

Electronic Supplementary Information

Neogenkwanines A–H: Daphnane-Type Diterpenes

Containing 4,7 or 4,6- Ether Group from the Flower Bud of *Daphne genkwa*

Ling-Zhi Li^{a,b}, Shao-Jiang Song^{a,b,*}, Pin-Yi Gao^c, Fei-Fei Li^{a,b}, Li-Hui Wang^d, Qing-Bo Liu^{a,b}, Xiao-Xiao Huang^{a,b}, Dan-Qi Li^{a,b}, Yu Sun^{a,b}

^aSchool of Traditional Chinese Materia Medica, Shenyang Pharmaceutical University,
103 Wenhua Rd., Shenyang 110016, People's Republic of China

^bKey Laboratory of Structure-Based Drug Design and Discovery, Ministry of
Education, Shenyang Pharmaceutical University, 103 Wenhua Rd., Shenyang
110016, People's Republic of China

^cCollege of Pharmaceutical and Biological Engineering, Shenyang University of
Chemical Technology, Shenyang 110142, People's Republic of China

^dSchool of Life Science and Biopharmaceuticals, Shenyang Pharmaceutical
University. 103 Wenhua Rd., Shenyang 110016, People's Republic of China

*To whom correspondence should be addressed. (S.-J. Song) E-mail:
songsj99@163.com. Tel: +86-24-23986510. Fax: +86-24-23986088

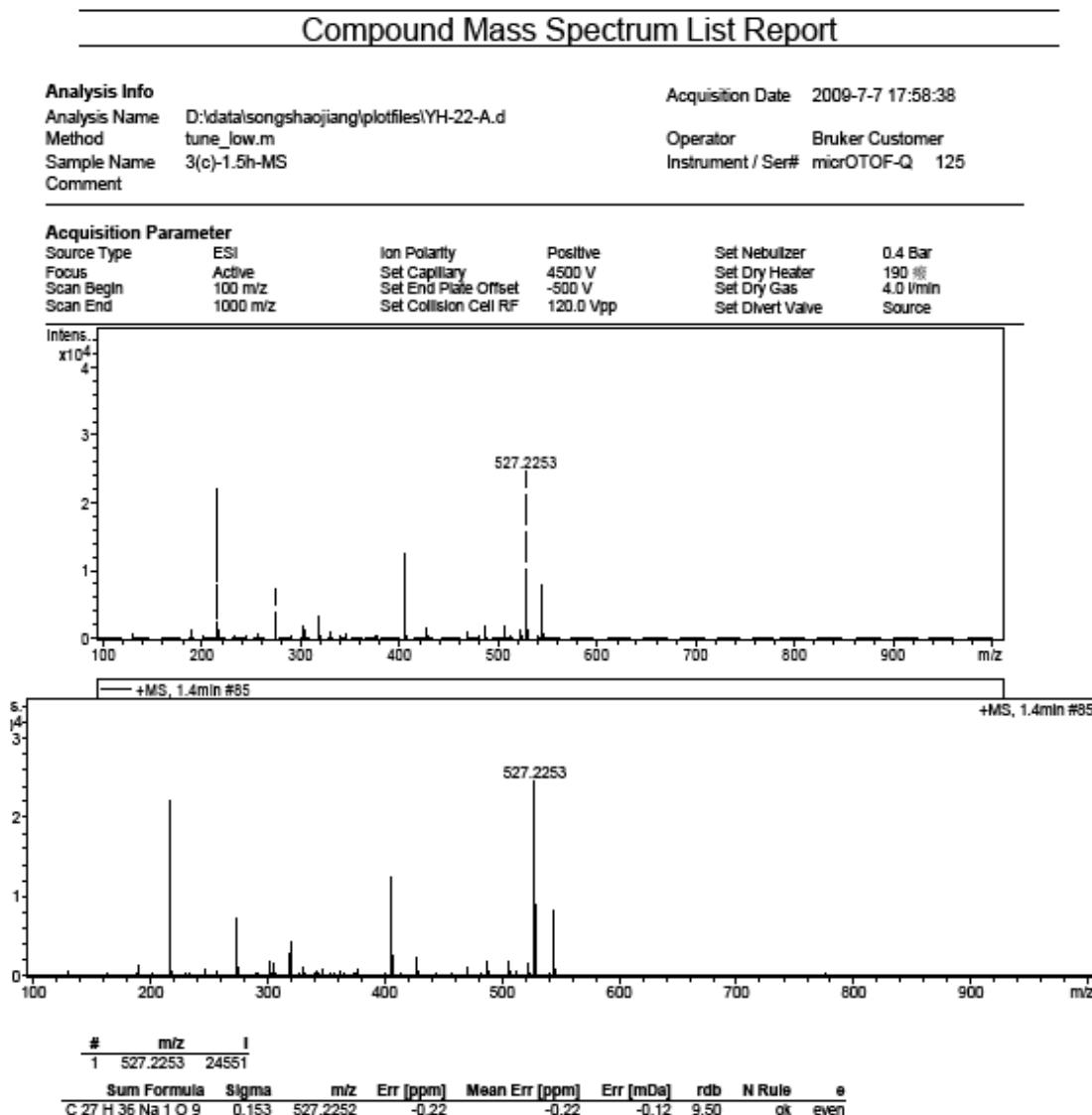
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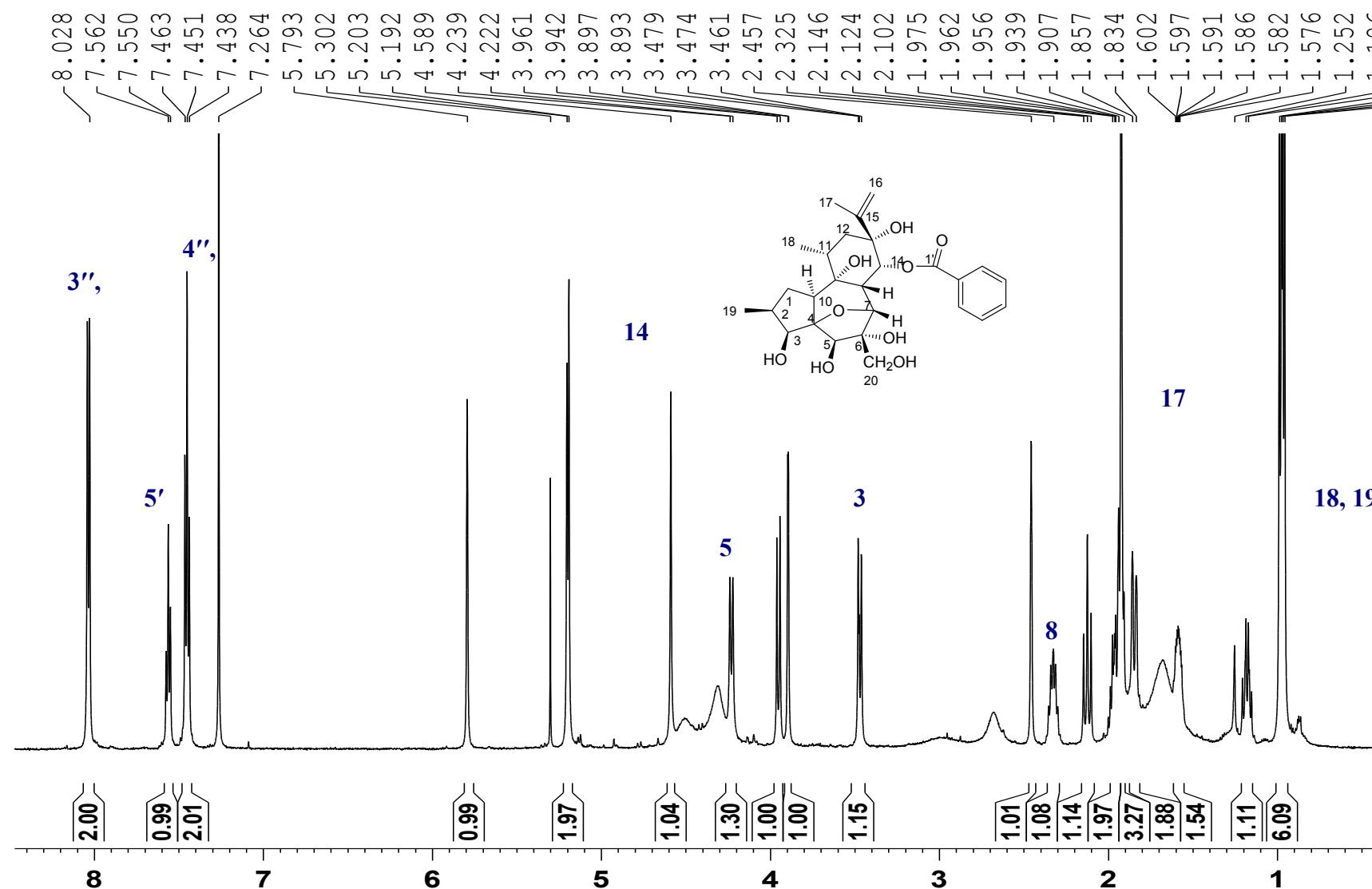
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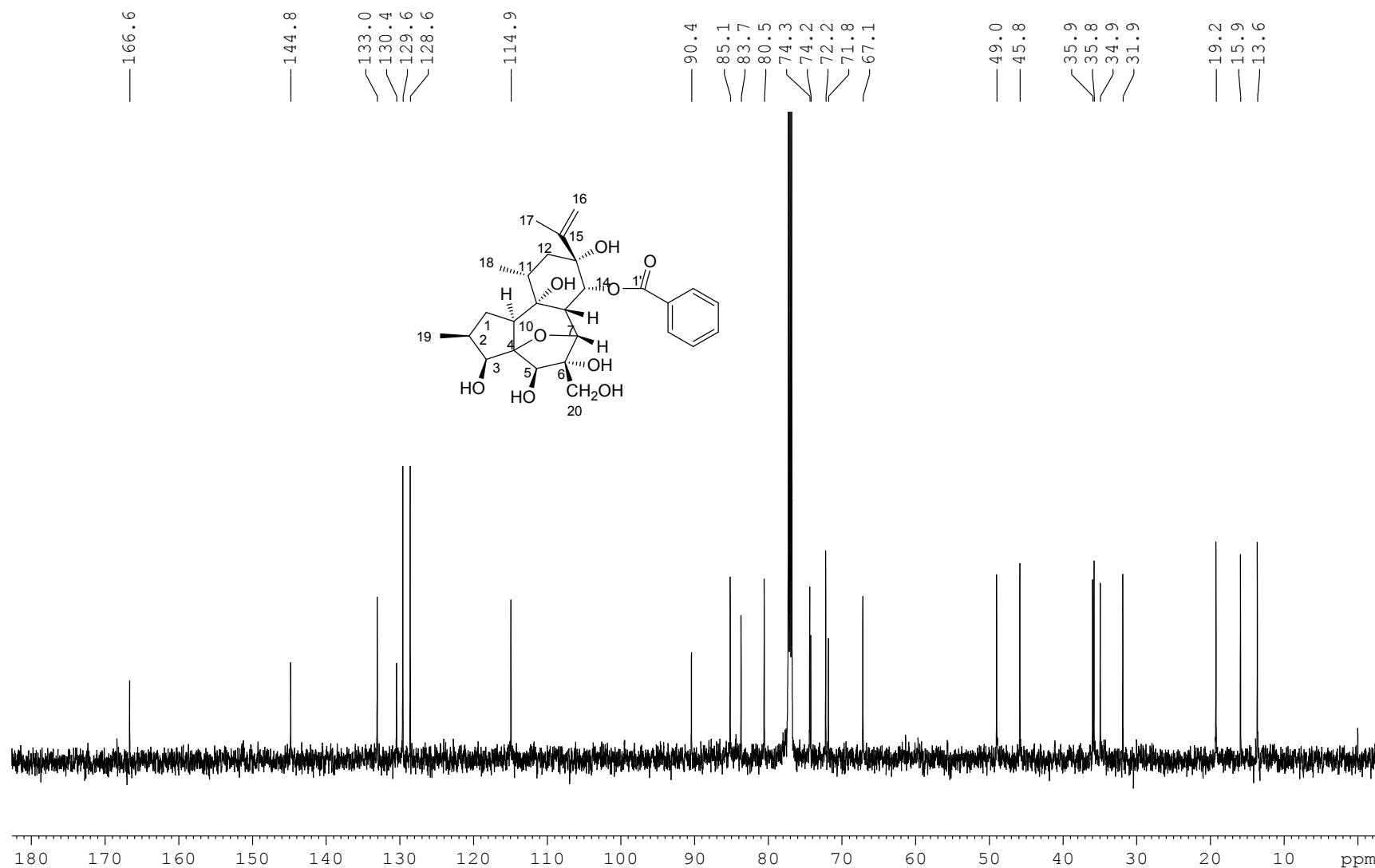
1:HRESIMS spectrum of compound 1



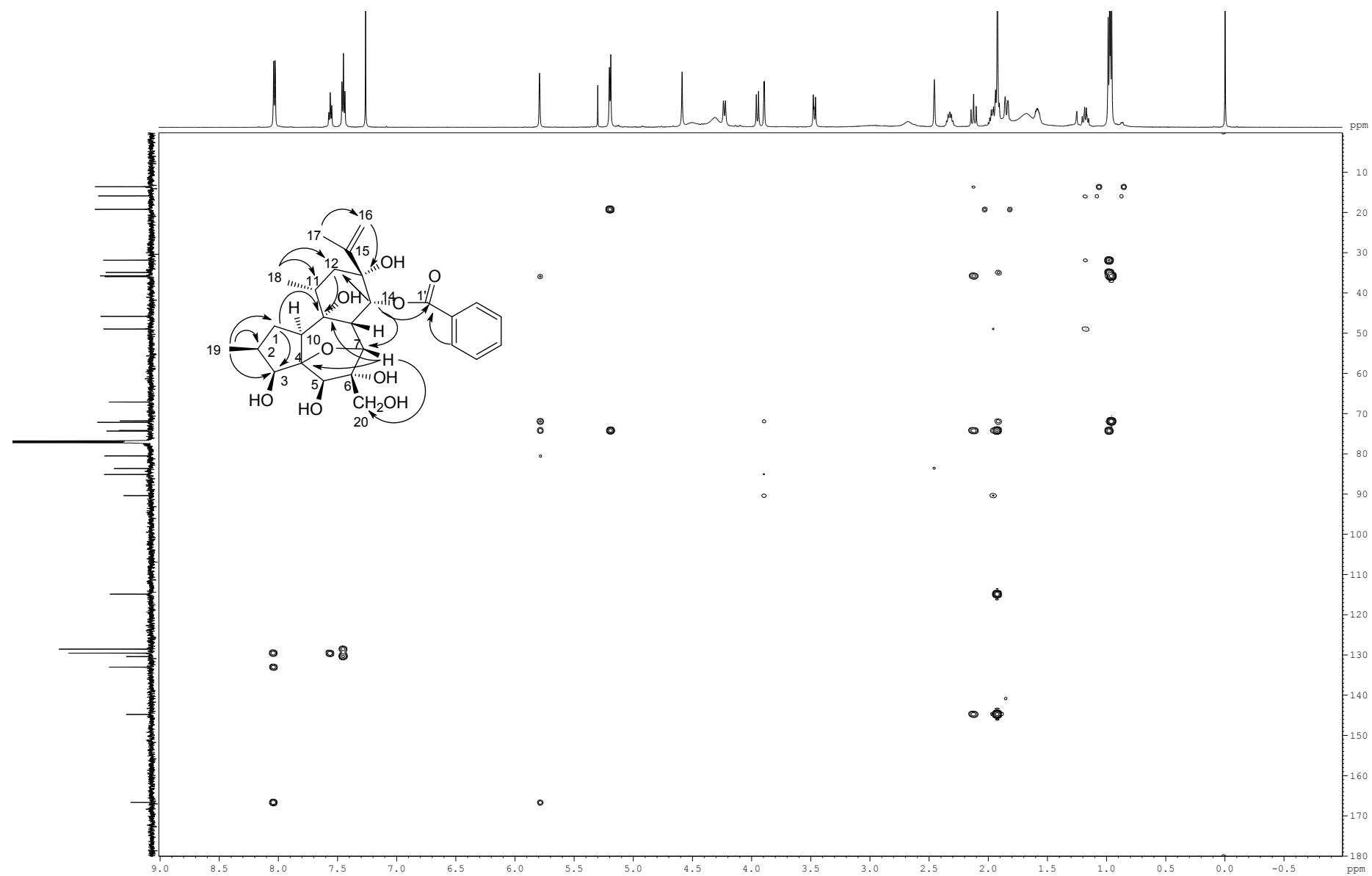
2:¹H NMR spectrum for compound **1** recorded in CDCl₃ at 600 MHz.



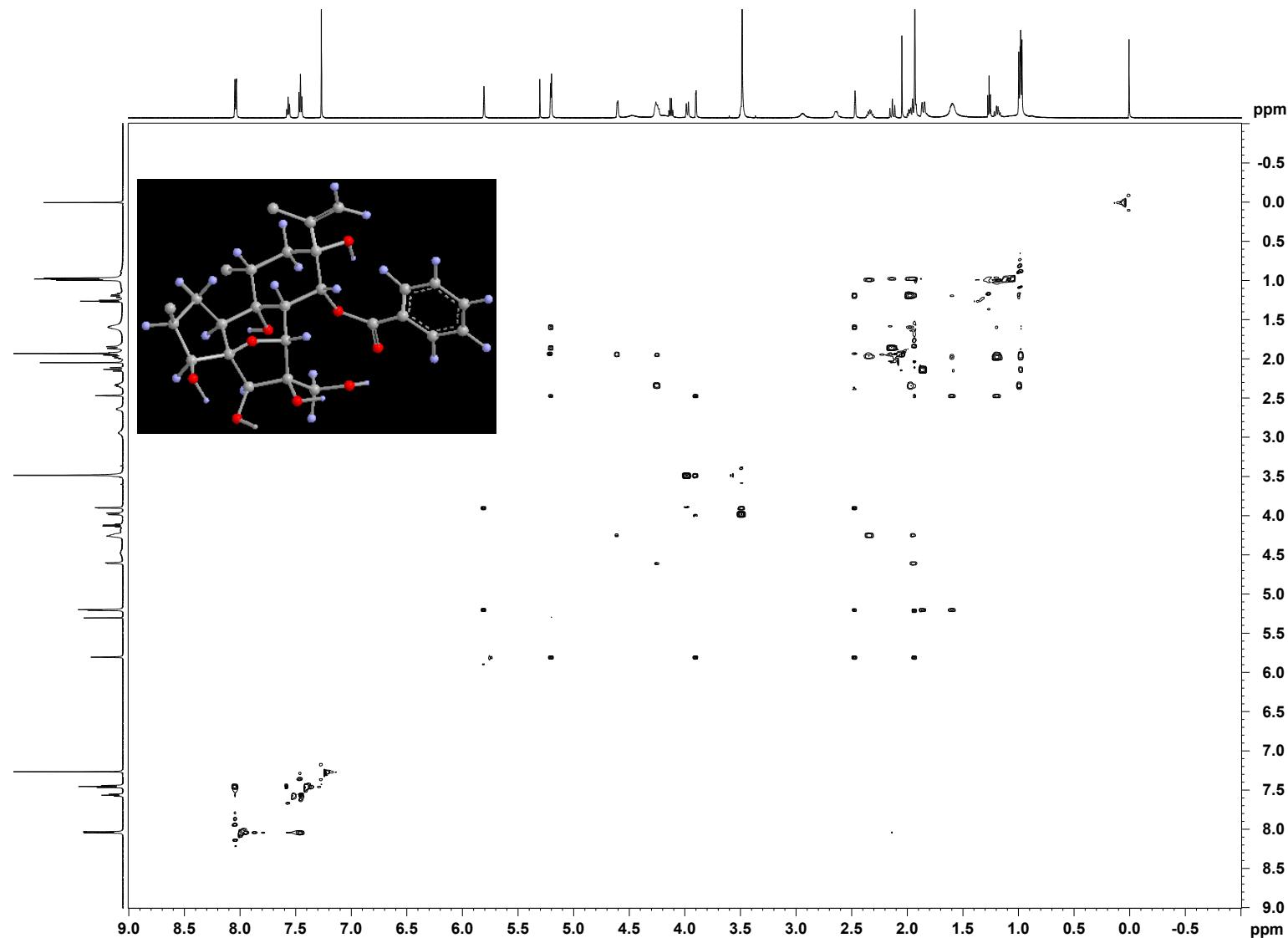
3:¹³C NMR spectrum for compound **1** recorded in CDCl₃ at 125 MHz.



4:HMBC spectrum for compound **1** recorded in CDCl_3 at 600 MHz.

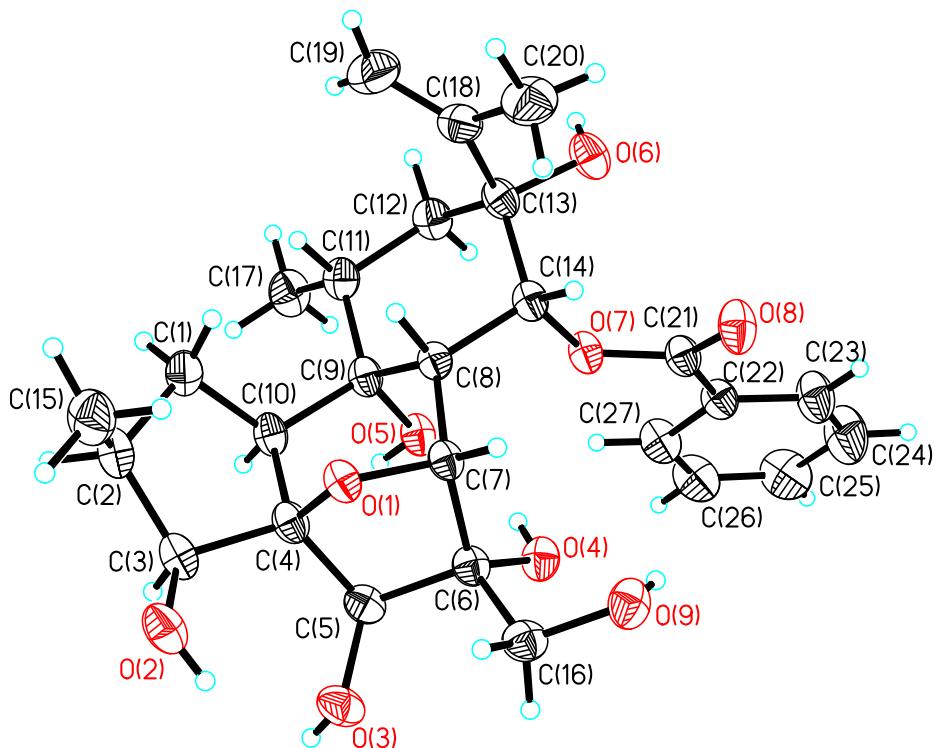


5: NOESY spectrum for compound **1** recorded in CDCl_3 at 600 MHz.



6. Single crystal X-ray diffraction analysis of genkdaphnin A (**1**)

Crystallization of genkdaphnin A (**1**) from n-hexane/ethyl acetate gave flaky cocrystal (1: 1) of **1** and ethyl acetate. All measurements were made on a Bruker SMART APEX-II with RAPID diffractometer using filtered CuK α radiation ($\lambda = 1.54187\text{\AA}$). Crystal data: Formula C₂₇H₃₆O₉, Formula weight 504.24, Orthorhombic system, Space group: P 21 21 21, $a = 11.7035(7)\text{\AA}$, $b = 12.7664(9)\text{\AA}$, $c = 21.1157(14)\text{\AA}$, $\alpha = \beta = \gamma = 90.00^\circ$, $V = 3154.9(4)\text{\AA}^3$, $Z = 4$, $T = 296(2)\text{ K}$, $d = 1.248\text{ g cm}^{-3}$, specimen: $0.05 \times 0.20 \times 0.010\text{ mm}^3$. The total number of independent reflections measured was 9697, 4408 reflections unique, of which 4183 were observed ($|F|^2 \geq 2\sigma|F|^2$). All calculations were performed using Crystal Structure except for refinement, which was performed using direct method SHELXL-97, expanded by using difference Fourier techniques, and refined by the full-matrix least-squares calculations. The non-hydrogen atoms were refined anisotropically, and hydrogen atoms were included at their calculated positions. The final indices were $R_1 = 0.0429$, $wR_2 = 0.1181$ ($w = 1/\sigma|F|^2$), $S = 1.030$. Crystallographic data for genkdaphnin A (**1**) have been deposited at the Shanghai Institute of Pharmaceutical Industry.



ORTEP drawing of genkdaphnin A (**1**).

7:HRESIMS spectrum for compound 2

Compound Mass Spectrum List Report**Analysis Info**

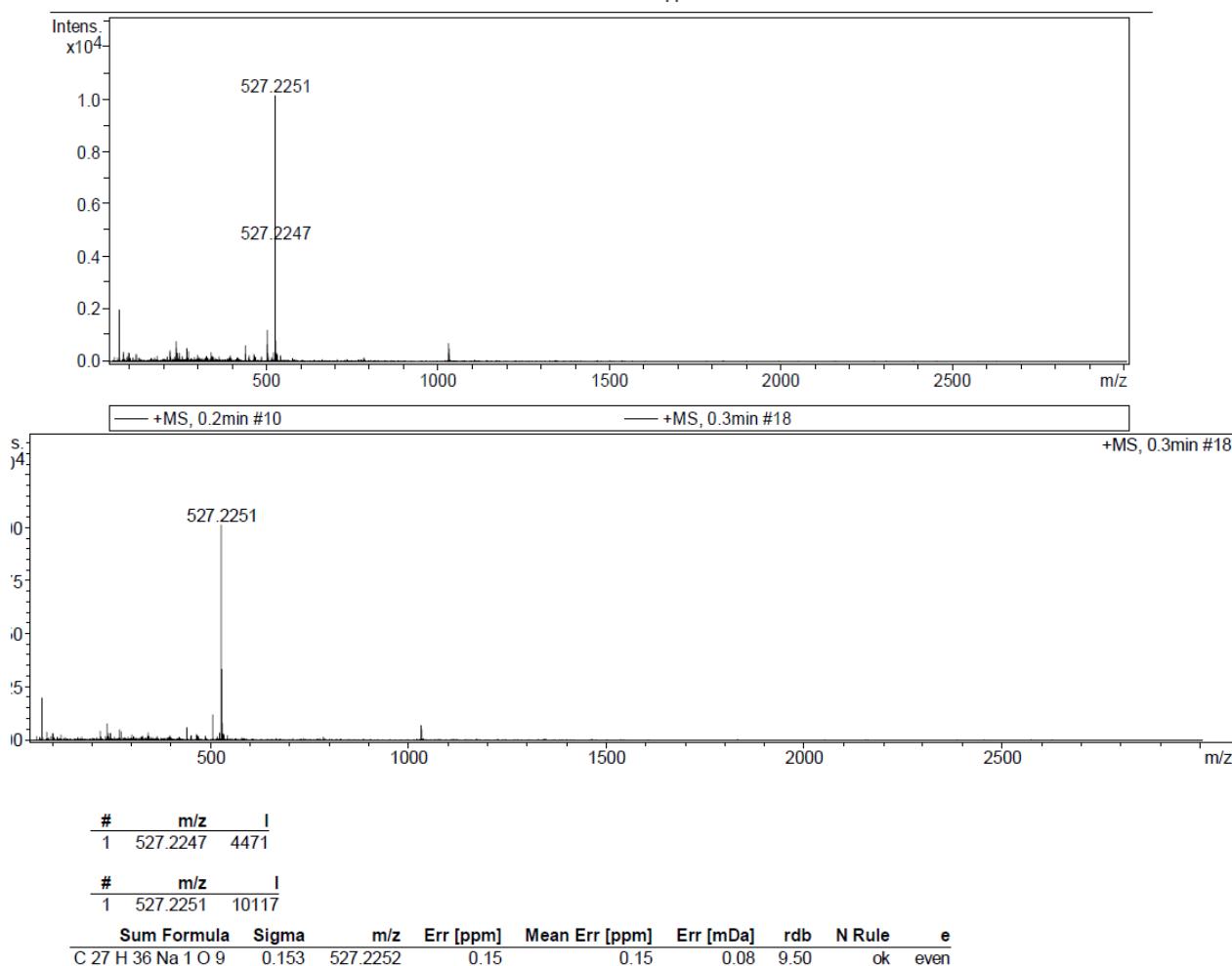
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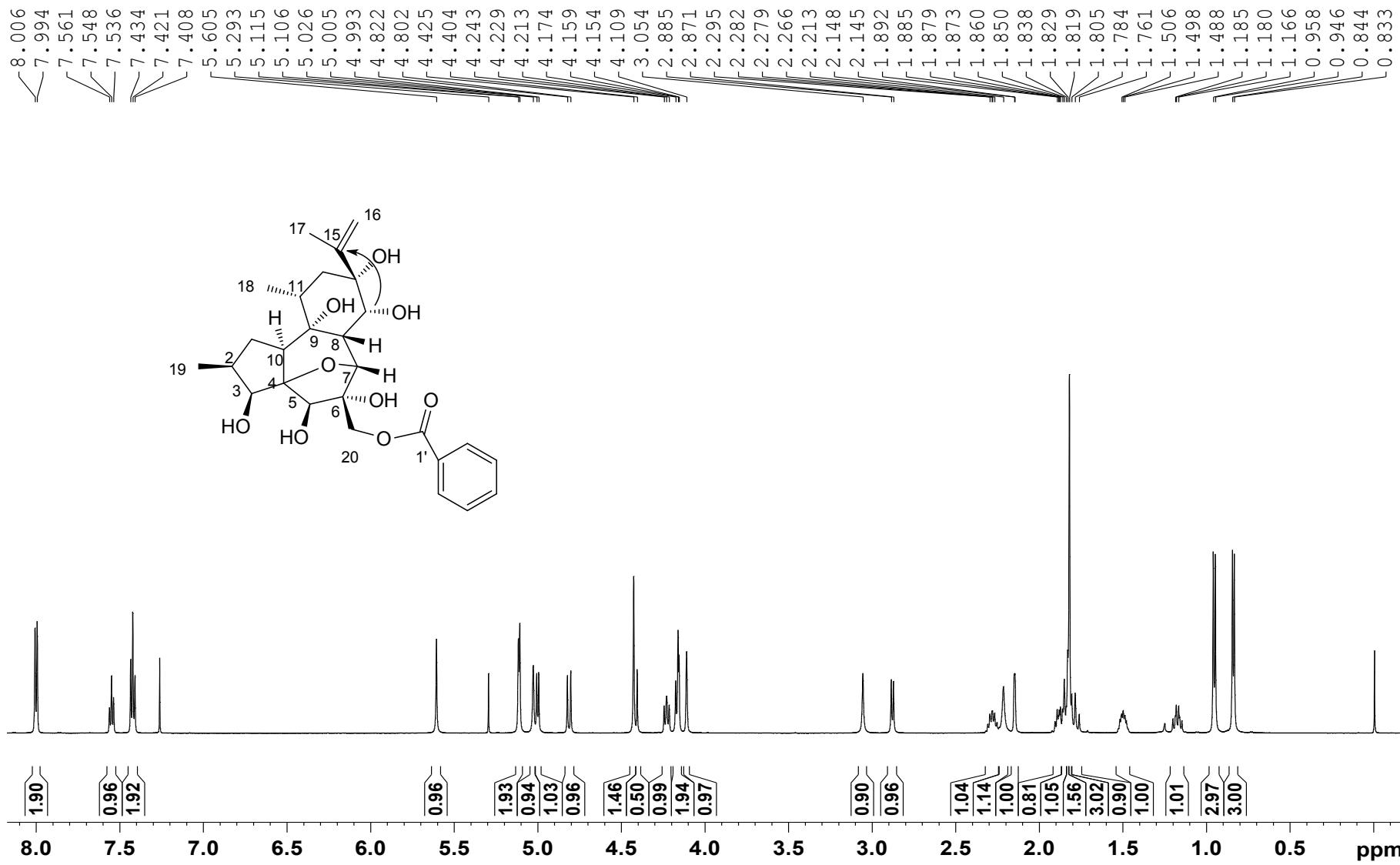
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 Instrument / Ser# micrOTOF-Q 125

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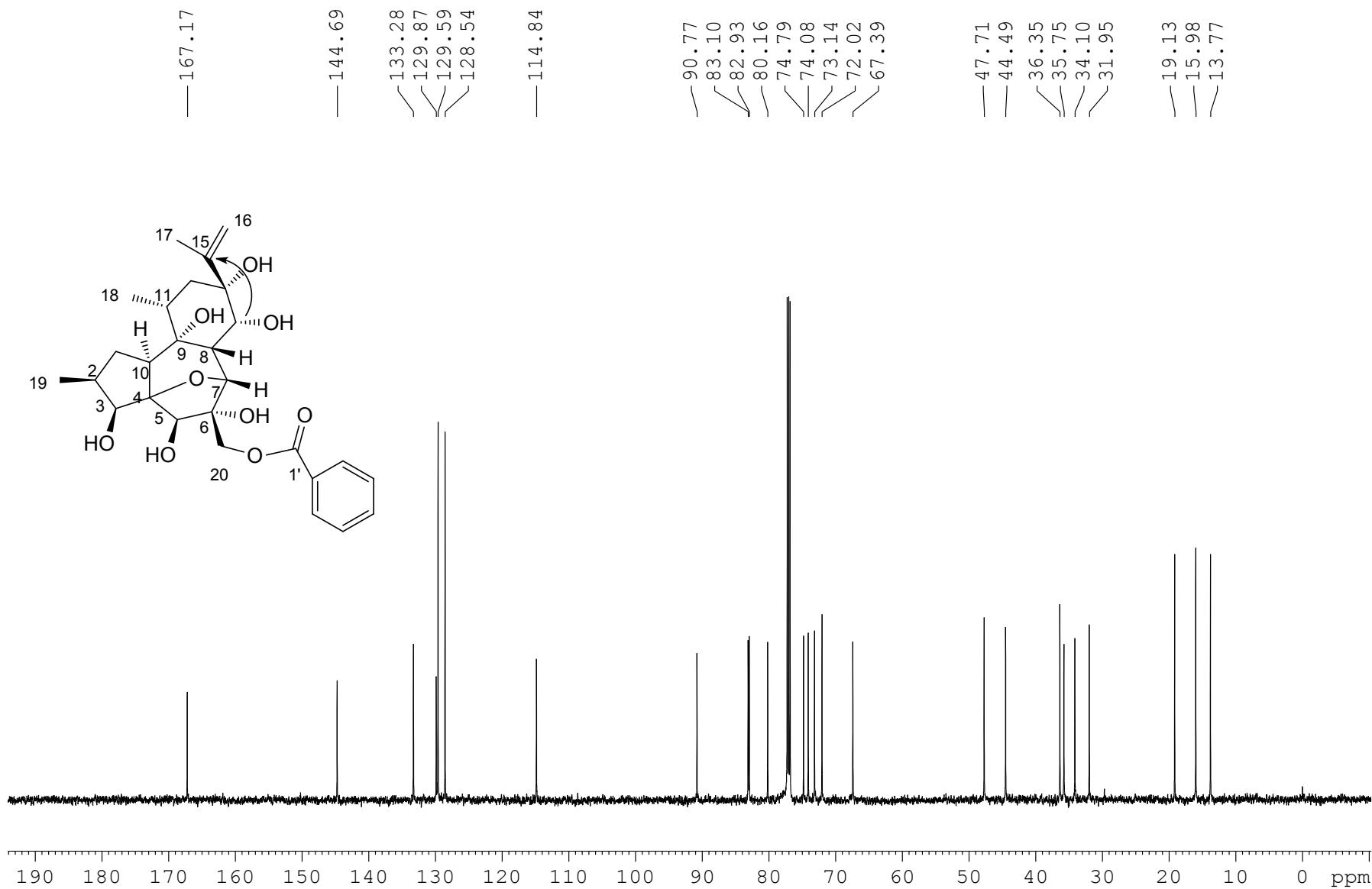
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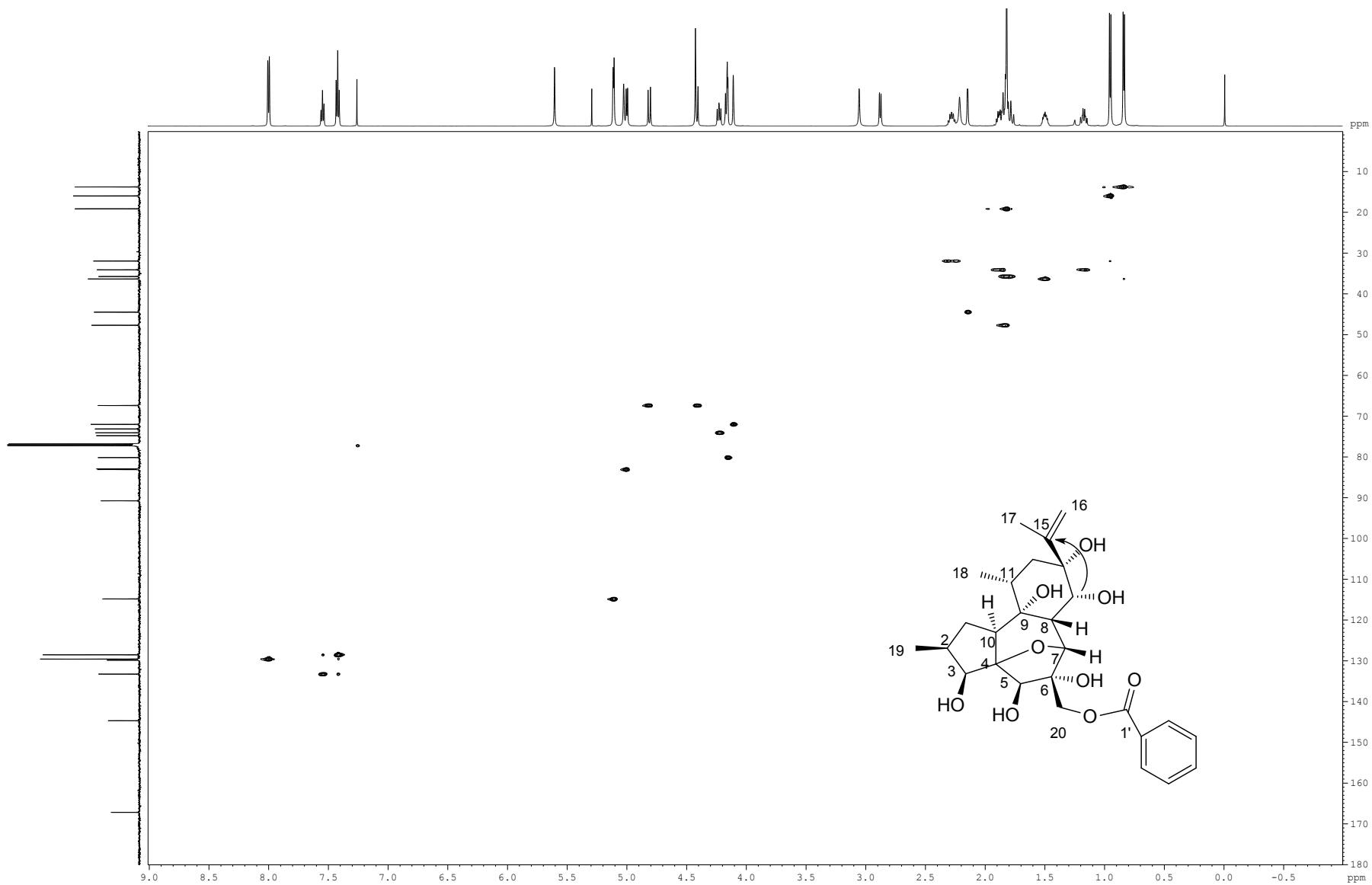
8: ^1H NMR spectrum for compound **2** recorded in CDCl_3 at 600 MHz.



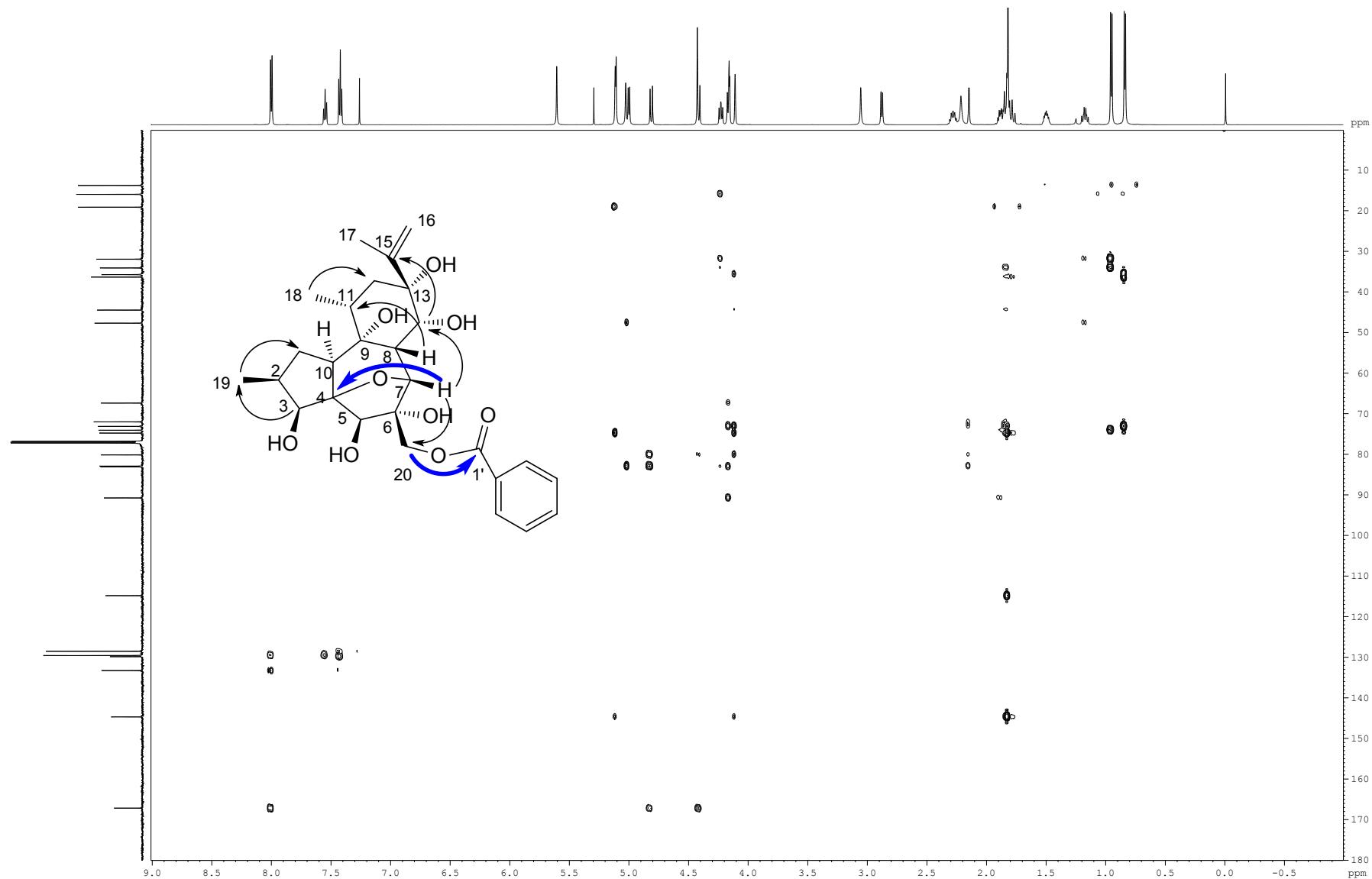
9: ^{13}C NMR spectrum for compound **2** recorded in CDCl_3 at 125 MHz.



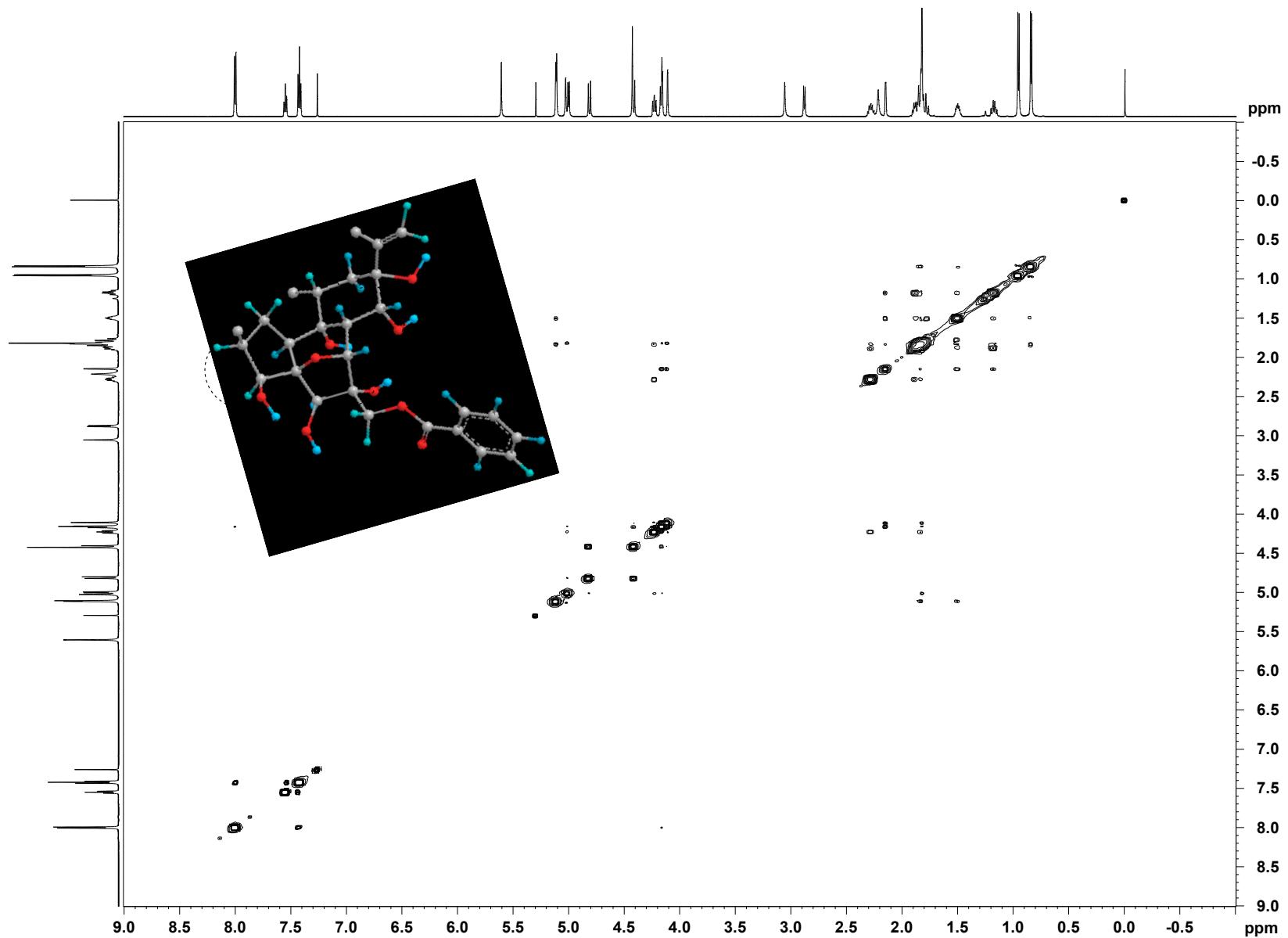
10:HSQC spectrum for compound **2** recorded in CDCl_3 at 600 MHz.



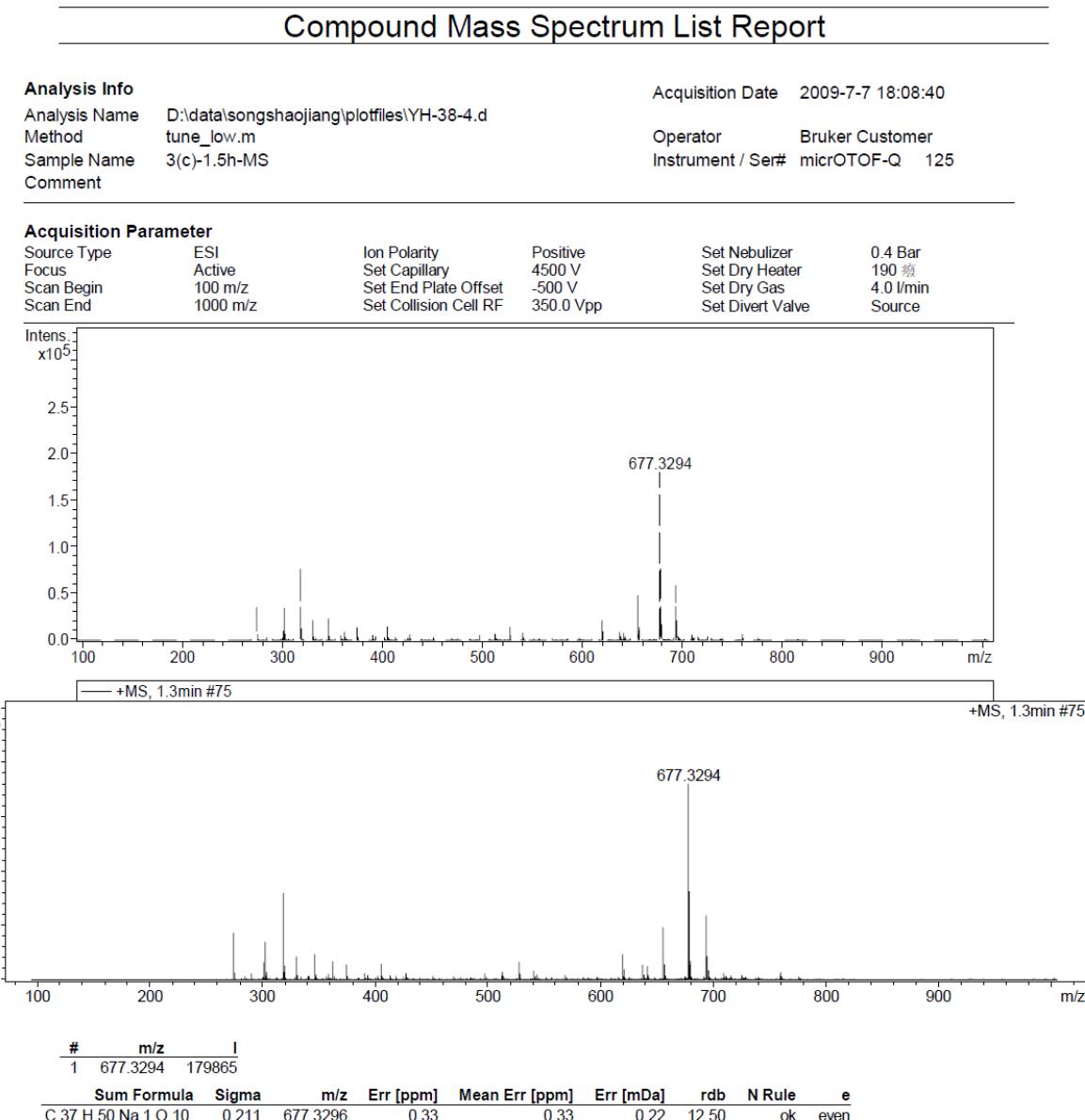
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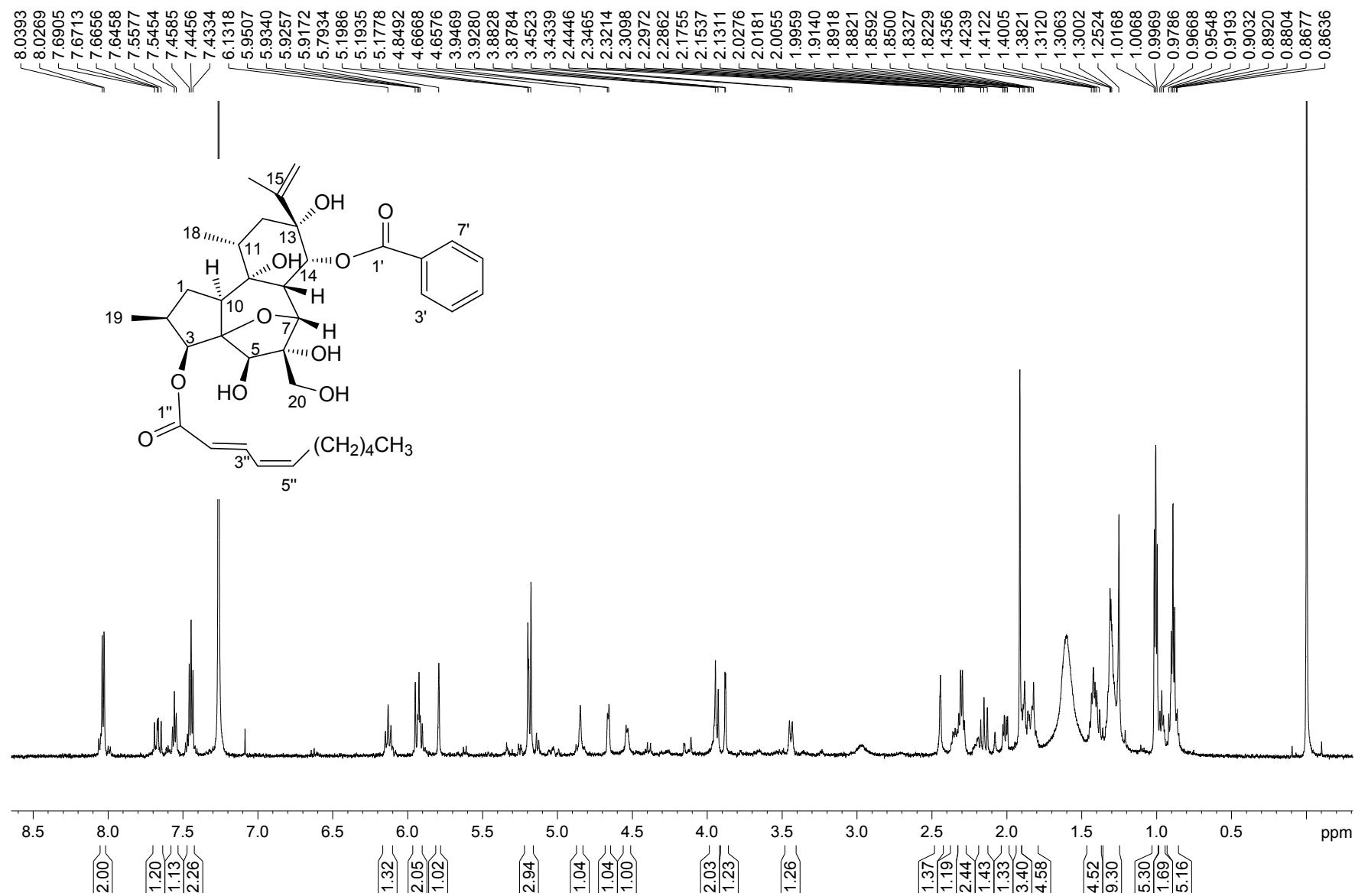
12: NOESY spectrum for compound **2** recorded in CDCl_3 at 600 MHz.



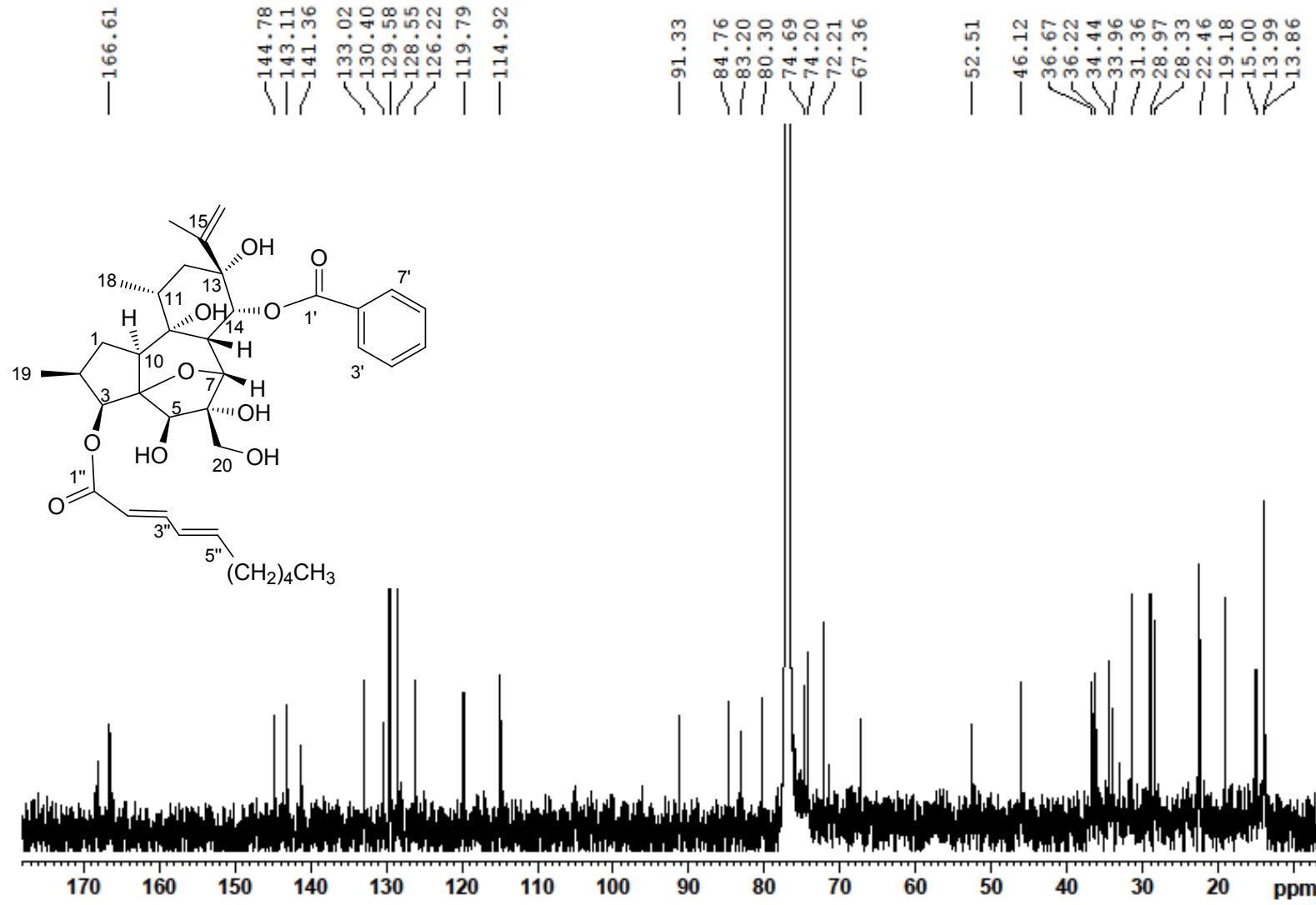
13. HRESIMS spectrum for compound 3 .



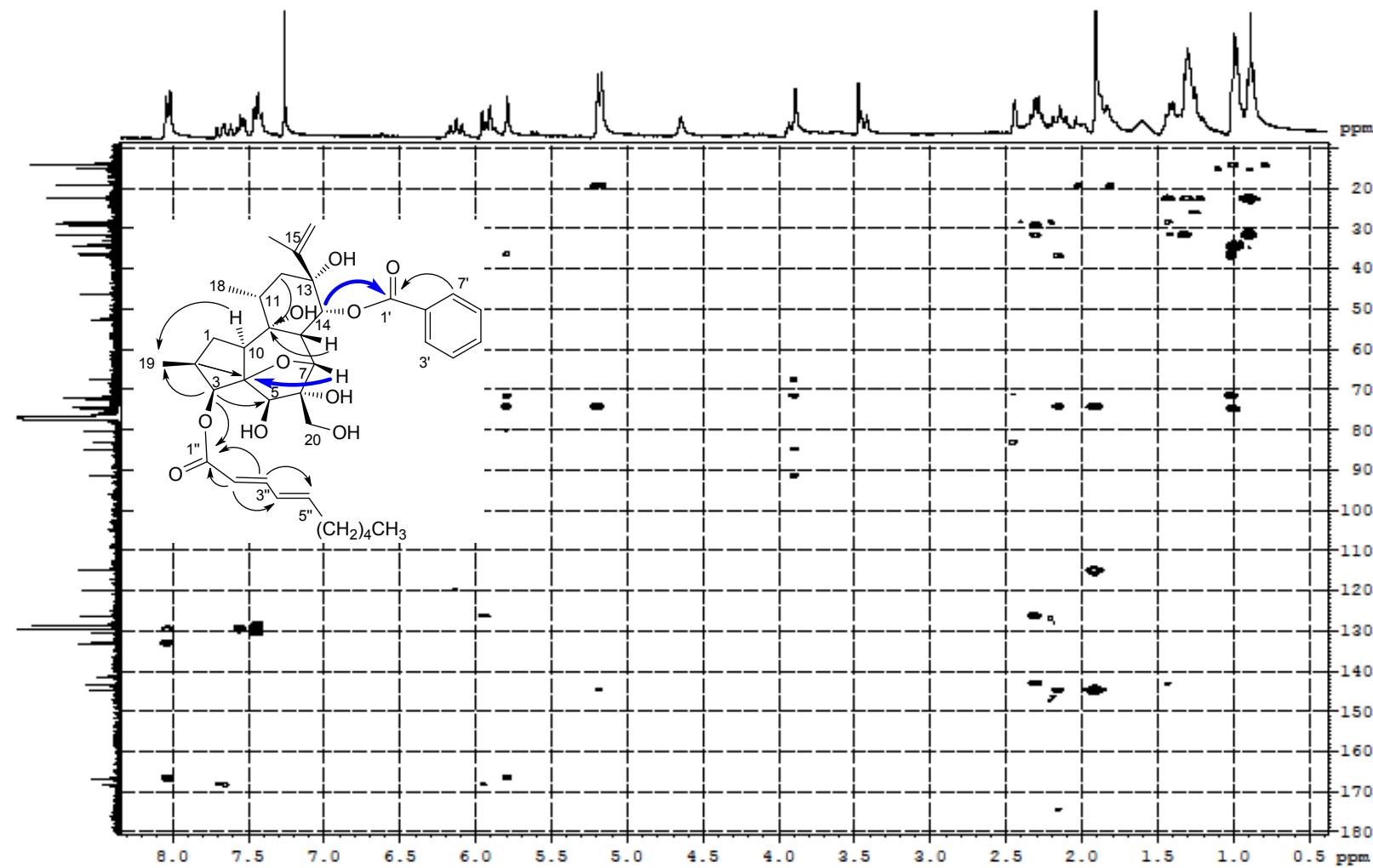
14. ^1H NMR spectrum for compound 3 recorded in CDCl_3 at 125 MHz.



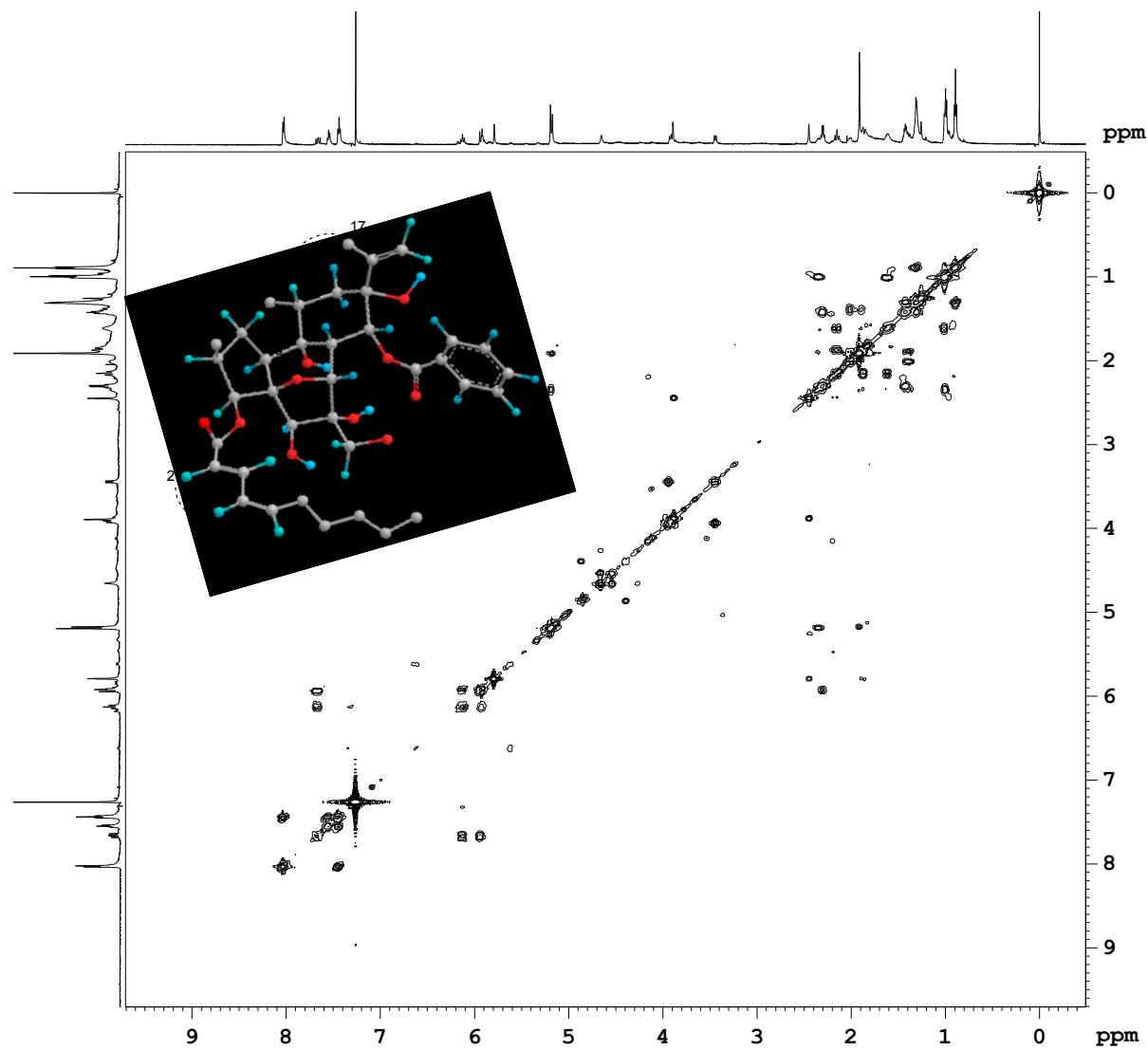
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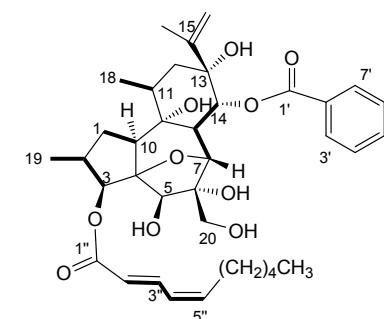
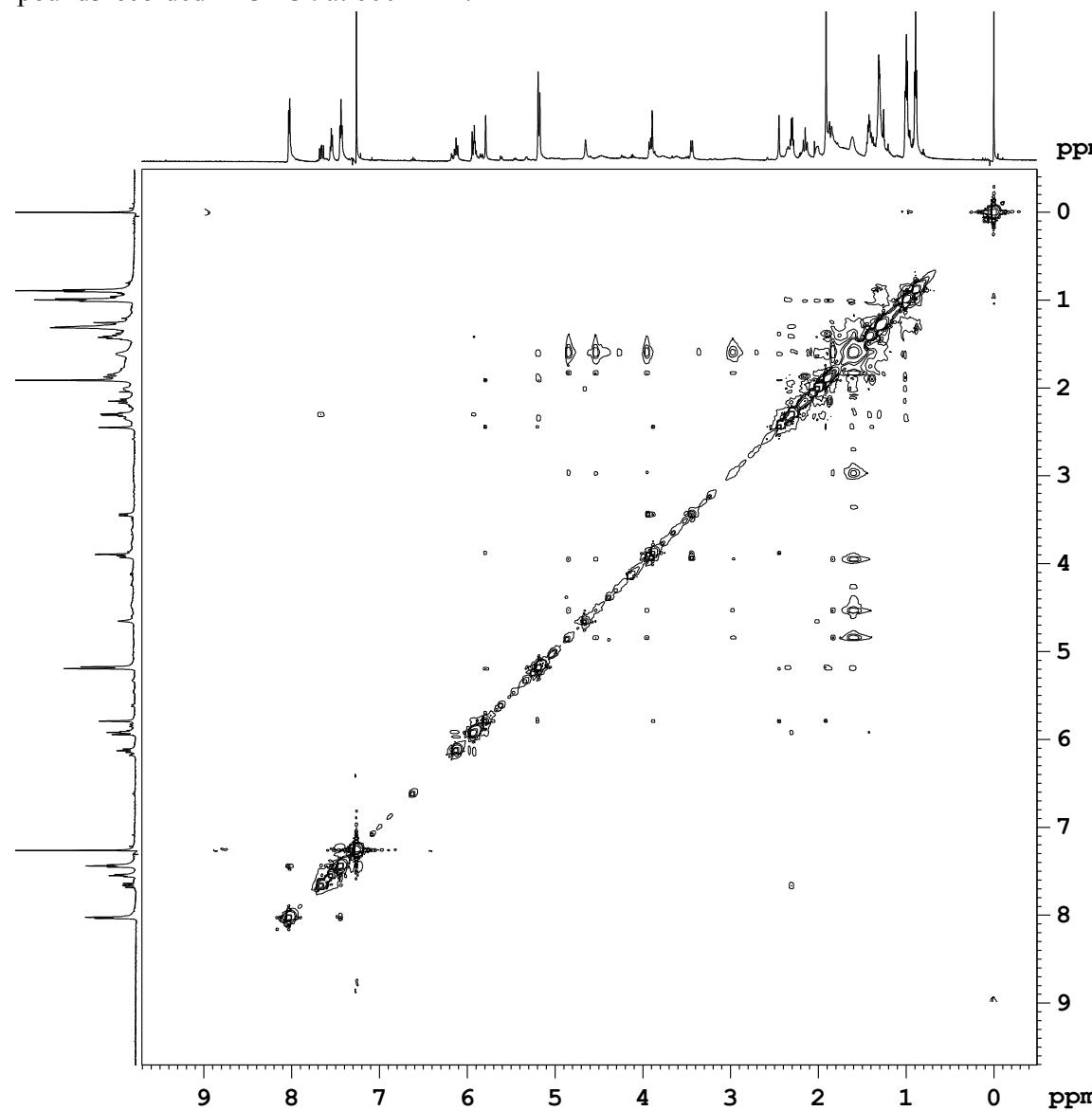
16:HMBC spectrum for compound³recorded in CDCl₃ at 600 MHz.



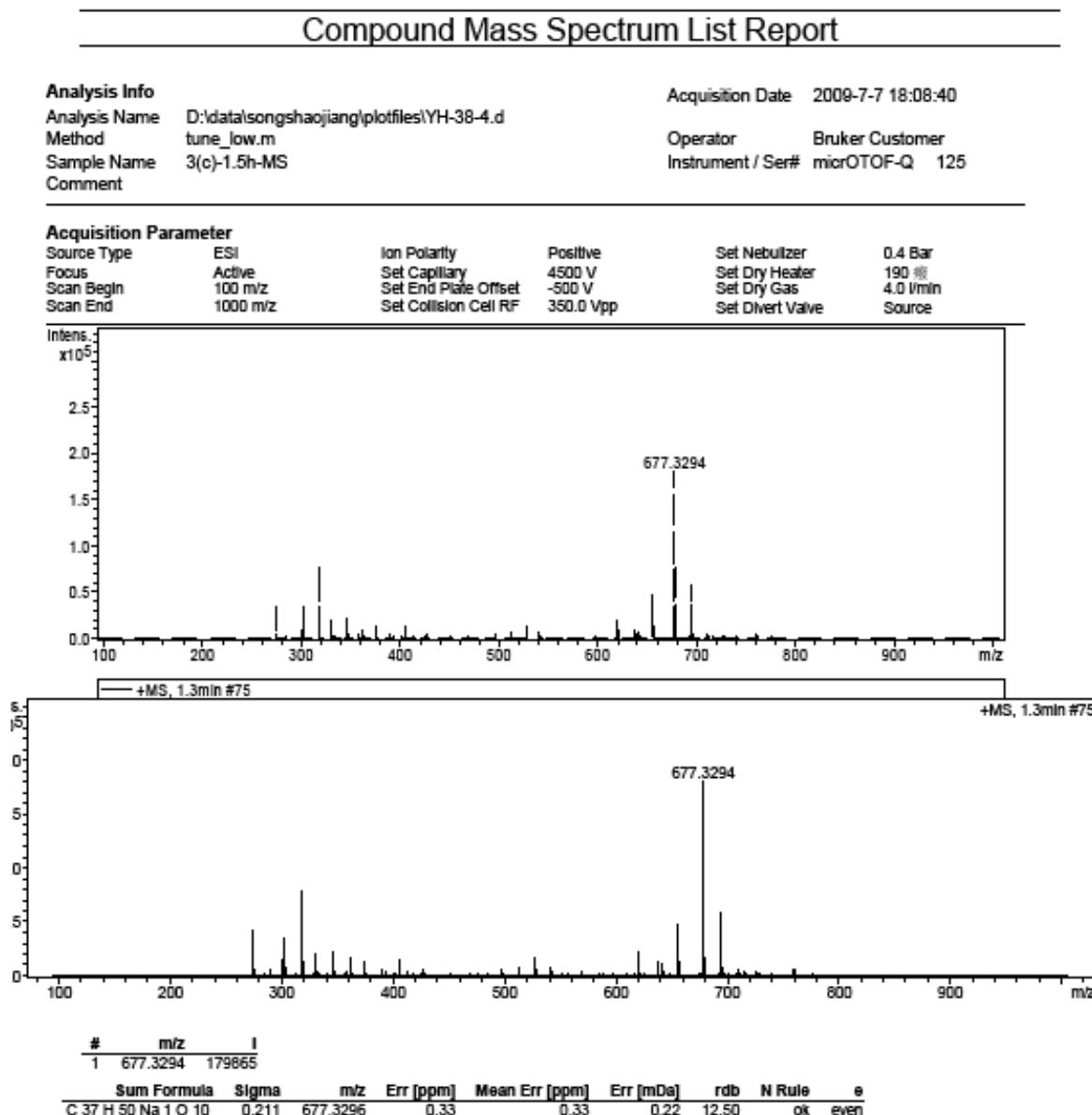
17: NOESY spectrum for compound 3 recorded in CDCl_3 at 600 MHz.



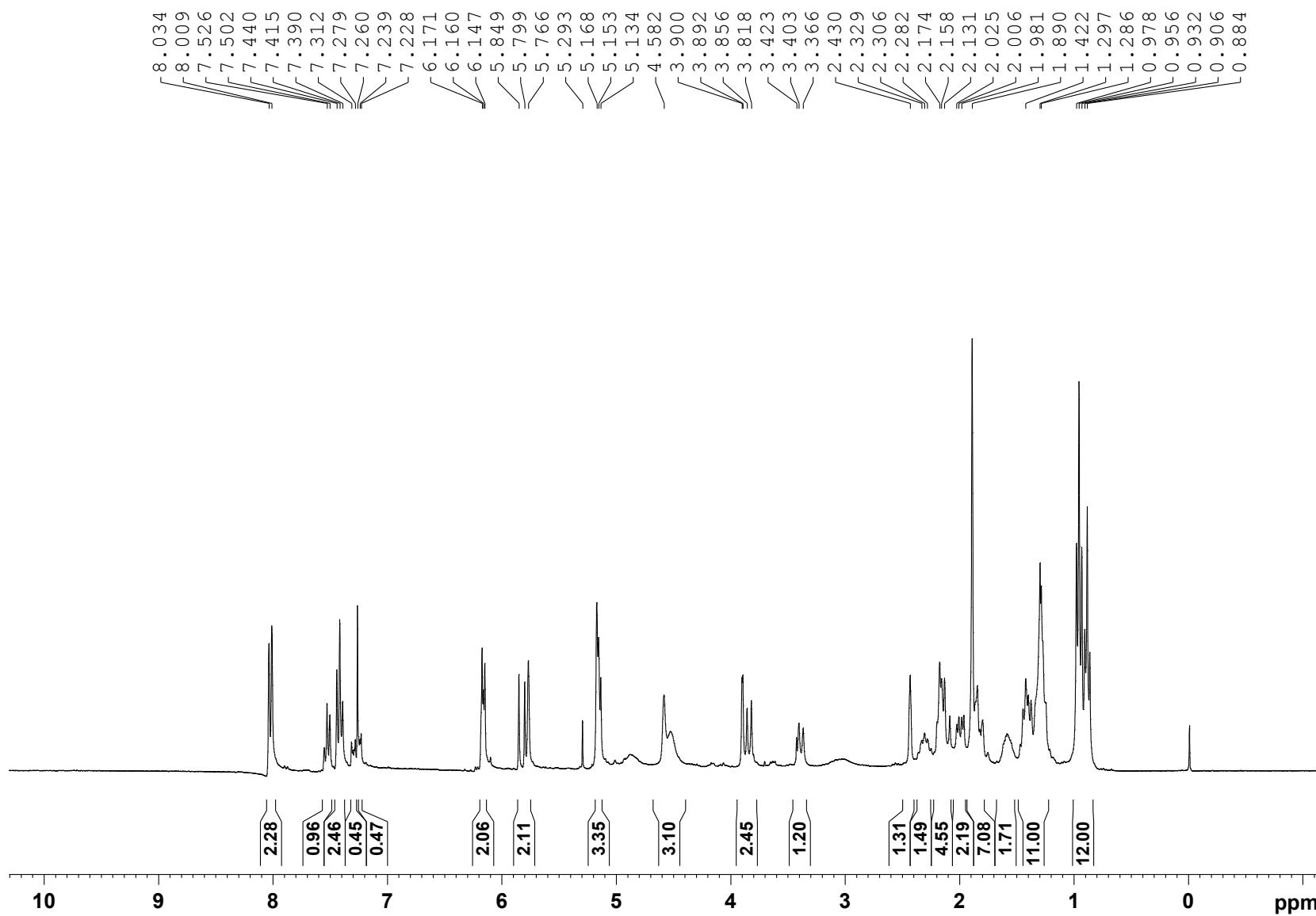
18:H-HCOSY spectrum for compound 3 recorded in CDCl₃ at 600 MHz.



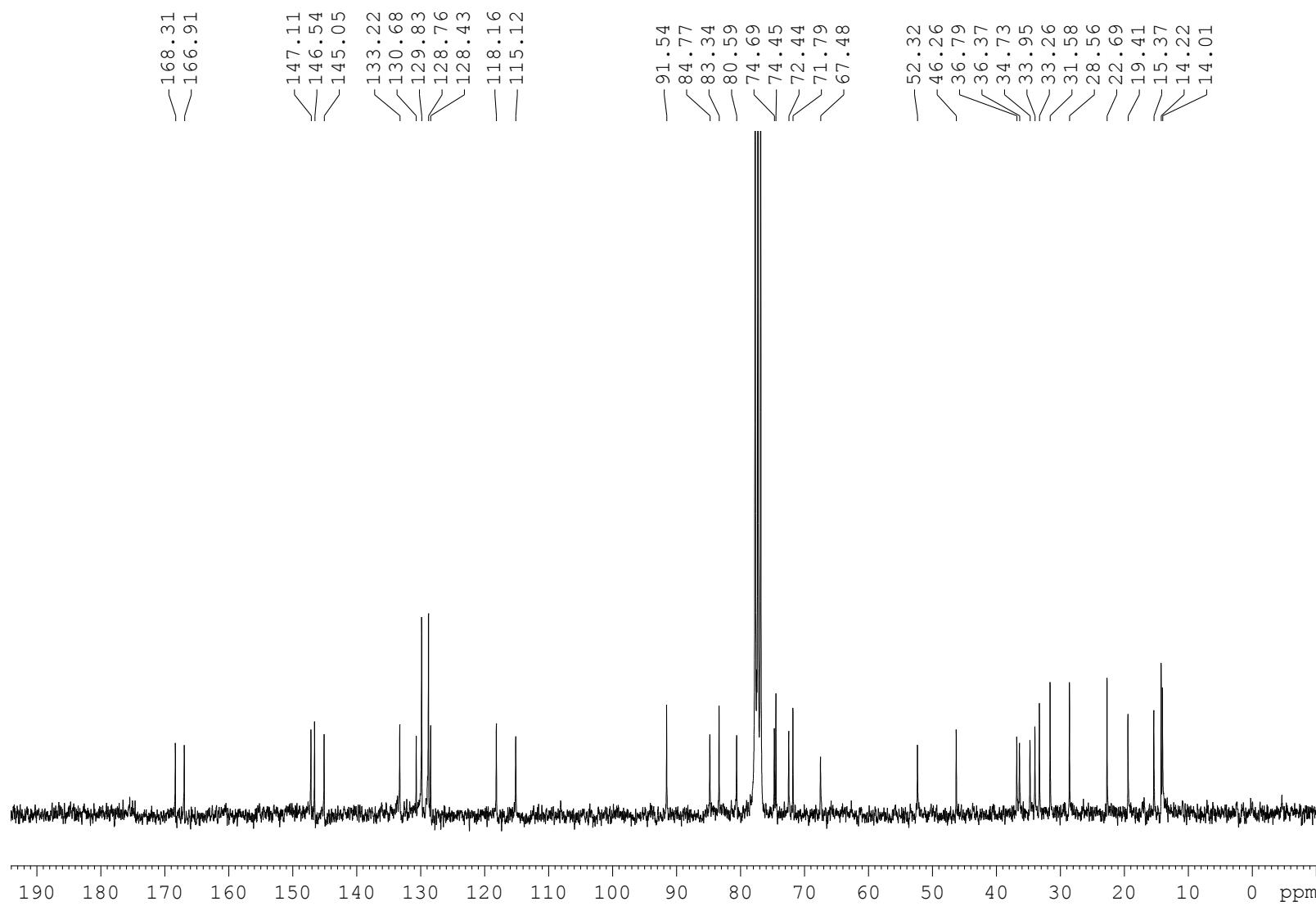
19. HRESIMS spectrum for compound 4 .



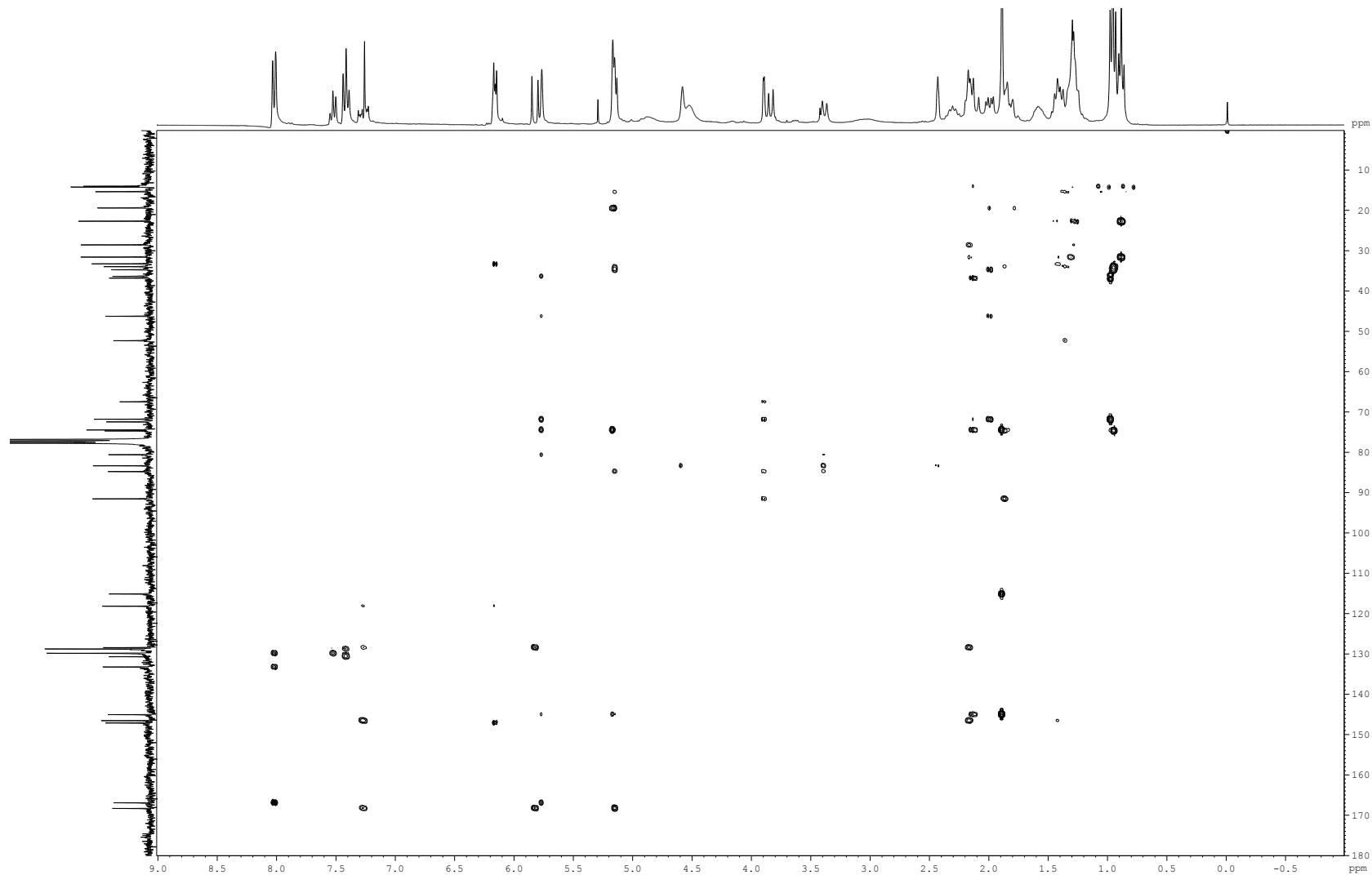
20. ^1H NMR spectrum for compound **4** recorded in CDCl_3 at 600 MHz.



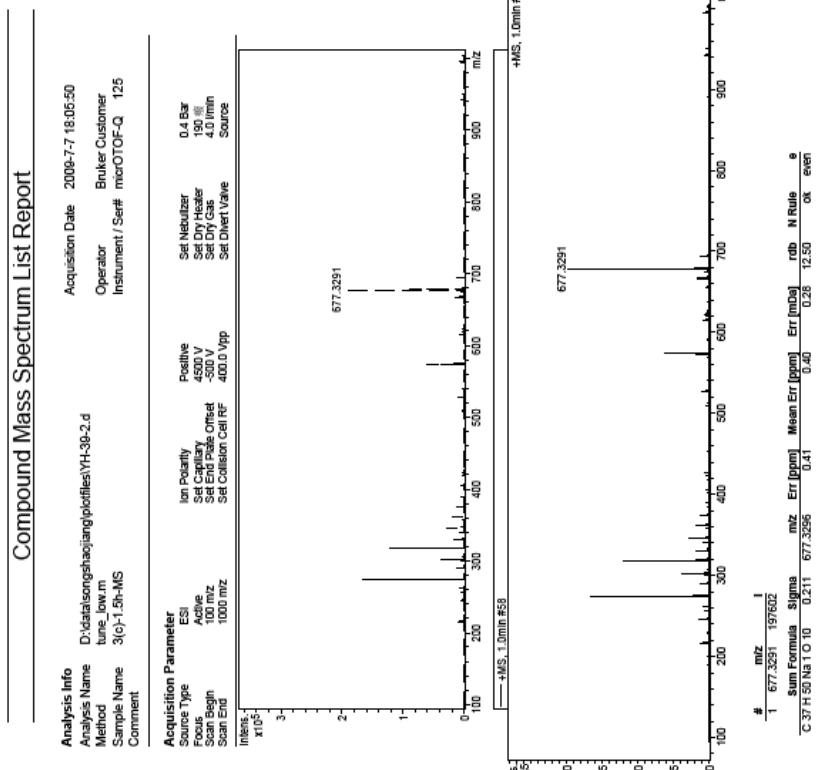
21. ^{13}C NMR spectrum for compound 4 recorded in CDCl_3 at 125 MHz.



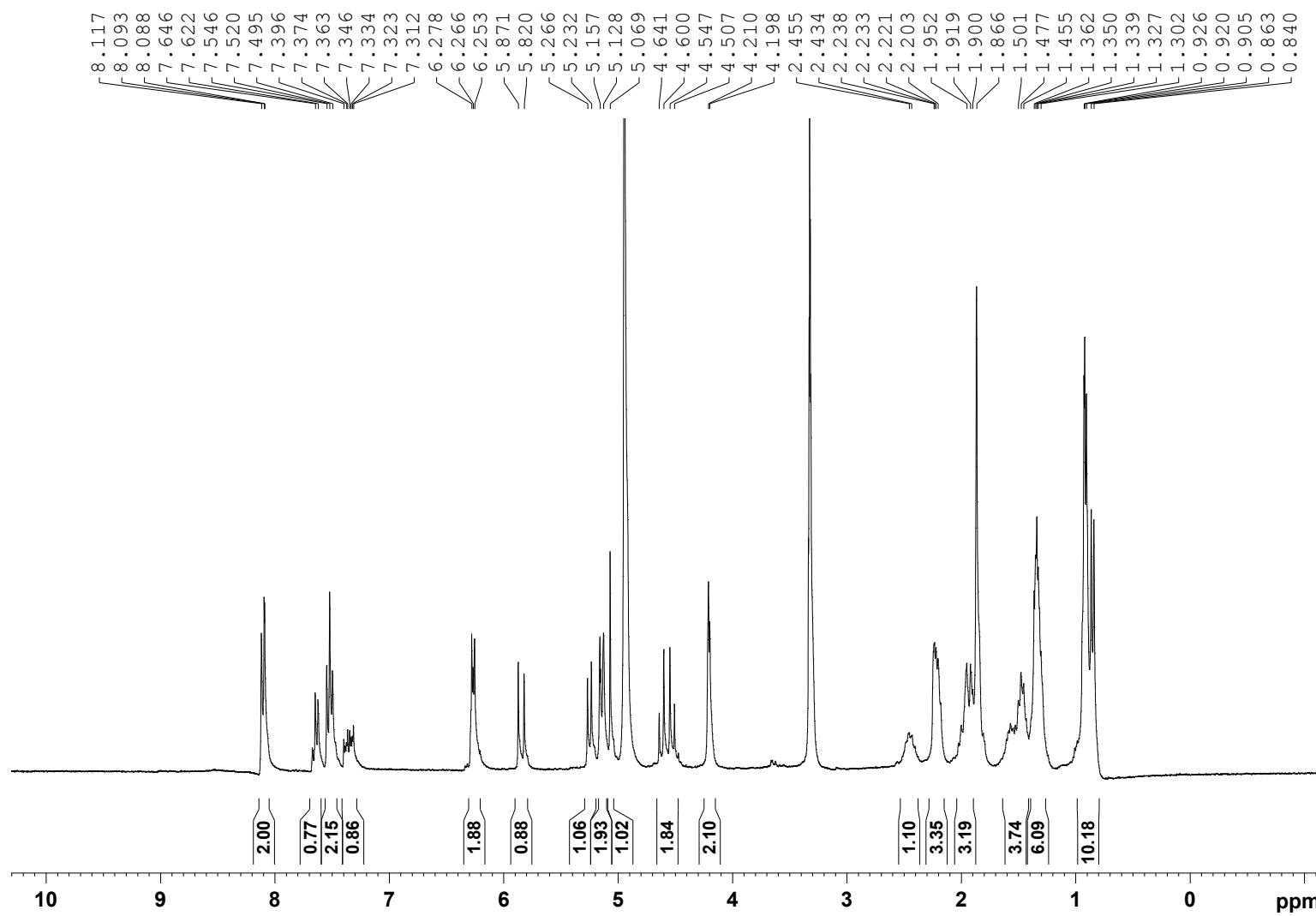
22. HMBC spectrum for compound 4 recorded in CDCl₃ at 600 MHz.



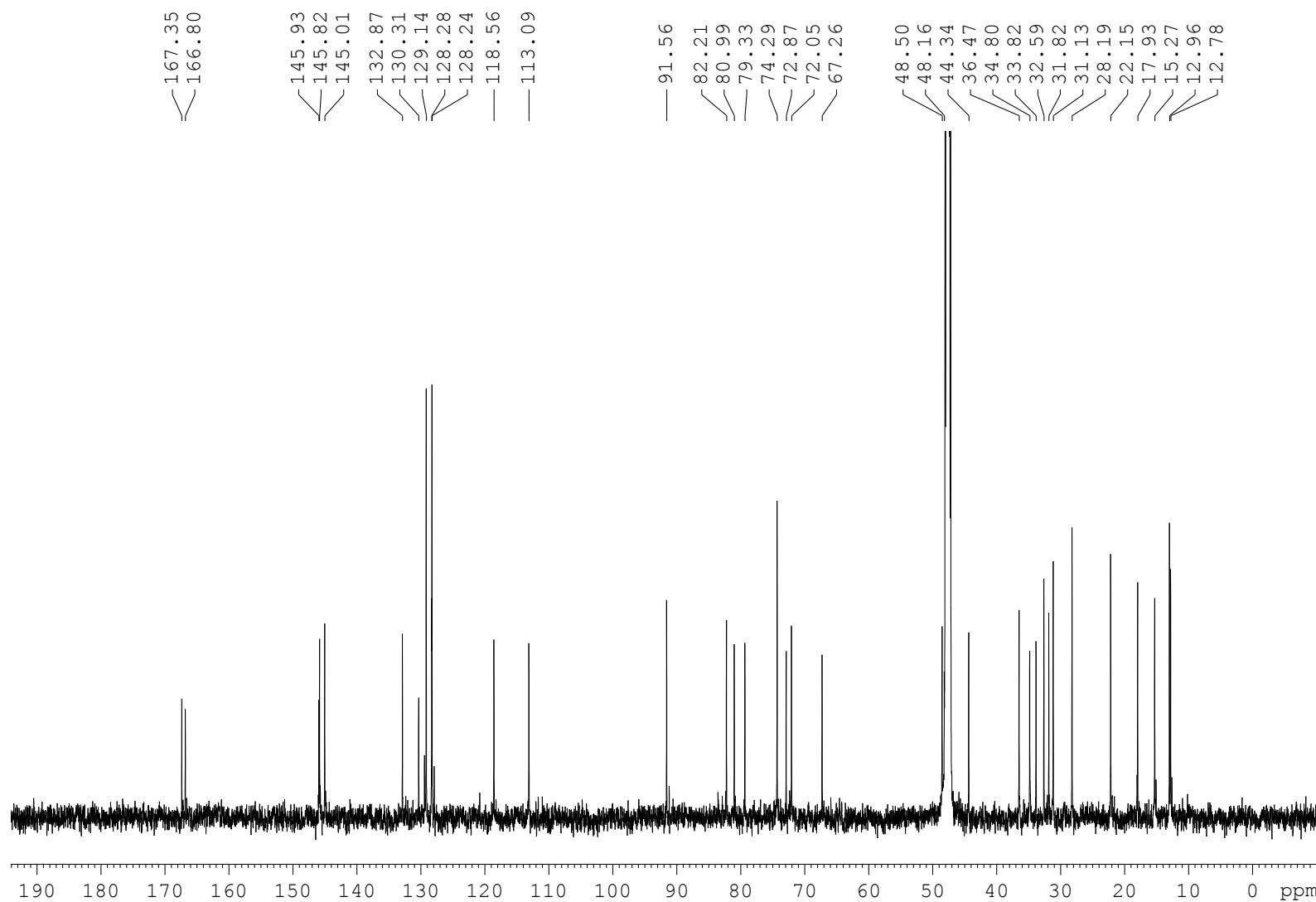
23. HRESIMS spectrum for compound 5 .



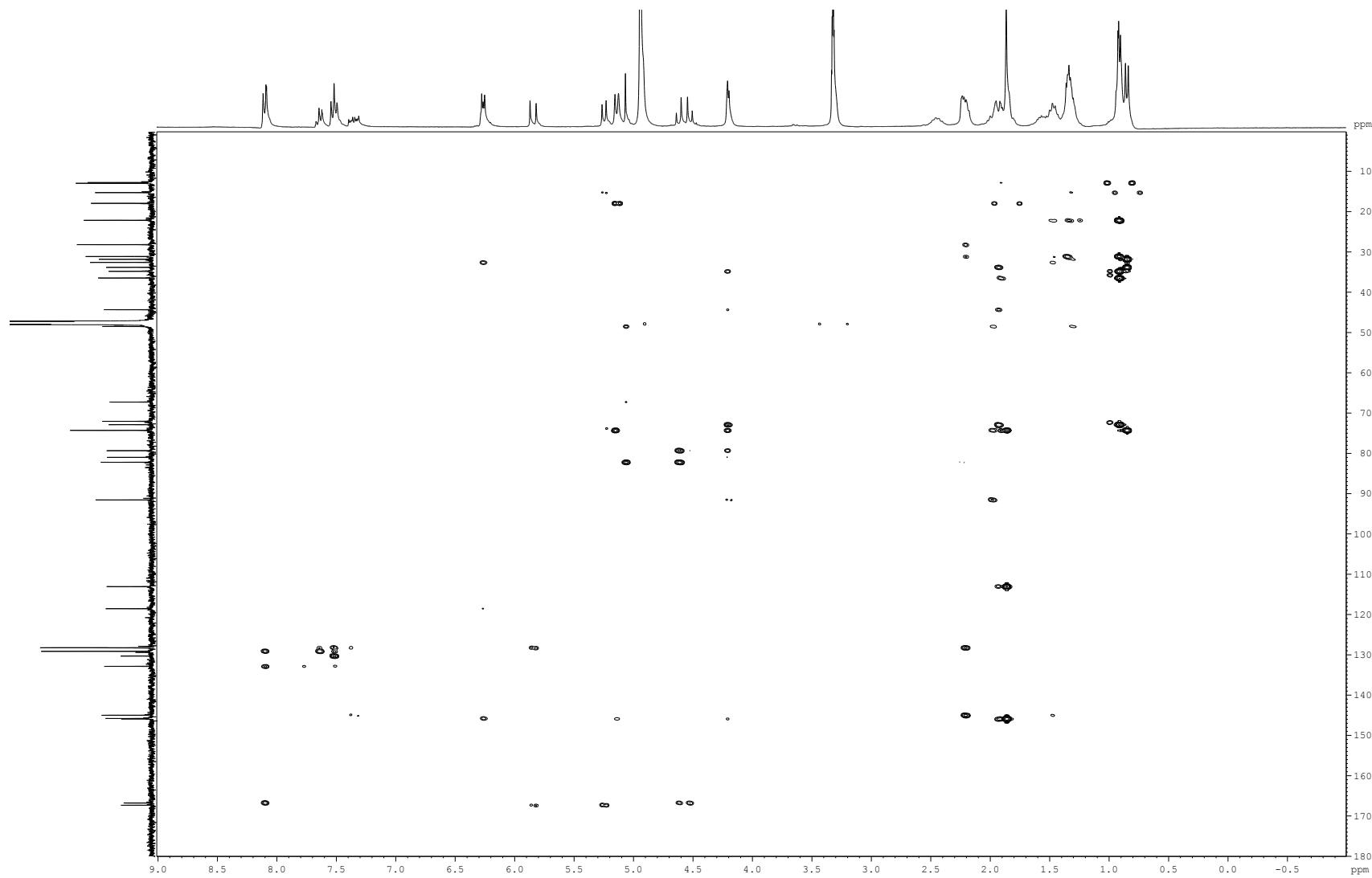
24. ^1H NMR spectrum for compound 5 recorded in CDCl_3 at 600 MHz.



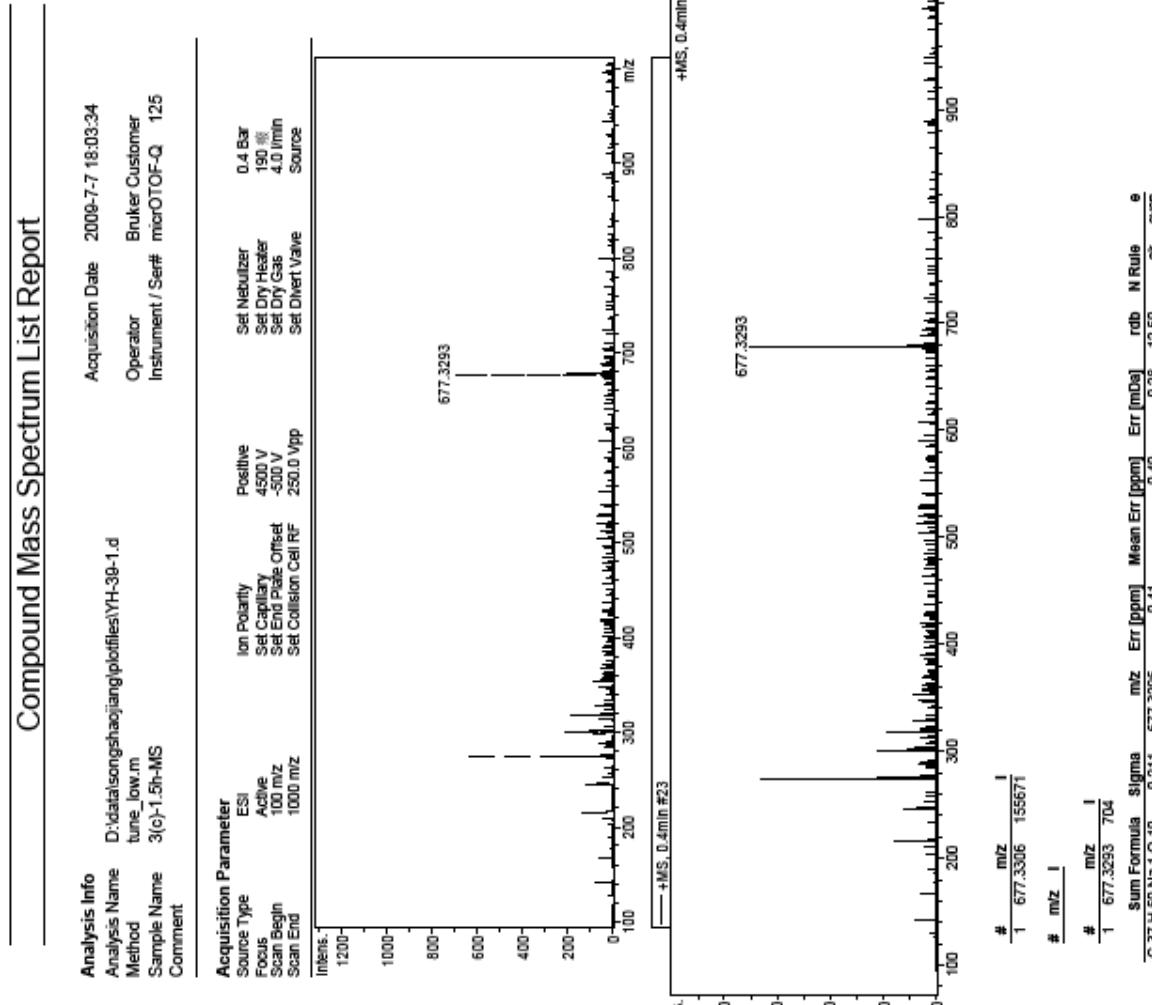
25. ^{13}C NMR spectrum for compound 5 recorded in CDCl_3 at 125 MHz.



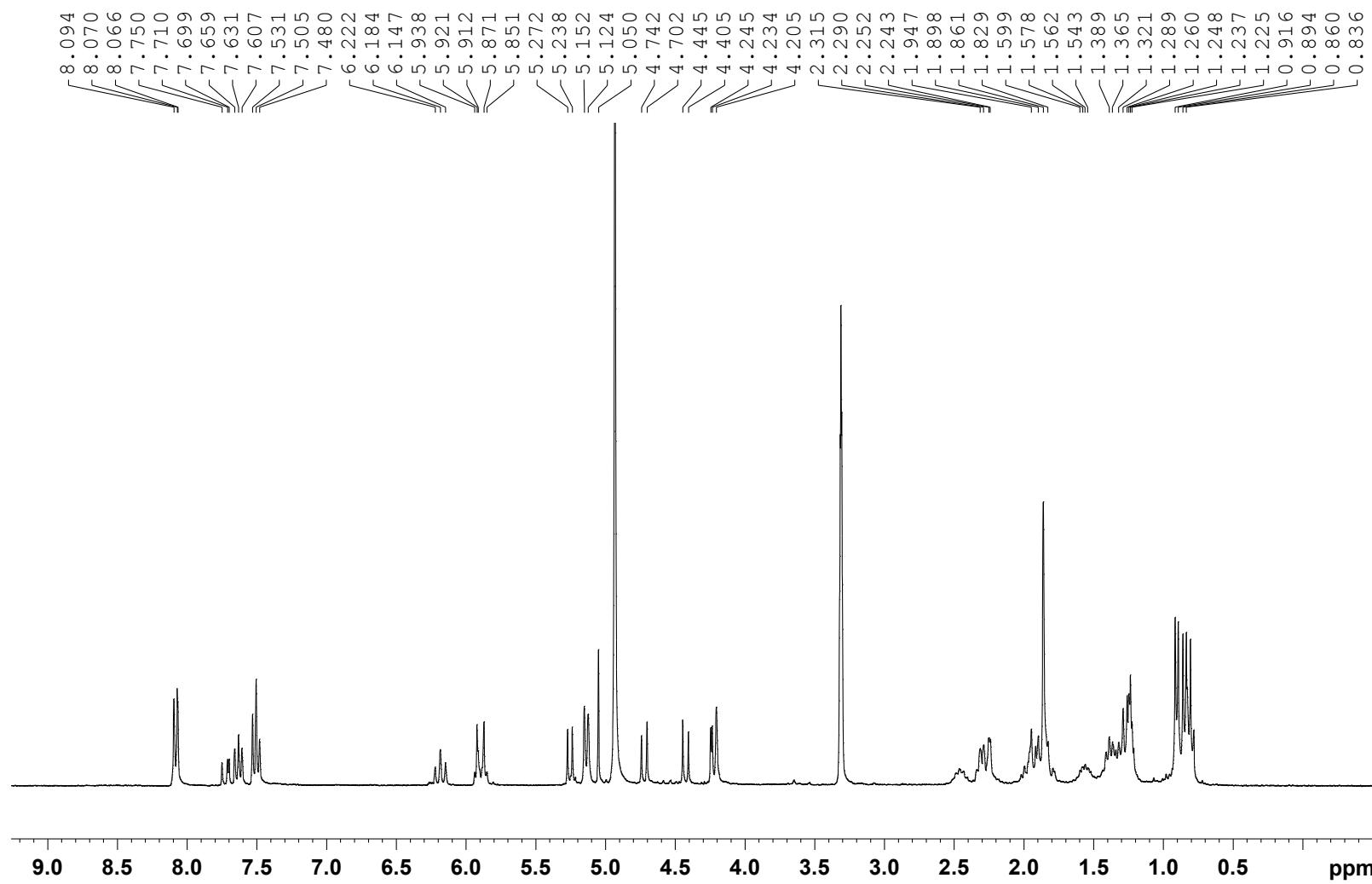
26. HMBC spectrum for compound 5 recorded in CDCl_3 at 600 MHz.



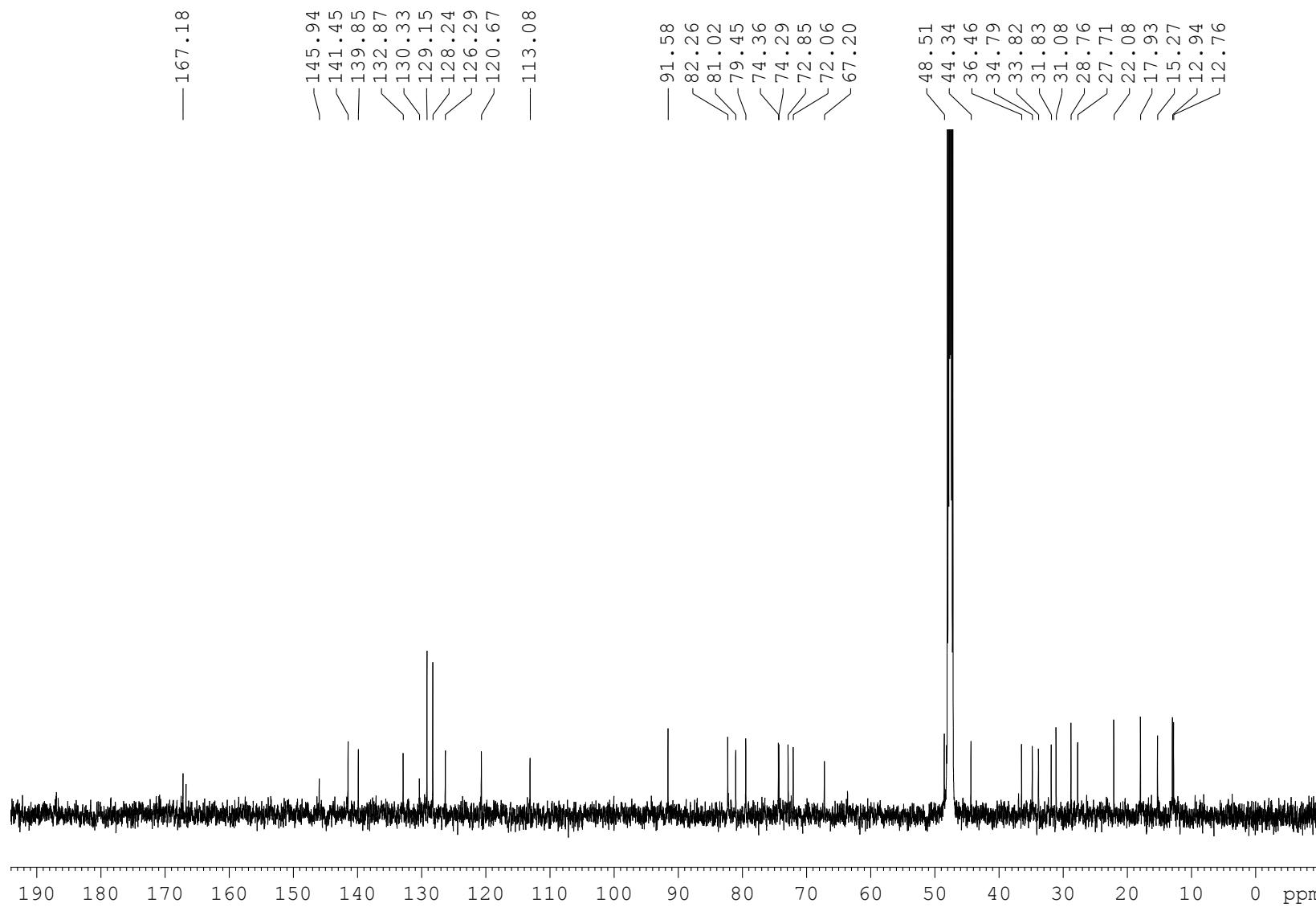
27. HRESIMS spectrum for compound6.



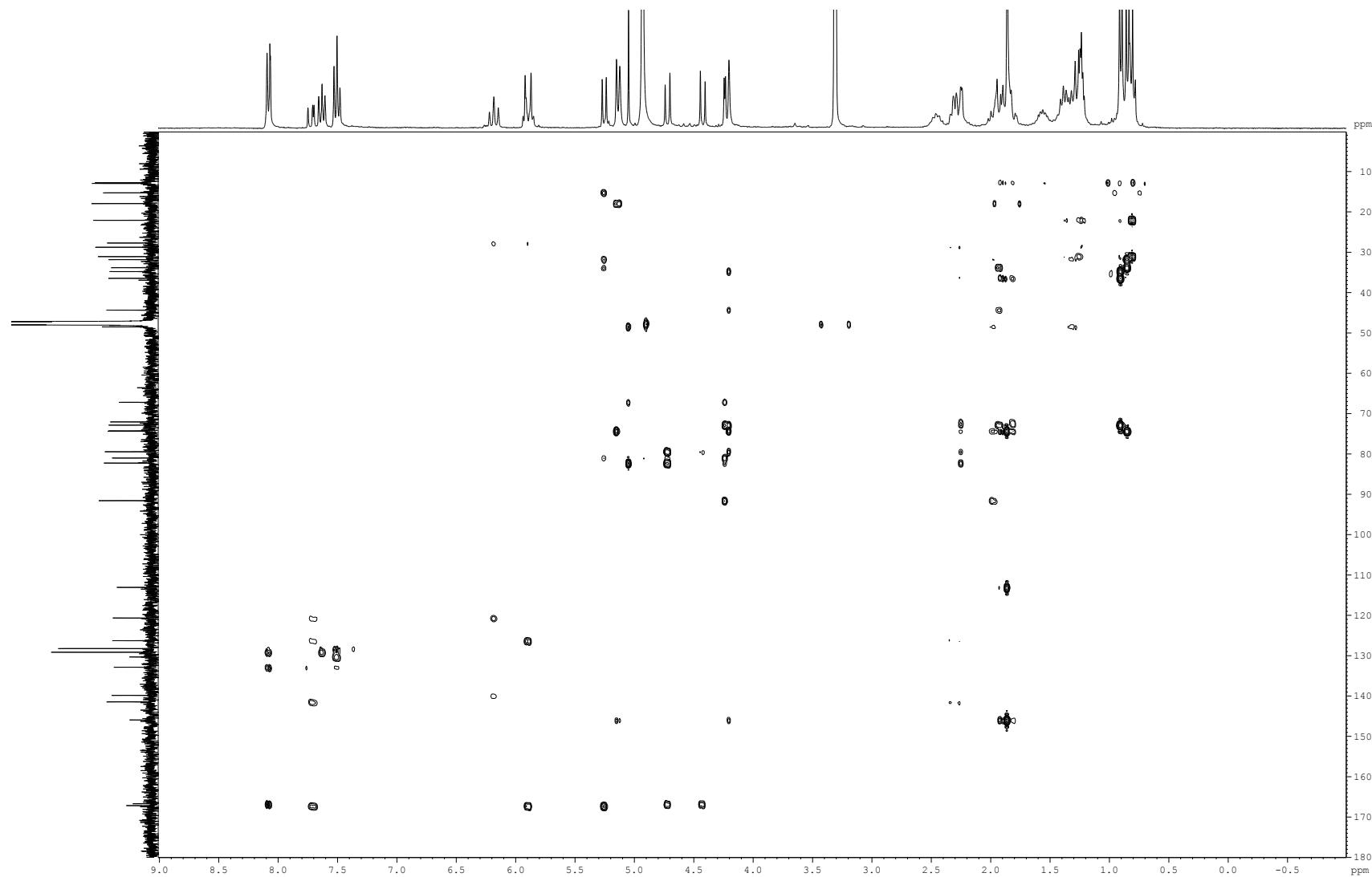
28. ^1H NMR spectrum for compound 6 recorded in CDCl_3 at 600 MHz.



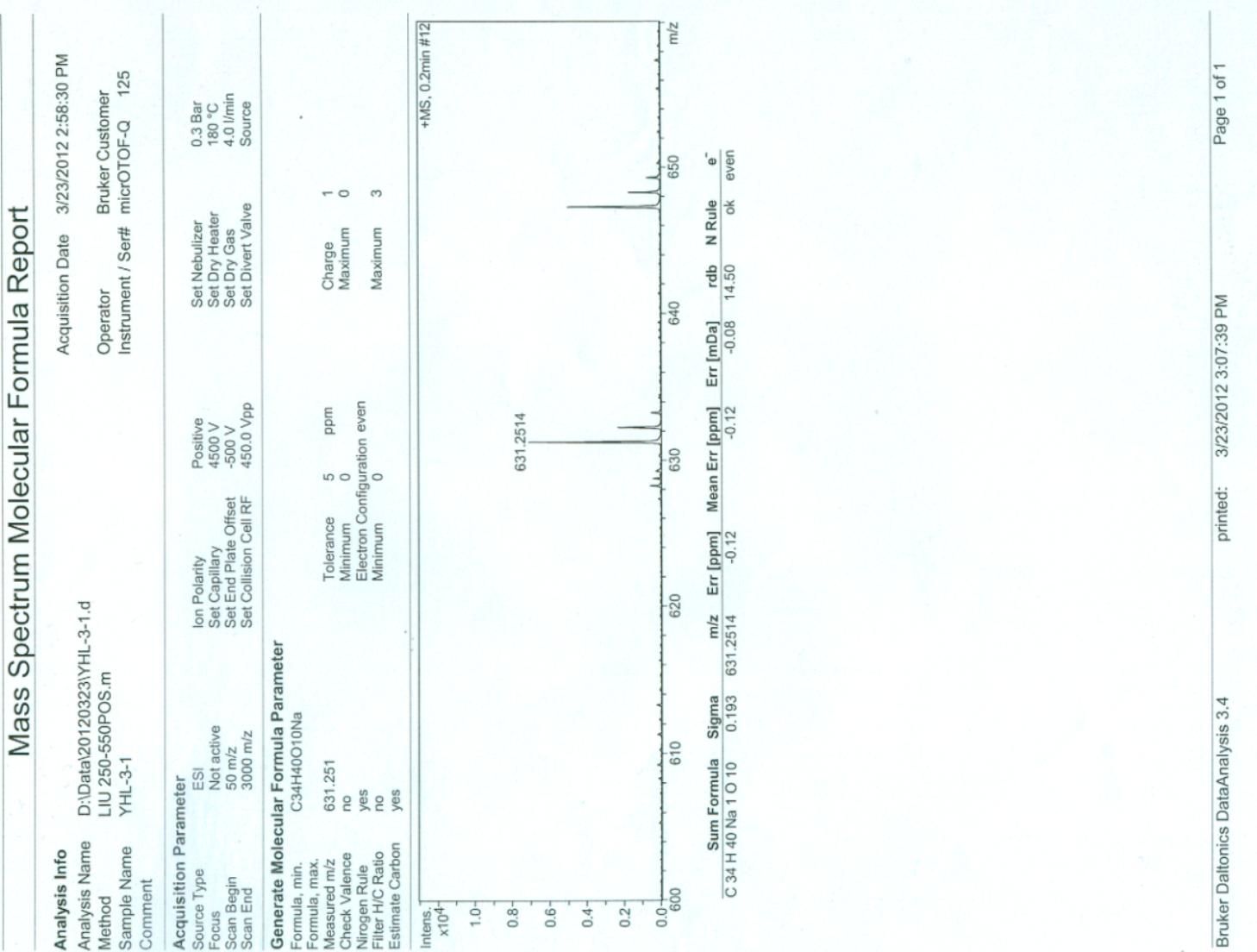
29. ^{13}C NMR spectrum for compound **6** recorded in CDCl_3 at 125 MHz.



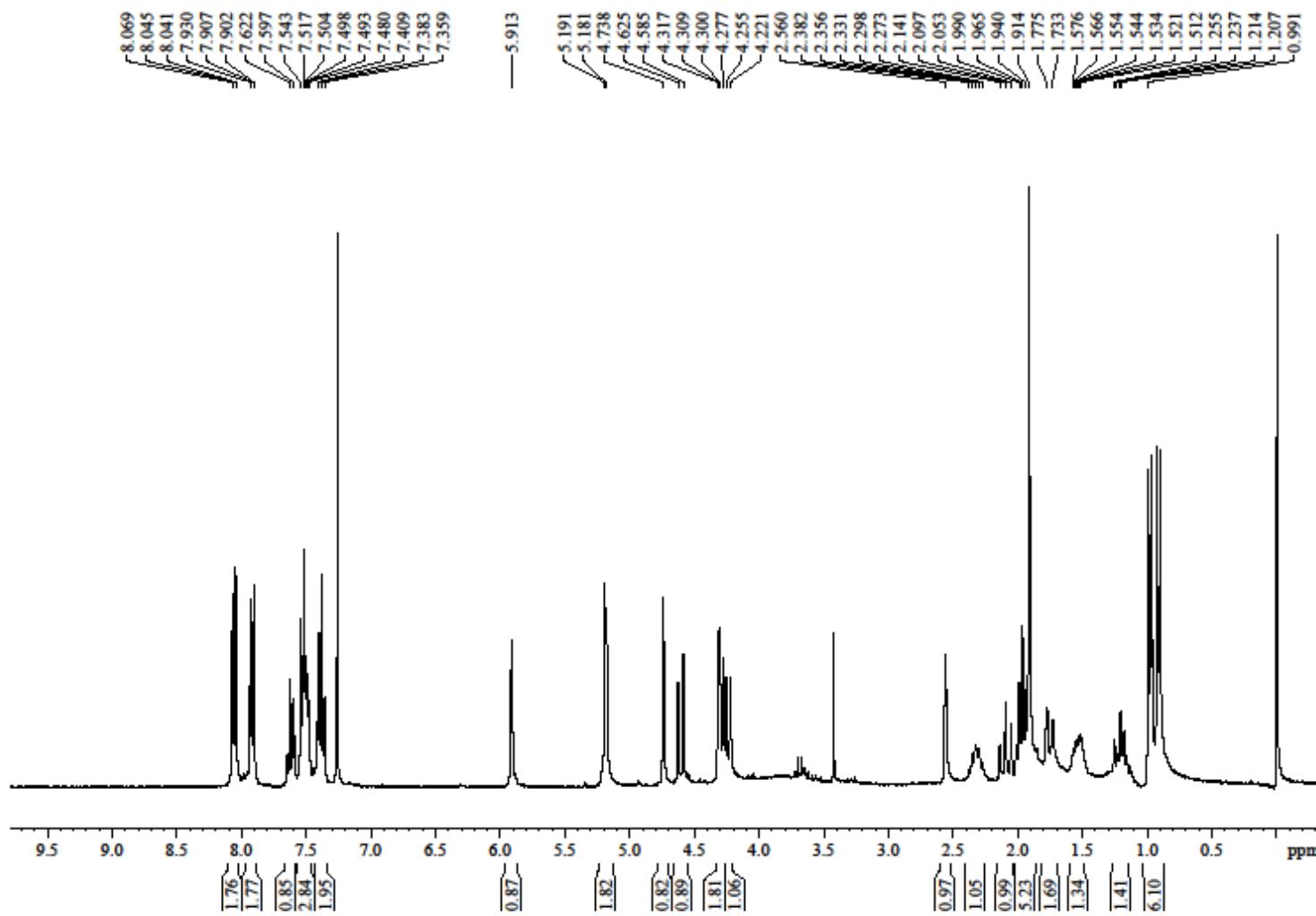
30. HMBC spectrum for compound 6 recorded in CDCl_3 at 600 MHz.



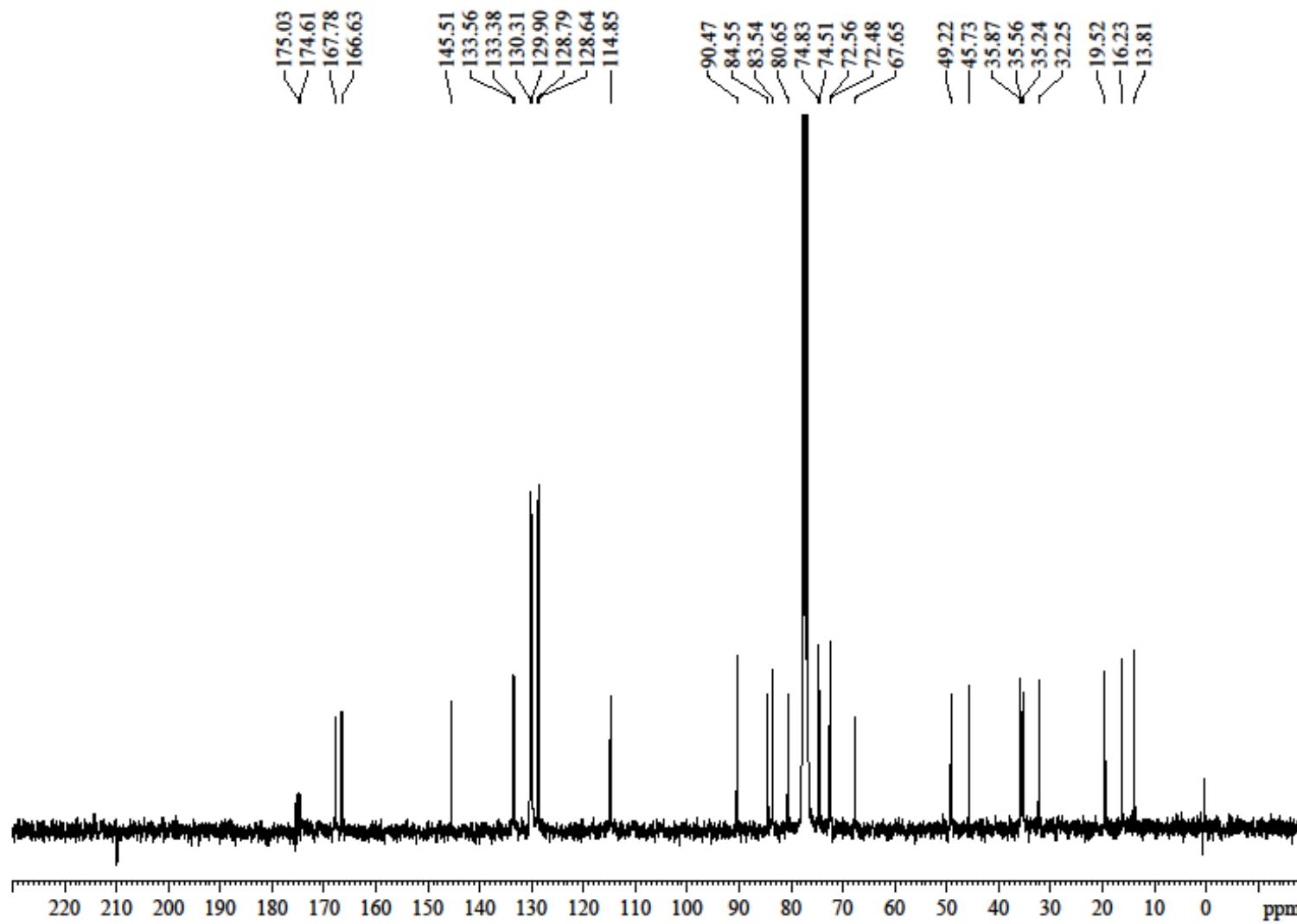
31. HRESIMS spectrum for compound 7.



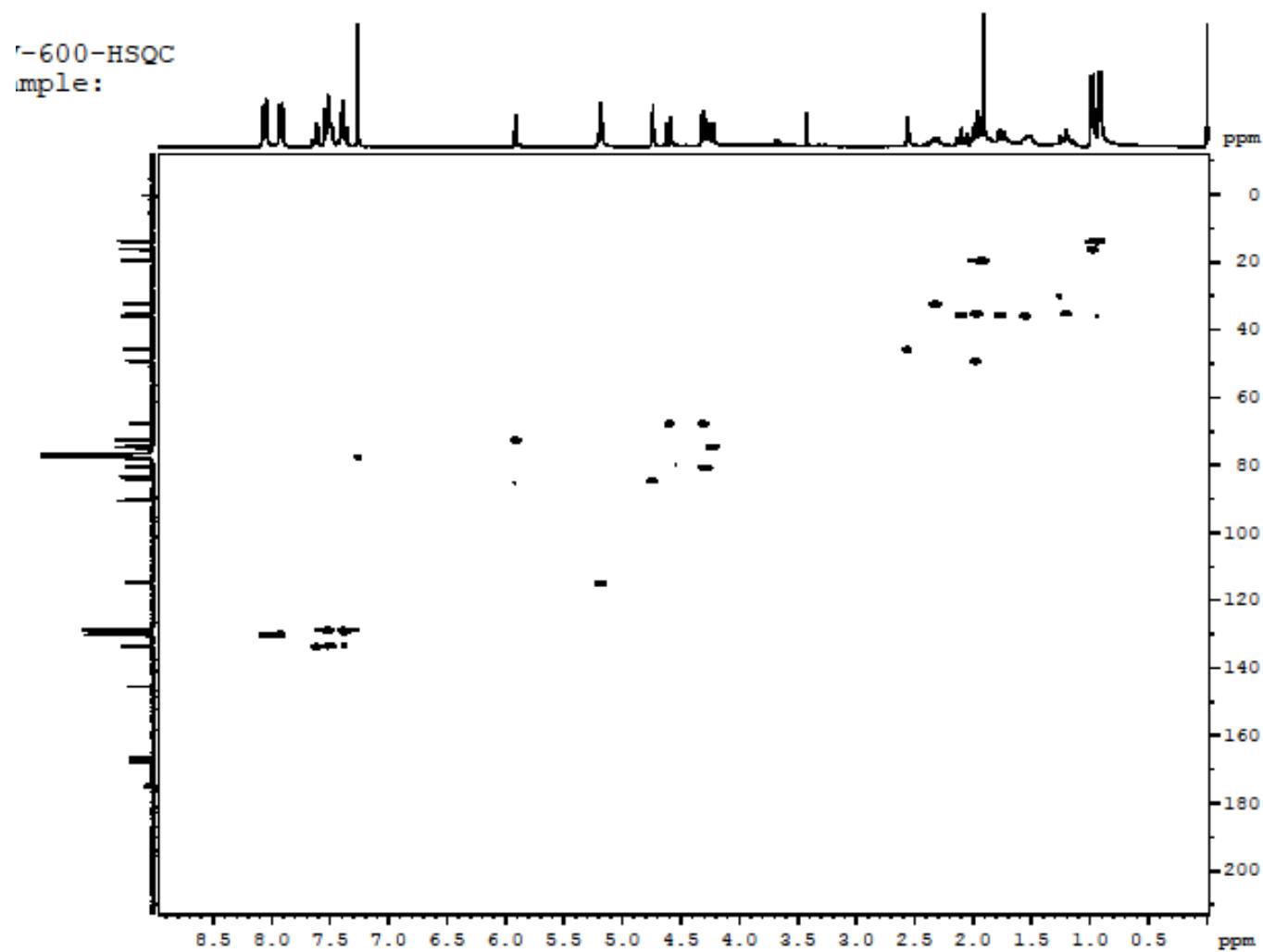
32. ^1H NMR spectrum for compound **8** recorded in CDCl_3 at 600 MHz.



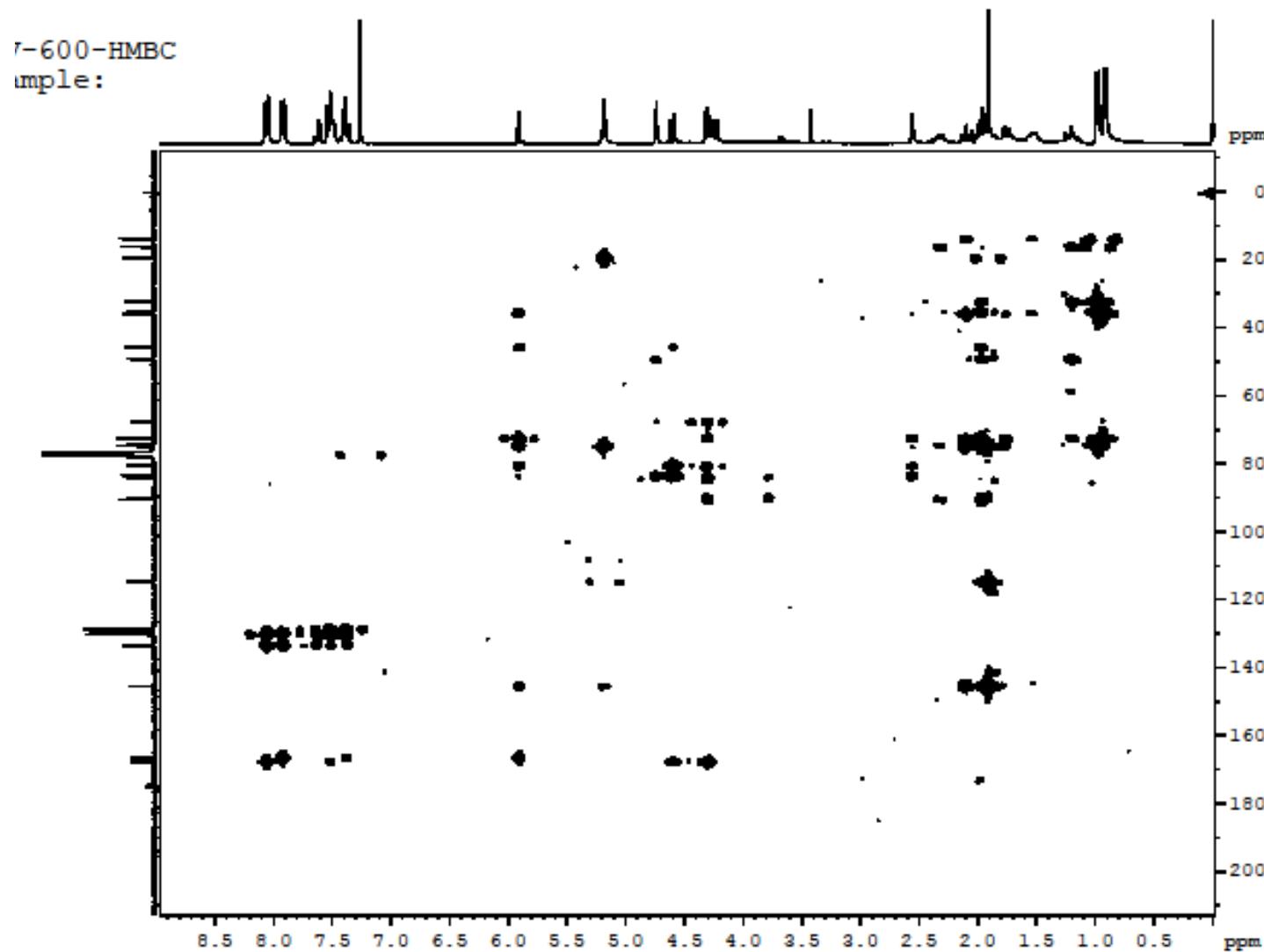
33. ^{13}C NMR spectrum for compound **8** recorded in CDCl_3 at 125 MHz.



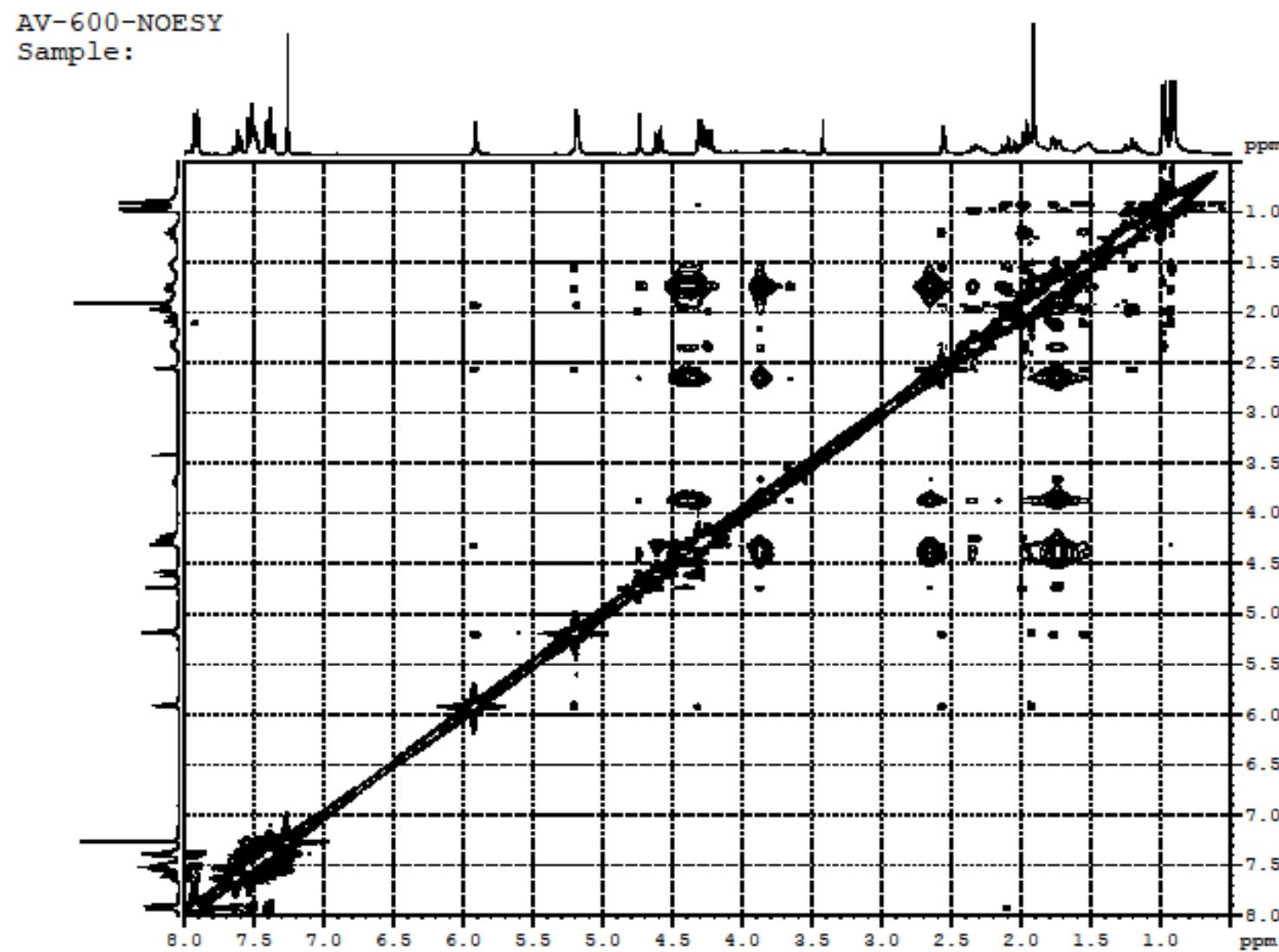
34. HSQC spectrum for compound **8** recorded in CDCl_3 at 600 MHz.



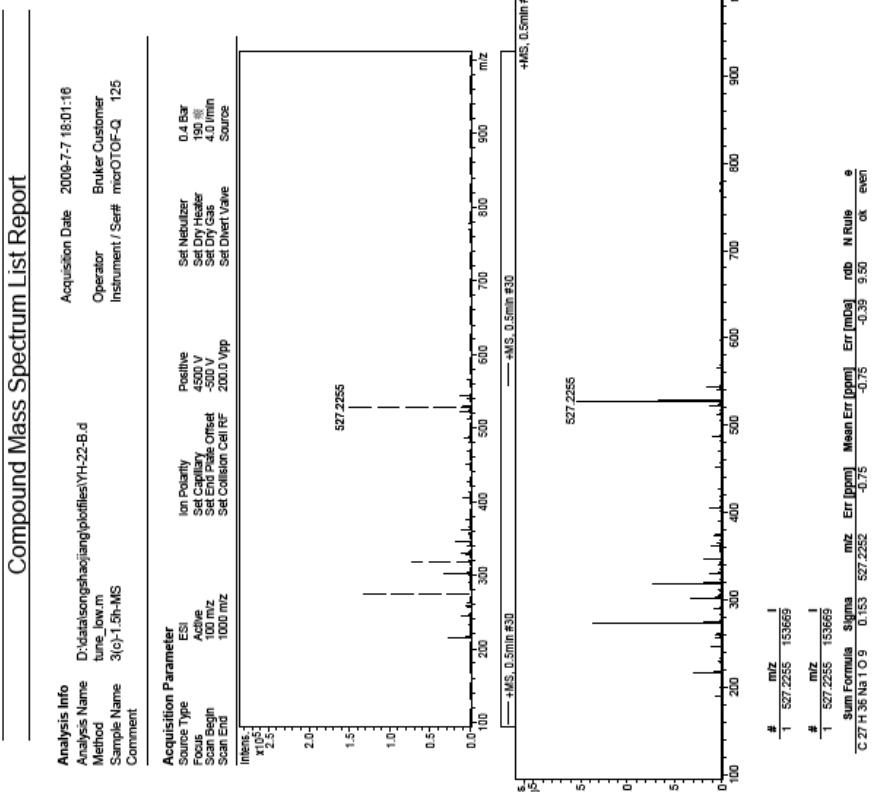
35.HMBCspectrum for compound **8** recorded in CDCl_3 at 600 MHz.



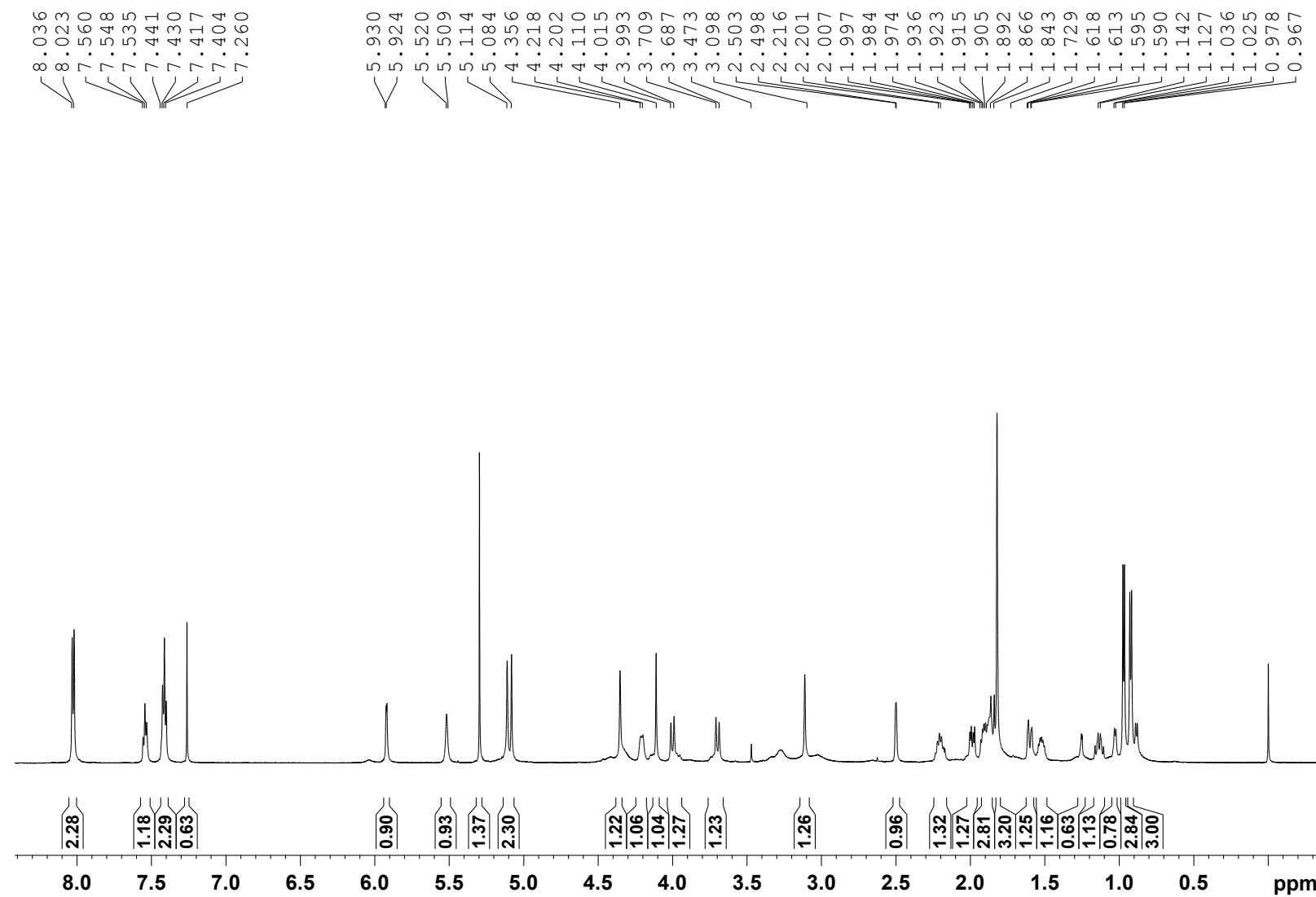
36.NOESY spectrum for compound **8** recorded in CDCl_3 at 600 MHz.



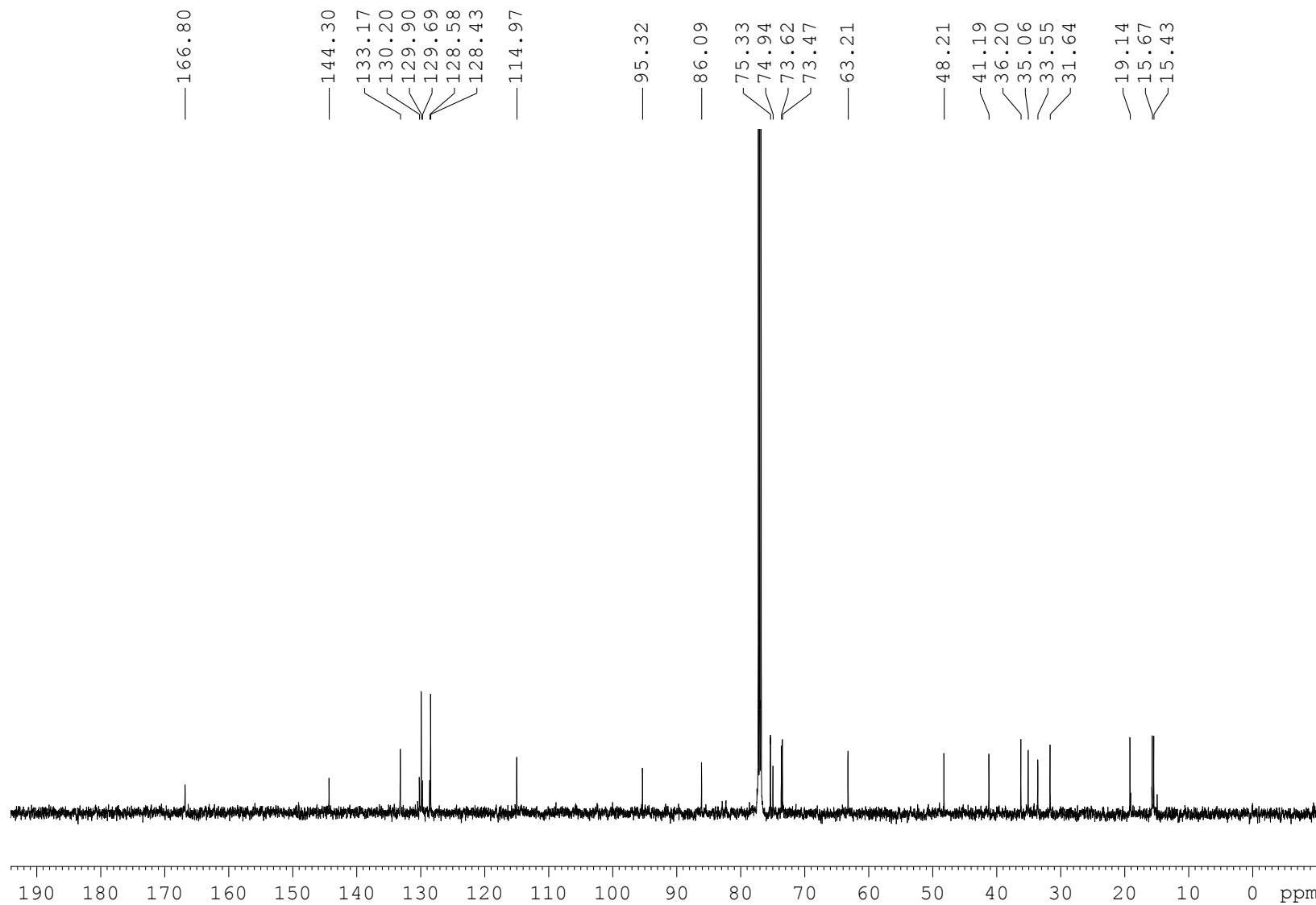
37. HRESIMS spectrum for compound 8.



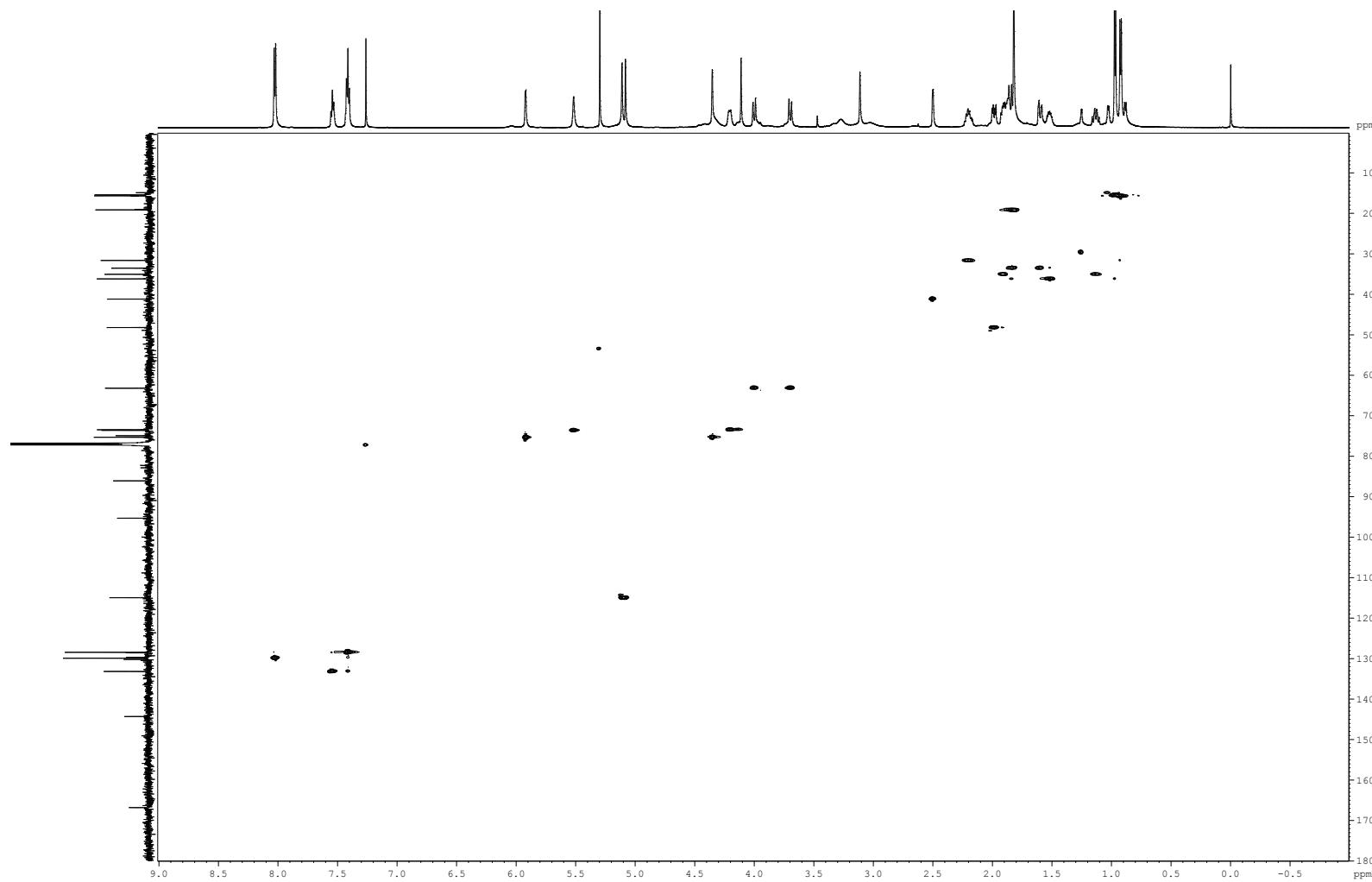
38. ^1H NMR spectrum for compound **8** recorded in CDCl_3 at 600 MHz.



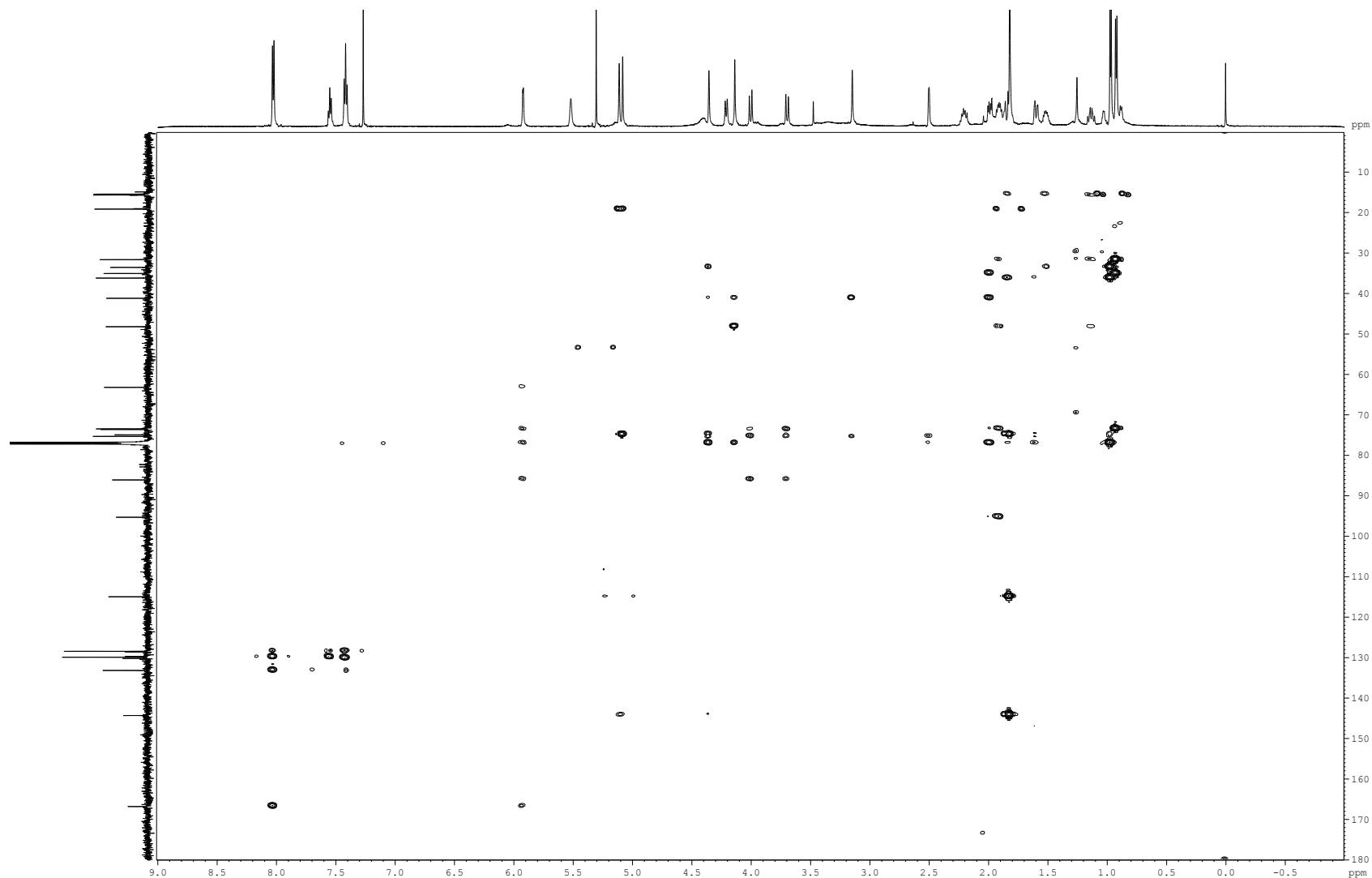
39. ^{13}C NMR spectrum for compound **8** recorded in CDCl_3 at 125 MHz.



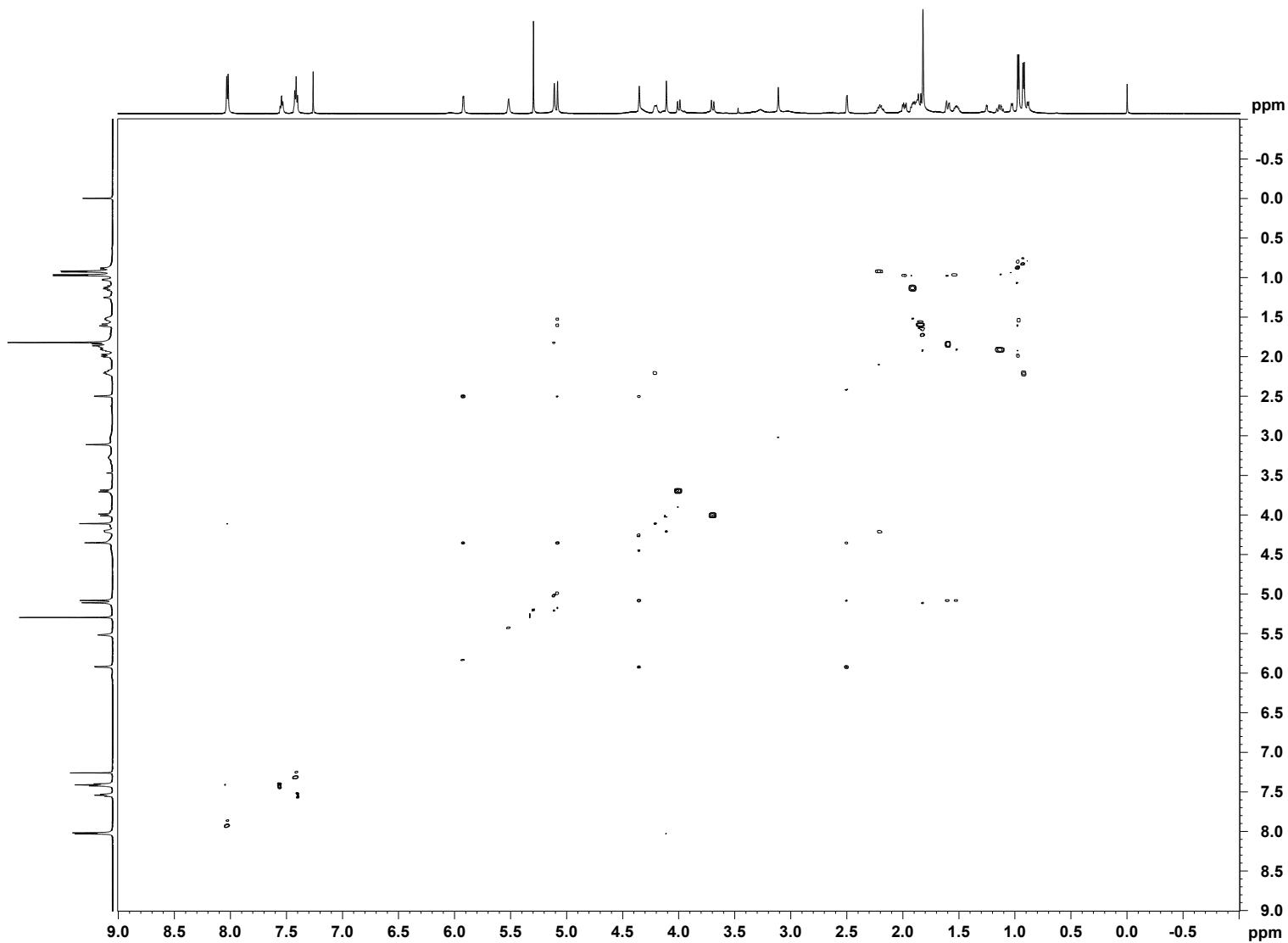
40. HSQC spectrum for compound **8** recorded in CDCl_3 at 600 MHz.



41.HMBCspectrum for compound **8** recorded in CDCl_3 at 600 MHz.



42.NOESY spectrum for compound **8** recorded in CDCl_3 at 600 MHz.



43. HRESIMS spectrum for compound 9.

Mass Spectrum Molecular Formula Report

Analysis Info

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Comment

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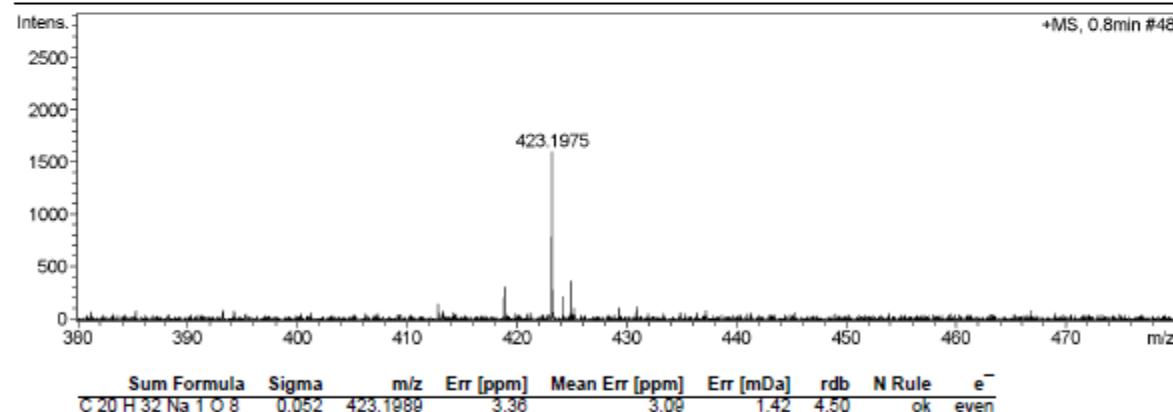
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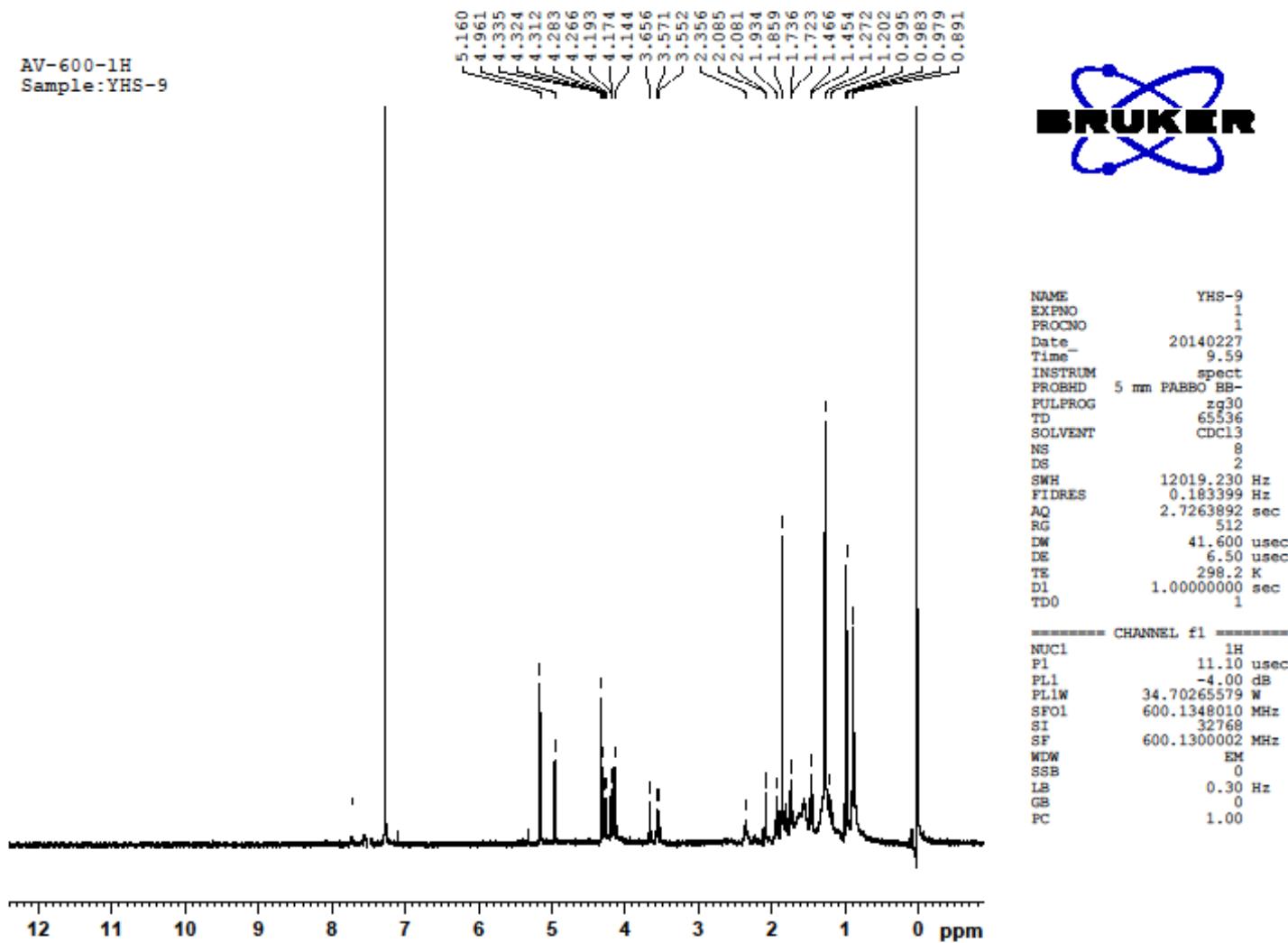
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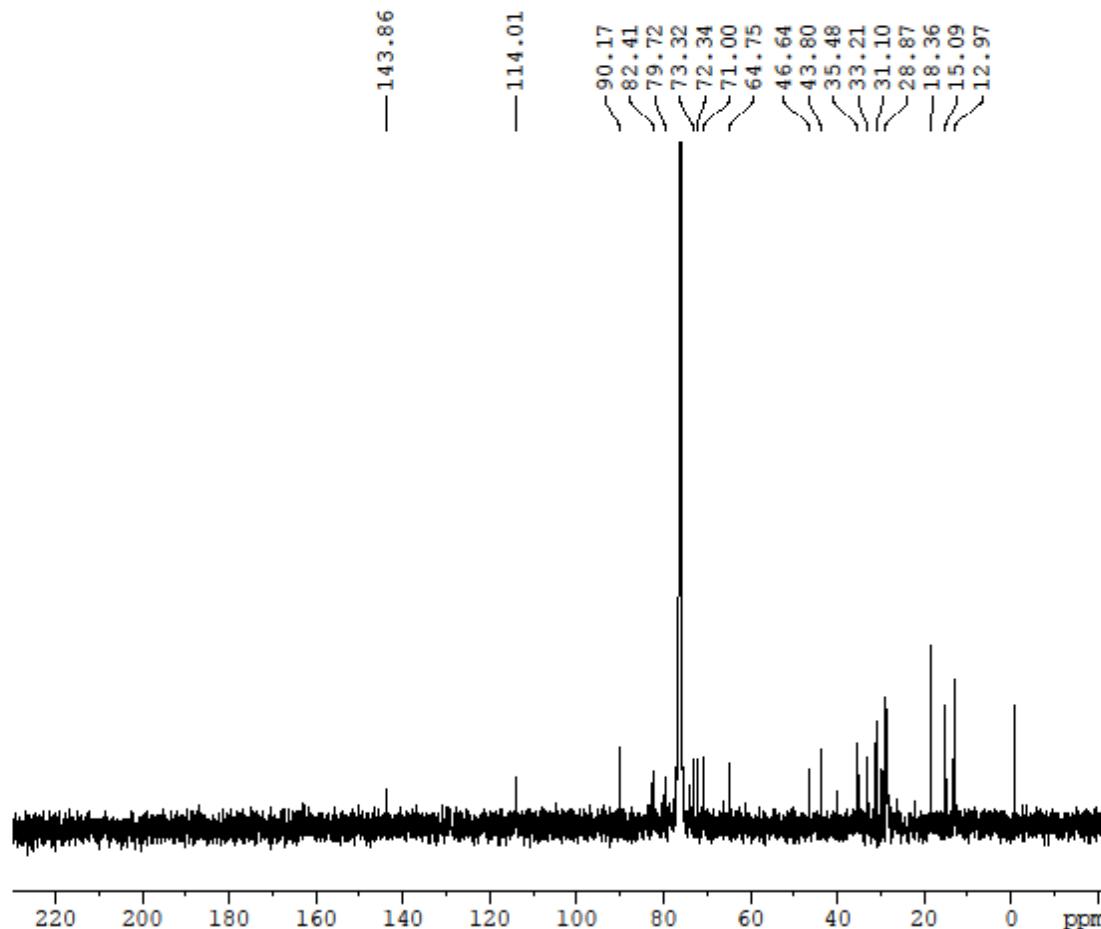
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Nirogen Rule	no				Electron Configuration	both
Filter H/C Ratio	no				Minimum	0
Estimate Carbon	yes					Maximum
						3



44. ^1H NMR spectrum for compound **9** recorded in CDCl_3 at 600 MHz

45. ^{13}C NMR spectrum for compound **9** recorded in CDCl_3 at 125 MHz.

AV-600-13C
Sample:YHS-9



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Time_         7.53
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PULPROG    zgppg30
TD           65536
SOLVENT     CDCl3
NS            13757
DS               2
SWH          45454.547 Hz
FIDRES       0.693581 Hz
AQ            0.7209570 sec
RG             23100
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D11          0.03000000 sec
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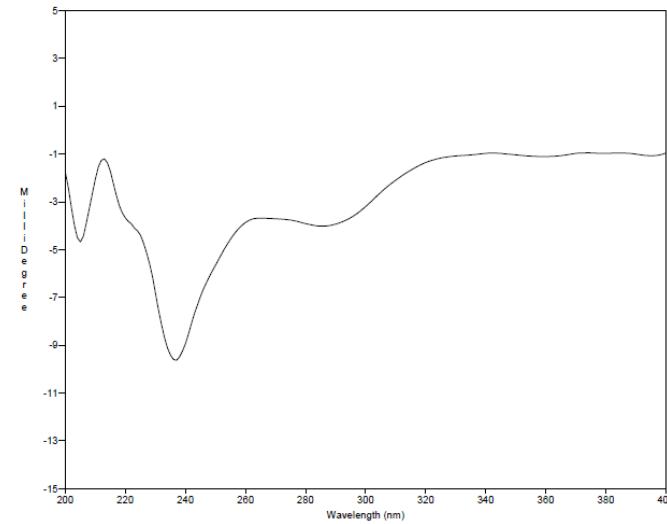
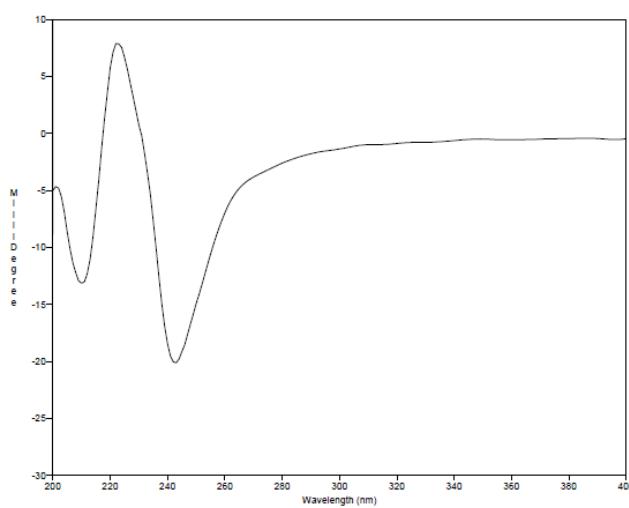
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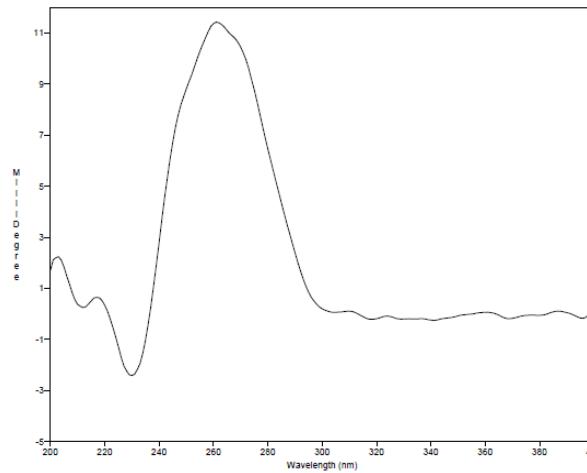
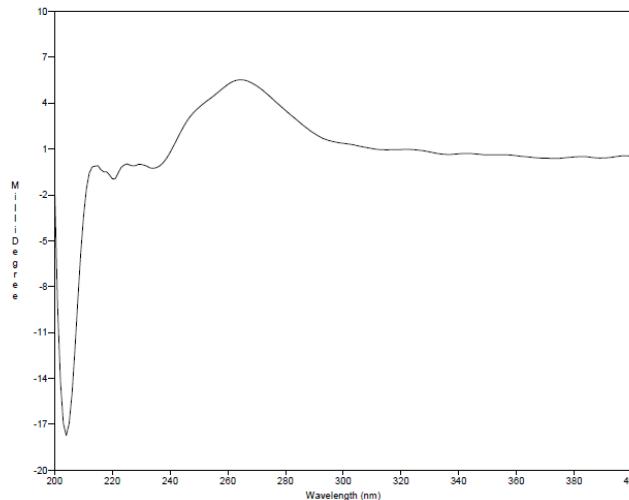
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PL12W          0.66736388 W
PL13W          0.34702653 W
SF02         600.1324005 MHz
SI             32768
SF           150.9029343 MHz
WDW            EM
SSB             0
LB             3.00 Hz
GB             0
PC            1.40

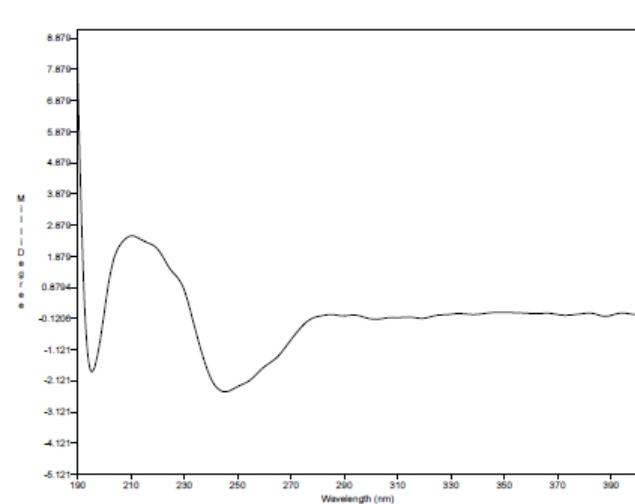
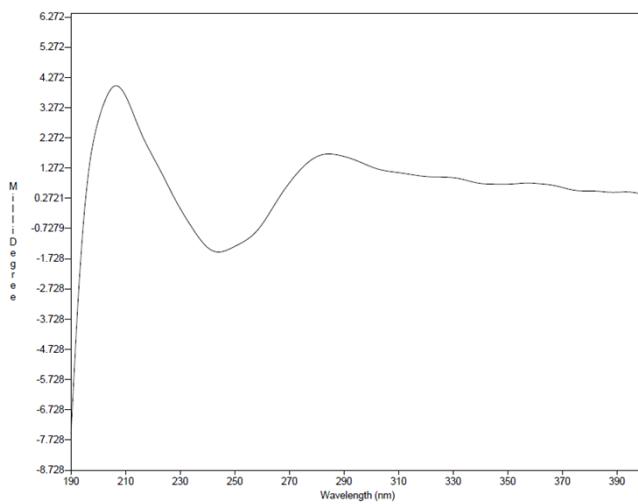
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46.CD spectrum for compounds **1-8**.

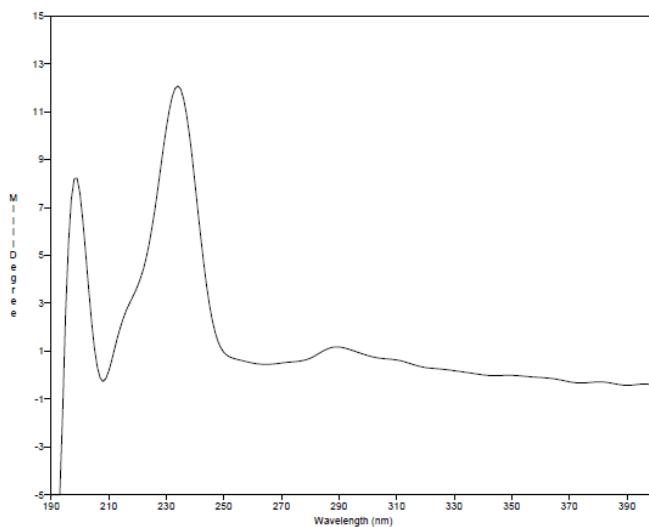
CD spectrum for compound 1. CD spectrum for compound 2



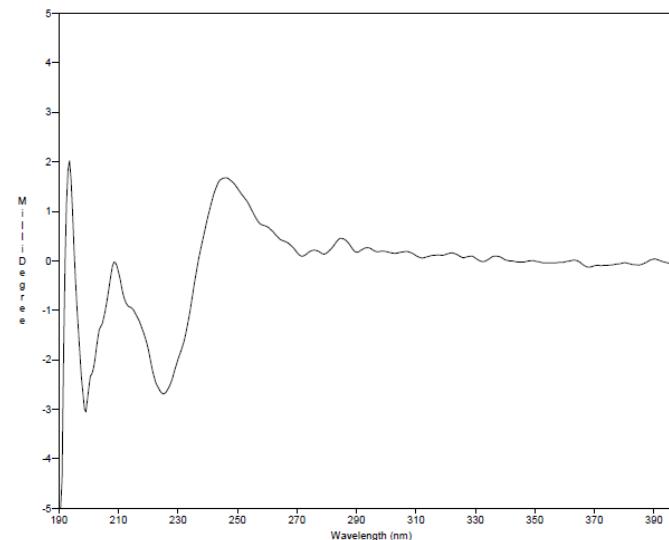
CD spectrum for compound 3 .CD spectrum for compound 4 .



CD spectrum for compound 5 .CD spectrum for compound 6 .

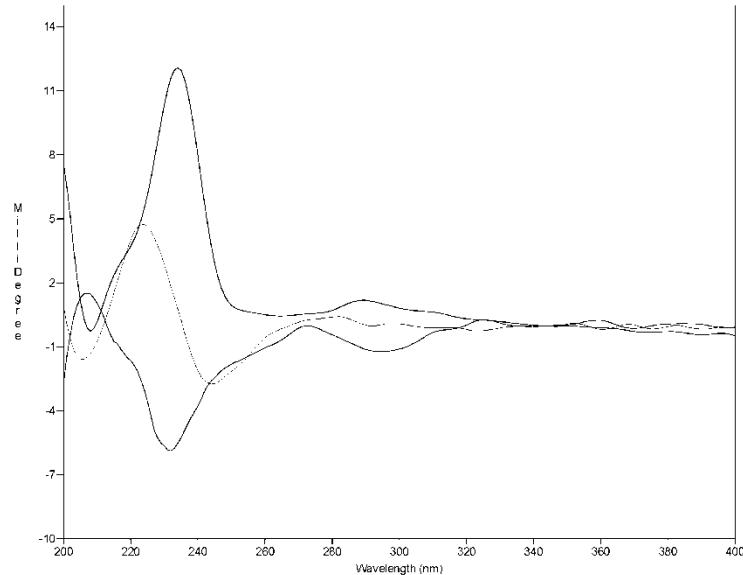


CD spectrum for compound 7 .



CD spectrum for compound 8

47. CD spectrum for the combination of several compounds
 CD spectrum for compounds **1,2** and **8**



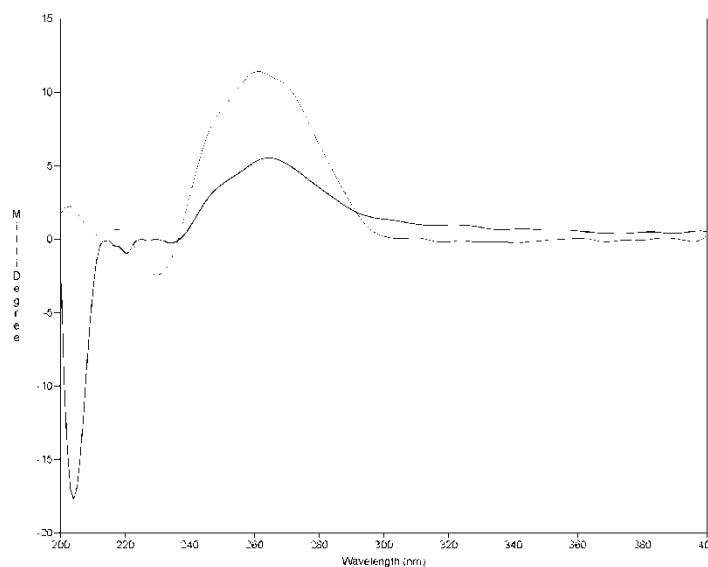
Bio-Kine Software V4.71 Date : 2014-4-1 Time : 9:31:10

PLOT 1 COMMENTS :
 File name: d:\手\h-22-a.bka
 Savitzky-Golay Smooth of sav-golay
 Window Points=15
 Polynomial Order=3
 Derivative=0

PLOT 2 COMMENTS :
 File name: d:\手\h-22-b.bka
 Savitzky-Golay Smooth of sav-golay
 Window Points=15
 Polynomial Order=3
 Derivative=0

PLOT 3 COMMENTS :
 File name: d:\手\h-22-c.bka
 Savitzky-Golay Smooth of sav-golay
 Window Points=15
 Polynomial Order=3
 Derivative=0

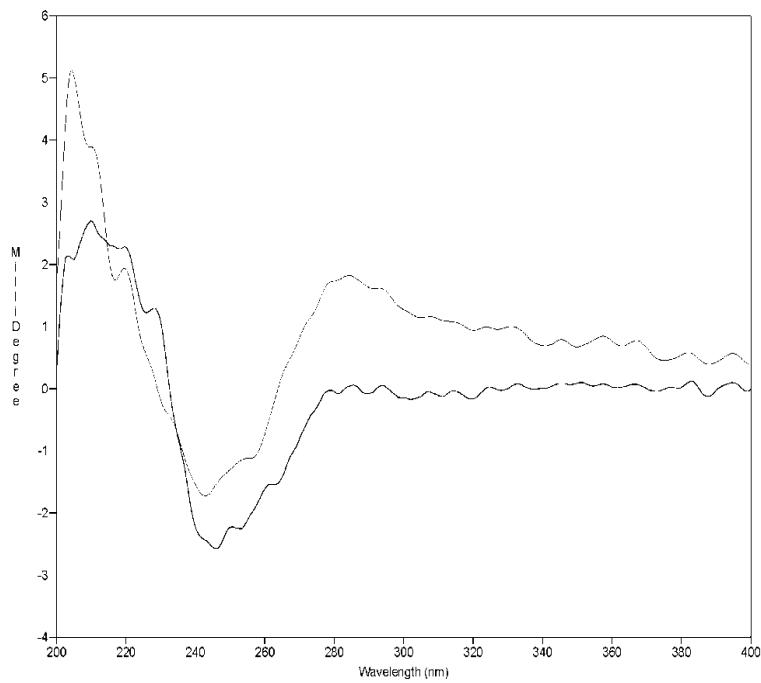
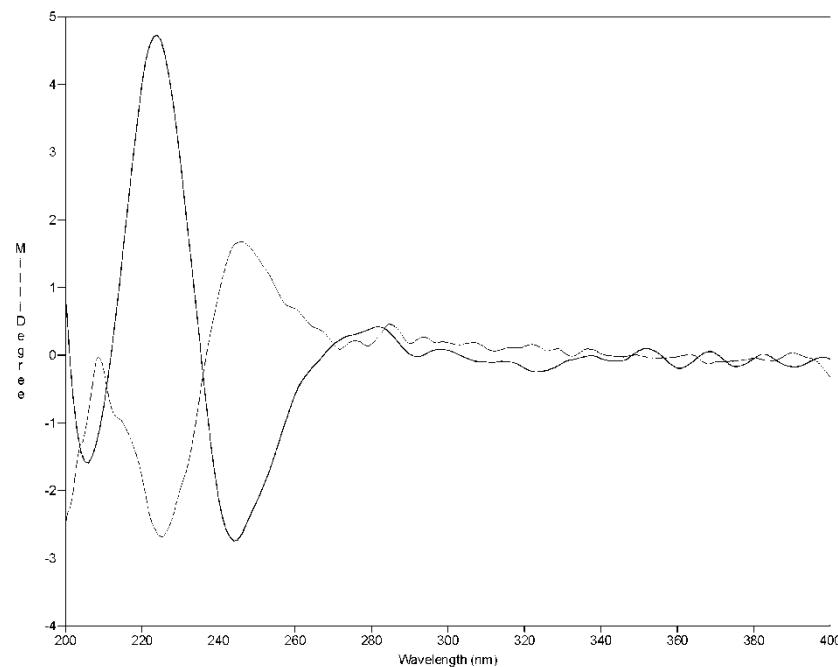
CD spectrum for compounds **3** and **4**



Bio-Kine Software V4.71 Date : 2014-4-1 Time : 11:01:40

PLOT 1 COMMENTS :
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 Savitzky-Golay Smooth of d:\手\h-36-2.bka
 Window Points=15
 Polynomial Order=3
 Derivative=0

PLOT 2 COMMENTS :
 File name: d:\手\h-36-4-1.bka
 Savitzky-Golay Smooth of sav-golay
 Window Points=15
 Polynomial Order=3
 Derivative=0

CD spectrum for compounds **5** and **6**CD spectrum for compounds **8** and **8**

48. Stereoviews of compounds 1-8

