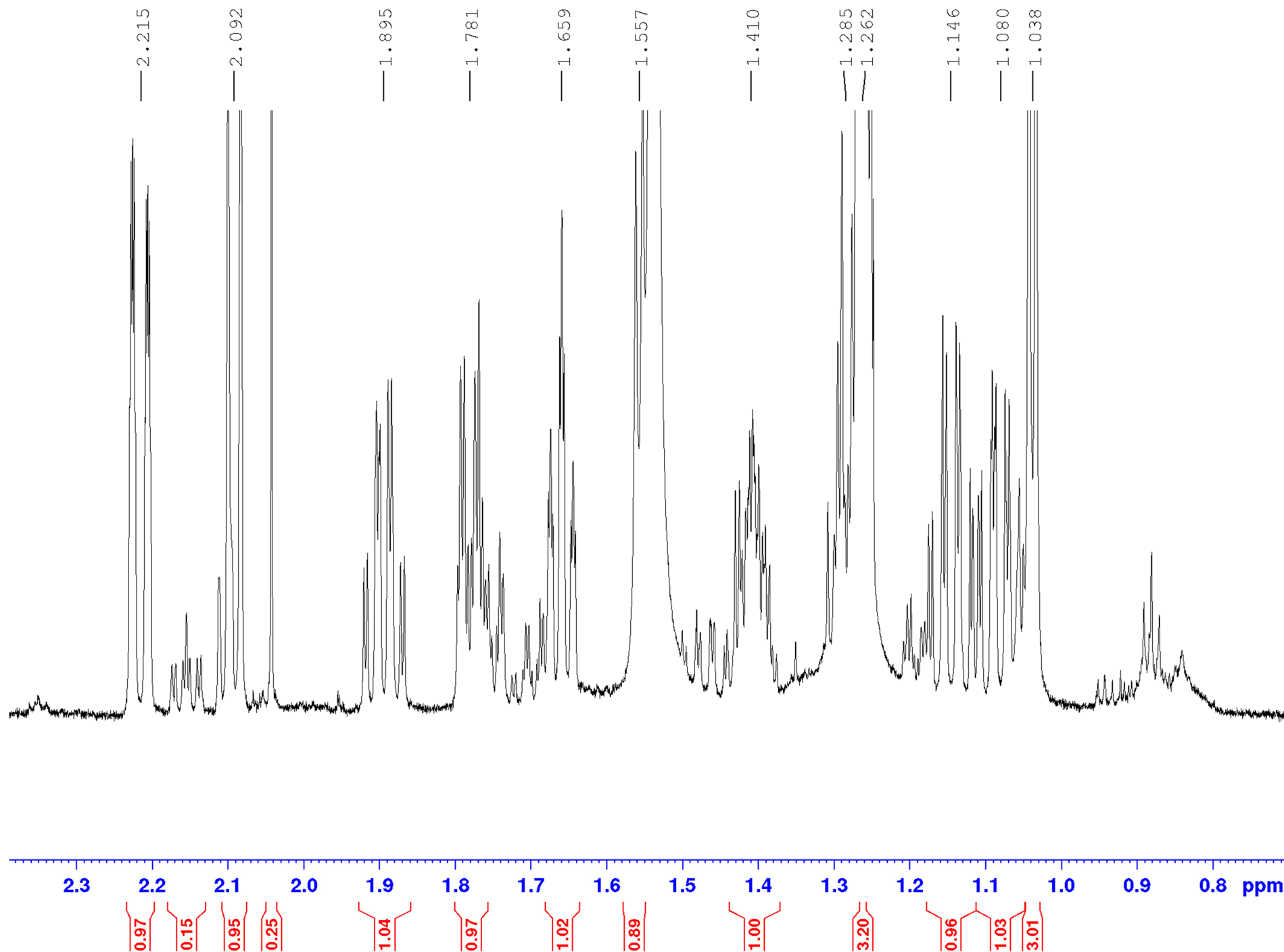


Figure S2. ^{13}C NMR spectrum (125.77 MHz) of **1** in CDCl_3

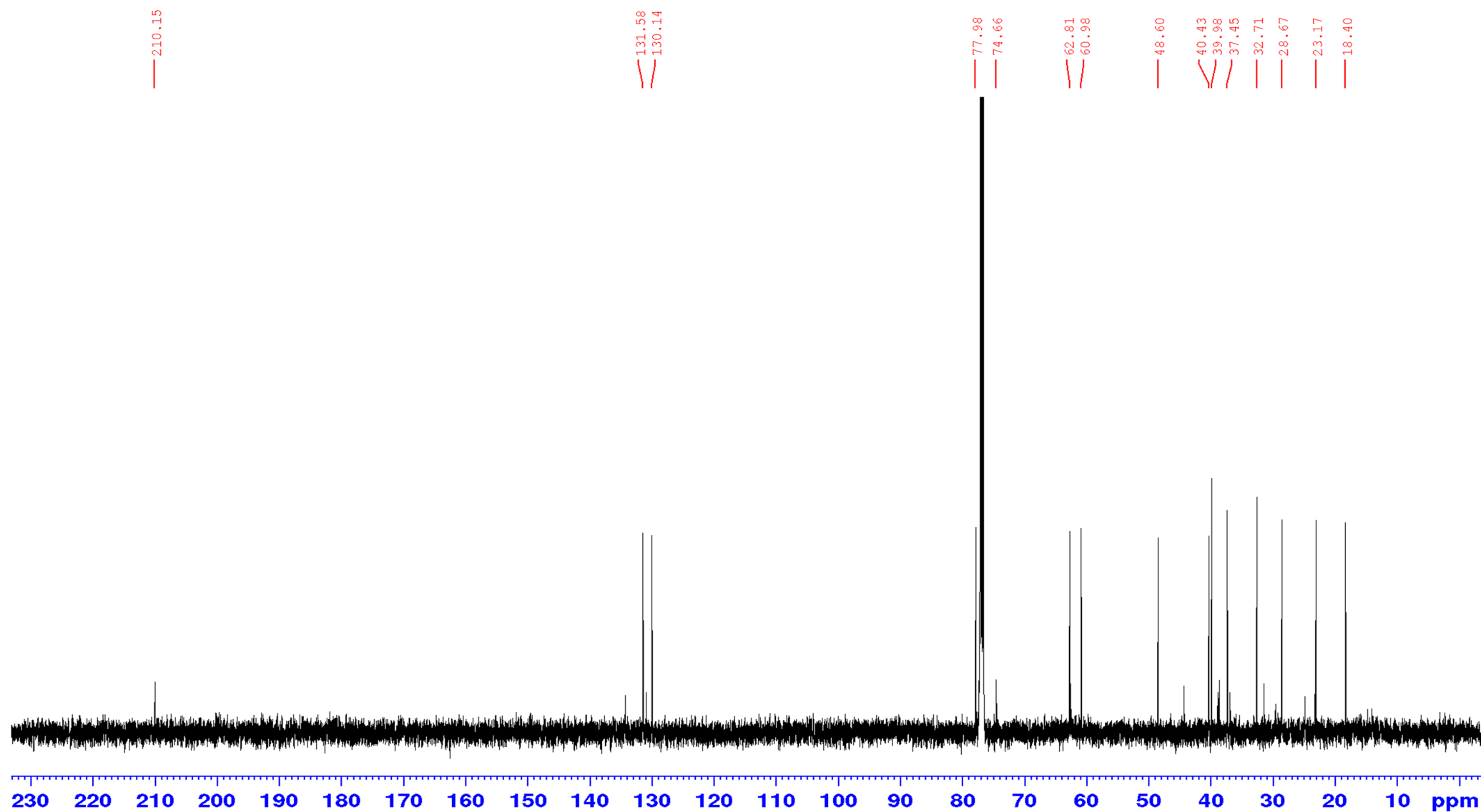


Figure S3. DEPT-135 spectrum (176.04 MHz) of **1** in CDCl₃

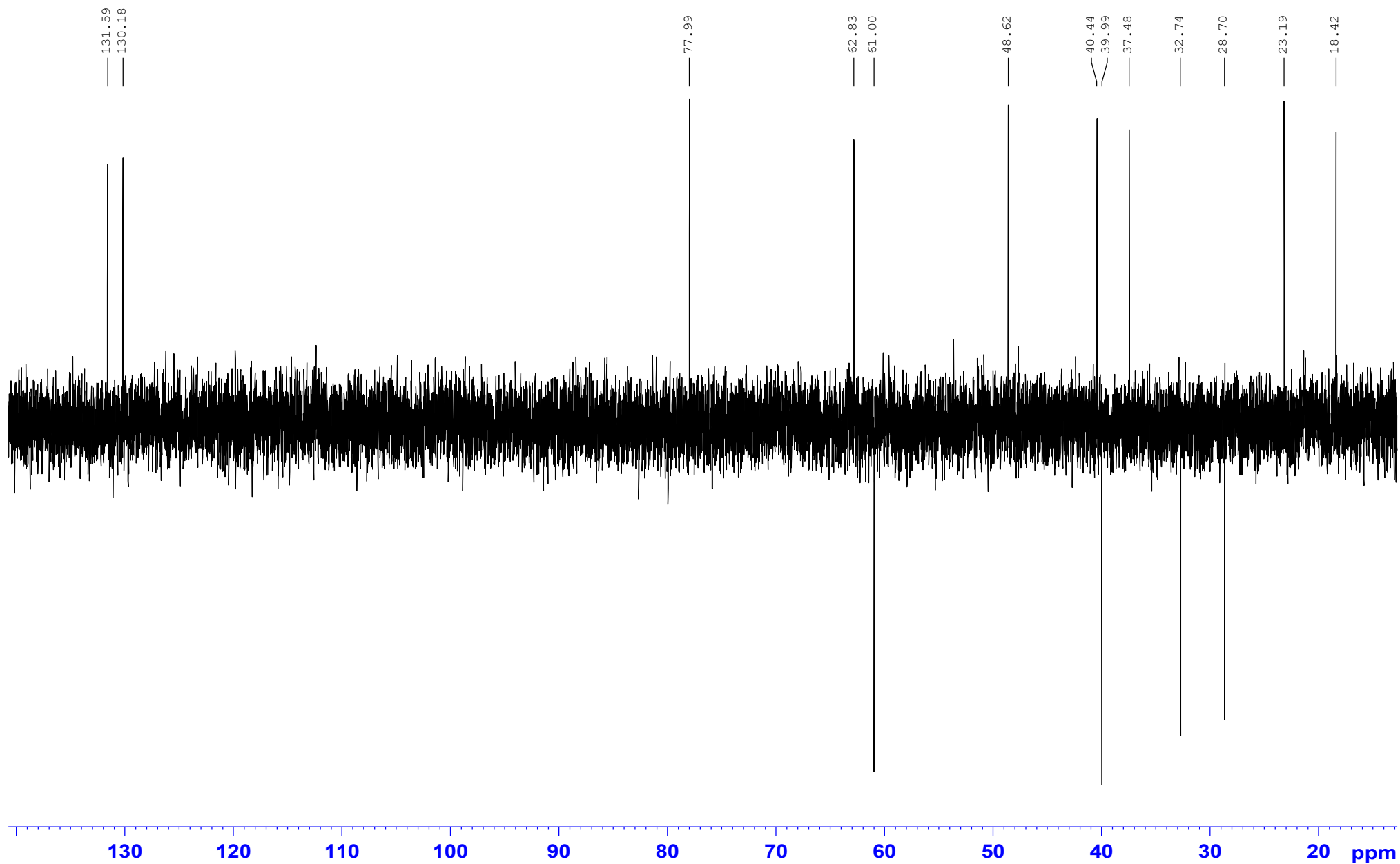


Figure S4. DEPT-90 spectrum (176.04) of **1** in CDCl₃

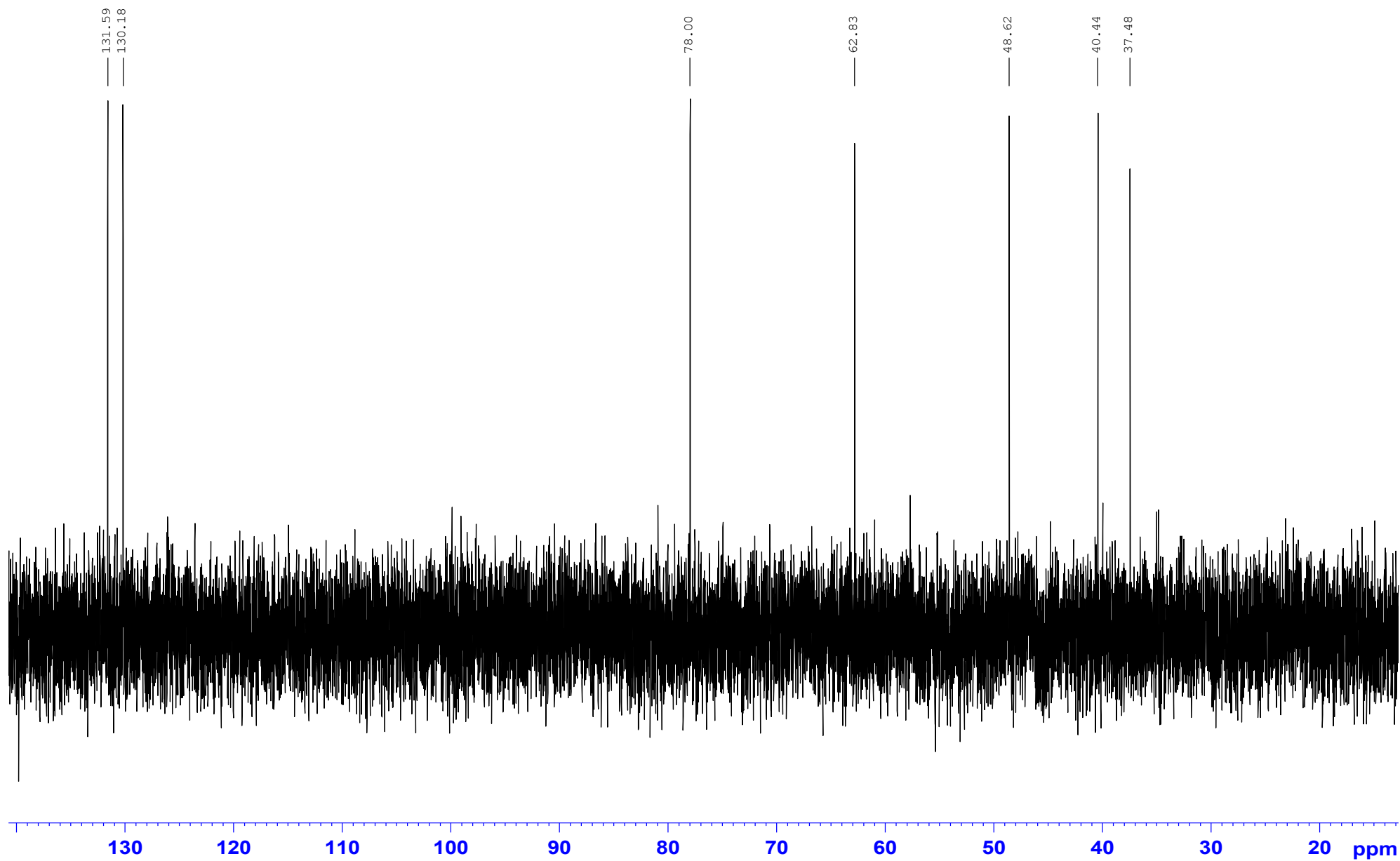


Figure S5. HSQC spectrum of **1** in CDCl₃

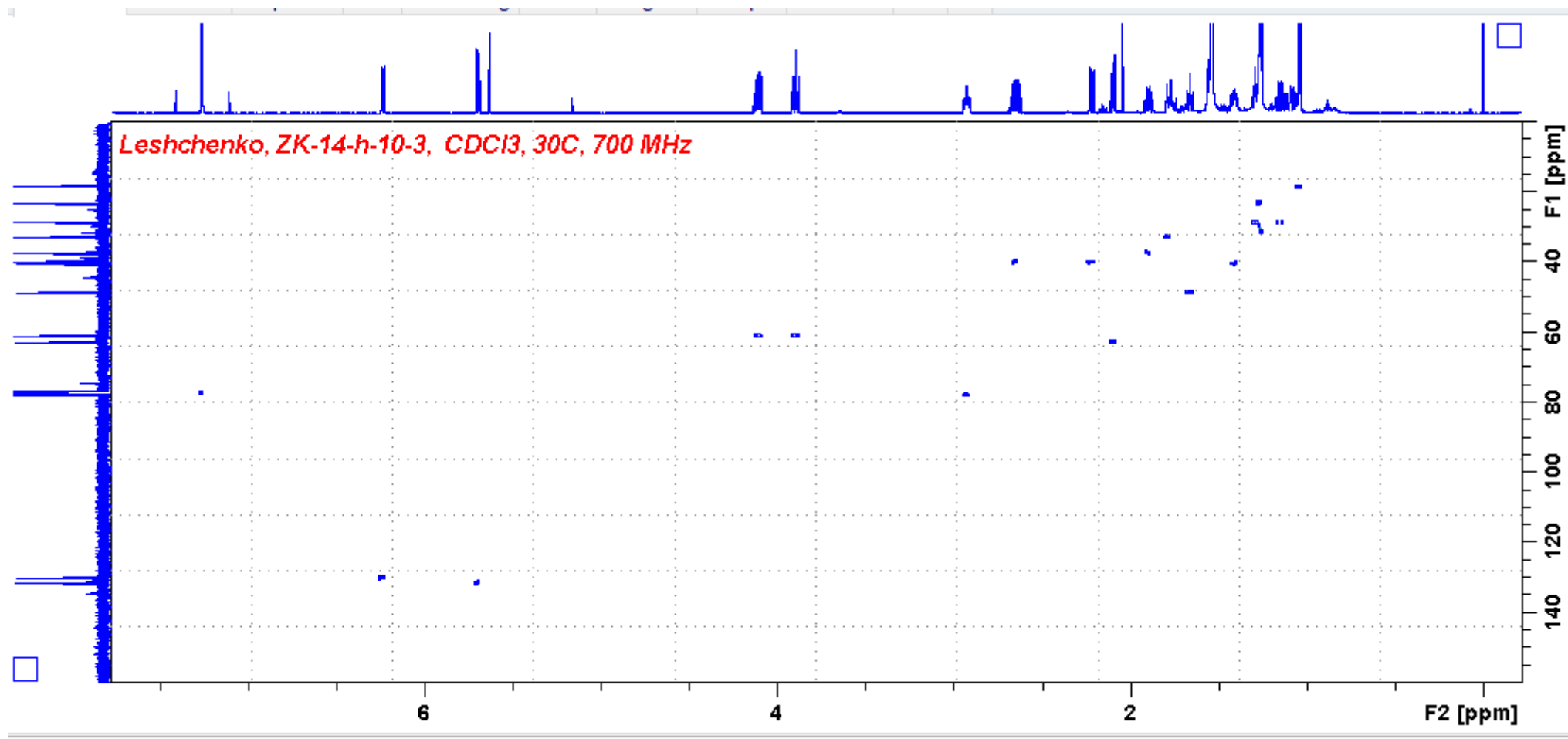


Figure S6. HMBC spectrum of **1** in CDCl₃

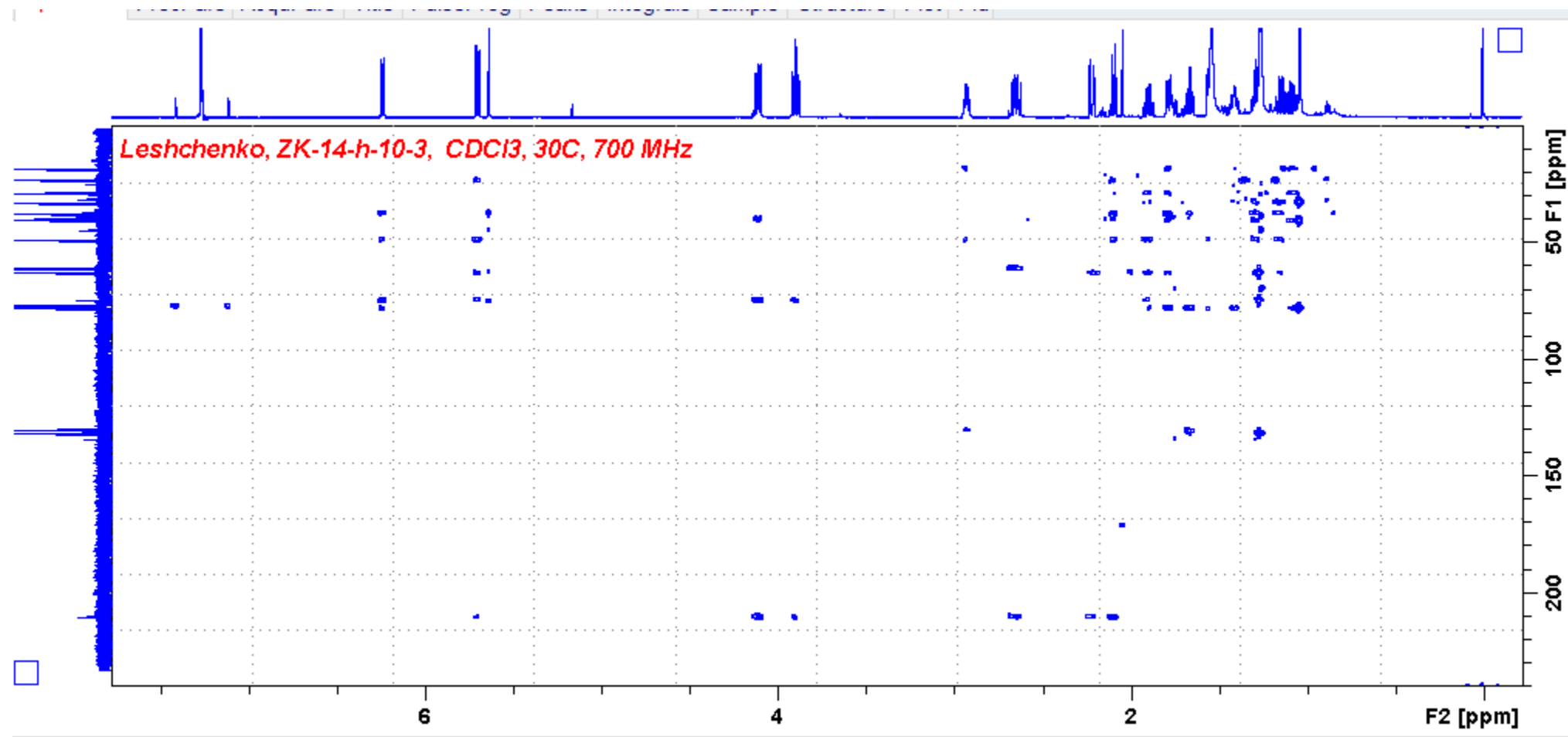


Figure S7. ^1H - ^1H COSY spectrum of **1** in CDCl_3

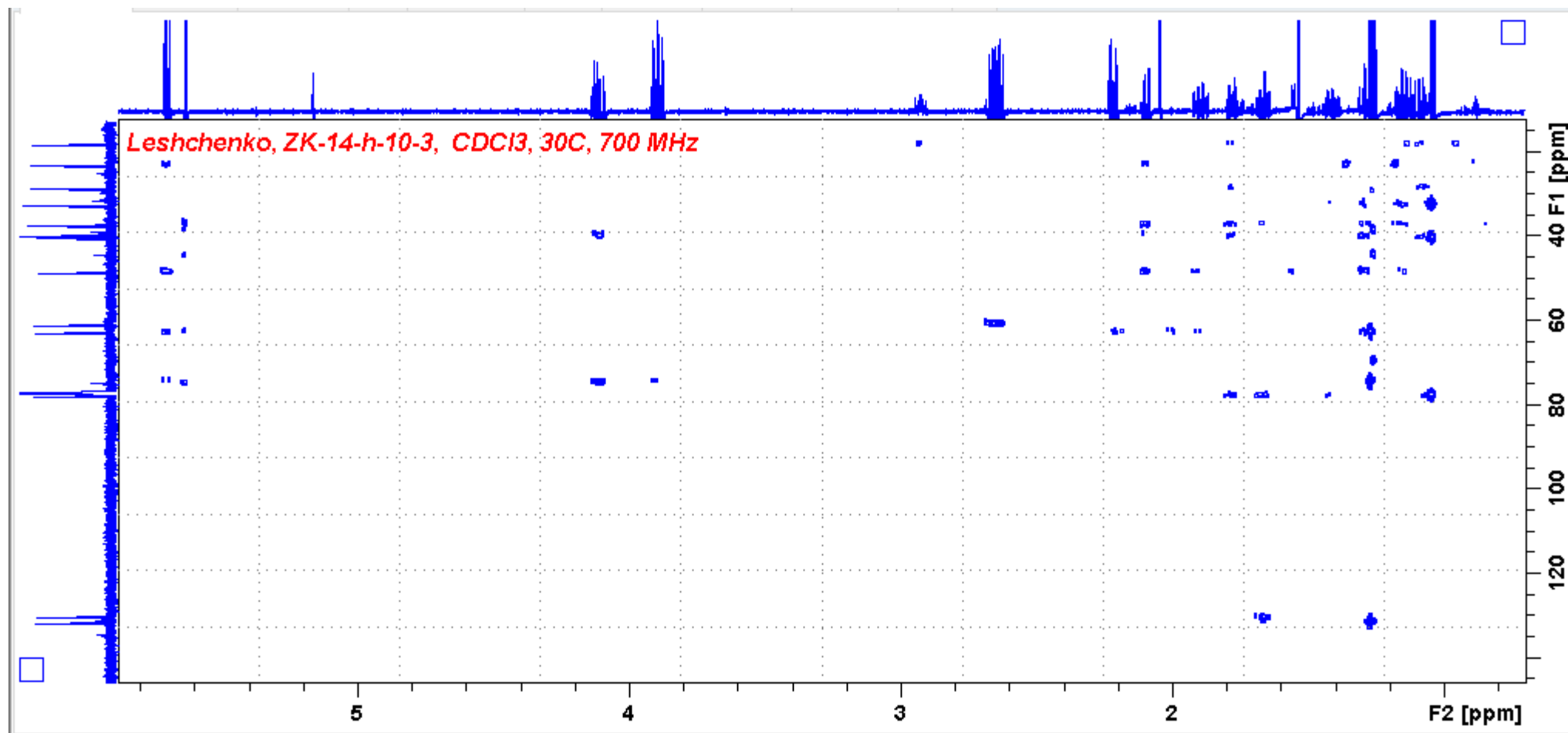


Figure S8. NOESY spectrum of **1** in CDCl₃

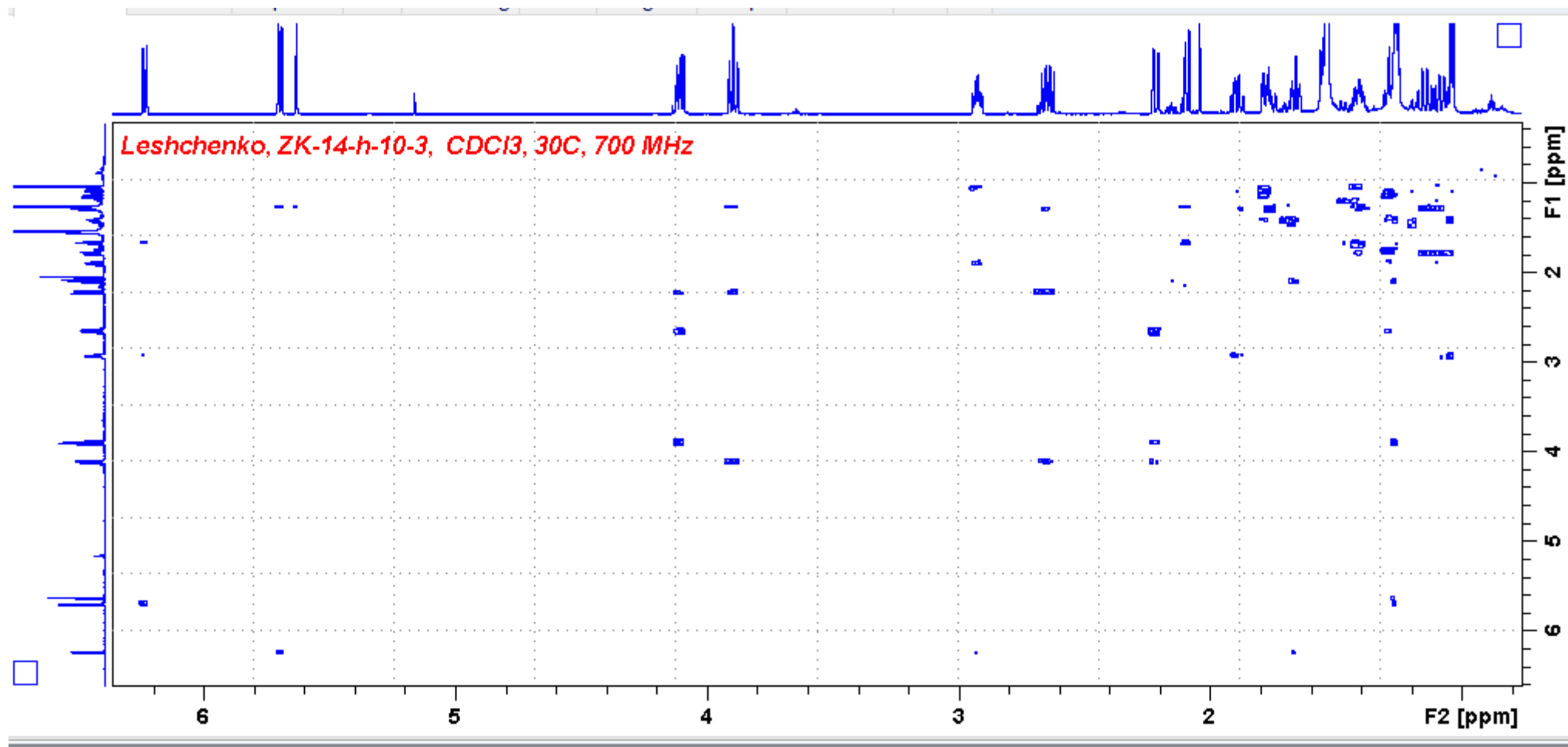


Figure S9. X-Ray data for **1** (Tables 1-6)**Table 1.** Crystal data and structure refinement for zosteropenilline A (**1**).

Identification code	t19	
Empirical formula	C15 H22 O3	
Formula weight	250.32	
Temperature	296(2) K	
Wavelength	0.71073 Å	
Crystal system	Orthorhombic	
Space group	P2 ₁ 2 ₁ 2 ₁	
Unit cell dimensions	a = 5.28750(10) Å	$\alpha = 90^\circ$.
	b = 10.1068(2) Å	$\beta = 90^\circ$.
	c = 25.6939(5) Å	$\gamma = 90^\circ$.
Volume	1373.07(5) Å ³	
Z	4	
Density (calculated)	1.211 Mg/m ³	
Absorption coefficient	0.083 mm ⁻¹	
F(000)	544	
Crystal size	0.330 x 0.200 x 0.110 mm ³	
Theta range for data collection	2.165 to 28.516°.	
Index ranges	-7 ≤ h ≤ 7, -13 ≤ k ≤ 12, -34 ≤ l ≤ 28	
Reflections collected	11438	
Independent reflections	3461 [R(int) = 0.0252]	
Completeness to theta = 25.242°	99.9 %	
Absorption correction	None	
Refinement method	Full-matrix least-squares on F ²	
Data / restraints / parameters	3461 / 0 / 167	
Goodness-of-fit on F ²	1.012	
Final R indices [I > 2σ(I)]	R1 = 0.0371, wR2 = 0.0822	
R indices (all data)	R1 = 0.0590, wR2 = 0.0925	
Absolute structure parameter	0.2(5)	
Extinction coefficient	0.008(2)	
Largest diff. peak and hole	0.147 and -0.137 e.Å ⁻³	

Table 2. Atomic coordinates (x 10⁴) and equivalent isotropic displacement parameters (Å² × 10³) for t19. U(eq) is defined as one third of the trace of the orthogonalized U^{ij} tensor.

	x	y	z	U(eq)
O(1)	3979(3)	2357(1)	8534(1)	56(1)
O(2)	-1785(3)	4243(2)	7843(1)	69(1)
O(3)	4966(3)	7079(1)	9853(1)	50(1)
C(1)	3237(5)	2008(3)	8020(1)	78(1)

C(2)	2187(4)	3185(3)	7730(1)	66(1)
C(3)	175(4)	3869(2)	8037(1)	50(1)
C(4)	806(3)	4108(2)	8600(1)	38(1)
C(5)	2613(3)	5297(2)	8654(1)	34(1)
C(6)	1790(4)	6507(2)	8345(1)	44(1)
C(7)	3626(4)	7647(2)	8431(1)	51(1)
C(8)	3950(4)	8001(2)	9000(1)	45(1)
C(9)	4718(3)	6781(2)	9312(1)	37(1)
C(10)	2880(3)	5633(2)	9229(1)	34(1)
C(11)	3615(4)	4422(2)	9531(1)	44(1)
C(12)	3258(4)	3208(2)	9357(1)	48(1)
C(13)	1977(4)	2866(2)	8858(1)	45(1)
C(14)	-40(4)	1816(2)	8952(1)	68(1)
C(15)	5838(5)	9125(2)	9068(1)	70(1)

Table 3. Bond lengths [E] and angles [°] for t19.

O(1)-C(1)	1.421(3)
O(1)-C(13)	1.442(2)
O(2)-C(3)	1.211(3)
O(3)-C(9)	1.428(2)
O(3)-H(3)	0.8200
C(1)-C(2)	1.509(4)
C(1)-H(1A)	0.9700
C(1)-H(1B)	0.9700
C(2)-C(3)	1.494(3)
C(2)-H(2A)	0.9700
C(2)-H(2B)	0.9700
C(3)-C(4)	1.503(3)
C(4)-C(5)	1.541(2)
C(4)-C(13)	1.549(3)
C(4)-H(4)	0.9800
C(5)-C(6)	1.521(2)
C(5)-C(10)	1.522(2)
C(5)-H(5)	0.9800
C(6)-C(7)	1.523(3)
C(6)-H(6A)	0.9700
C(6)-H(6B)	0.9700
C(7)-C(8)	1.515(3)
C(7)-H(7A)	0.9700
C(7)-H(7B)	0.9700
C(8)-C(15)	1.522(3)

C(8)-C(9)	1.525(3)
C(8)-H(8)	0.9800
C(9)-C(10)	1.529(2)
C(9)-H(9)	0.9800
C(10)-C(11)	1.501(2)
C(10)-H(10)	0.9800
C(11)-C(12)	1.319(3)
C(11)-H(11)	0.9300
C(12)-C(13)	1.492(3)
C(12)-H(12)	0.9300
C(13)-C(14)	1.524(3)
C(14)-H(14A)	0.9600
C(14)-H(14B)	0.9600
C(14)-H(14C)	0.9600
C(15)-H(15A)	0.9600
C(15)-H(15B)	0.9600
C(15)-H(15C)	0.9600

C(1)-O(1)-C(13)	114.97(16)
C(9)-O(3)-H(3)	109.5
O(1)-C(1)-C(2)	111.35(18)
O(1)-C(1)-H(1A)	109.4
C(2)-C(1)-H(1A)	109.4
O(1)-C(1)-H(1B)	109.4
C(2)-C(1)-H(1B)	109.4
H(1A)-C(1)-H(1B)	108.0
C(3)-C(2)-C(1)	111.5(2)
C(3)-C(2)-H(2A)	109.3
C(1)-C(2)-H(2A)	109.3
C(3)-C(2)-H(2B)	109.3
C(1)-C(2)-H(2B)	109.3
H(2A)-C(2)-H(2B)	108.0
O(2)-C(3)-C(2)	122.4(2)
O(2)-C(3)-C(4)	122.5(2)
C(2)-C(3)-C(4)	115.09(18)
C(3)-C(4)-C(5)	110.48(15)
C(3)-C(4)-C(13)	111.66(16)
C(5)-C(4)-C(13)	110.22(14)
C(3)-C(4)-H(4)	108.1
C(5)-C(4)-H(4)	108.1
C(13)-C(4)-H(4)	108.1
C(6)-C(5)-C(10)	110.68(14)

C(6)-C(5)-C(4)	113.72(15)
C(10)-C(5)-C(4)	108.59(14)
C(6)-C(5)-H(5)	107.9
C(10)-C(5)-H(5)	107.9
C(4)-C(5)-H(5)	107.9
C(5)-C(6)-C(7)	110.50(15)
C(5)-C(6)-H(6A)	109.6
C(7)-C(6)-H(6A)	109.6
C(5)-C(6)-H(6B)	109.6
C(7)-C(6)-H(6B)	109.6
H(6A)-C(6)-H(6B)	108.1
C(8)-C(7)-C(6)	113.00(16)
C(8)-C(7)-H(7A)	109.0
C(6)-C(7)-H(7A)	109.0
C(8)-C(7)-H(7B)	109.0
C(6)-C(7)-H(7B)	109.0
H(7A)-C(7)-H(7B)	107.8
C(7)-C(8)-C(15)	111.19(18)
C(7)-C(8)-C(9)	110.24(16)
C(15)-C(8)-C(9)	111.59(16)
C(7)-C(8)-H(8)	107.9
C(15)-C(8)-H(8)	107.9
C(9)-C(8)-H(8)	107.9
O(3)-C(9)-C(8)	111.42(15)
O(3)-C(9)-C(10)	110.78(15)
C(8)-C(9)-C(10)	111.76(14)
O(3)-C(9)-H(9)	107.6
C(8)-C(9)-H(9)	107.6
C(10)-C(9)-H(9)	107.6
C(11)-C(10)-C(5)	110.14(14)
C(11)-C(10)-C(9)	112.47(15)
C(5)-C(10)-C(9)	111.37(14)
C(11)-C(10)-H(10)	107.5
C(5)-C(10)-H(10)	107.5
C(9)-C(10)-H(10)	107.5
C(12)-C(11)-C(10)	123.14(17)
C(12)-C(11)-H(11)	118.4
C(10)-C(11)-H(11)	118.4
C(11)-C(12)-C(13)	124.84(18)
C(11)-C(12)-H(12)	117.6
C(13)-C(12)-H(12)	117.6
O(1)-C(13)-C(12)	104.26(15)

O(1)-C(13)-C(14)	110.89(16)
C(12)-C(13)-C(14)	110.03(18)
O(1)-C(13)-C(4)	109.65(16)
C(12)-C(13)-C(4)	111.19(15)
C(14)-C(13)-C(4)	110.66(16)
C(13)-C(14)-H(14A)	109.5
C(13)-C(14)-H(14B)	109.5
H(14A)-C(14)-H(14B)	109.5
C(13)-C(14)-H(14C)	109.5
H(14A)-C(14)-H(14C)	109.5
H(14B)-C(14)-H(14C)	109.5
C(8)-C(15)-H(15A)	109.5
C(8)-C(15)-H(15B)	109.5
H(15A)-C(15)-H(15B)	109.5
C(8)-C(15)-H(15C)	109.5
H(15A)-C(15)-H(15C)	109.5
H(15B)-C(15)-H(15C)	109.5

Symmetry transformations used to generate equivalent atoms:

Table 4. Anisotropic displacement parameters ($\text{\AA}^2 \times 10^3$) for t19. The anisotropic displacement factor exponent takes the form: $-2\pi^2 [h^2 a^{*2} U^{11} + \dots + 2 h k a^* b^* U^{12}]$

	U ¹¹	U ²²	U ³³	U ²³	U ¹³	U ¹²
O(1)	46(1)	50(1)	72(1)	-16(1)	2(1)	6(1)
O(2)	47(1)	100(1)	60(1)	-3(1)	-16(1)	-7(1)
O(3)	47(1)	59(1)	43(1)	-16(1)	-5(1)	-3(1)
C(1)	68(2)	78(2)	86(2)	-43(2)	4(2)	7(2)
C(2)	55(1)	92(2)	52(1)	-31(1)	-3(1)	-7(1)
C(3)	40(1)	58(1)	52(1)	-9(1)	-5(1)	-12(1)
C(4)	31(1)	43(1)	40(1)	-4(1)	0(1)	-1(1)
C(5)	32(1)	38(1)	33(1)	-1(1)	-2(1)	-1(1)
C(6)	44(1)	48(1)	40(1)	7(1)	-7(1)	-1(1)
C(7)	51(1)	48(1)	54(1)	17(1)	-5(1)	-5(1)
C(8)	37(1)	35(1)	63(1)	2(1)	-4(1)	0(1)
C(9)	33(1)	40(1)	39(1)	-6(1)	-2(1)	2(1)
C(10)	33(1)	36(1)	33(1)	-1(1)	0(1)	1(1)
C(11)	51(1)	47(1)	35(1)	5(1)	-6(1)	2(1)
C(12)	52(1)	41(1)	52(1)	11(1)	-4(1)	2(1)
C(13)	38(1)	38(1)	58(1)	-2(1)	2(1)	-3(1)
C(14)	53(1)	48(1)	102(2)	11(1)	0(1)	-13(1)

C(15)	64(1)	42(1)	103(2)	5(1)	-16(1)	-12(1)
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Table 5. Hydrogen coordinates ($\times 10^4$) and isotropic displacement parameters ($\text{\AA}^2 \times 10^{-3}$) for t19.

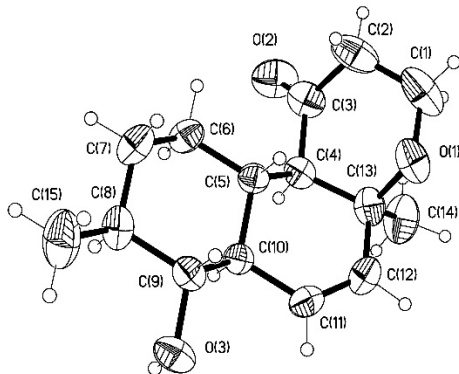
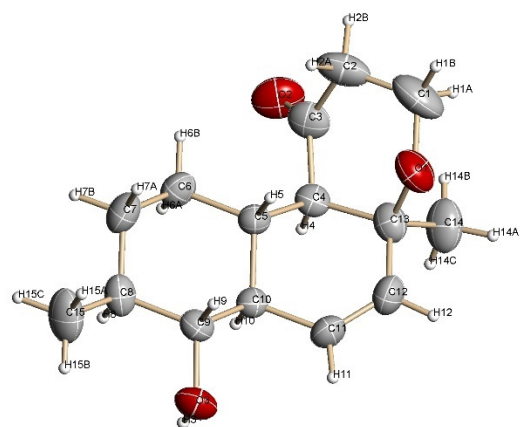
	x	y	z	U(eq)
H(3)	3589	7305	9970	75
H(1A)	1964	1318	8036	93
H(1B)	4687	1661	7833	93
H(2A)	3545	3803	7657	79
H(2B)	1490	2893	7401	79
H(4)	-766	4322	8784	46
H(5)	4278	5024	8525	41
H(6A)	107	6772	8454	53
H(6B)	1726	6289	7978	53
H(7A)	5261	7409	8287	61
H(7B)	3020	8418	8244	61
H(8)	2310	8305	9132	54
H(9)	6381	6498	9186	45
H(10)	1217	5918	9354	41
H(11)	4357	4532	9856	53
H(12)	3848	2514	9561	58
H(14A)	740	1028	9085	102
H(14B)	-879	1616	8630	102
H(14C)	-1251	2141	9199	102
H(15A)	7459	8855	8938	105
H(15B)	5982	9340	9431	105
H(15C)	5264	9887	8880	105

Table 6. Hydrogen bonds for t19 [$\text{\AA}$ and $^\circ$].

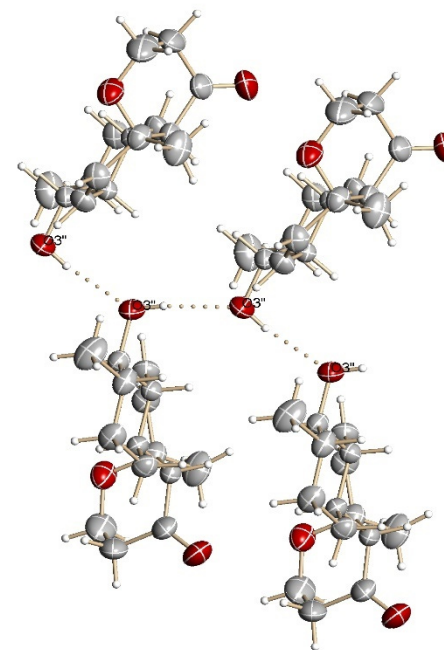
D-H...A	d(D-H)	d(H...A)	d(D...A)	$\angle(\text{DHA})$
O(3)-H(3)...O(3)#1	0.82	2.07	2.8785(10)	171.3
C(2)-H(2A)...O(2)#2	0.97	2.55	3.374(3)	142.3

Symmetry transformations used to generate equivalent atoms:

#1 $x-1/2, -y+3/2, -z+2$ #2 $x+1, y, z$



Crystal structure of **1**

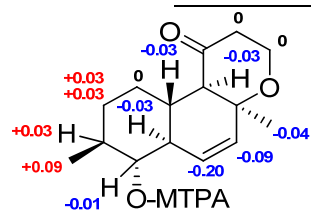


Polymer chain fragment of **1**

Figure S10. ^1H and ^{13}C NMR Spectroscopic for S-MTPA ester of **1** (1a) and R-MTPA ester of **1** (1b).

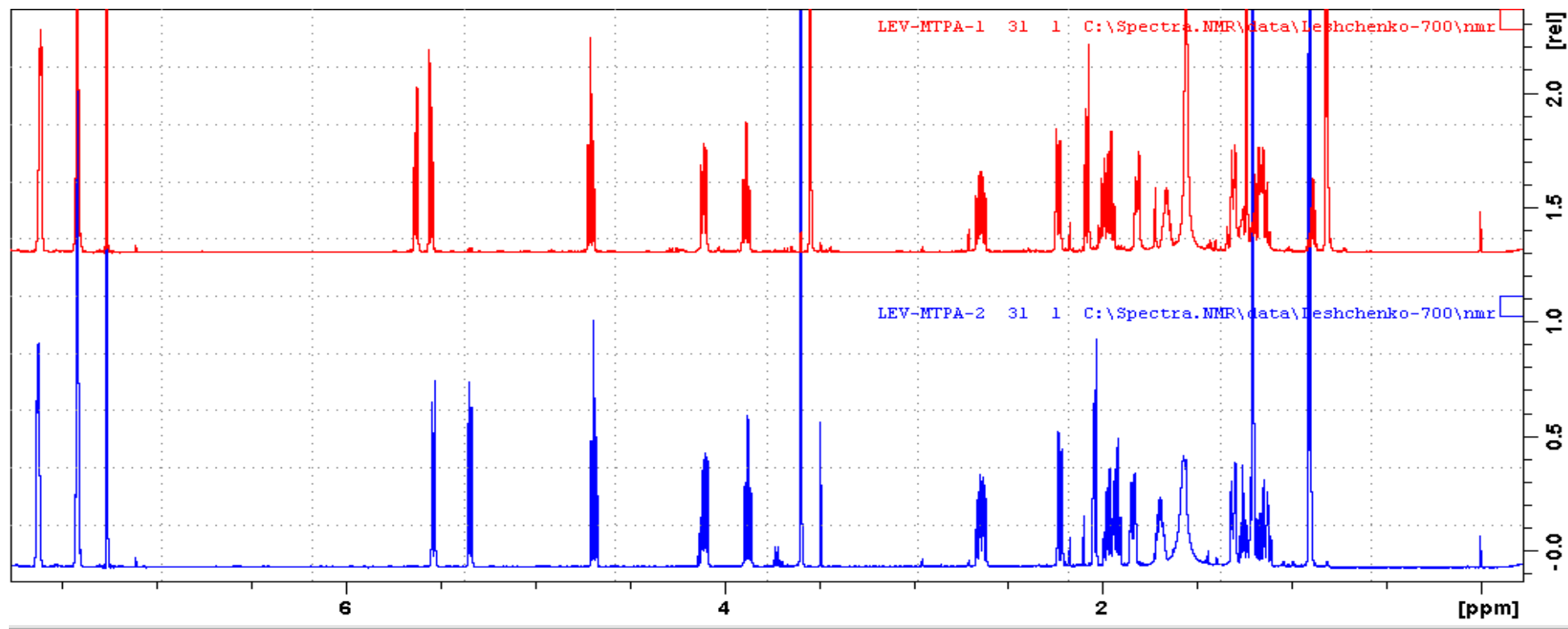
Table 1. $\Delta\delta(\delta_S - \delta_R)$ values (in ppm) for the (S)- and (R)-MPTA esters of **1**.

Position	δ_C (mult) at 176.4 in CDCl_3	(S)-MTPA ester (1a) at 700.13 in CDCl_3 δ_H (J, Hz)	(R)-MTPA ester (1b) at 700.13 in CDCl_3 δ_H (J, Hz)	$\Delta\delta(\delta_S - \delta_R)$ values (in ppm)
1	60.9, CH_2	4.10, dd (12.0, 8.1) 3.88, td (12.0, 2.9)	4.10, dd (11.7, 8.1) 3.88, td (11.8, 2.8)	0 0
2	39.9, CH_2	2.64, ddd (13.8, 12.1, 8.0) 2.23, brd (13.8)	2.64, ddd (13.9, 12.1, 8.2) 2.23, brd (13.8)	0 0
3	209.0, C			
4	62.3, CH	2.04, d (11.1)	2.07, d (10.8)	-0,03
5	37.2, CH	1.96, qd (11.5, 3.3)	1.99, qd (10.9, 3.1)	-0,03
6	28.3, CH_2	1.30, dq (13.1, 3.2) 1.14, qd (11.3, 3.0)	1.30, m 1.14, m	0 0
7	32.7, CH_2	1.84, dq (13.8, 3.4) 1.20, m	1.81, m 1,17	+0,03 +0,03
8	38.1, CH	1.69, m	1,66, m	+0,03
9	81.7, CH	4.69 t (10.4)	4.70, t (10.5)	-0,01
10	45.6, CH	1.92, tt (10.7, 1.8)	1.95, brt (10.5)	-0,03
11	127.9, CH	5.34 d (10.3)	5.54, d (10.1)	-0,20
12	132.3, CH	5.53 dd (10.3, 2.5)	5.62, dd (10.1, 2.1)	-0,09
13	74.4, C			
14	23.0, CH_3	1.20, s	1.24, s	-0,04
15	18.5, CH_3	0.90, d (6.3)	0.81, d (6.5)	+0,09



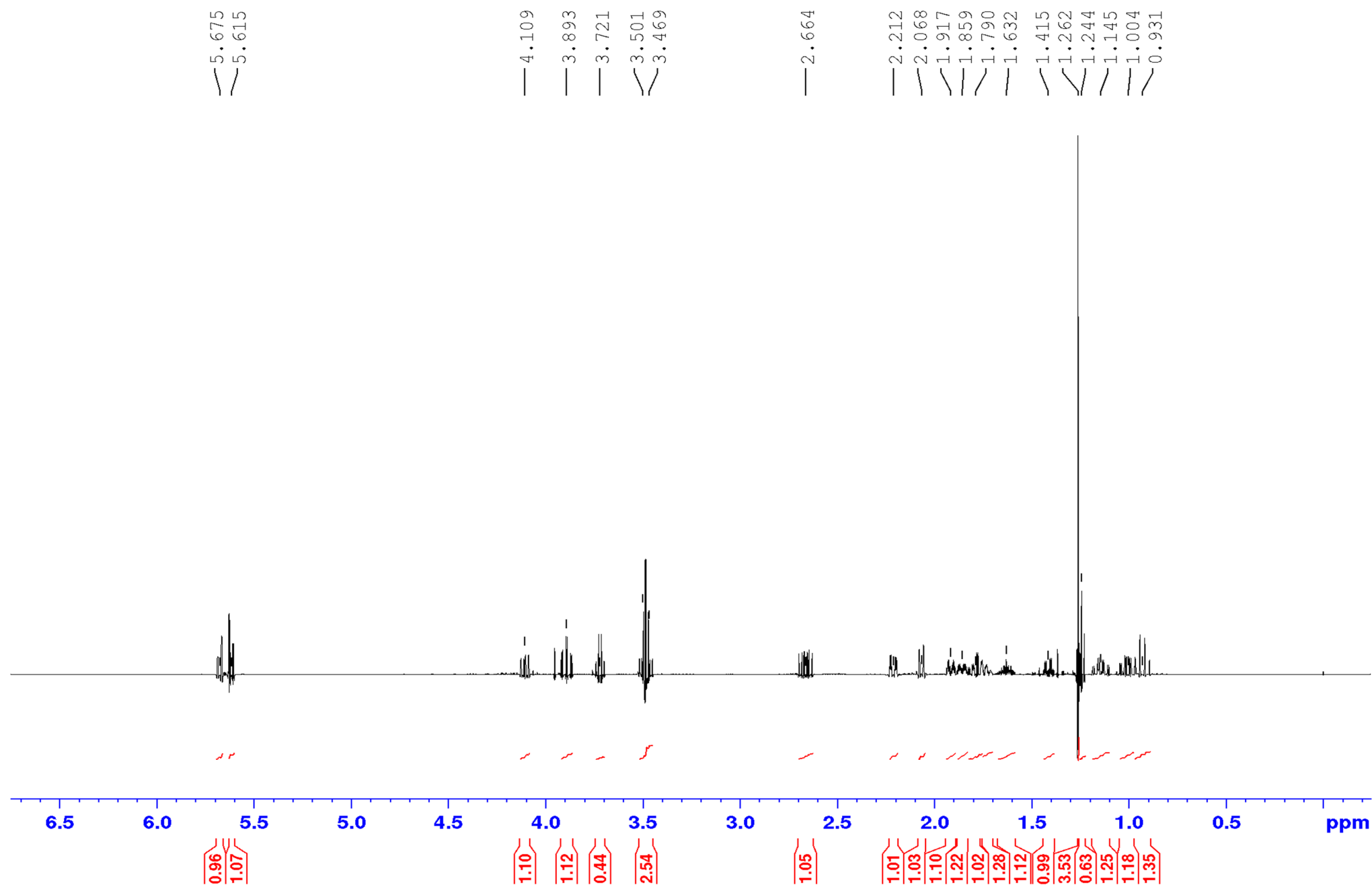
4R, 5S, 8S, 9R, 10R, 13S – 1

^1H NMR spectrum (700.13 MHz) of (S)- and (R)-MPTA esters of **1** in CDCl_3



*LEV-MTPA-2 - (S)-MTPA ester (1a); LEV-MTPA-1 - (R)-MTPA ester (1b)

Figure S11. ^1H NMR spectrum (500.13 MHz) of **2** in CDCl_3



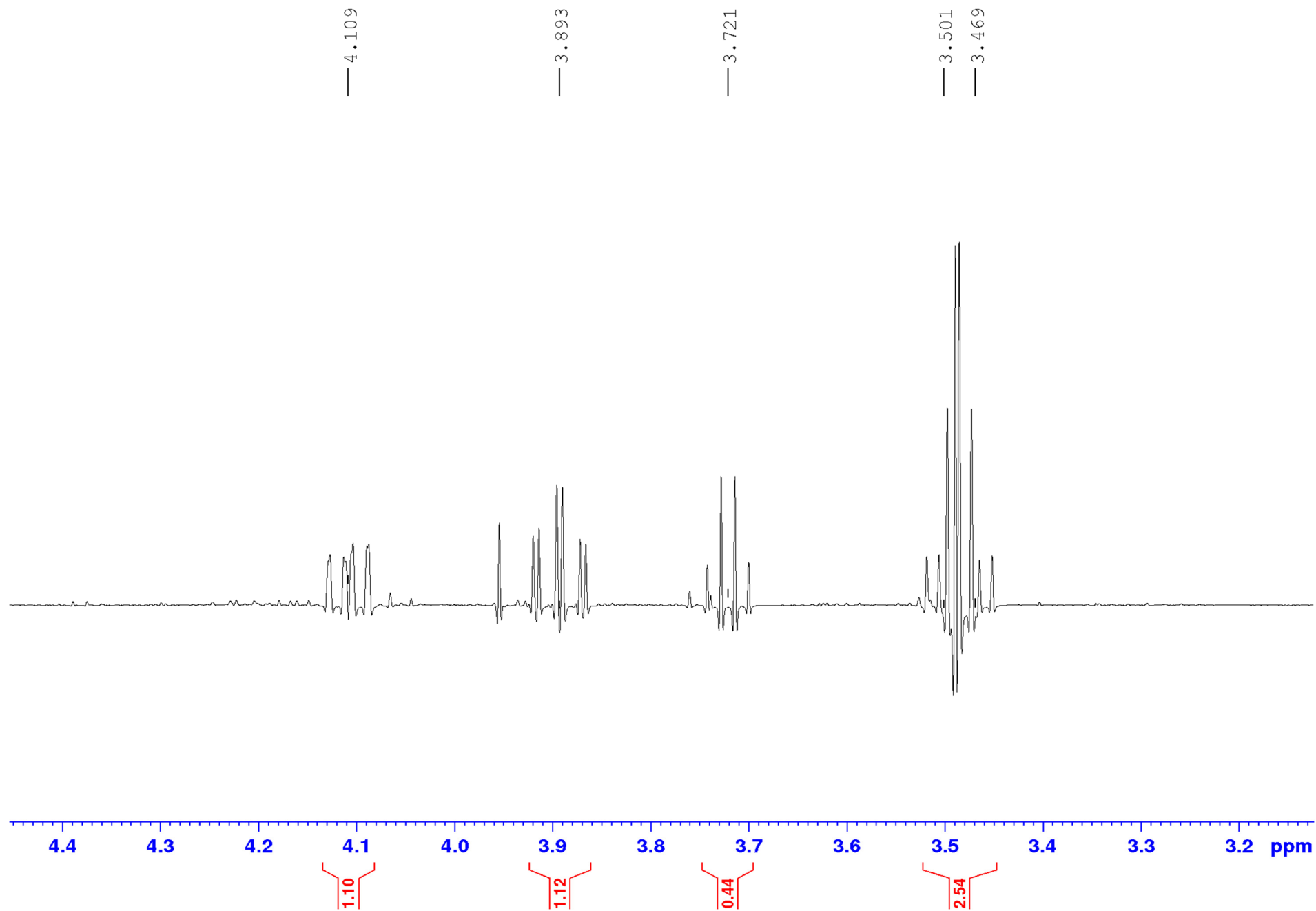


Figure S12. ^{13}C NMR spectrum (125.77 MHz) of **2** in CDCl_3

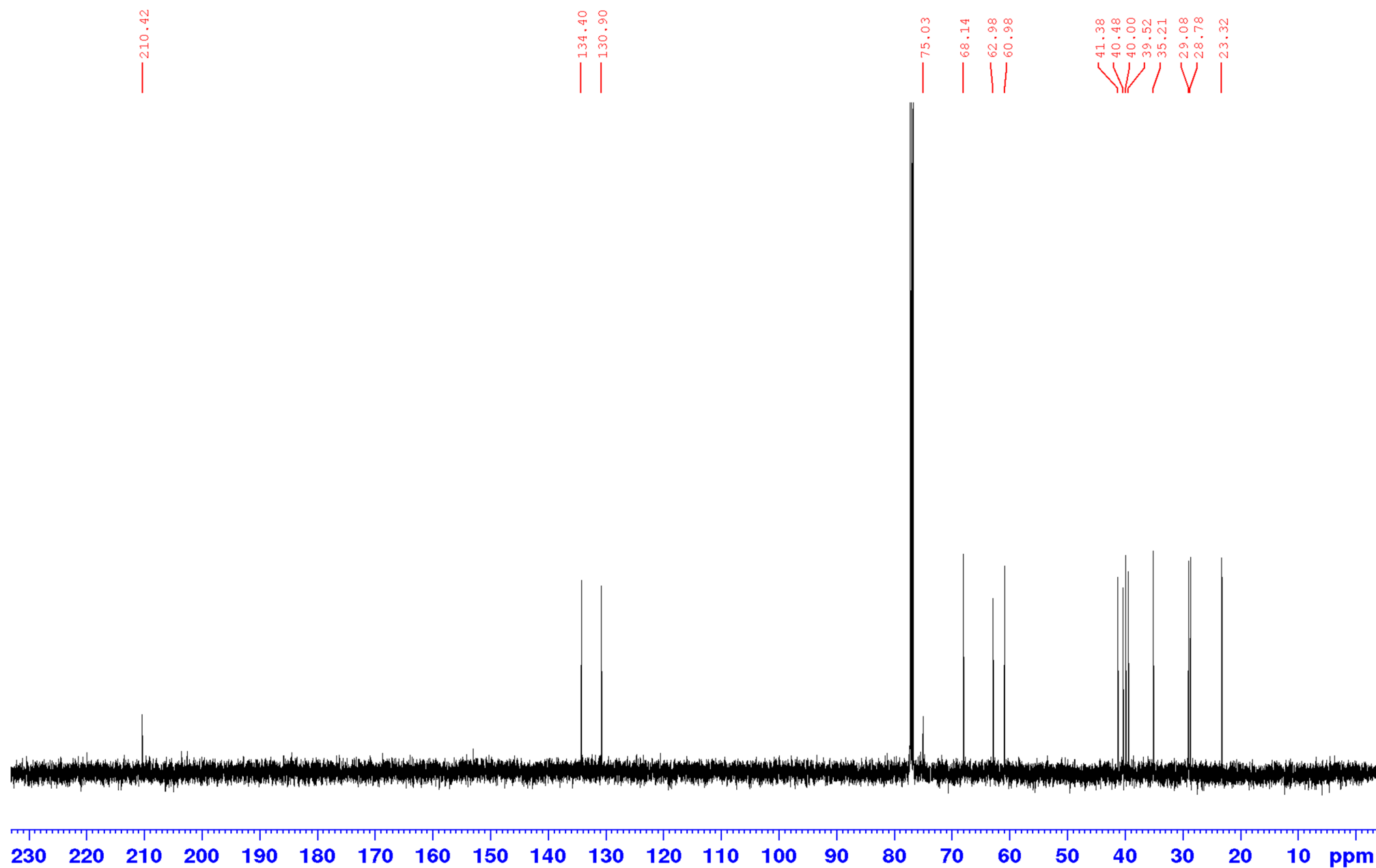


Figure S13. DEPT-135 spectrum (125.77 MHz) of **2** in CDCl₃

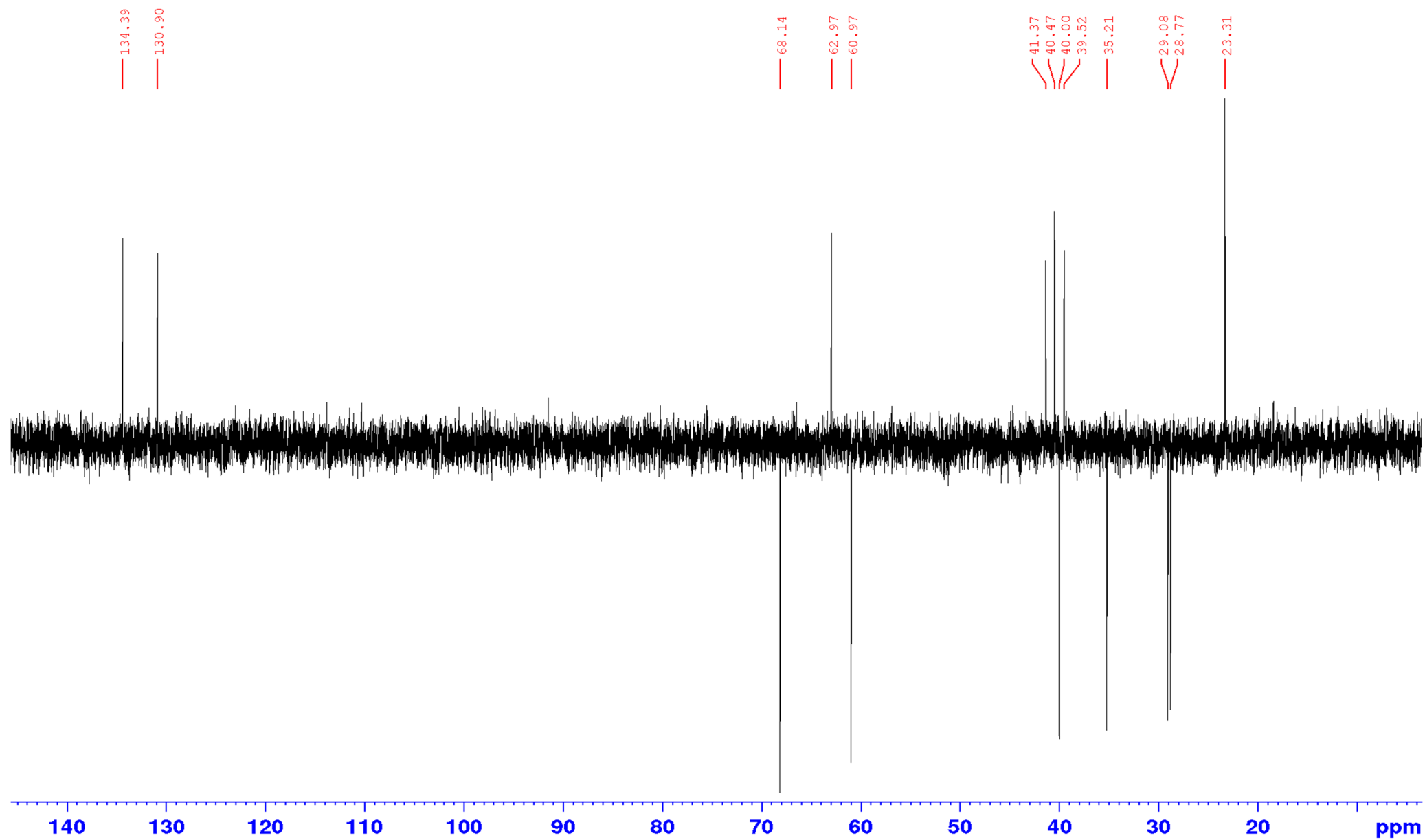


Figure S14. DEPT-90 spectrum (125.77 MHz) of **2** in CDCl₃

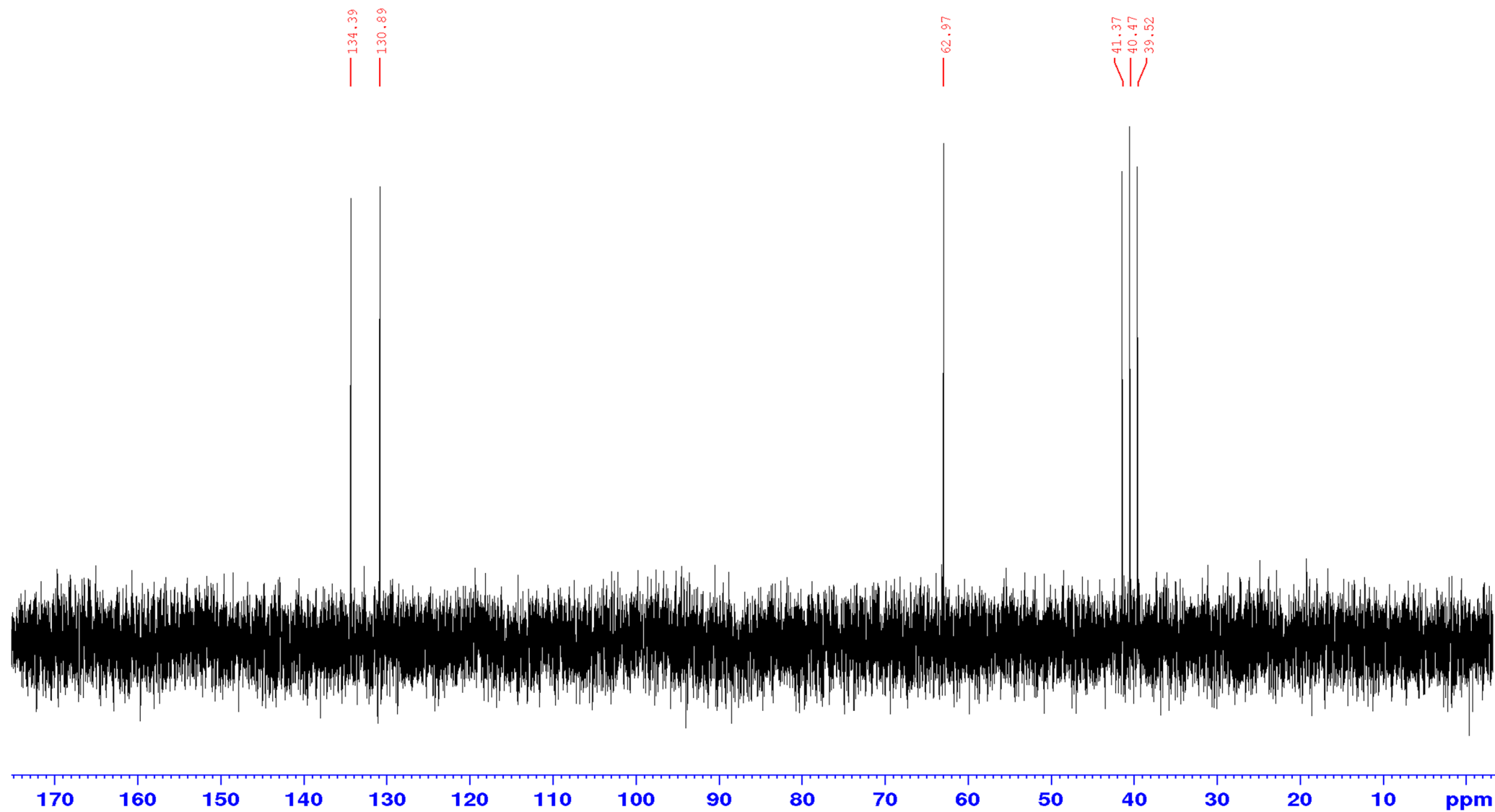


Figure S15. HSQC spectrum of **2** in CDCl₃

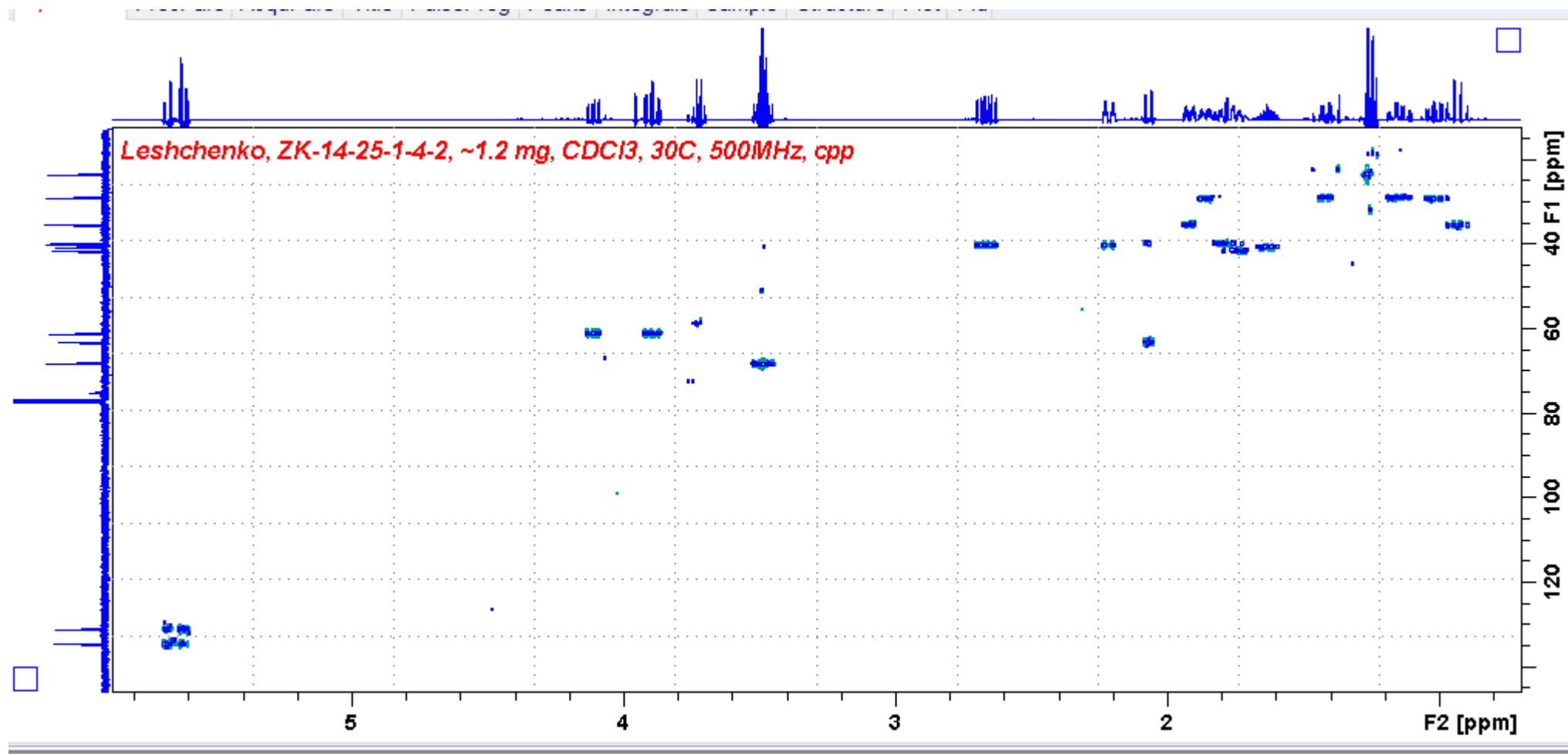


Figure S16. HMBC spectrum of **2** in CDCl₃

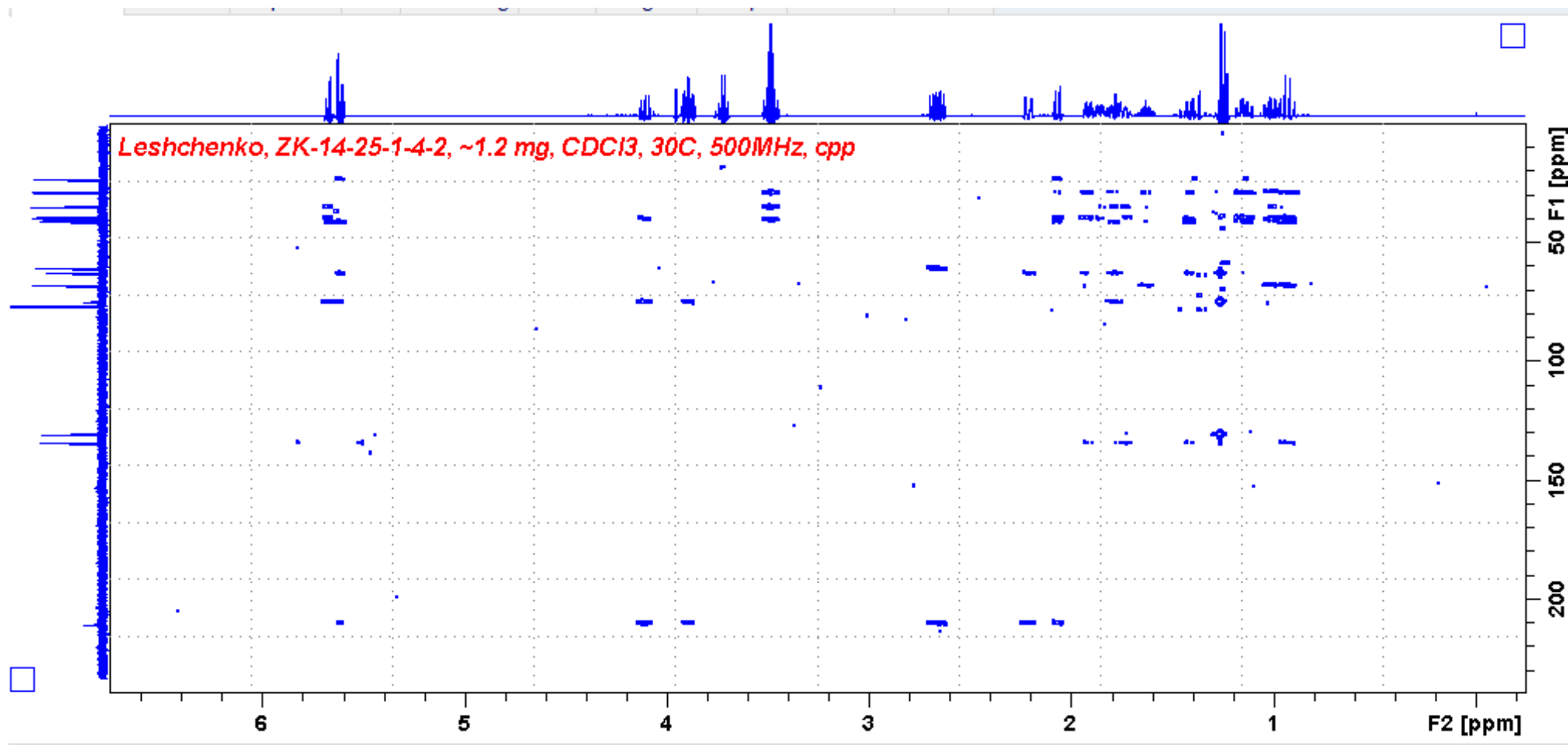


Figure S17. ¹H-¹H COSY spectrum of **2** in CDCl₃

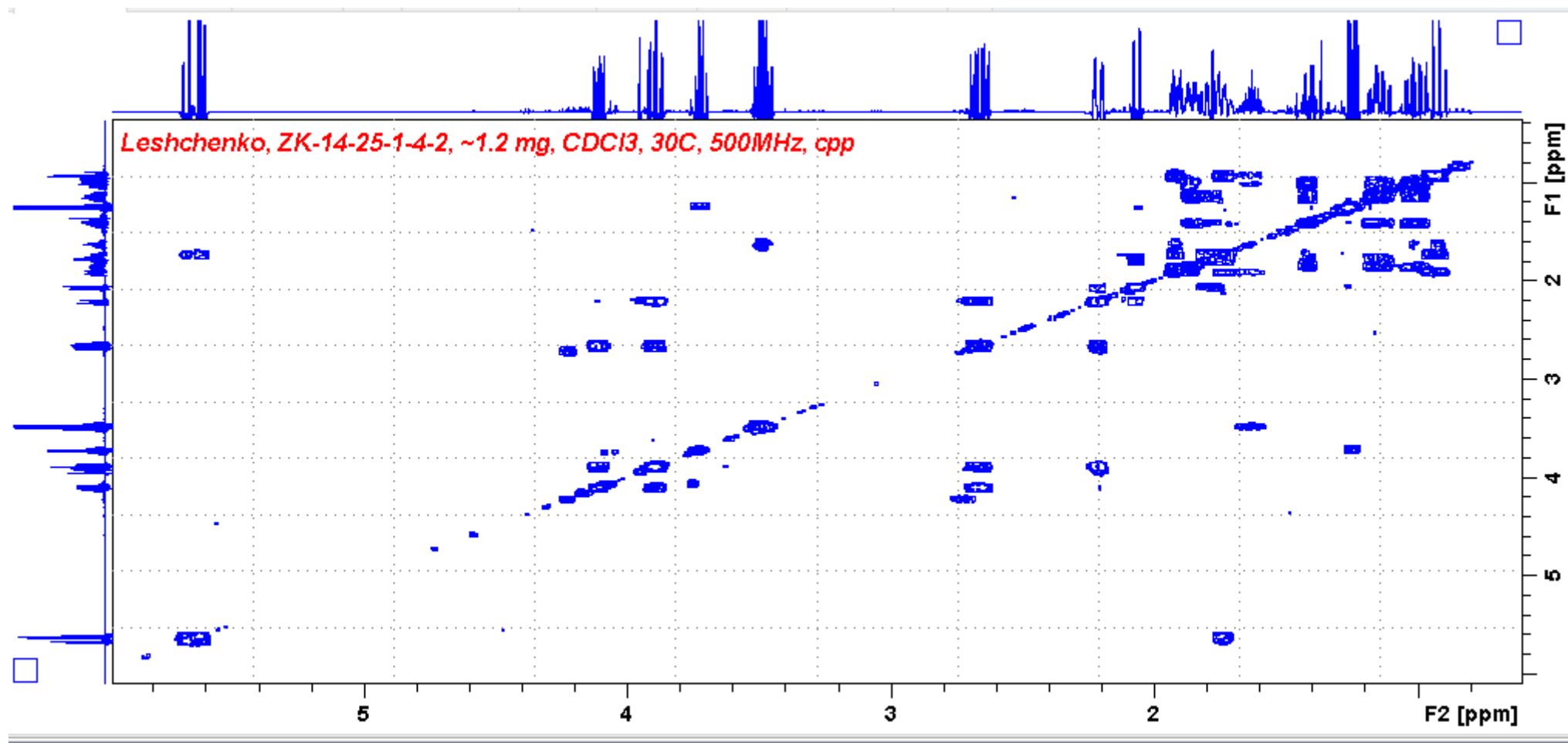


Figure S19. NOESY spectrum of **2** in CDCl₃

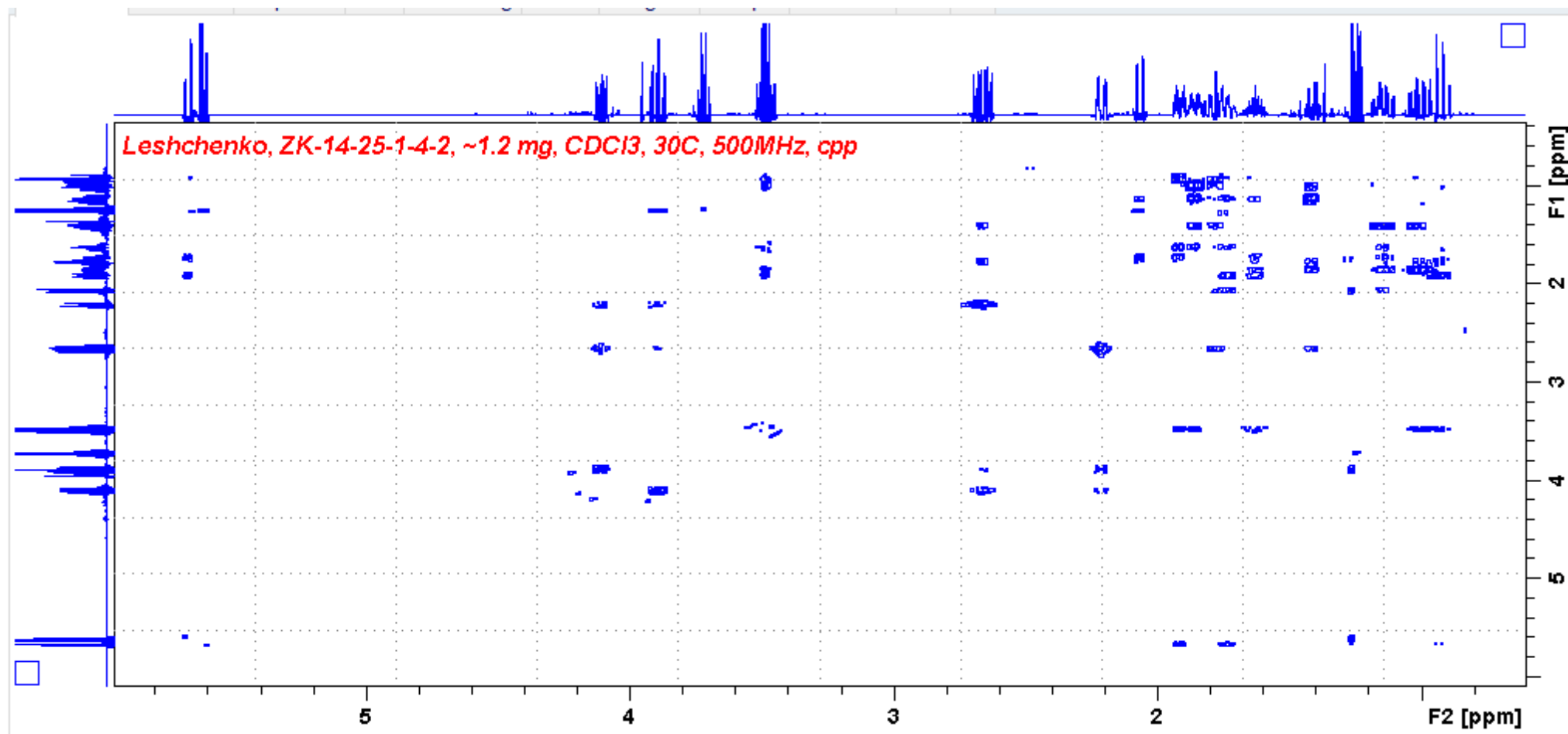
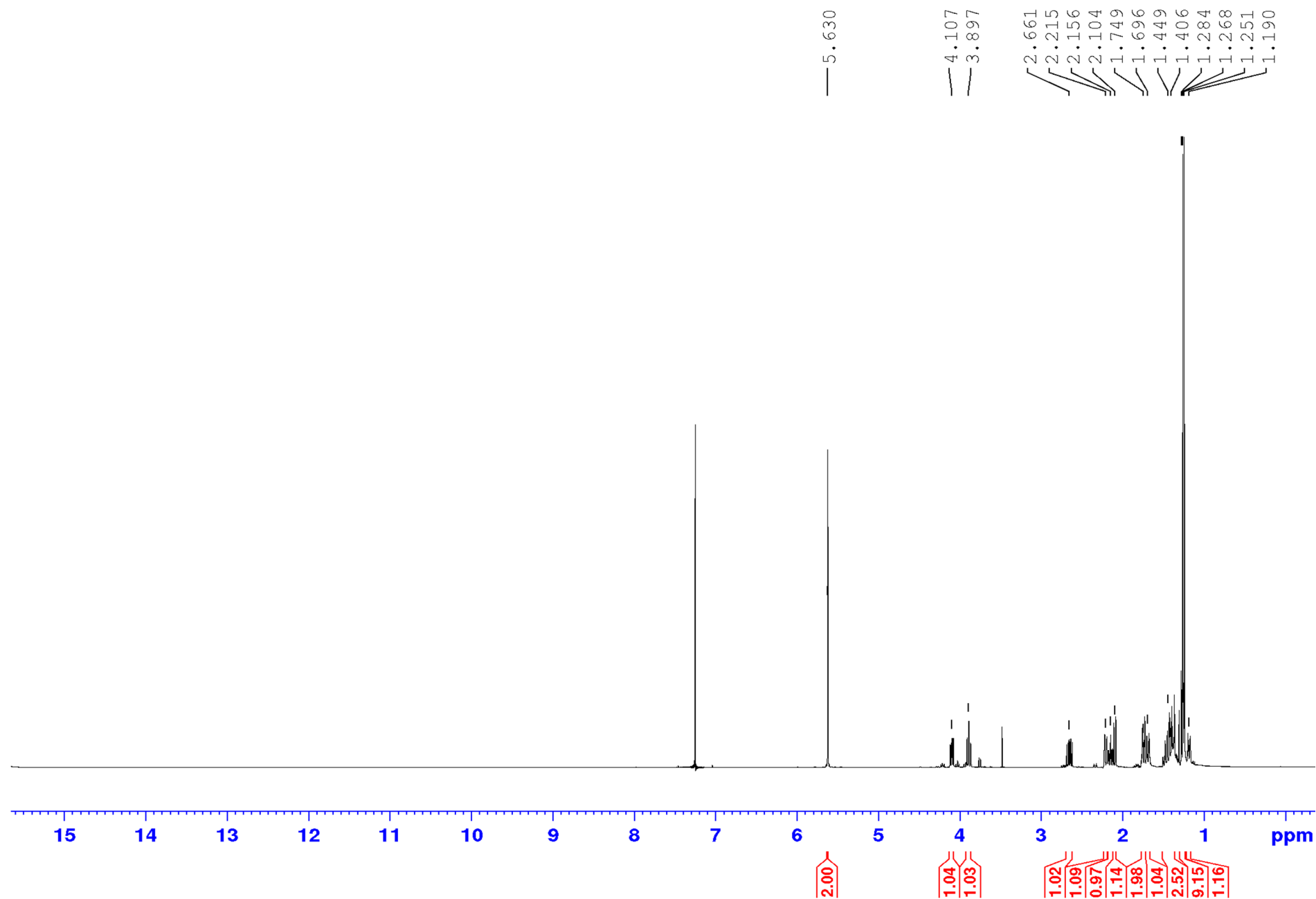


Figure S20. ^1H NMR spectrum (500.13 MHz) of **3** in CDCl_3



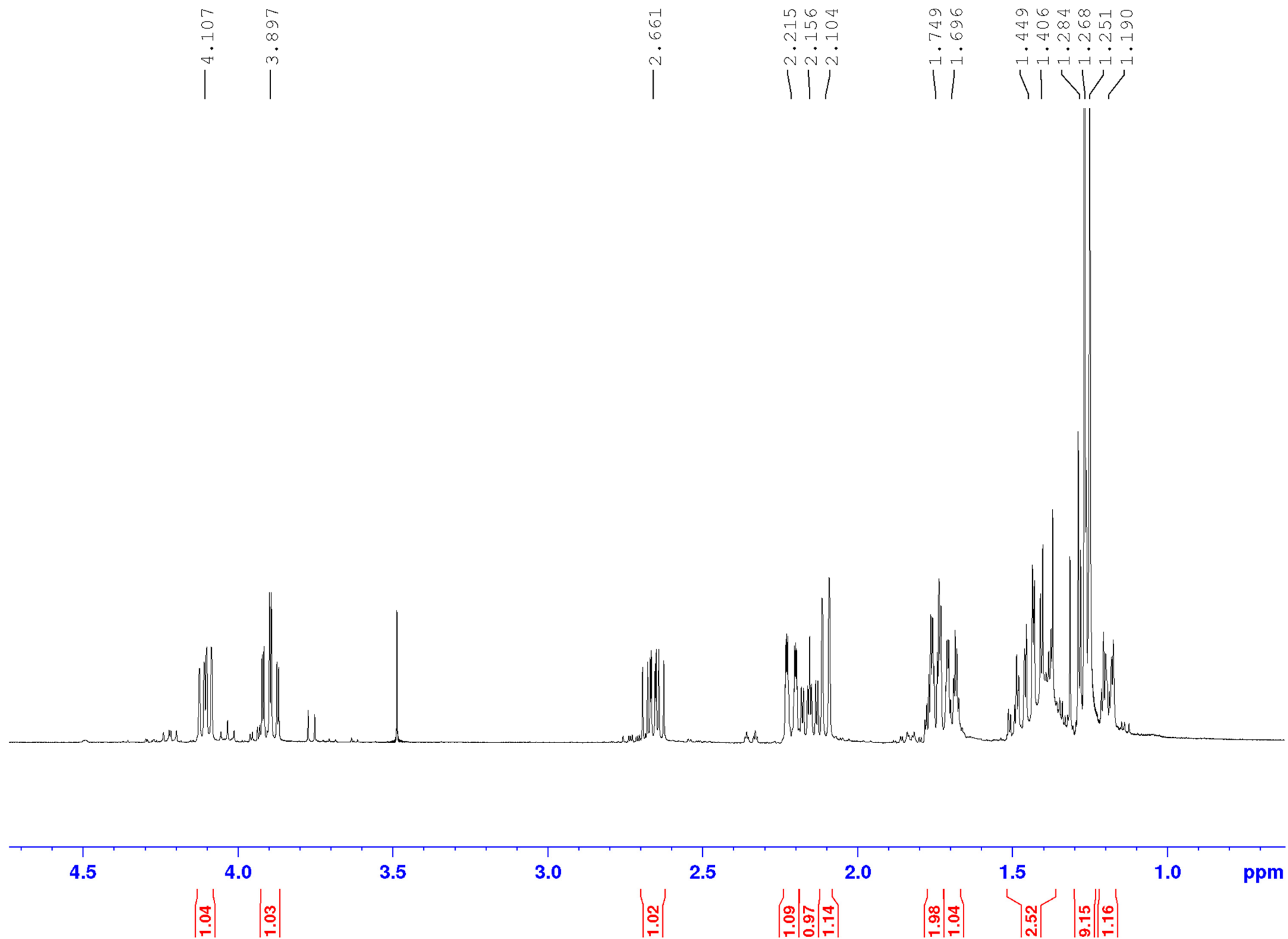


Figure S21. ^{13}C NMR spectrum (125.77 MHz) of **3** in CDCl_3

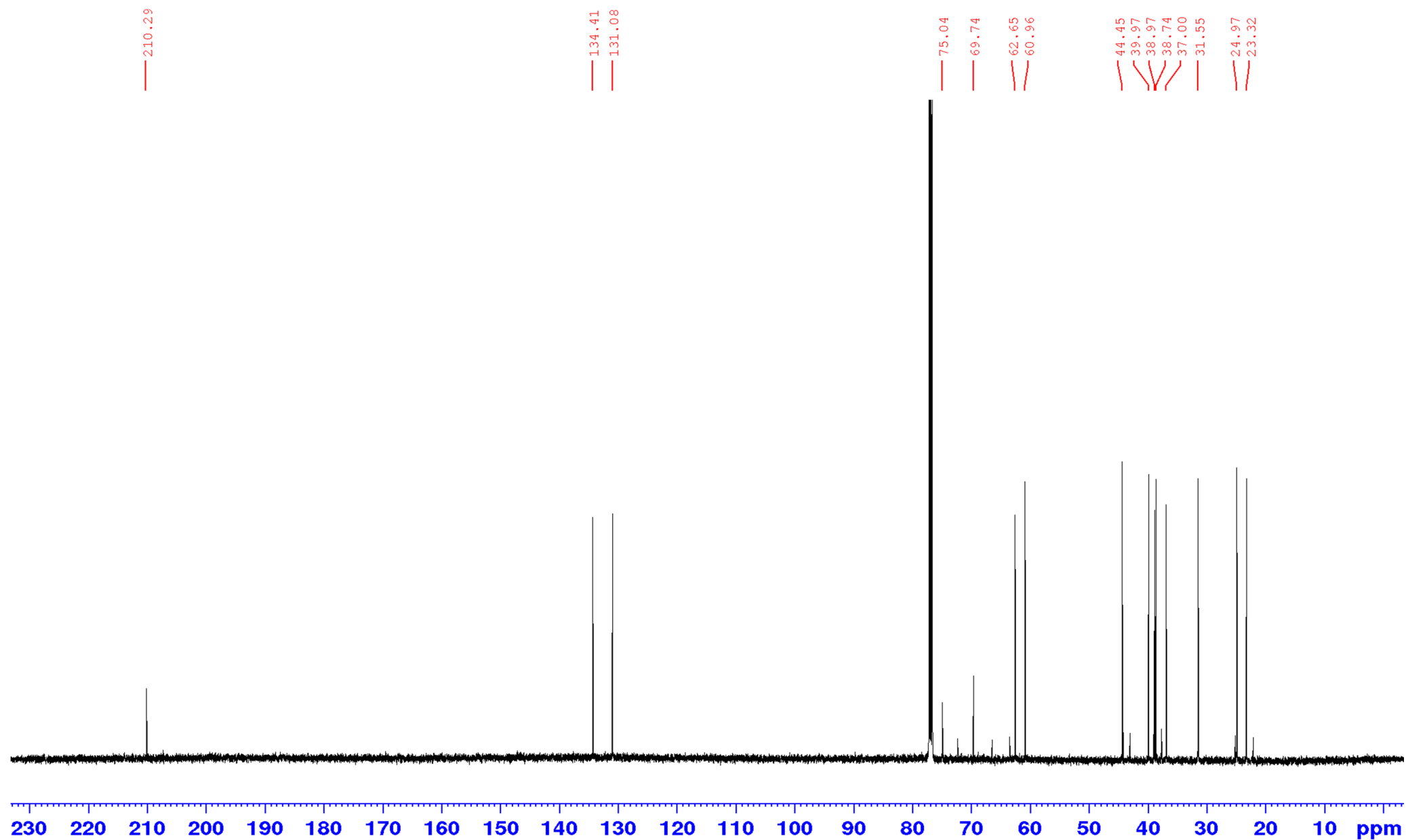


Figure S22. DEPT-135 spectrum (125.77 MHz) of **3** in CDCl₃

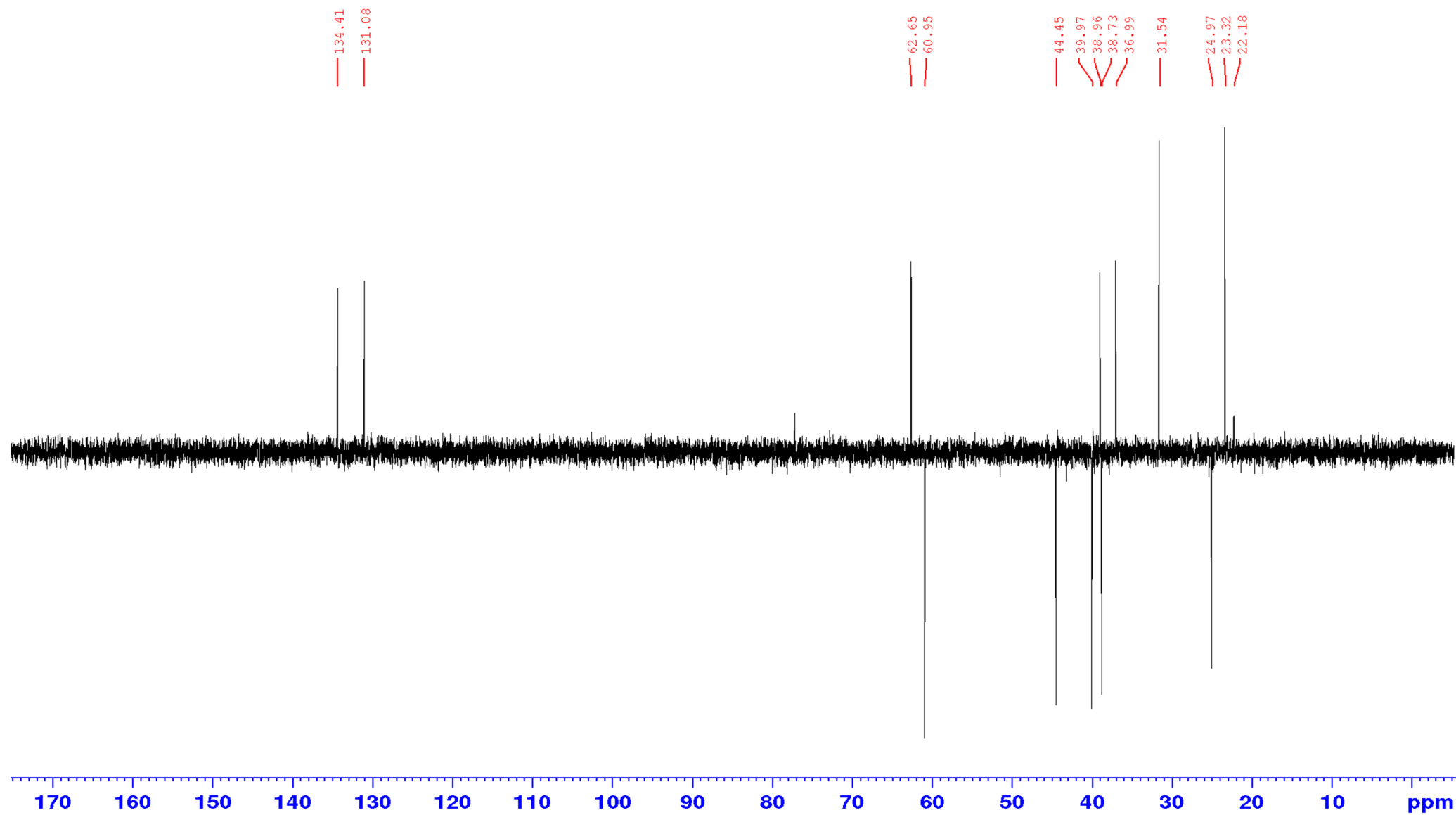


Figure S23. DEPT-90 spectrum (125.77 MHz) of **3** in CDCl₃

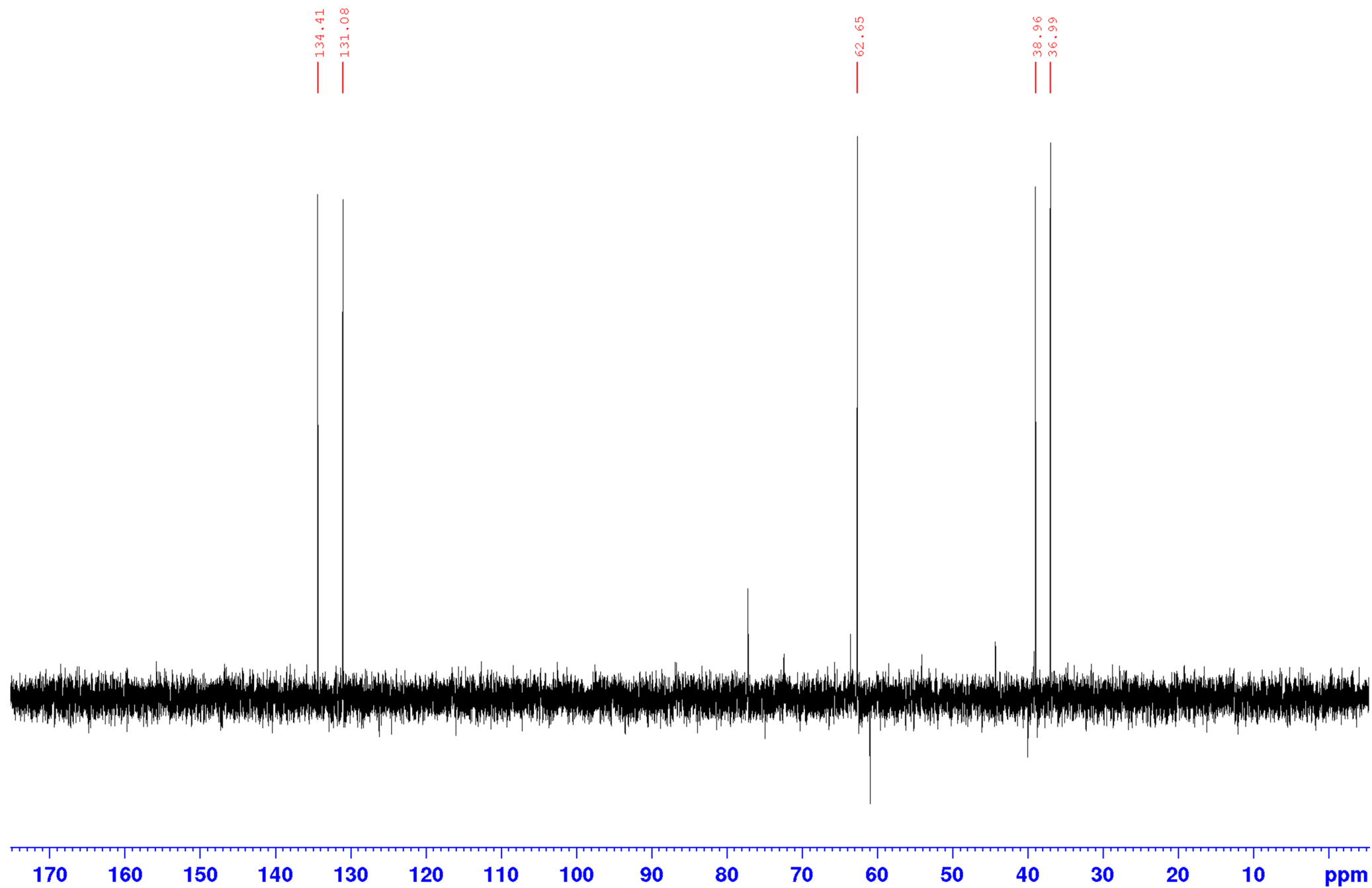


Figure S24. HSQC spectrum of **3** in CDCl₃

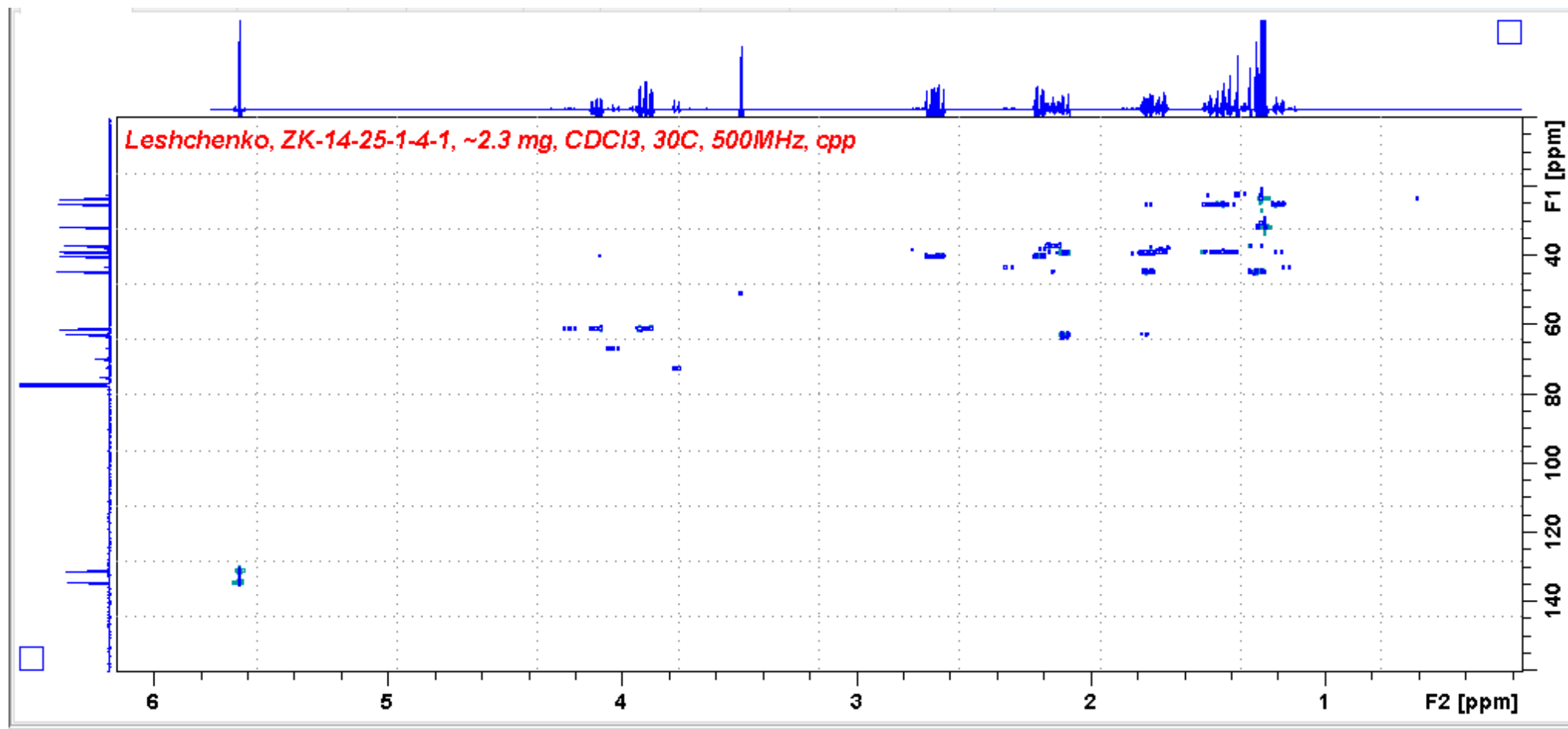


Figure S25. HMBC spectrum of **3** in CDCl₃

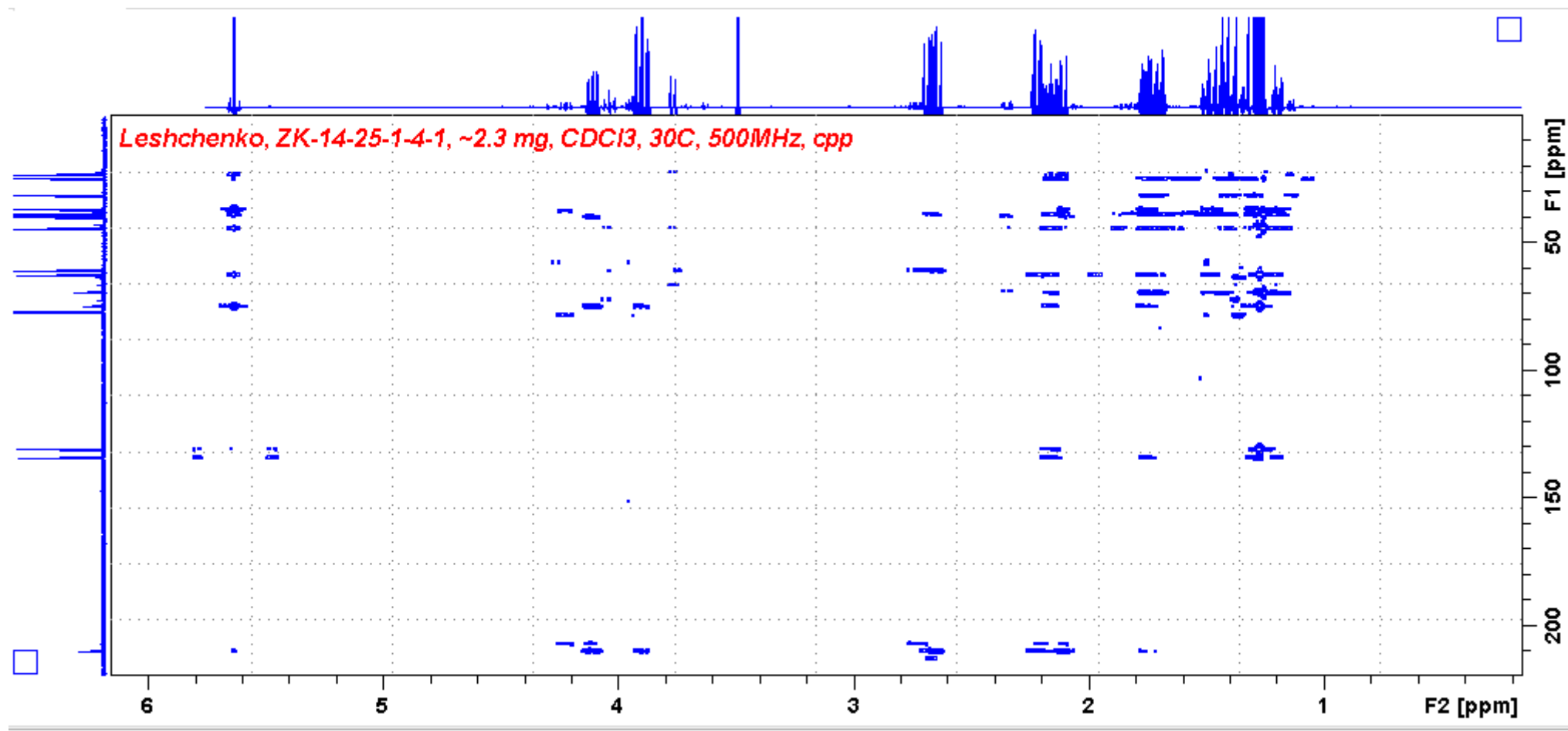


Figure S26. ^1H - ^1H COSY spectrum of **3** in CDCl_3

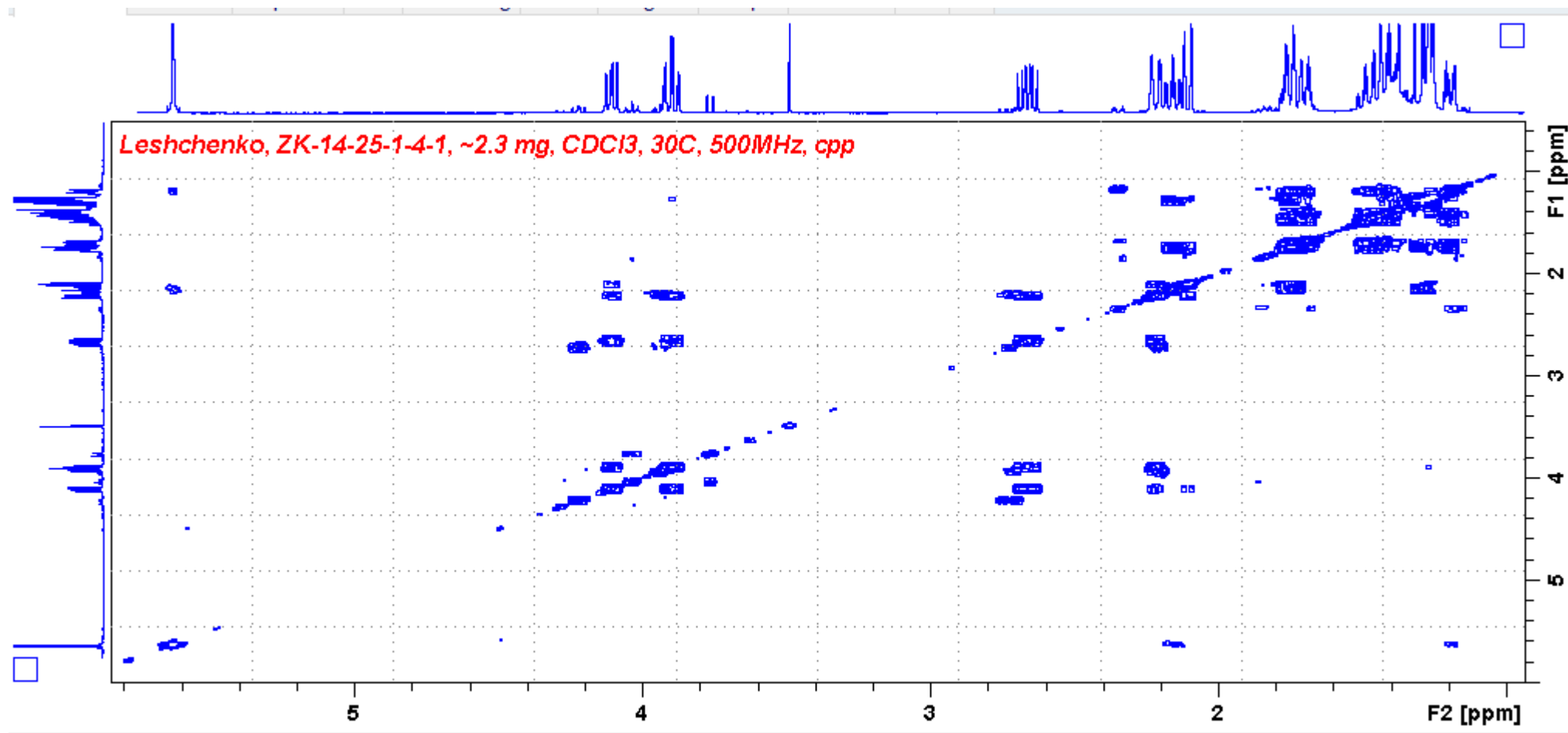


Figure S27. NOESY spectrum of **3** in CDCl₃

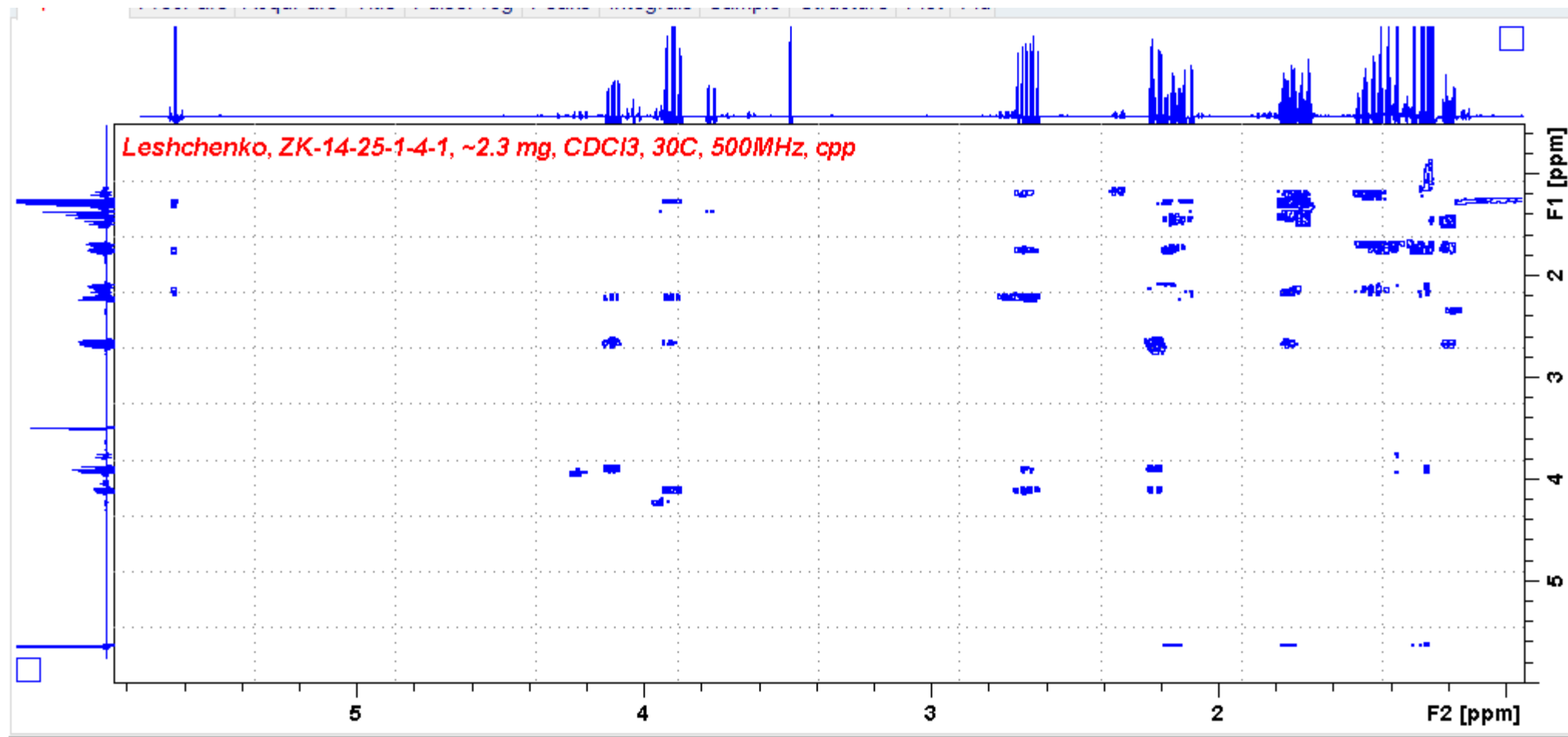
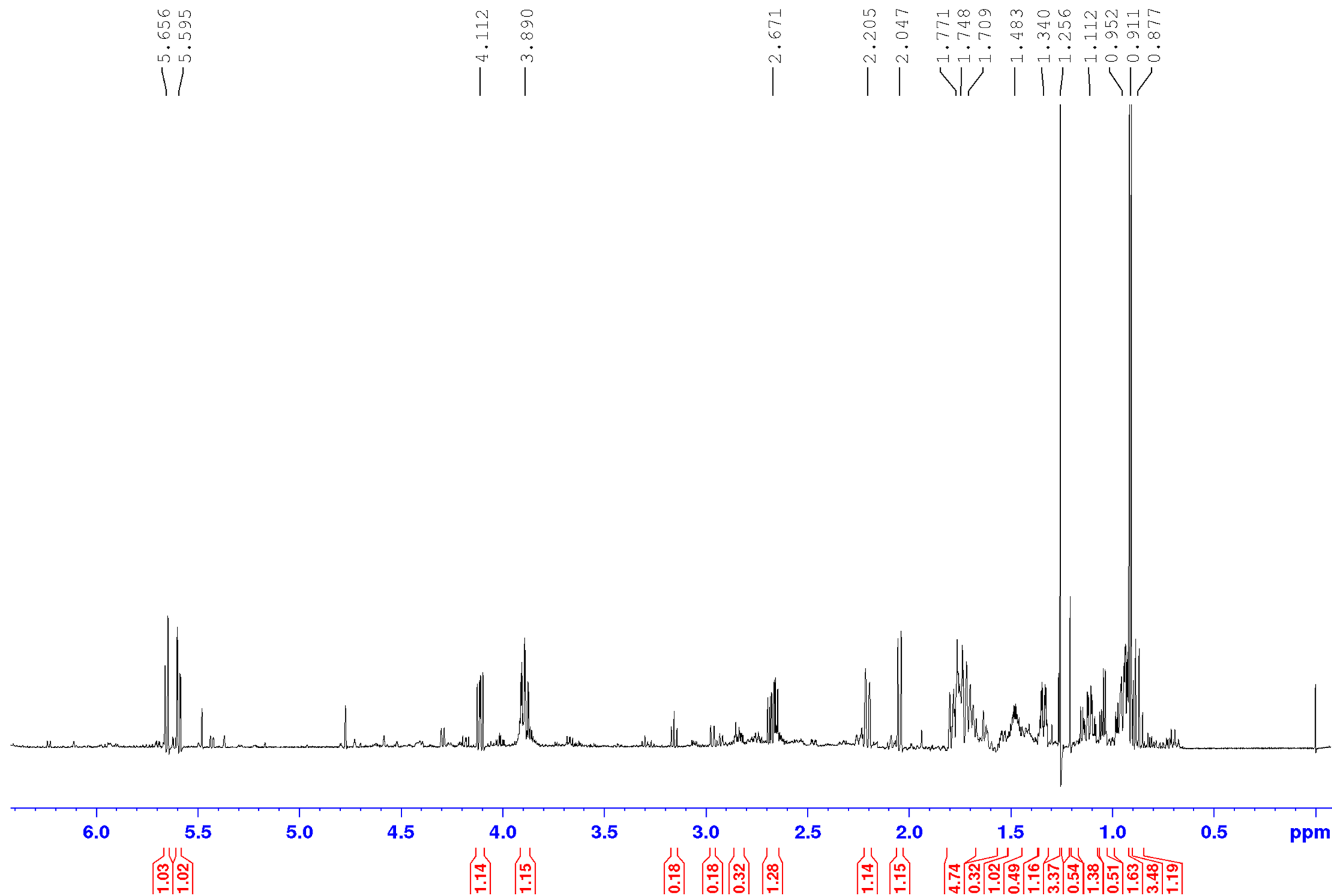


Figure S28. ^1H NMR spectrum (700.13 MHz) of **4** in CDCl_3



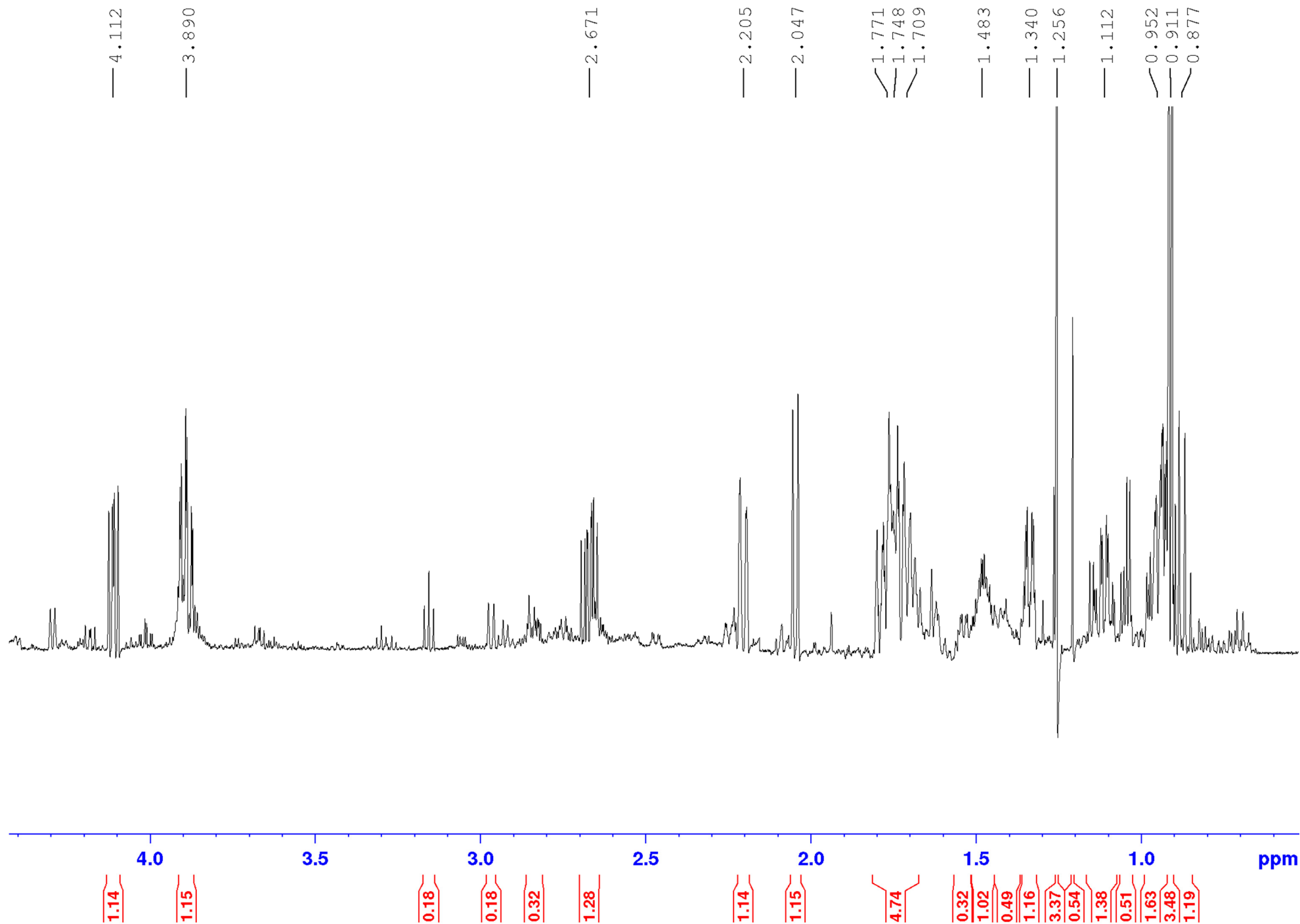


Figure S29. ^{13}C NMR spectrum (176.04 MHz) of **4** in CDCl_3

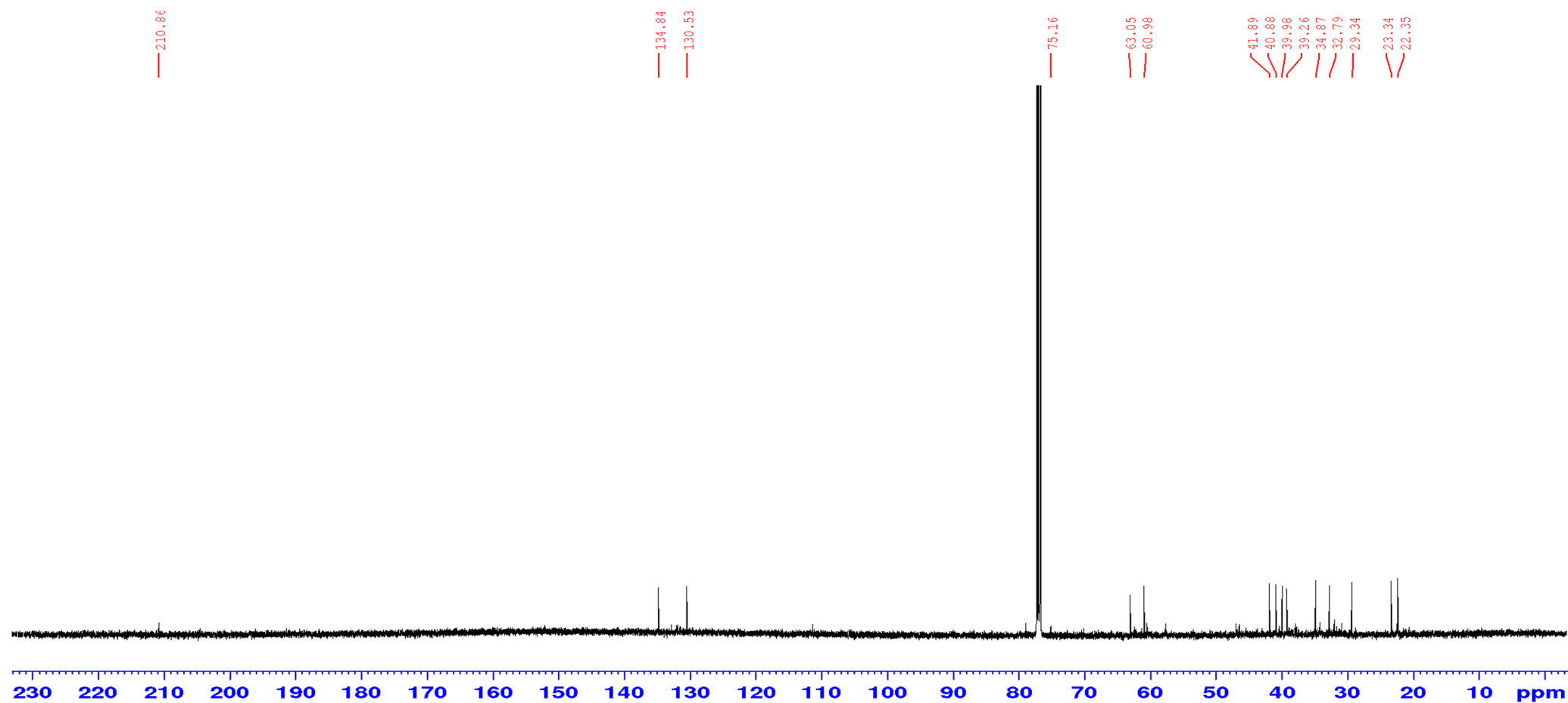


Figure S30. DEPT-135 spectrum (176.04 MHz) of **4** in CDCl₃

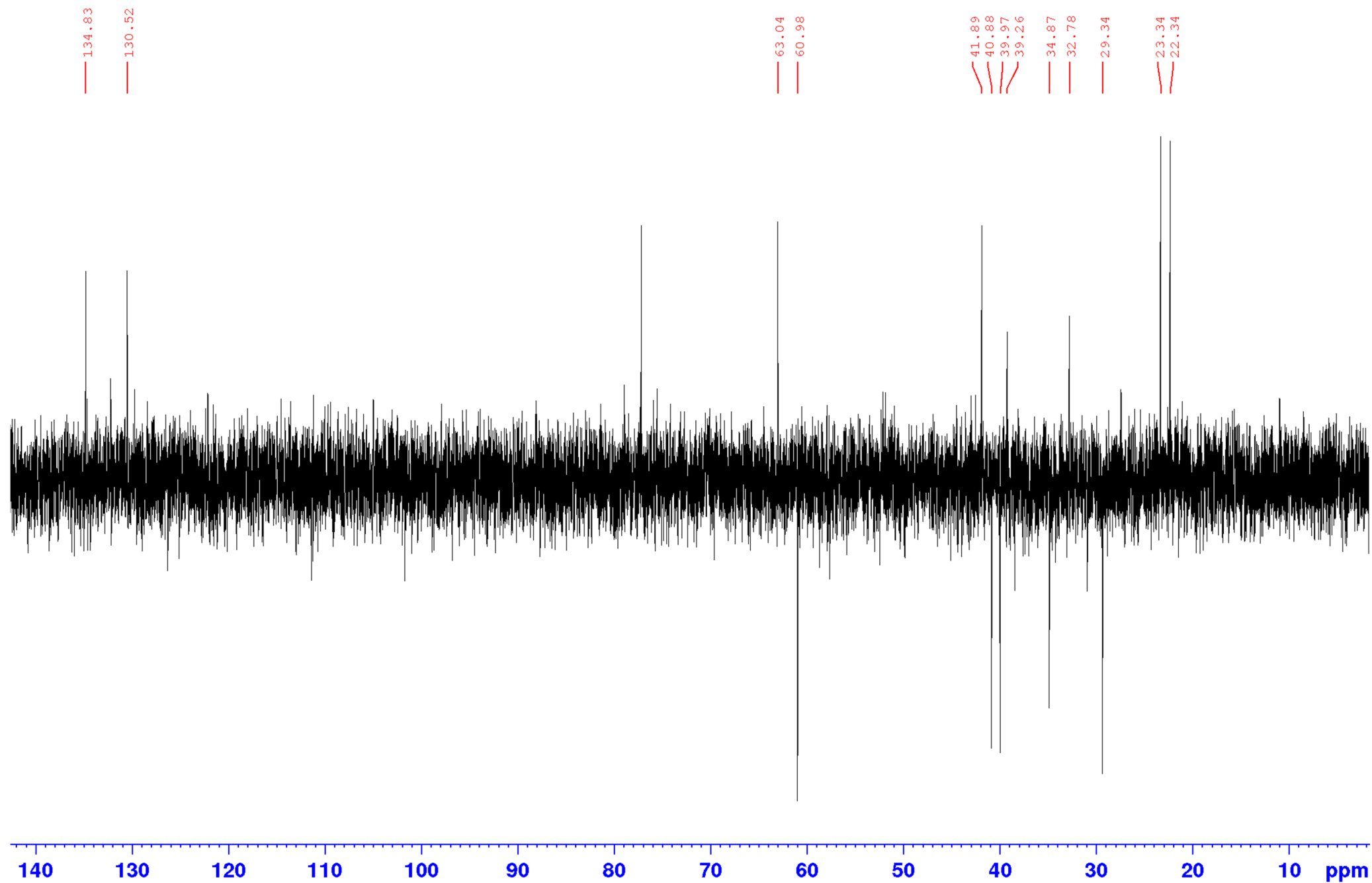


Figure S31. DEPT-90 spectrum (176.04 MHz) of **4** in CDCl₃

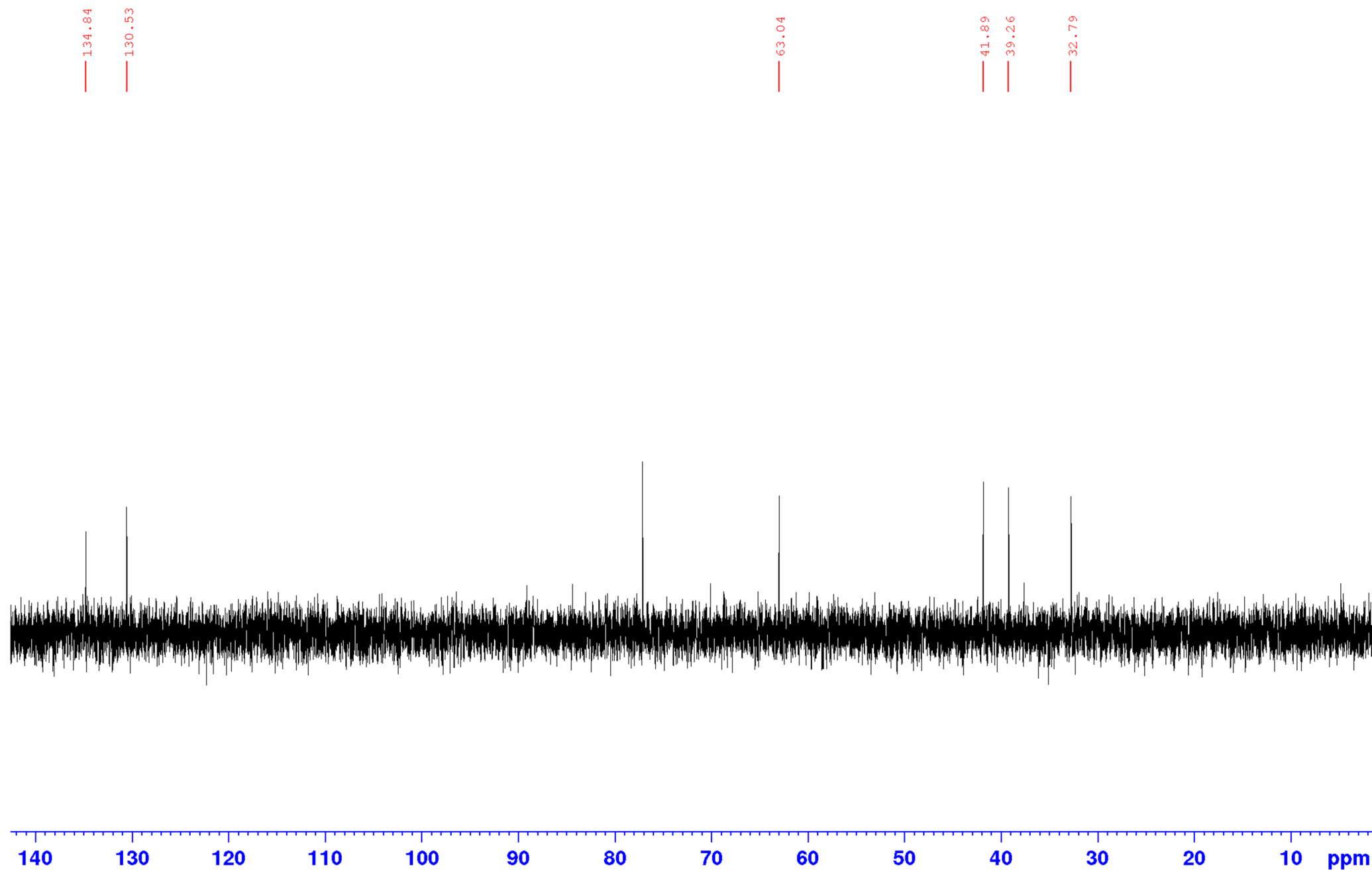


Figure S32. HSQC spectrum of **4** in CDCl₃

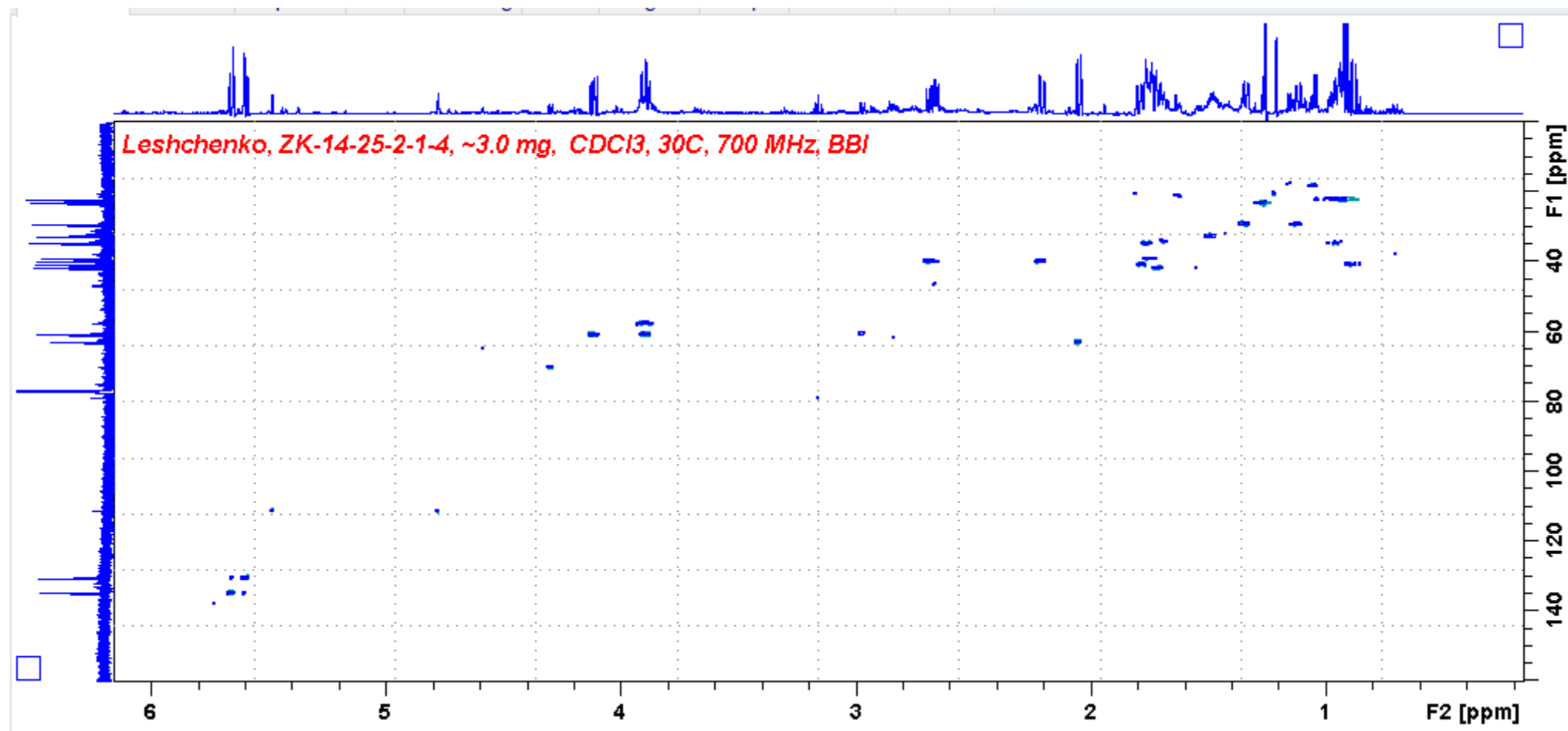


Figure S33. HMBC spectrum of **4** in CDCl₃

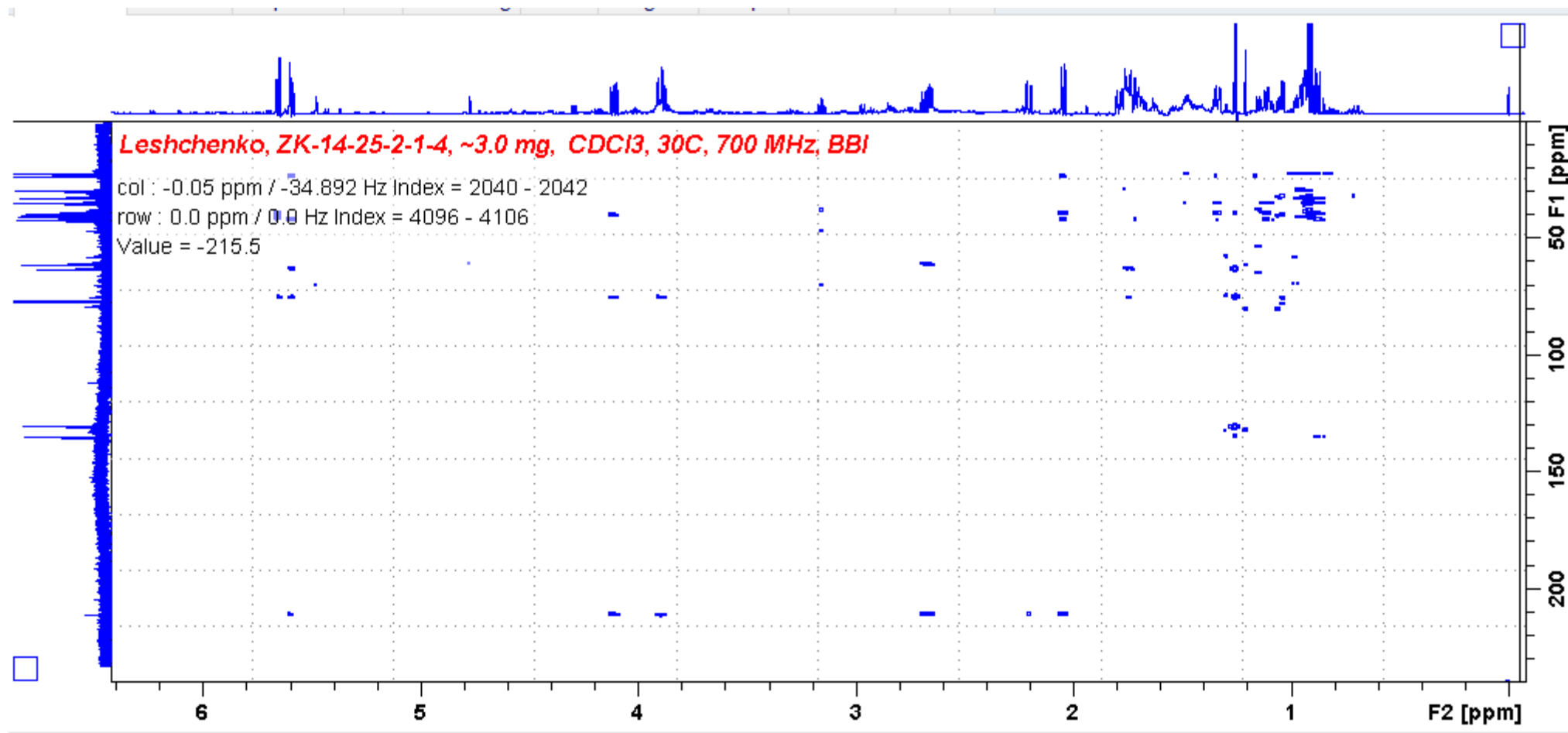


Figure S34. ^1H - ^1H COSY spectrum of **4** in CDCl_3

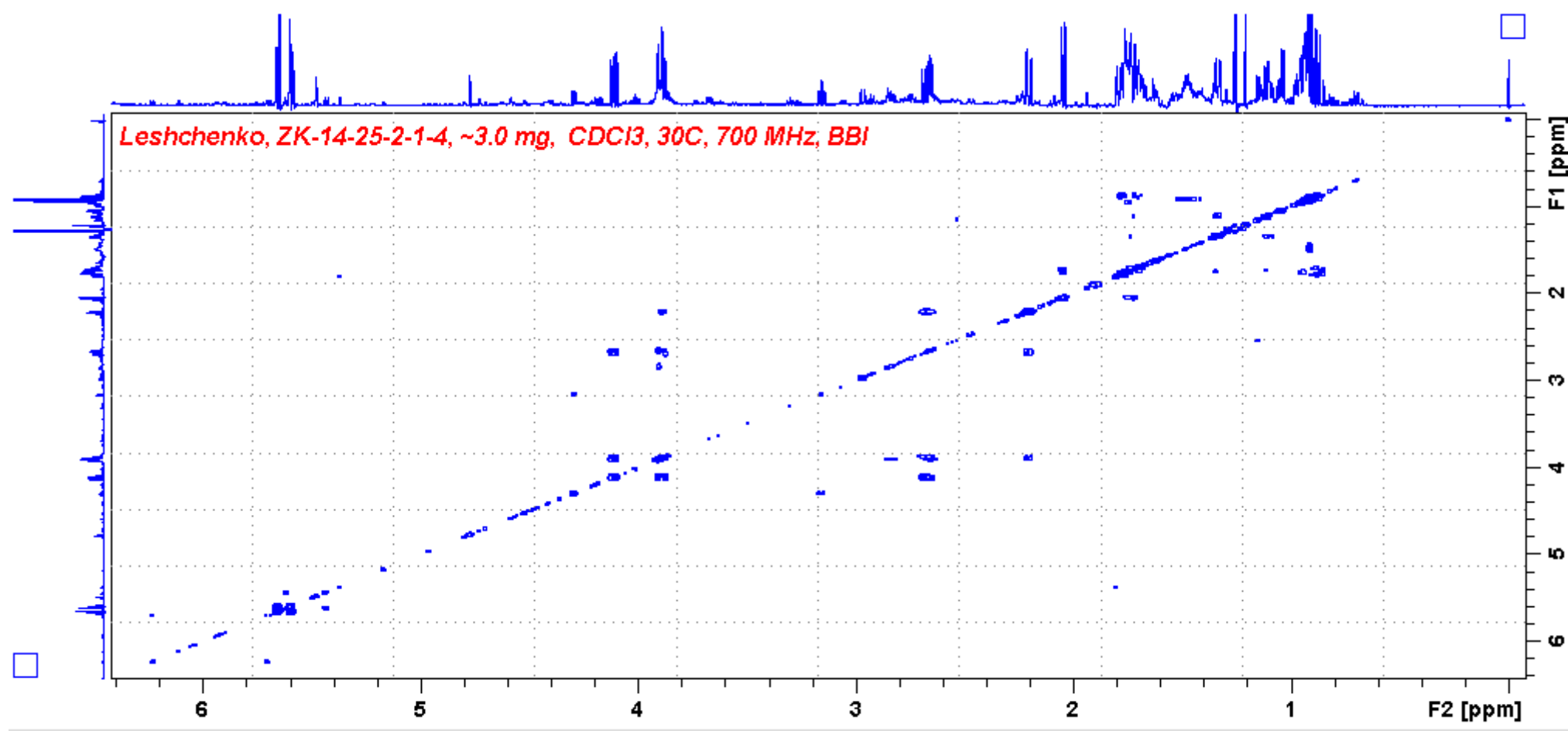


Figure S35. NOESY spectrum of **4** in CDCl₃

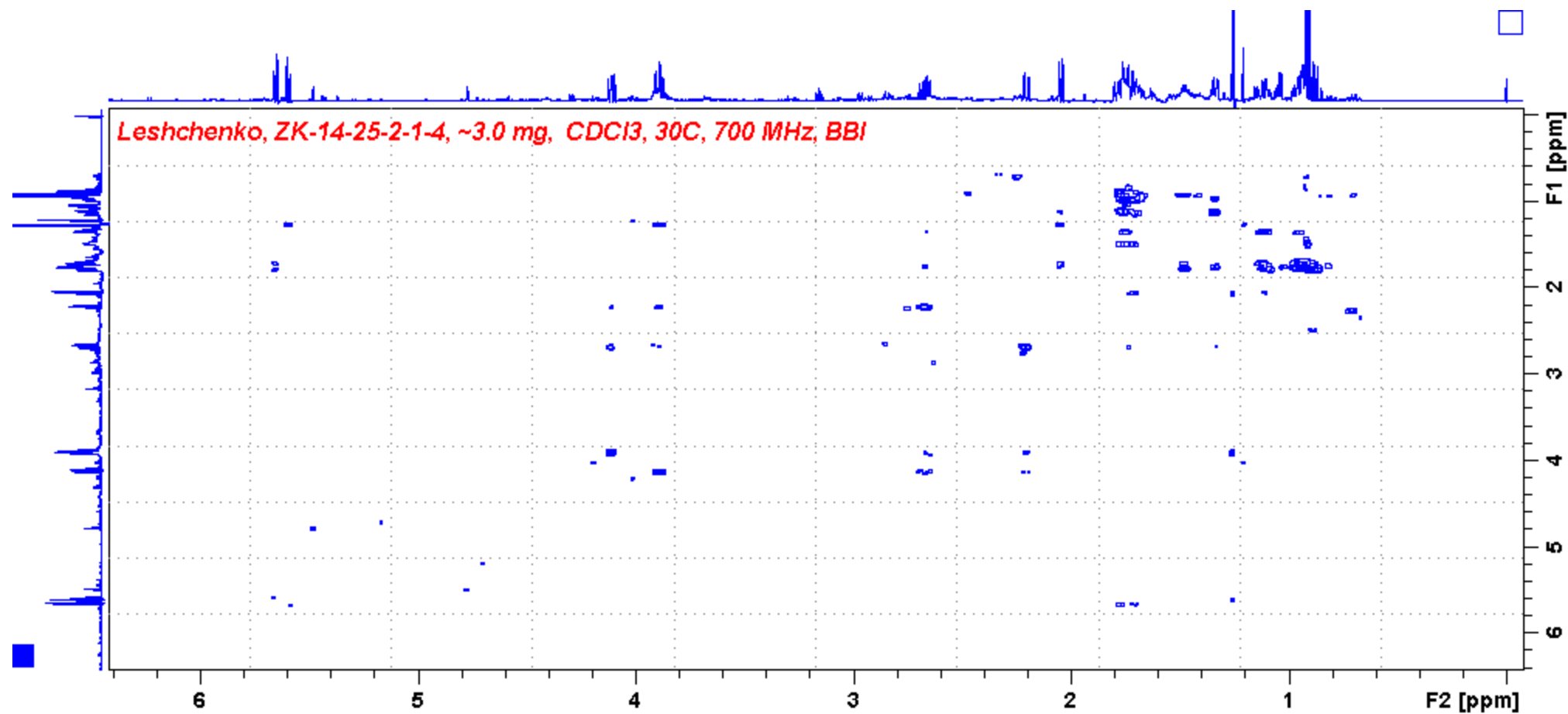
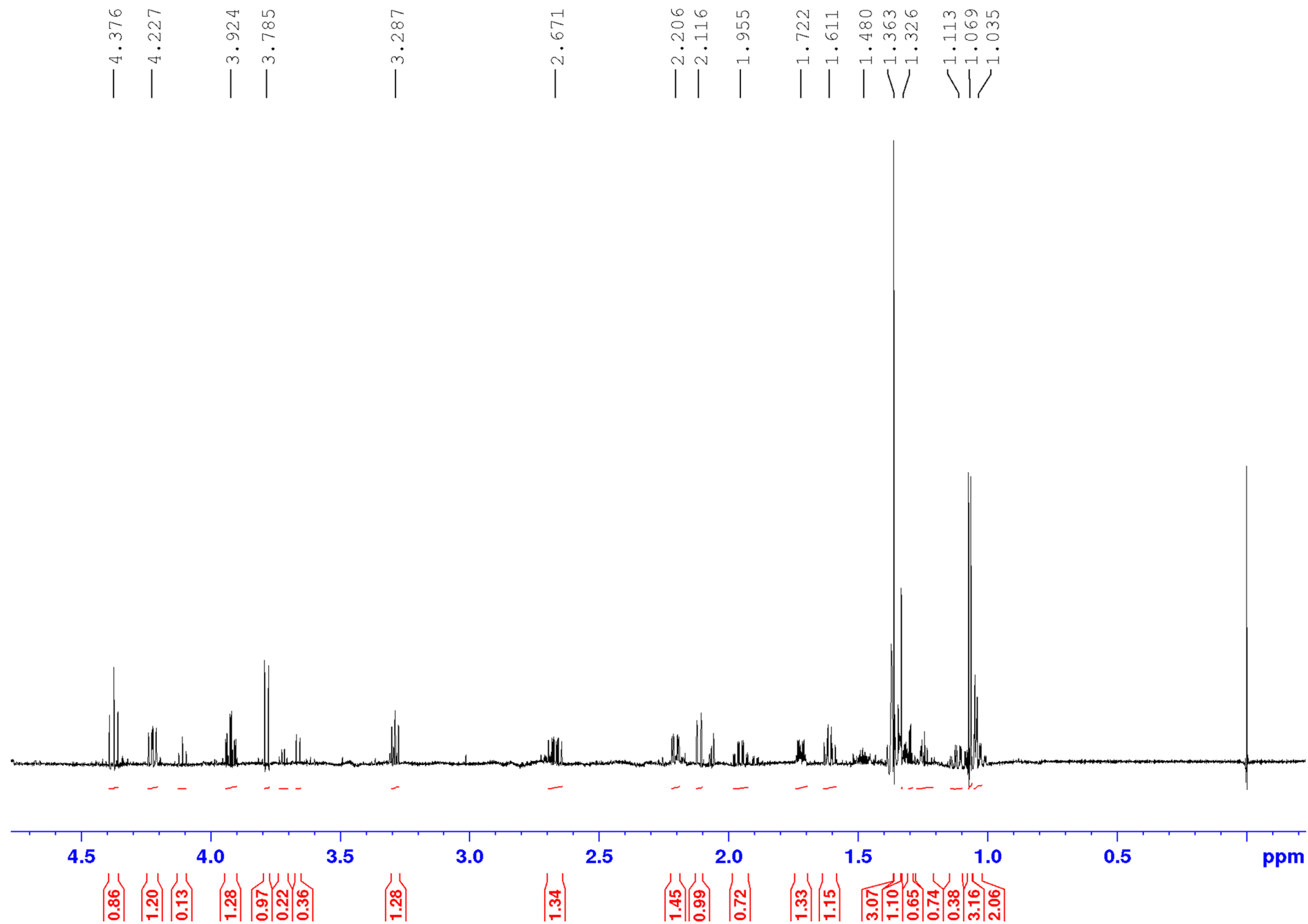


Figure S36. ^1H NMR spectrum (700.13 MHz) of **5** in CDCl_3



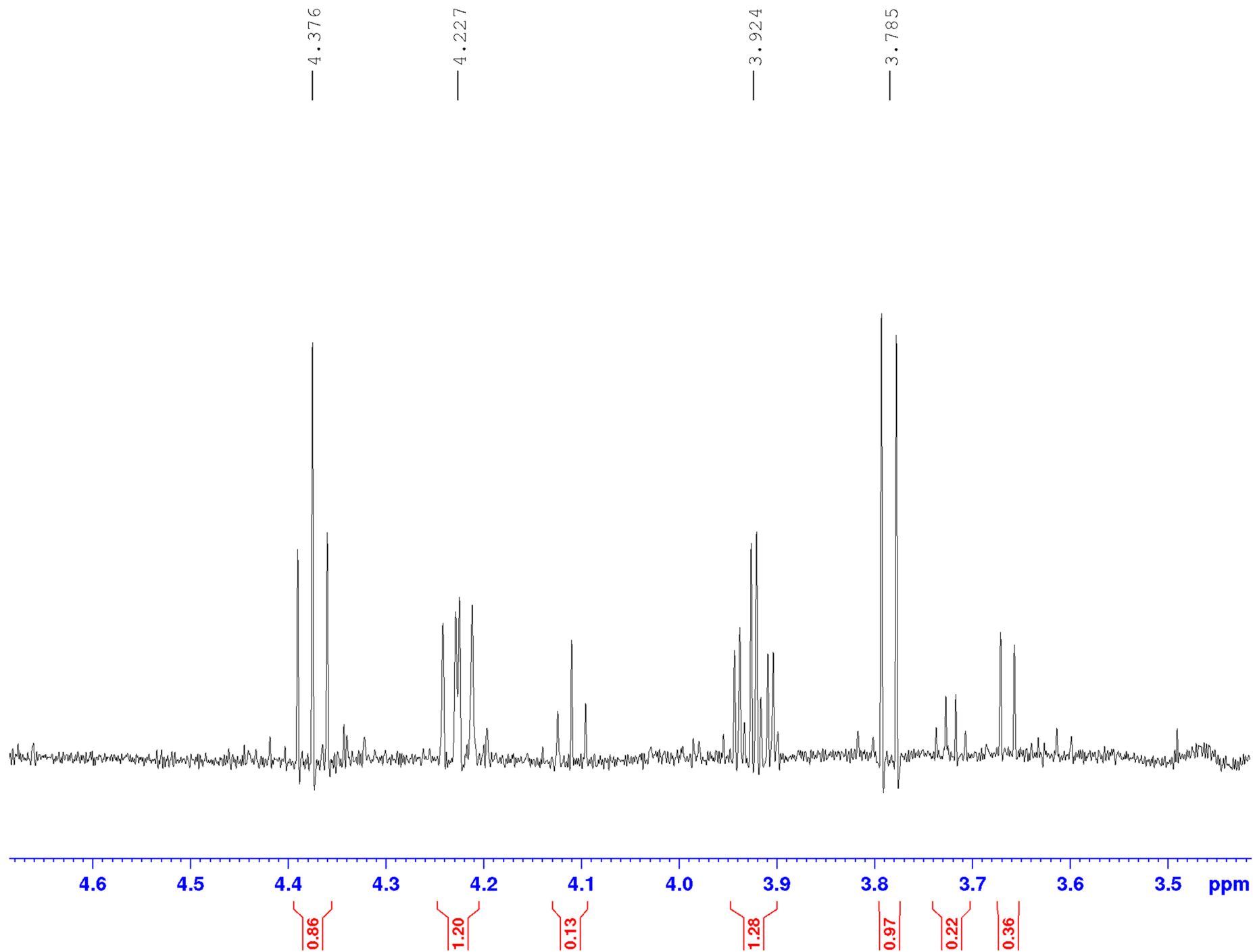


Figure S37. ^{13}C NMR spectrum (176.04 MHz) of **5** in CDCl_3

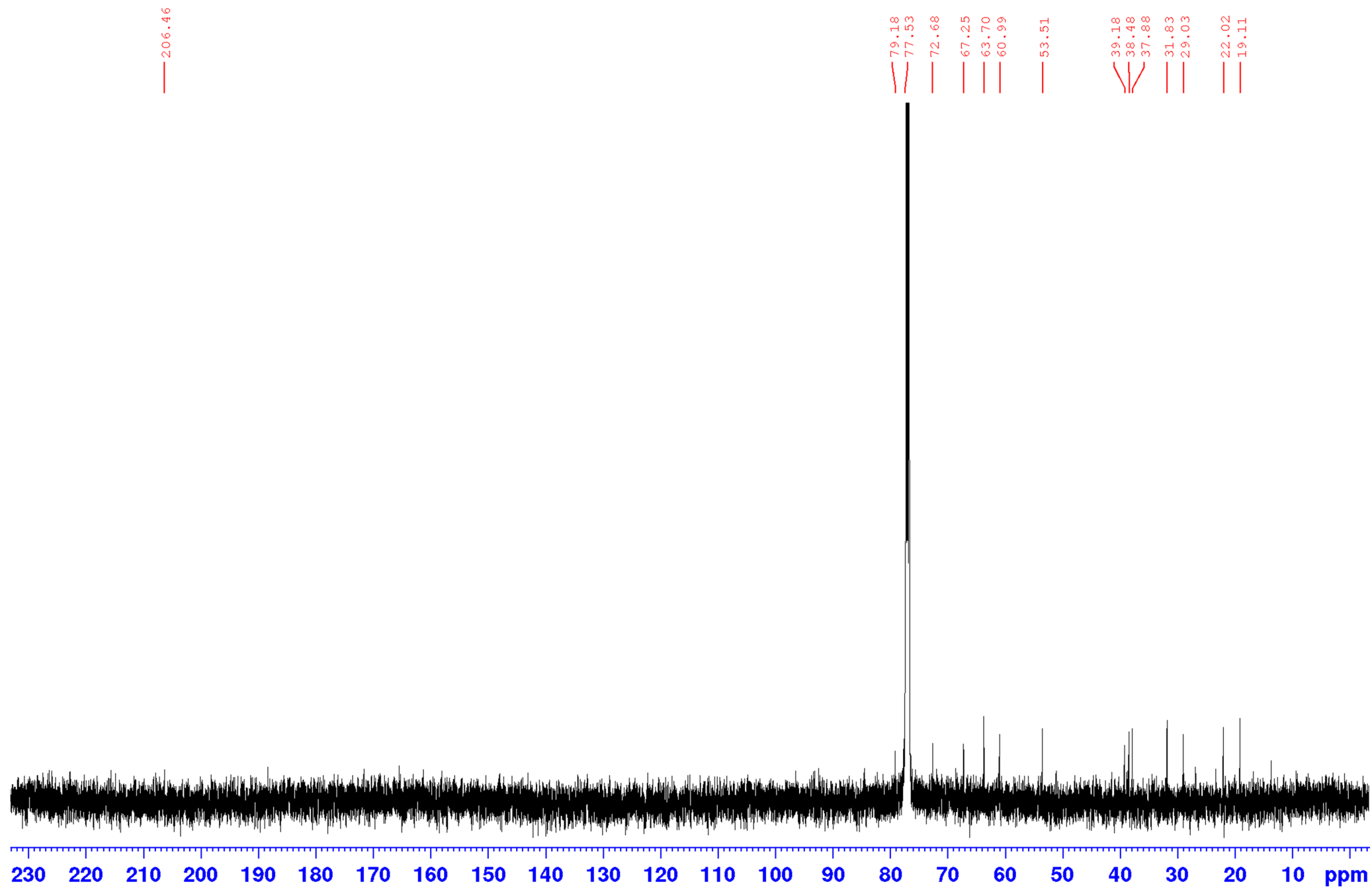


Figure S38. DEPT-135 spectrum (176.04 MHz) of **5** in CDCl₃

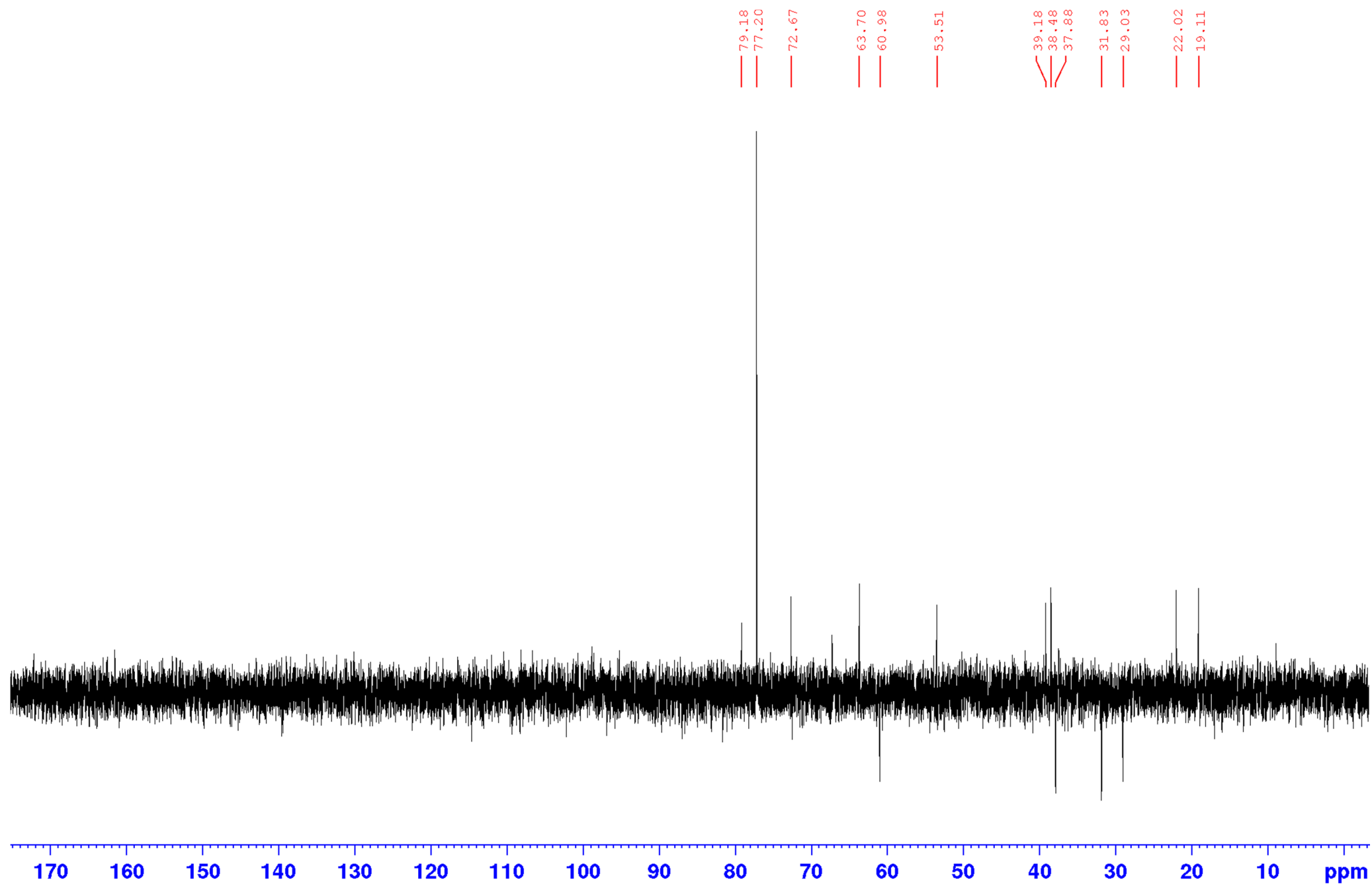


Figure S39. HSQC spectrum of **5** in CDCl₃

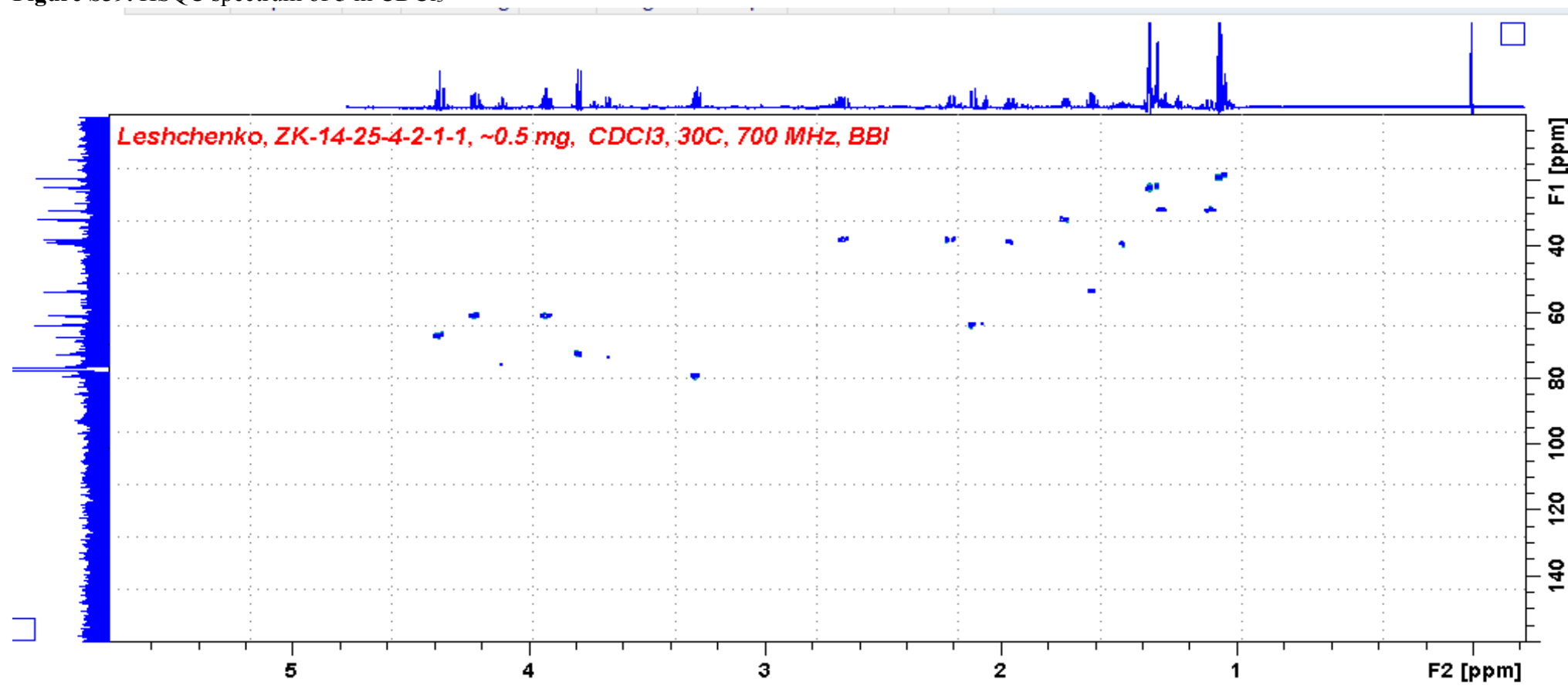


Figure S40. HMBC spectrum of **5** in CDCl₃

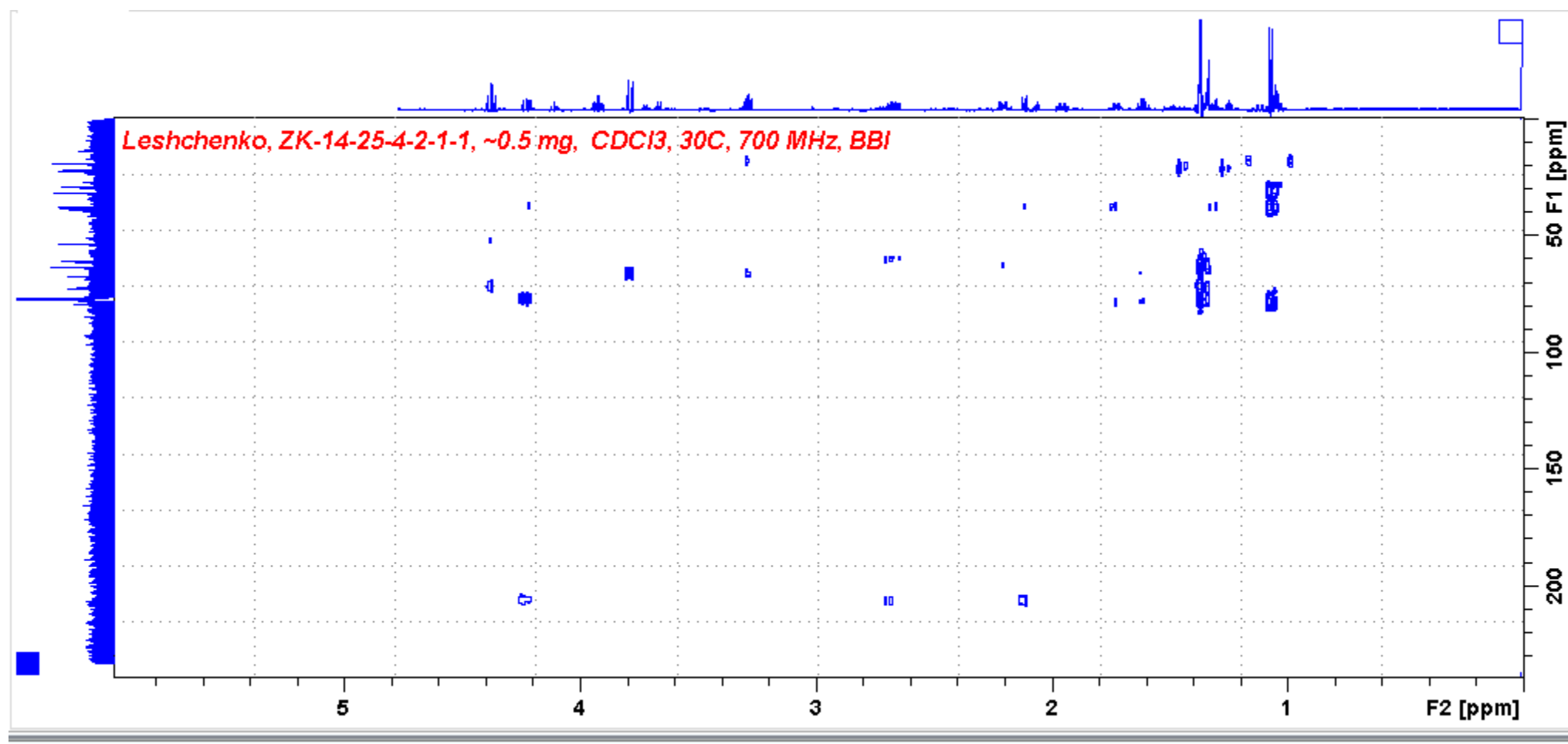


Figure S41. ^1H - ^1H COSY spectrum of **5** in CDCl_3

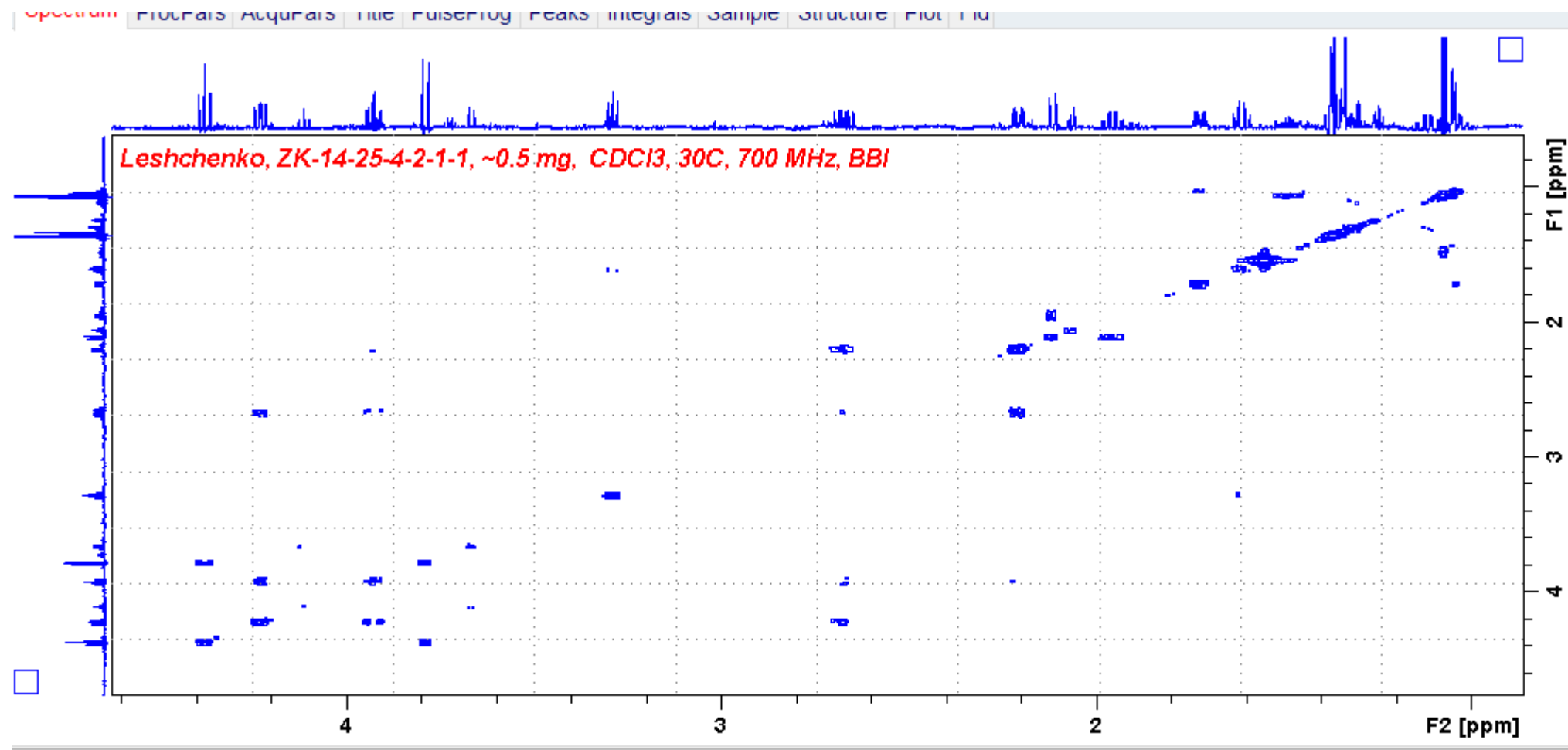


Figure S42. NOESY spectrum of **5** in CDCl₃

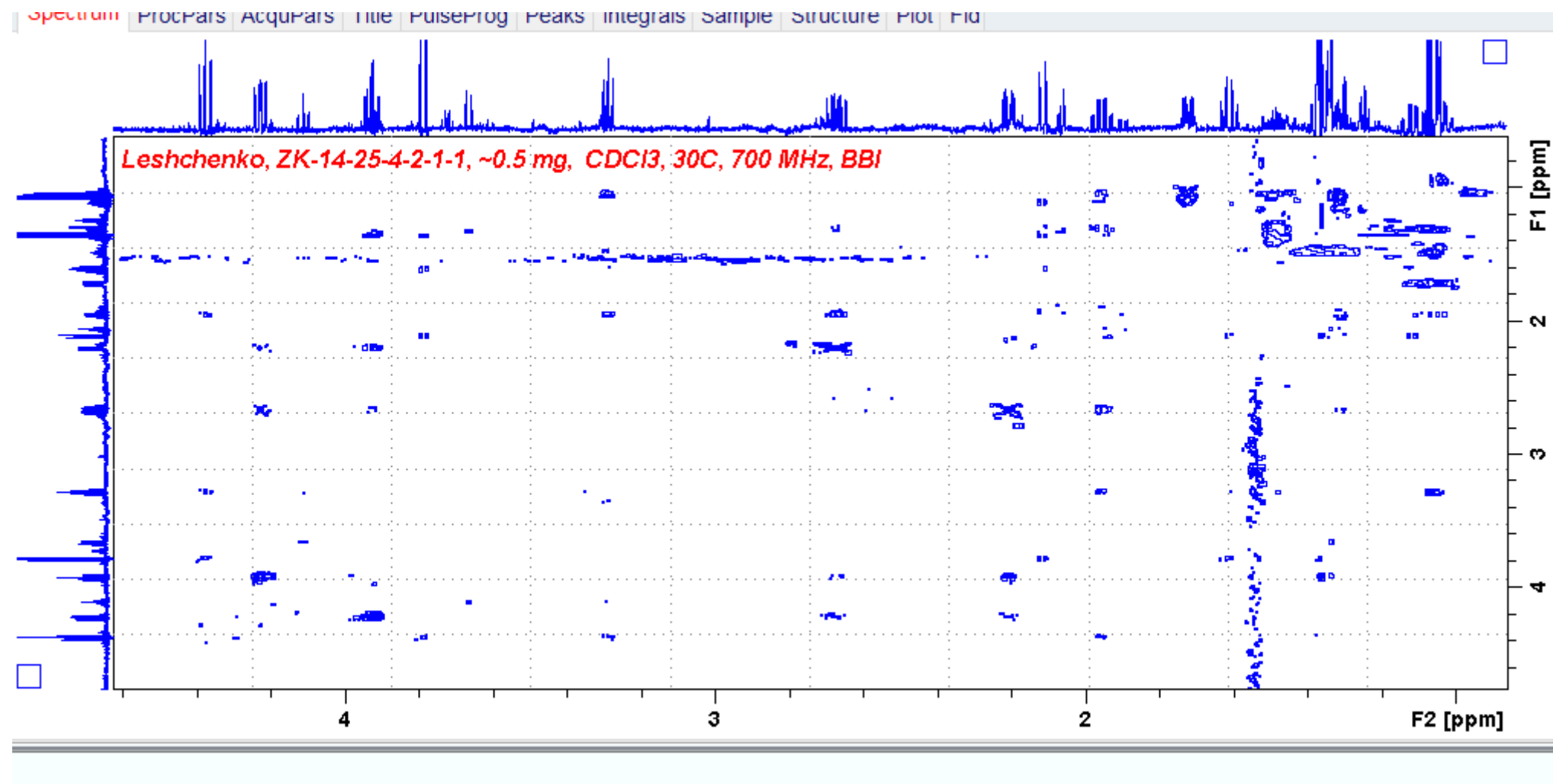
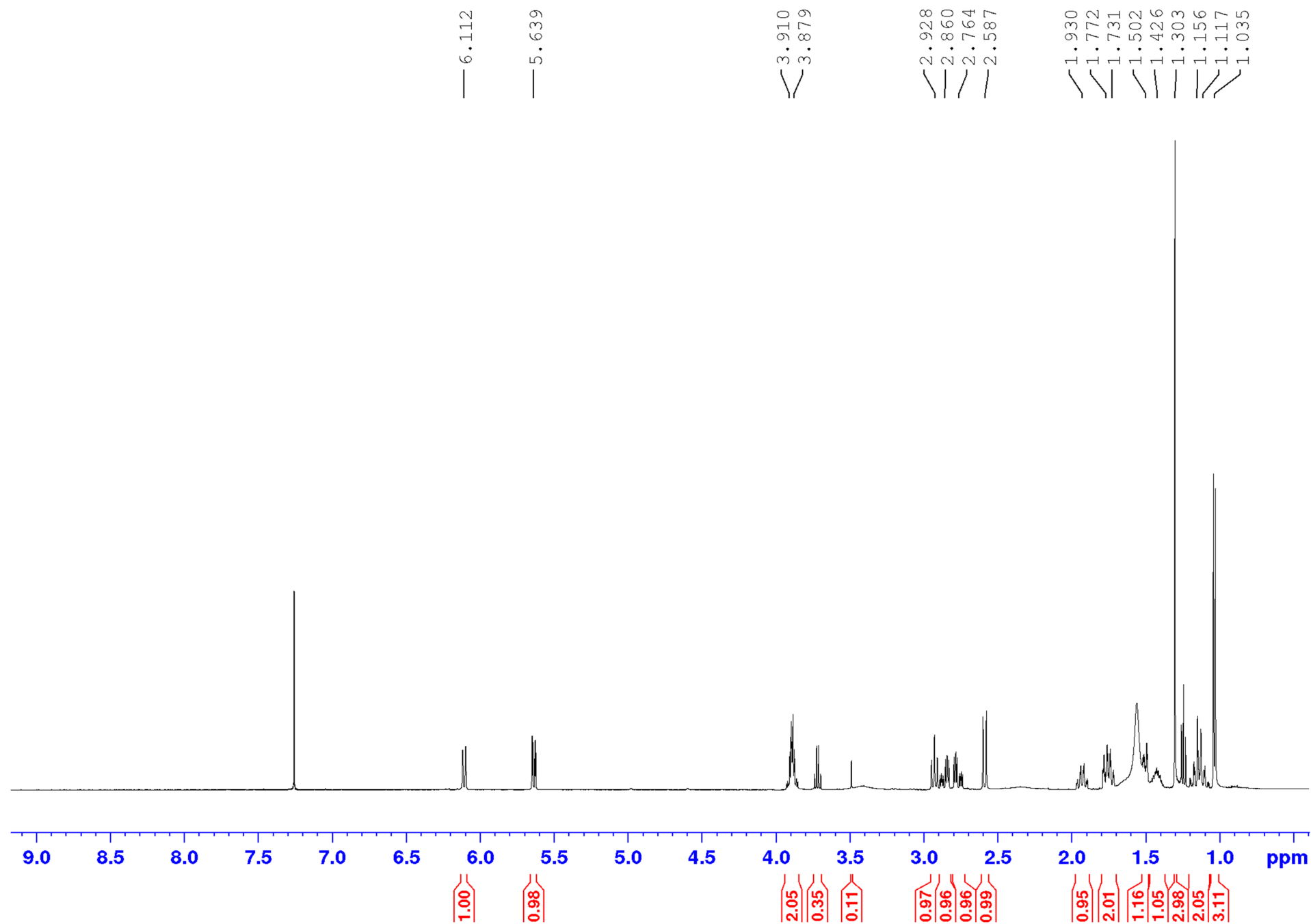


Figure S43. ^1H NMR spectrum (500.13 MHz) of **6** in CDCl_3



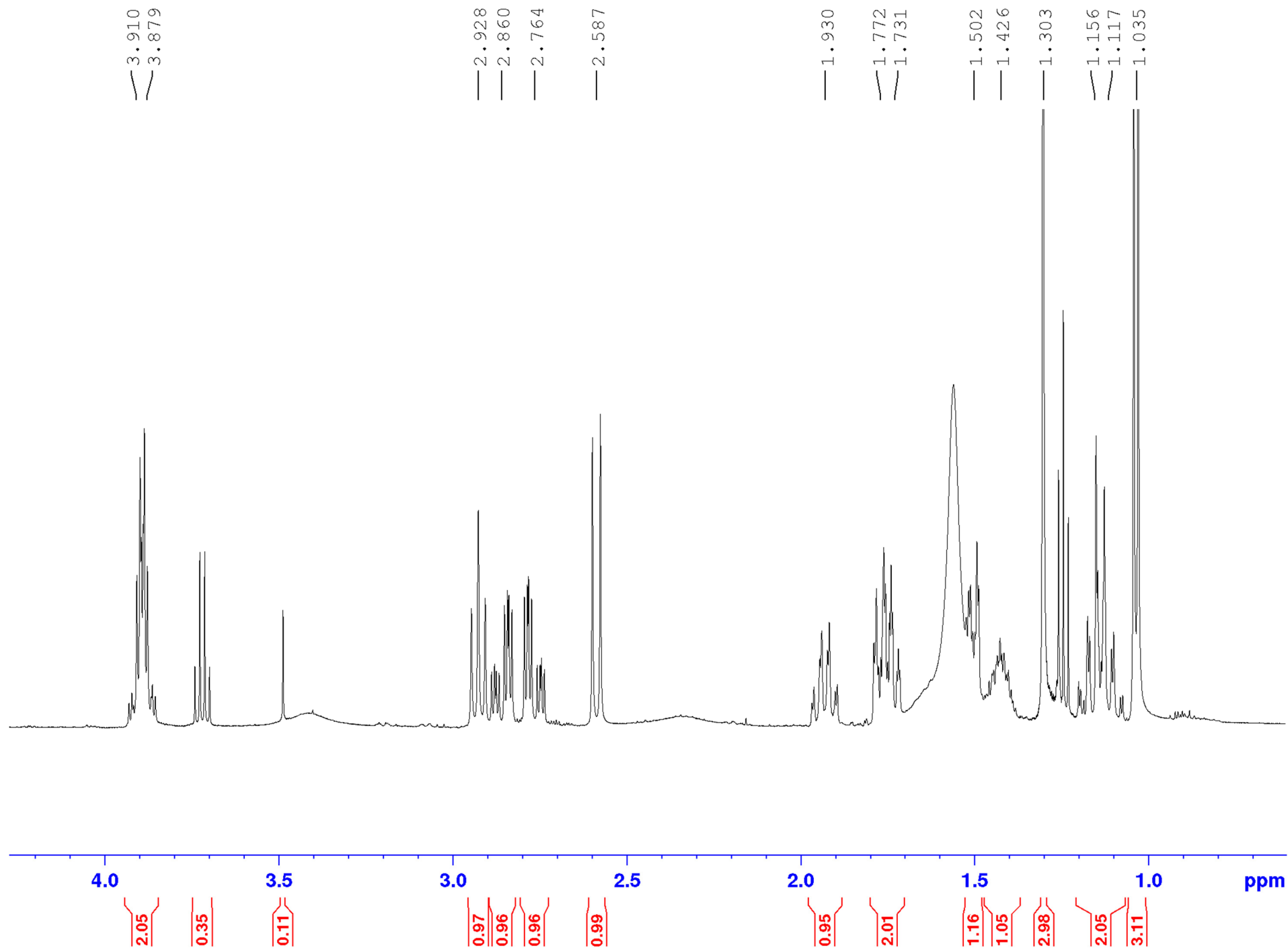


Figure S44. ^{13}C NMR spectrum (125.77 MHz) of **6** in CDCl_3

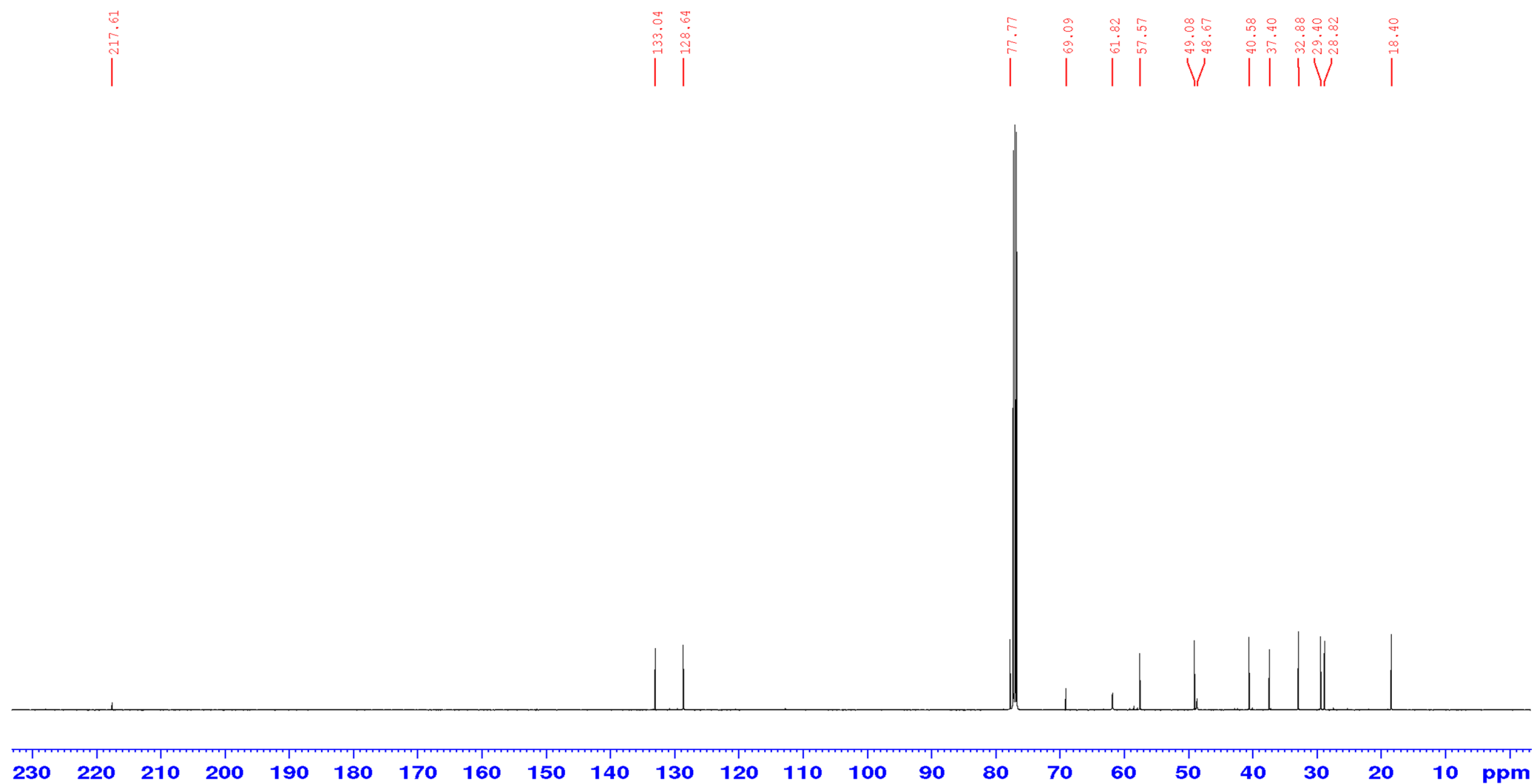


Figure S45. DEPT-135 spectrum (125.77 MHz) of **6** in CDCl₃

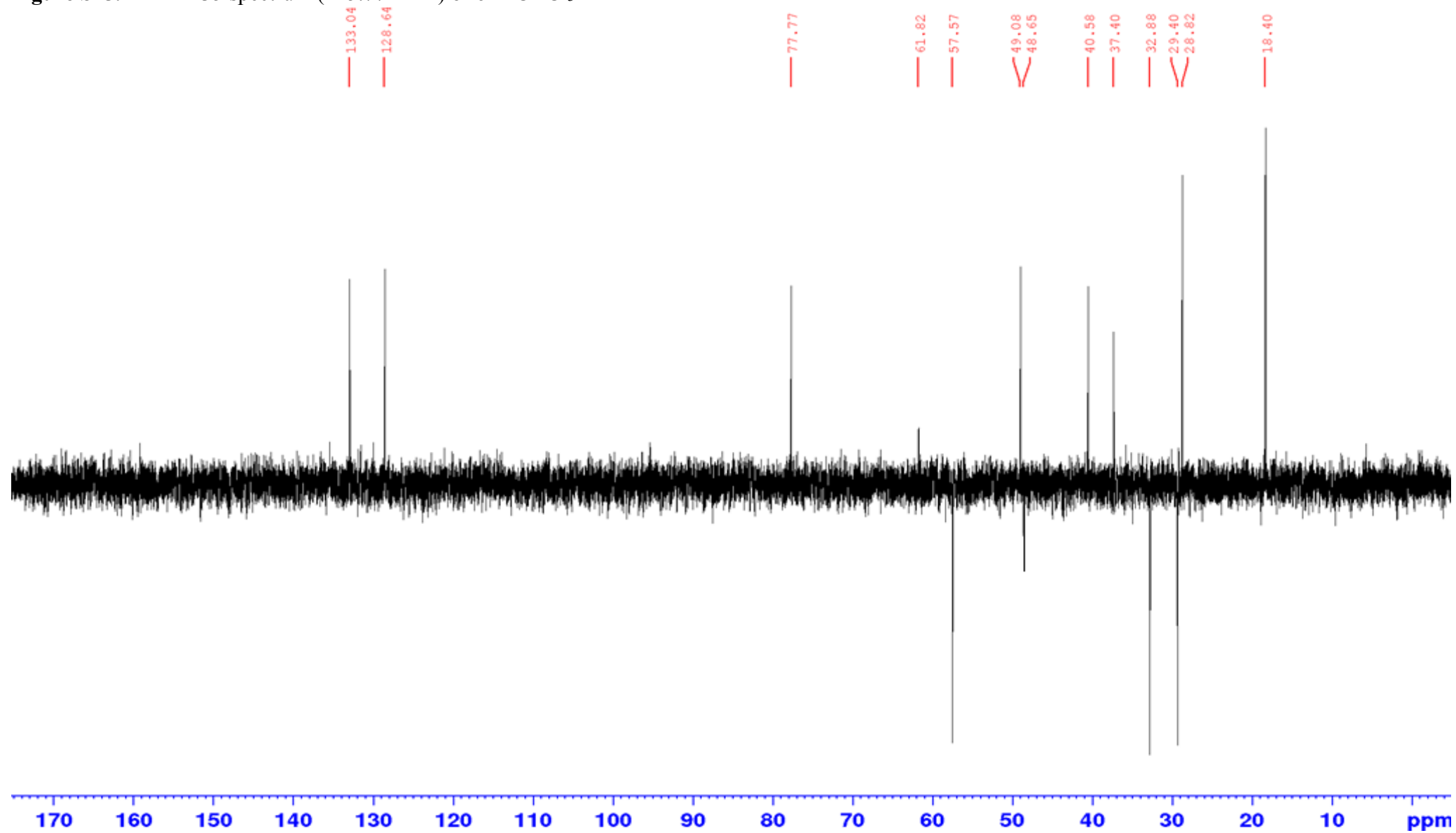


Figure S46. DEPT-90 spectrum (125.77 MHz) of **6** in CDCl₃

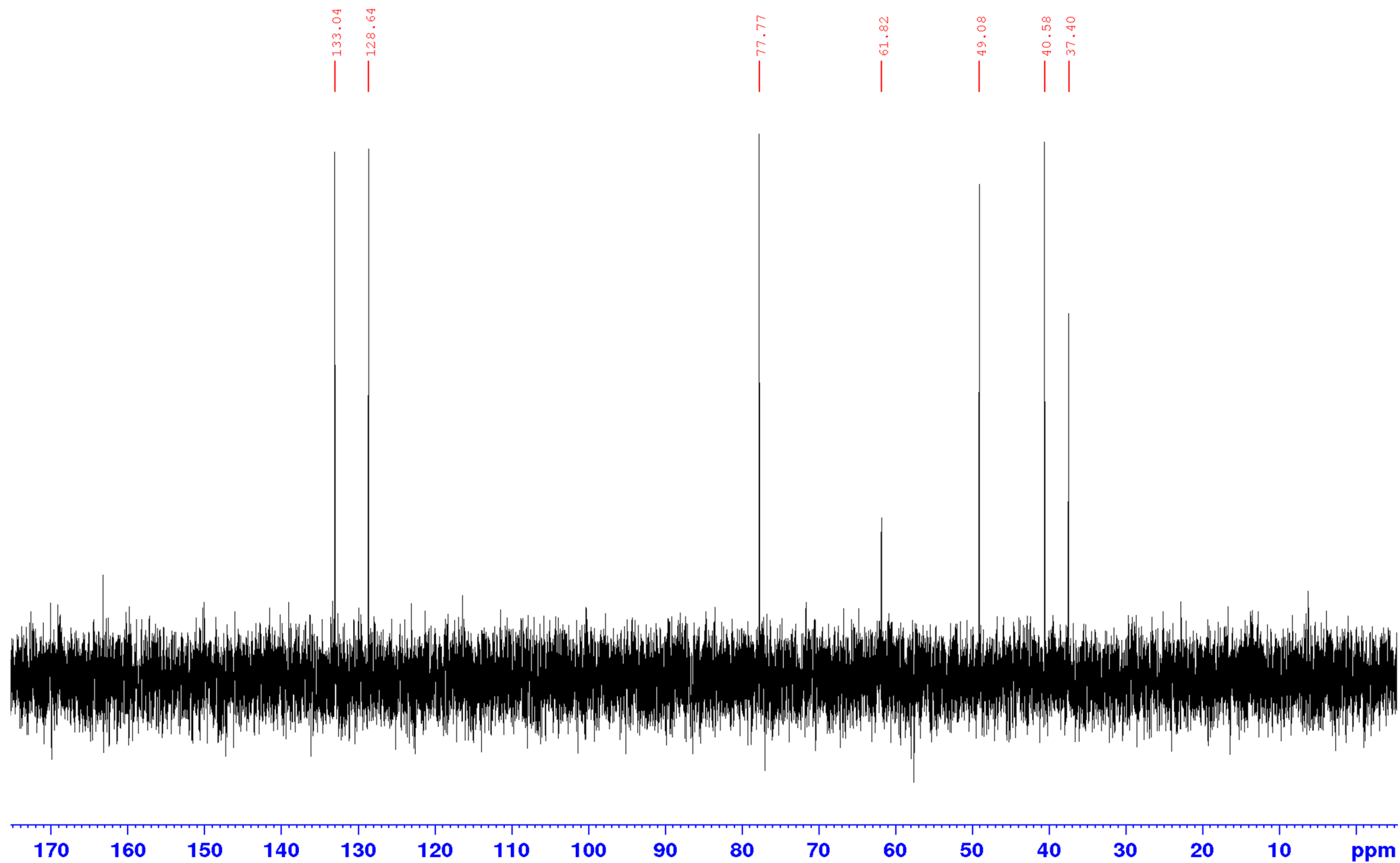


Figure S47. HSQC spectrum of **6** in CDCl₃

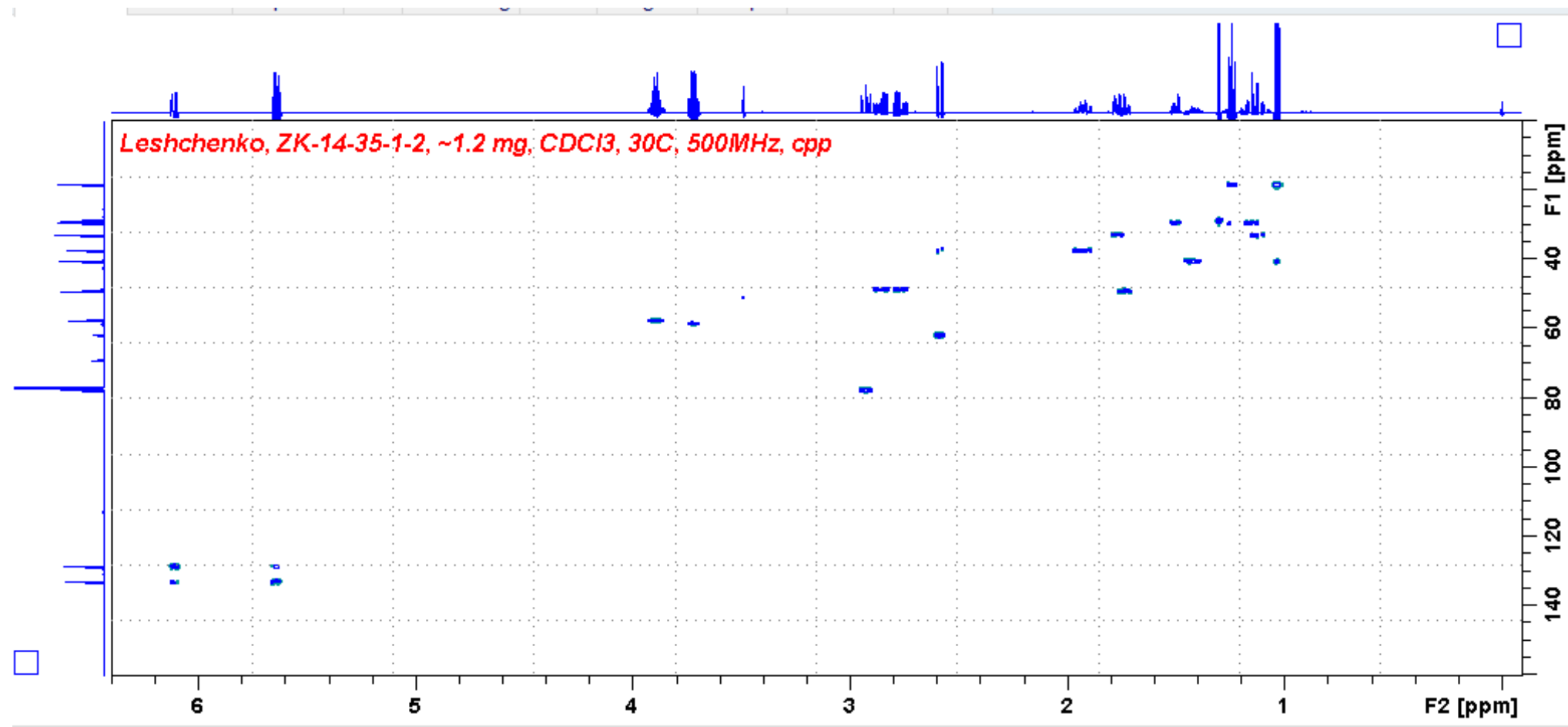


Figure S48. HMBC spectrum of **6** in CDCl₃

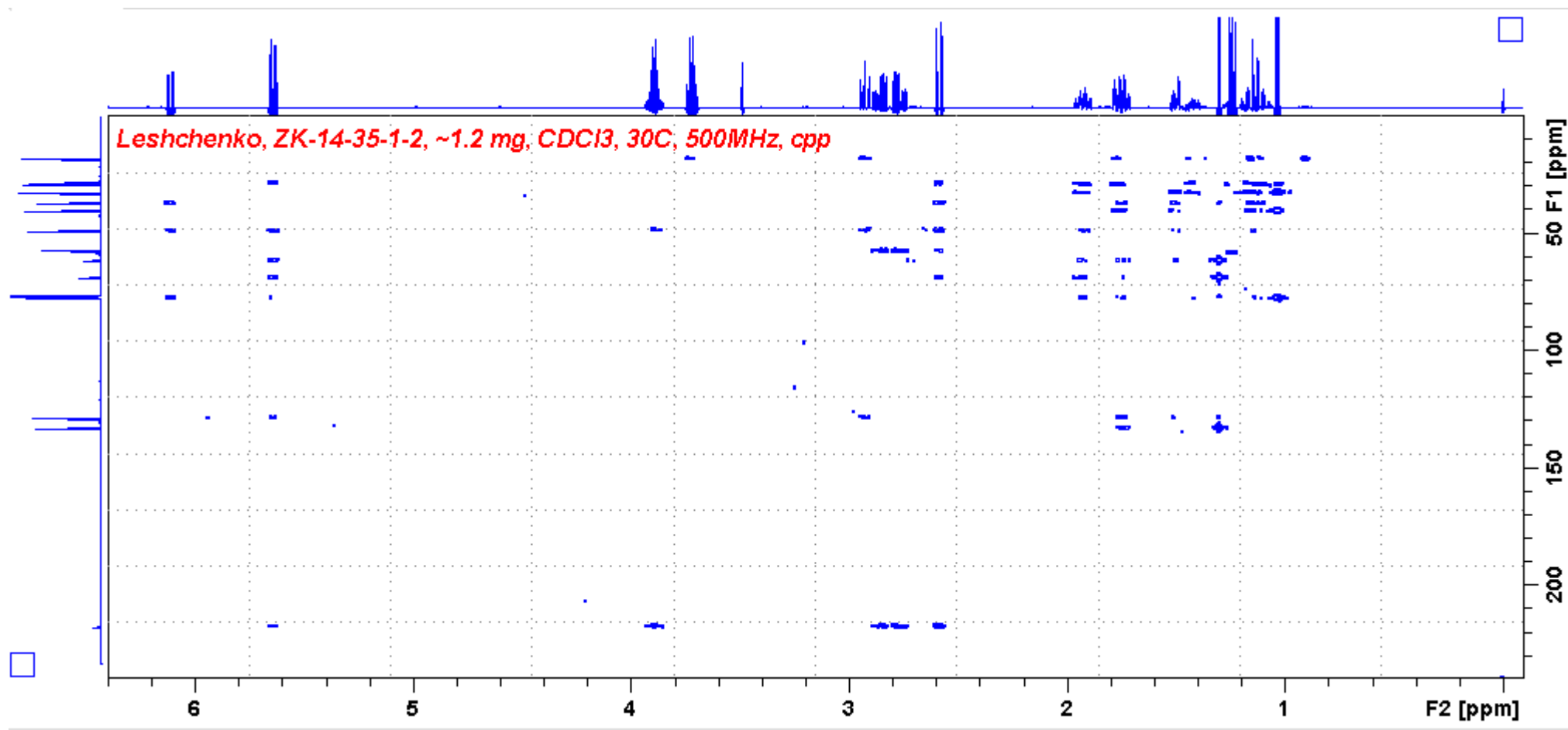


Figure S49. ^1H - ^1H COSY spectrum of **6** in CDCl_3

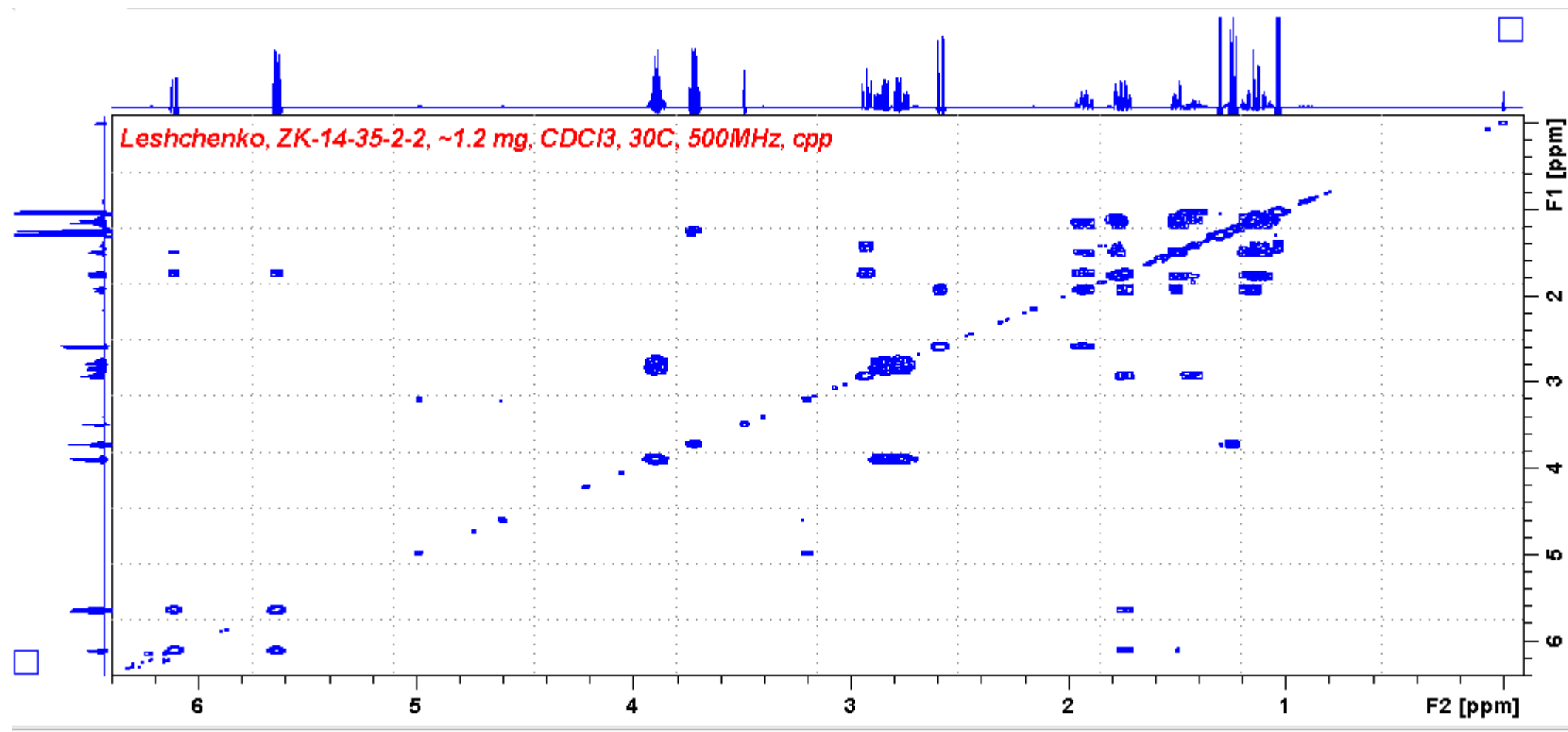


Figure S50. NOESY spectrum of **6** in CDCl₃

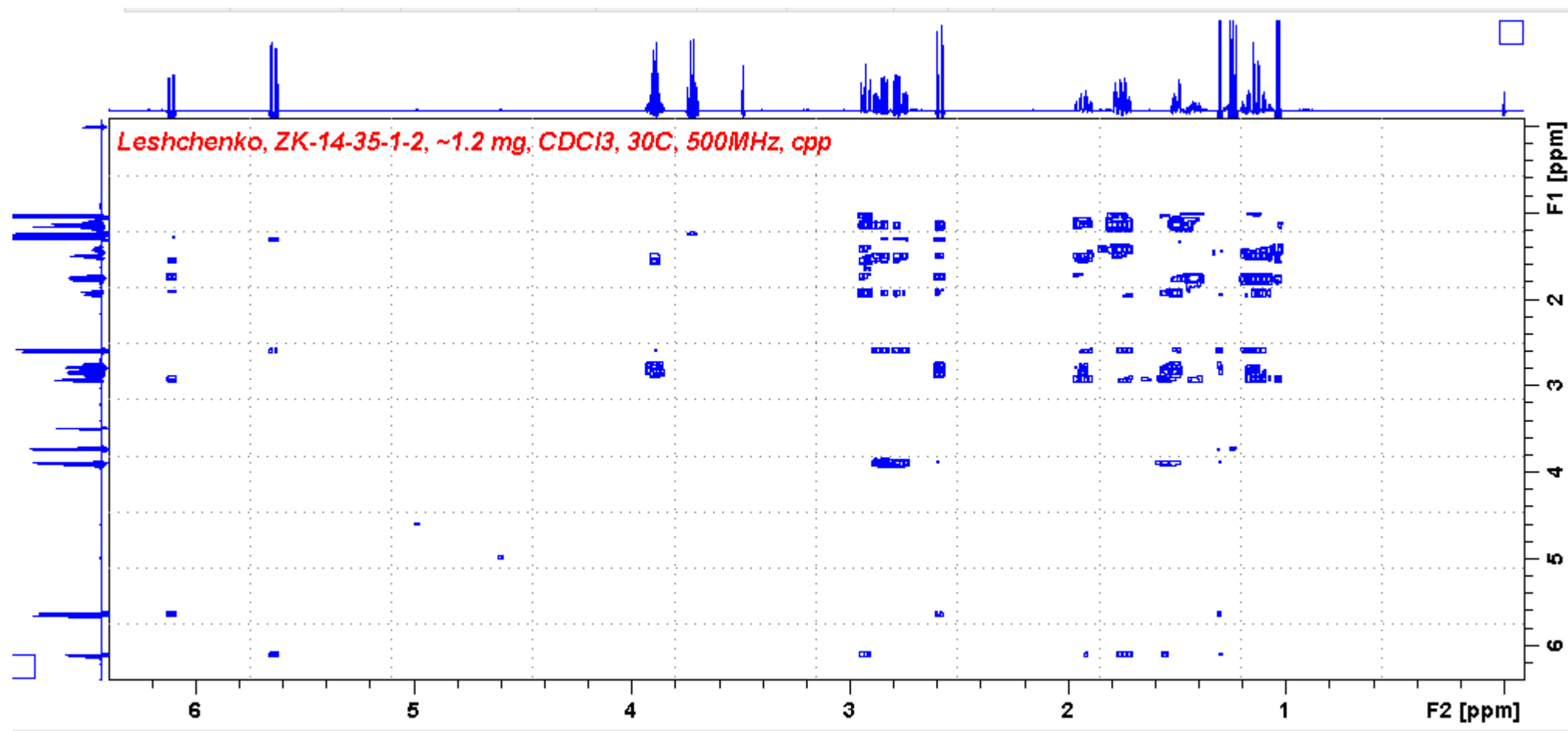


Figure S51. ^1H NMR spectrum (700.13 MHz) of **13** in DMSO- d_6

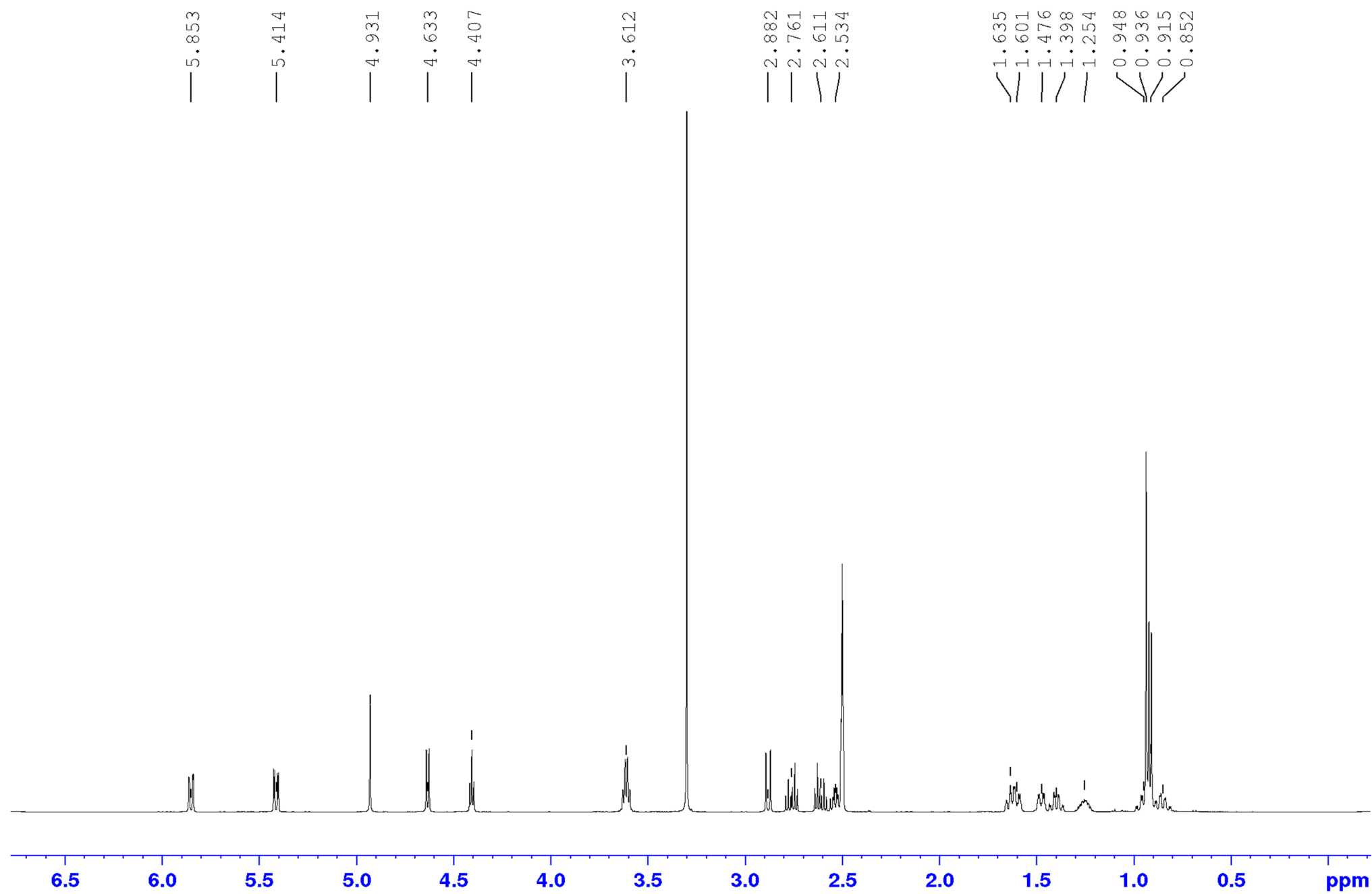


Figure S52. ^{13}C NMR spectrum (176.04 MHz) of **13** in DMSO- d_6

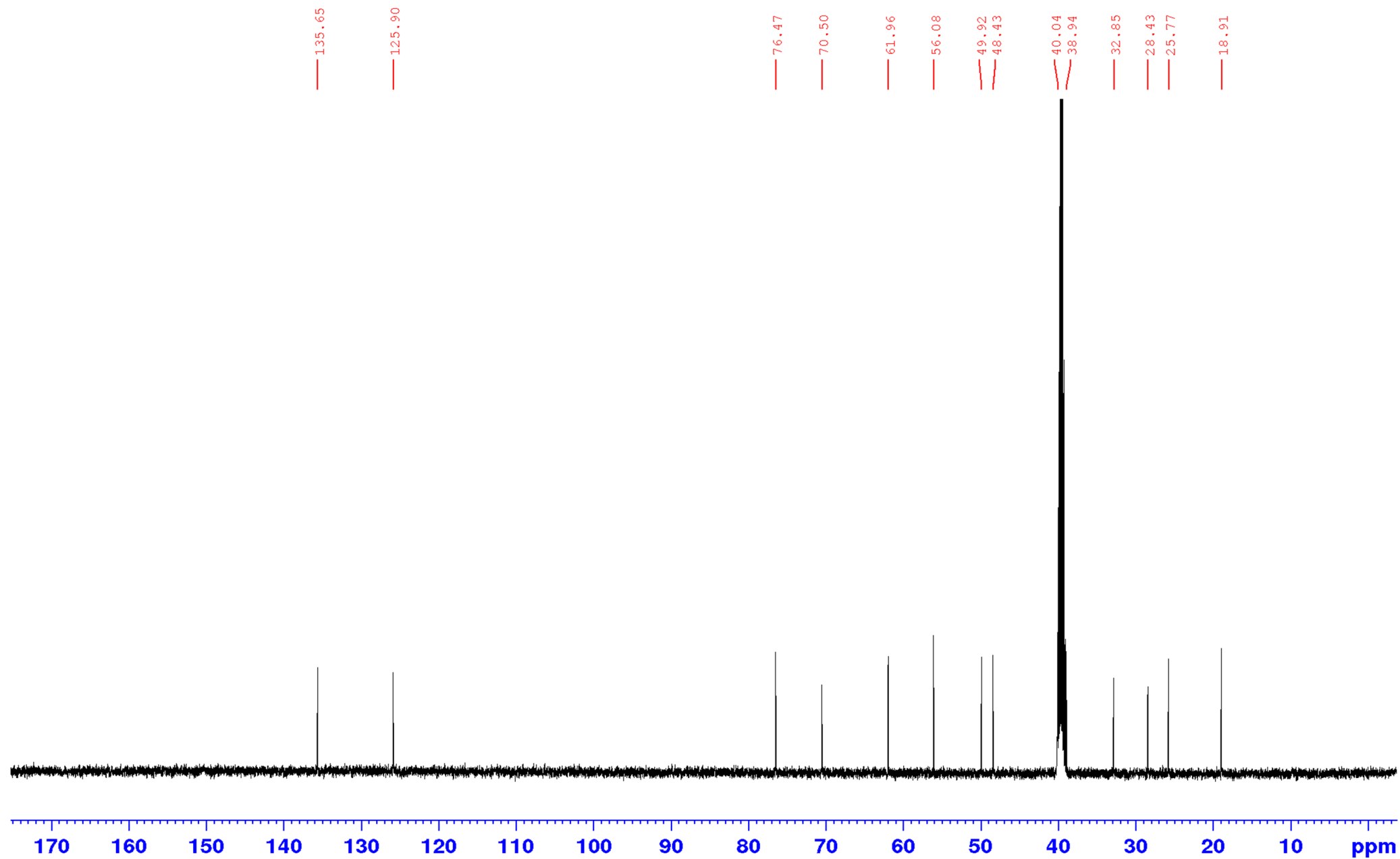


Figure S53. DEPT-135 spectrum (176.04 MHz) of **13** in DMSO-d₆

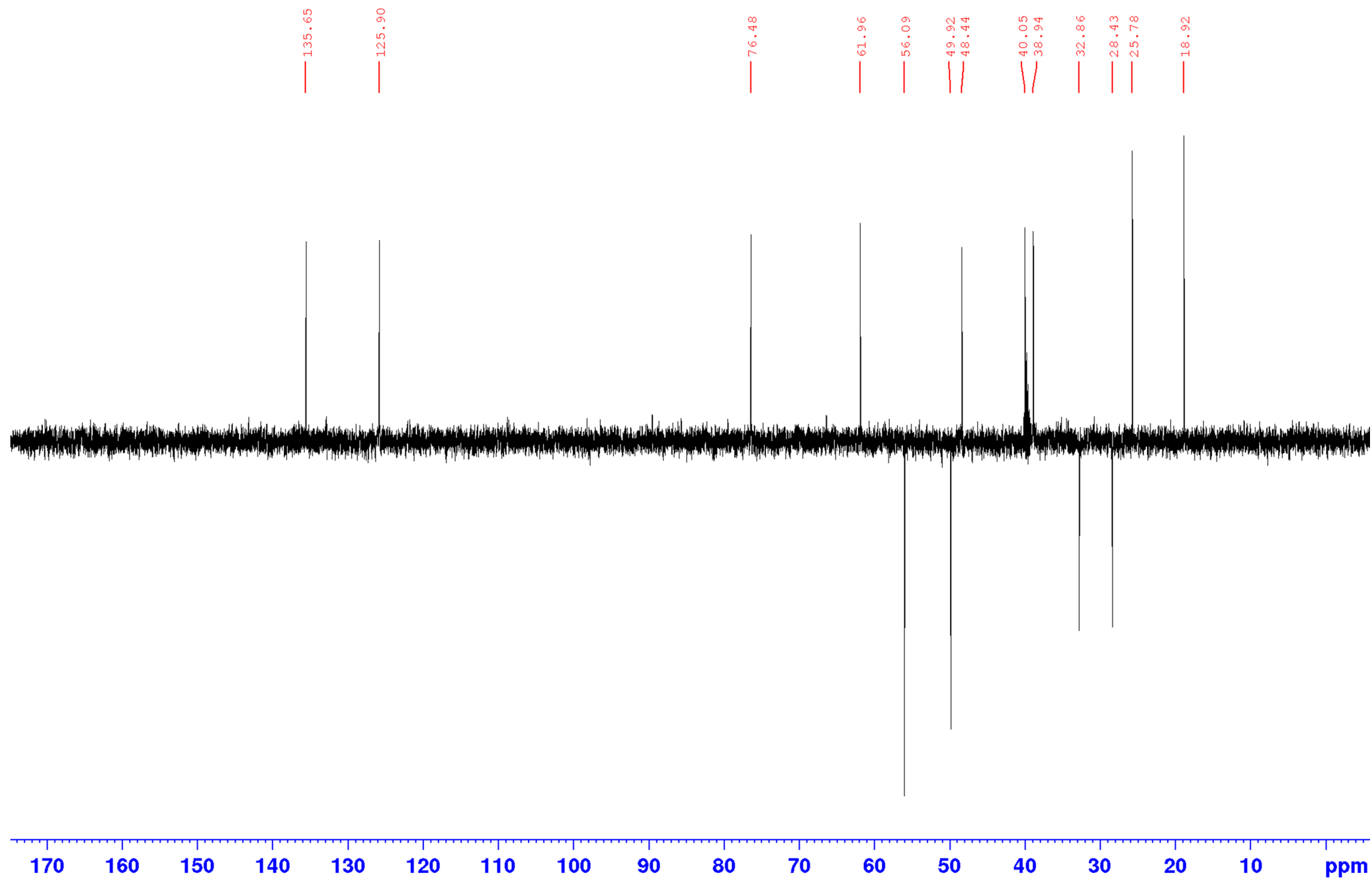


Figure S54. HSQC spectrum of **13** in DMSO-d₆

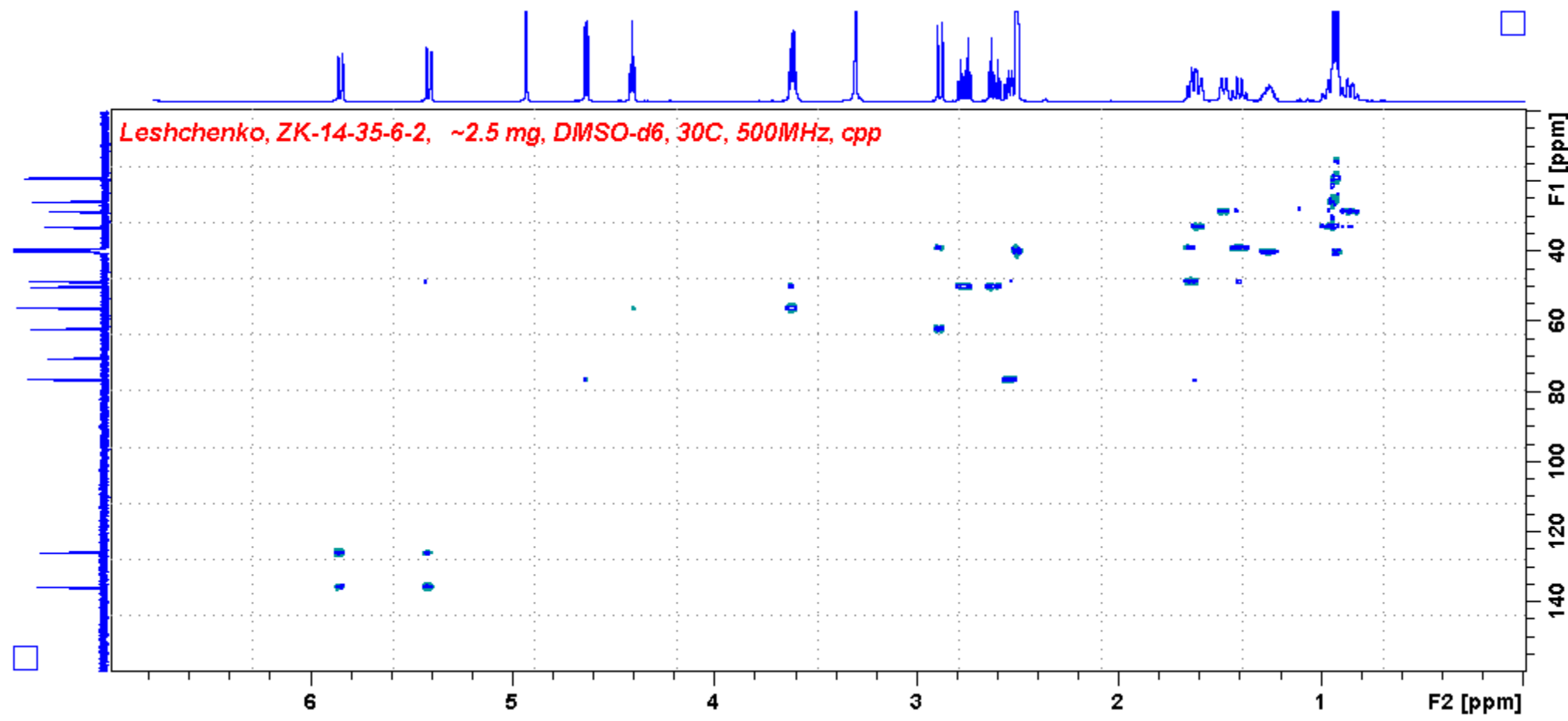


Figure S55. HMBC spectrum of **13** in DMSO-d₆

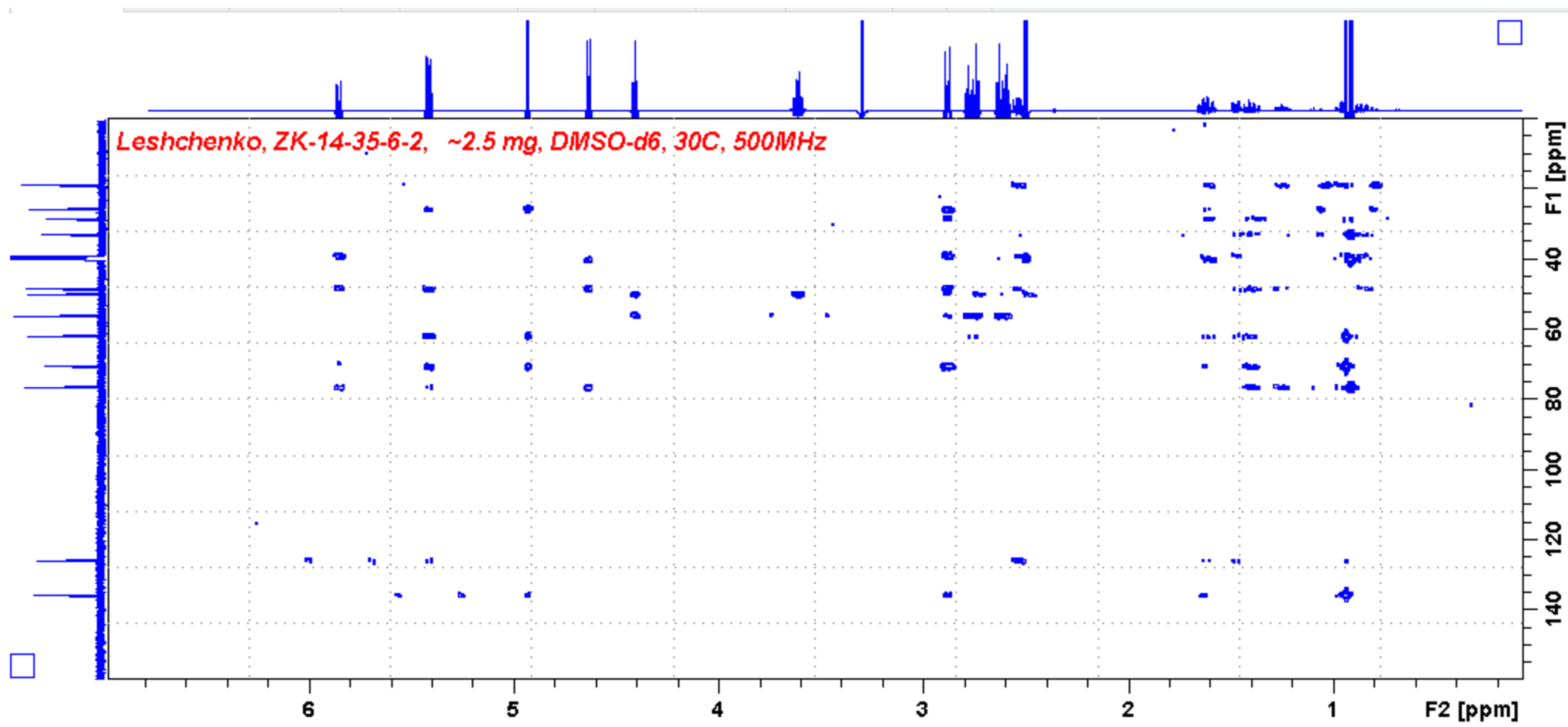


Figure S56. ^1H - ^1H COSY spectrum of **13** in DMSO- d_6

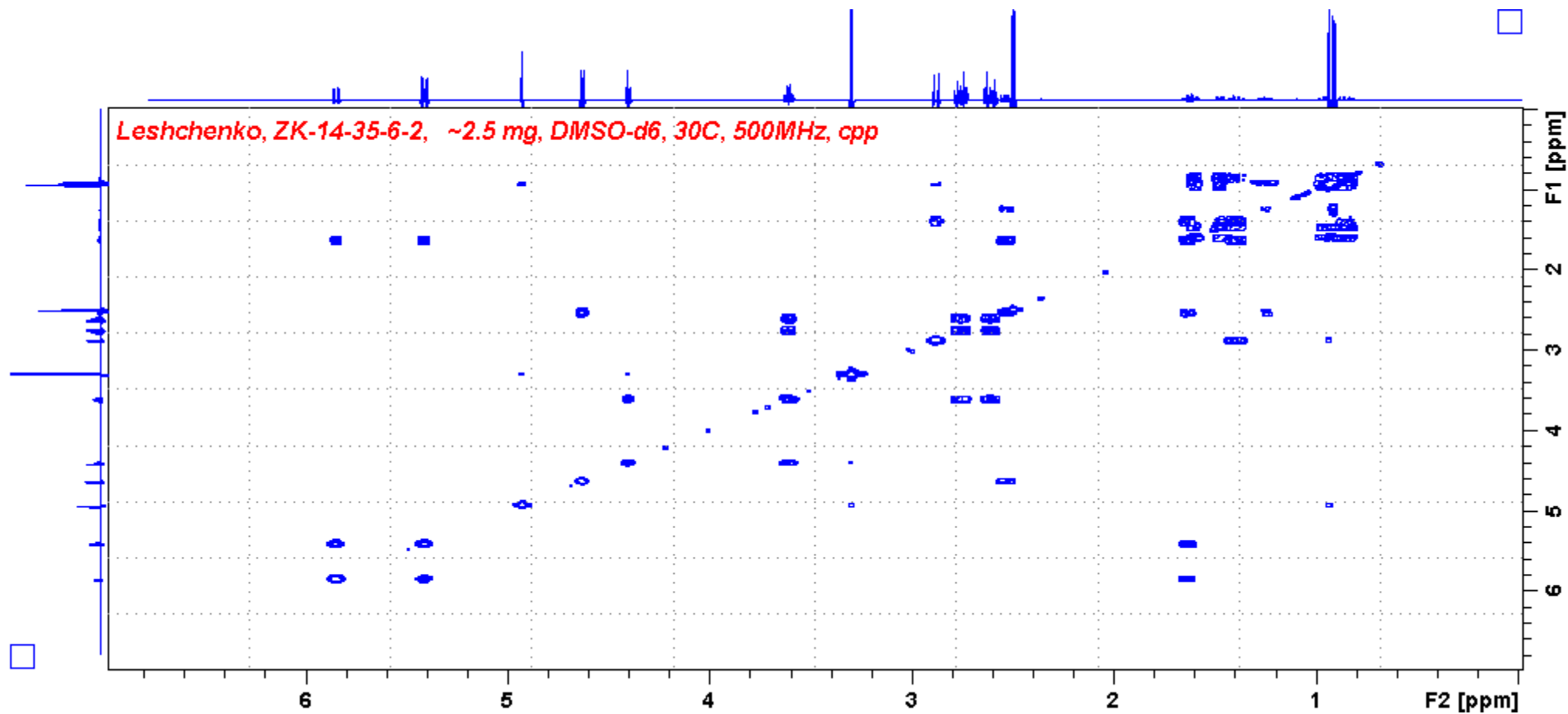


Figure S57. NOESY spectrum of **13** in DMSO-d₆

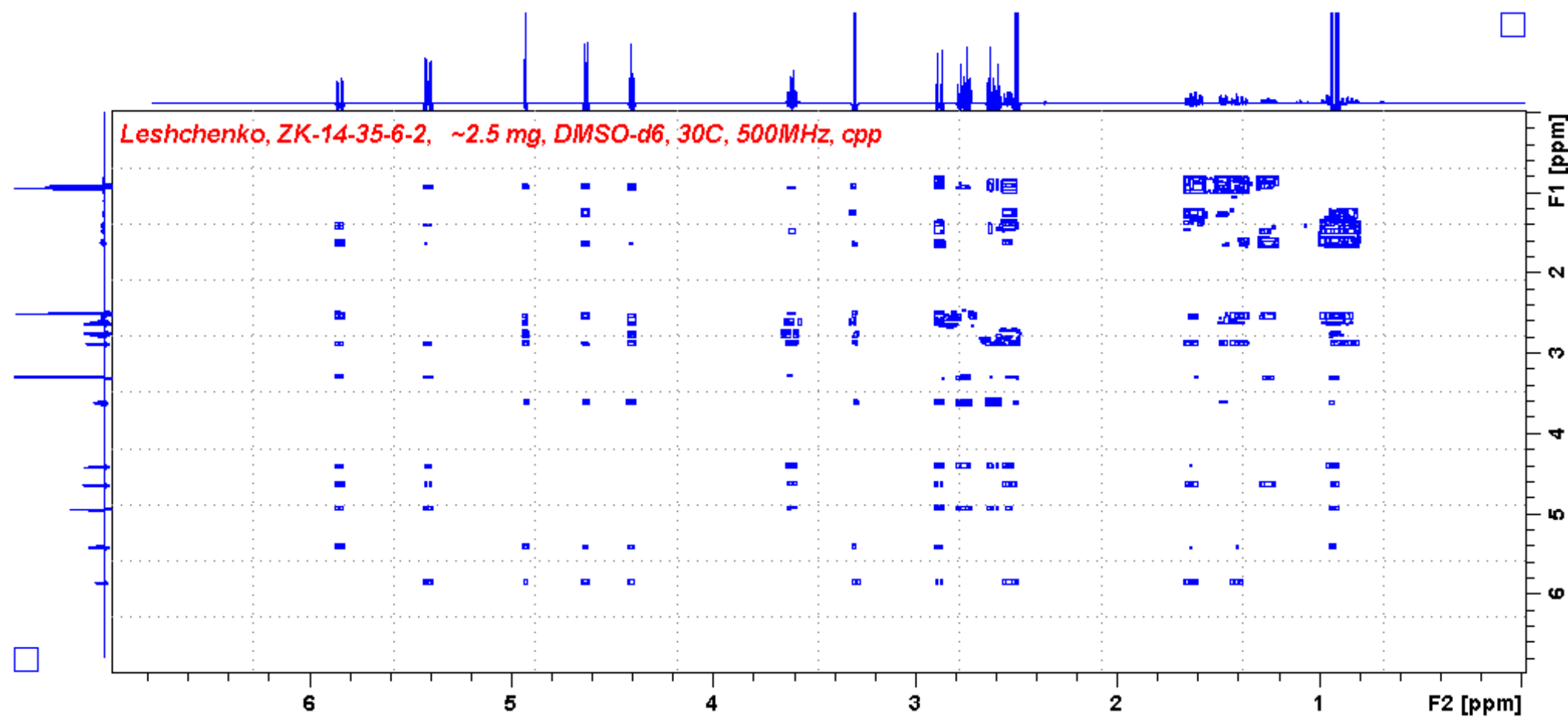
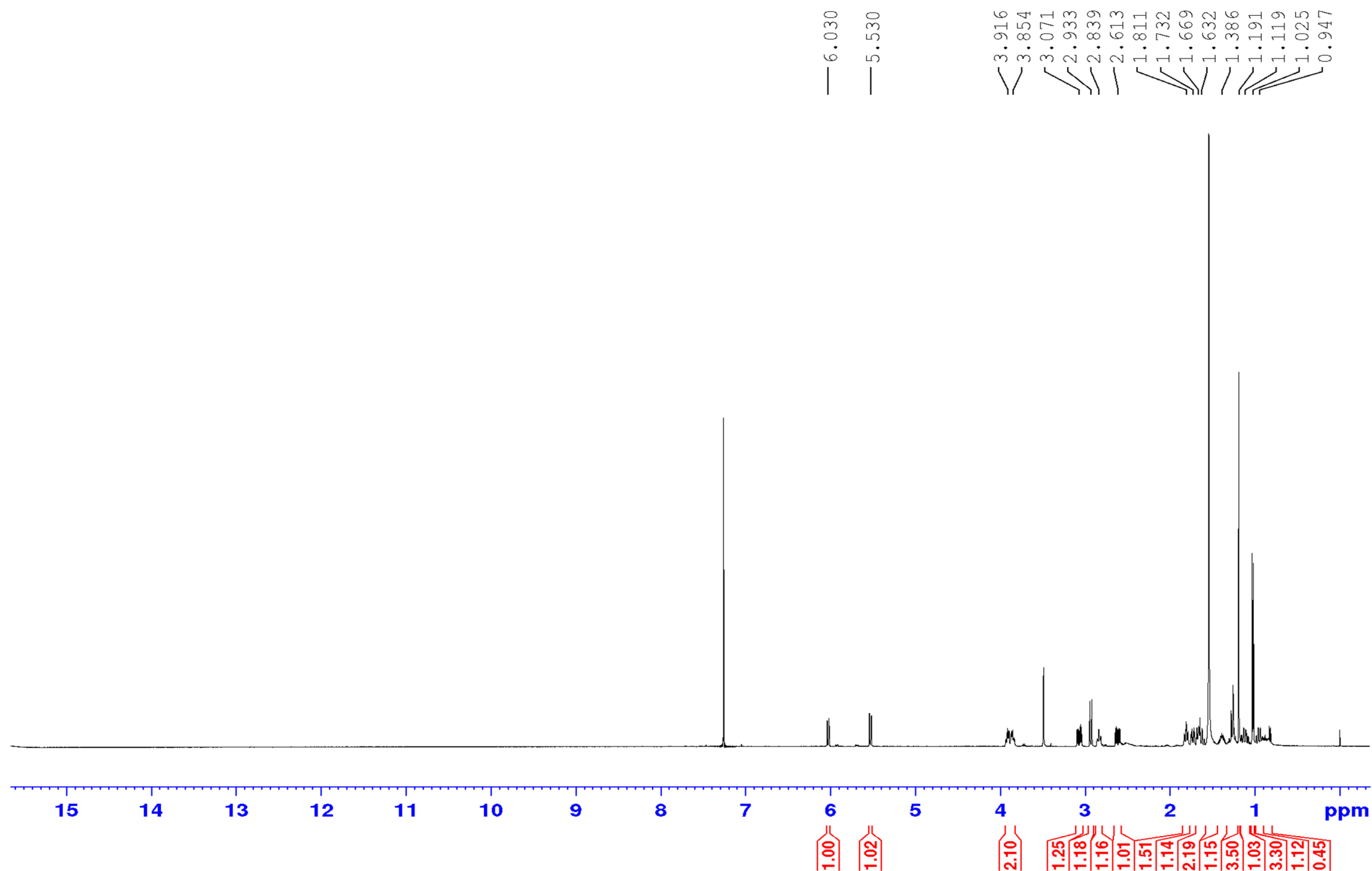
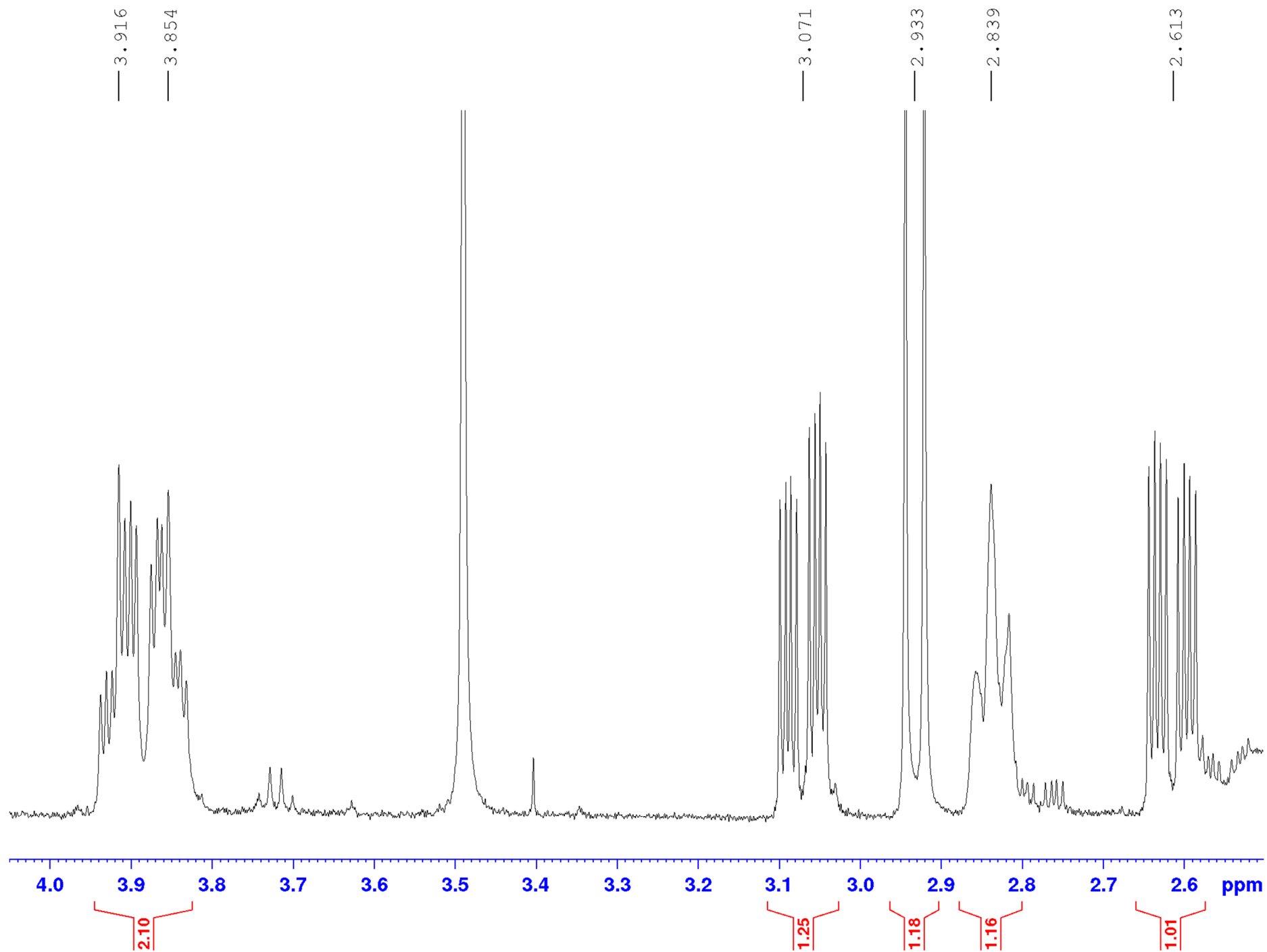


Figure S58. ^1H NMR spectrum (500.13 MHz) of **13** in CDCl_3





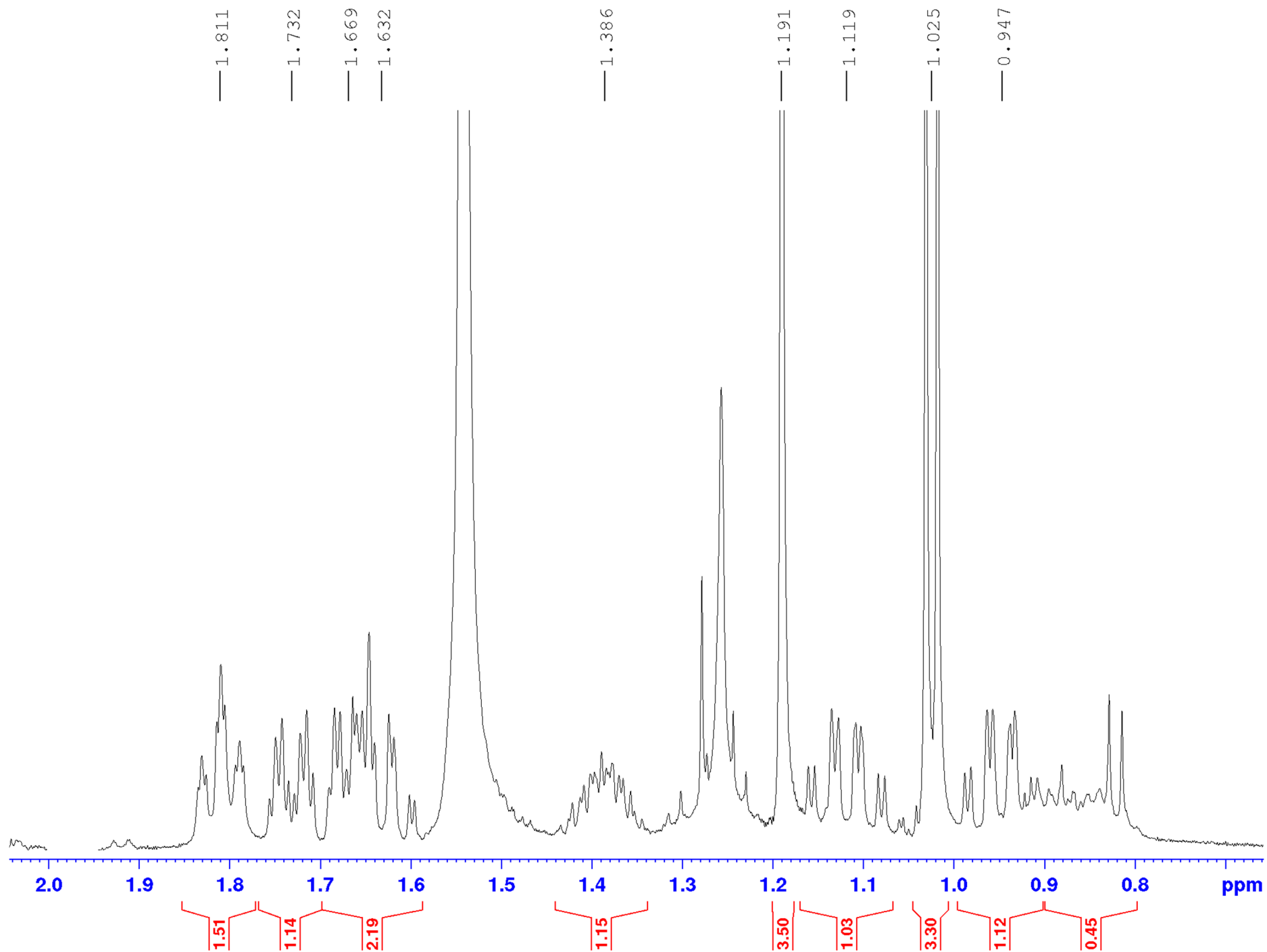


Figure S59. ^{13}C NMR spectrum (125.77 MHz) of **13** in CDCl_3

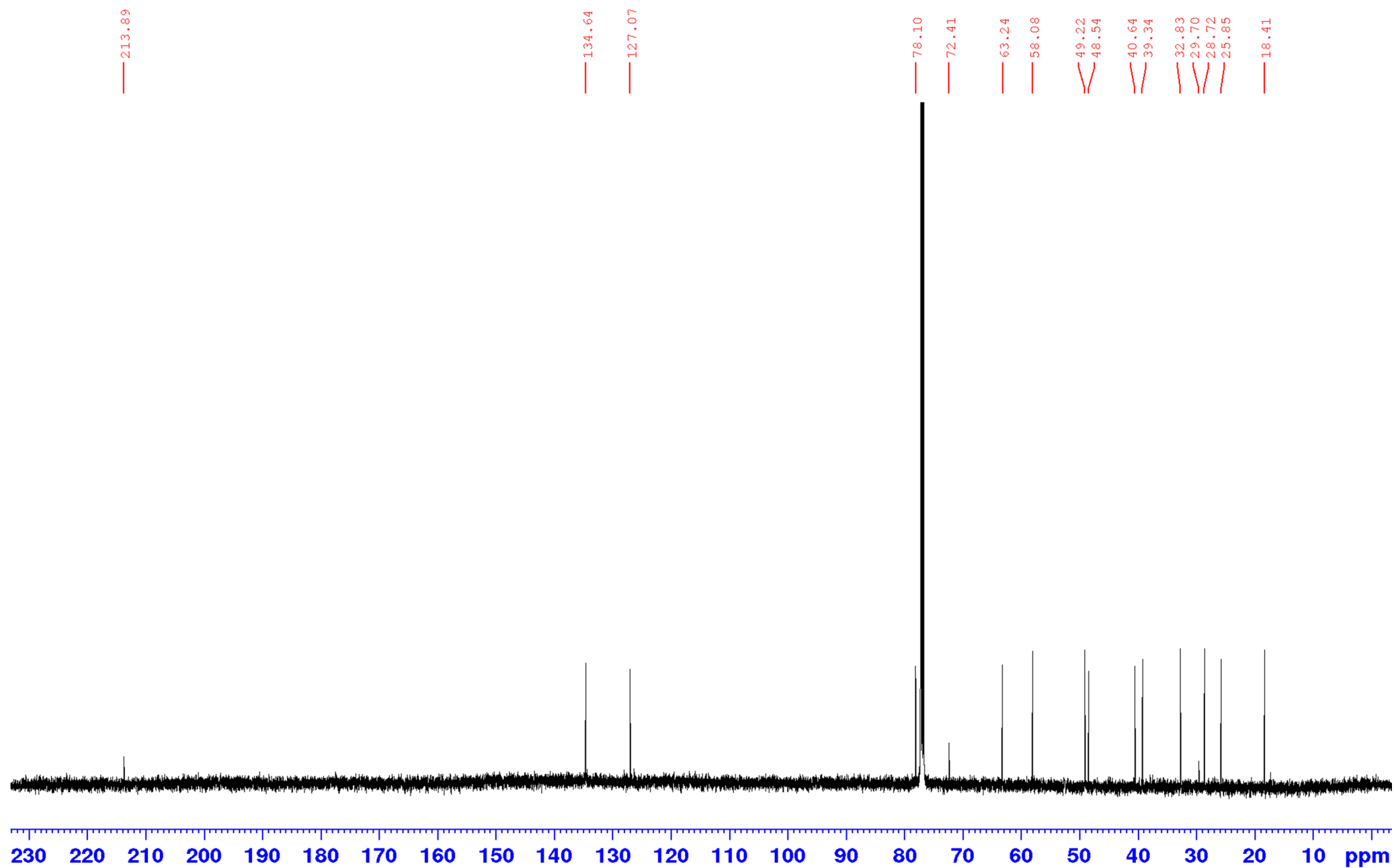


Figure S60. DEPT-135 spectrum (125.77 MHz) of **13** in CDCl₃

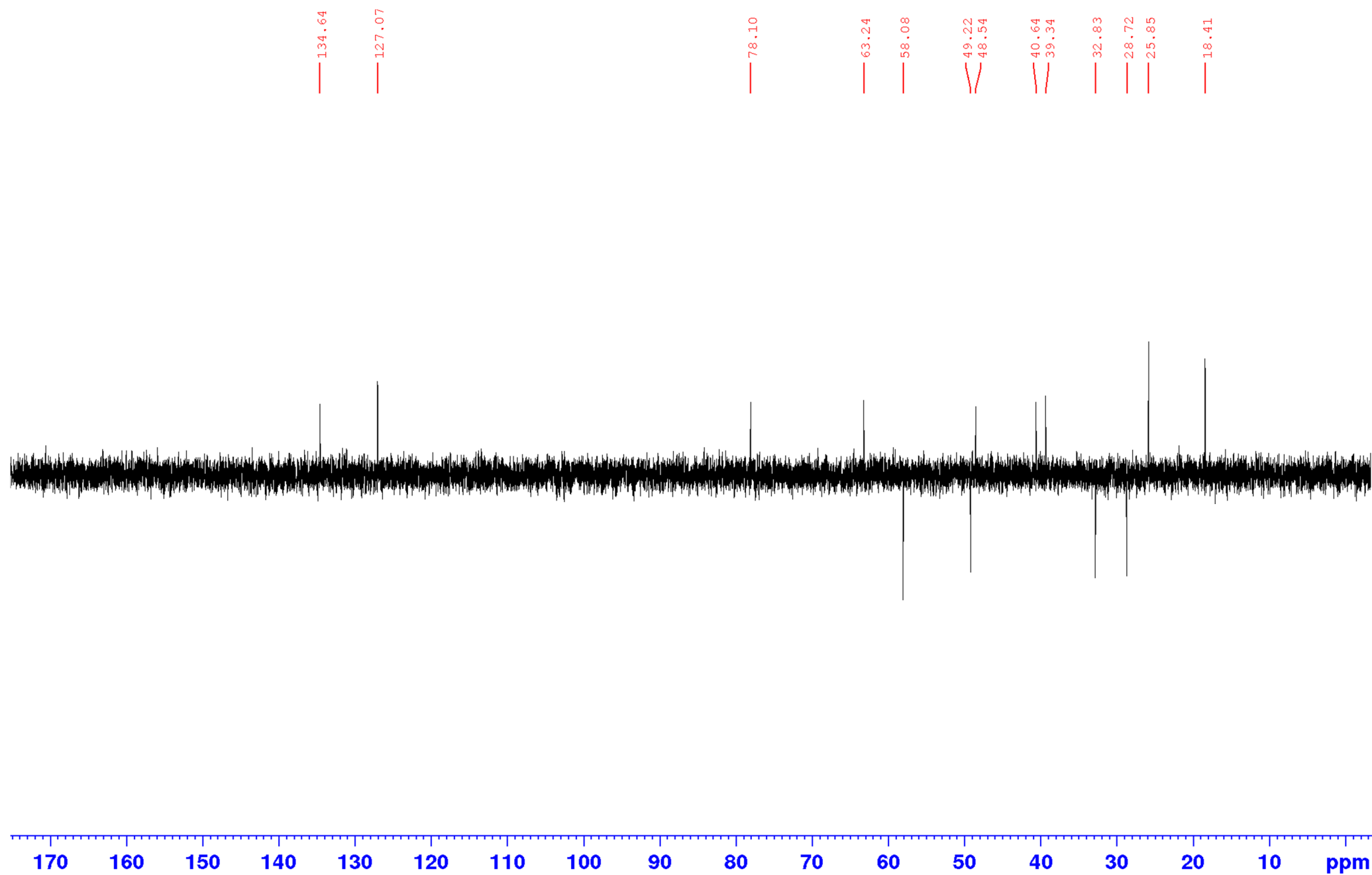


Figure S61. DEPT-90 spectrum (125.77 MHz) of **13** in CDCl₃

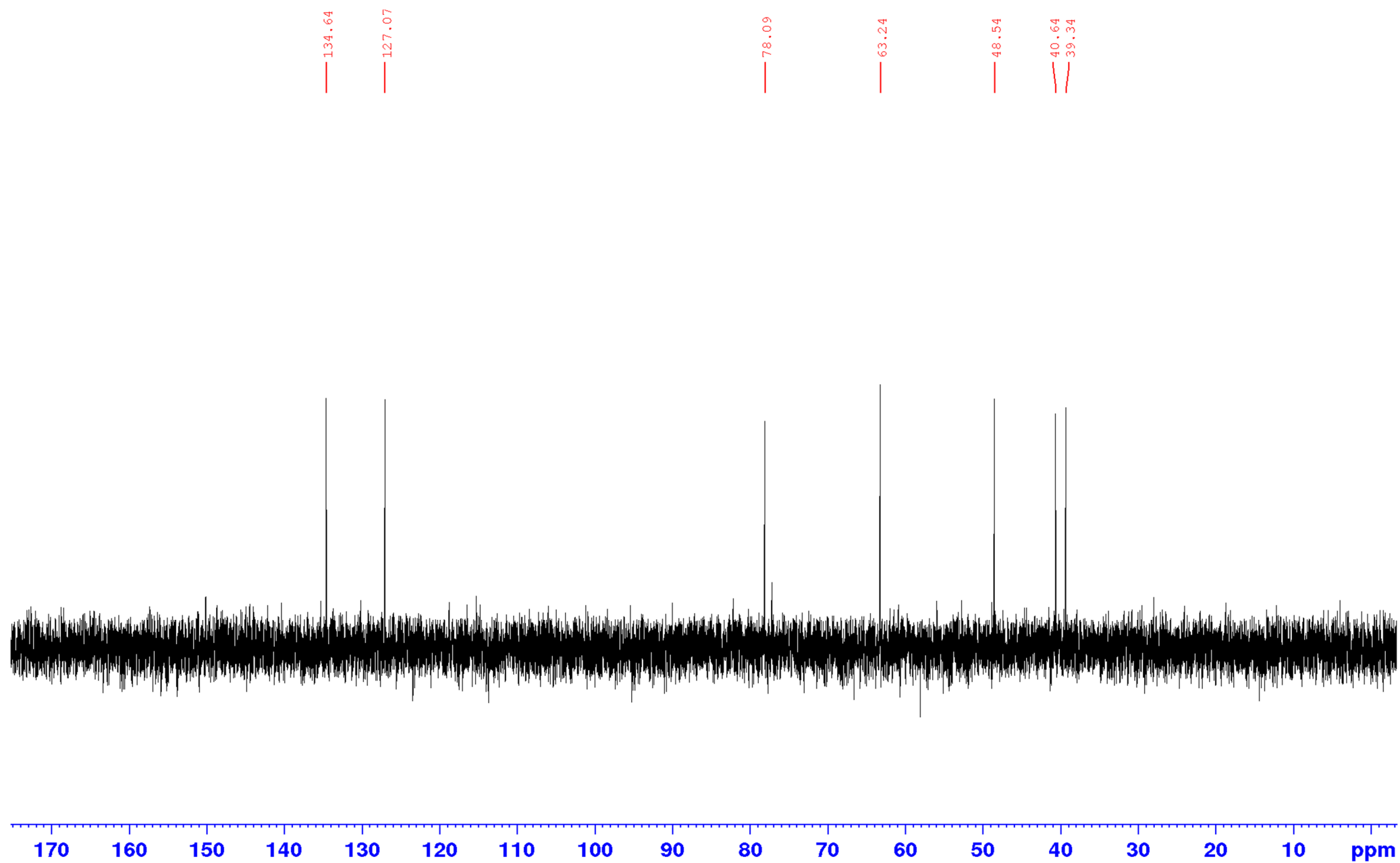


Figure S62. HSQC spectrum of **13** in CDCl₃

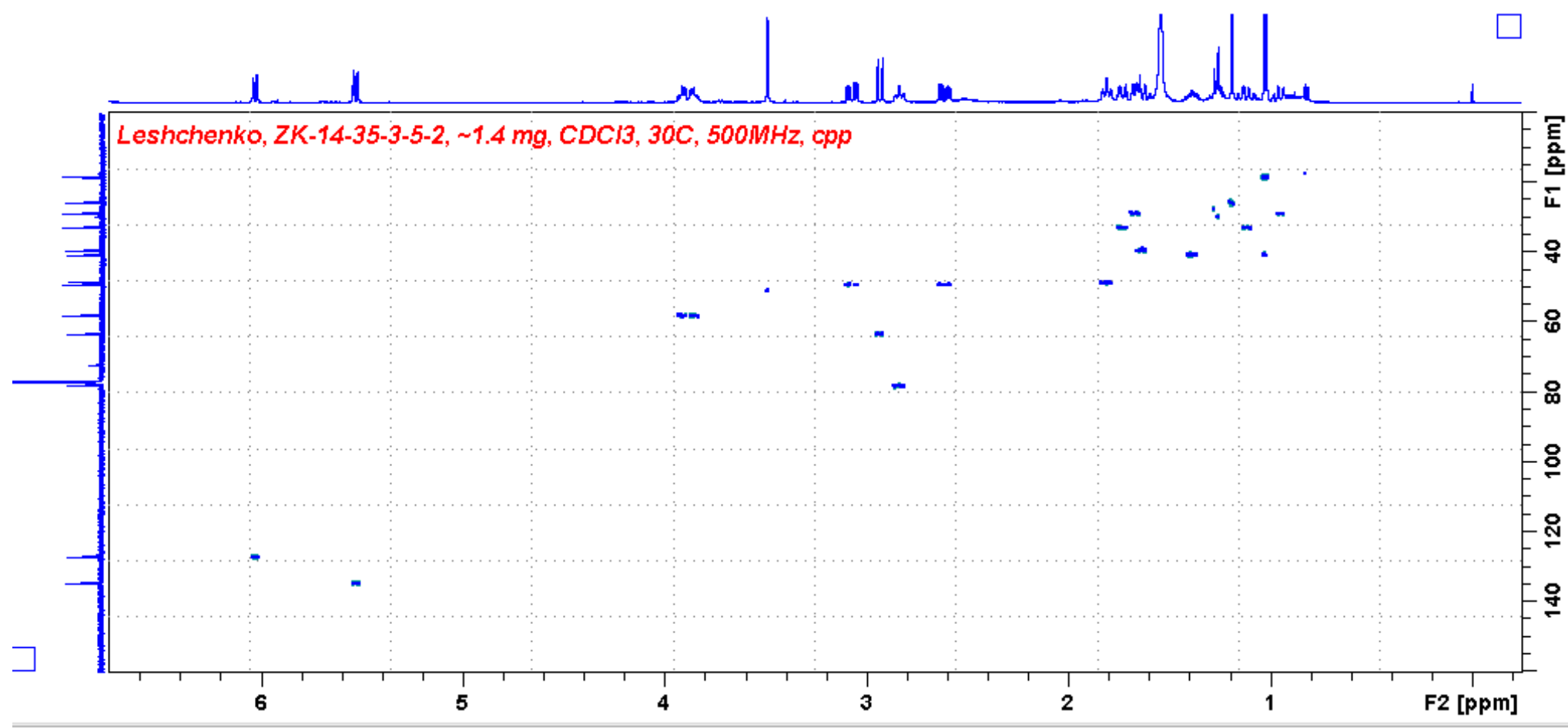


Figure S63. HMBC spectrum of **13** in CDCl₃

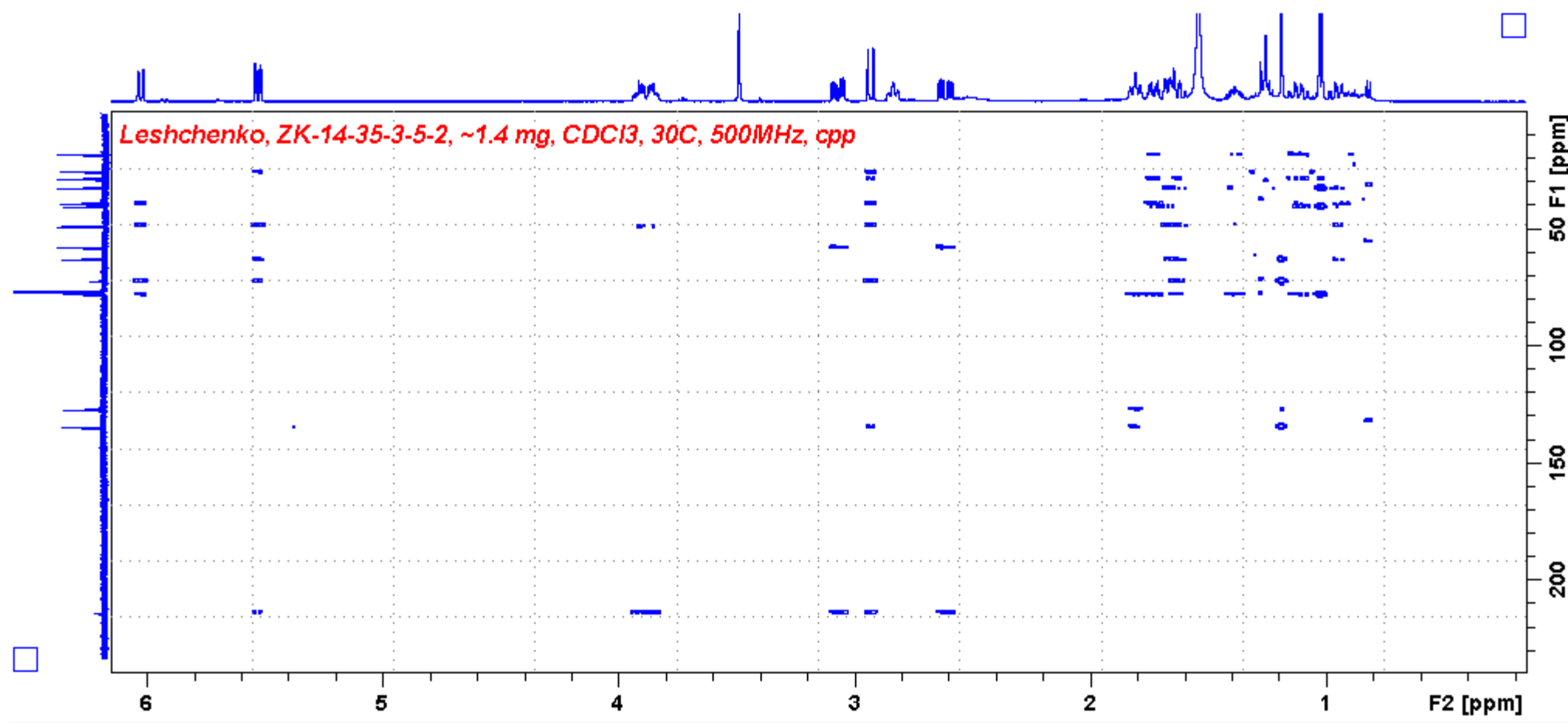


Figure S64. ^1H – ^1H COSY spectrum of **13** in CDCl_3

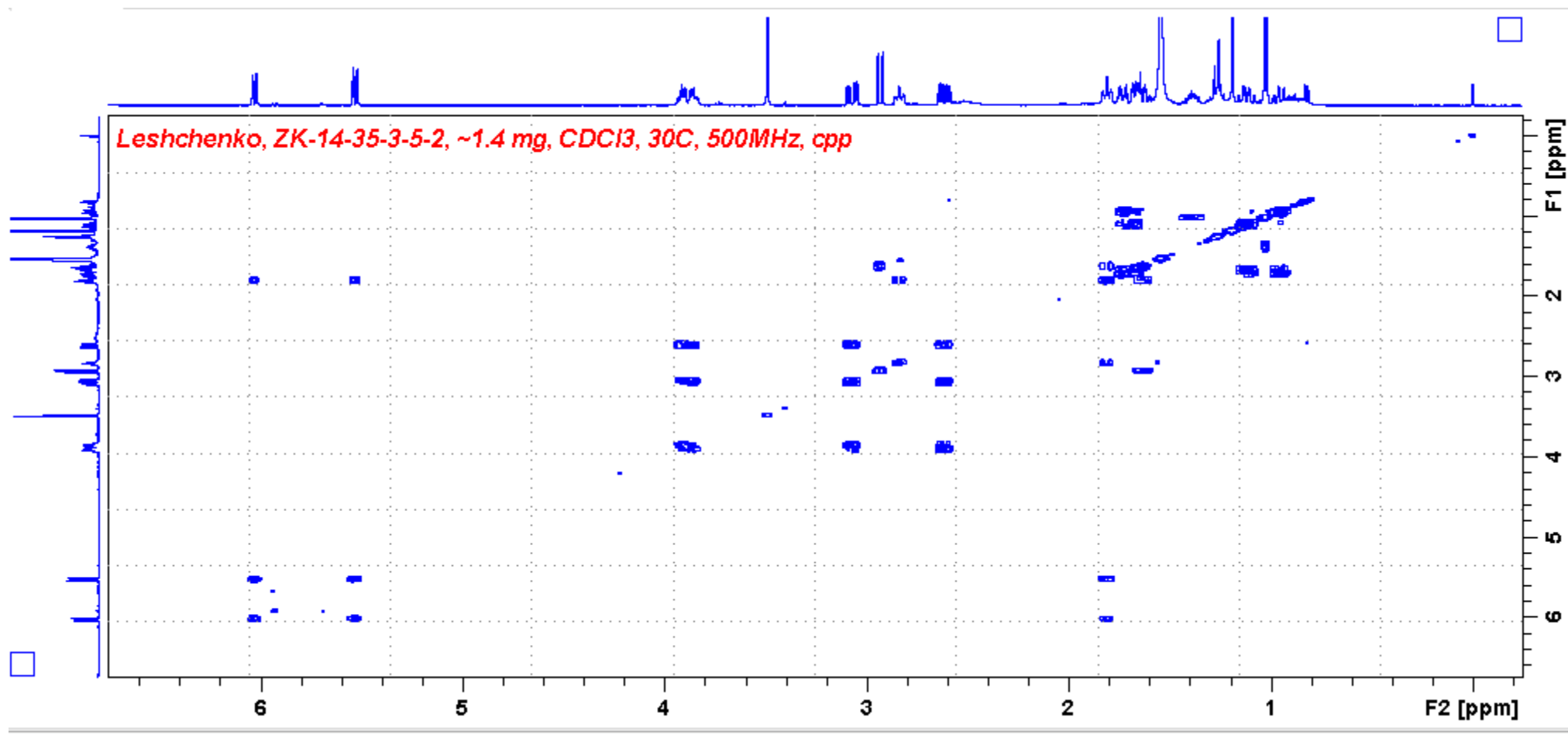


Figure S65. NOESY spectrum of **13** in CDCl₃

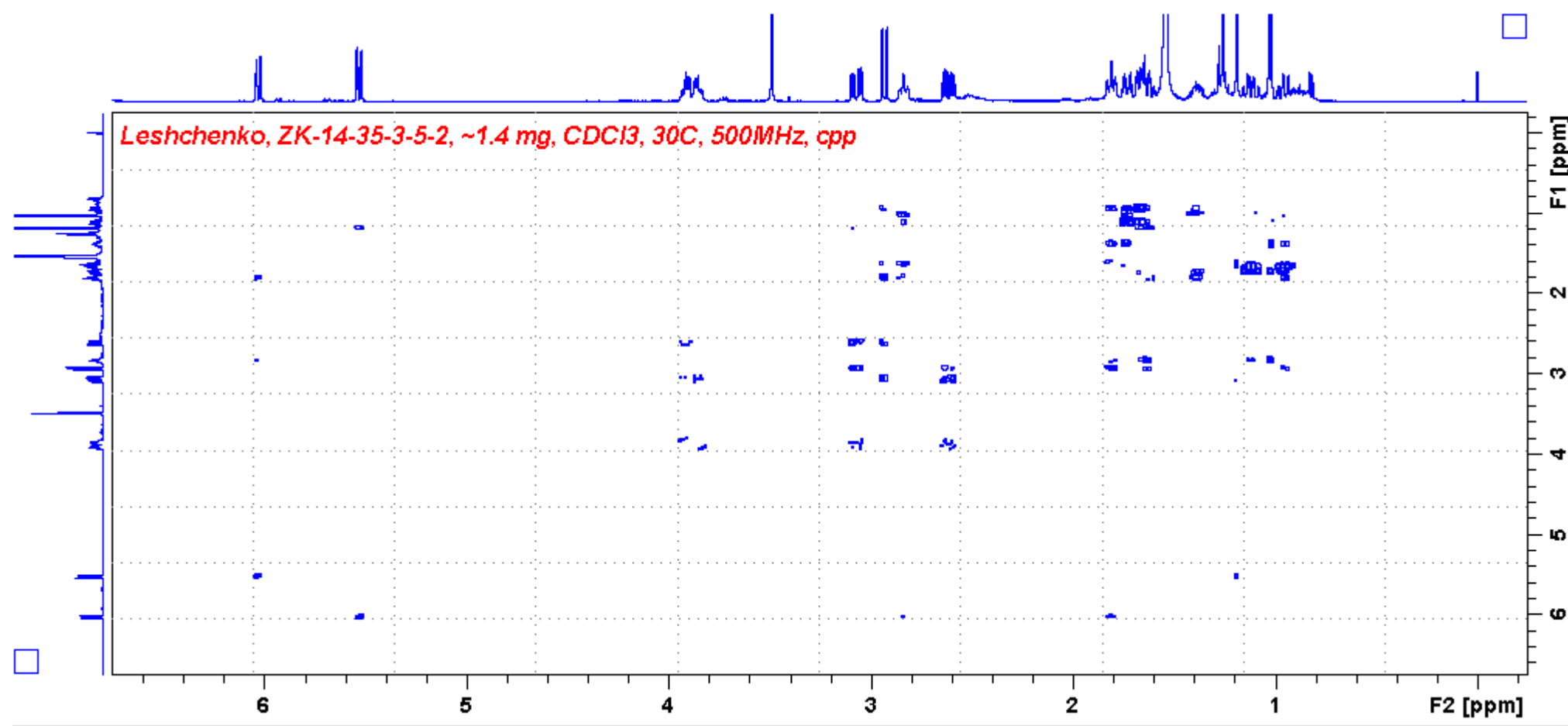


Figure S66. ^{13}C NMR spectrum of **13** and **6** in CDCl_3

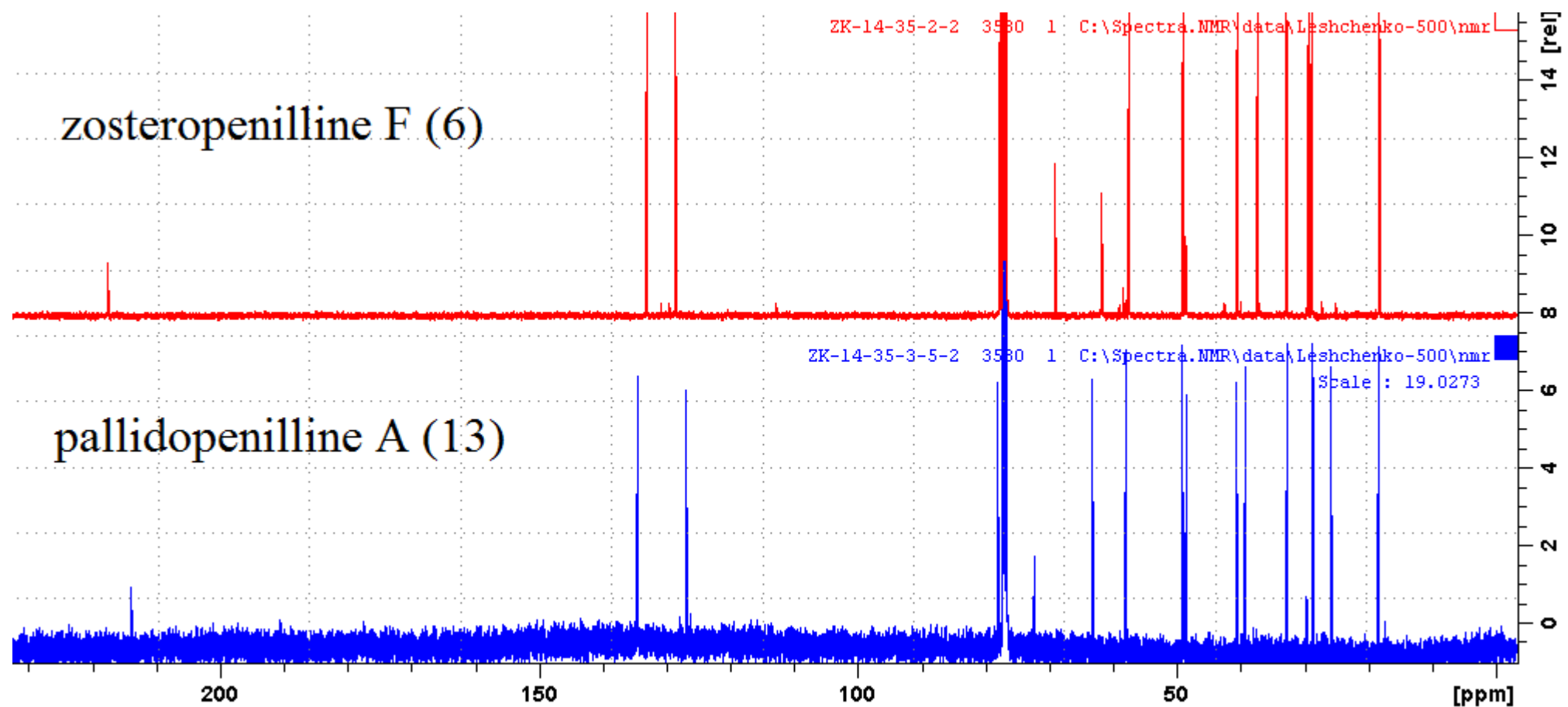


Figure S67. DEPT spectrum of **13** and **6** in CDCl₃

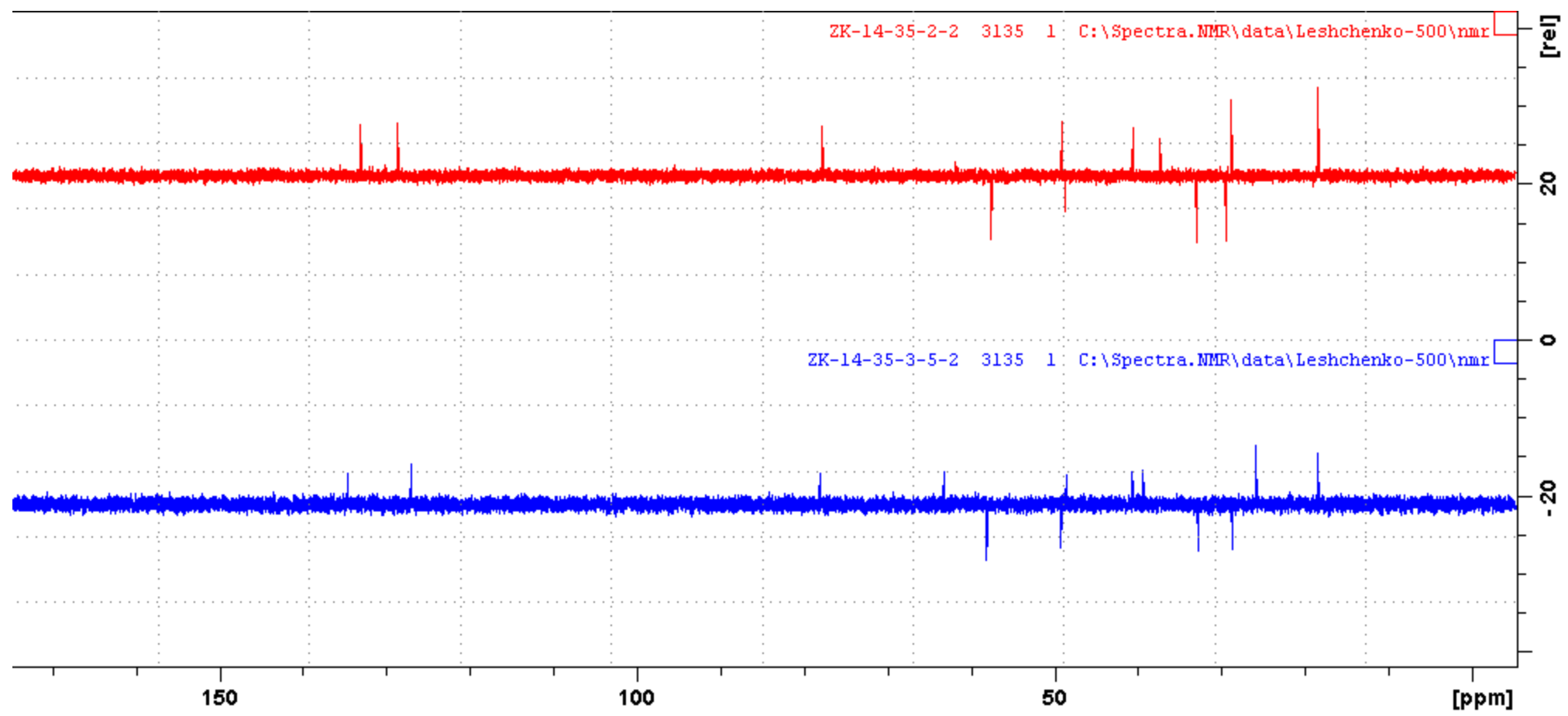
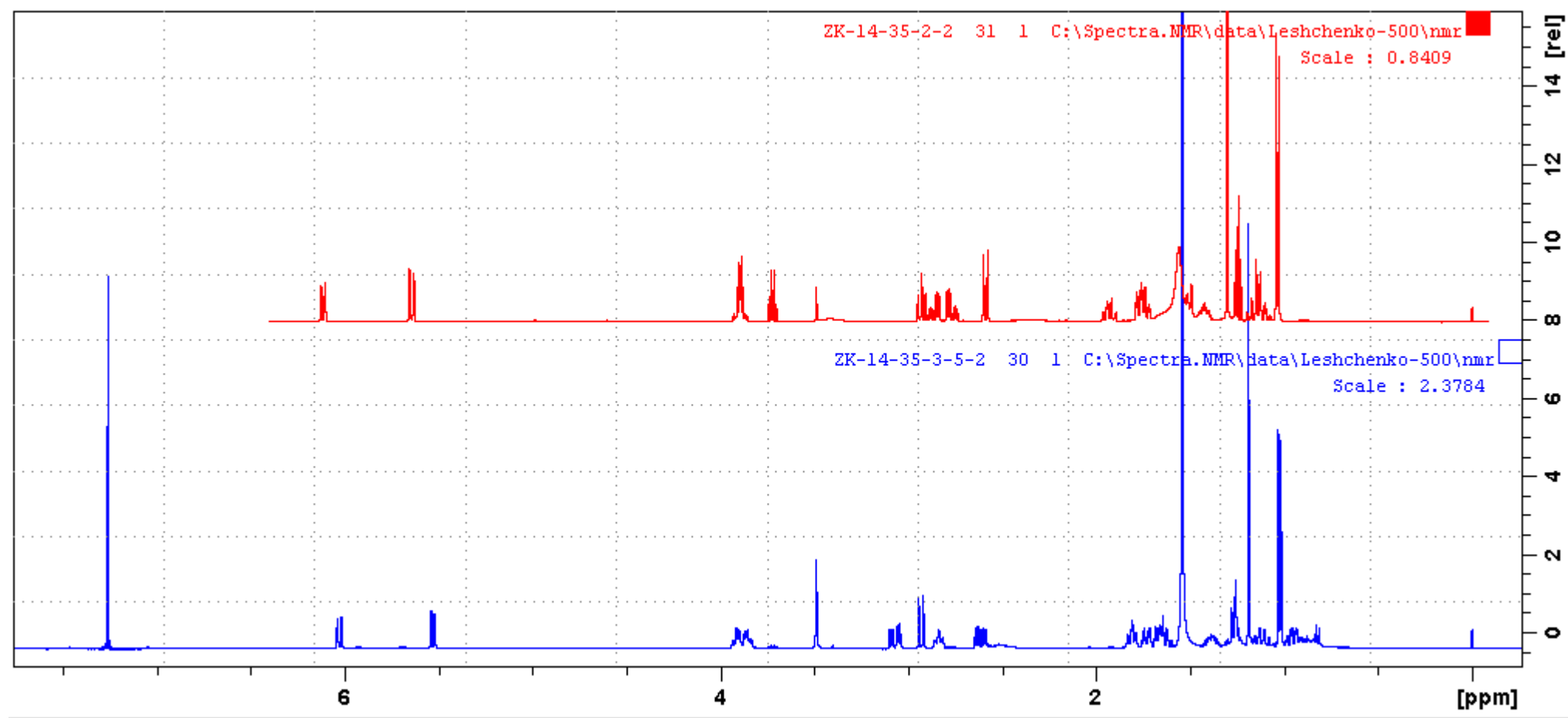


Figure S68. ^1H NMR spectrum of **13** and **6** in CDCl_3



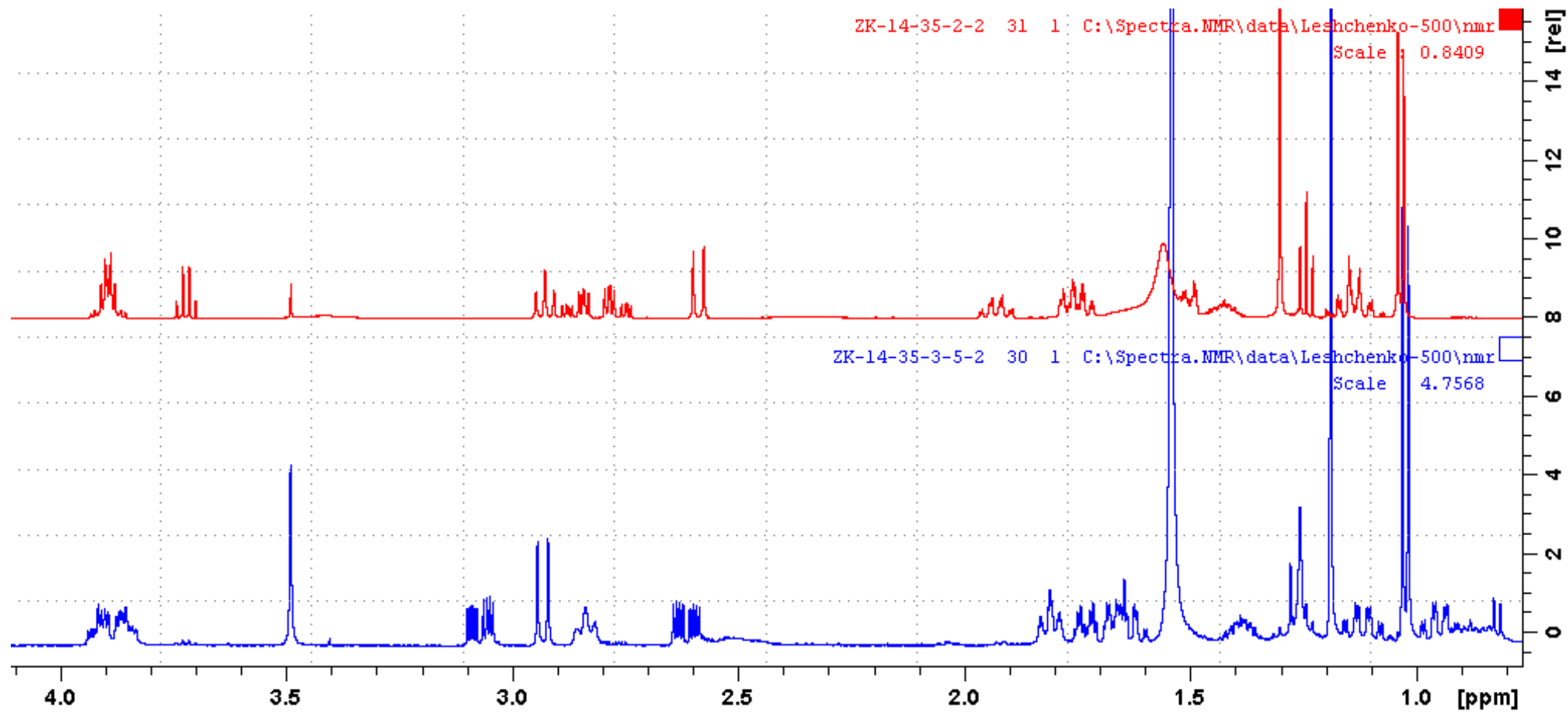
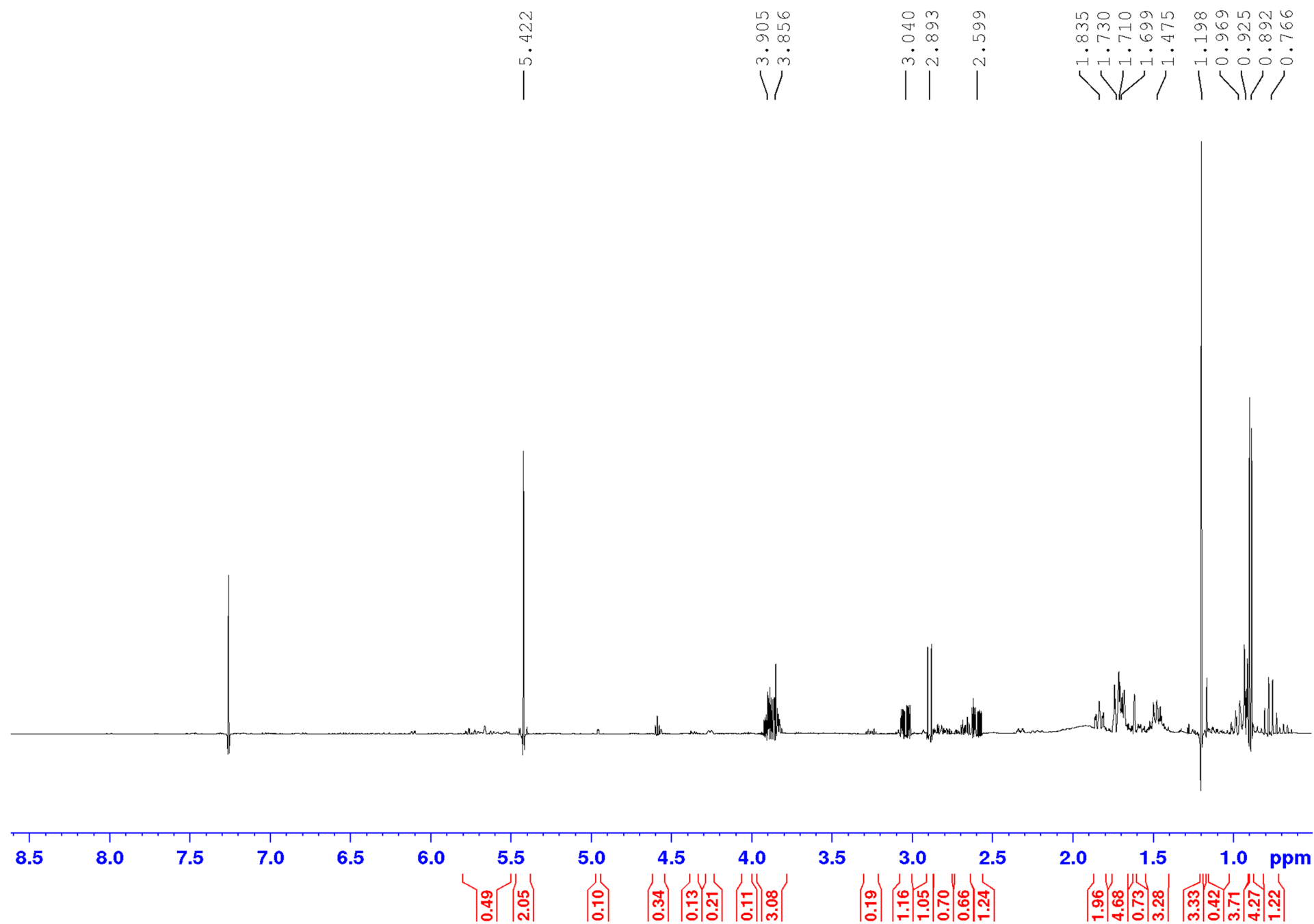


Figure S69. ^1H NMR spectrum (500.13 MHz) of **7** in CDCl_3



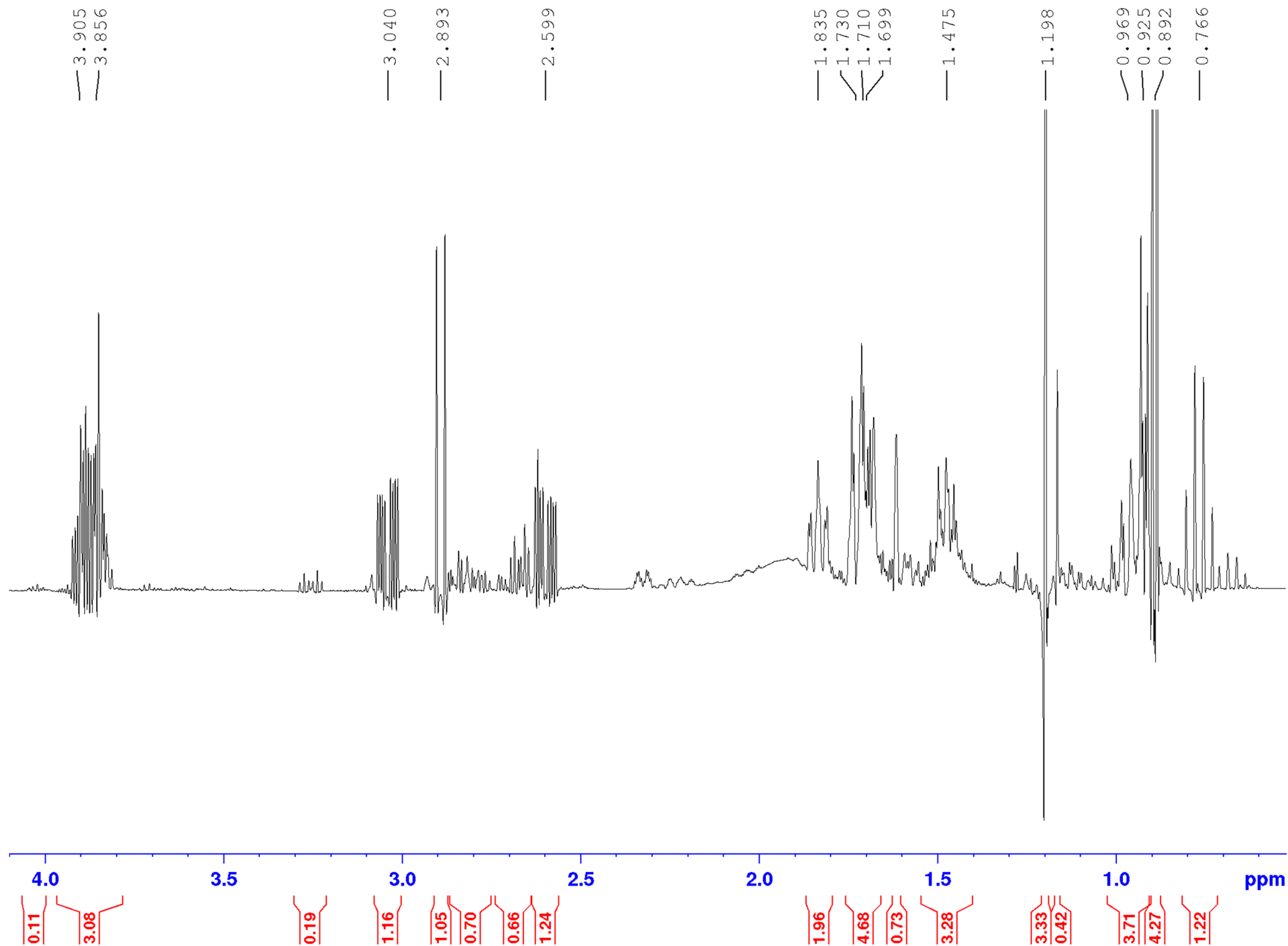


Figure S70. ^{13}C NMR spectrum (125.77 MHz) of **7** in CDCl_3

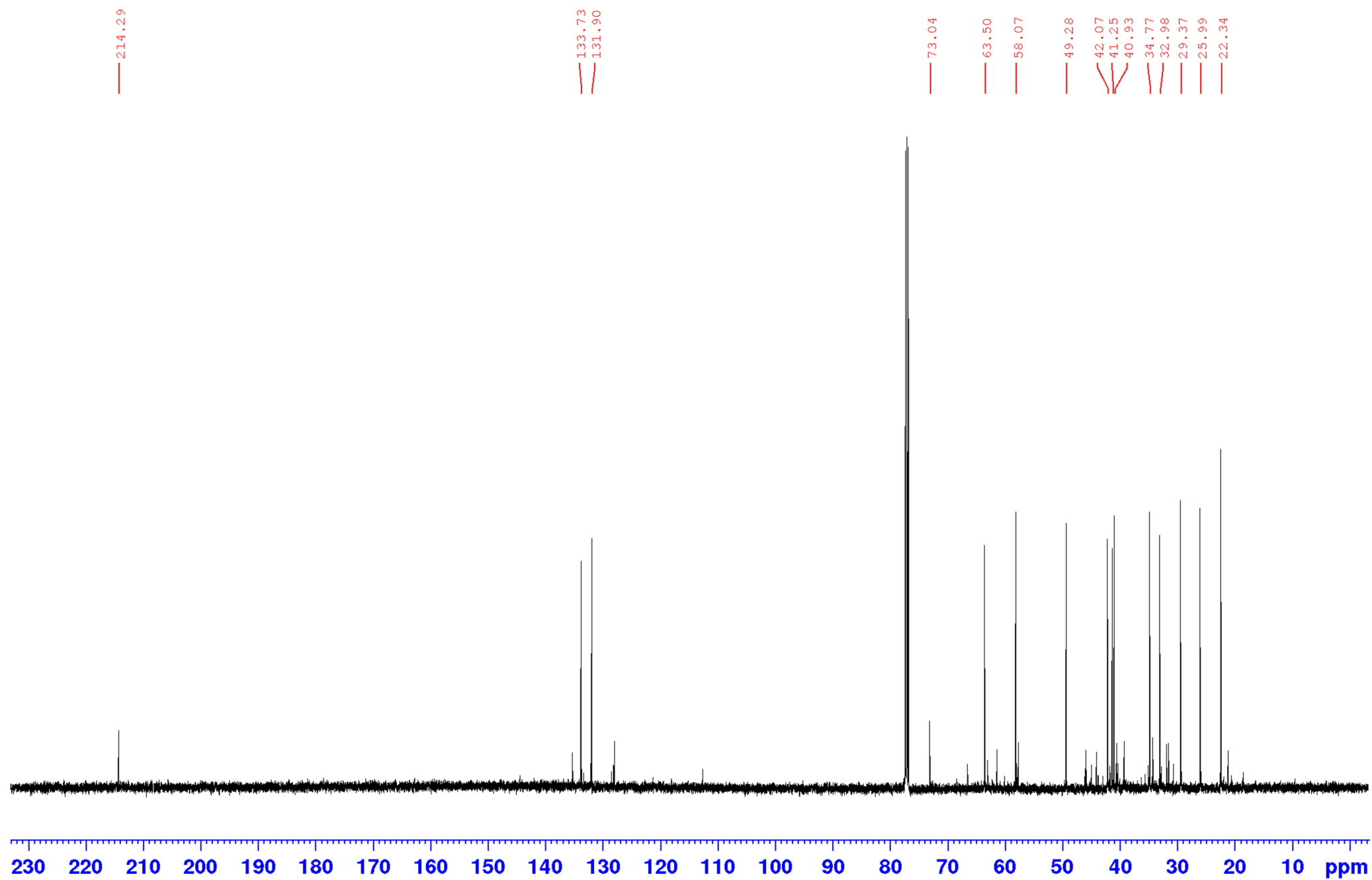


Figure S71. DEPT-135 spectrum (125.77 MHz) of **7** in CDCl₃

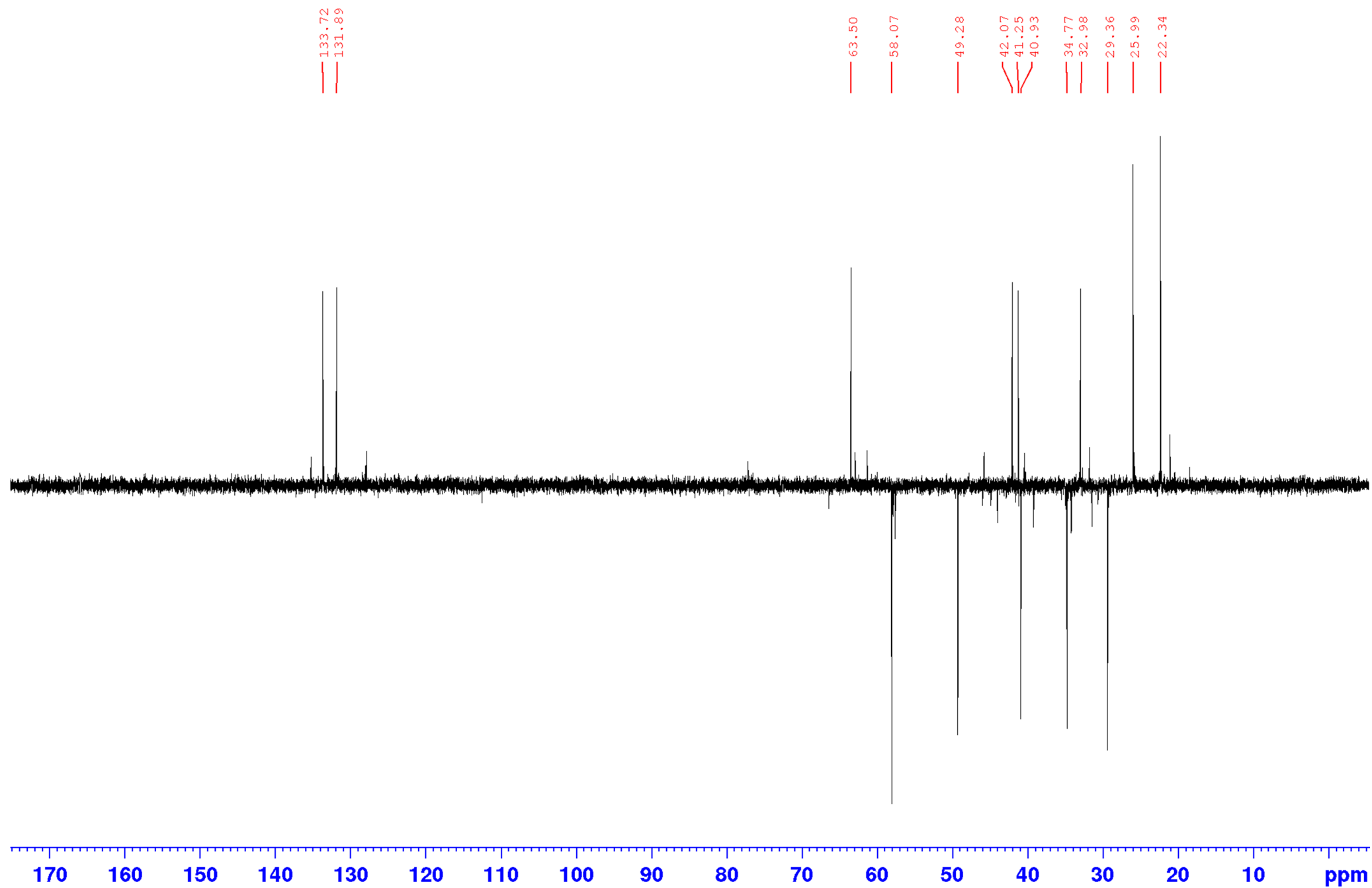


Figure S72. DEPT-90 spectrum (125.77 MHz) of **7** in CDCl₃

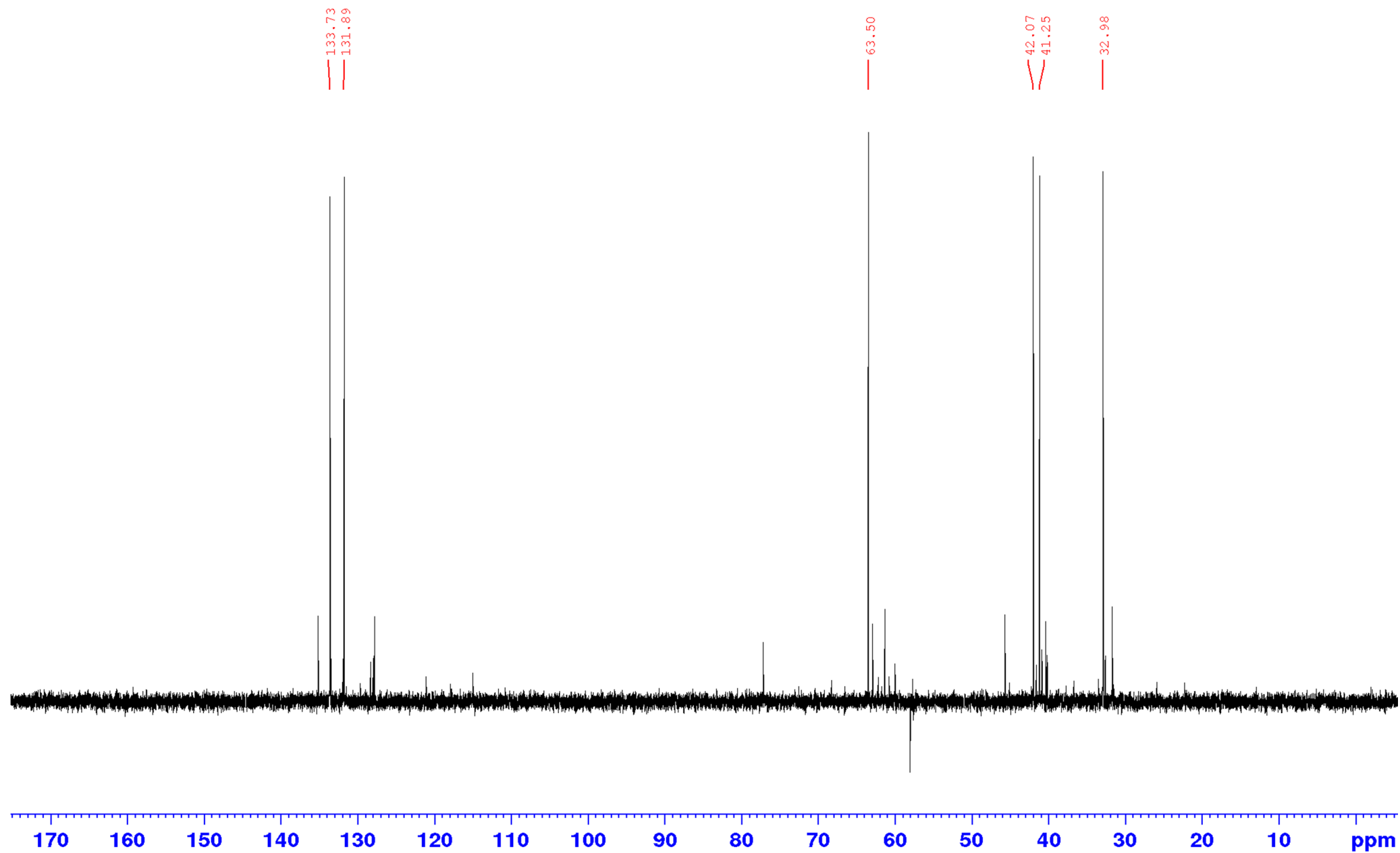


Figure S73. HSQC spectrum of 7 in CDCl₃

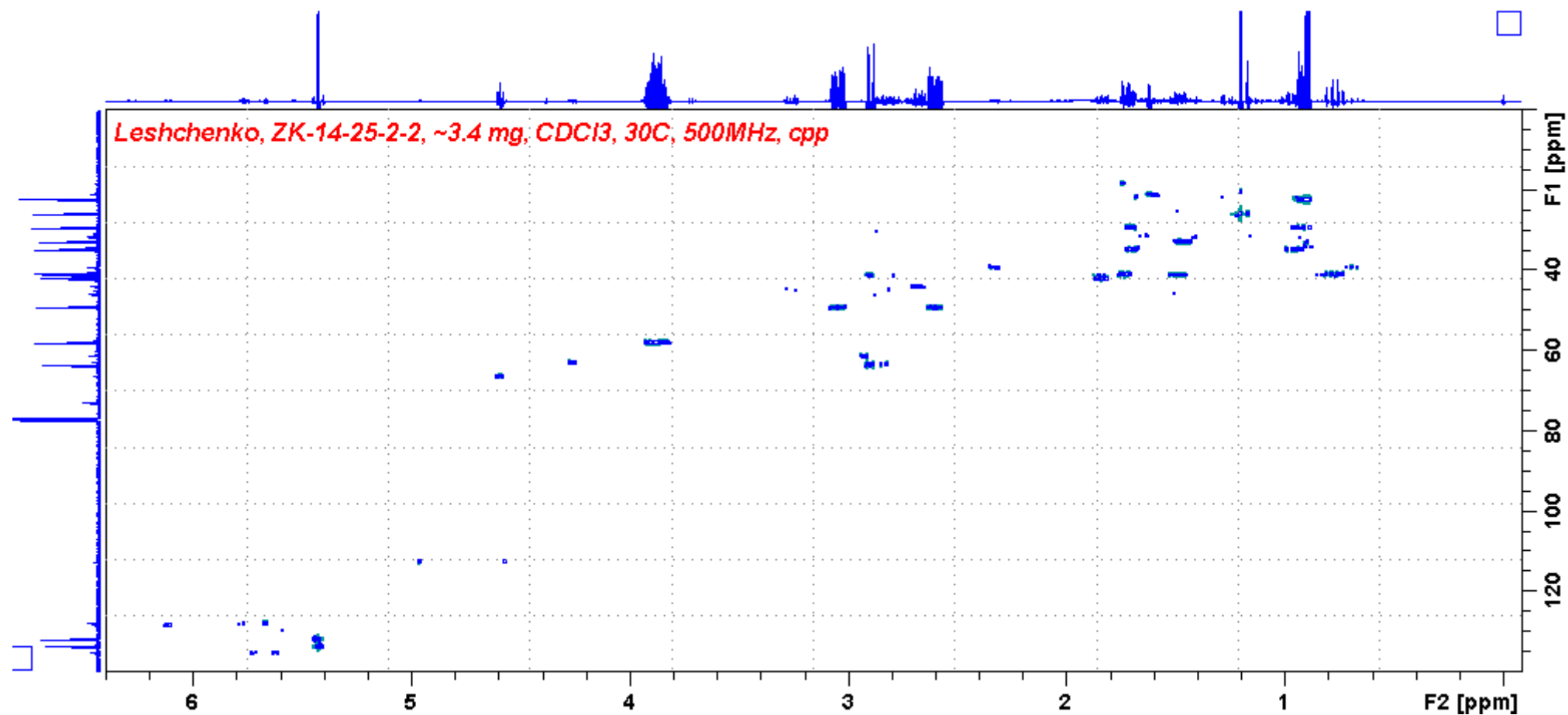


Figure S74. HMBC spectrum of **7** in CDCl₃

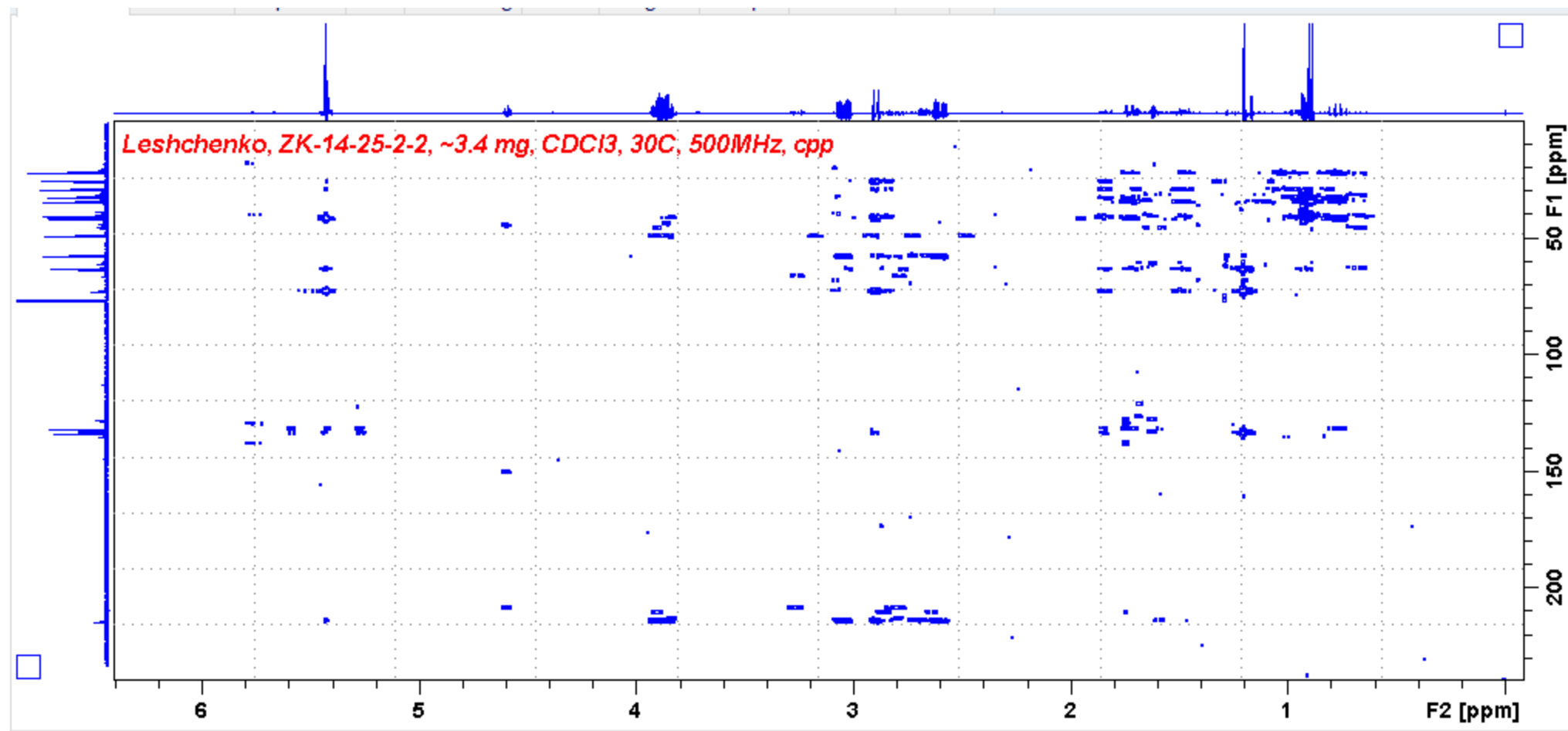


Figure S75. ^1H - ^1H COSY spectrum of **7** in CDCl_3

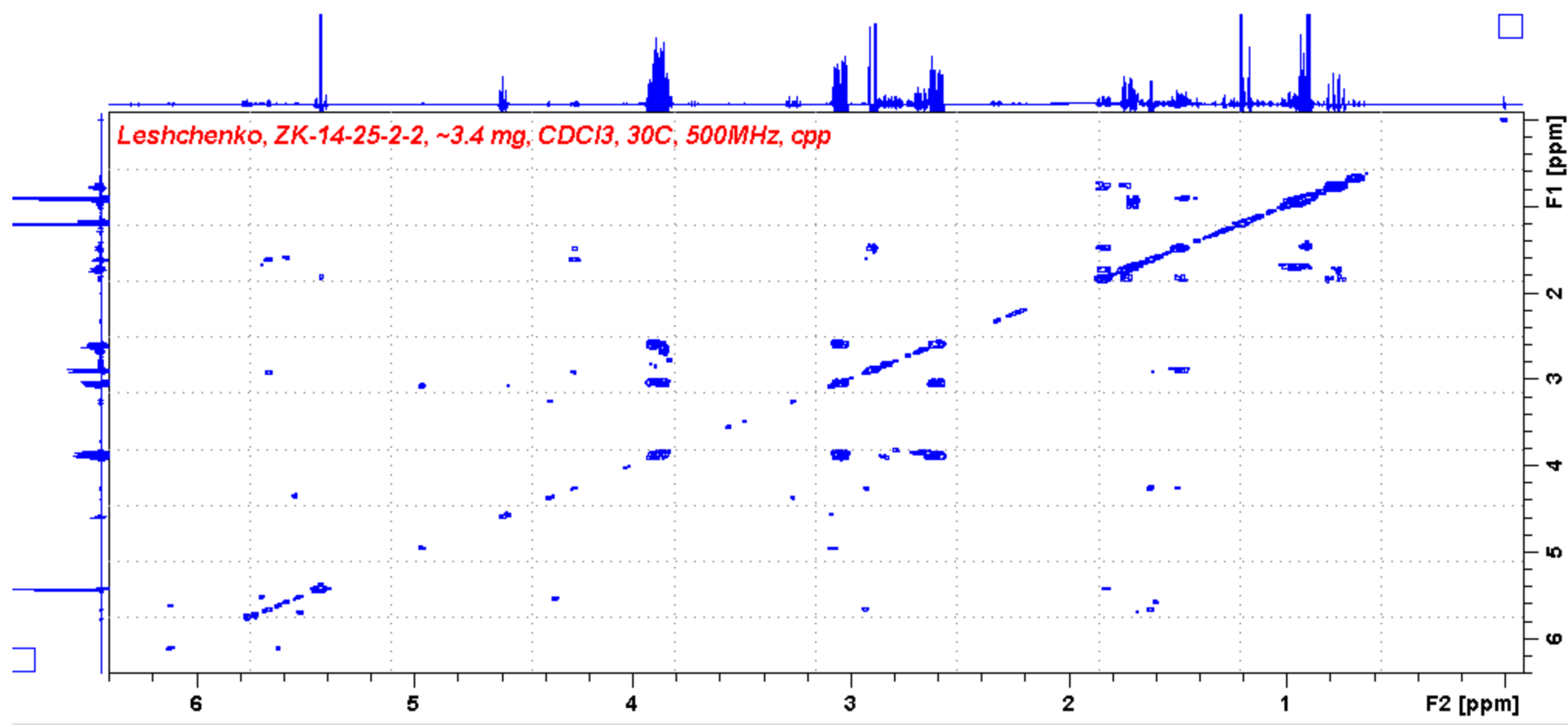


Figure S76. NOESY spectrum of **7** in CDCl₃

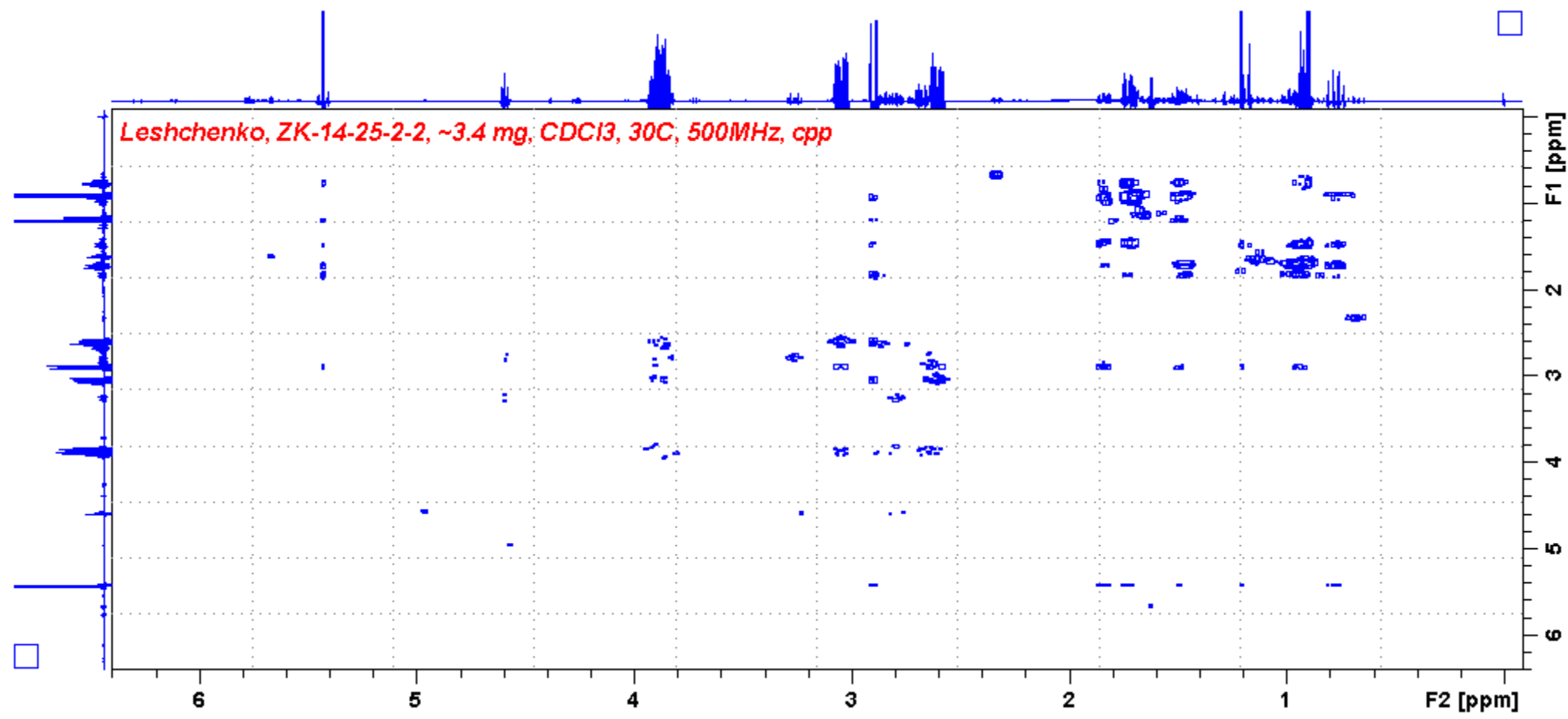


Figure S77. NOESY spectrum of 7 in DmsO-d6

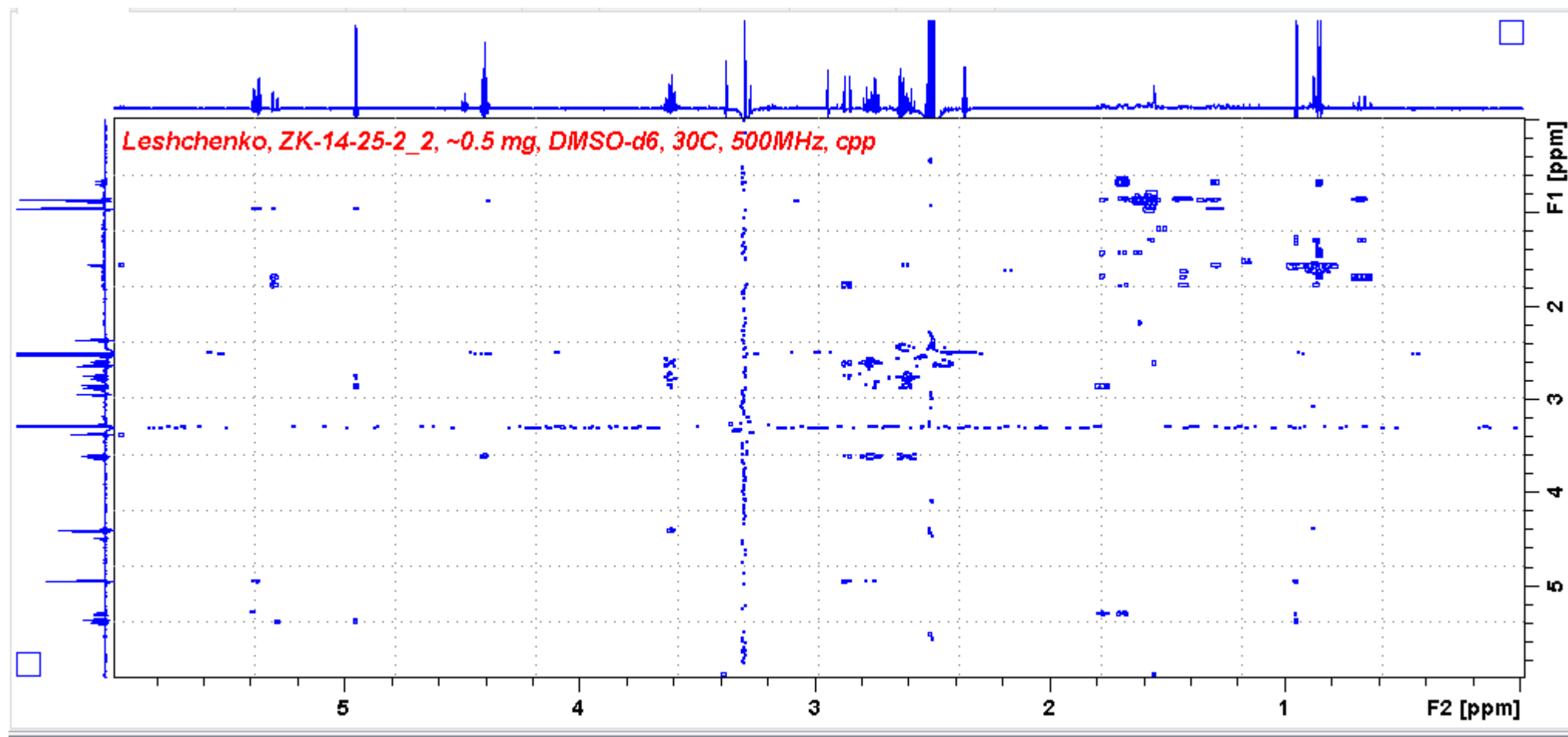
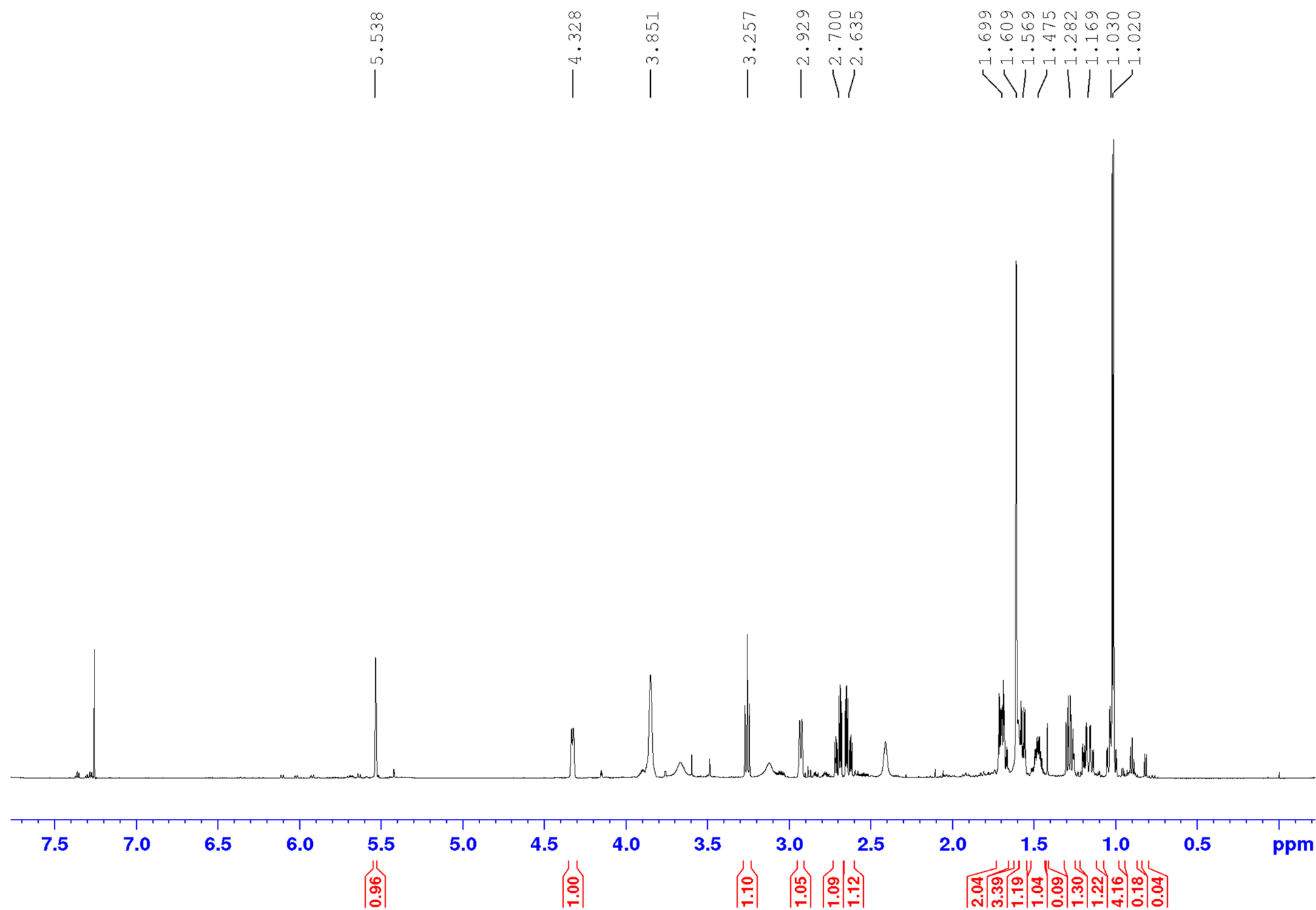


Figure S78. ^1H NMR spectrum (700.13 MHz) of **8** in CDCl_3



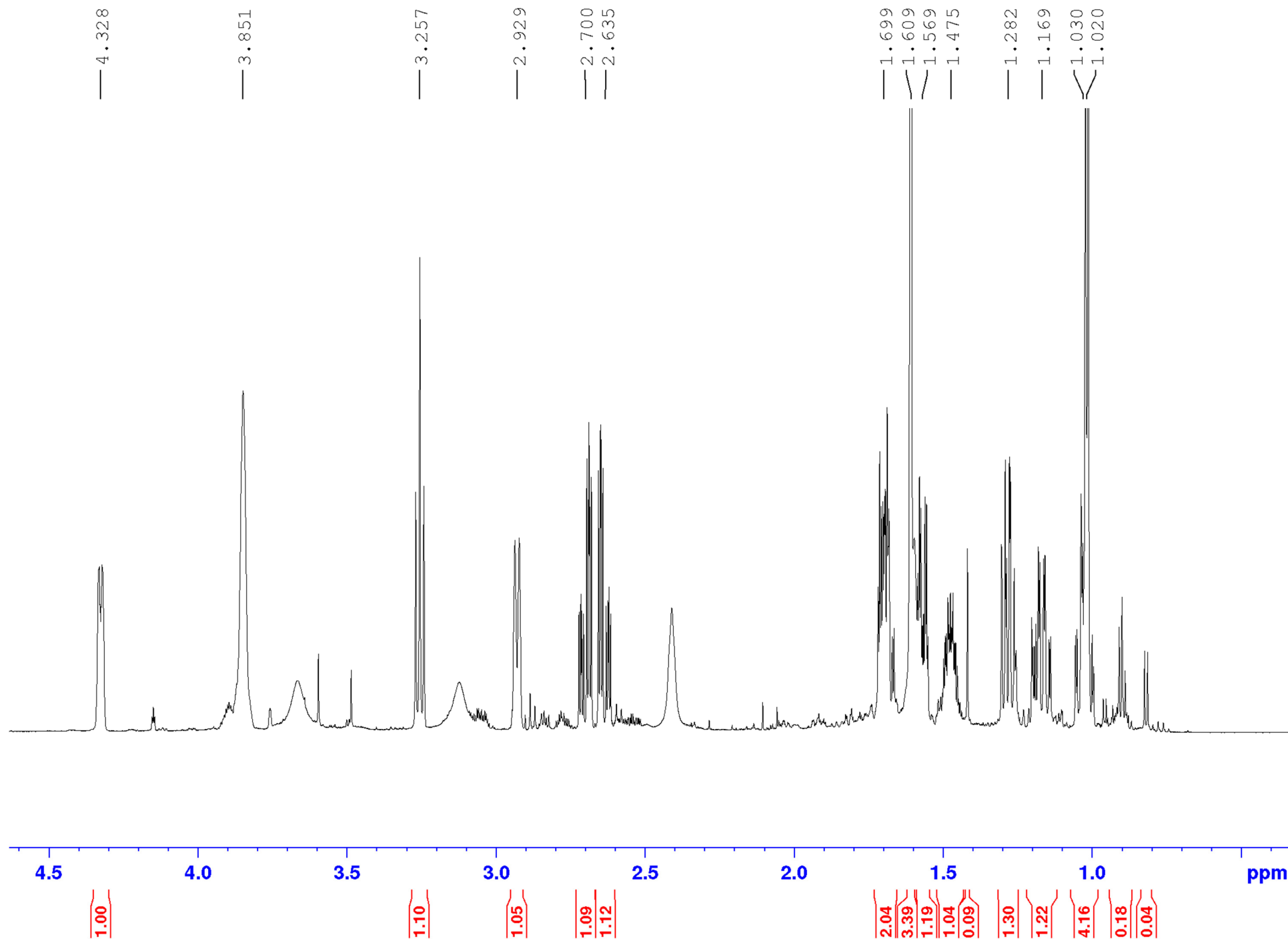


Figure S79. ^{13}C NMR spectrum (176.04 MHz) of **8** in CDCl_3

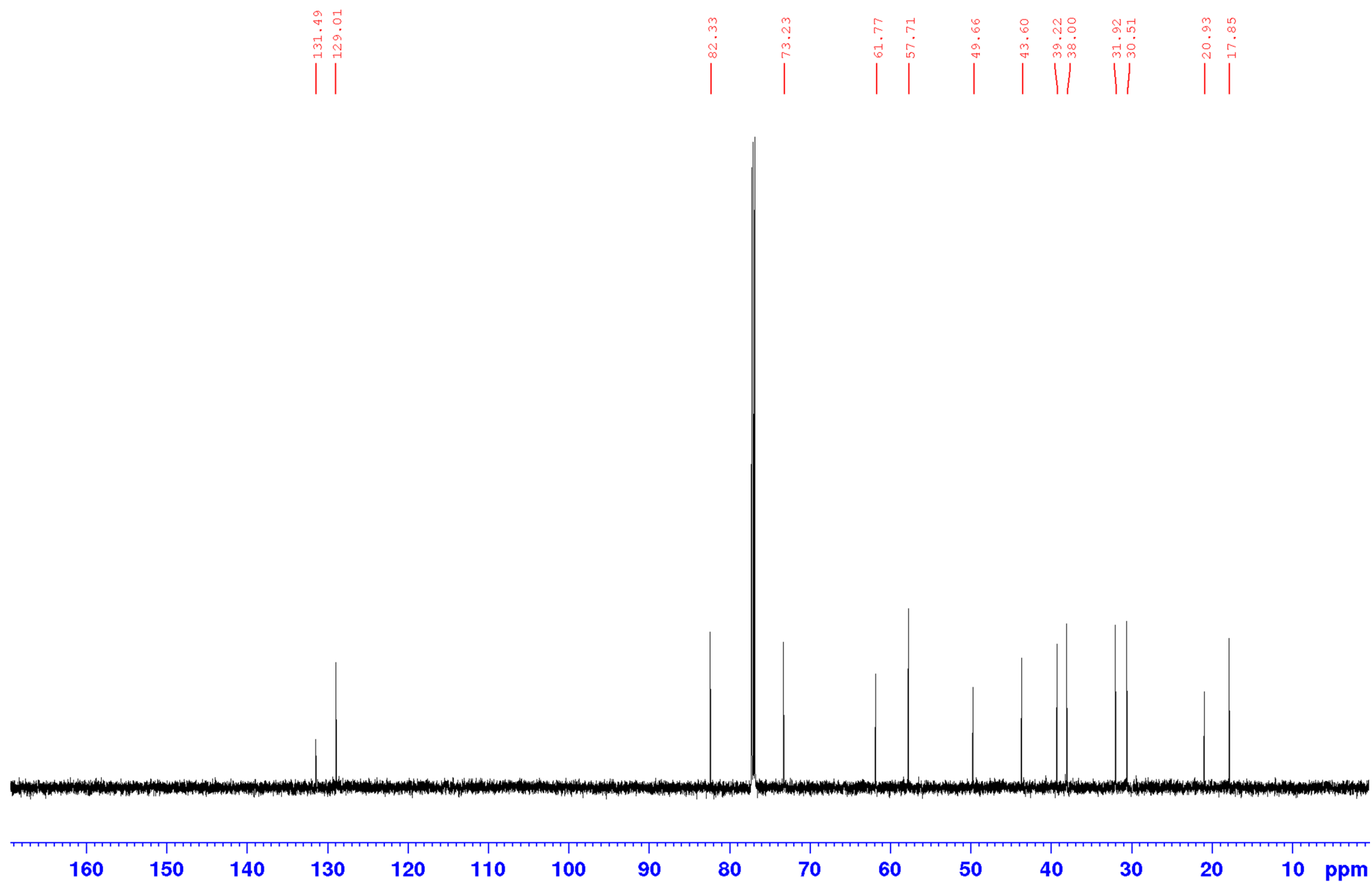


Figure S80. DEPT-135 spectrum (176.04 MHz) of **8** in CDCl₃

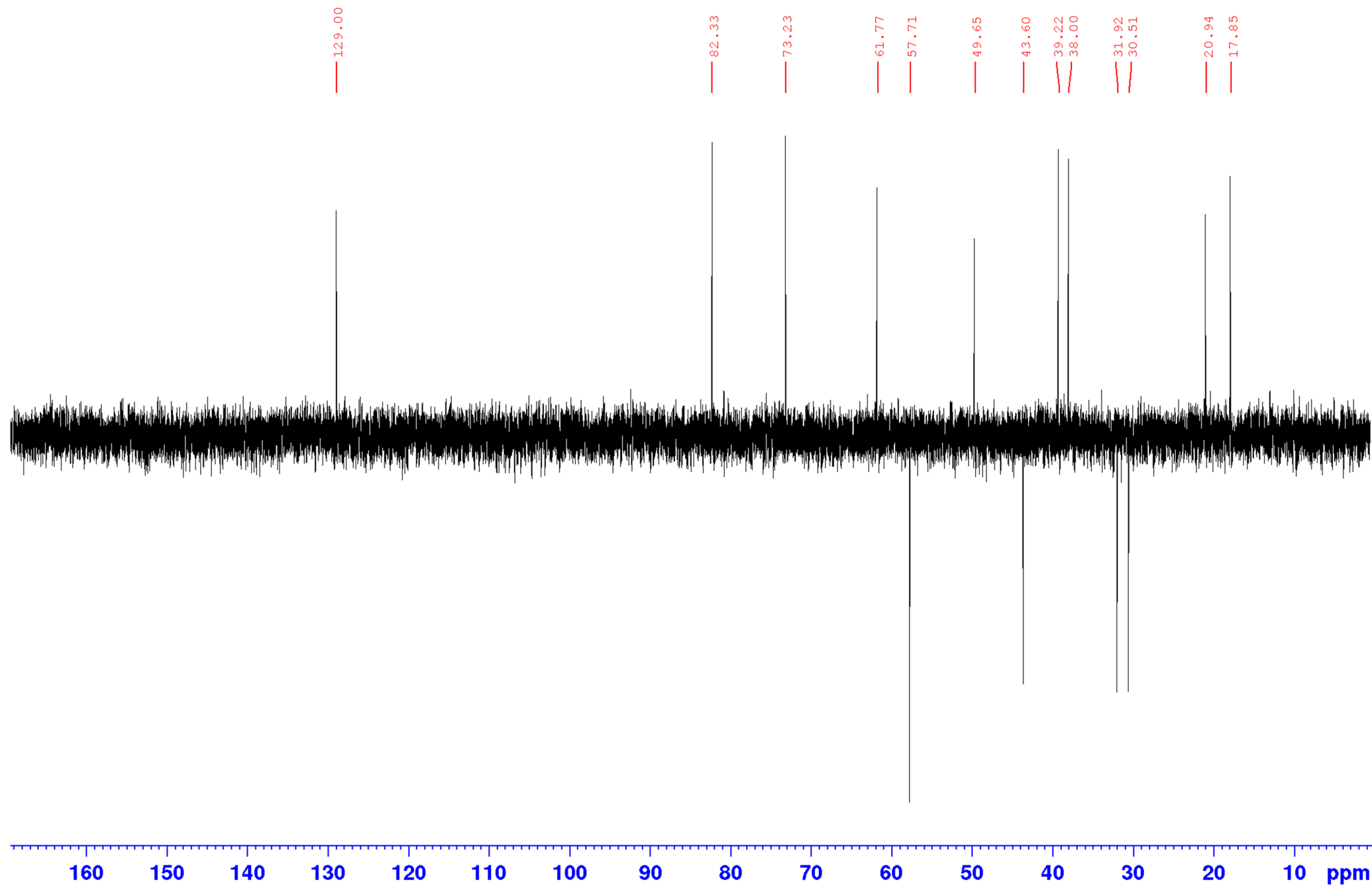


Figure S81. DEPT-90 spectrum (176.04) of **8** in CDCl₃

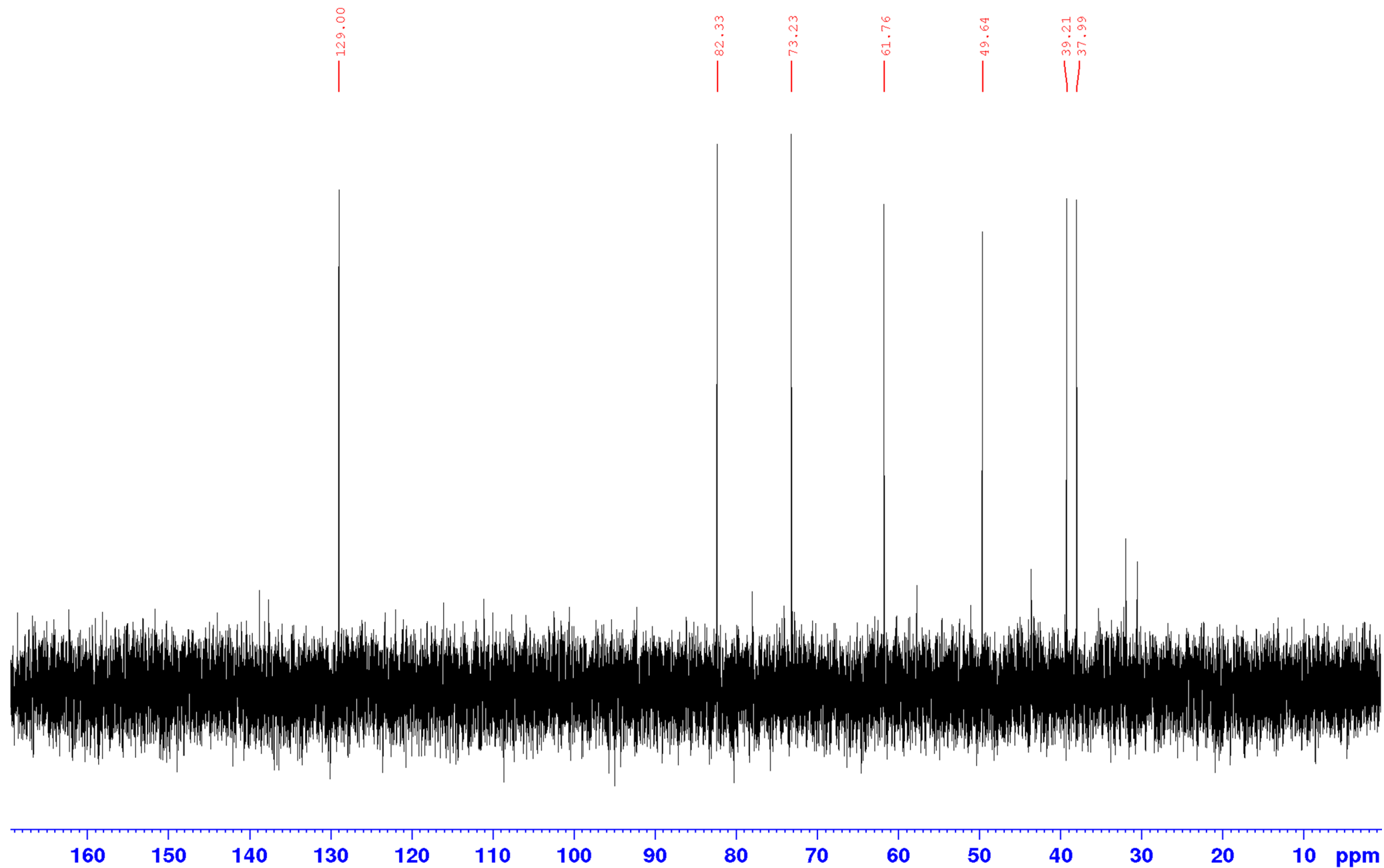


Figure S82. HSQC spectrum of **8** in CDCl₃

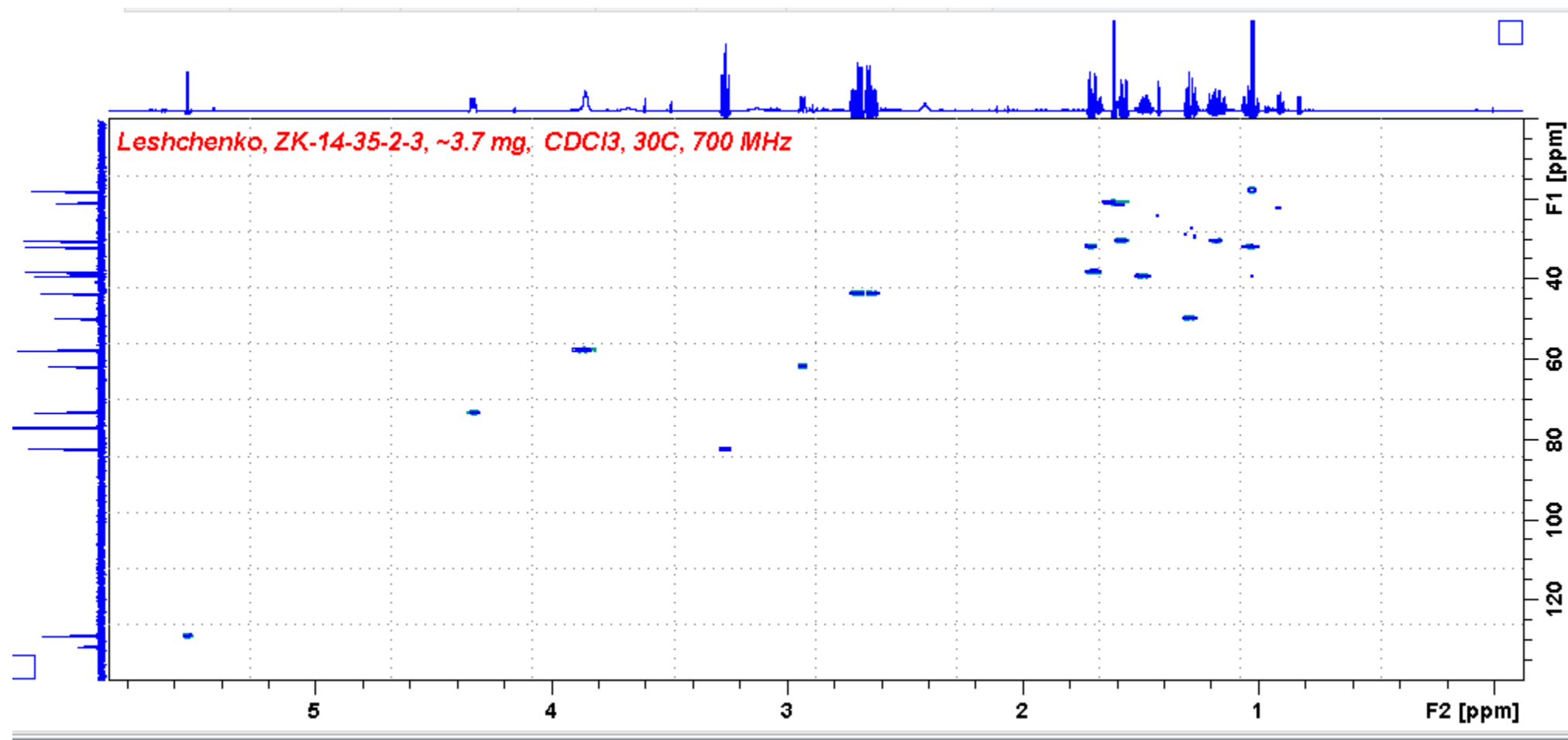


Figure S83. HMBC spectrum of **8** in CDCl₃

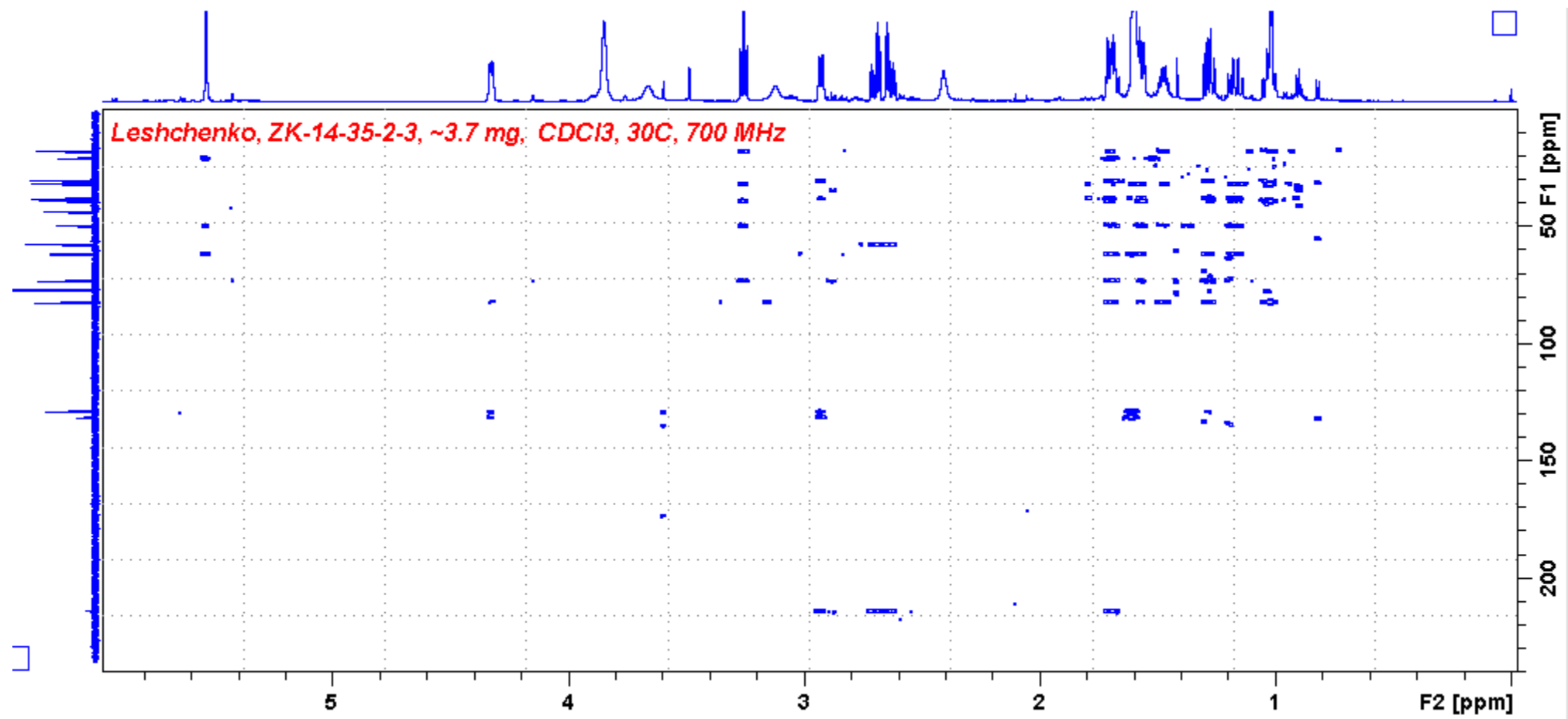


Figure S84. ^1H - ^1H COSY spectrum of **8** in CDCl_3

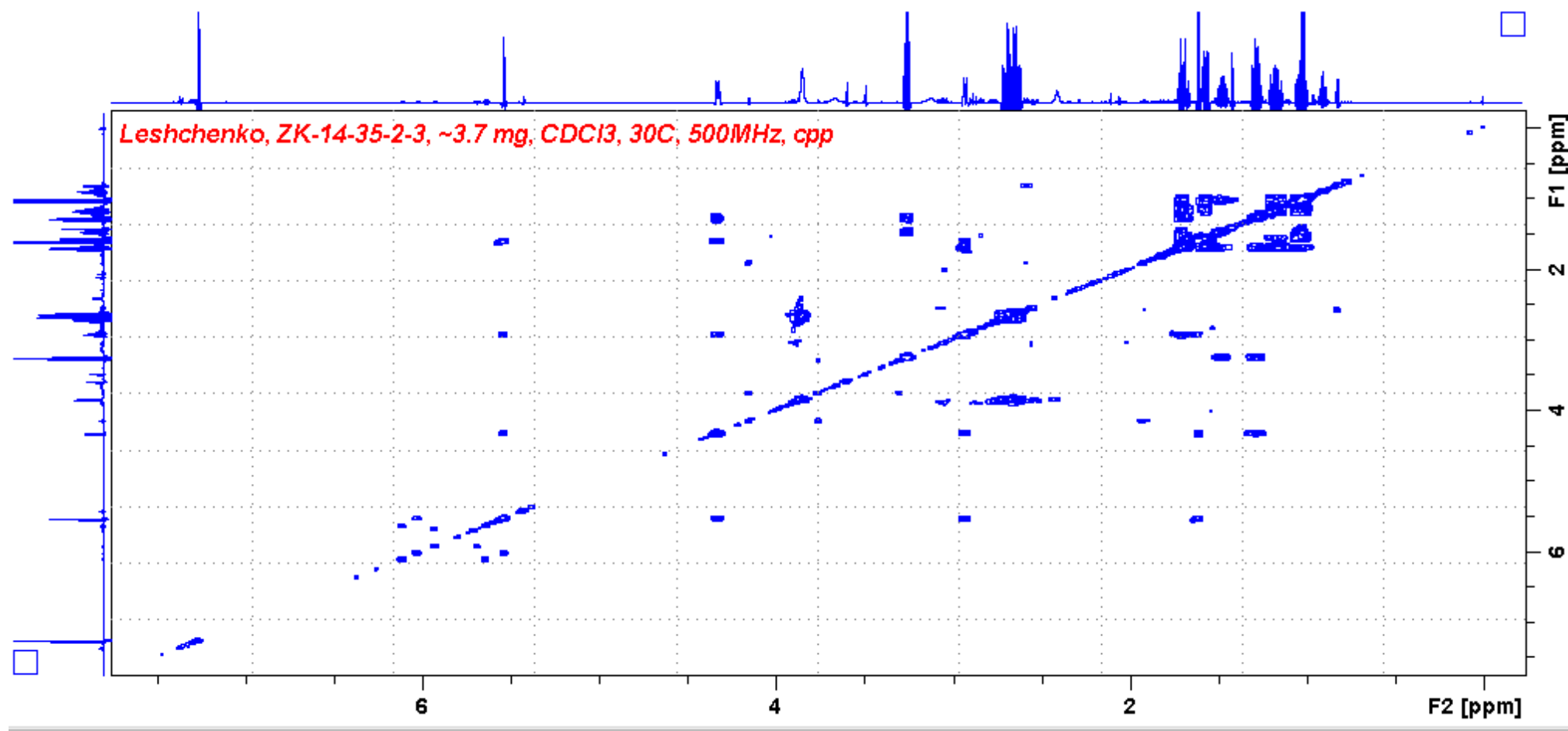


Figure S85. NOESY spectrum of **8** in CDCl₃

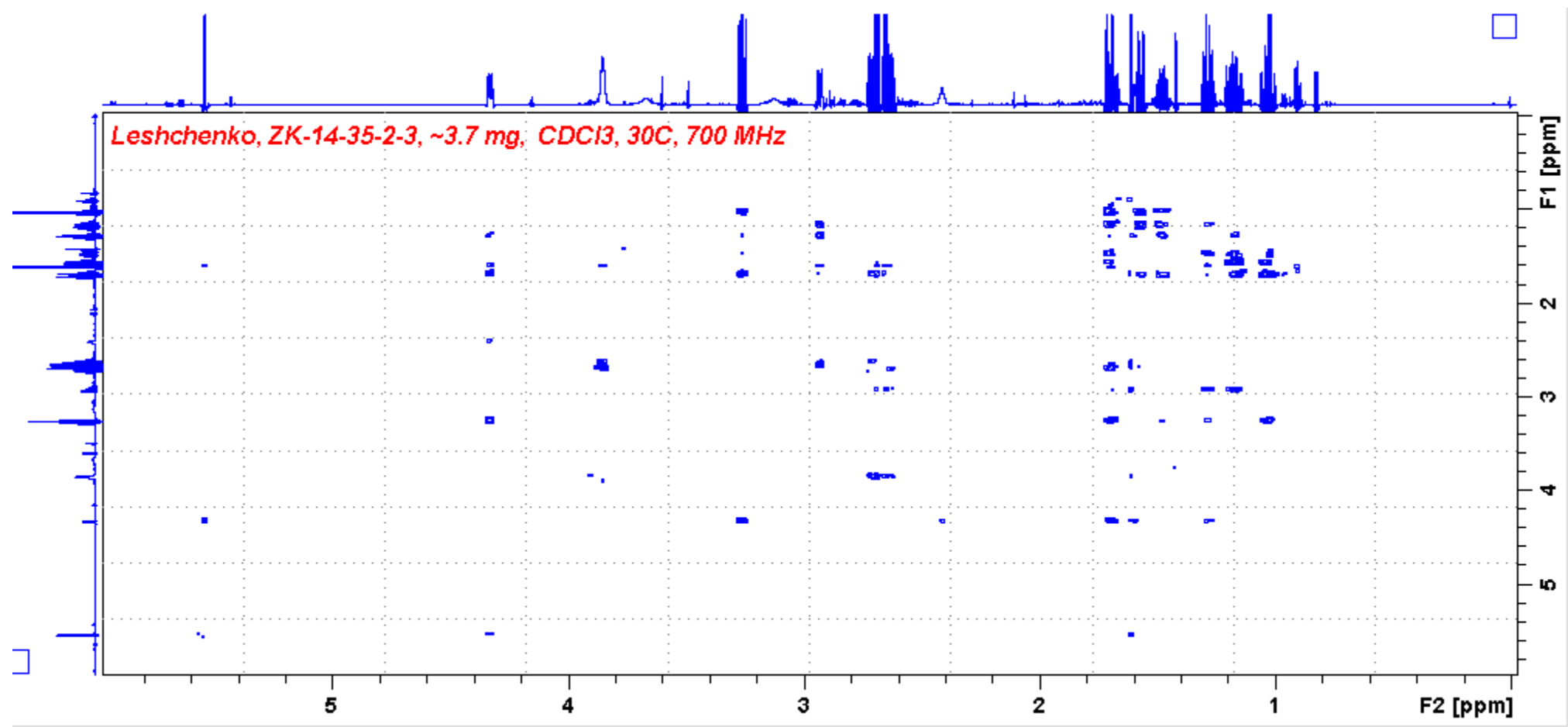


Figure S86. ^1H NMR spectrum (125.77 MHz) of **9** in CDCl_3

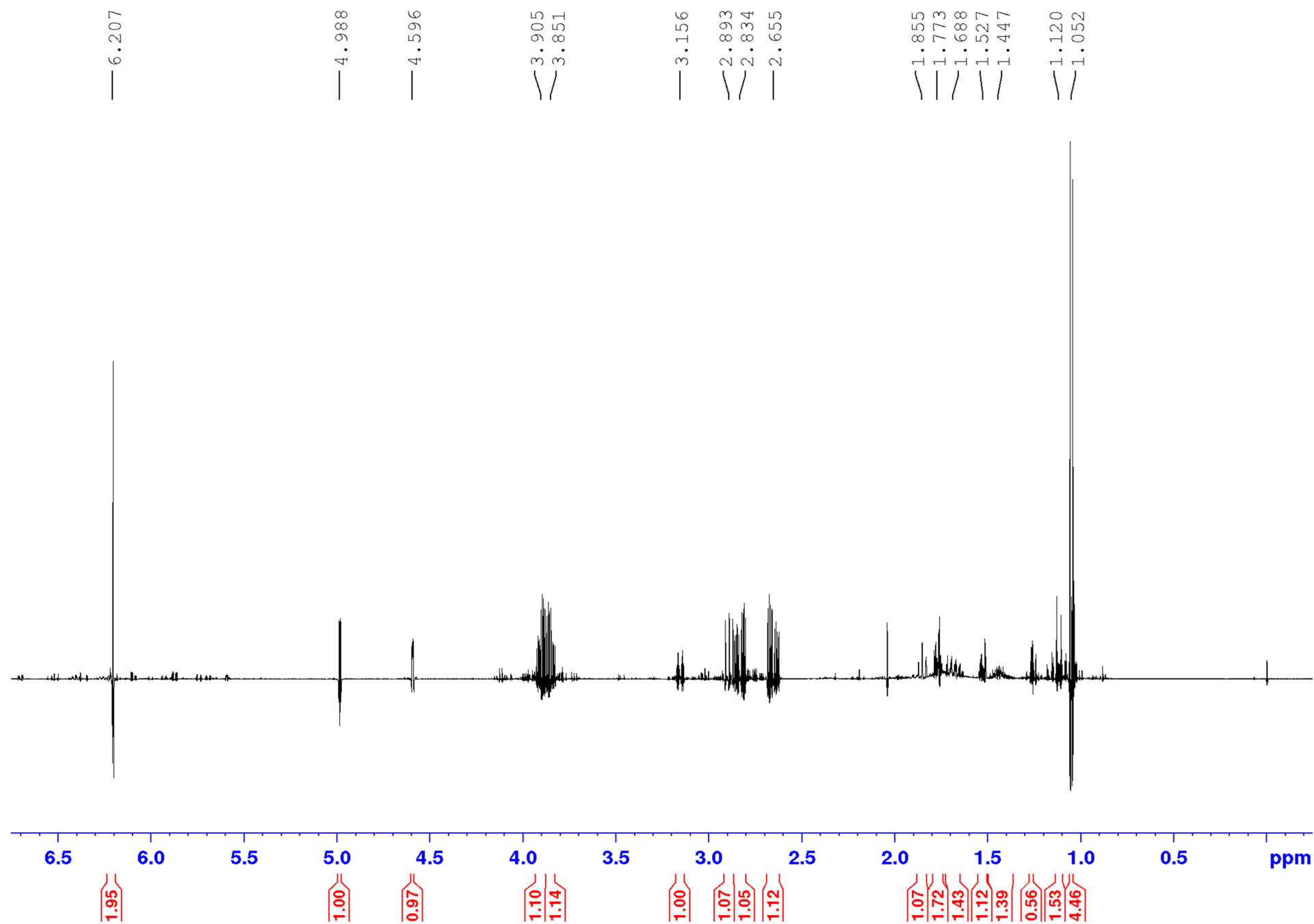


Figure S87. ^{13}C NMR spectrum (125.77 MHz) of **9** in CDCl_3

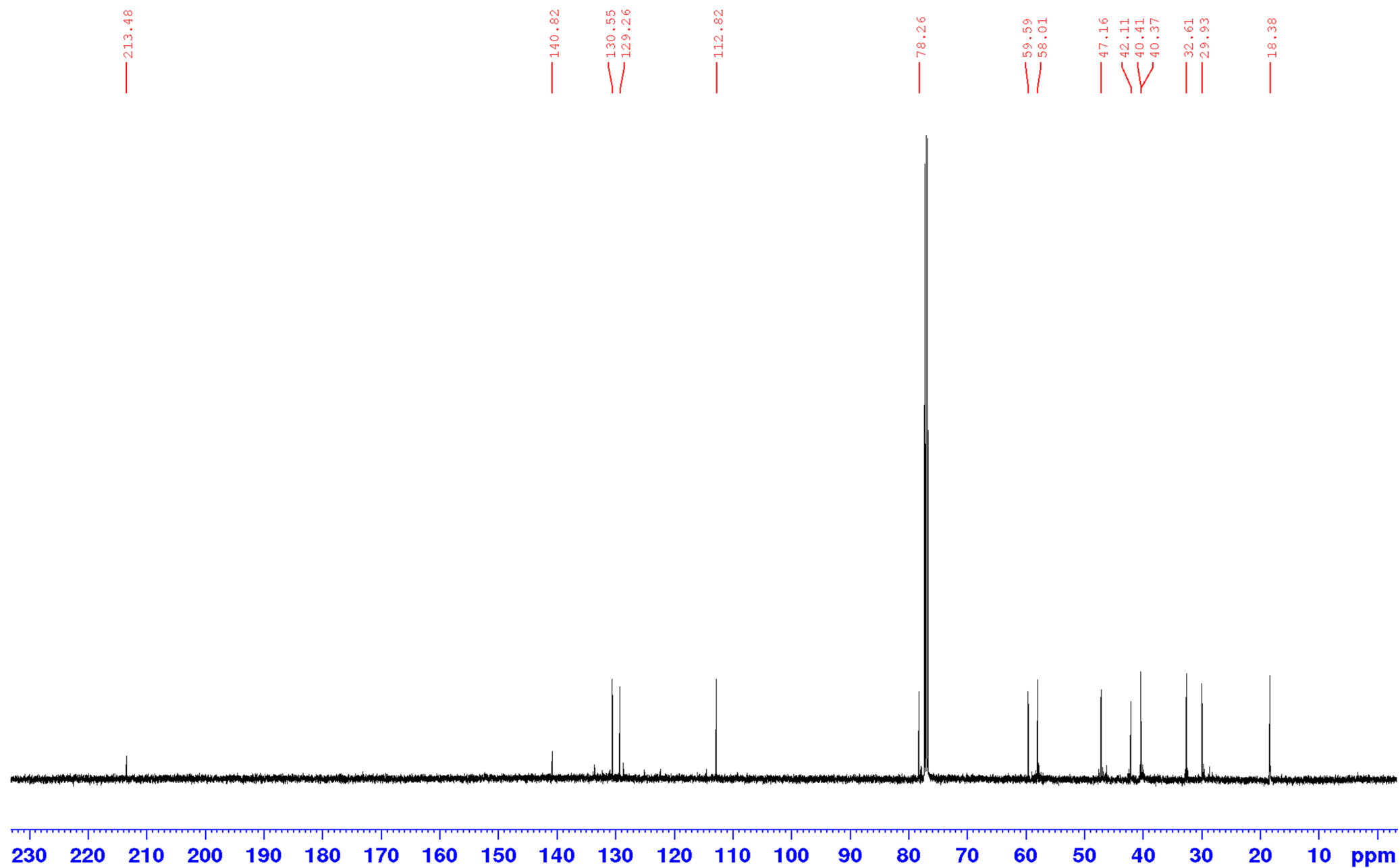


Figure S88. DEPT-135 spectrum (125.77 MHz) of **9** in CDCl₃

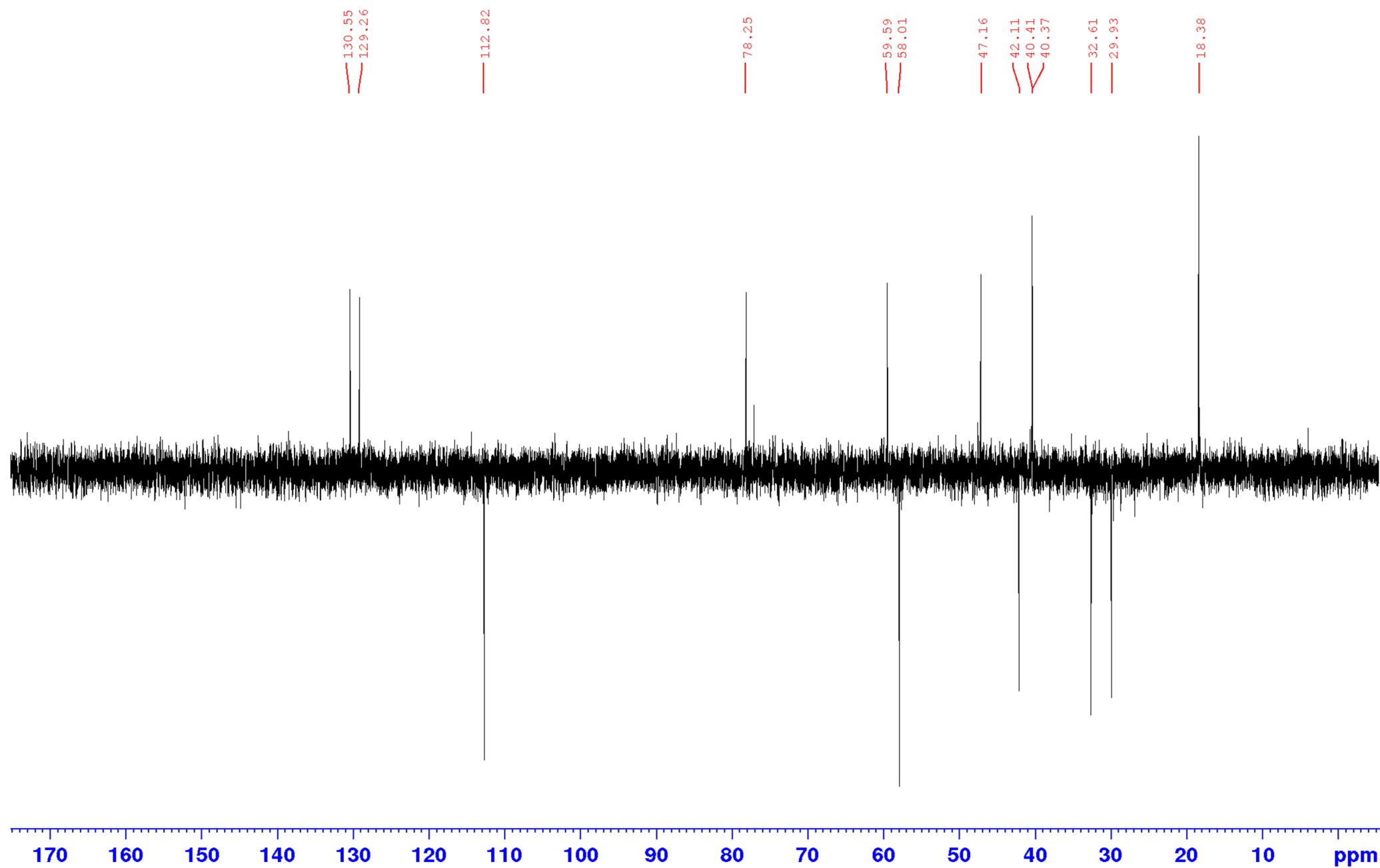


Figure S89. DEPT-90 spectrum (125.77 MHz) of **9** in CDCl₃

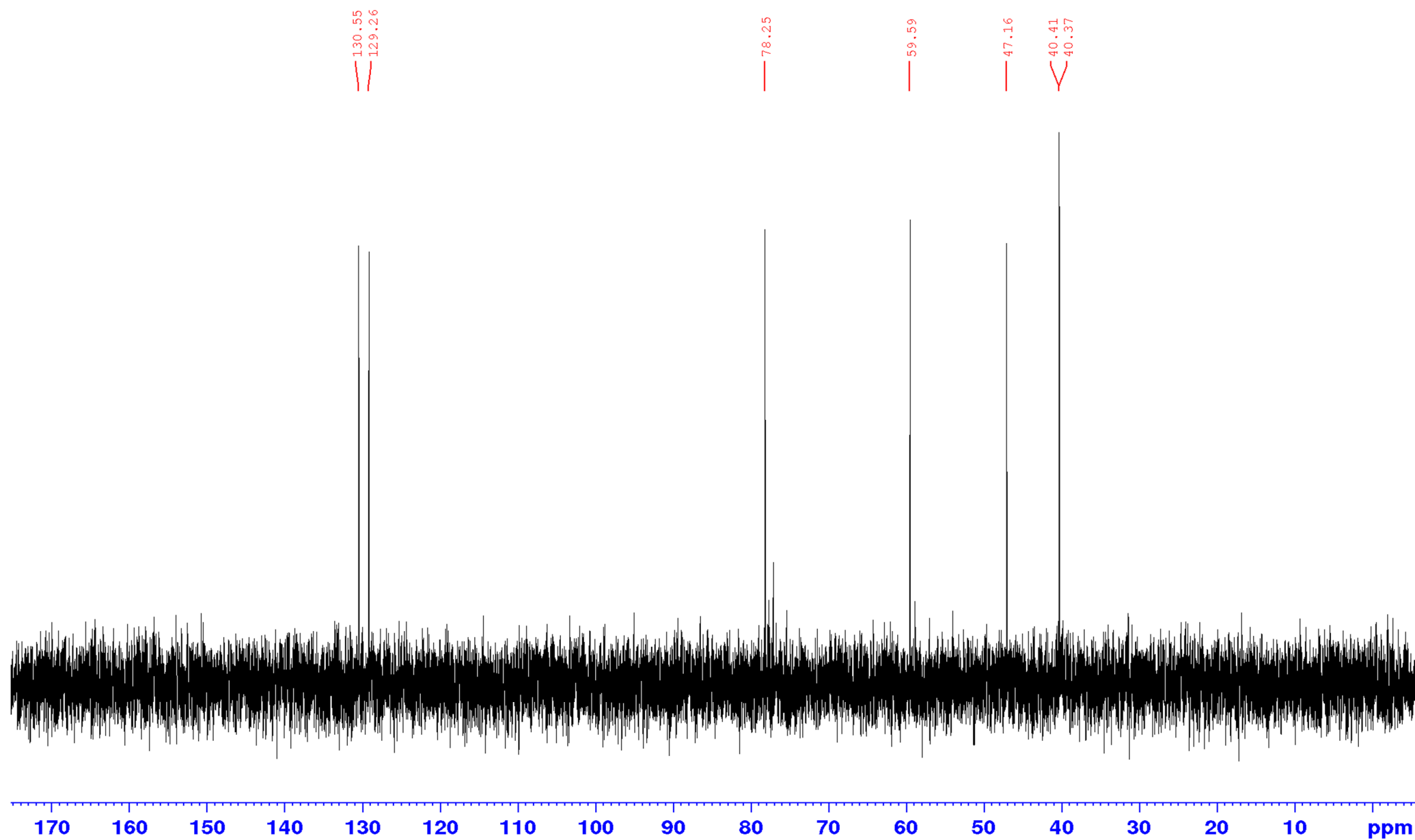


Figure S90. HSQC spectrum of **9** in CDCl₃

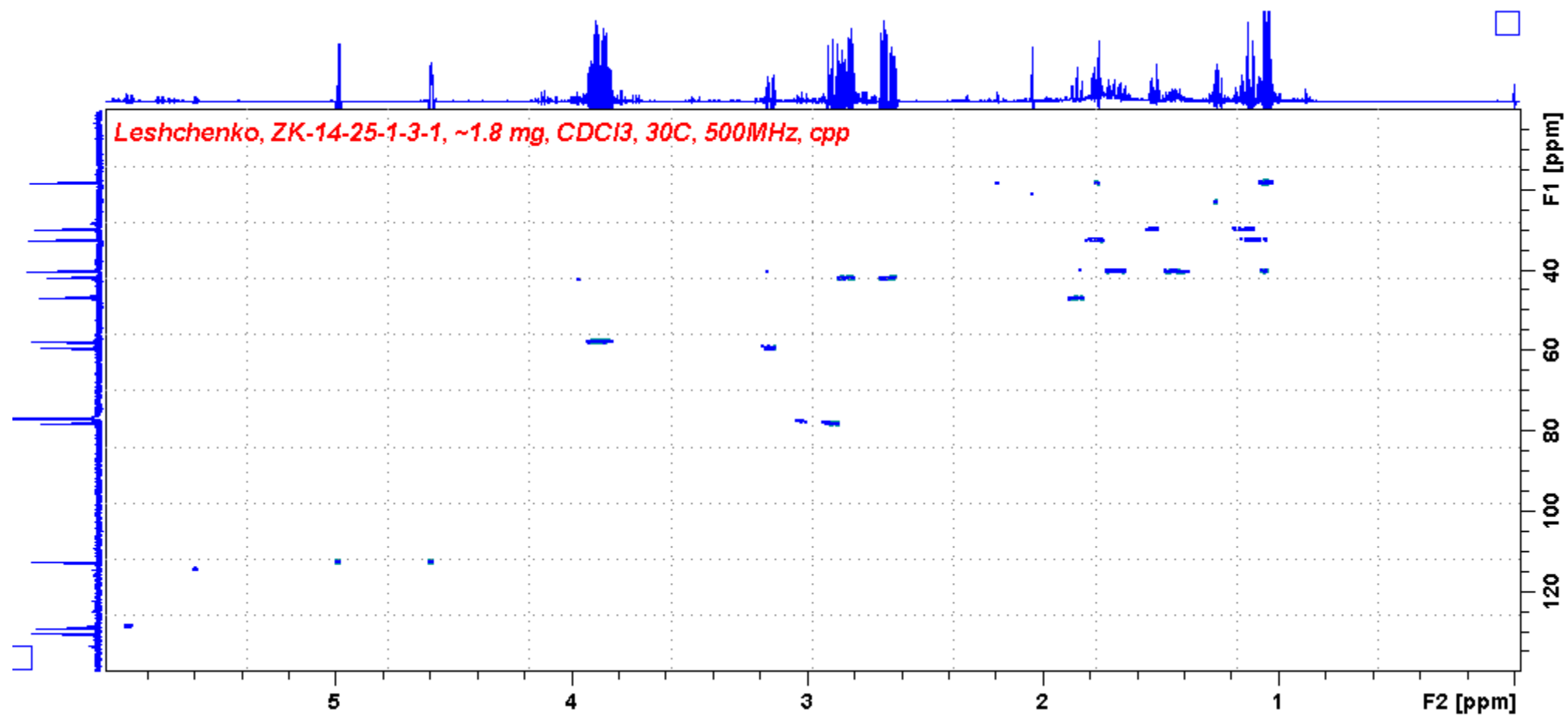


Figure S91. HMBC spectrum of **9** in CDCl₃

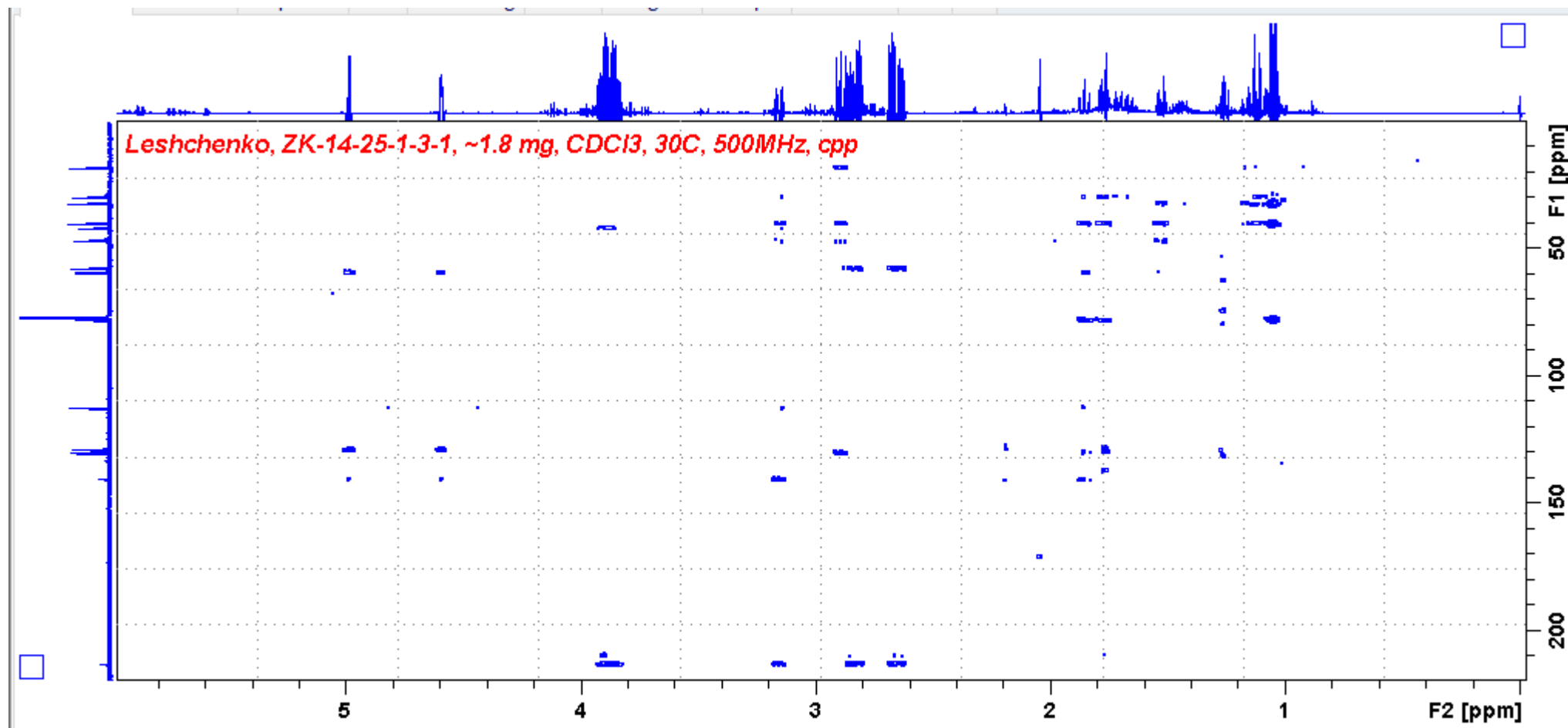


Figure S92. ^1H - ^1H COSY spectrum of **9** in CDCl_3

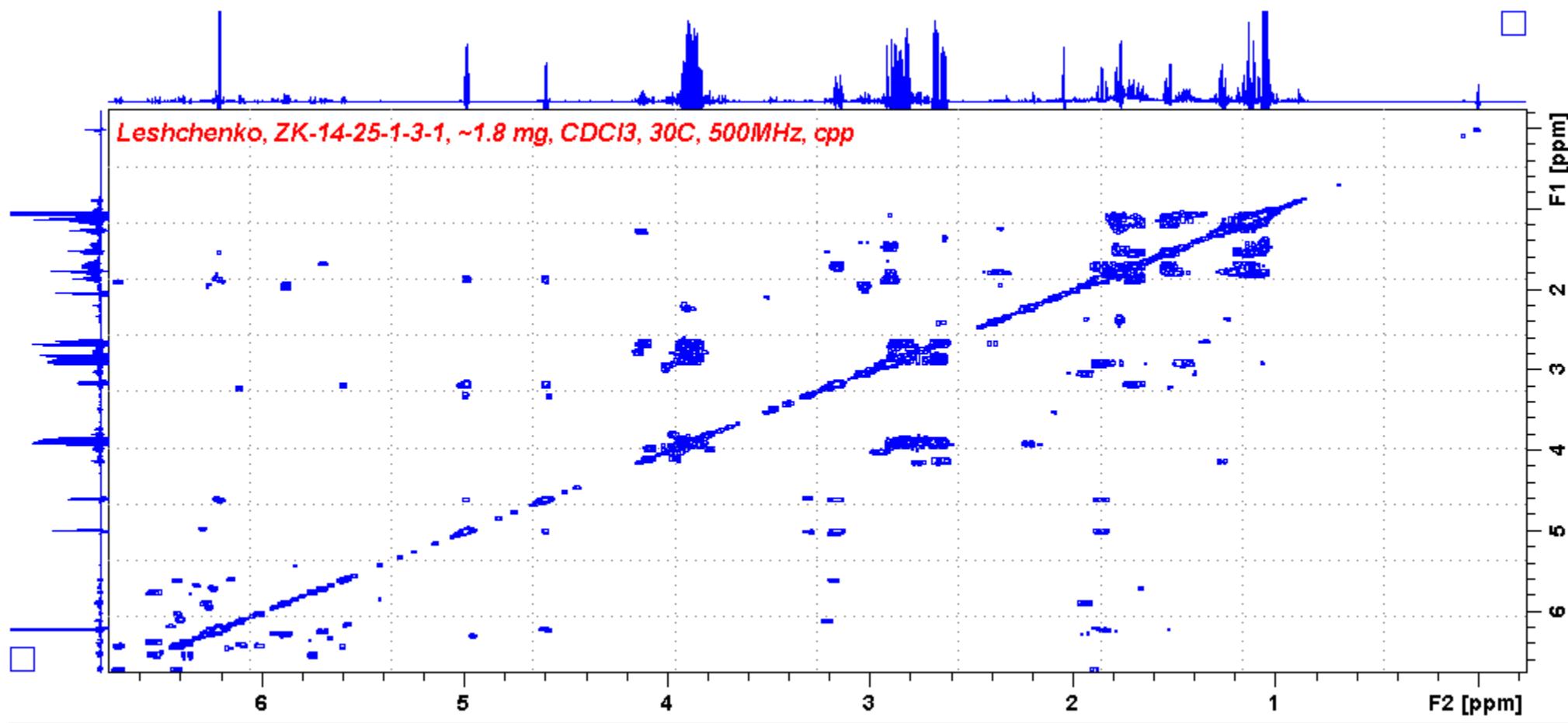


Figure S93. NOESY spectrum of **9** in CDCl₃

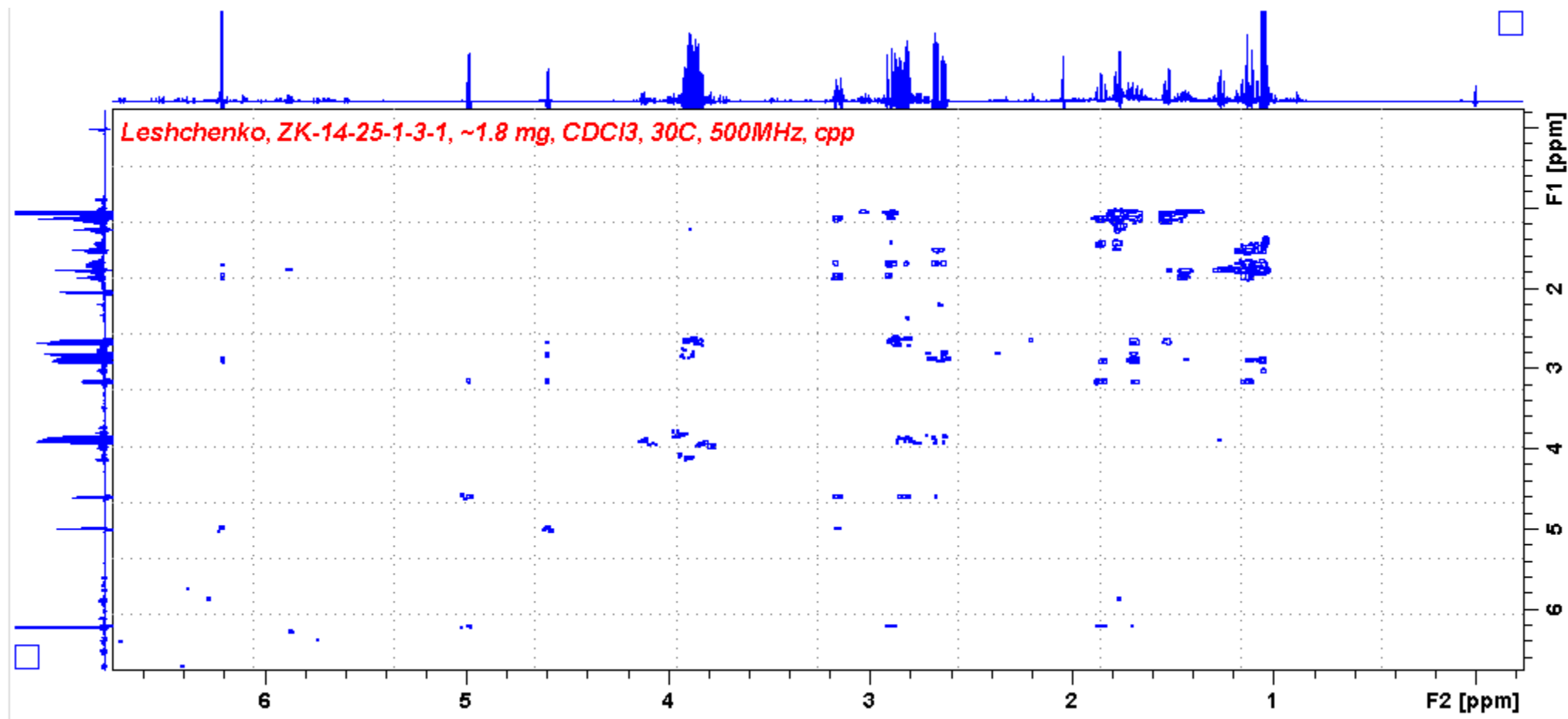


Figure S94. ^1H NMR spectrum (700.13 MHz) of **10** in CDCl_3

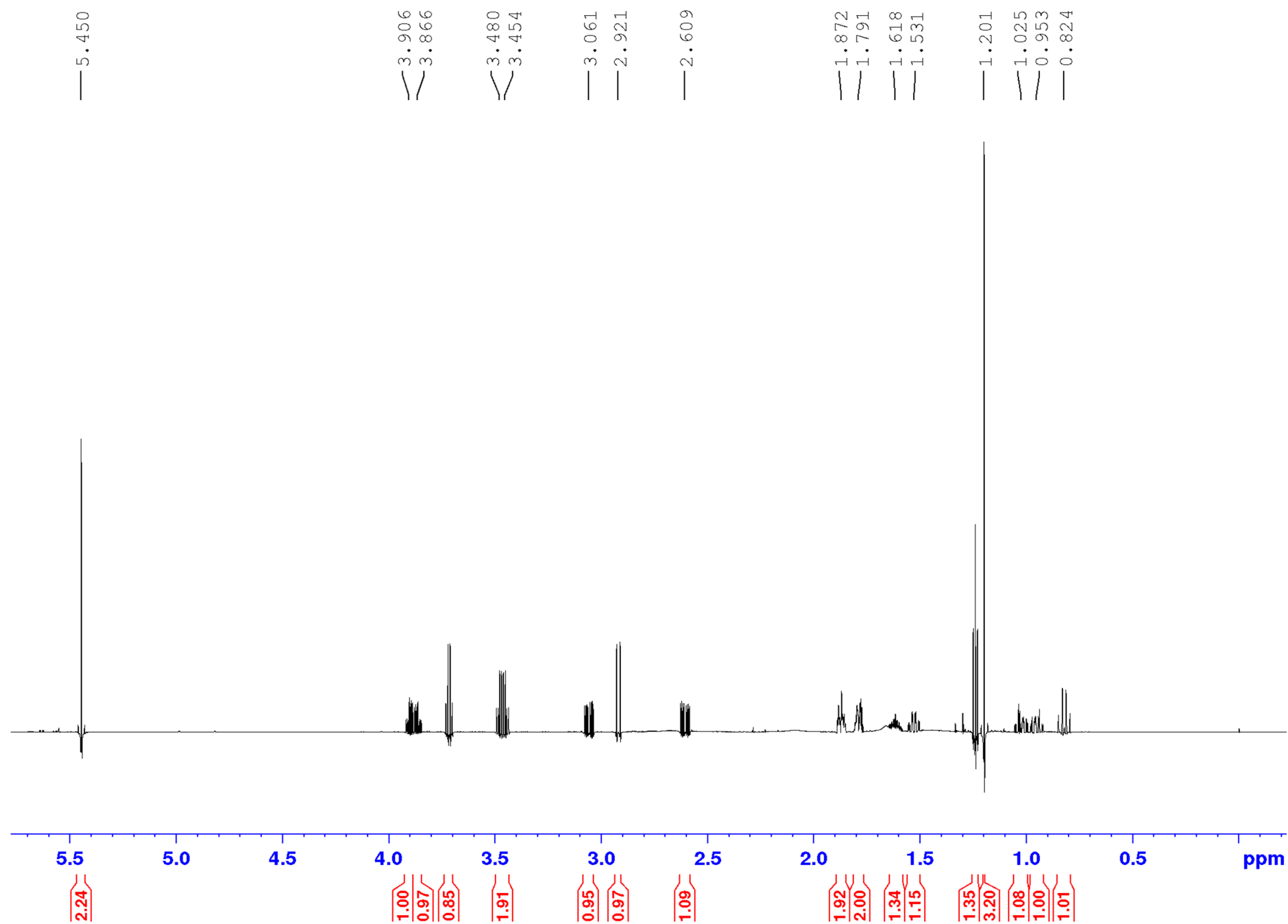


Figure S95. ^{13}C NMR spectrum (176.04 MHz) of **10** in CDCl_3

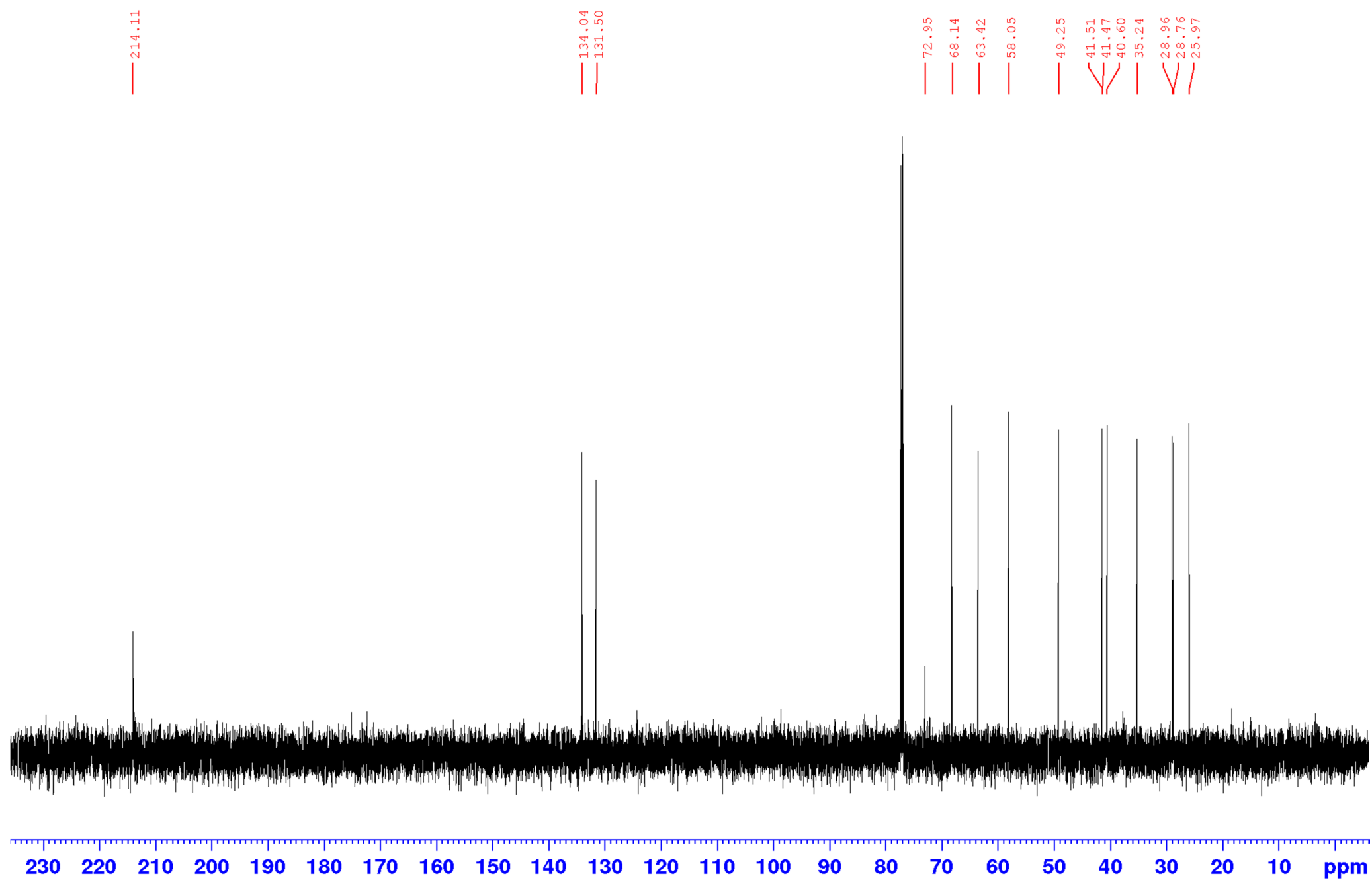


Figure S96. DEPT-135 spectrum (176.04 MHz) of **10** in CDCl₃

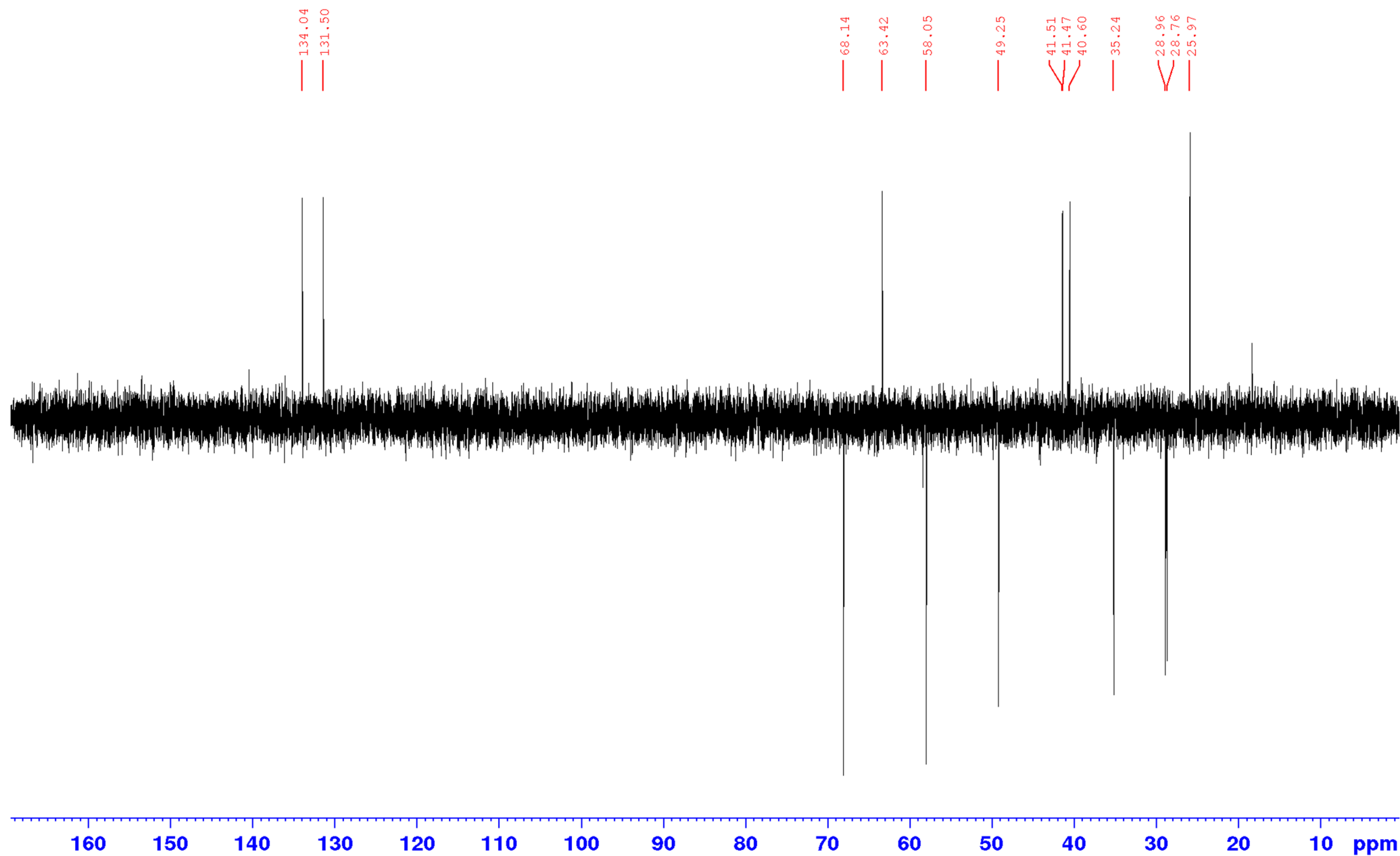


Figure S97. DEPT-90 spectrum (176.04) of **10** in CDCl₃

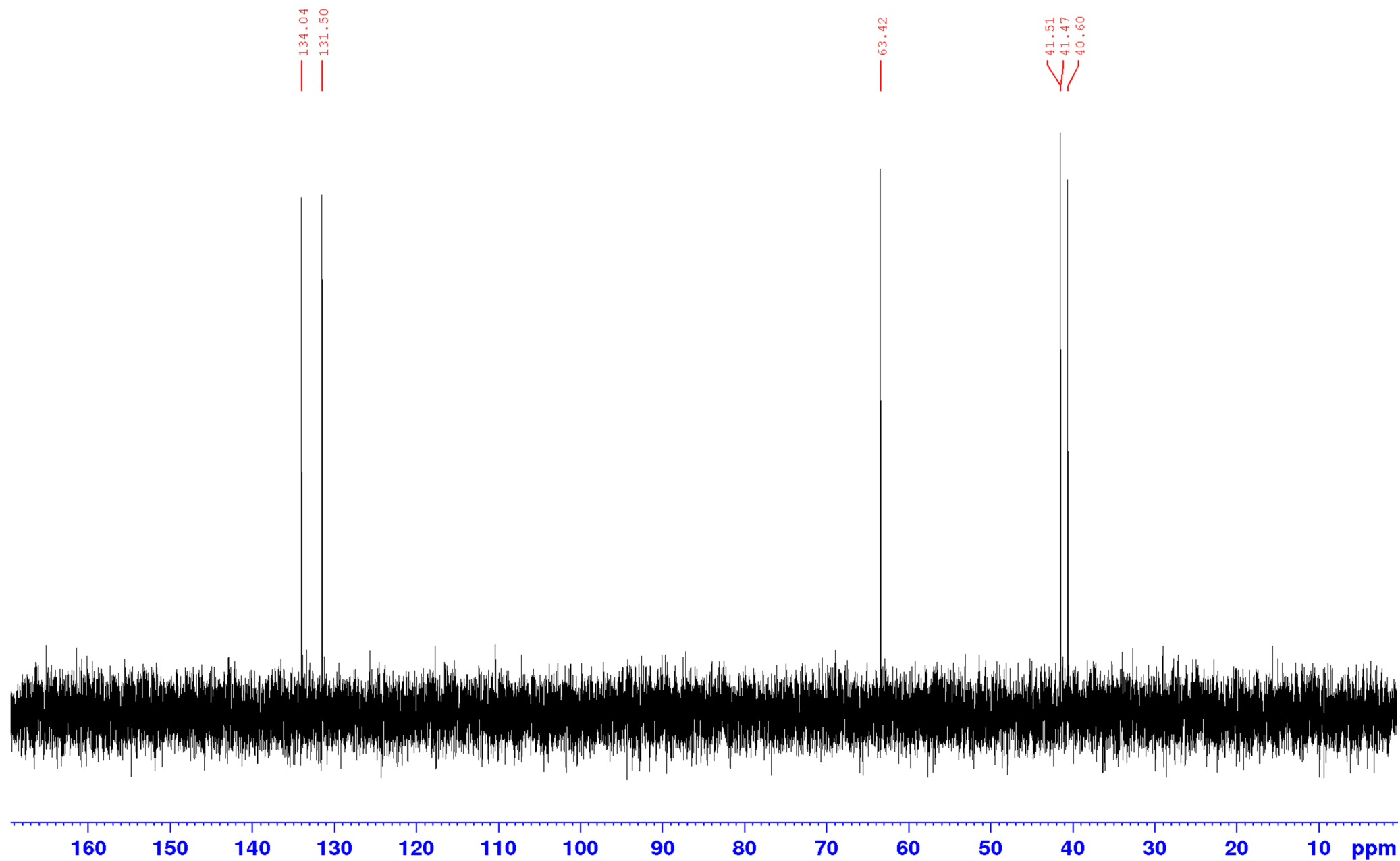


Figure S98. HSQC spectrum of **10** in CDCl₃

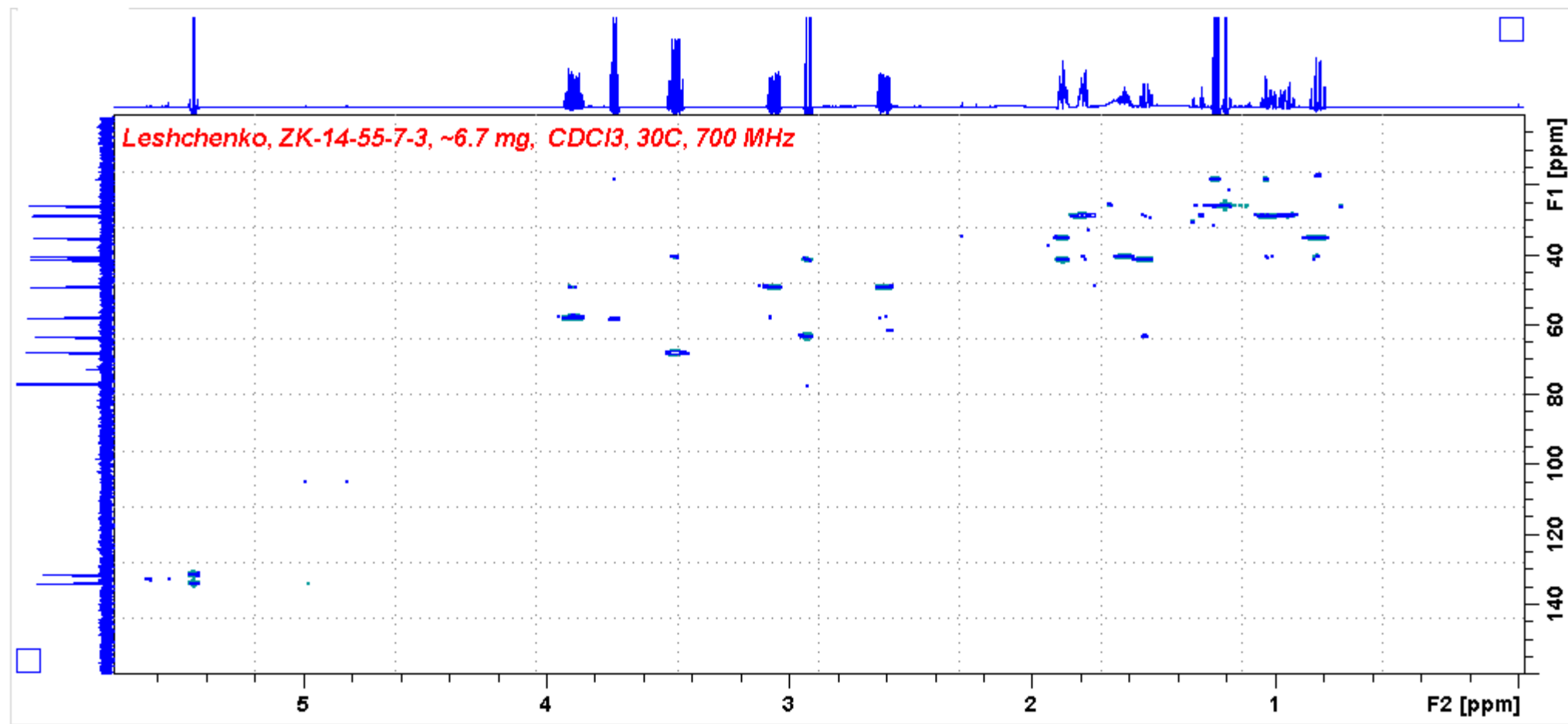


Figure S99. HMBC spectrum of **10** in CDCl₃

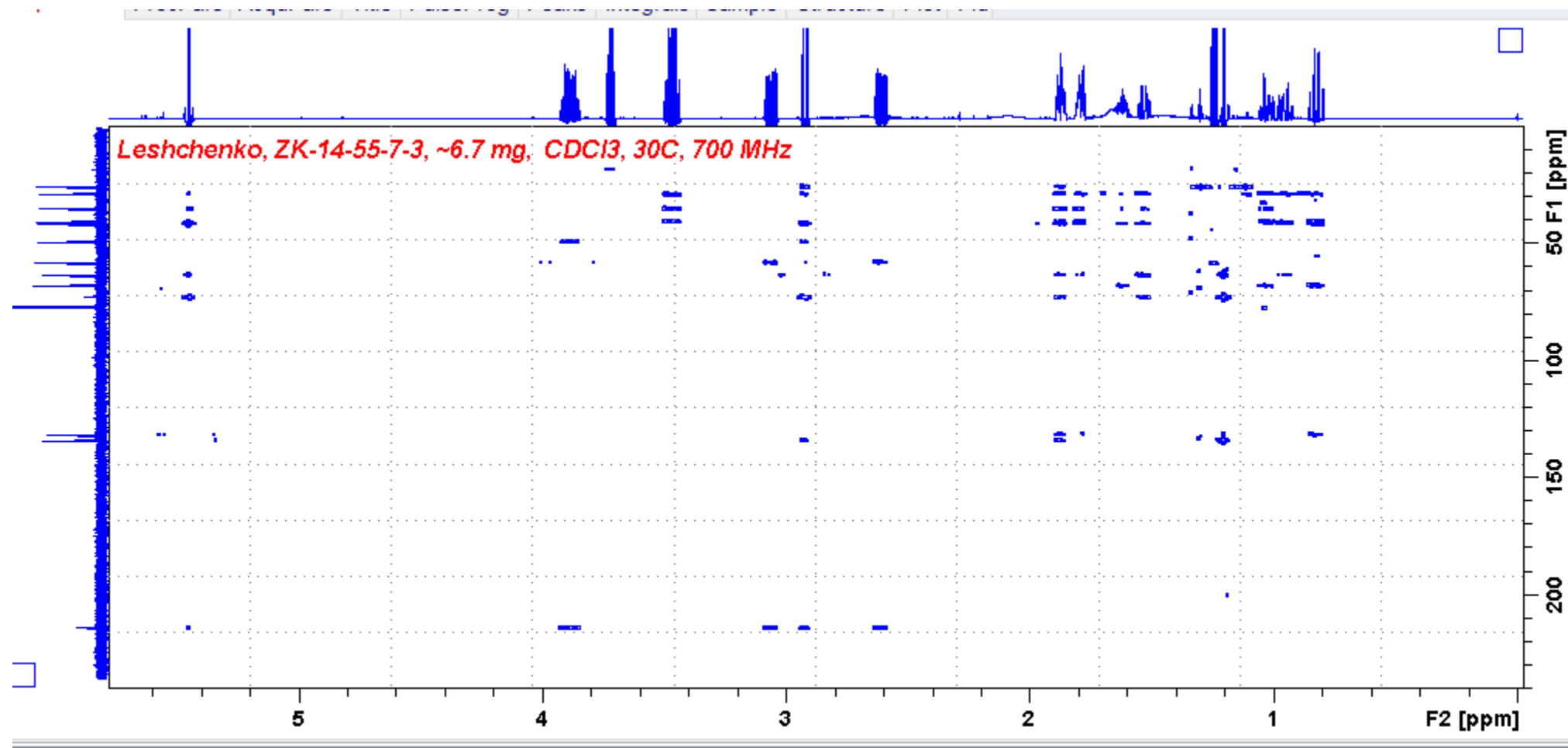


Figure S100. ^1H - ^1H COSY spectrum of **10** in CDCl_3

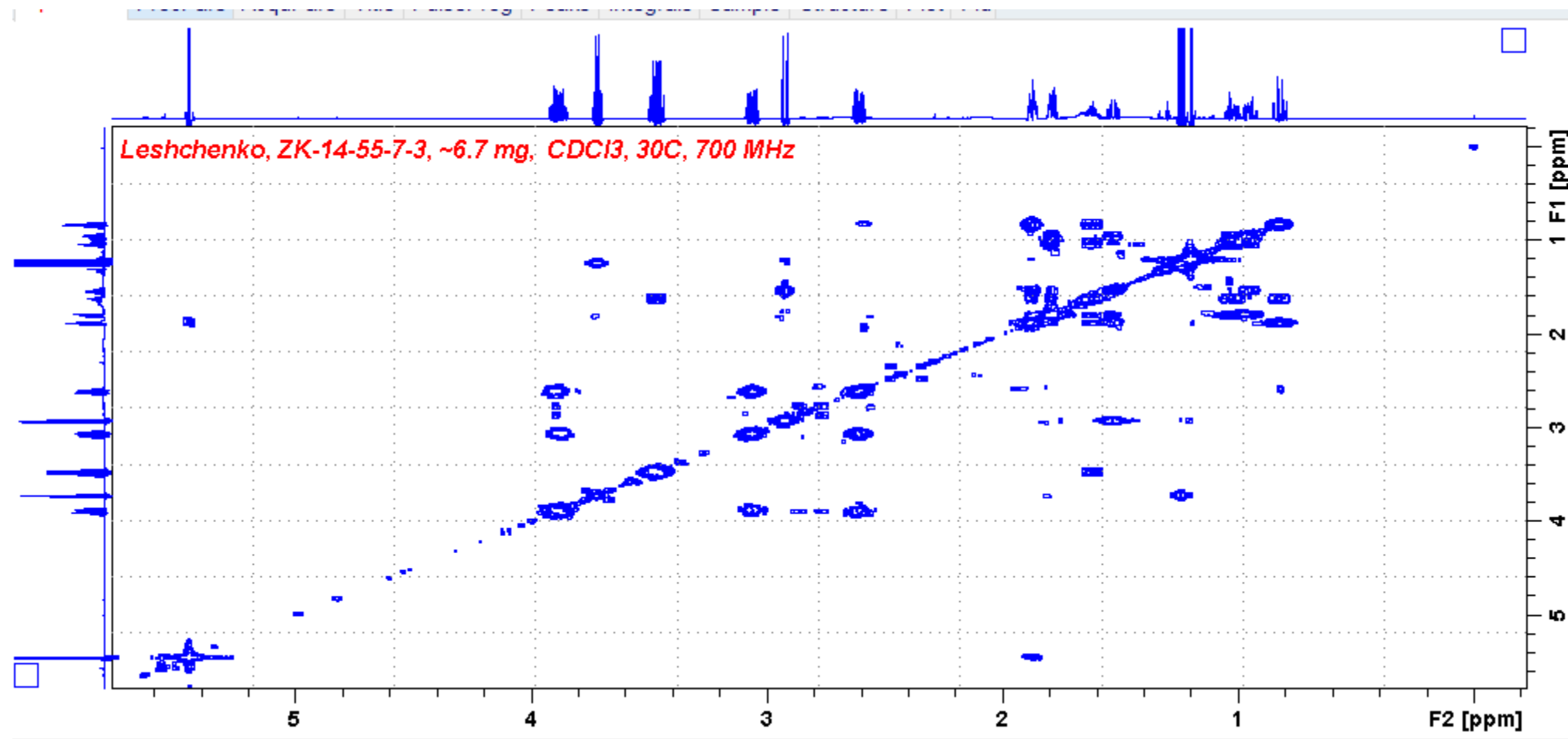


Figure S101. NOESY spectrum of **10** in CDCl₃

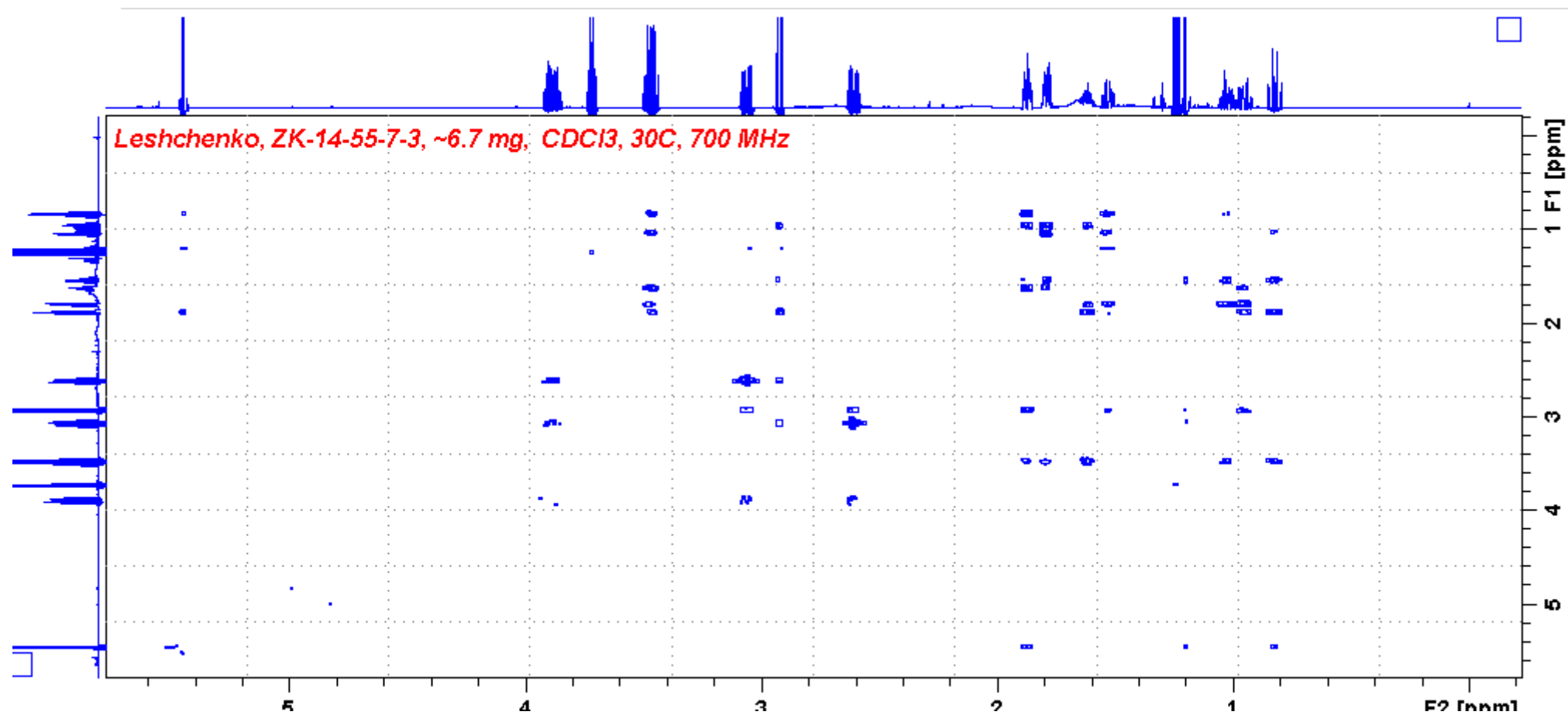


Figure S102. ^1H NMR spectrum (500.13 MHz) of **11** in CDCl_3

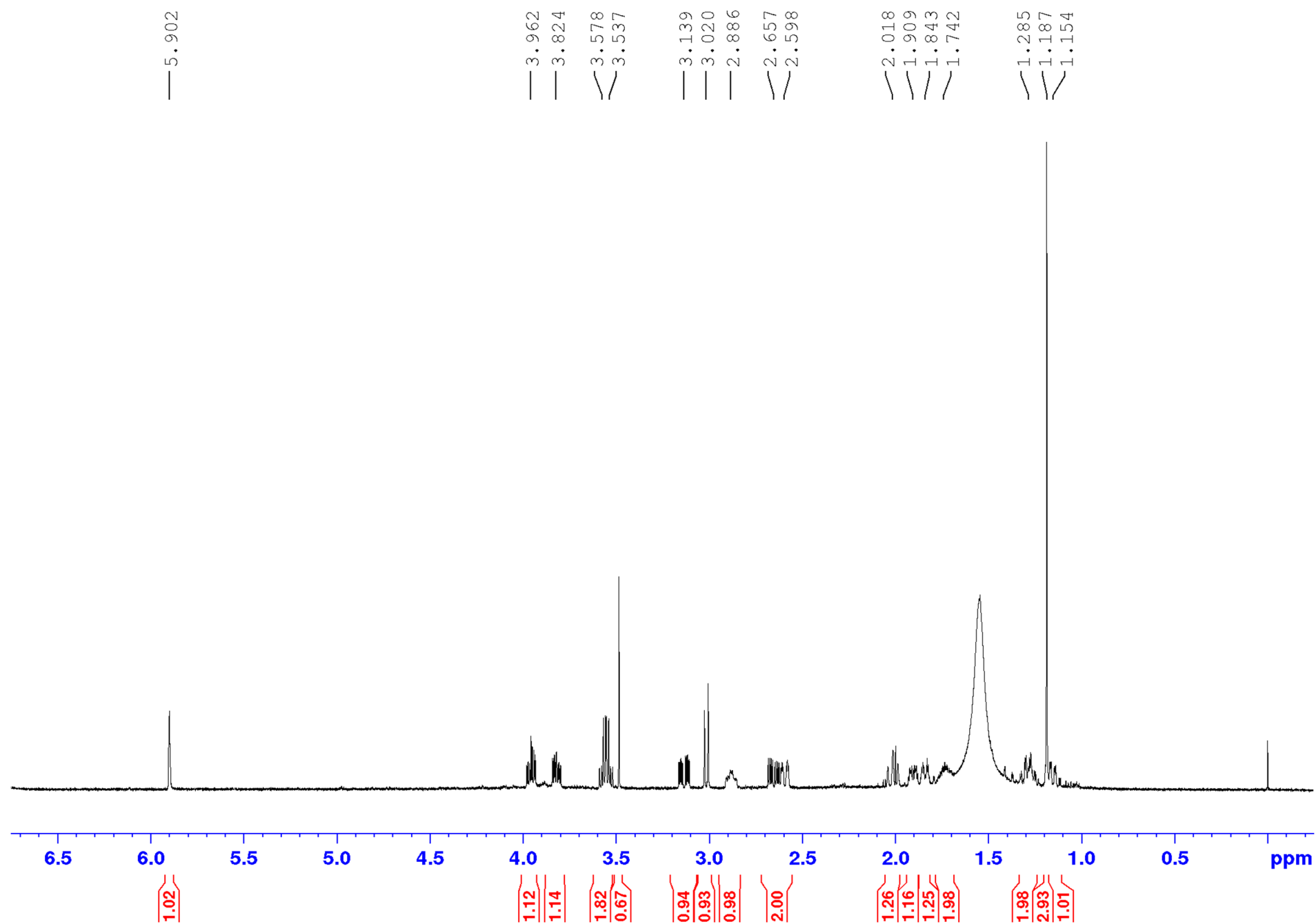


Figure S103. ^{13}C NMR spectrum (125.77 MHz) of **11** in CDCl_3

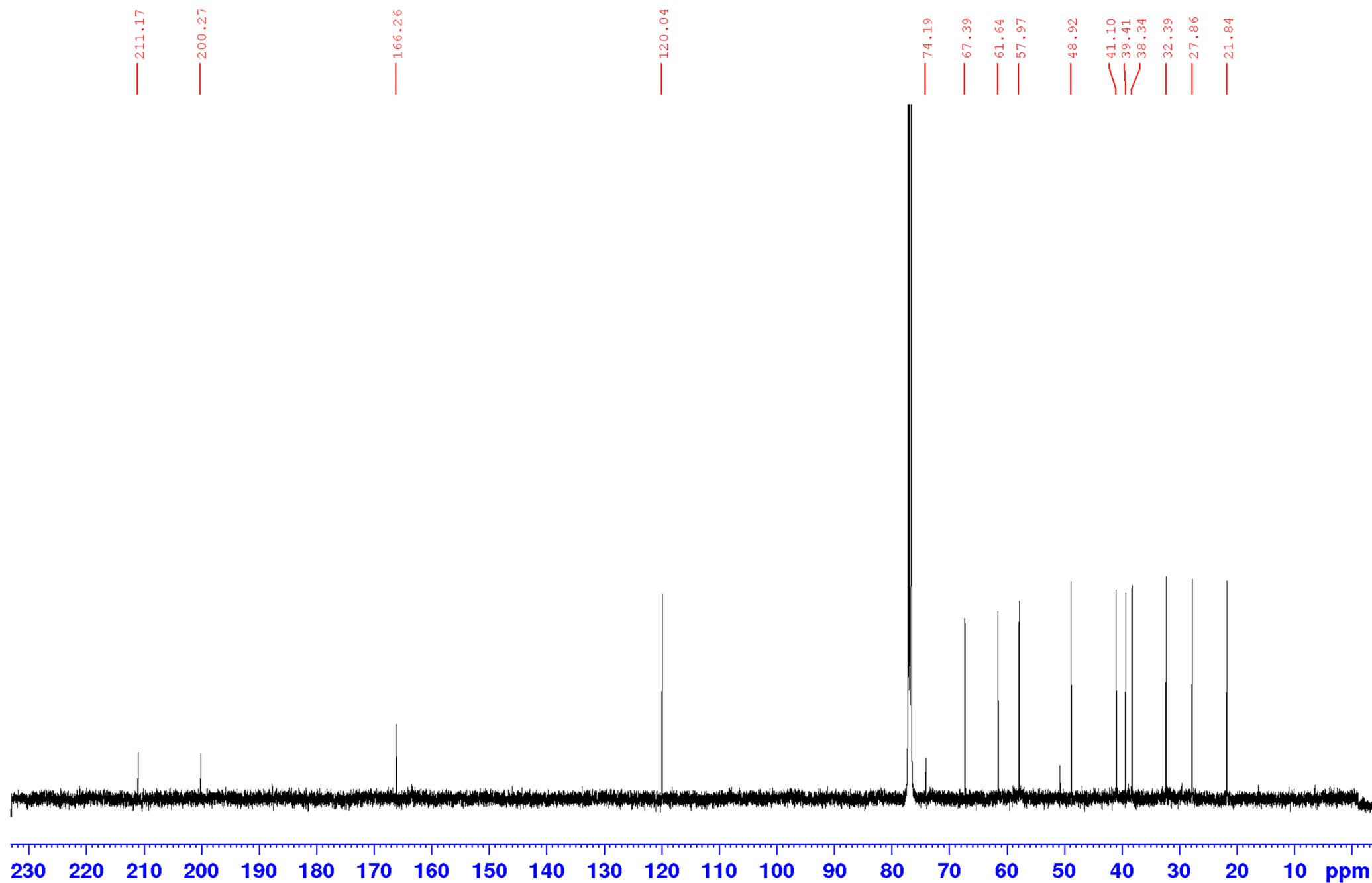


Figure S104. DEPT-135 spectrum (125.77 MHz) of **11** in CDCl₃

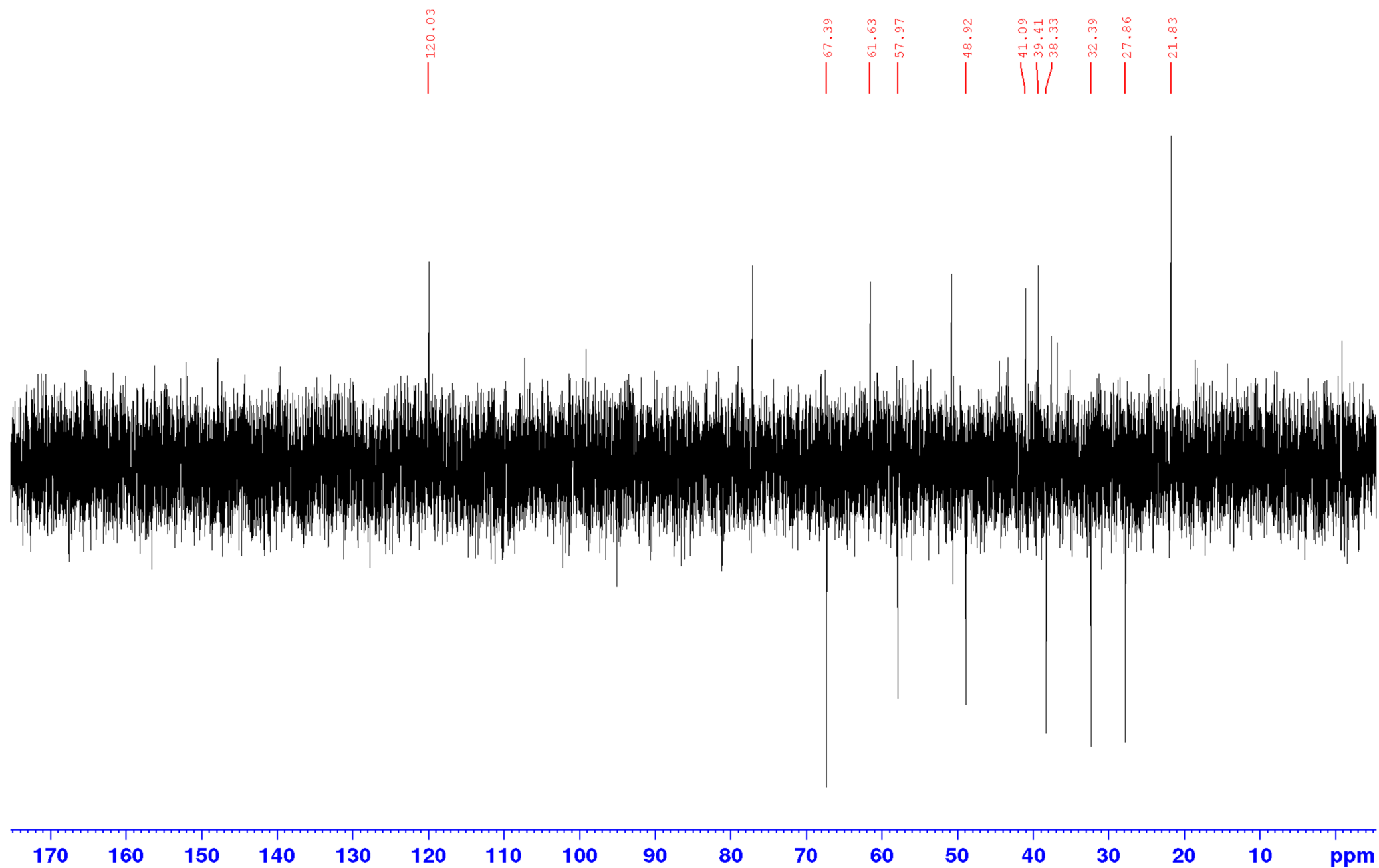


Figure S105. DEPT-90 spectrum (125.77 MHz) of **11** in CDCl₃

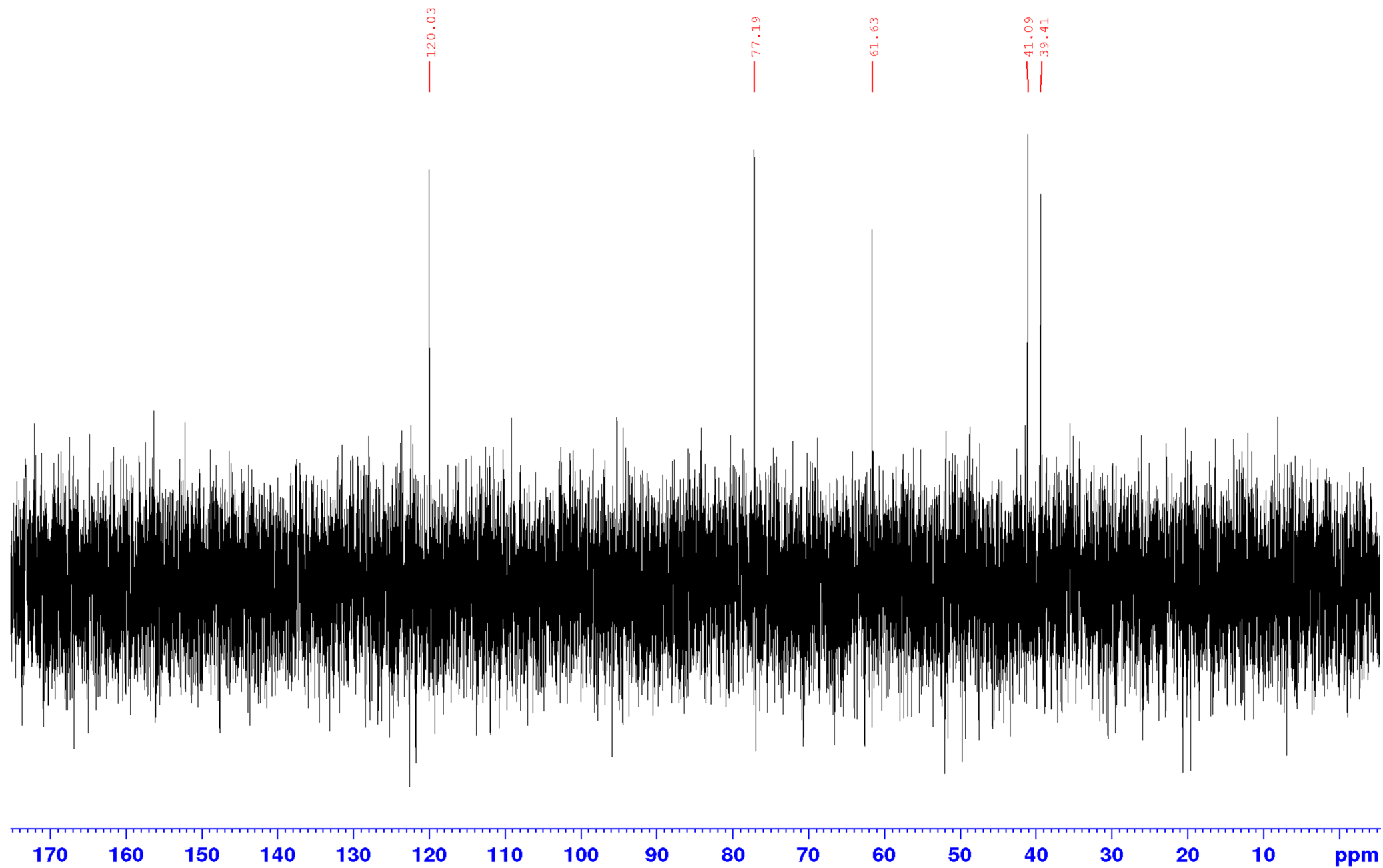


Figure S106. HSQC spectrum of **11** in CDCl₃

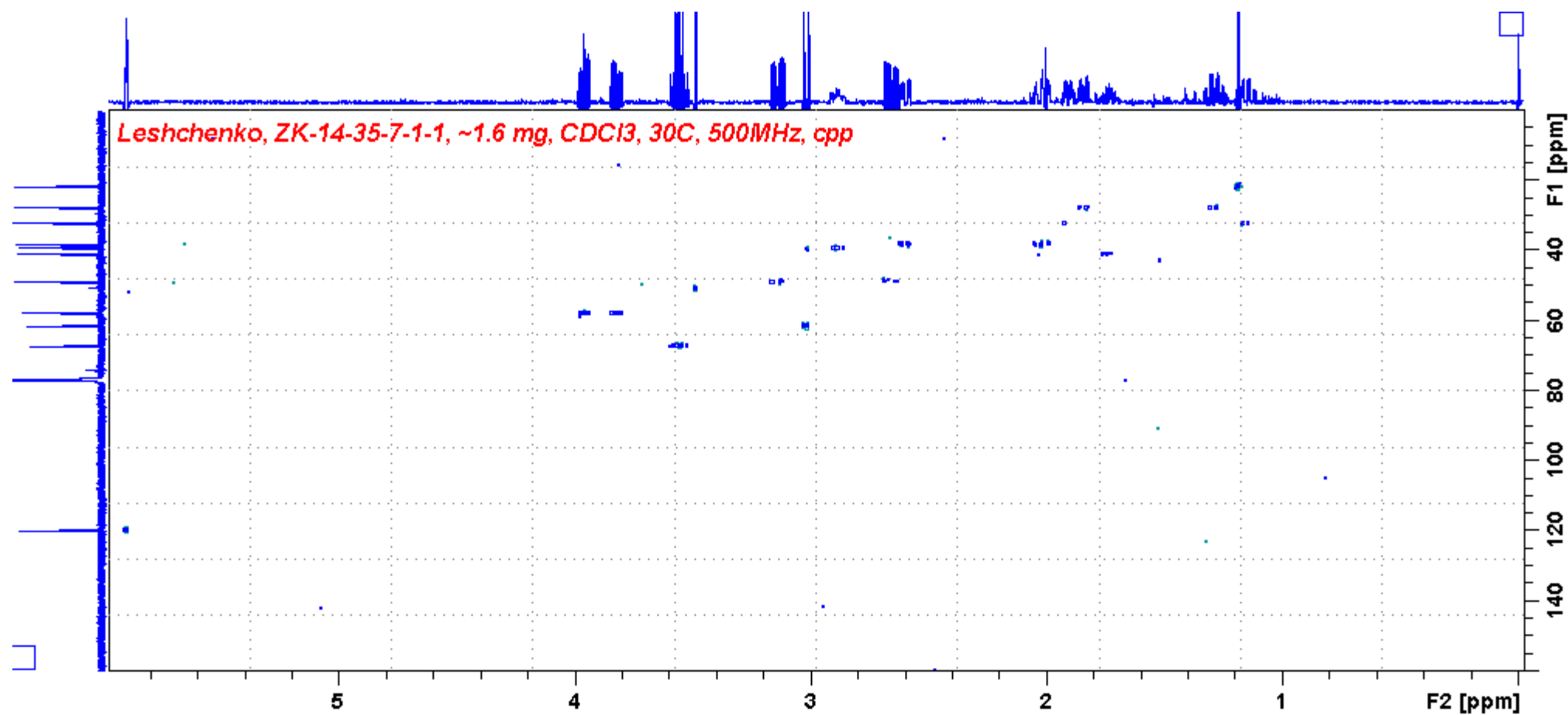


Figure S107. HMBC spectrum of **11** in CDCl₃

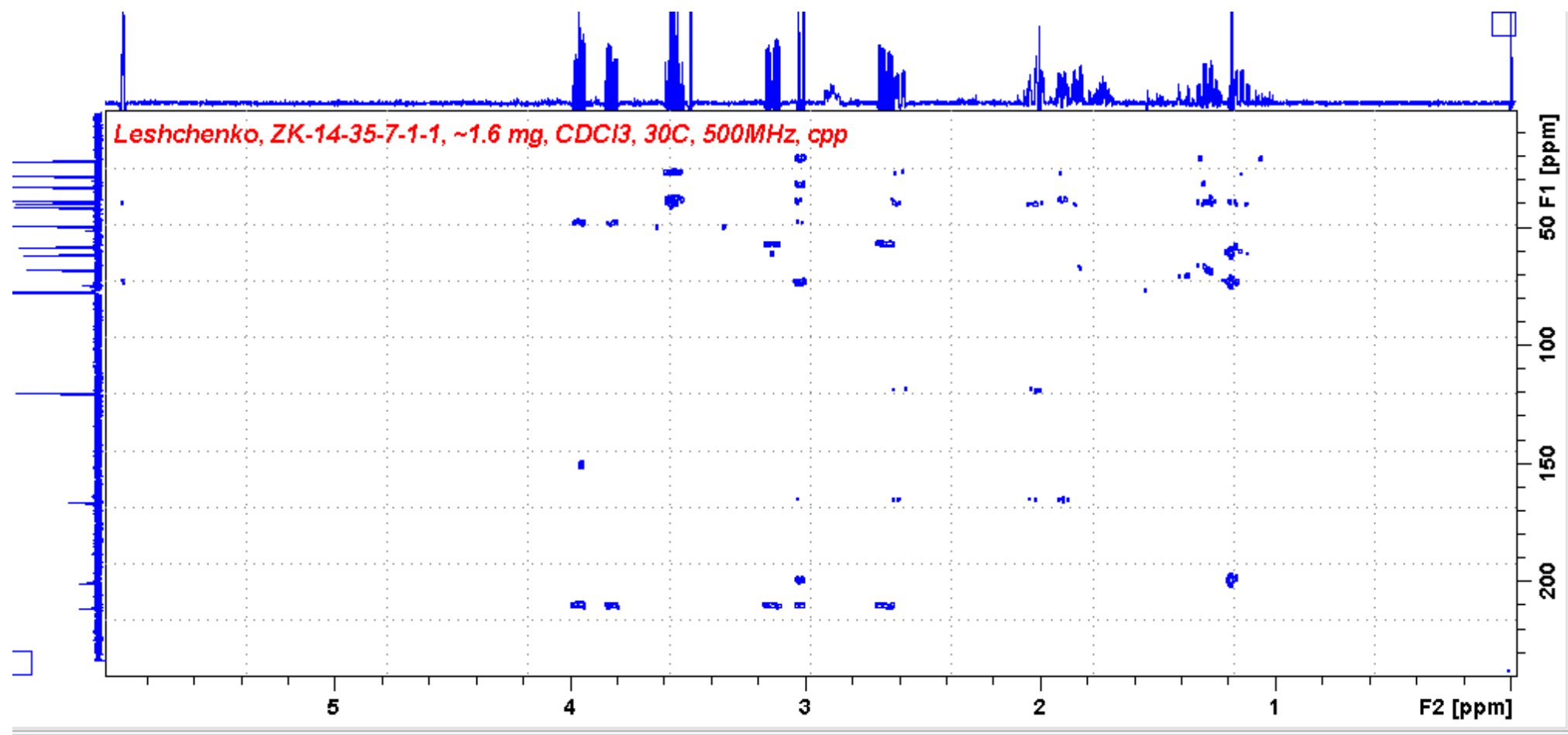


Figure S108. ^1H - ^1H COSY spectrum of **11** in CDCl_3

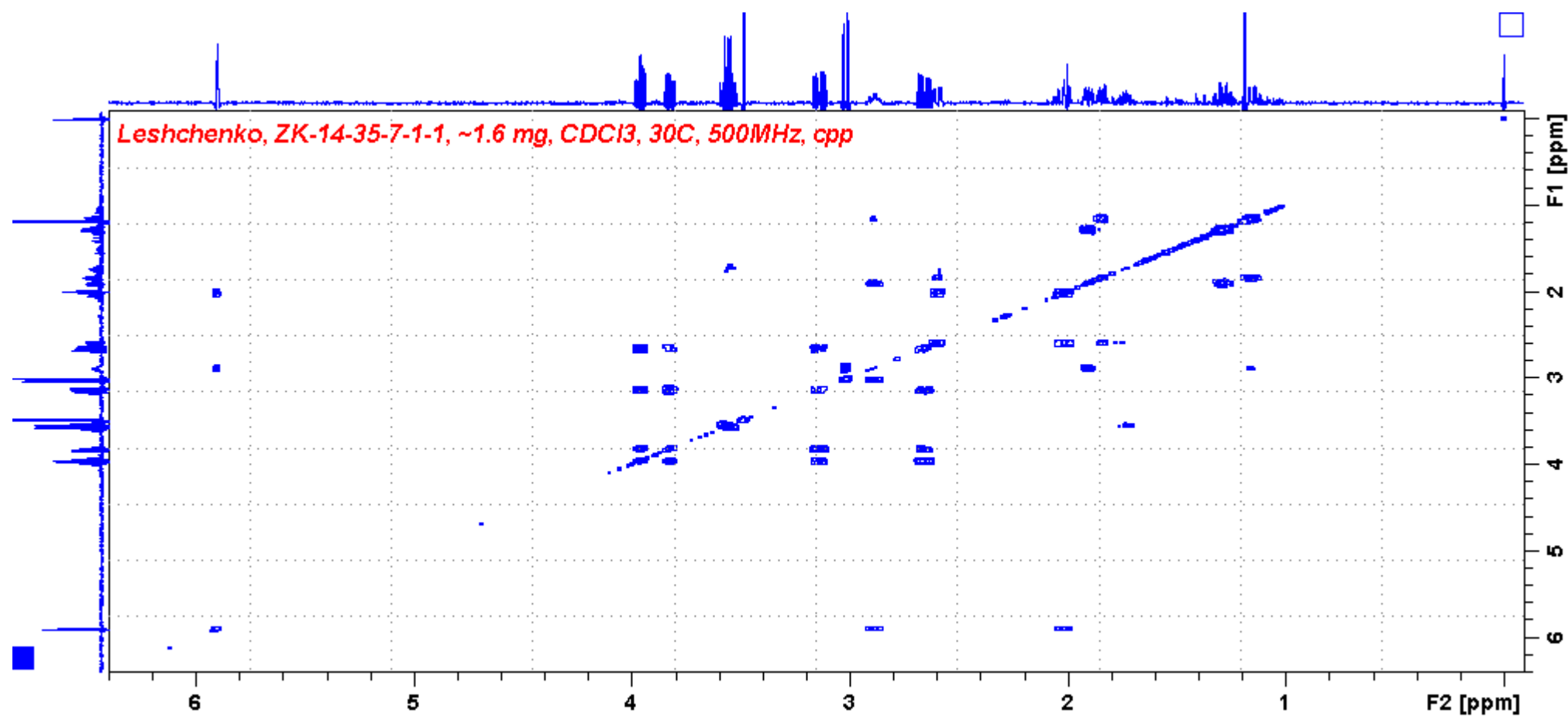


Figure S106. NOESY spectrum of **11** in CDCl₃

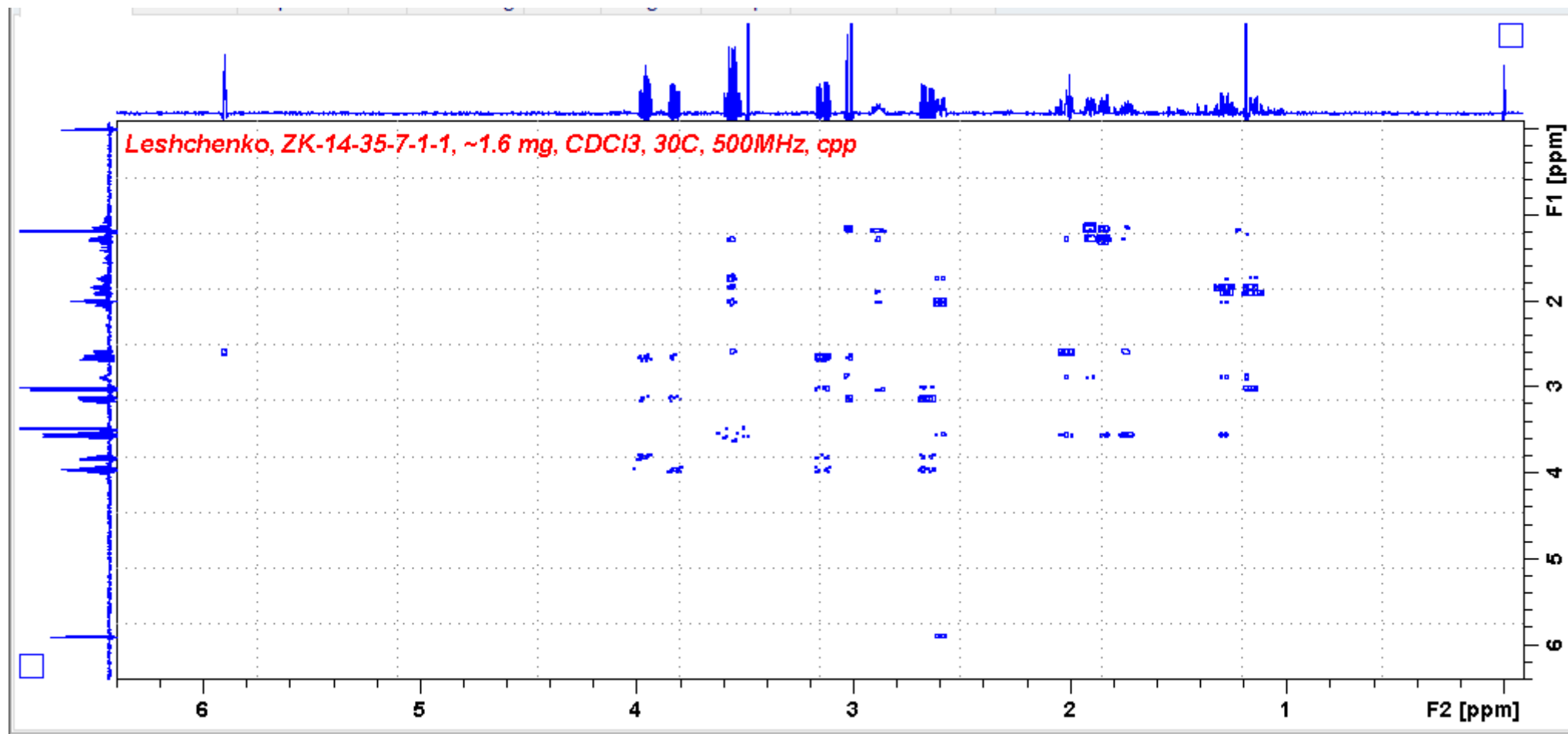
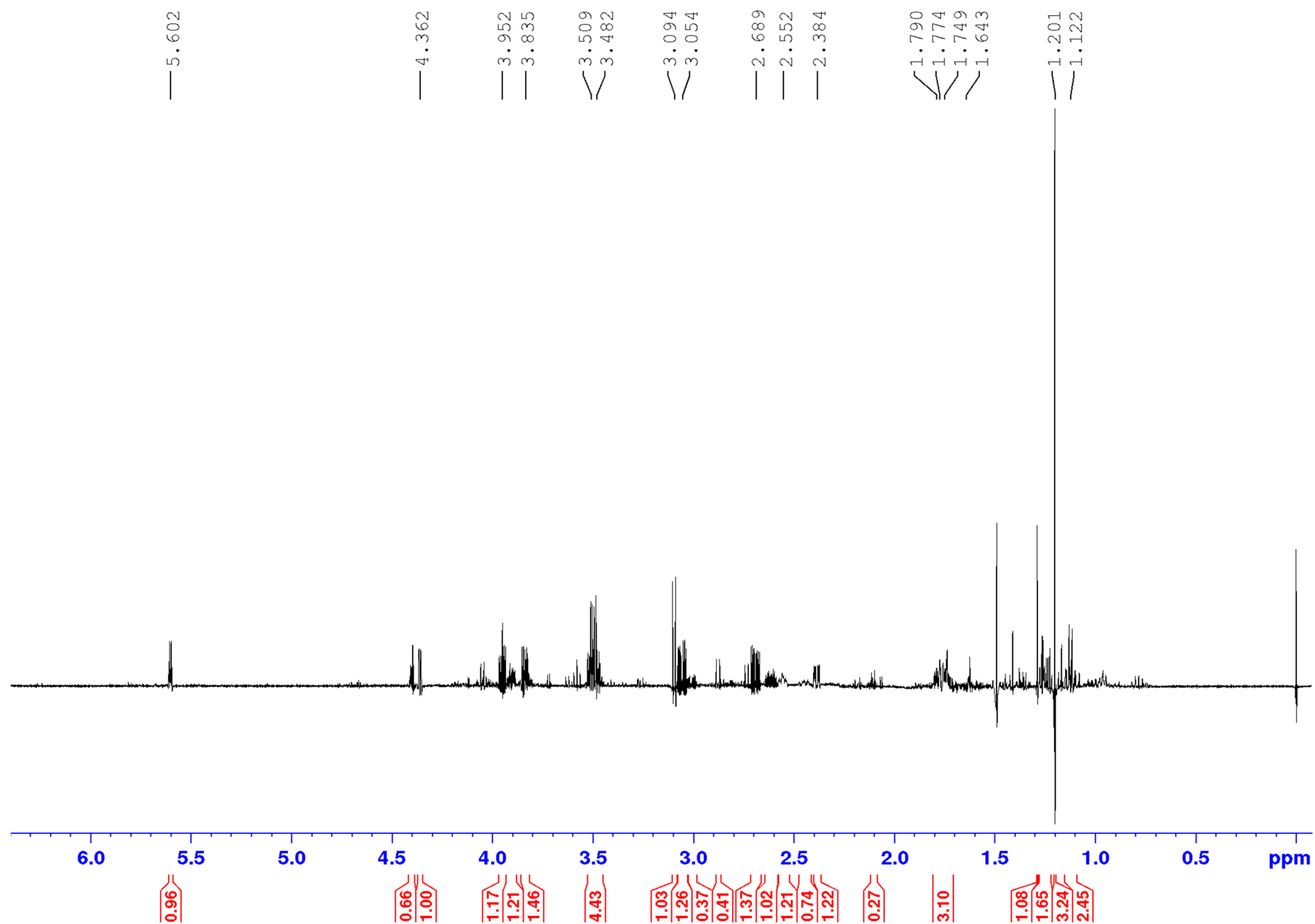


Figure S110. ^1H NMR spectrum (700.13 MHz) of **12** in CDCl_3



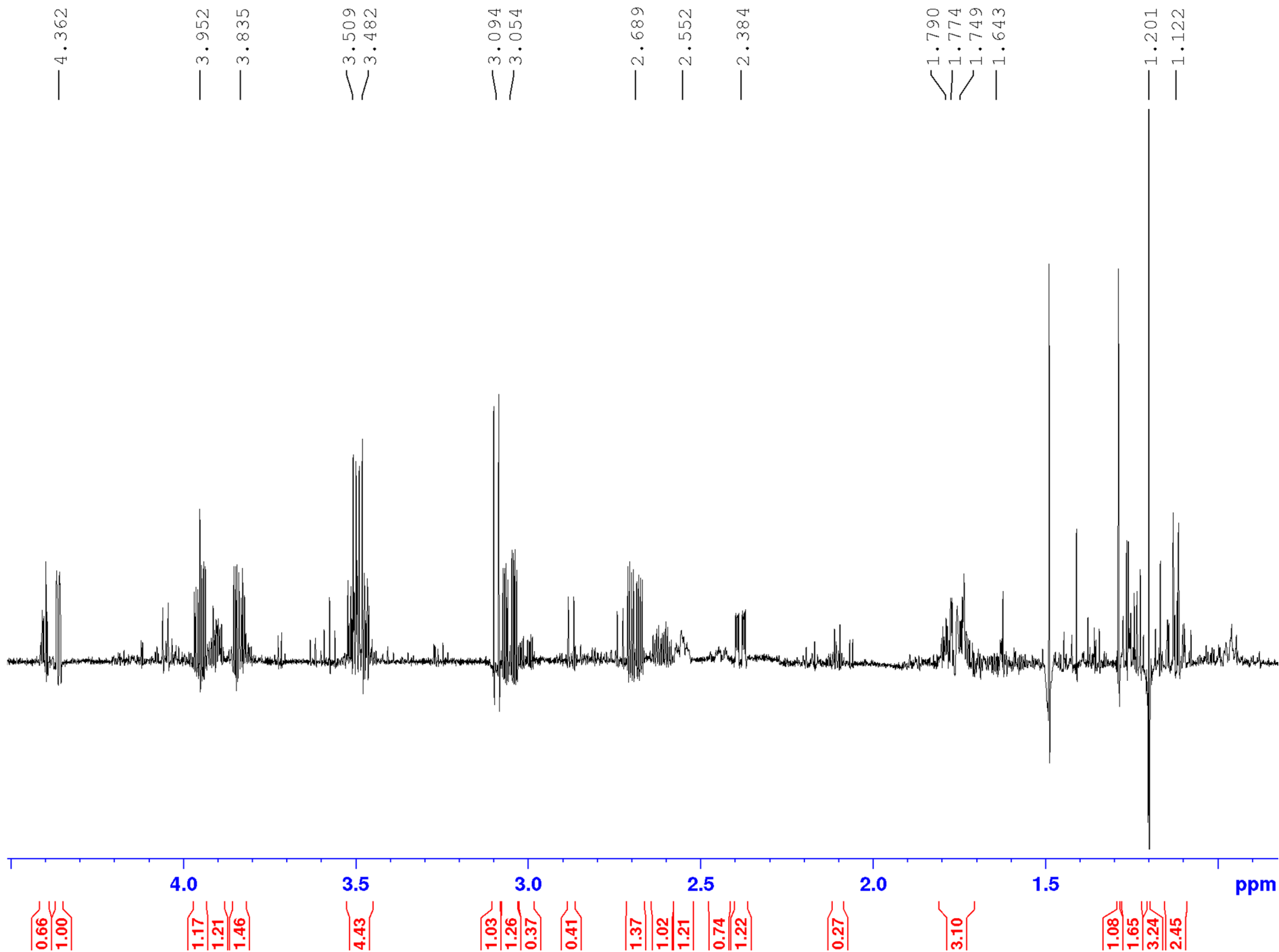


Figure S111. ^{13}C NMR spectrum (125.77 MHz) of **12** in CDCl_3

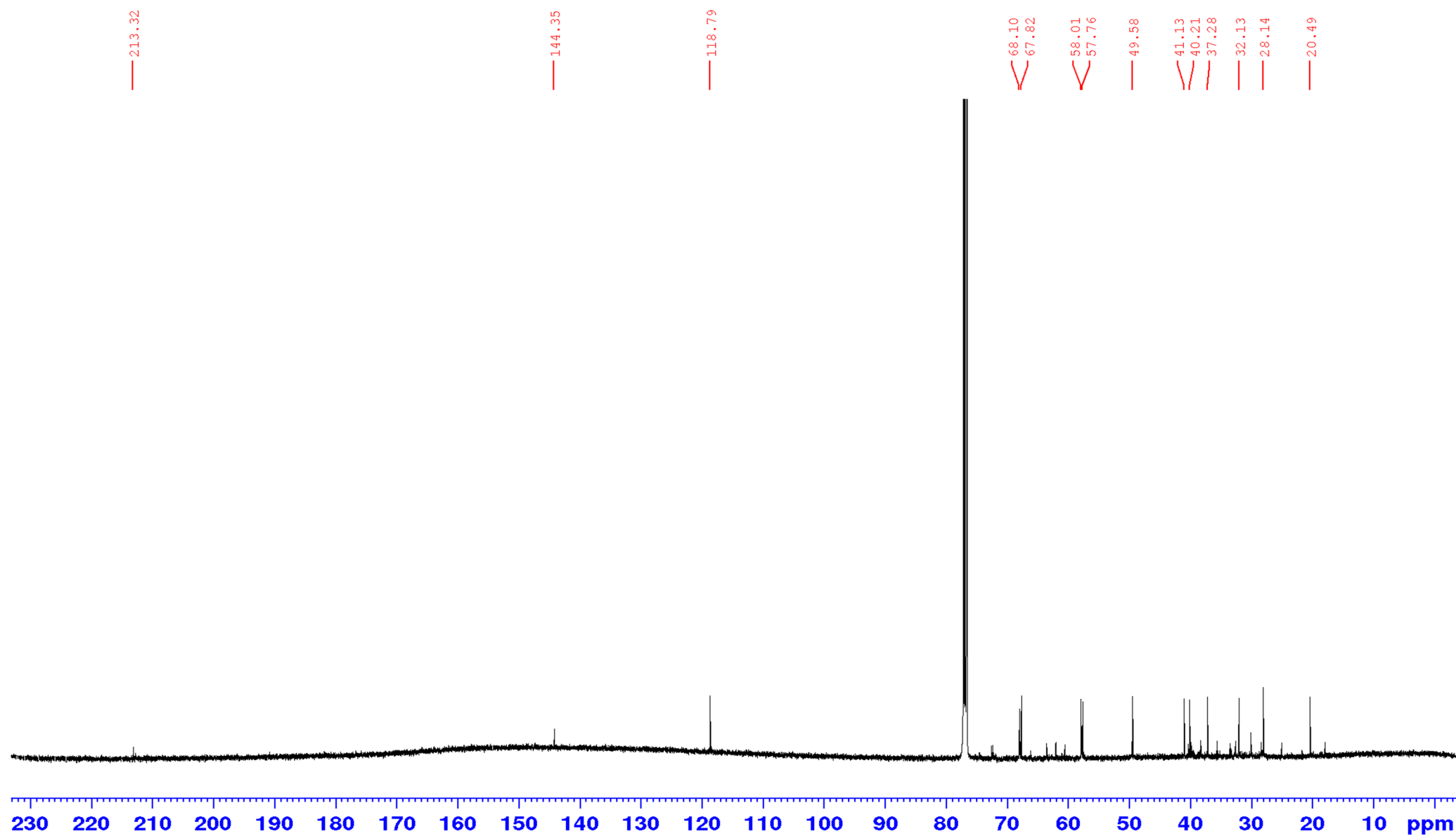


Figure S112. DEPT-135 spectrum (125.77 MHz) of **12** in CDCl₃

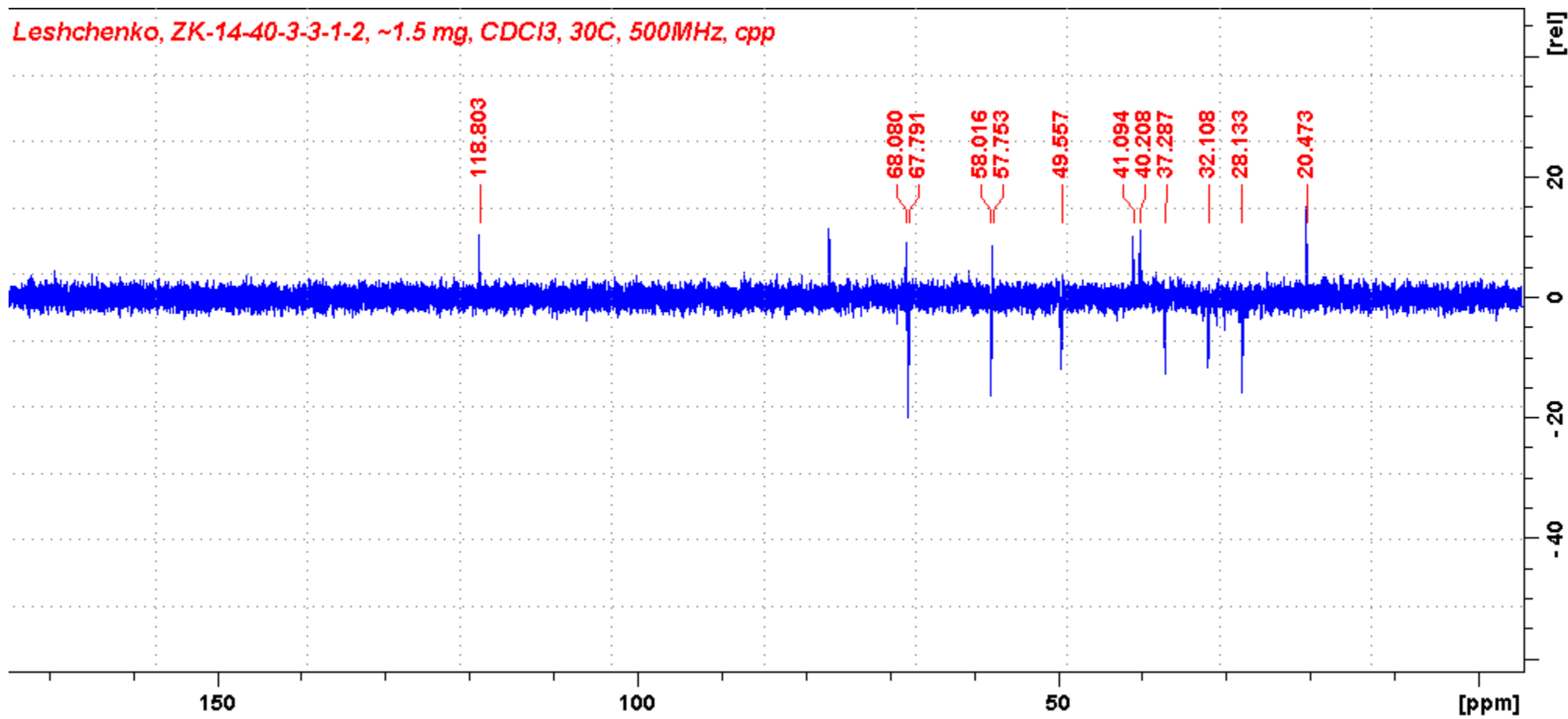


Figure S113. DEPT-90 spectrum (125.77 MHz) of **12** in CDCl₃

Leshchenko, ZK-14-40-3-3-1-2, ~1.5 mg, CDCl₃, 30°C, 500MHz, cpp

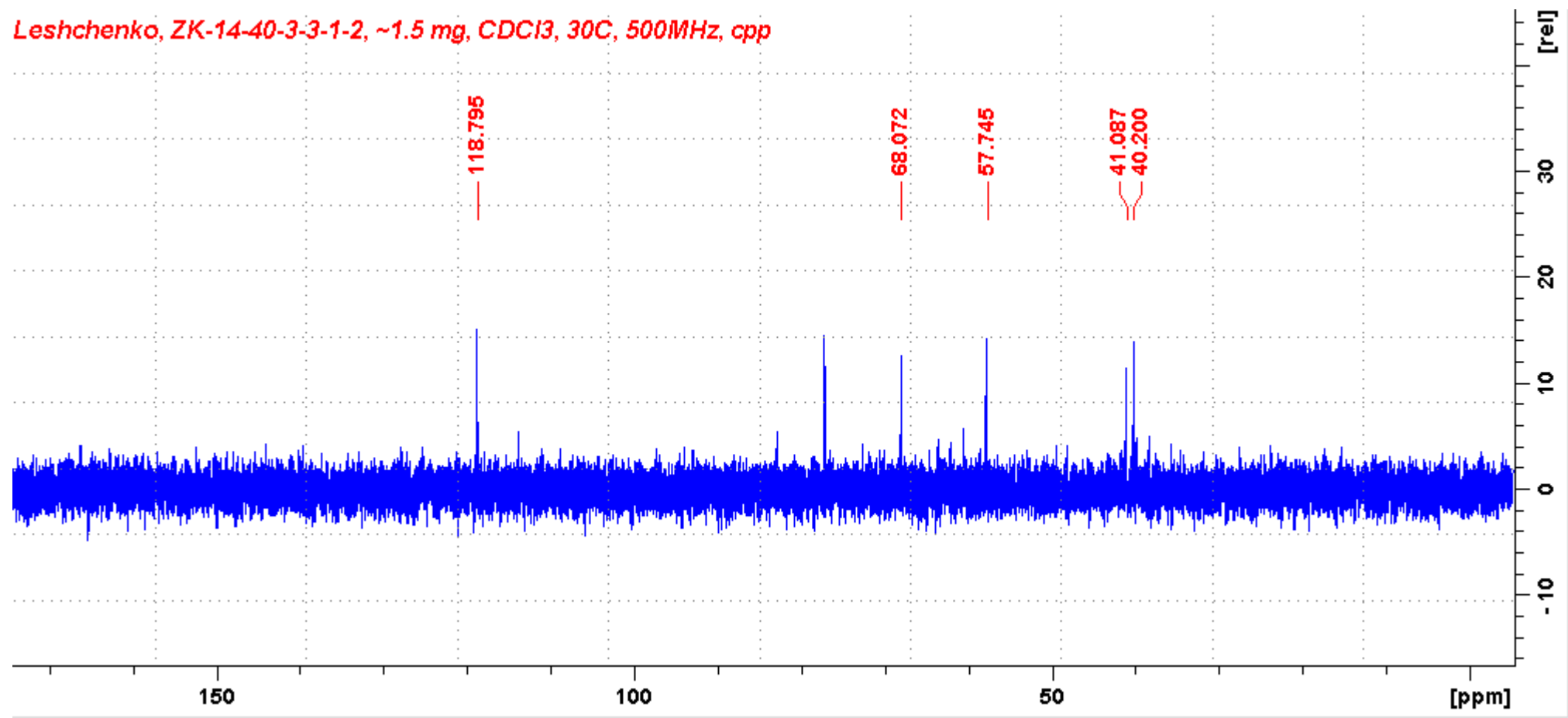


Figure S114. HSQC spectrum of **12** in CDCl₃

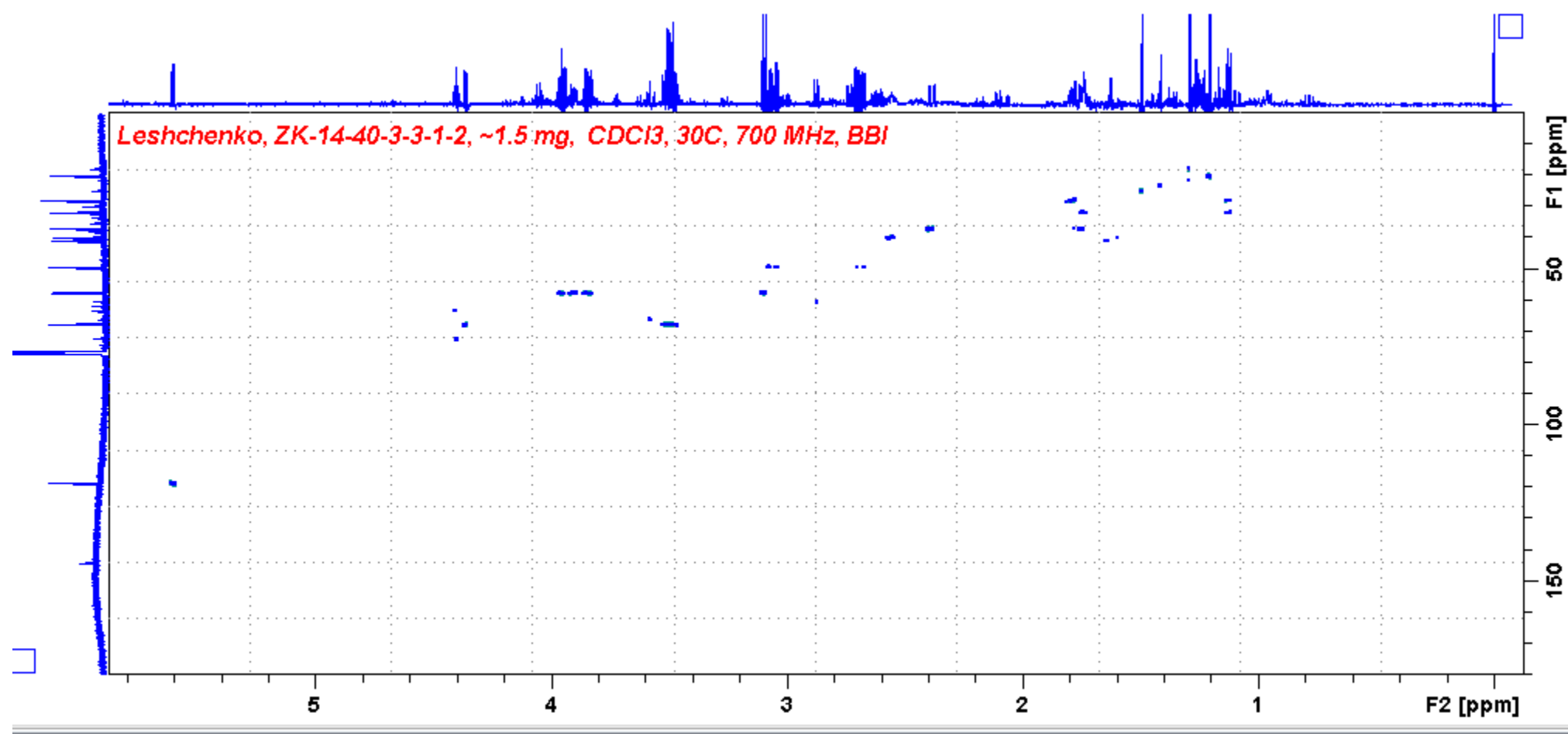


Figure S115. HMBC spectrum of **12** in CDCl₃

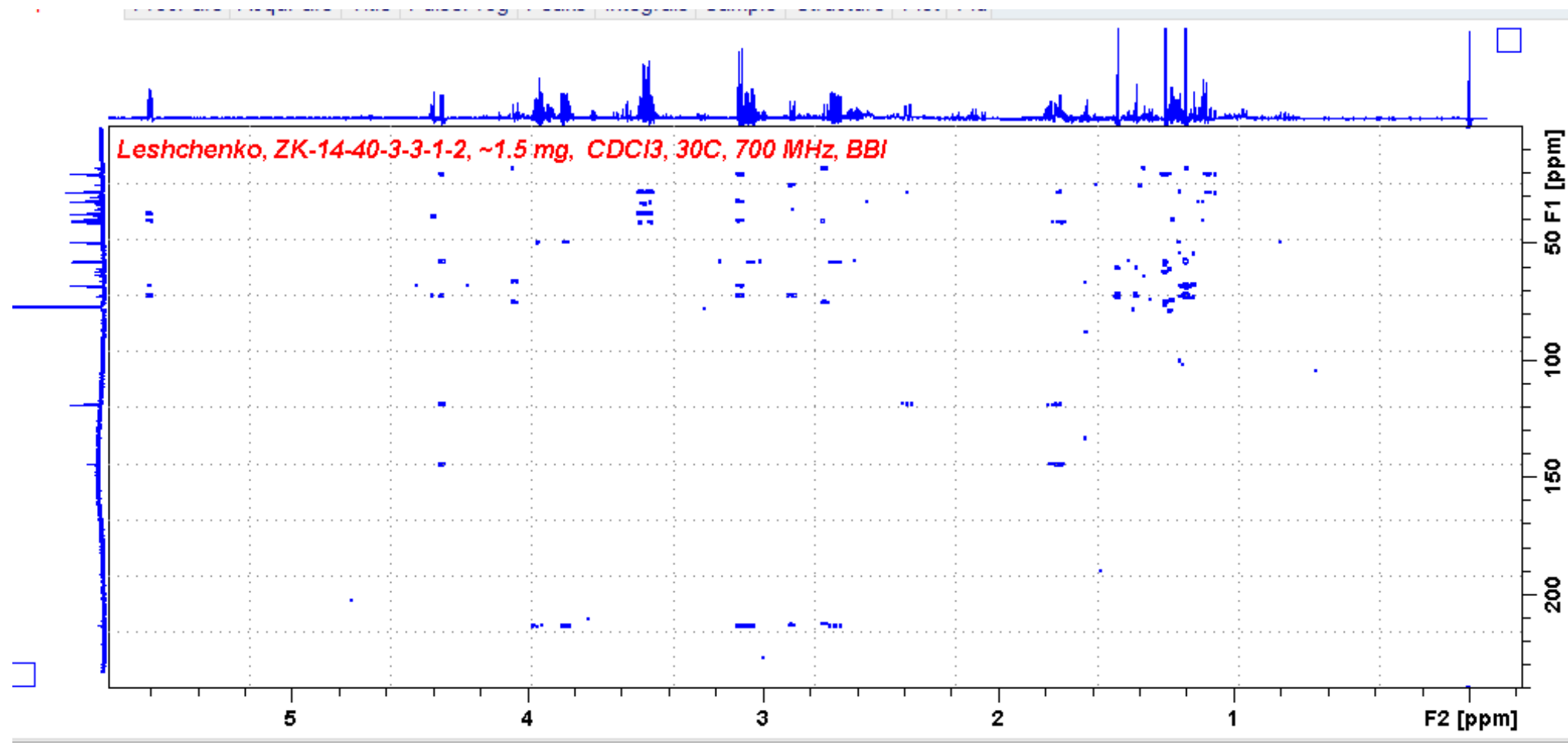


Figure S116. ^1H - ^1H COSY spectrum of **12** in CDCl_3

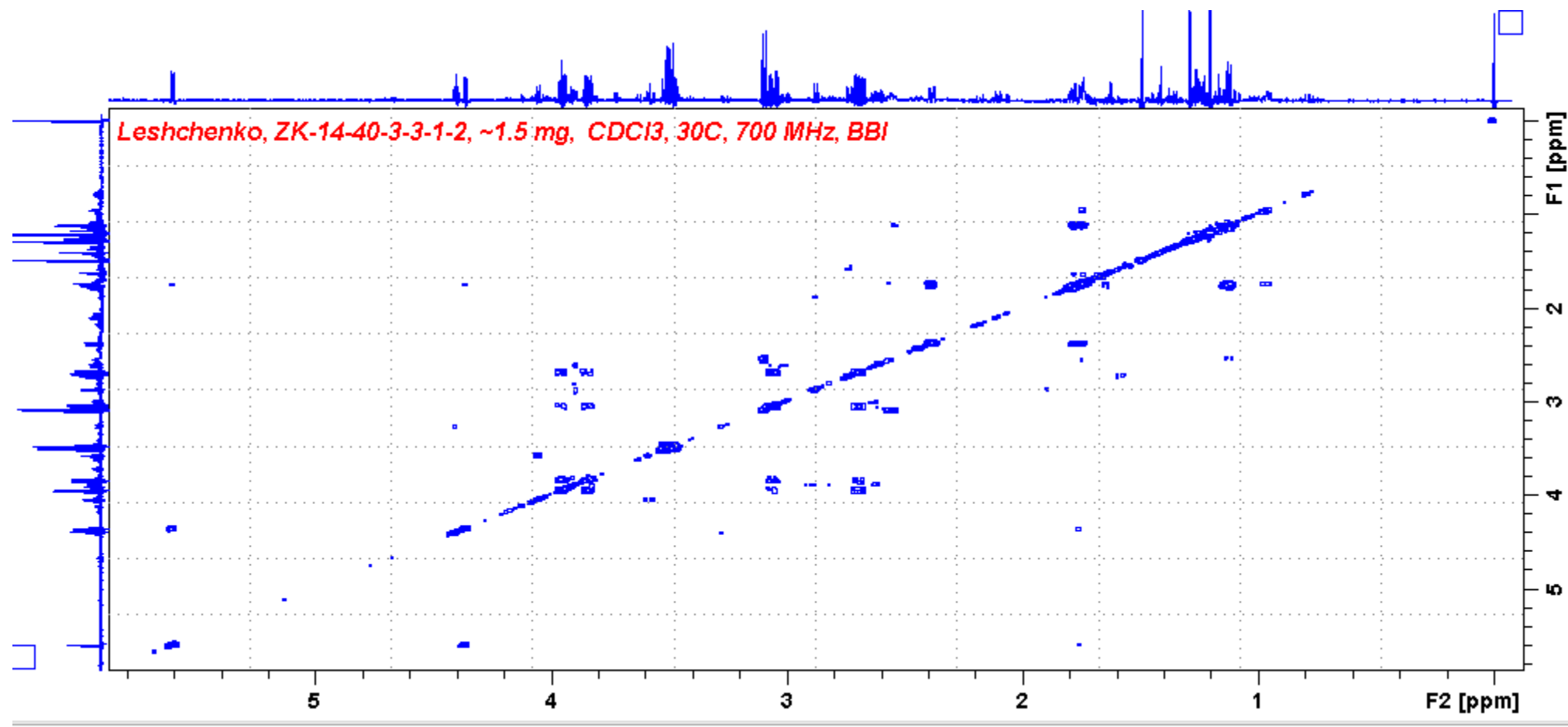


Figure S117. NOESY spectrum of **12** in CDCl₃

