

APPENDIX TWO

Spectra of Compounds Relevant to Chapter Two

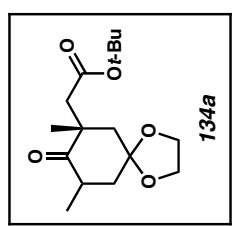


Figure A2.1 ^1H NMR of compound (+)-134a (300 MHz, CDCl_3)

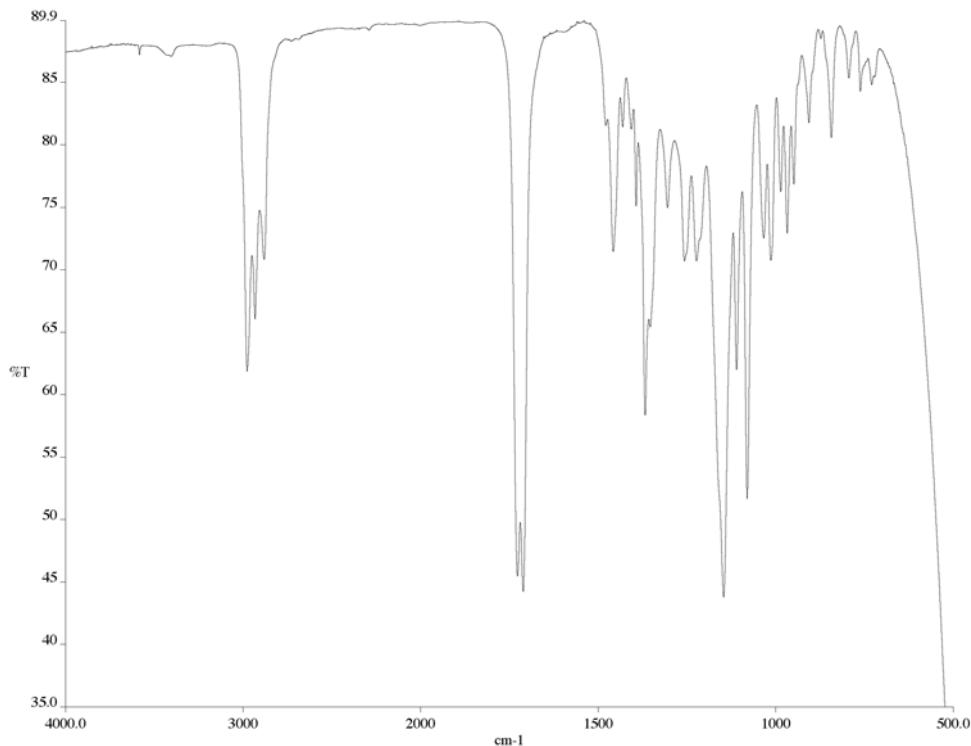


Figure A2.2 IR of compound (*+*)-134a (NaCl/film)

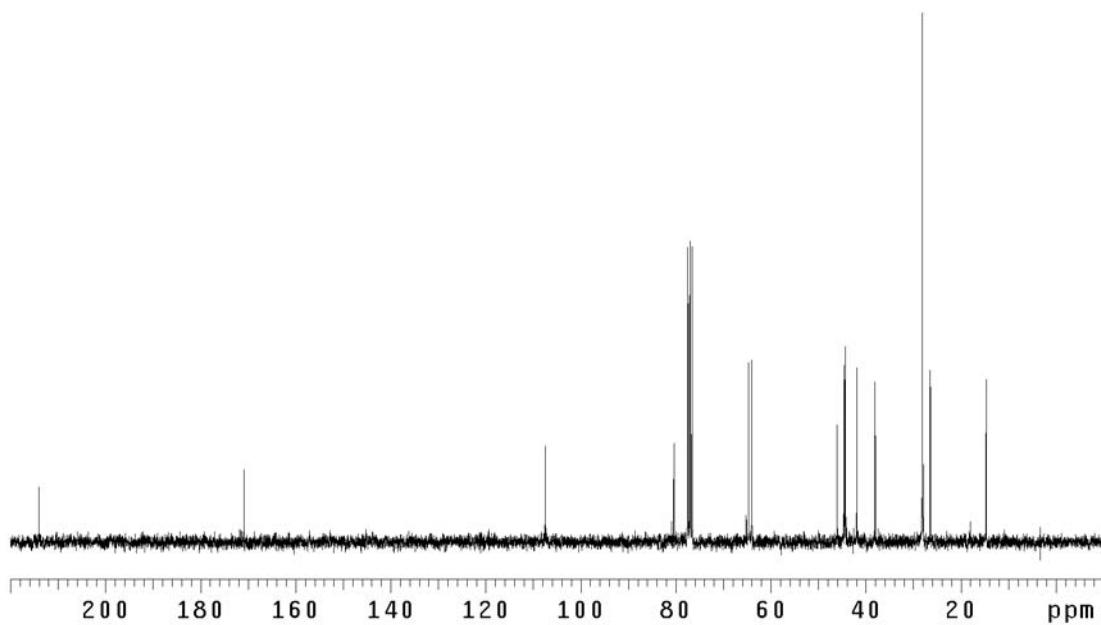


Figure A2.3 ¹³C NMR of compound (*+*)-134a (75 MHz, CDCl₃)

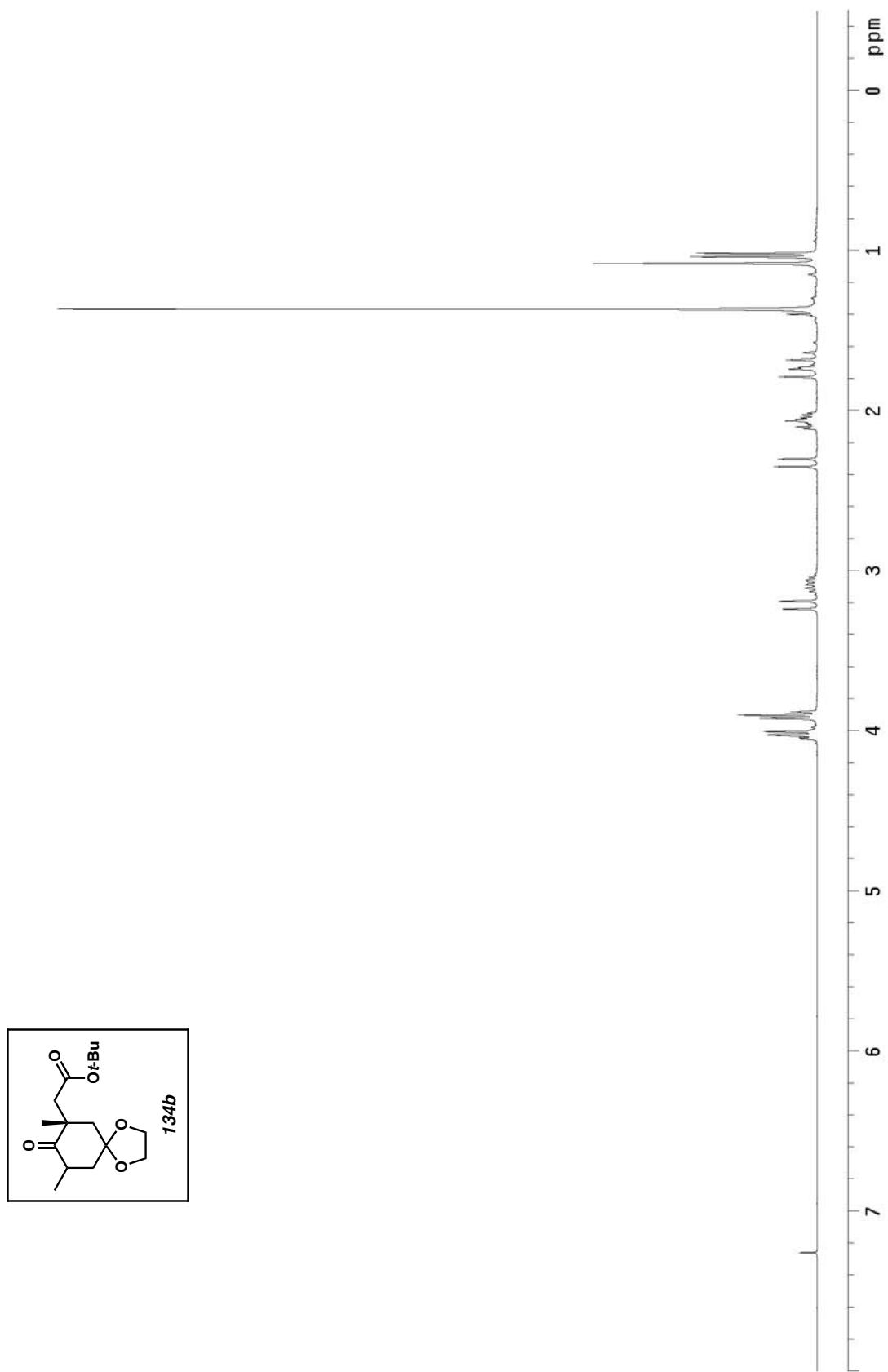


Figure A2.4 ¹H NMR of compound (-)-134b (300 MHz, CDCl₃)

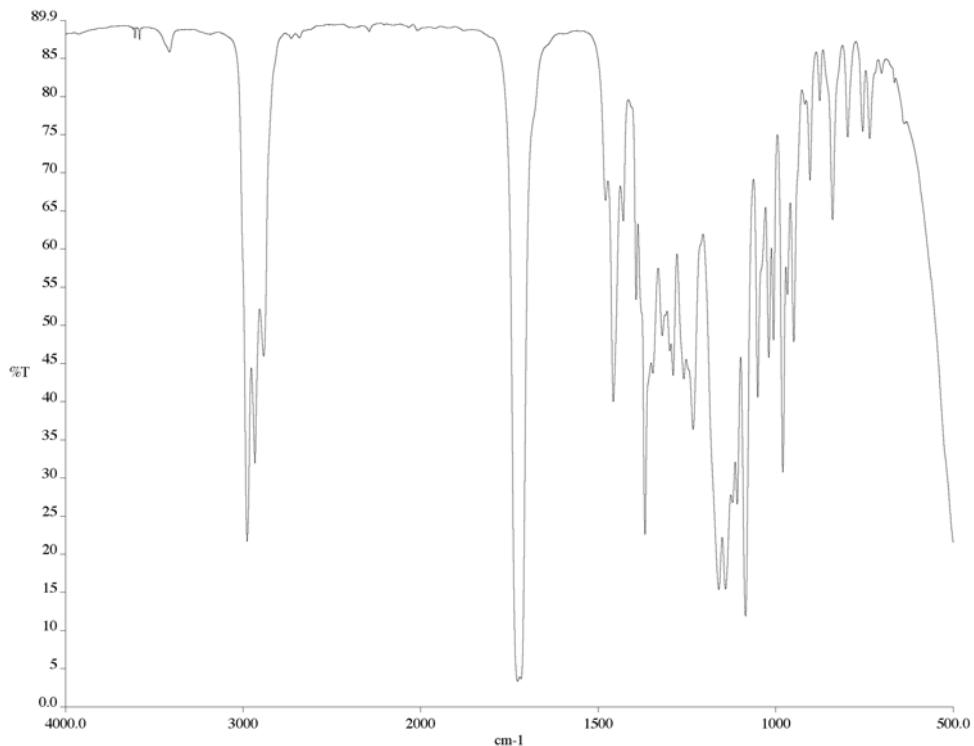


Figure A2.5 IR of compound (*-*)-**134b** (NaCl/film)

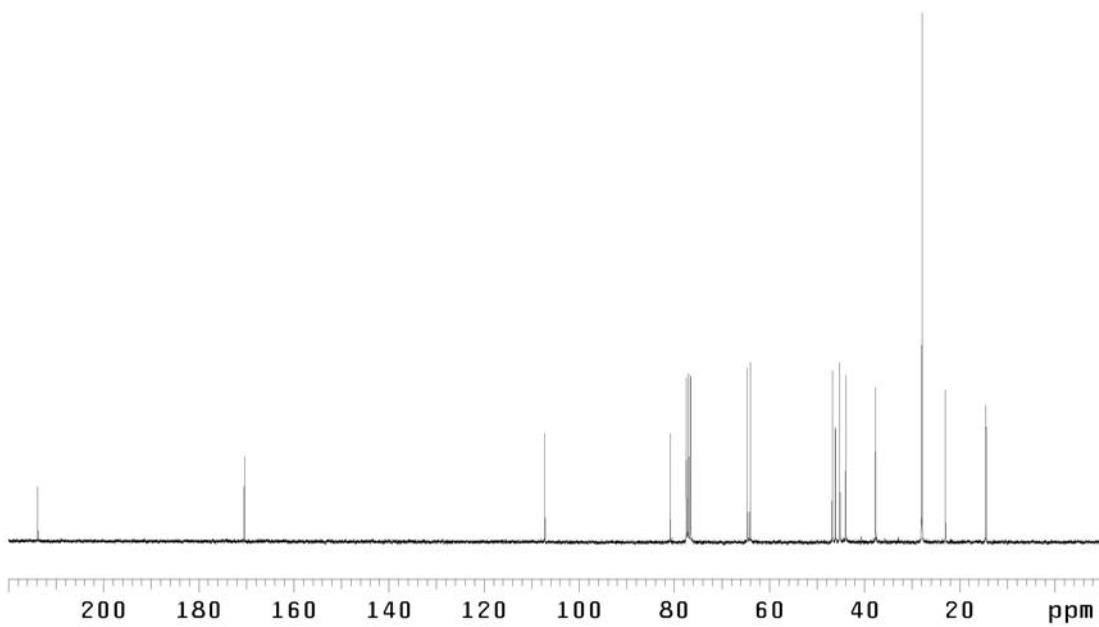


Figure A2.6 ¹³C NMR of compound (*-*)-**134b** (75 MHz, CDCl₃)

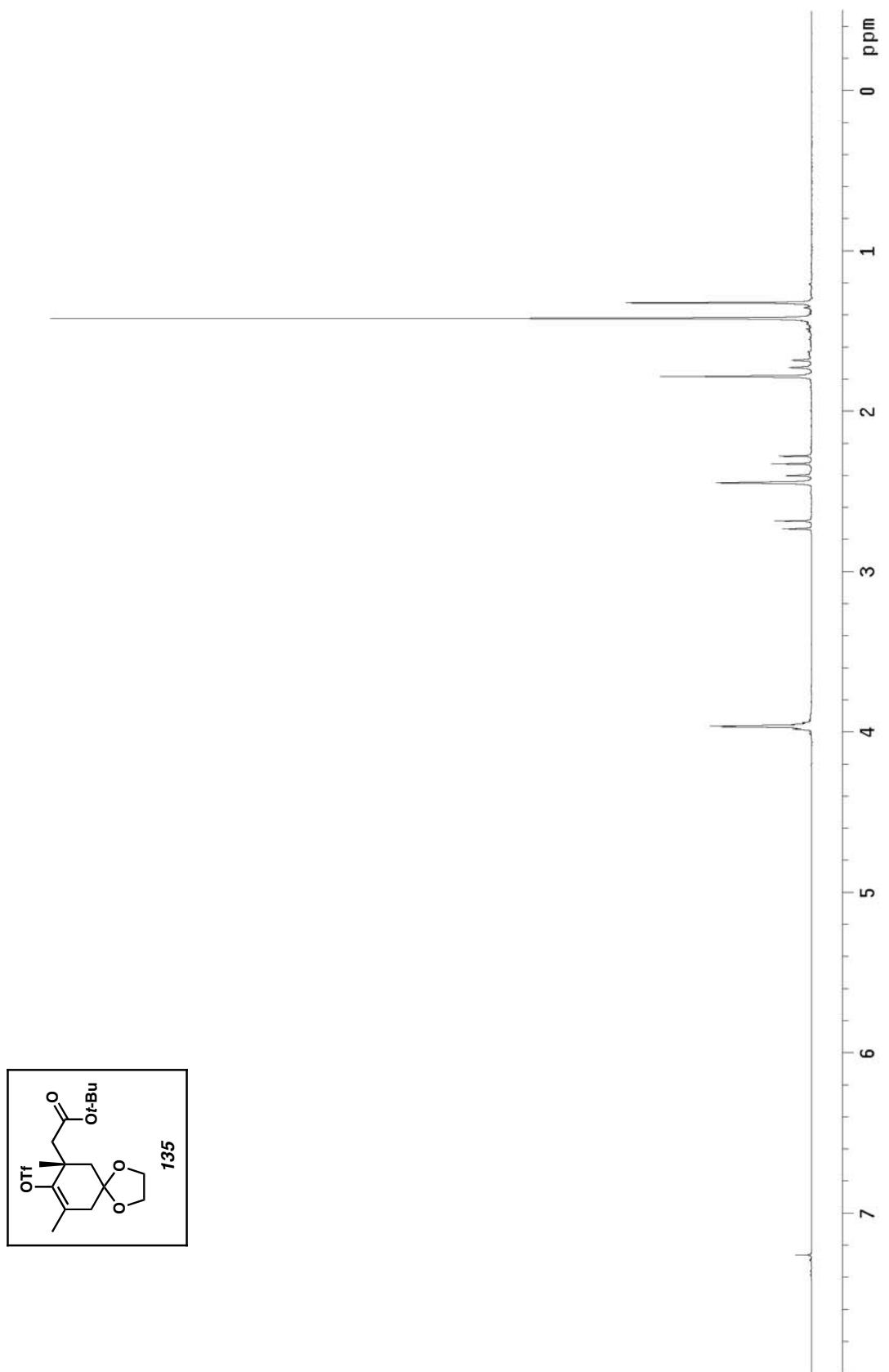


Figure A2.7 ¹H NMR of compound 135 (300 MHz, CDCl₃)

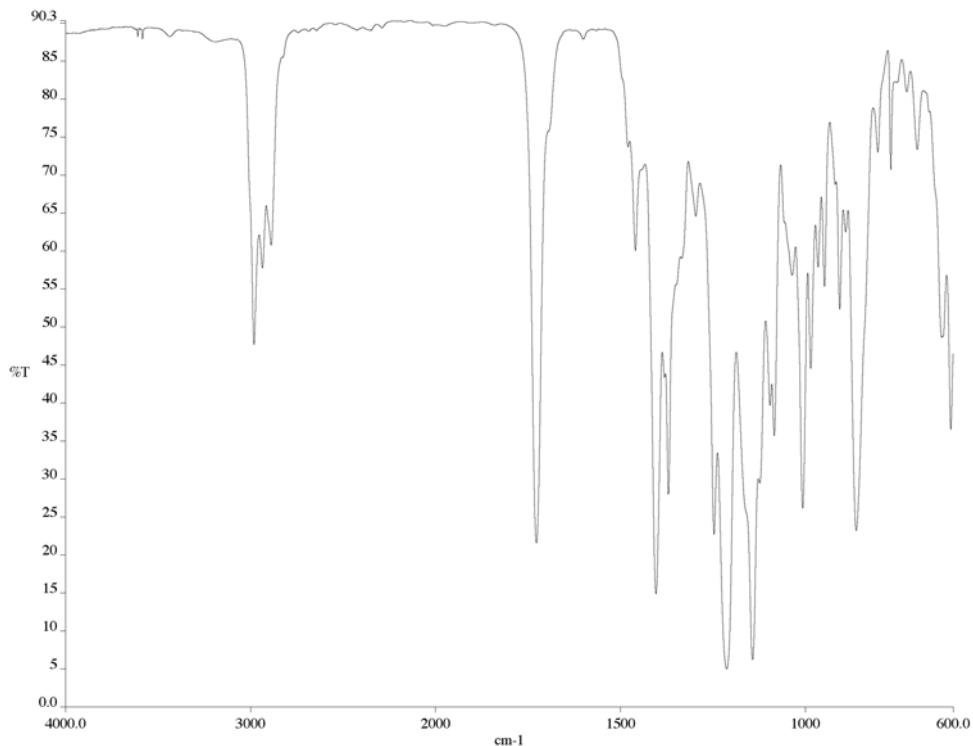


Figure A2.8 IR of compound **135** (NaCl/film)

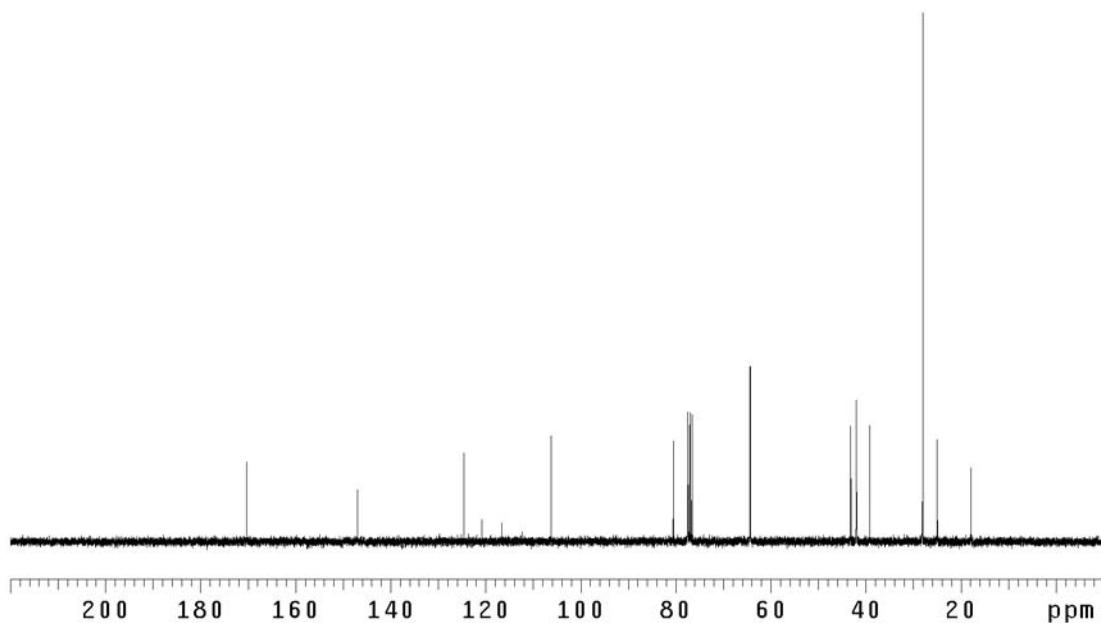


Figure A2.9 ¹³C NMR of compound **135** (75 MHz, CDCl₃)

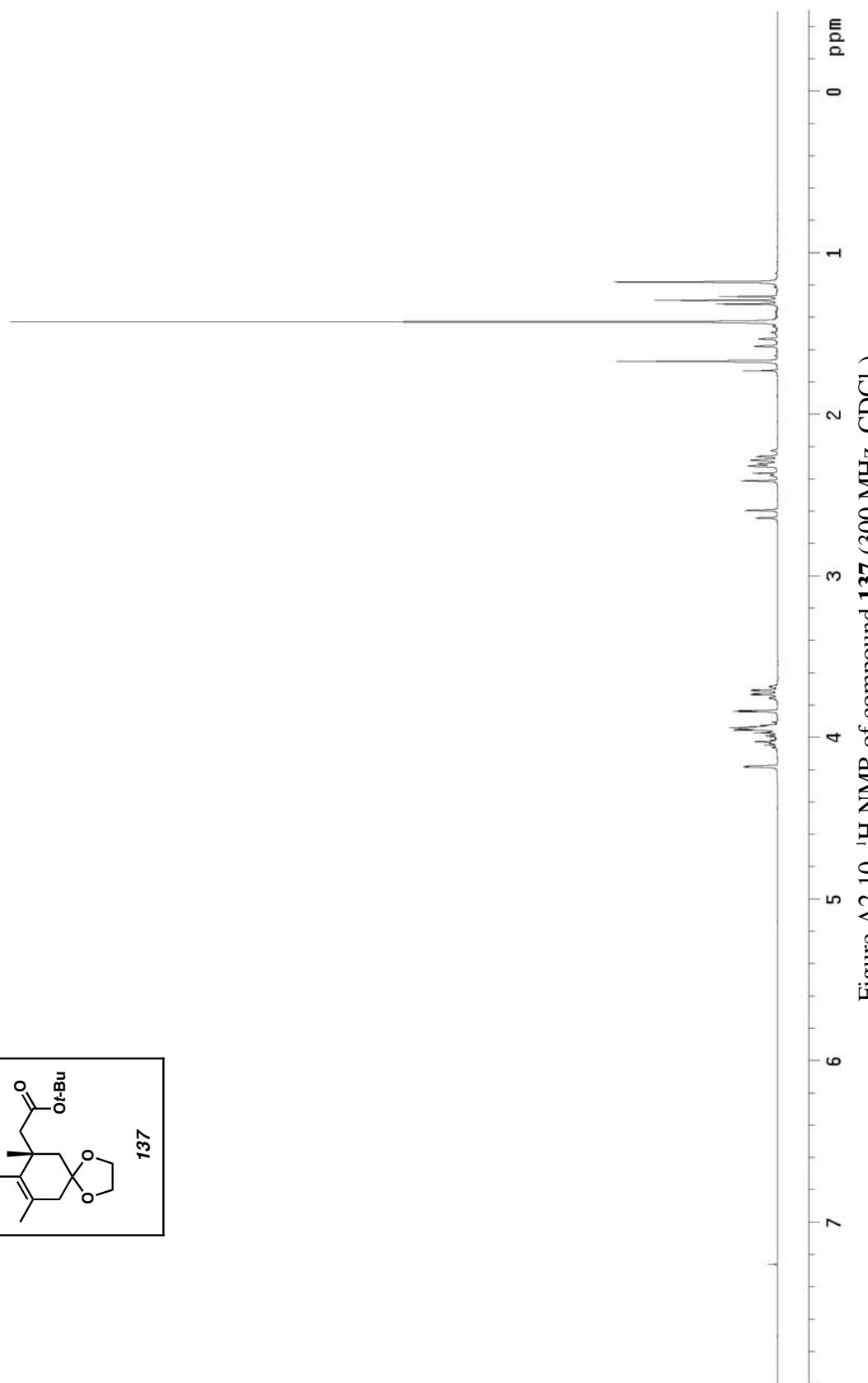
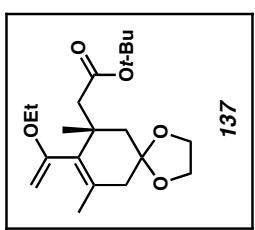


Figure A2.10 ^1H NMR of compound 137 (300 MHz, CDCl_3)

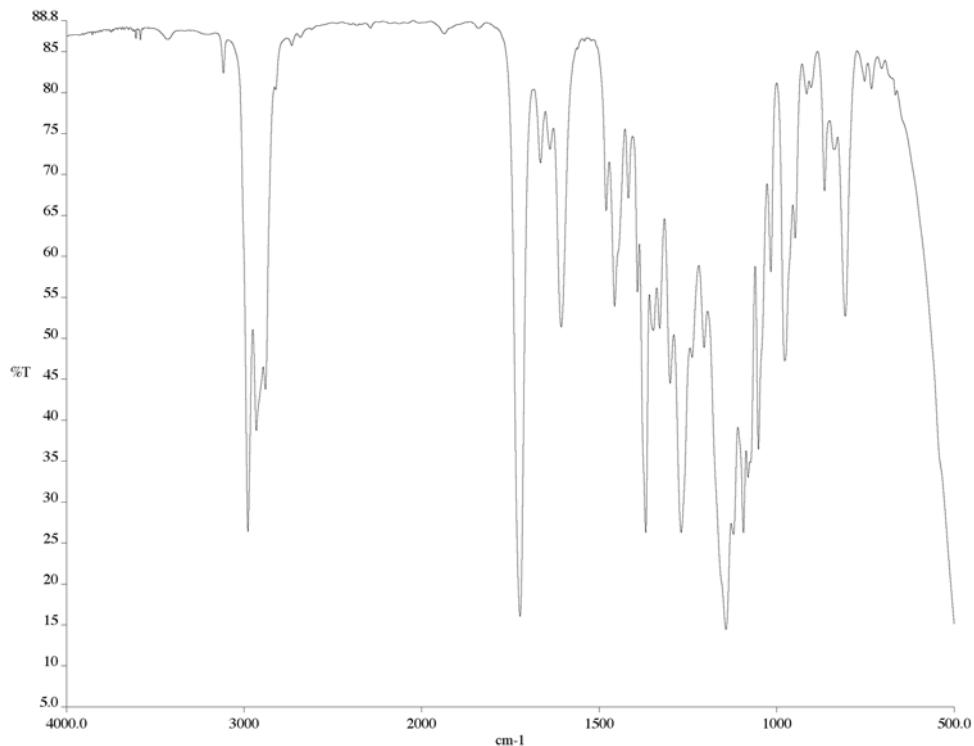


Figure A2.11 IR of compound **137** (NaCl/film)

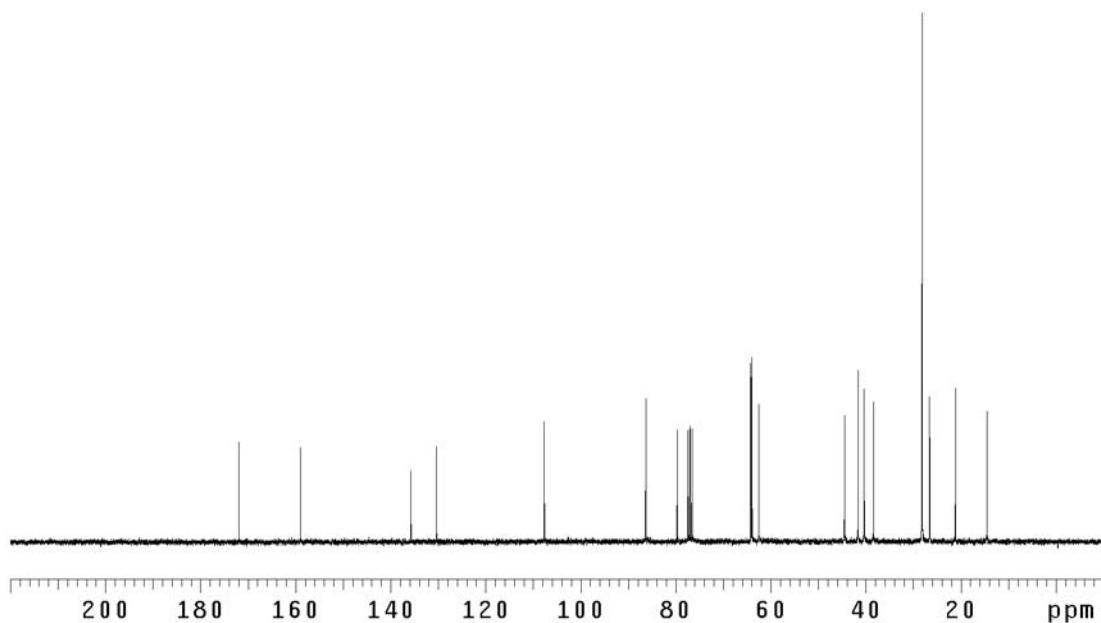


Figure A2.12 ¹³C NMR of compound **137** (75 MHz, CDCl₃)

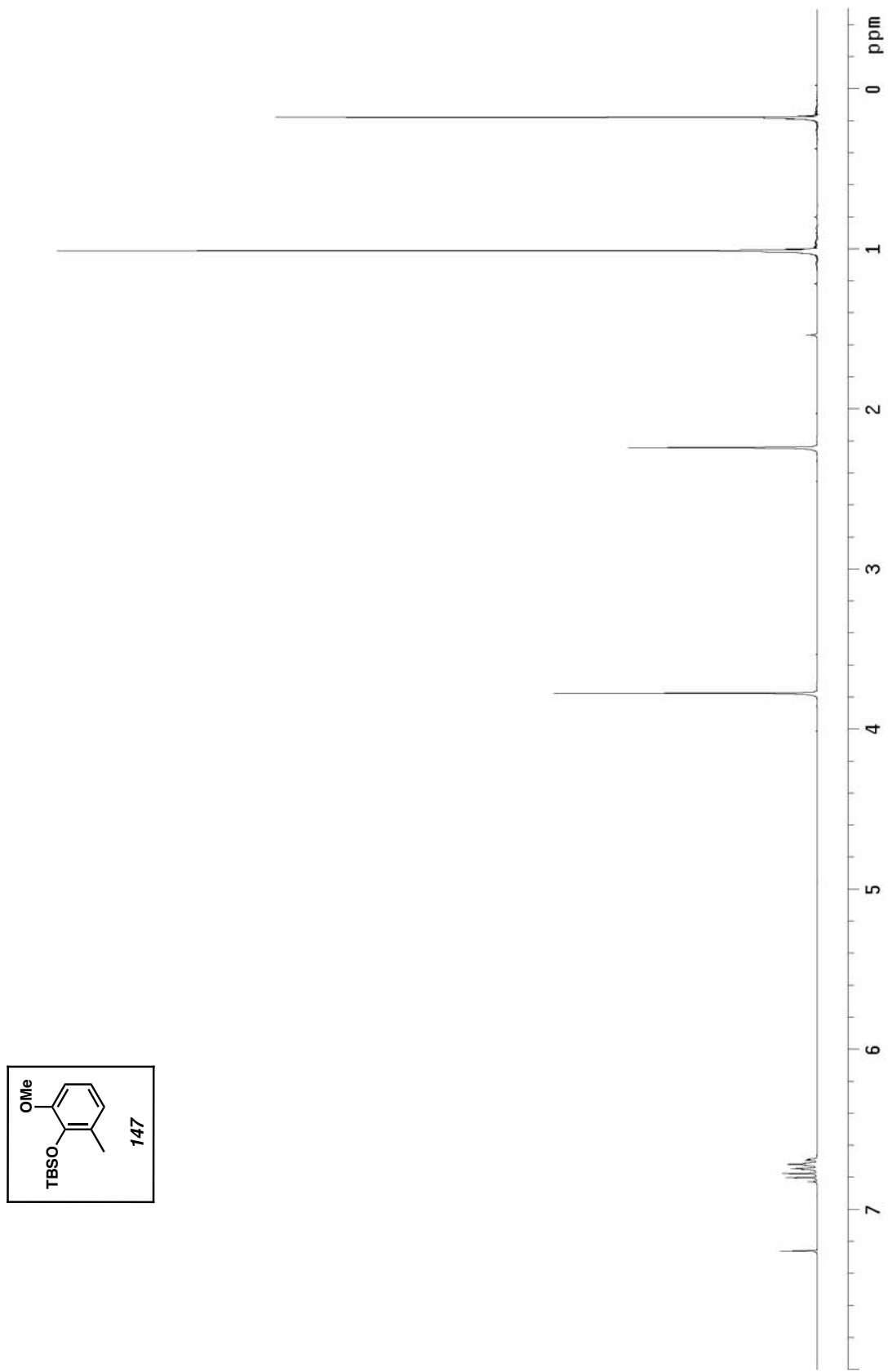


Figure A2.13 ¹H NMR of compound 147 (300 MHz, CDCl₃)

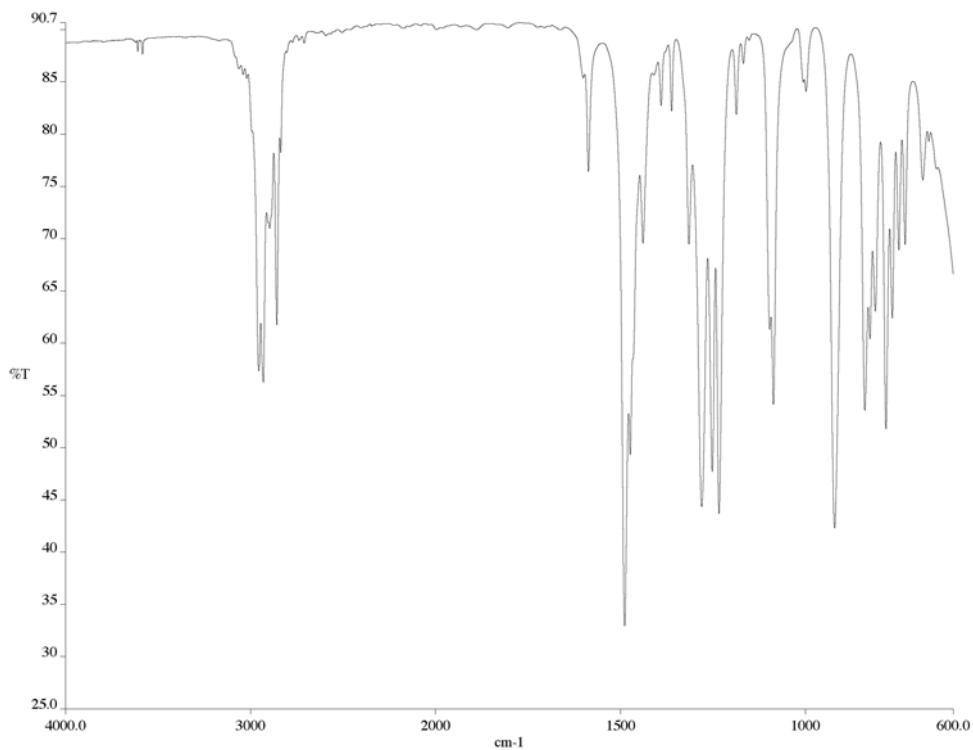


Figure A2.14 IR of compound **147** (NaCl/film)

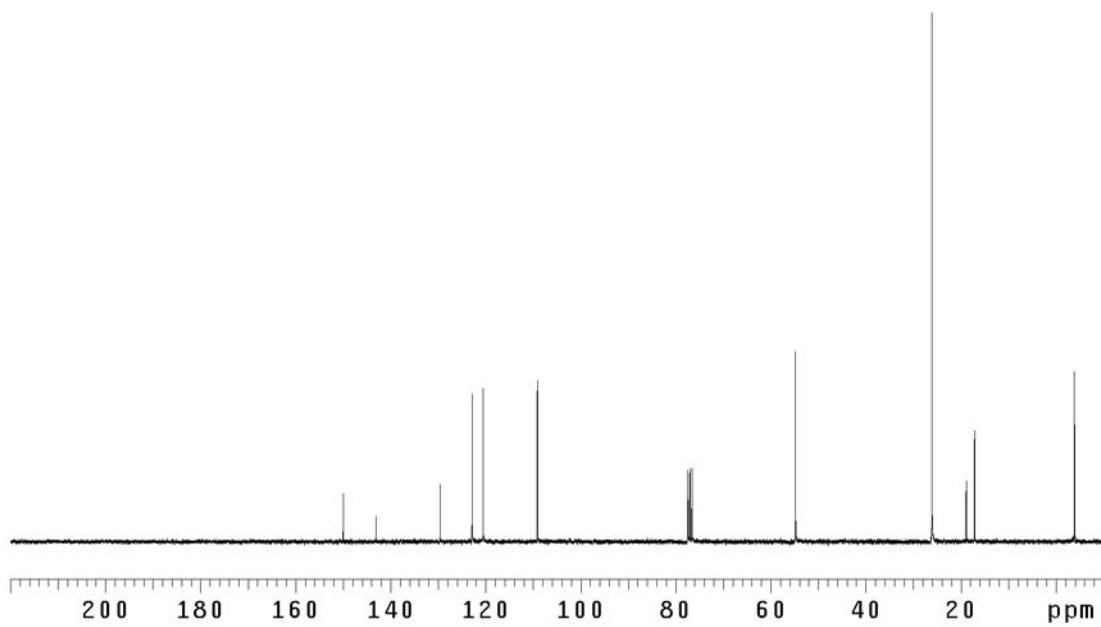


Figure A2.15 ¹³C NMR of compound **147** (75 MHz, CDCl₃)

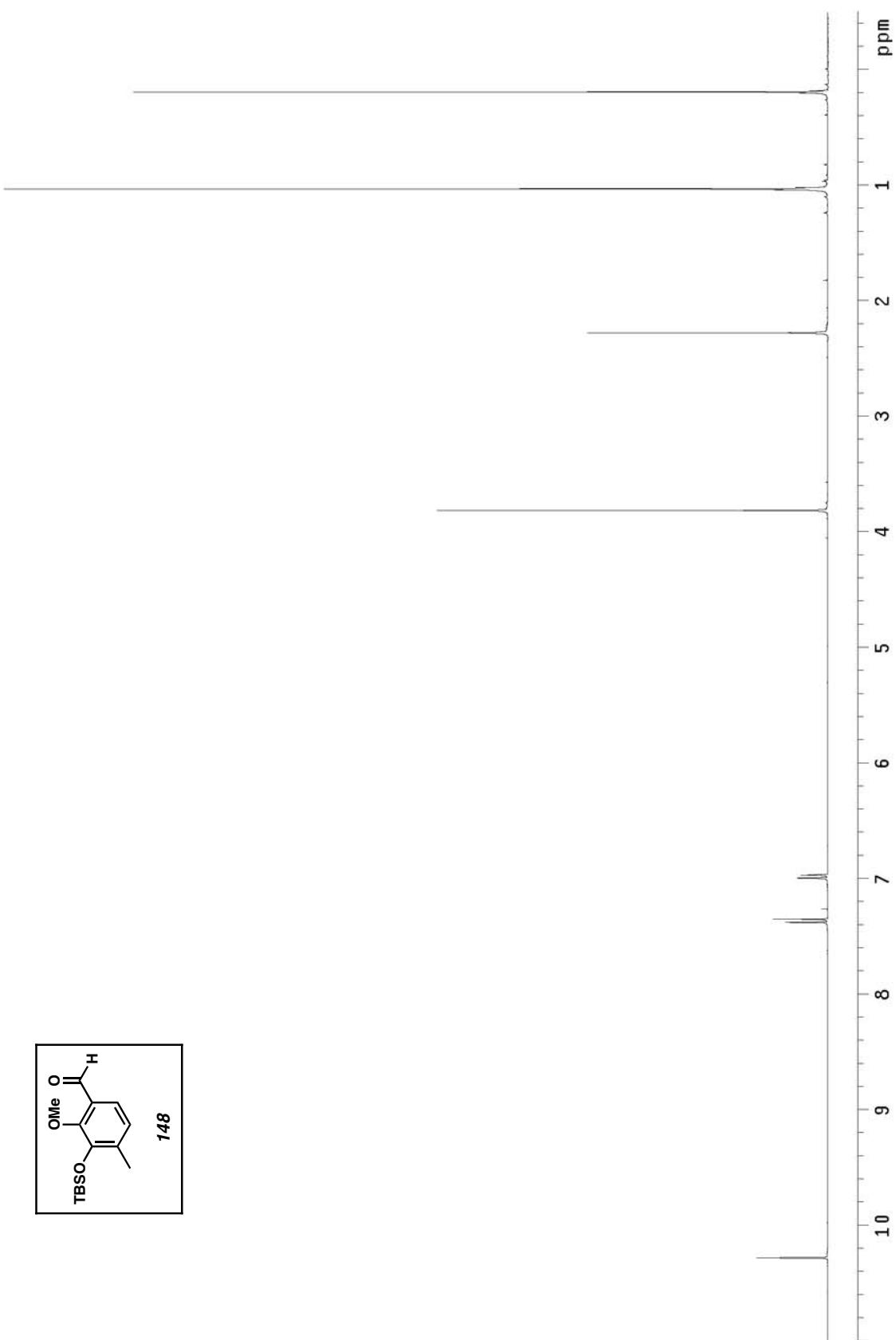


Figure A2.16 ^1H NMR of compound **148** (300 MHz, CDCl_3)

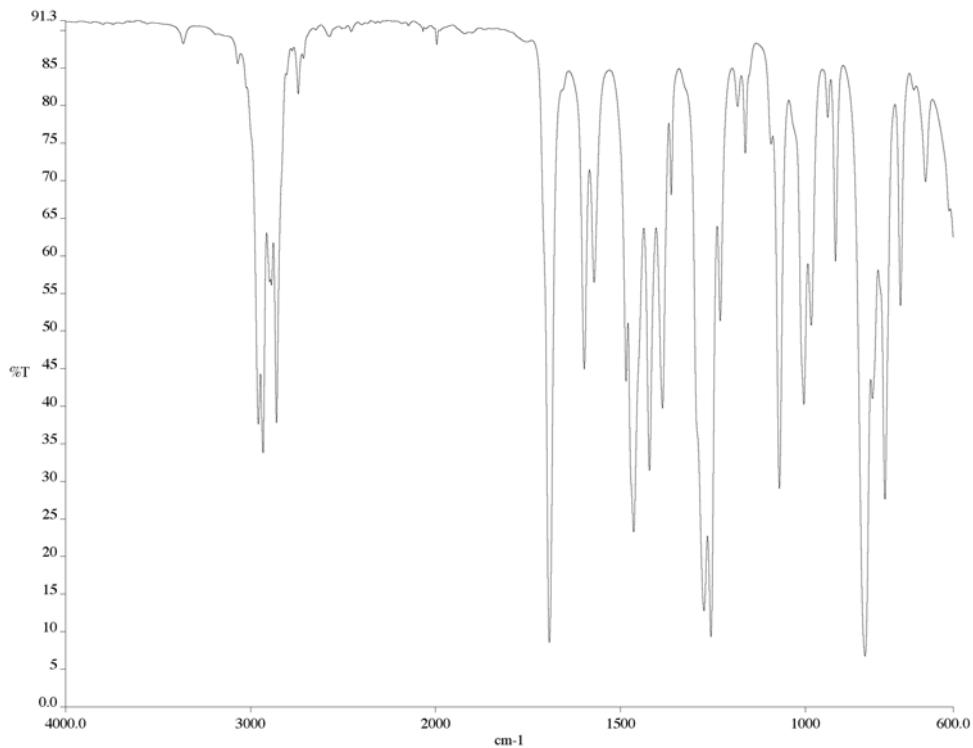


Figure A2.17 IR of compound **148** (NaCl/film)

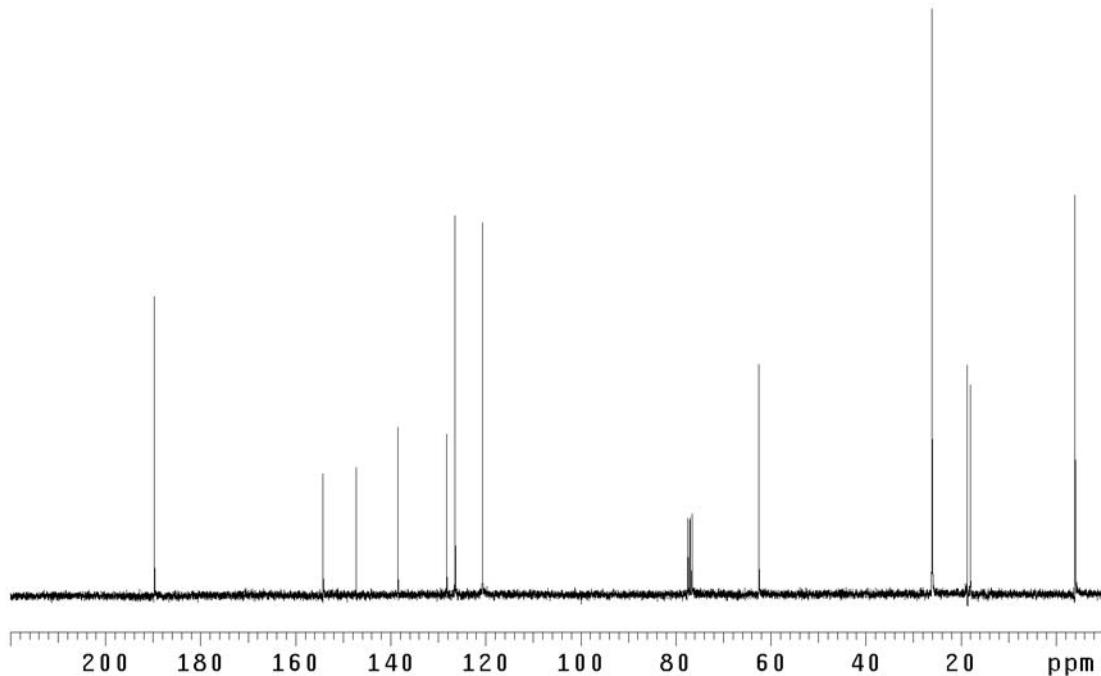


Figure A2.18 ¹³C NMR of compound **148** (75 MHz, CDCl₃)

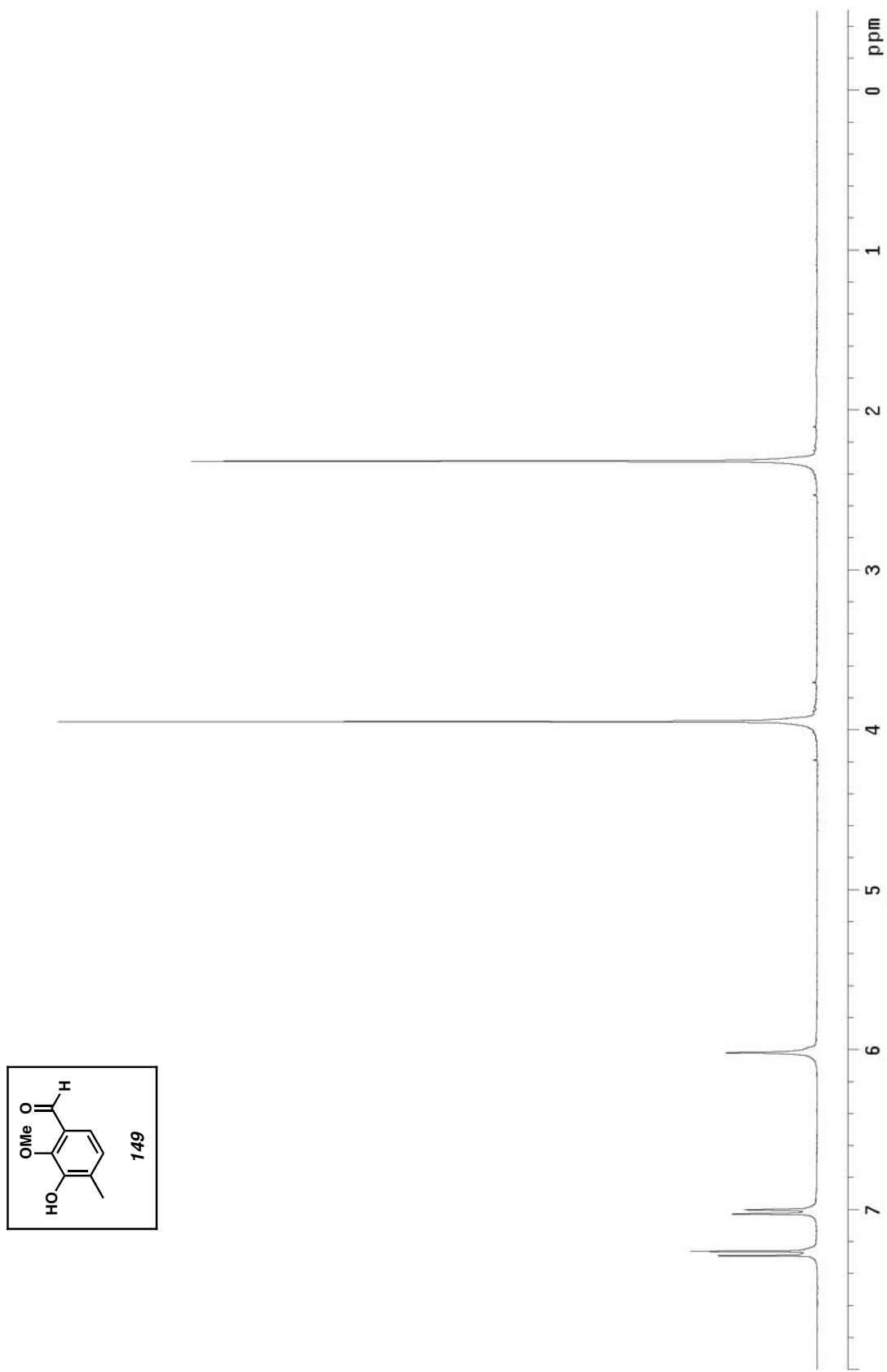


Figure A2.19 ^1H NMR of compound **149** (300 MHz, CDCl_3)

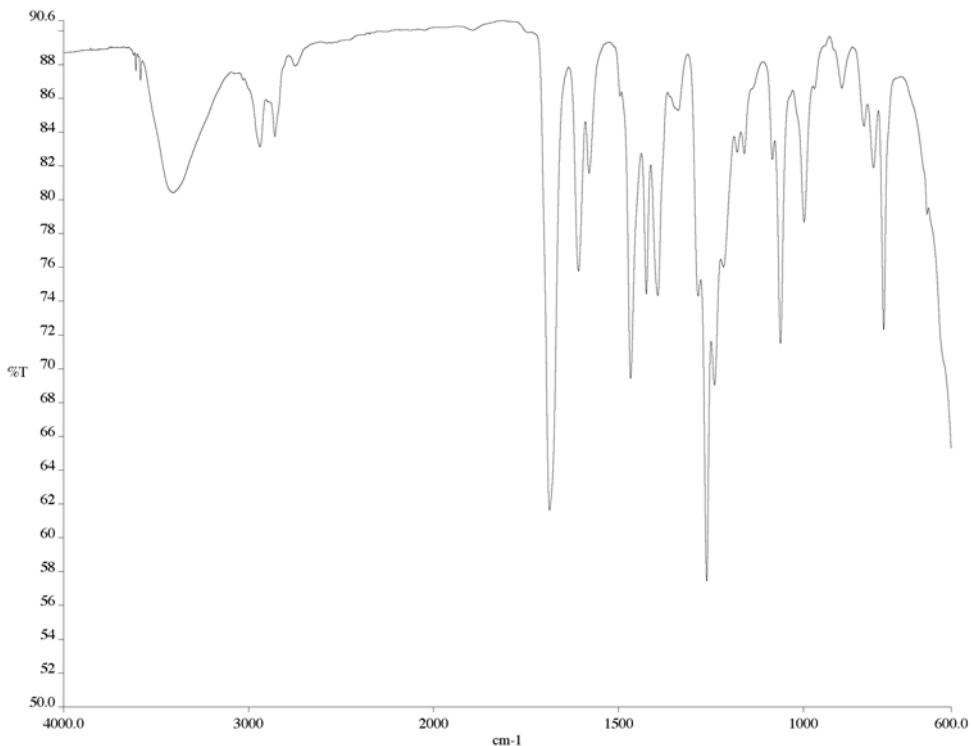


Figure A2.20 IR of compound **149** (NaCl/film)

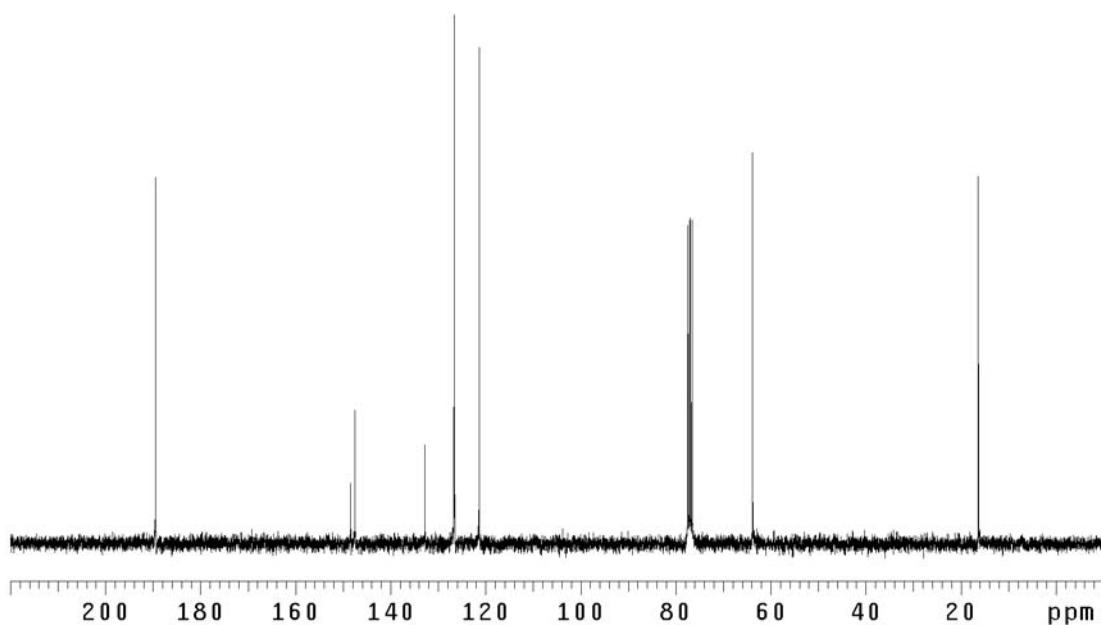


Figure A2.21 ¹³C NMR of compound **149** (75 MHz, CDCl₃)

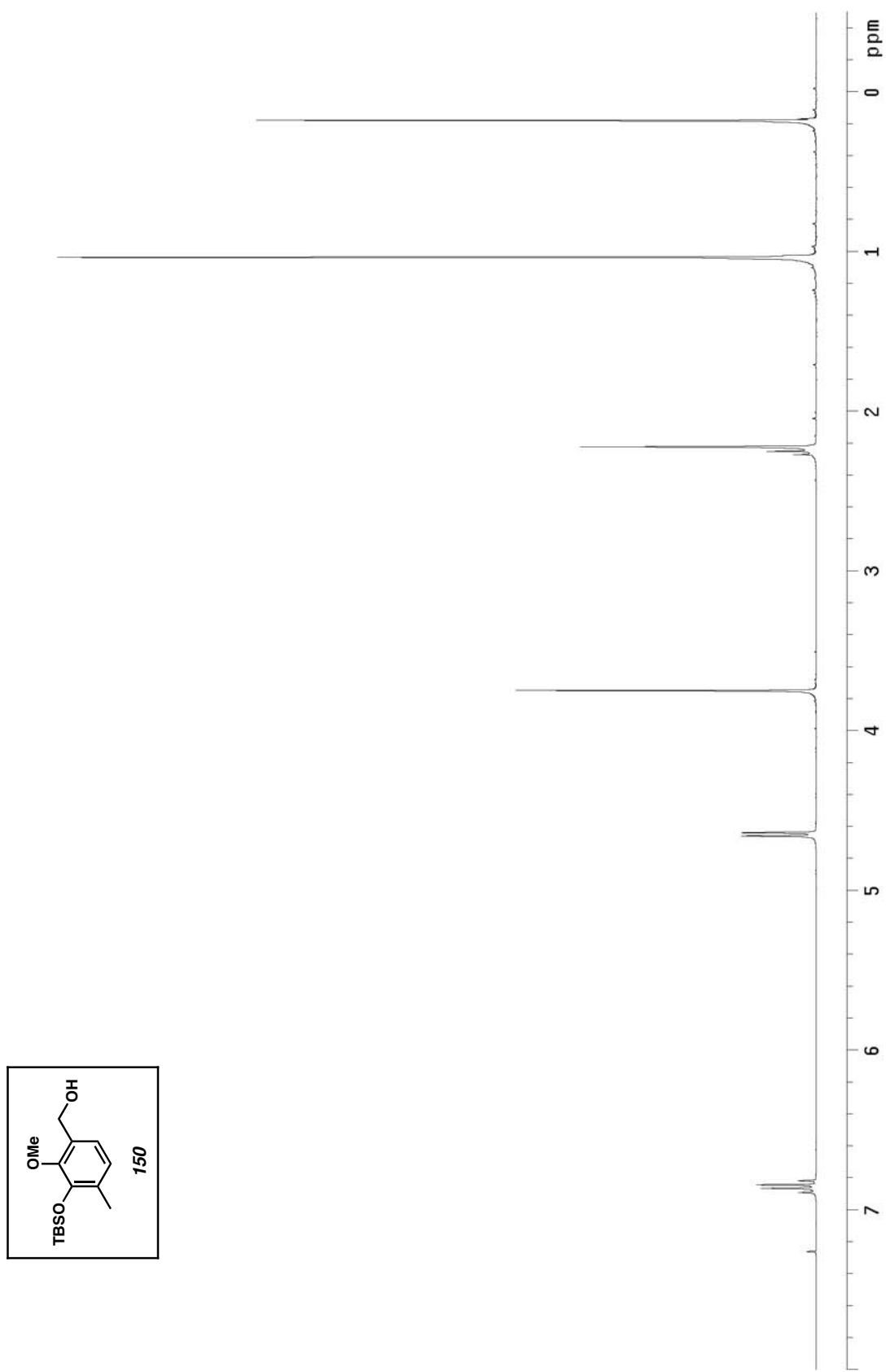


Figure A2.22 ^1H NMR of compound **150** (300 MHz, CDCl_3)

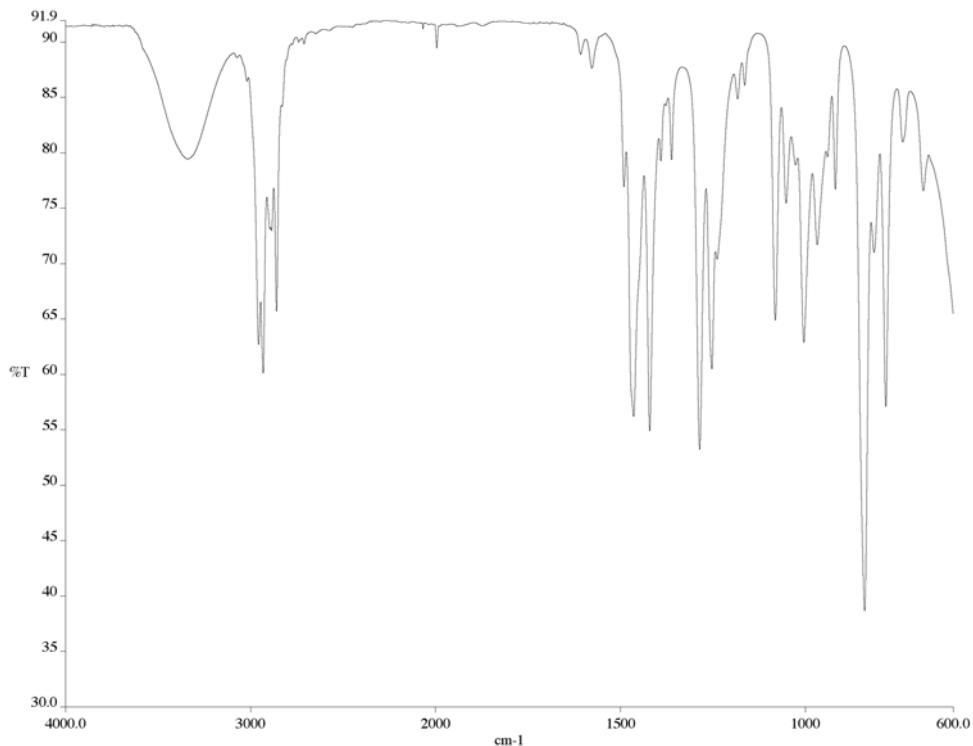


Figure A2.23 IR of compound **150** (NaCl/film)

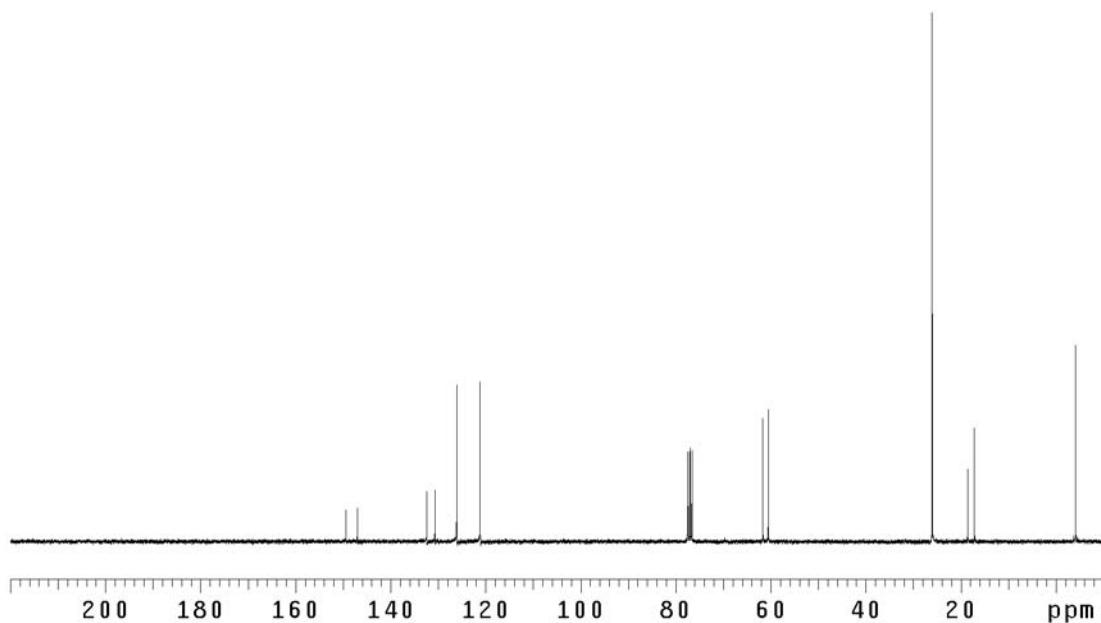


Figure A2.24 ¹³C NMR of compound **150** (75 MHz, CDCl₃)

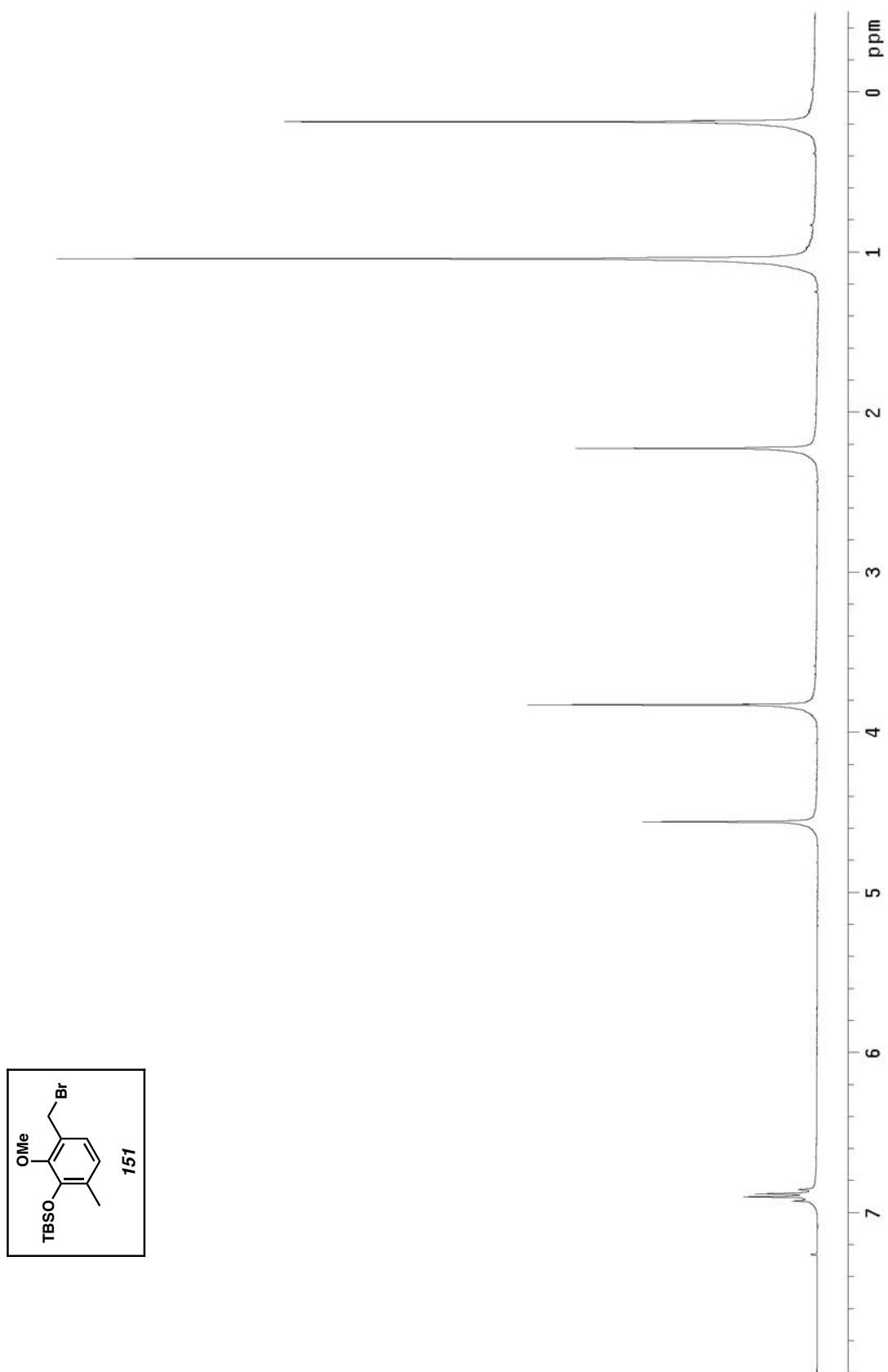


Figure A2.25 ^1H NMR of compound 151 (300 MHz, CDCl_3)

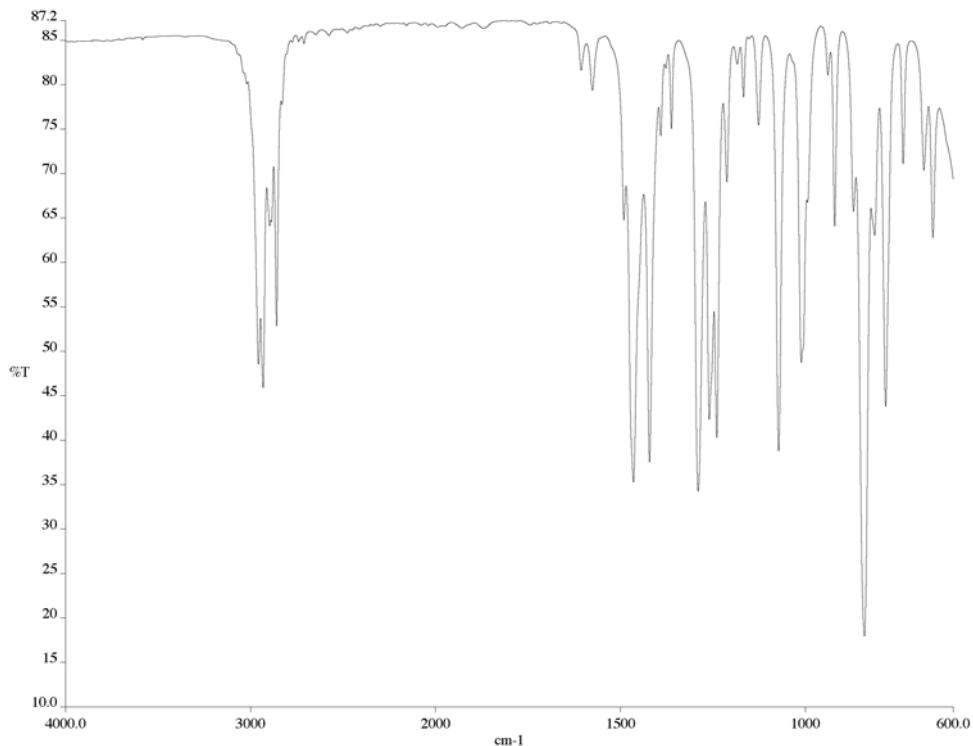


Figure A2.26 IR of compound **151** (NaCl/film)

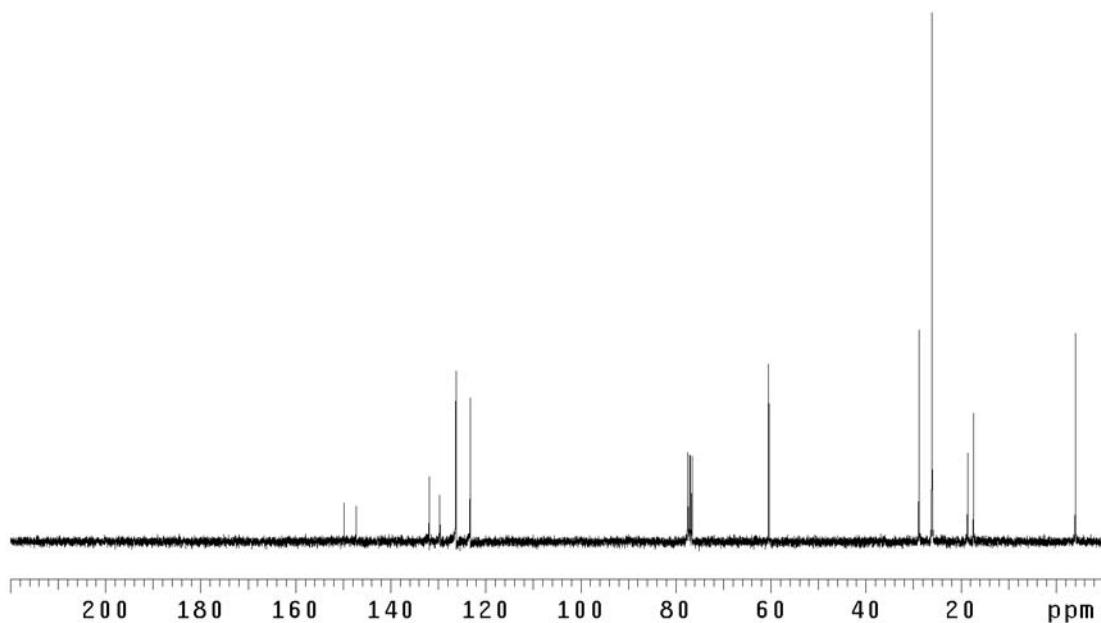


Figure A2.27 ¹³C NMR of compound **151** (75 MHz, CDCl₃)

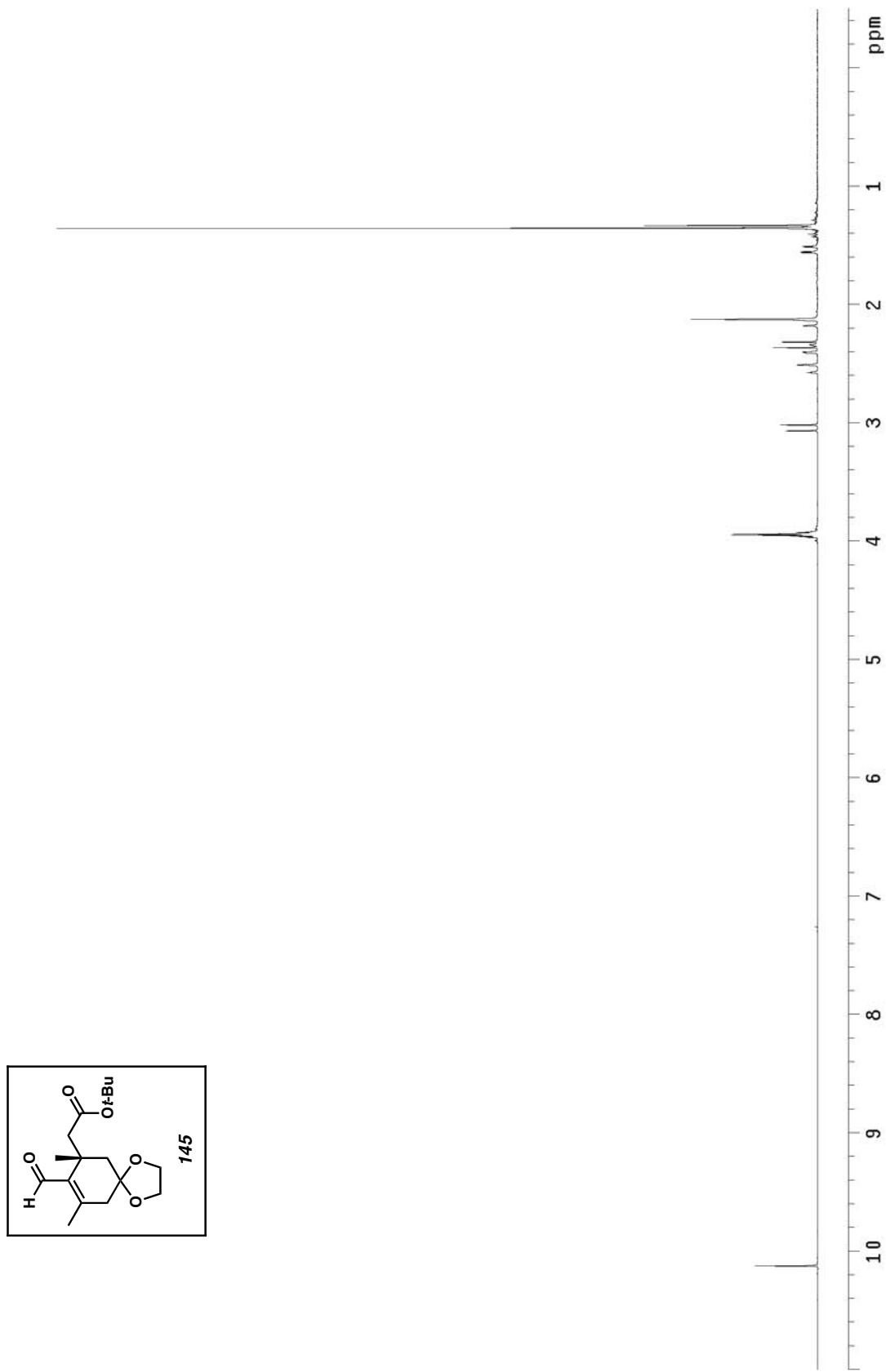


Figure A2.28 ^1H NMR of compound 145 (300 MHz, CDCl_3)

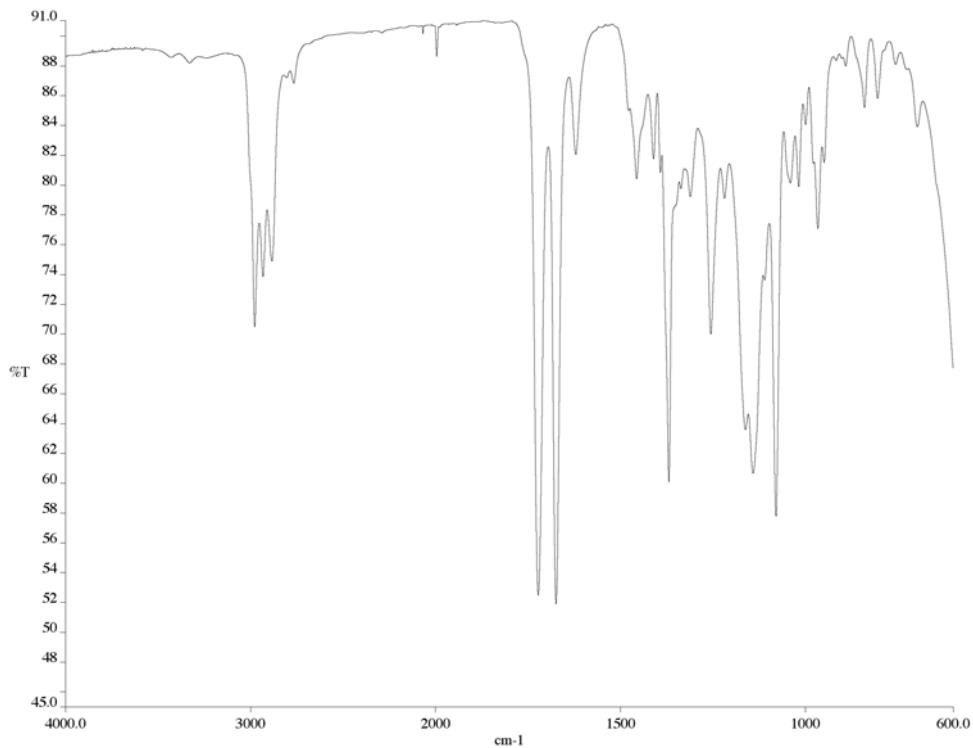


Figure A2.29 IR of compound **145** (NaCl/film)

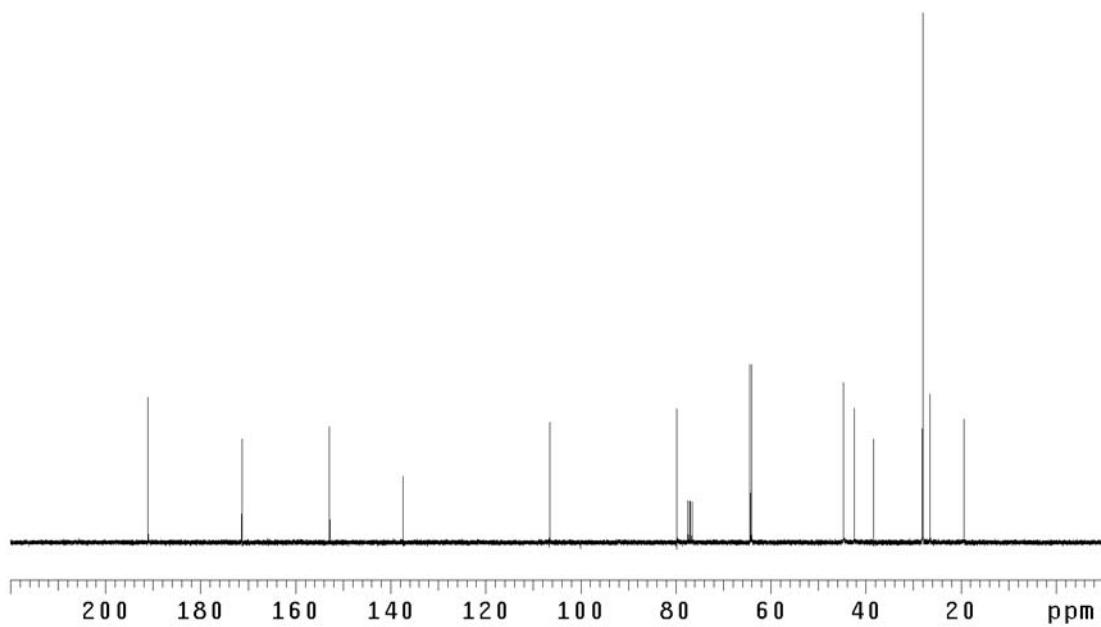


Figure A2.30 ¹³C NMR of compound **145** (75 MHz, CDCl₃)

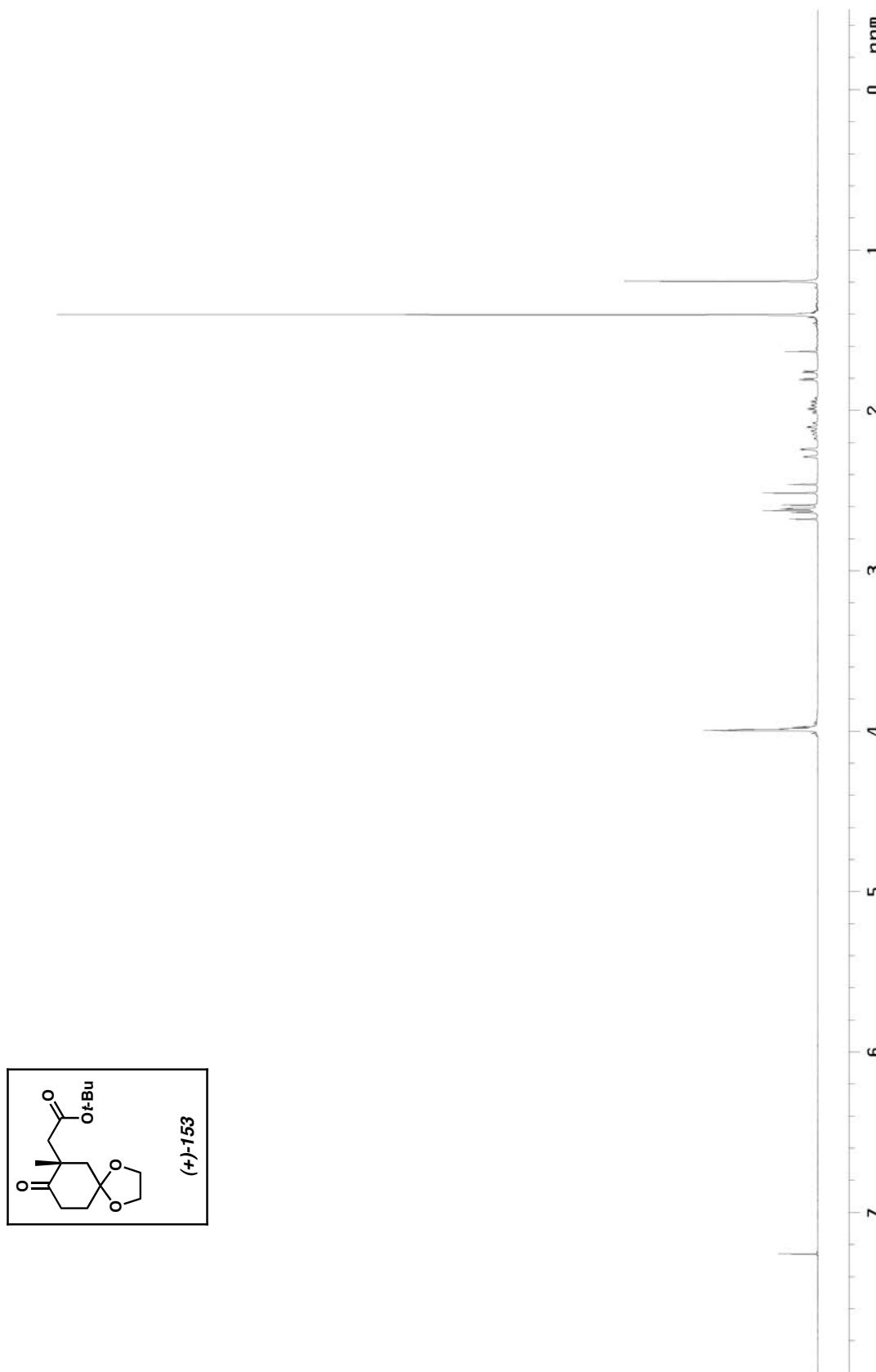


Figure A2.31 ^1H NMR of compound $(+)-153$ (300 MHz, CDCl_3)

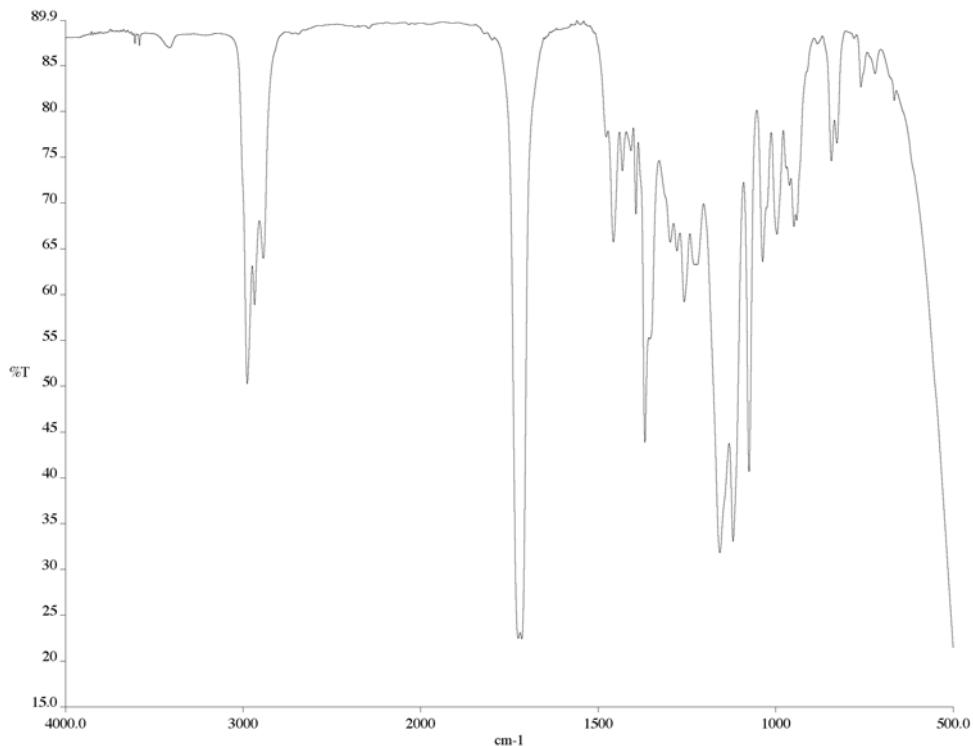


Figure A2.32 IR of compound (*+*)-153 (NaCl/film)

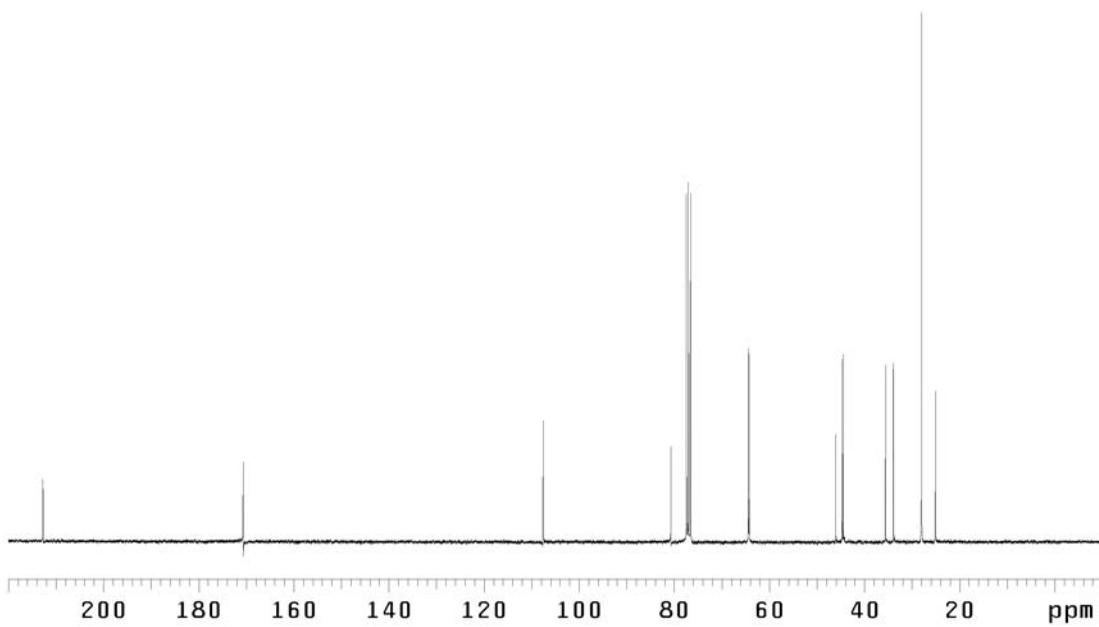


Figure A2.33 ¹³C NMR of compound (*+*)-153 (75 MHz, CDCl₃)

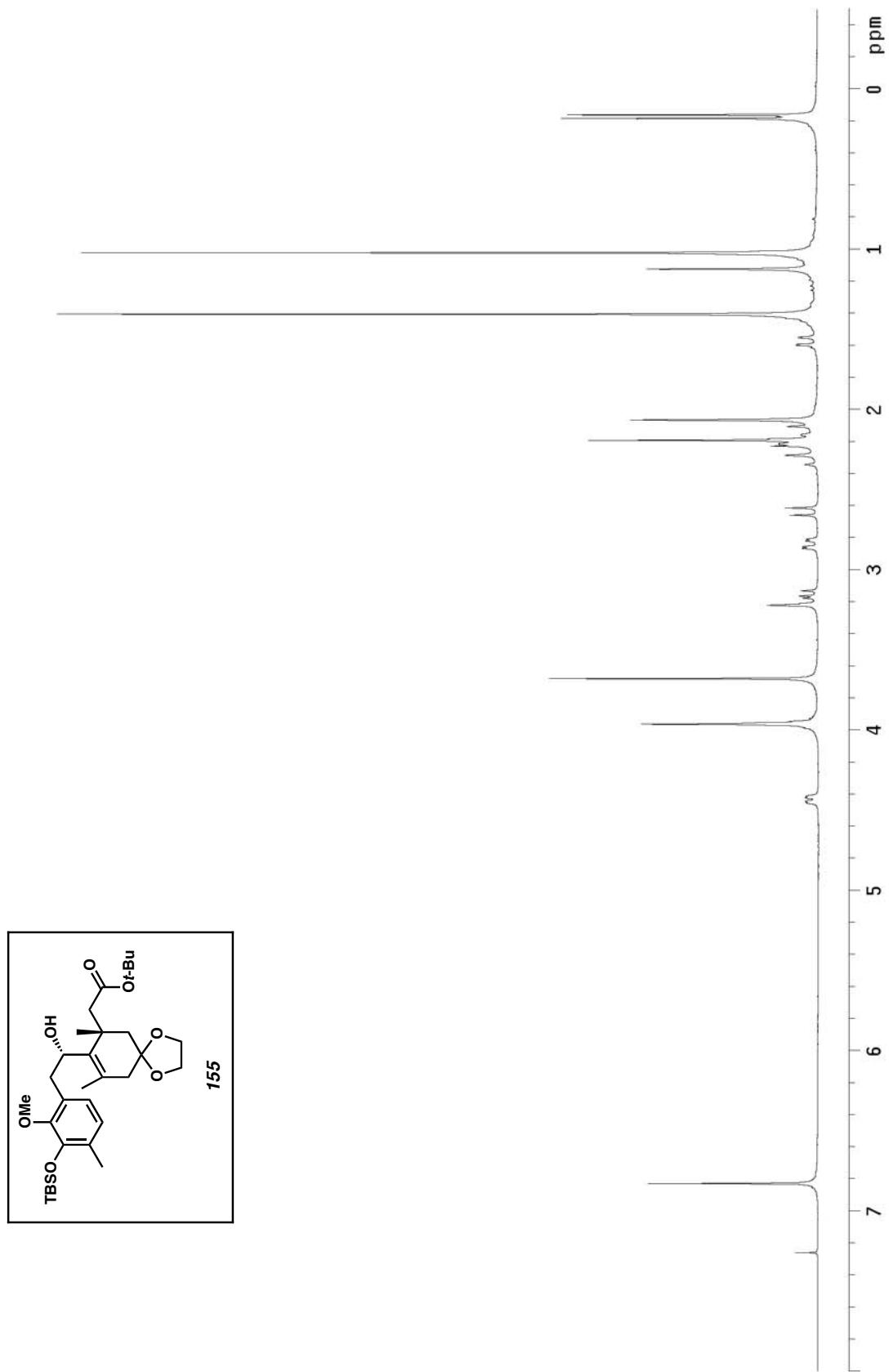


Figure A2.34 ^1H NMR of compound 155 (300 MHz, CDCl_3)

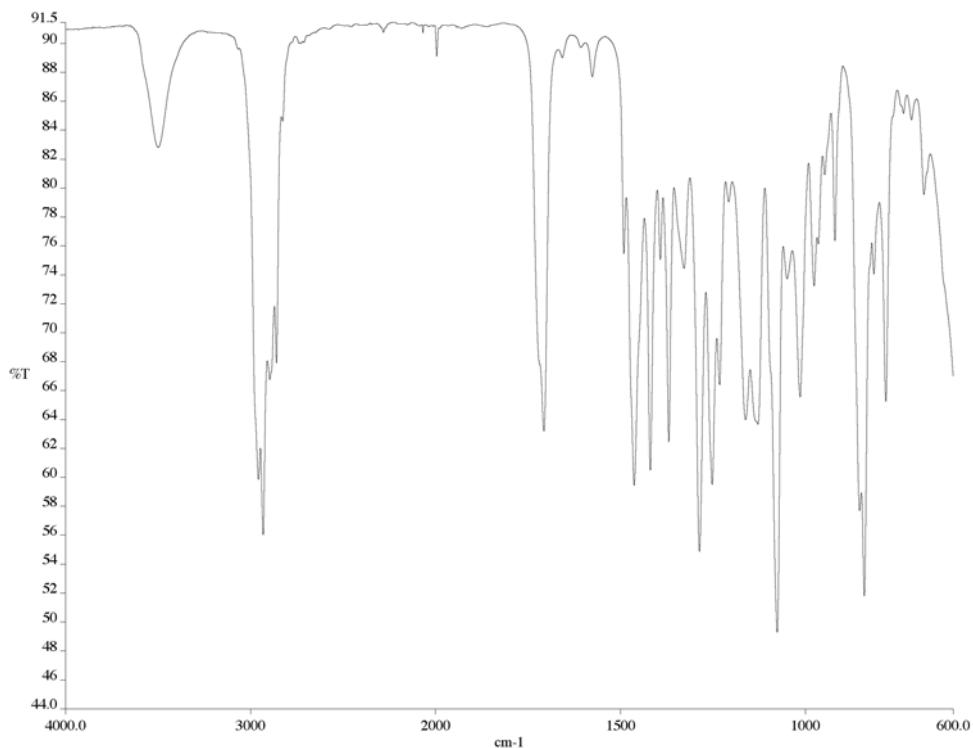


Figure A2.35 IR of compound **155** (NaCl/film)

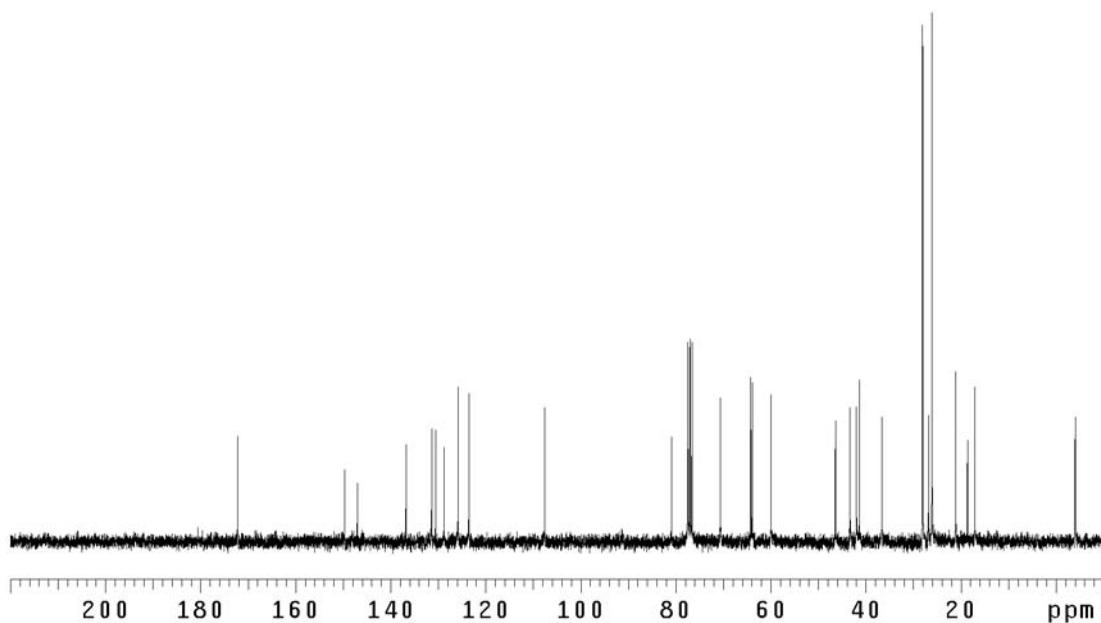


Figure A2.36 ¹³C NMR of compound **155** (75 MHz, CDCl₃)

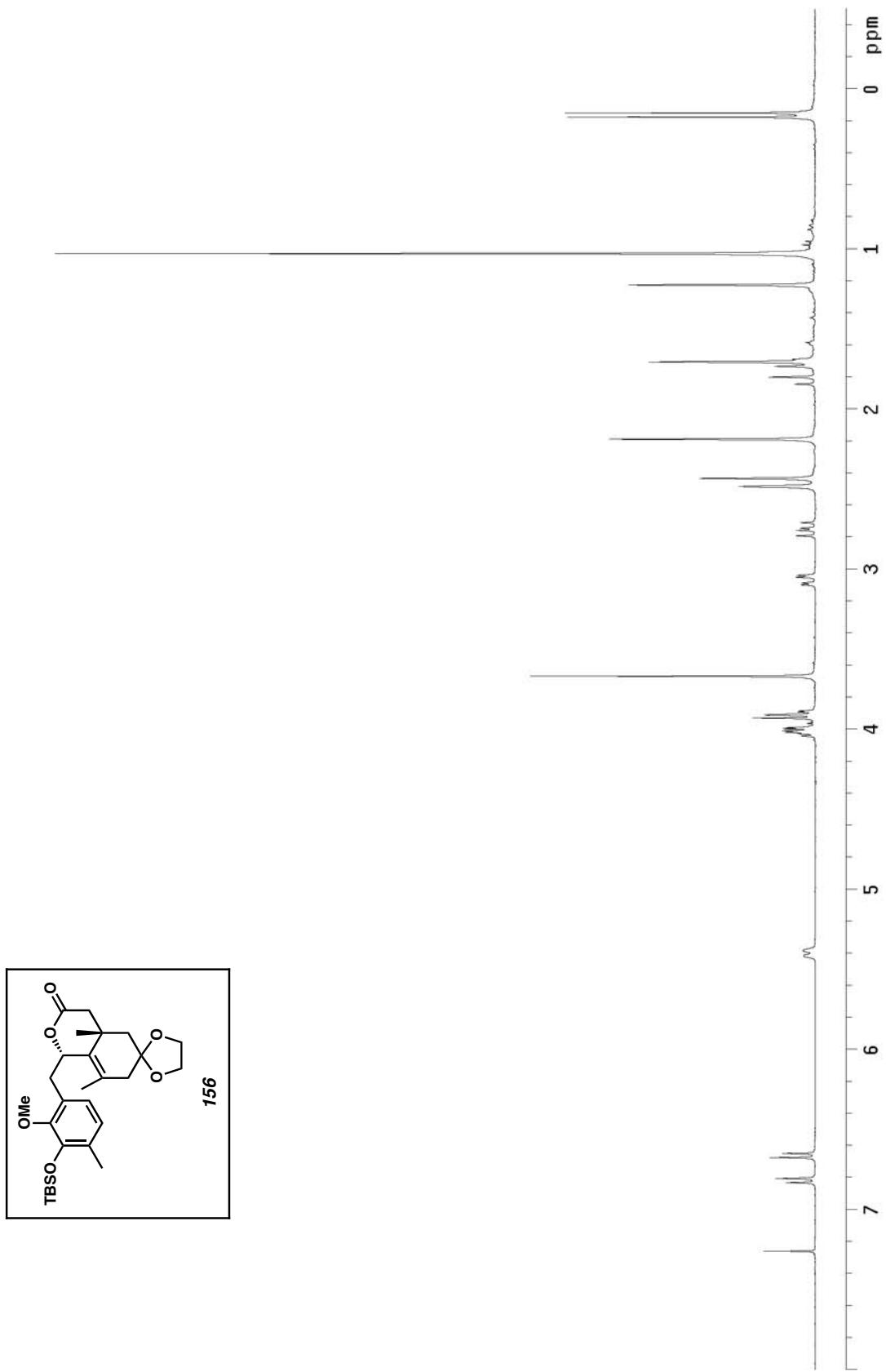


Figure A2.37 ^1H NMR of compound **156** (300 MHz, CDCl_3)

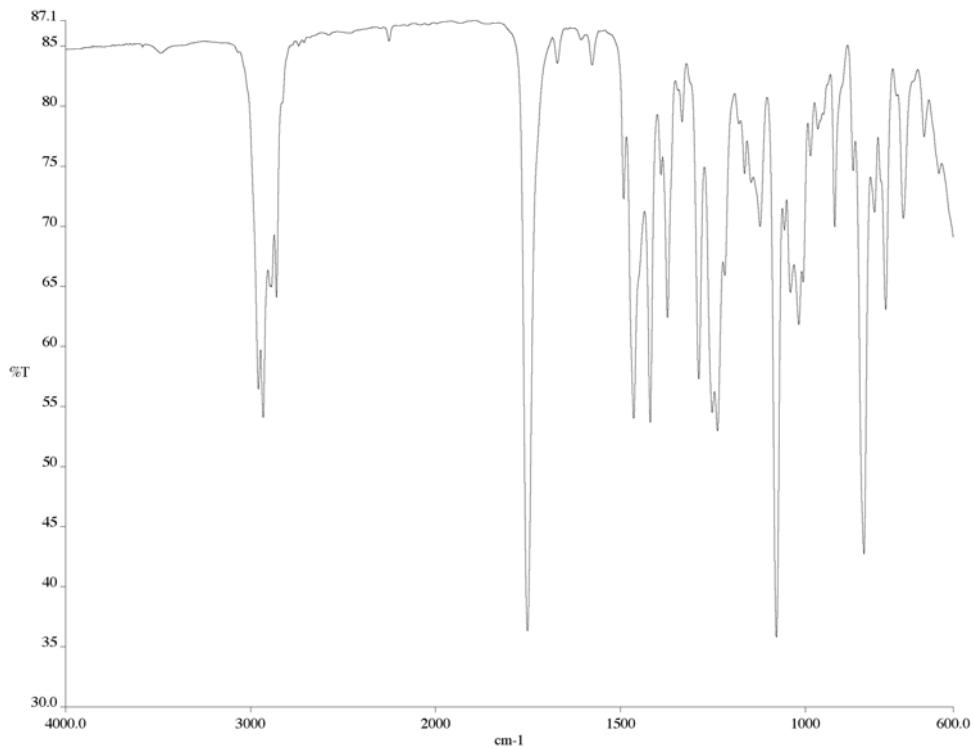


Figure A2.38 IR of compound **156** (NaCl/film)

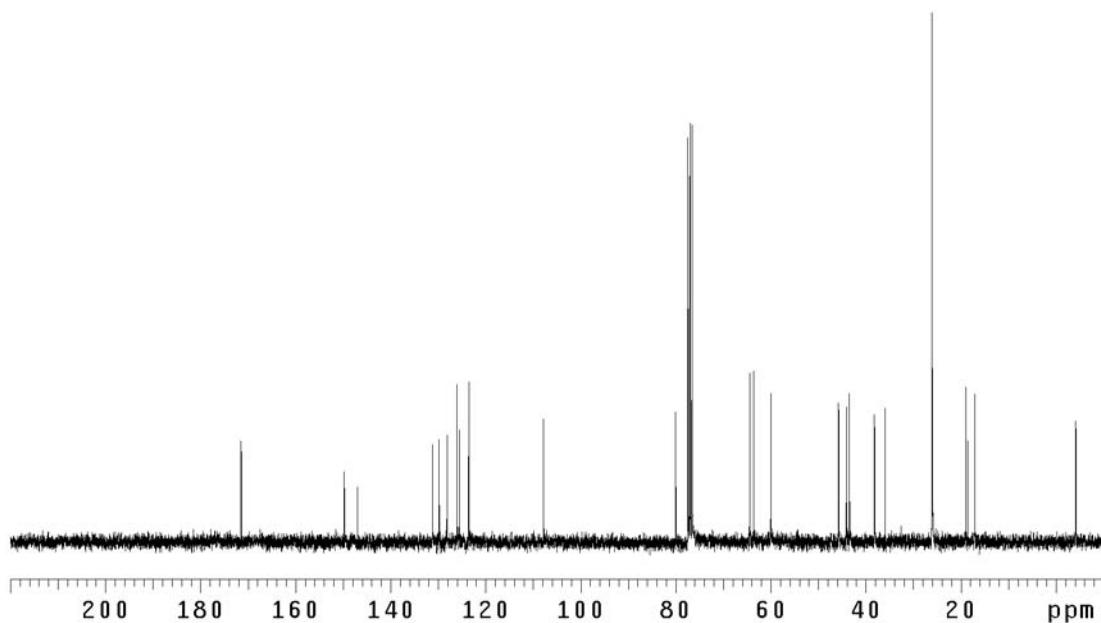


Figure A2.39 ¹³C NMR of compound **156** (75 MHz, CDCl₃)

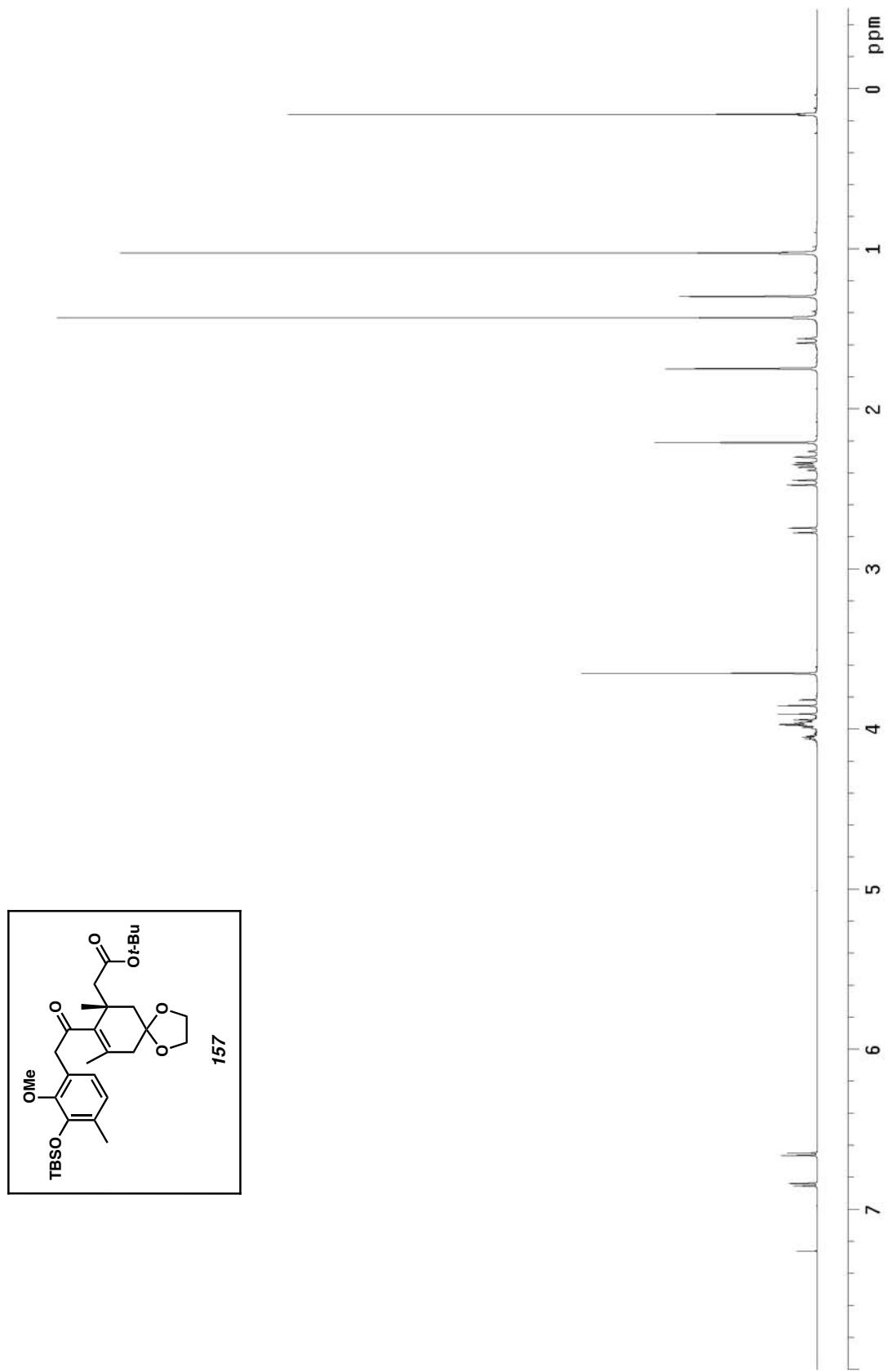


Figure A2.40 ^1H NMR of compound 157 (500 MHz, CDCl_3)

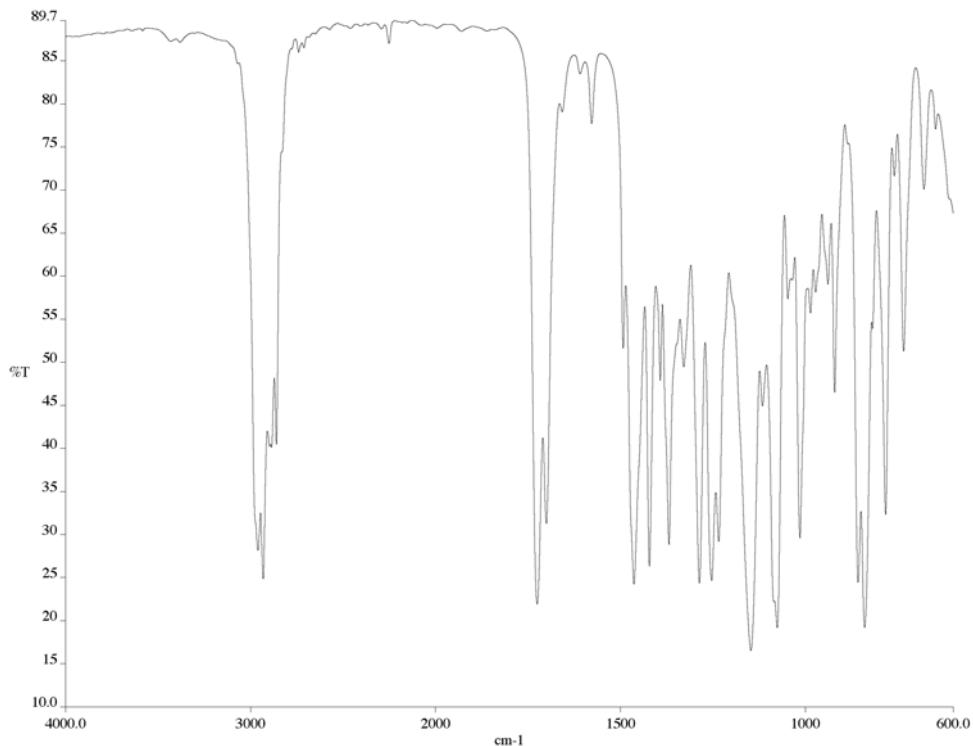


Figure A2.41 IR of compound **157** (NaCl/film)

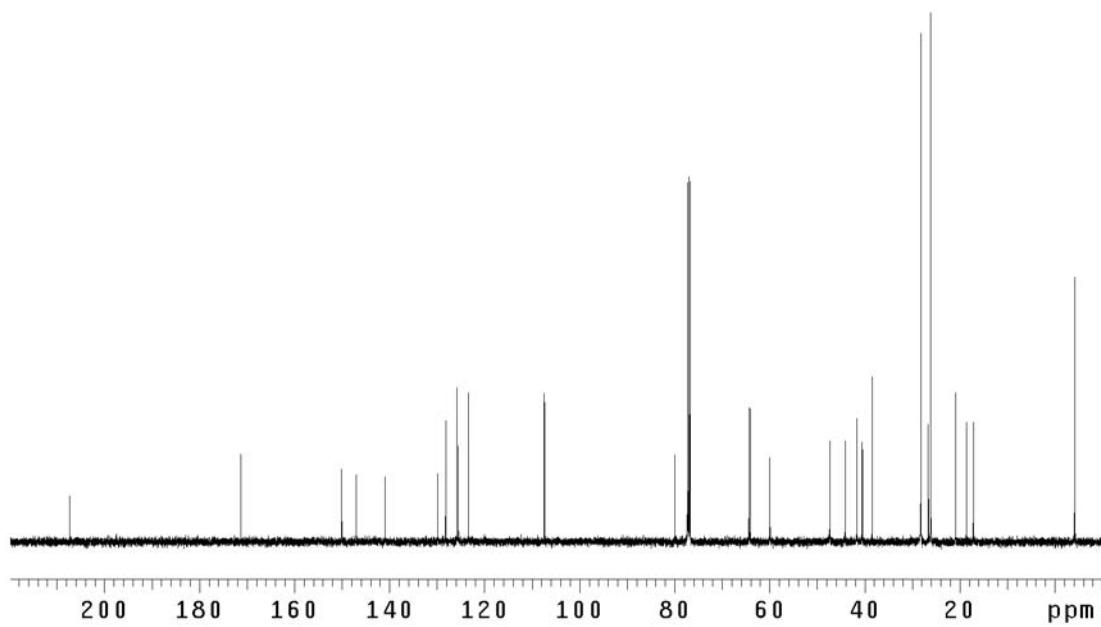


Figure A2.42 ¹³C NMR of compound **157** (125 MHz, CDCl₃)

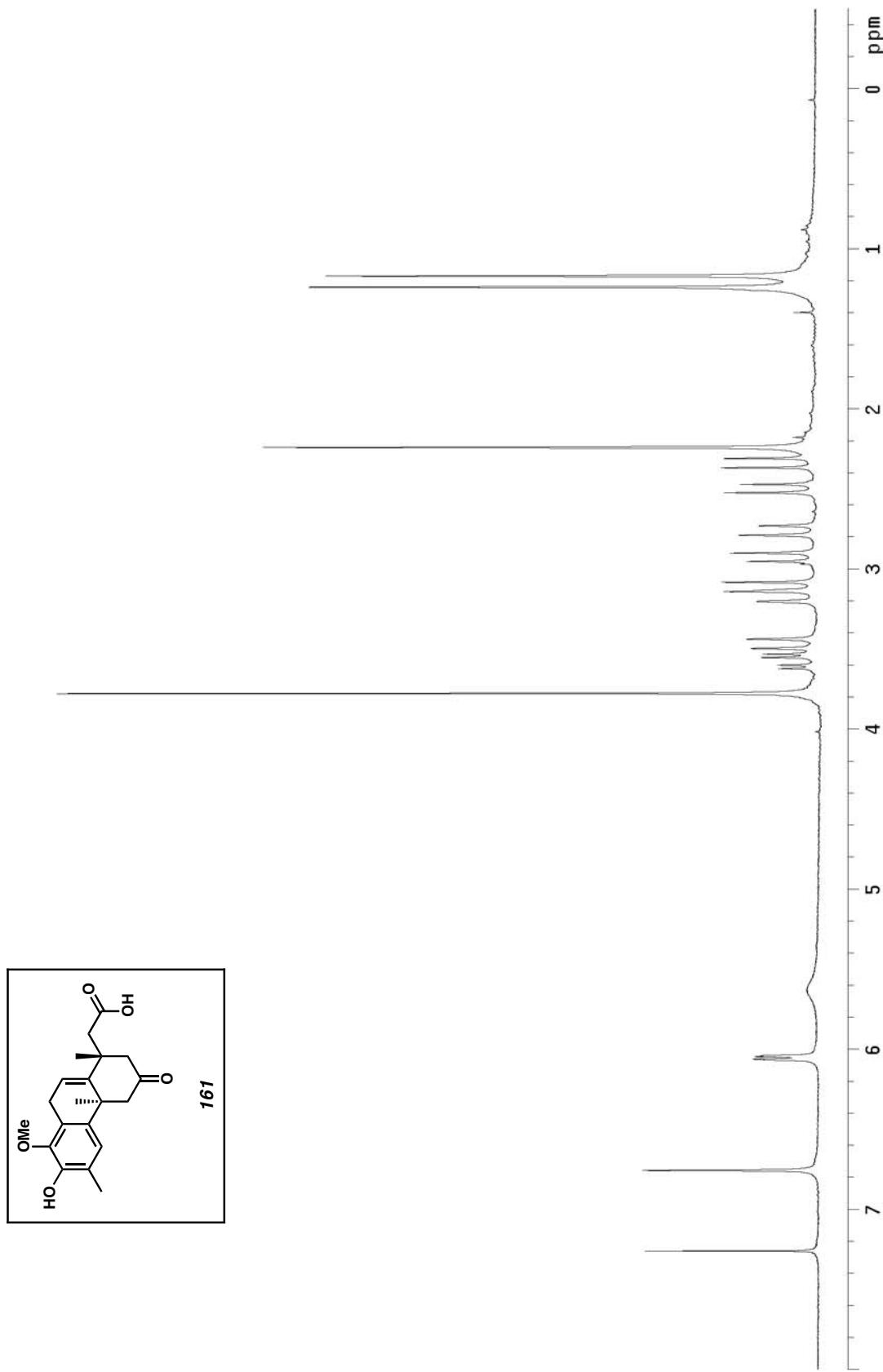


Figure A2.43 ^1H NMR of compound **161** (300 MHz, CDCl_3)

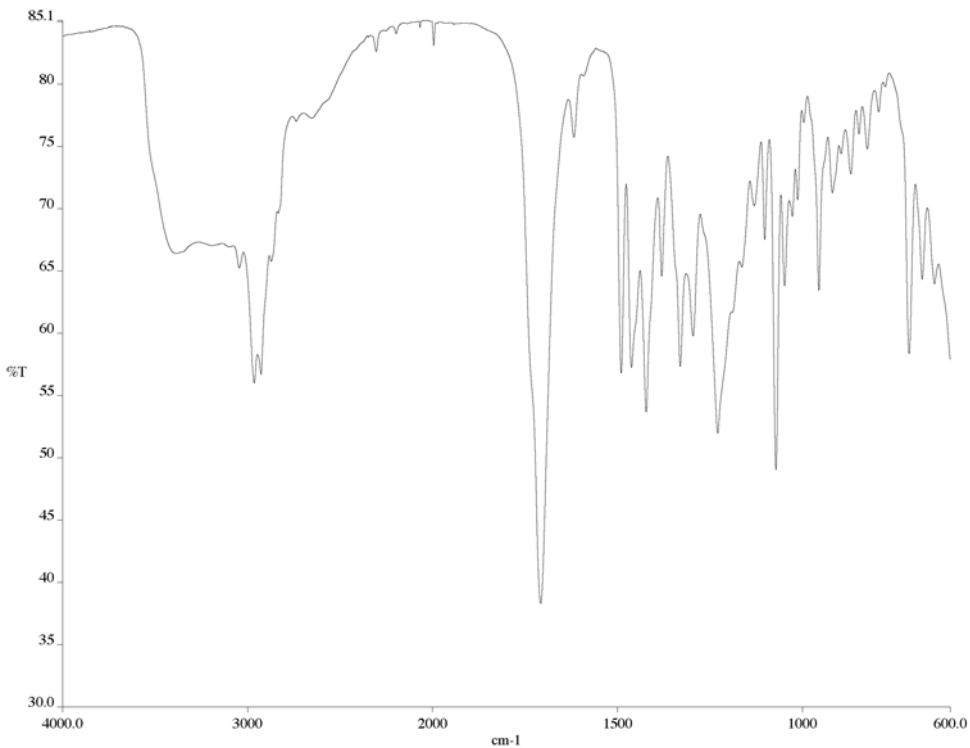


Figure A2.44 IR of compound **161** (NaCl/film)

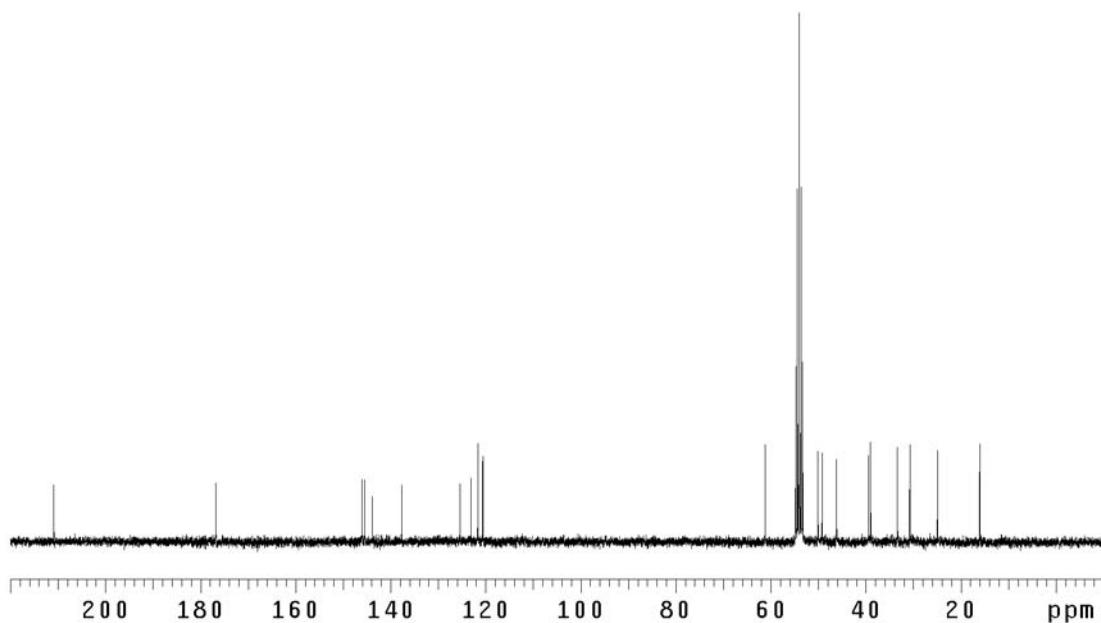


Figure A2.45 ¹³C NMR of compound **161** (75 MHz, CD₂Cl₂)

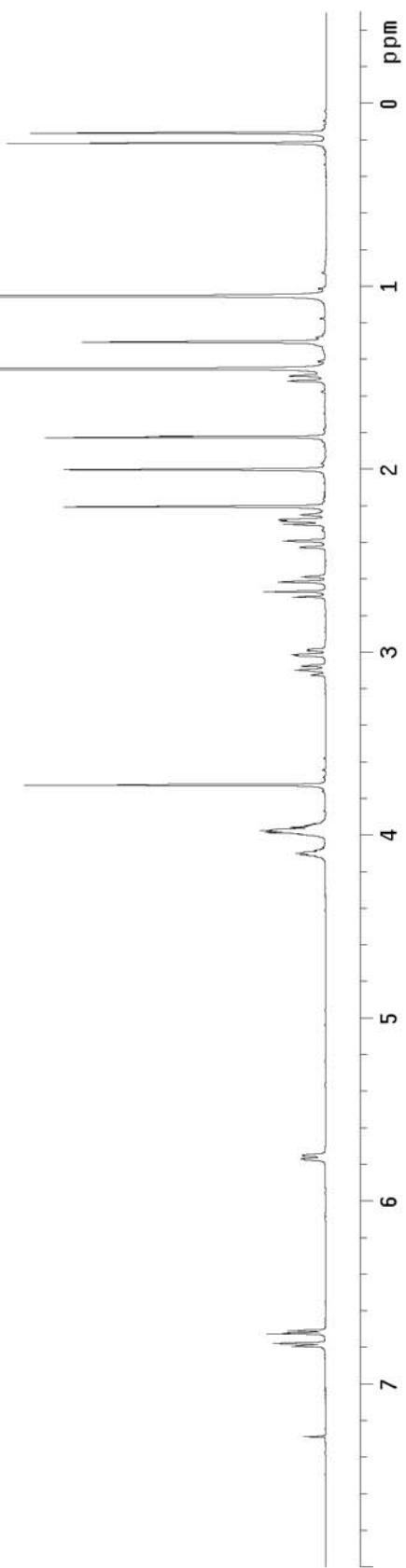
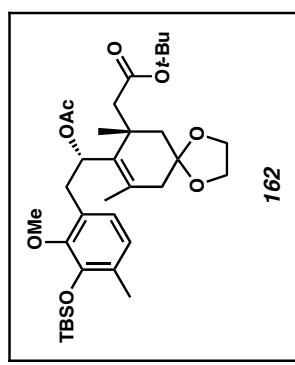


Figure A2.46 ^1H NMR of compound **162** (500 MHz, CDCl_3)

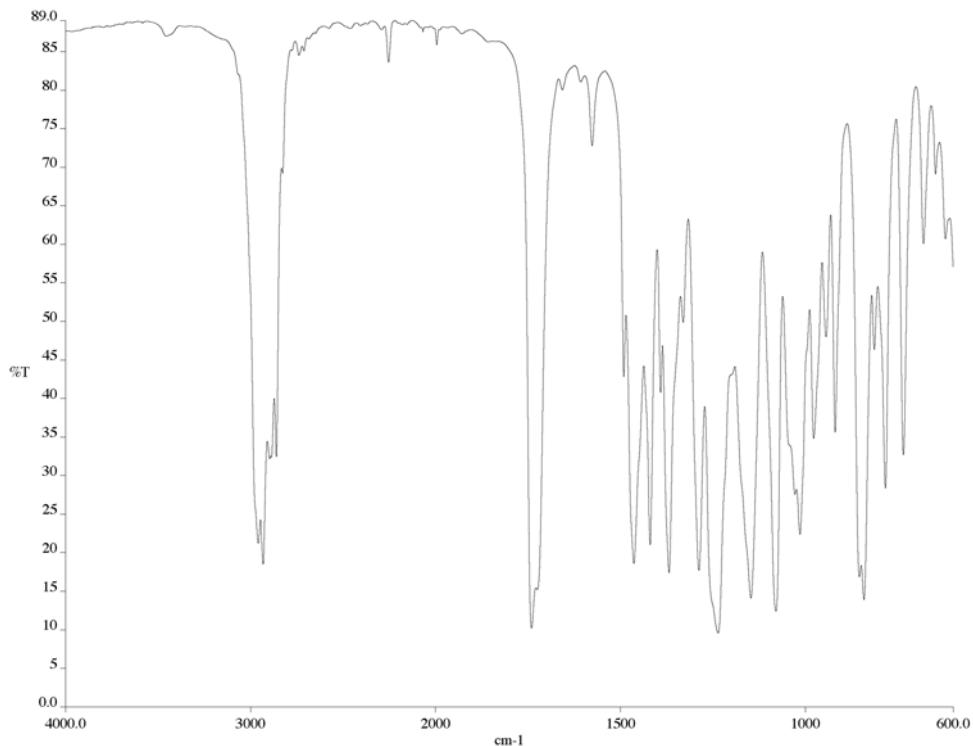


Figure A2.47 IR of compound **162** (NaCl/film)

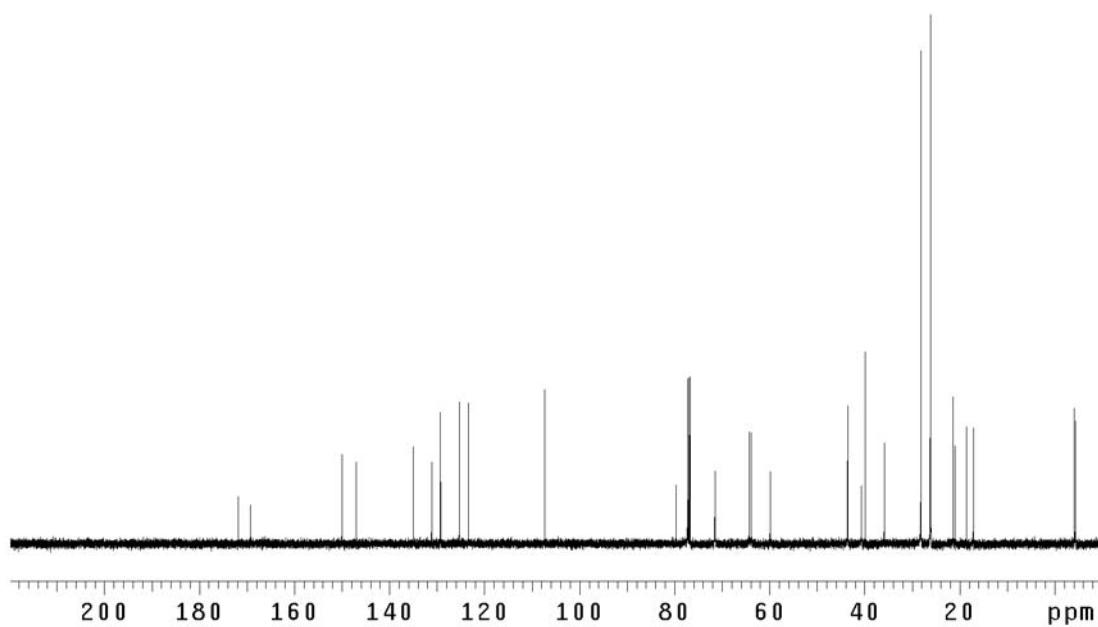


Figure A2.48 ¹³C NMR of compound **162** (125 MHz, CDCl₃)

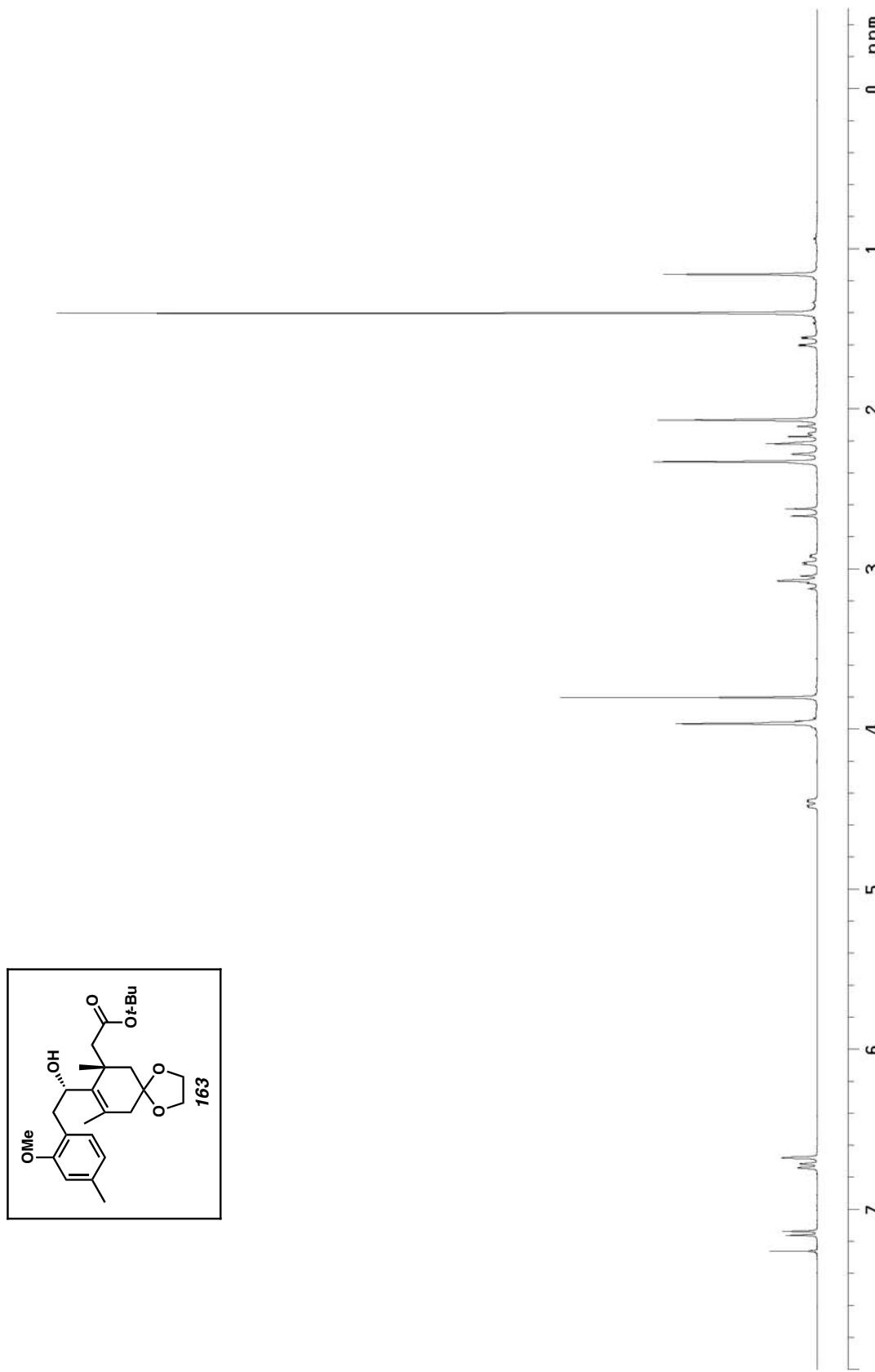


Figure A2.49 ^1H NMR of compound 163 (300 MHz, CDCl_3)

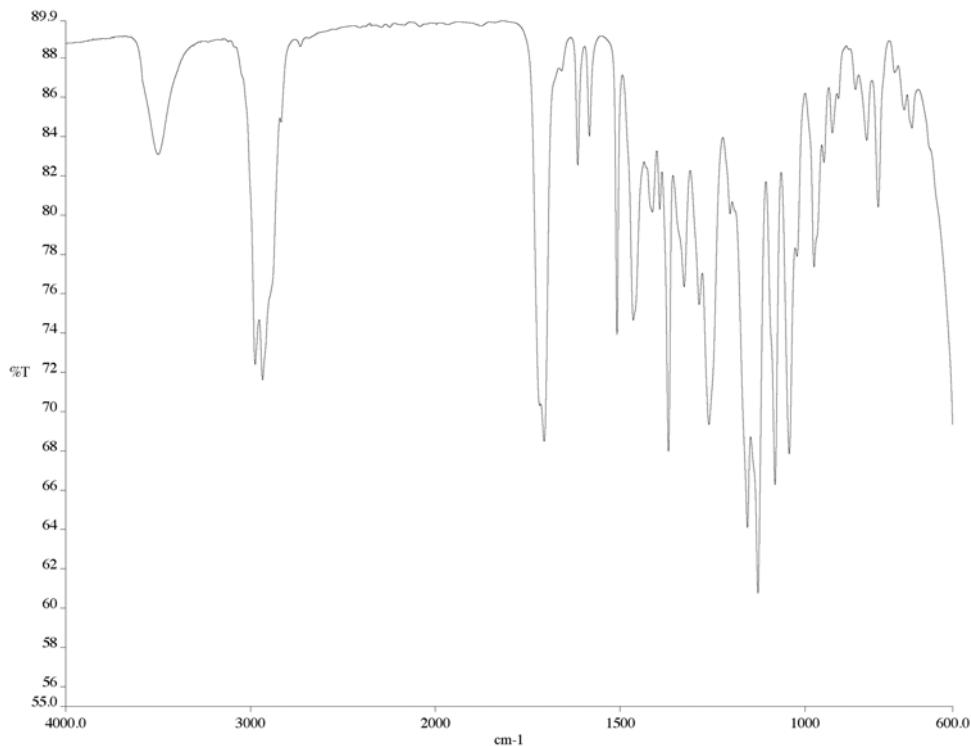


Figure A2.50 IR of compound **163** (NaCl/film)

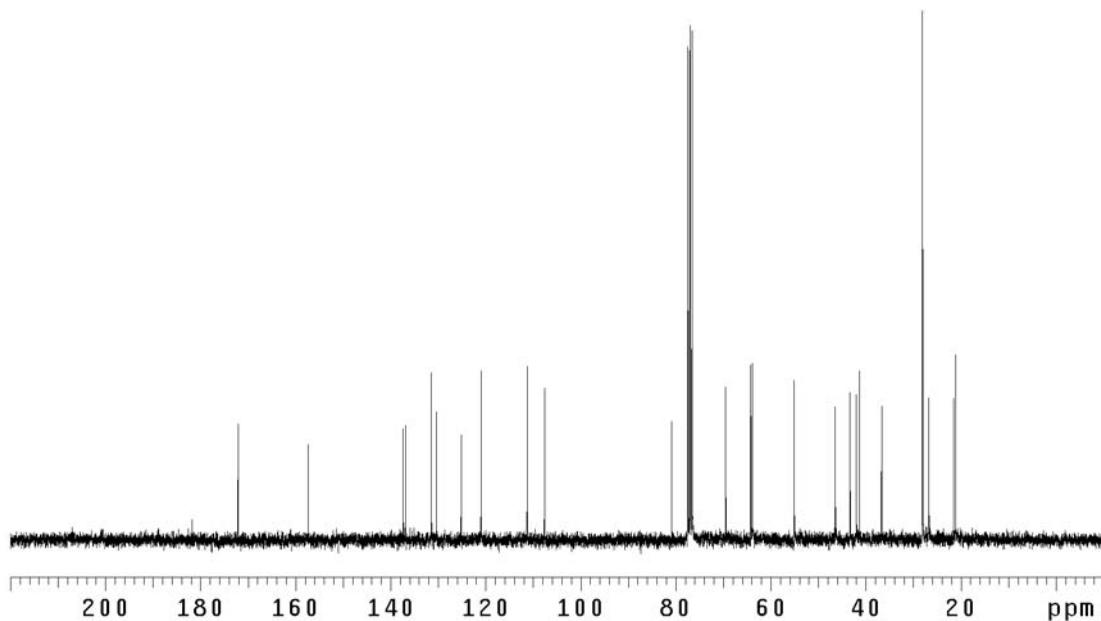
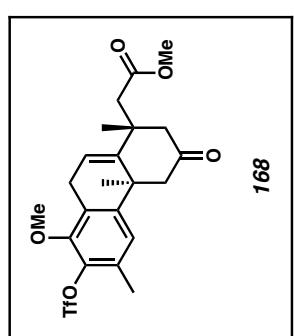
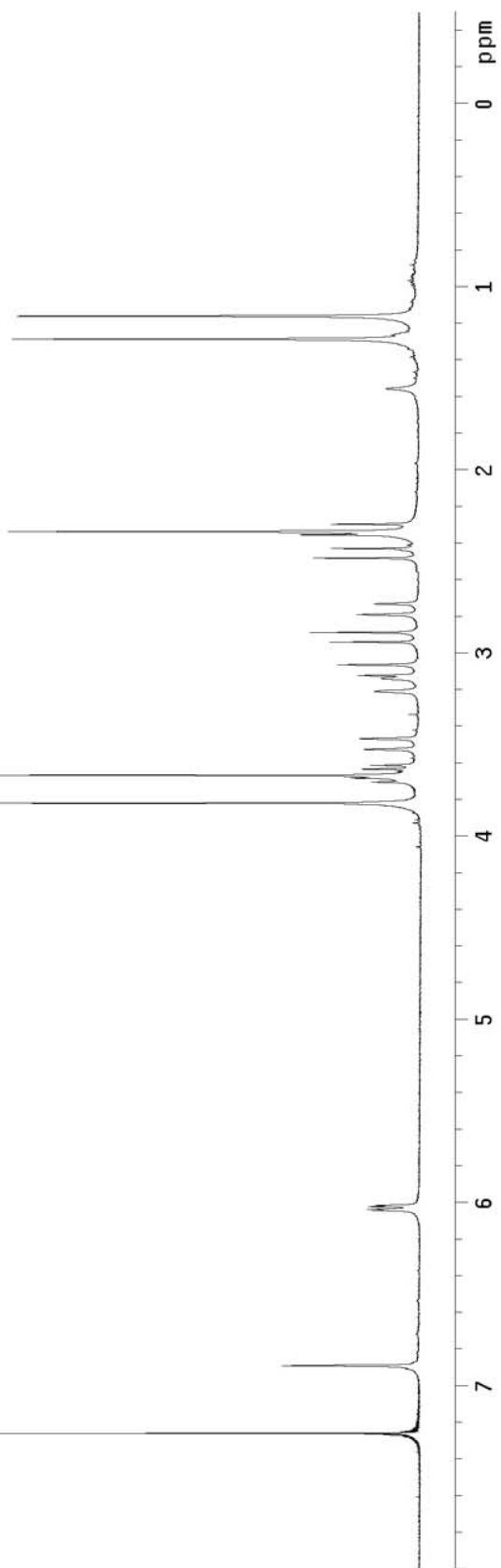


Figure A2.51 ¹³C NMR of compound **163** (75 MHz, CDCl₃)



168

Figure A2.52 ¹H NMR of compound 168 (300 MHz, CDCl₃)

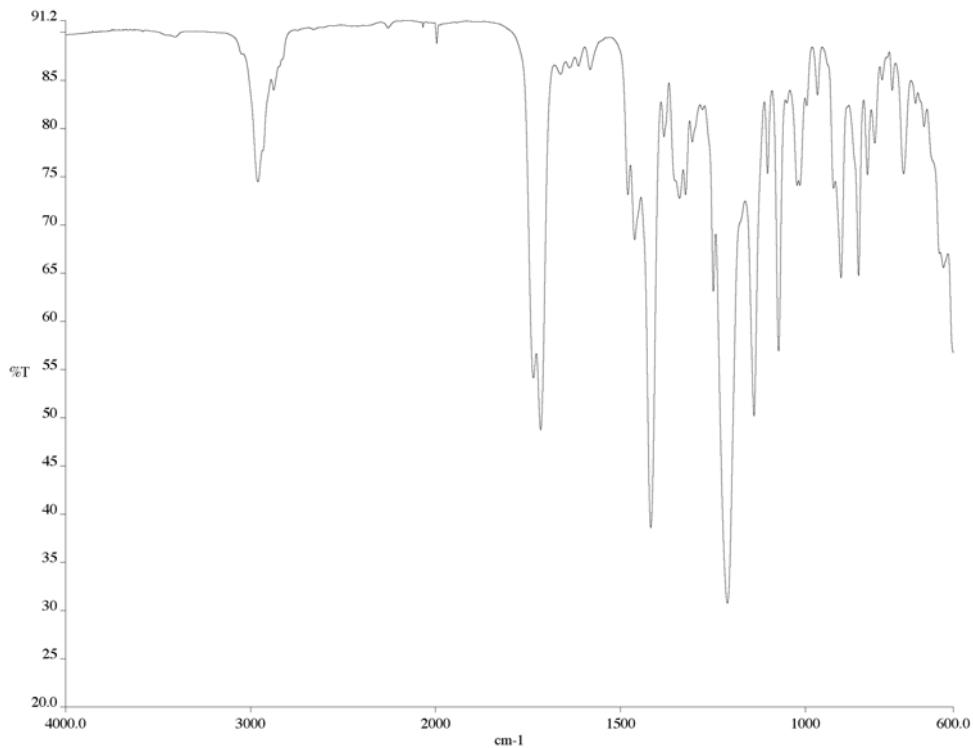


Figure A2.53 IR of compound **168** (NaCl/film)

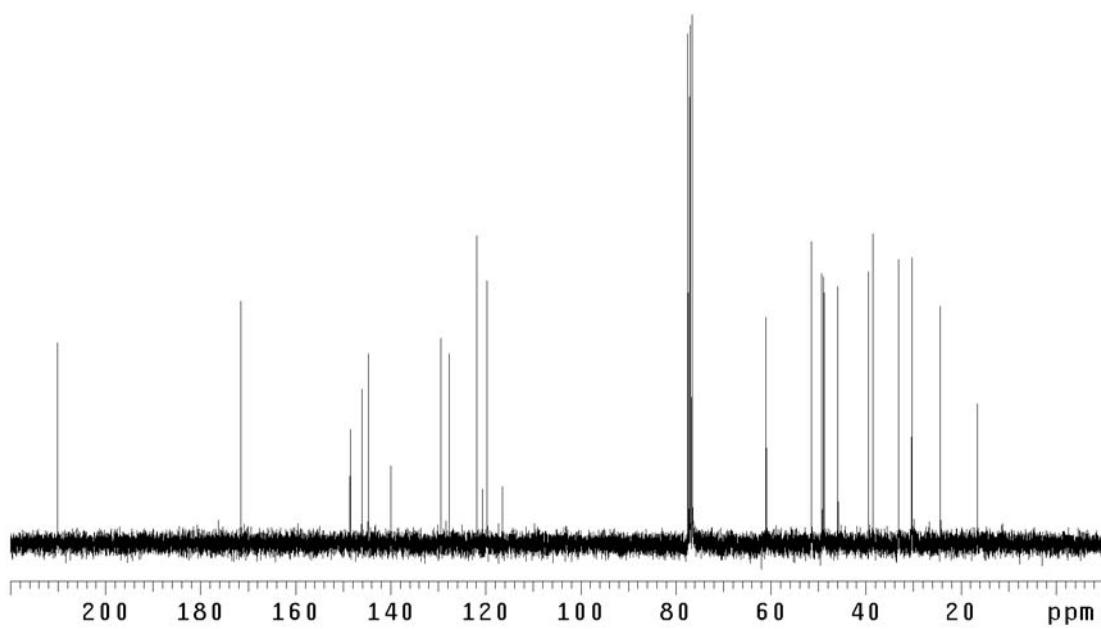


Figure A2.54 ¹³C NMR of compound **168** (75 MHz, CDCl₃)

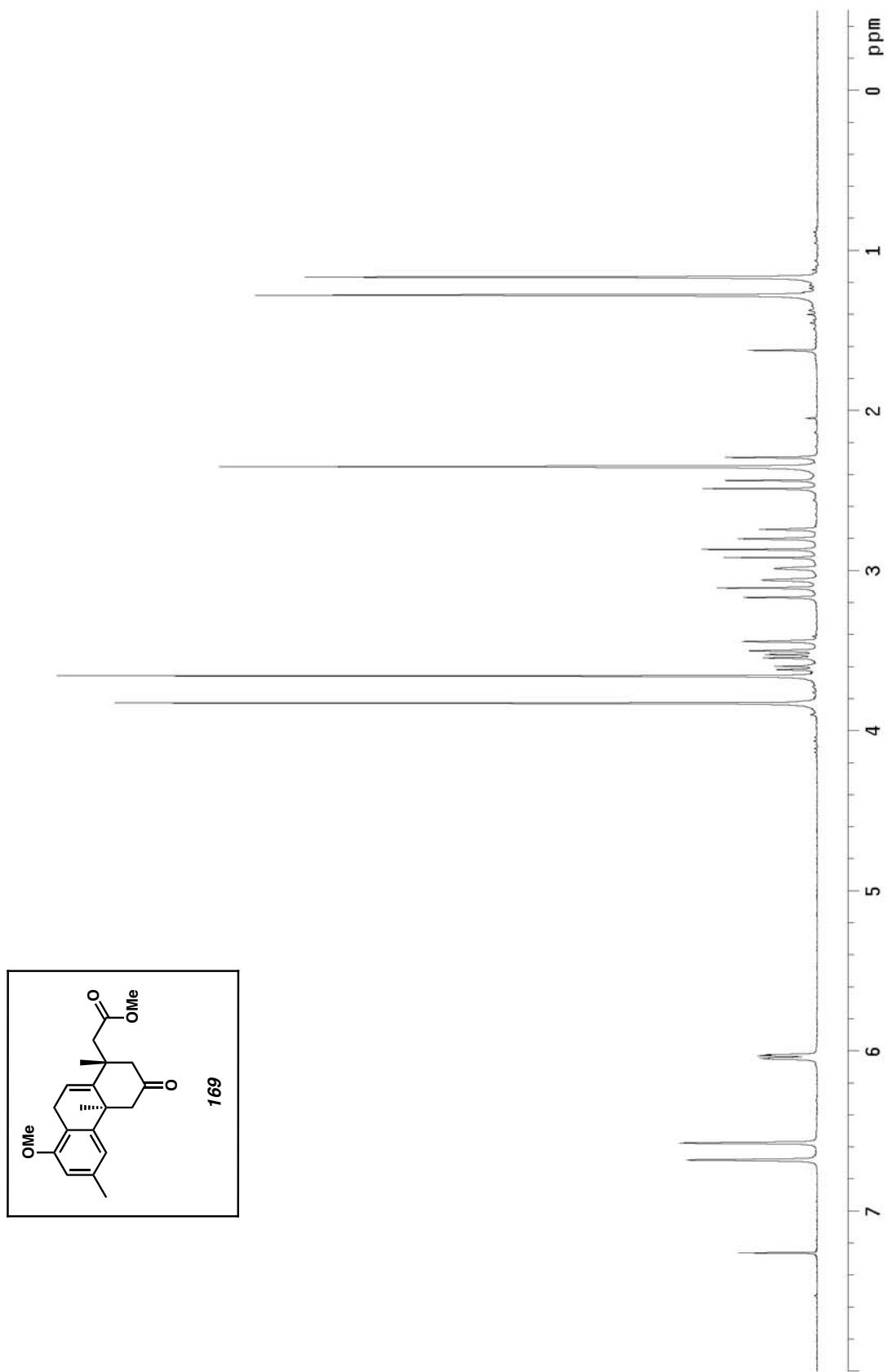


Figure A2.55 ^1H NMR of compound **169** (300 MHz, CDCl_3)

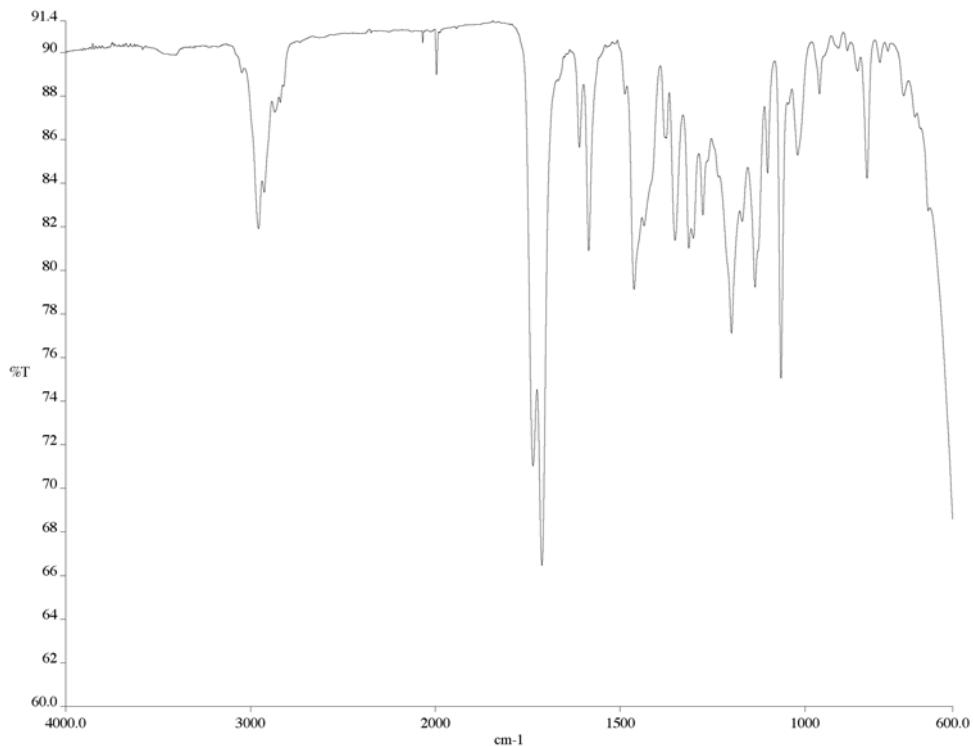


Figure A2.56 IR of compound **169** (NaCl/film)

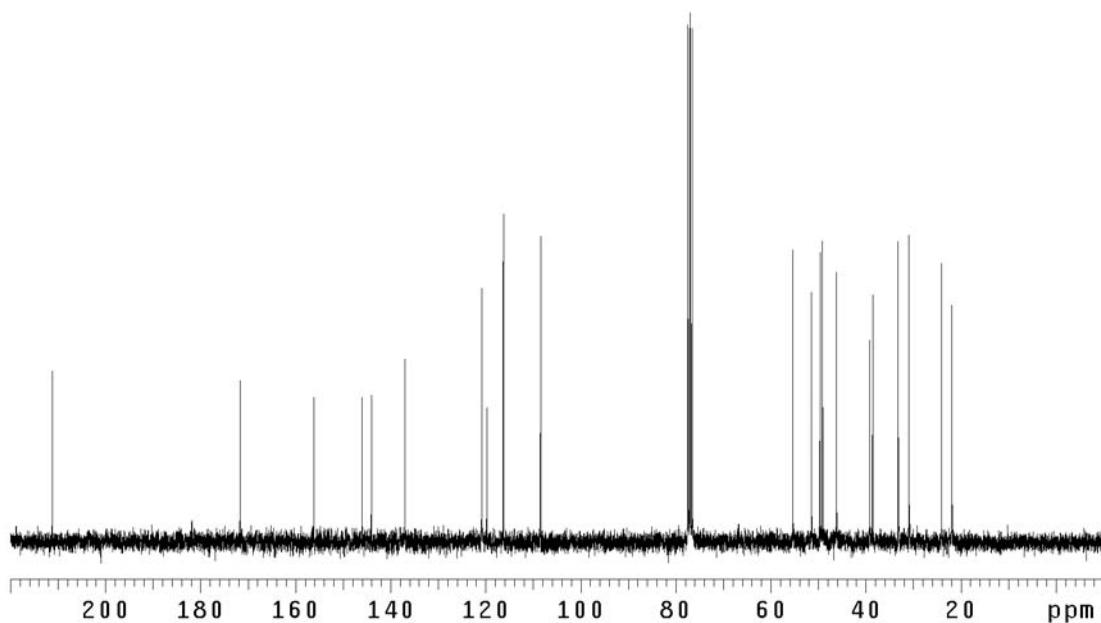


Figure A2.57 ¹³C NMR of compound **169** (75 MHz, CDCl₃)

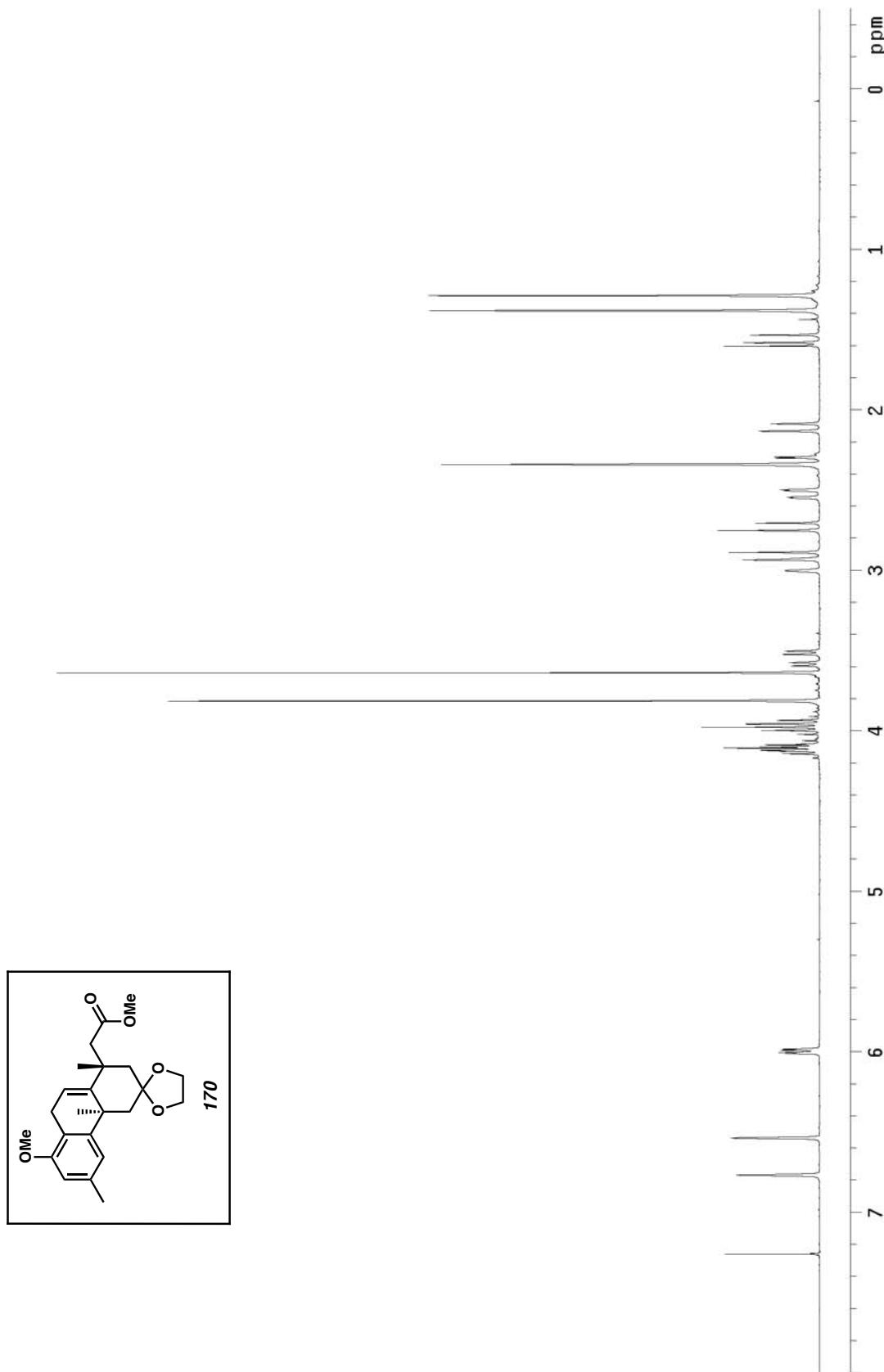


Figure A2.58 ^1H NMR of compound 170 (300 MHz, CDCl_3)

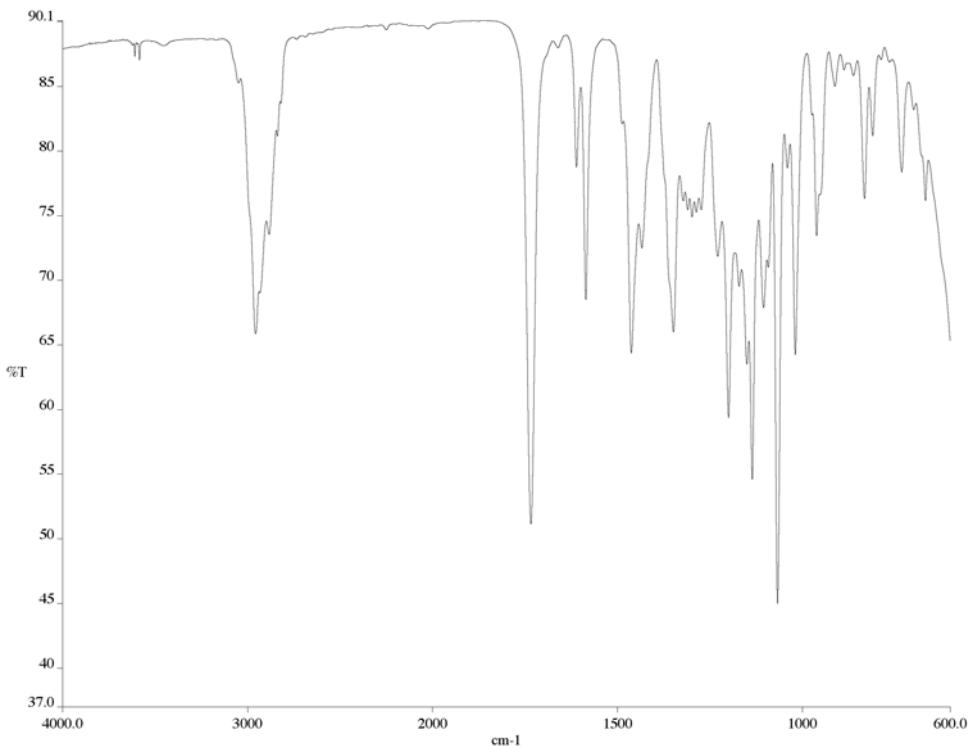


Figure A2.59 IR of compound **170** (NaCl/film)

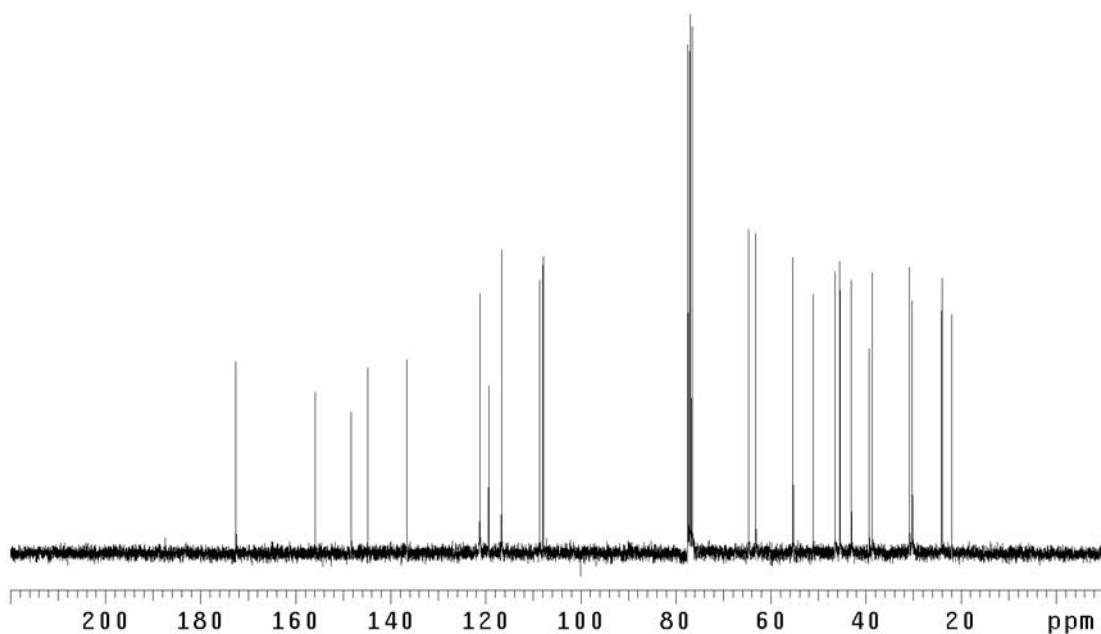


Figure A2.60 ¹³C NMR of compound **170** (75 MHz, CDCl₃)

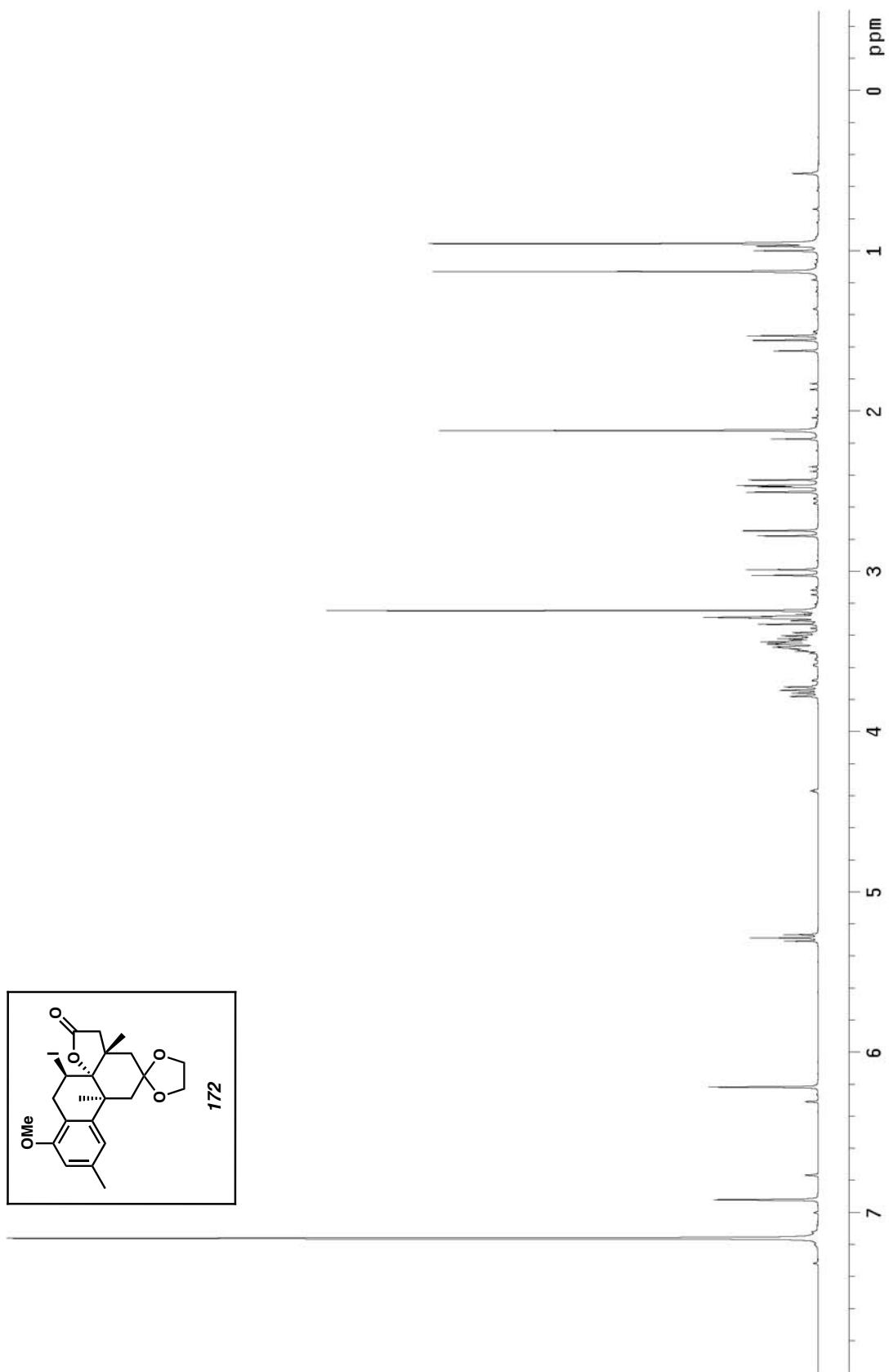


Figure A2.61 ^1H NMR of compound 172 (500 MHz, C_6D_6)

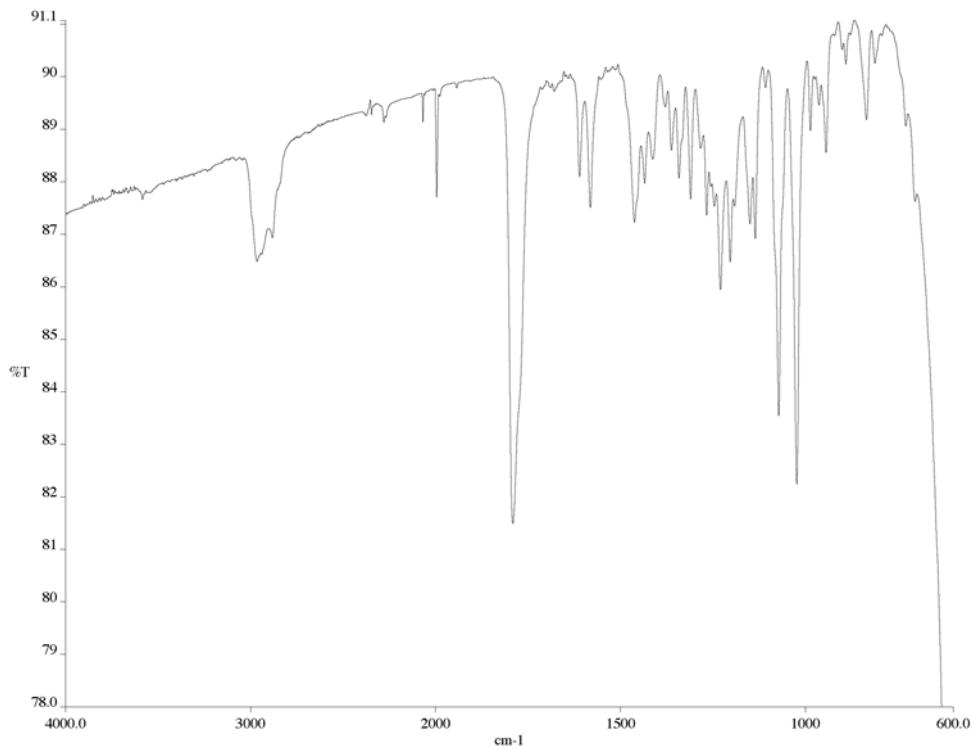


Figure A2.62 IR of compound **172** (NaCl/film)

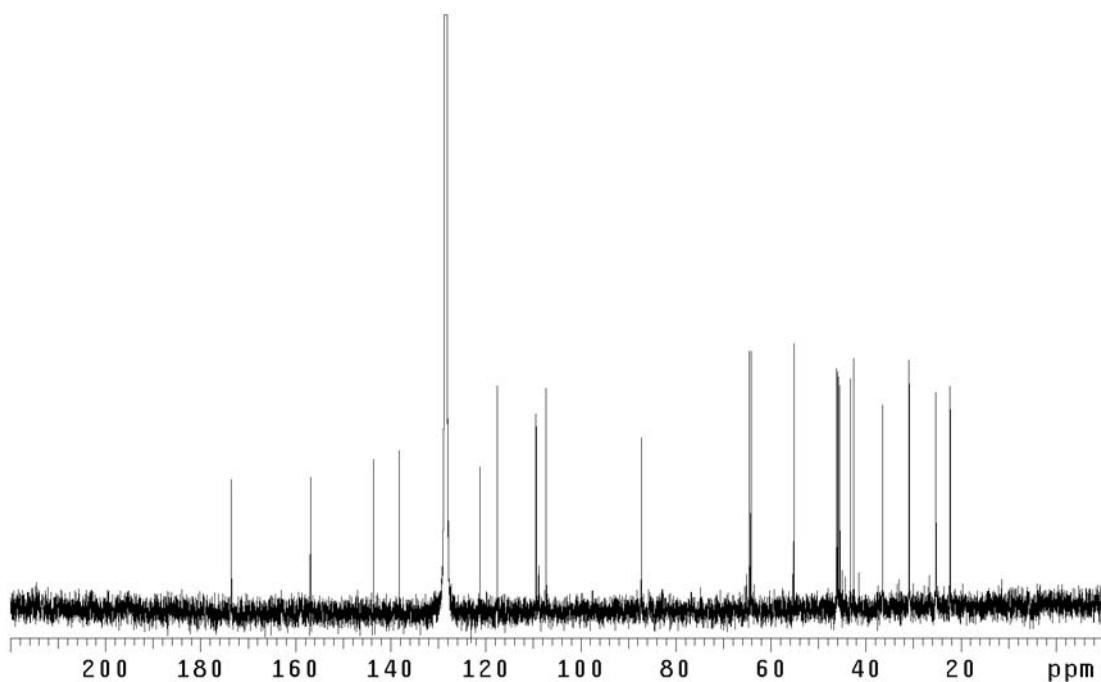


Figure A2.63 ¹³C NMR of compound **172** (125 MHz, C₆D₆)

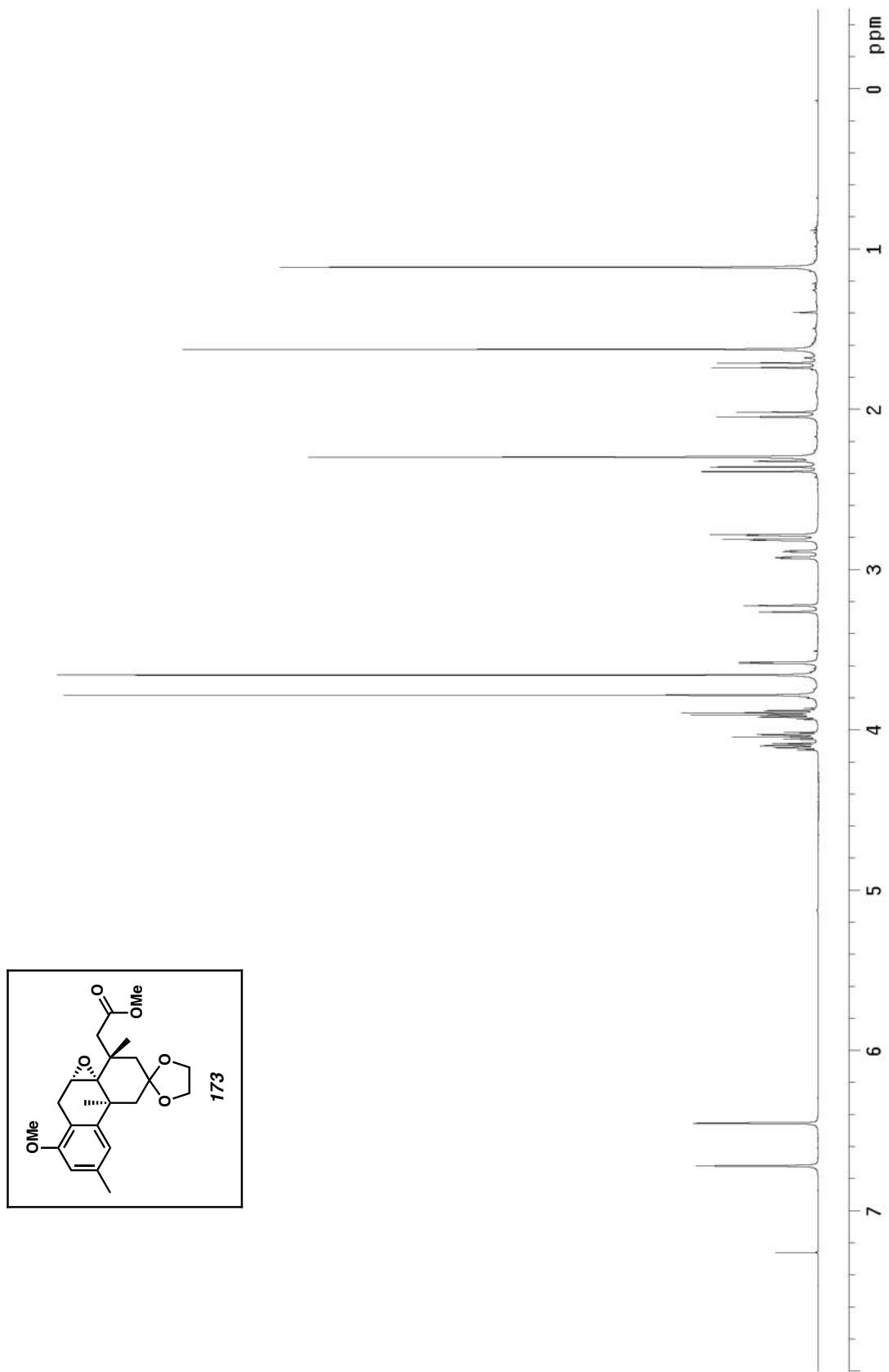


Figure A2.64 ^1H NMR of compound 173 (500 MHz, CDCl_3)

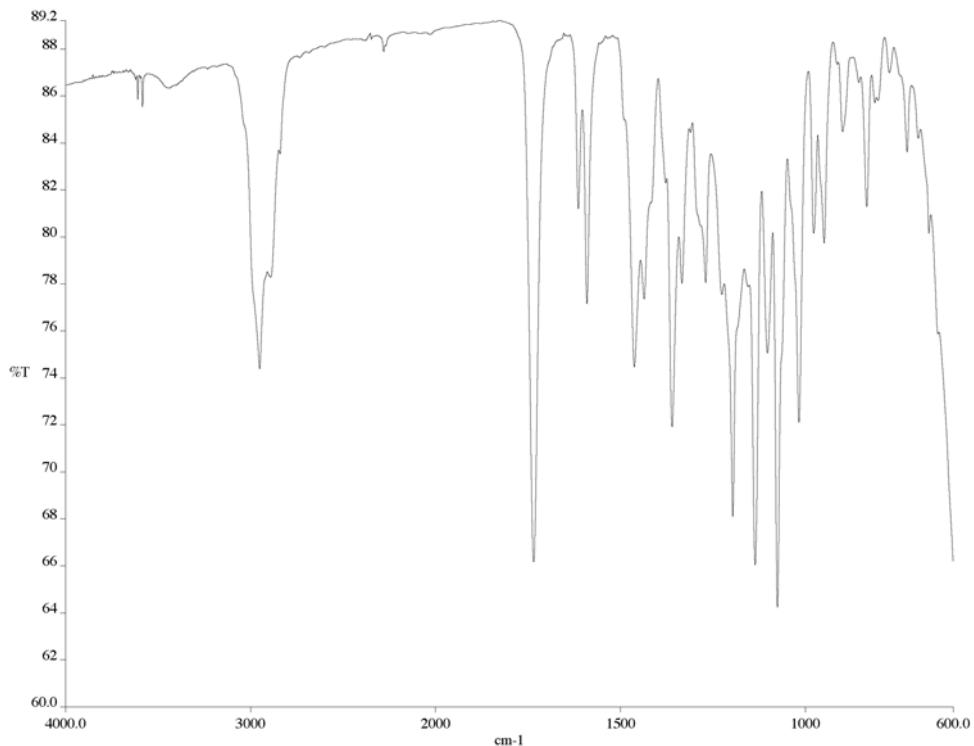


Figure A2.65 IR of compound **173** (NaCl/film)

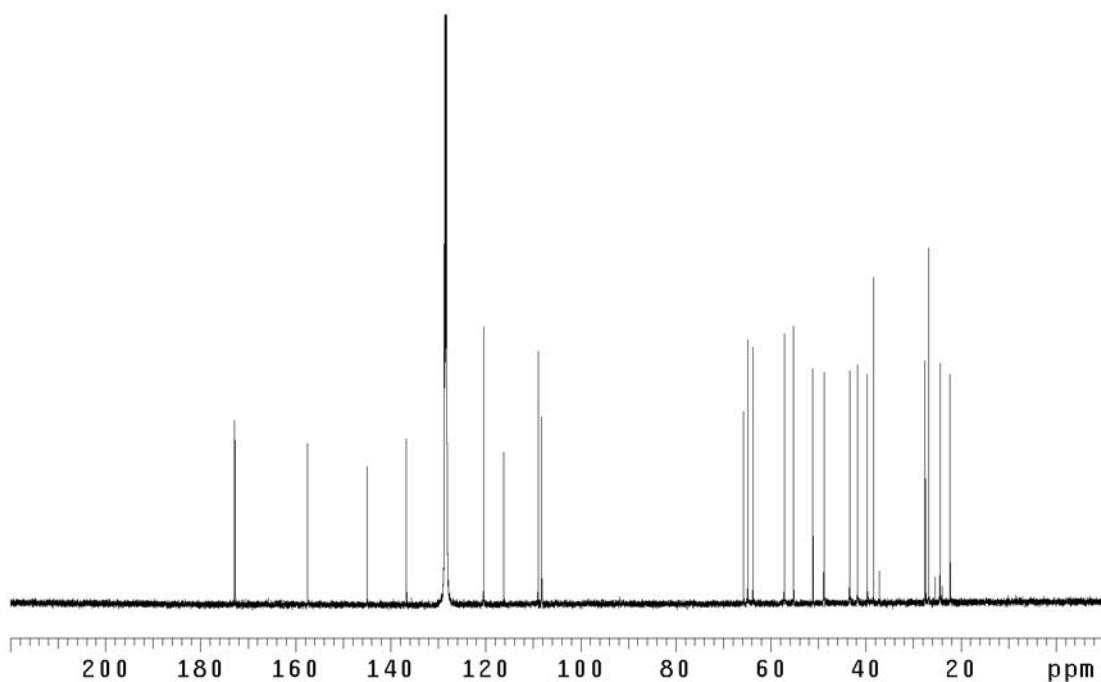


Figure A2.66 ¹³C NMR of compound **173** (125 MHz, C₆D₆)

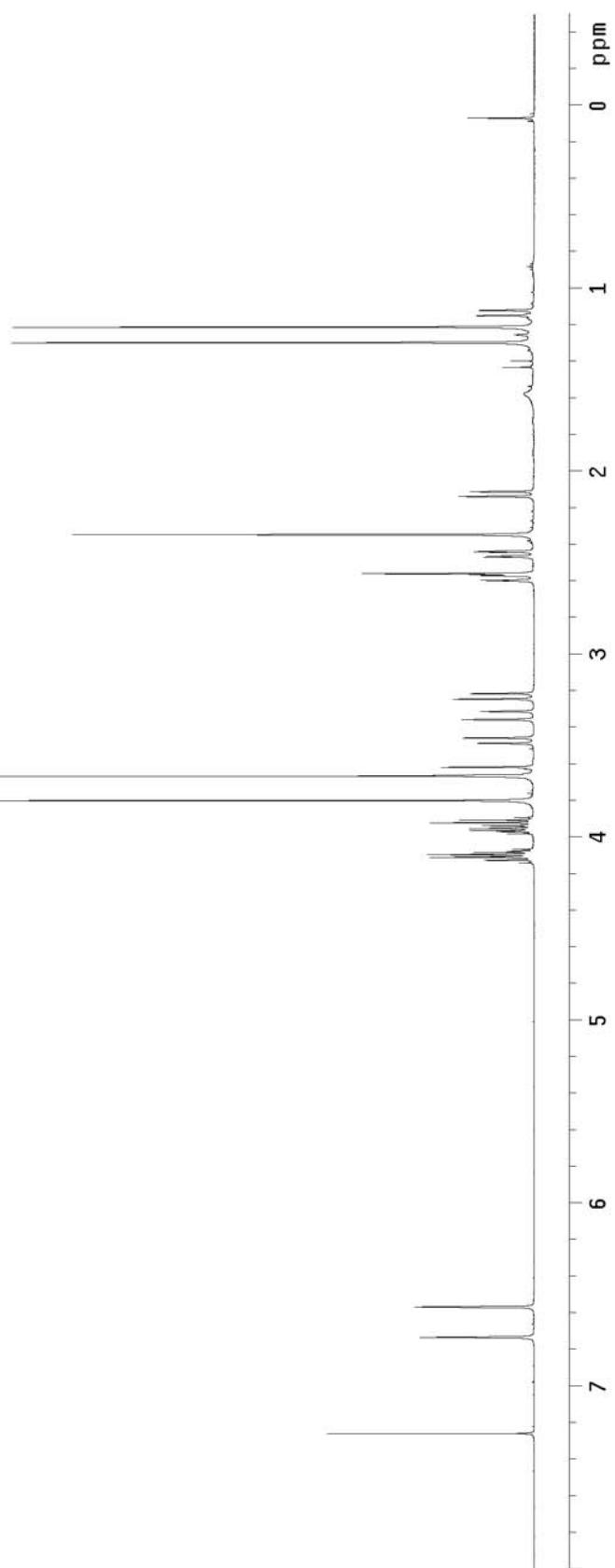
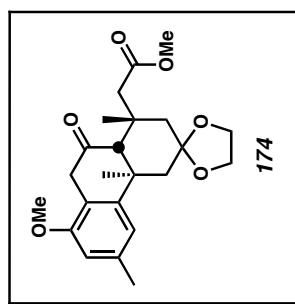


Figure A2.67 ¹H NMR of compound 174 (500 MHz, CDCl₃)

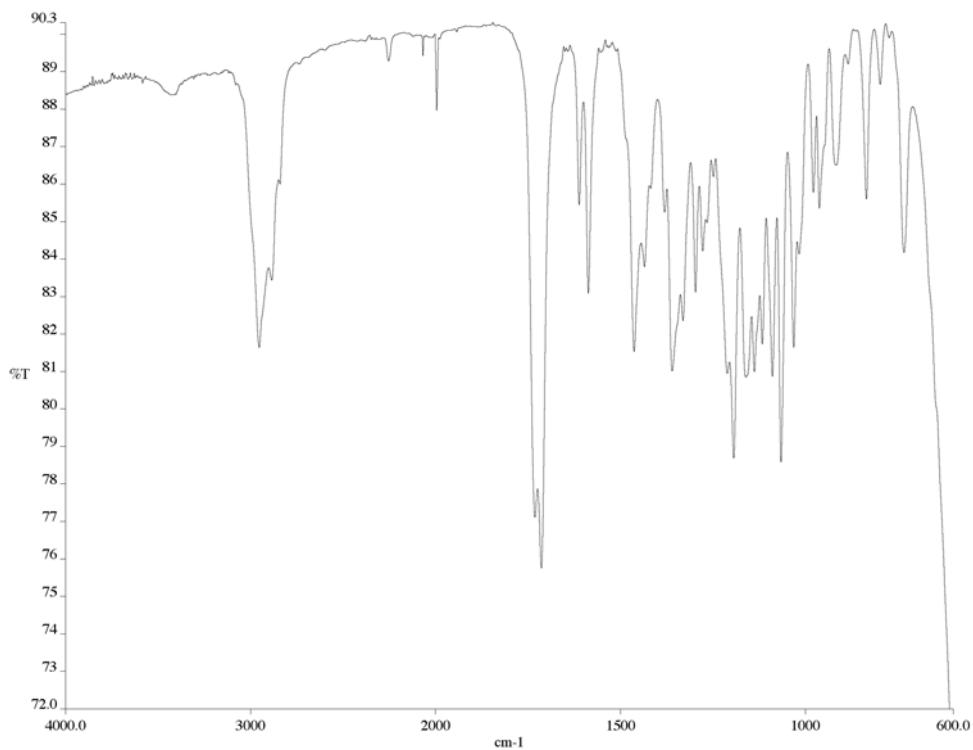


Figure A2.68 IR of compound **174** (NaCl/film)

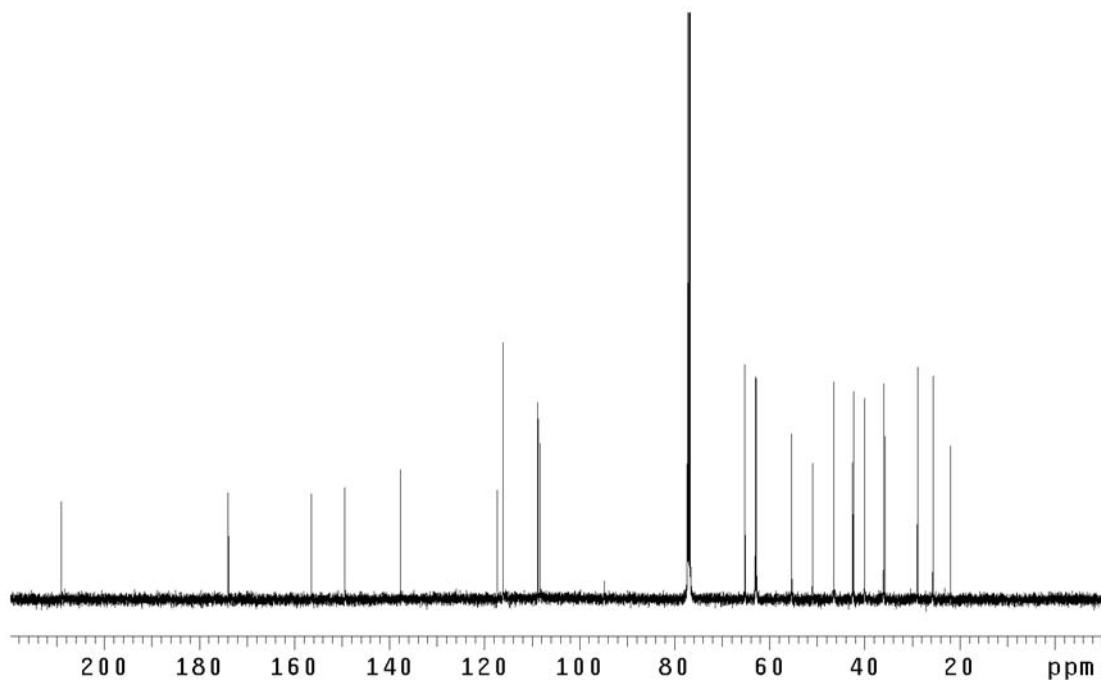


Figure A2.69 ¹³C NMR of compound **174** (125 MHz, CDCl₃)

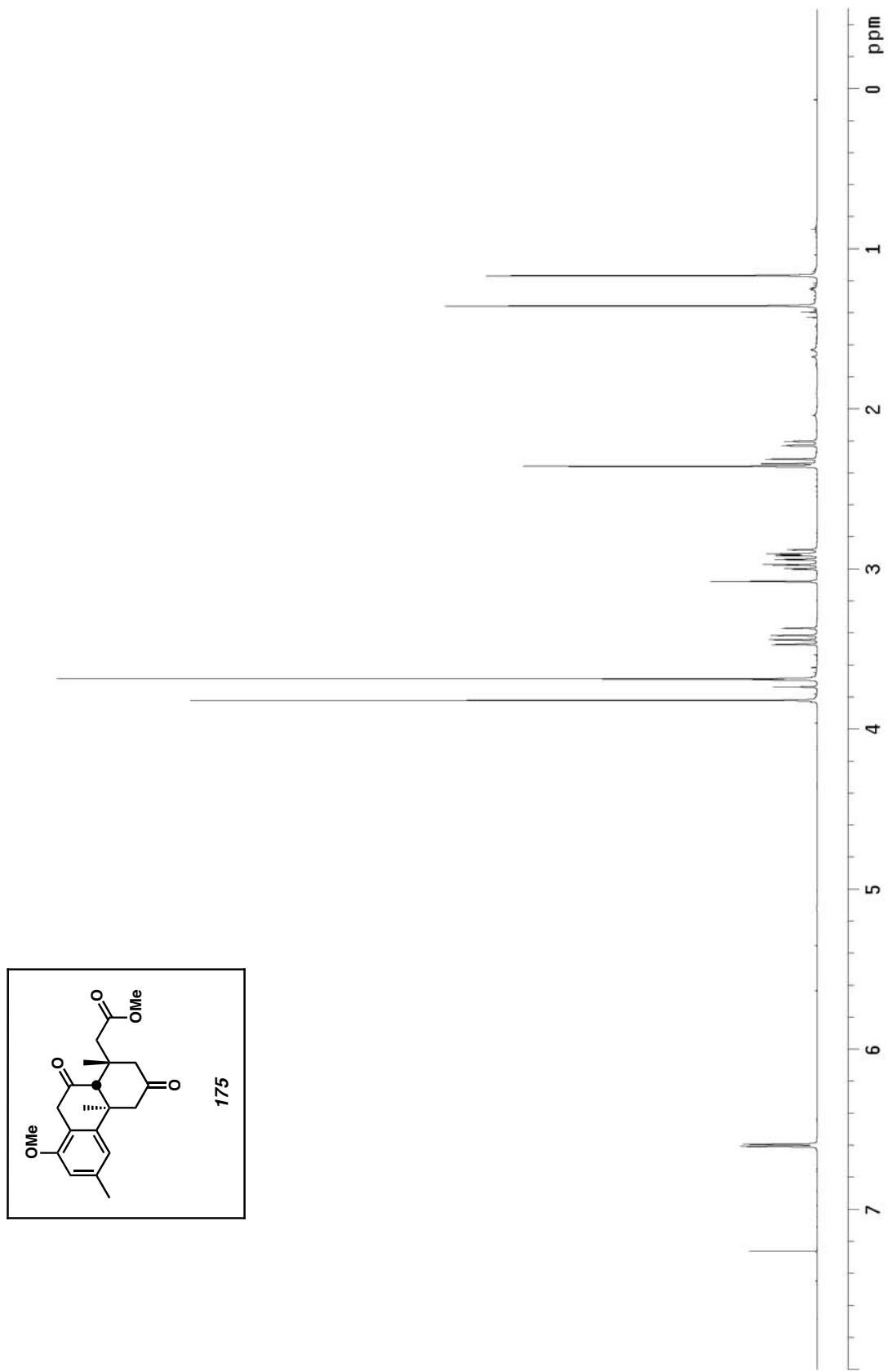


Figure A2.70 ^1H NMR of compound 175 (500 MHz, CDCl_3)

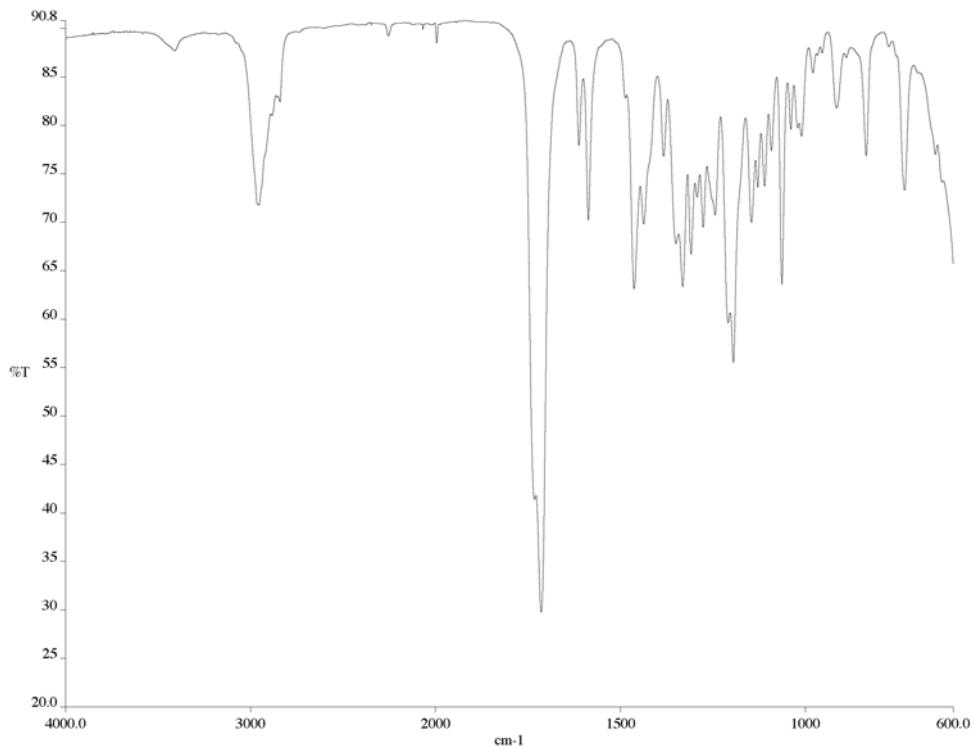


Figure A2.71 IR of compound **175** (NaCl/film)

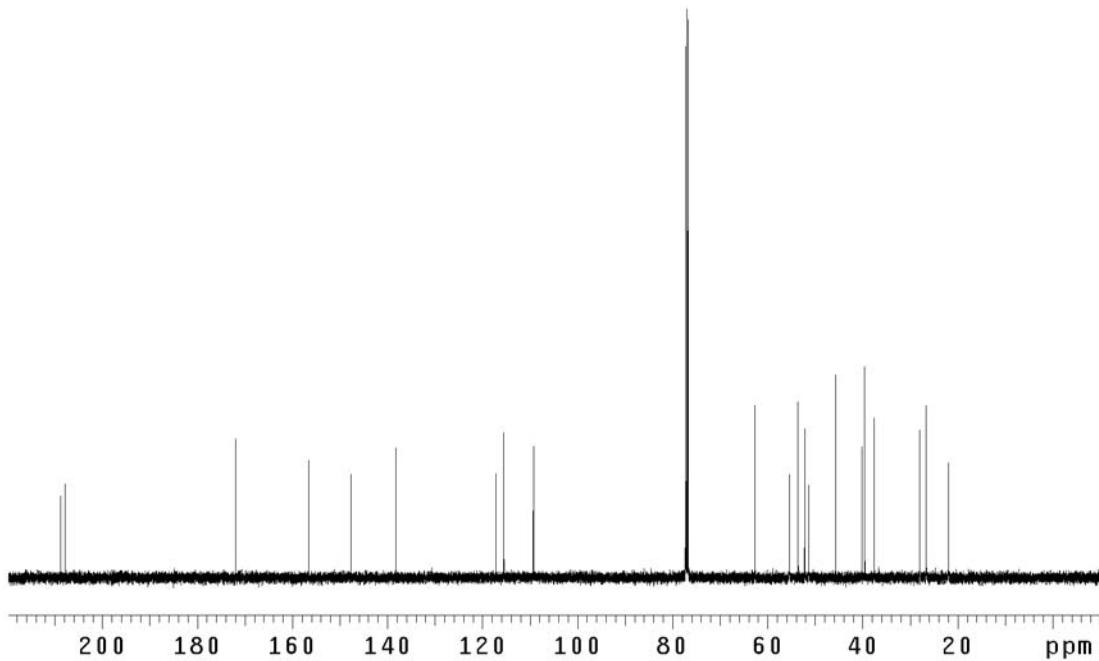


Figure A2.72 ¹³C NMR of compound **175** (125 MHz, CDCl₃)