

Supporting Information for

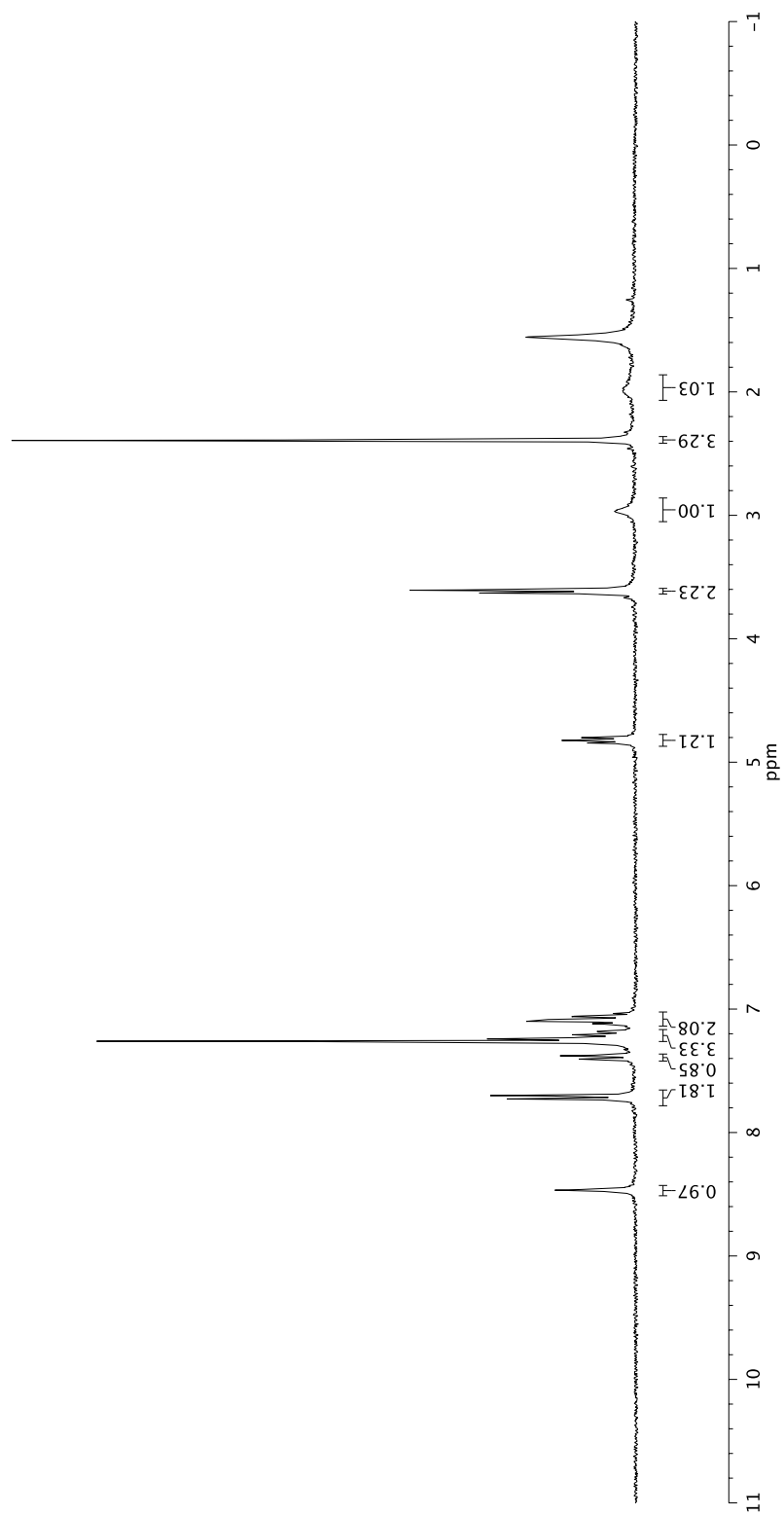
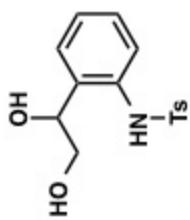
**The Evolution of a Unified, Stereodivergent Approach to the
Synthesis of Communesin F and Perophoramidine**

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stoltz@caltech.edu

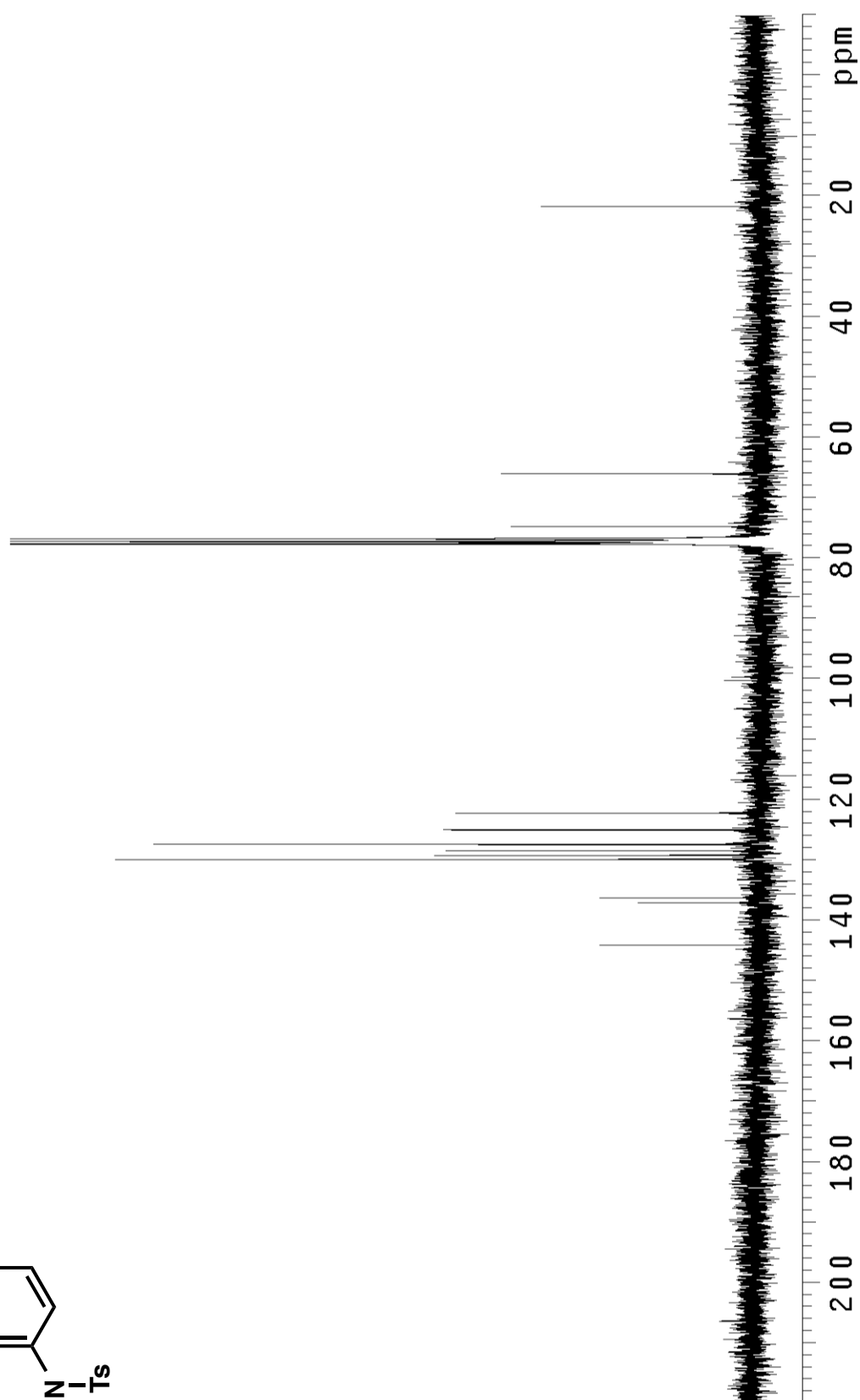
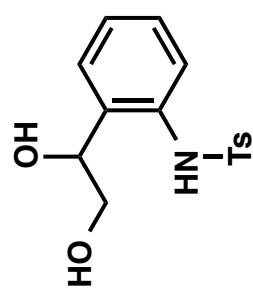
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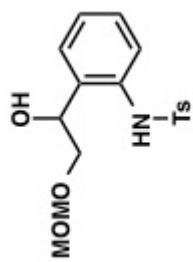


SI-2

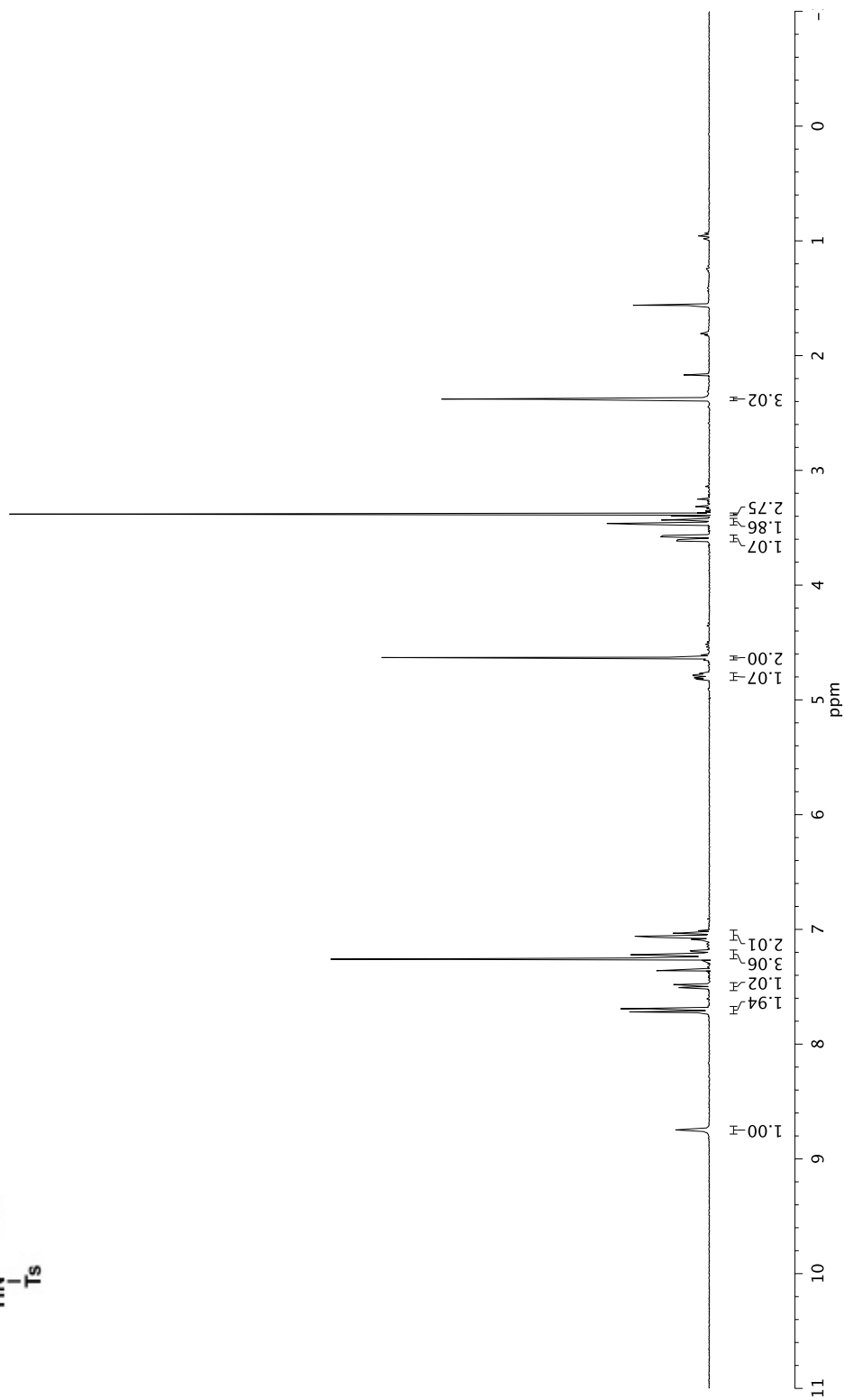
¹H NMR (300 MHz, CDCl₃) of compound SI-2.



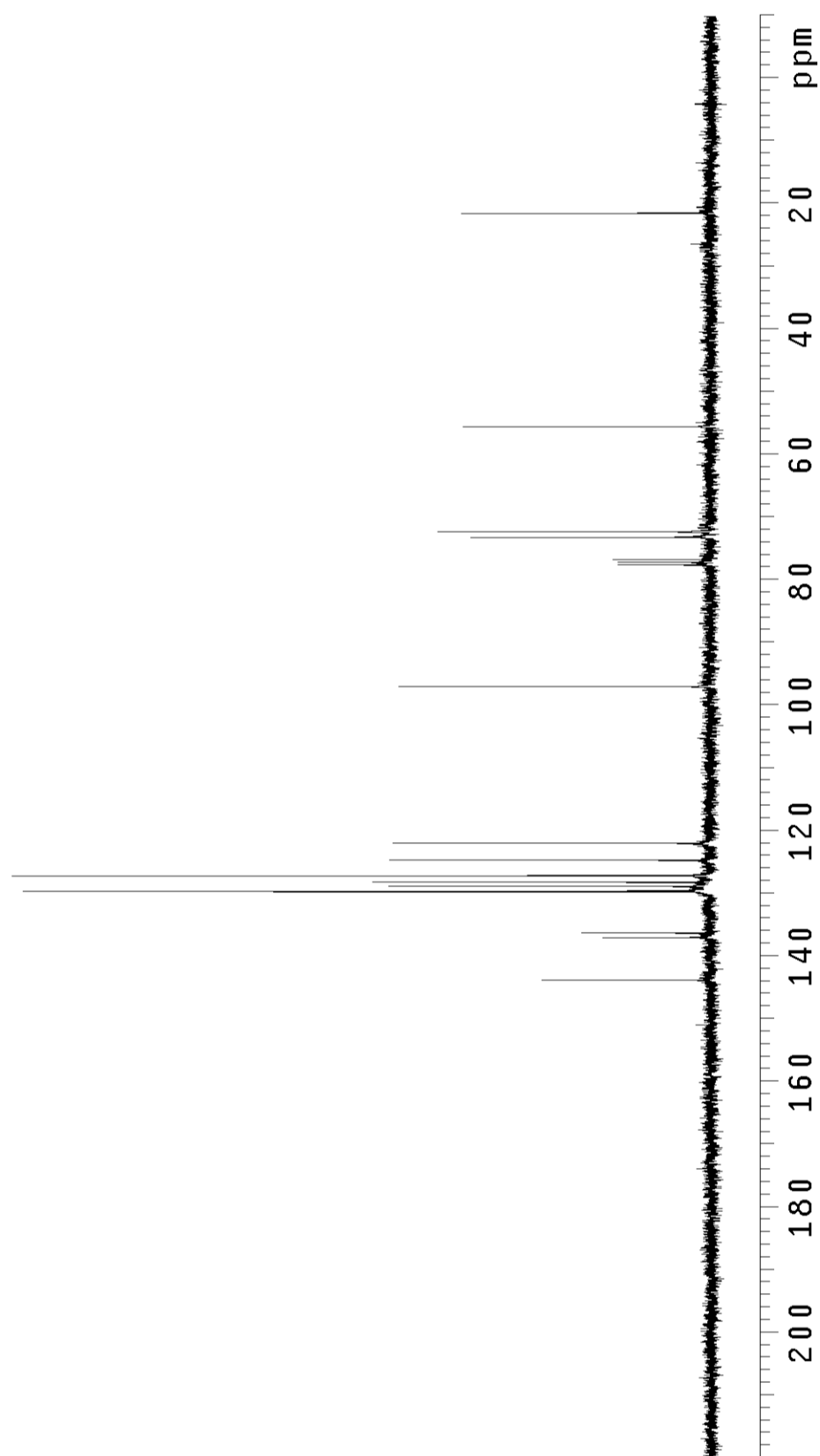
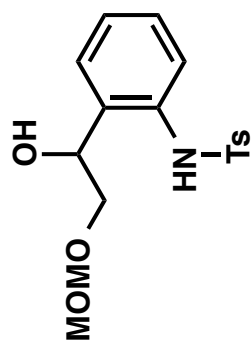
^{13}C NMR (75 MHz, CDCl_3) of compound SI-2.



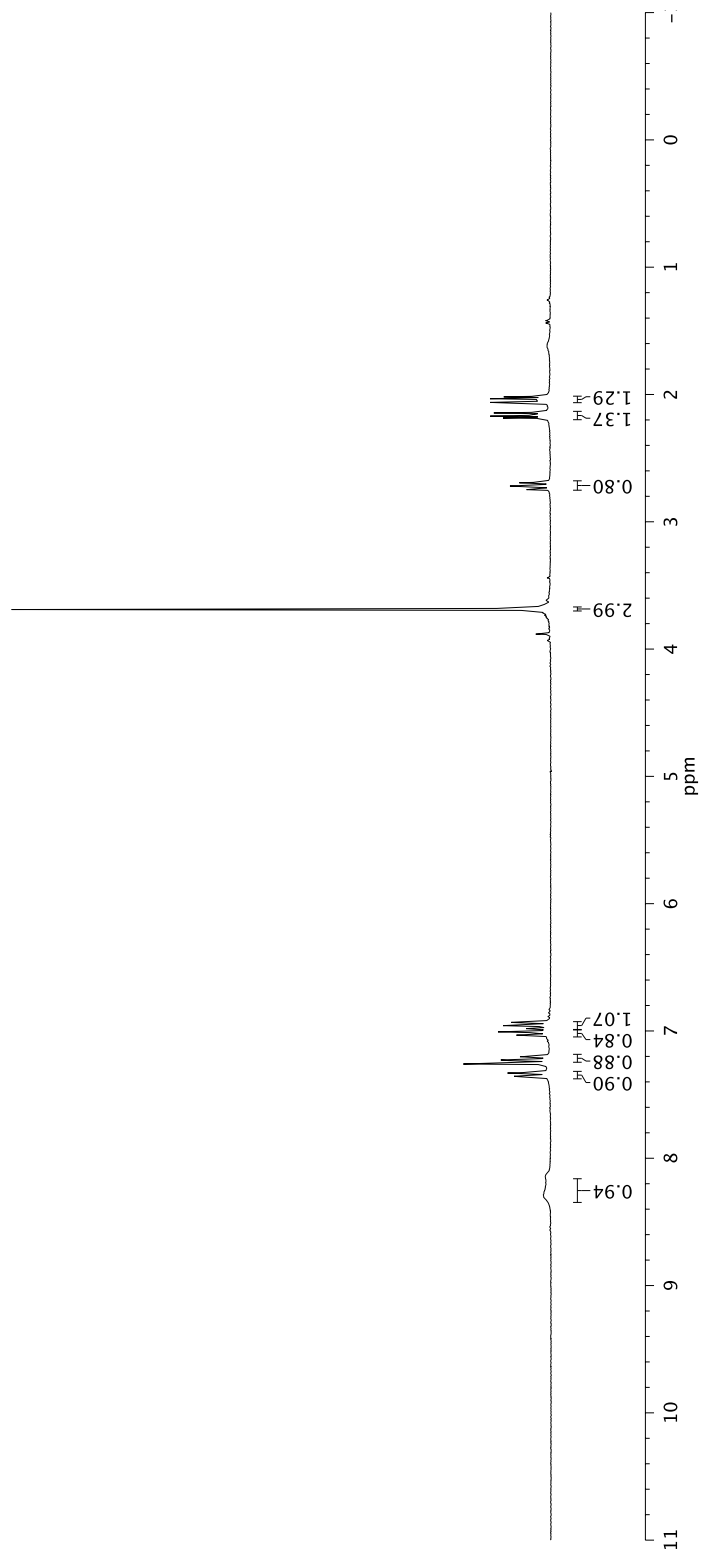
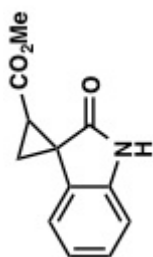
SI-4

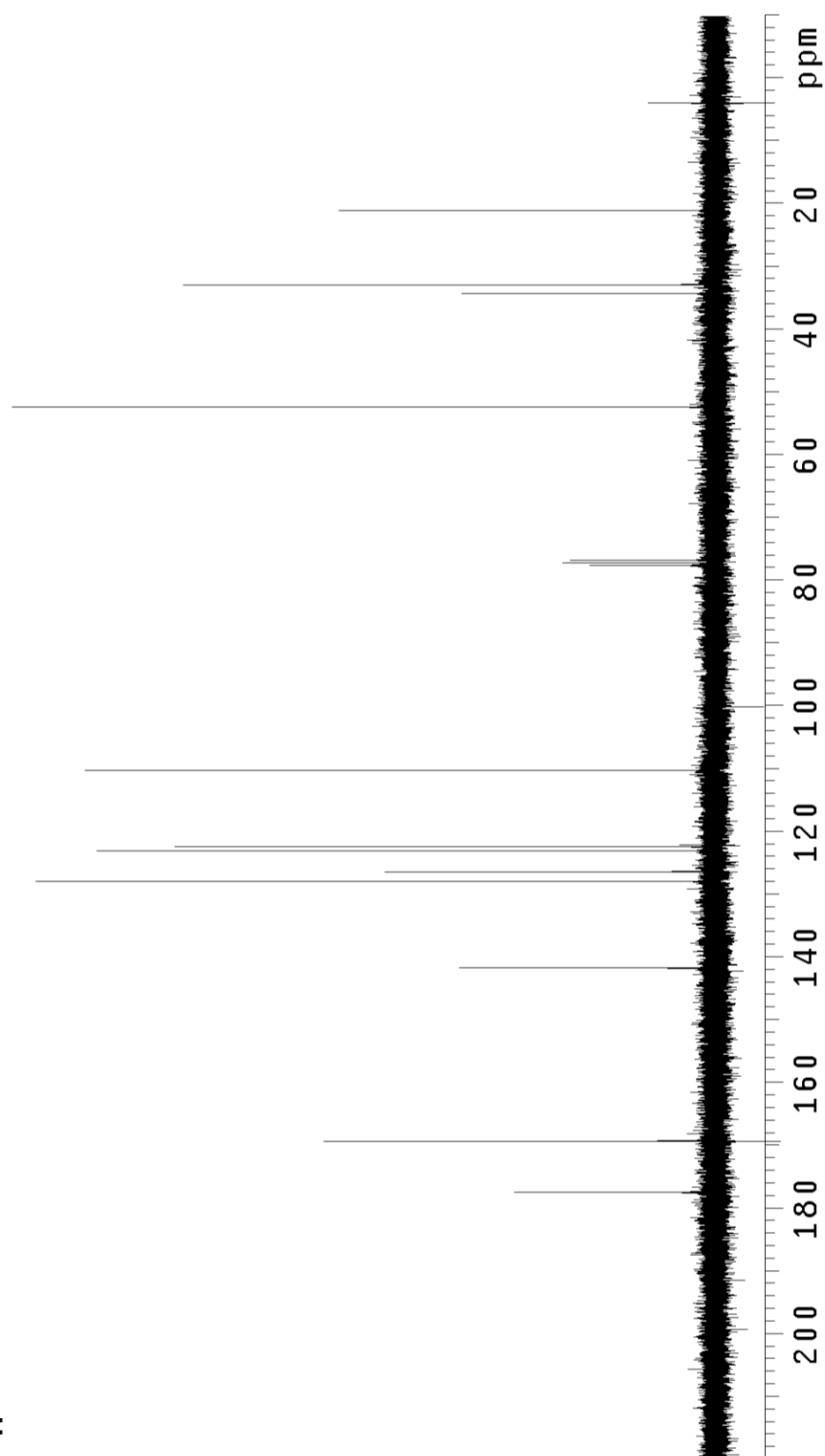
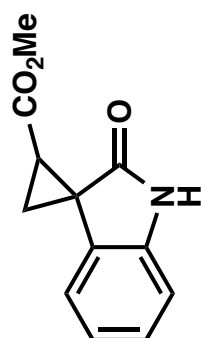


^1H NMR (300 MHz, CDCl_3) of compound **13**.

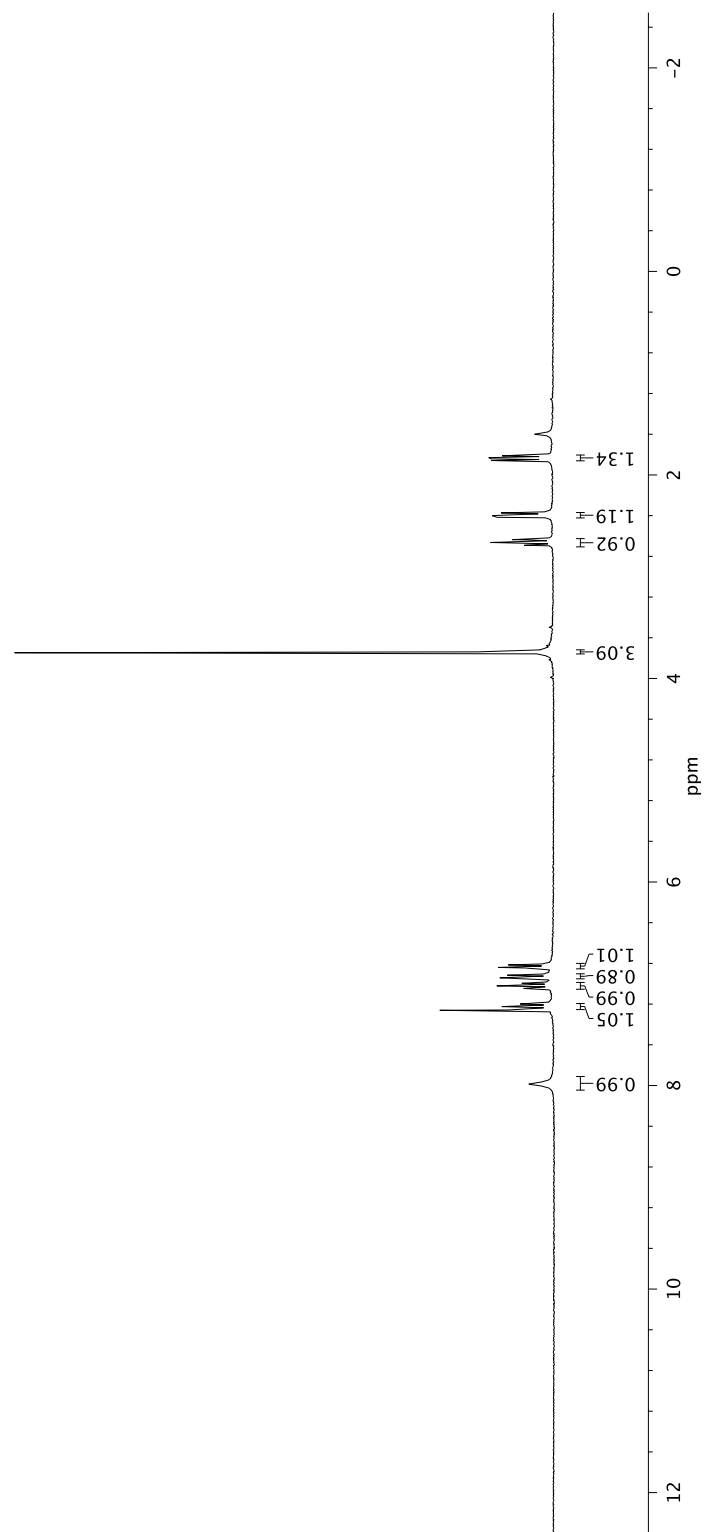
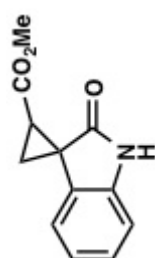


^{13}C NMR (75 MHz, CDCl_3) of compound **13**.

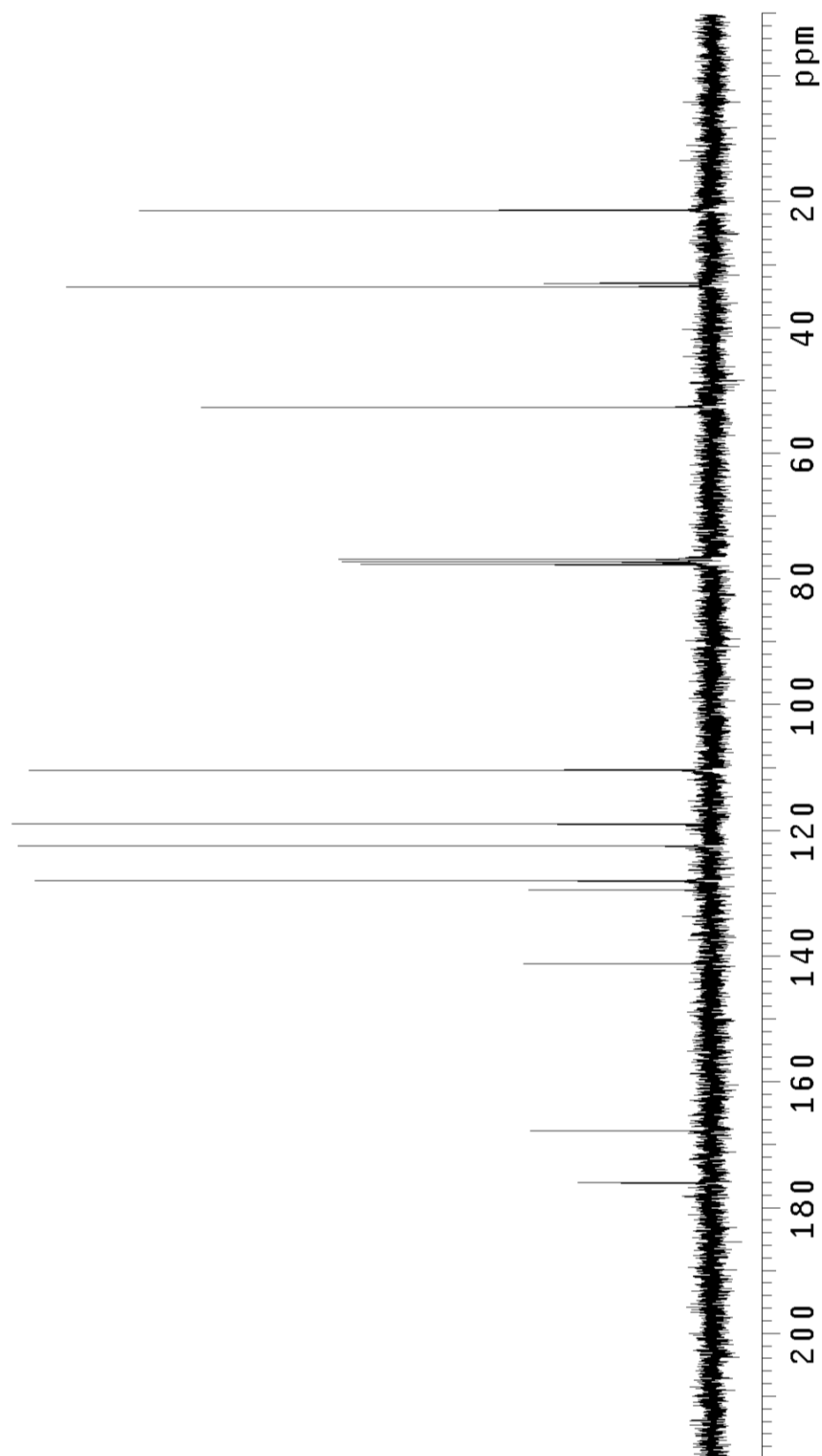
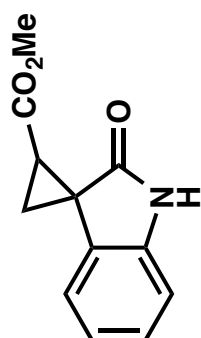




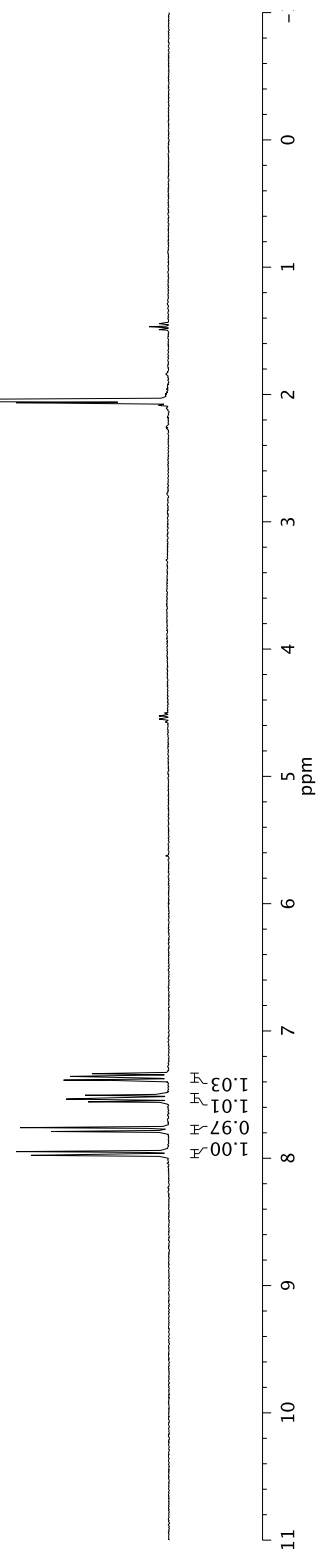
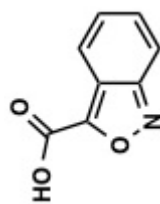
^{13}C NMR (75 MHz, CDCl_3) of compound **16a**.

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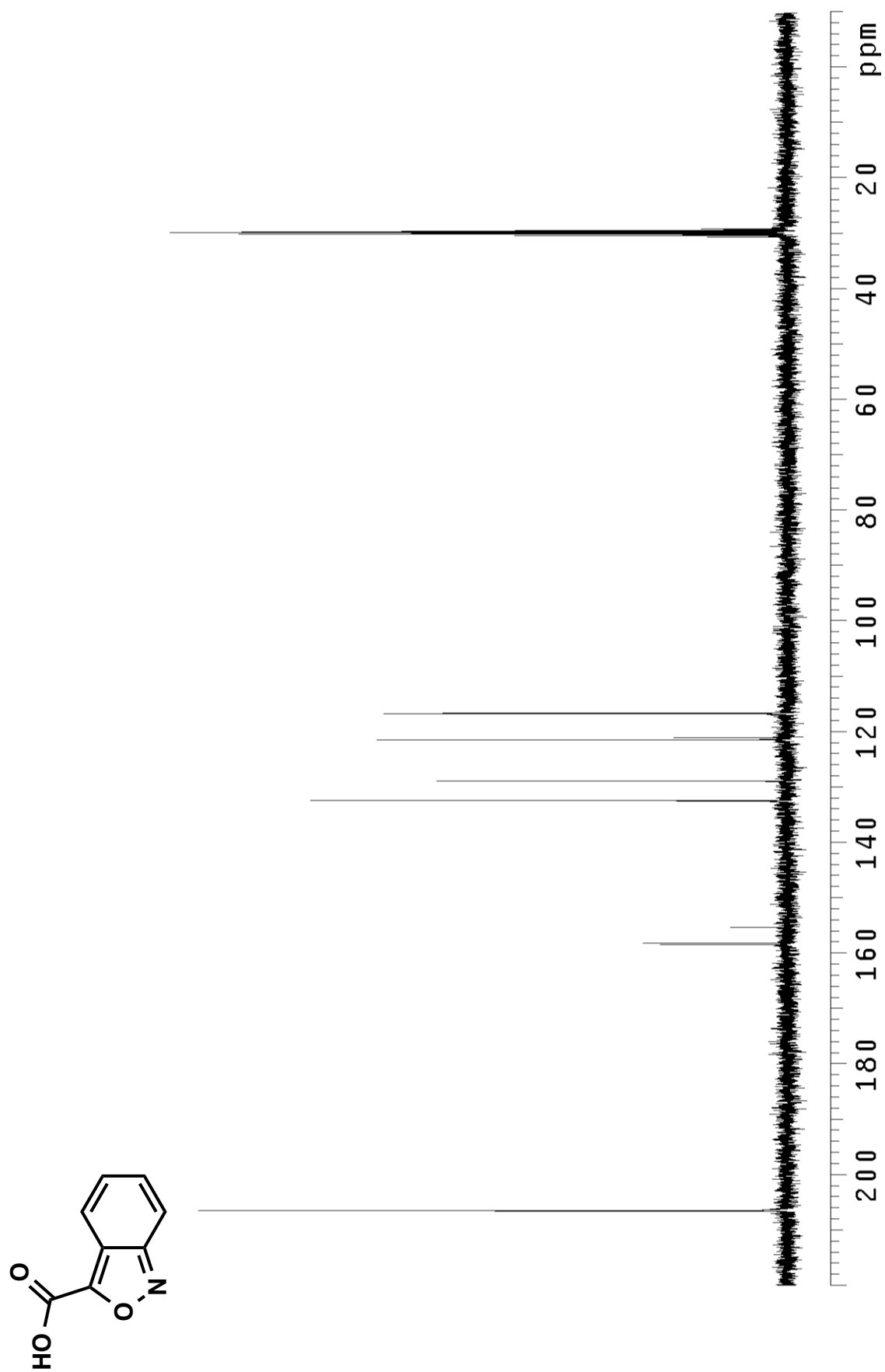
¹H NMR (300 MHz, CDCl₃) of compound **16b**.

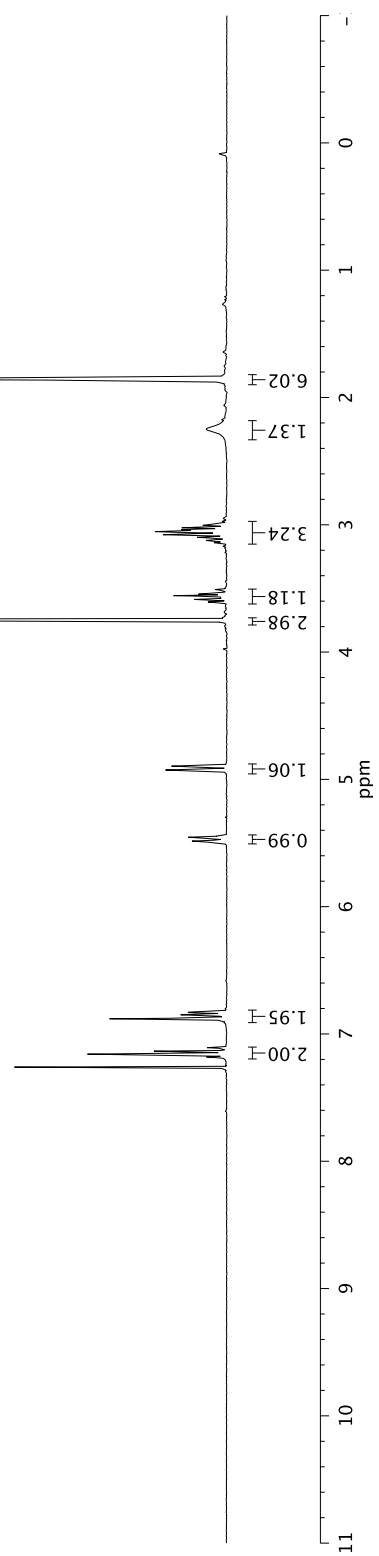
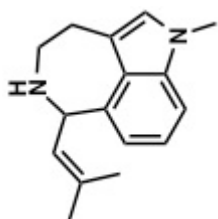


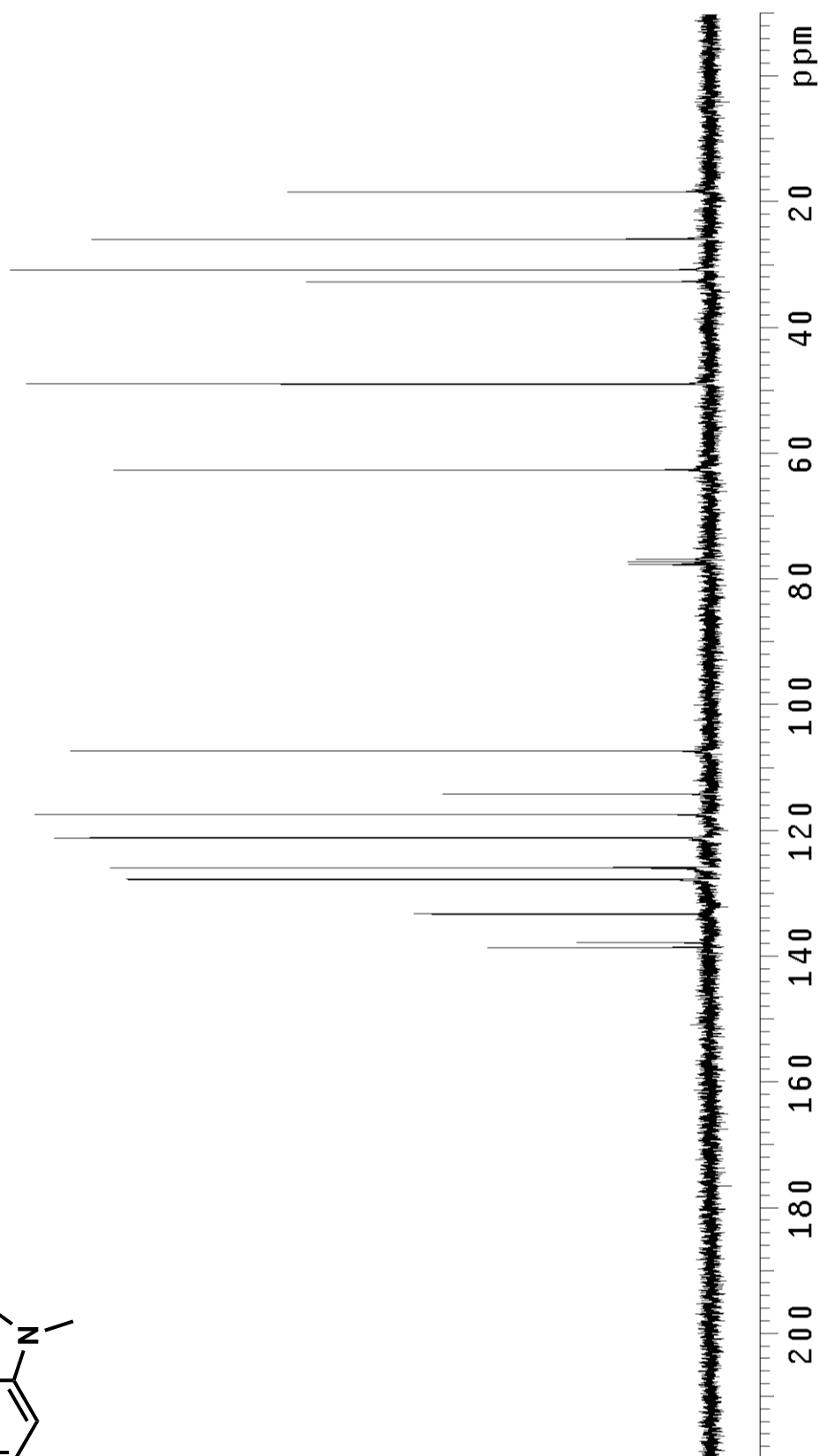
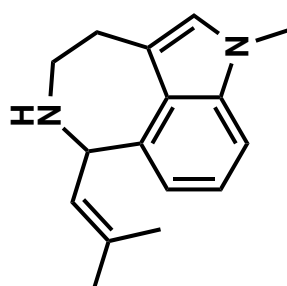
¹³C NMR (75 MHz, CDCl₃) of compound **16b**.



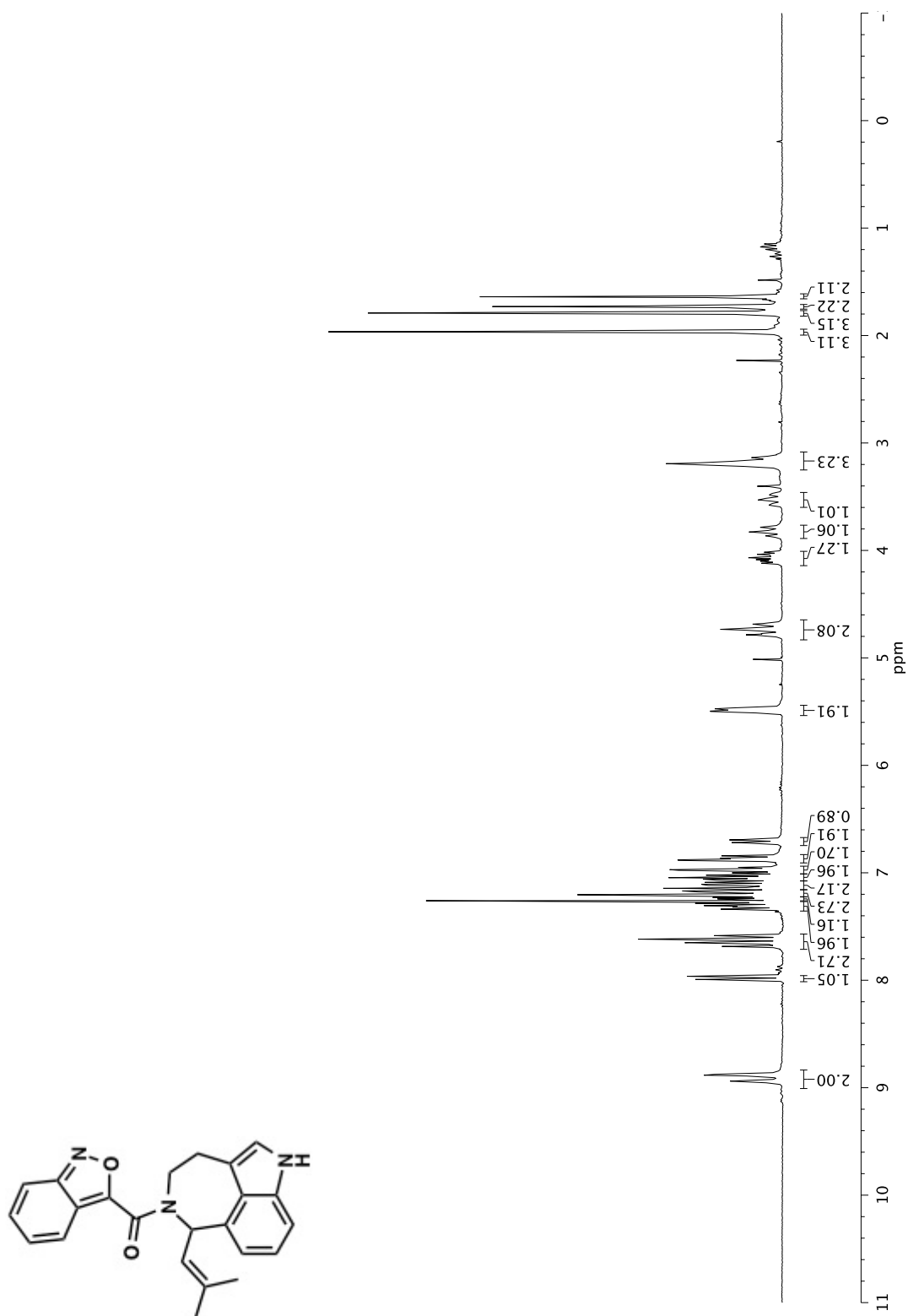
¹H NMR (300 MHz, acetone-d₆) of compound **20**.



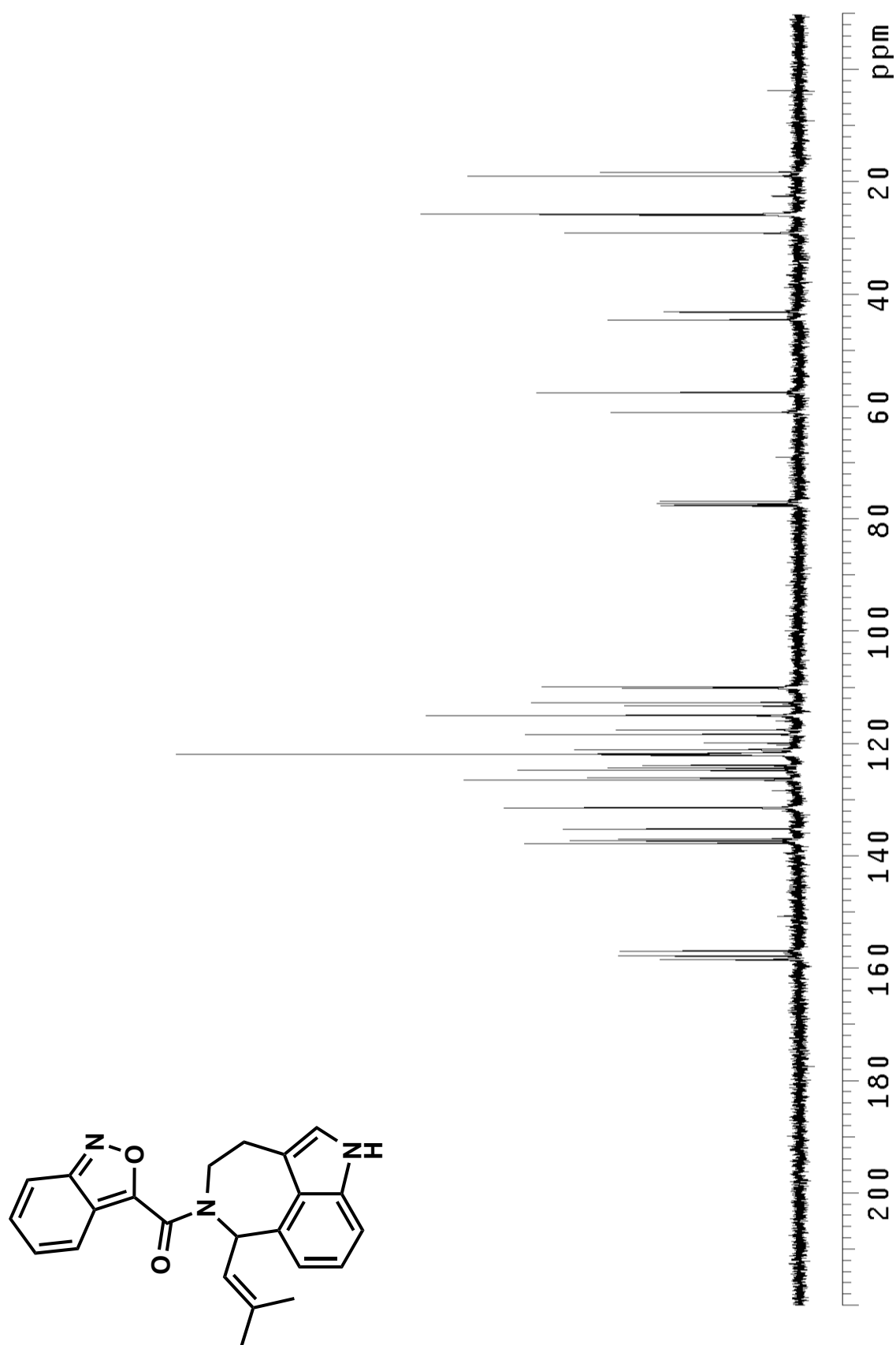




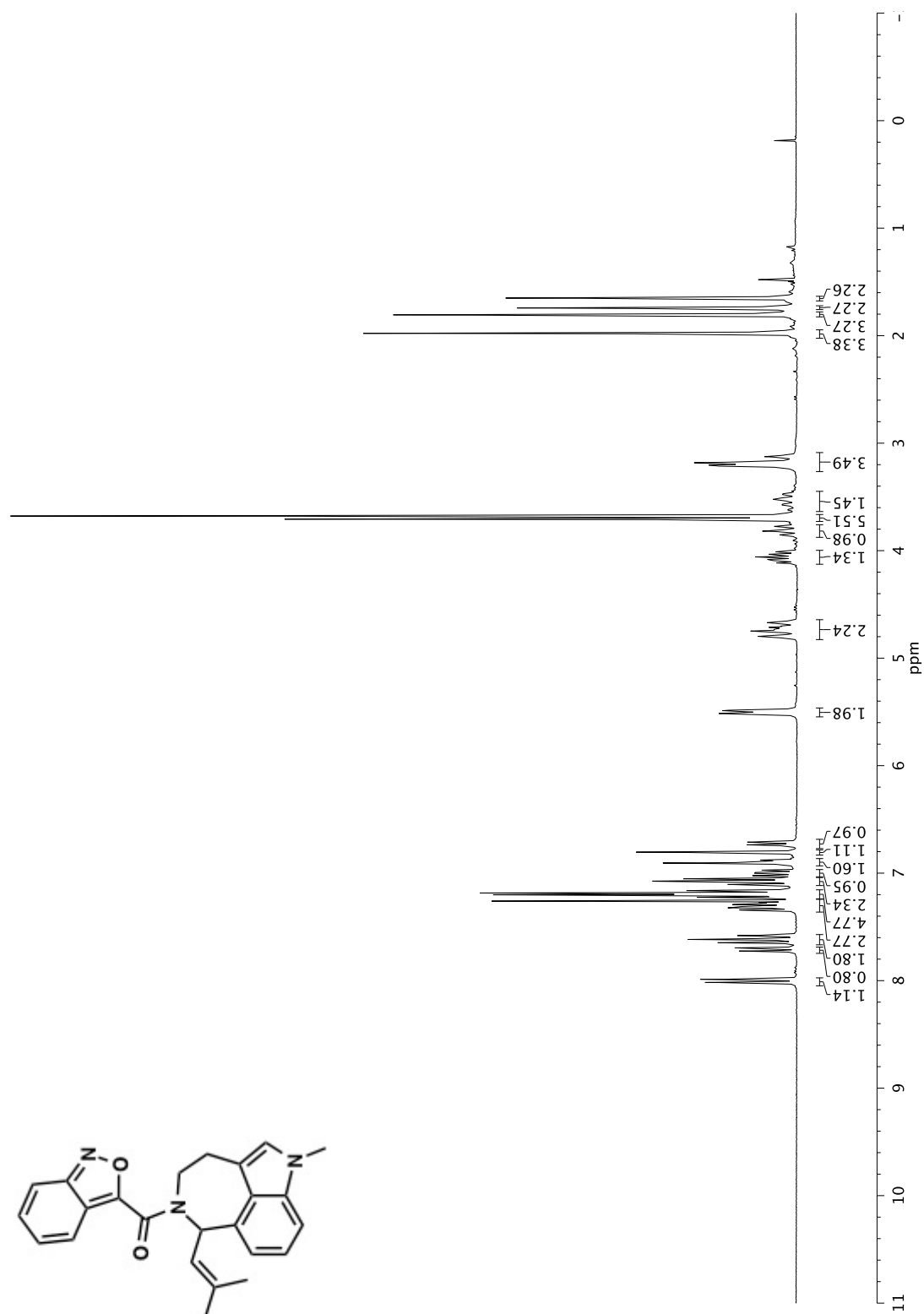
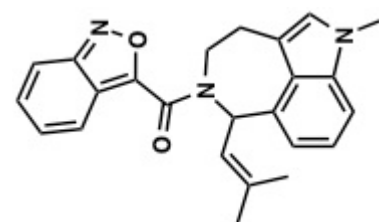
^{13}C NMR (75 MHz, CDCl_3) of compound **5**.

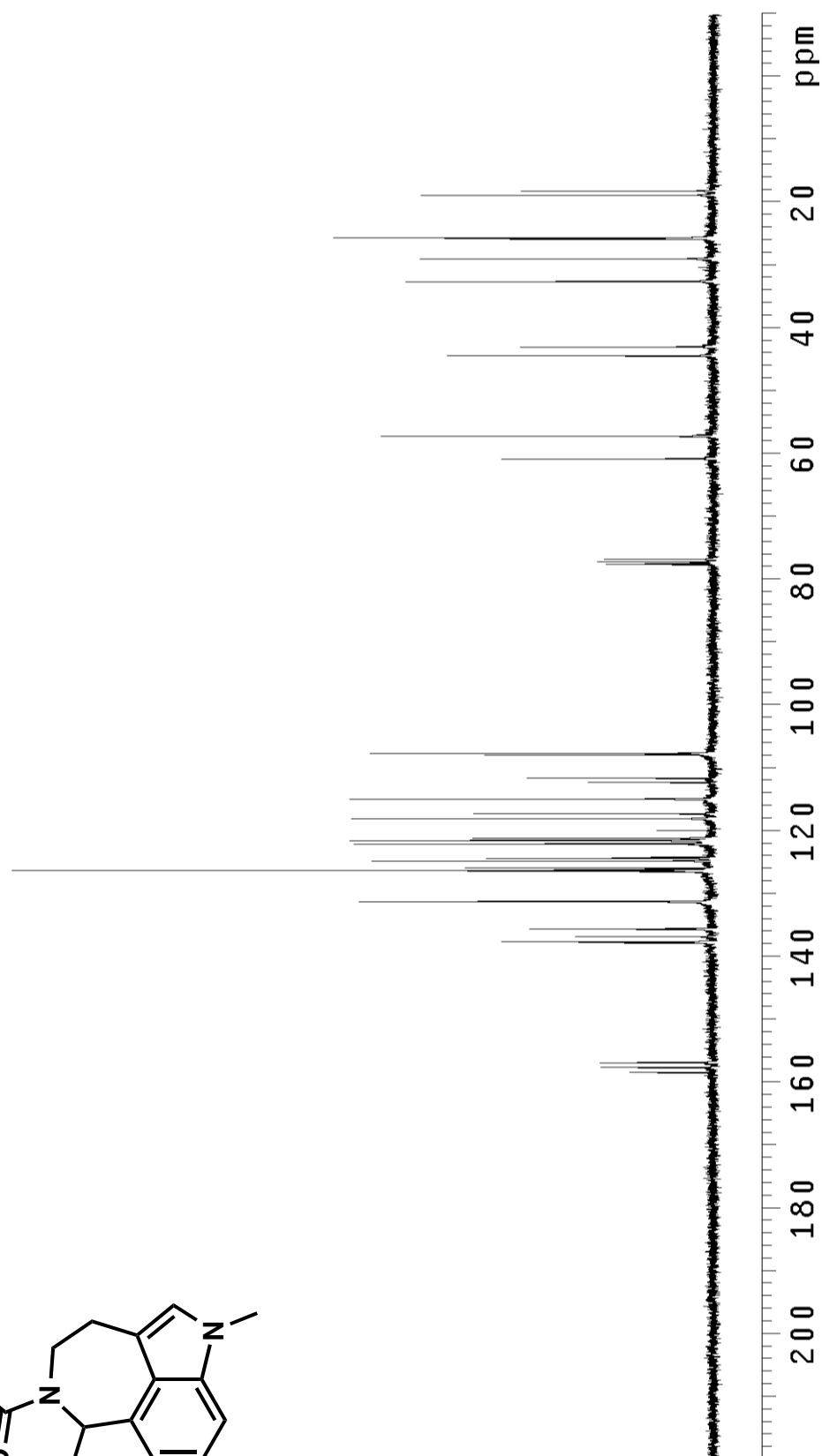
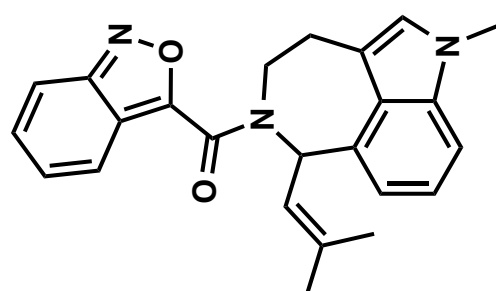


¹H NMR (300 MHz, CDCl₃) of compound **22**.

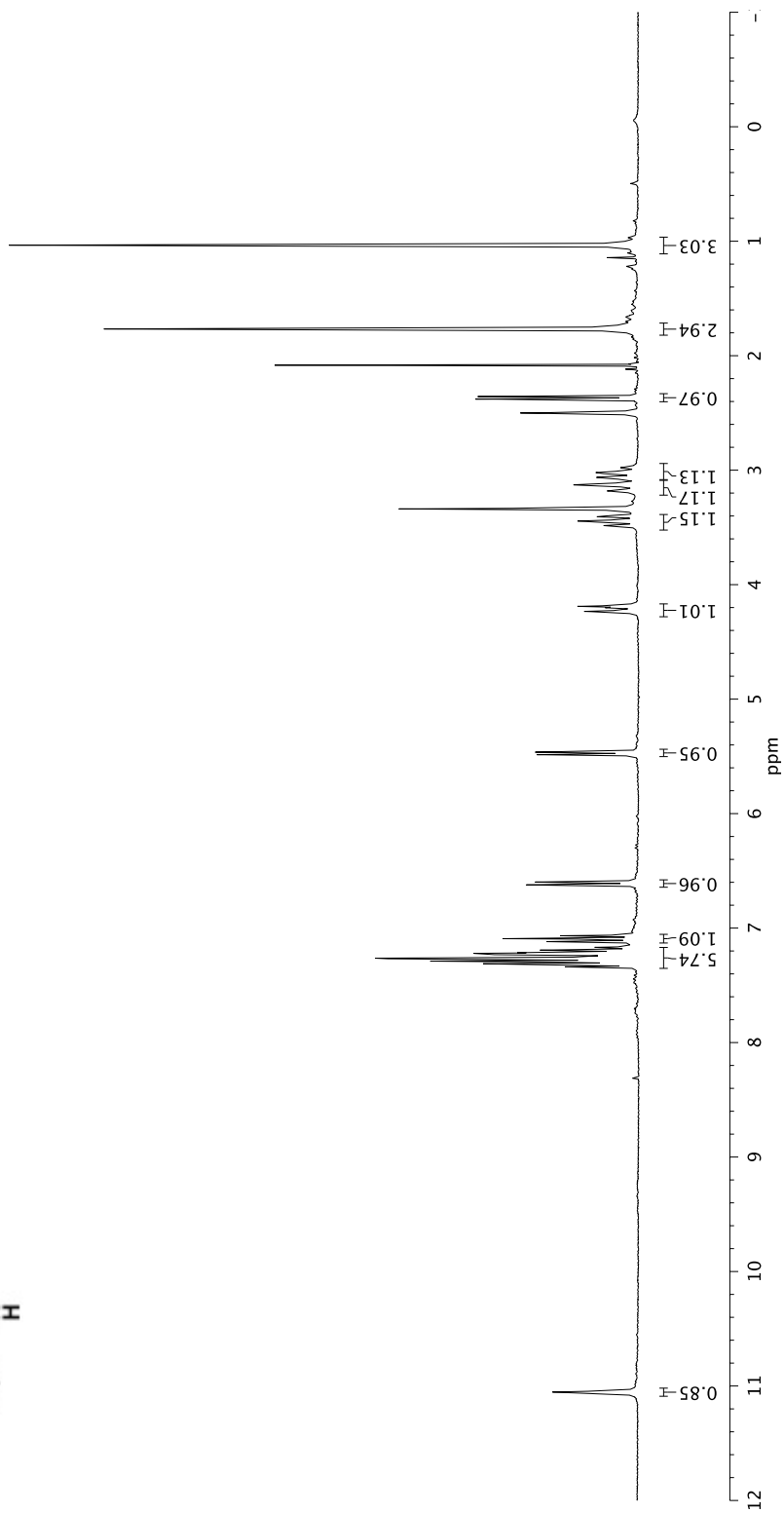
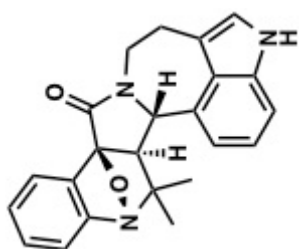


^{13}C NMR (75 MHz, CDCl_3) of compound 22.

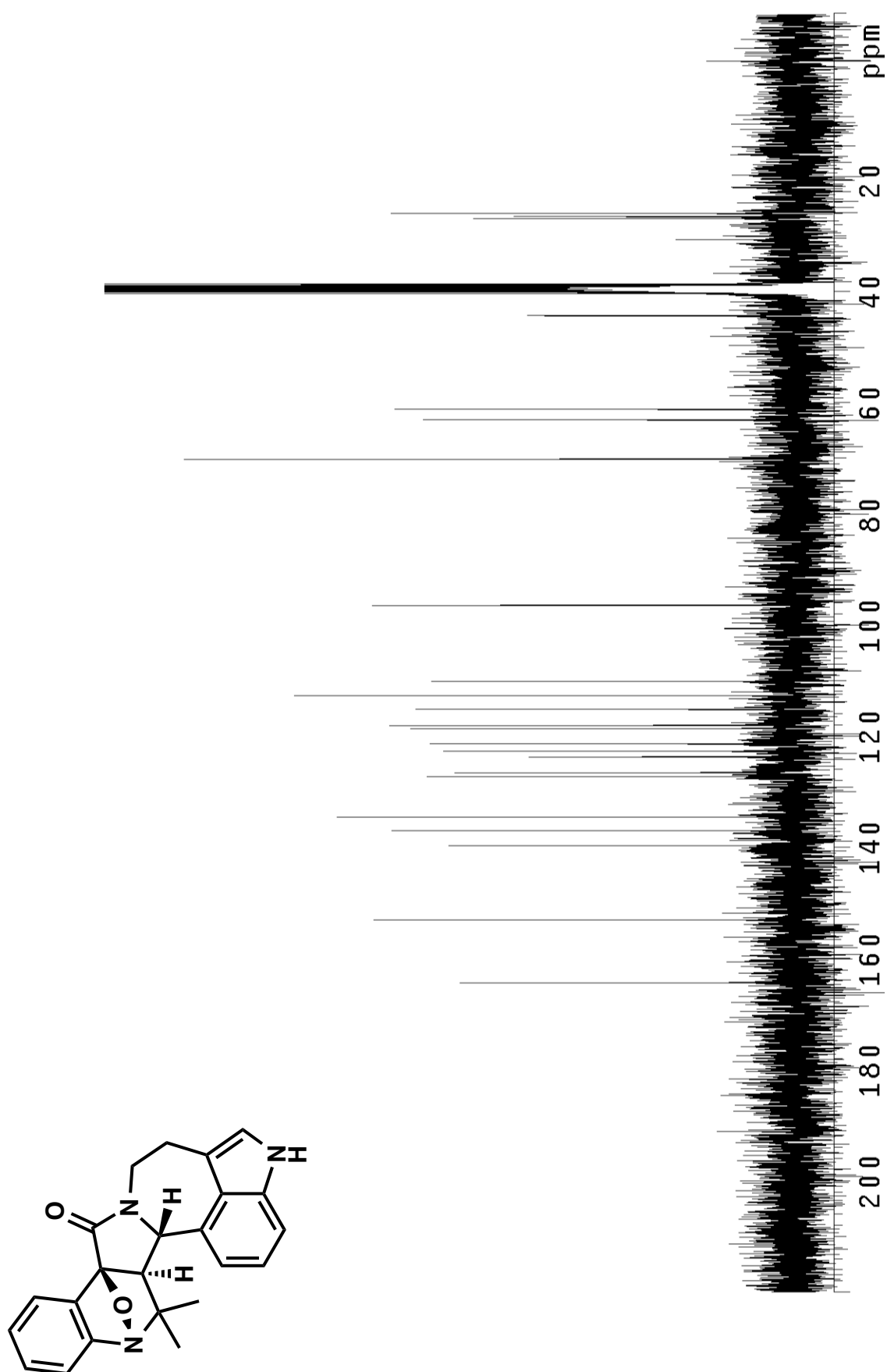




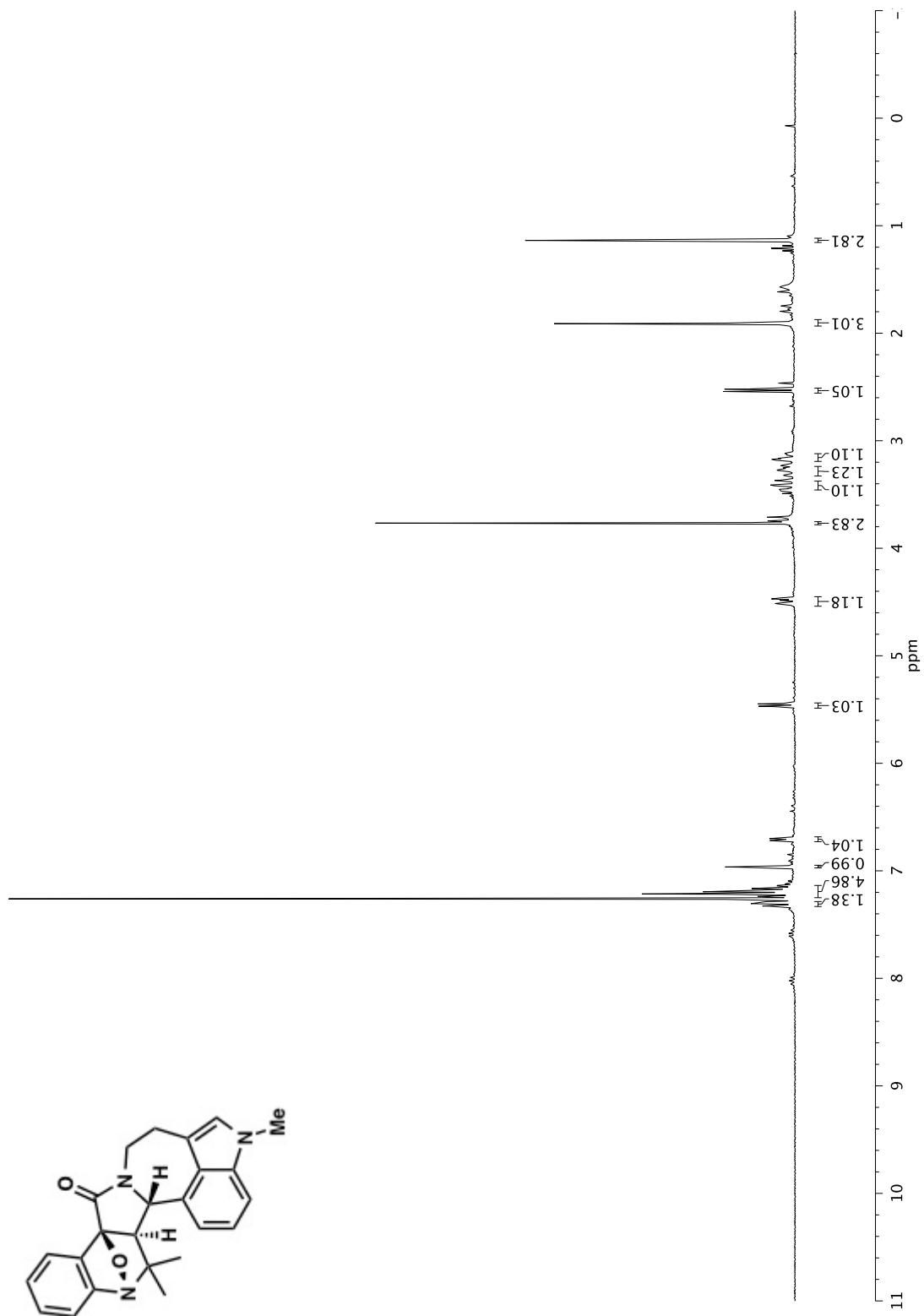
^{13}C NMR (75 MHz, CDCl_3) of compound 19.



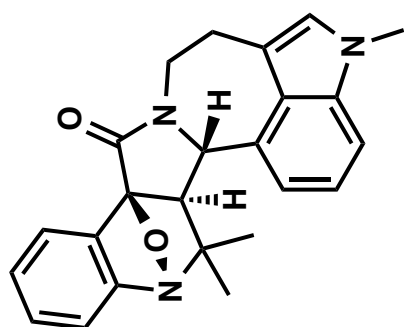
^1H NMR (300 MHz, CDCl_3) of compound **23**.



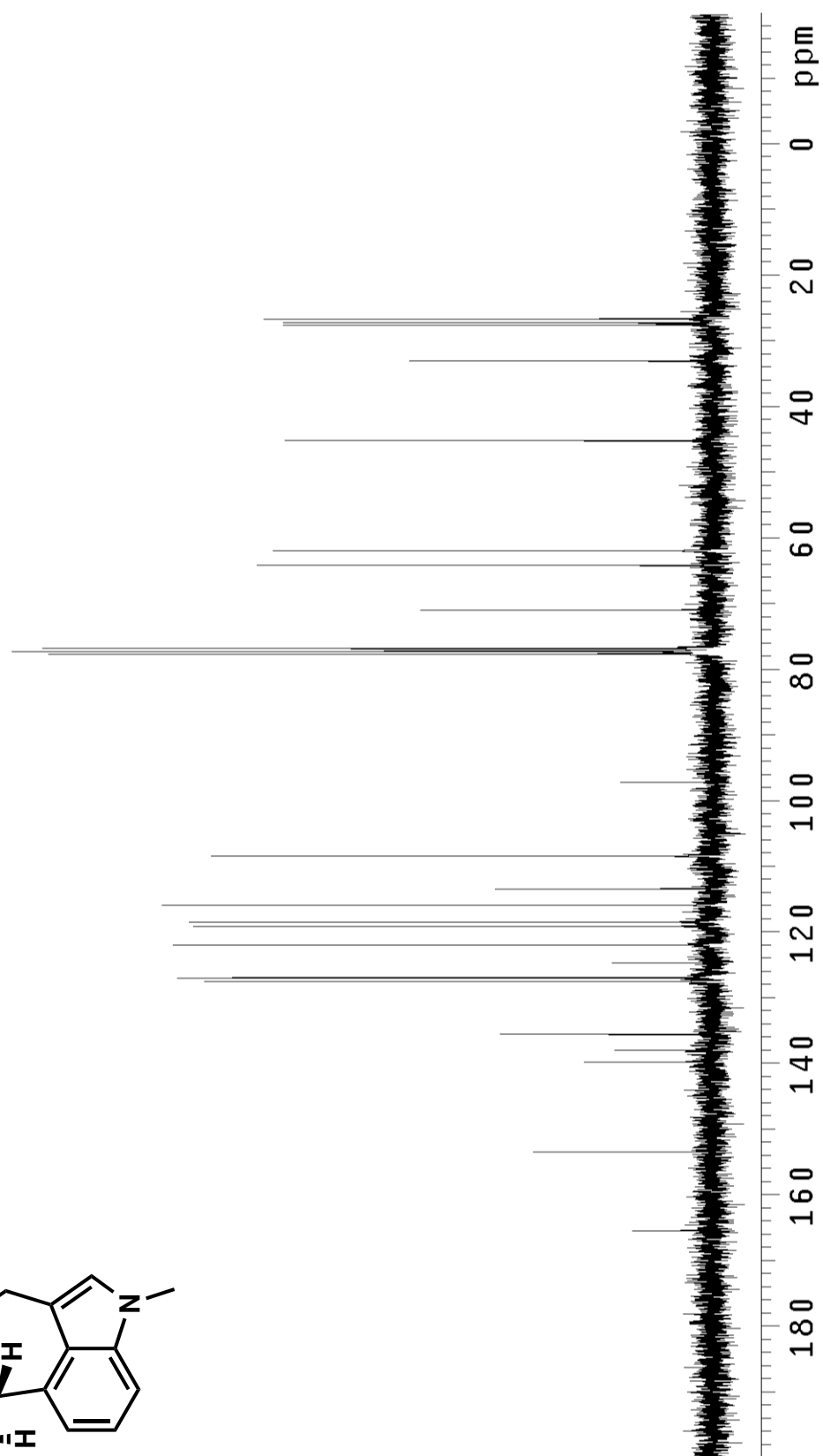
^{13}C NMR (75 MHz, CDCl_3) of compound **23**.

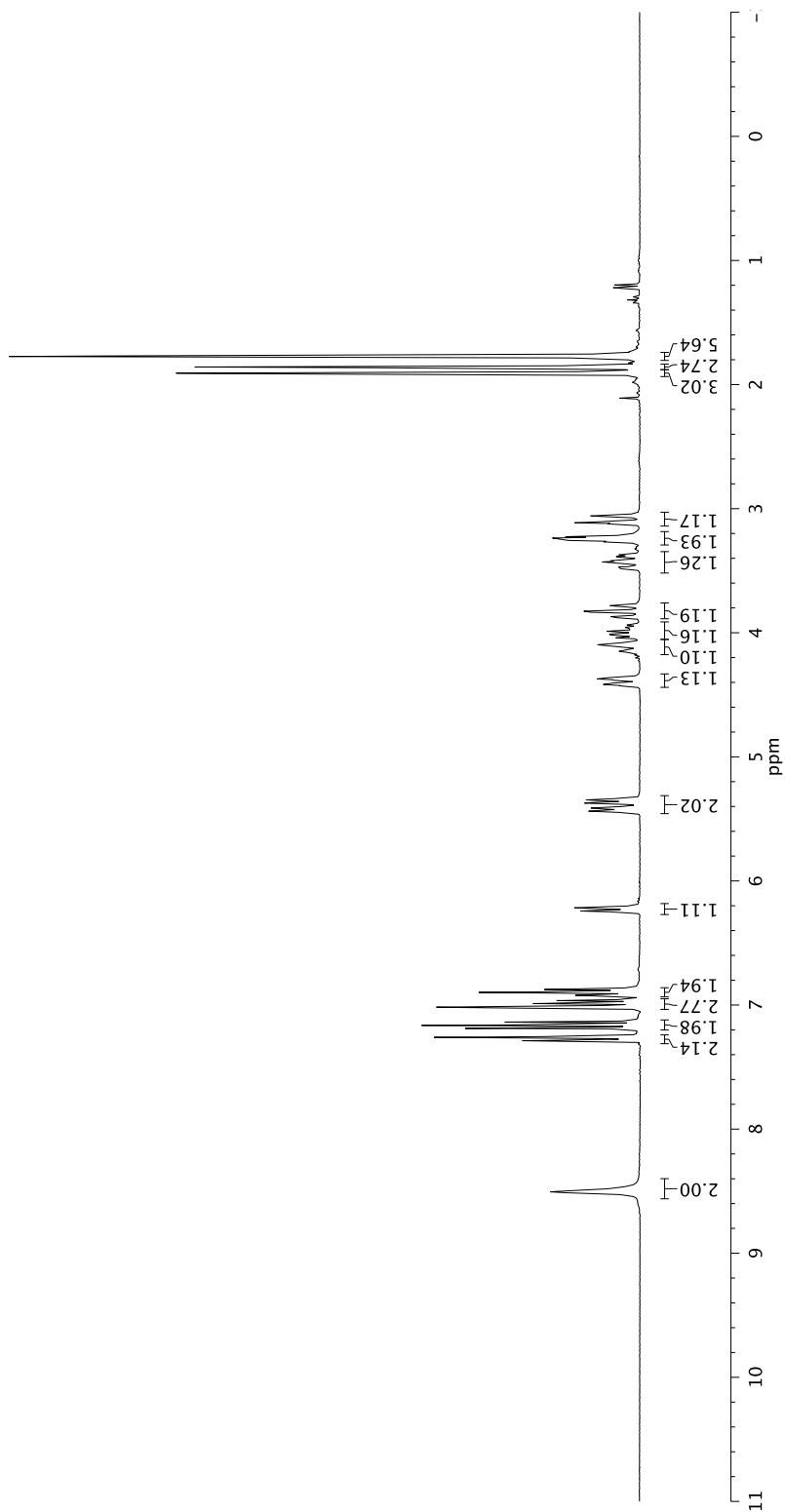
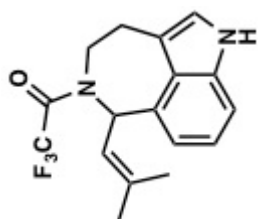


^1H NMR (300 MHz, CDCl_3) of compound **24**.

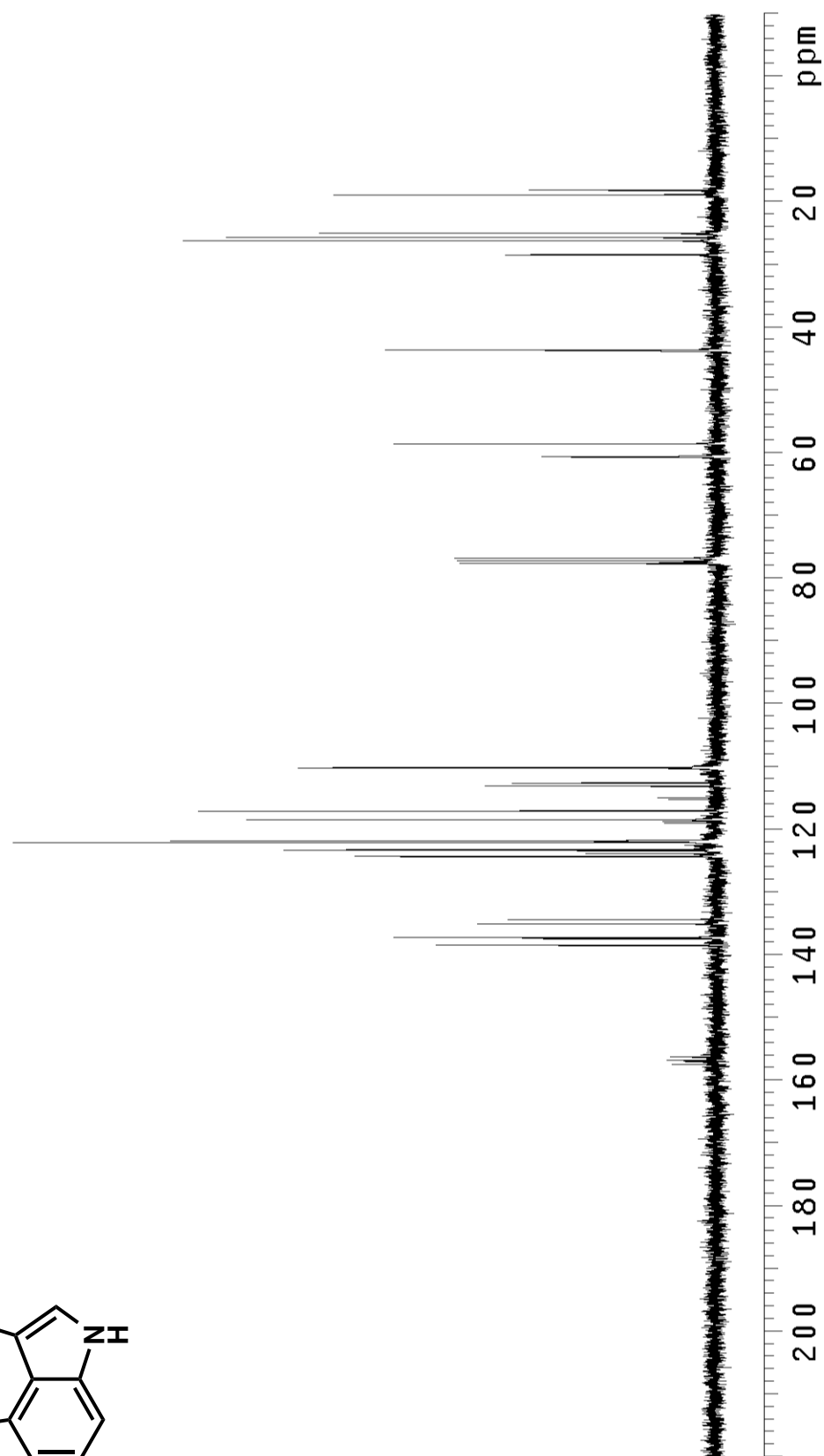
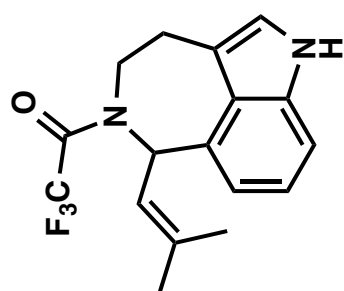


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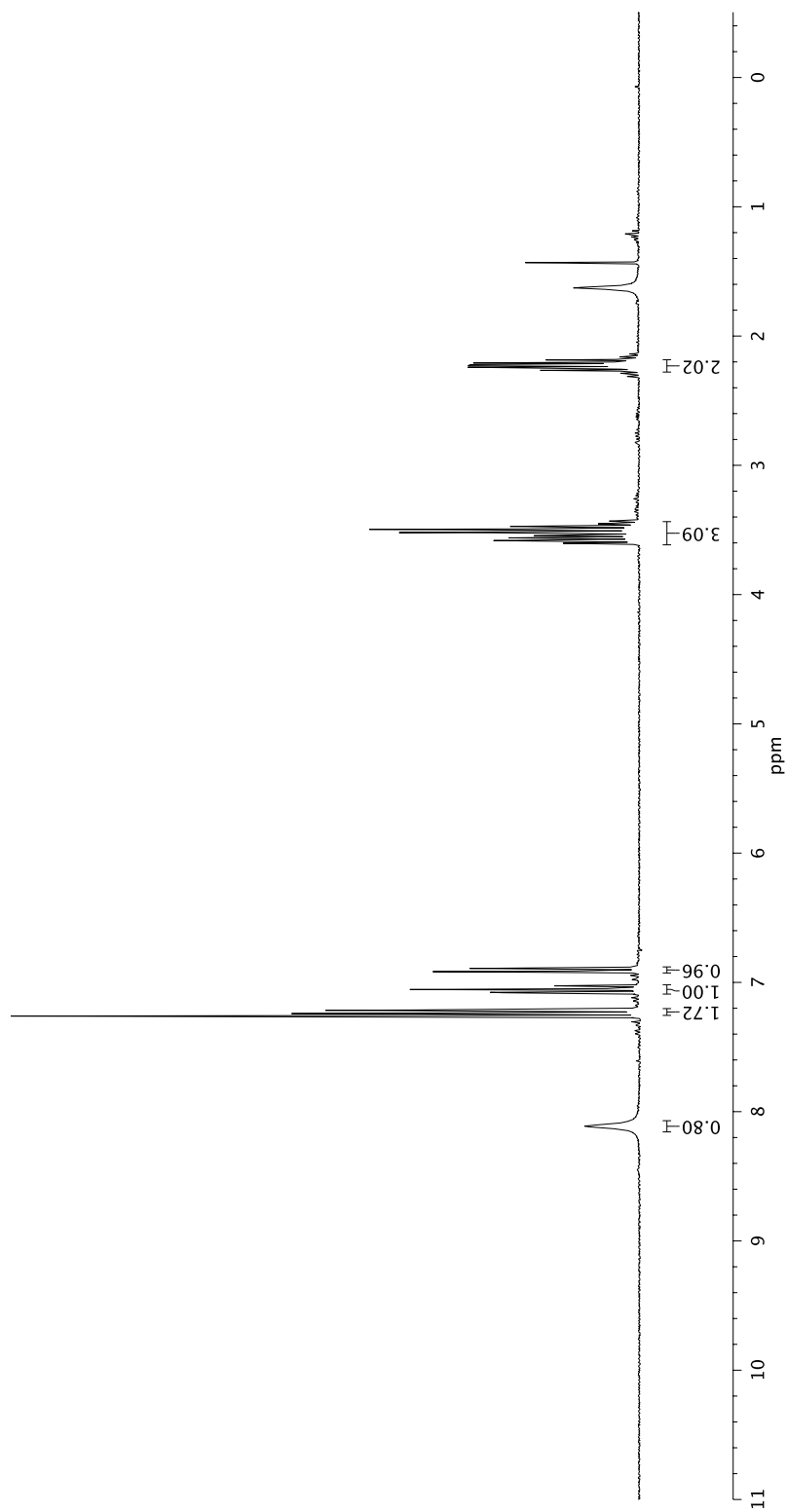
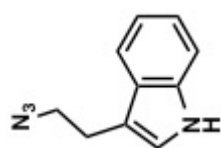
 ^{13}C NMR (75 MHz, CDCl_3) of compound **24**.



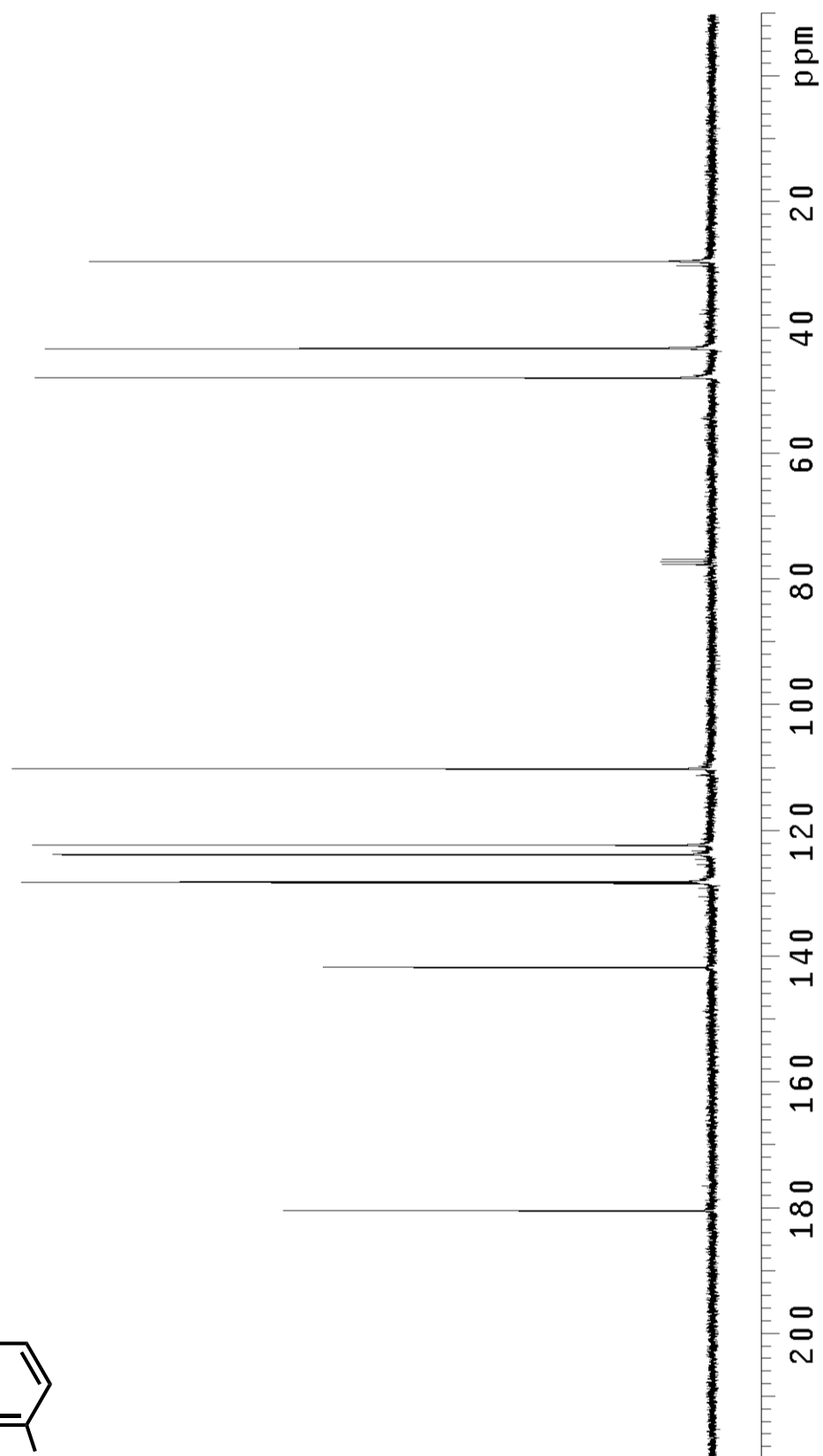
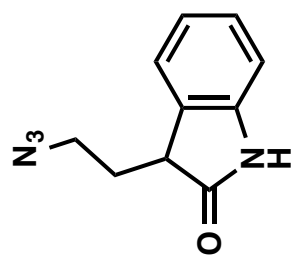
¹H NMR (300 MHz, CDCl₃) of compound **25**.



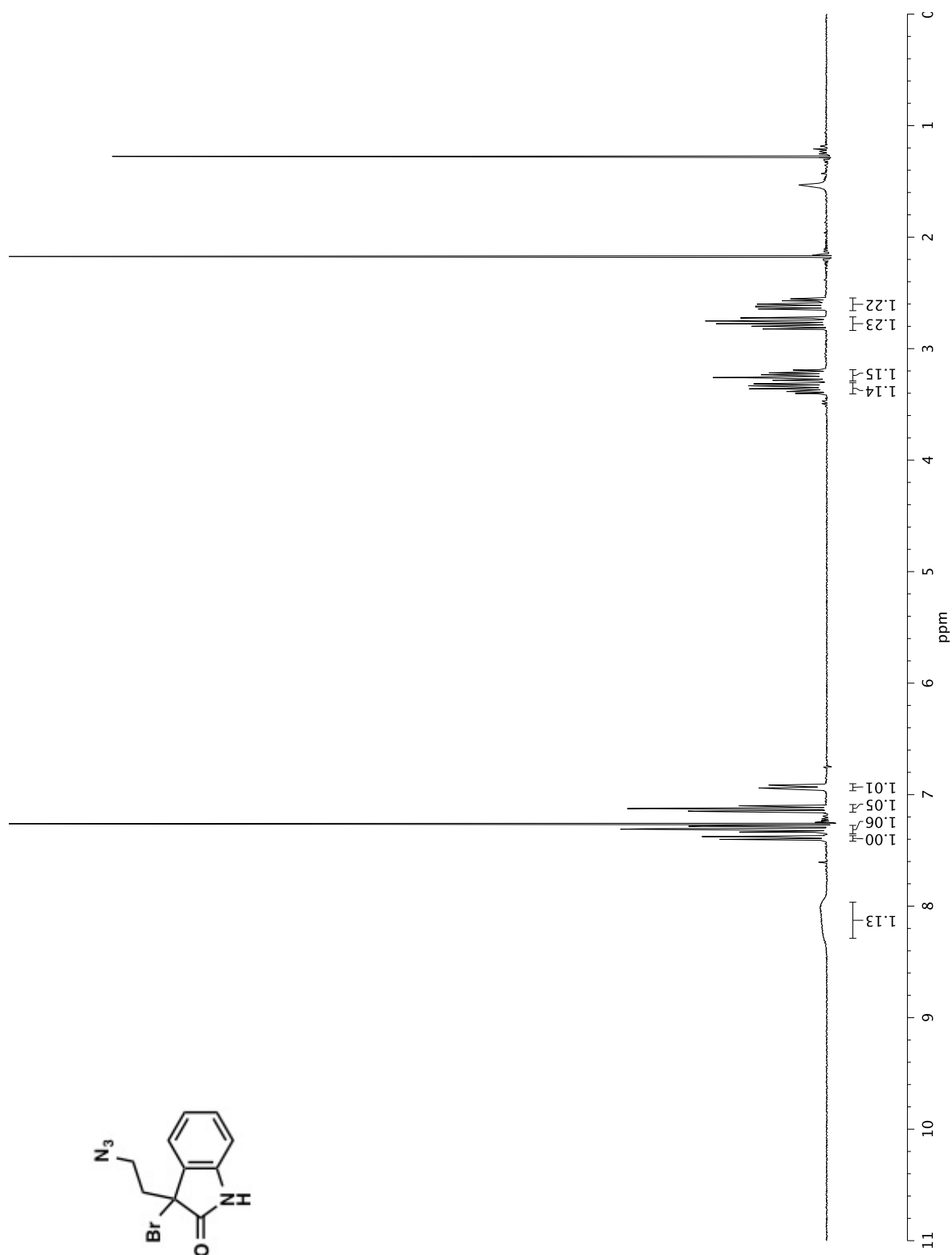
^{13}C NMR (75 MHz, CDCl_3) of compound **25**.



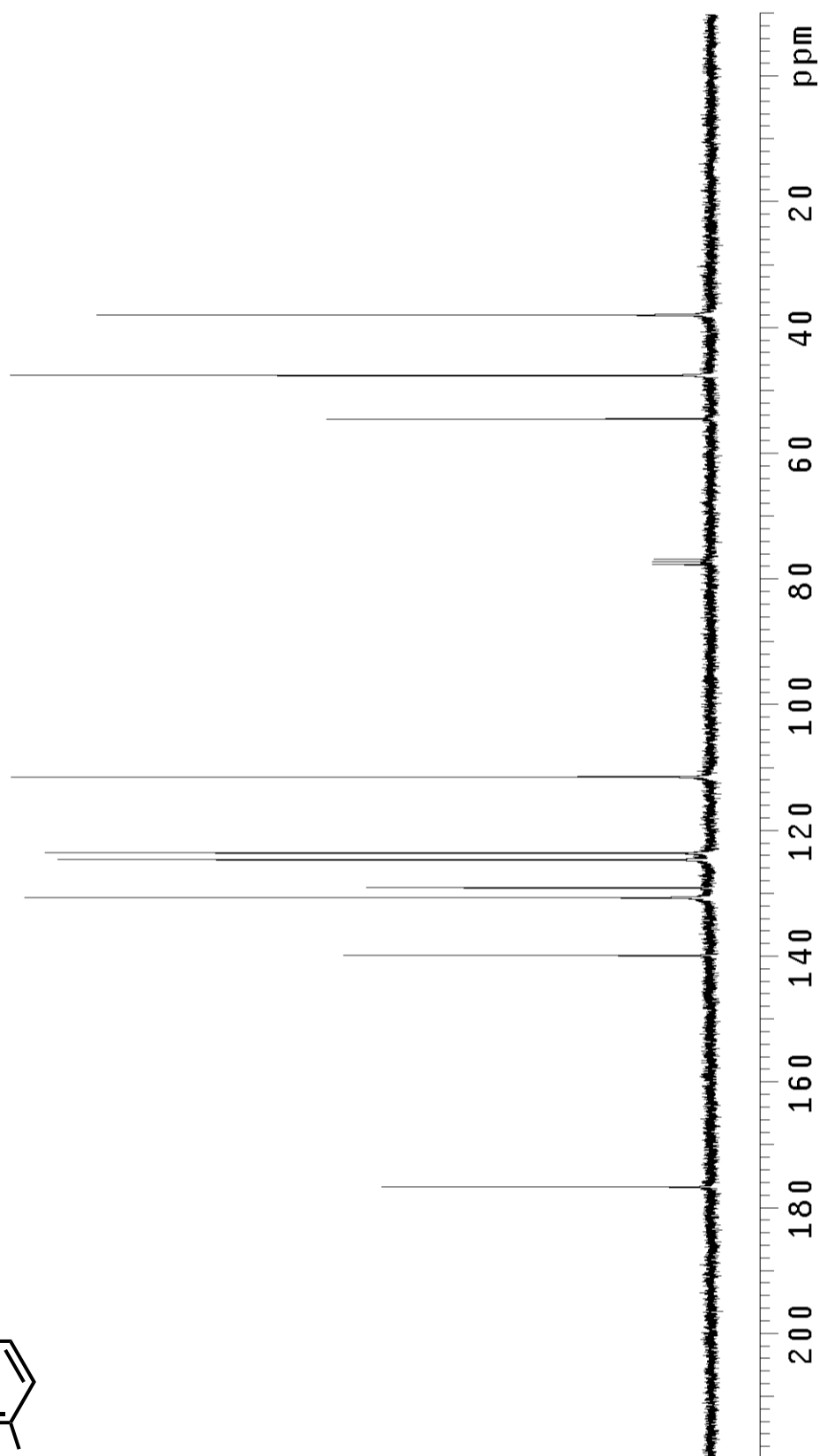
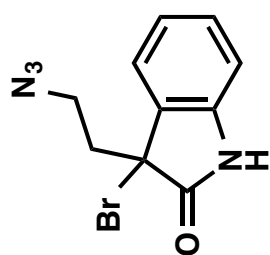
¹H NMR (300 MHz, CDCl₃) of compound SI-7.



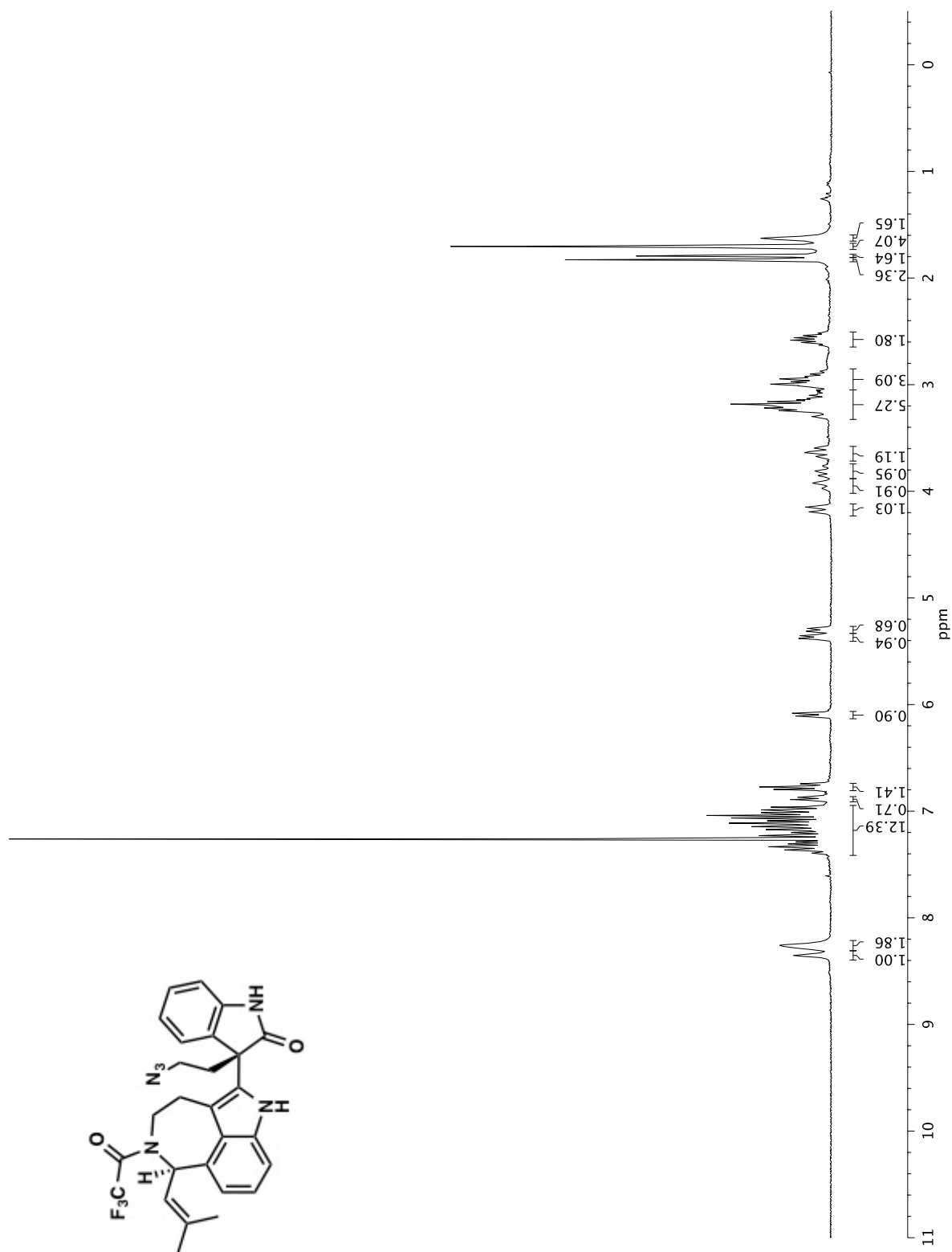
^{13}C NMR (75 MHz, CDCl_3) of compound SI-7.



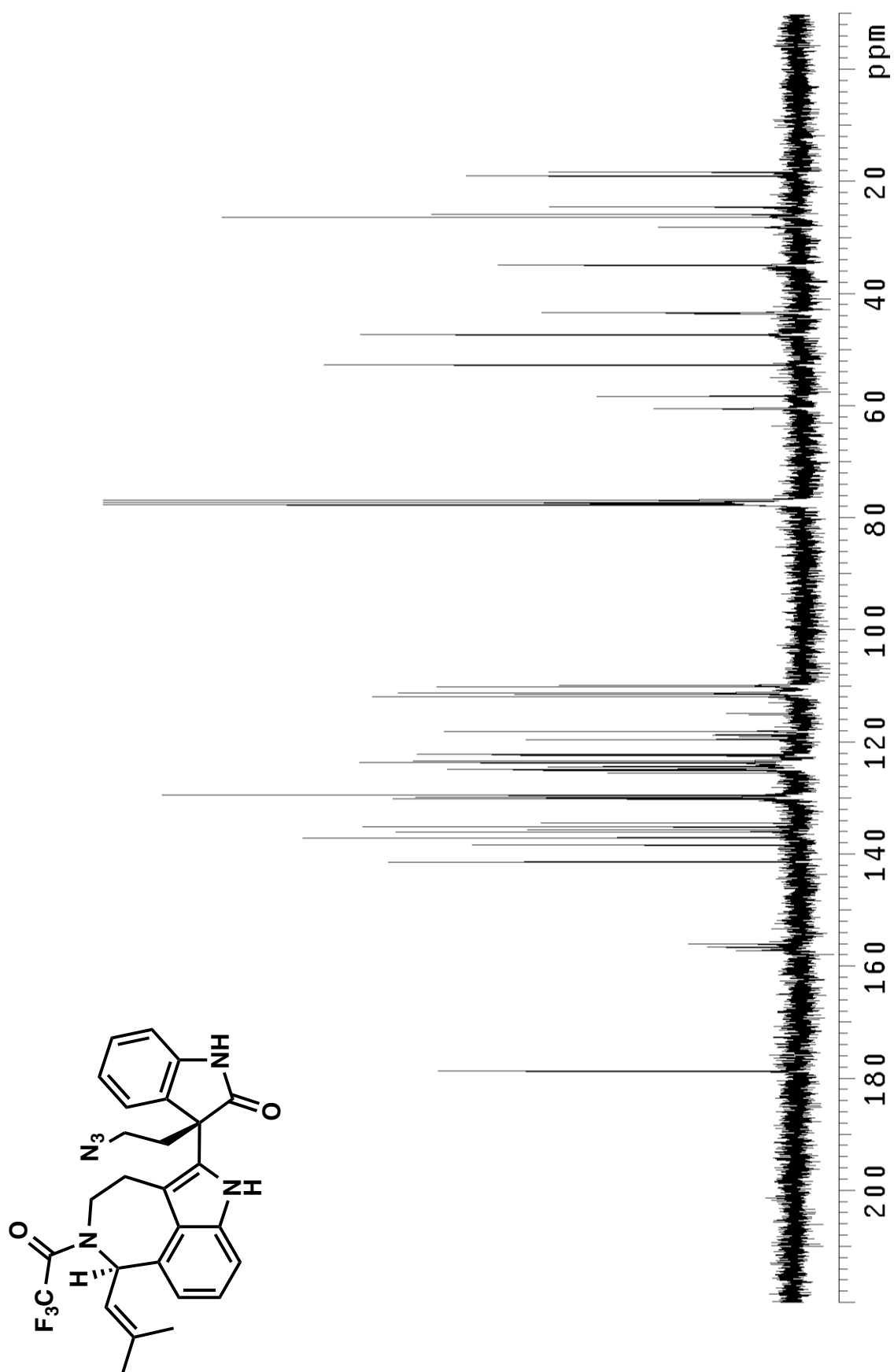
¹H NMR (300 MHz, CDCl₃) of compound **26**.



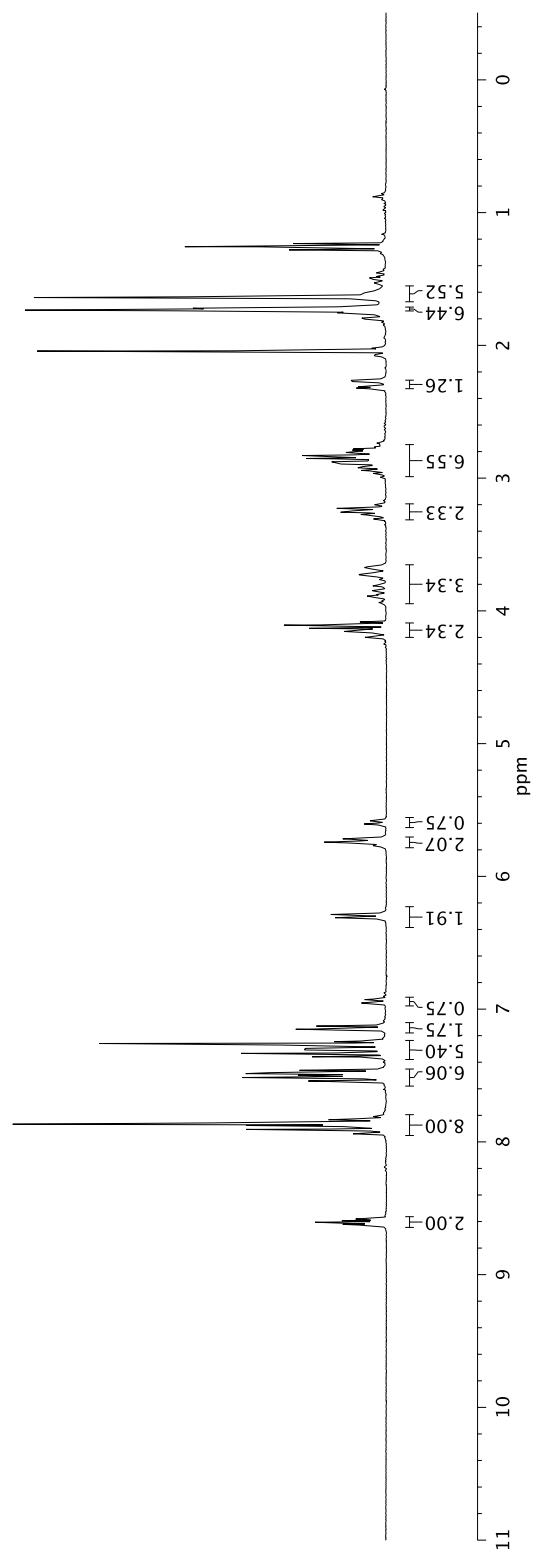
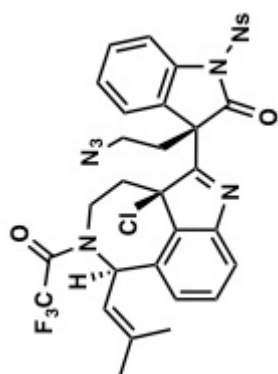
¹³C NMR (75 MHz, CDCl₃) of compound 26.



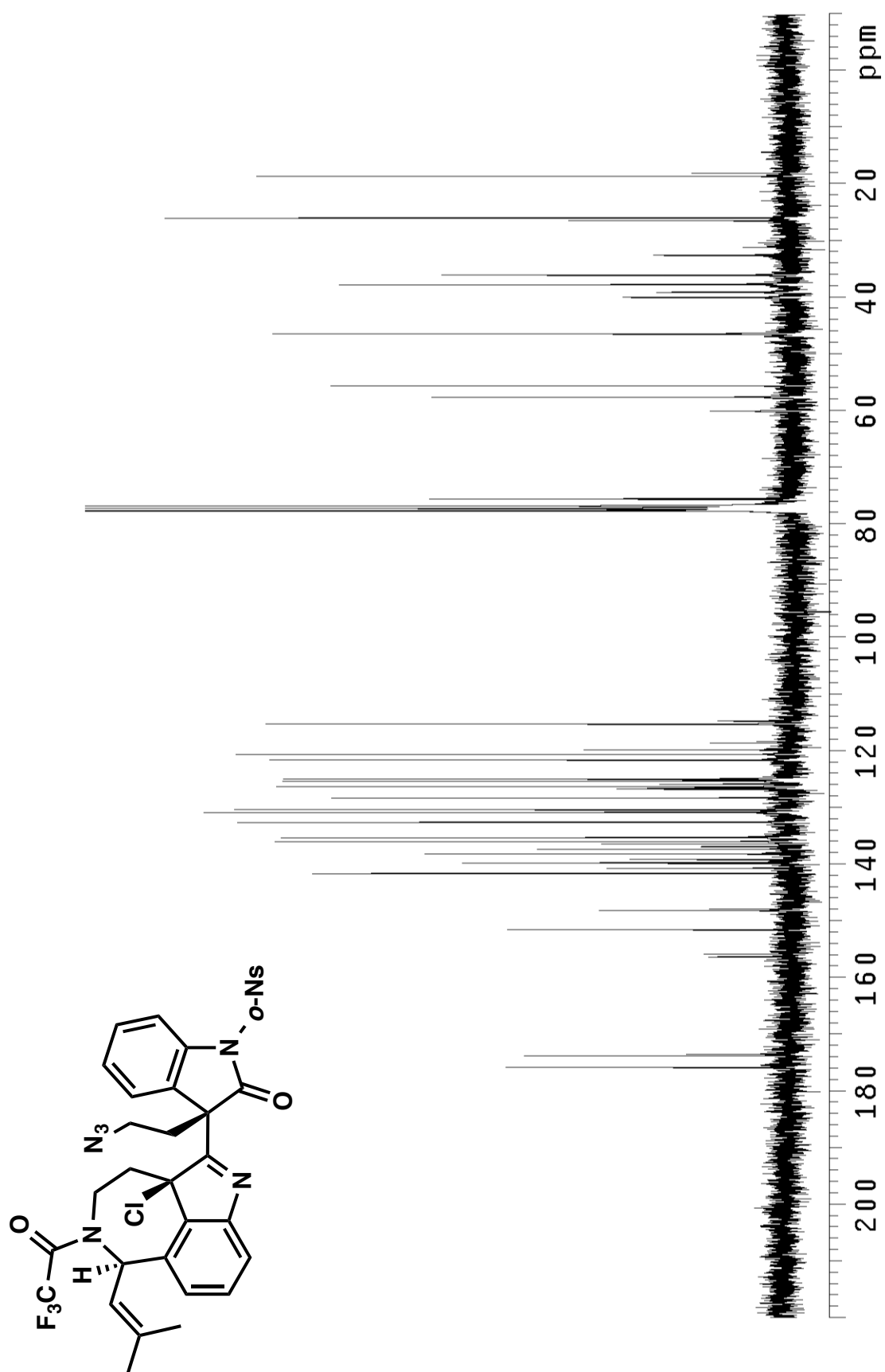
^1H NMR (300 MHz, CDCl_3) of compound **28**.



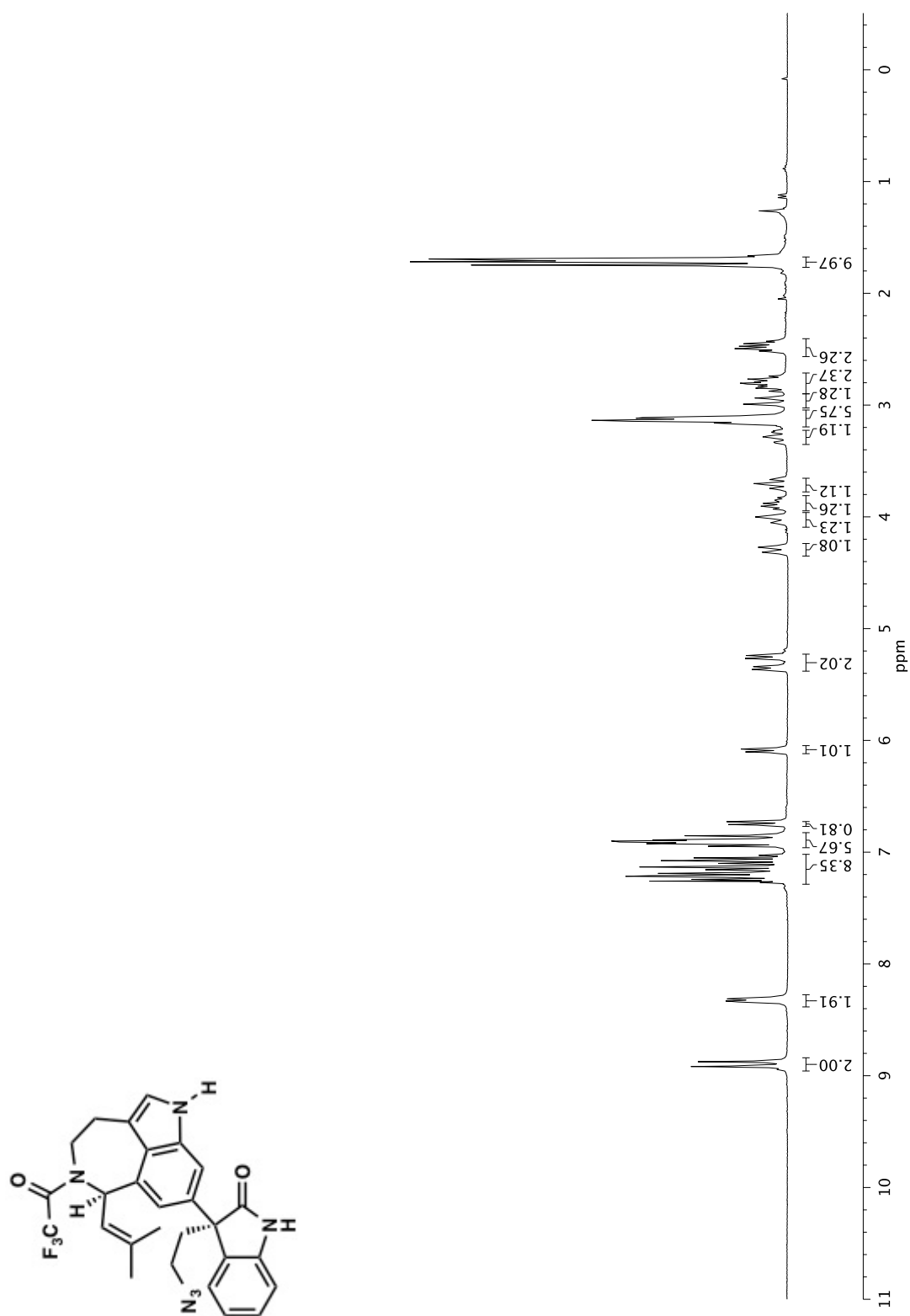
^{13}C NMR (75 MHz, CDCl_3) of compound 28.

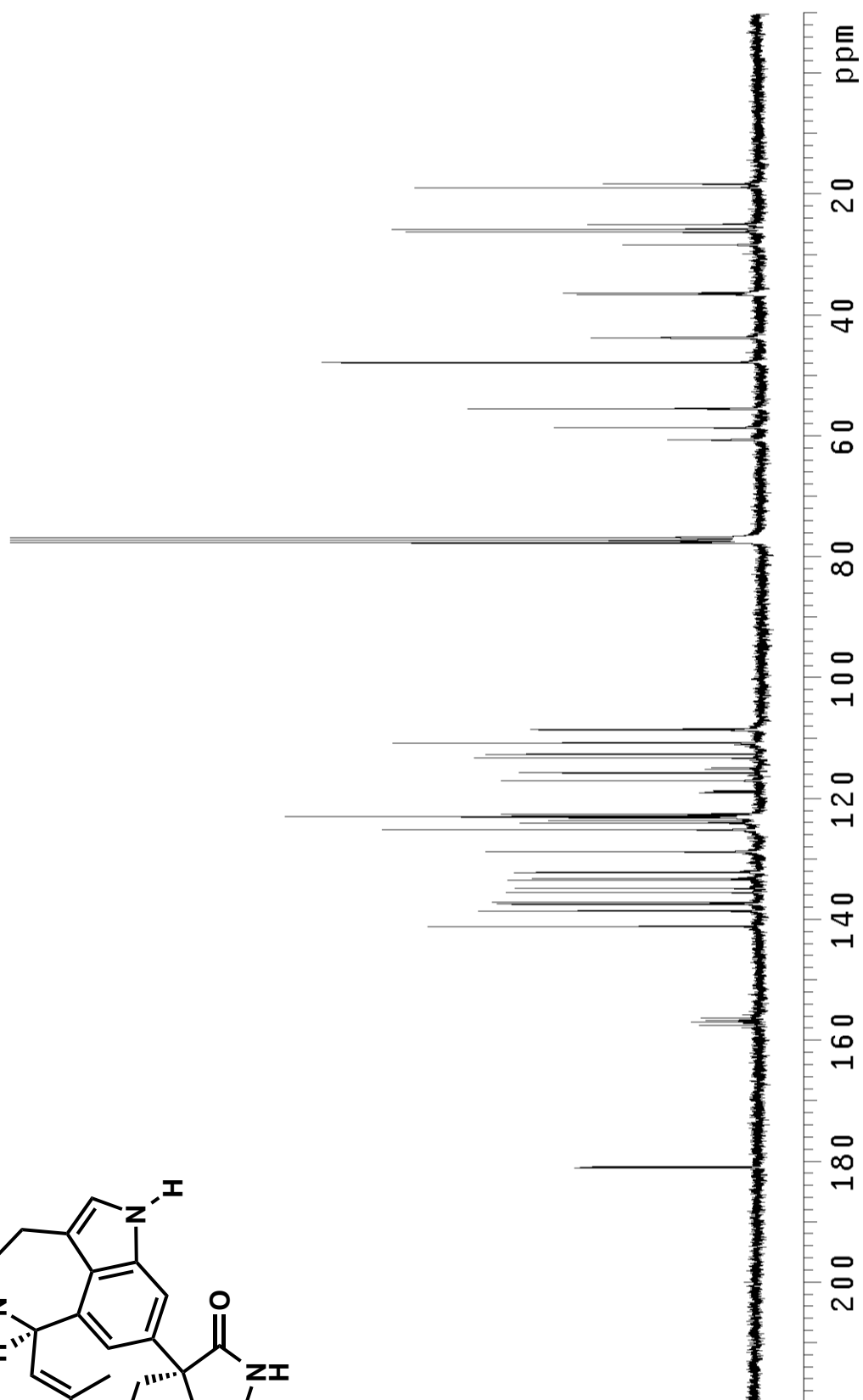


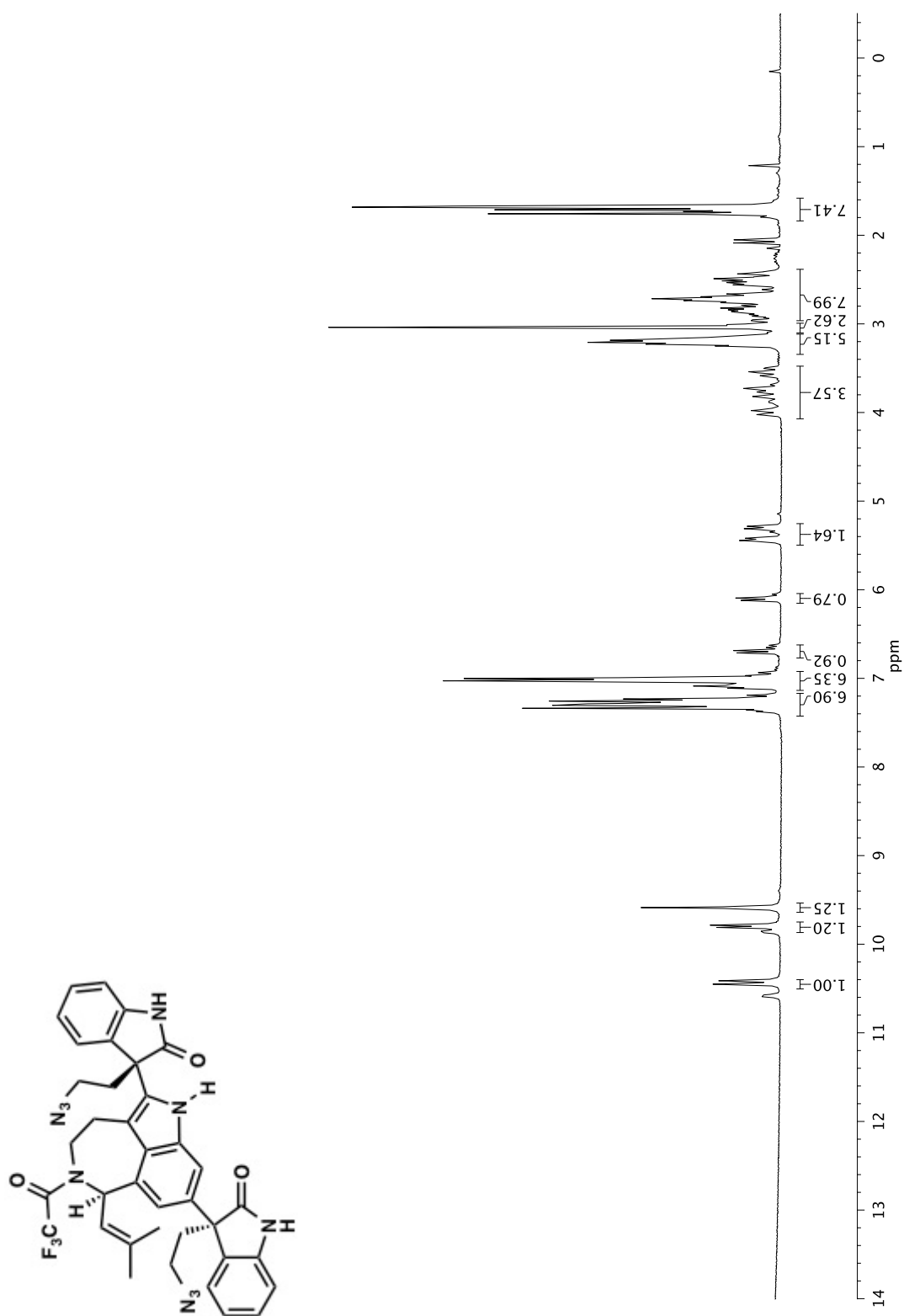
^1H NMR (300 MHz, CDCl_3) of compound **29**.



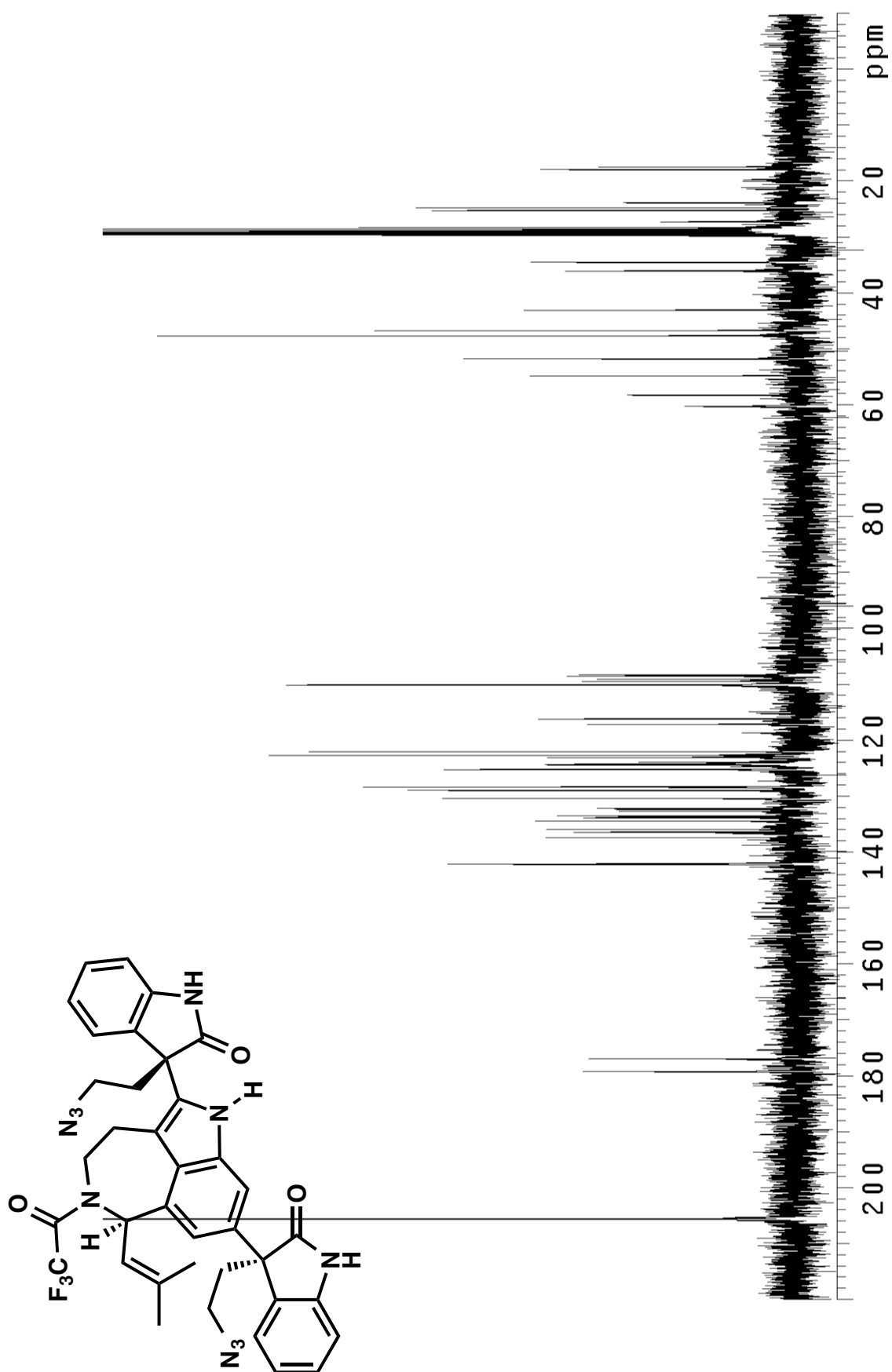
^{13}C NMR (75 MHz, CDCl_3) of compound **29**.

¹H NMR (300 MHz, CDCl₃) of compound **30**.

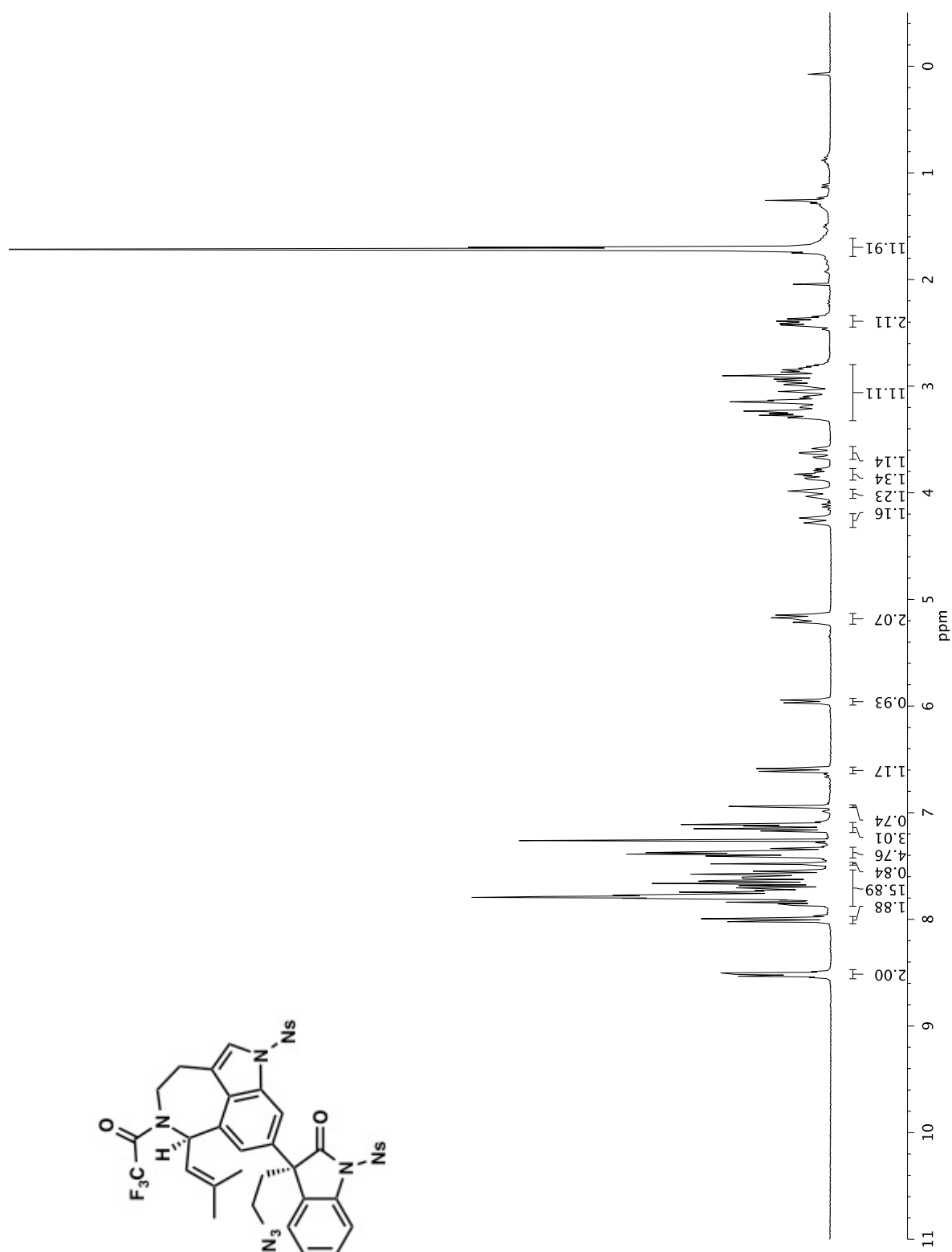
¹³C NMR (75 MHz, CDCl₃) of compound **30**.



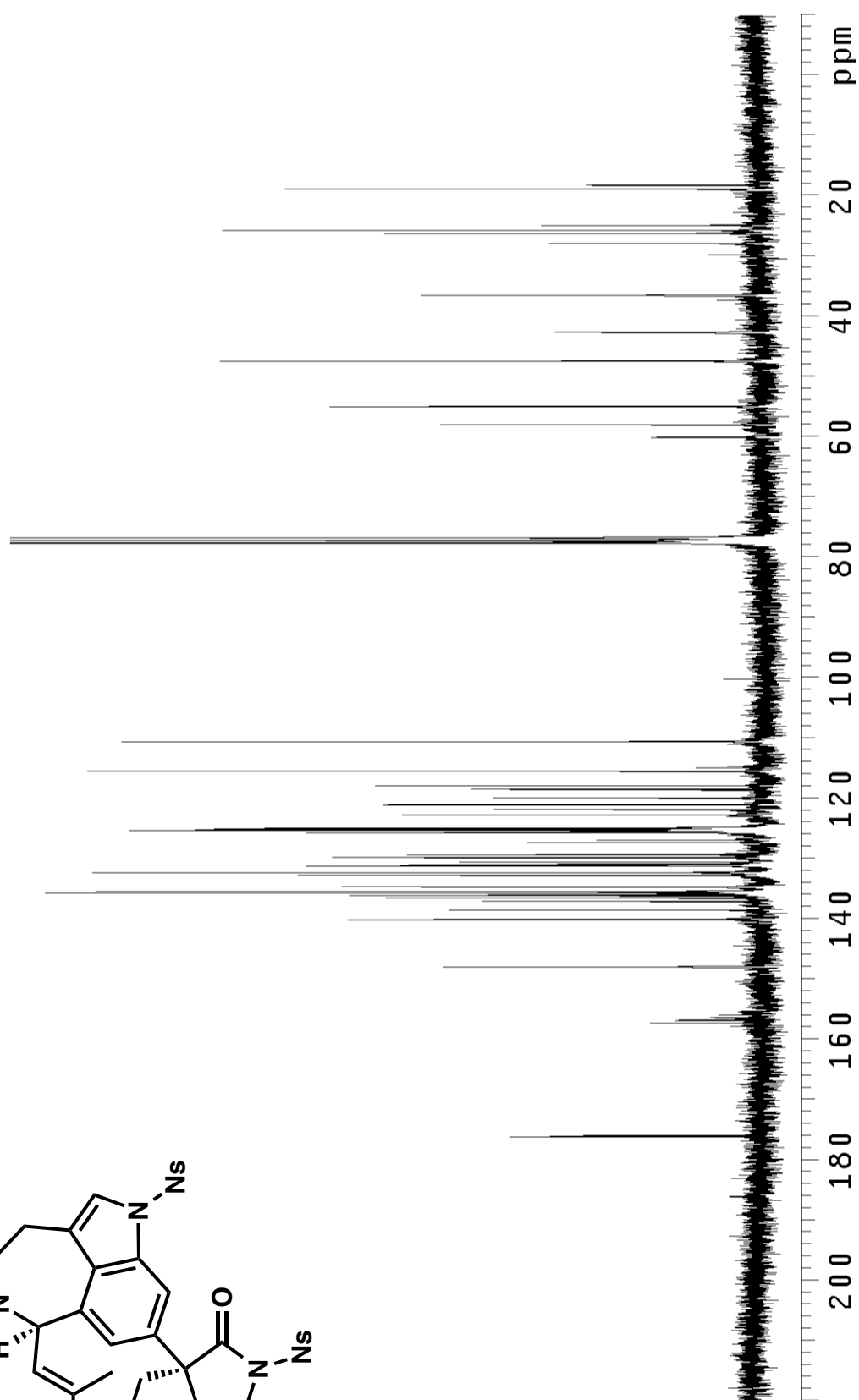
^1H NMR (300 MHz, acetone-d_6) of compound **31**.

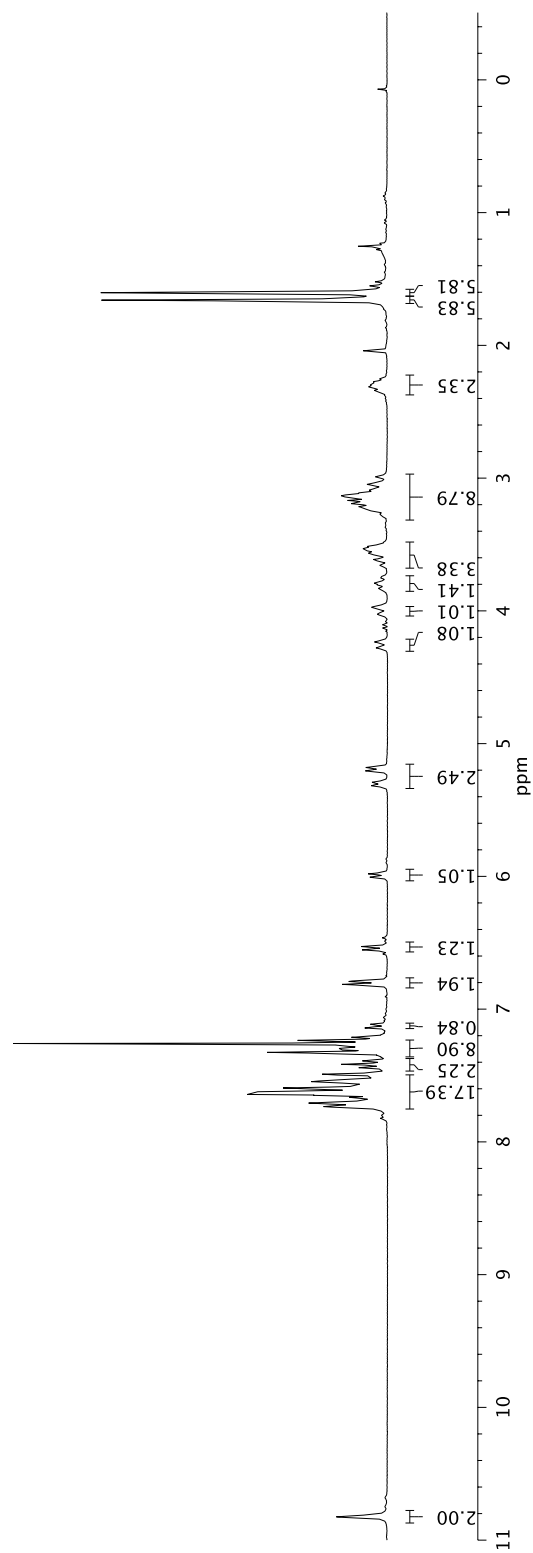
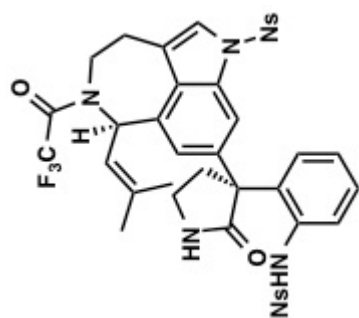


^{13}C NMR (75 MHz, acetone- d_6) of compound **31**.

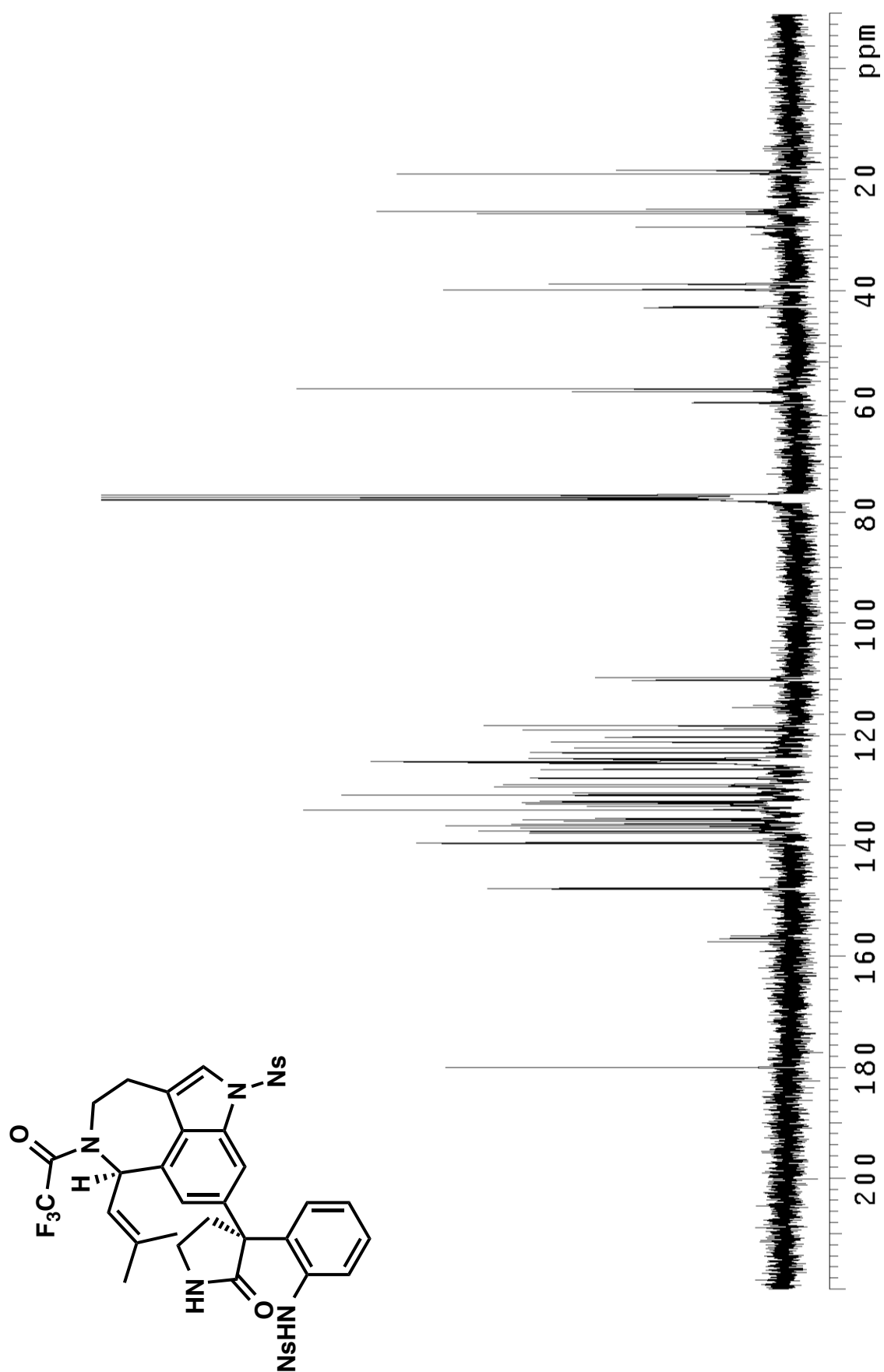


^1H NMR (300 MHz, CDCl_3) of compound SI-8.

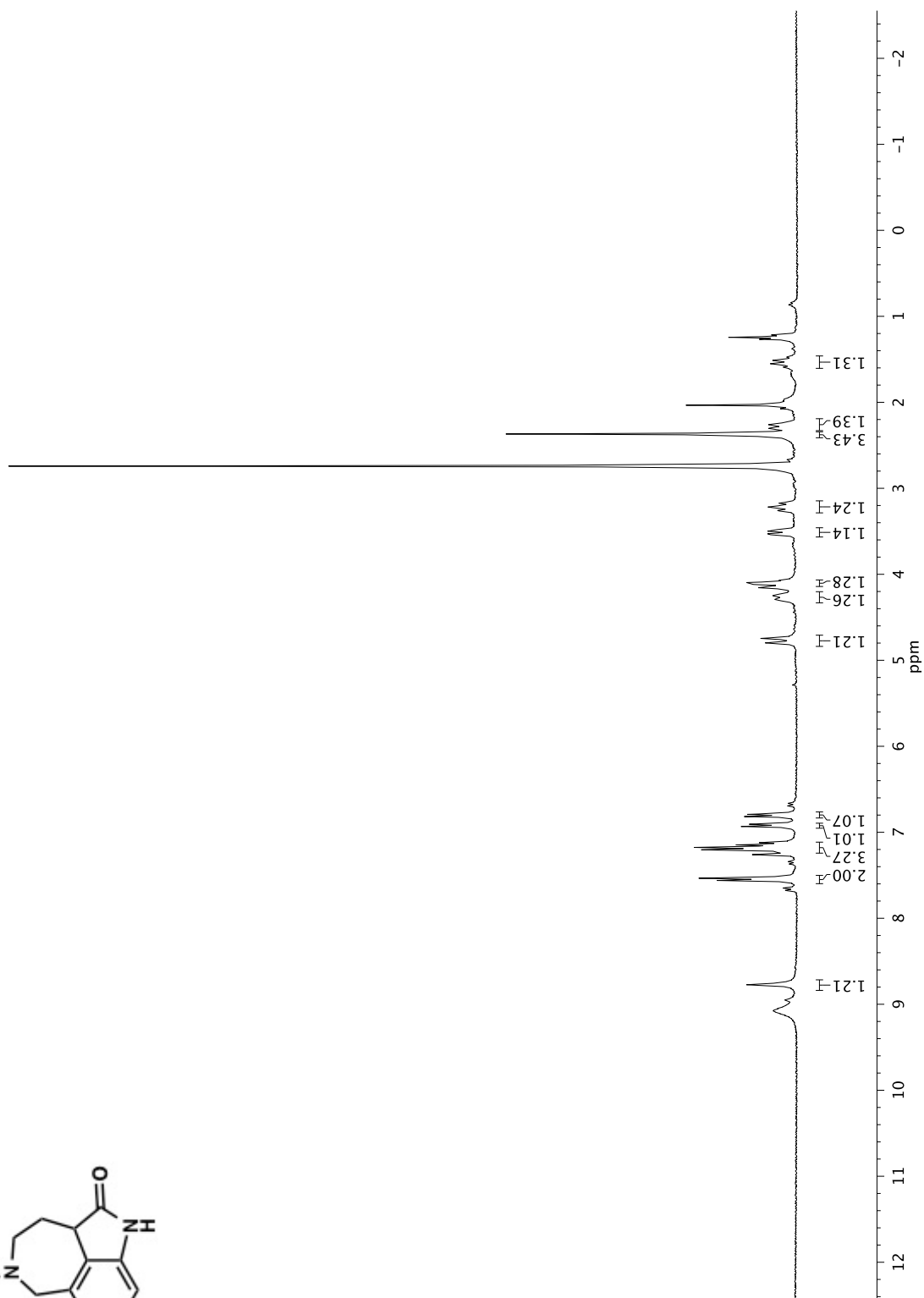
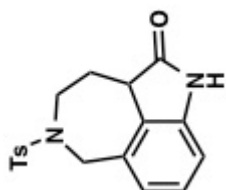
¹³C NMR (75 MHz, CDCl₃) of compound **SI-8**.

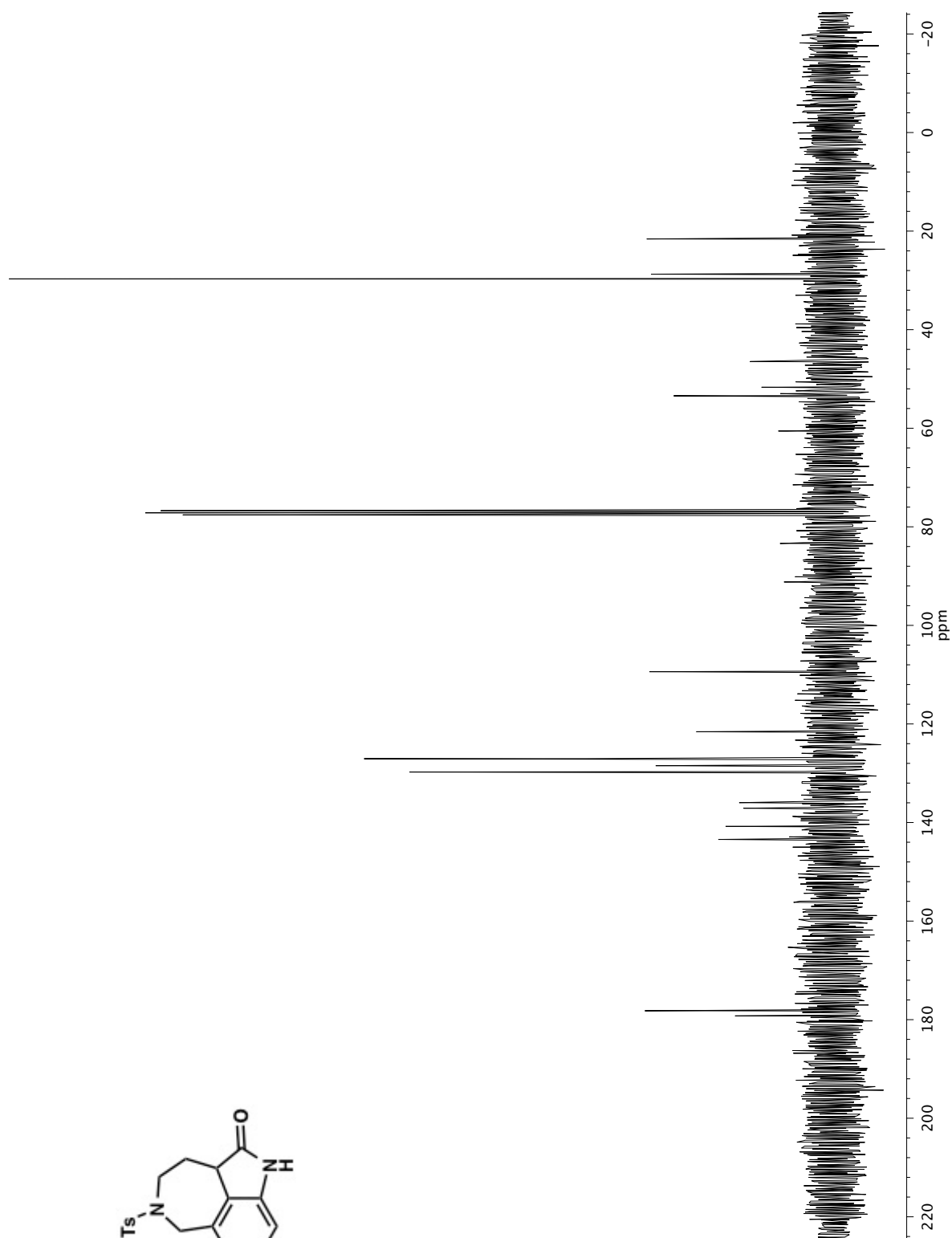
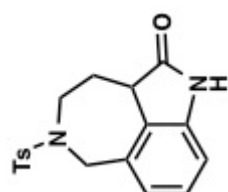


¹H NMR (300 MHz, CDCl₃) of compound **32**.

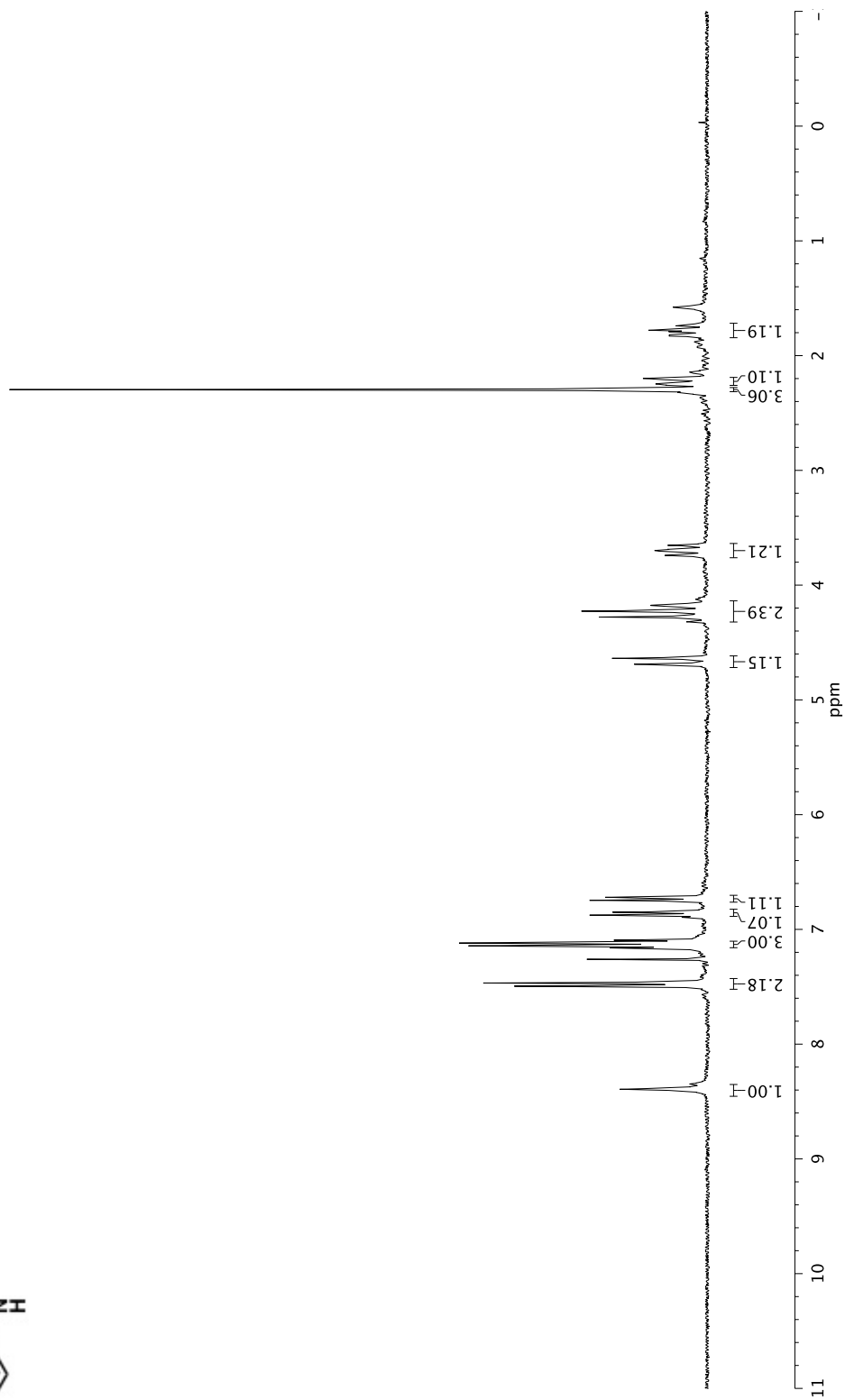
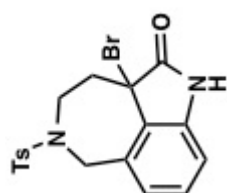


^{13}C NMR (75 MHz, CDCl_3) of compound **32**.

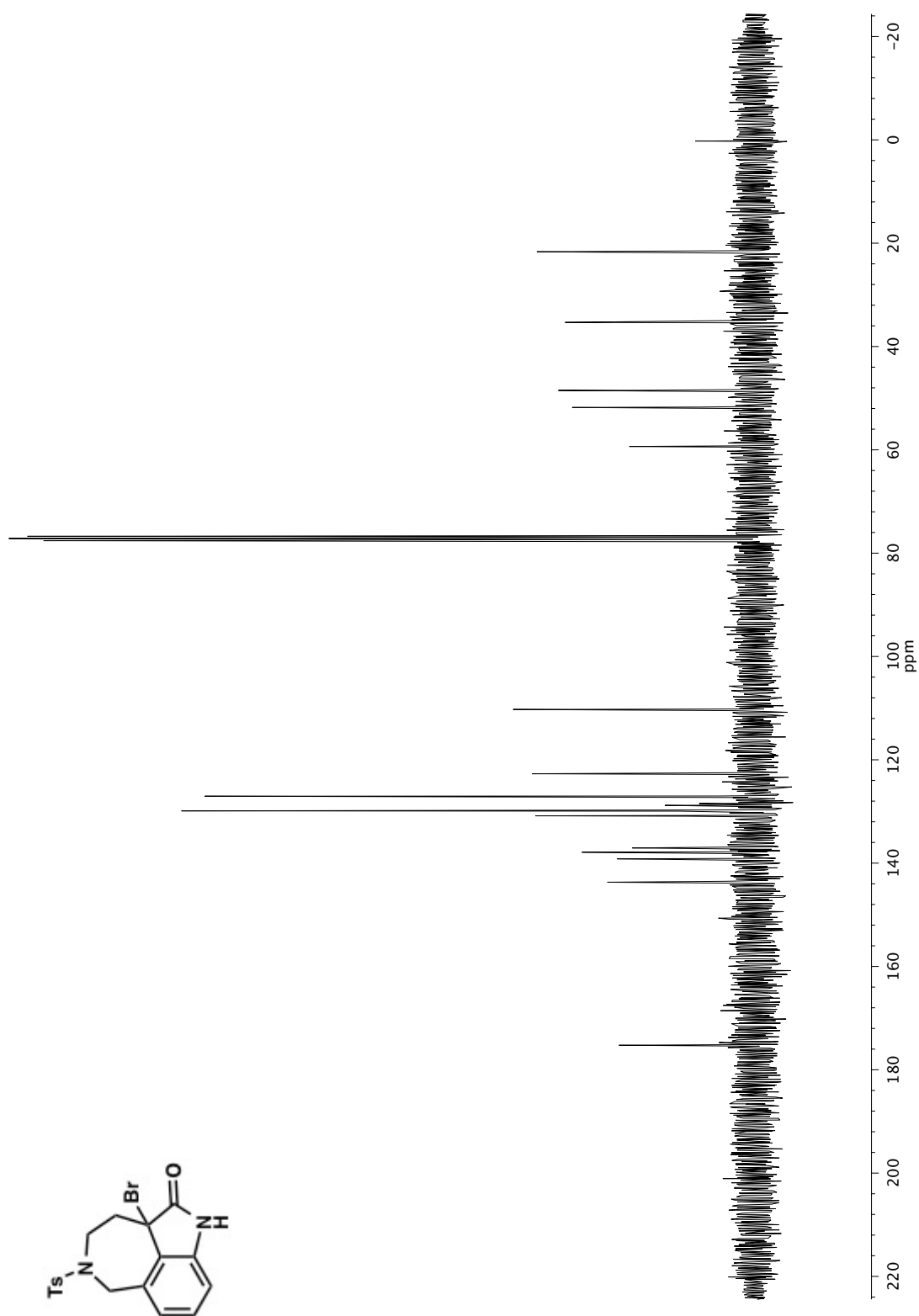




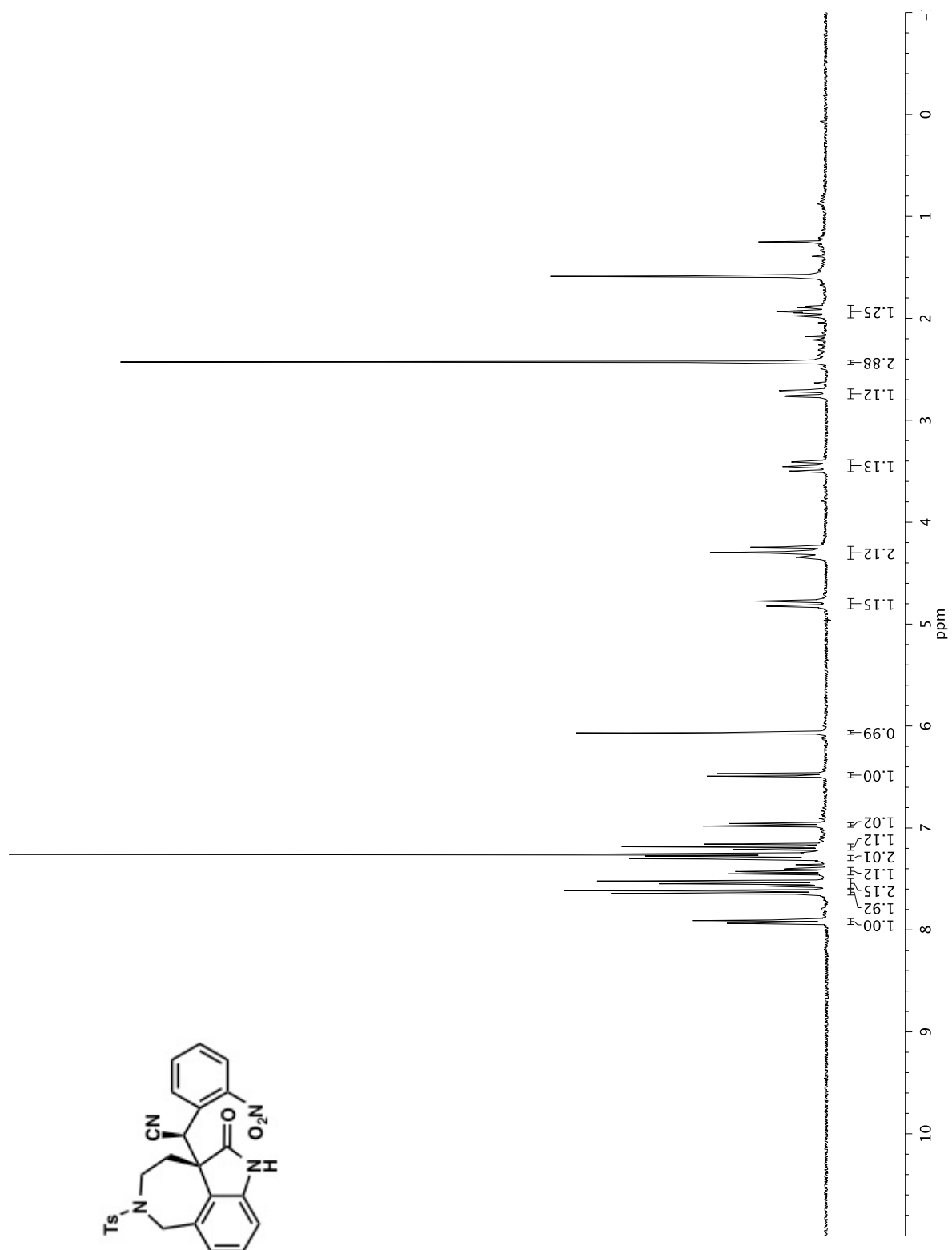
^{13}C NMR (75 MHz, CDCl_3) of compound SI-11.

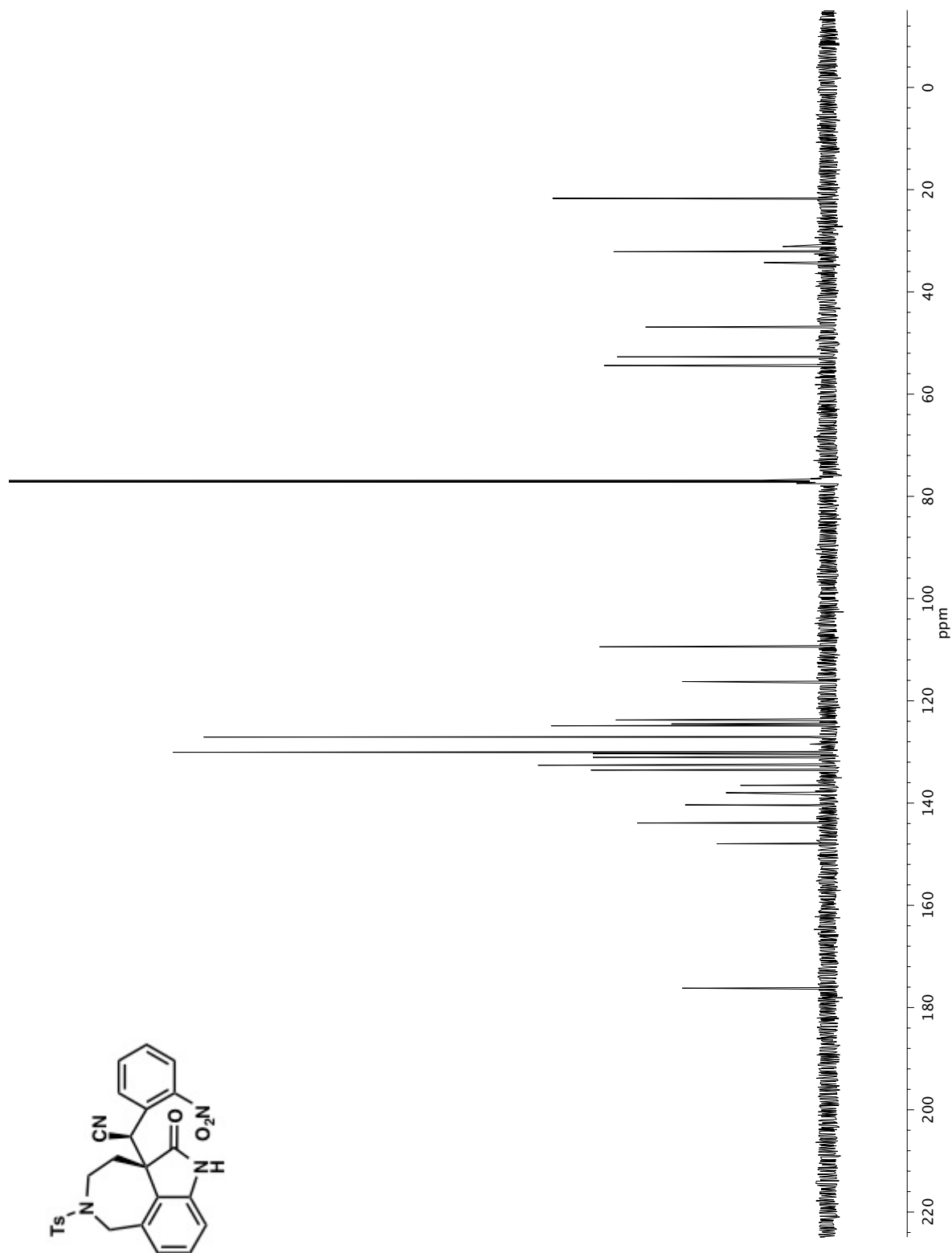


¹H NMR (300 MHz, CDCl₃) of compound **35**.

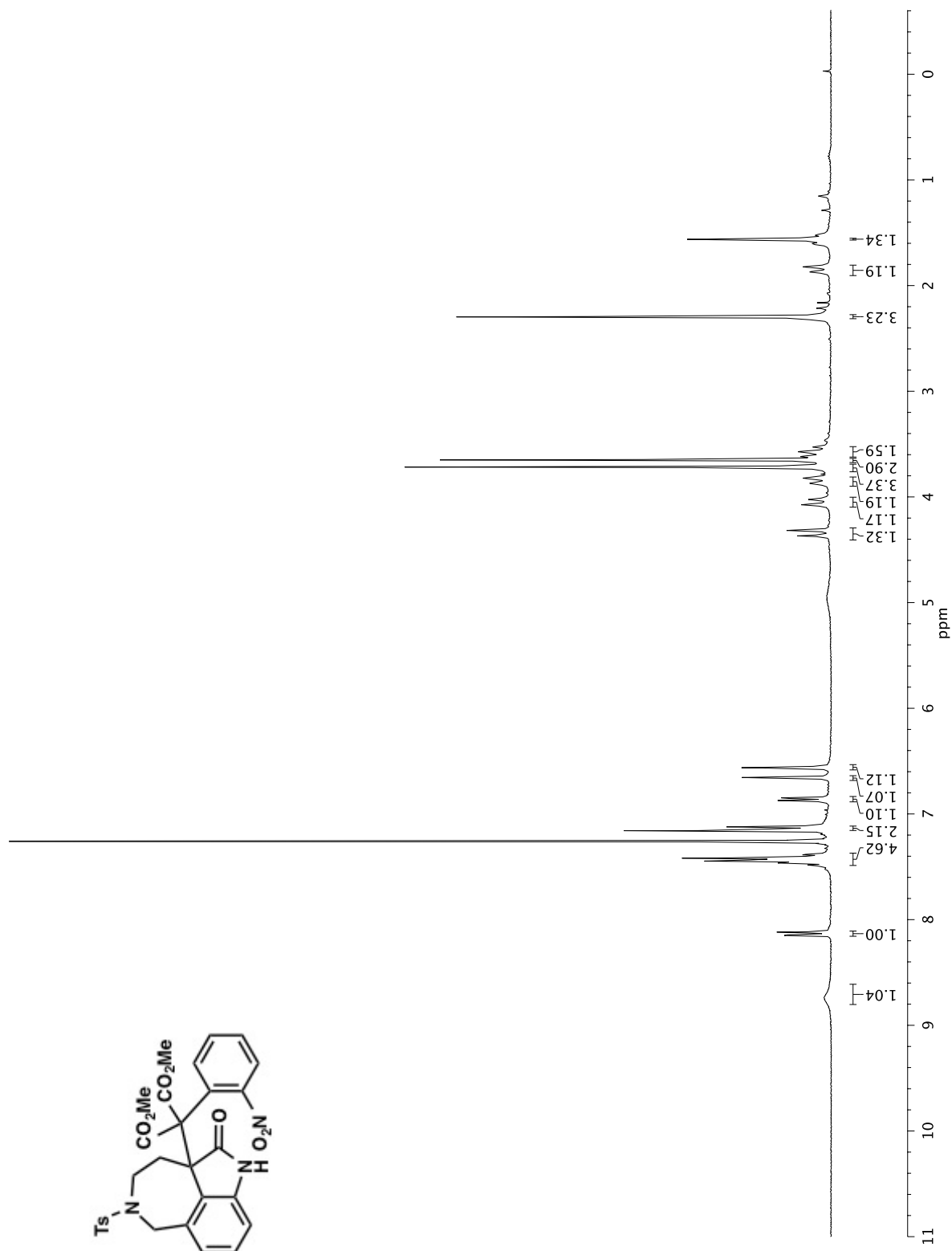


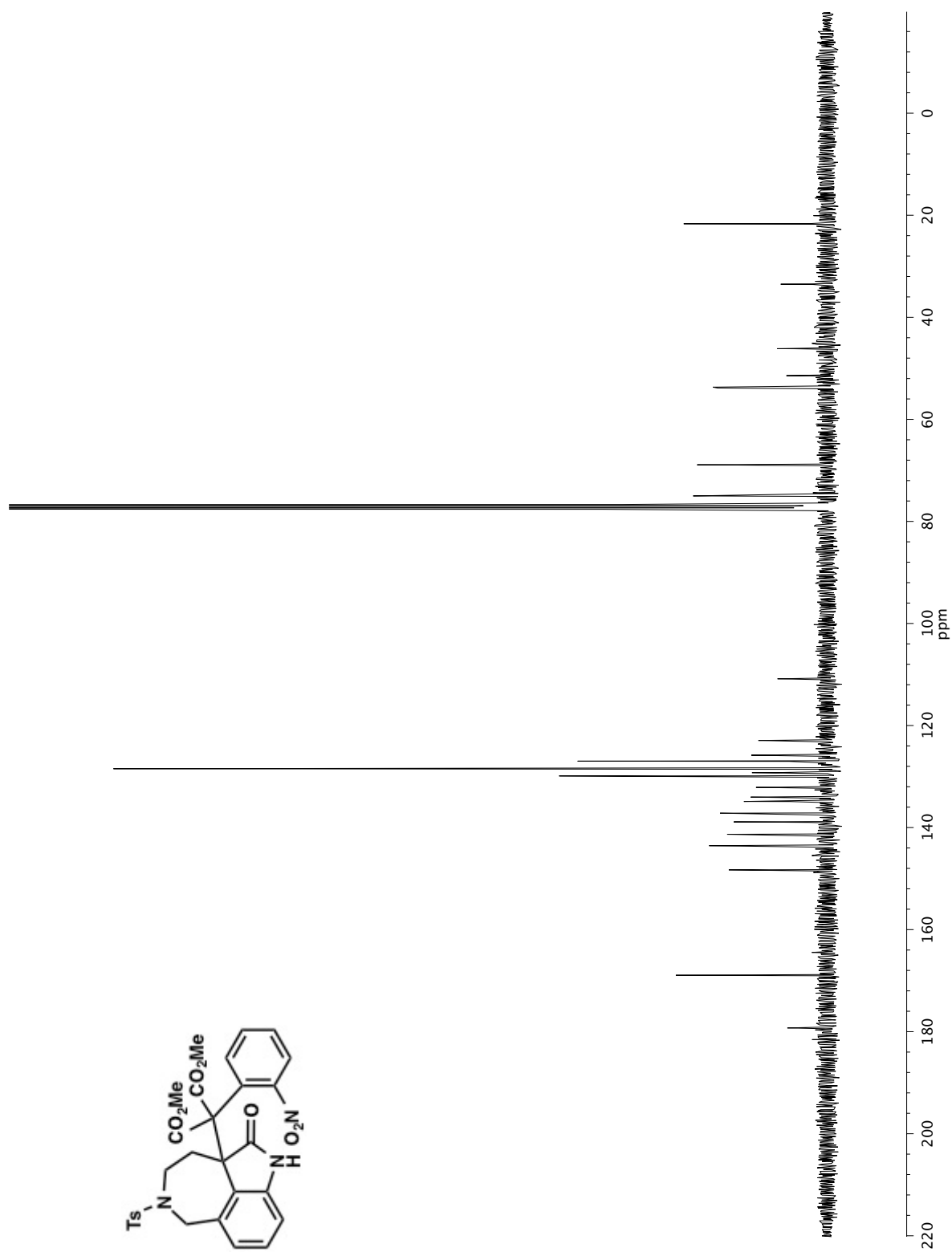
^{13}C NMR (75 MHz, CDCl_3) of compound **35**.

¹H NMR (300 MHz, CDCl₃) of compound 37.

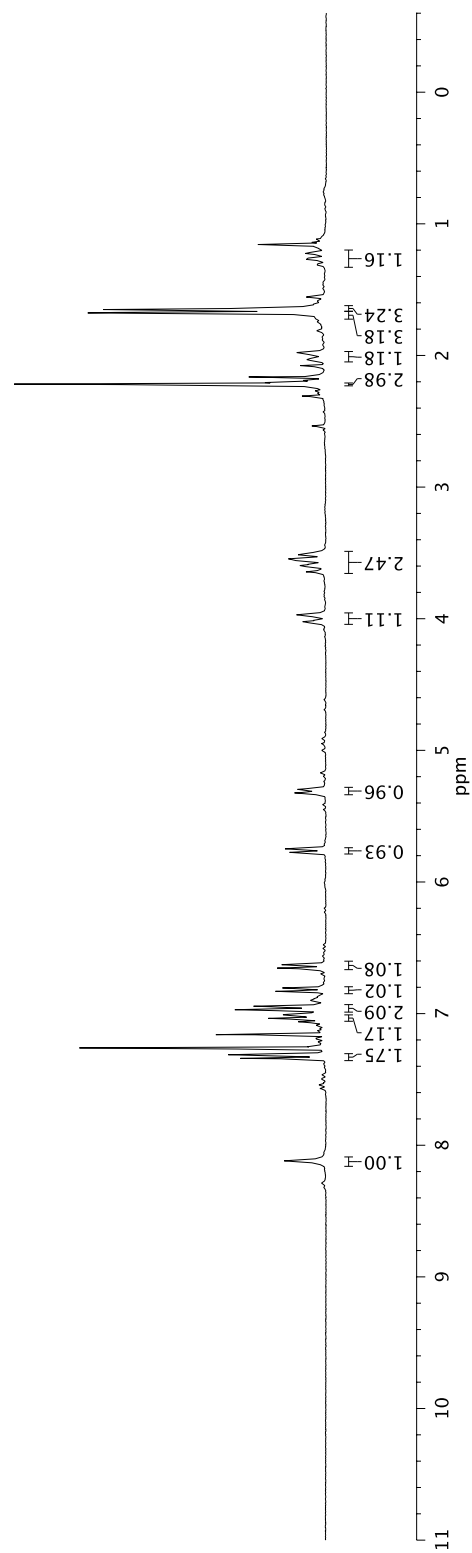
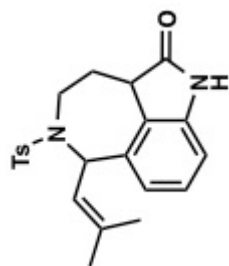


¹³C NMR (75 MHz, CDCl₃) of compound **37**.

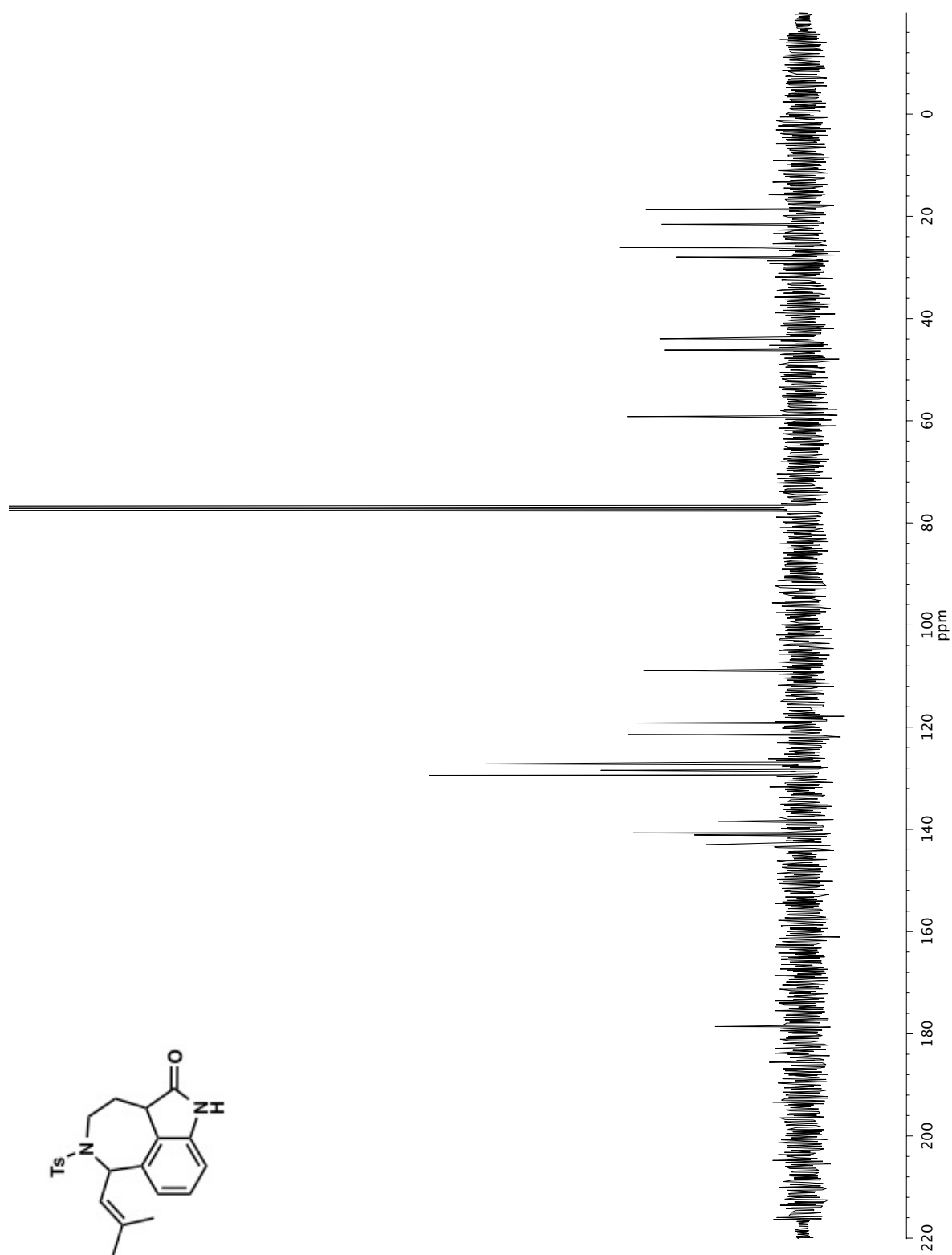




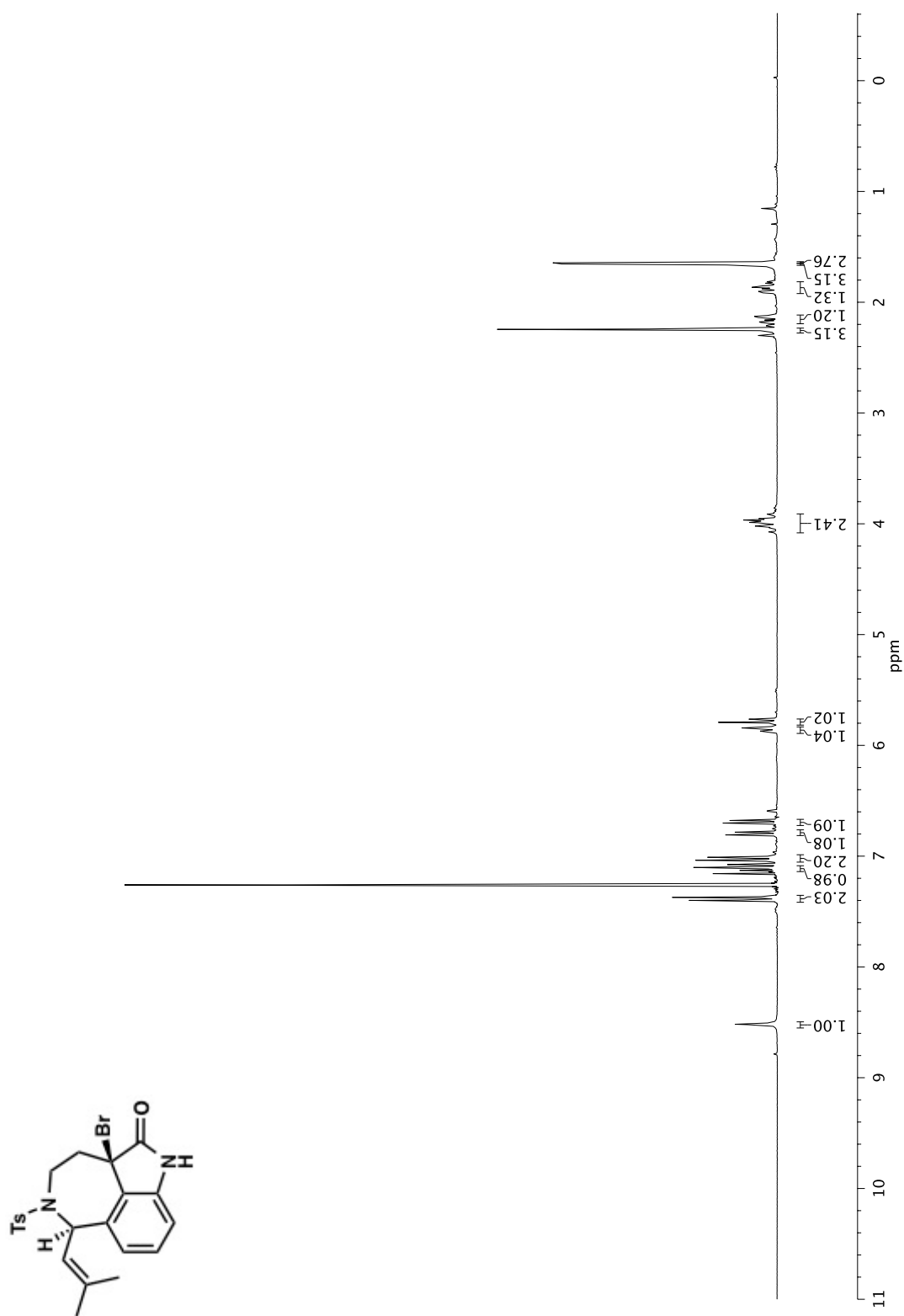
¹³C NMR (75 MHz, CDCl₃) of compound **39**.

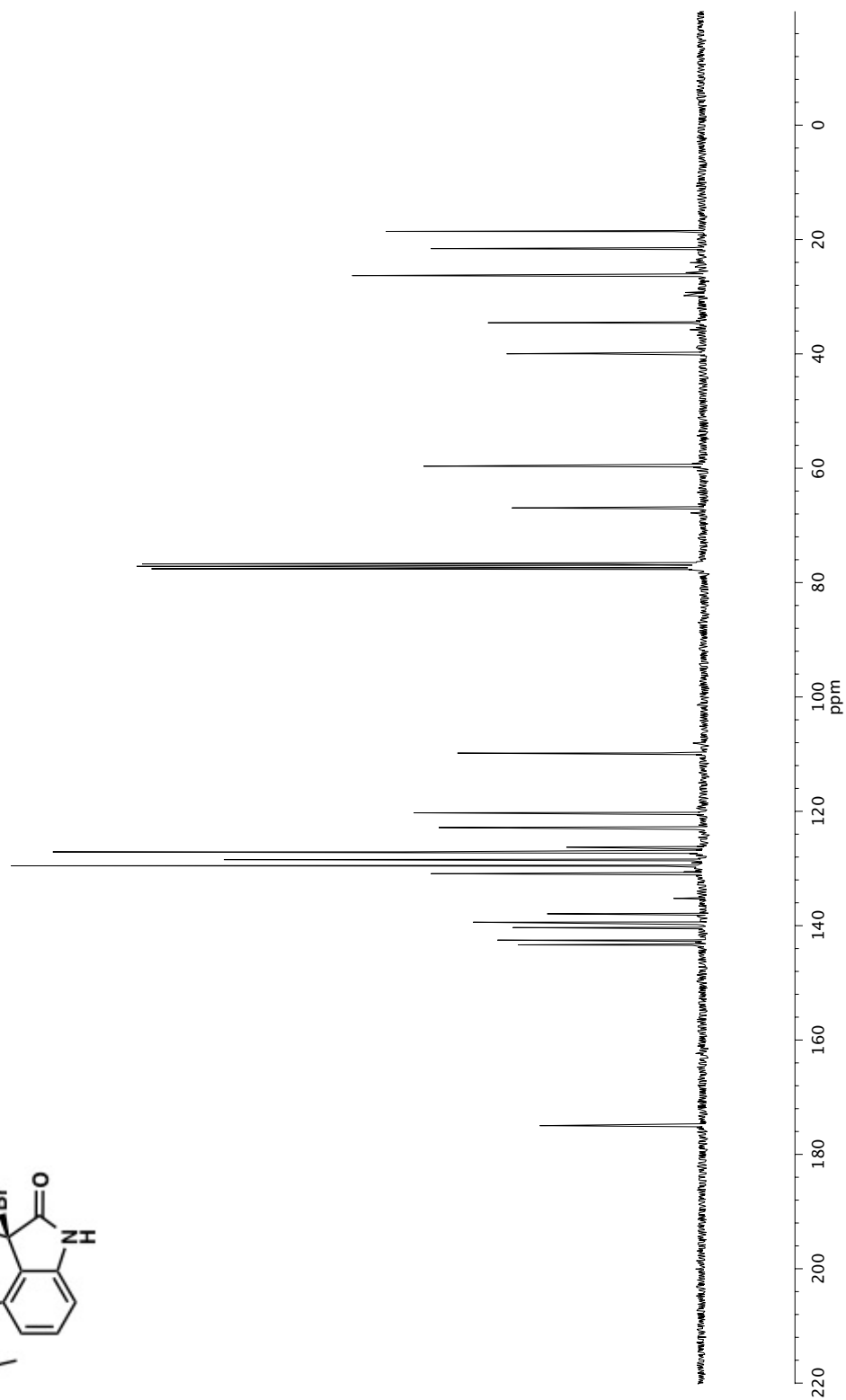
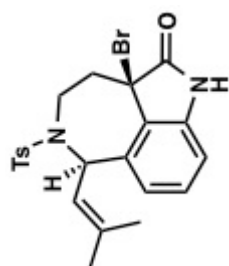


^1H NMR (300 MHz, CDCl_3) of compound **SI-13**.

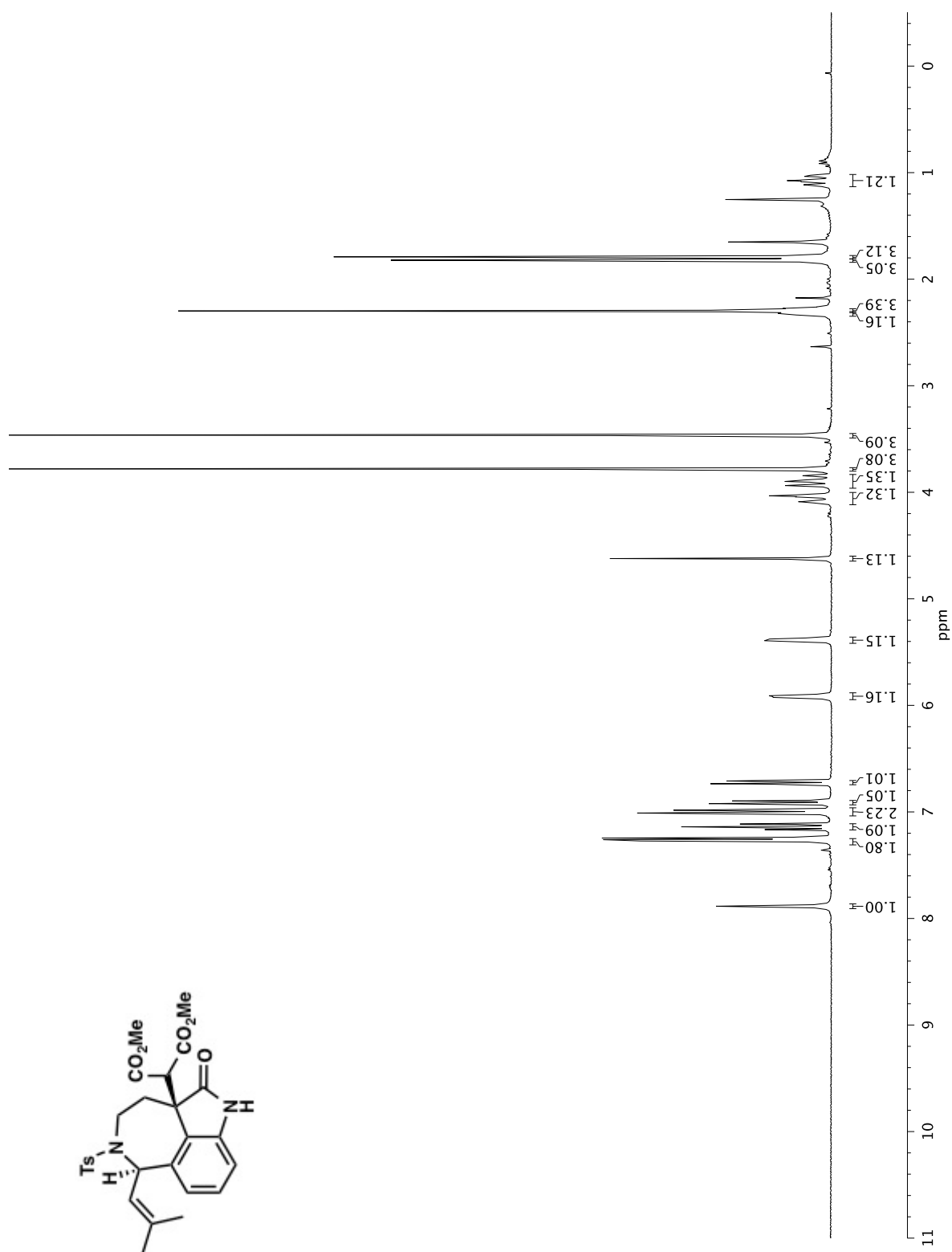


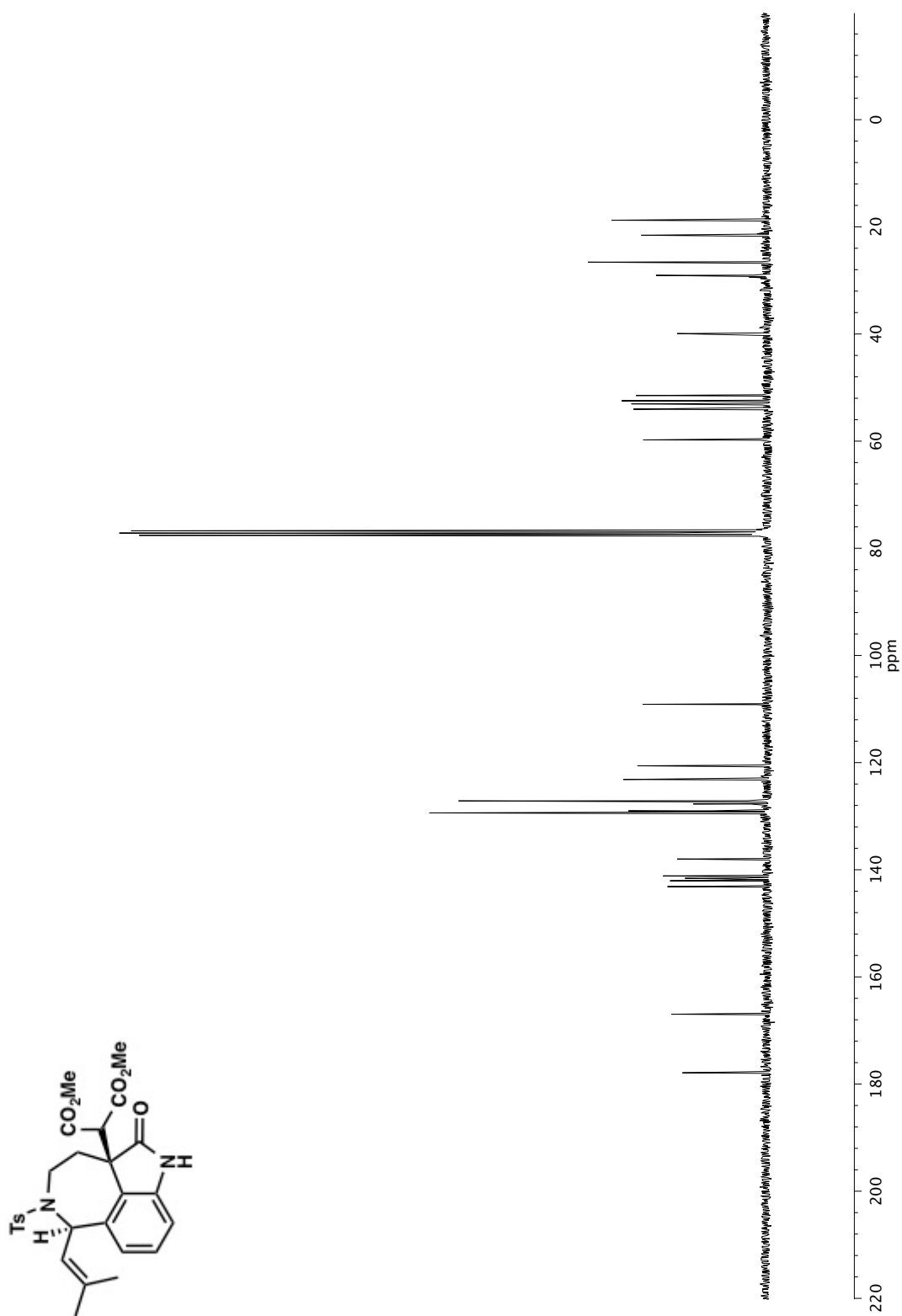
^{13}C NMR (75 MHz, CDCl_3) of compound **SI-13**.



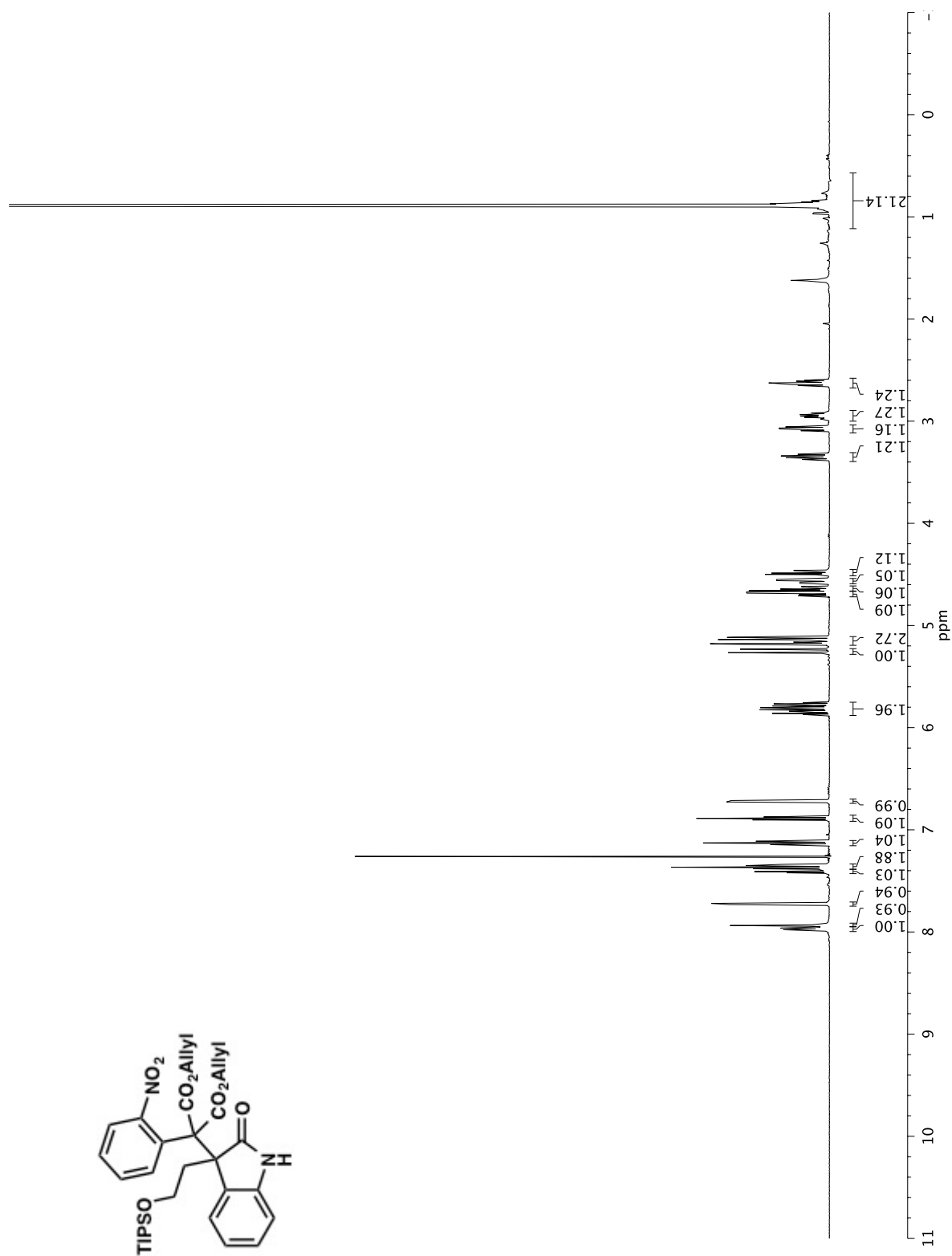


^{13}C NMR (75 MHz, CDCl_3) of compound 40.

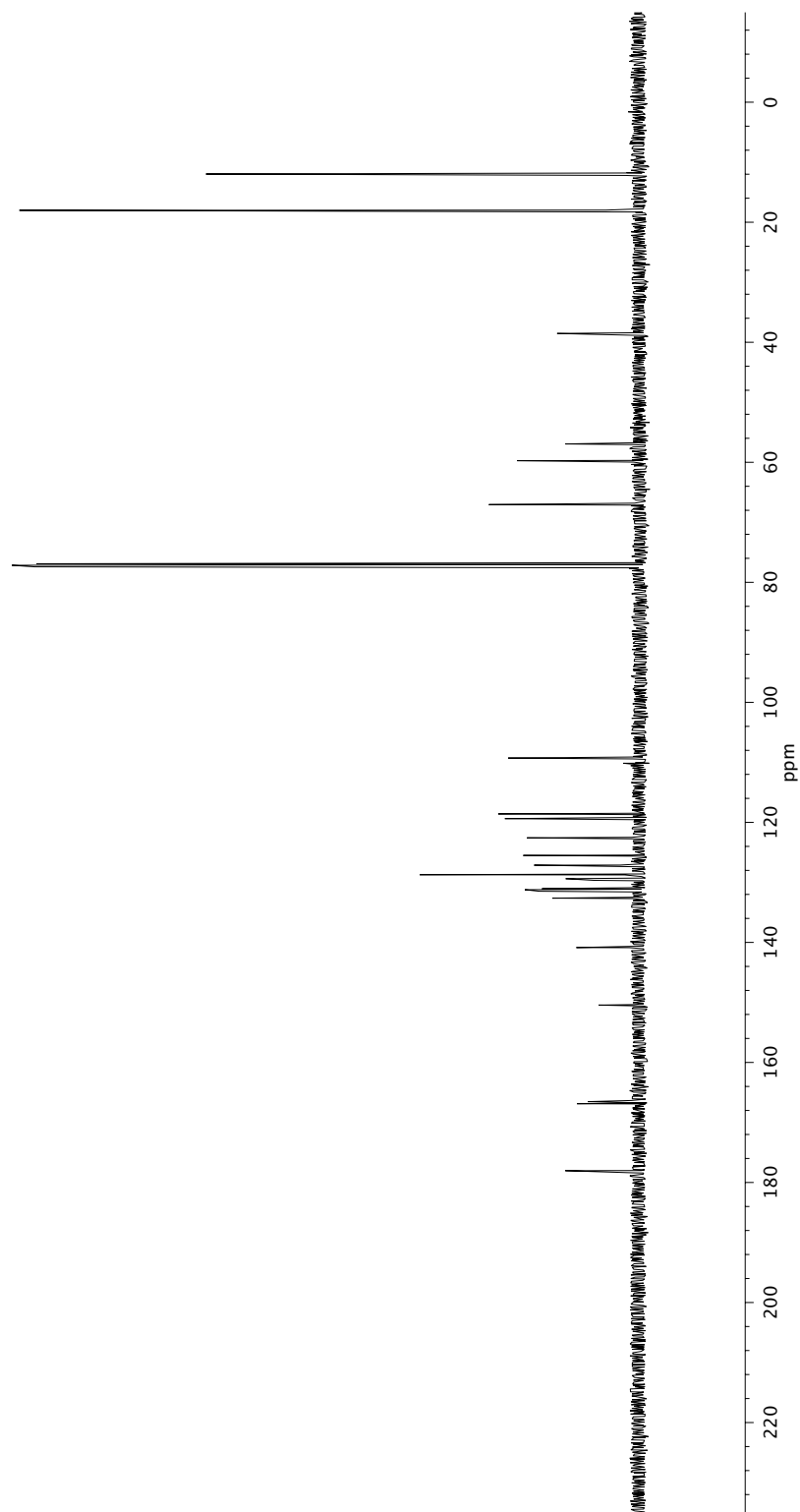
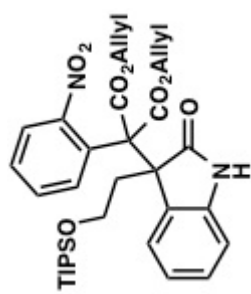
 ^1H NMR (300 MHz, CDCl_3) of compound **42**.



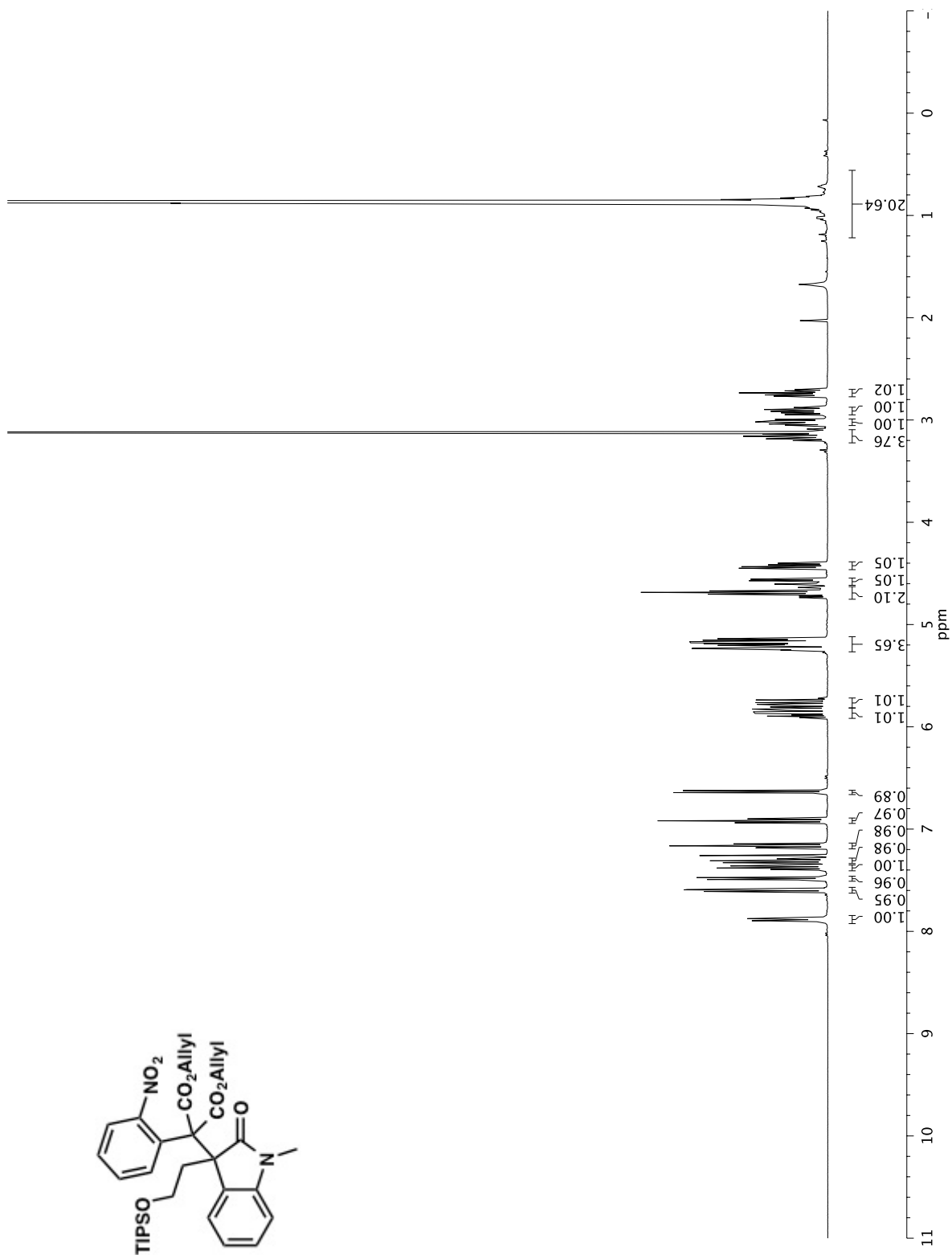
^{13}C NMR (75 MHz, CDCl_3) of compound 42.

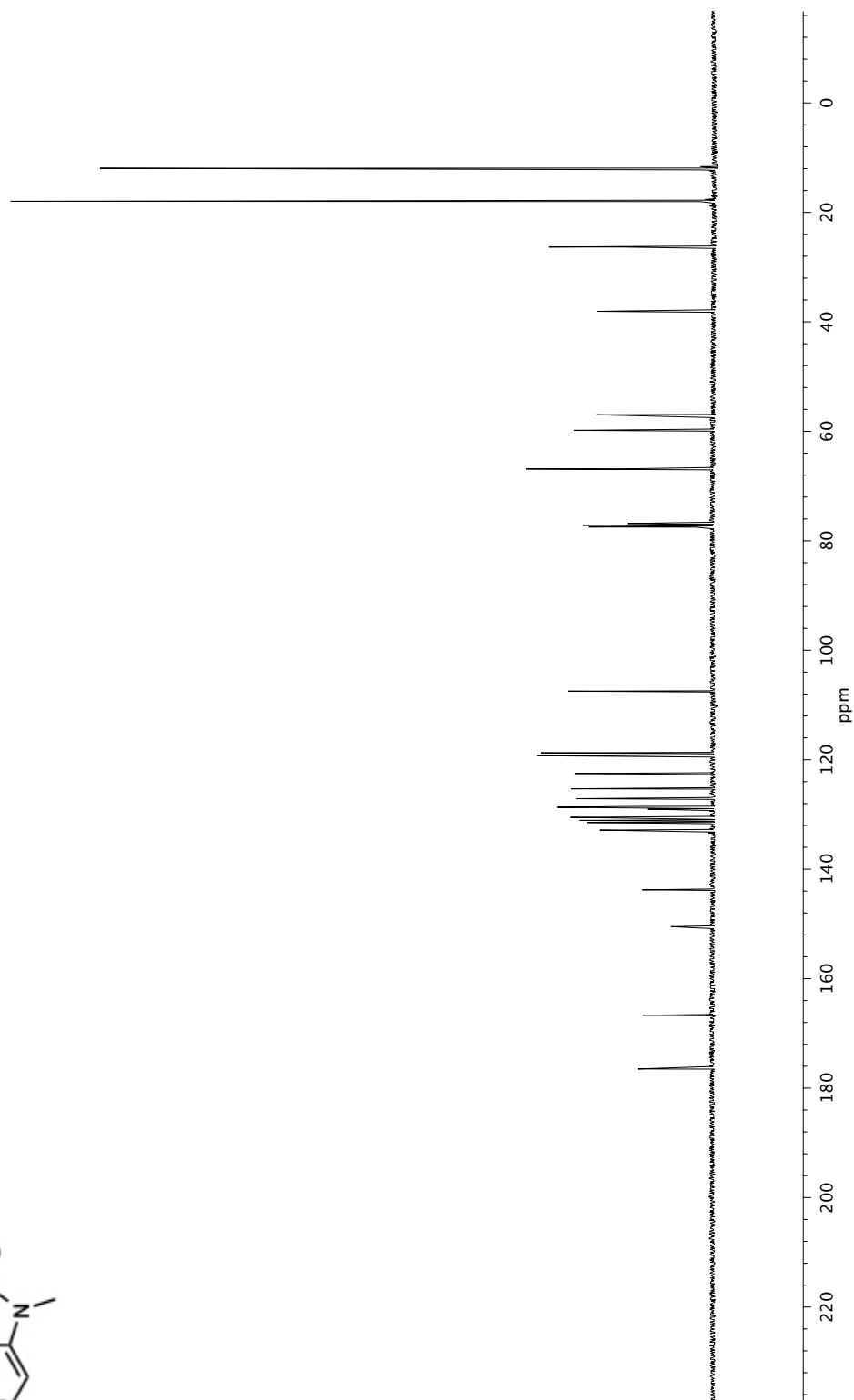
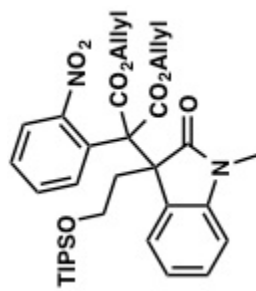


¹H NMR (500 MHz, CDCl₃) of compound **46**.

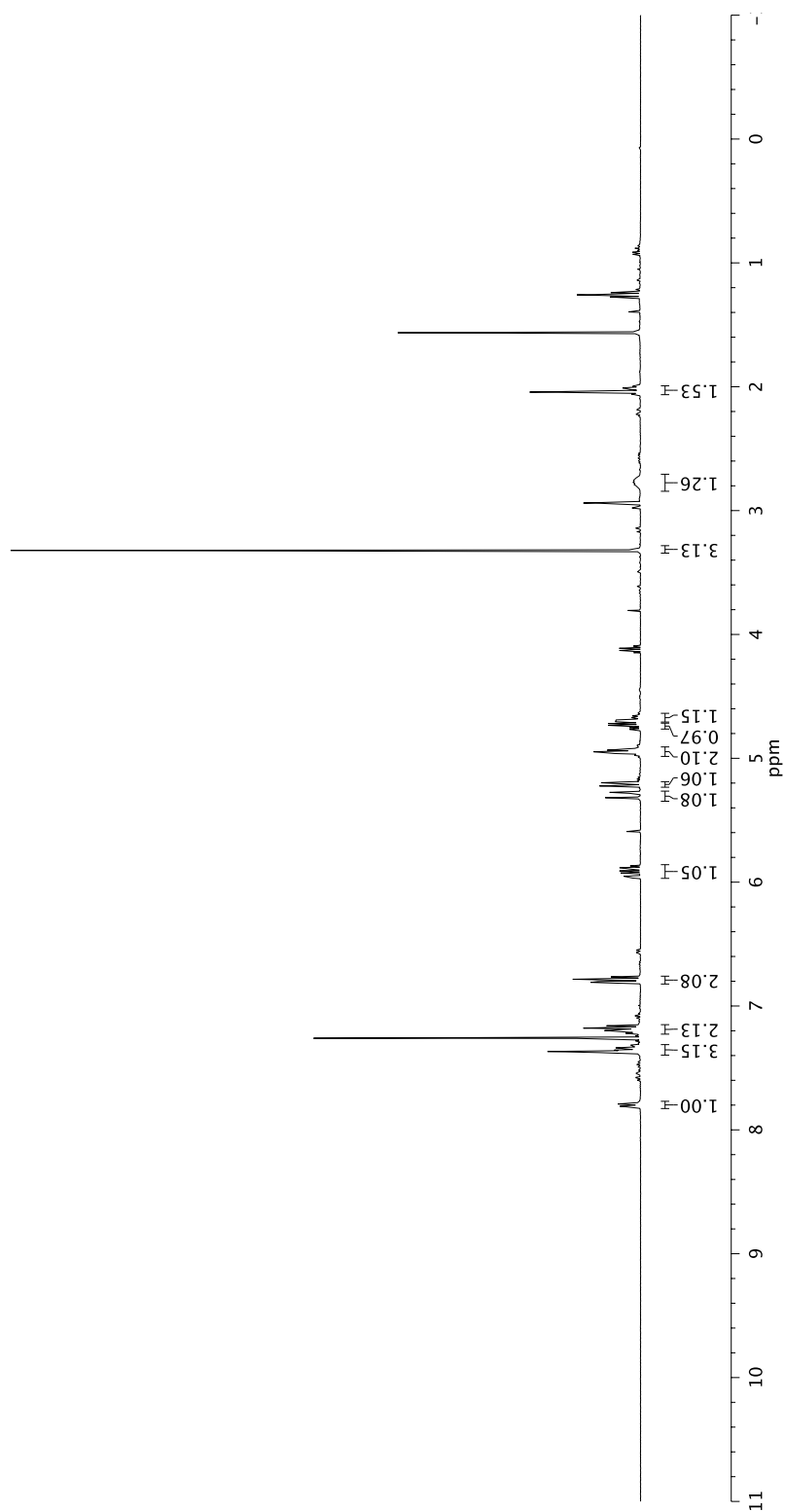
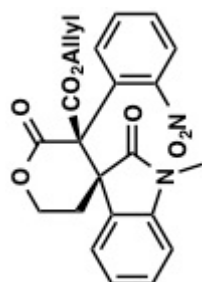


¹³C NMR (125 MHz, CDCl₃) of compound **46**.

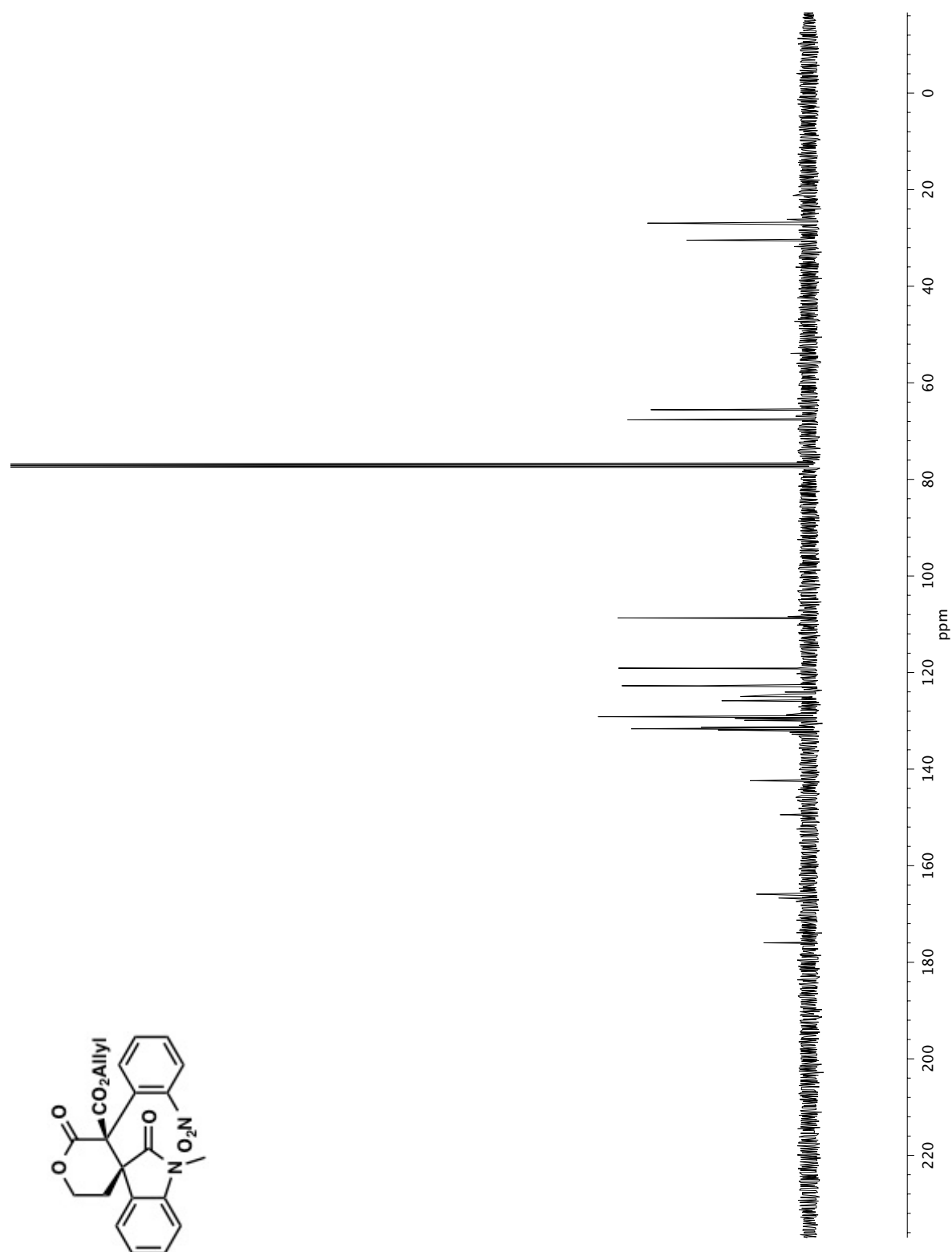




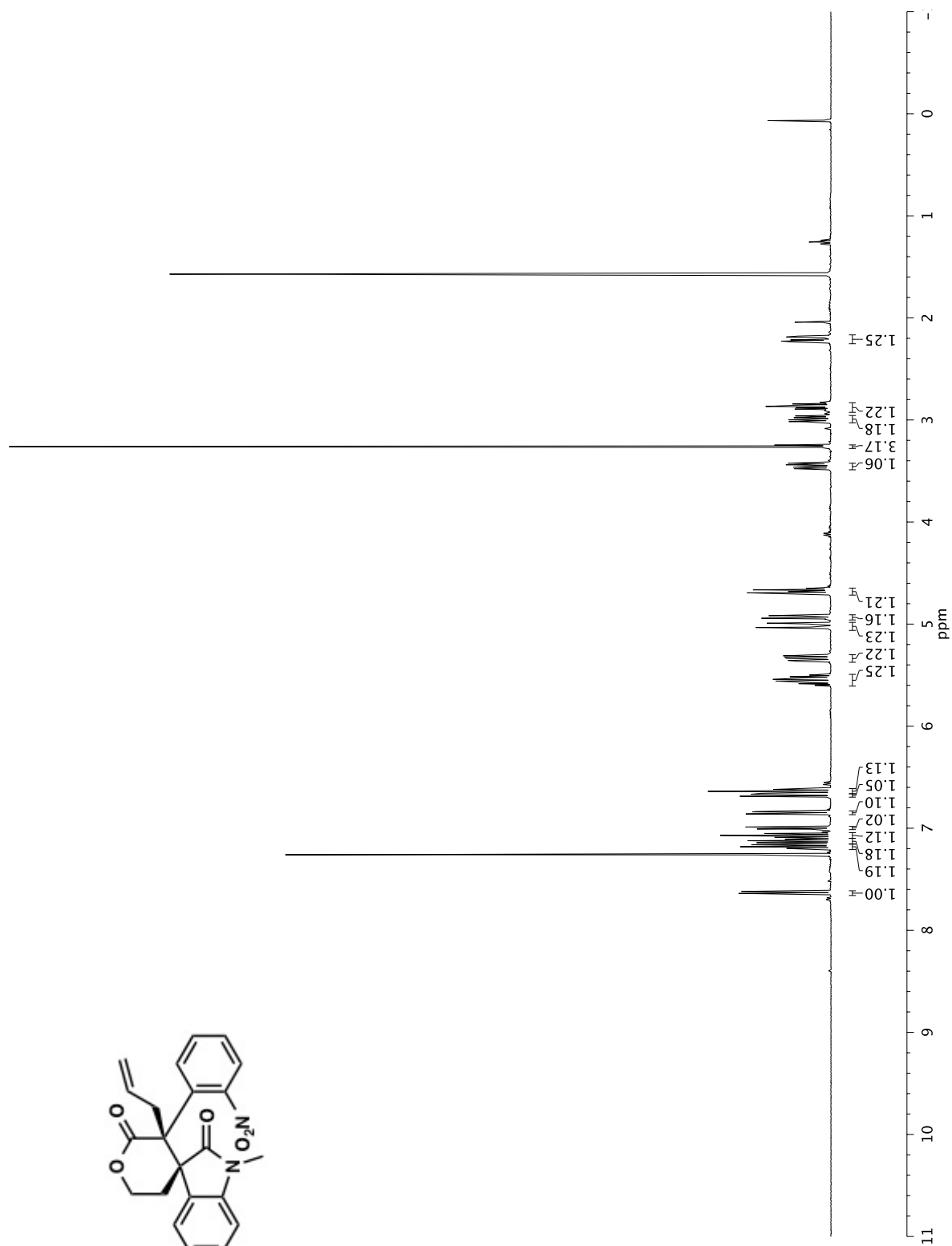
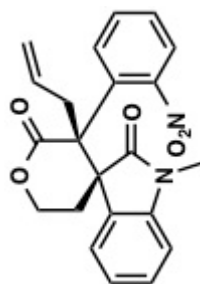
¹³C NMR (125 MHz, CDCl₃) of compound 48.

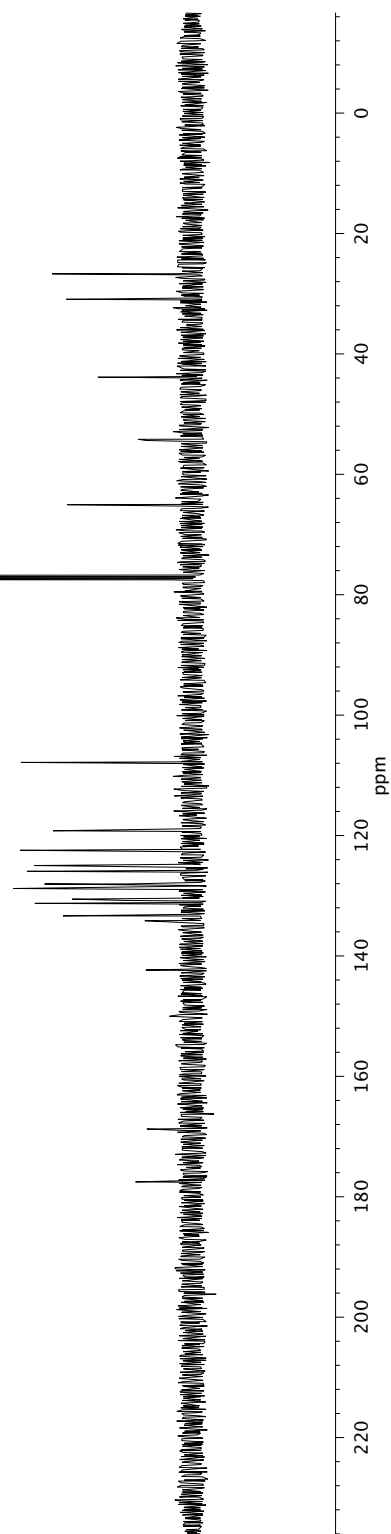
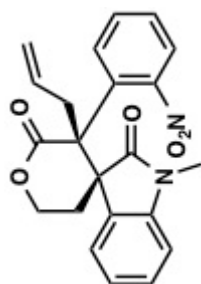


¹H NMR (400 MHz, CDCl₃) of compound **50**.

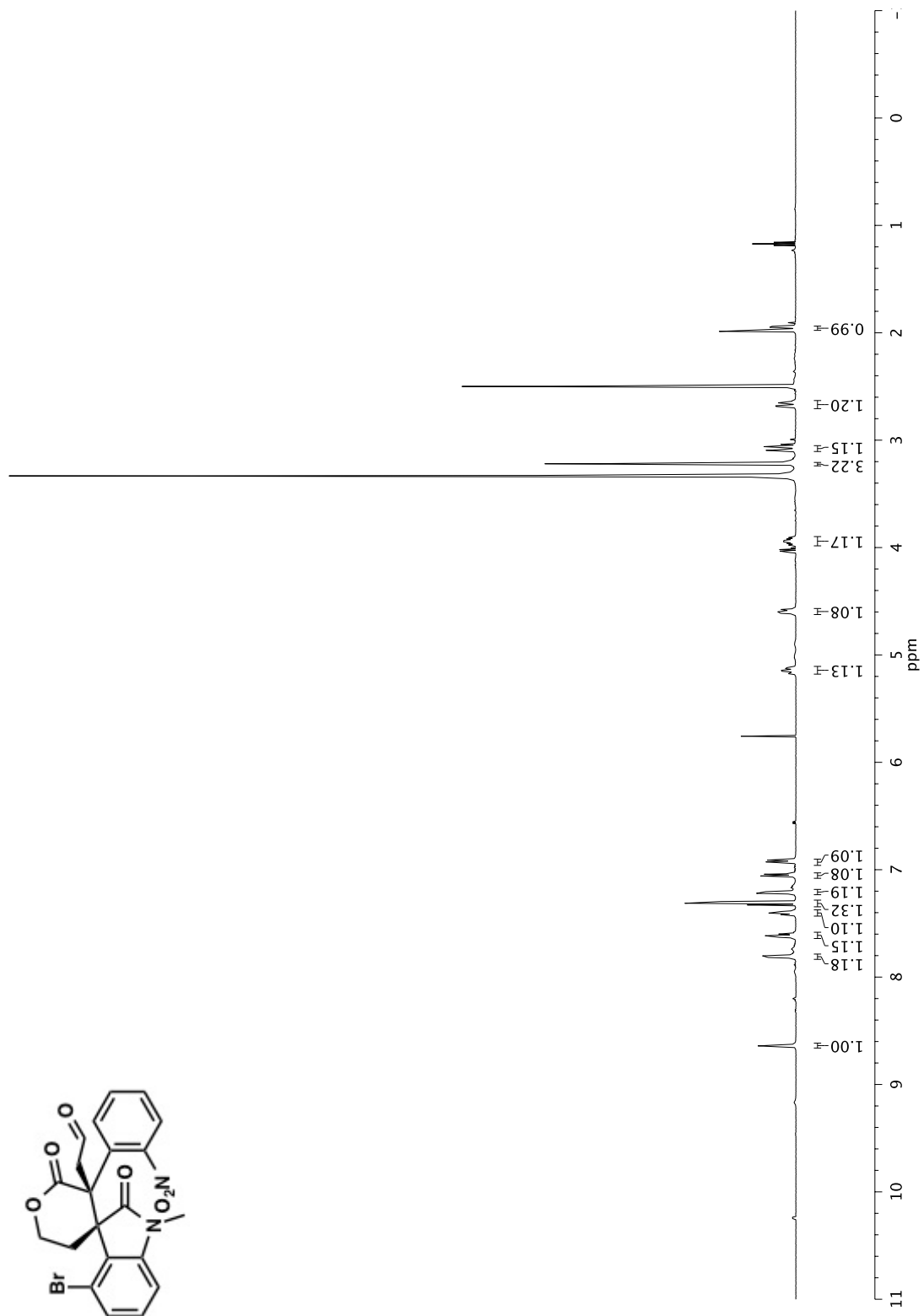


^{13}C NMR (100 MHz, CDCl_3) of compound **50**.

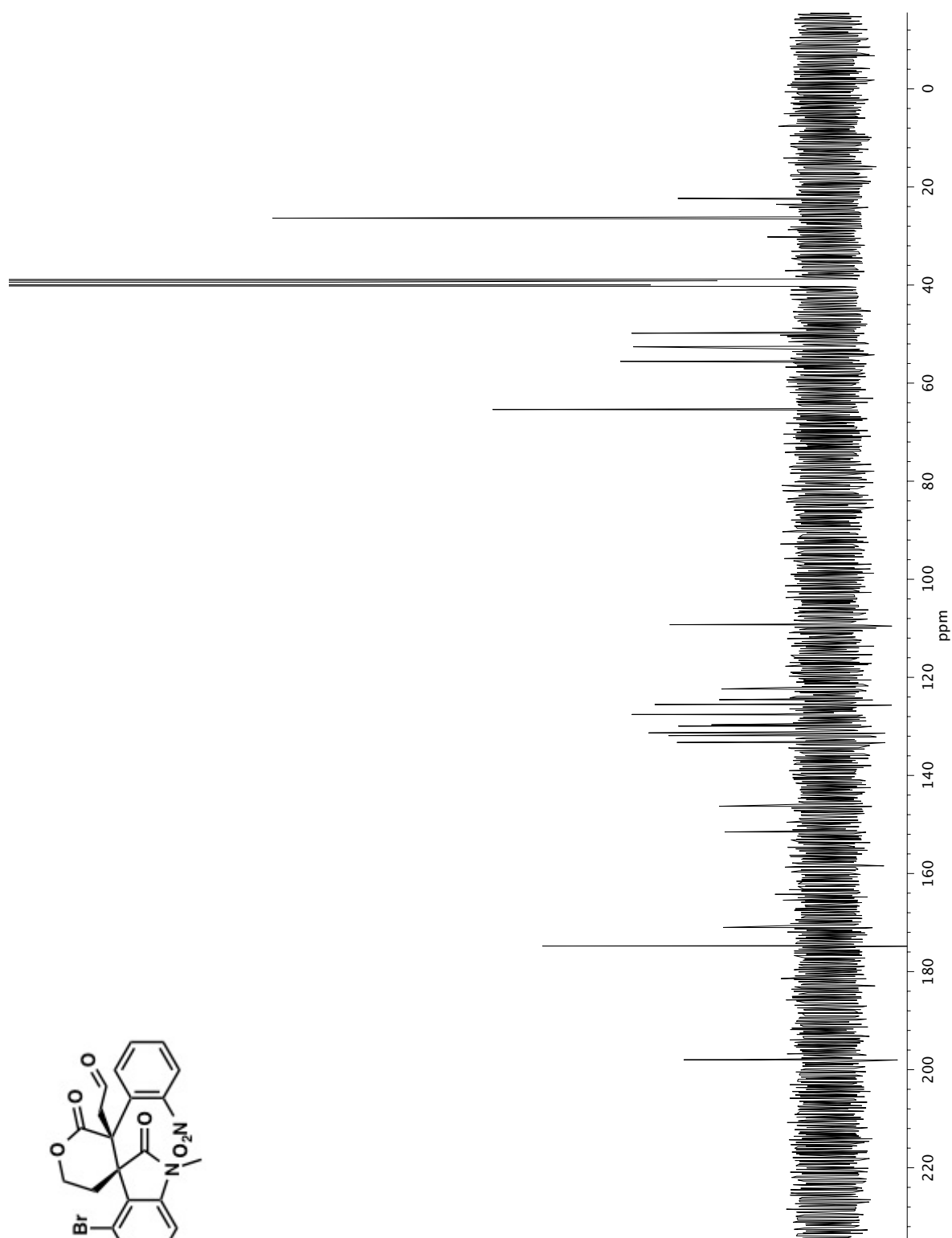
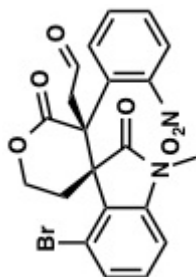


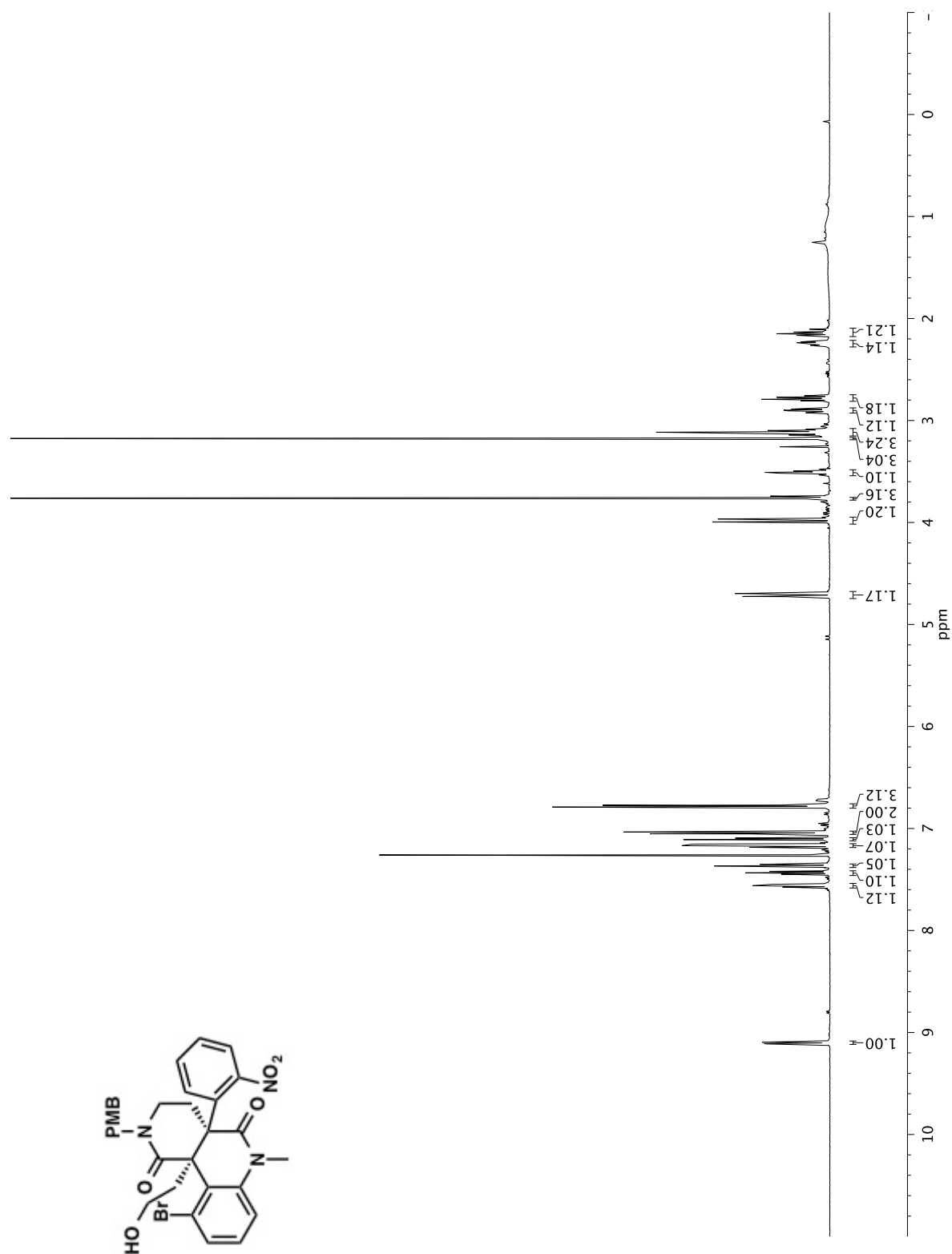


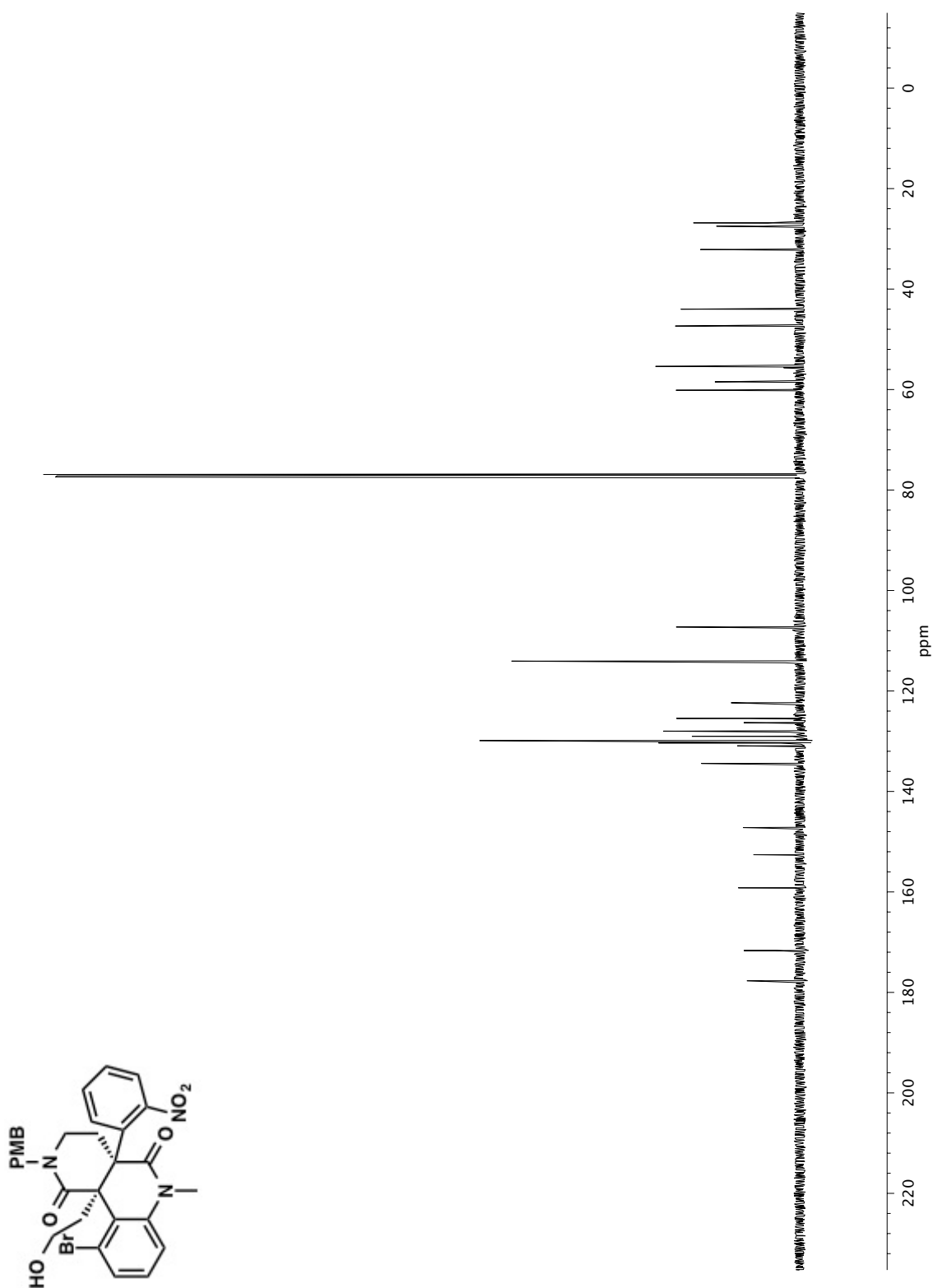
^{13}C NMR (100 MHz, CDCl_3) of compound **51**.



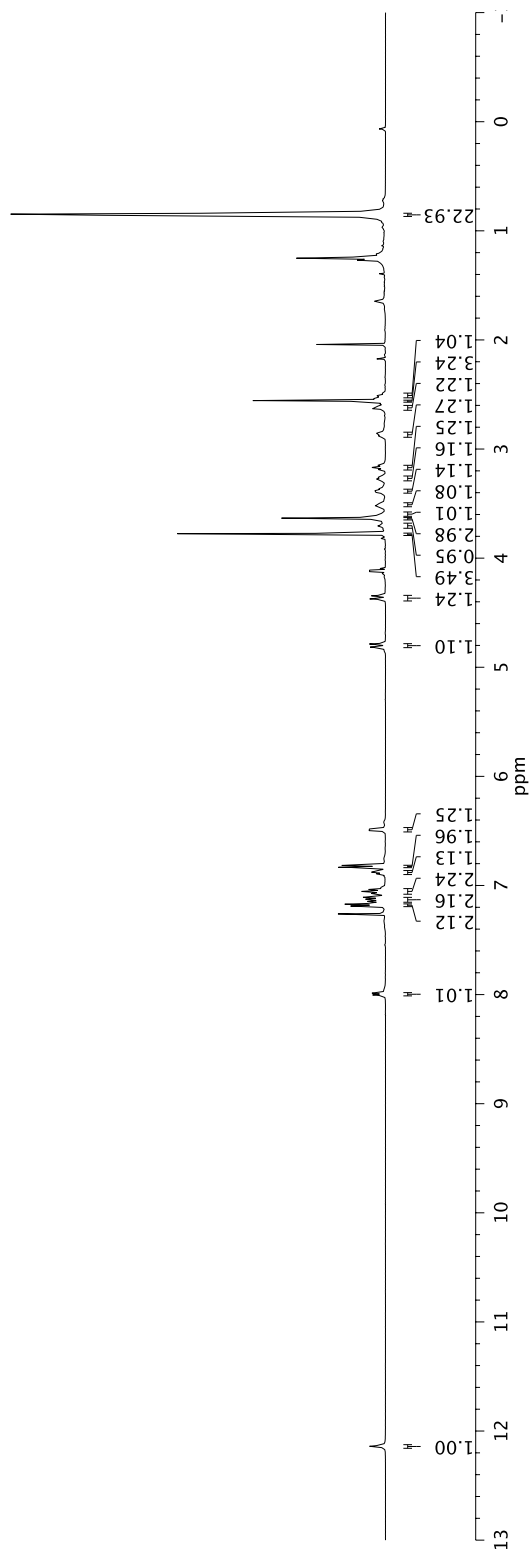
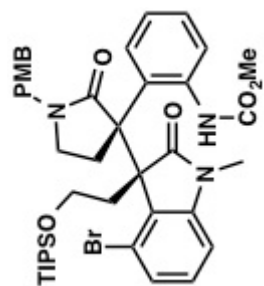
^1H NMR (500 MHz, DMSO) of compound **63**.

¹³C NMR (125 MHz, DMSO) of compound **63**.

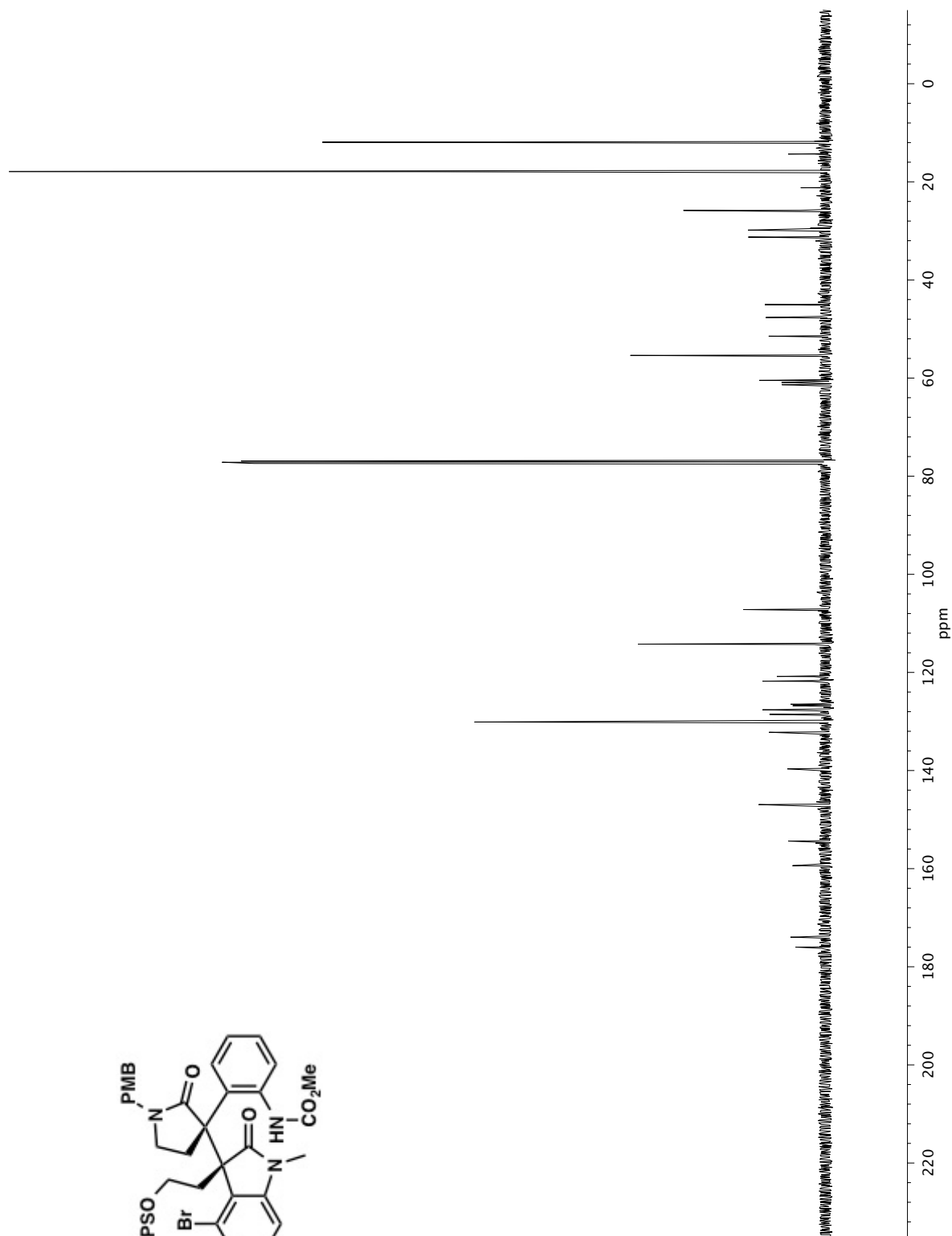
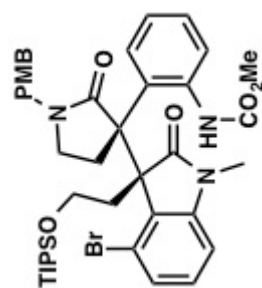
¹H NMR (500 MHz, CDCl₃) of compound **65**.



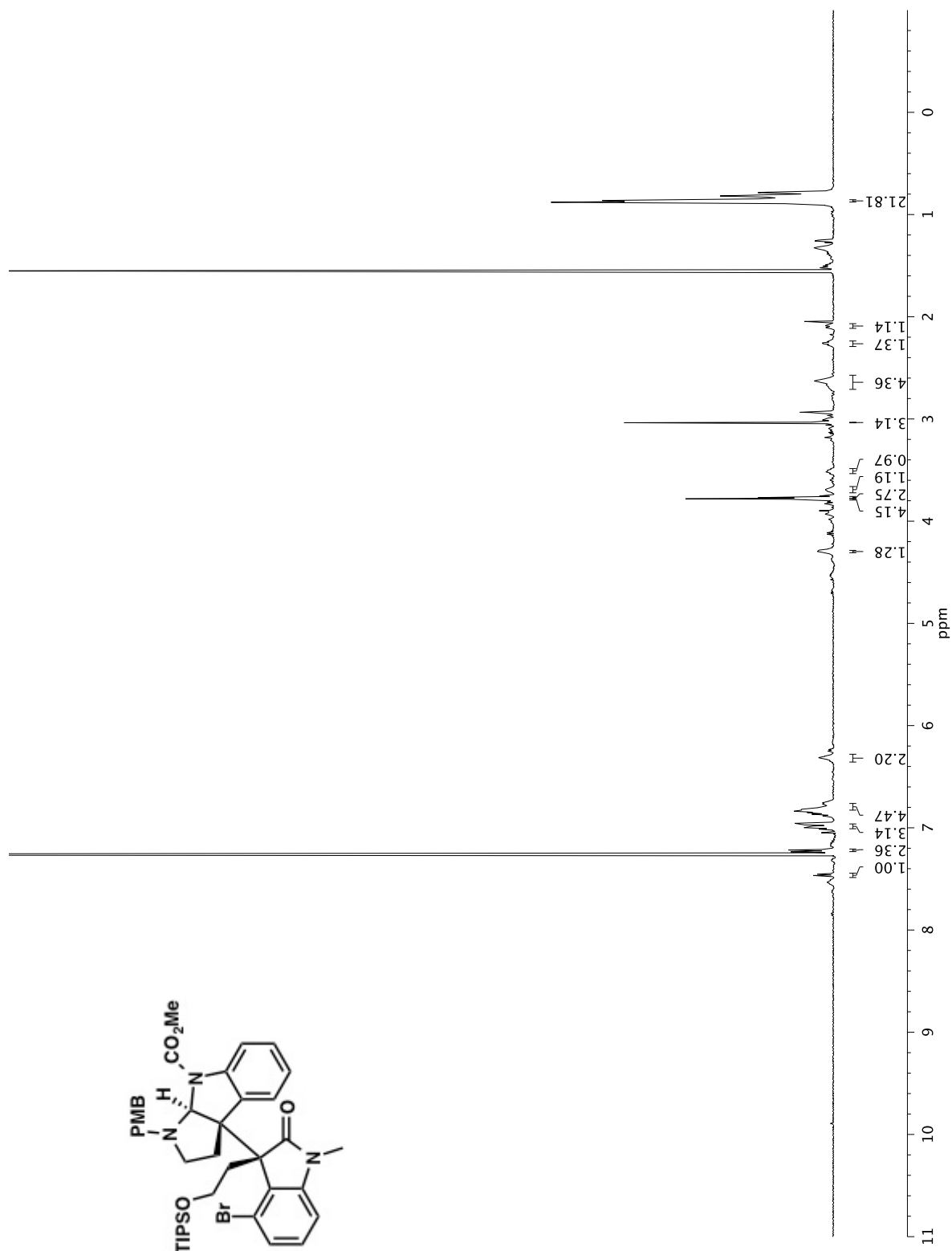
¹³C NMR (125 MHz, CDCl₃) of compound **65**.



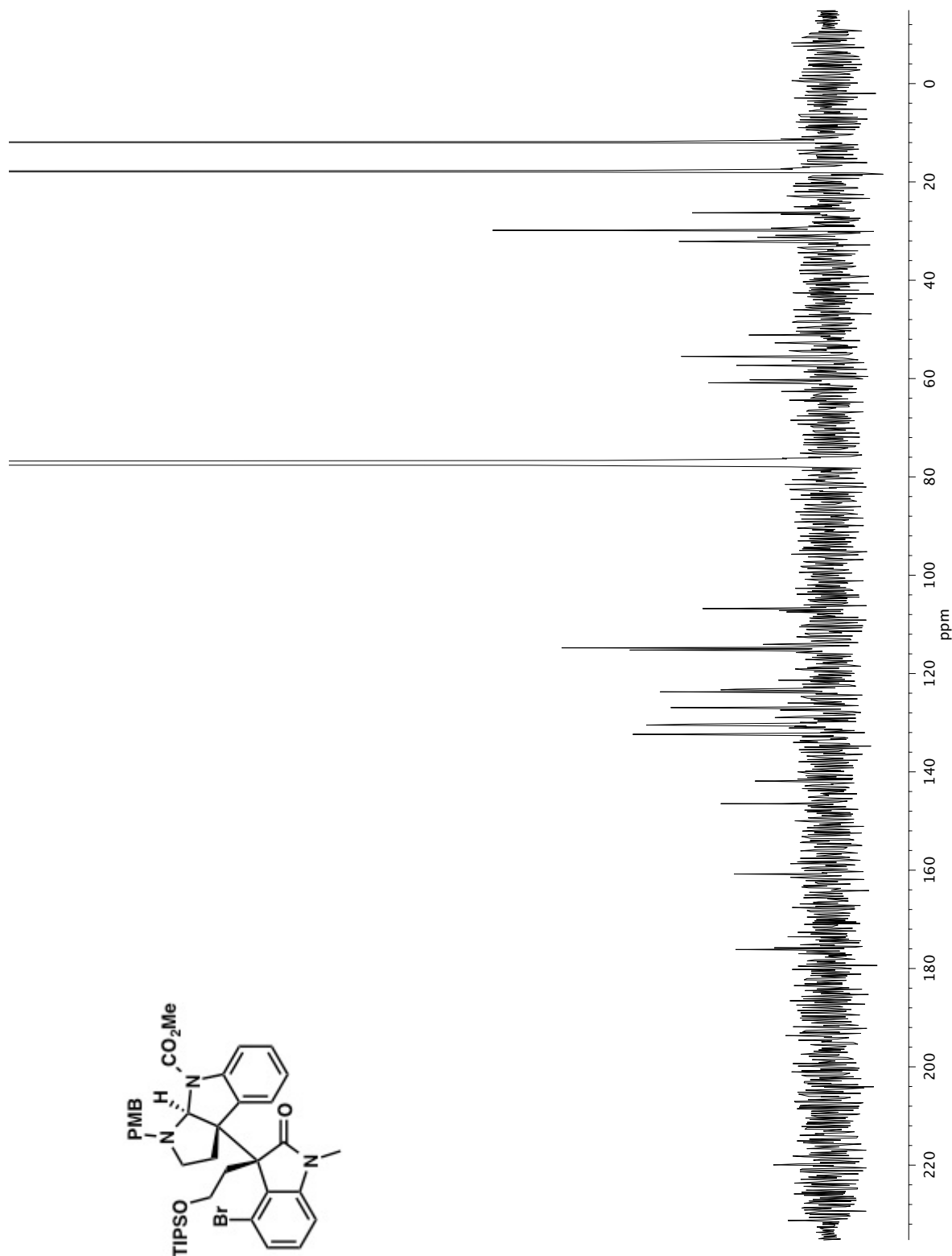
^1H NMR (500 MHz, CDCl_3) of compound **54**.



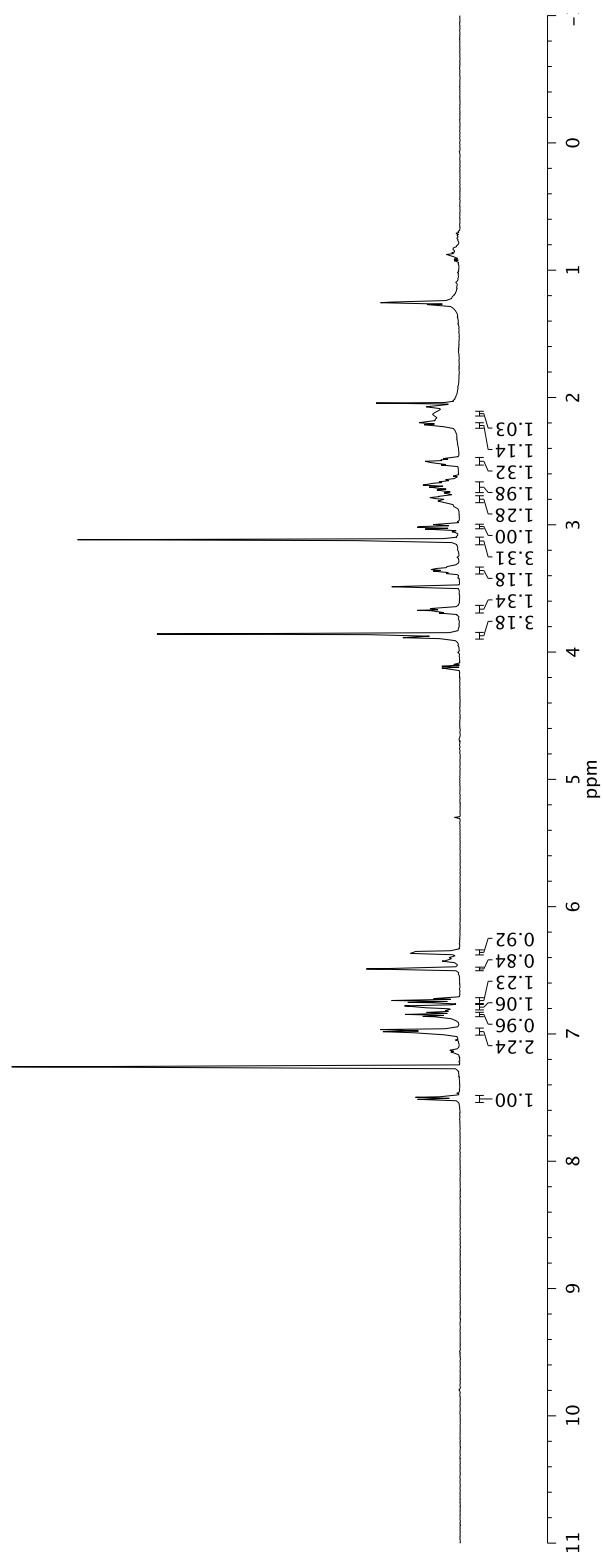
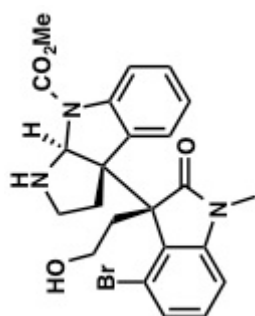
¹³C NMR (125 MHz, CDCl₃) of compound 54.



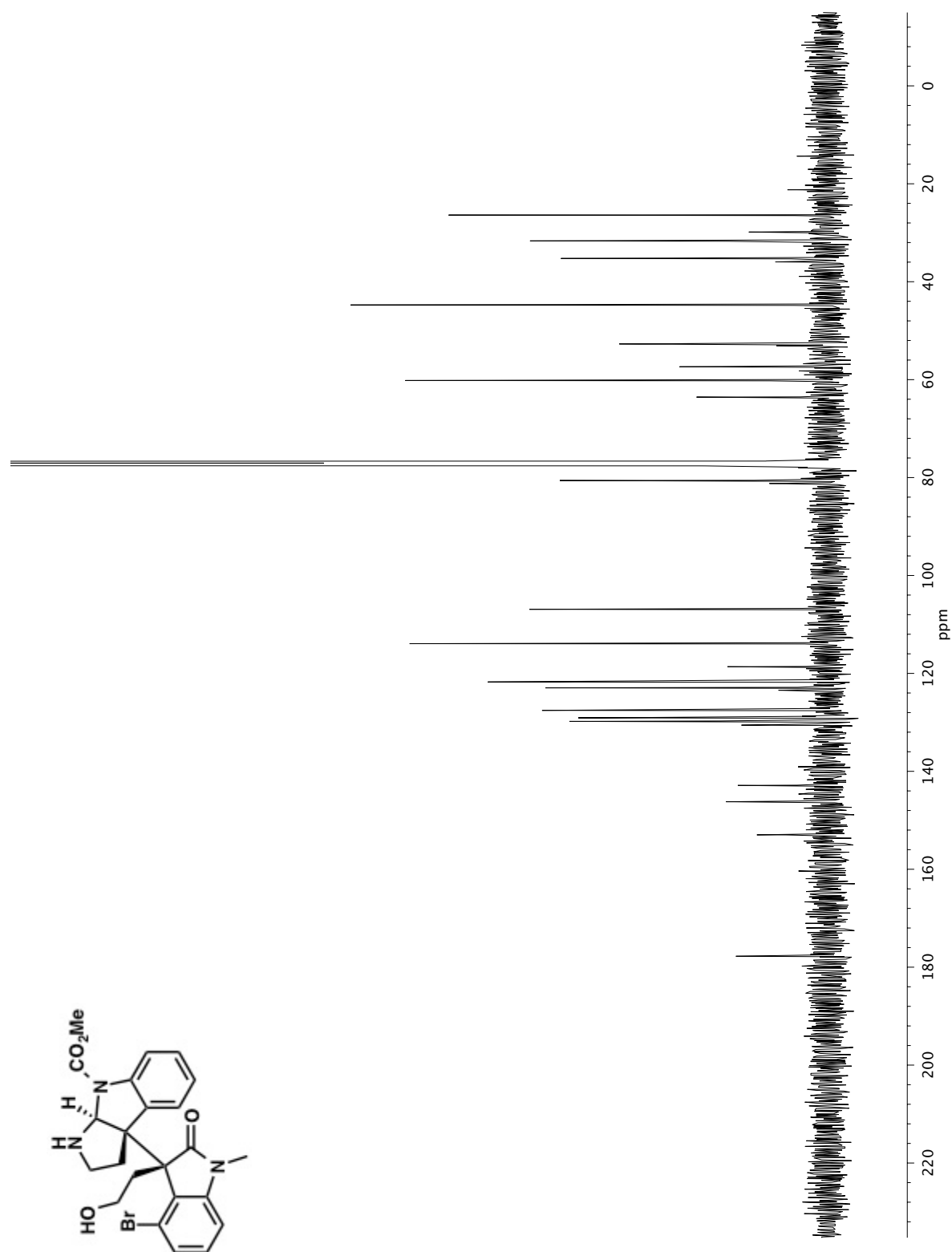
¹H NMR (500 MHz, CDCl₃) of compound 71.



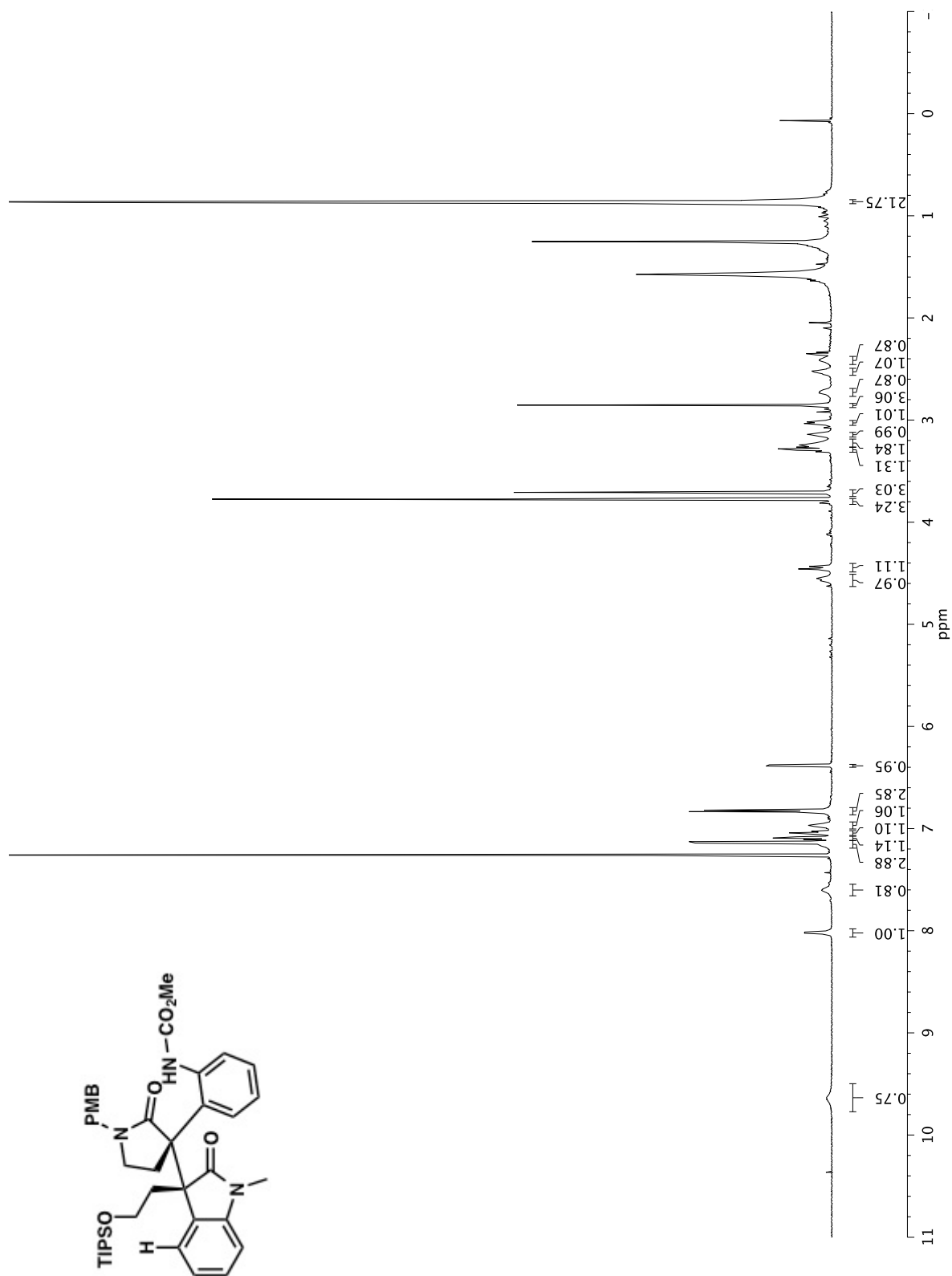
^{13}C NMR (125 MHz, CDCl_3) of compound **71**.



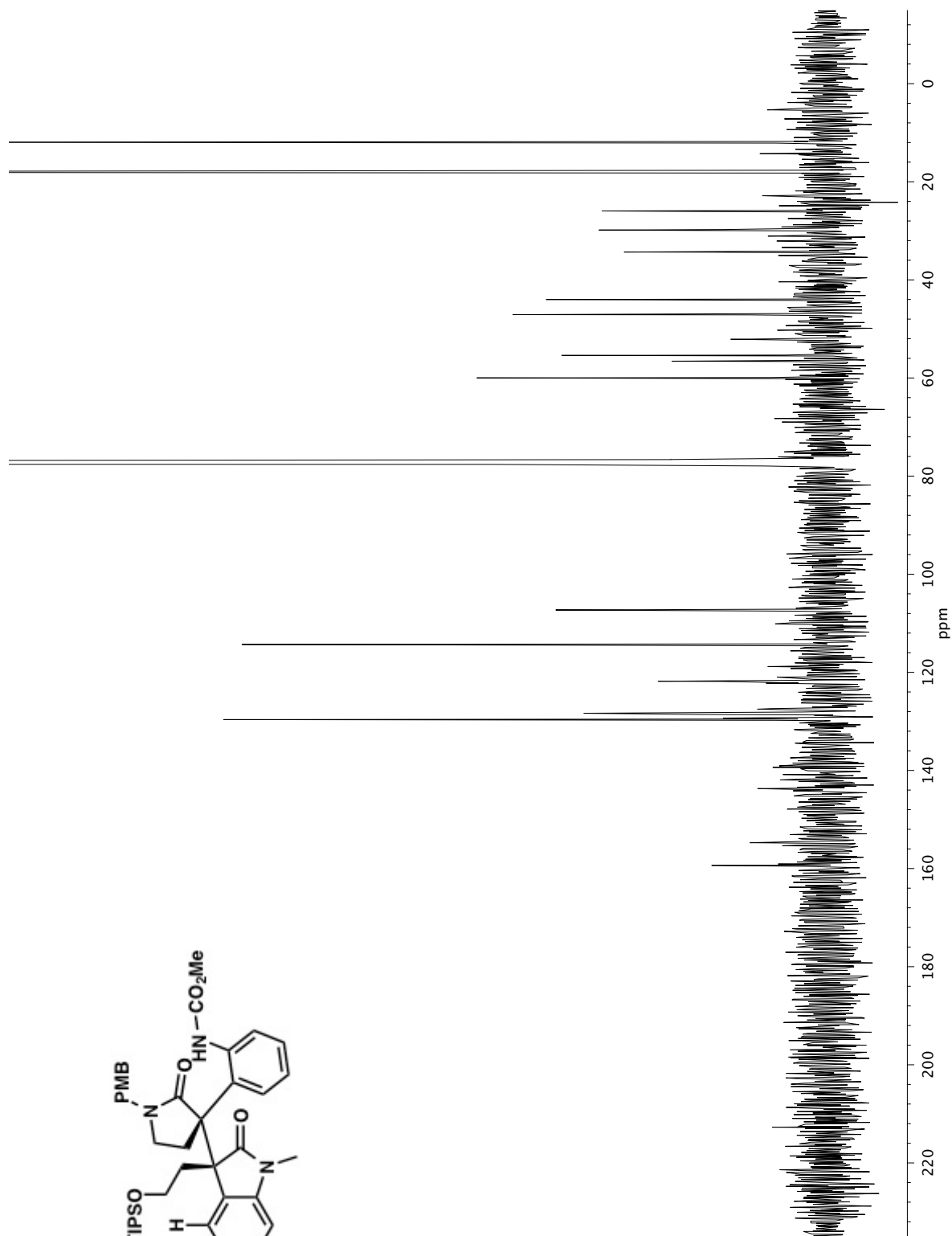
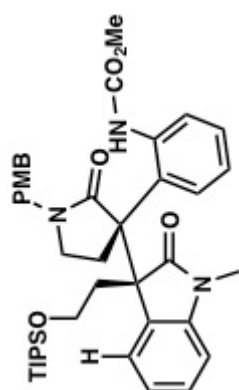
¹H NMR (600 MHz, CDCl₃) of compound 72.



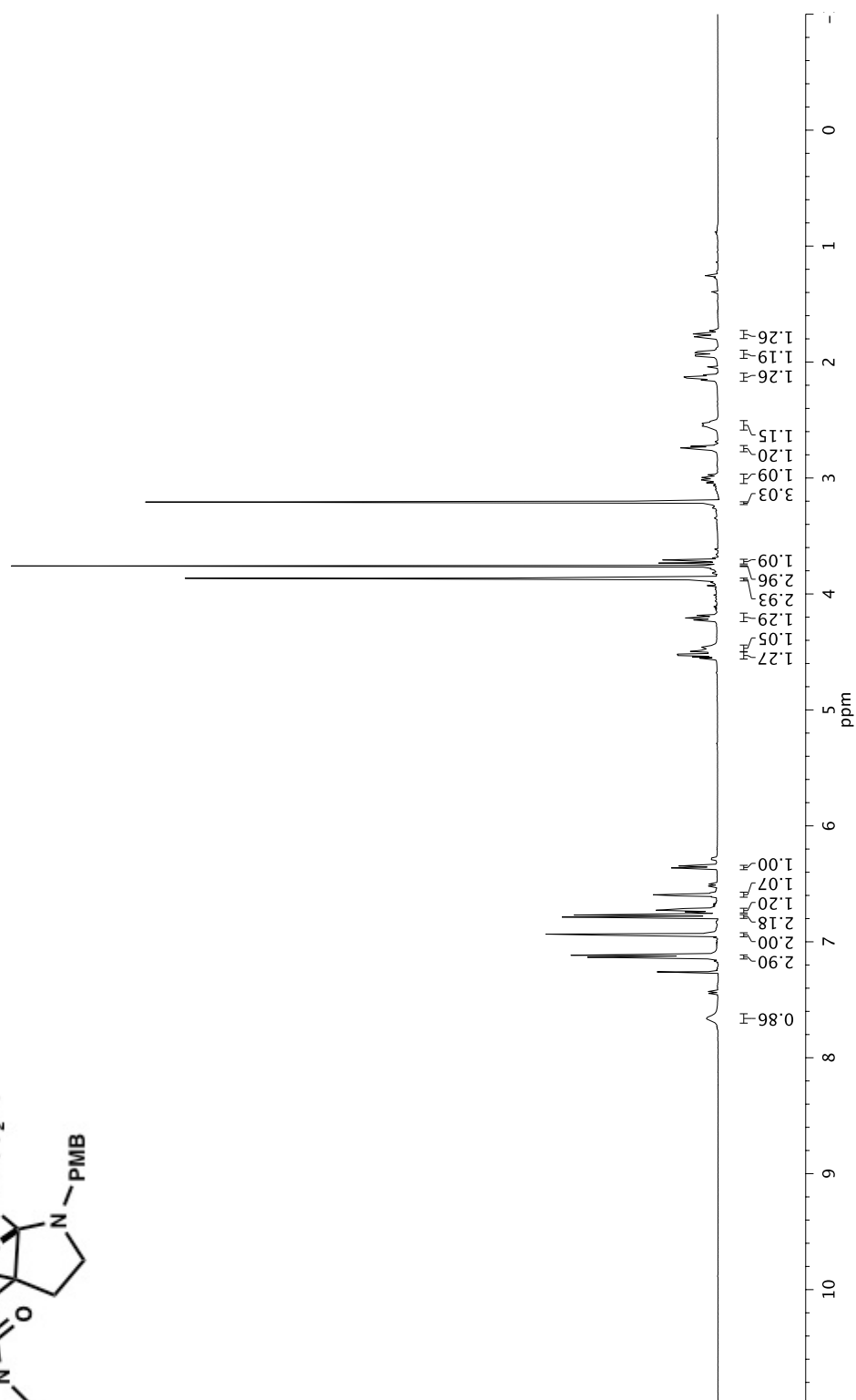
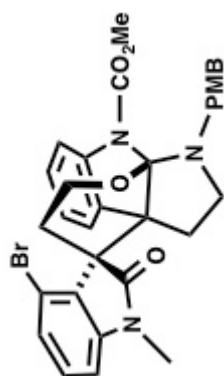
^{13}C NMR (125 MHz, CDCl_3) of compound 72.



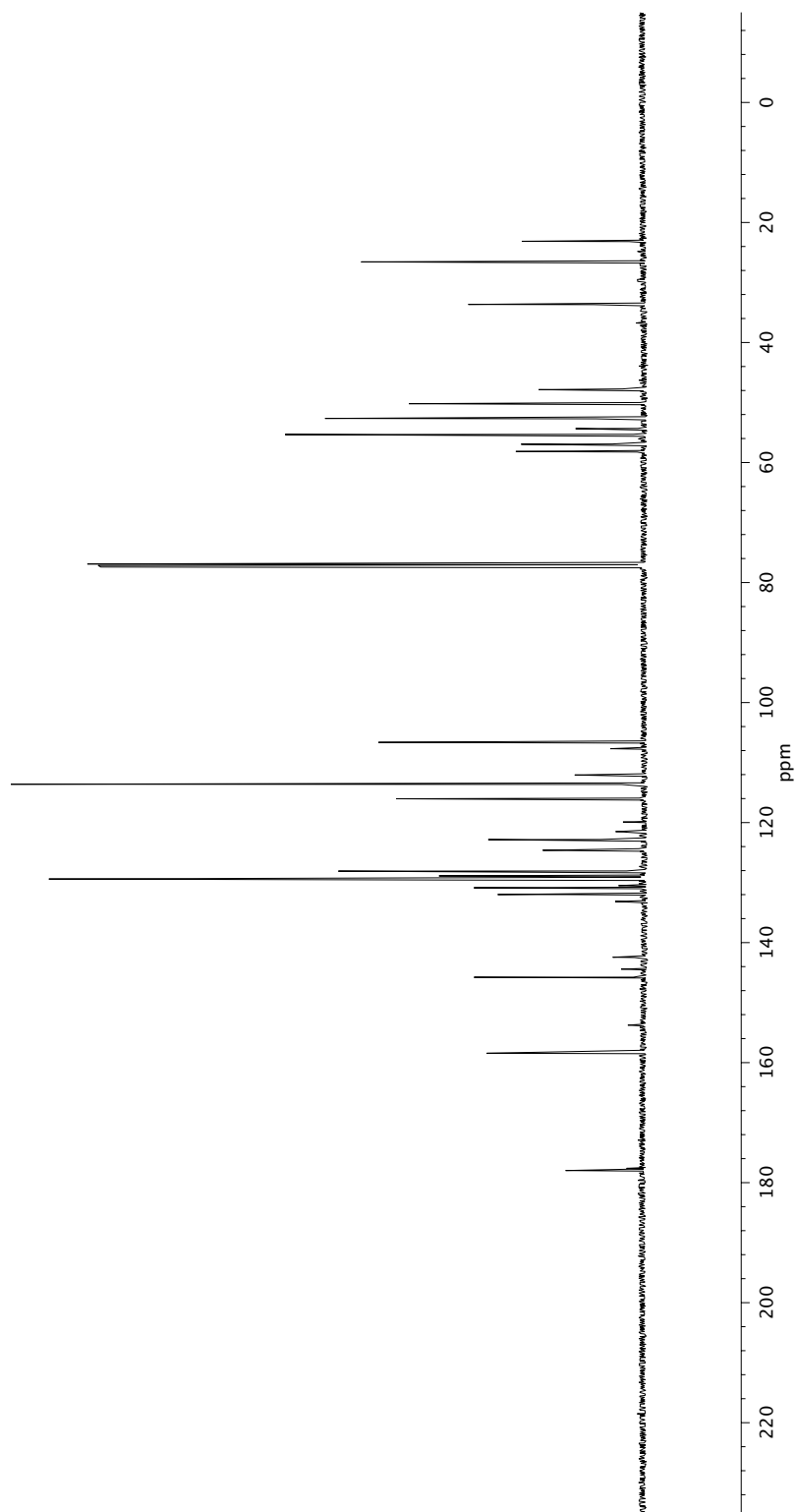
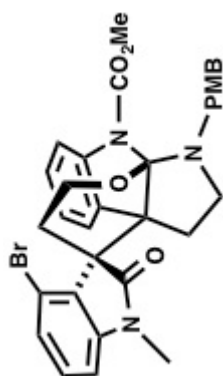
¹H NMR (600 MHz, CDCl₃) of compound 73.



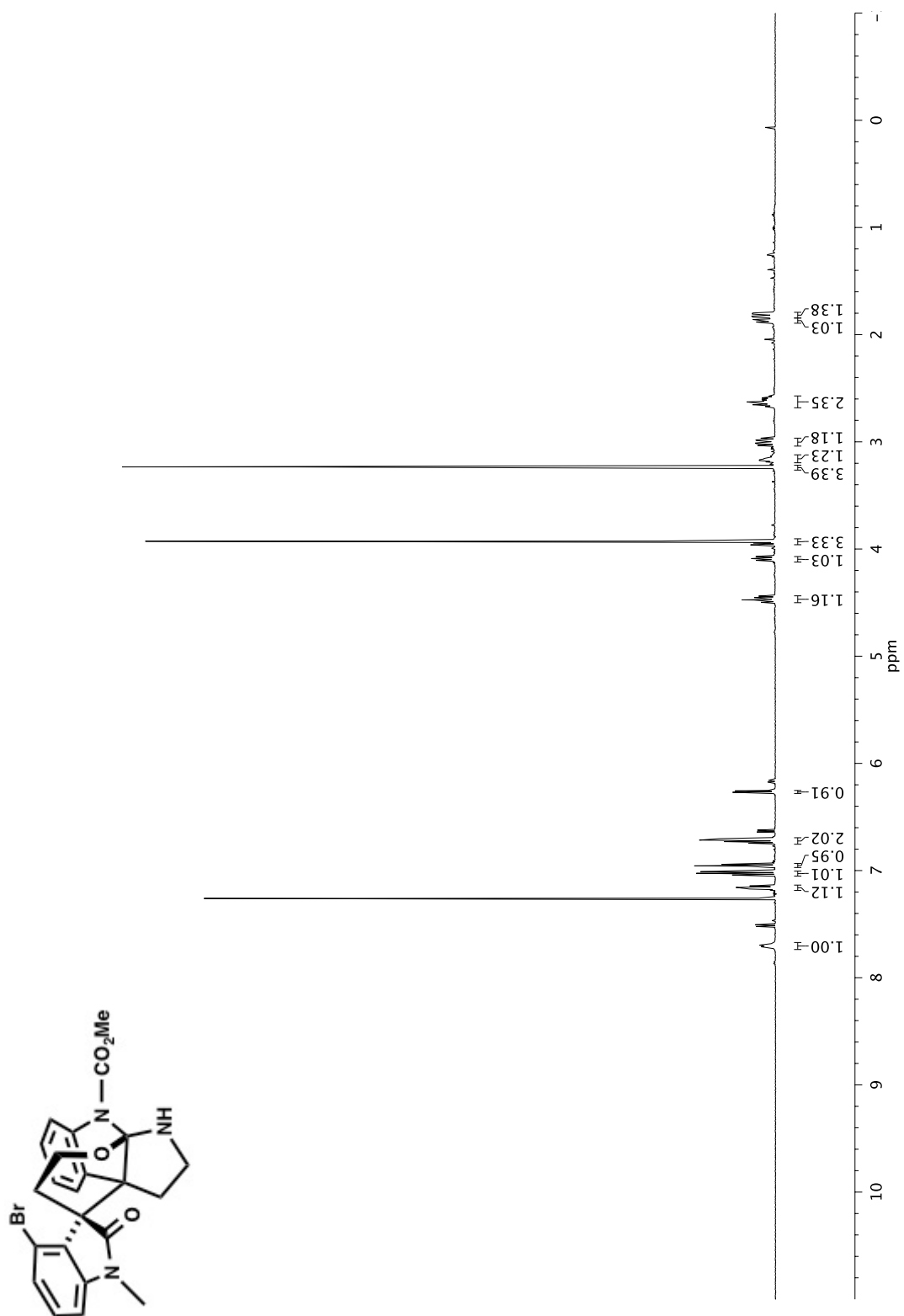
^{13}C NMR (125 MHz, CDCl_3) of compound 73.



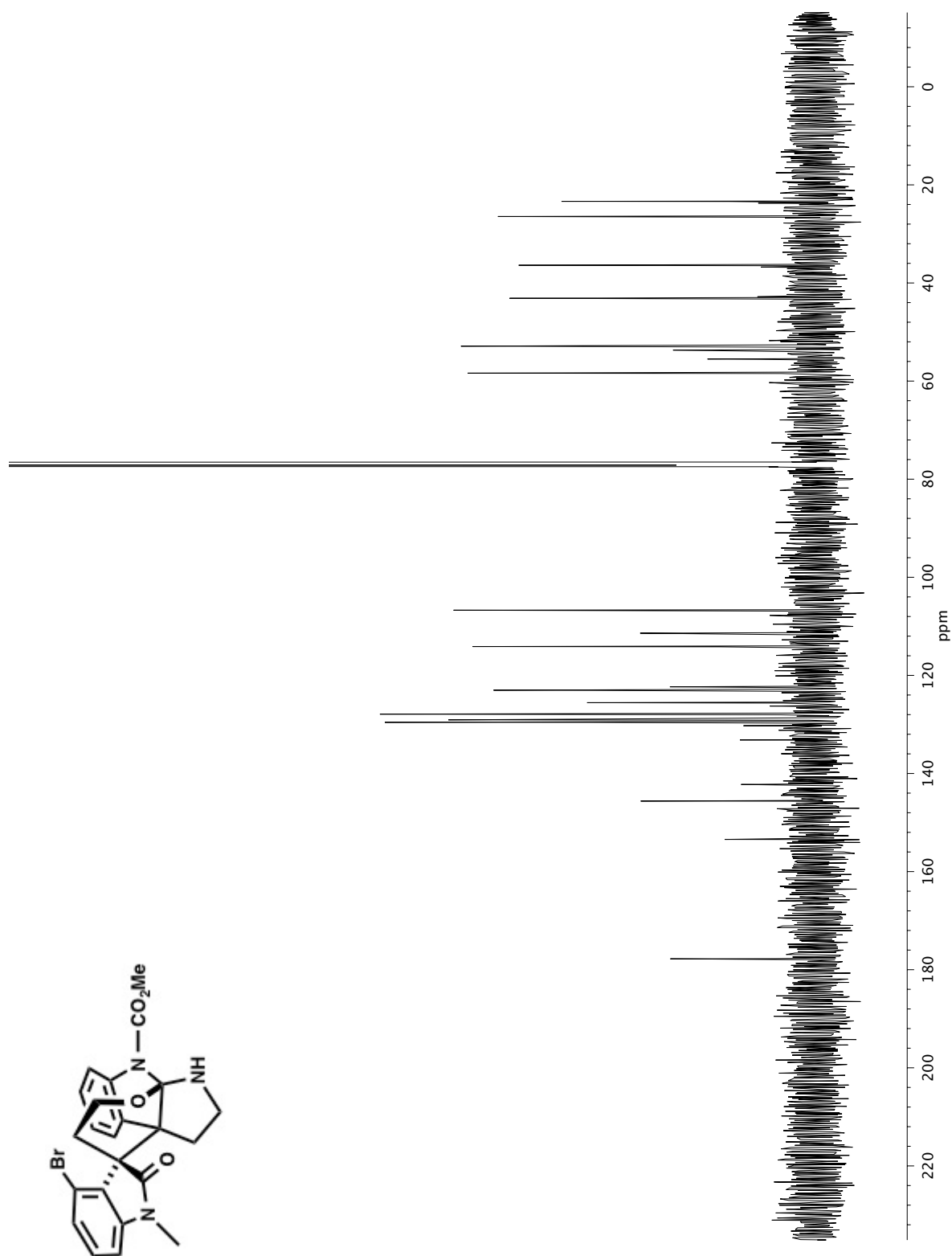
¹H NMR (500 MHz, CDCl₃) of compound 76

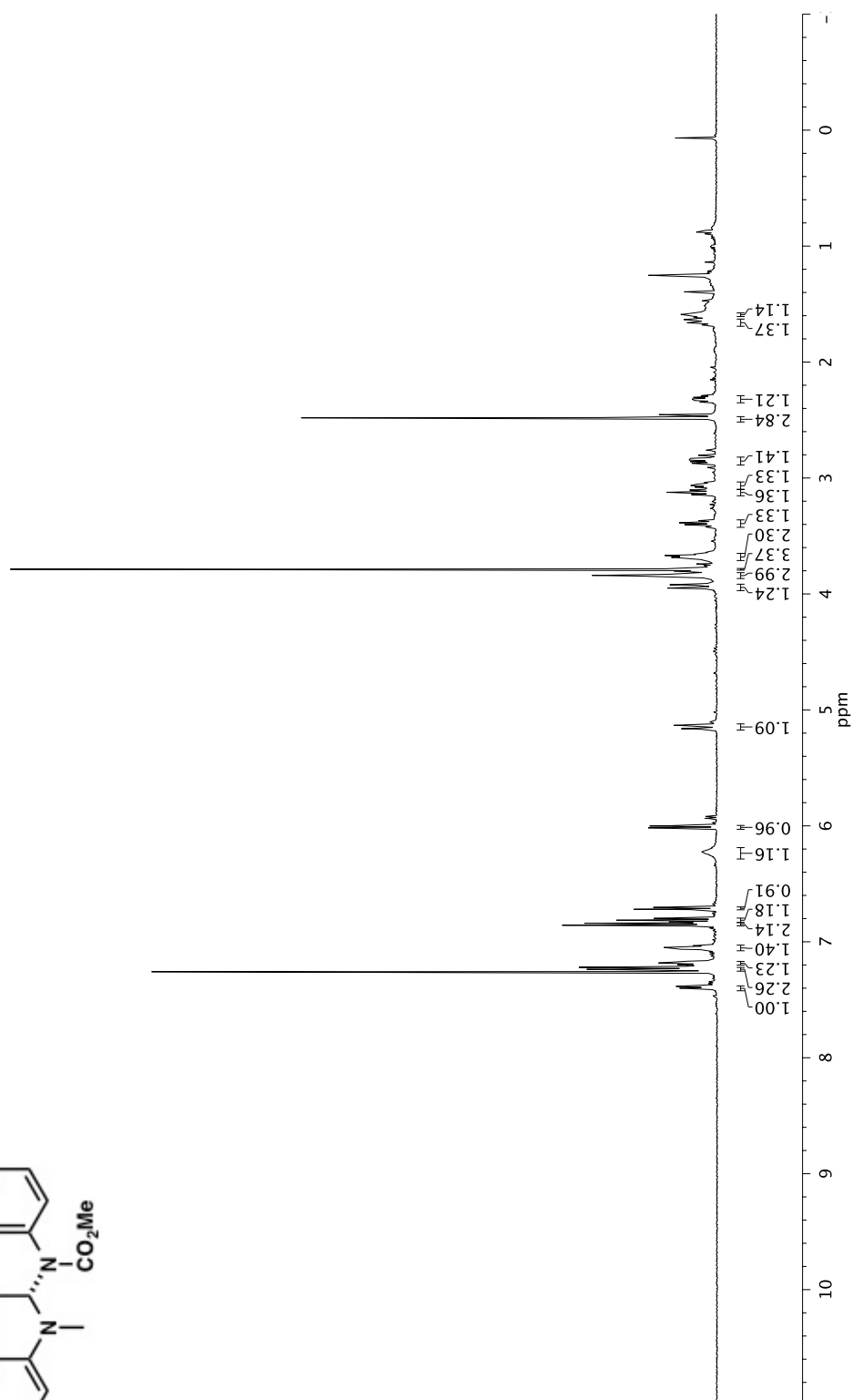
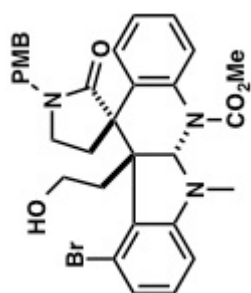


¹³C NMR (125 MHz, CDCl₃) of compound 76.

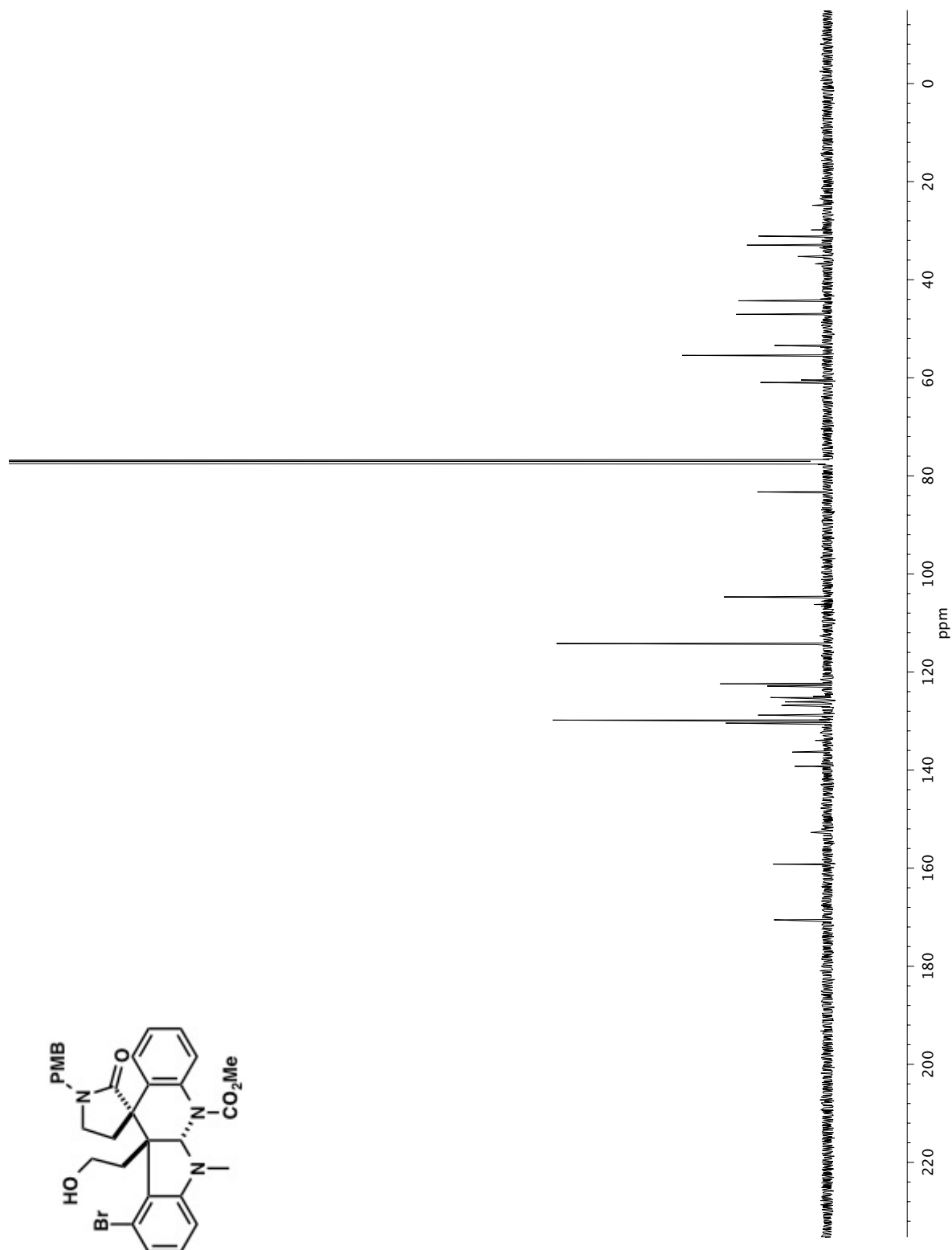


¹H NMR (500 MHz, CDCl₃) of compound 77.

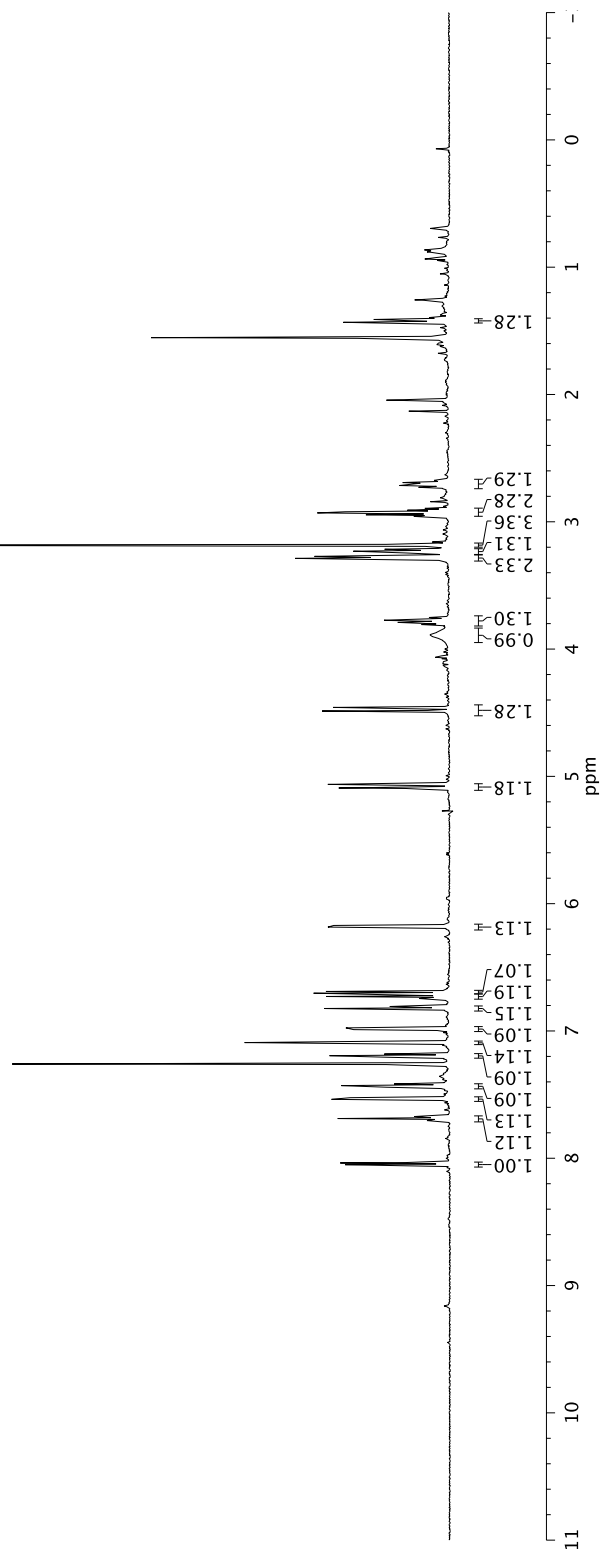
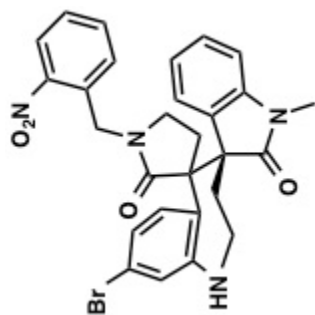




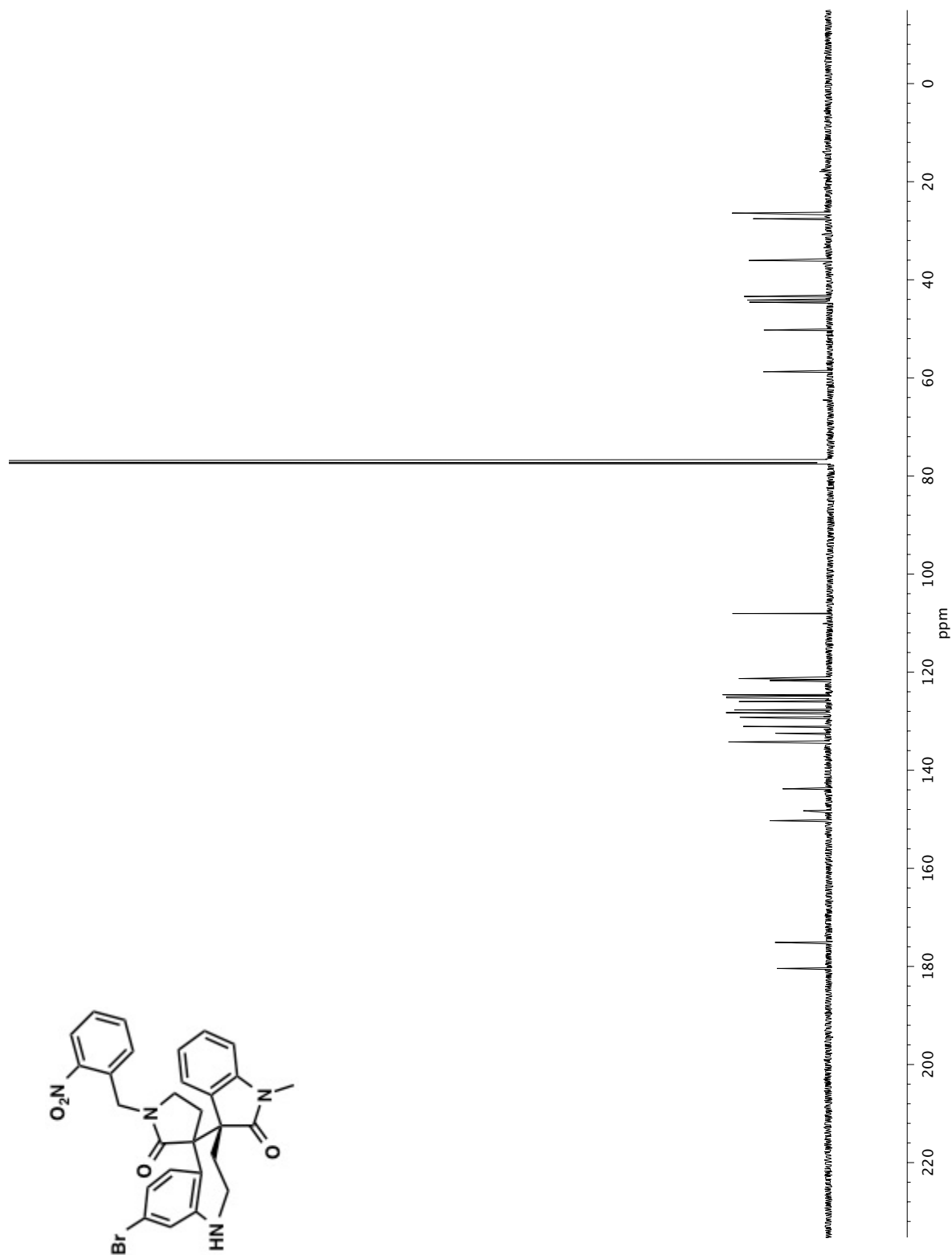
^1H NMR (500 MHz, CDCl_3) of compound **81**.



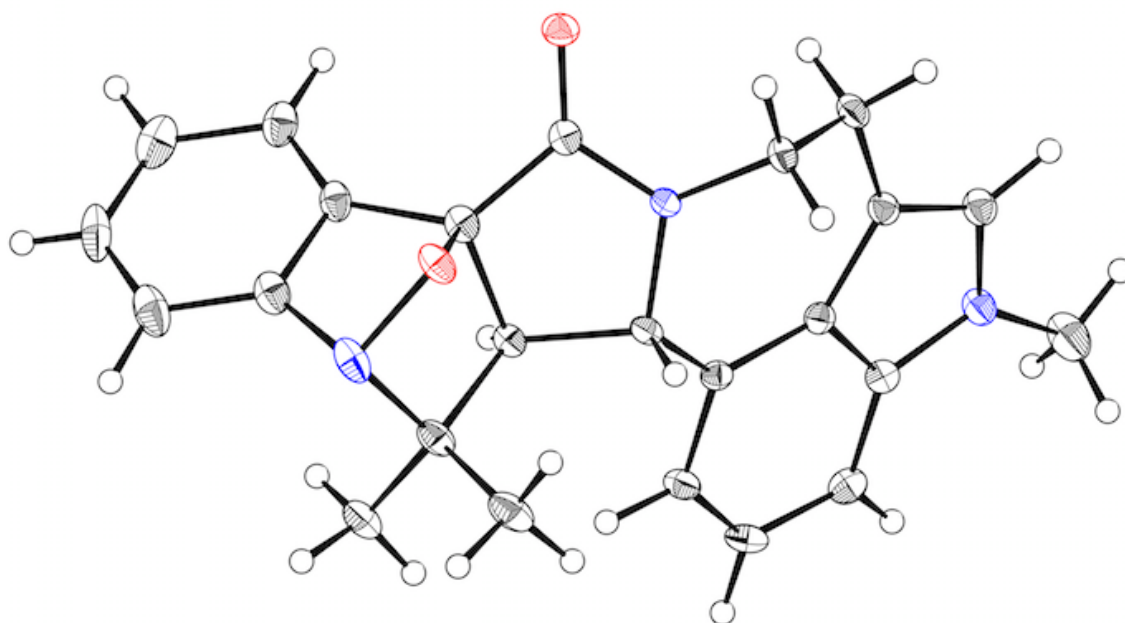
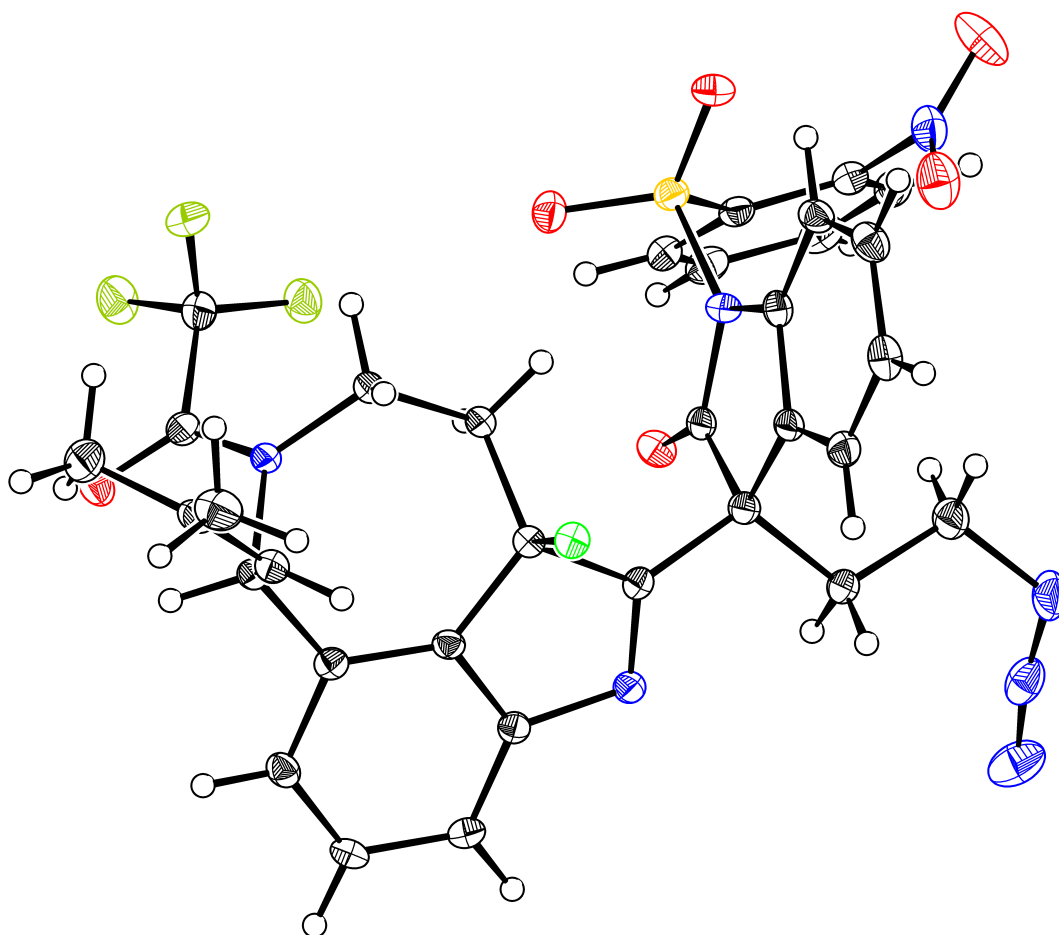
¹³C NMR (125 MHz, CDCl₃) of compound **81**.



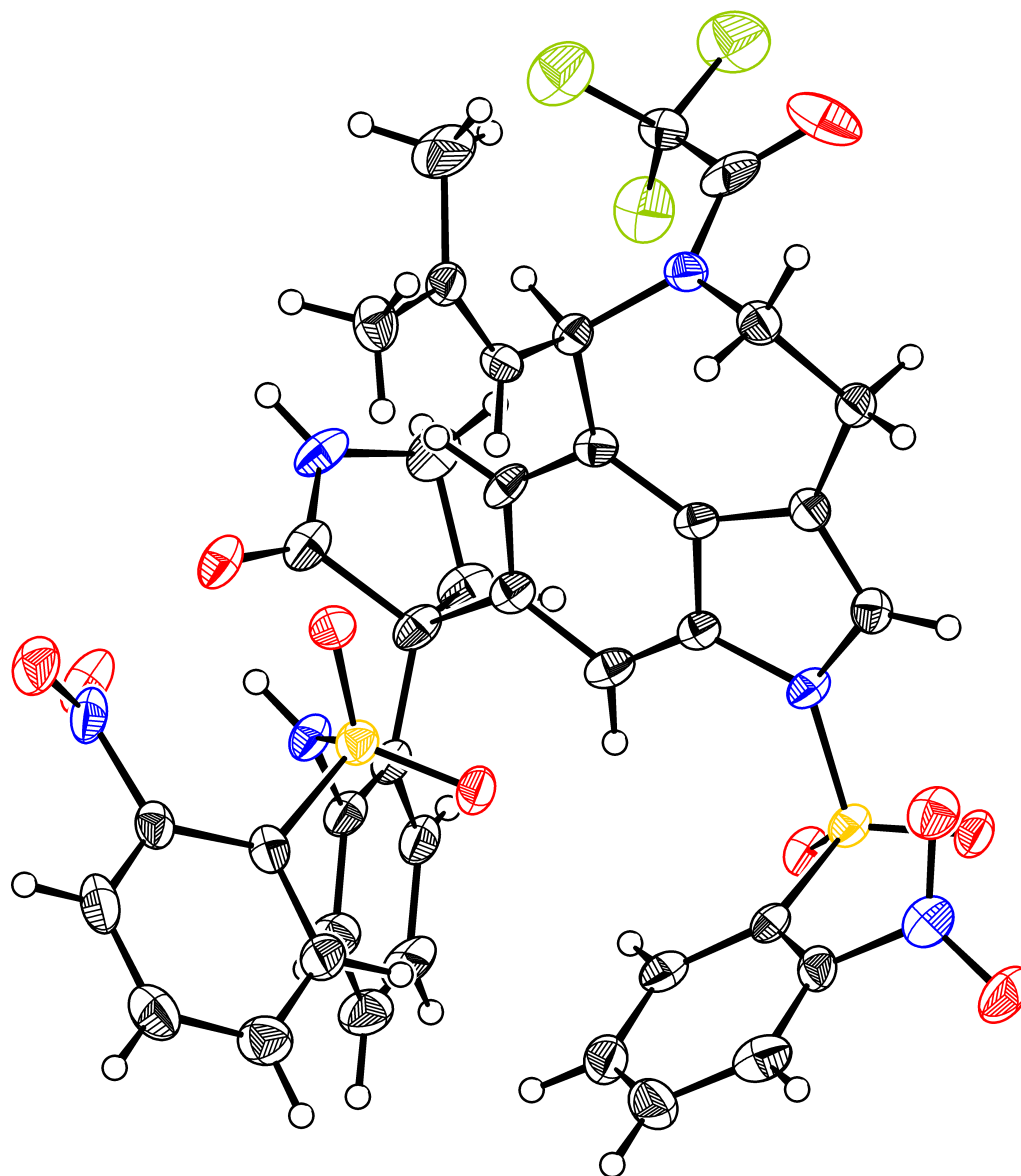
^1H NMR (600 MHz, CDCl_3) of compound 91.



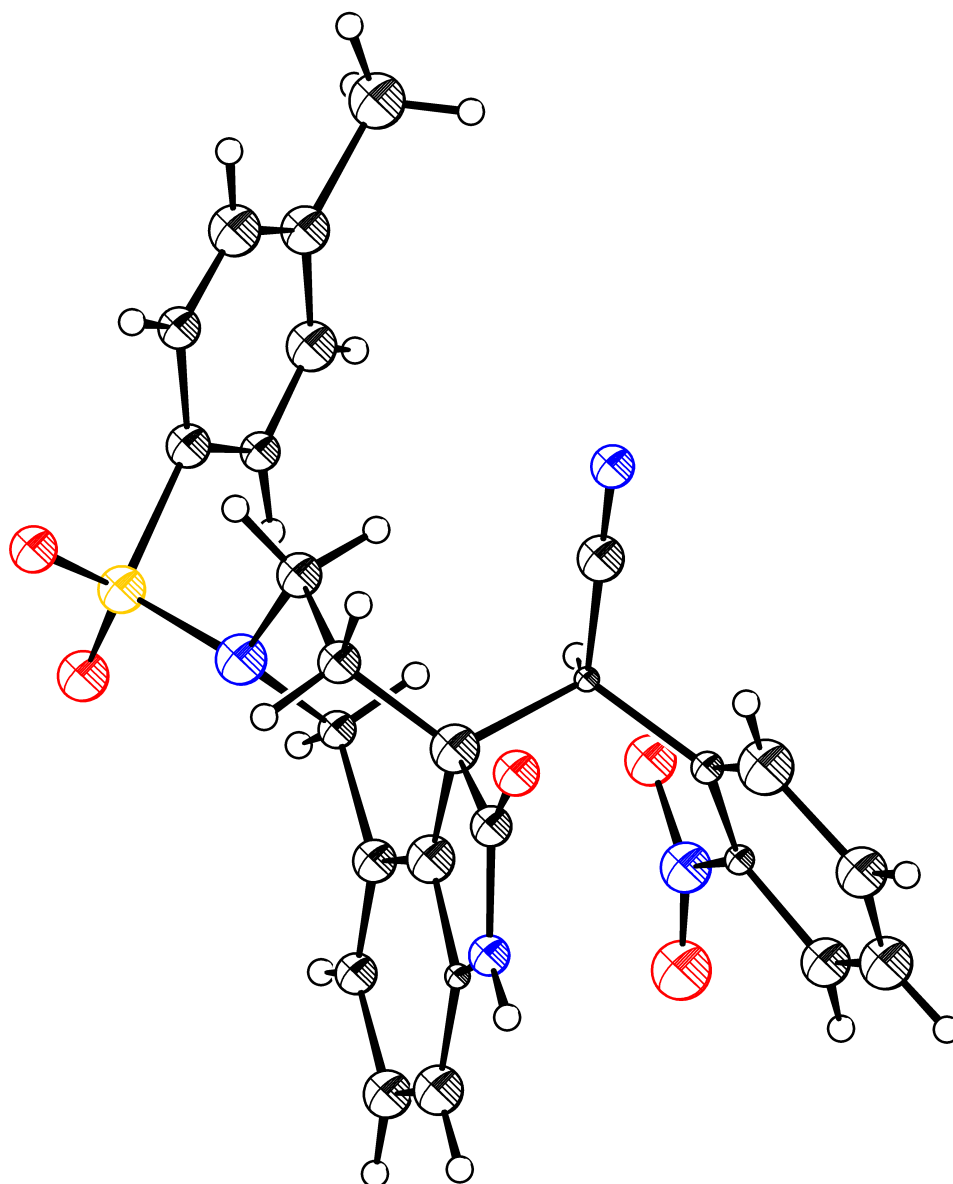
^{13}C NMR (125 MHz, CDCl_3) of compound **91**.

Crystal Structure for 24.**Crystal Structure for 29.**

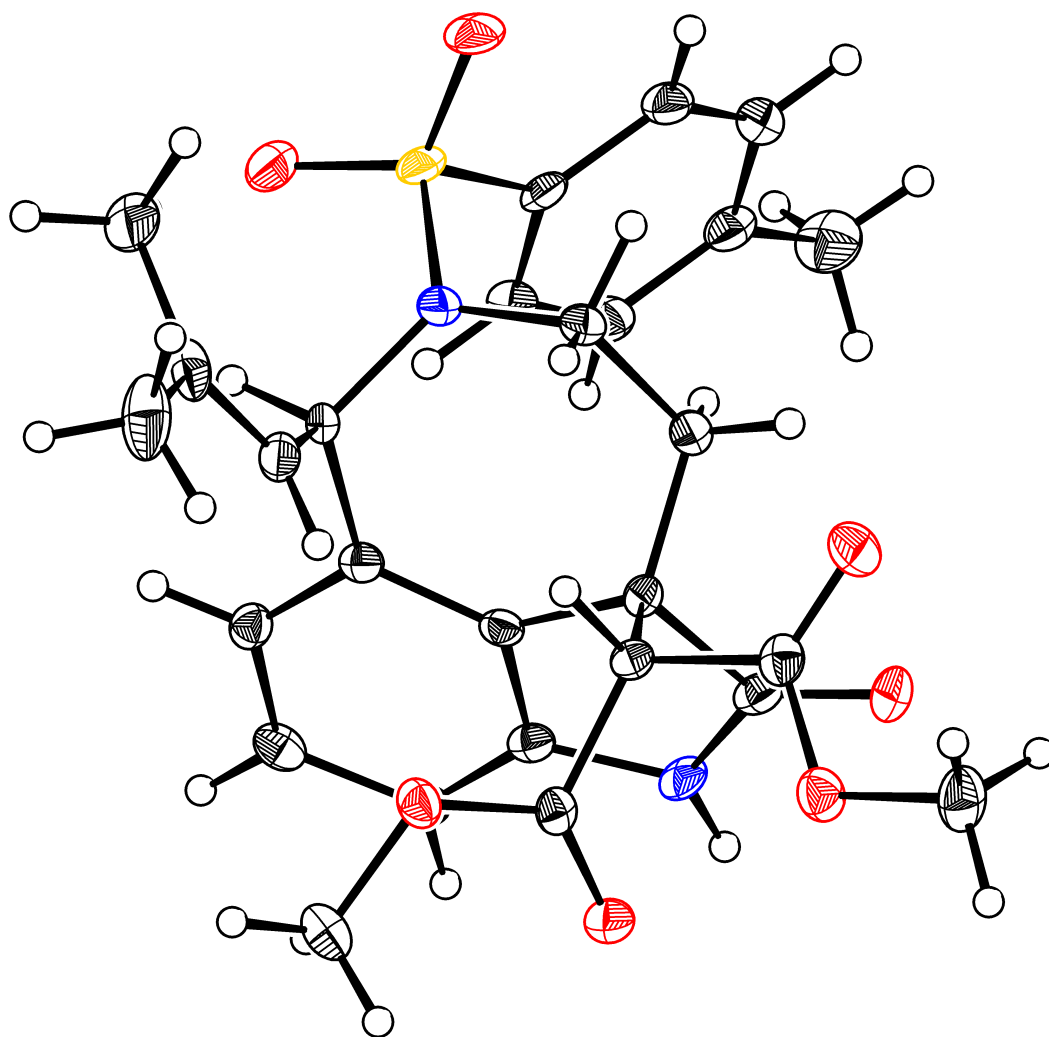
Crystal Structure for 32.

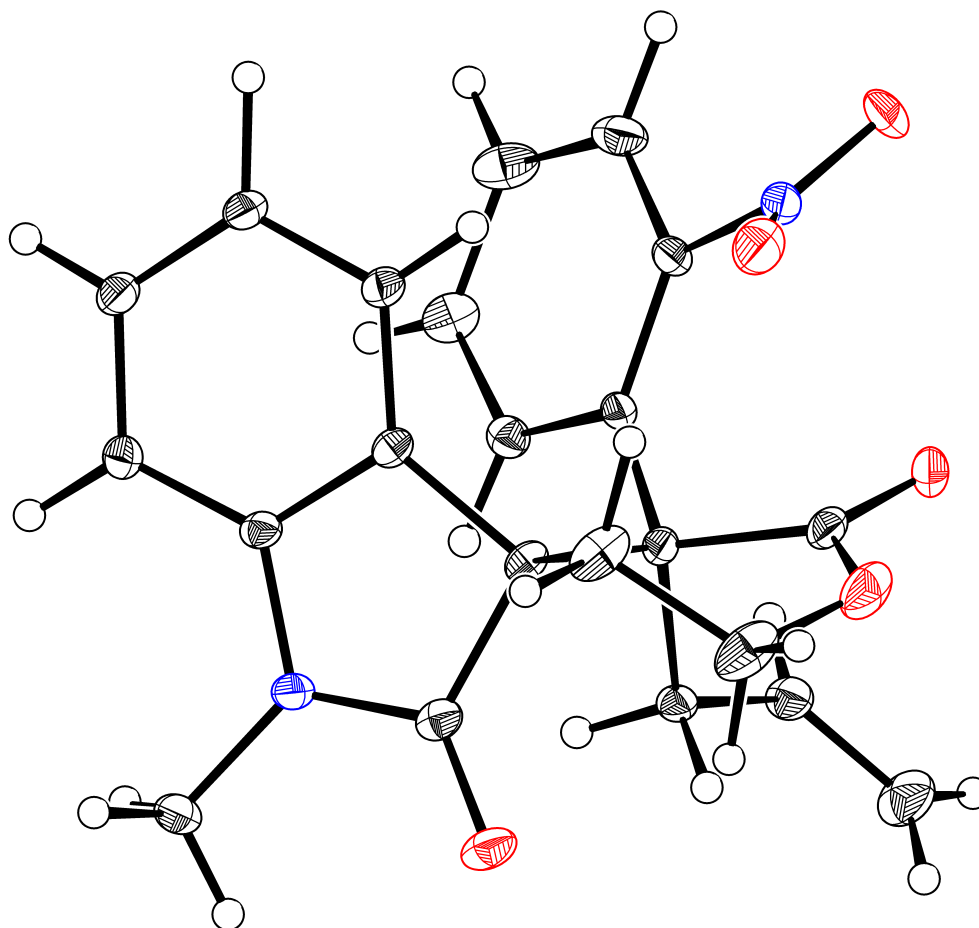


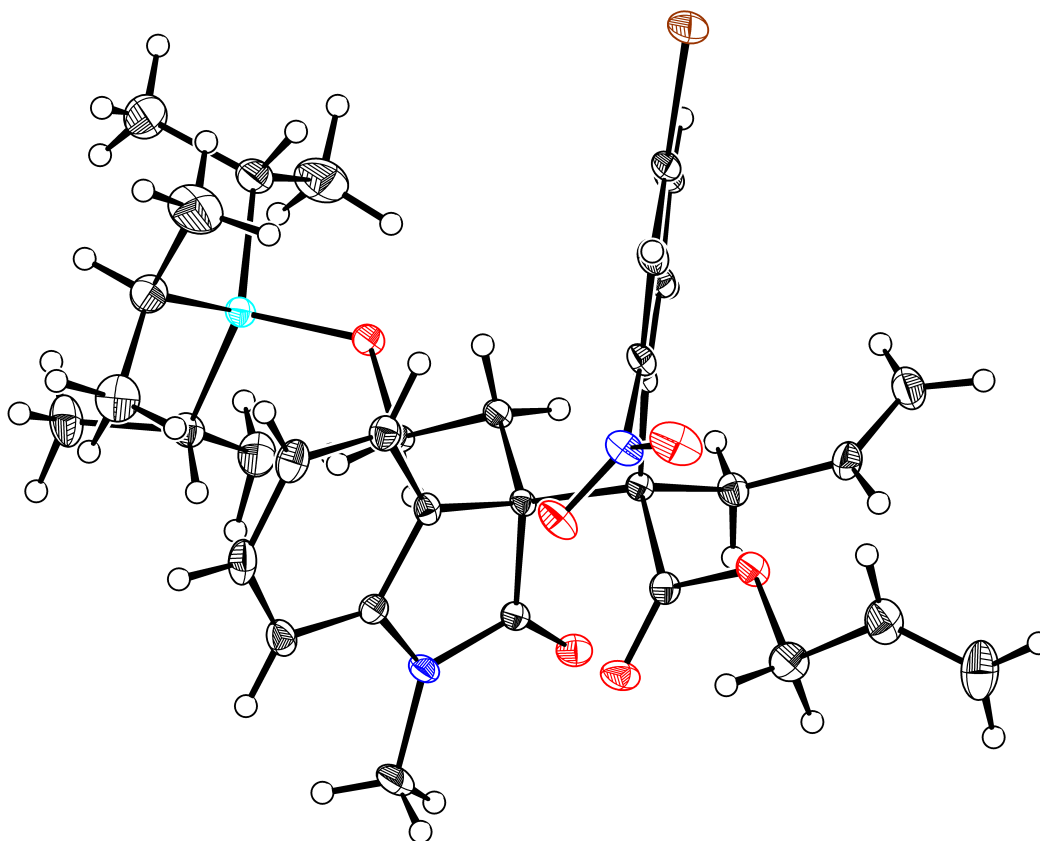
Crystal Structure for 37.



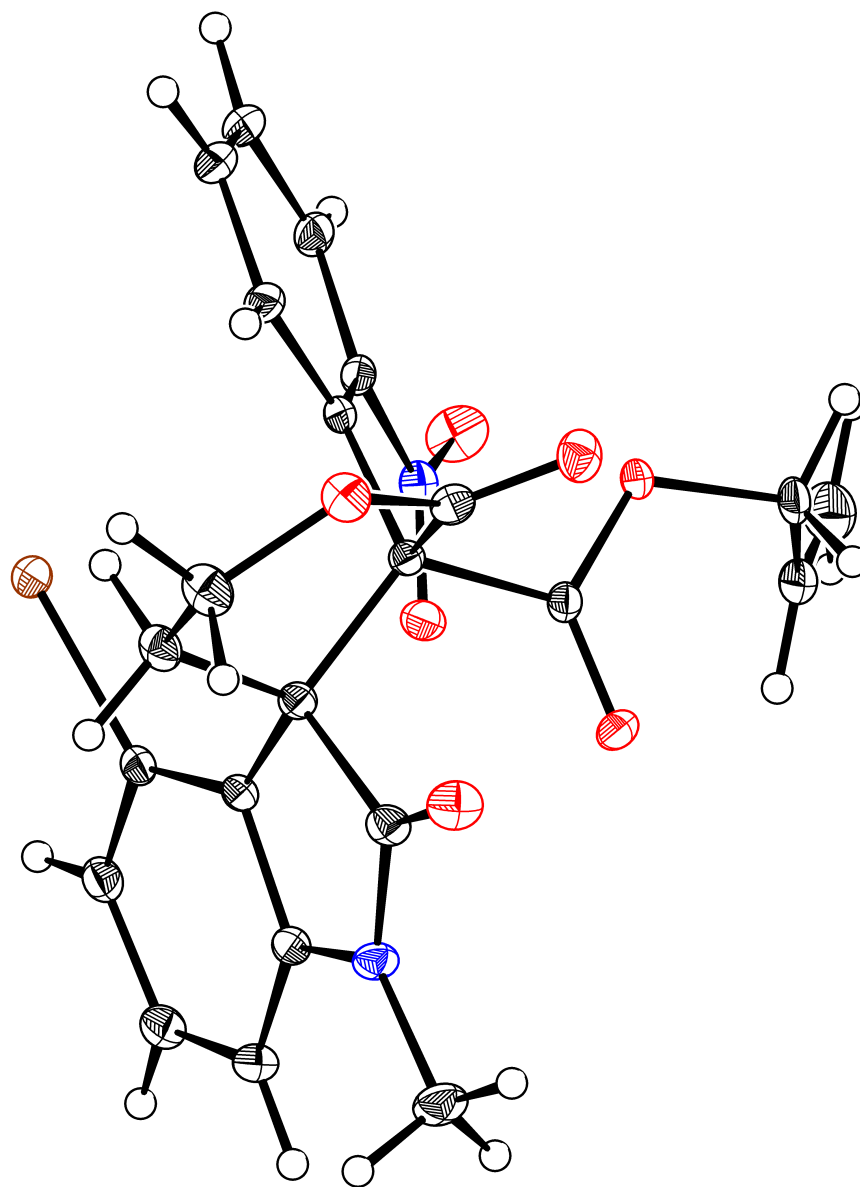
Crystal Structure for 42.



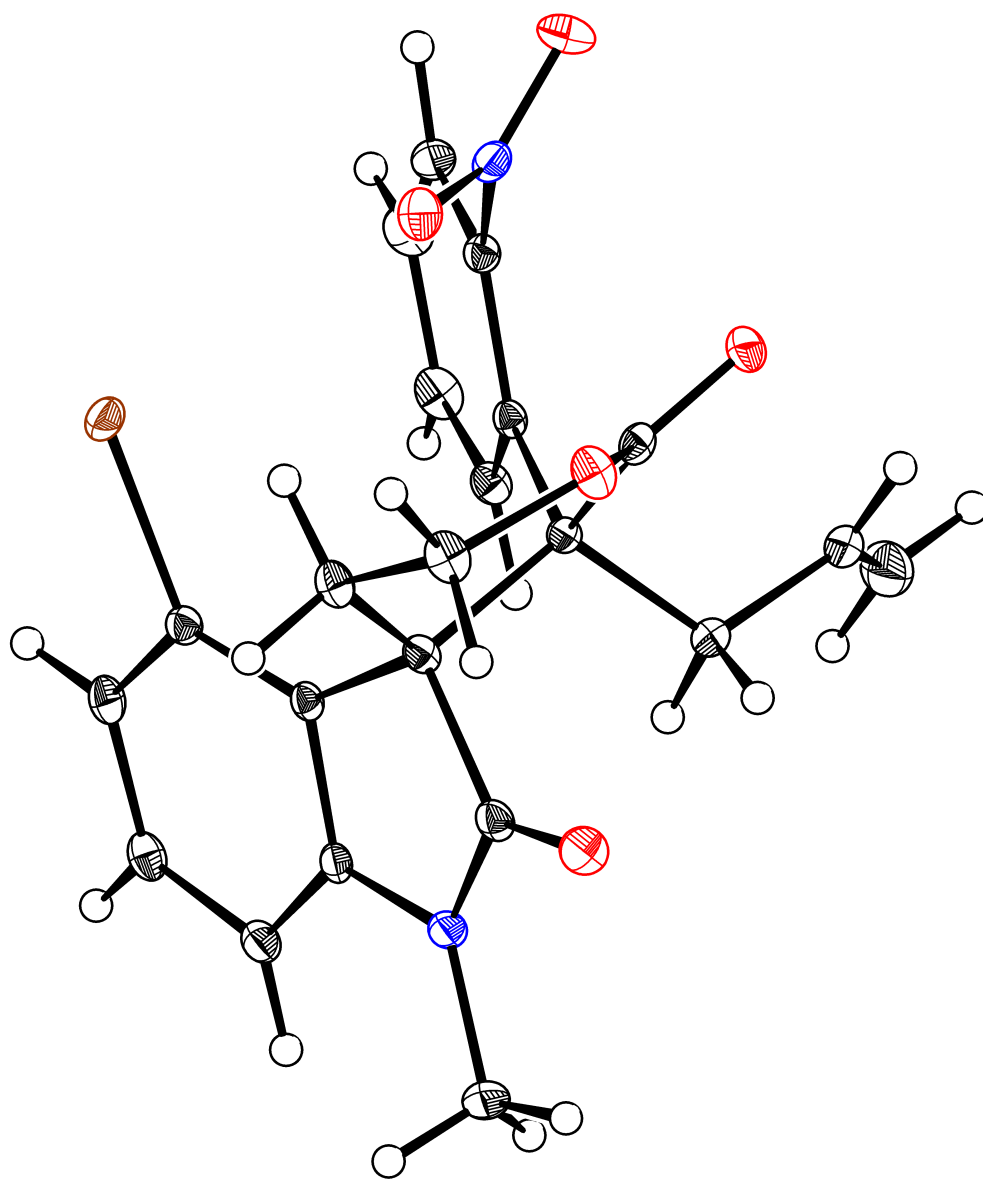
Crystal Structure for 51.

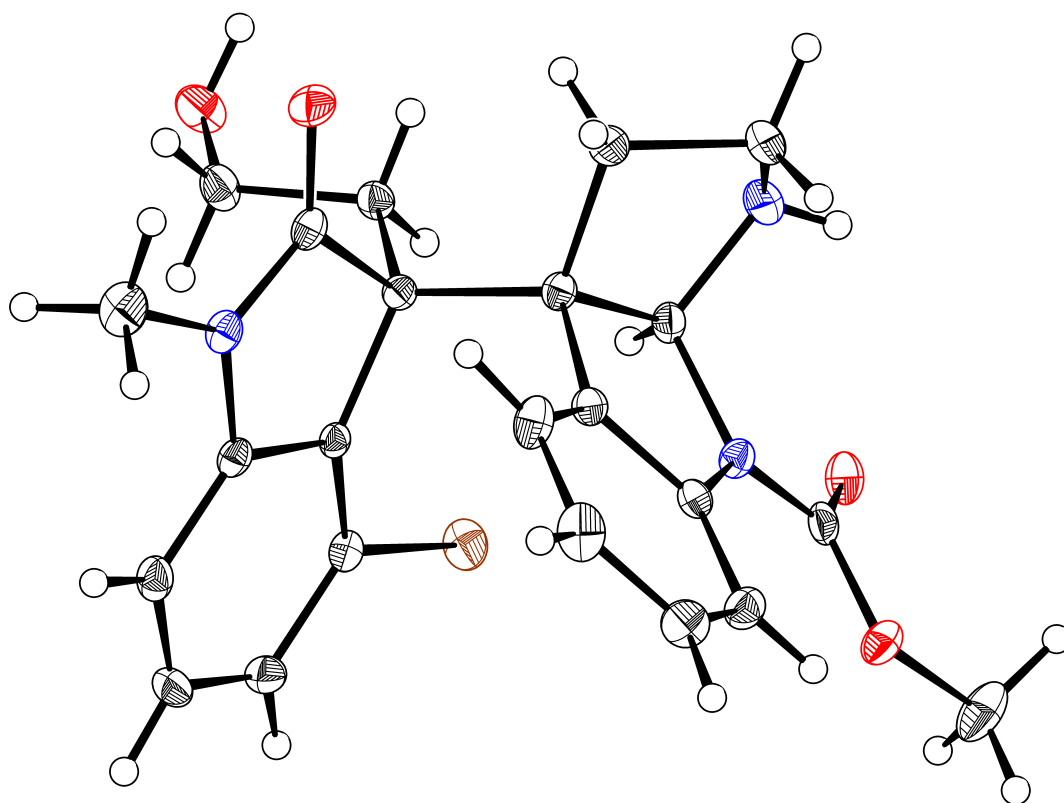
Crystal Structure for 52.

Crystal Structure for 61.

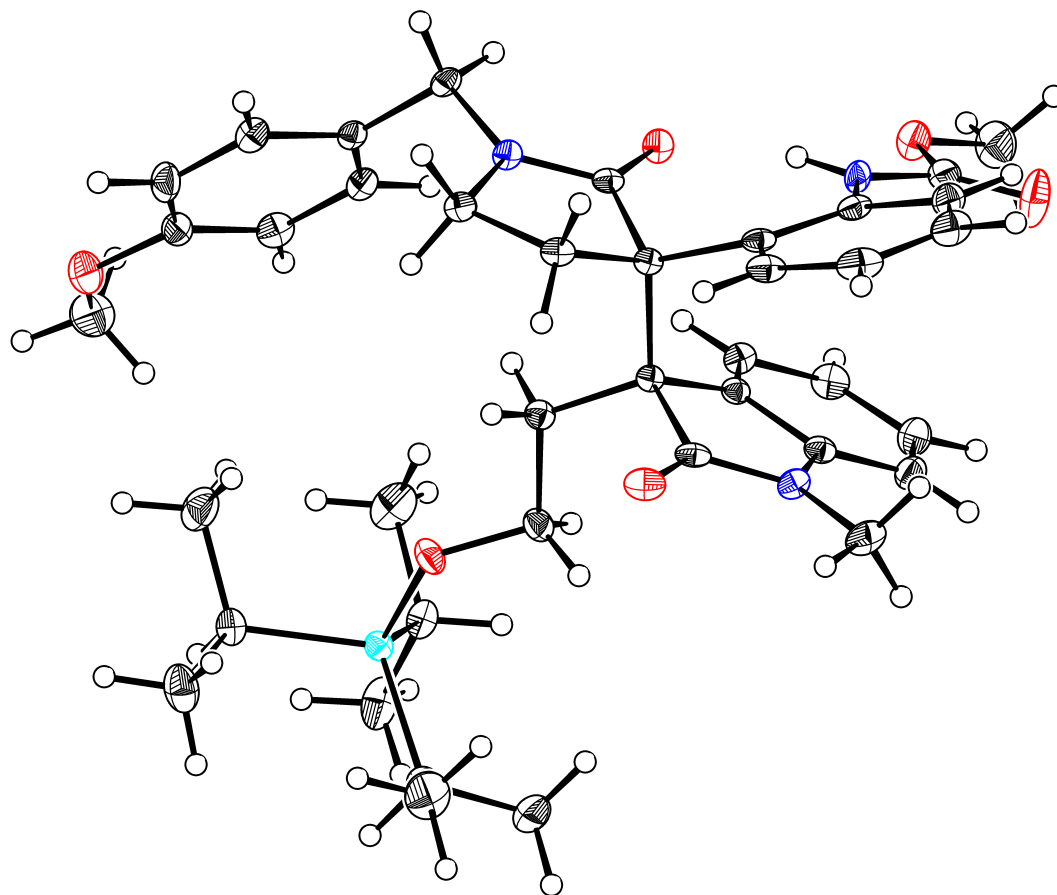


Crystal Structure for 62.

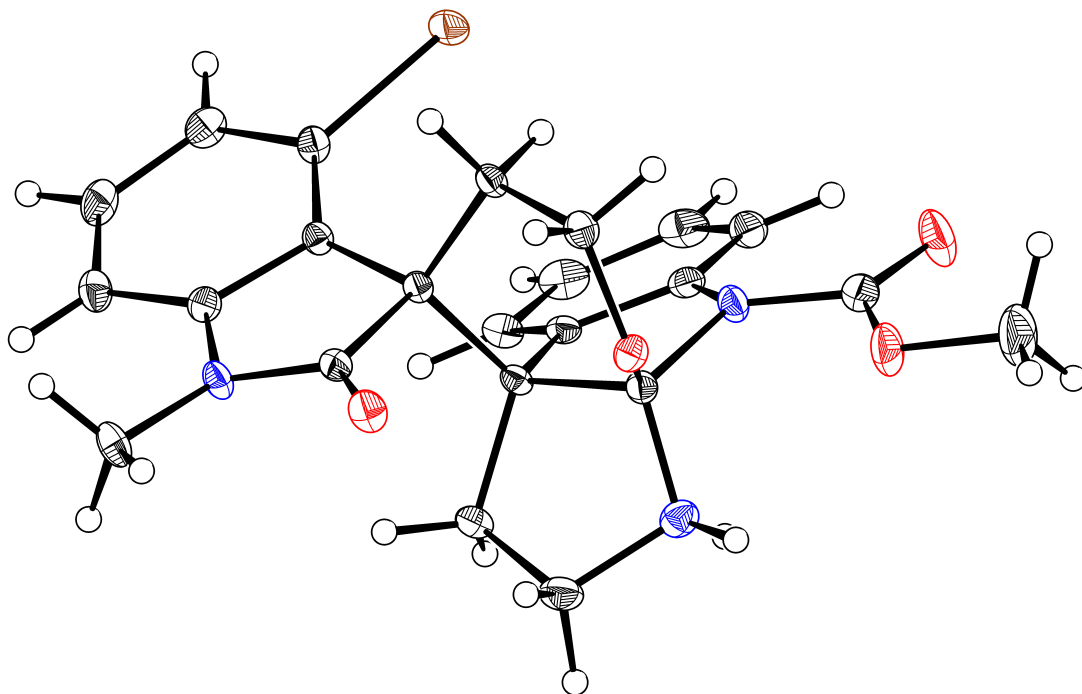


Crystal Structure for 72.

Crystal Structure for 73.



Crystal Structure for 77.



Crystal Structure for 94.

