

## **APPENDIX 10**

*Spectra Related to Appendix 9:*

*Studies Toward the Enantioselective Total Synthesis of (+)-Lingzhiol*

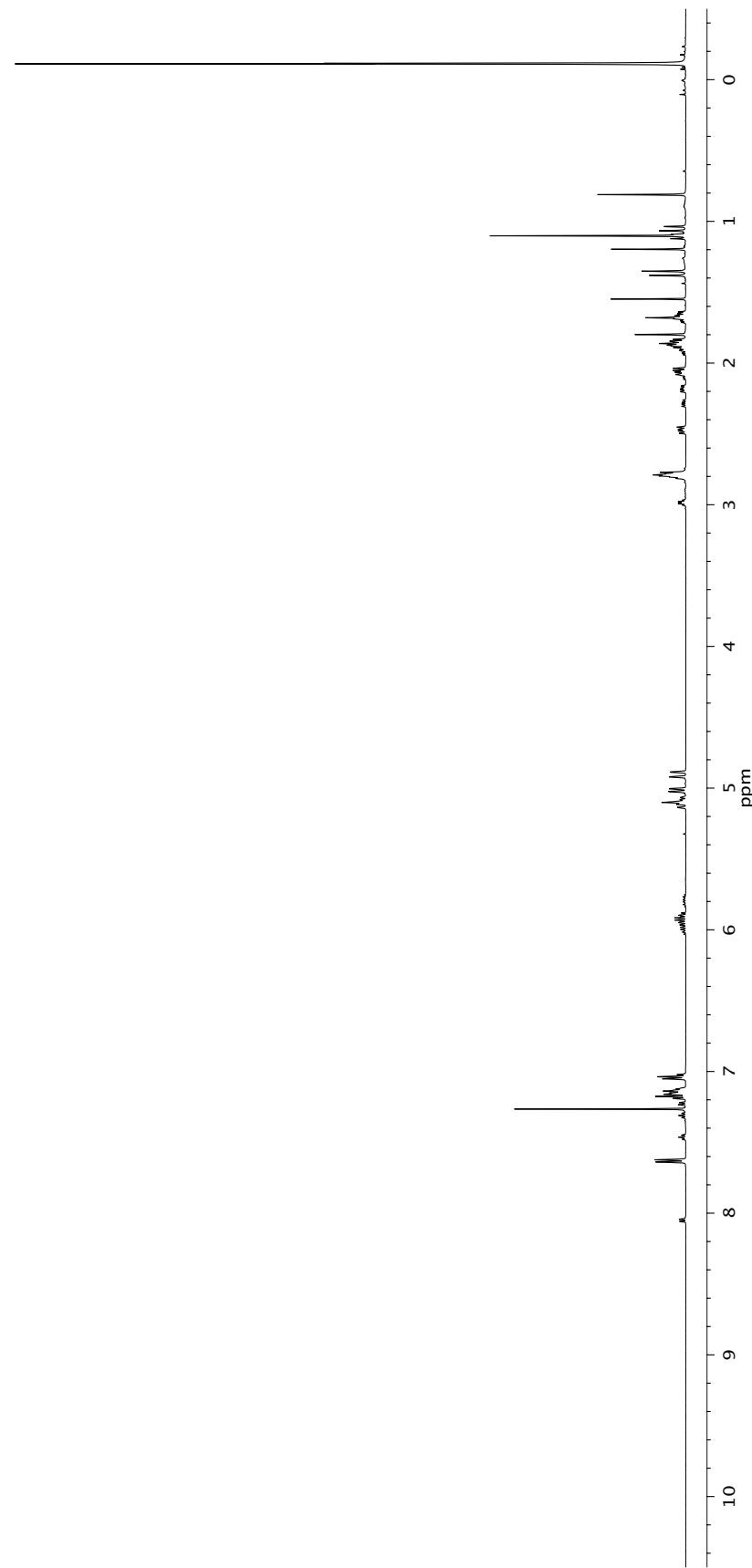
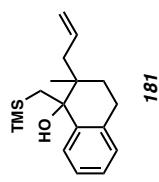


Figure A10.1 <sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) of compound 181.

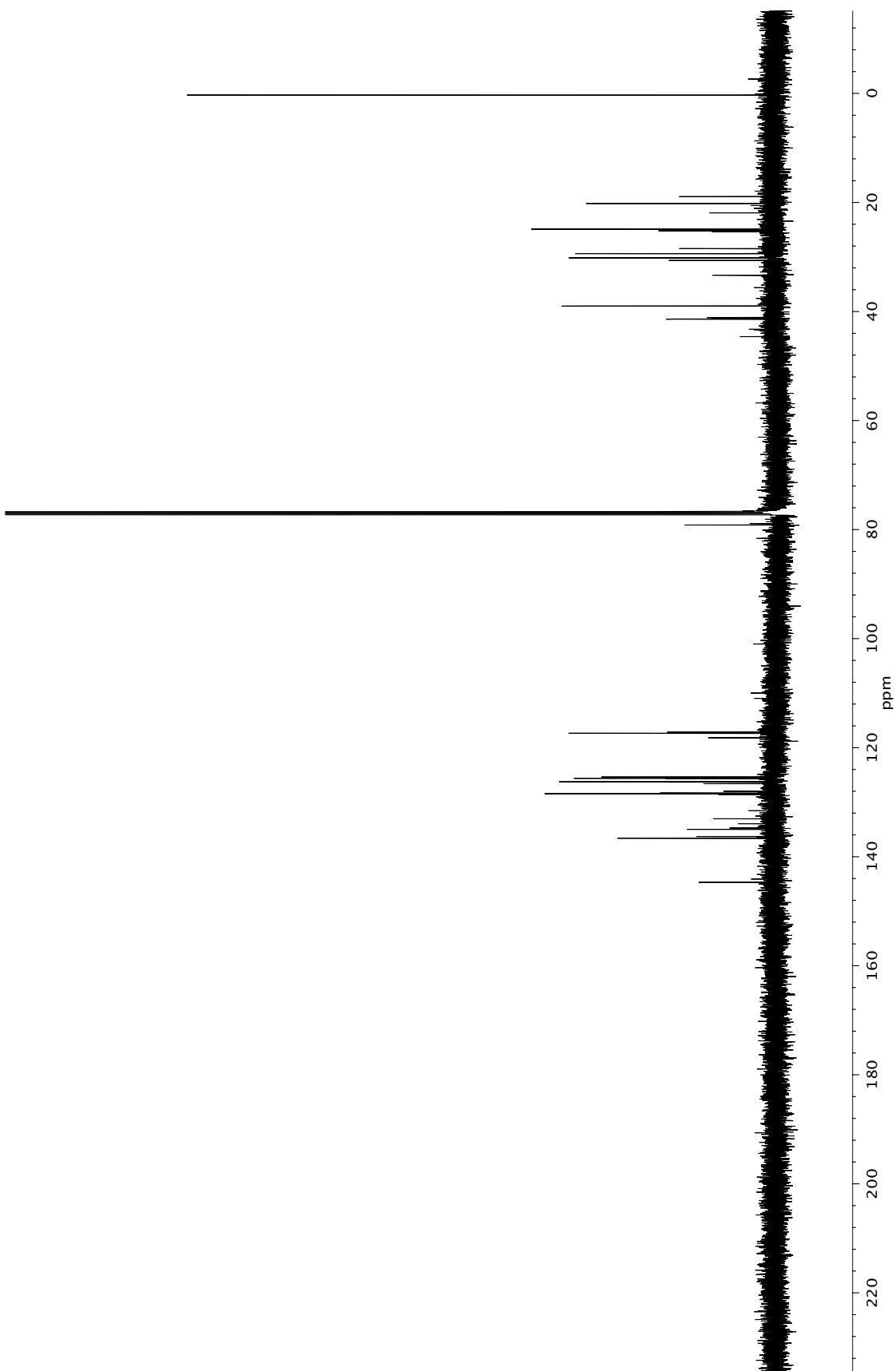


Figure A10.2  $^{13}\text{C}$  NMR (500 MHz, CDCl<sub>3</sub>) of compound 181.

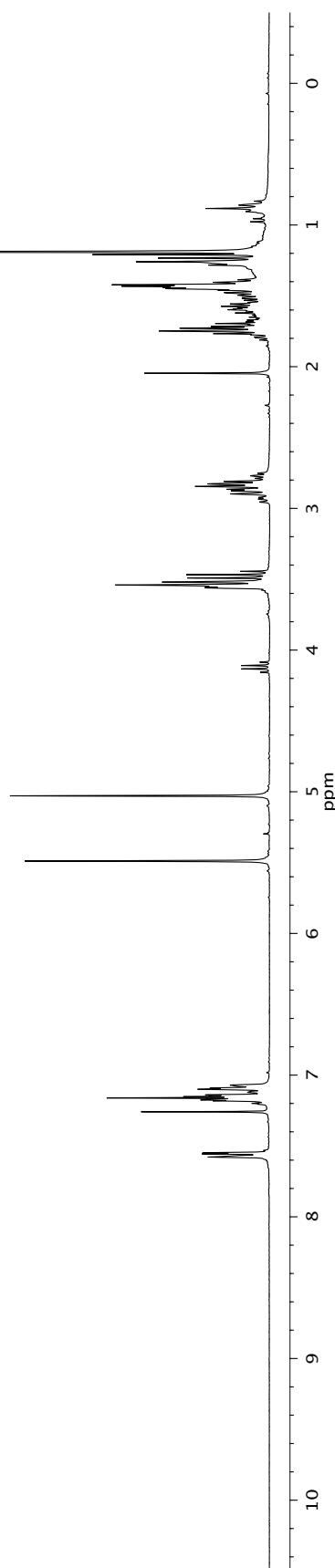
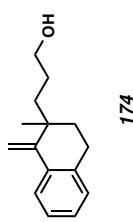


Figure A10.3  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 174.

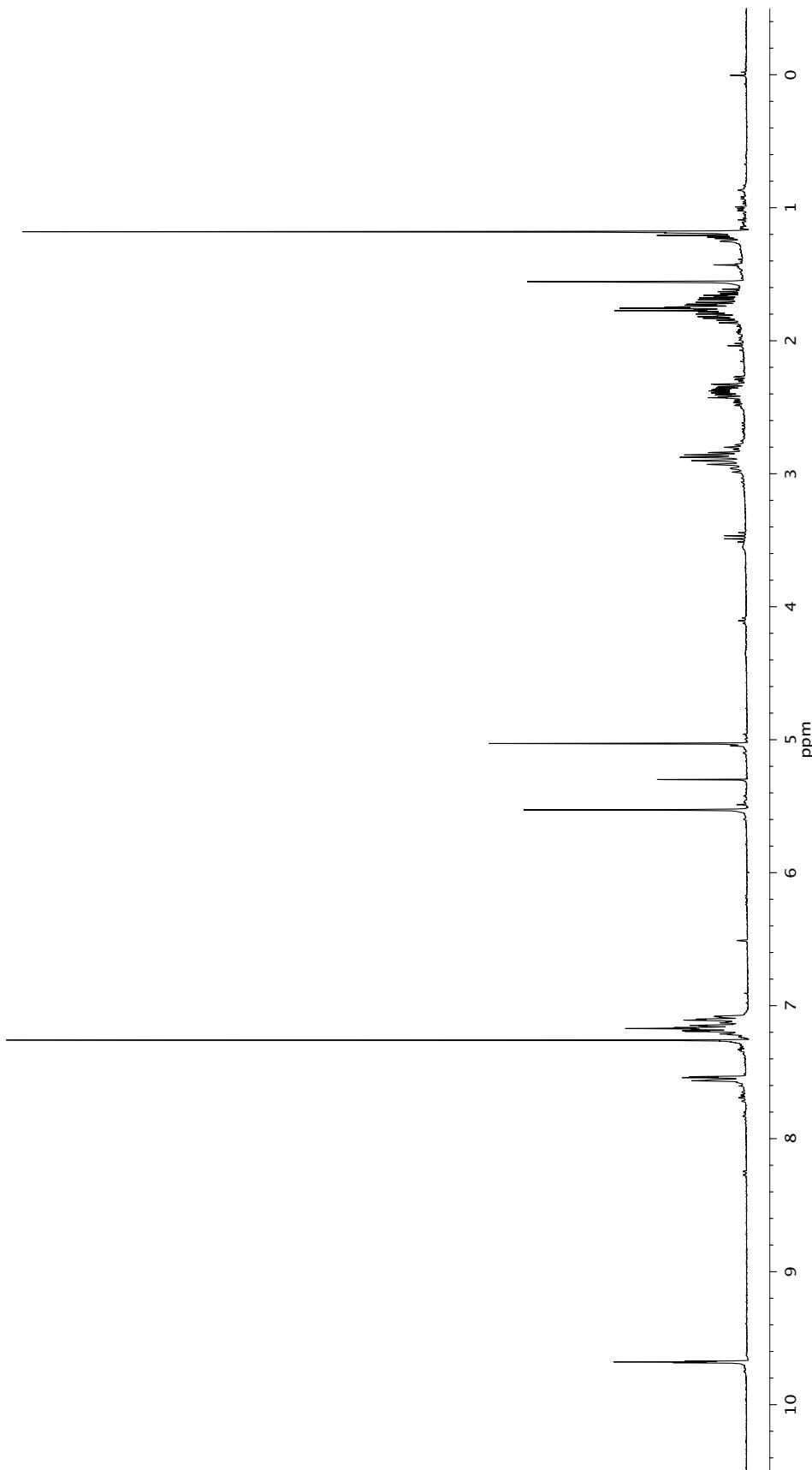
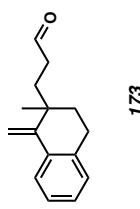


Figure A10.4  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of compound 173.

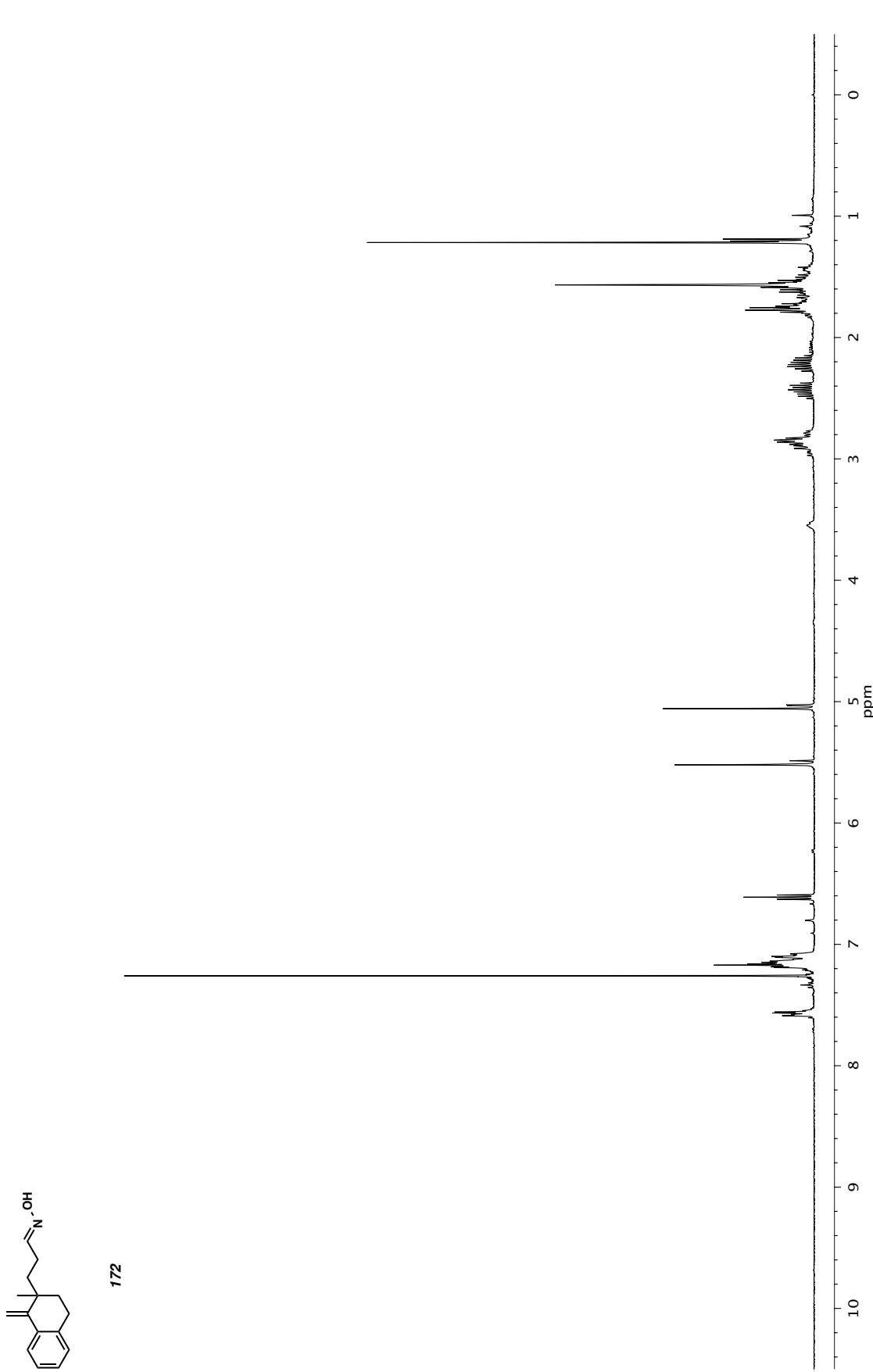


Figure A10.5  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of compound 172.

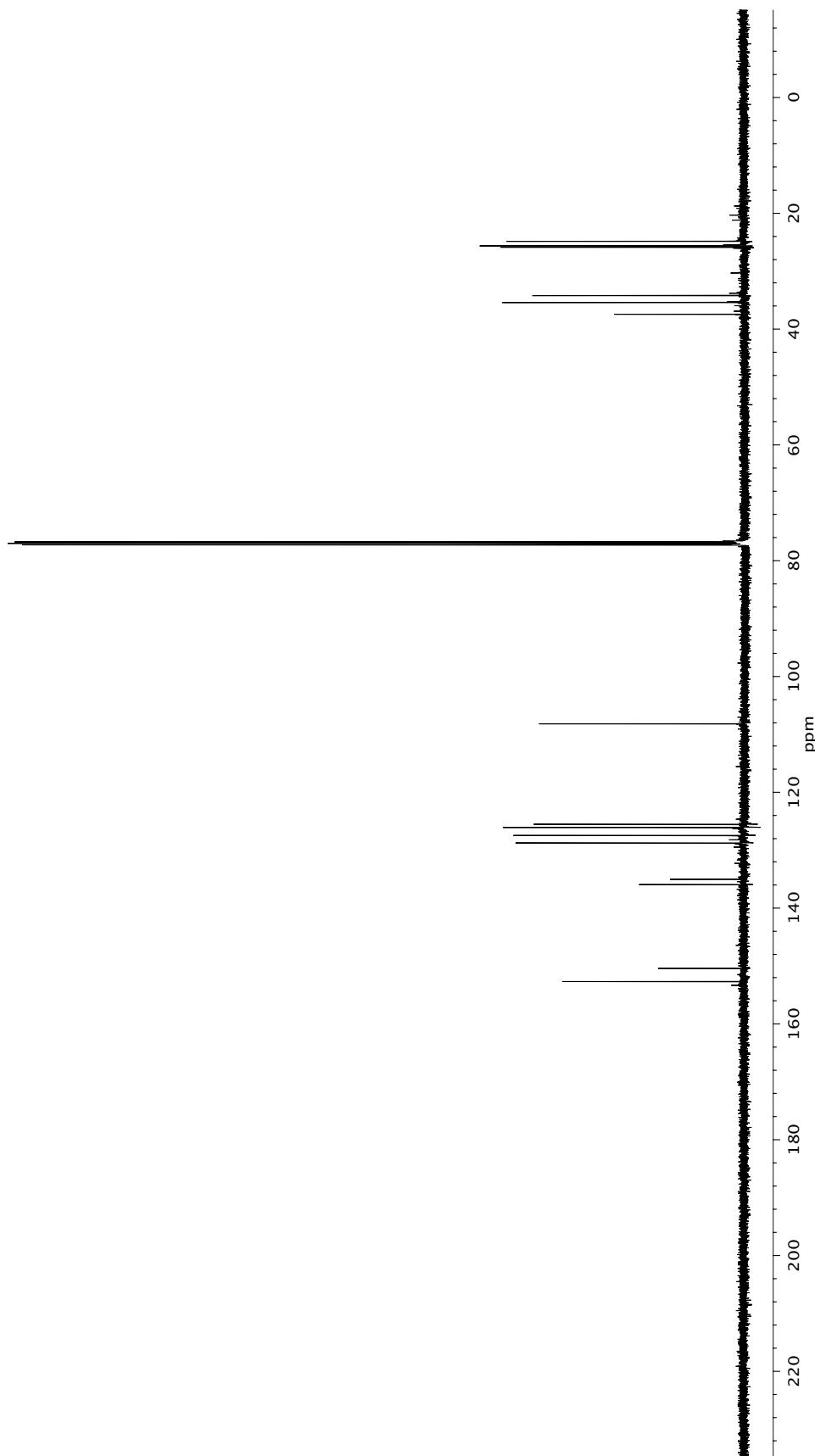


Figure A10.6  $^{13}\text{C}$  NMR (500 MHz, CDCl<sub>3</sub>) of compound 172.

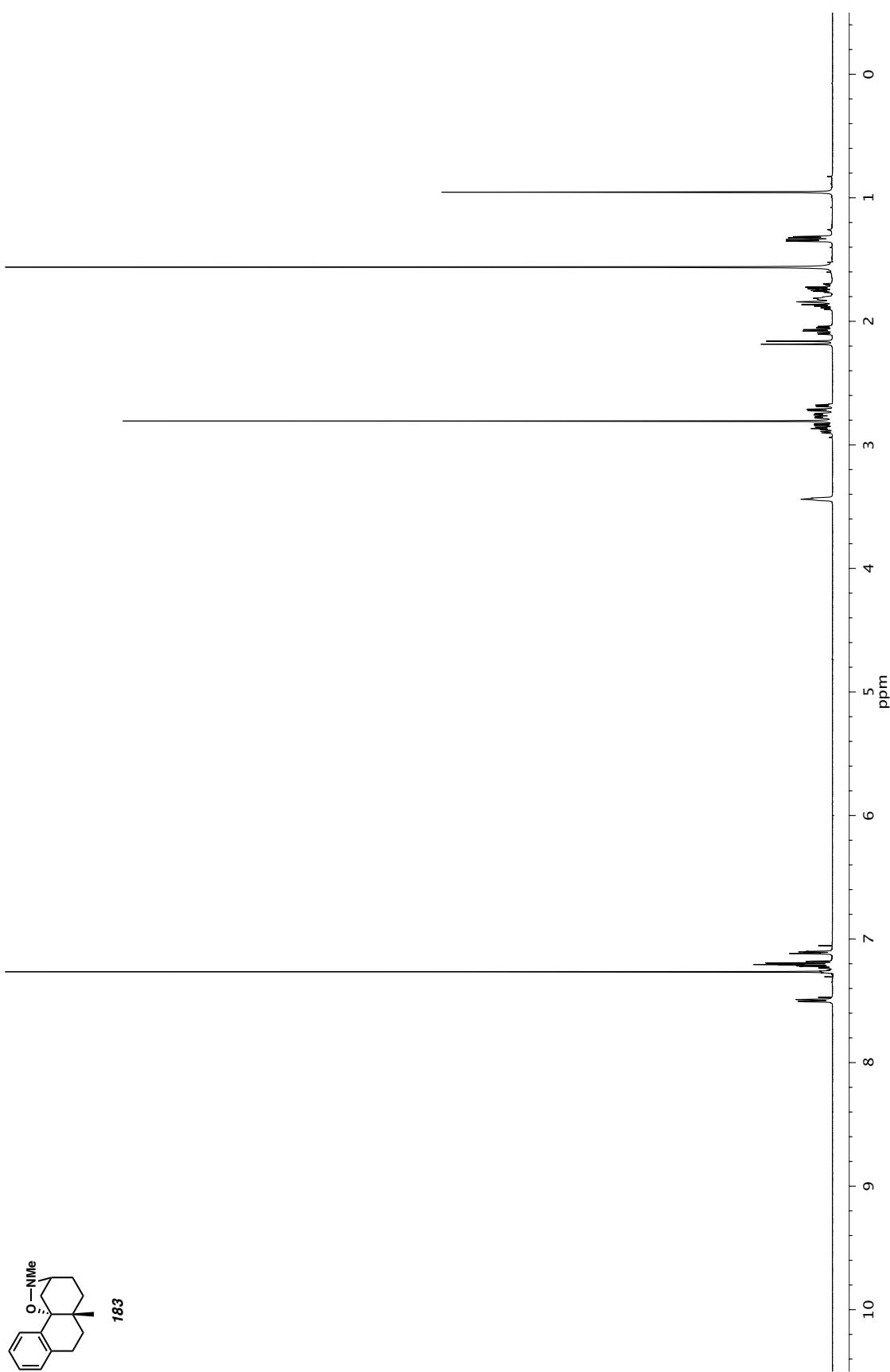


Figure A10.7  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 183.

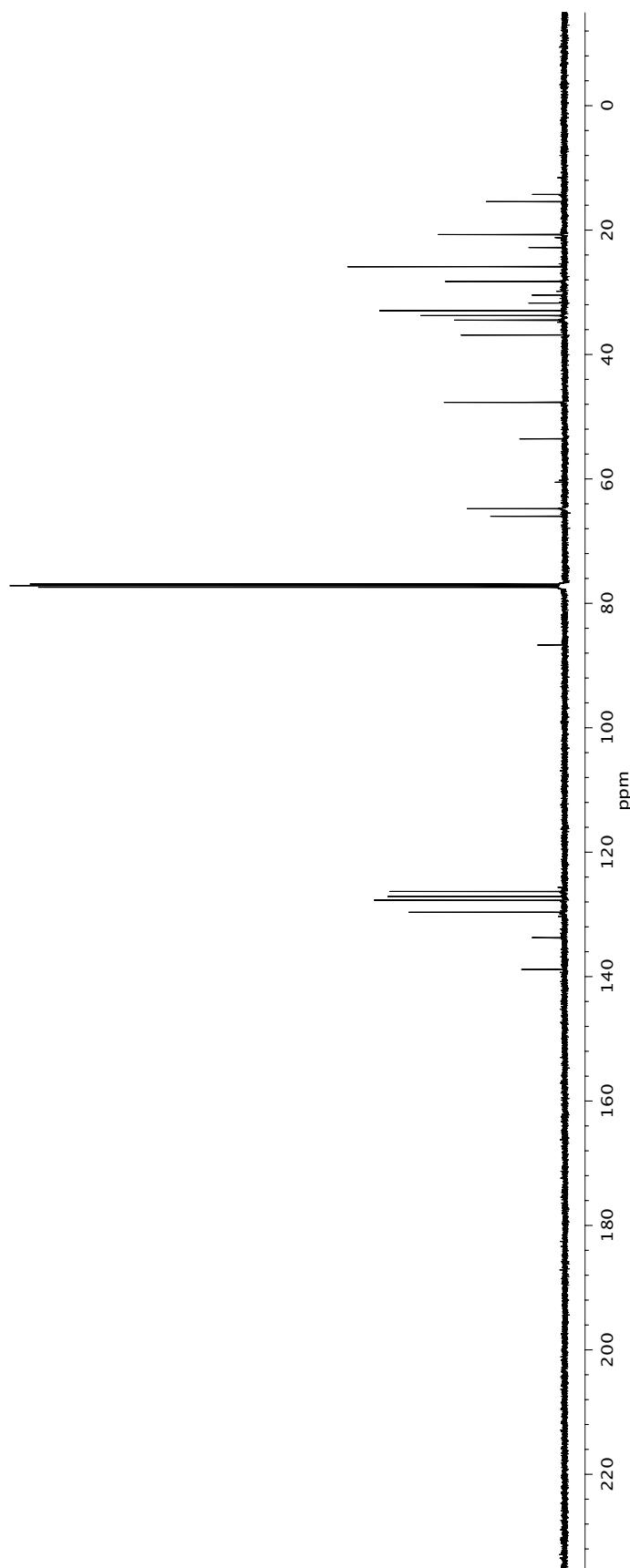


Figure A10.8  $^{13}\text{C}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 183.

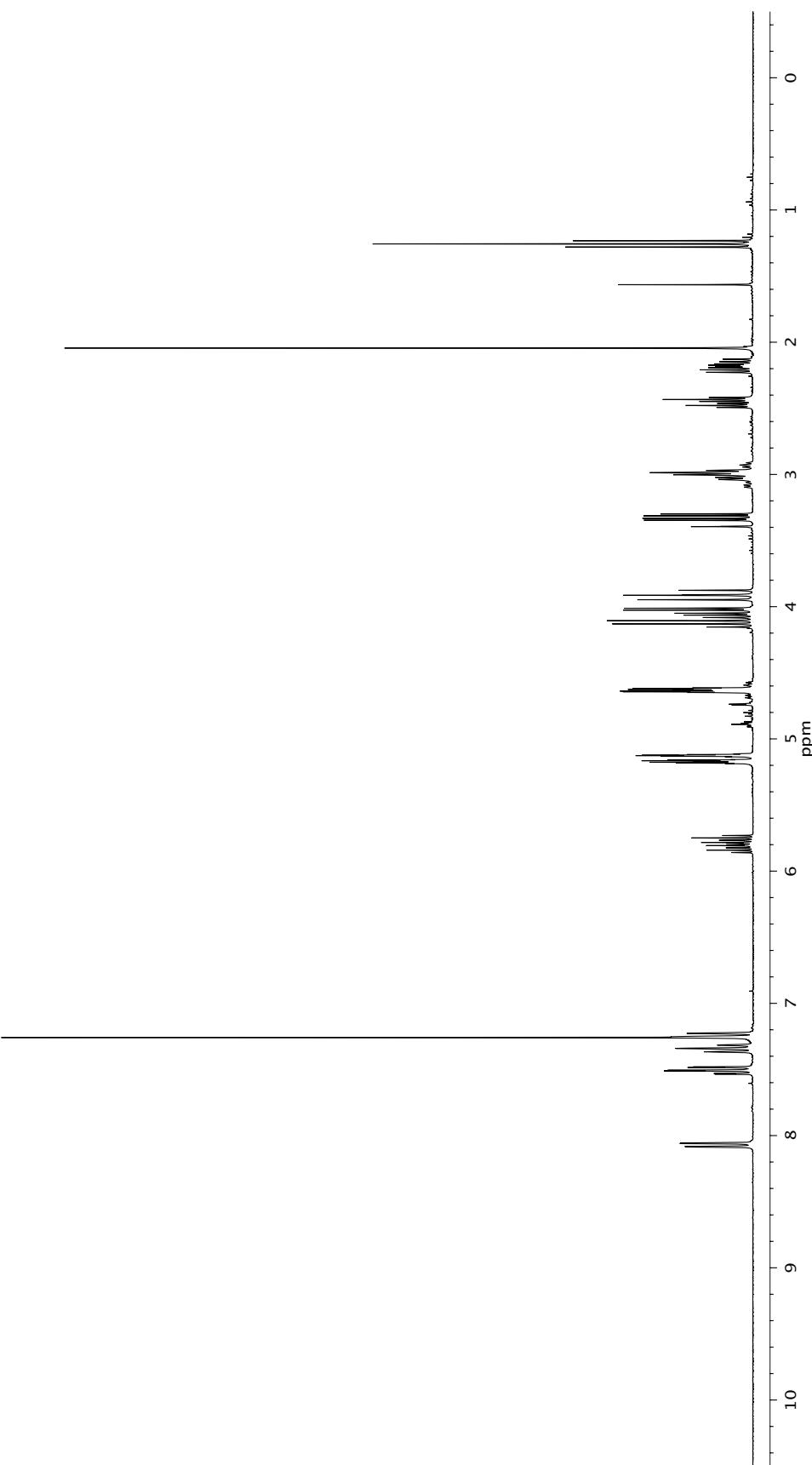
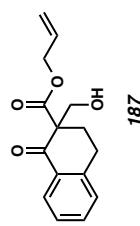


Figure A10.8  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of compound 187.

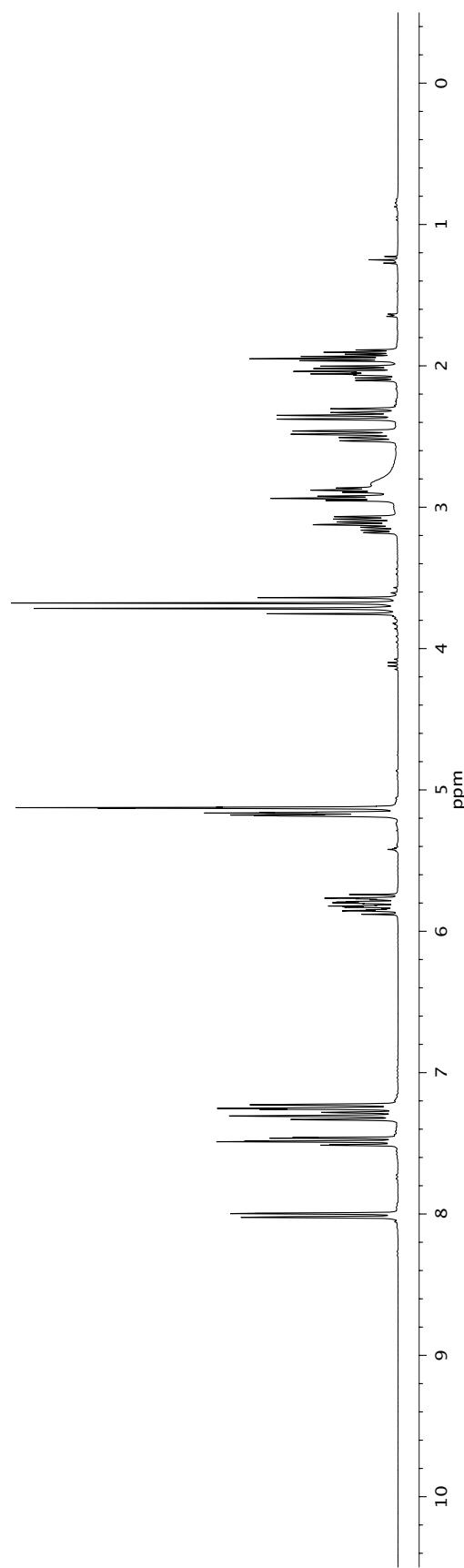
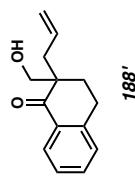


Figure A10.9  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of compound 188'.

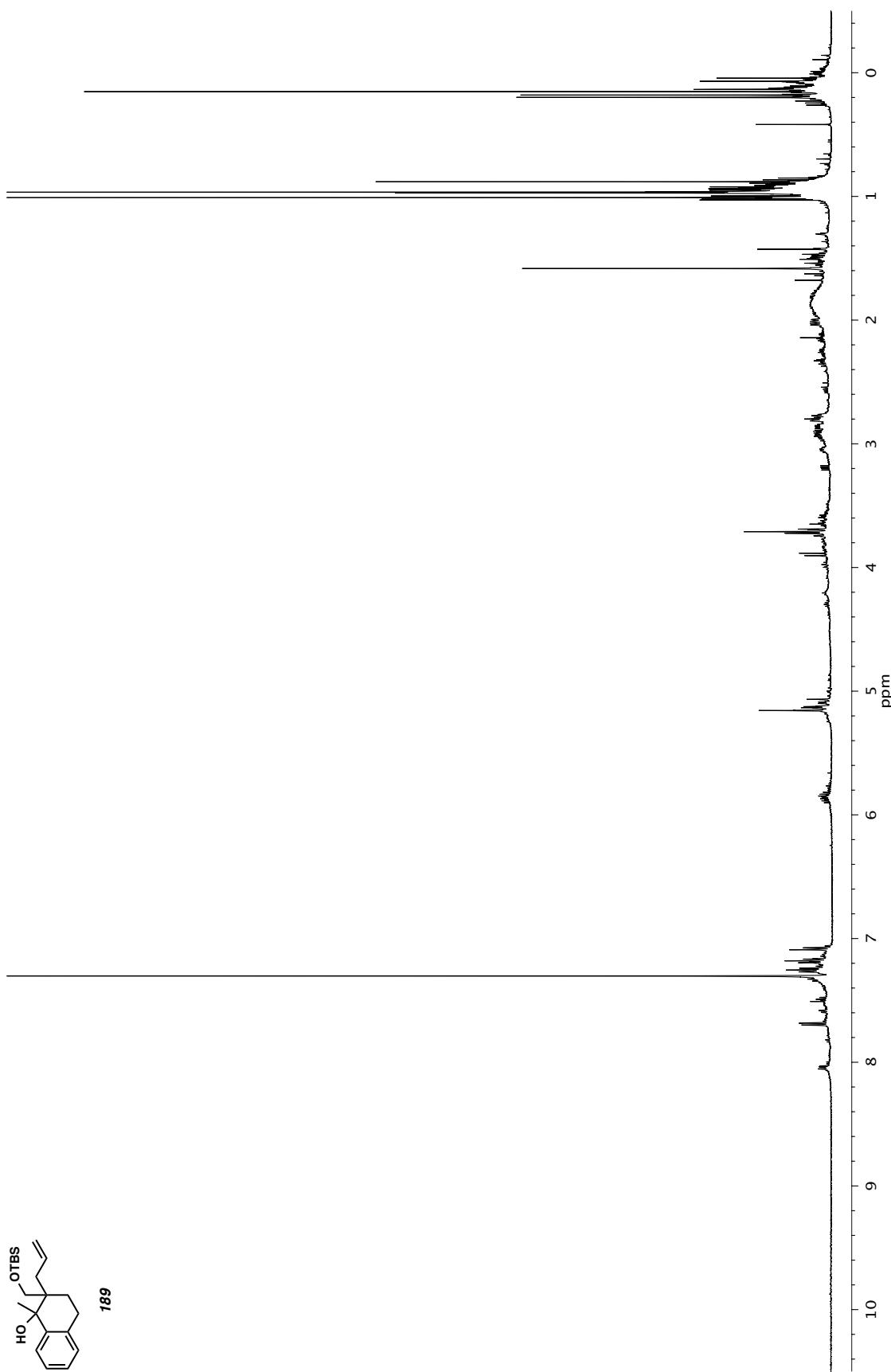


Figure A10.10  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 189.

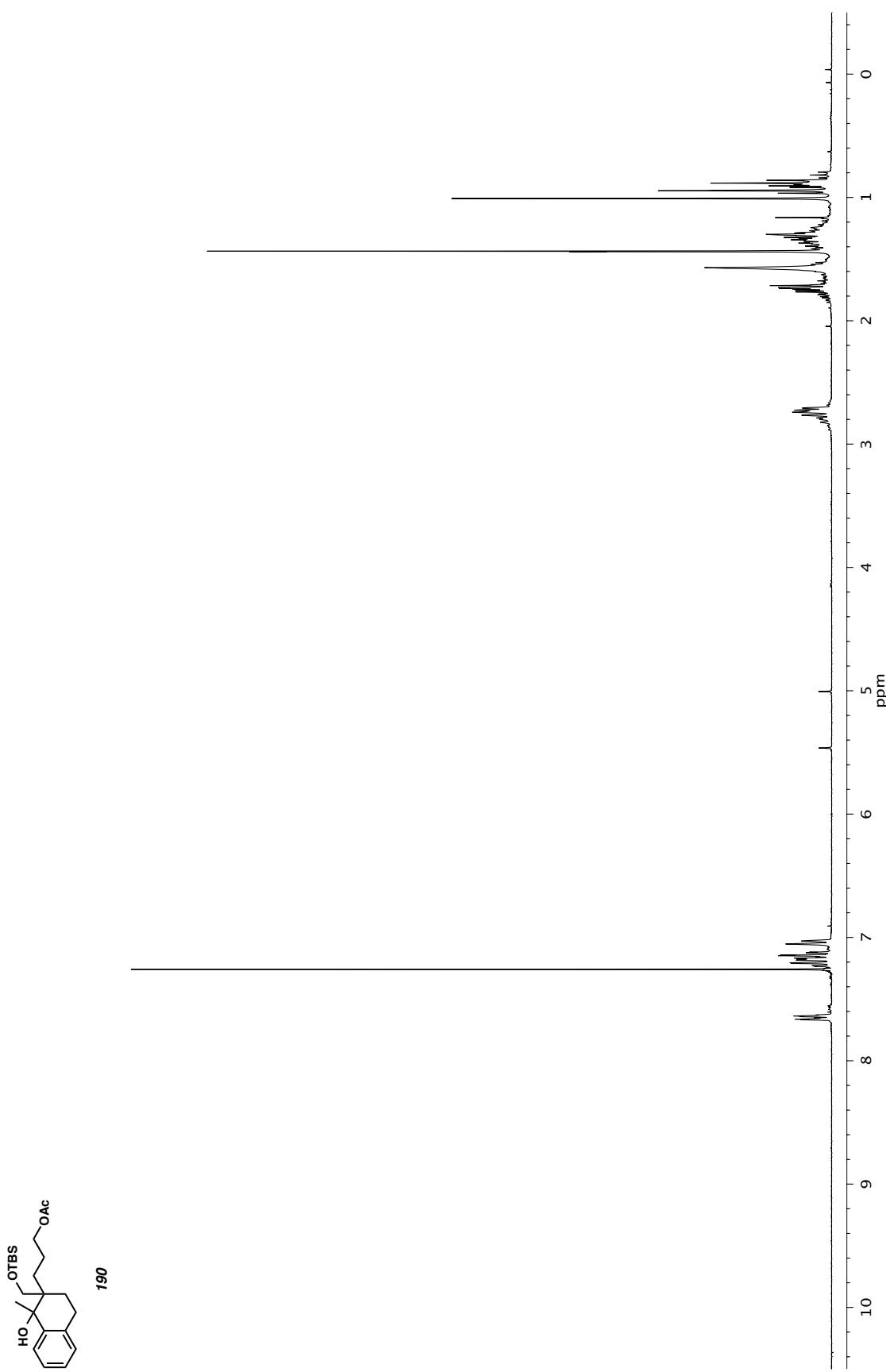


Figure A10.11  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 190.

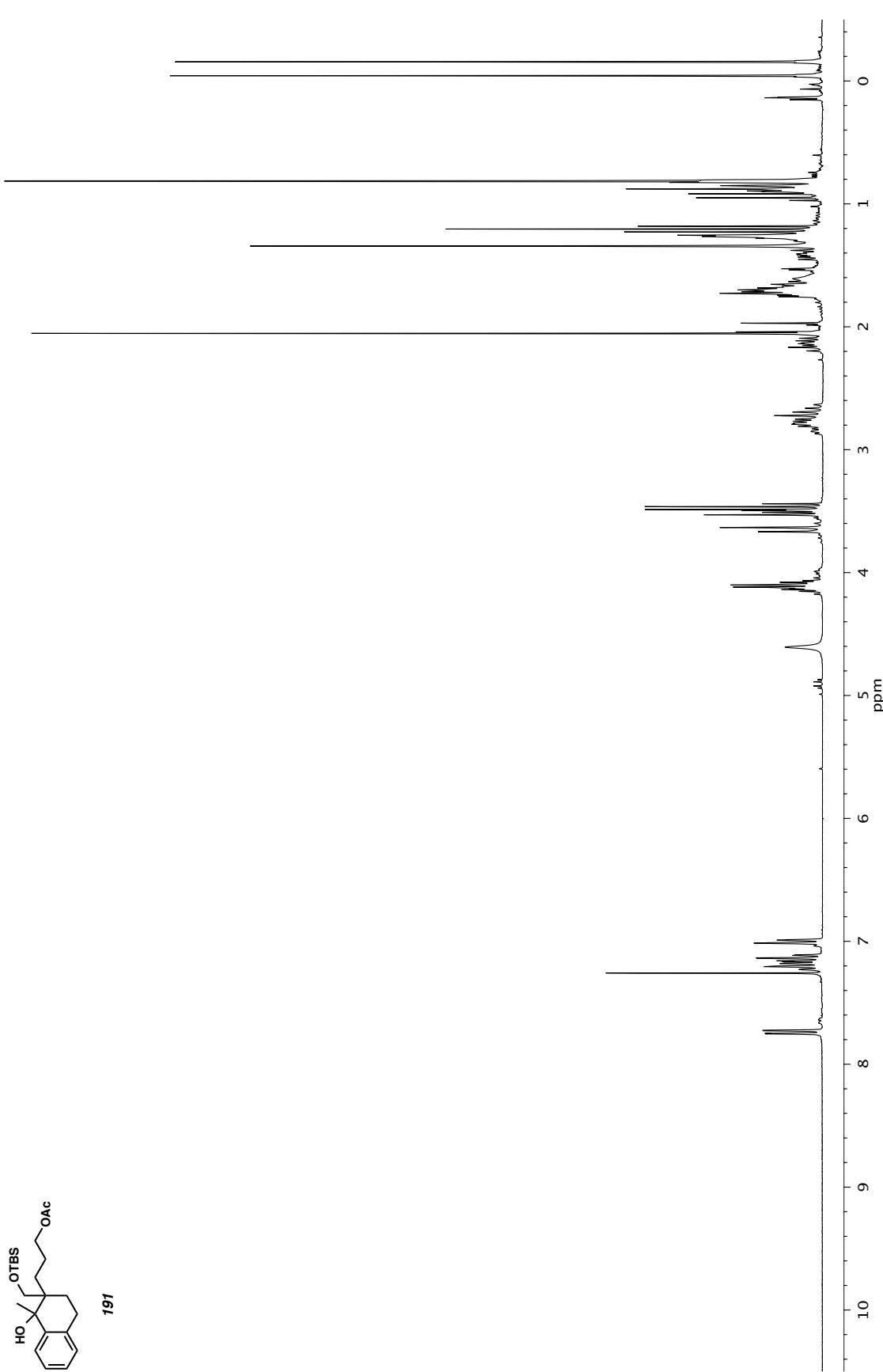


Figure A10.12  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 191.

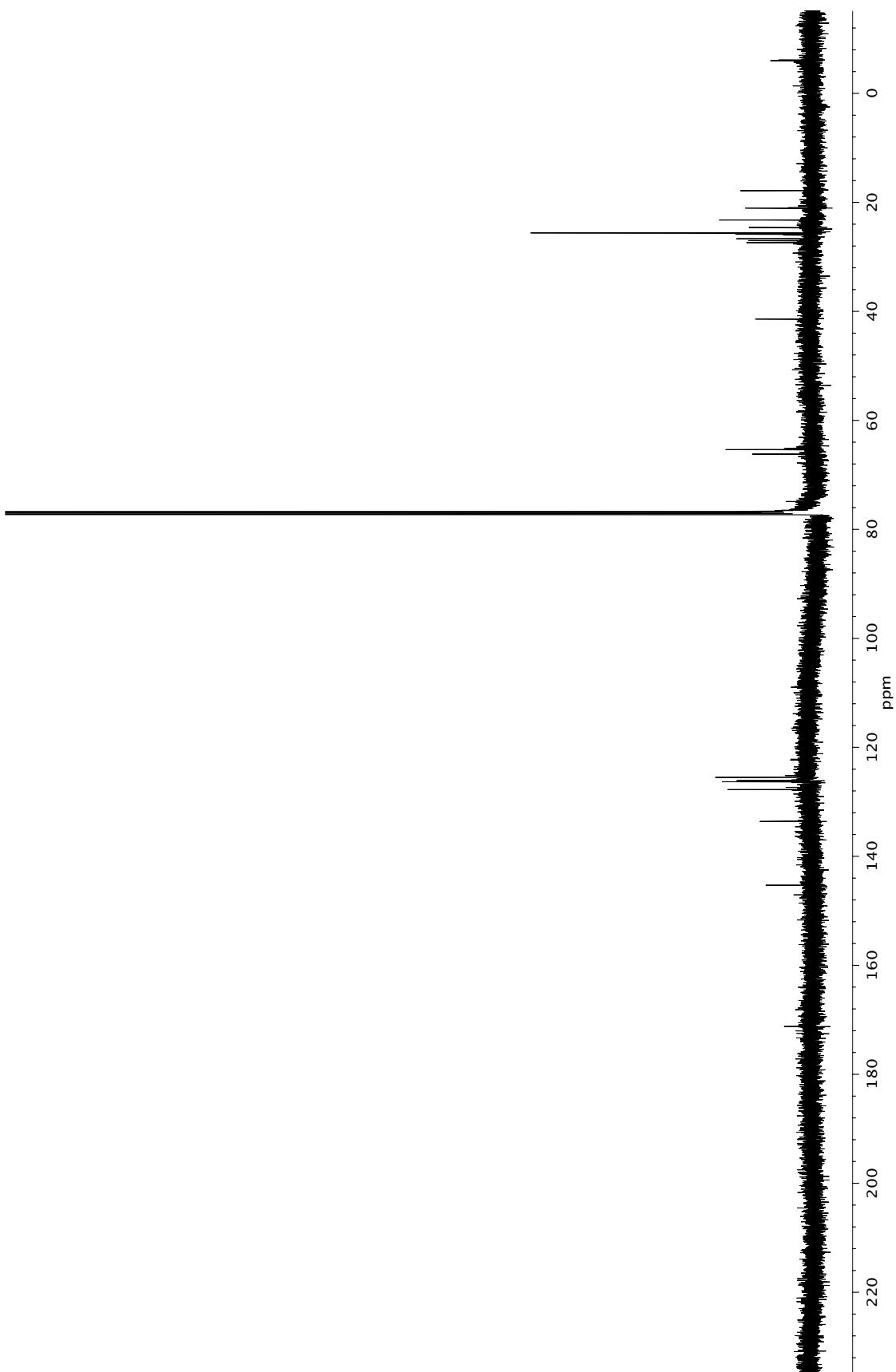


Figure A10.13  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ ) of compound 191.

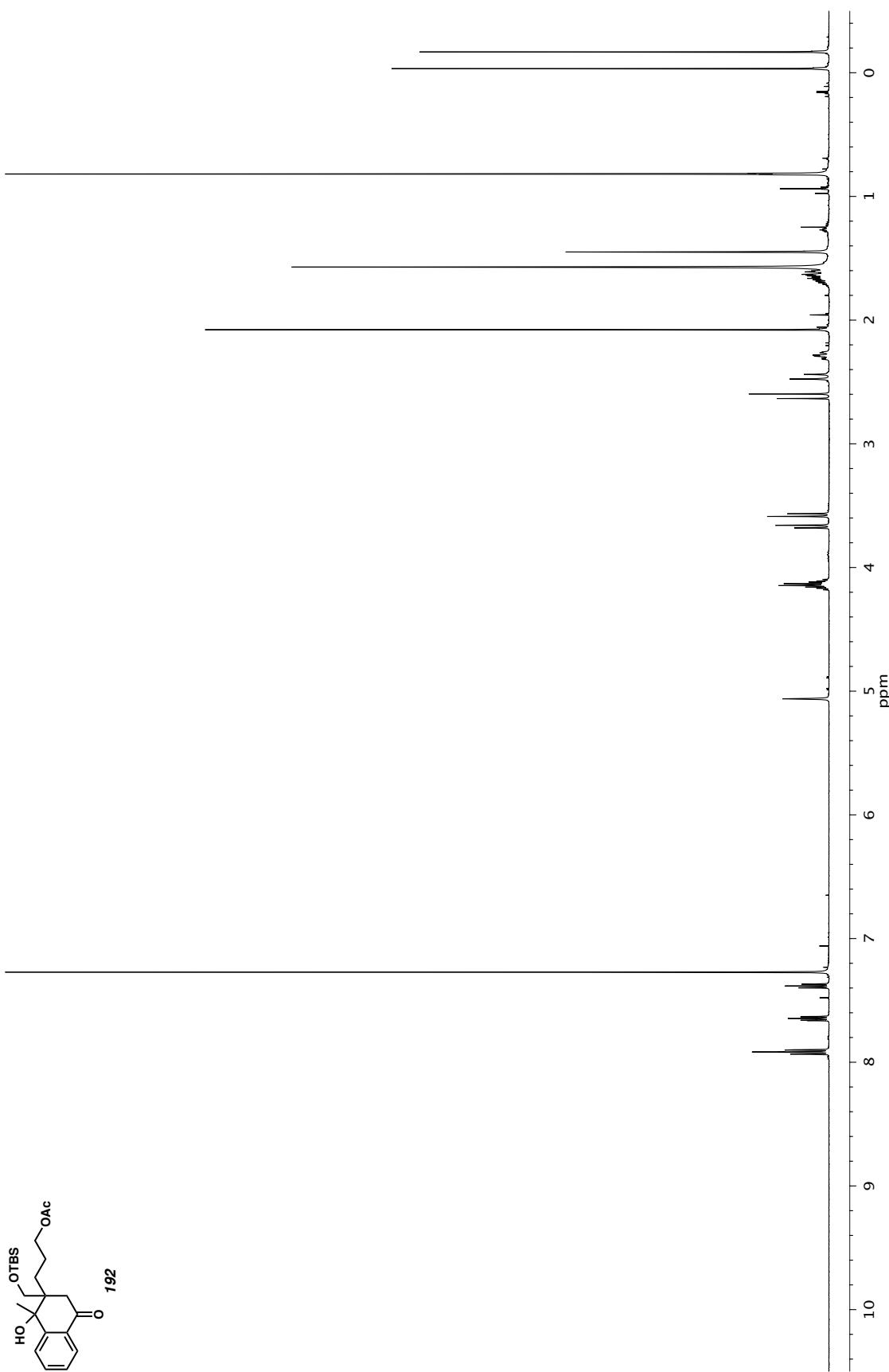


Figure A10.14  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 192.

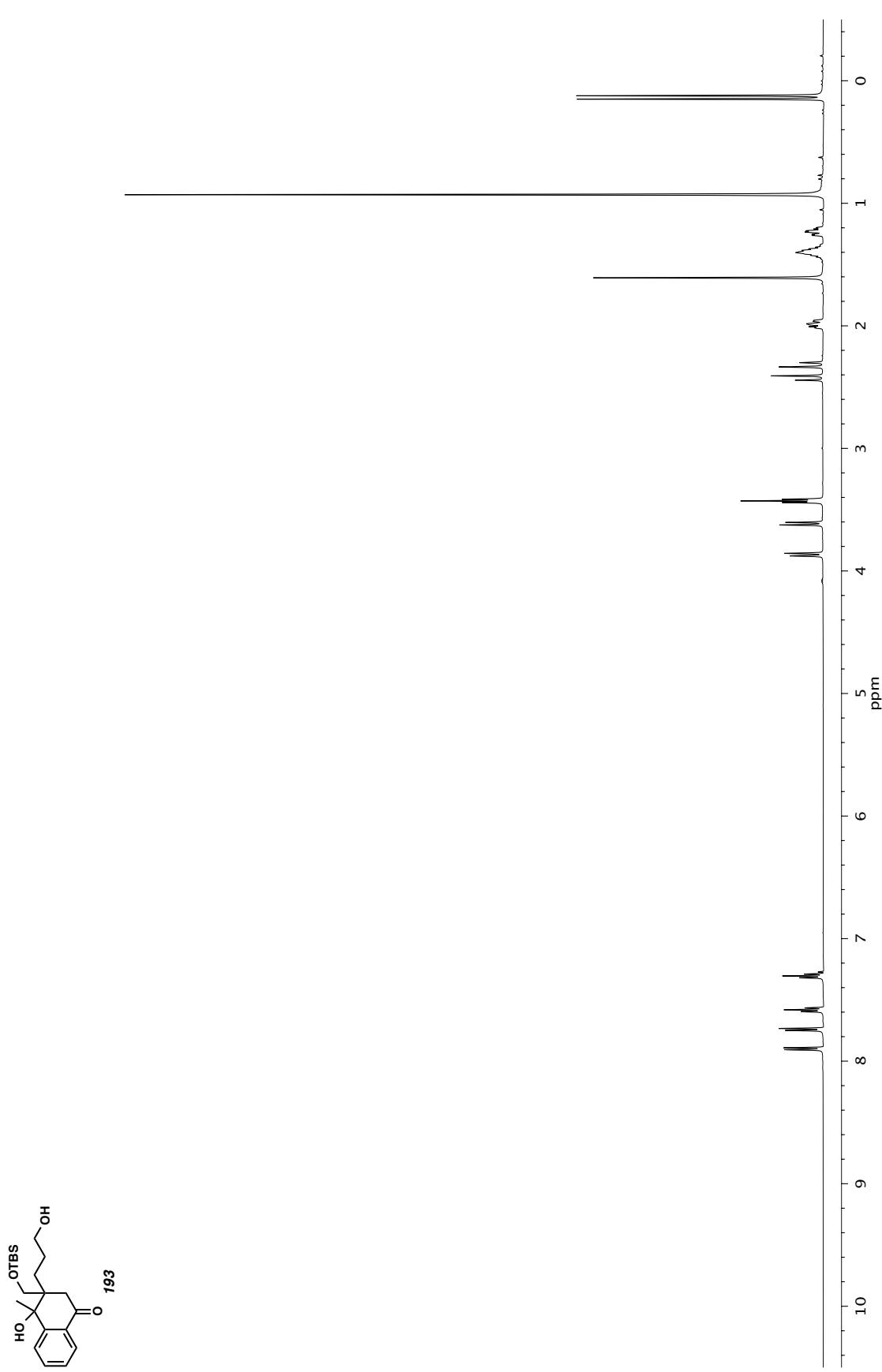


Figure A10.15  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 193.

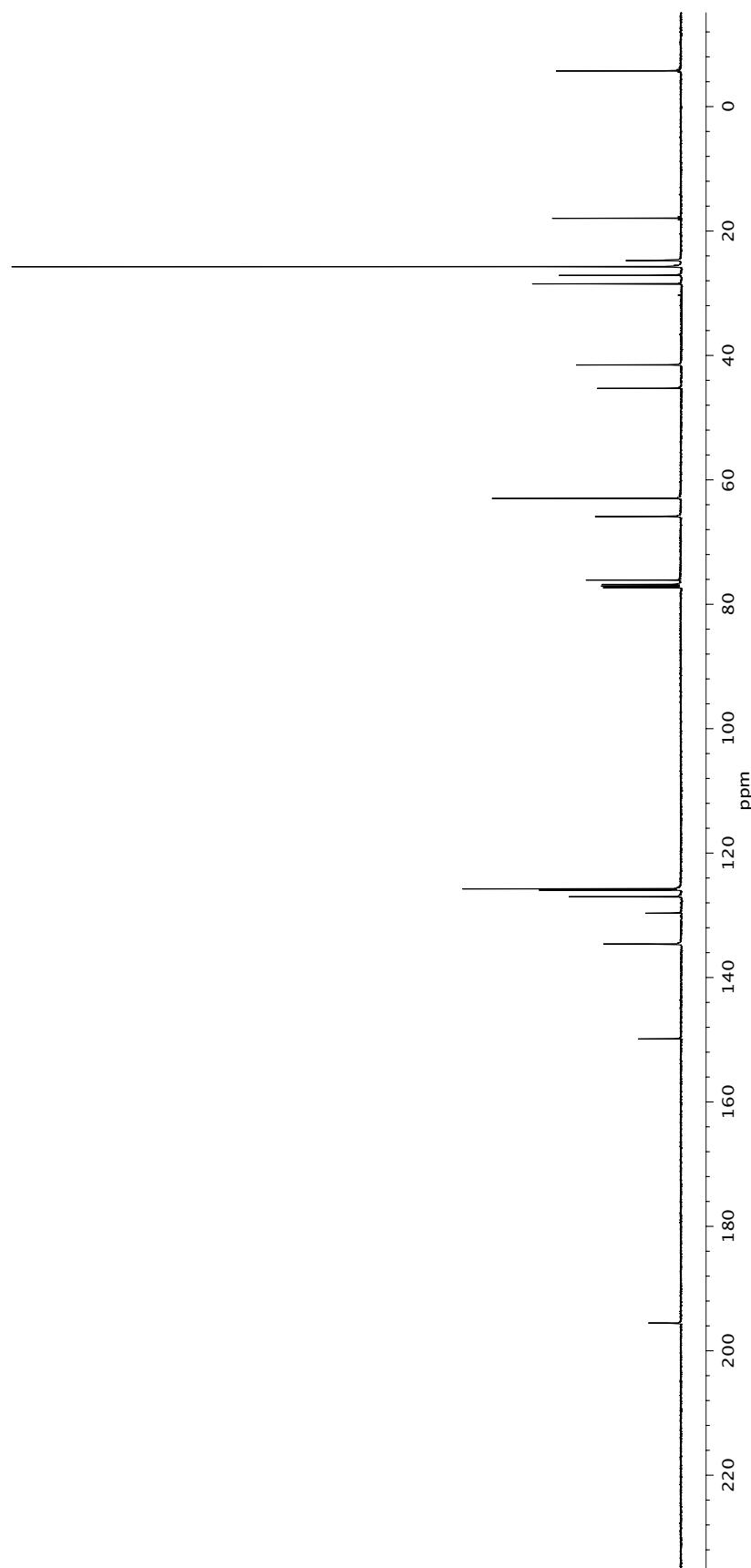


Figure A10.16  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ ) of compound 193.

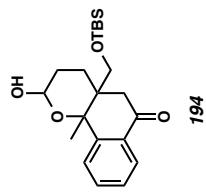
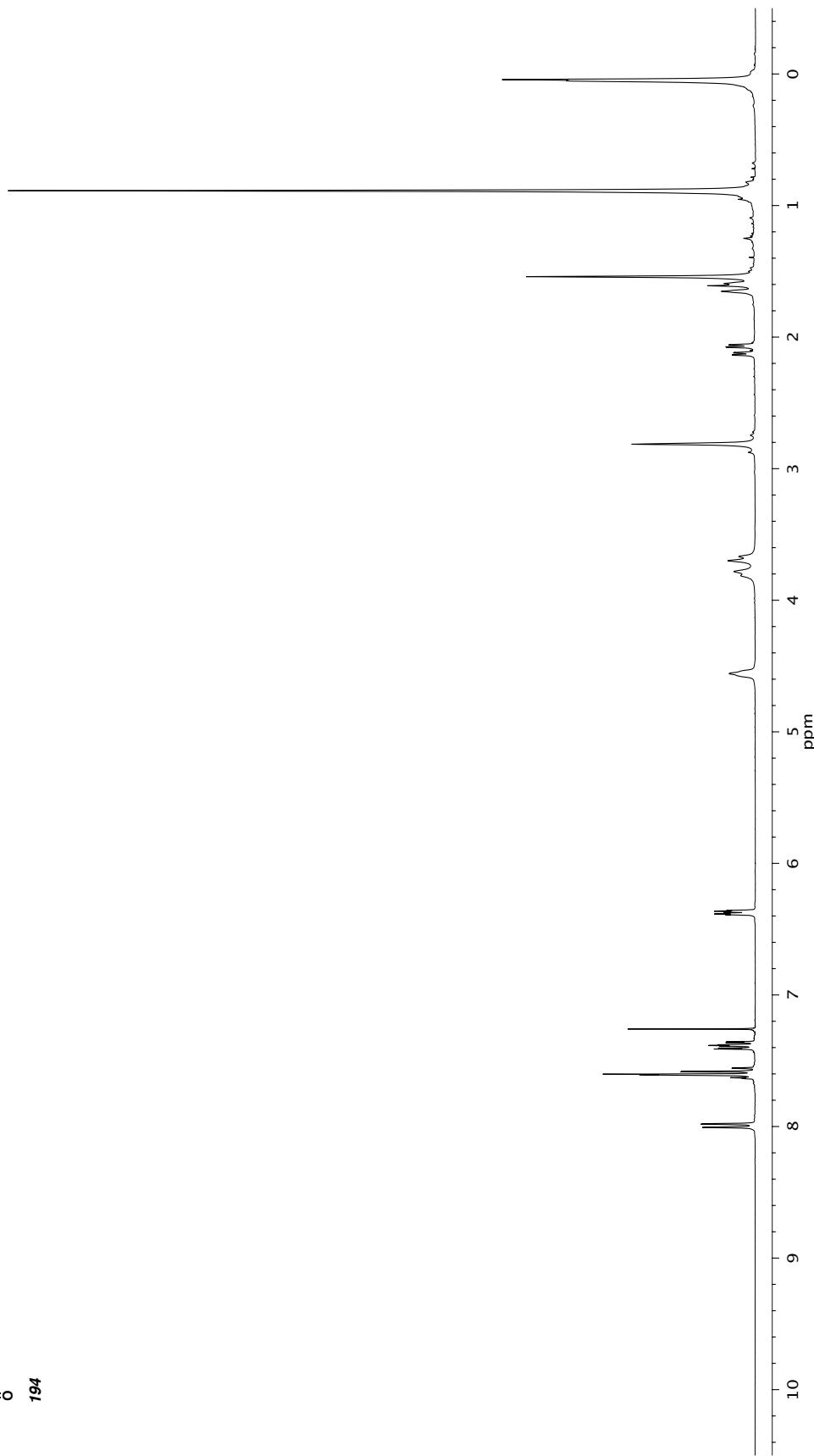


Figure A10.19  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 194.

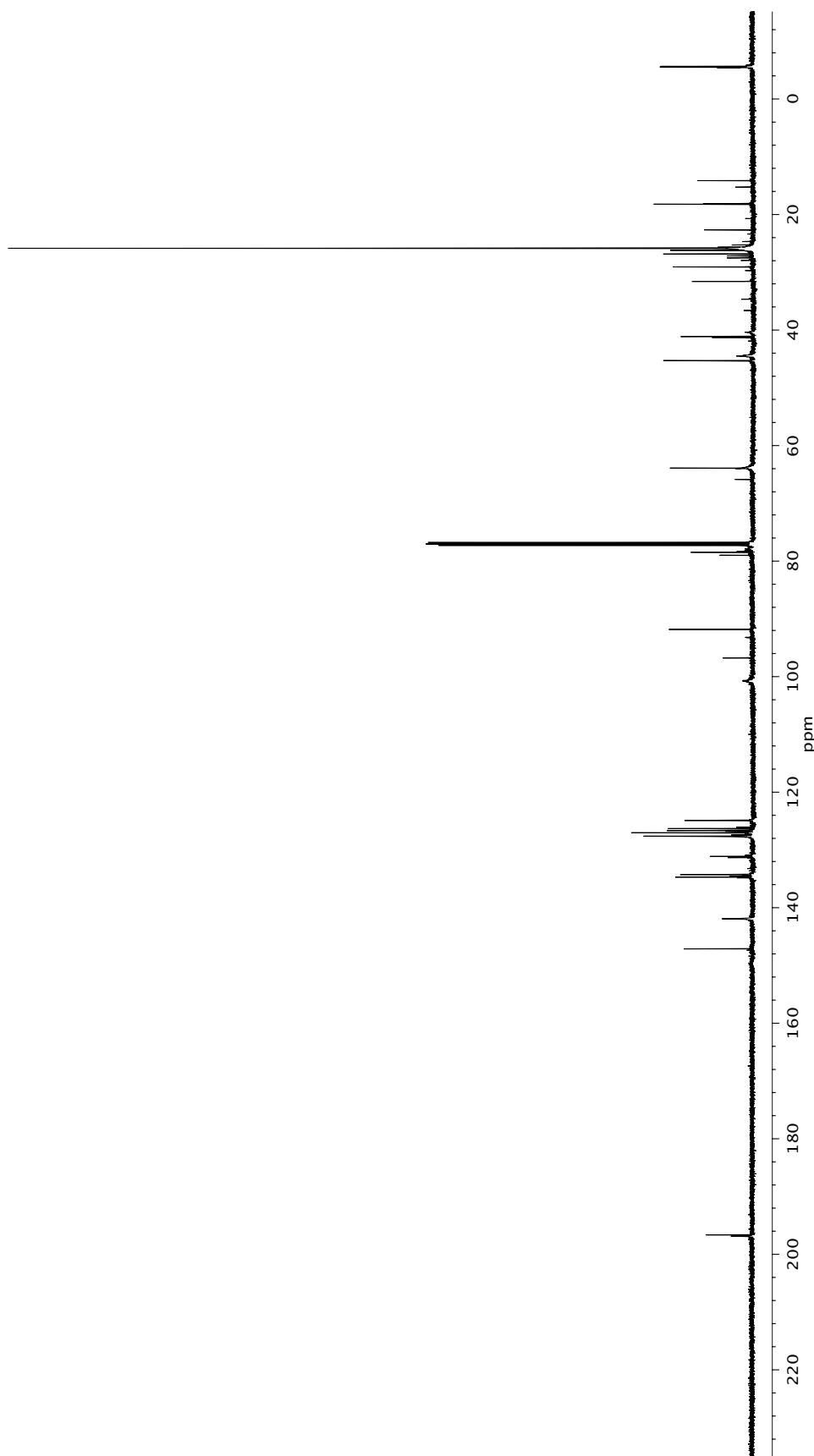
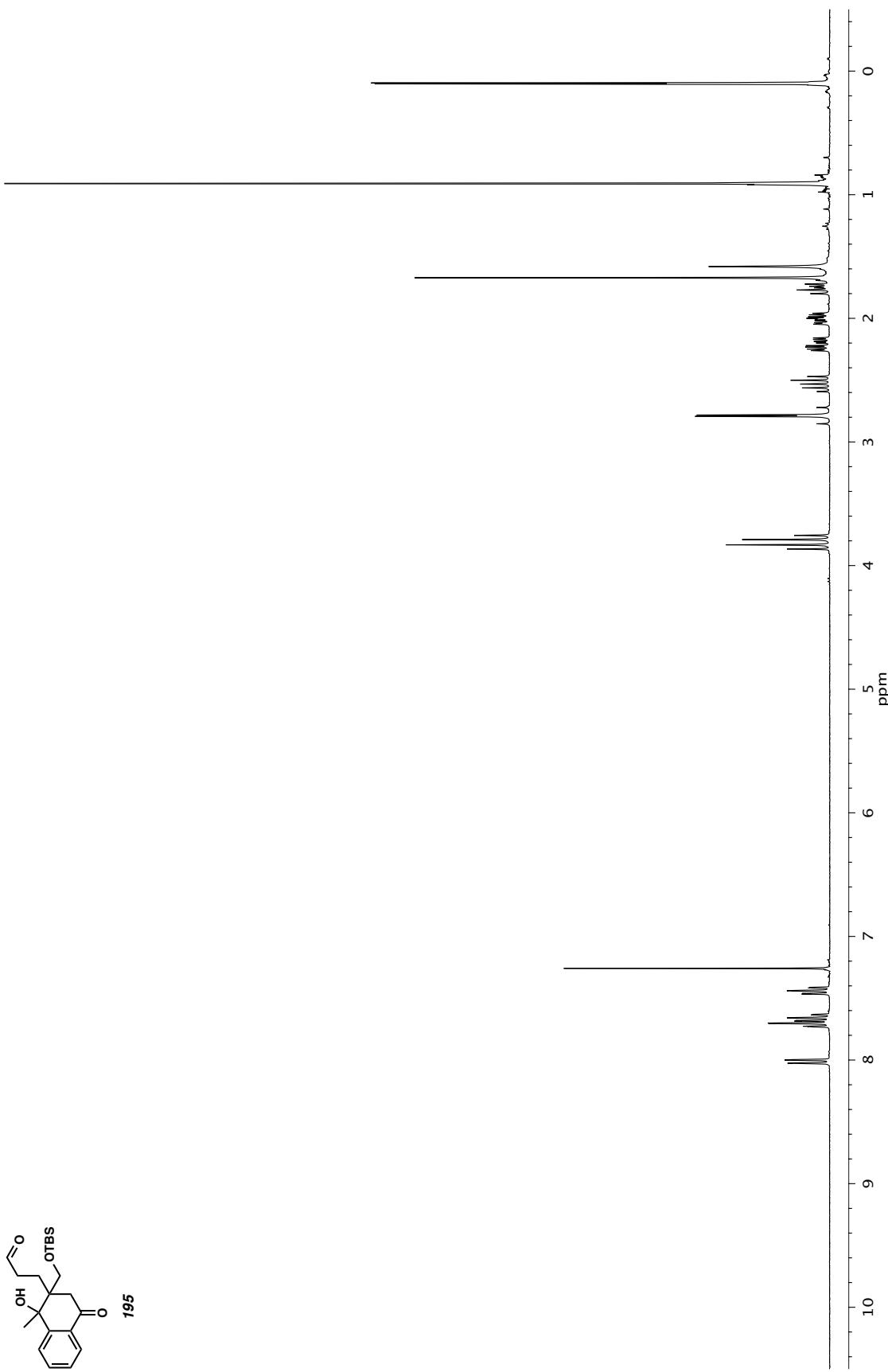
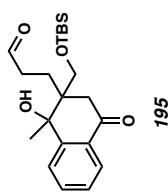
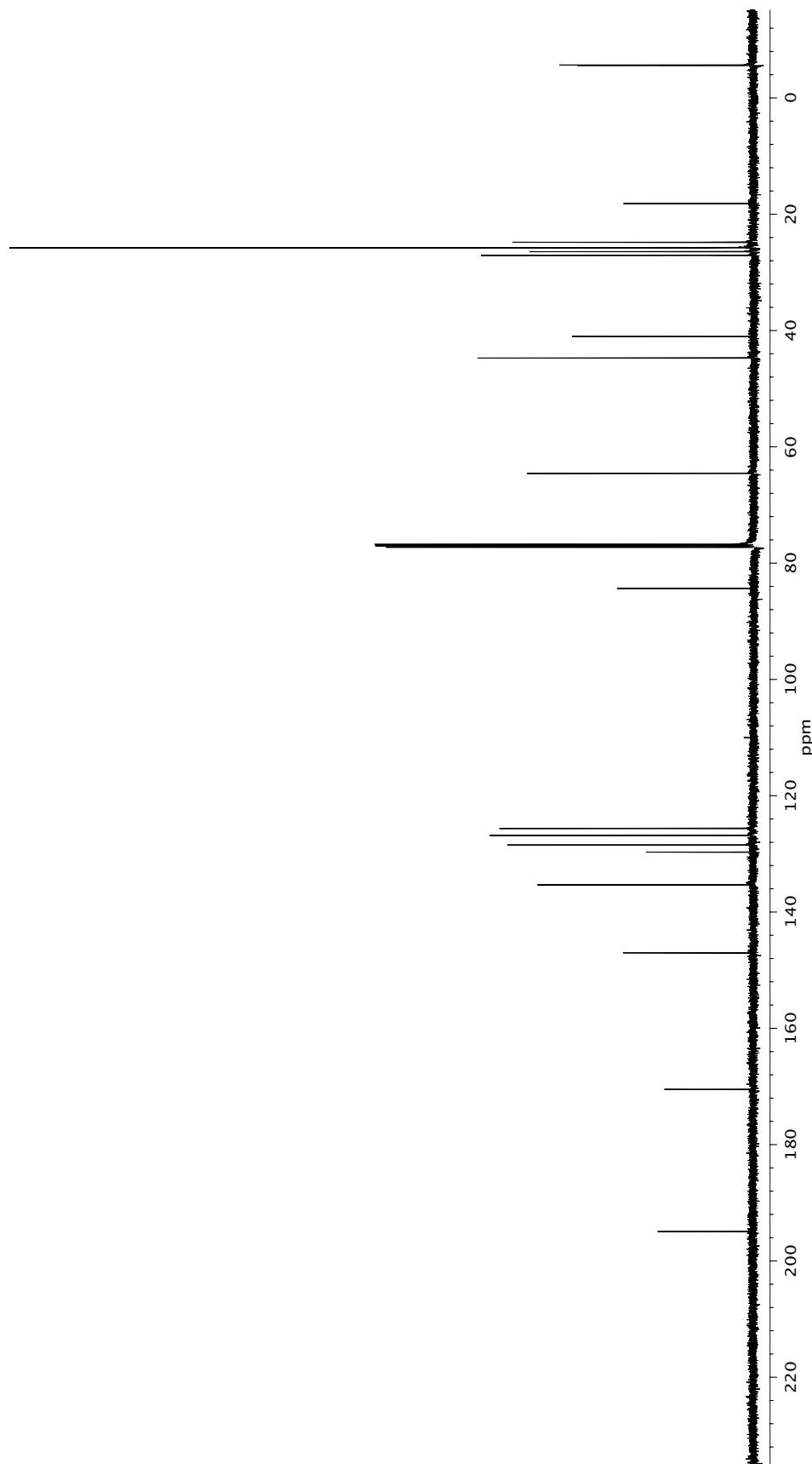


Figure A10.20  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ ) of compound 194.



*Figure A10.17*  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of compound 195.



*Figure A10.18*  $^{13}\text{C}$  NMR (125 MHz,  $\text{CDCl}_3$ ) of compound 195.

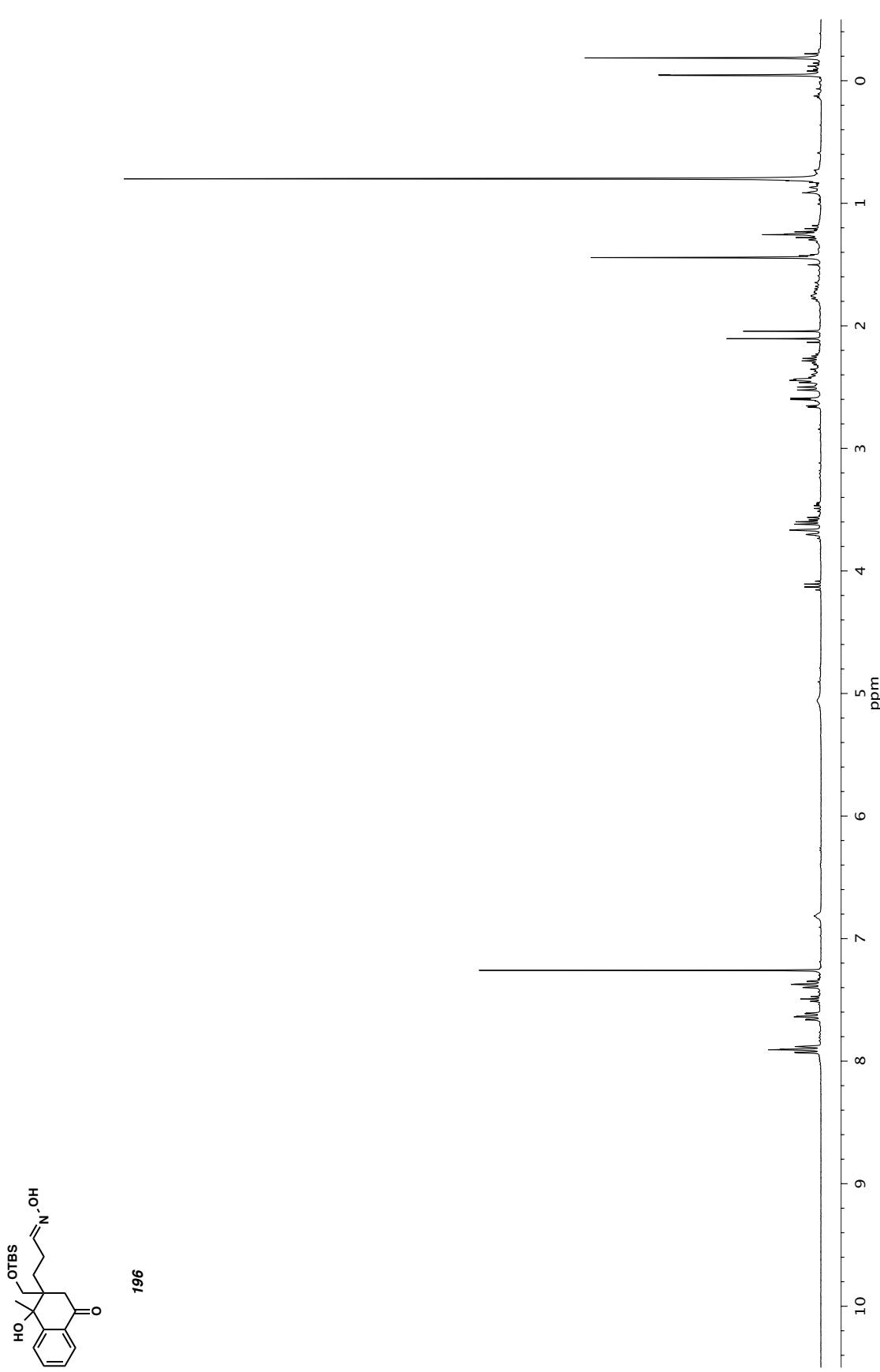


Figure A10.21  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of compound 196.