

Alternative access to functionalized 2,8-ethanonoradamantane derivatives

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SUPPORTING INFORMATION

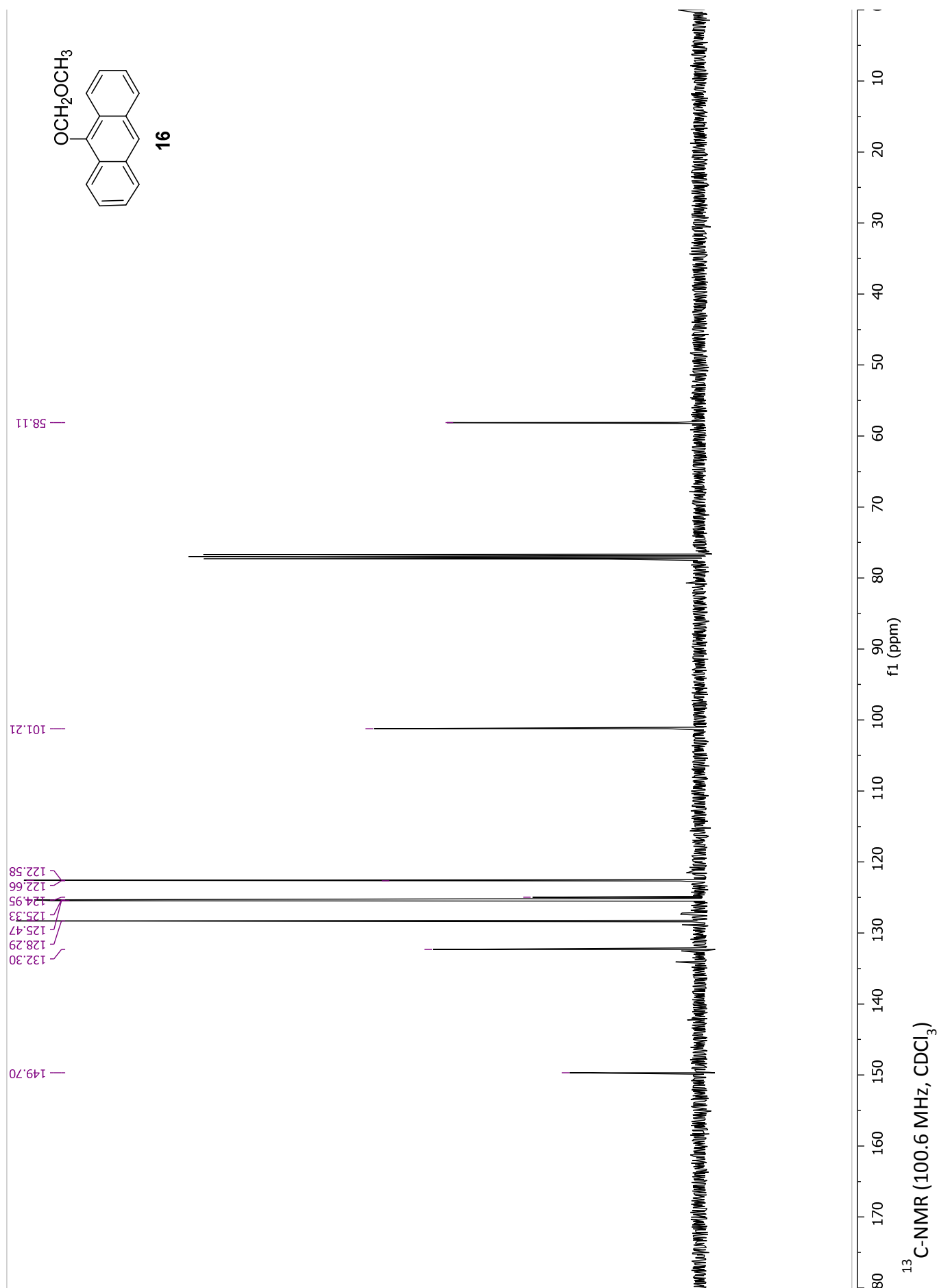
Content

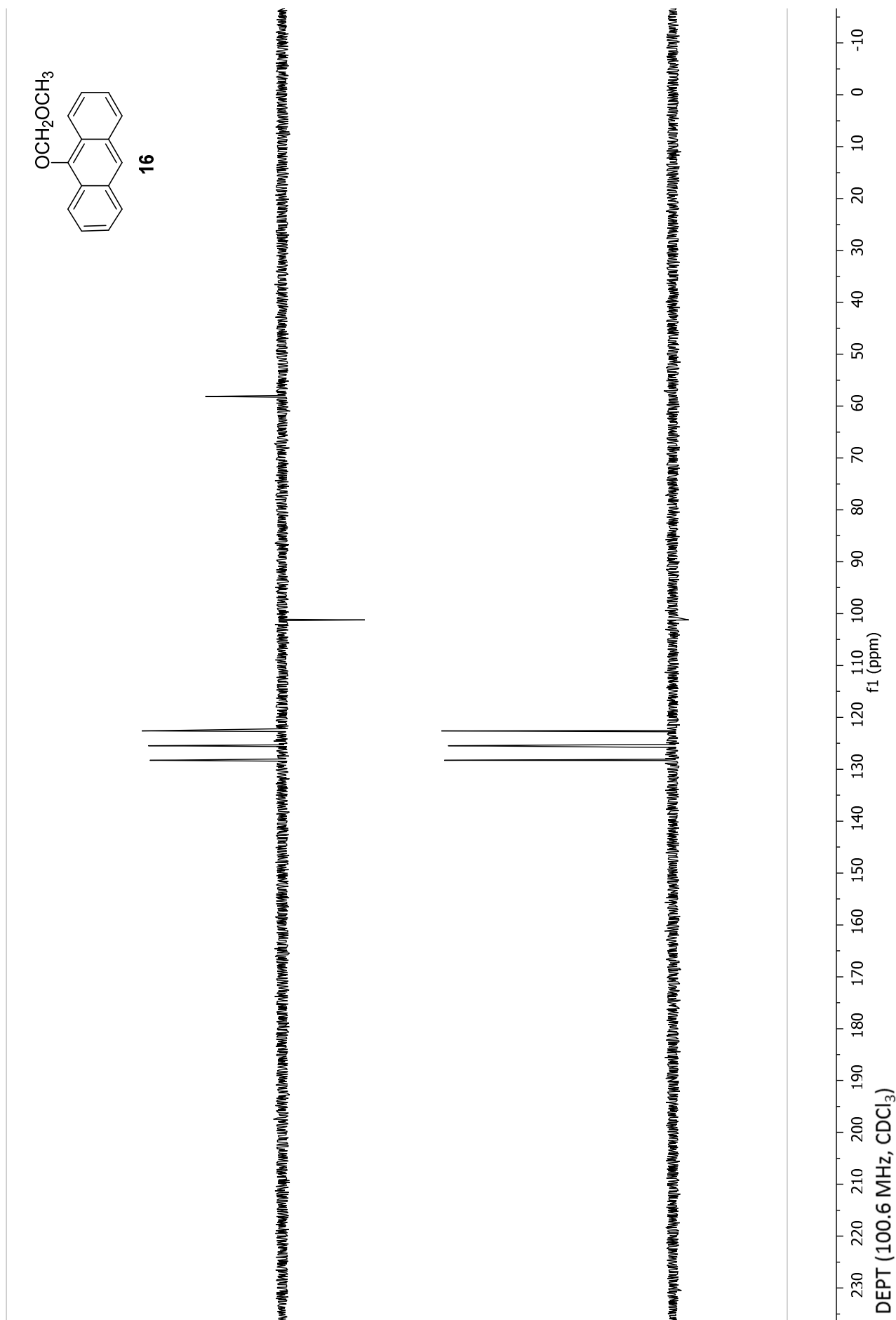
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1

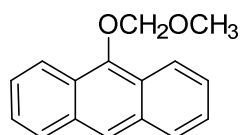


NMR and IR spectra of compound **16**

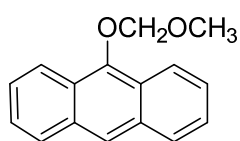
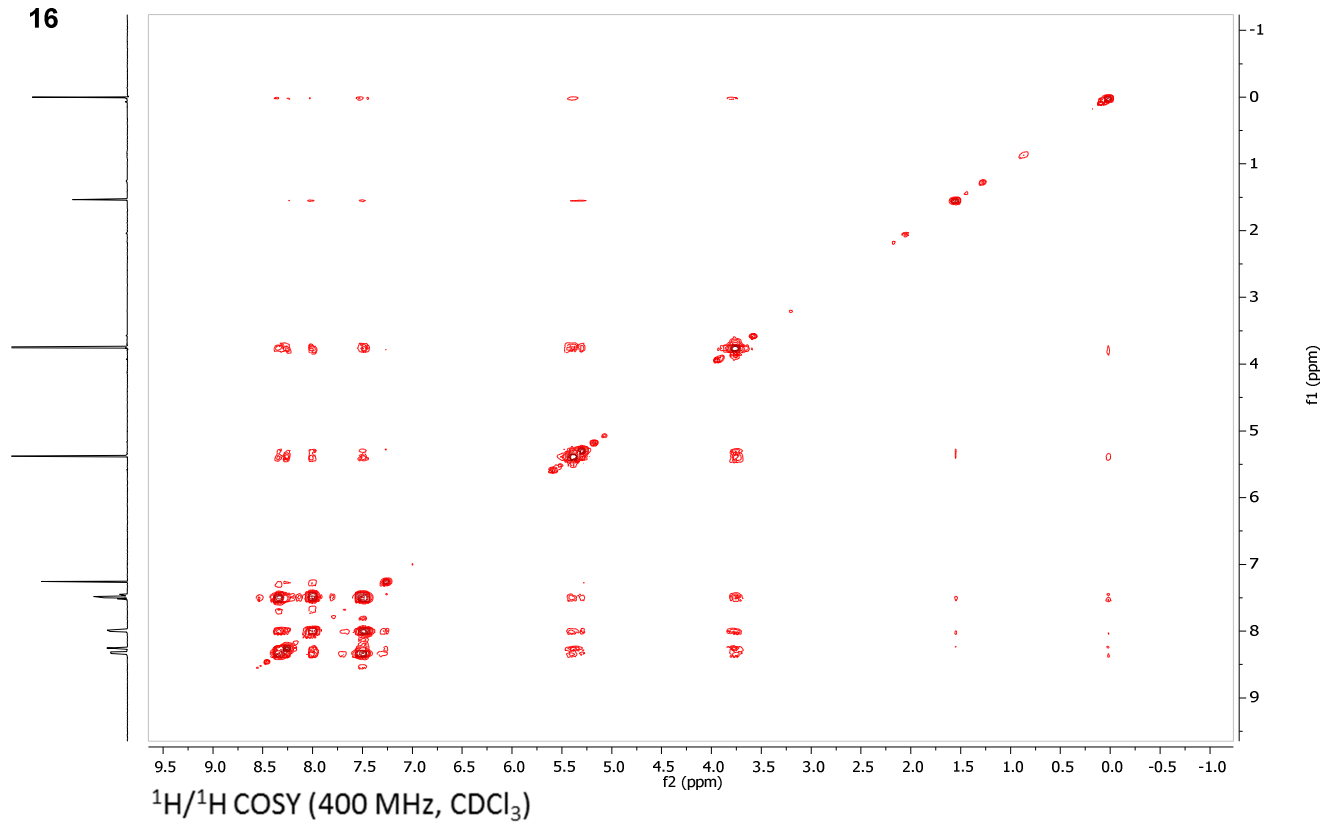




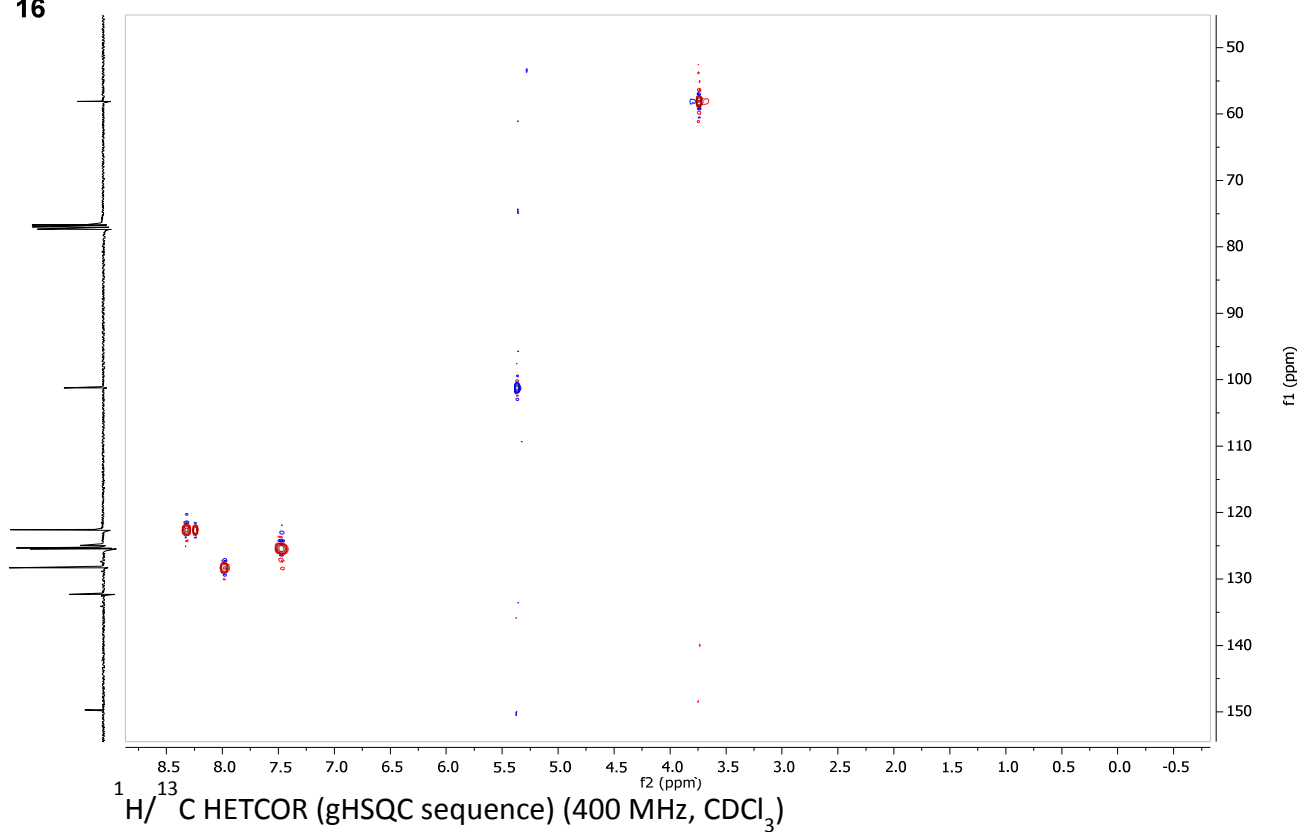
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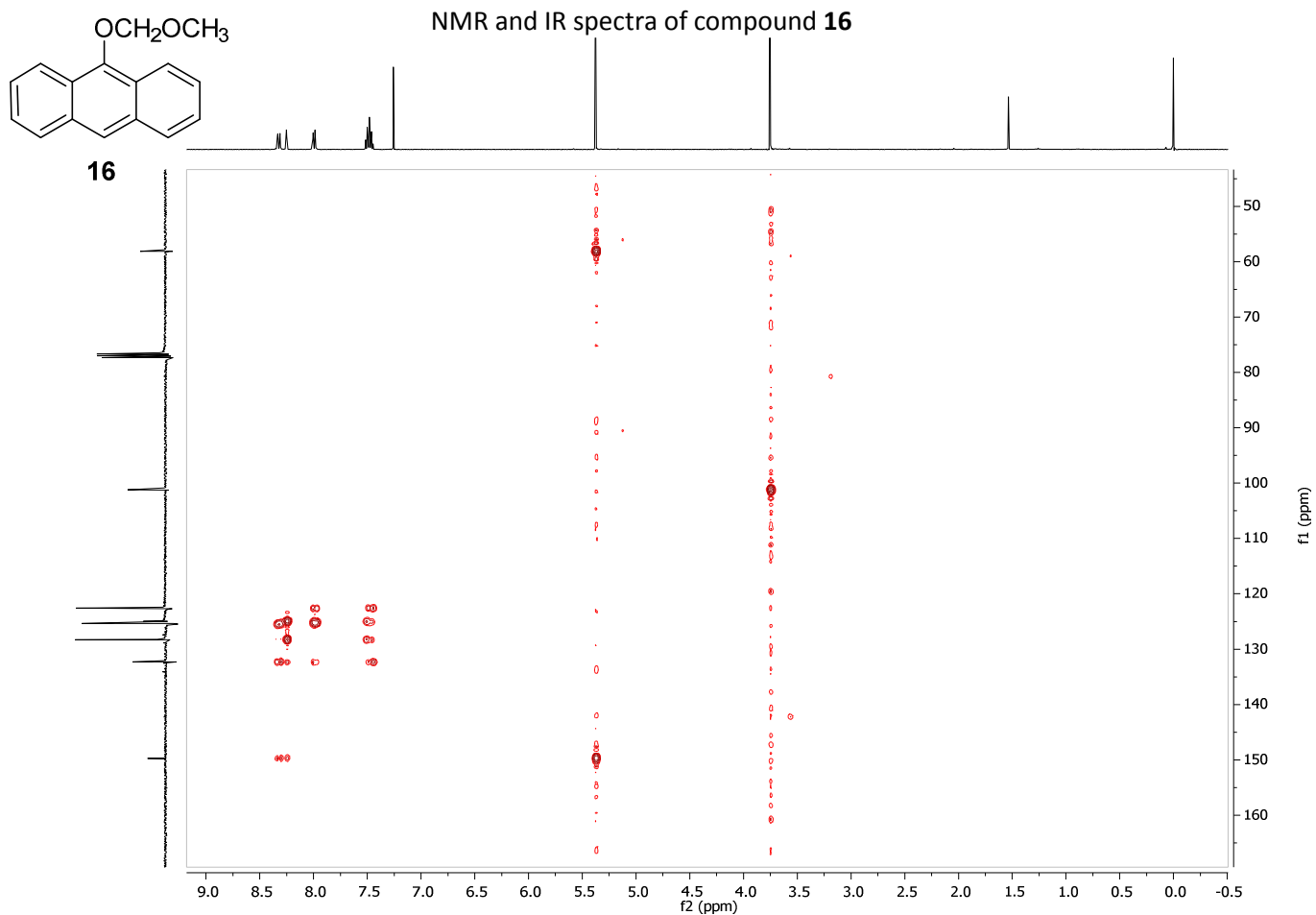


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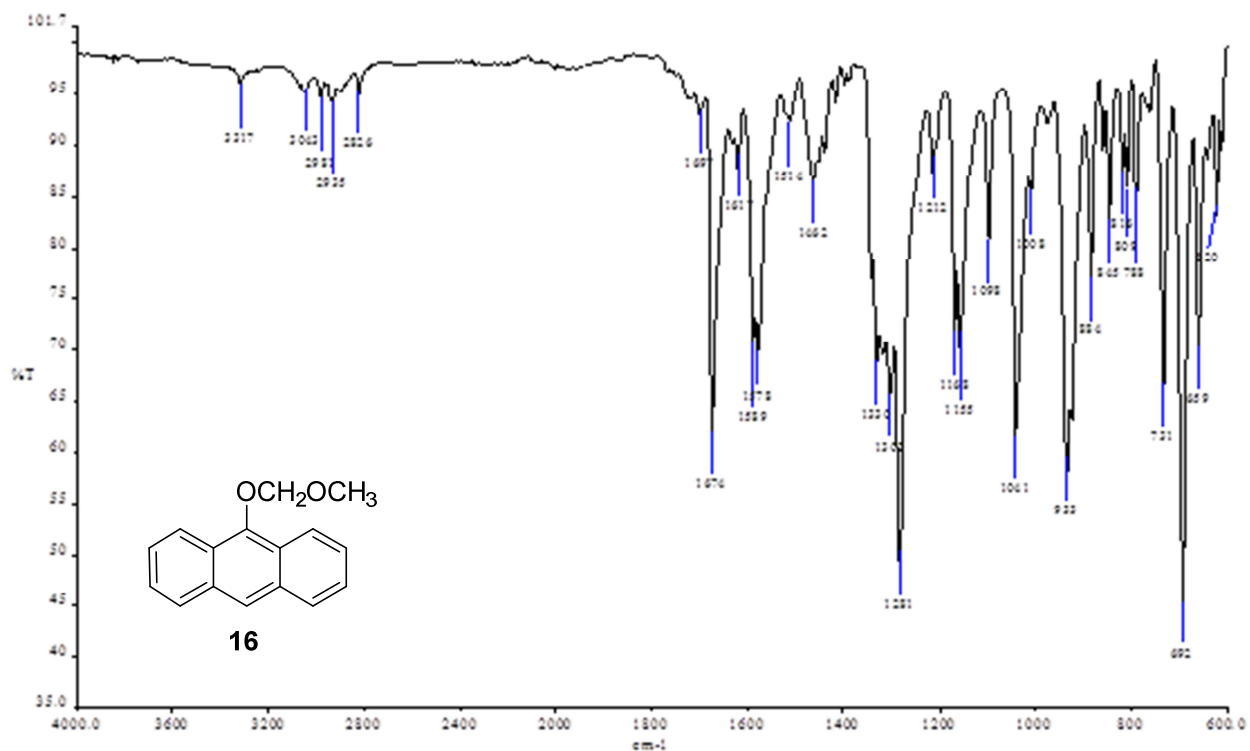


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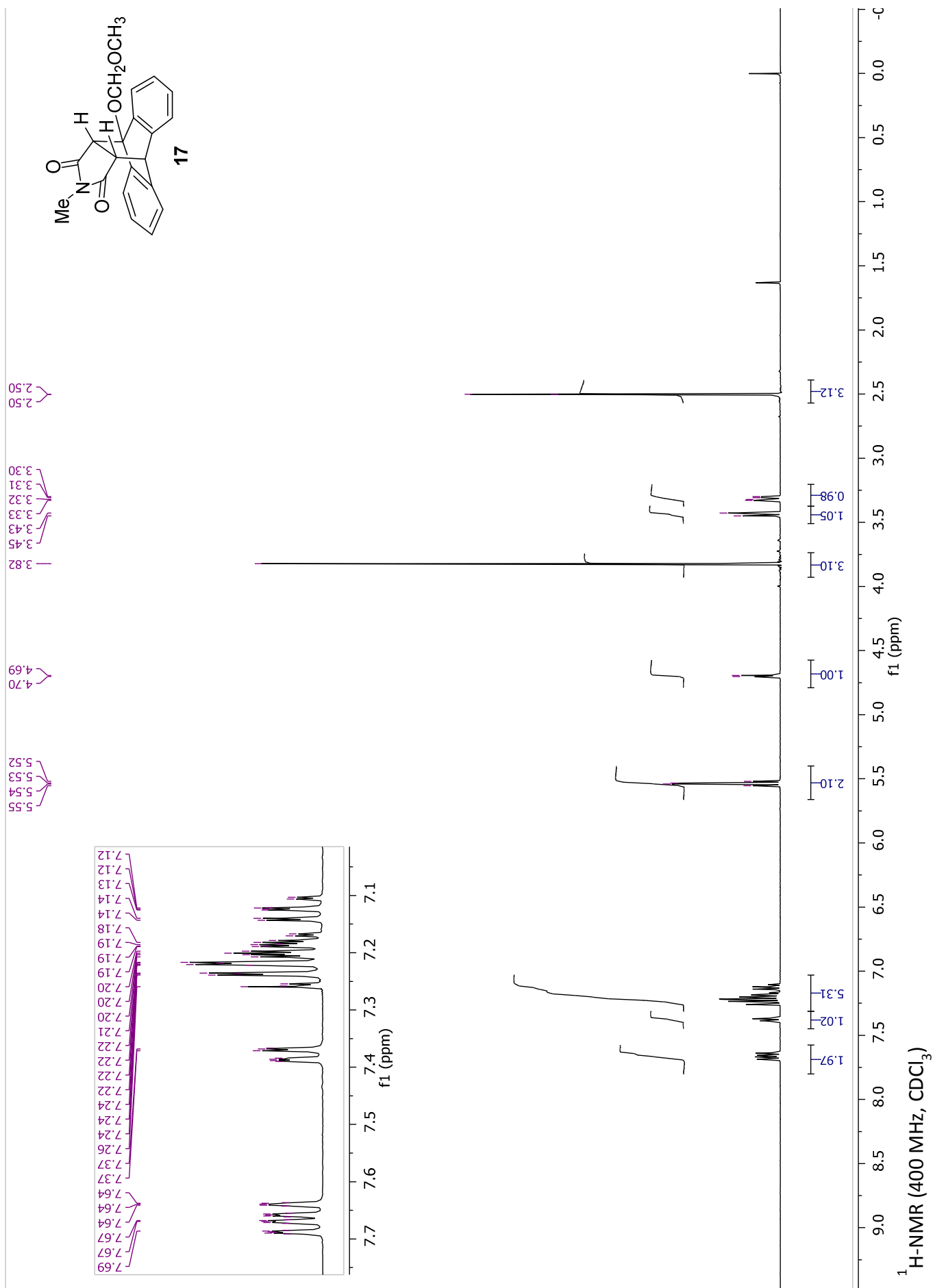




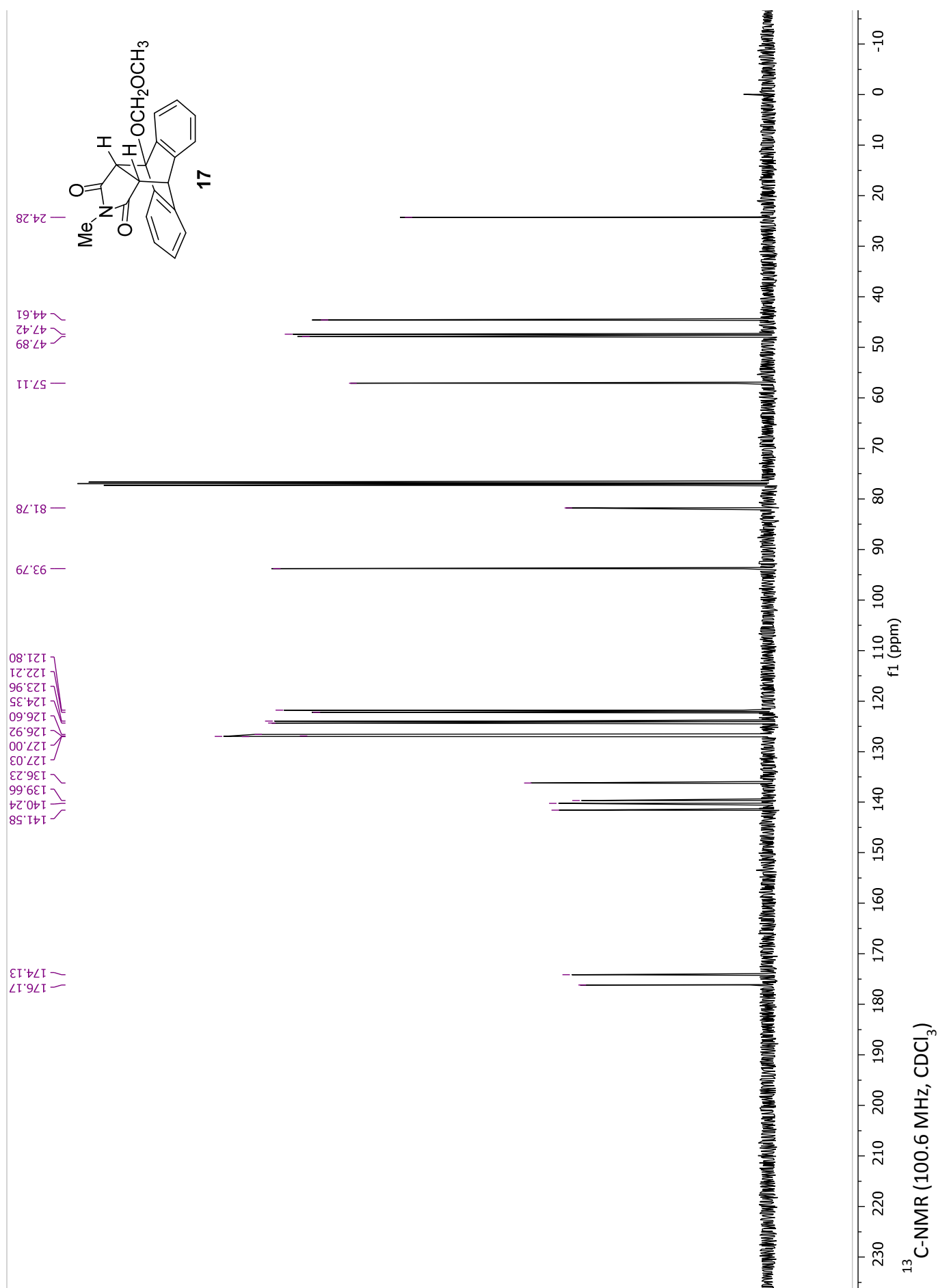
$^1\text{H}/^{13}\text{C}$ HETCOR (gHMBC sequence) (400 MHz, CDCl_3)



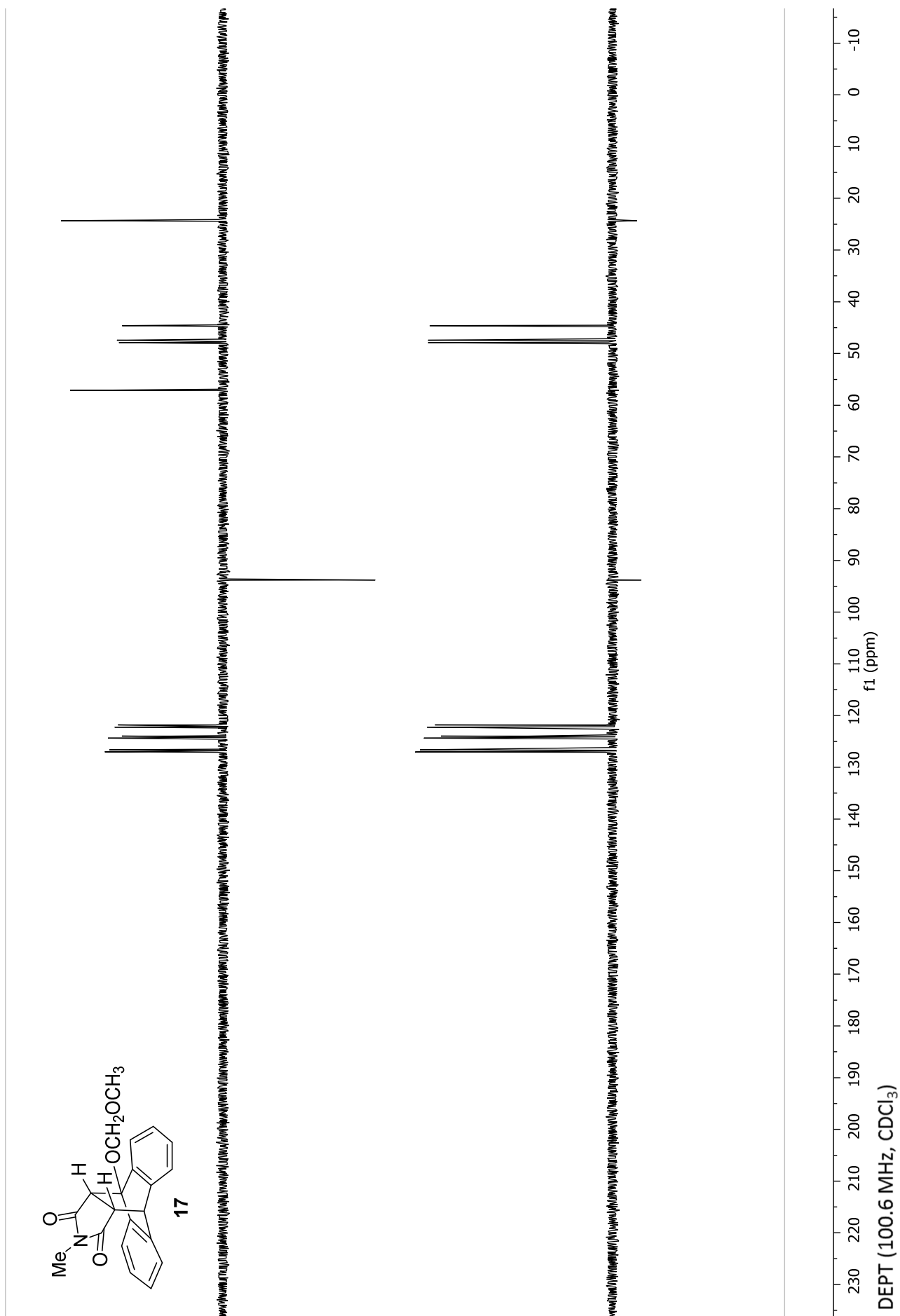
NMR and IR spectra of compound **17**



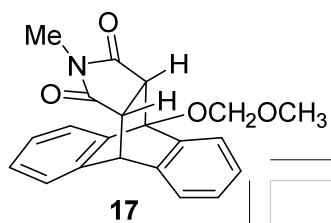
NMR and IR spectra of compound **17**



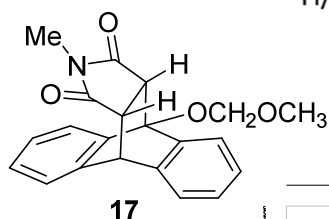
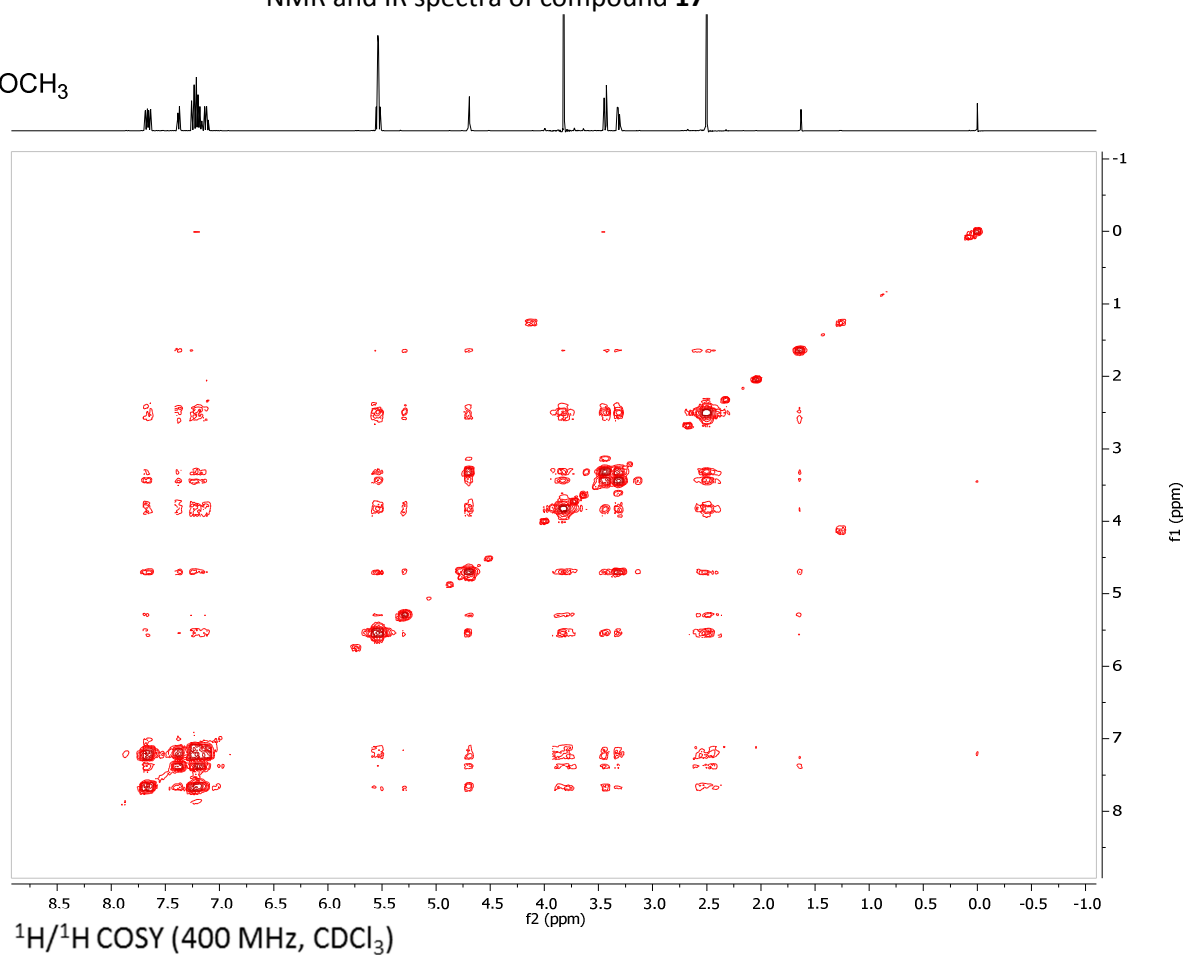
NMR and IR spectra of compound 17



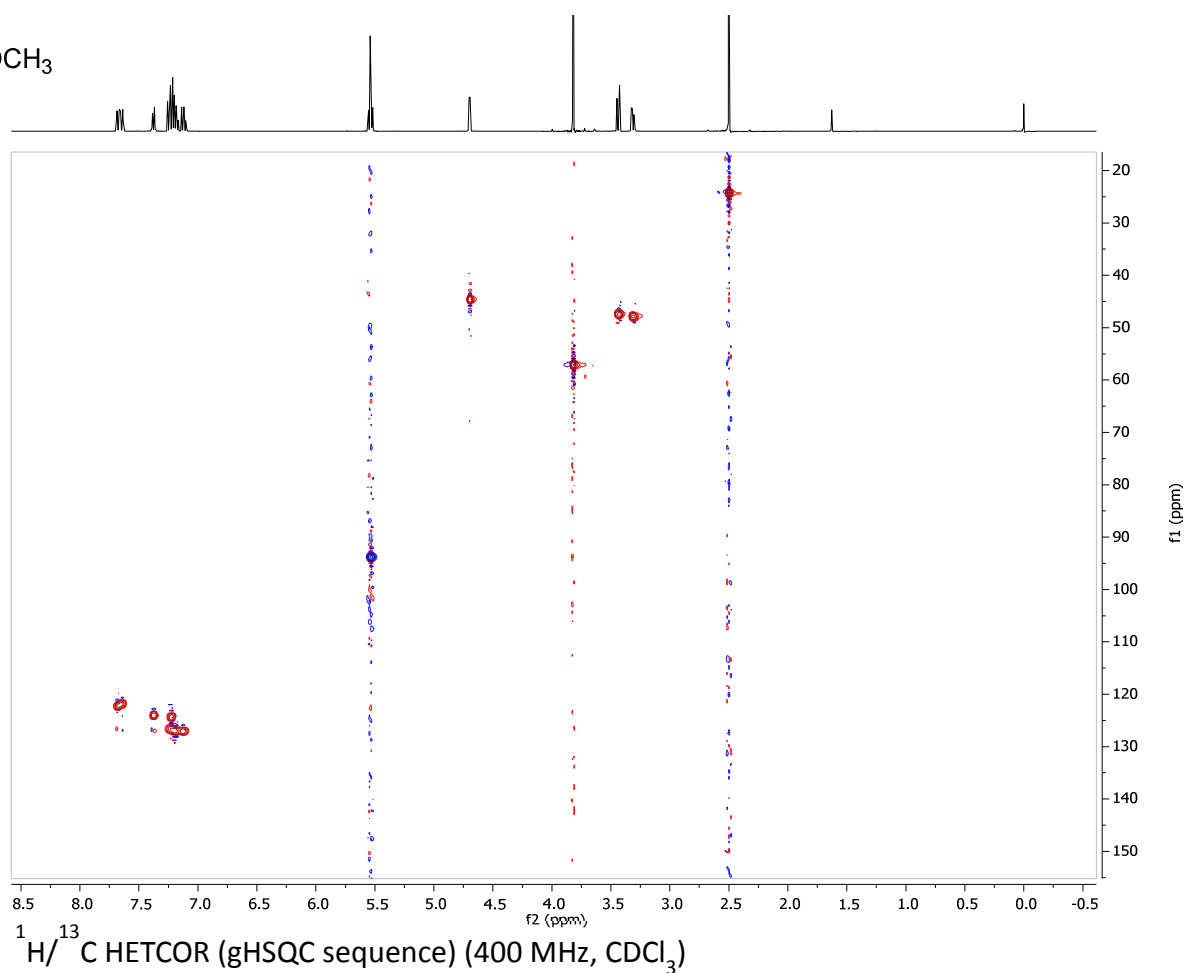
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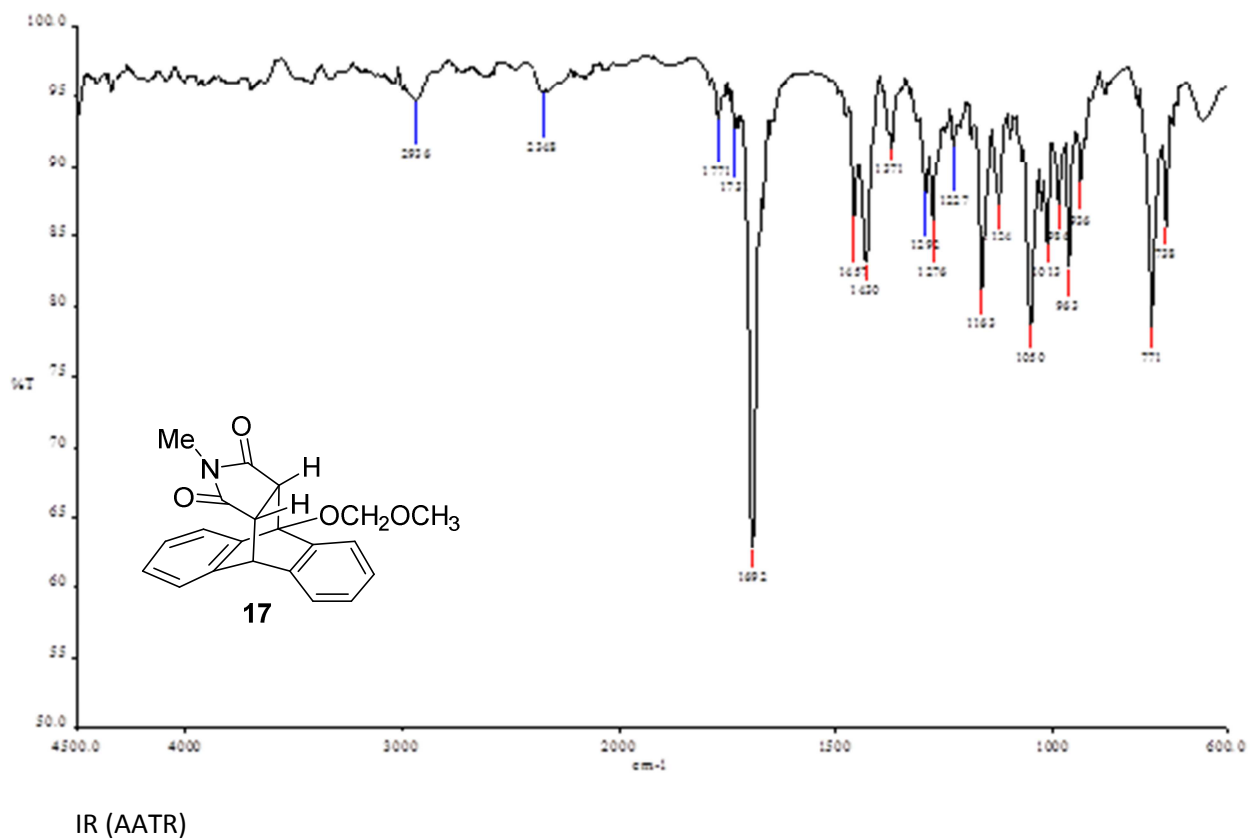
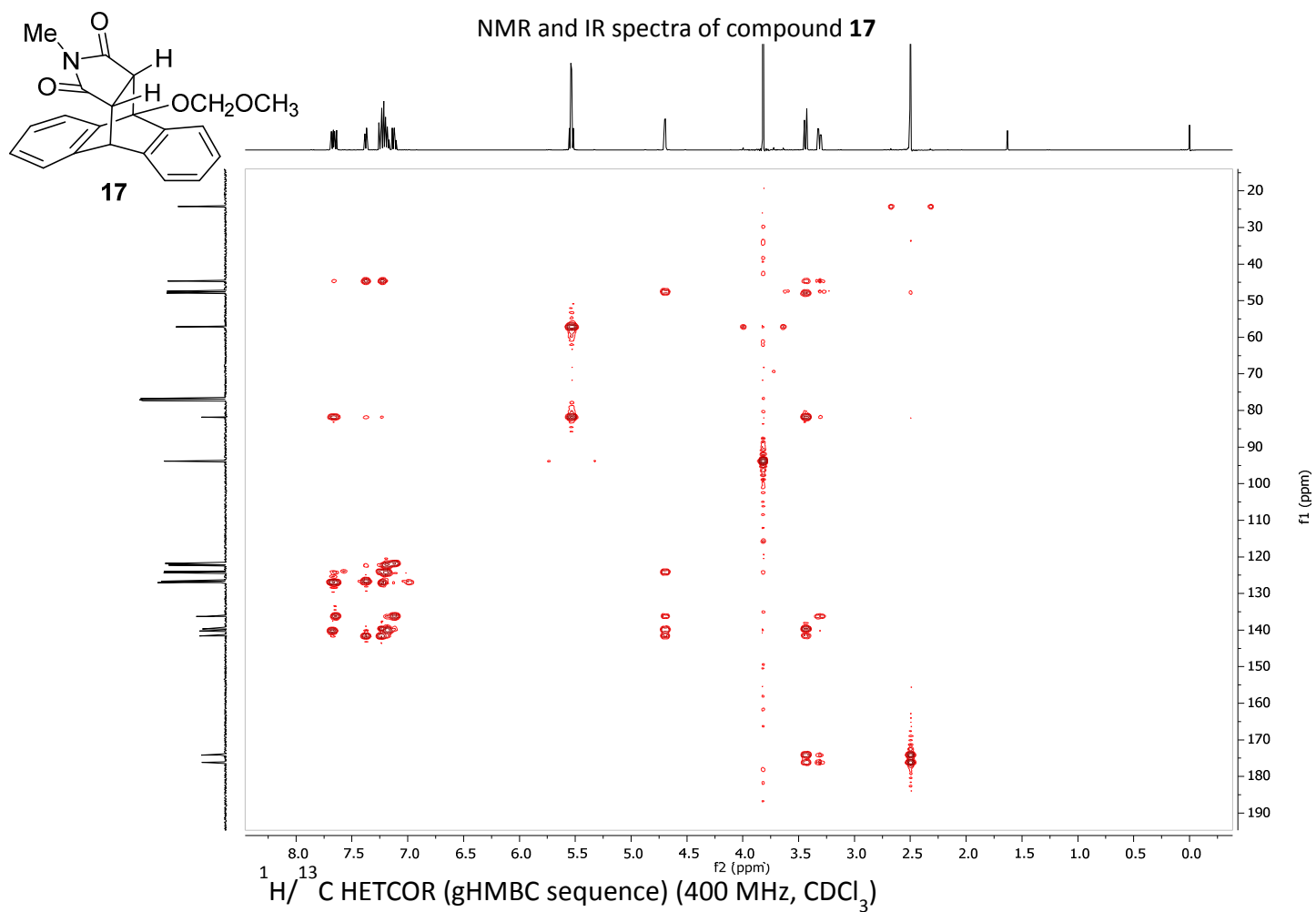
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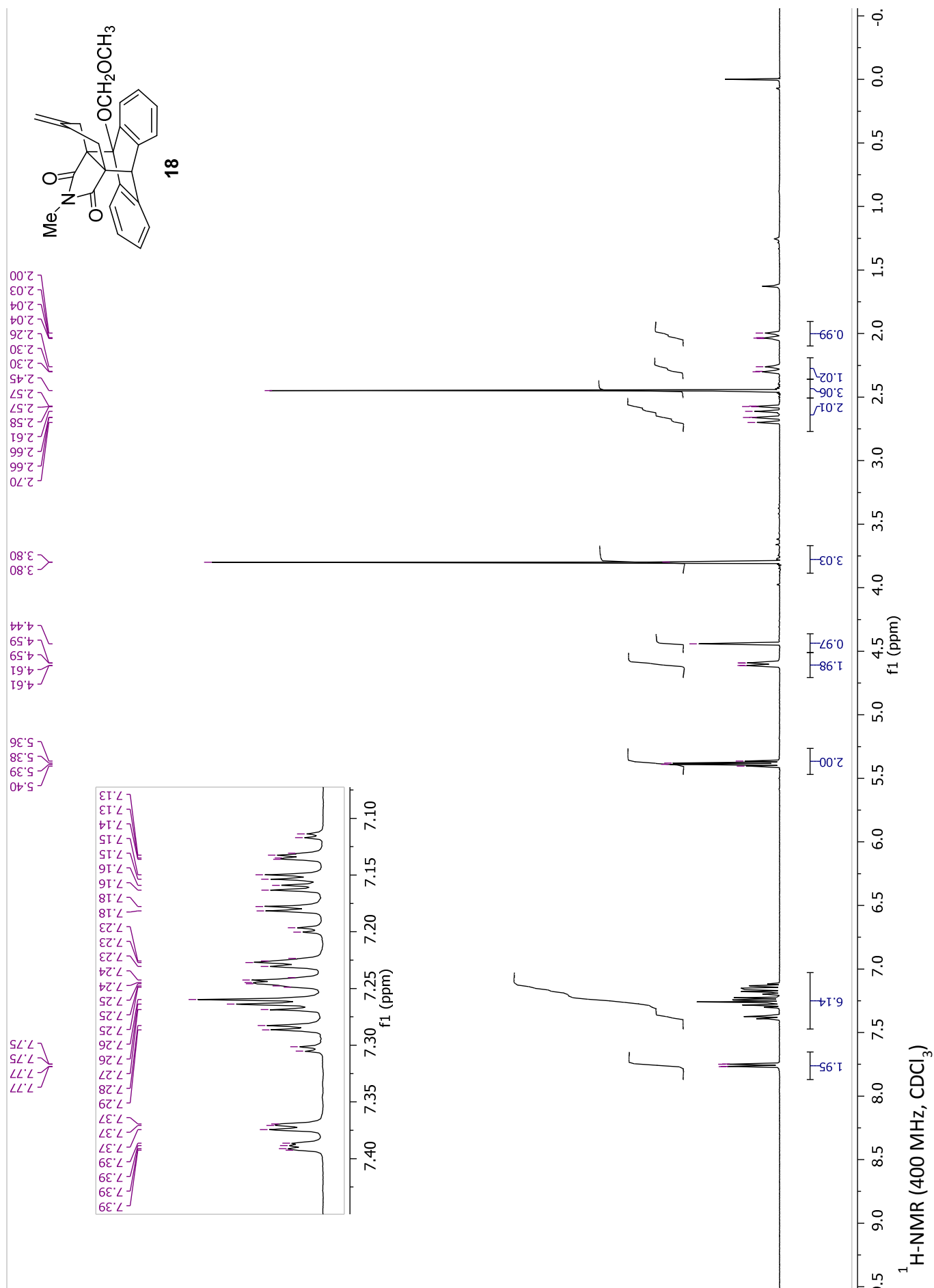
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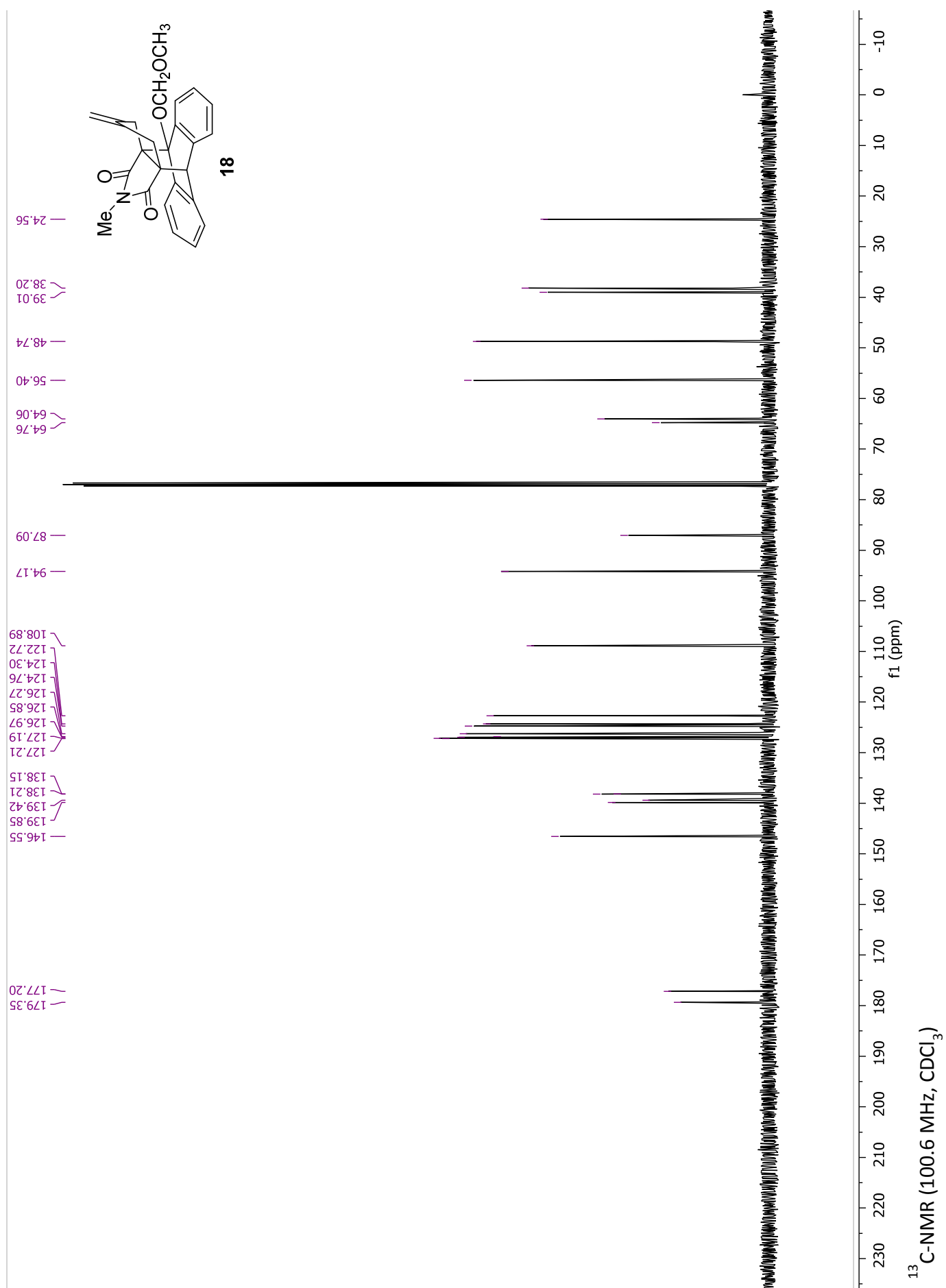
NMR and IR spectra of compound **17**

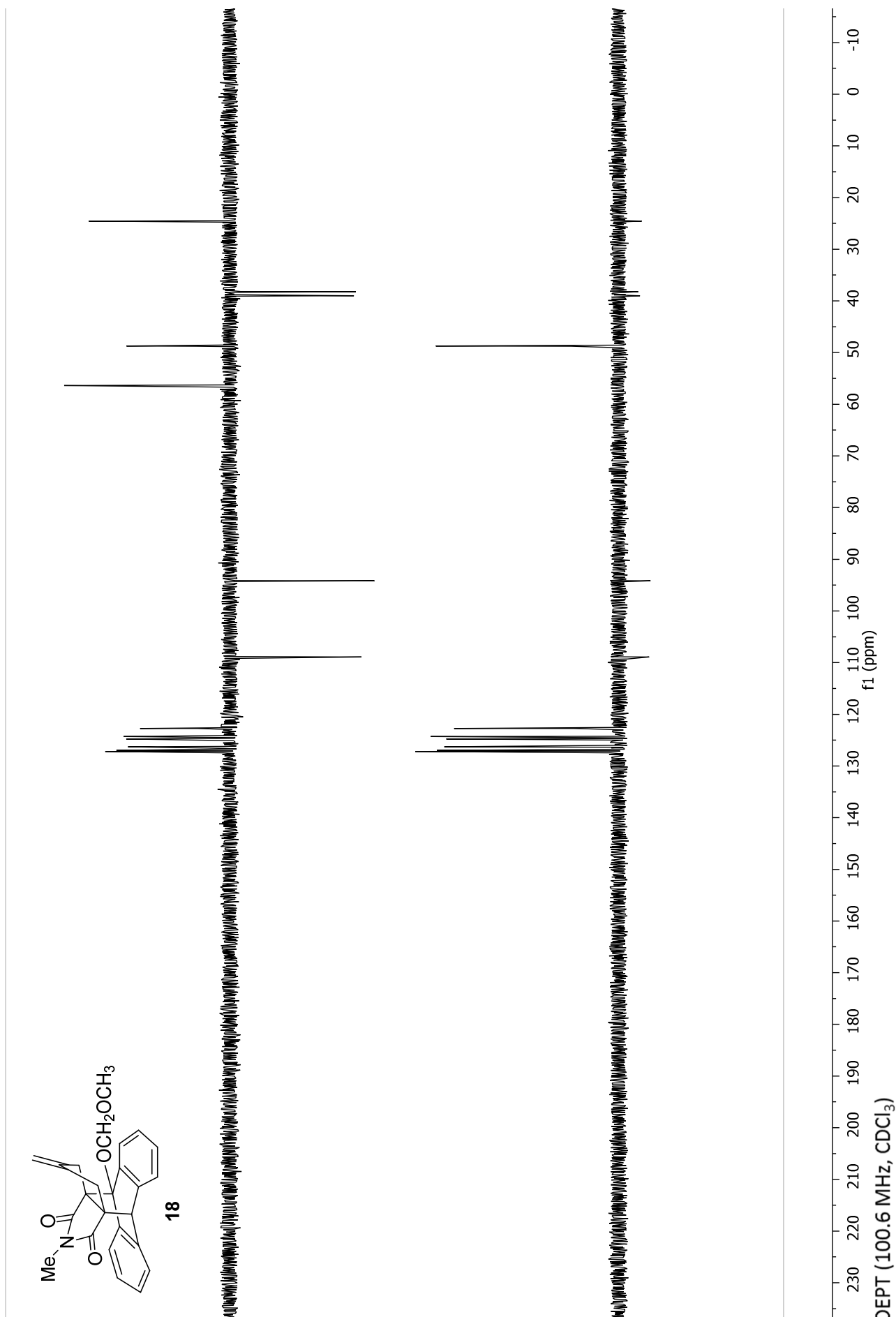


NRM and IR spectra of compound **18**

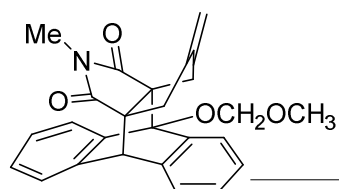


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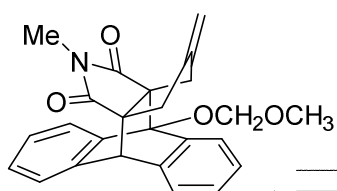
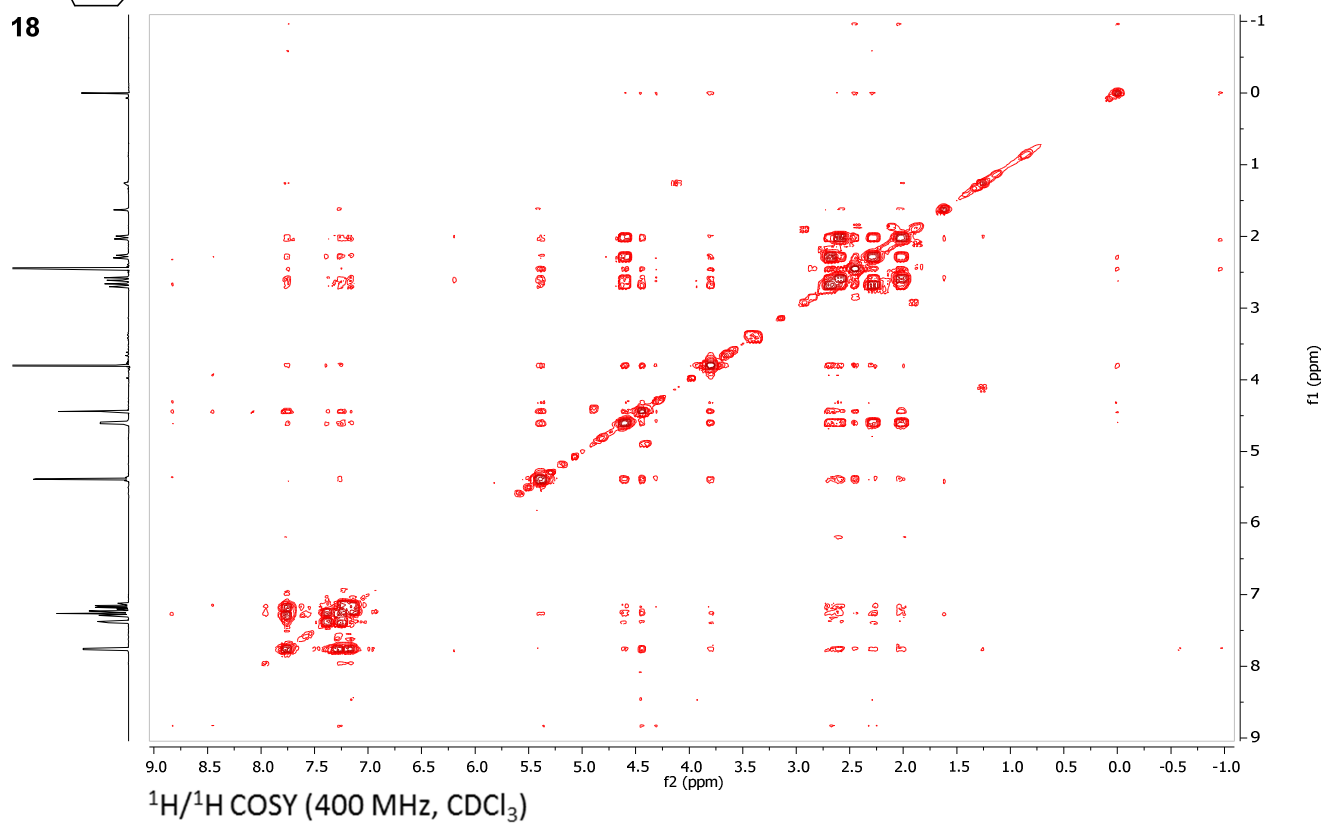




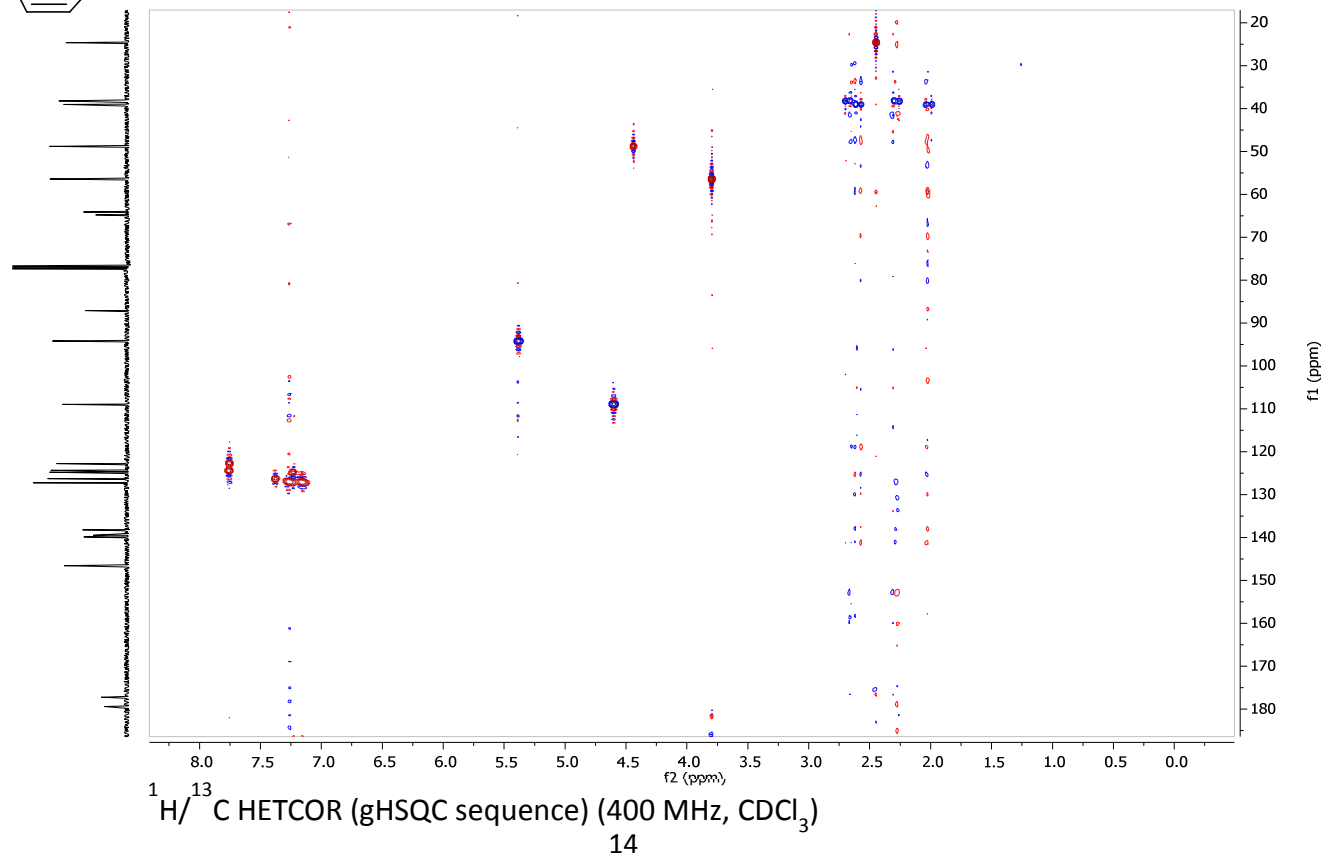
NRM and IR spectra of compound **18**

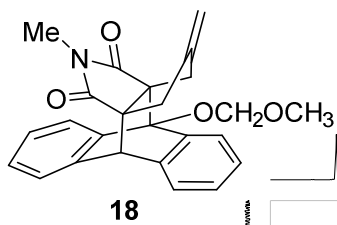


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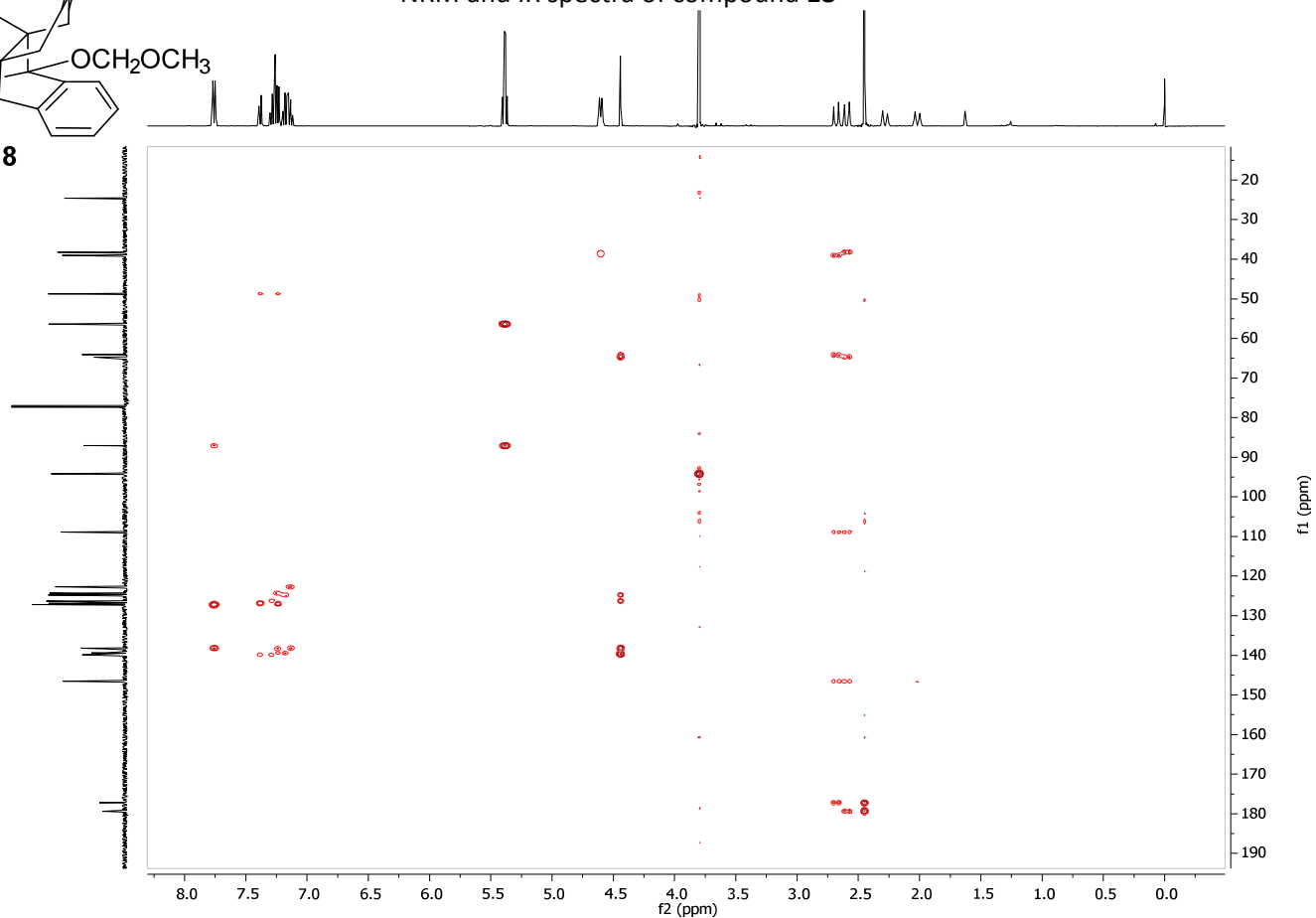


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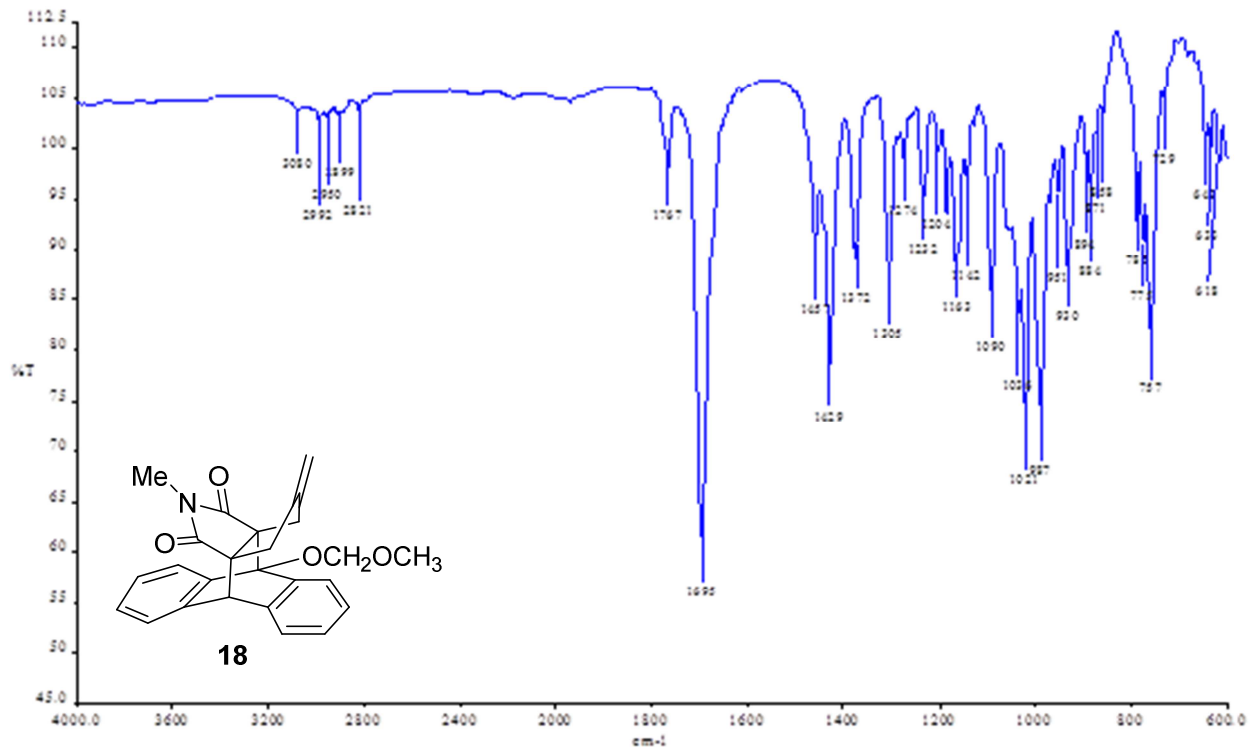




NRM and IR spectra of compound **18**

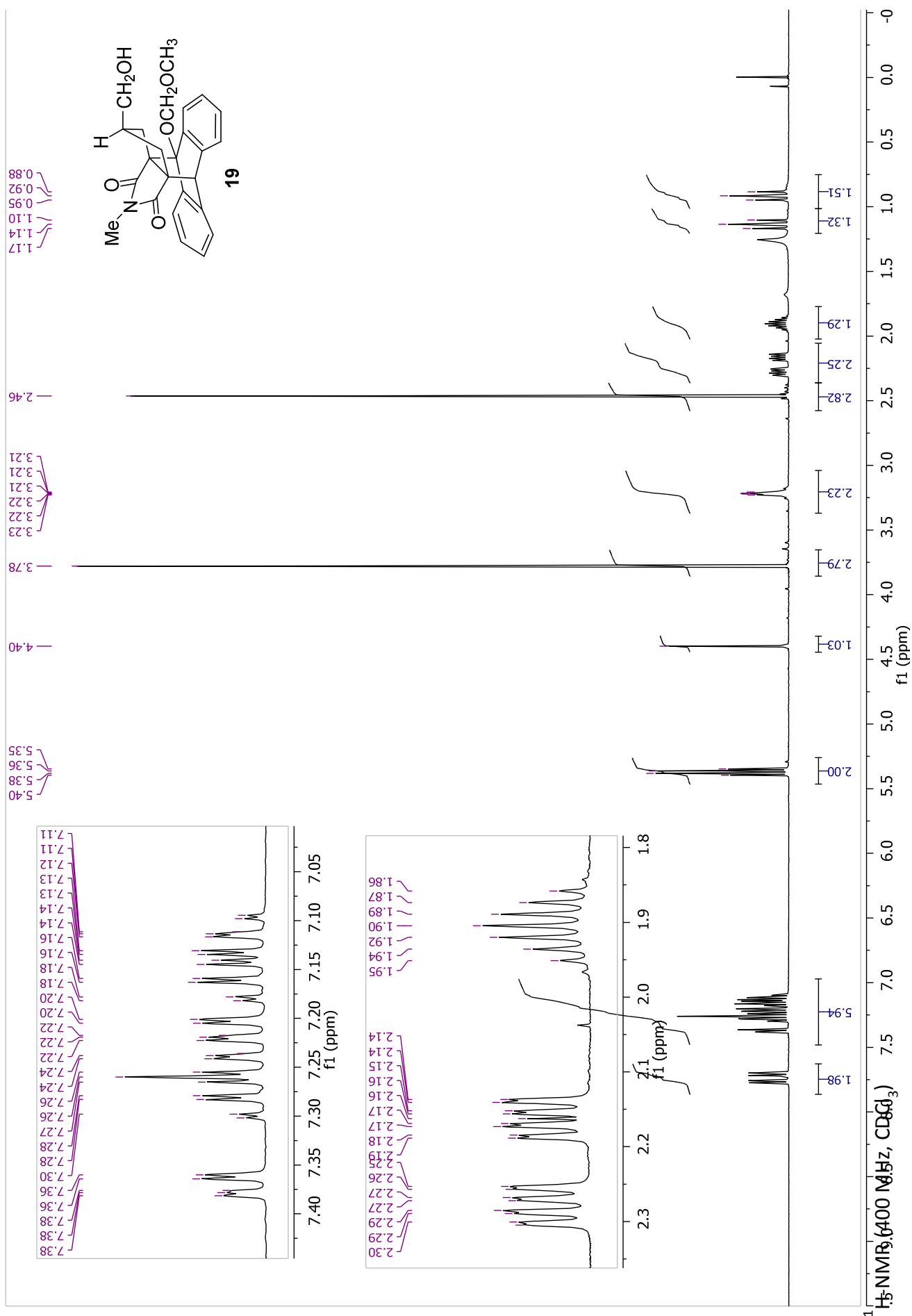


$^1\text{H}/^{13}\text{C}$ HETCOR (gHMBC sequence) (400 MHz, CDCl_3)

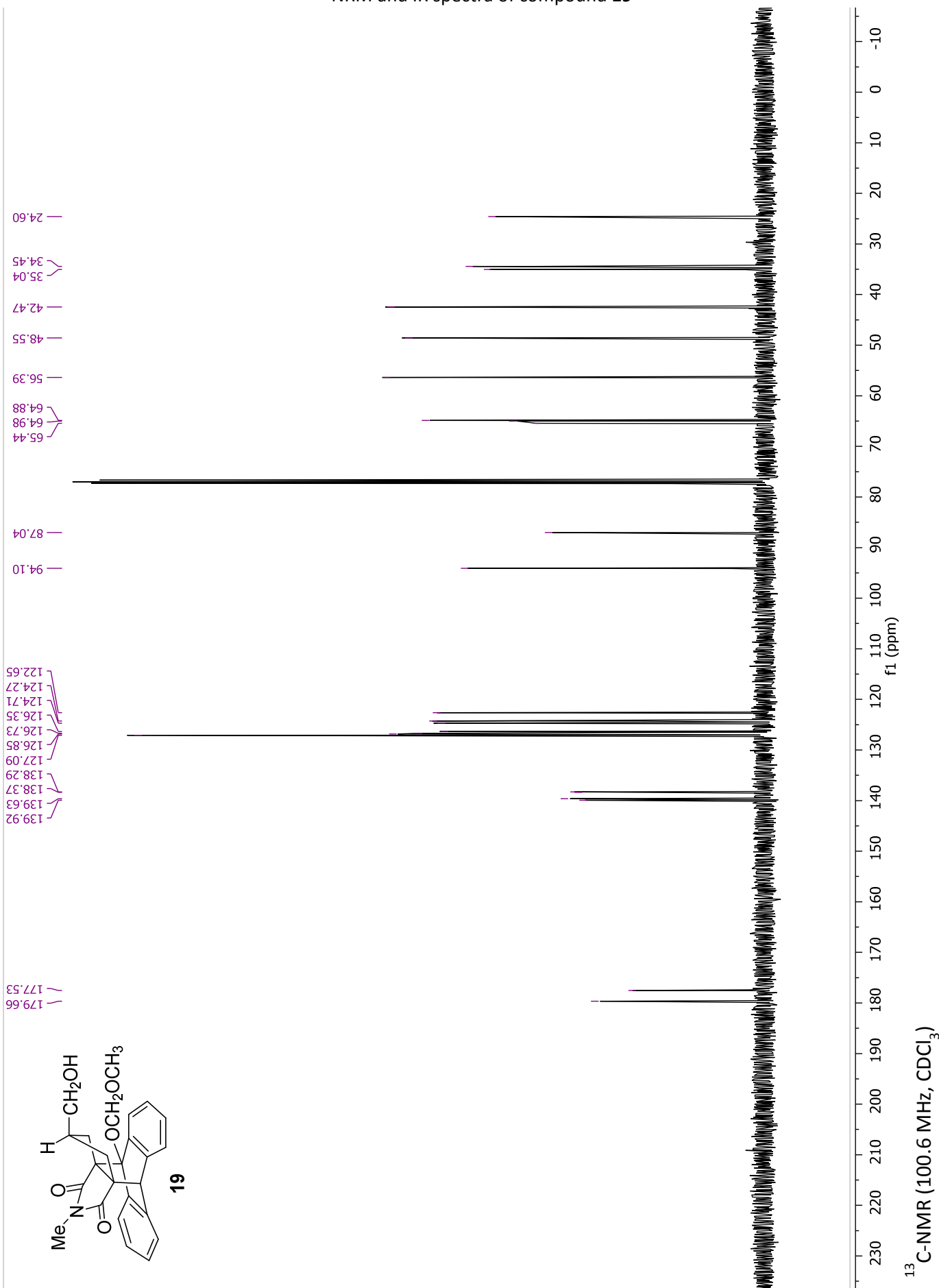


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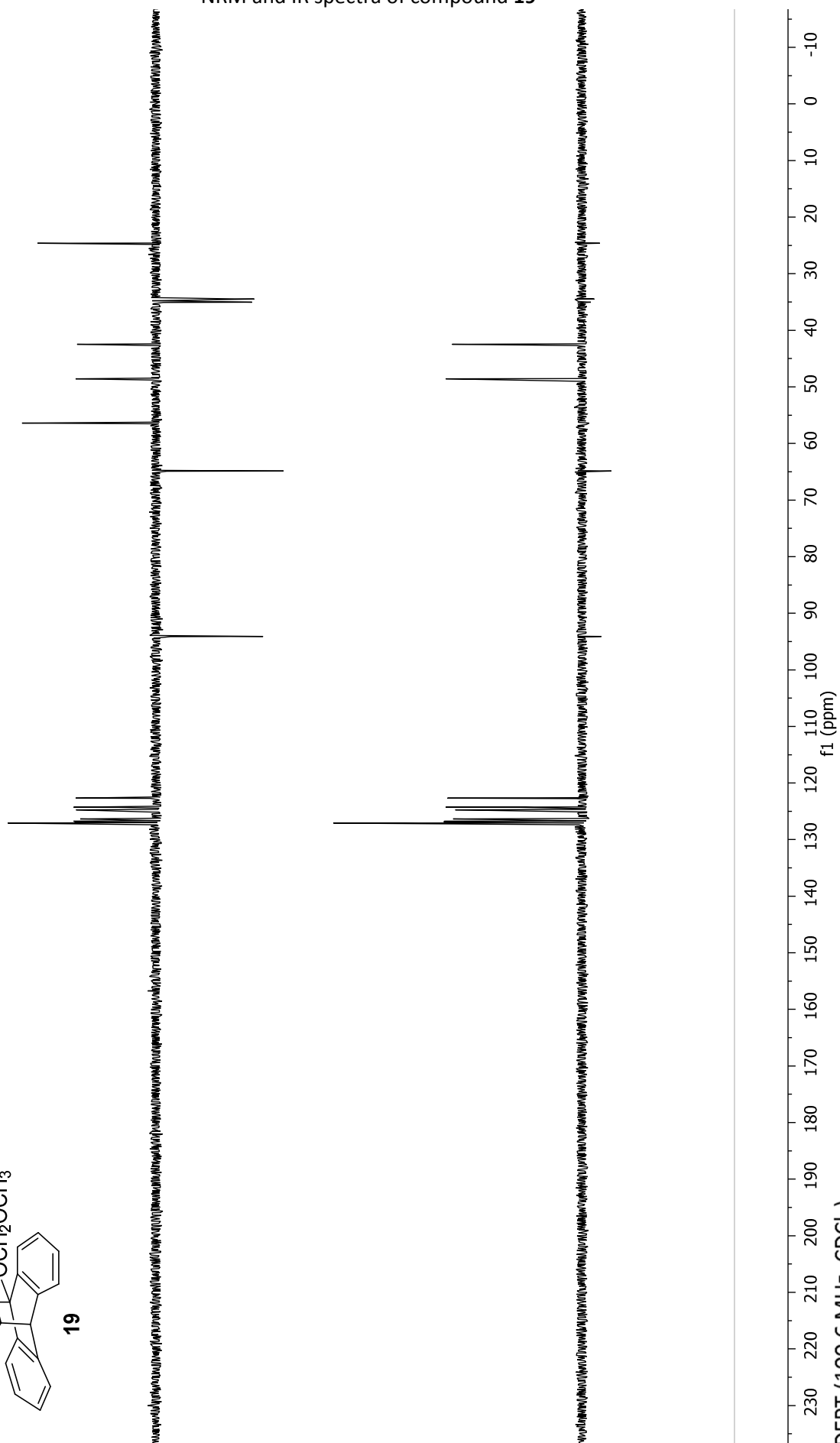
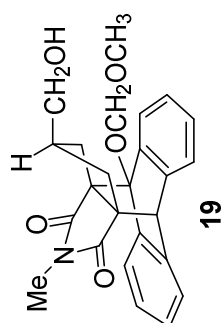
NRM and IR spectra of compound **19**

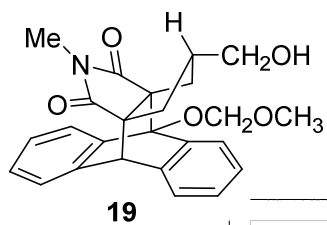


NRM and IR spectra of compound **19**



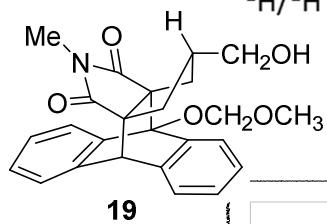
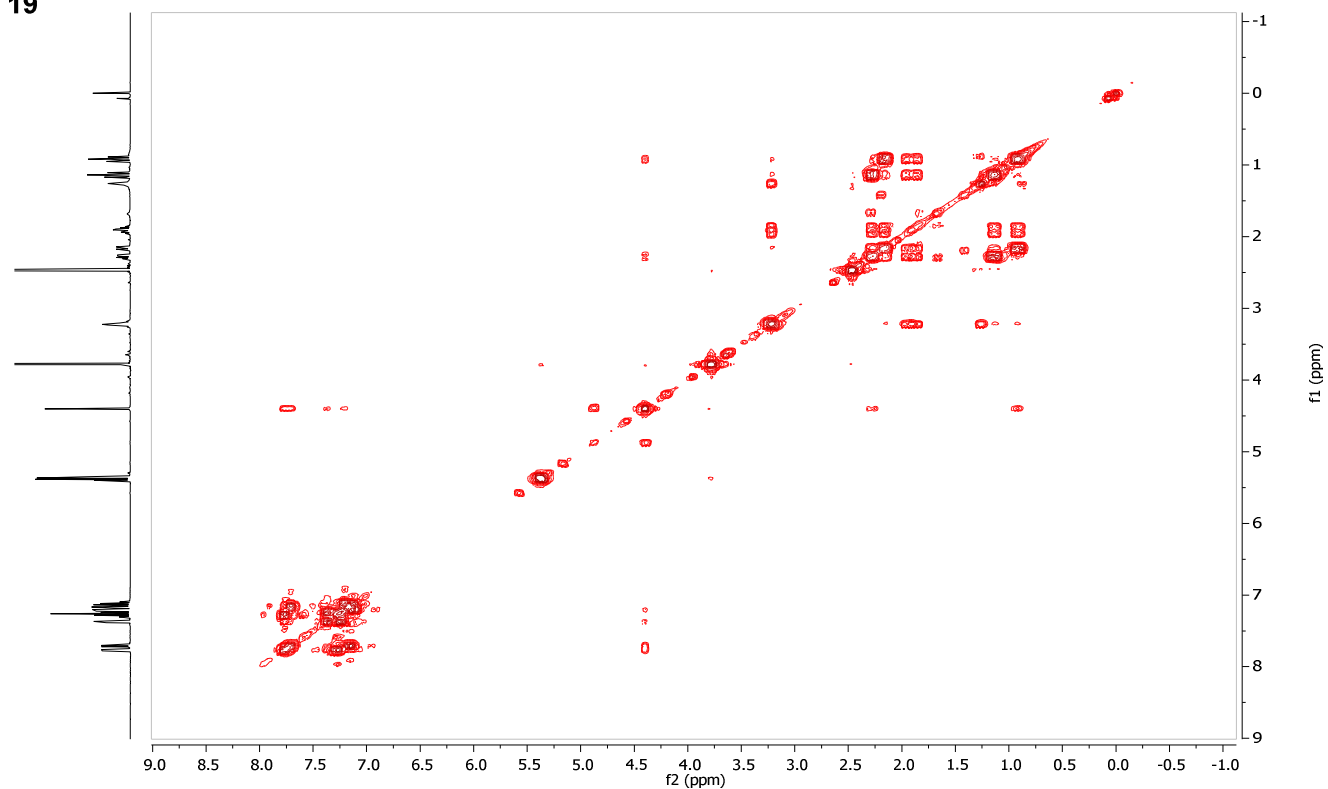
NRM and IR spectra of compound **19**

DEPT (100.6 MHz, CDCl₃)

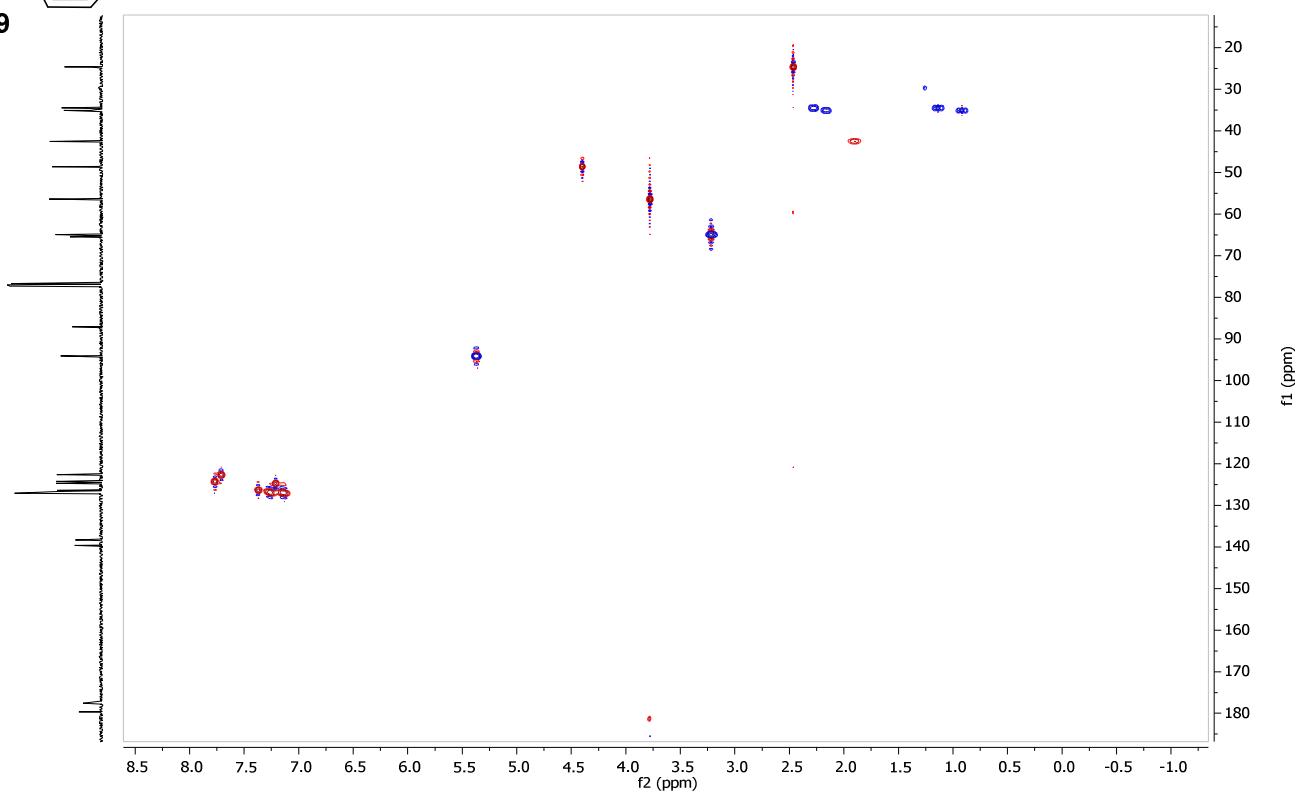


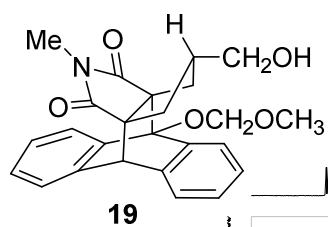
NRM and IR spectra of compound **19**

19

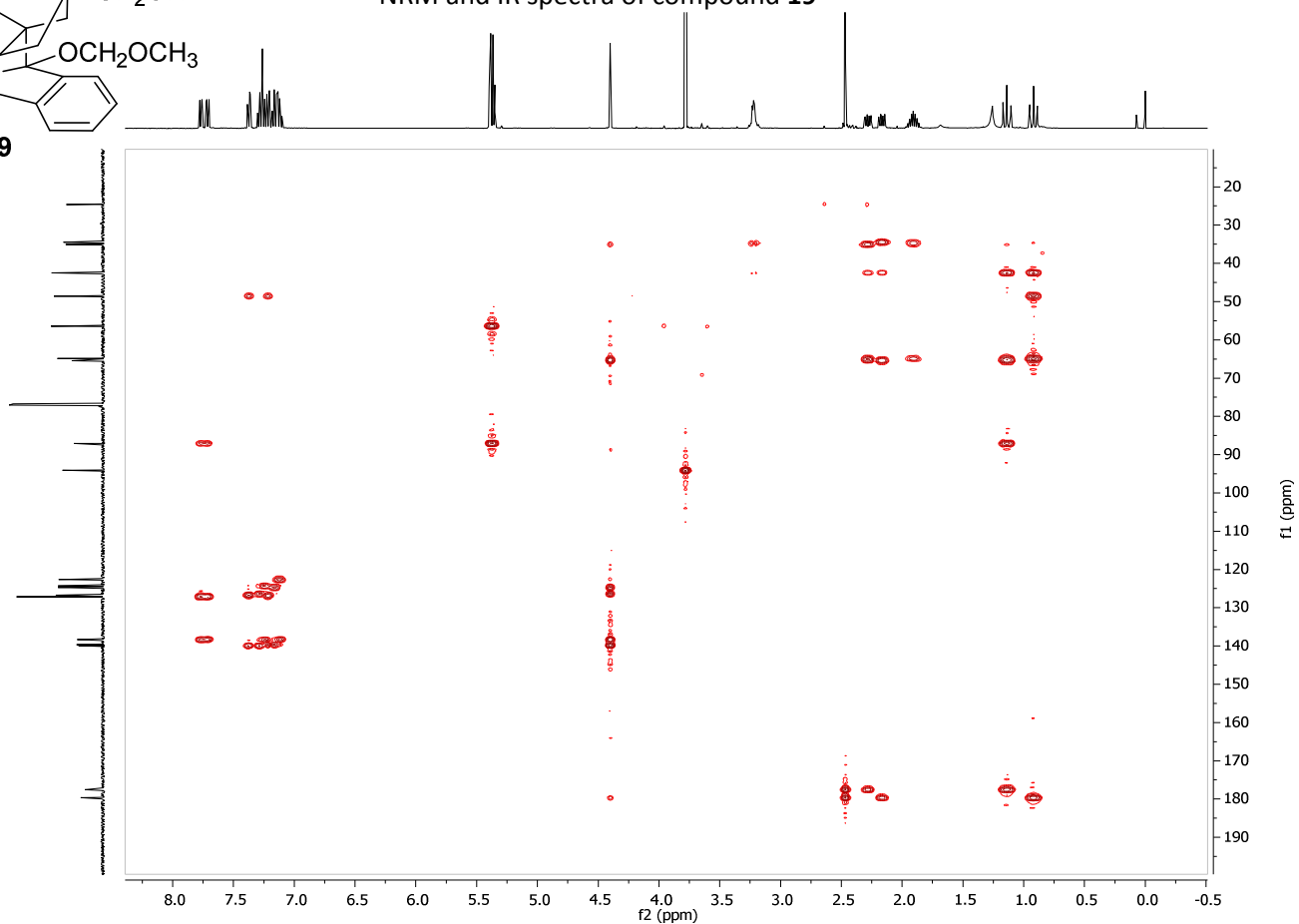


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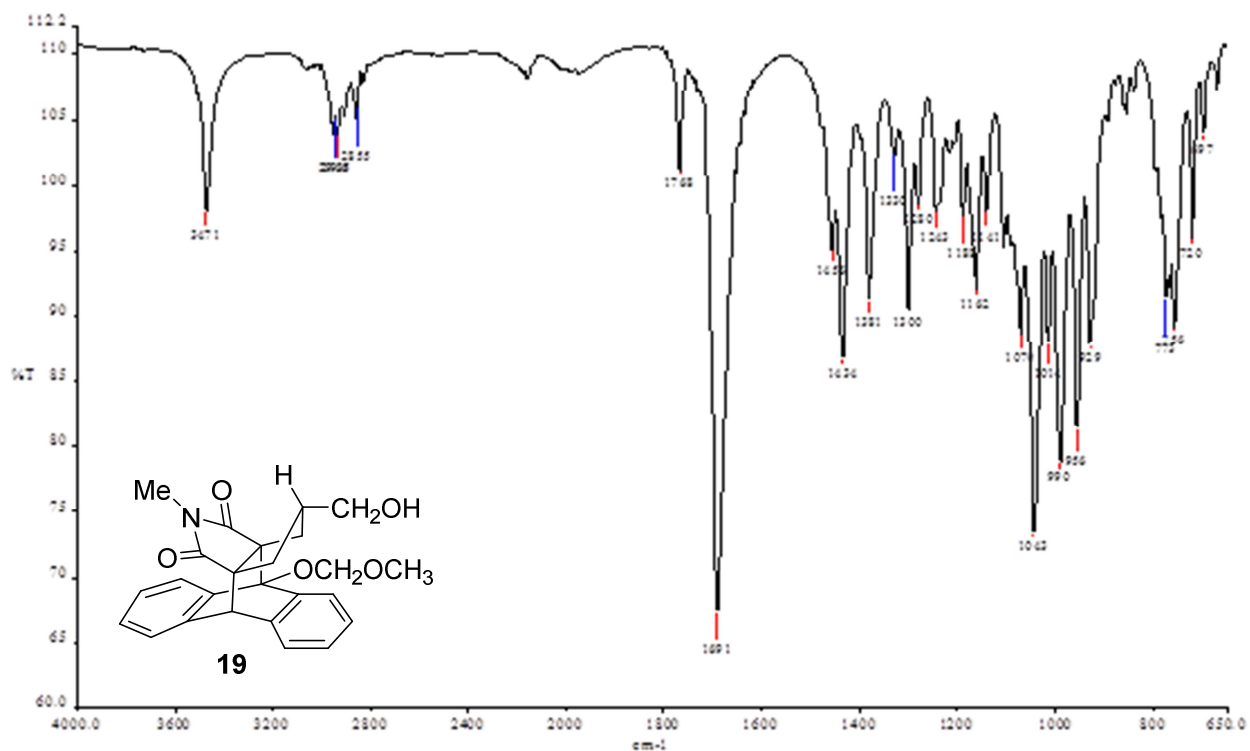




NRM and IR spectra of compound **19**

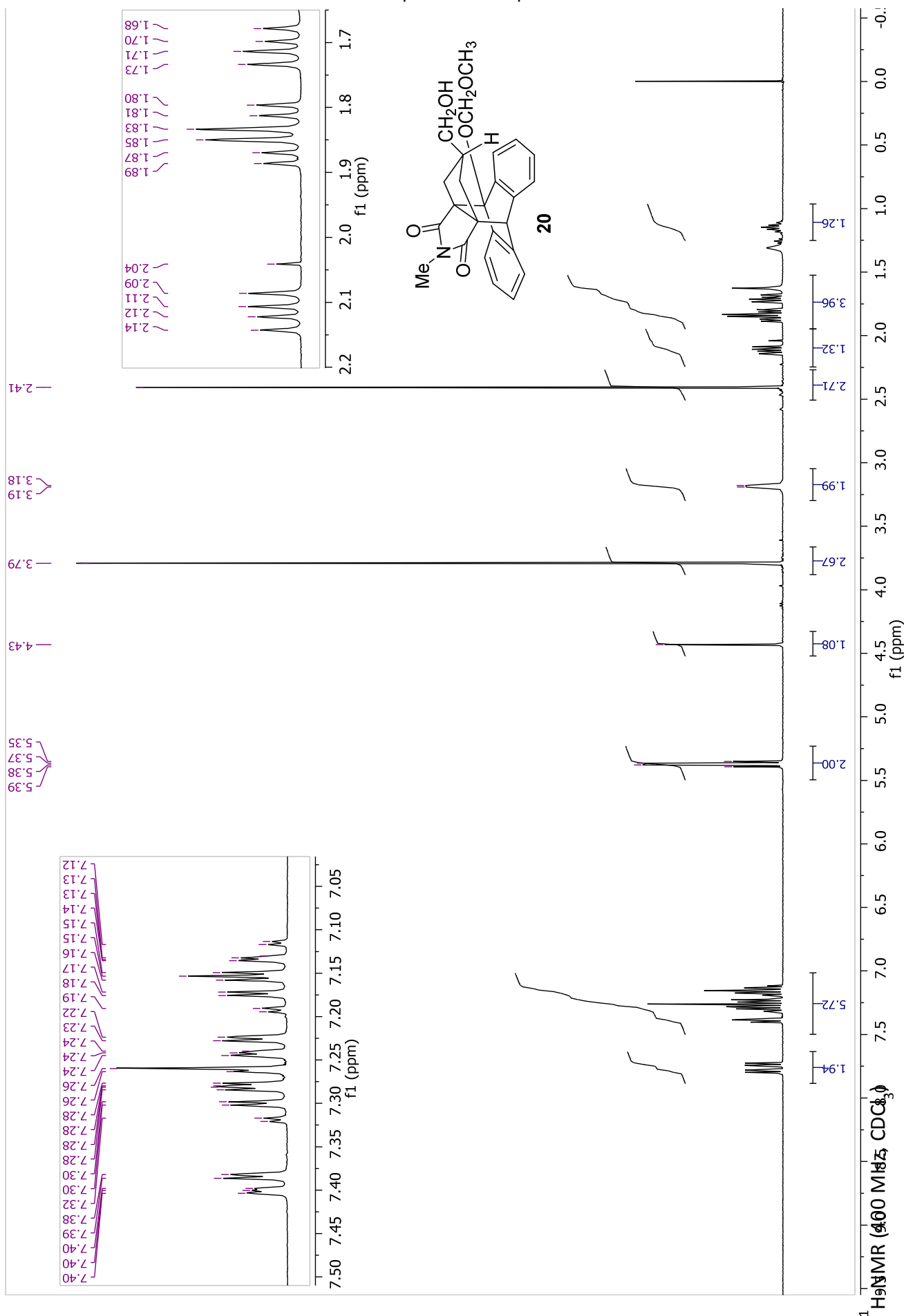


$^1\text{H}/^{13}\text{C}$ HETCOR (gHMBC sequence) (400 MHz, CDCl_3)

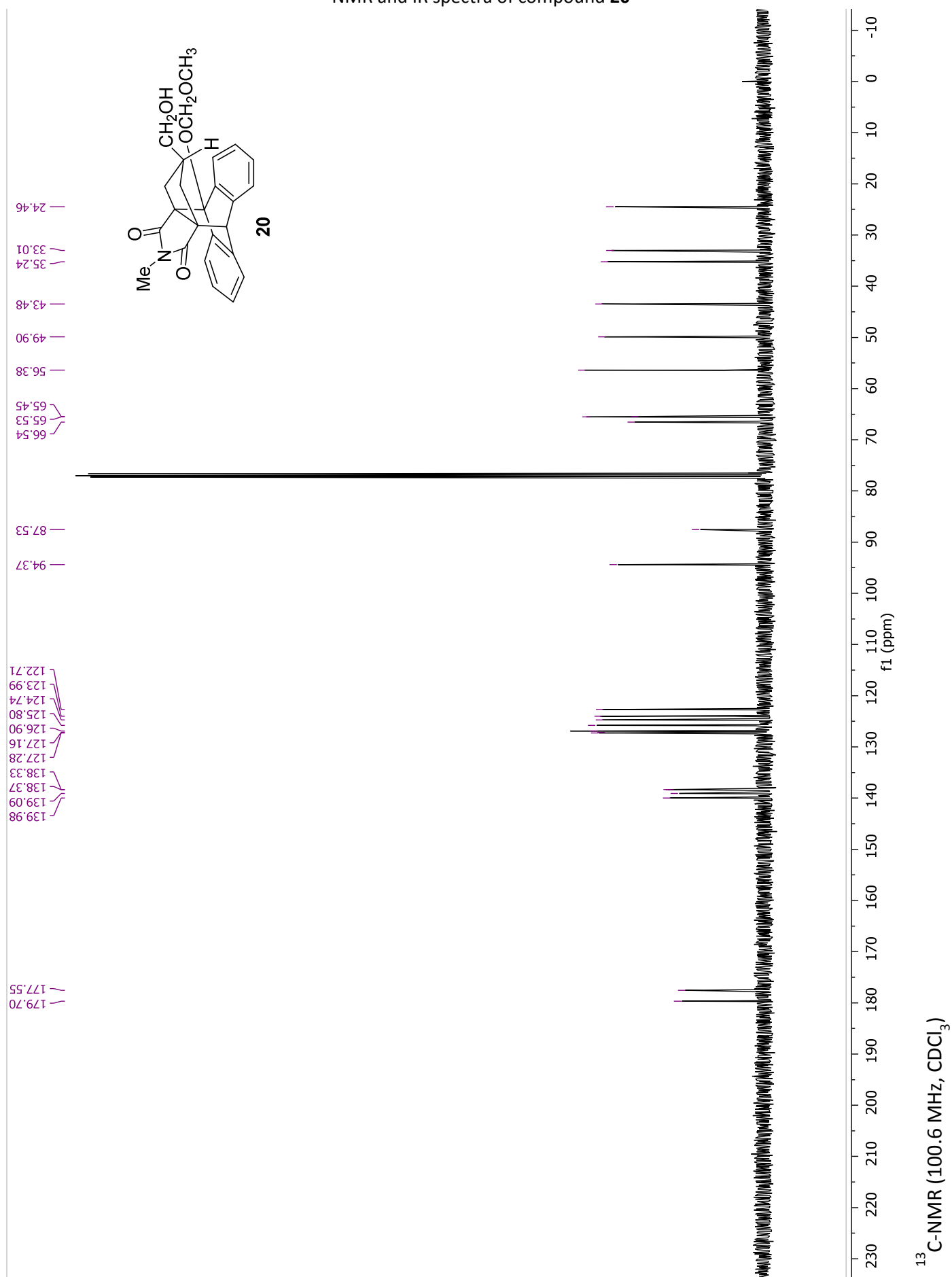


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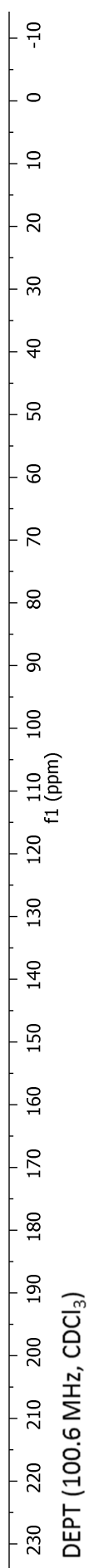
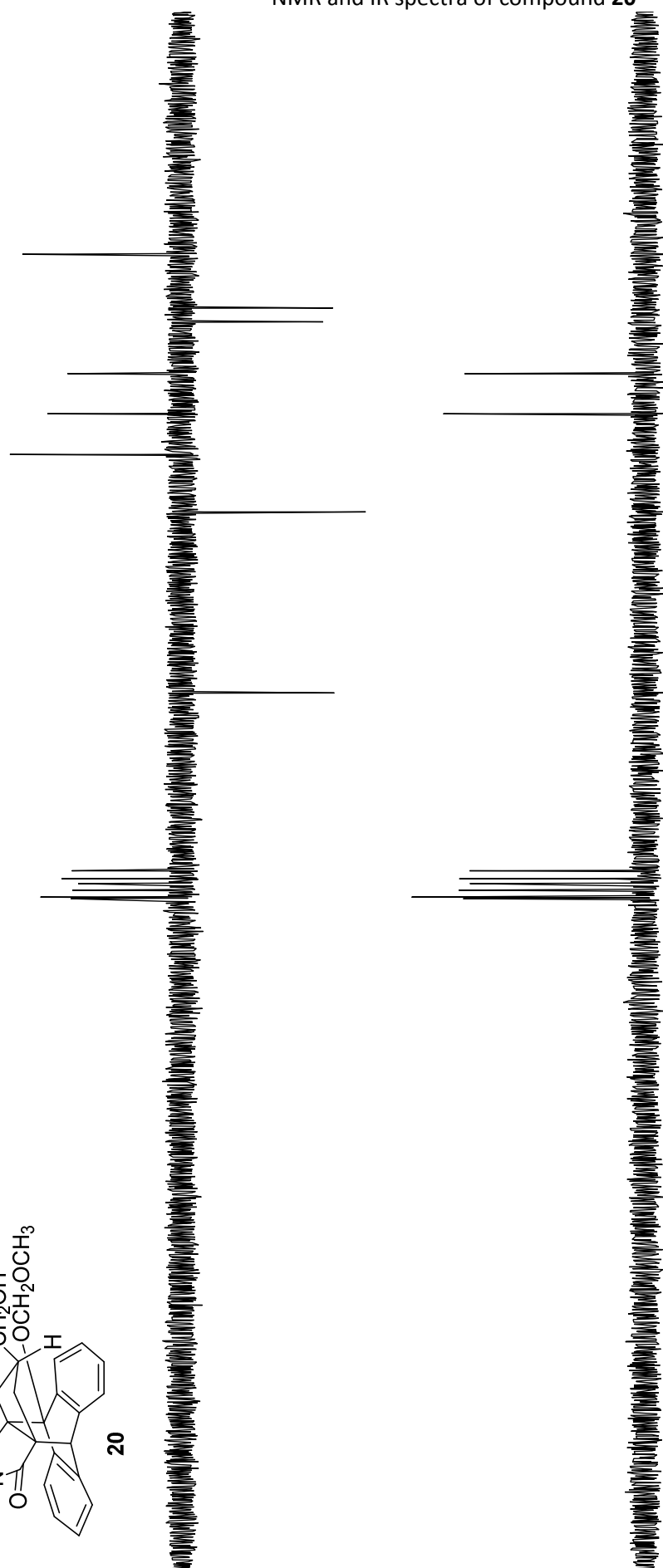
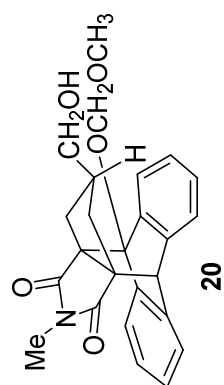
NMR and IR spectra of compound **20**

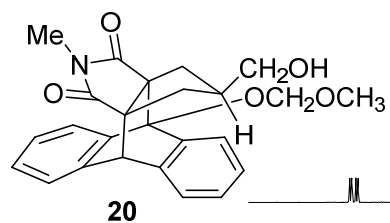


NMR and IR spectra of compound **20**



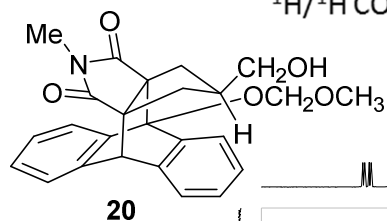
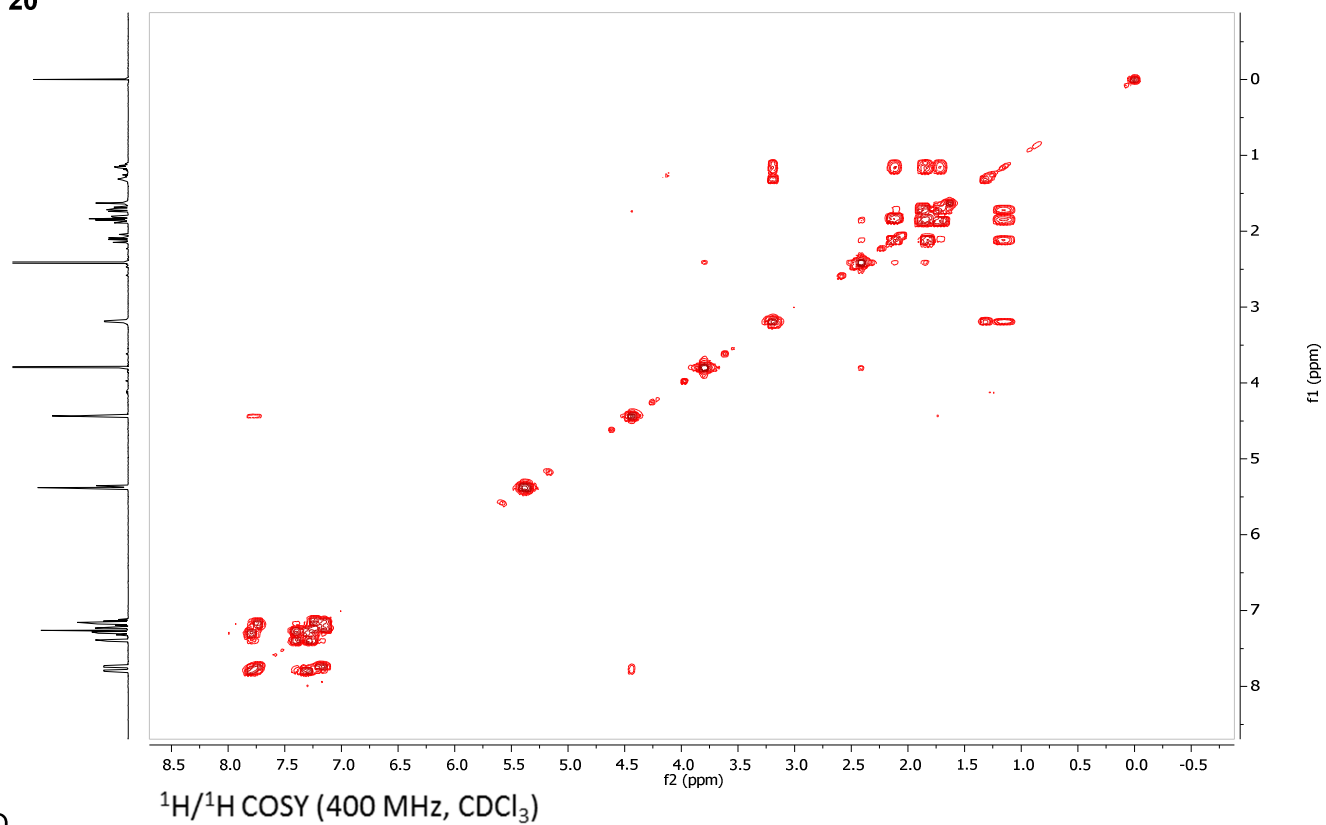
NMR and IR spectra of compound **20**



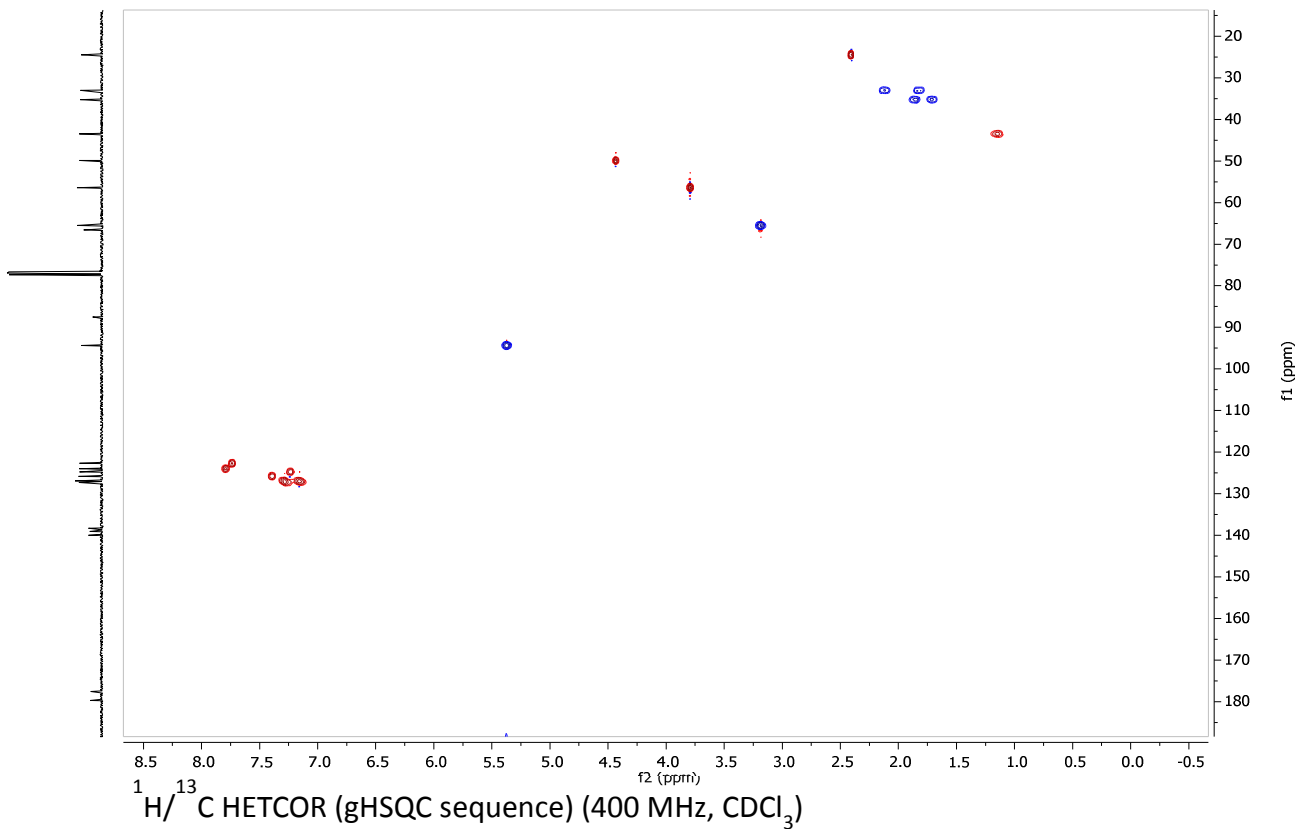


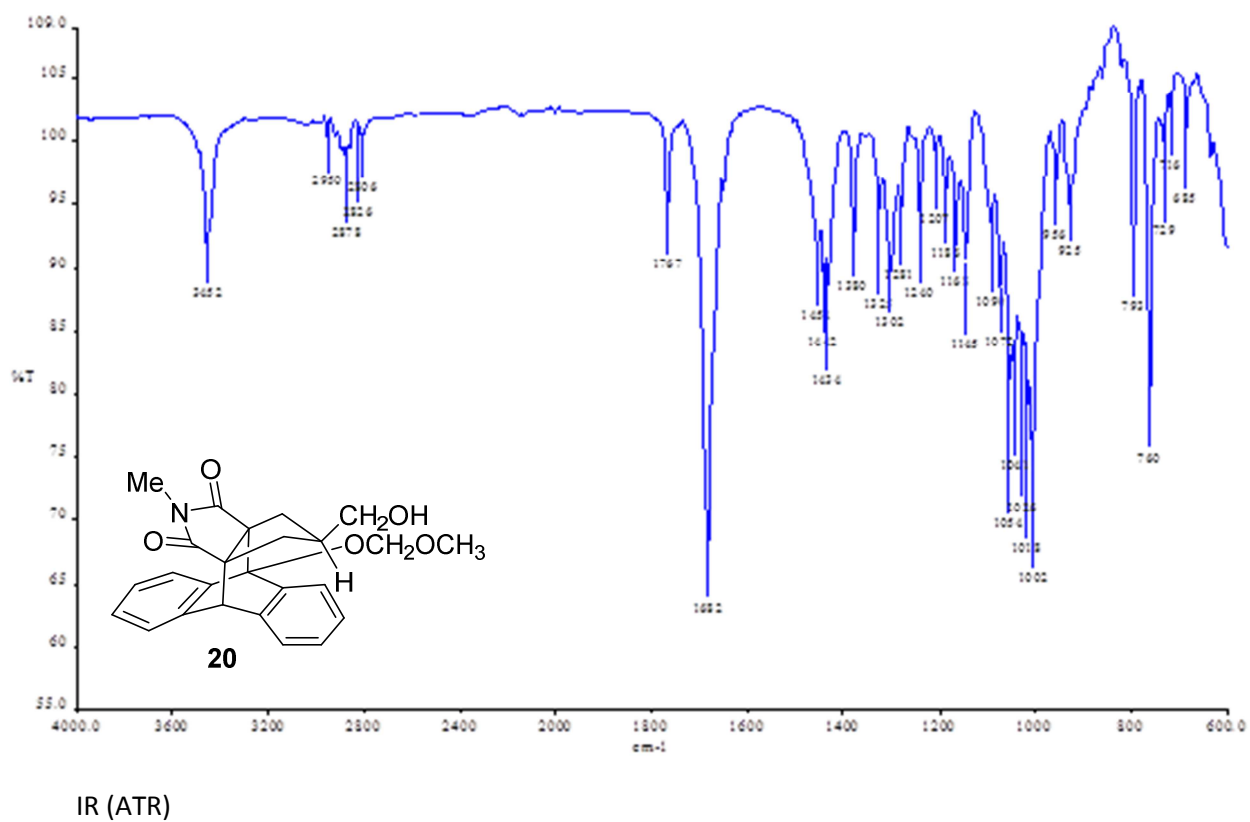
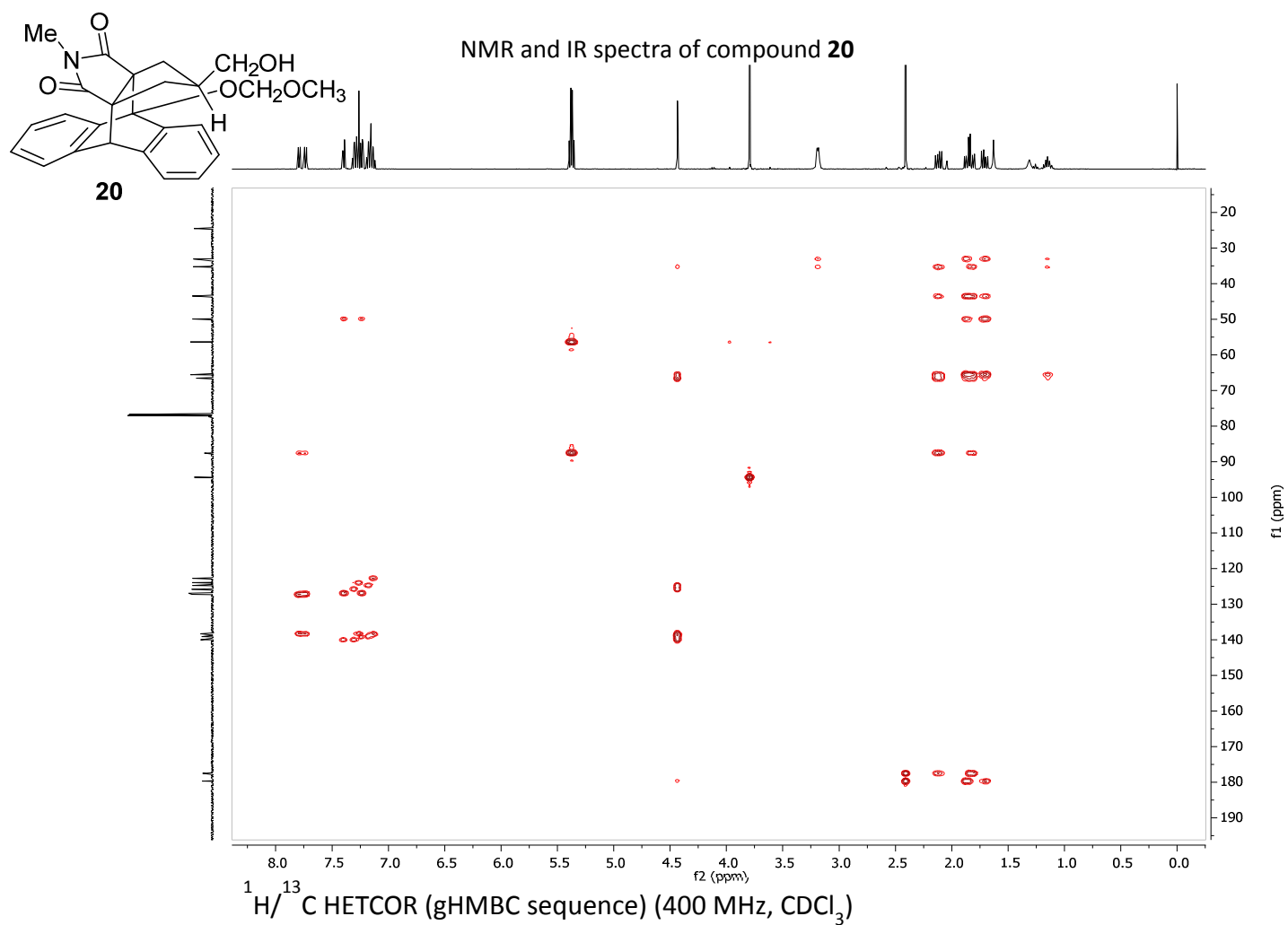
NMR and IR spectra of compound **20**

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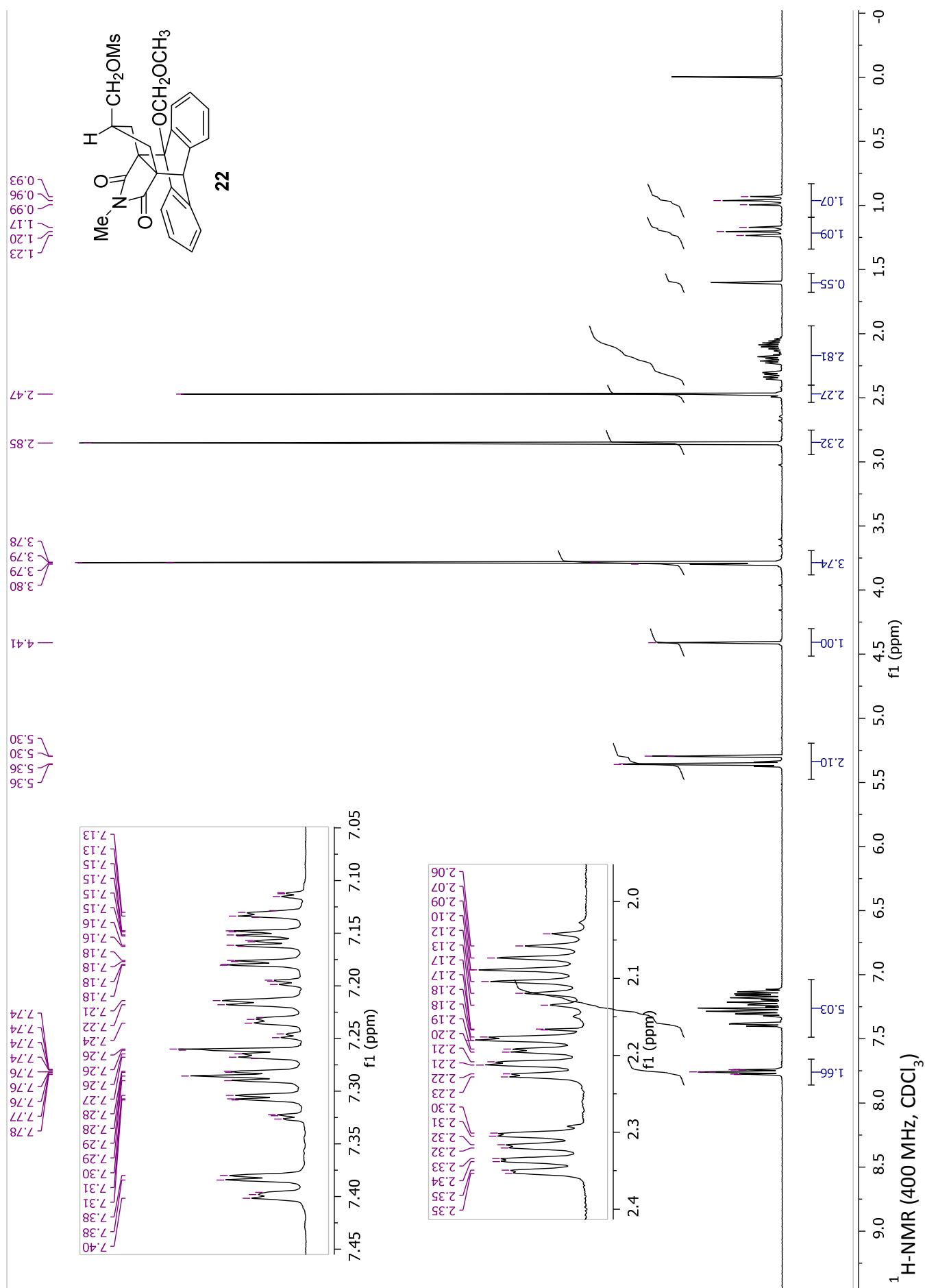


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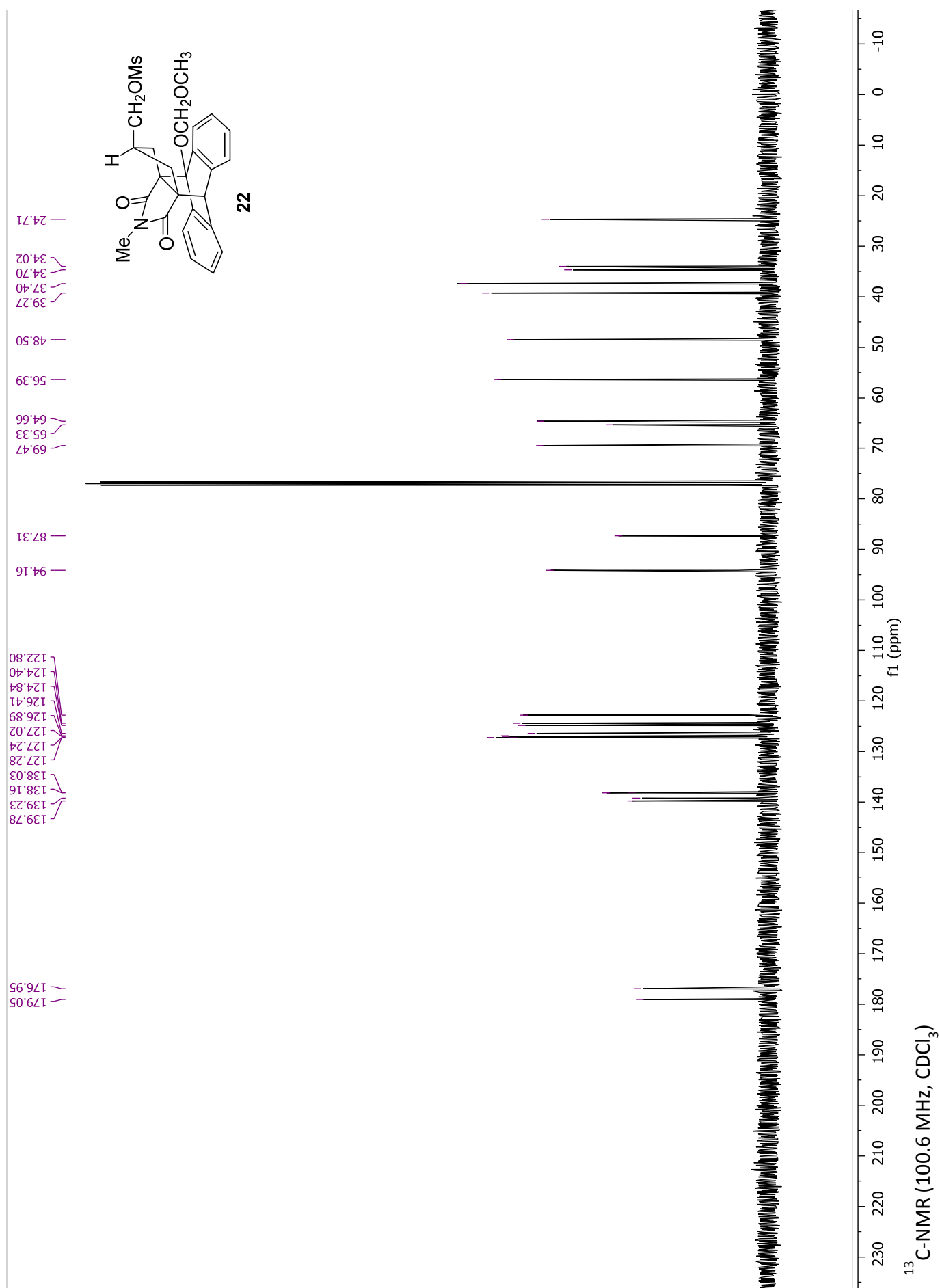


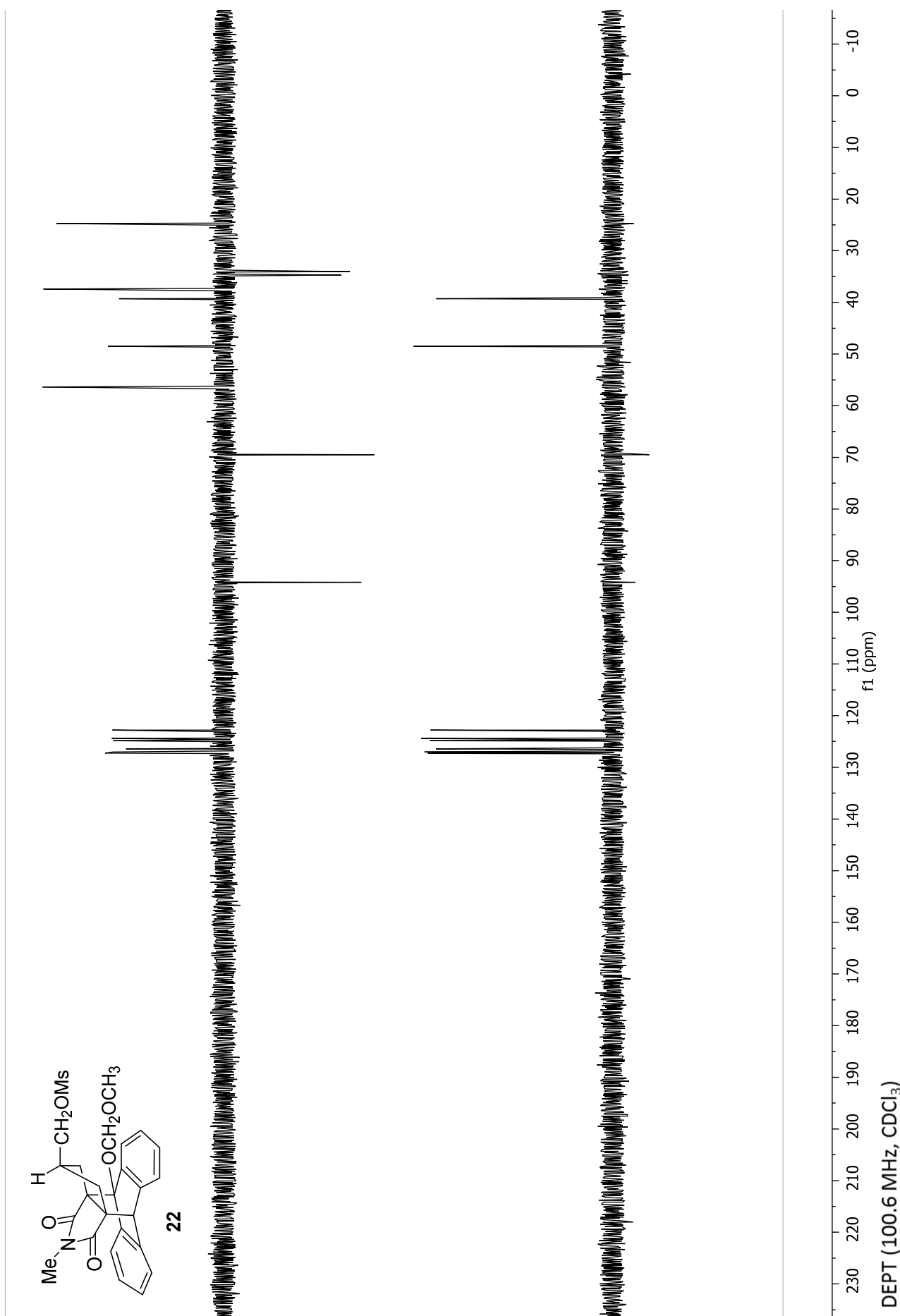


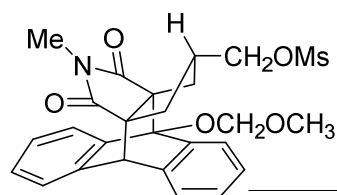
NMR and IR spectra of compound **22**



NMR and IR spectra of compound **22**

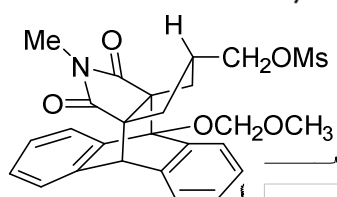
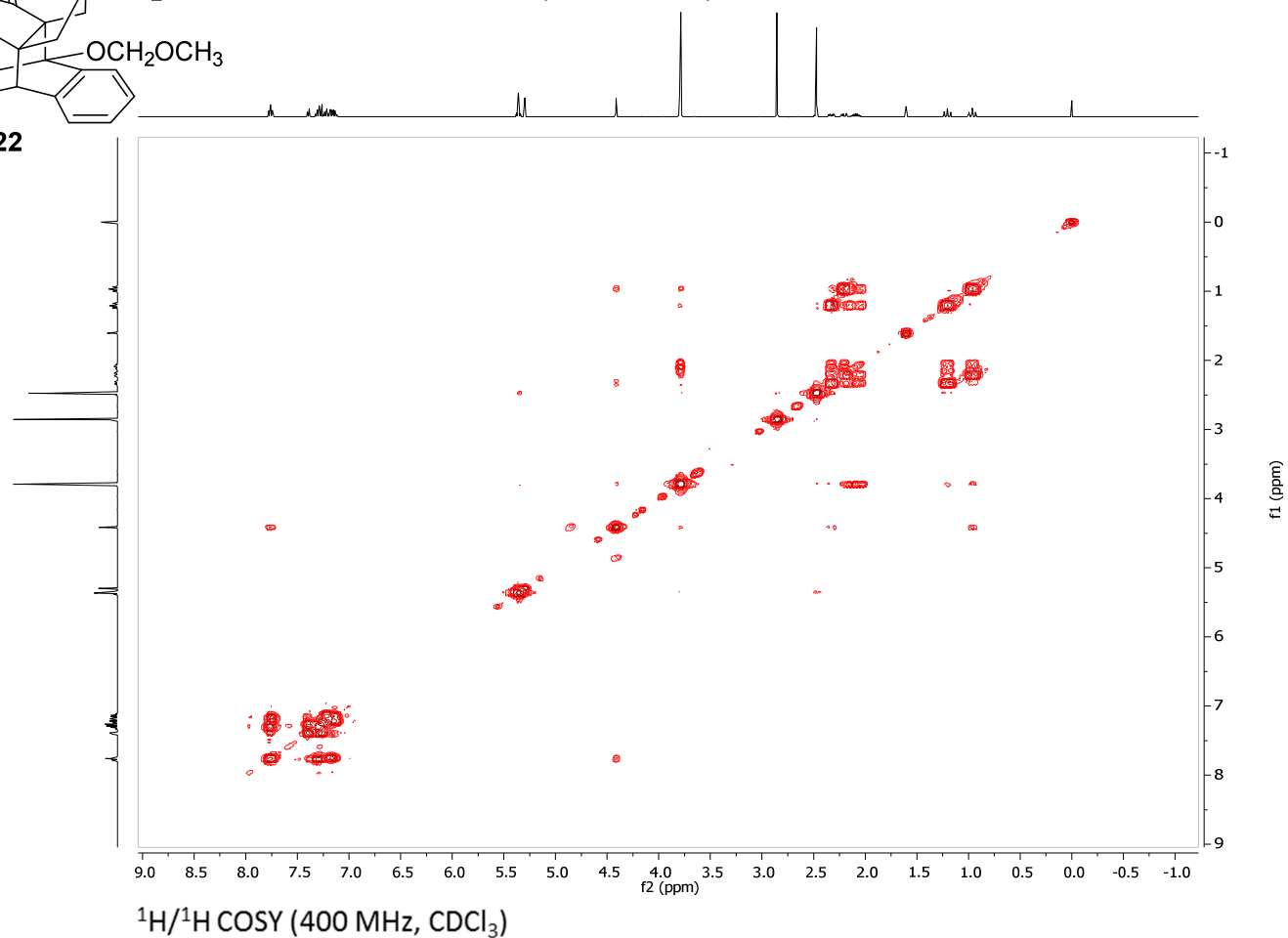




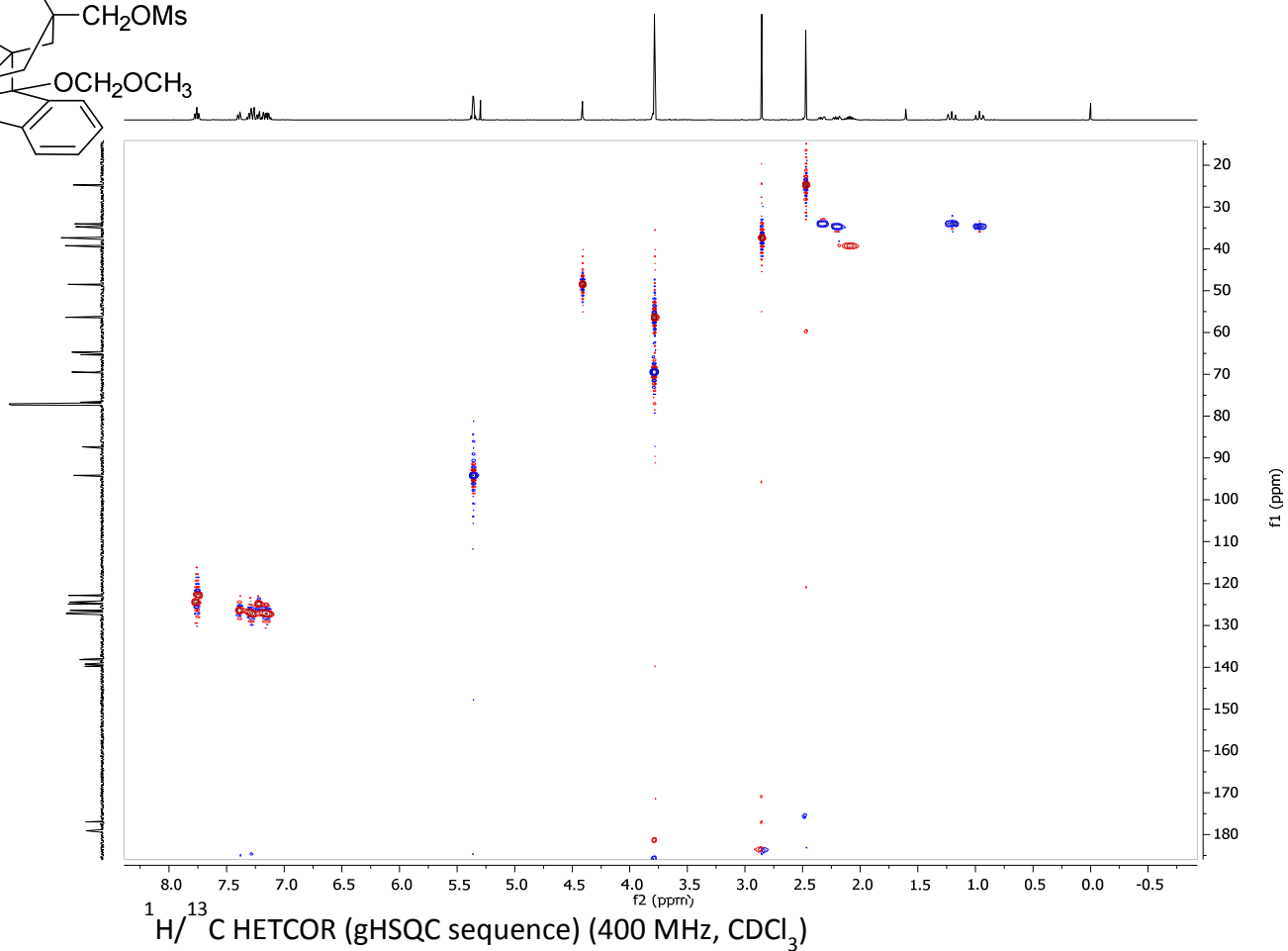


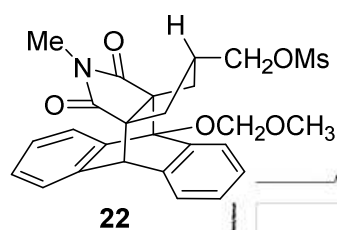
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NMR and IR spectra of compound **22**

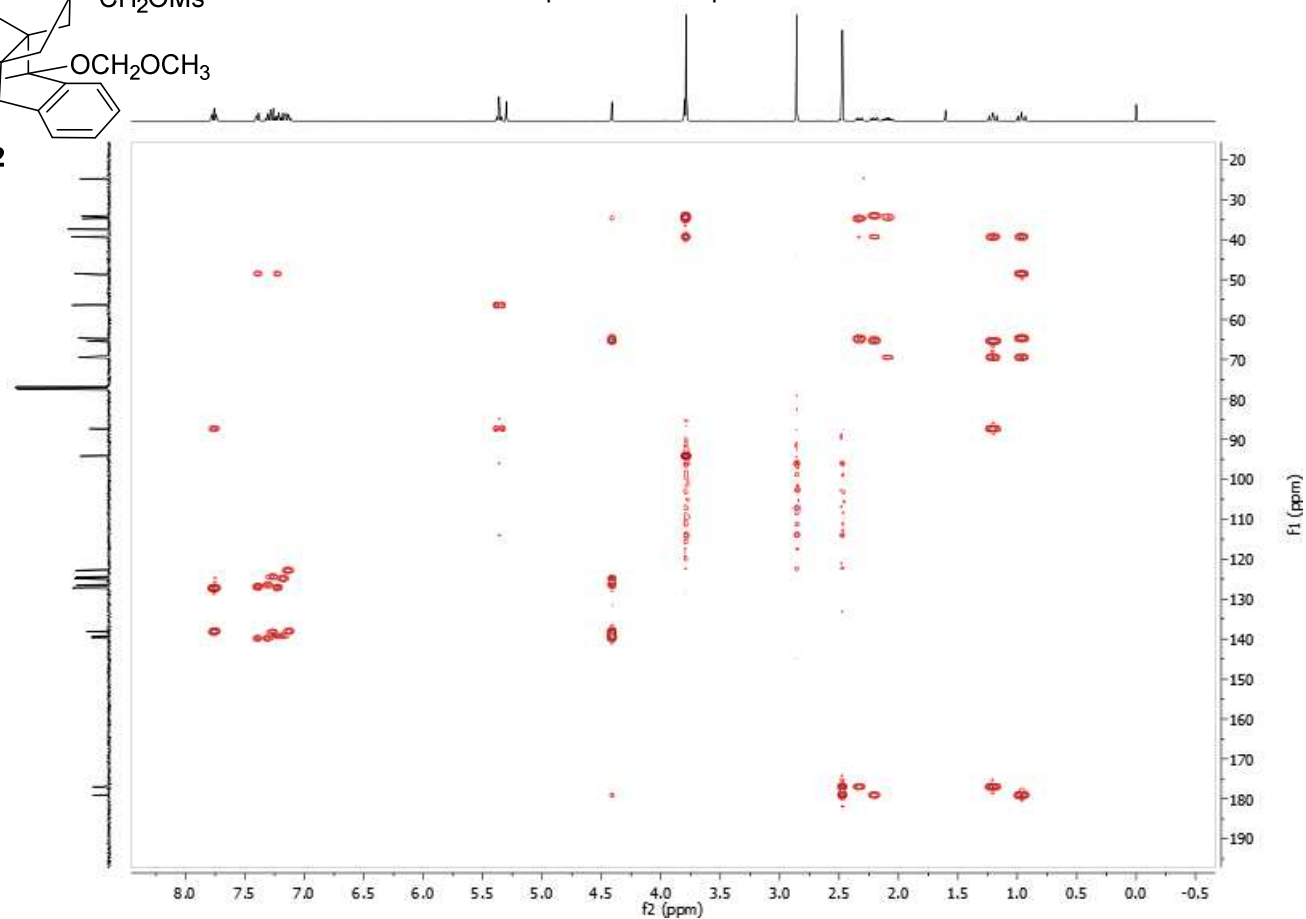


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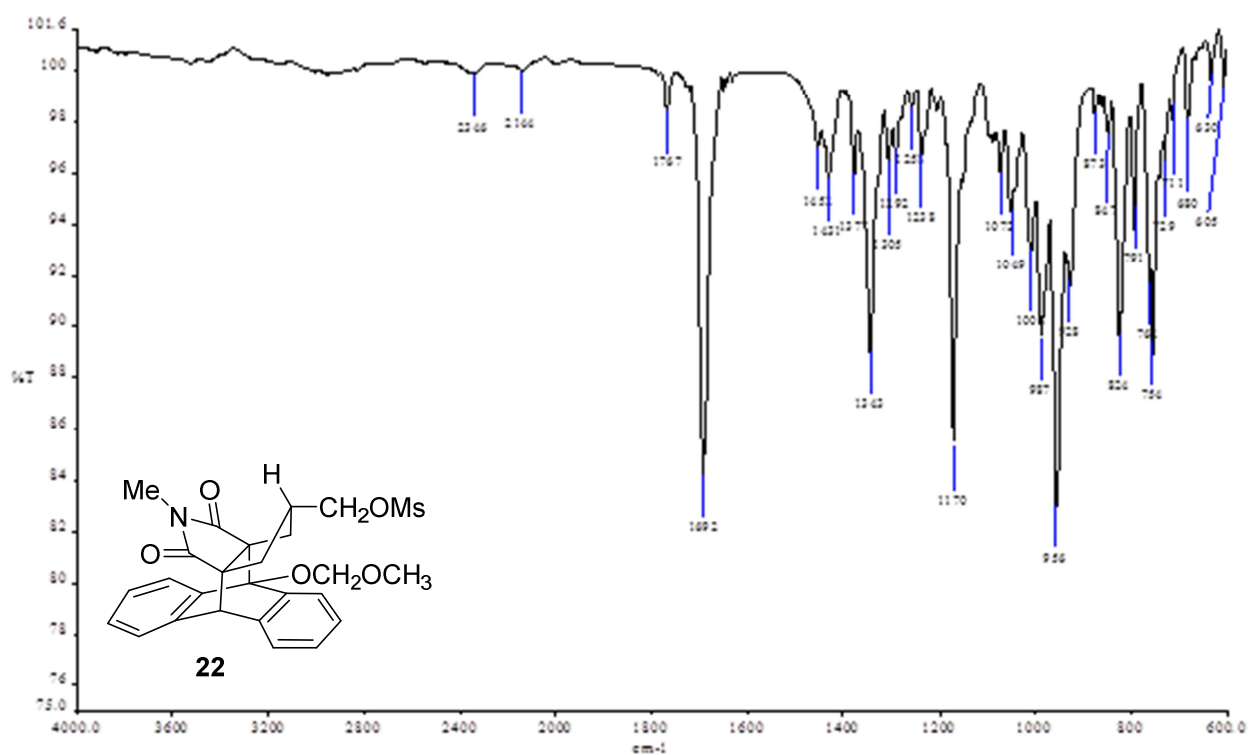




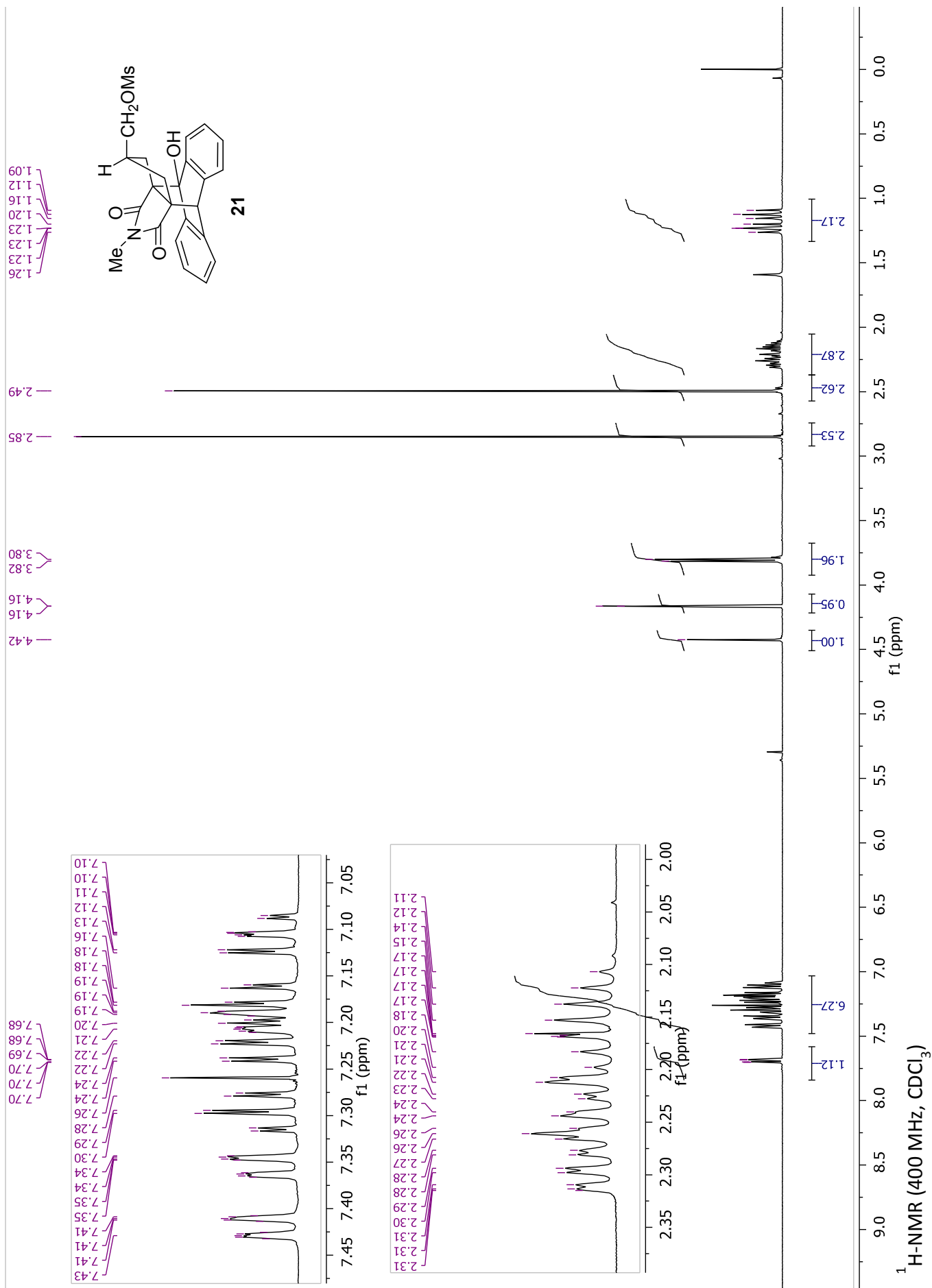
NMR and IR spectra of compound **22**



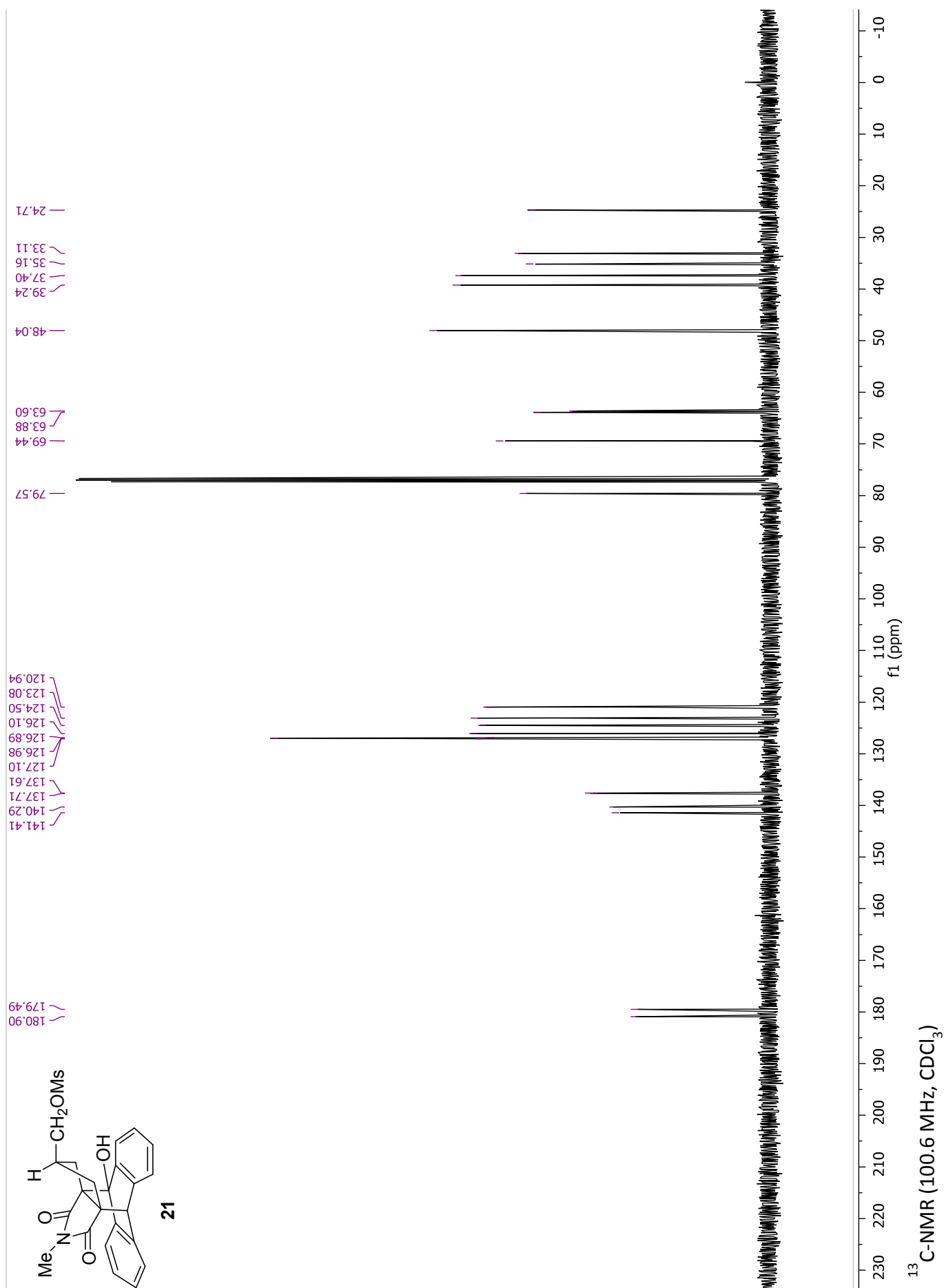
¹H/¹³C HETCOR (gHMBC sequence) (400 MHz, CDCl₃)

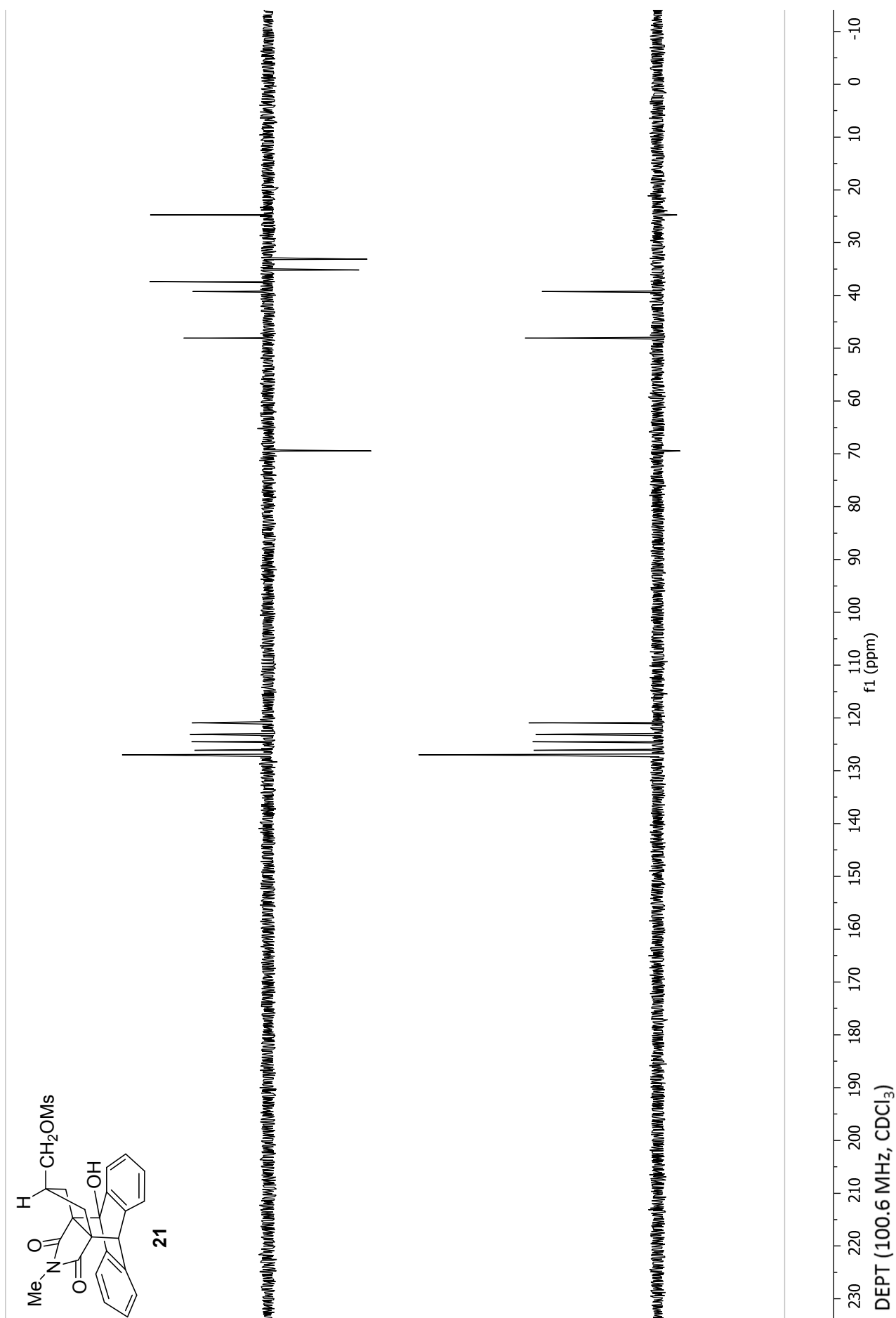


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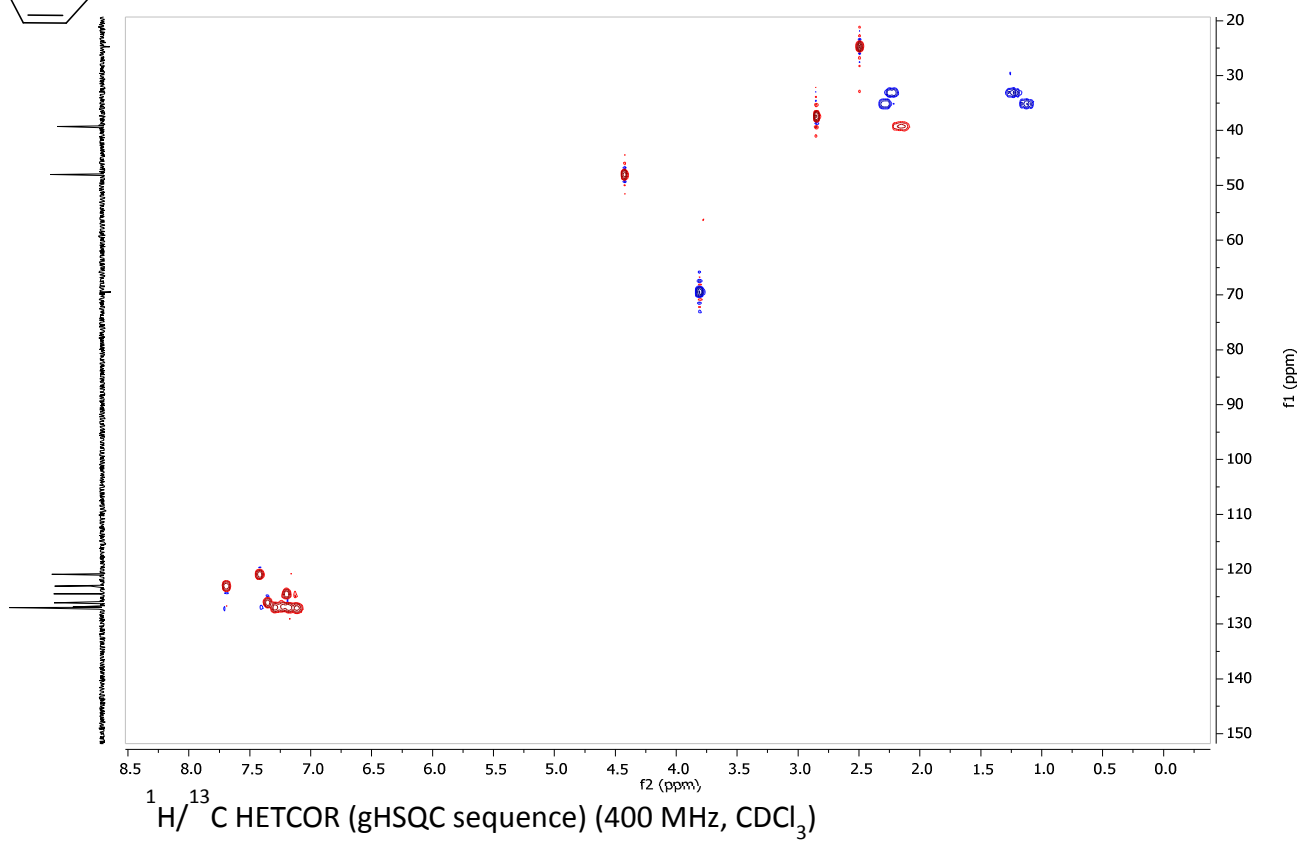
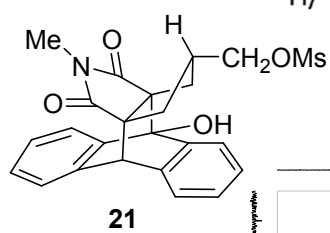
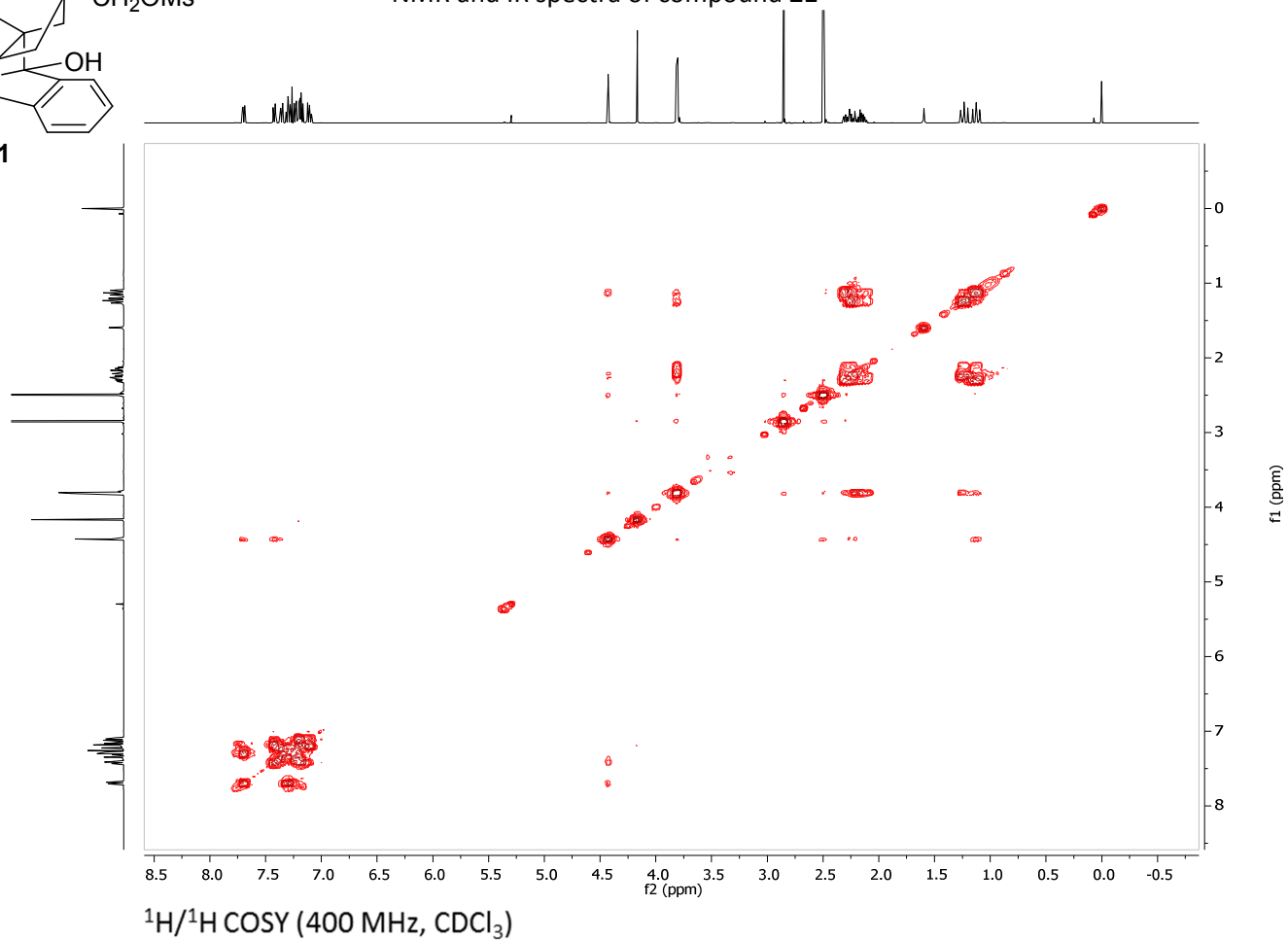
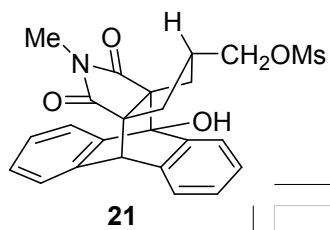
NMR and IR spectra of compound **21**

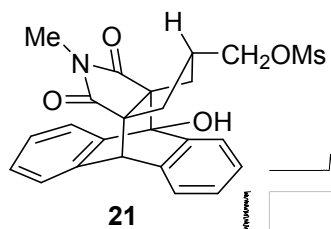
NMR and IR spectra of compound **21**



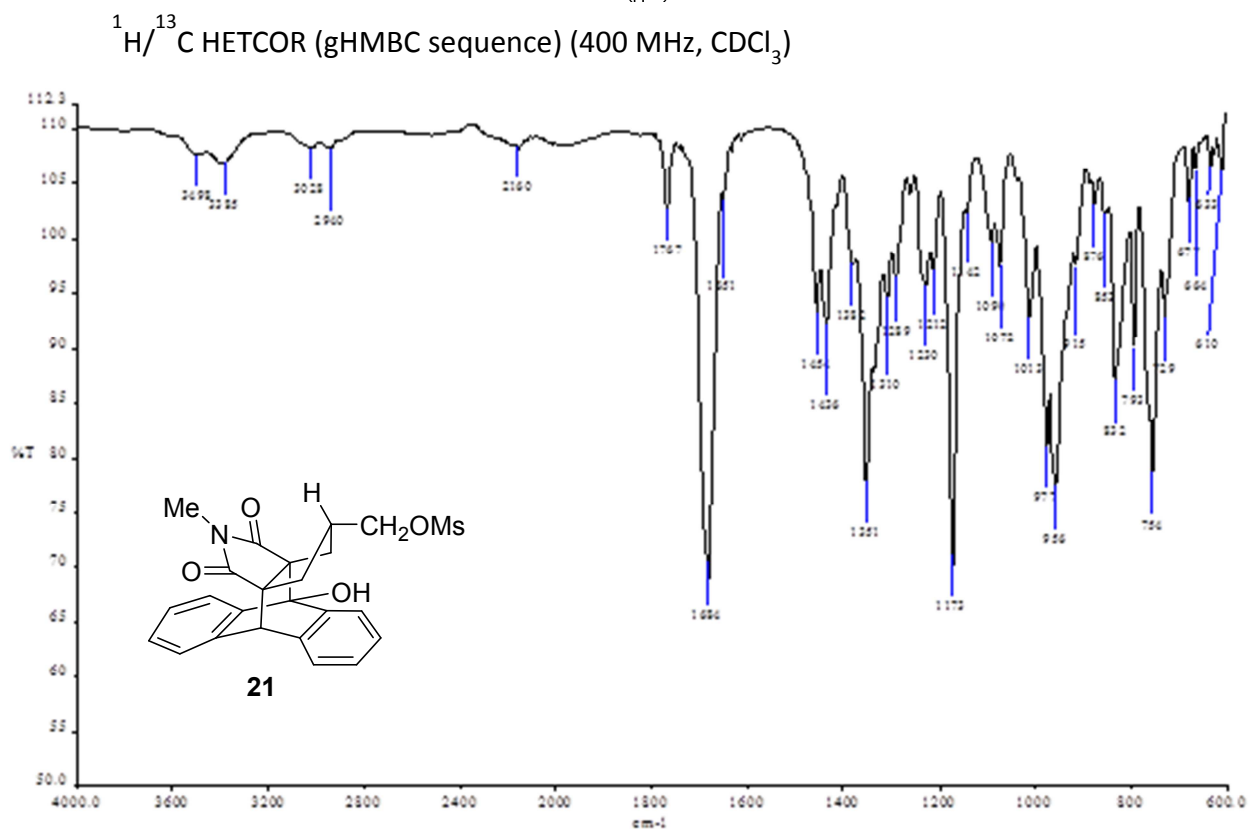
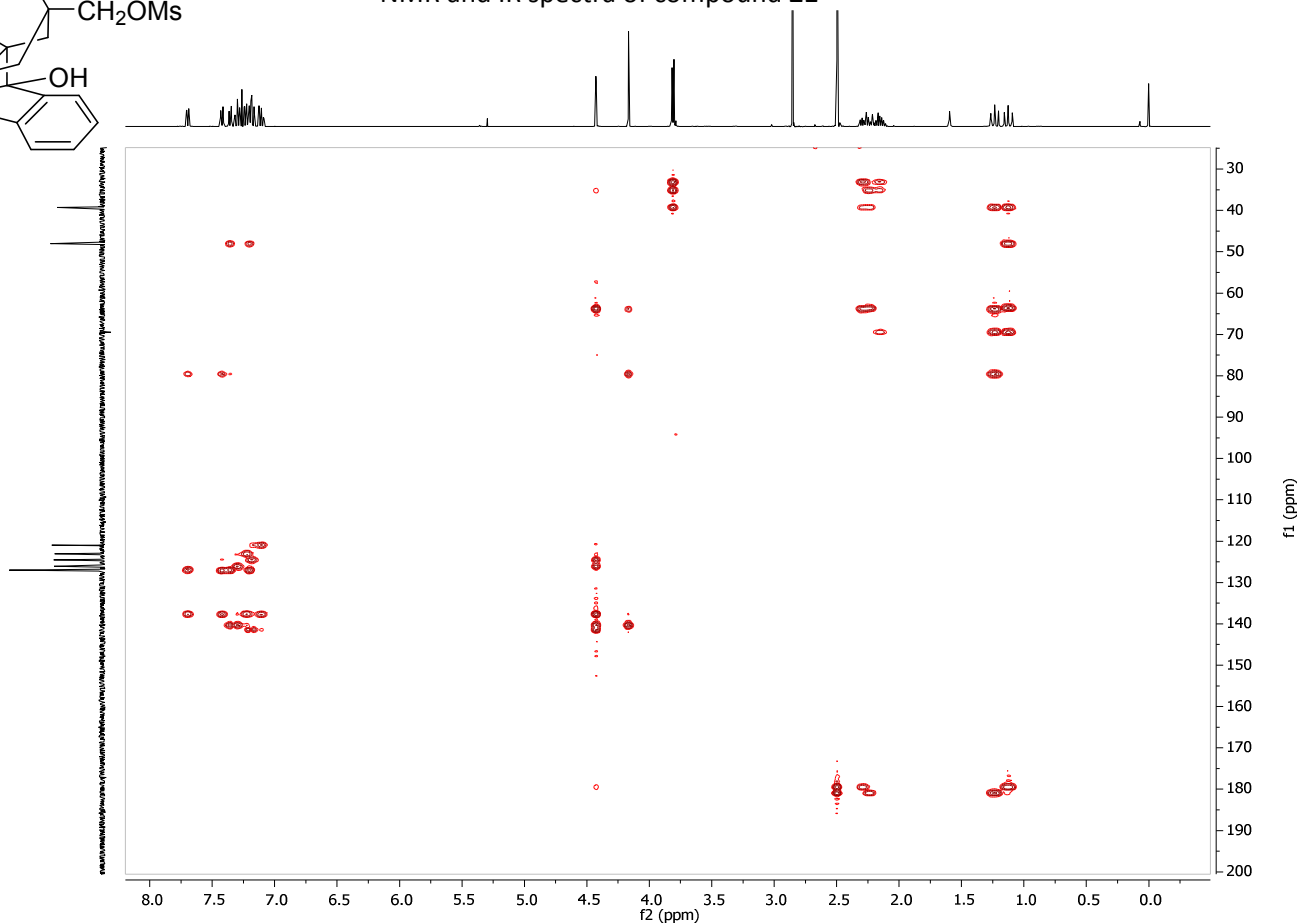


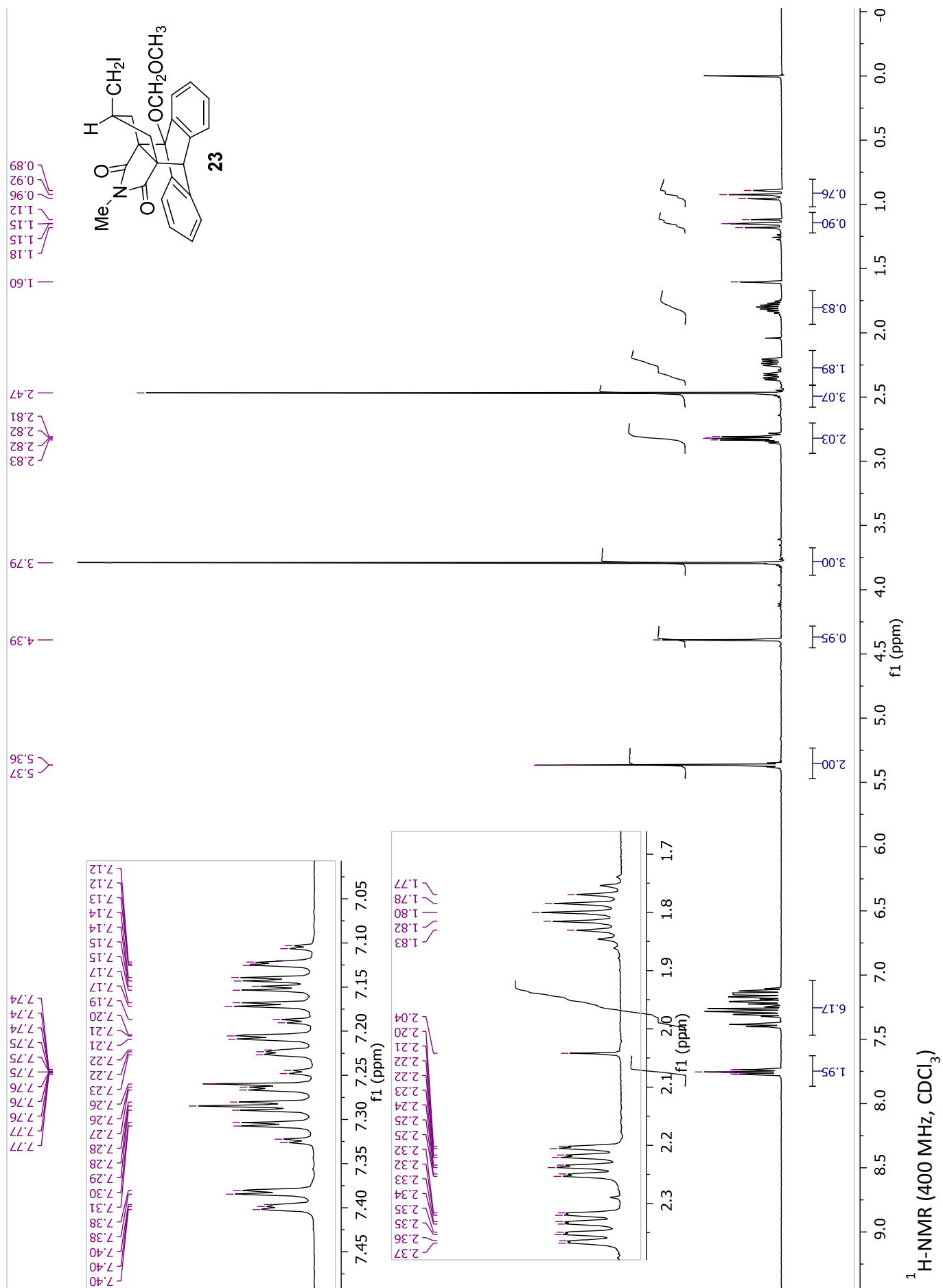
NMR and IR spectra of compound **21**



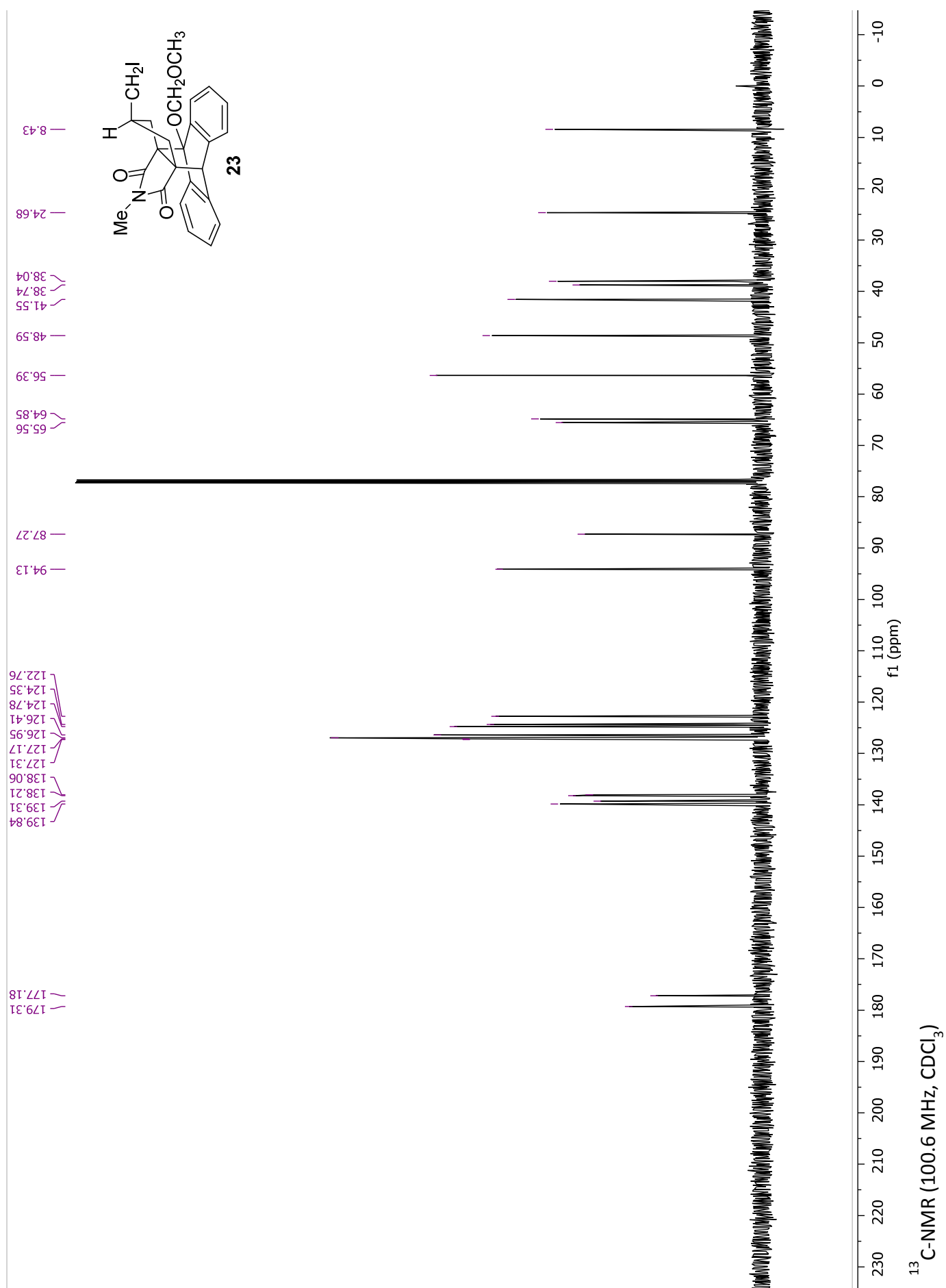


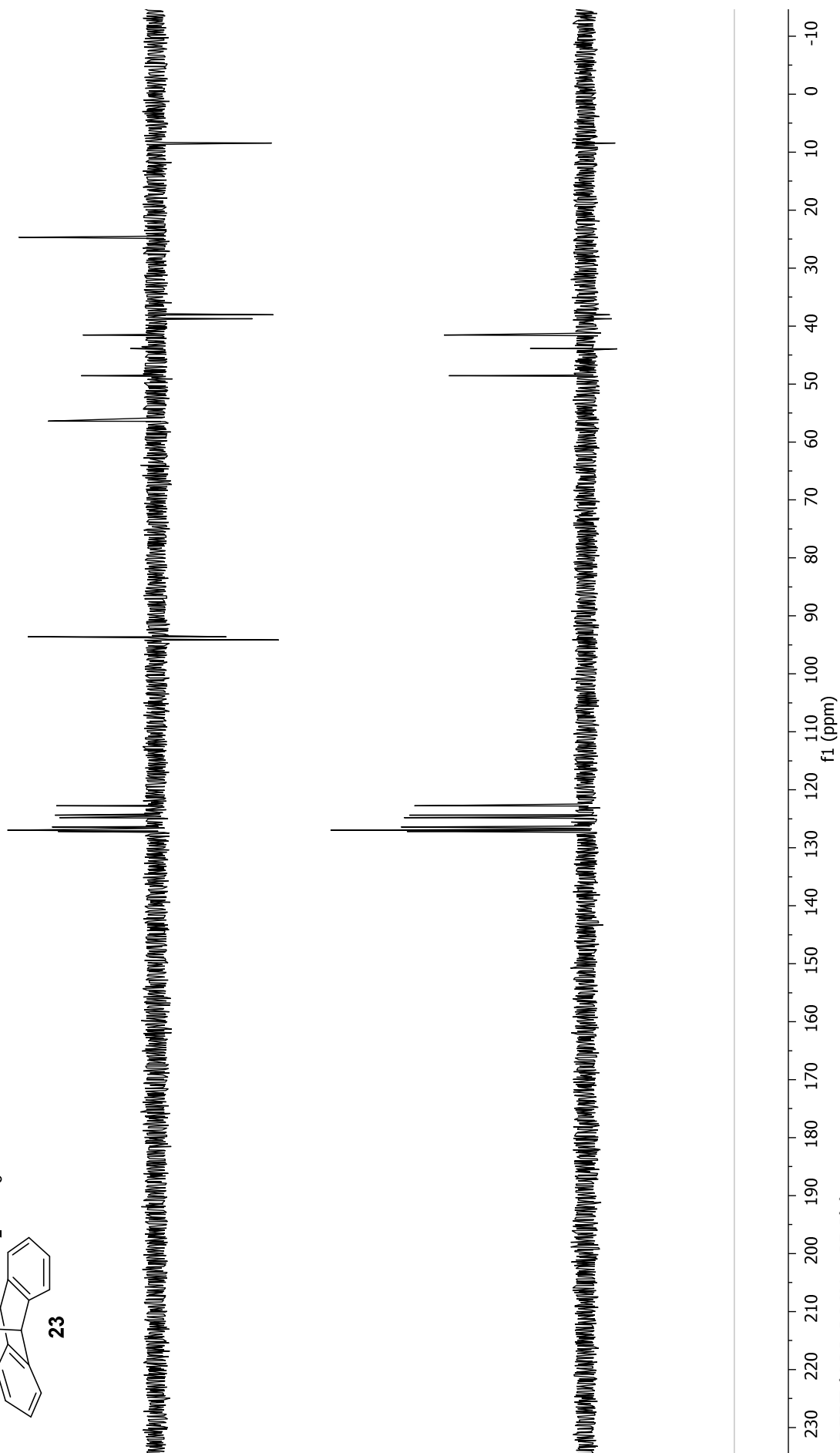
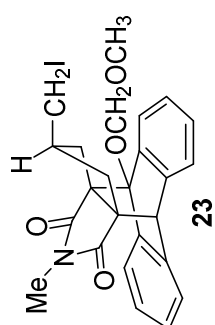
NMR and IR spectra of compound **21**





NMR and IR spectra of compound **23**







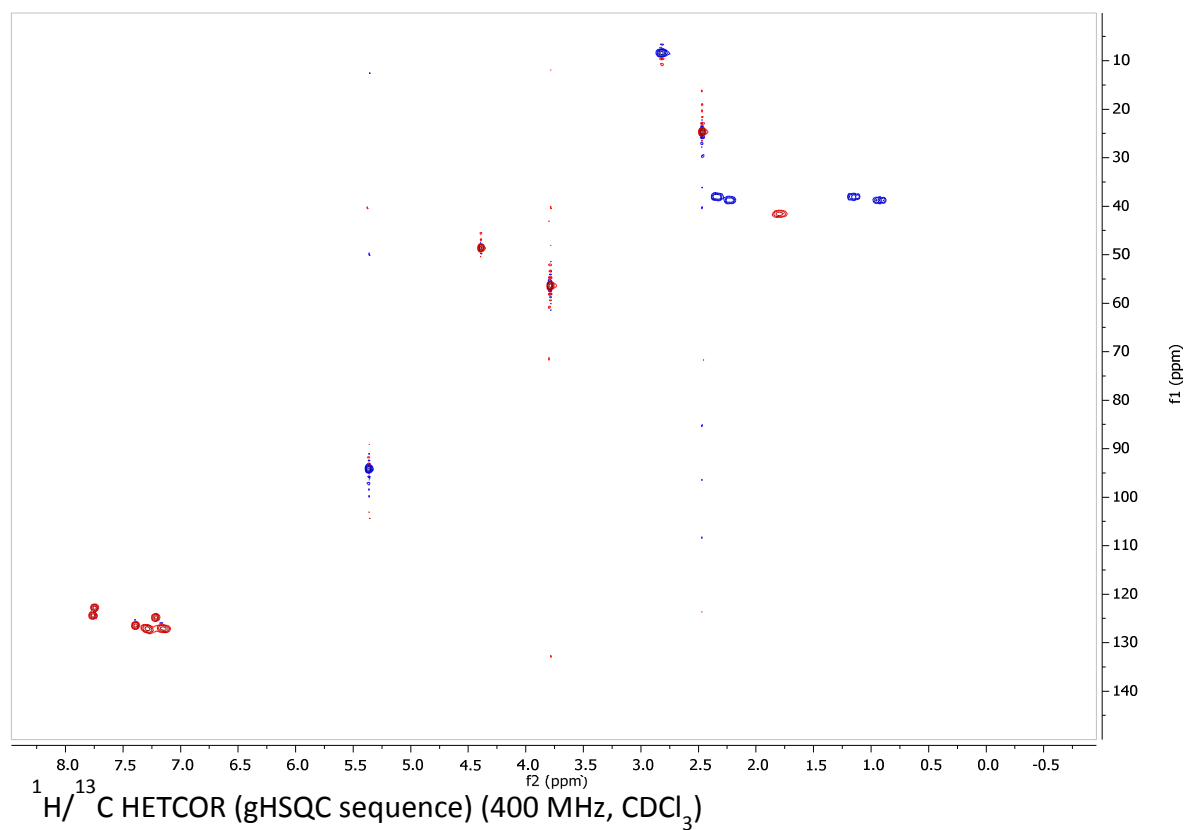
¹H NMR and ¹³C NMR spectra of compound 25.

¹H NMR (400 MHz, CDCl₃) spectrum of compound 25. The spectrum shows peaks in the aromatic region (7.0-8.0 ppm), a methoxy singlet (~3.8 ppm), and aliphatic signals (1.0-2.5 ppm).

¹³C NMR (100 MHz, CDCl₃) spectrum of compound 25. The spectrum shows peaks from 0 to 9 ppm, including a methoxy carbon (~5.5 ppm) and aliphatic carbons (1.0-4.5 ppm).

23

23



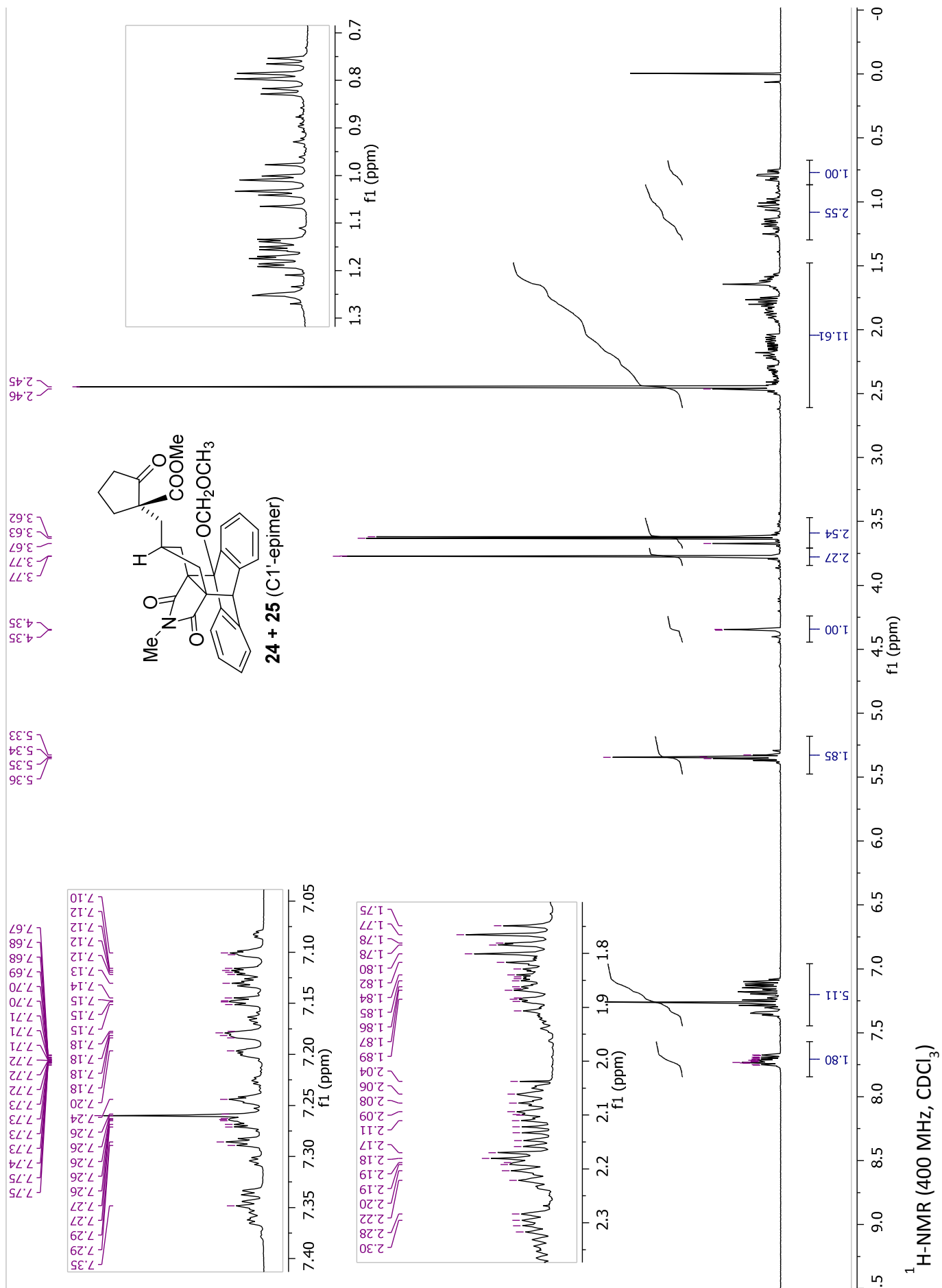


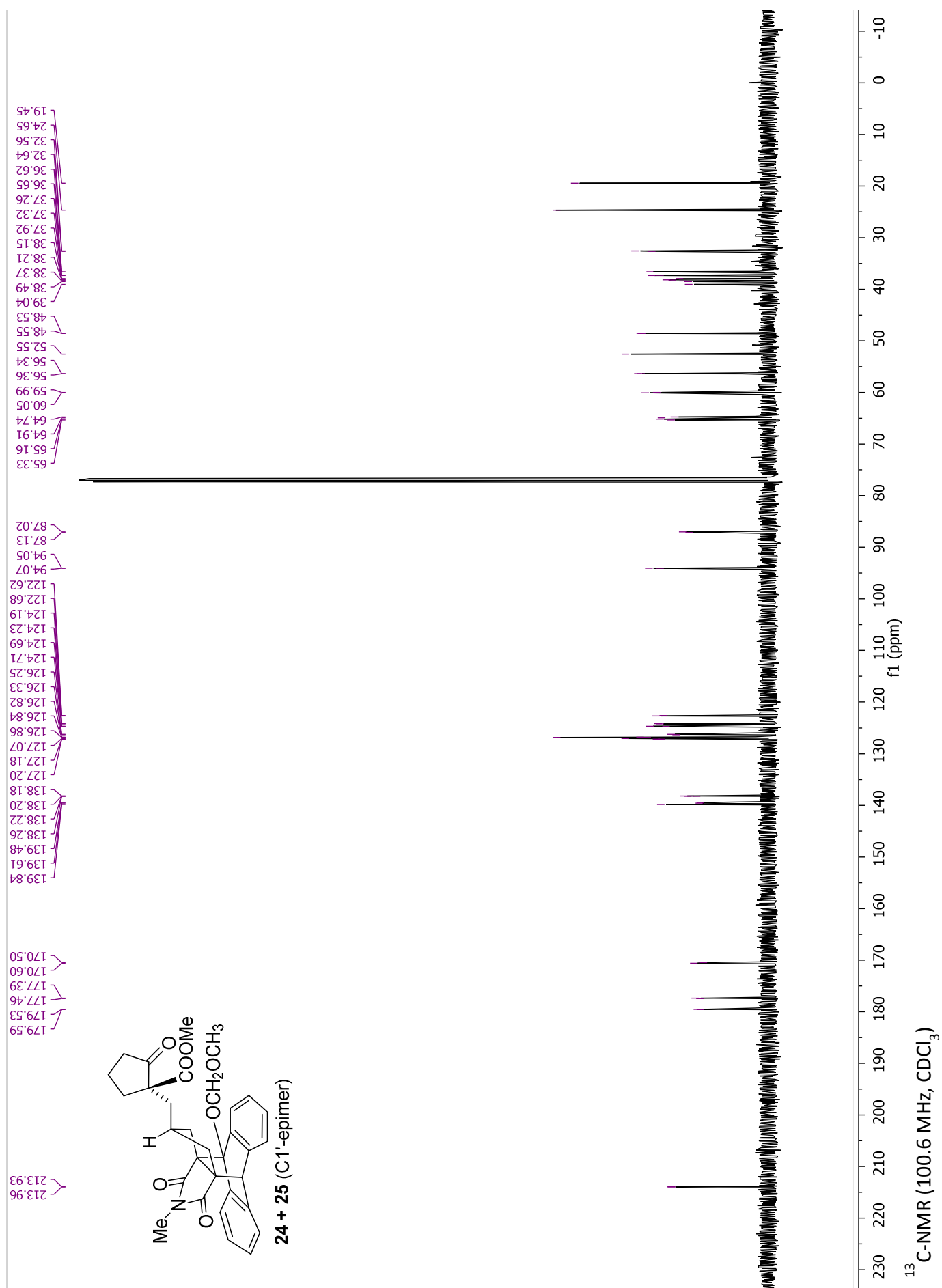
Chemical structure of **23** is shown in the inset. The structure is a complex polycyclic molecule with a central carbon atom bonded to a phenyl group, a benzyl group, a 2-methyl-2-oxo-1,3-dioxolane-5-yl group, and a 2-iodoethyl group.

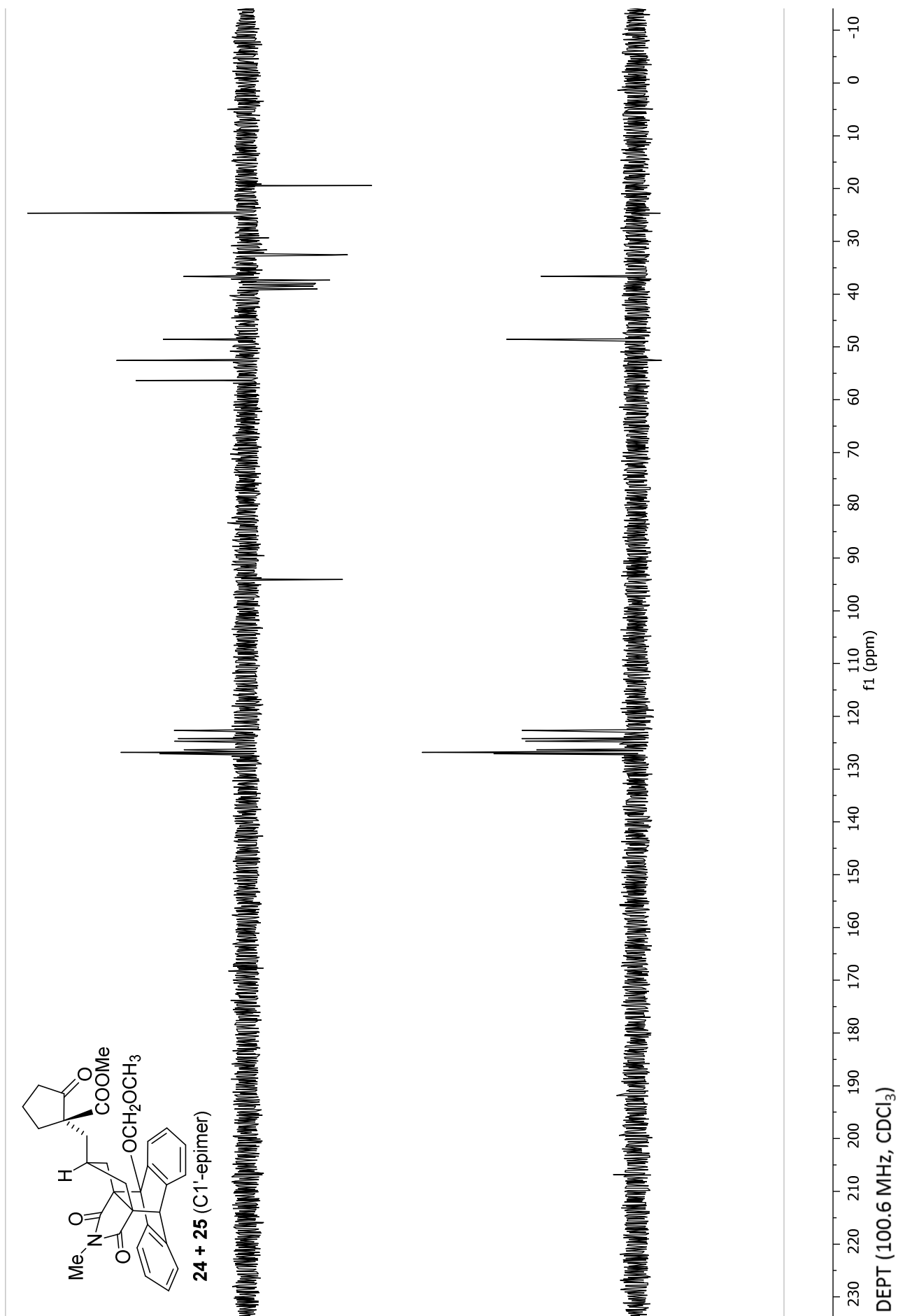
IR Spectrum (cm⁻¹):

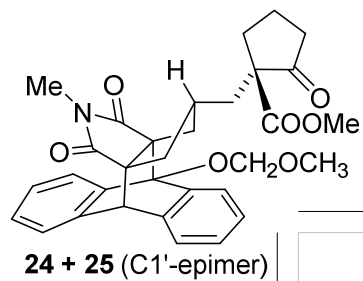
- 2968 (C-H stretch)
- 2926 (C-H stretch)
- 2354 (C-H stretch)
- 1769 (C=O stretch)
- 1699 (C-O stretch)
- 1625 (C=C stretch)
- 1576 (C=C stretch)
- 1525 (C=C stretch)
- 1499 (C=C stretch)
- 1451 (C=C stretch)
- 1399 (C-O stretch)
- 1361 (C-O stretch)
- 1299 (C-O stretch)
- 1276 (C-O stretch)
- 1251 (C-O stretch)
- 1199 (C-O stretch)
- 1161 (C-O stretch)
- 1099 (C-O stretch)
- 1045 (C-O stretch)
- 1021 (C-O stretch)
- 1005 (C-O stretch)
- 919 (C-O stretch)
- 901 (C-O stretch)
- 861 (C-O stretch)
- 799 (C-O stretch)
- 759 (C-O stretch)

40

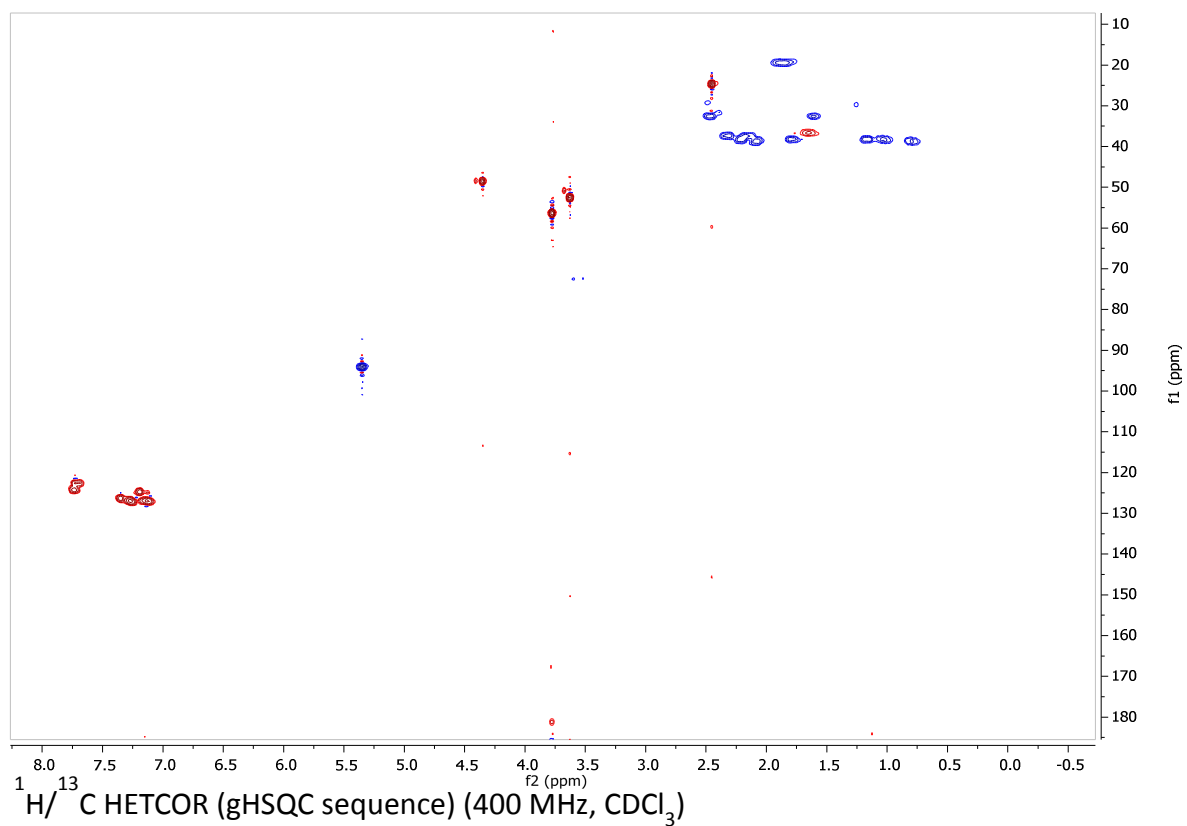
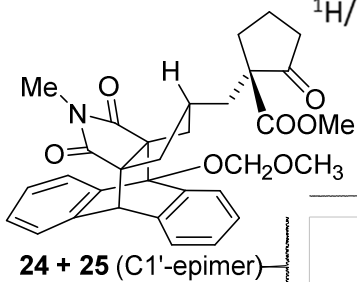
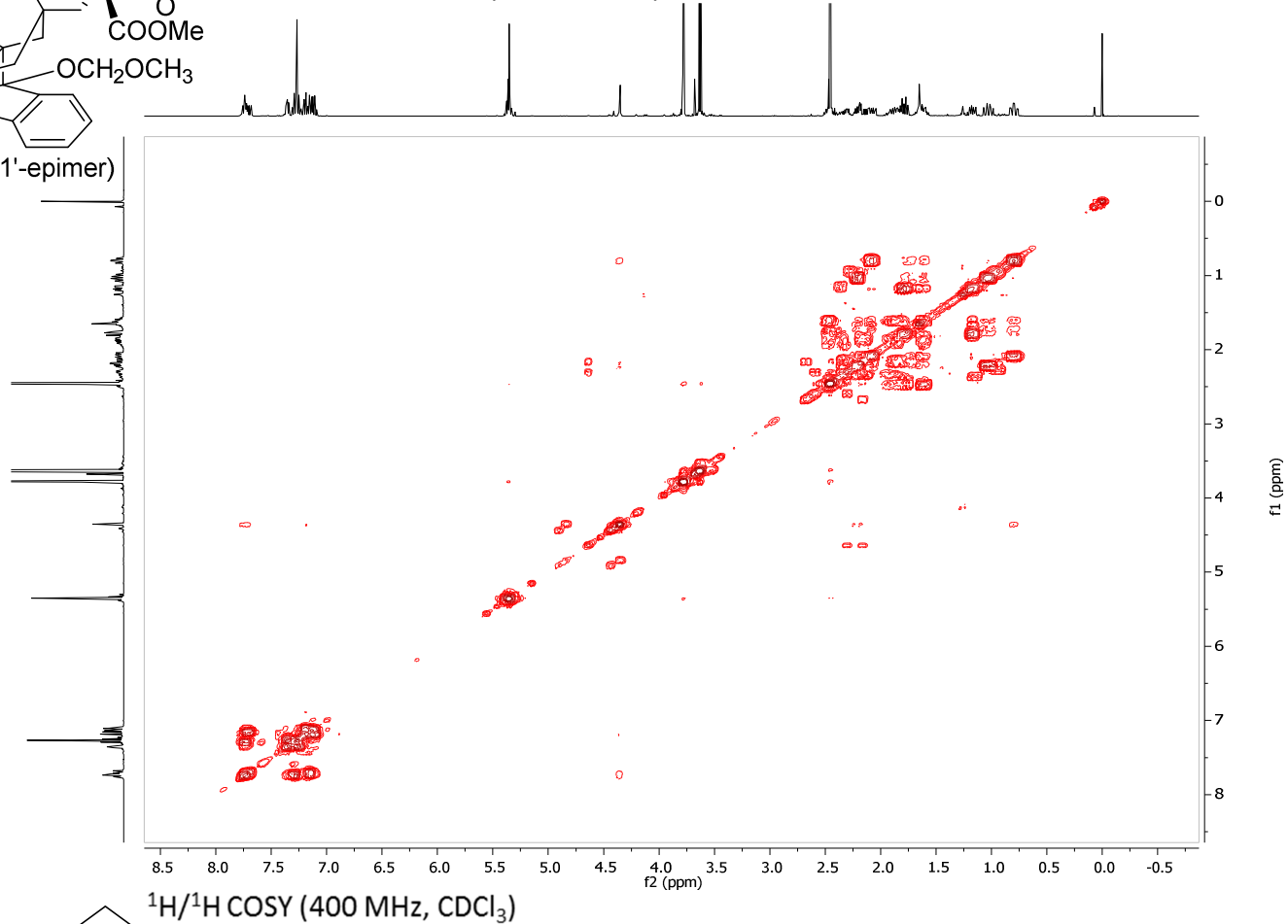


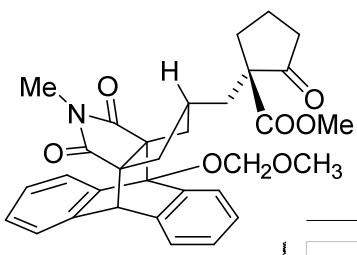






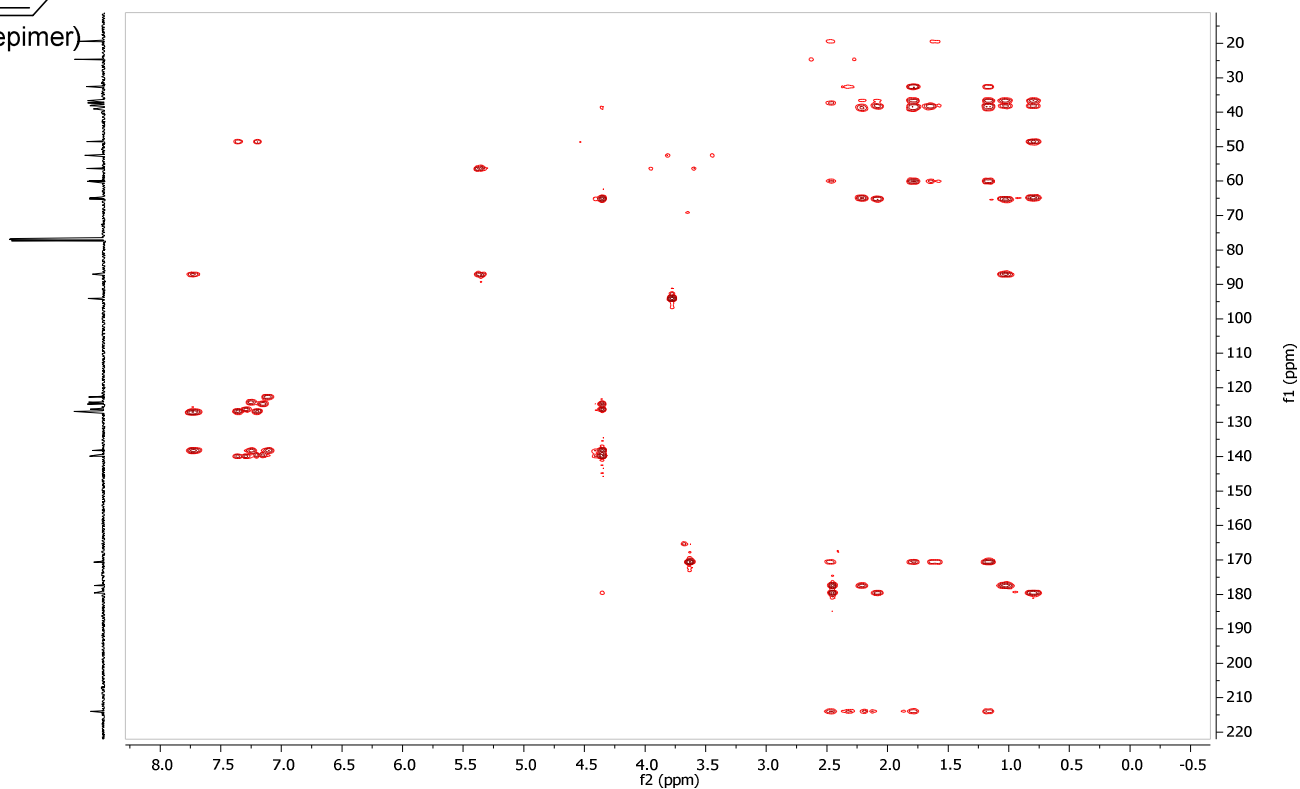
NMR and IR spectra of compounds **24** and **25**



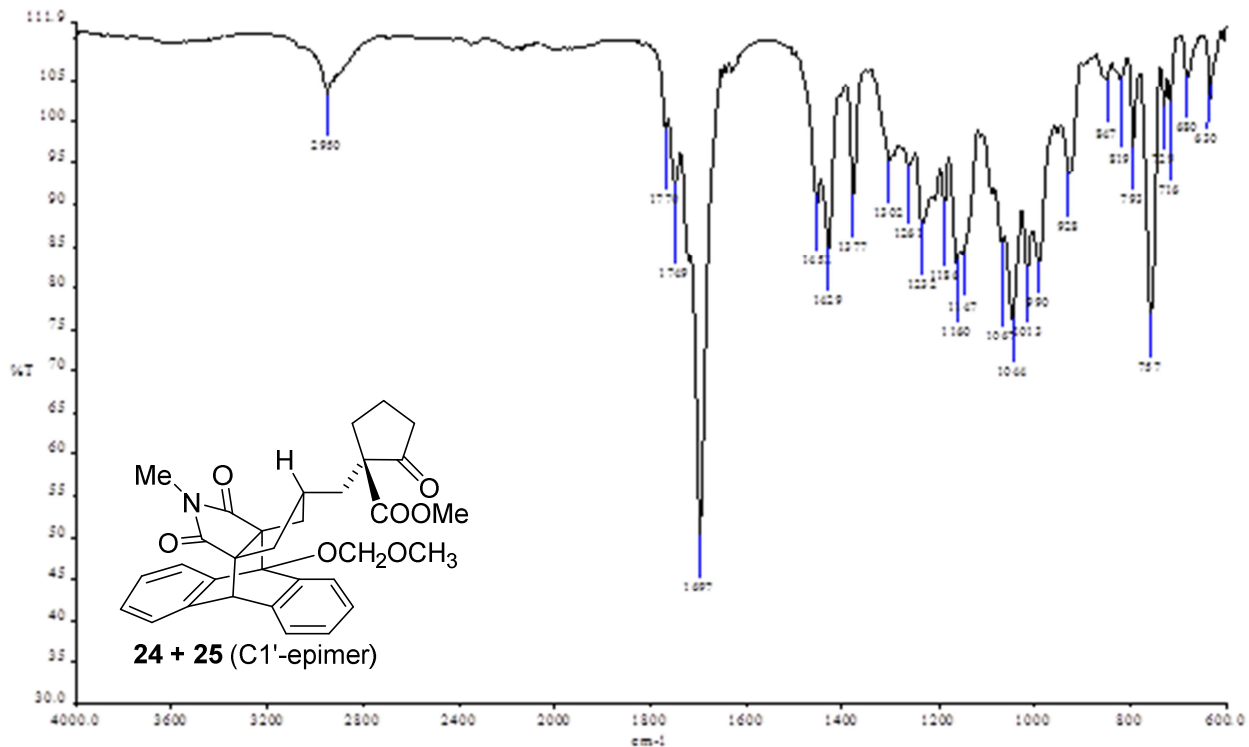


NMR and IR spectra of compounds **24** and **25**

24 + 25 (C1'-epimer)

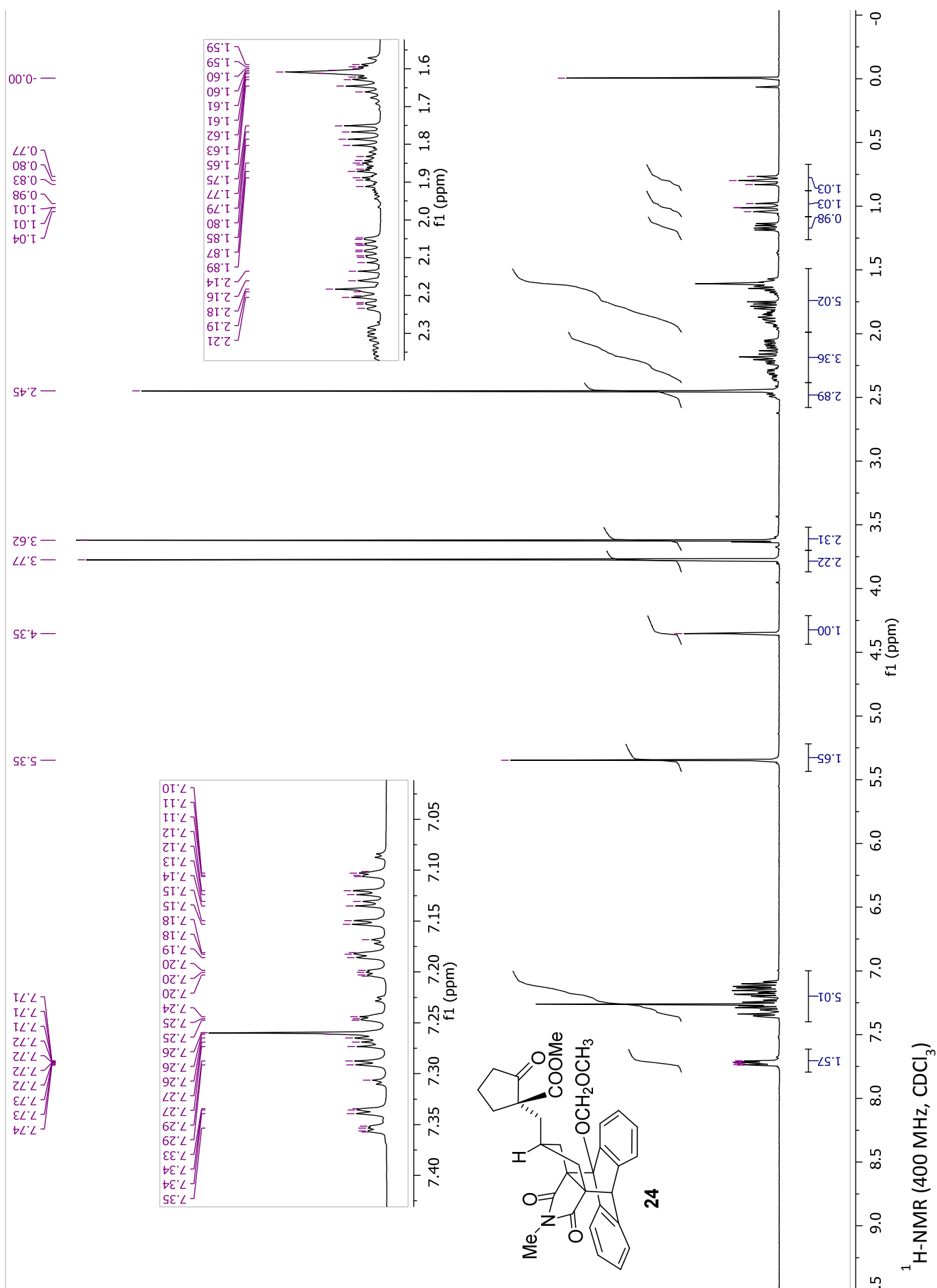


$^1\text{H}/^{13}\text{C}$ HETCOR (gHMBC sequence) (400 MHz, CDCl_3)

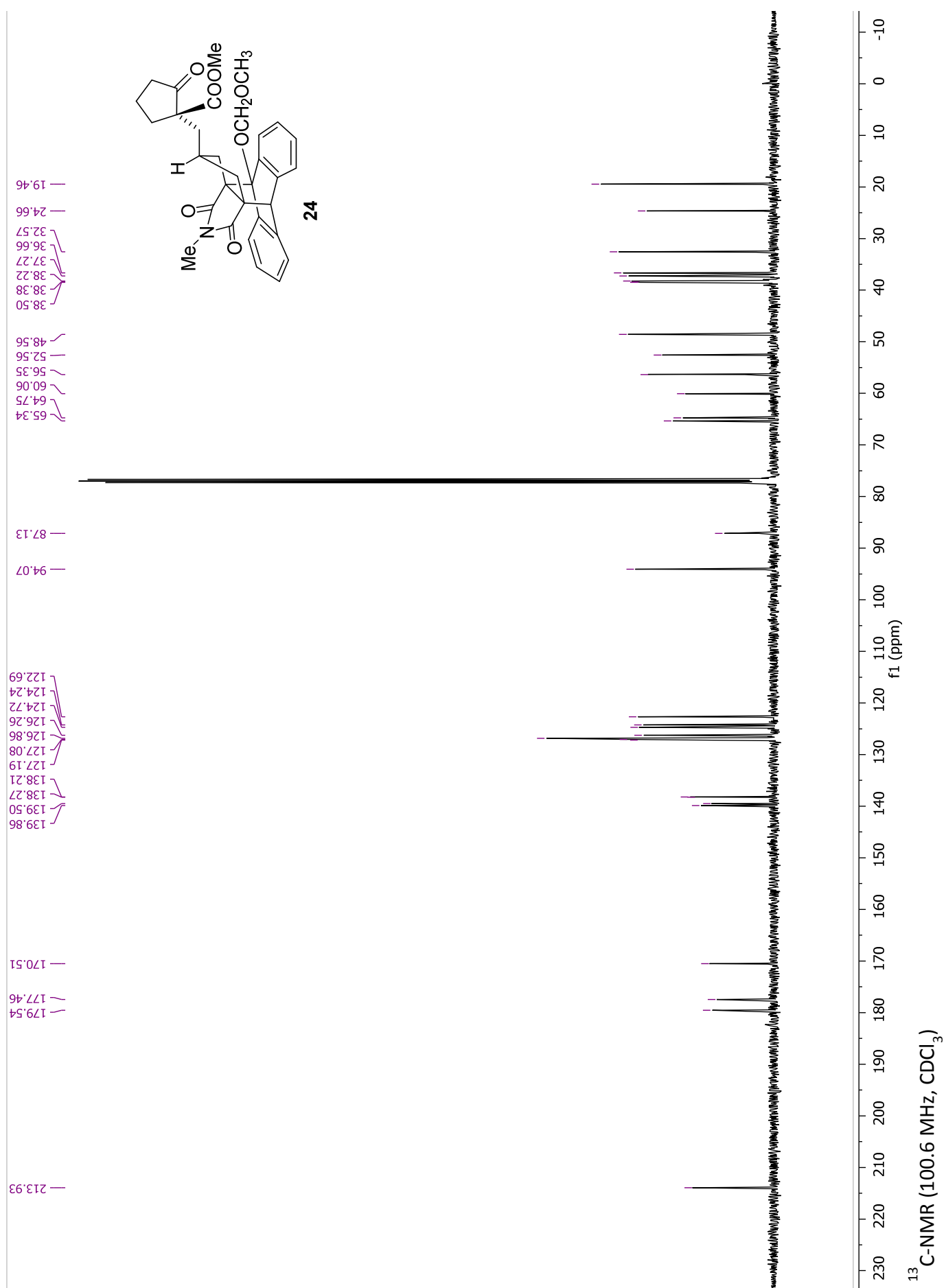


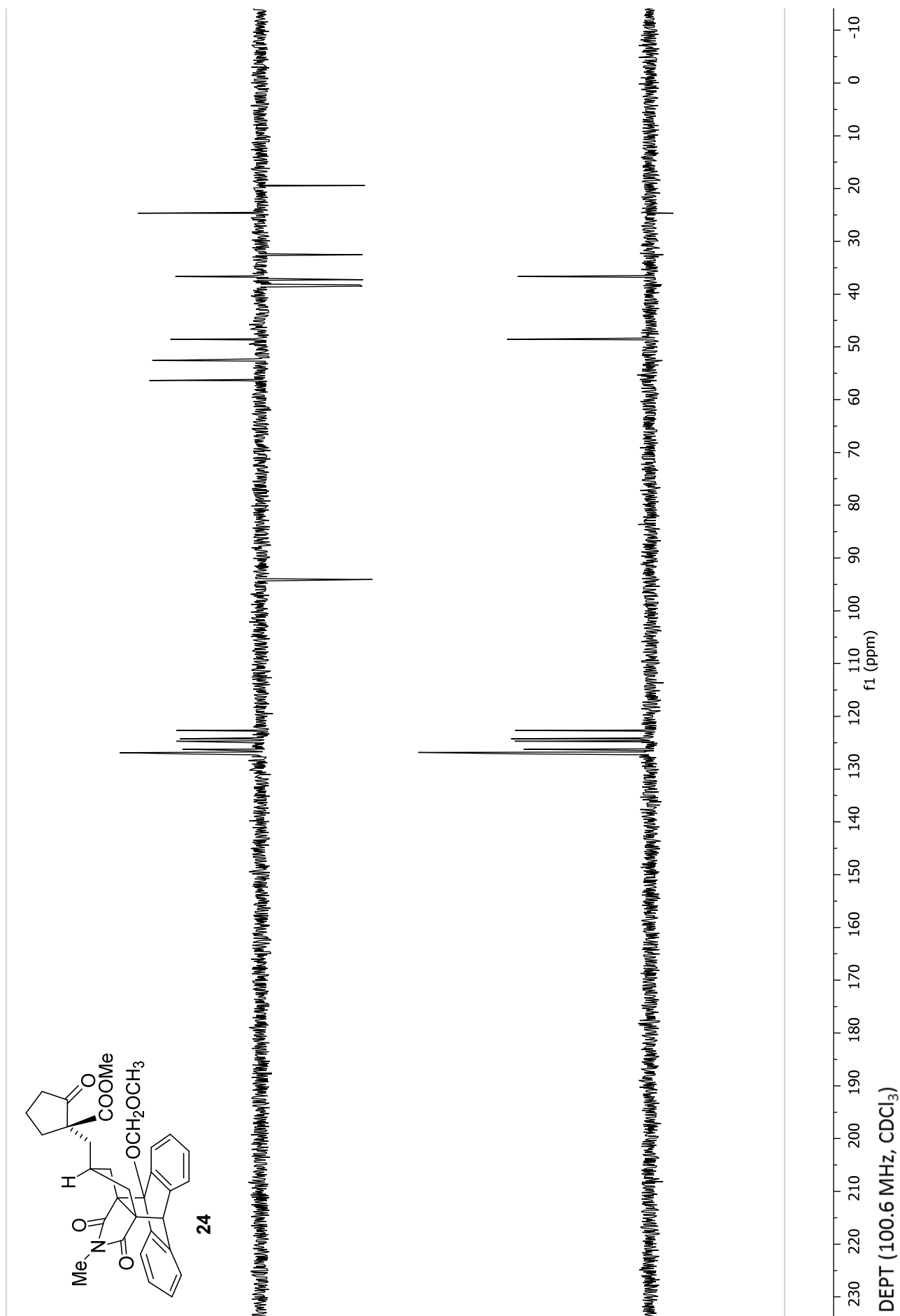
IR (ATR)

46

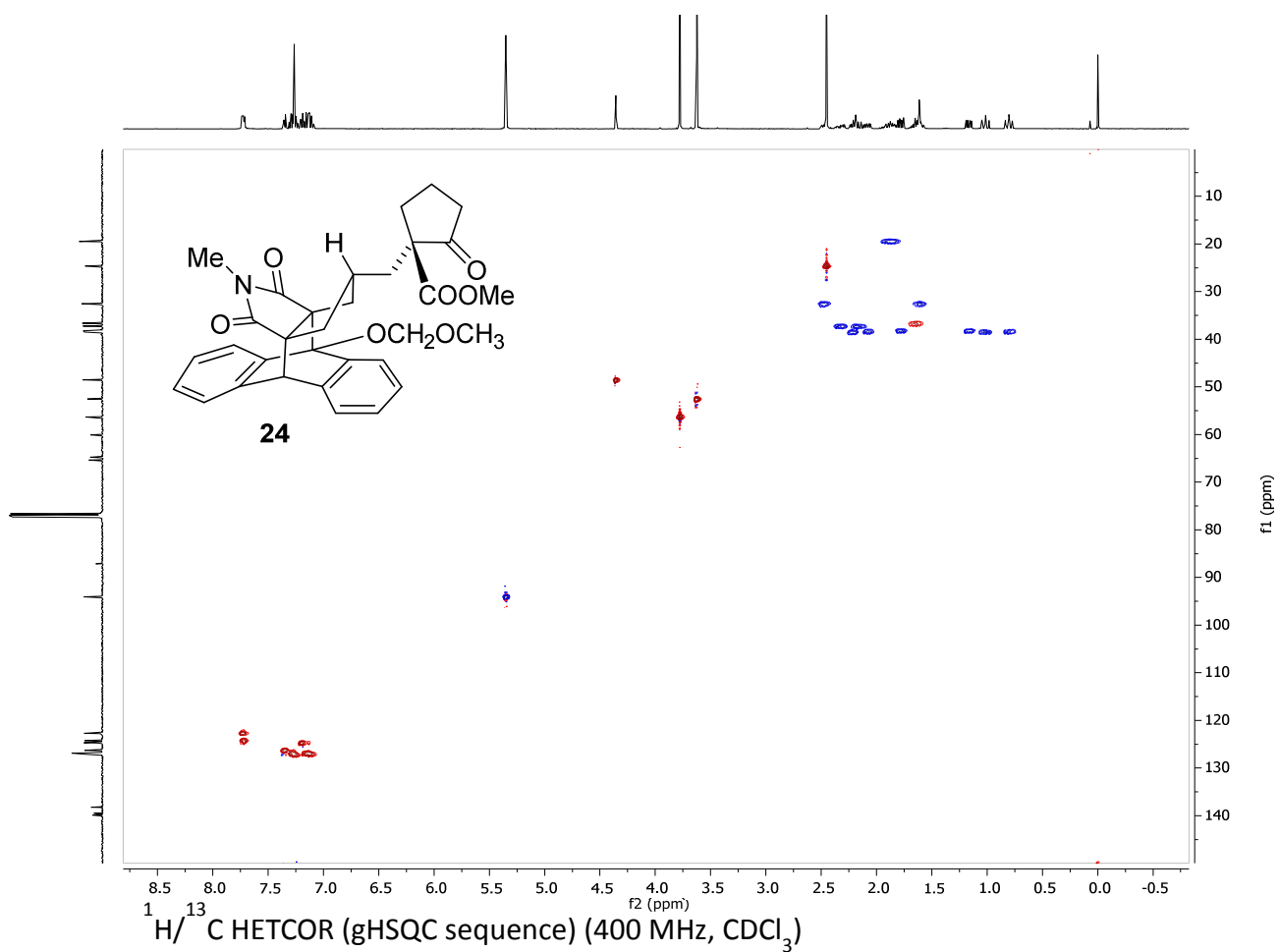
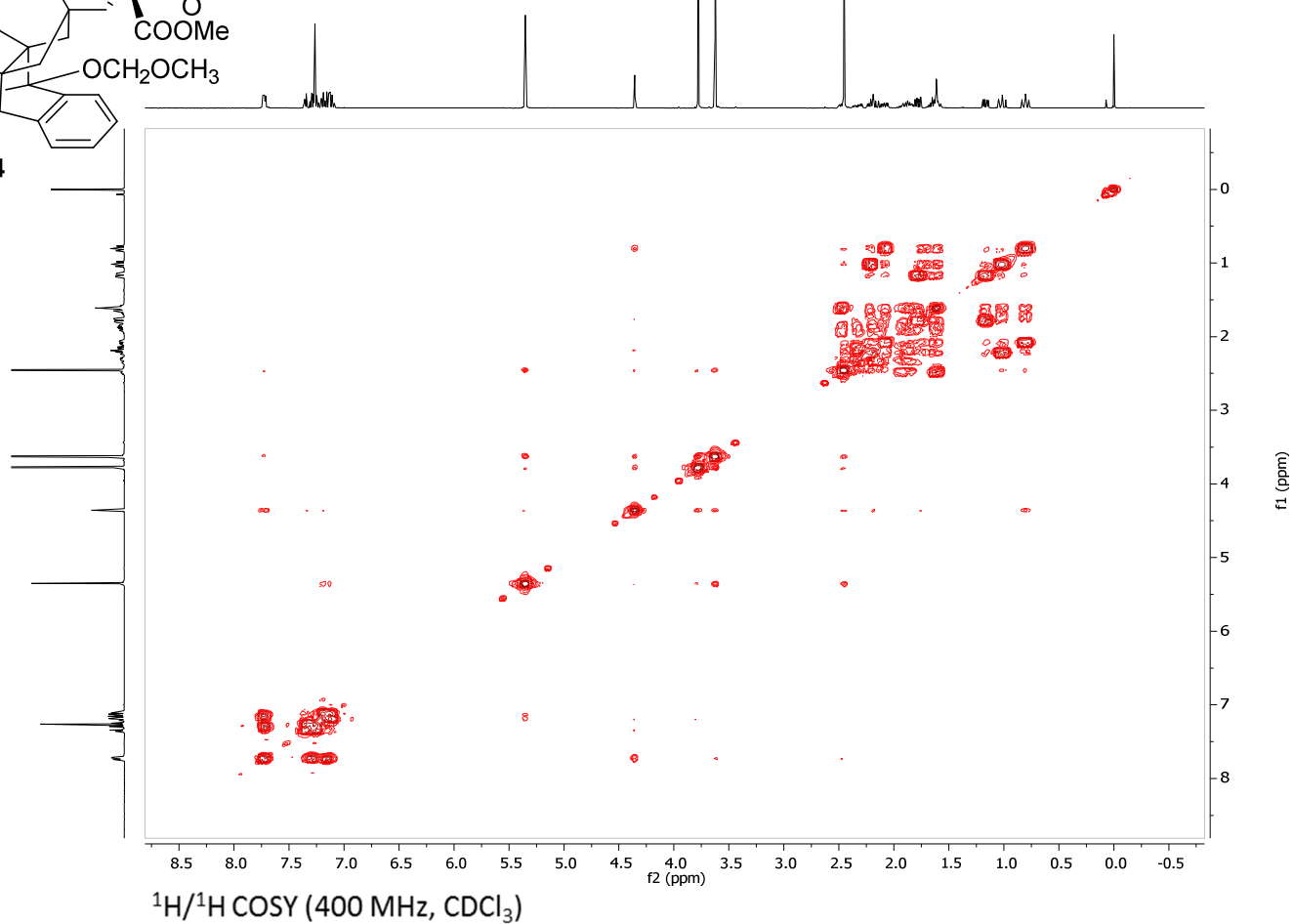
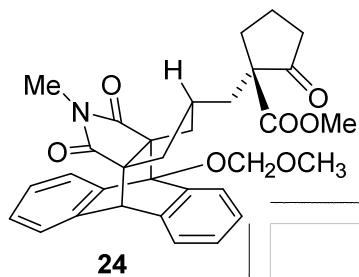


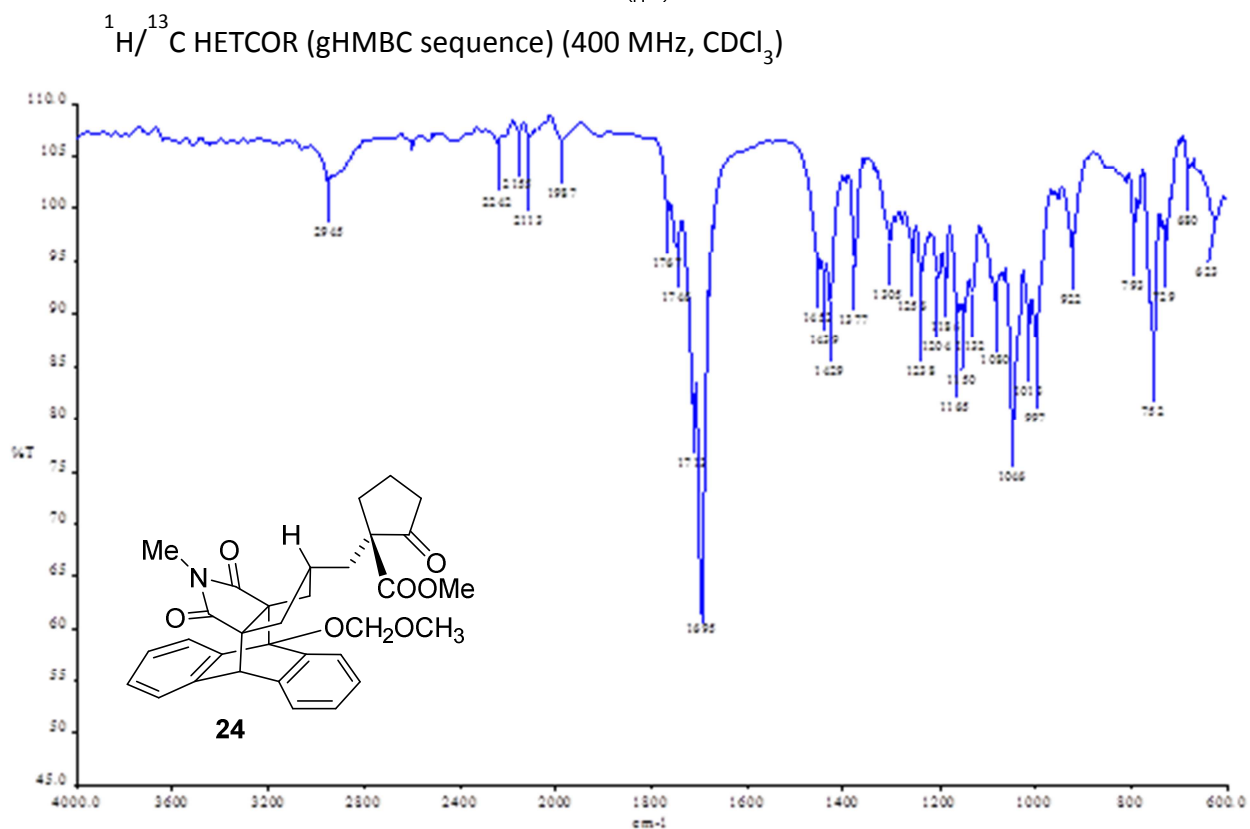
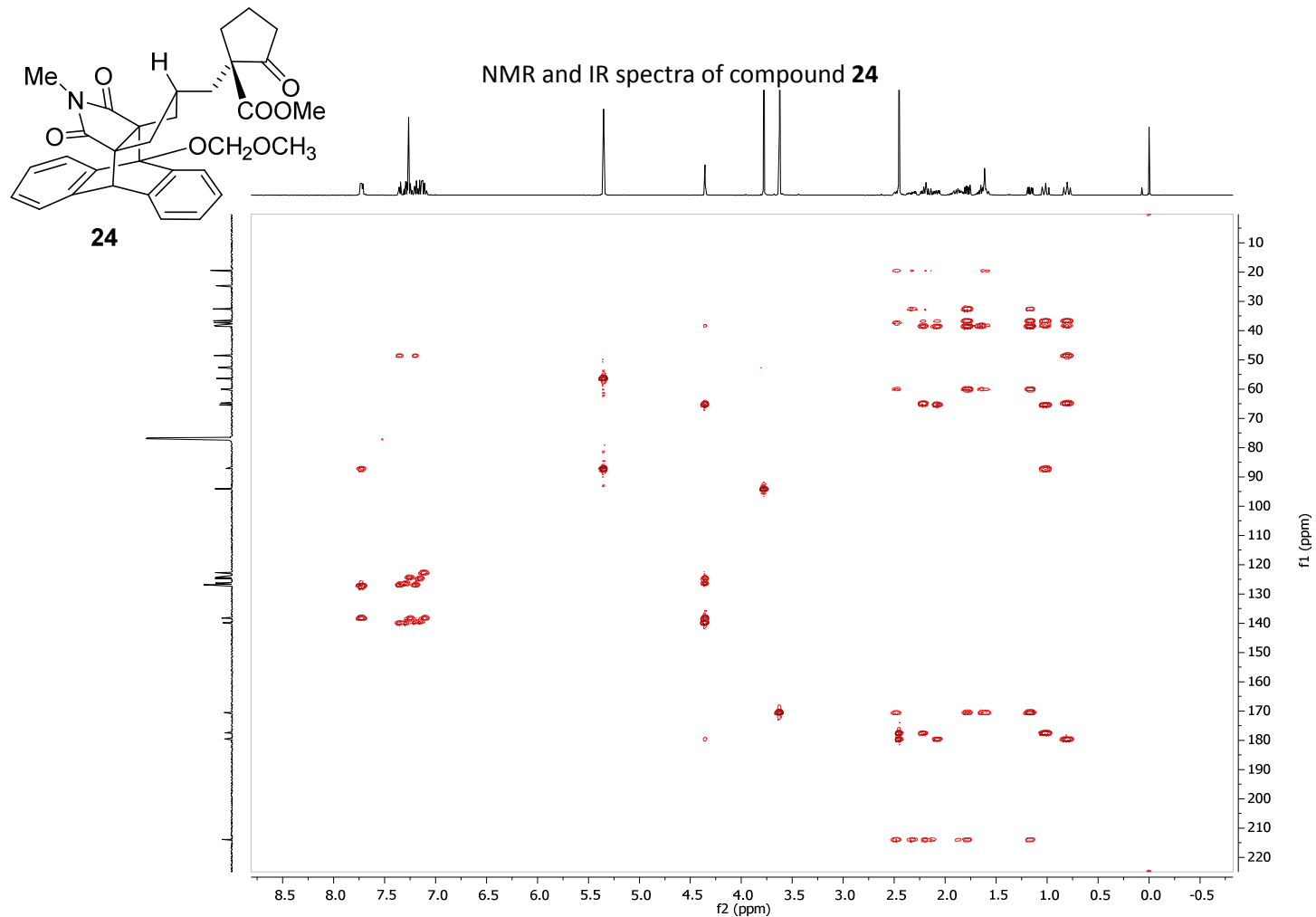
NMR and IR spectra of compound **24**



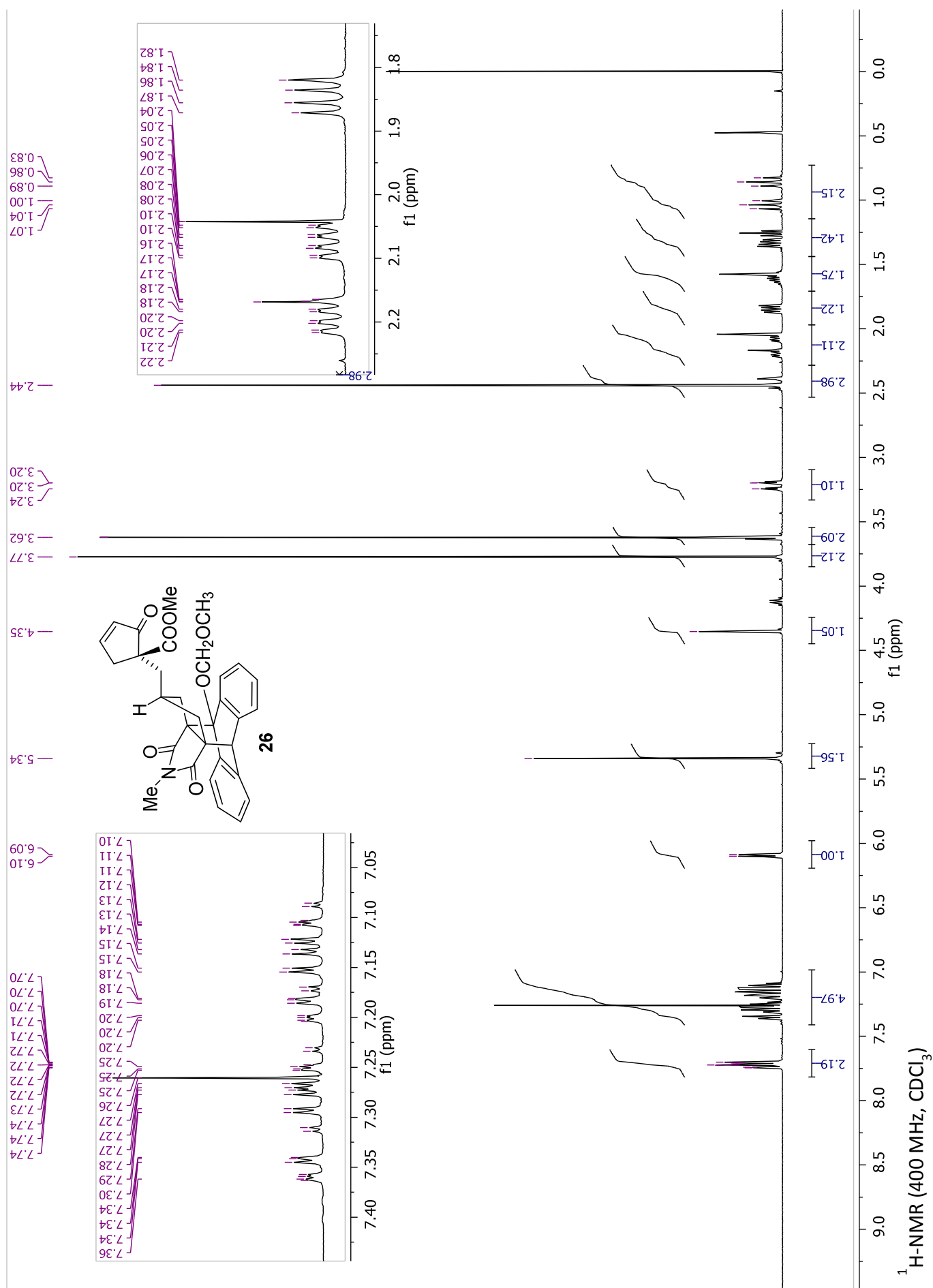


NMR and IR spectra of compound **24**

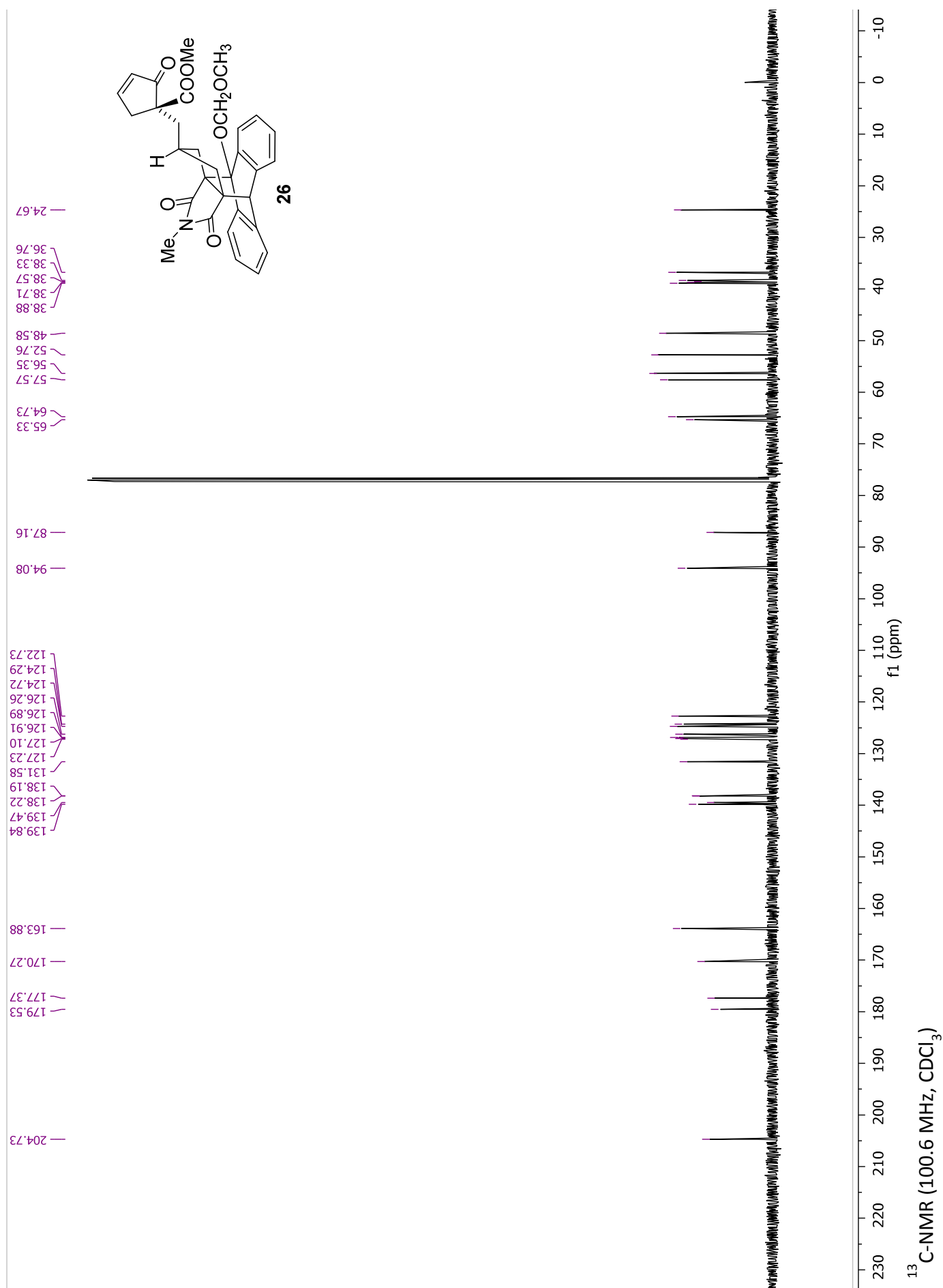


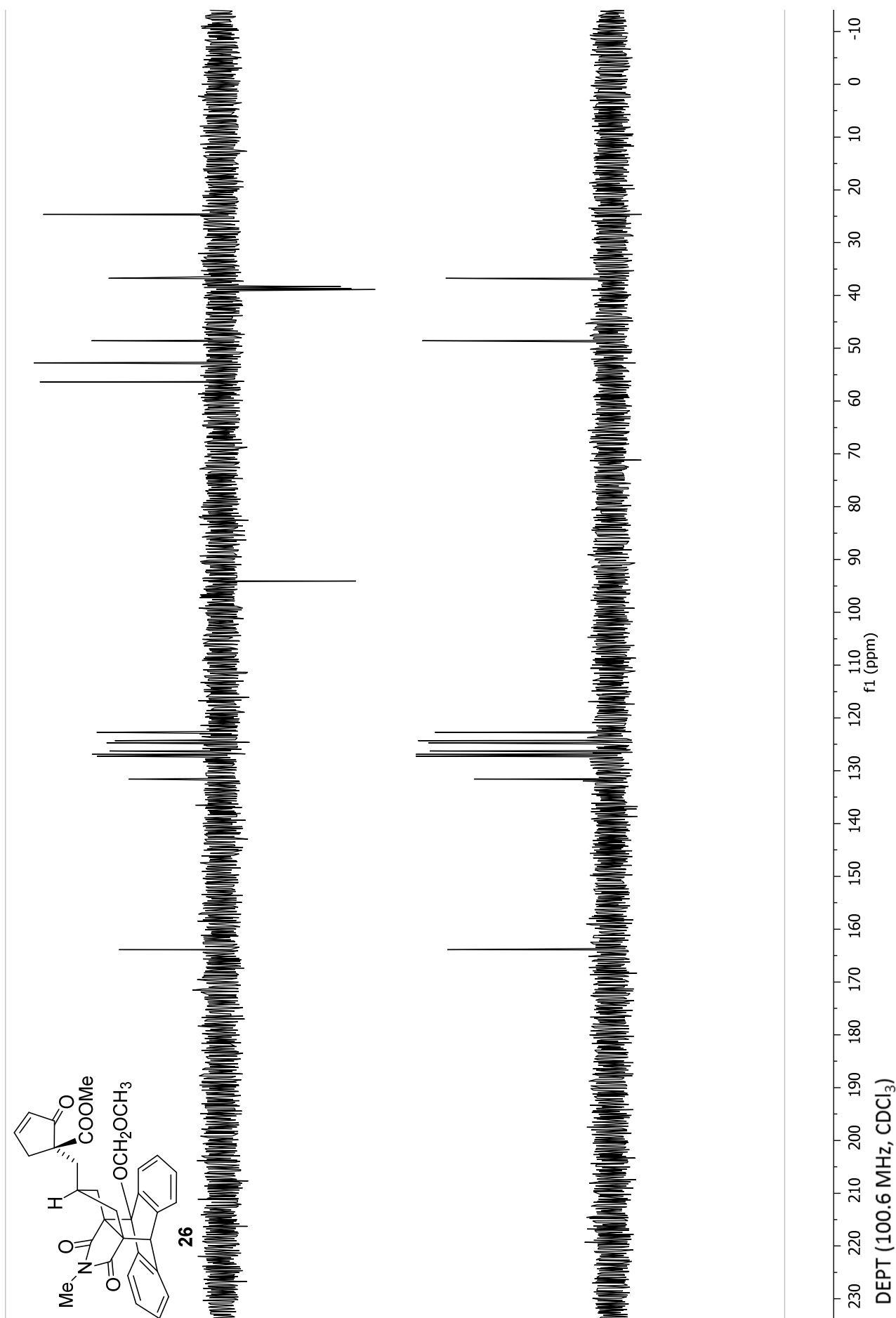


IR (ATR)

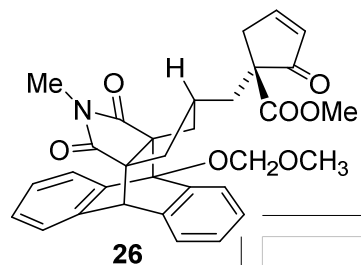


NMR and IR spectra of compound **26**

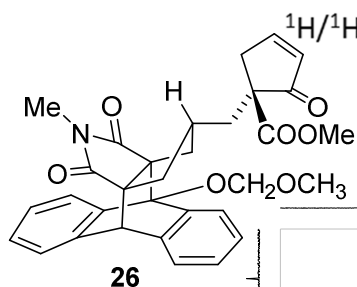
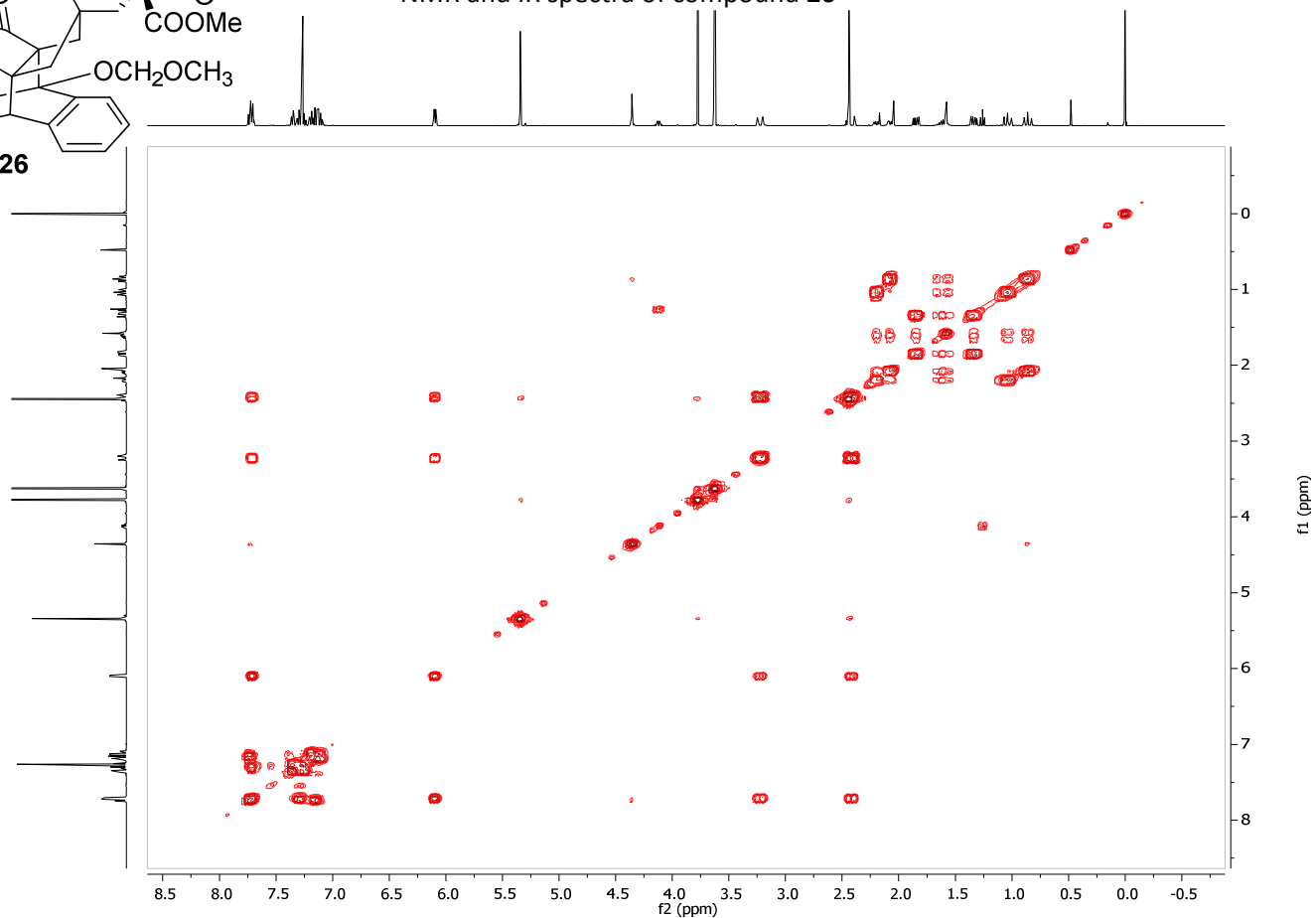




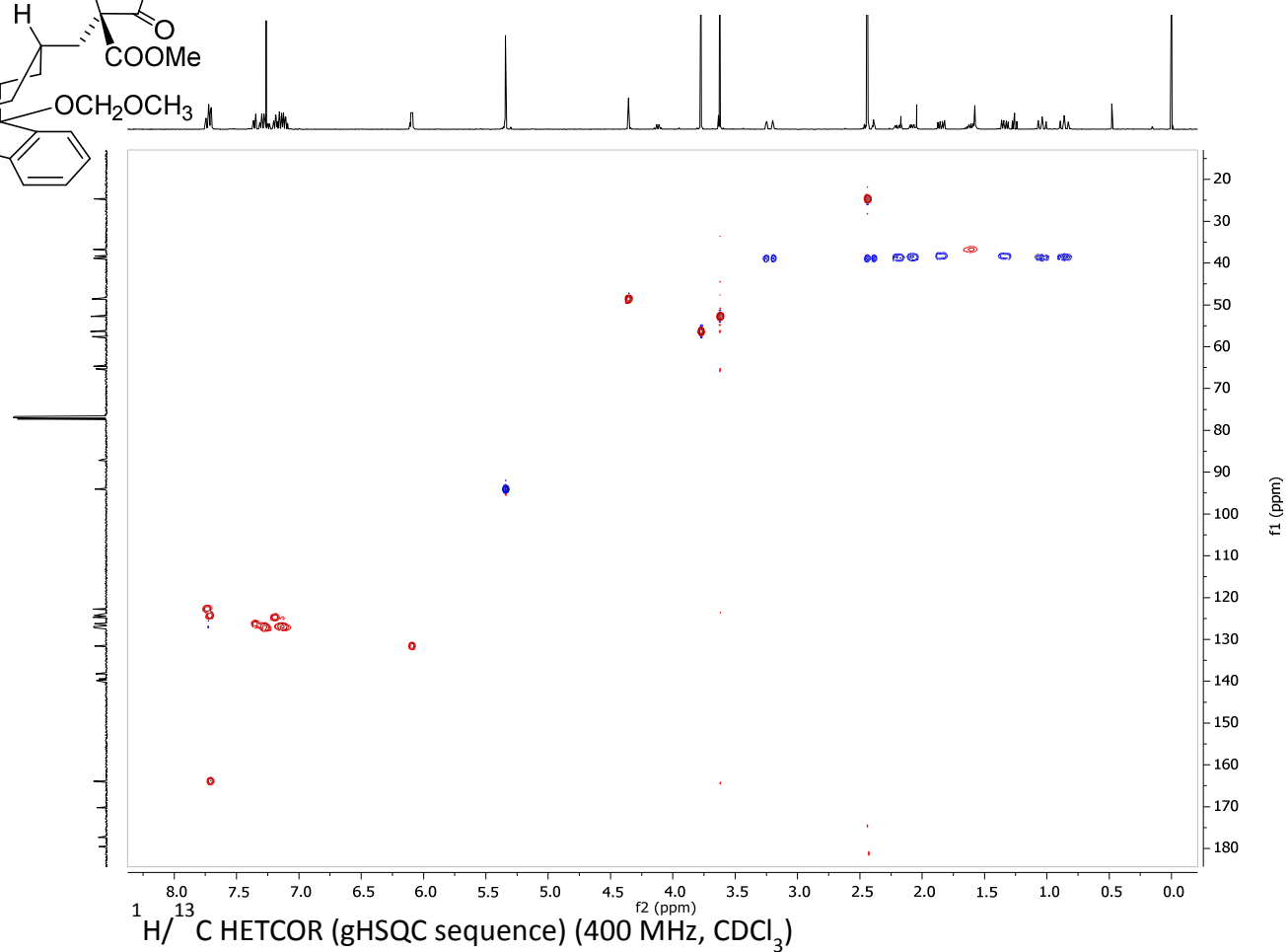
NMR and IR spectra of compound **26**



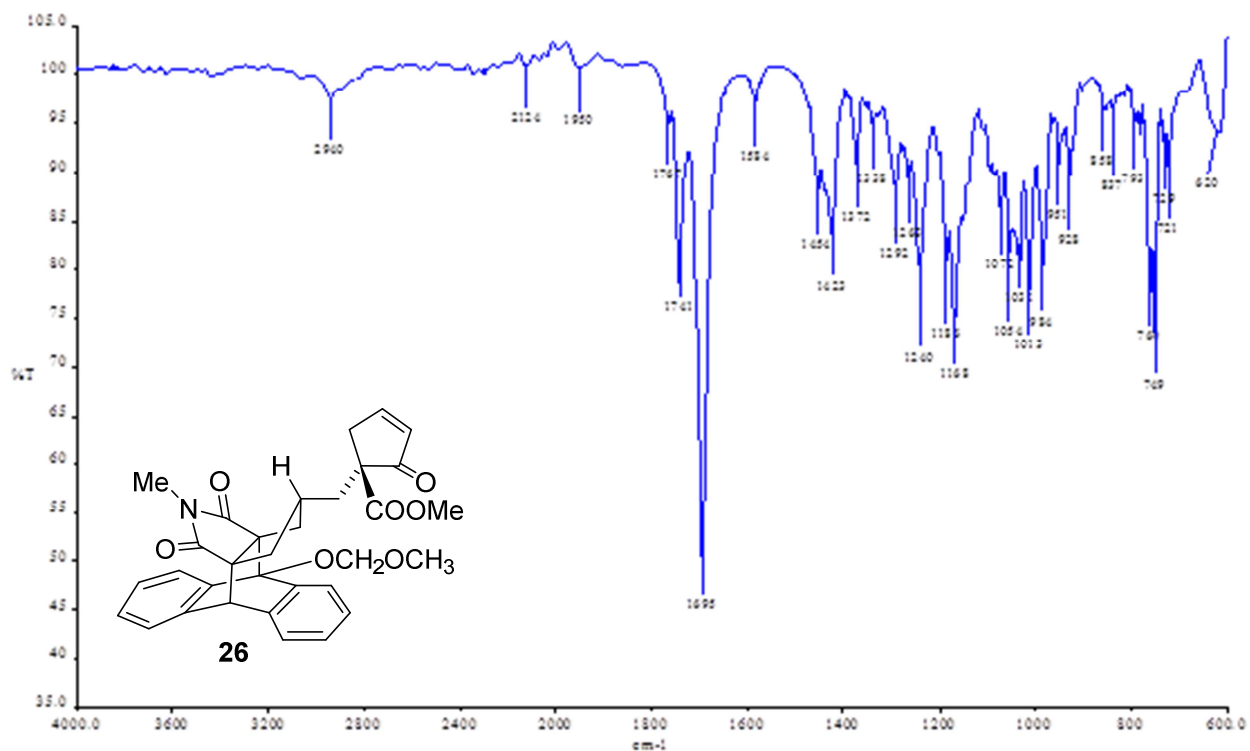
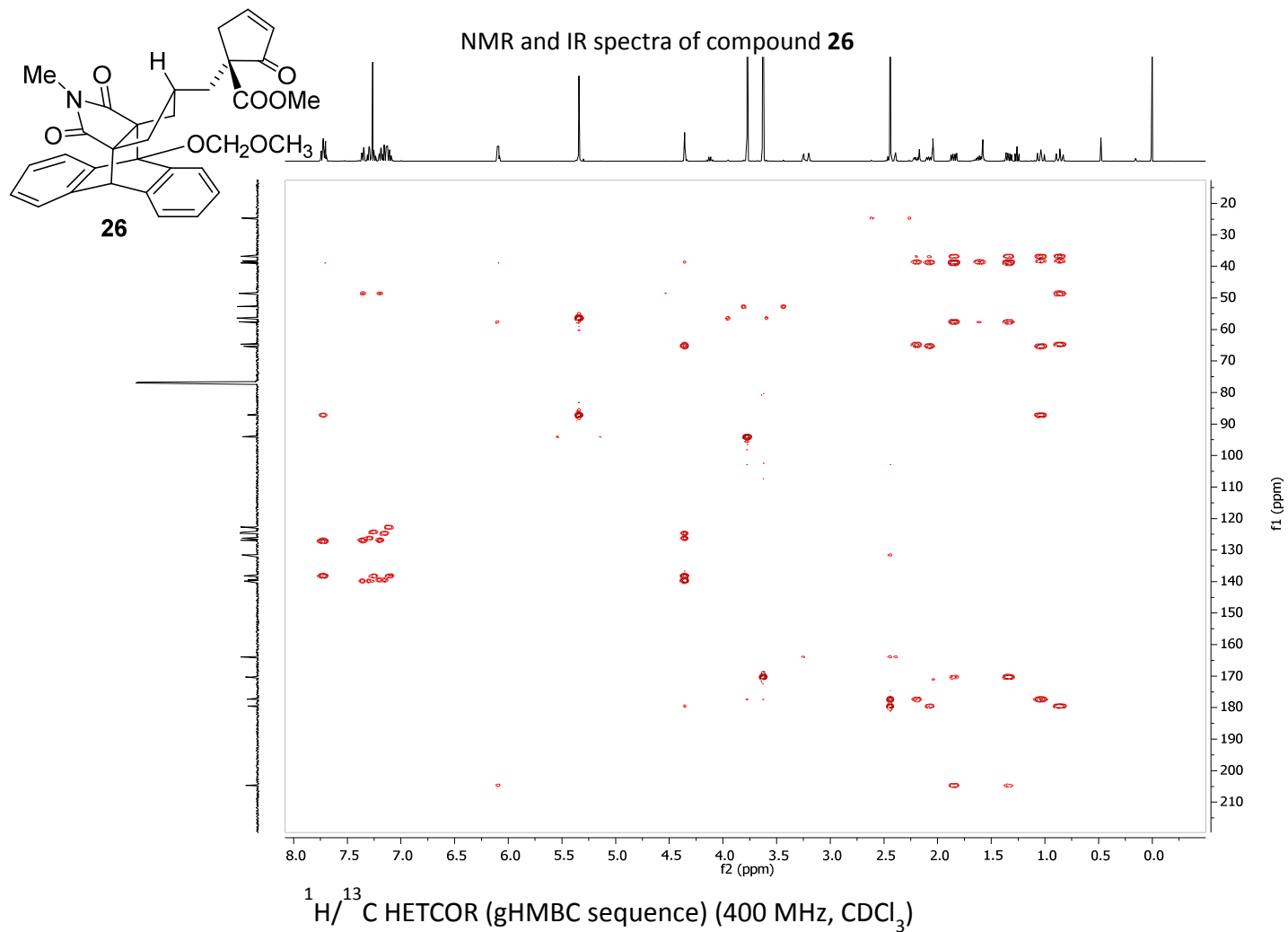
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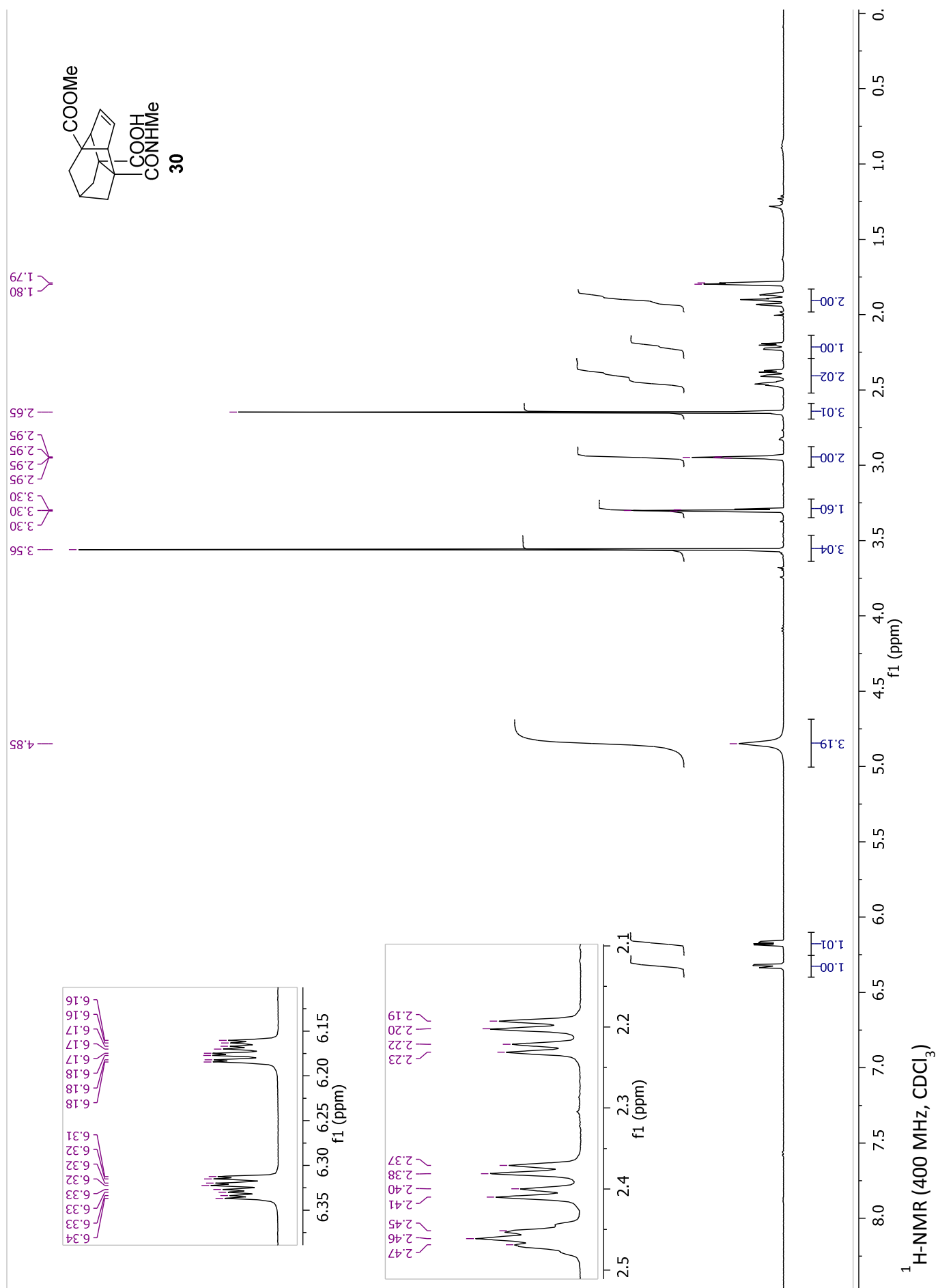
26



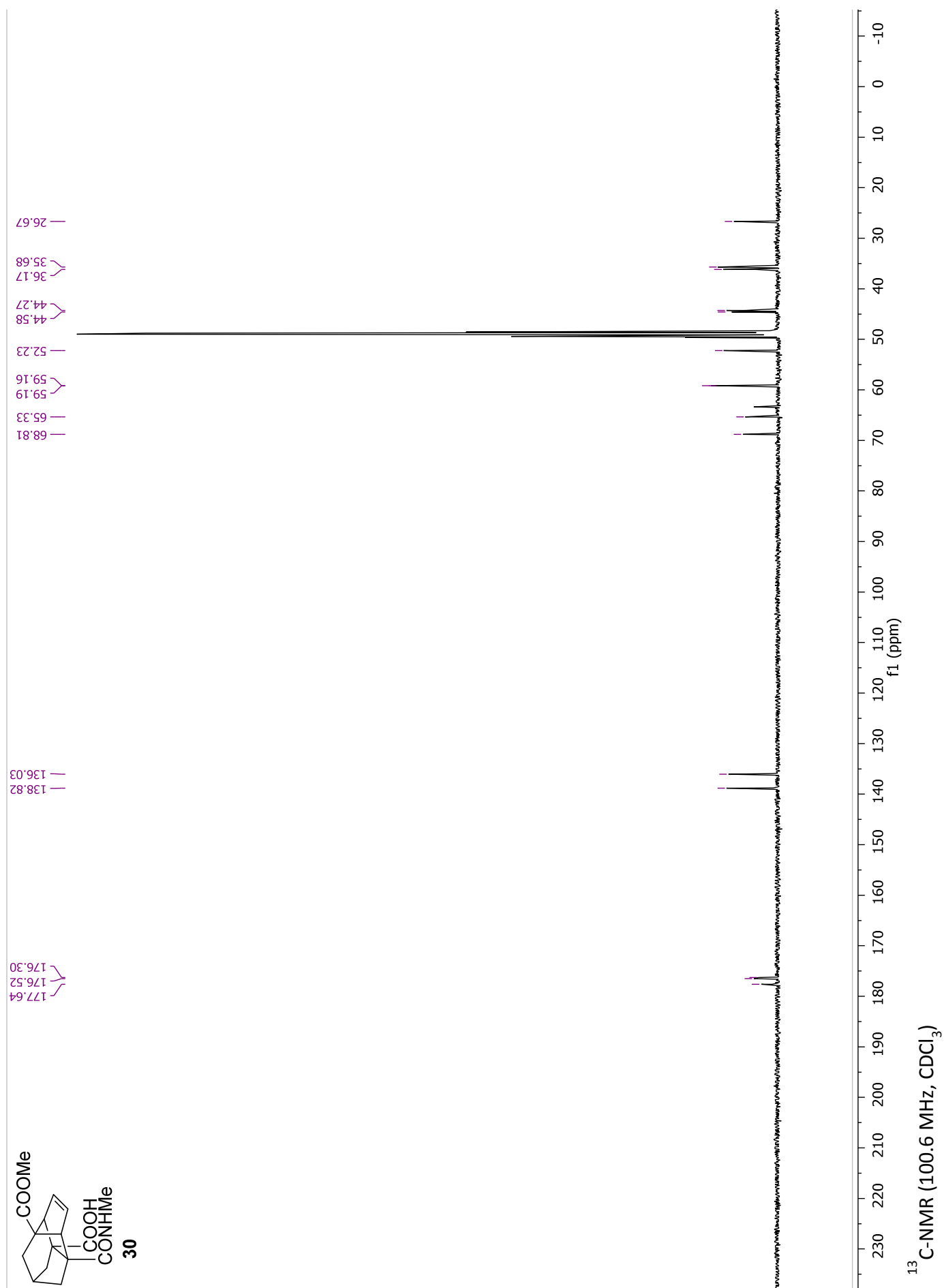
NMR and IR spectra of compound **26**

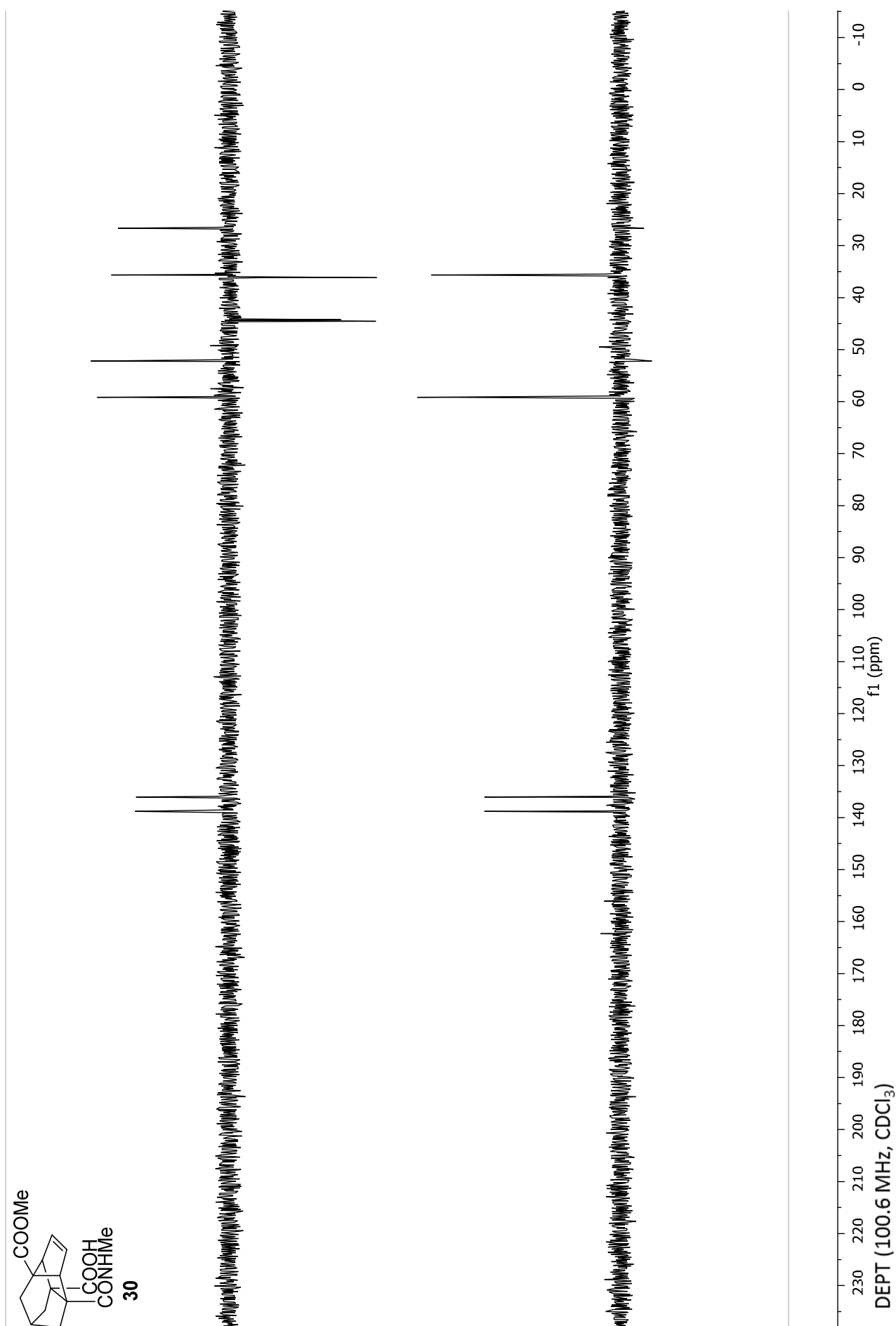


NMR and IR spectra of compound **30**

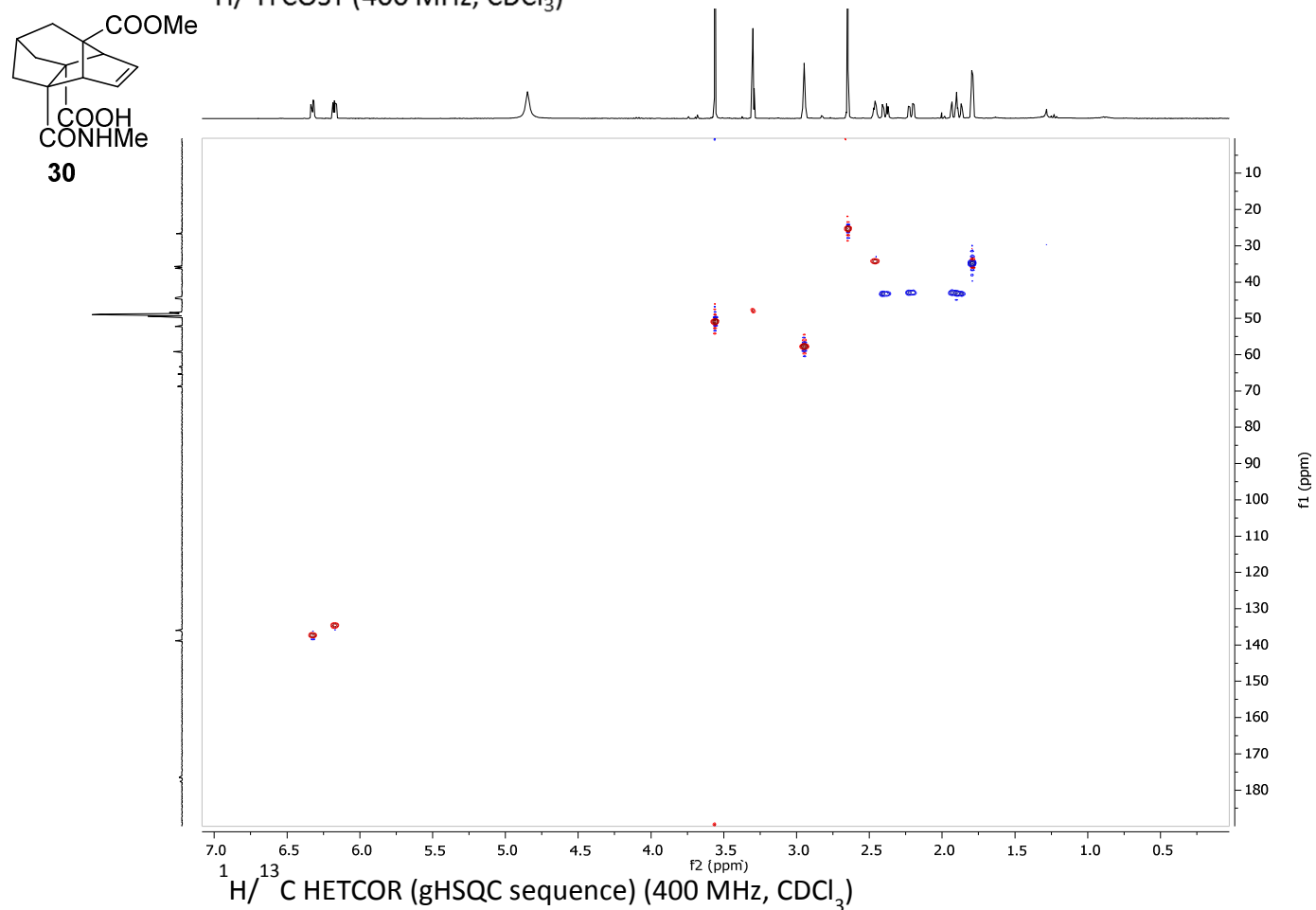
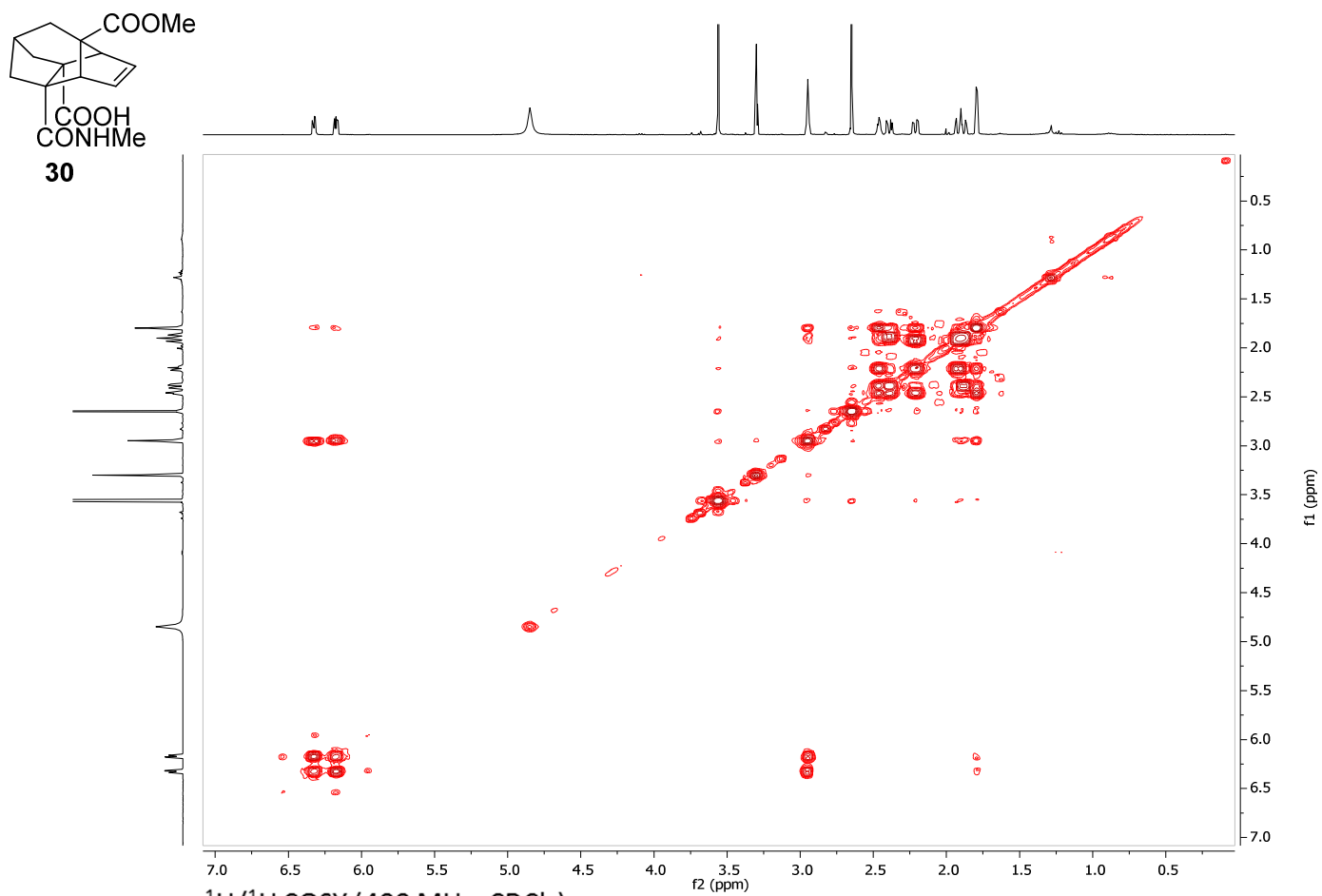


NMR and IR spectra of compound **30**

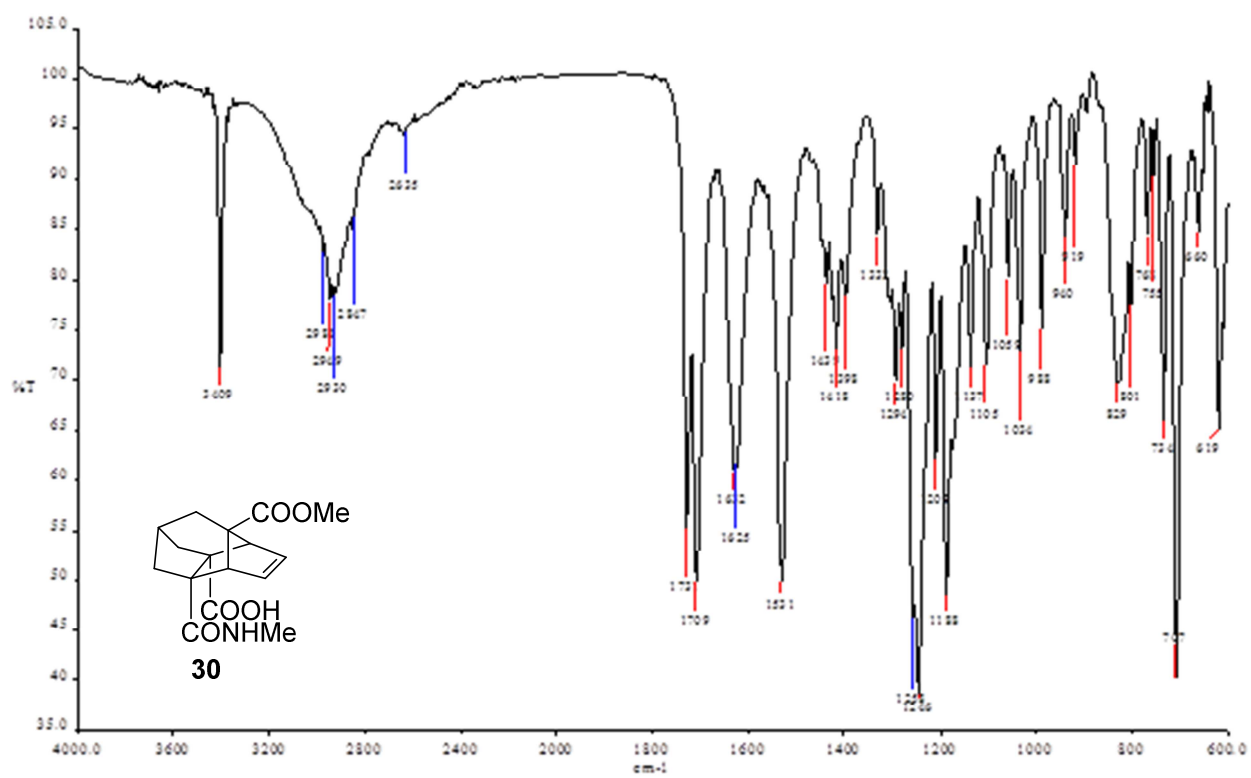
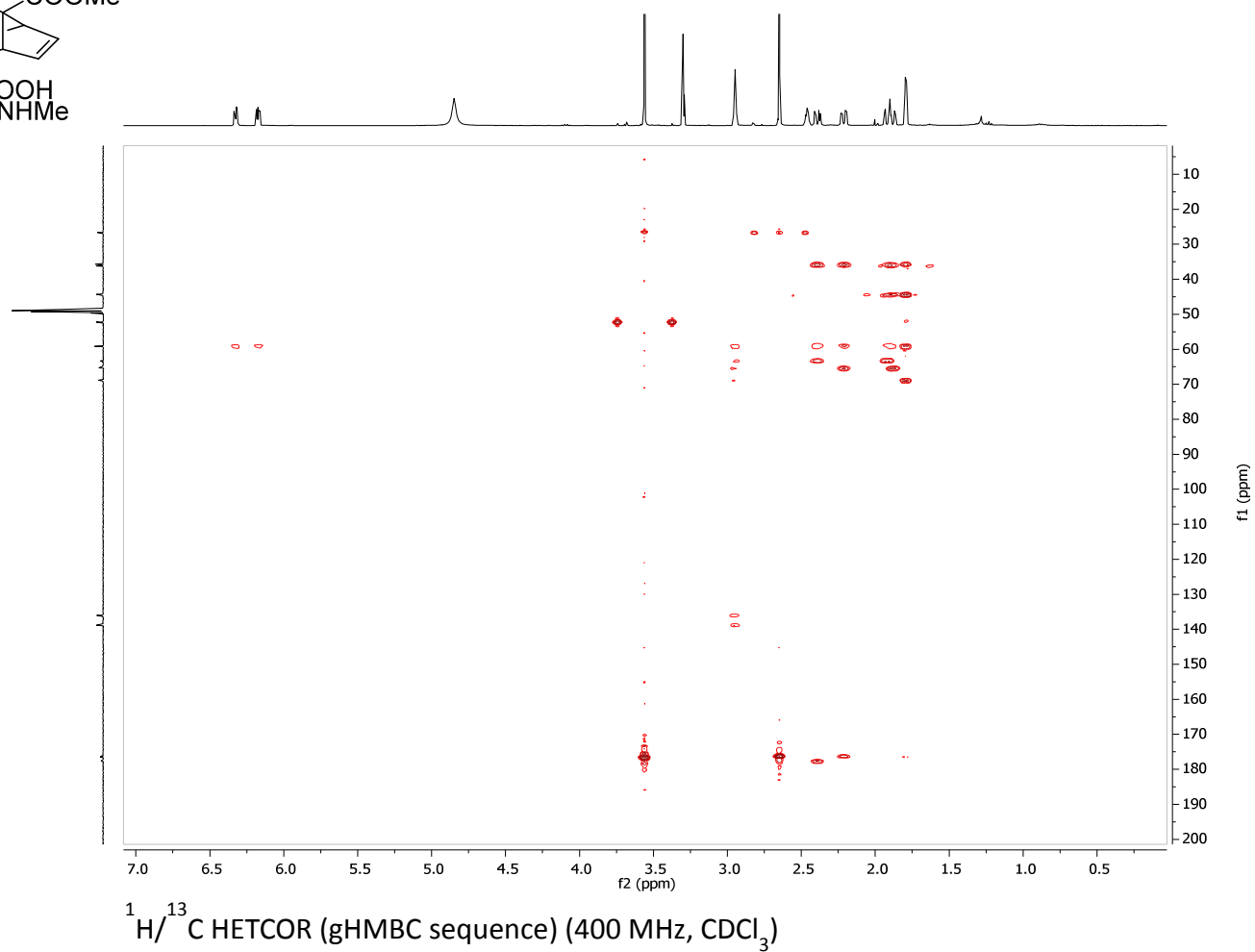
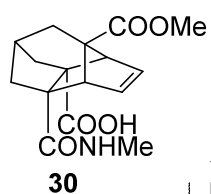




NMR and IR spectra of compound **30**

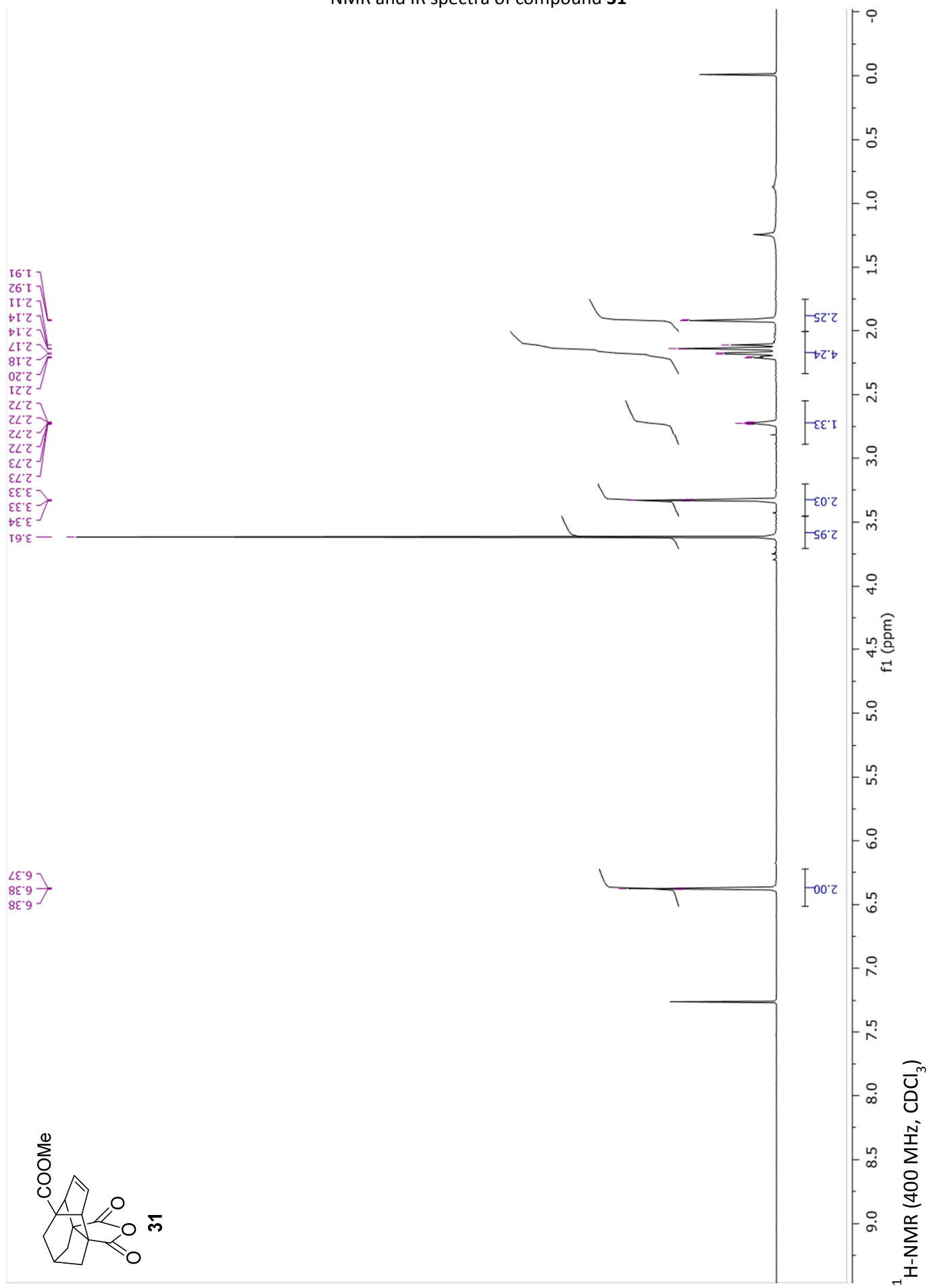


NMR and IR spectra of compound **30**

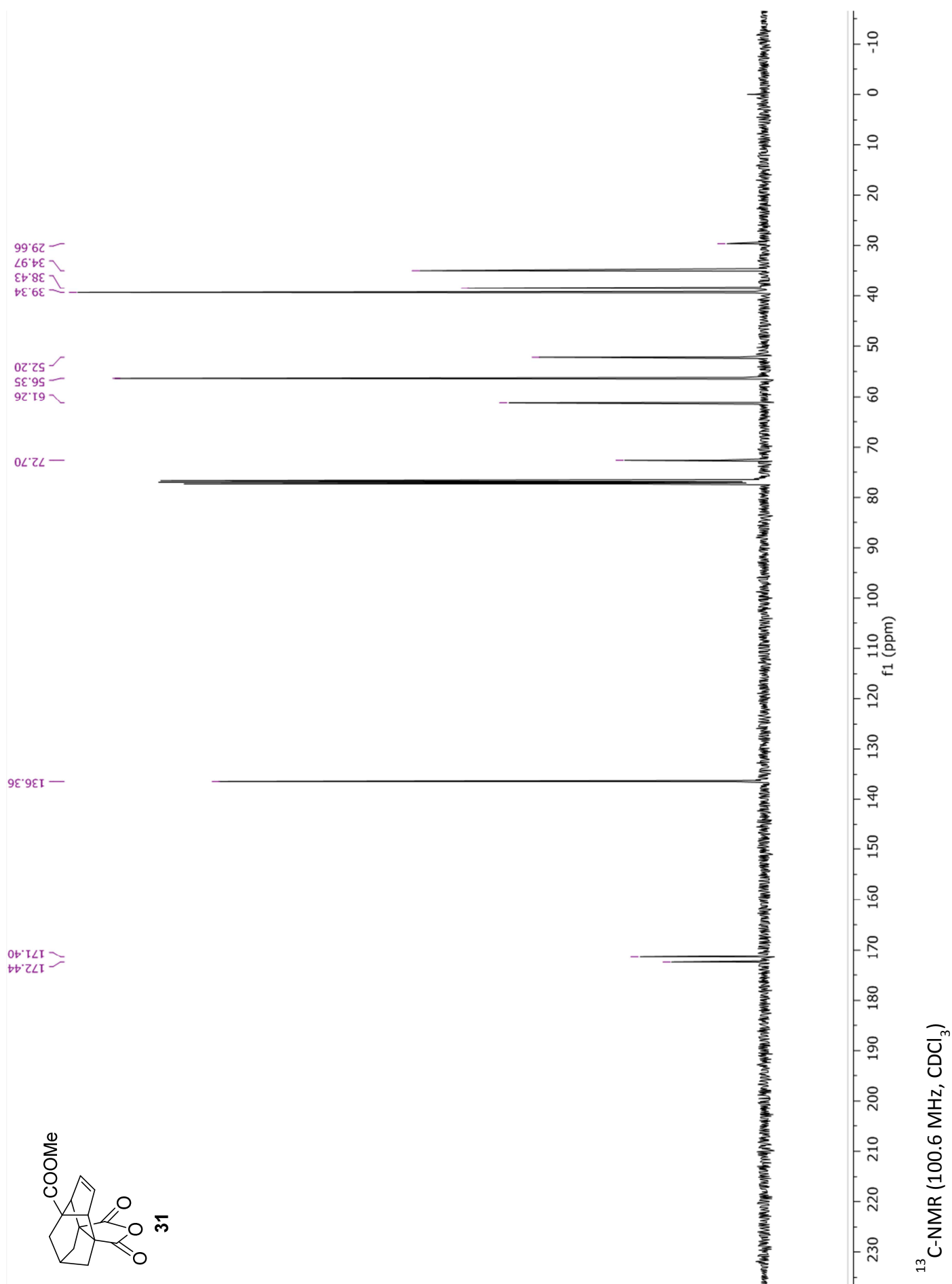


IR (ATR)

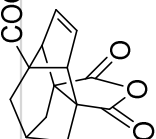
NMR and IR spectra of compound **31**



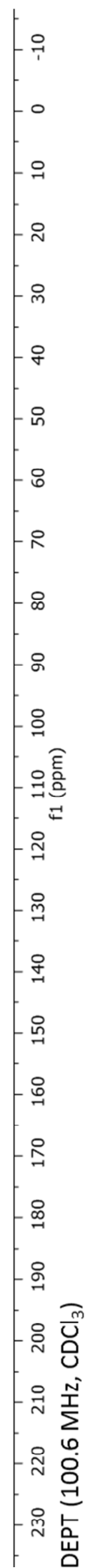
NMR and IR spectra of compound **31**



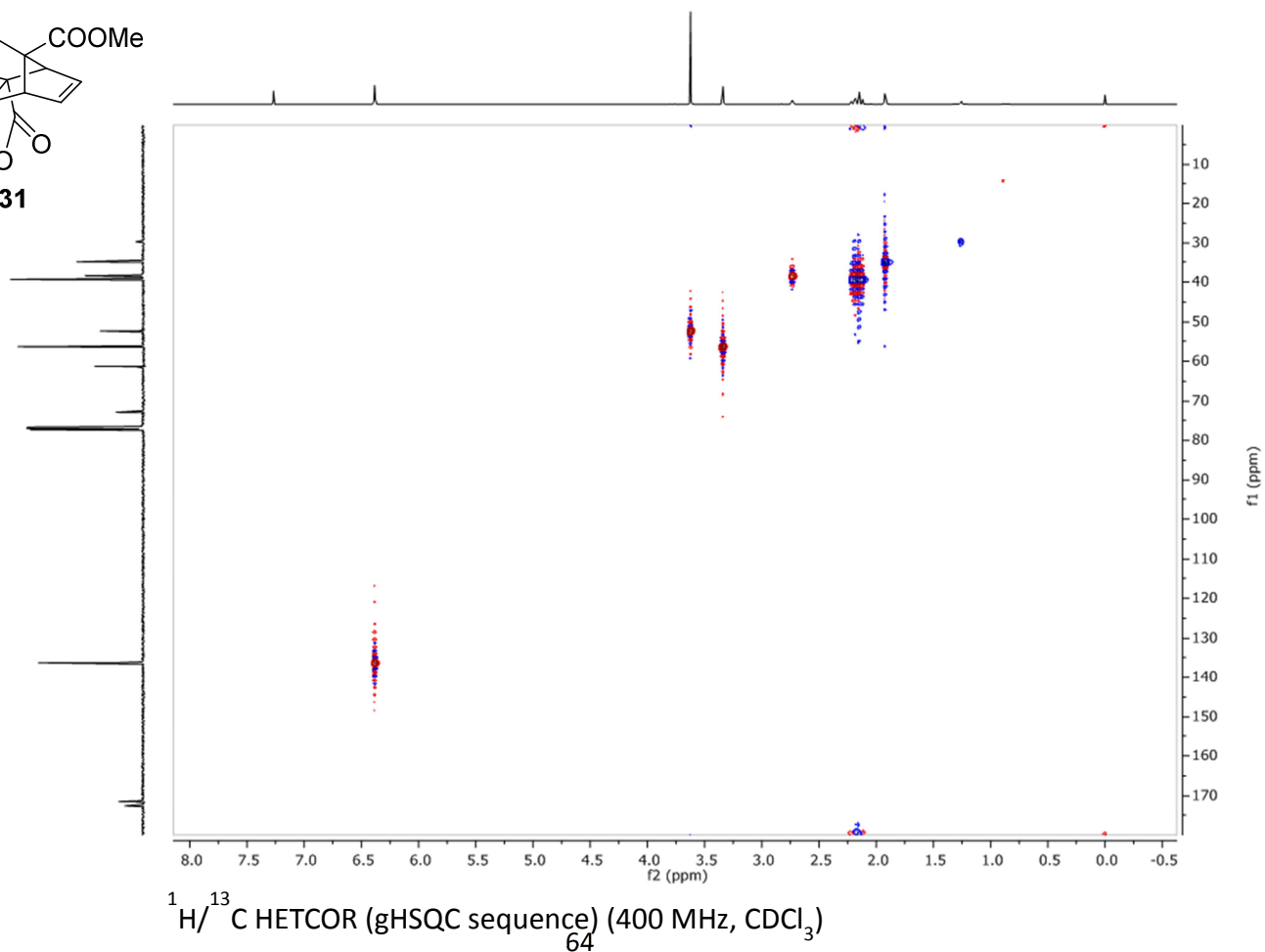
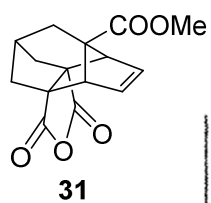
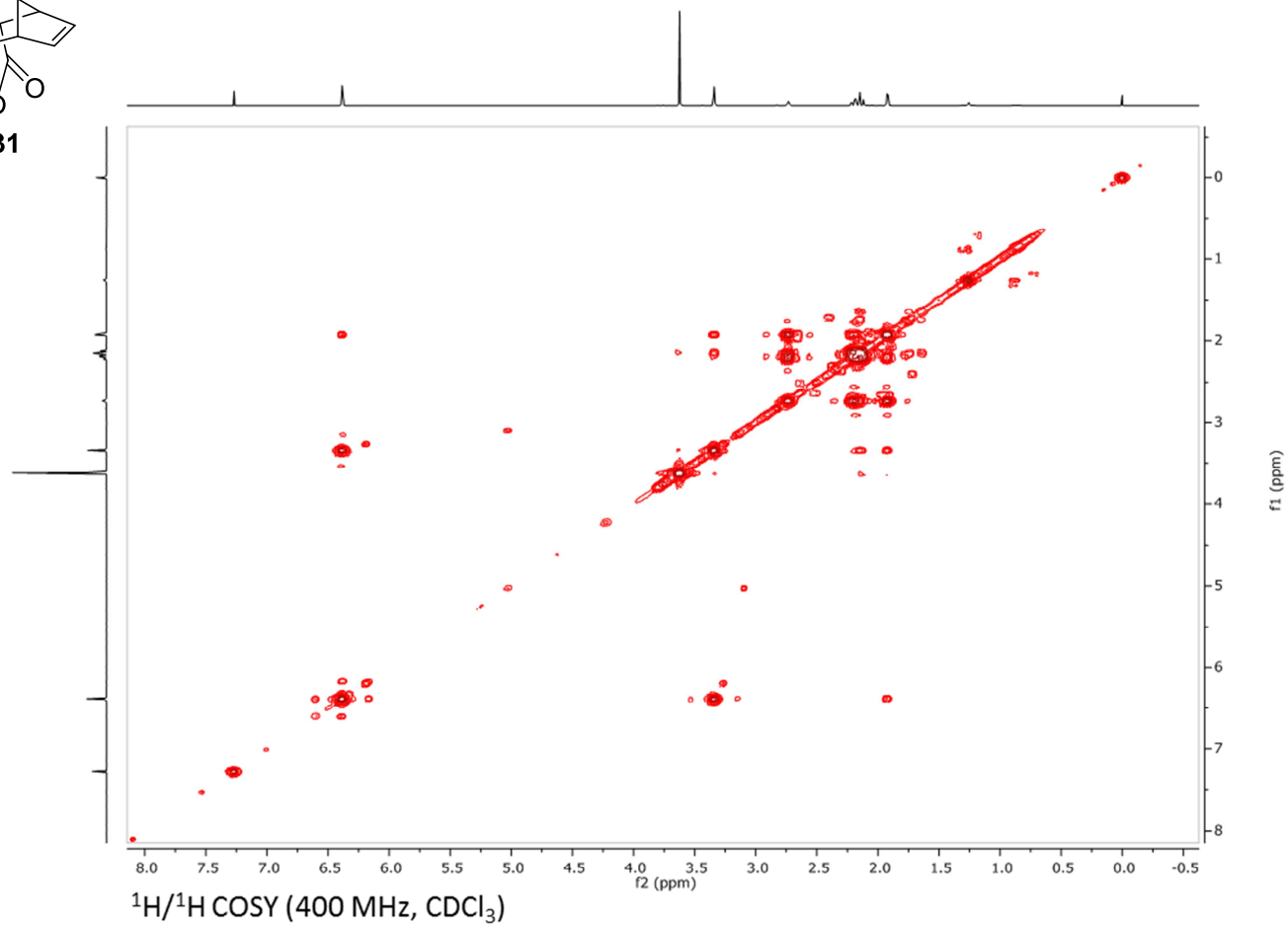
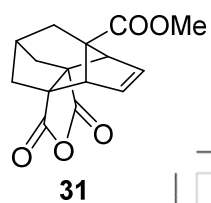
COOMe



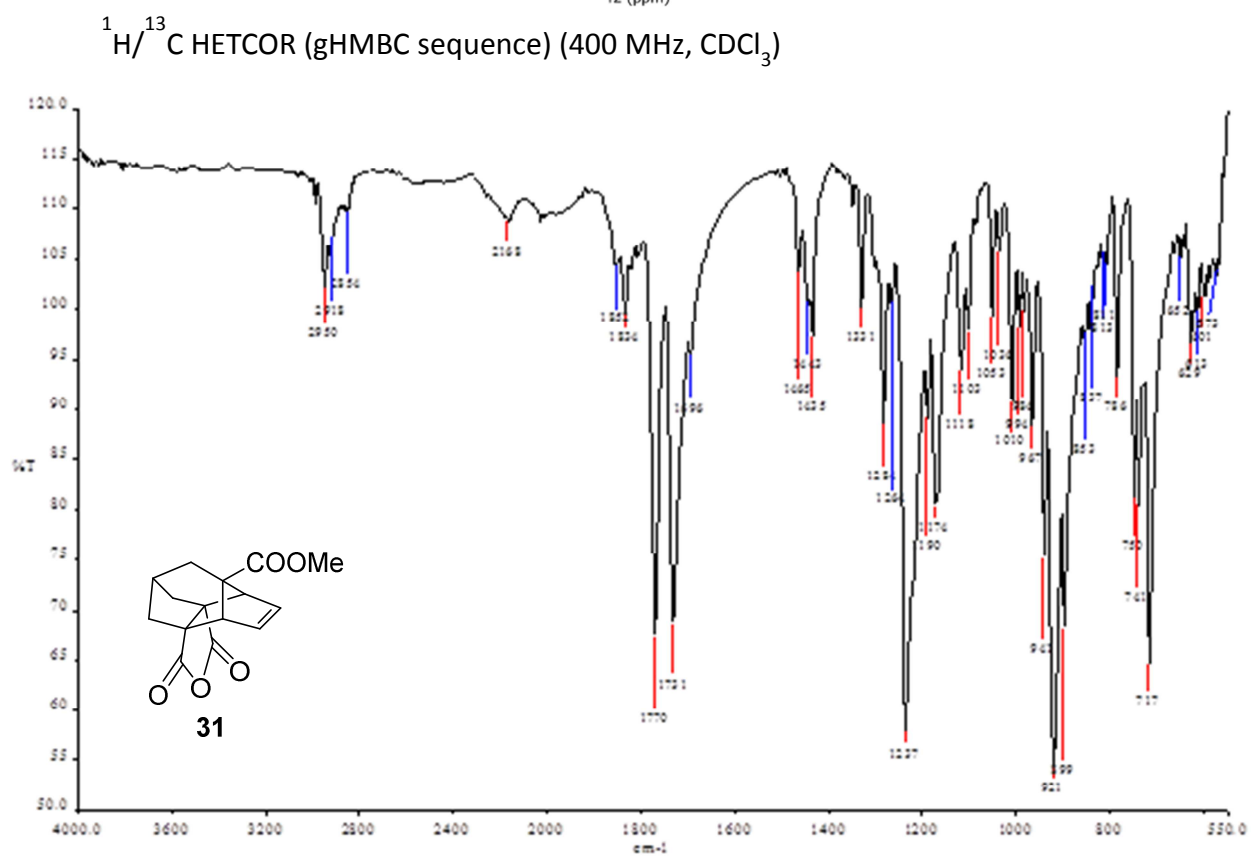
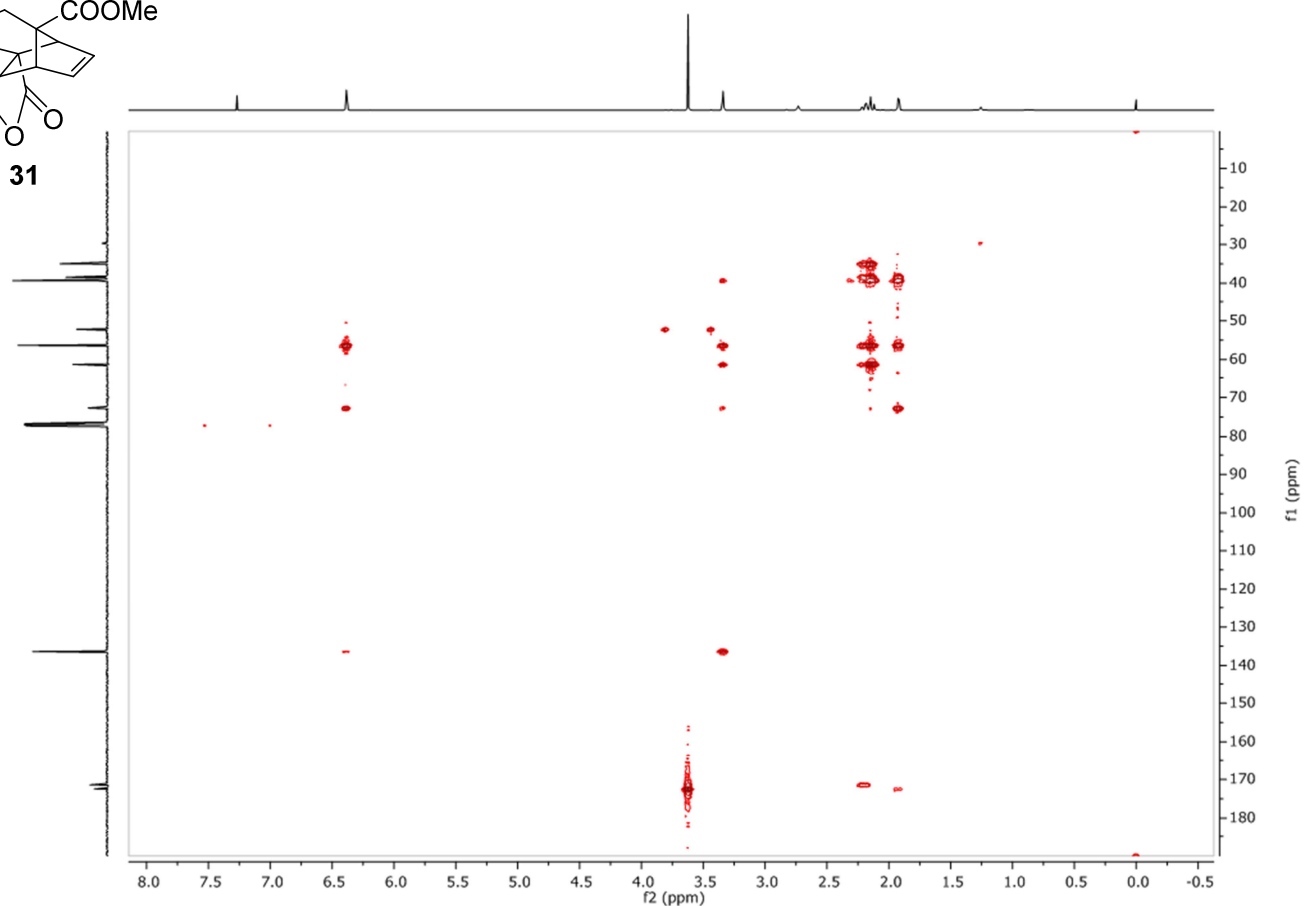
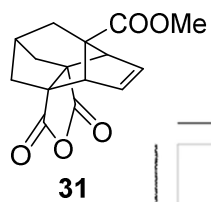
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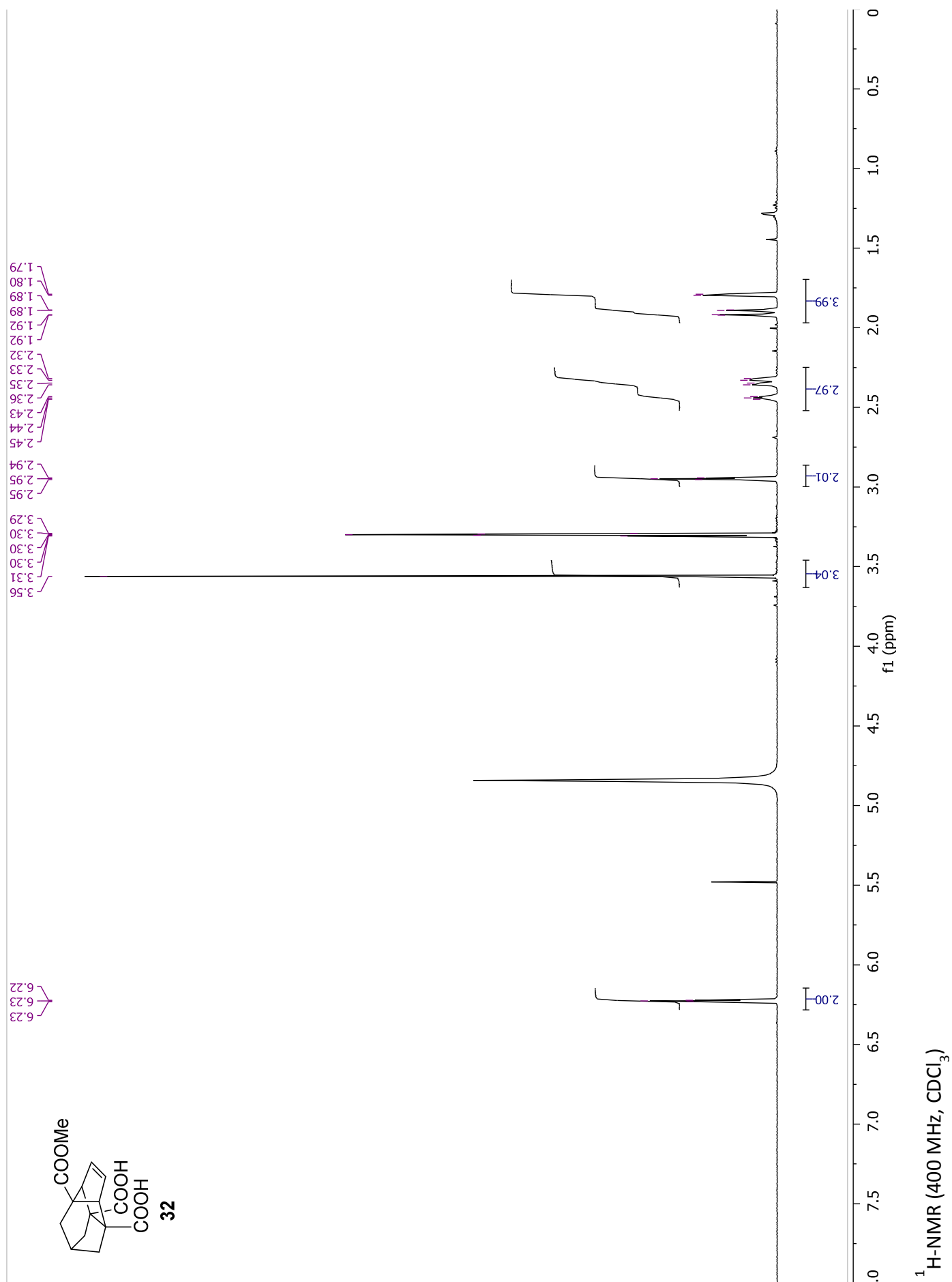
NMR and IR spectra of compound **31**



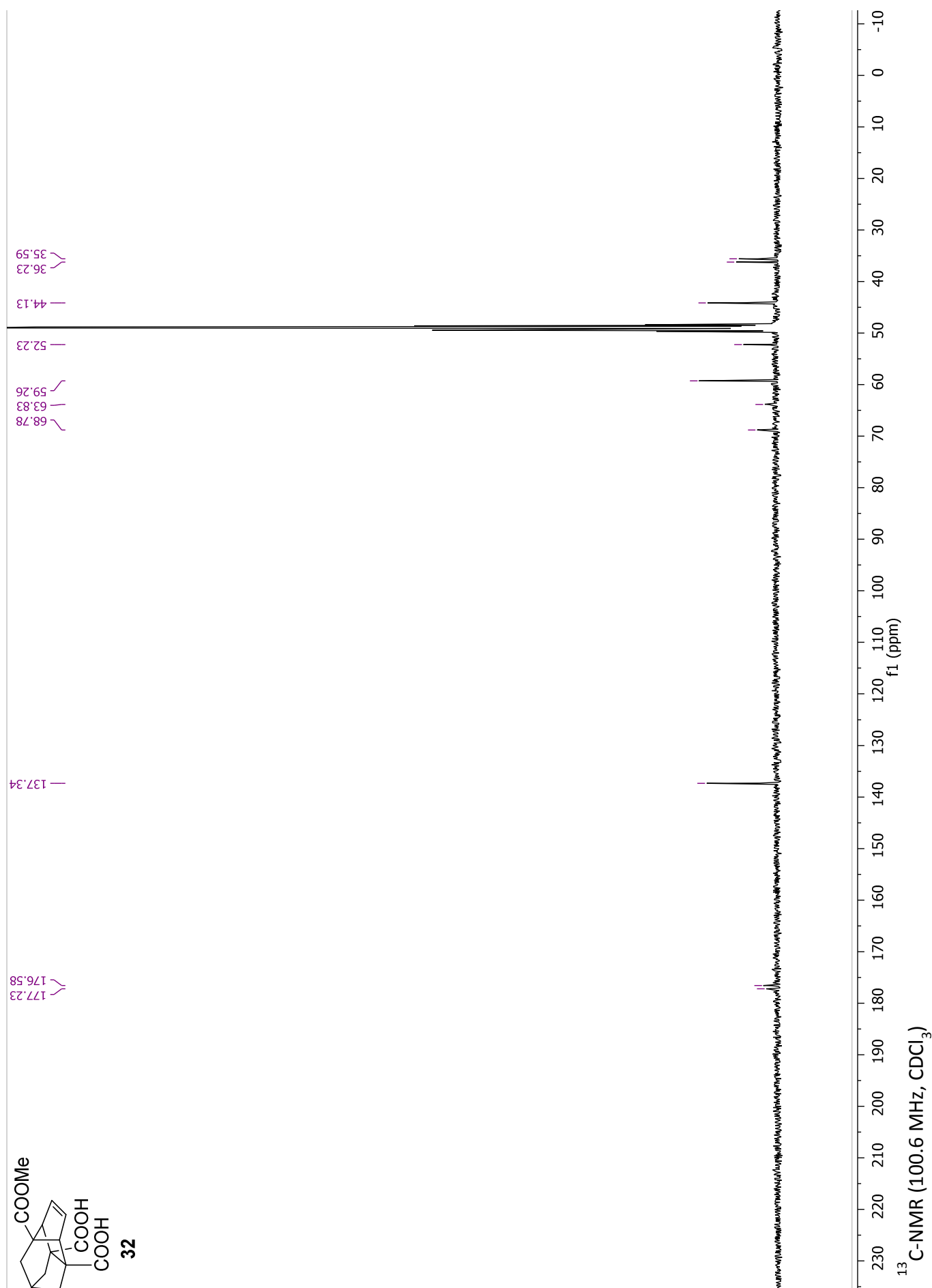
NMR and IR spectra of compound **31**

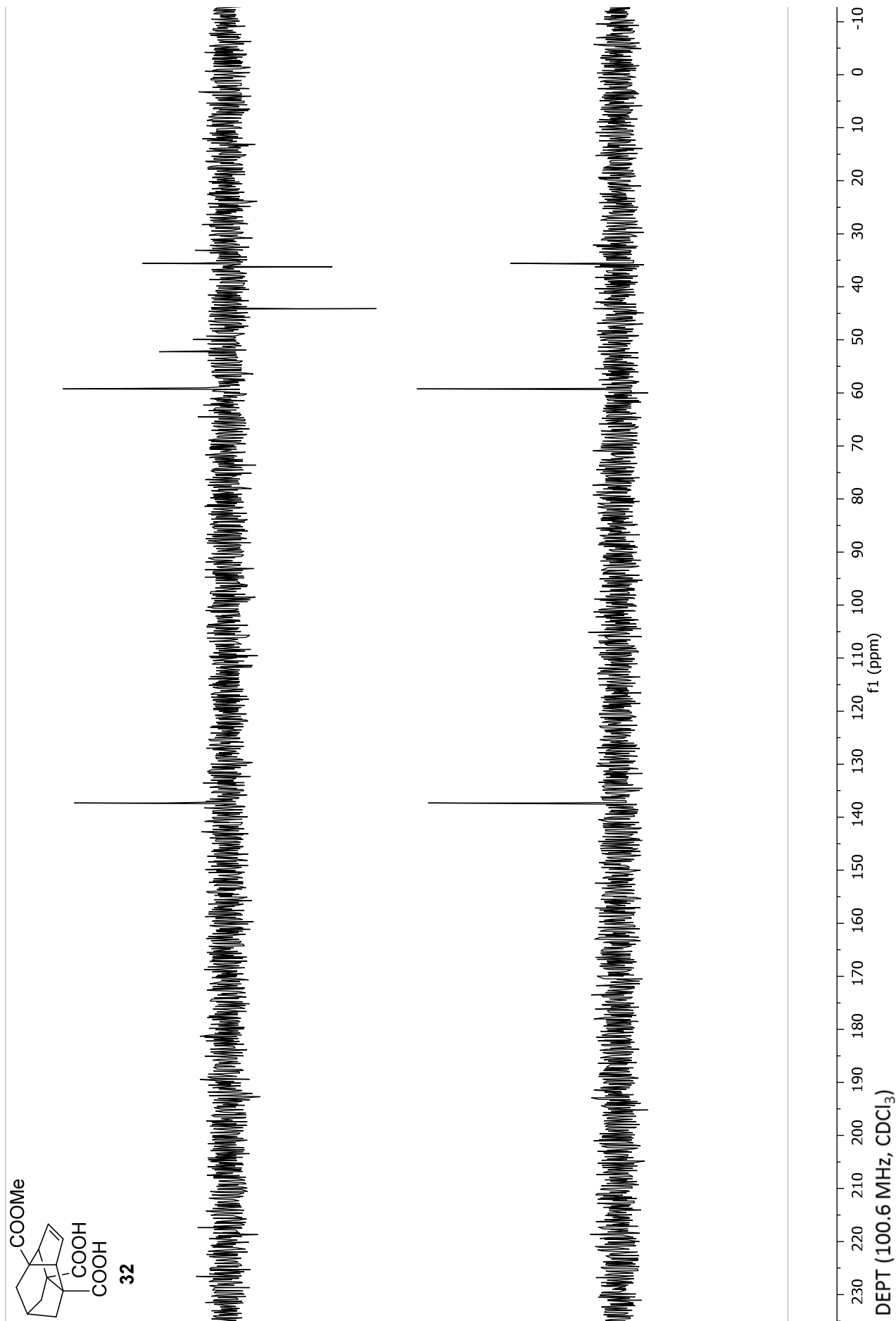


NMR and IR spectra of compound **32**



NMR and IR spectra of compound **32**





NMR and IR spectra of compound **32**

