

Supplementary Material

Silver-catalyzed benzannulation, part 2: total synthesis of (1*R*,4*S*,11*S*)-8,19-dihydroxyserrulat-14-ene and (1*R*,4*S*,11*S*)-8-hydroxyserrulat-14-en-19-oic acid

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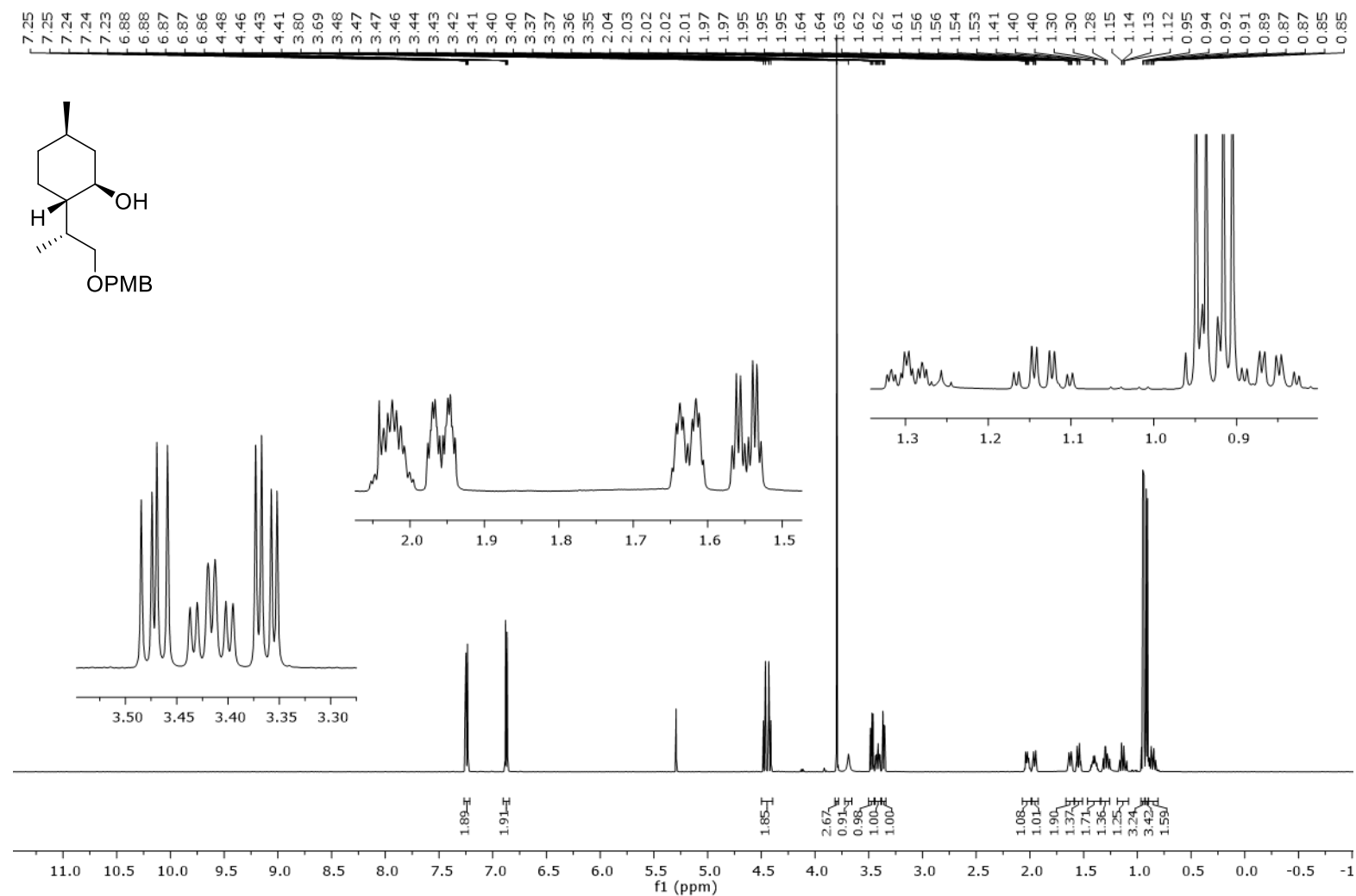


Figure S1: ¹H NMR spectrum of **9** (600 MHz, CDCl₃)

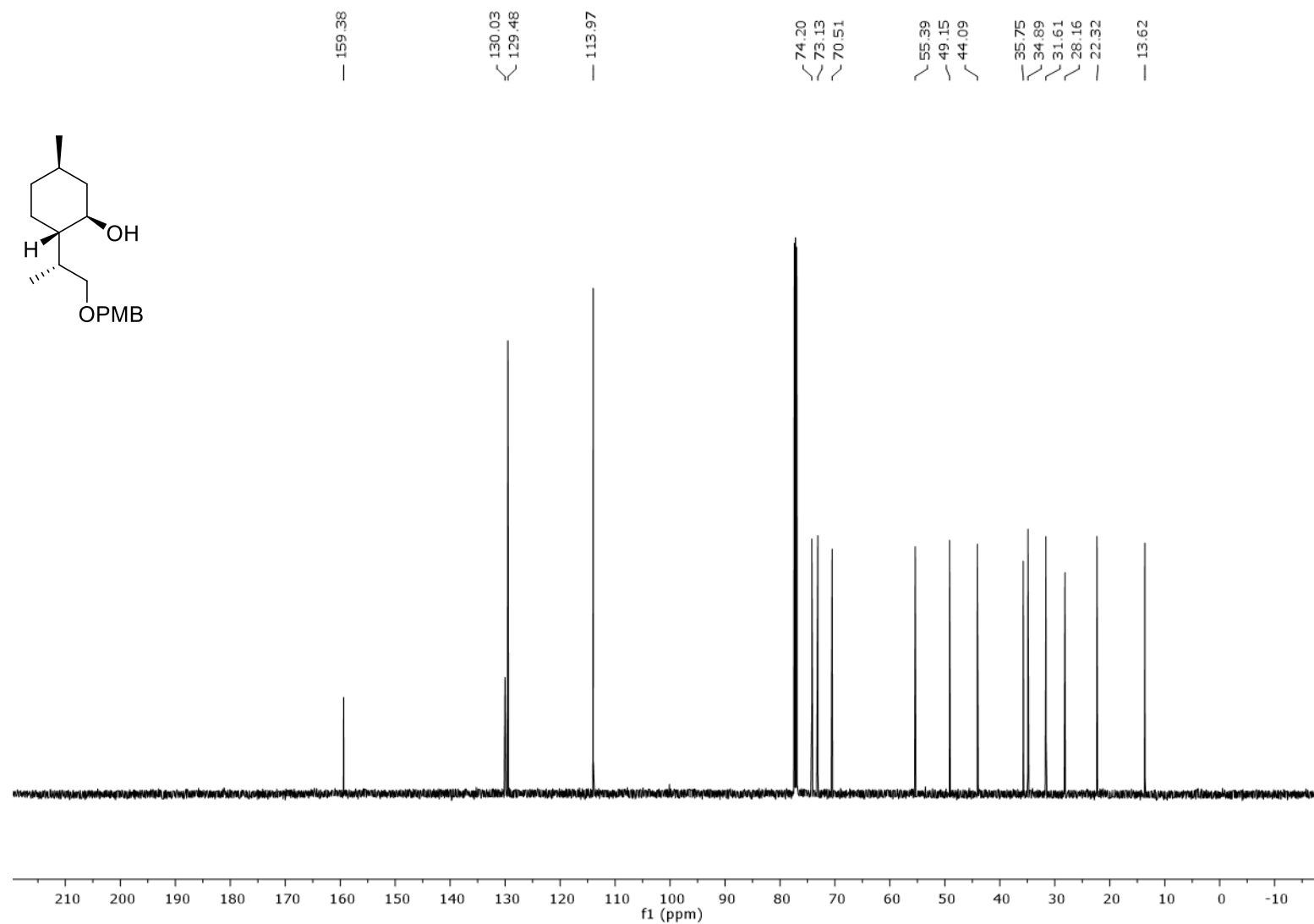


Figure S2: ¹³C NMR spectrum of **9** (150 MHz, CDCl₃)

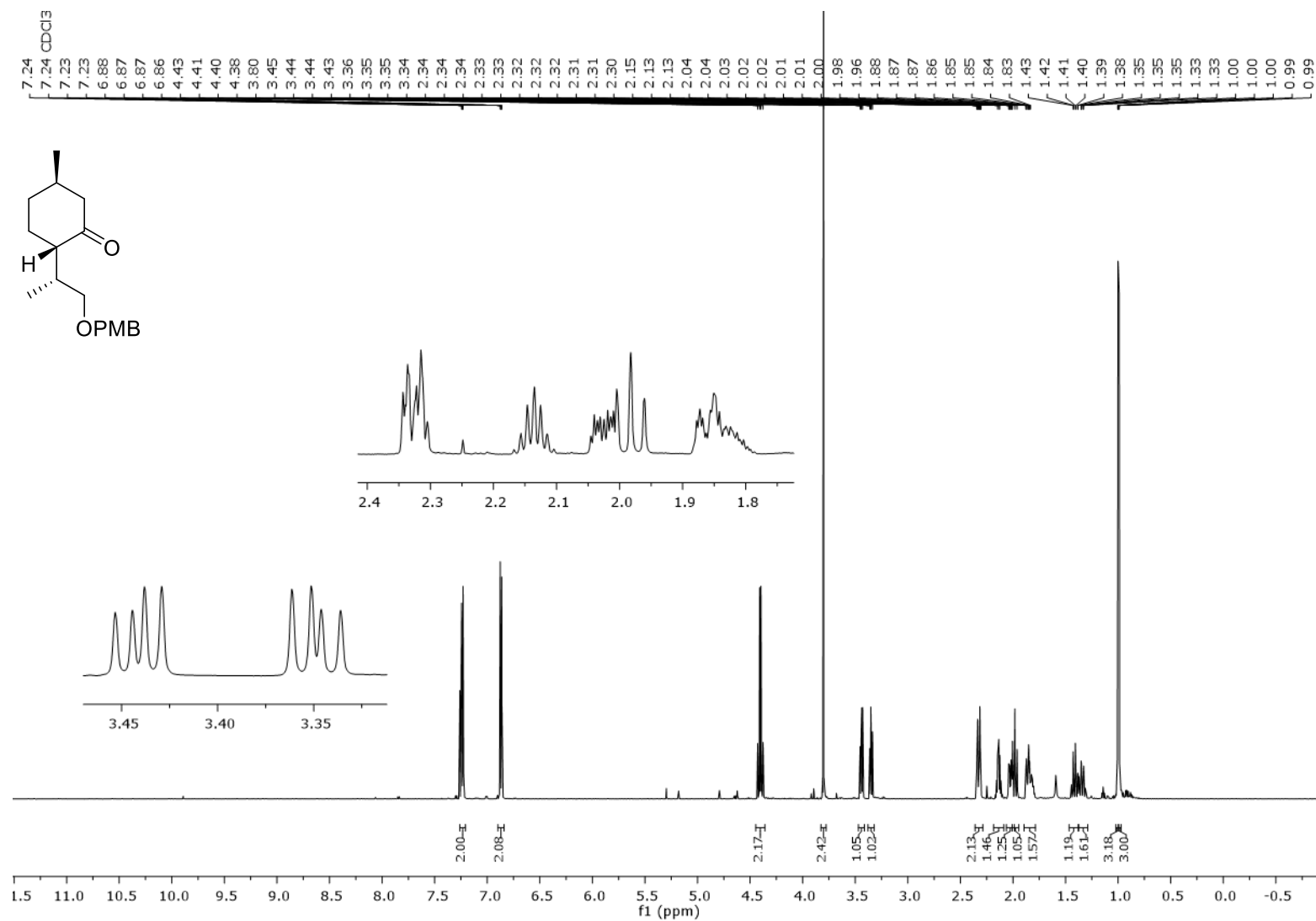


Figure S3: ¹H NMR spectrum of **10** (600 MHz, CDCl₃)

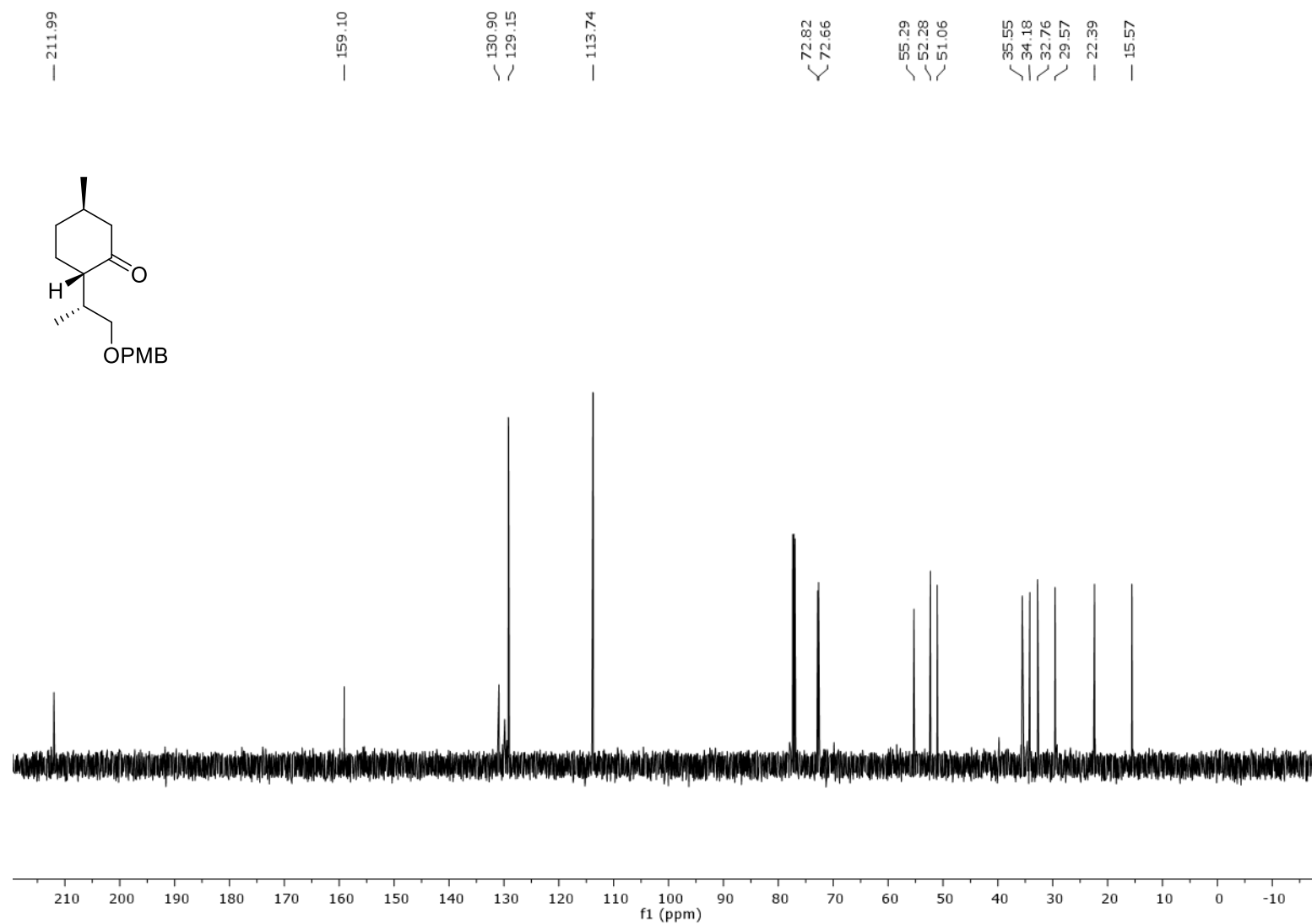


Figure S4: ^{13}C NMR spectrum of **10** (150 MHz, CDCl_3)

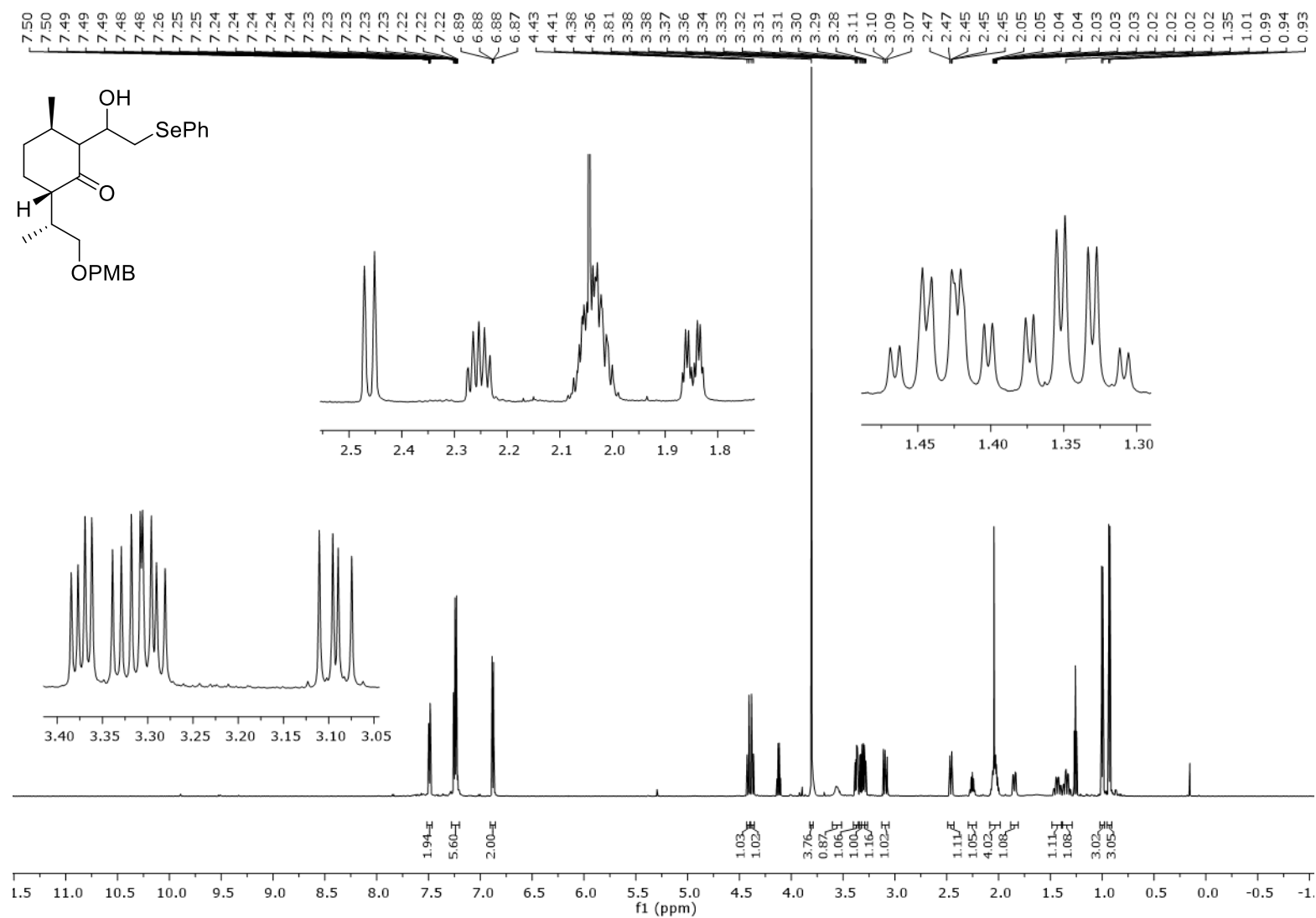


Figure S5: ¹H NMR spectrum of **12** (600 MHz, CDCl₃)

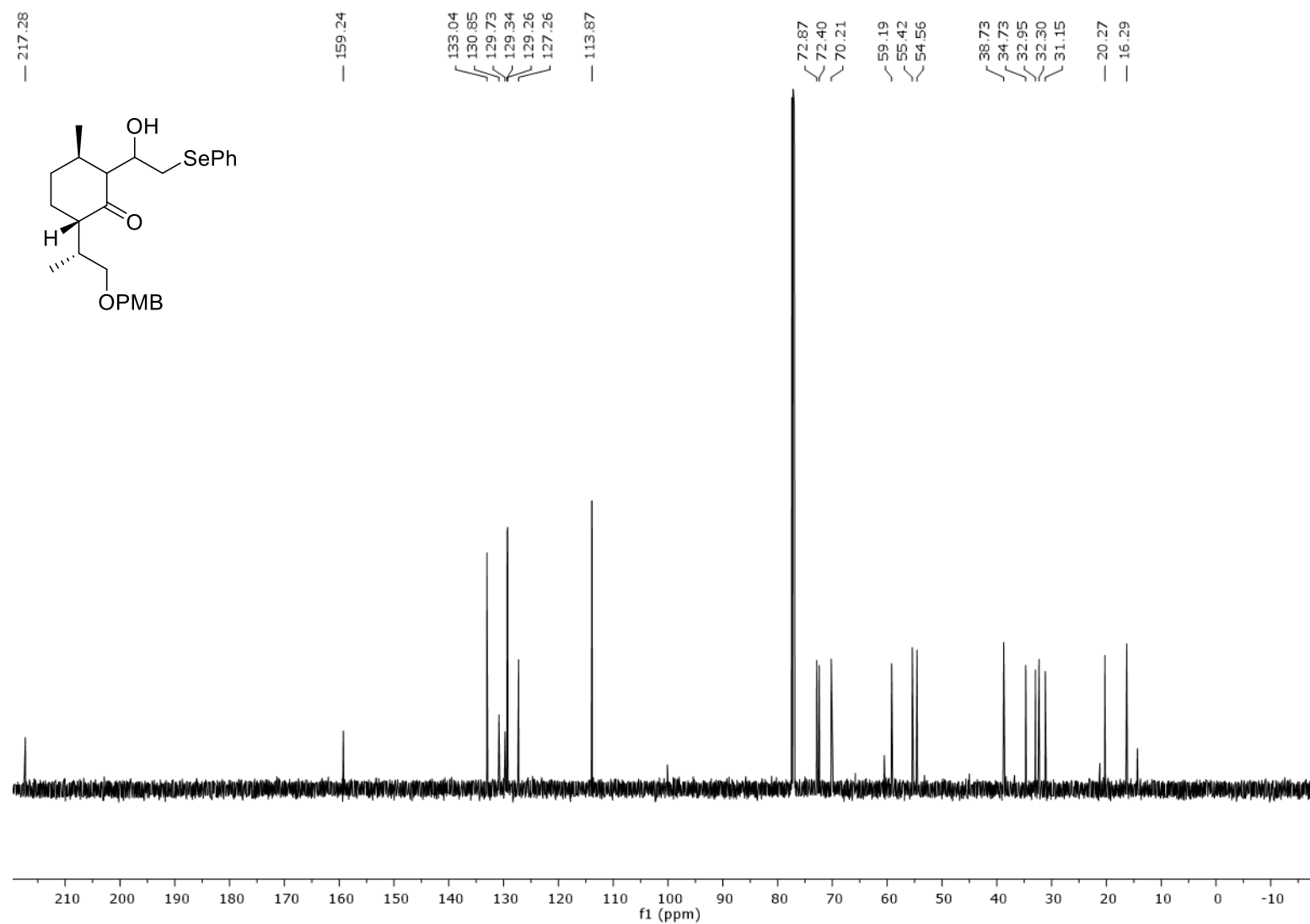


Figure S6: ^{13}C NMR spectrum of **12** (150 MHz, CDCl_3)

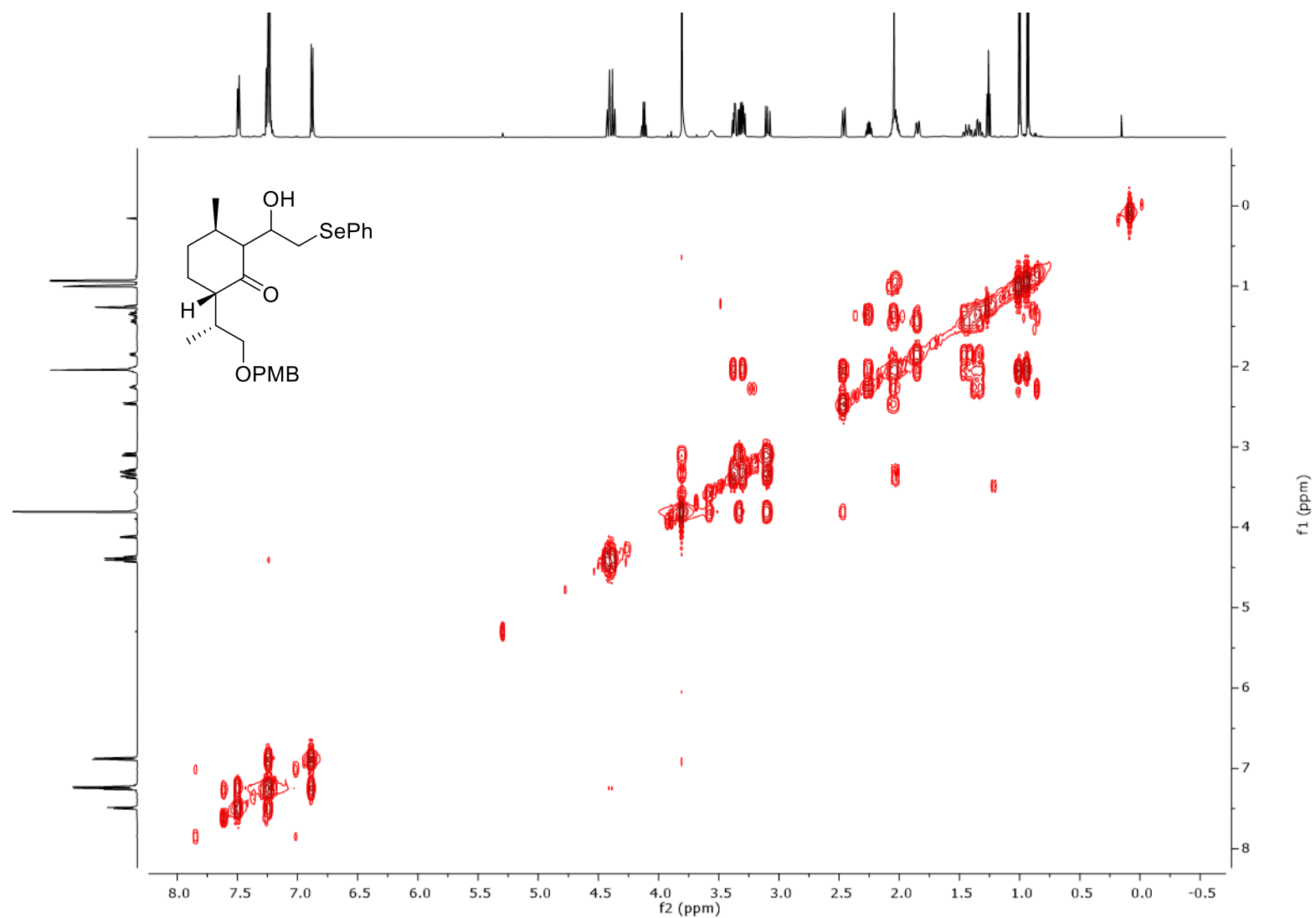


Figure S7: COSY spectrum of **12** (600 × 600 MHz, CDCl₃)

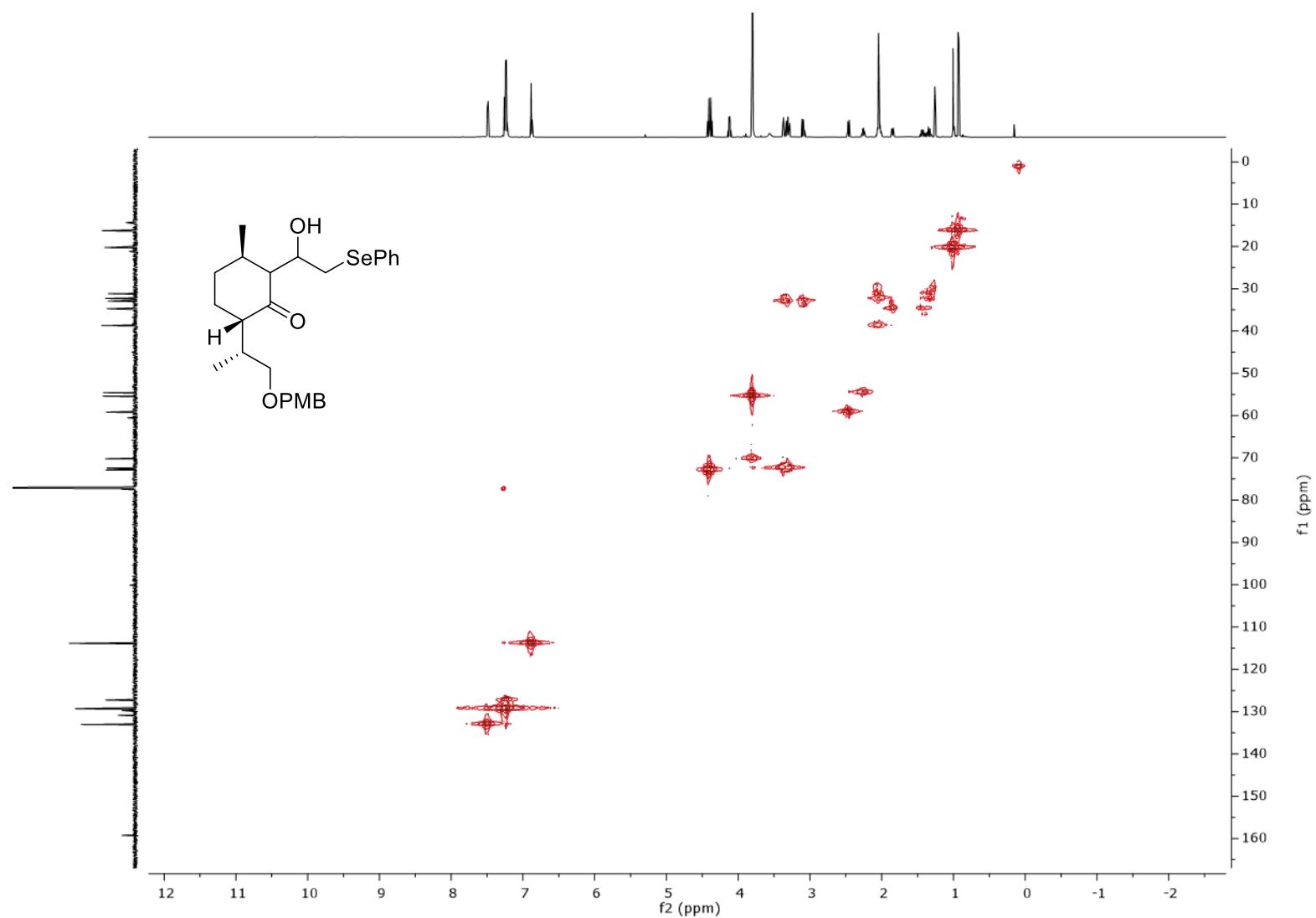


Figure S8: HMQC NMR spectrum of **12** (400 × 100 MHz, CDCl_3)

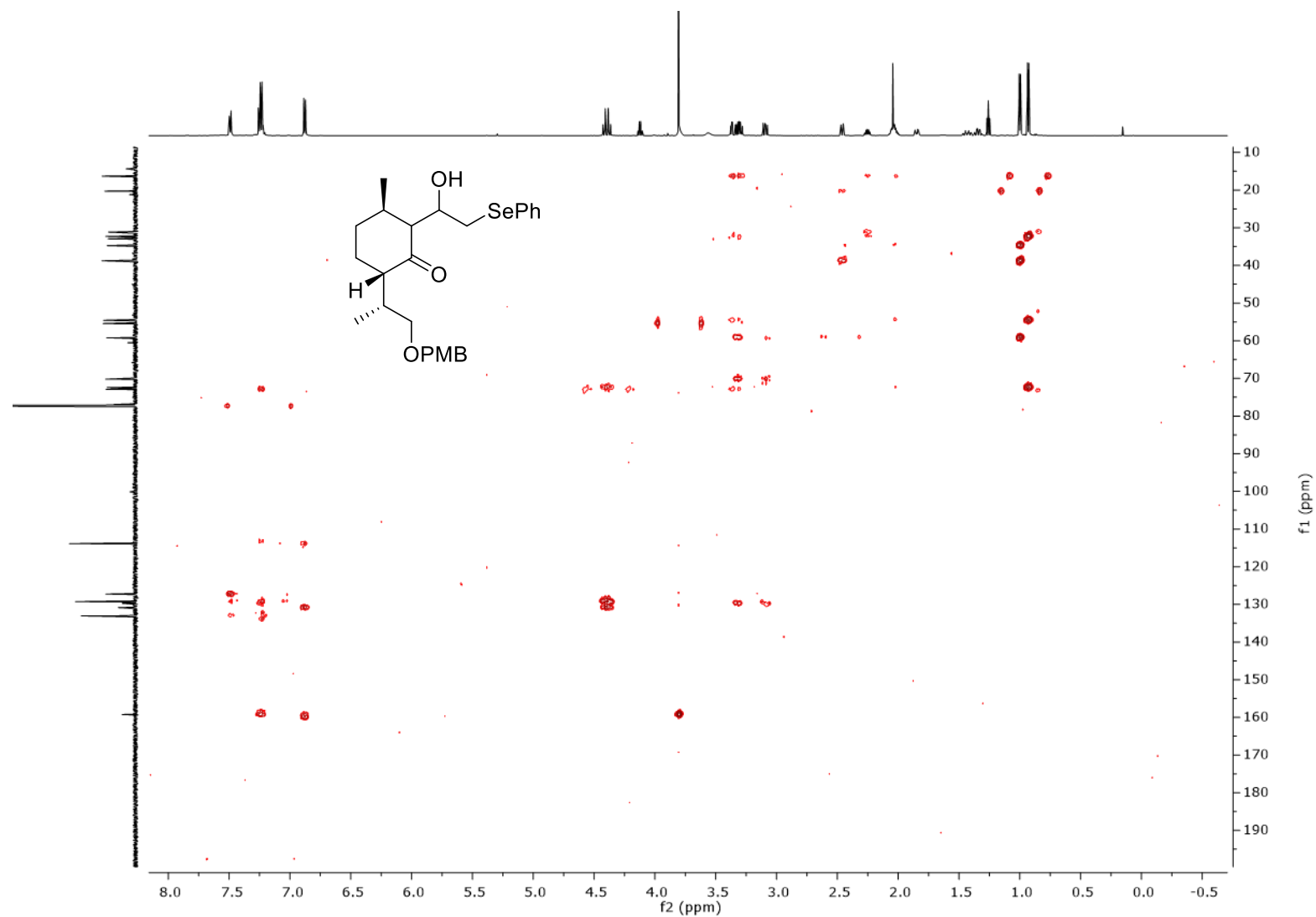
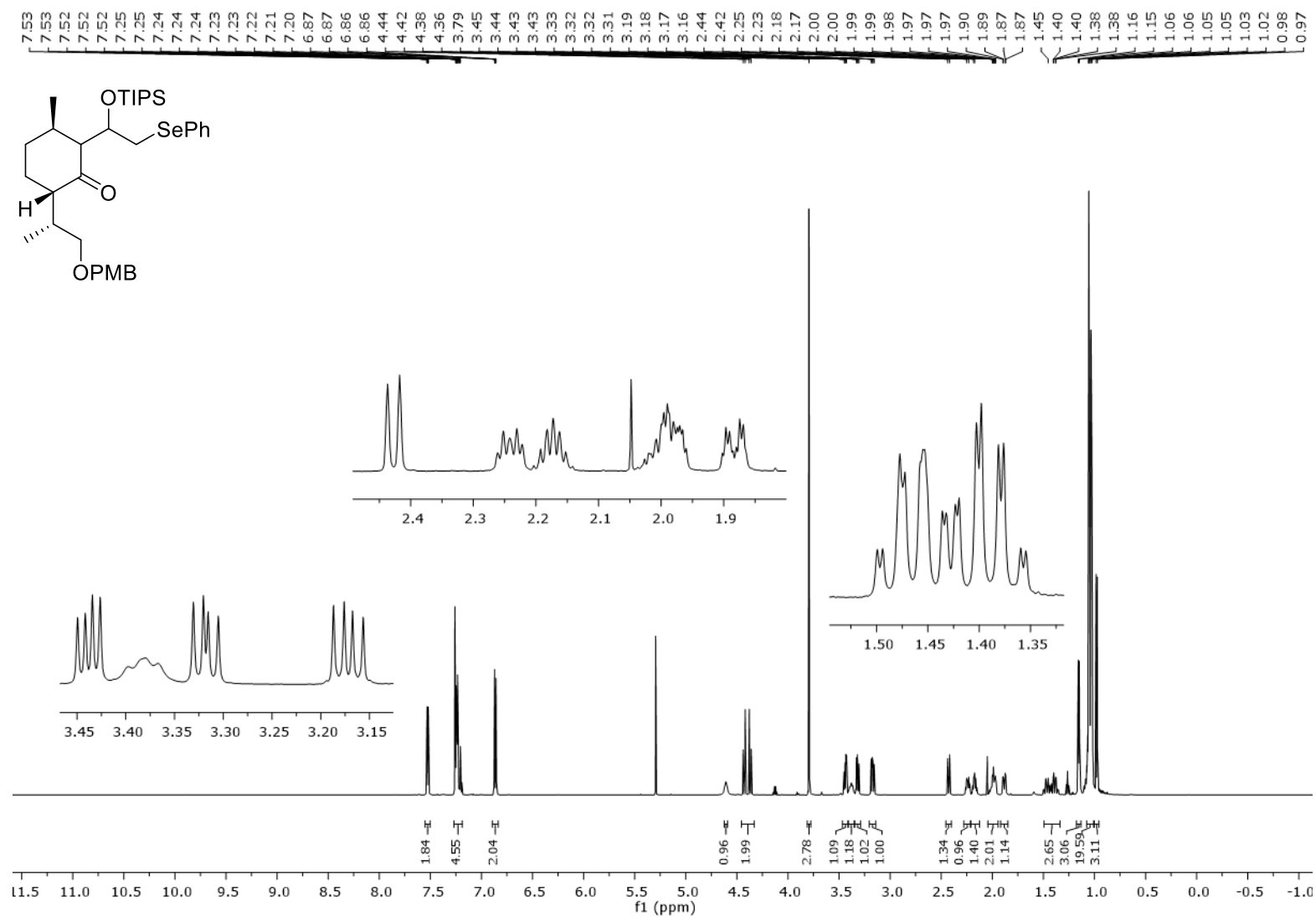


Figure S9: HMBC NMR spectrum of **12** (400 $\times$ 100 MHz, CDCl_3)

Figure S10: ^1H NMR spectrum of **13** (600 MHz, CDCl_3)

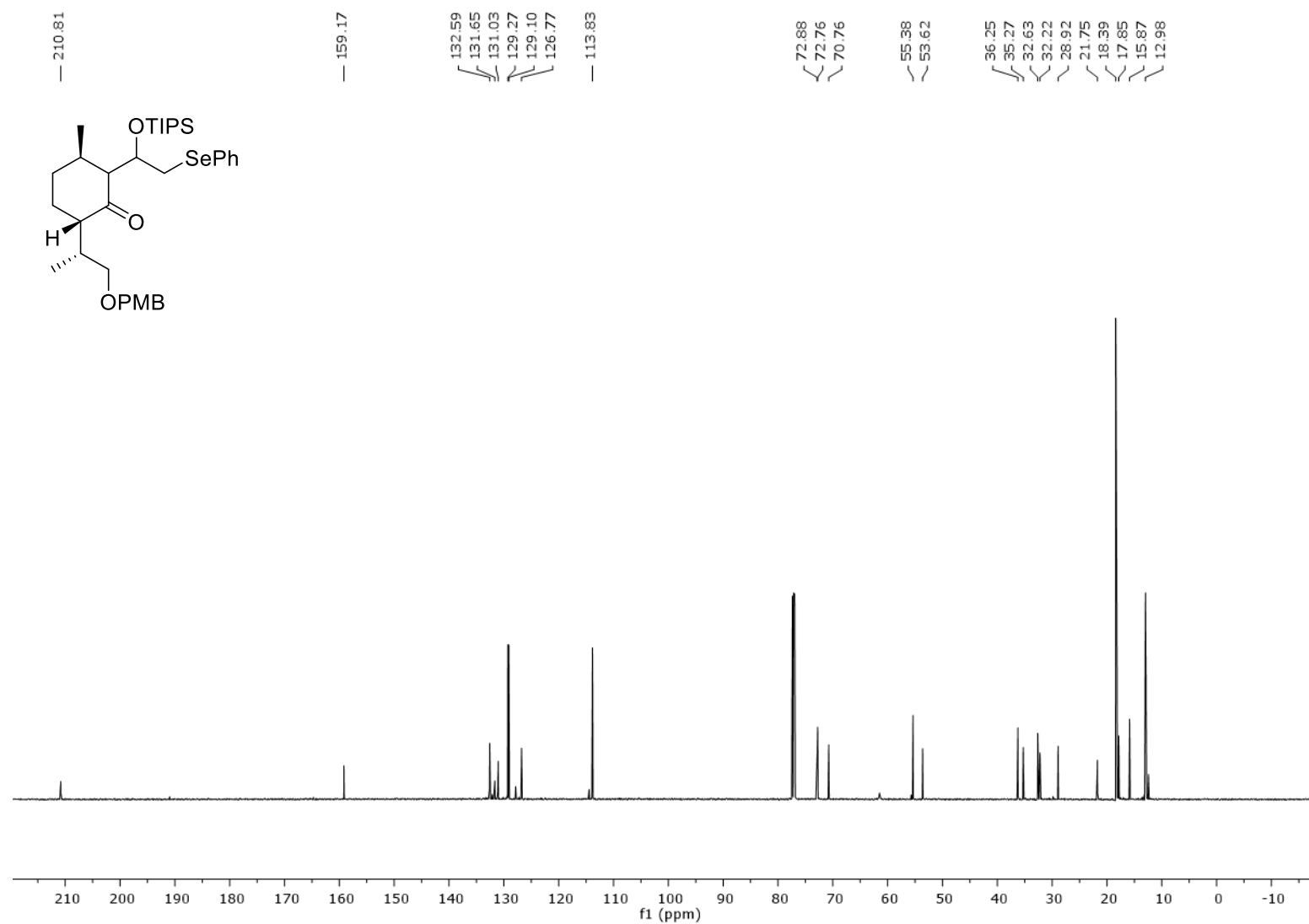


Figure S11: ^{13}C NMR spectrum of **13** (150 MHz, CDCl_3)

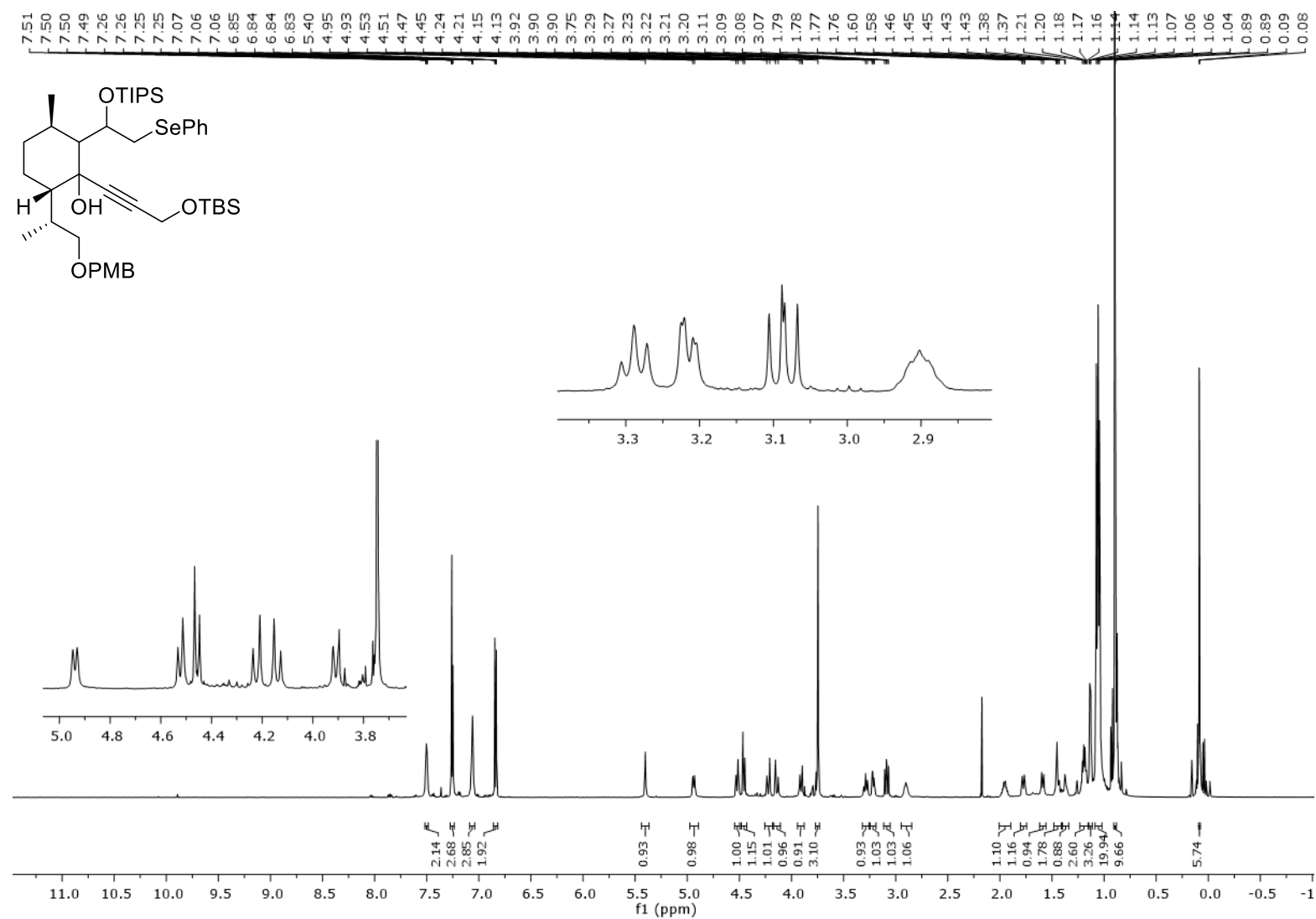


Figure S12: ^1H NMR spectrum of **16** (600 MHz, CDCl_3)

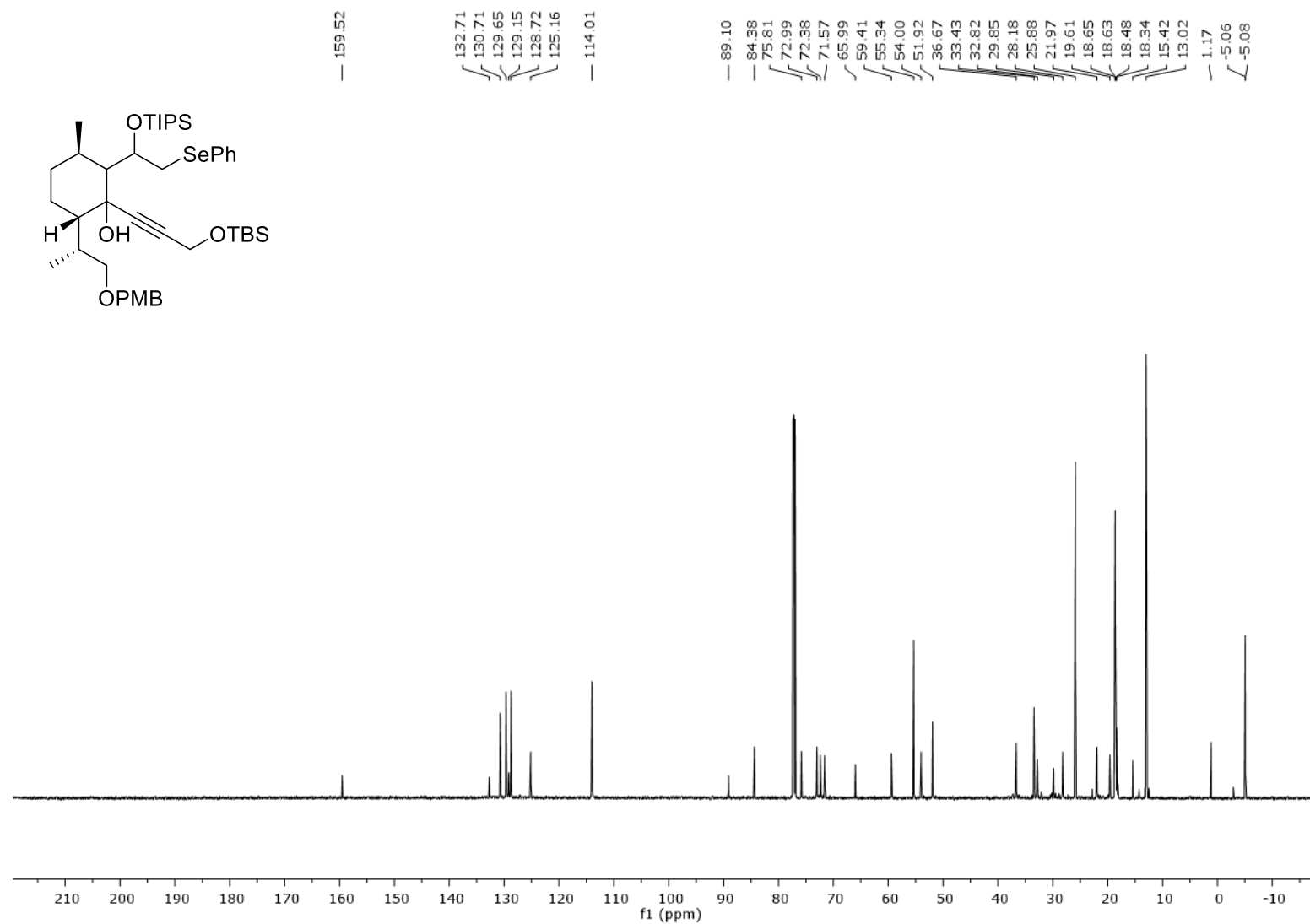


Figure S13: ^{13}C NMR spectrum of **16** (150 MHz, CDCl_3)

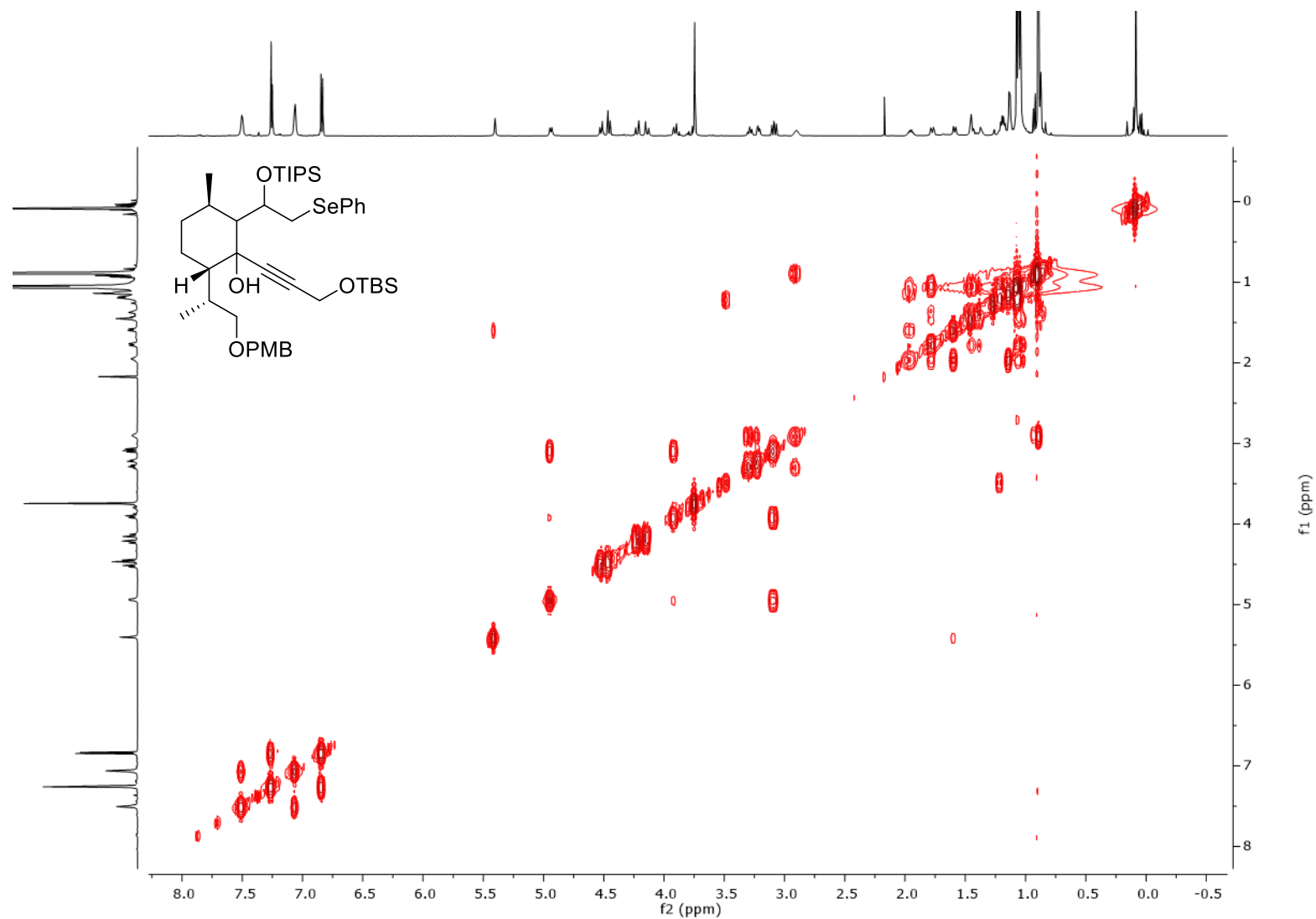


Figure S14: COSY NMR spectrum of **16** (600 × 600 MHz, CDCl₃)

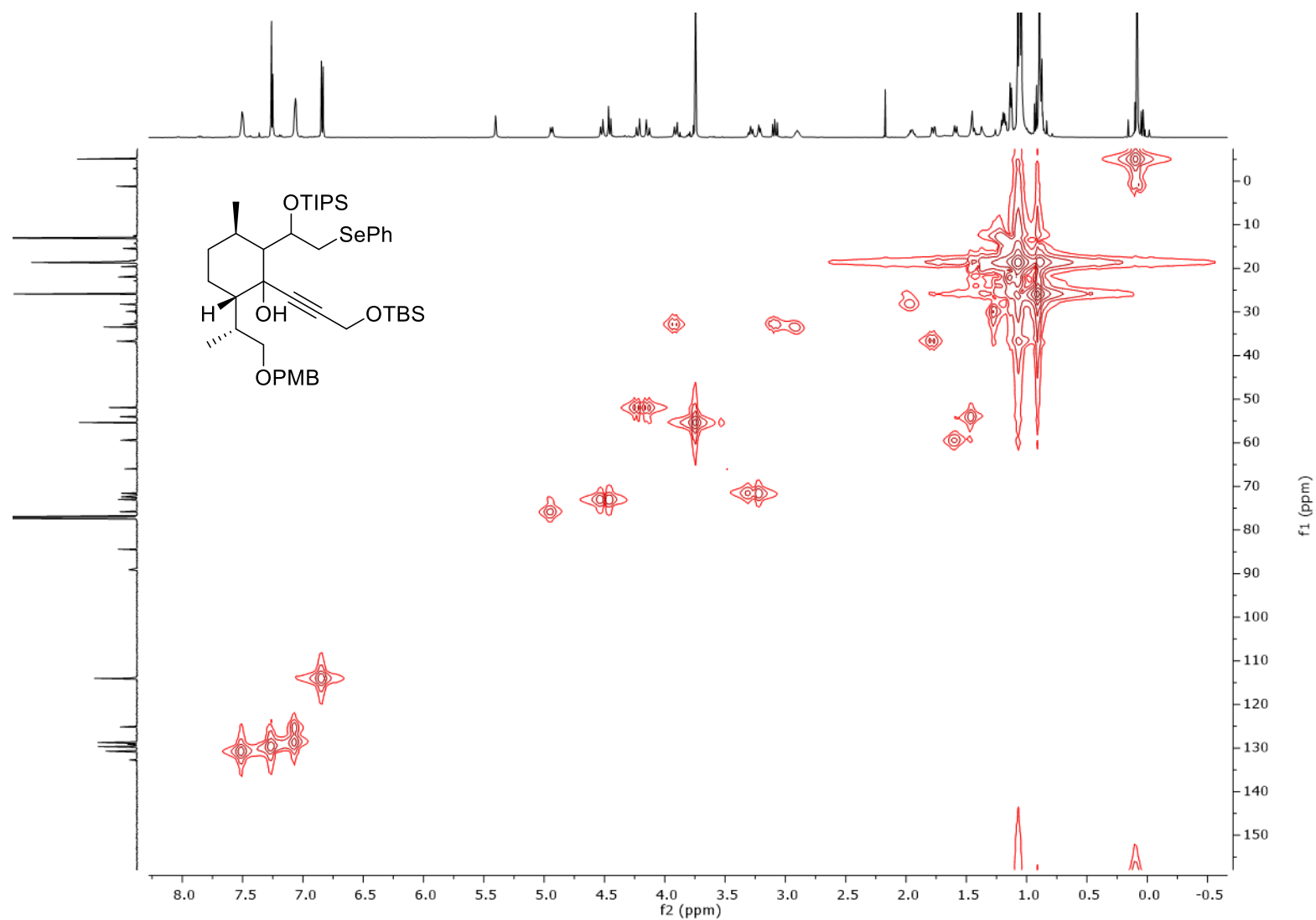


Figure S15: HMQC NMR spectrum of **16** (600 $\times$ 150 MHz, CDCl_3)

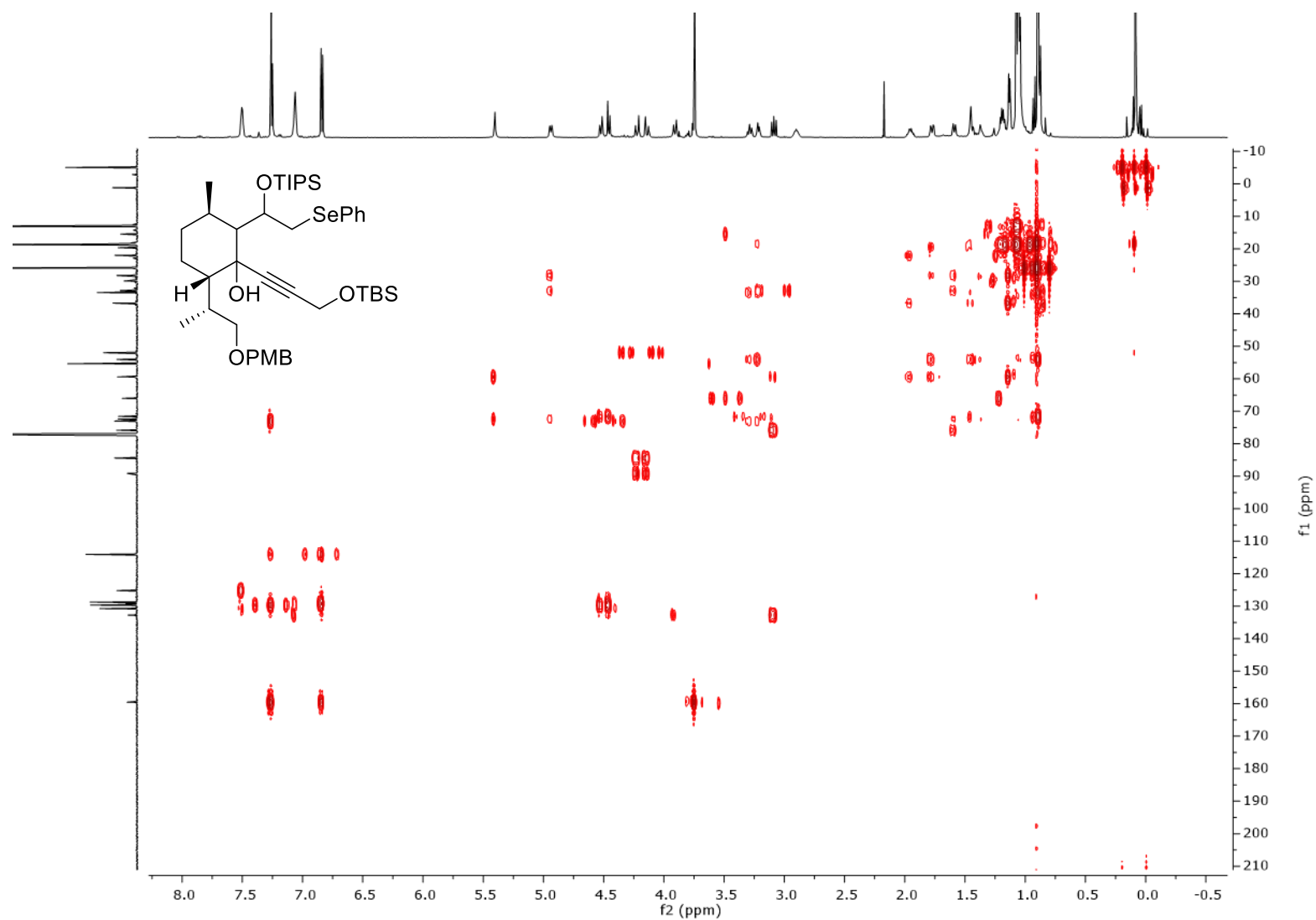
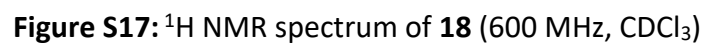


Figure S16: HMBC NMR spectrum of **16** (600 × 150 MHz, CDCl₃)



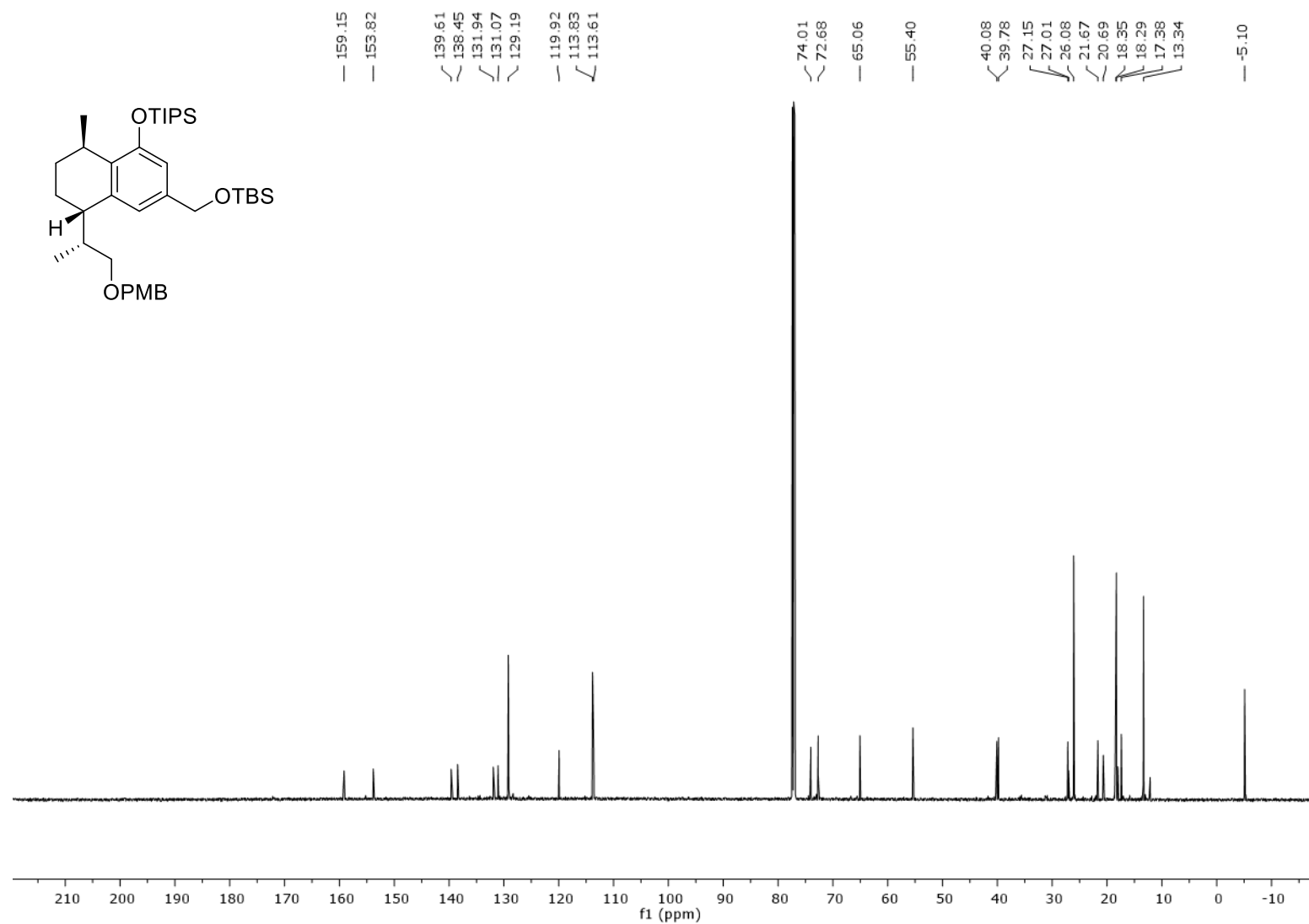


Figure S18: ^{13}C NMR spectrum of **18** (150 MHz, CDCl₃)

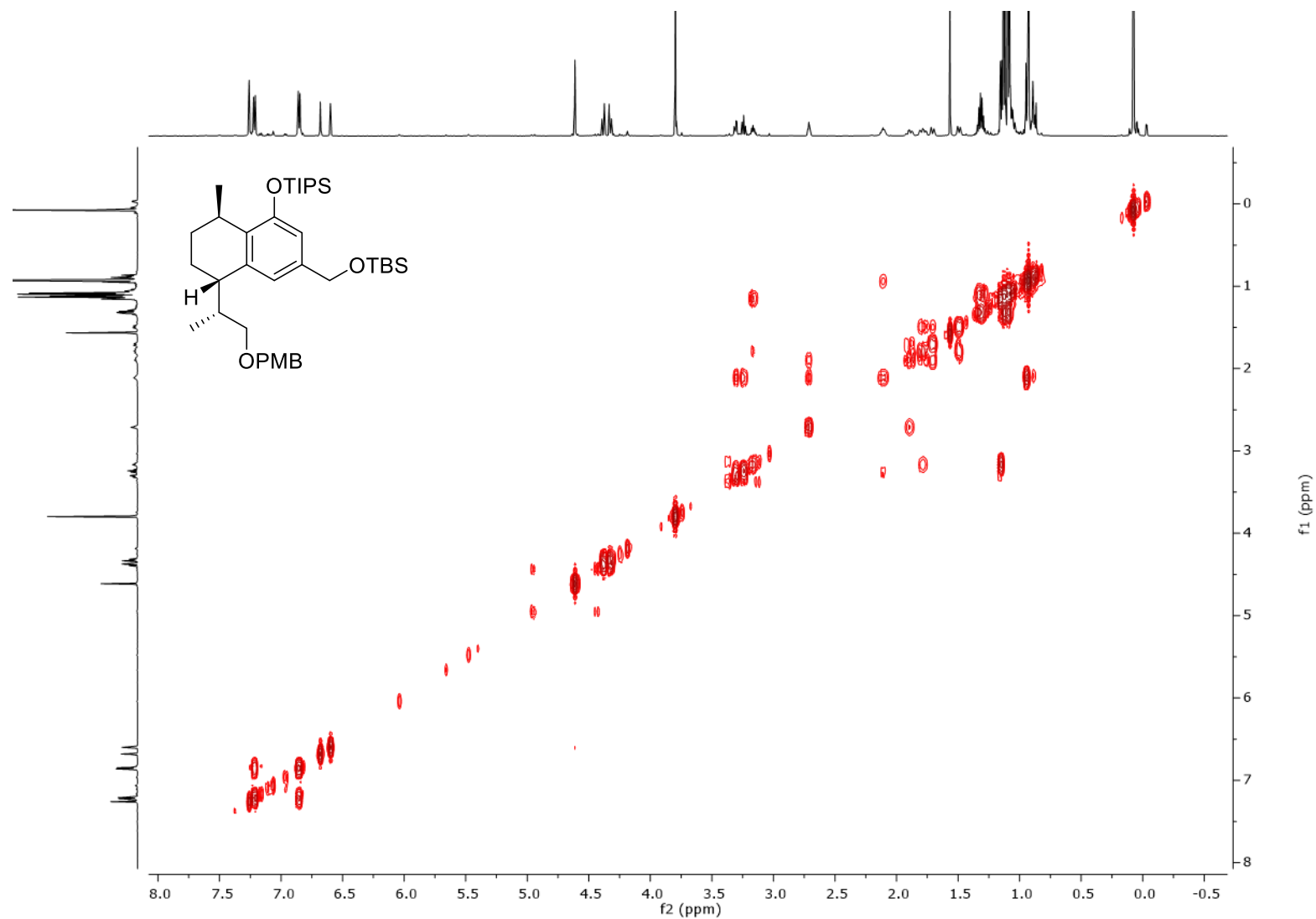


Figure S19: COSY NMR spectrum of **18** (600 × 600 MHz, CDCl₃)

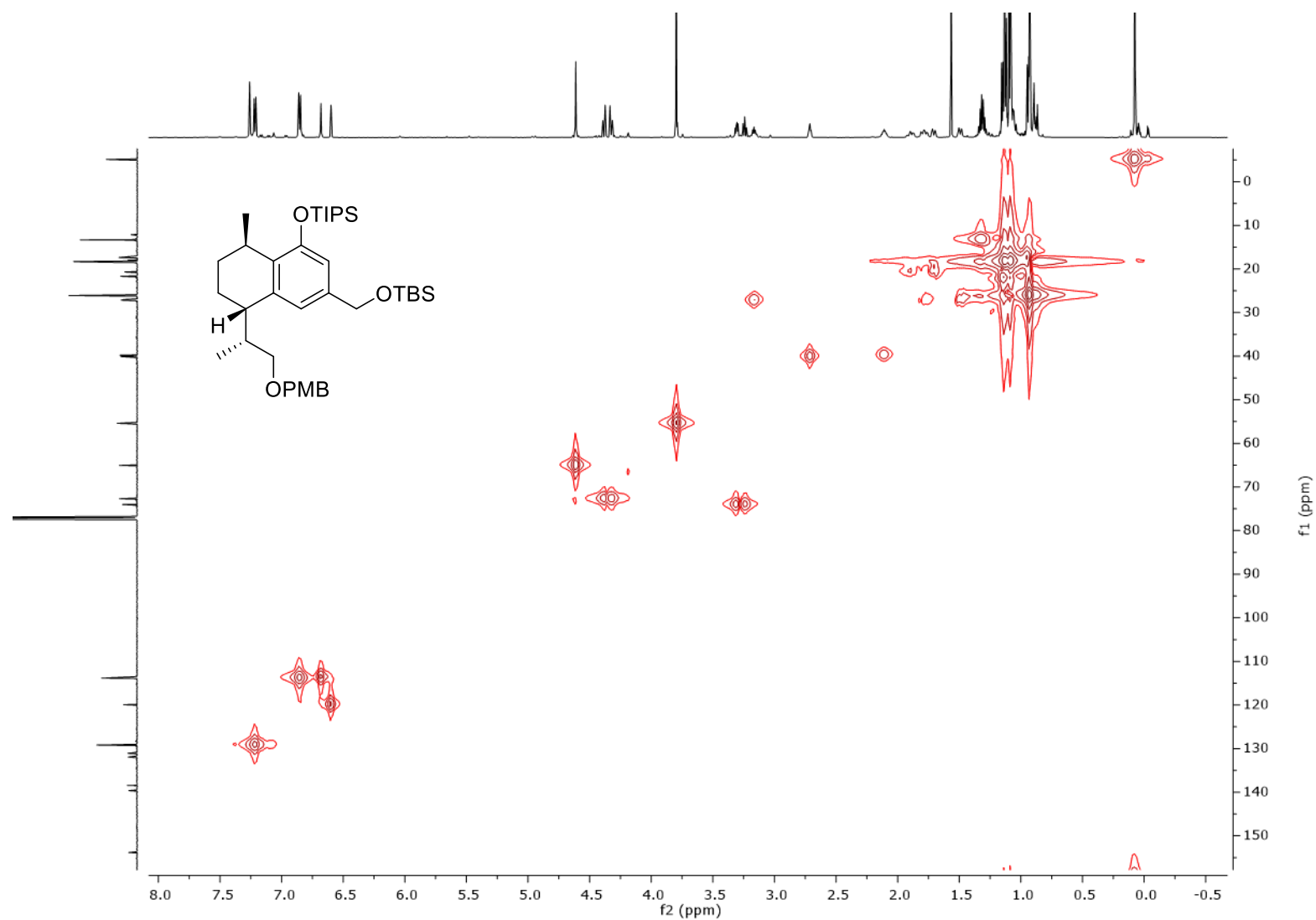


Figure S20: HMQC NMR spectrum of **18** (600 × 150 MHz, CDCl₃)

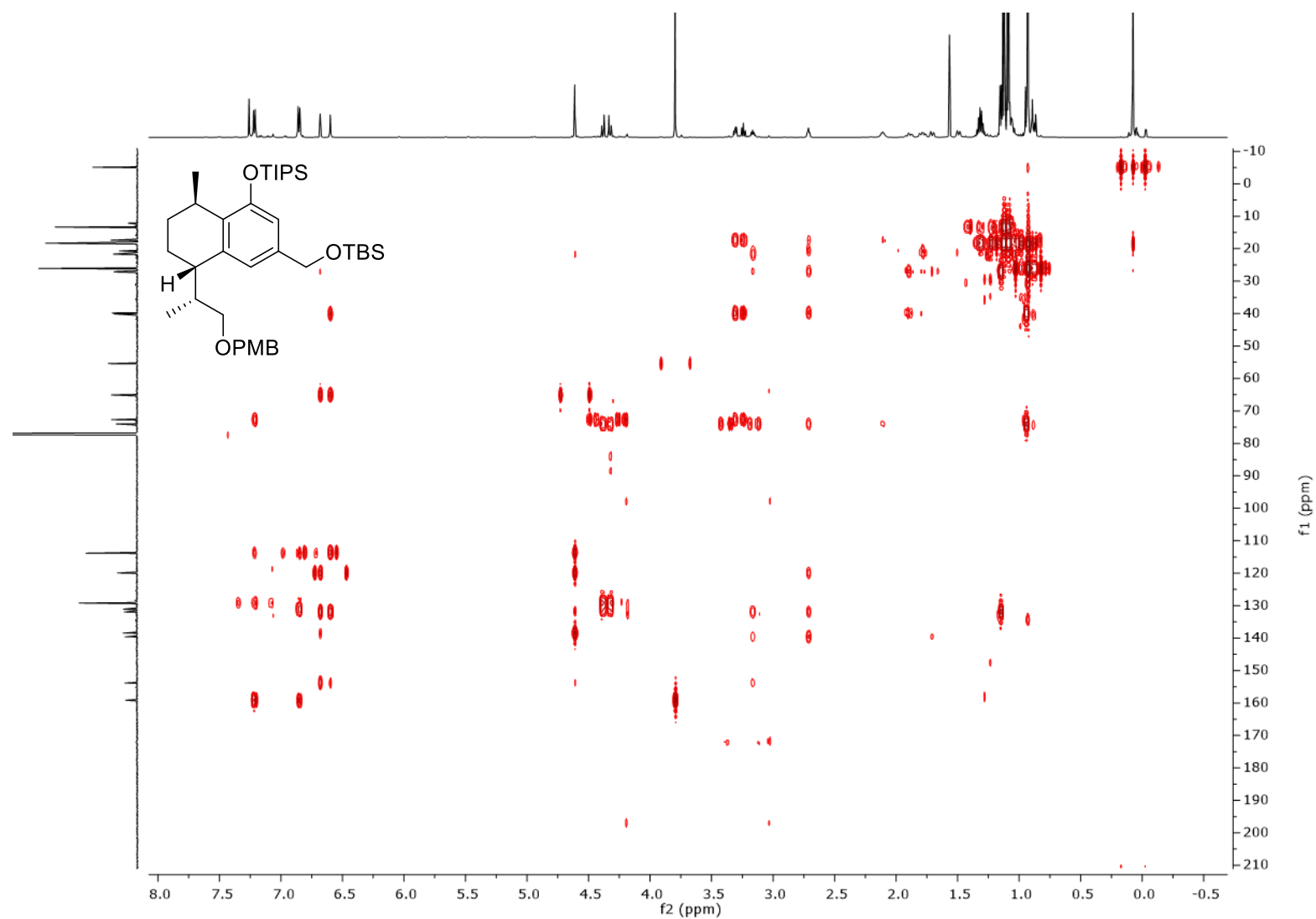


Figure S21: HMBC NMR spectrum of **18** (600 $\times$ 150 MHz, CDCl_3)

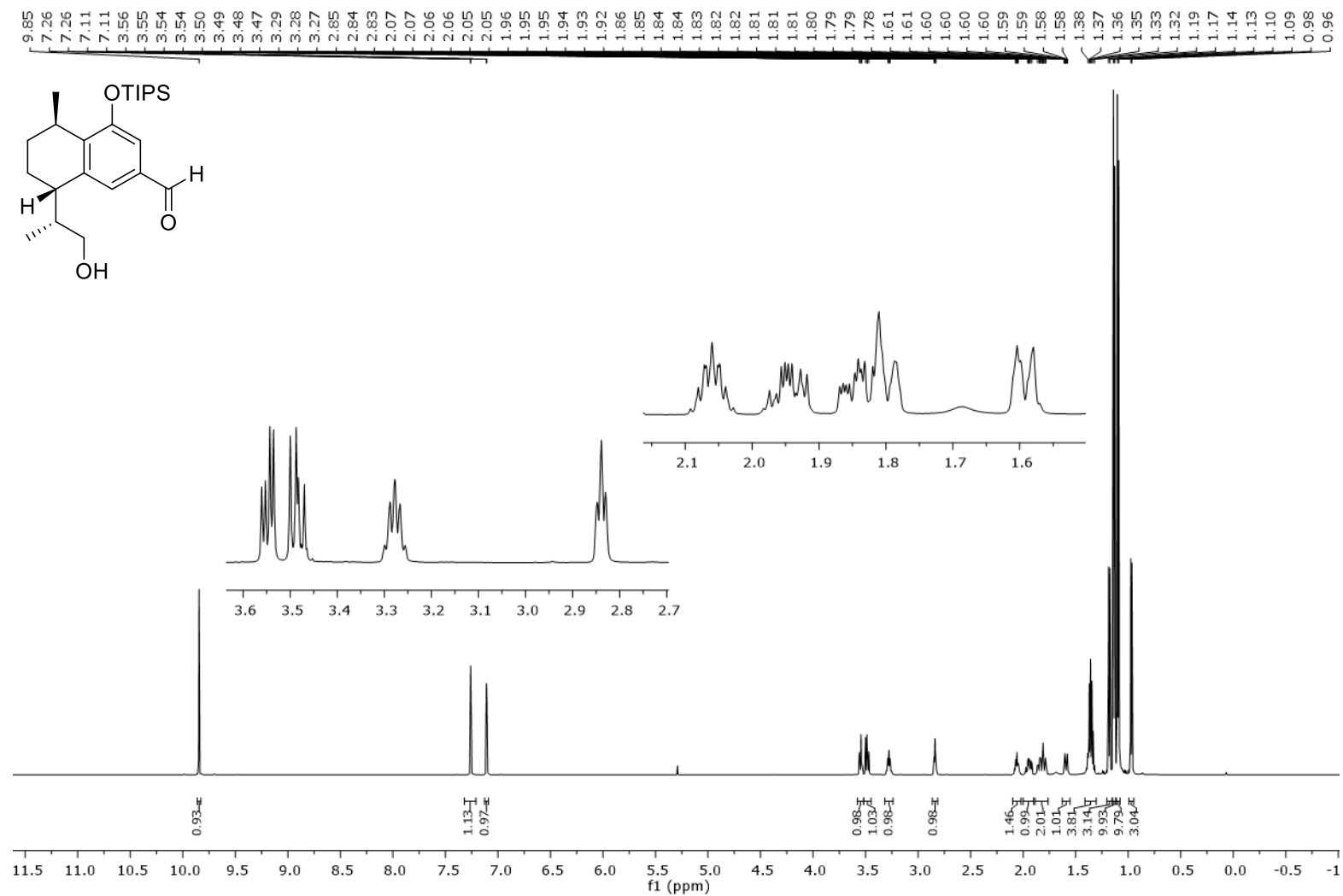


Figure S22: ^1H NMR spectrum of **21** (600 MHz, CDCl_3)

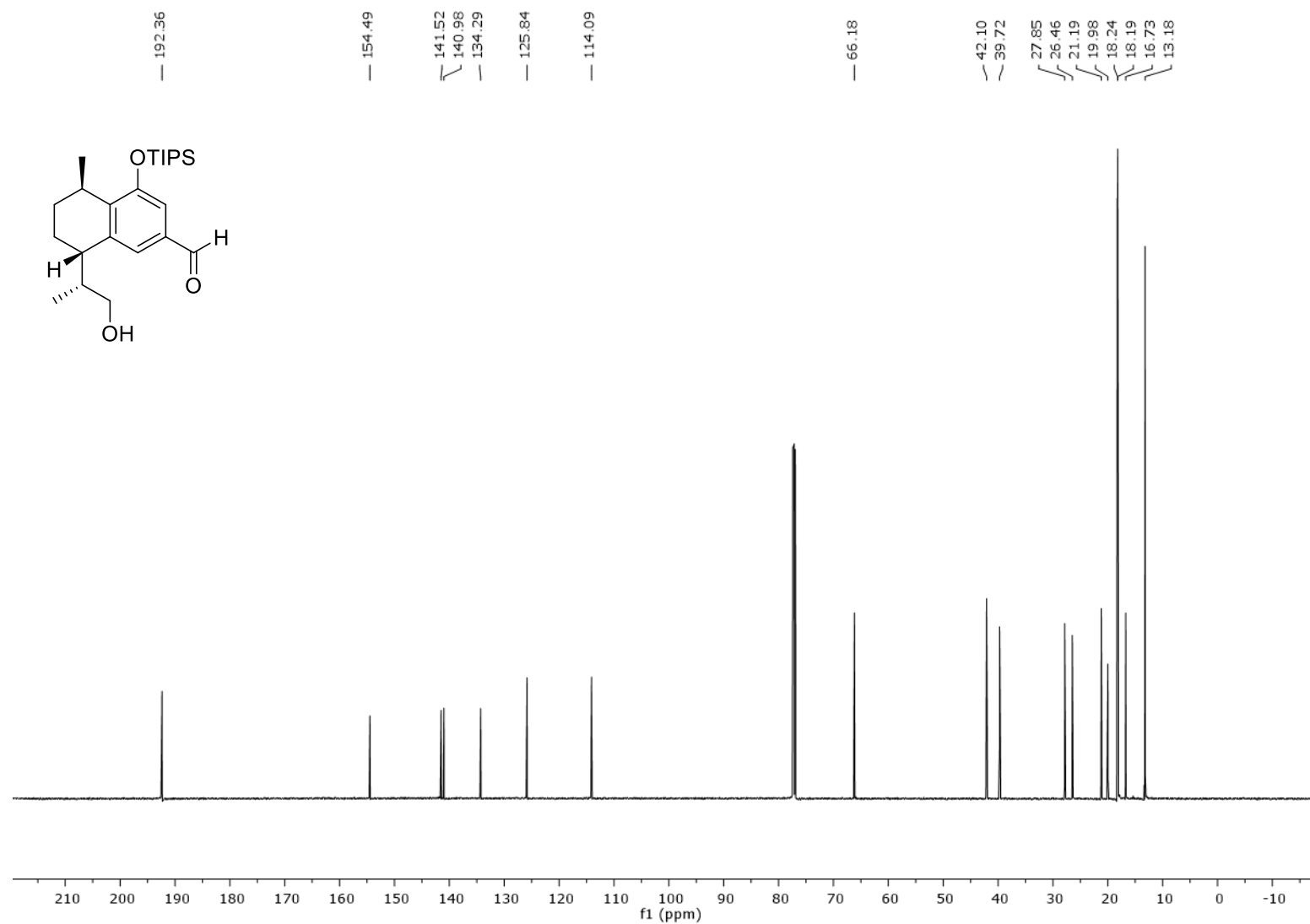


Figure S23: ^{13}C NMR spectrum of **21** (150 MHz, CDCl_3)

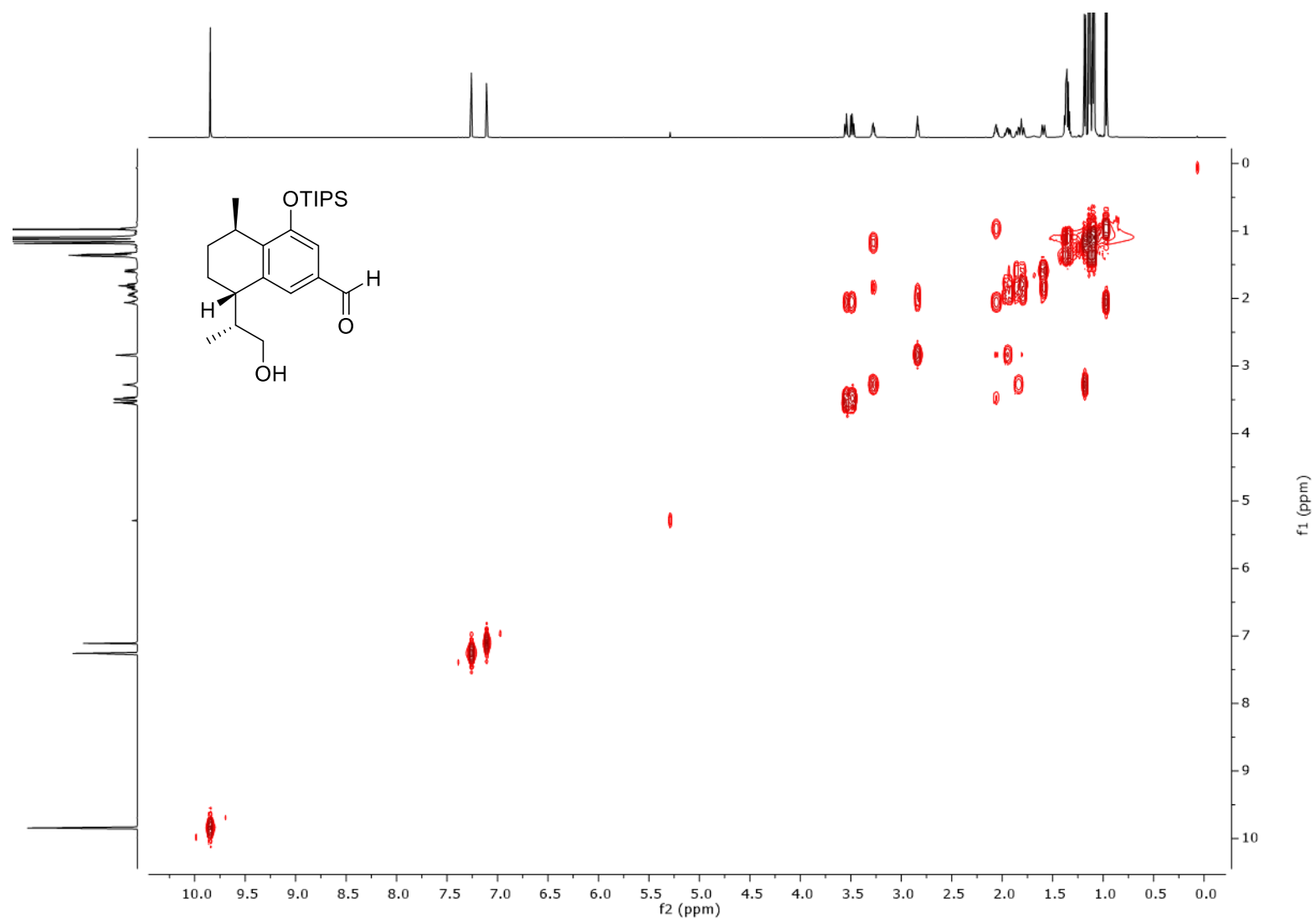


Figure S24: COSY NMR spectrum of **21** (600 × 600 MHz, CDCl₃)

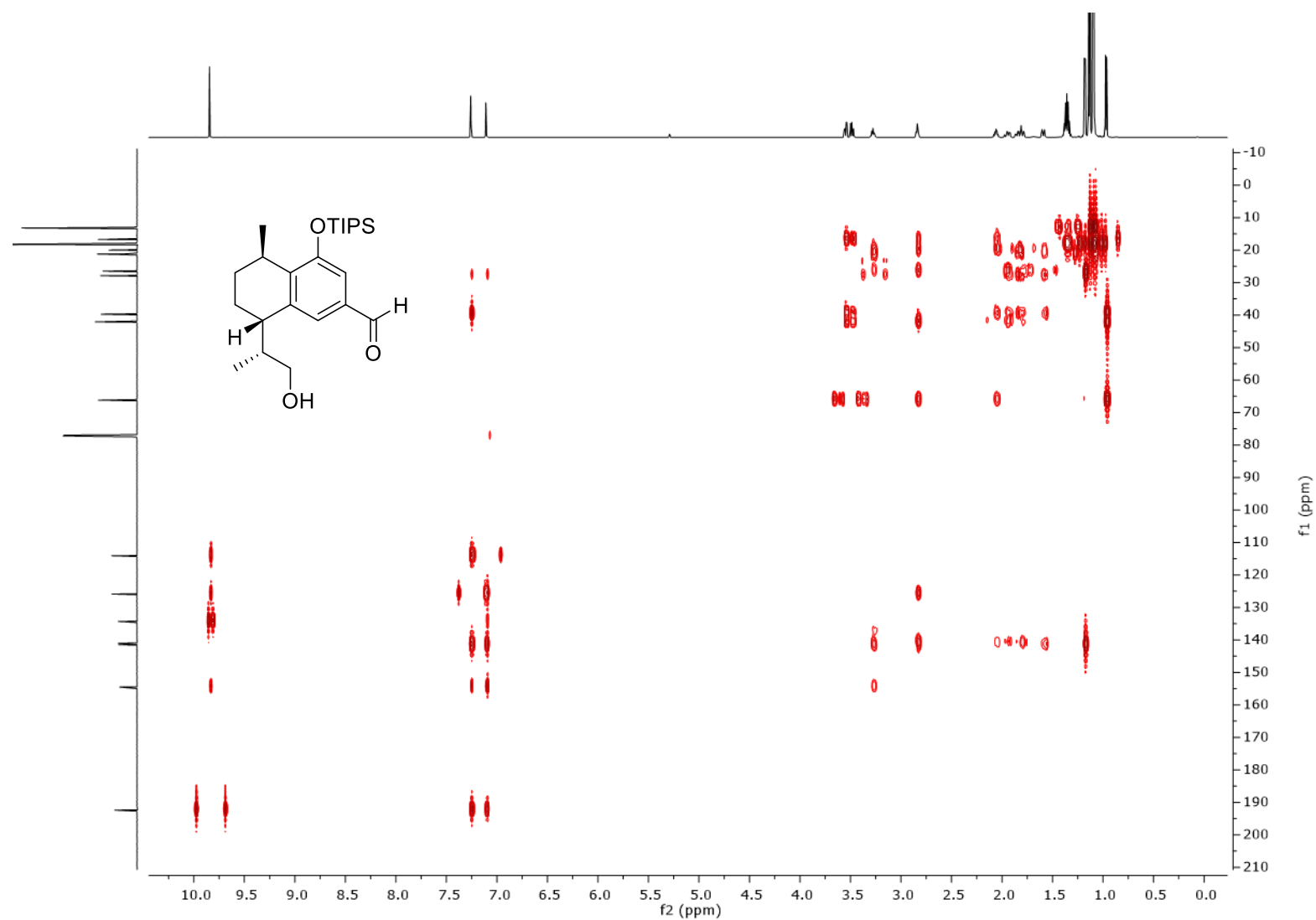


Figure S25: HMBC NMR spectrum of **21** (600 $\times$ 150 MHz, CDCl_3)

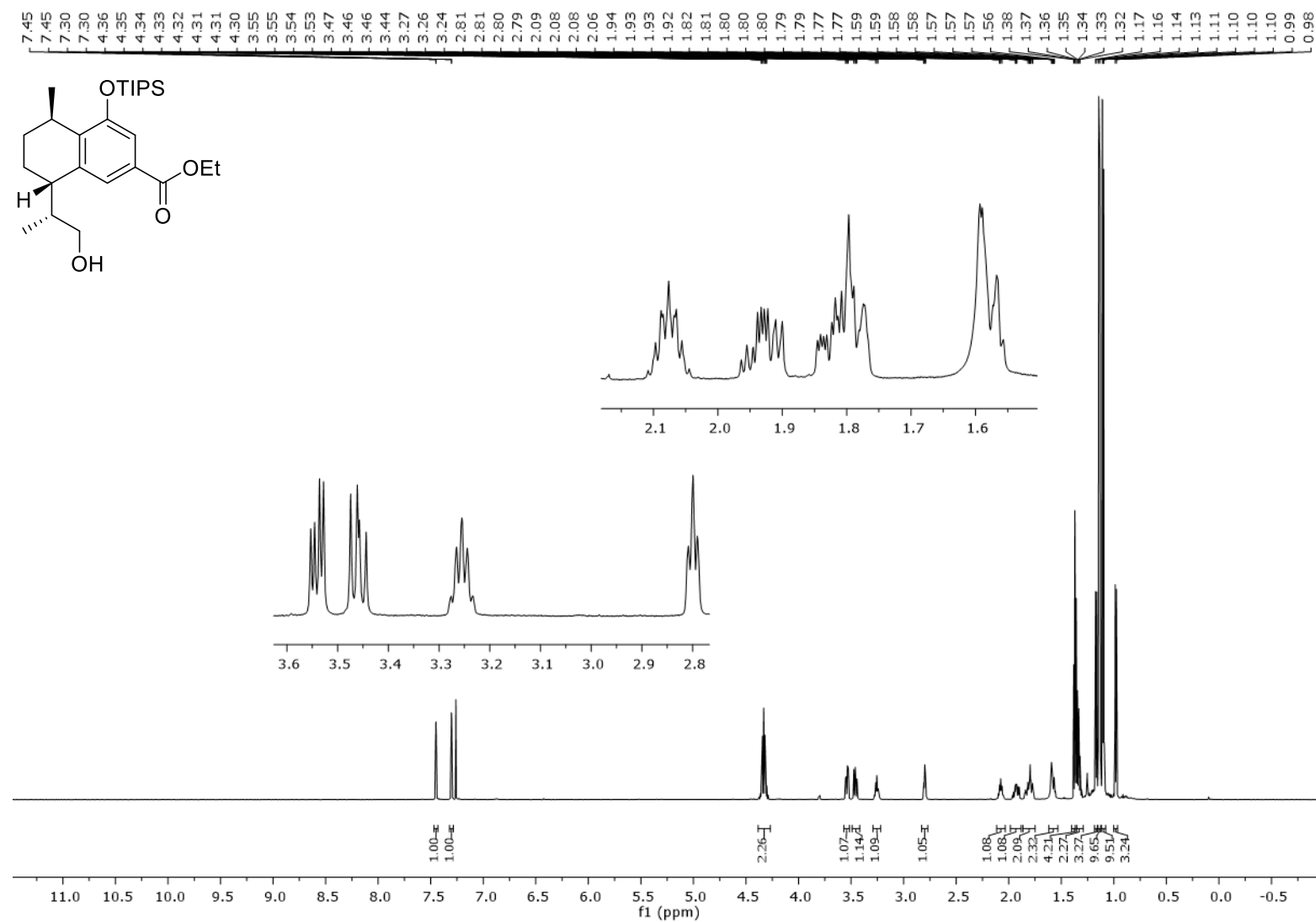


Figure S26: ^1H NMR spectrum of **22** (600 MHz, CDCl_3)

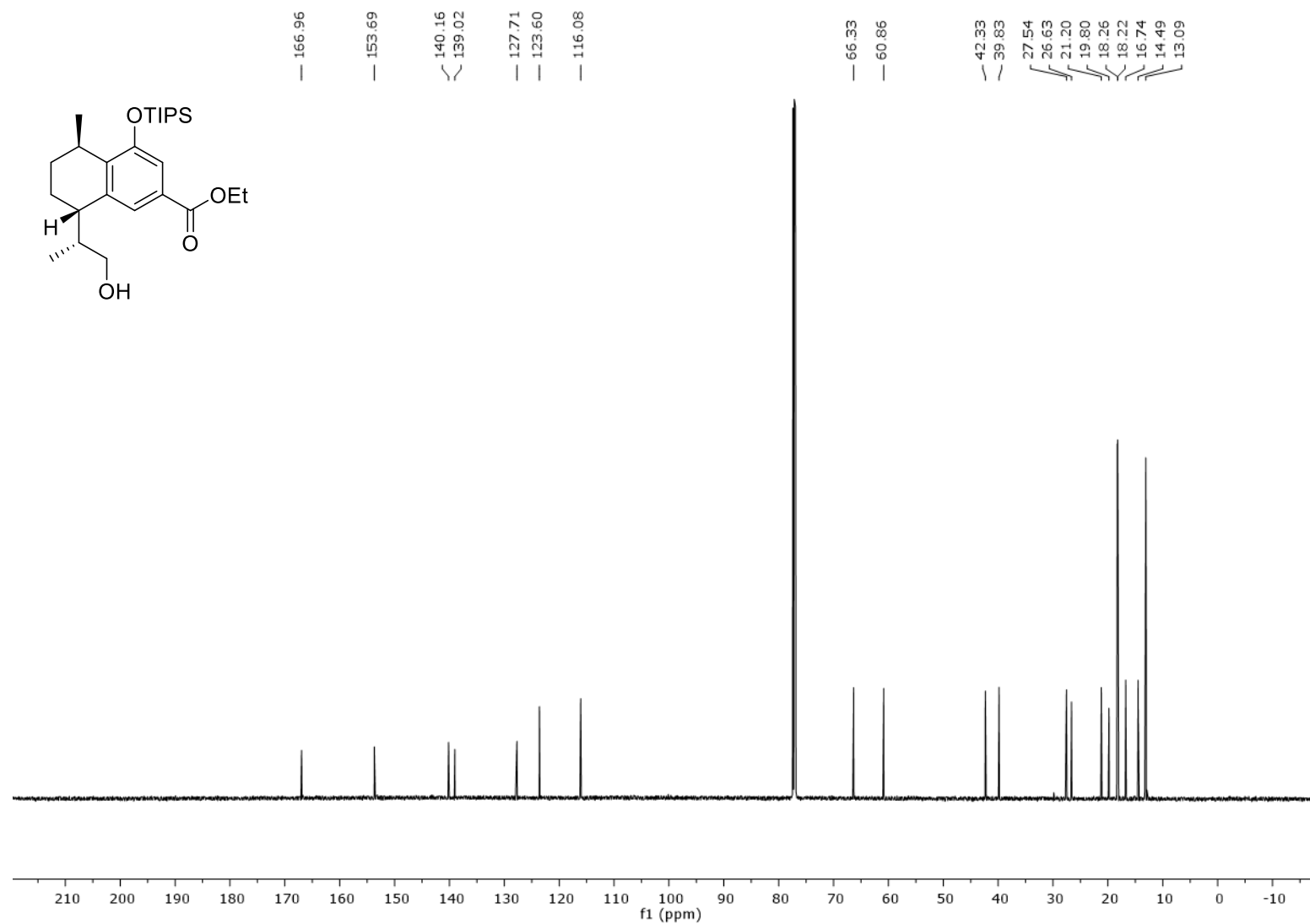


Figure S27: ^{13}C NMR spectrum of **22** (150 MHz, CDCl_3)

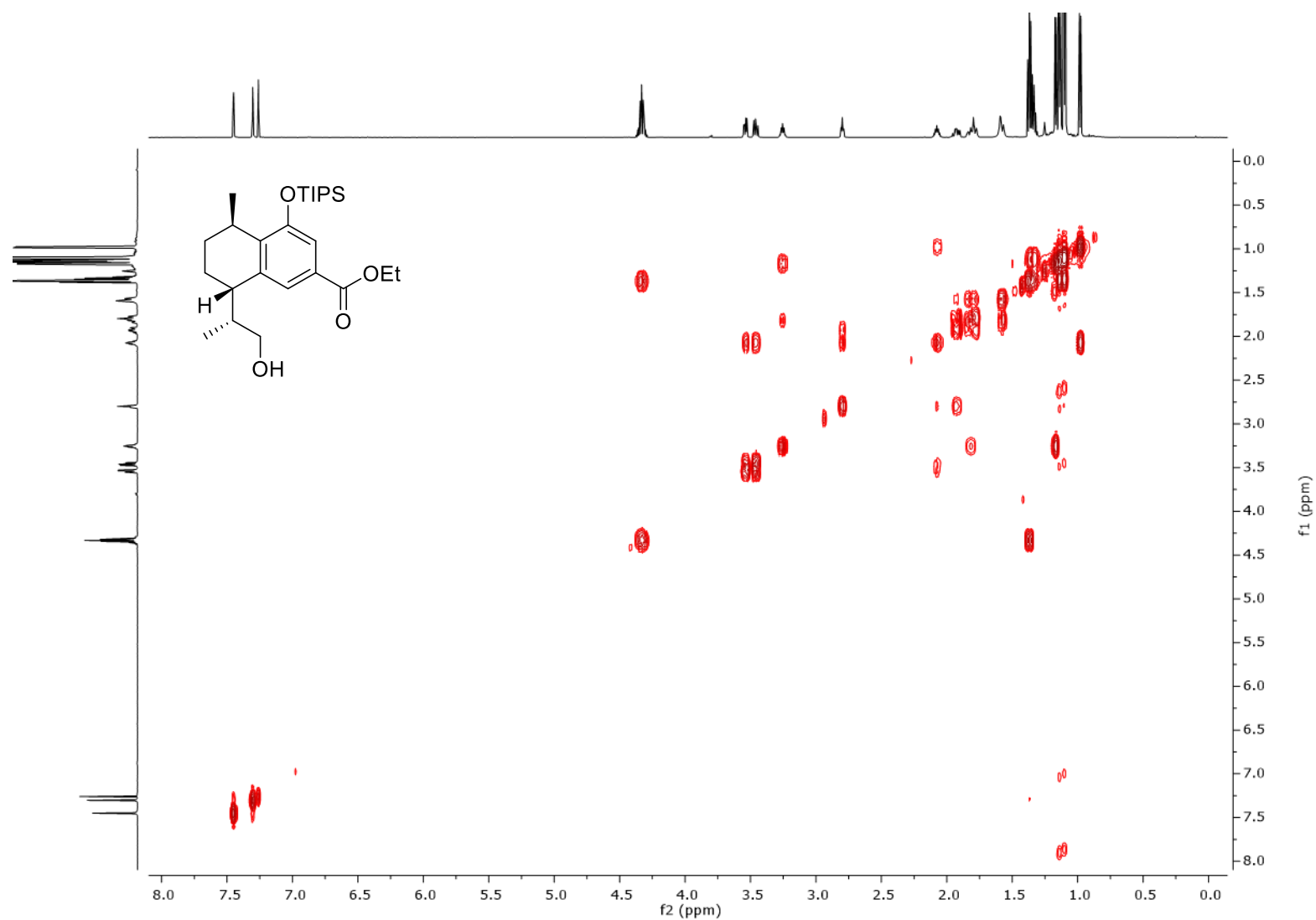
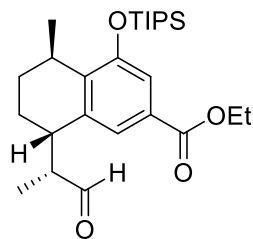


Figure S28: COSY NMR spectrum of **22** (600 × 600 MHz, CDCl₃)



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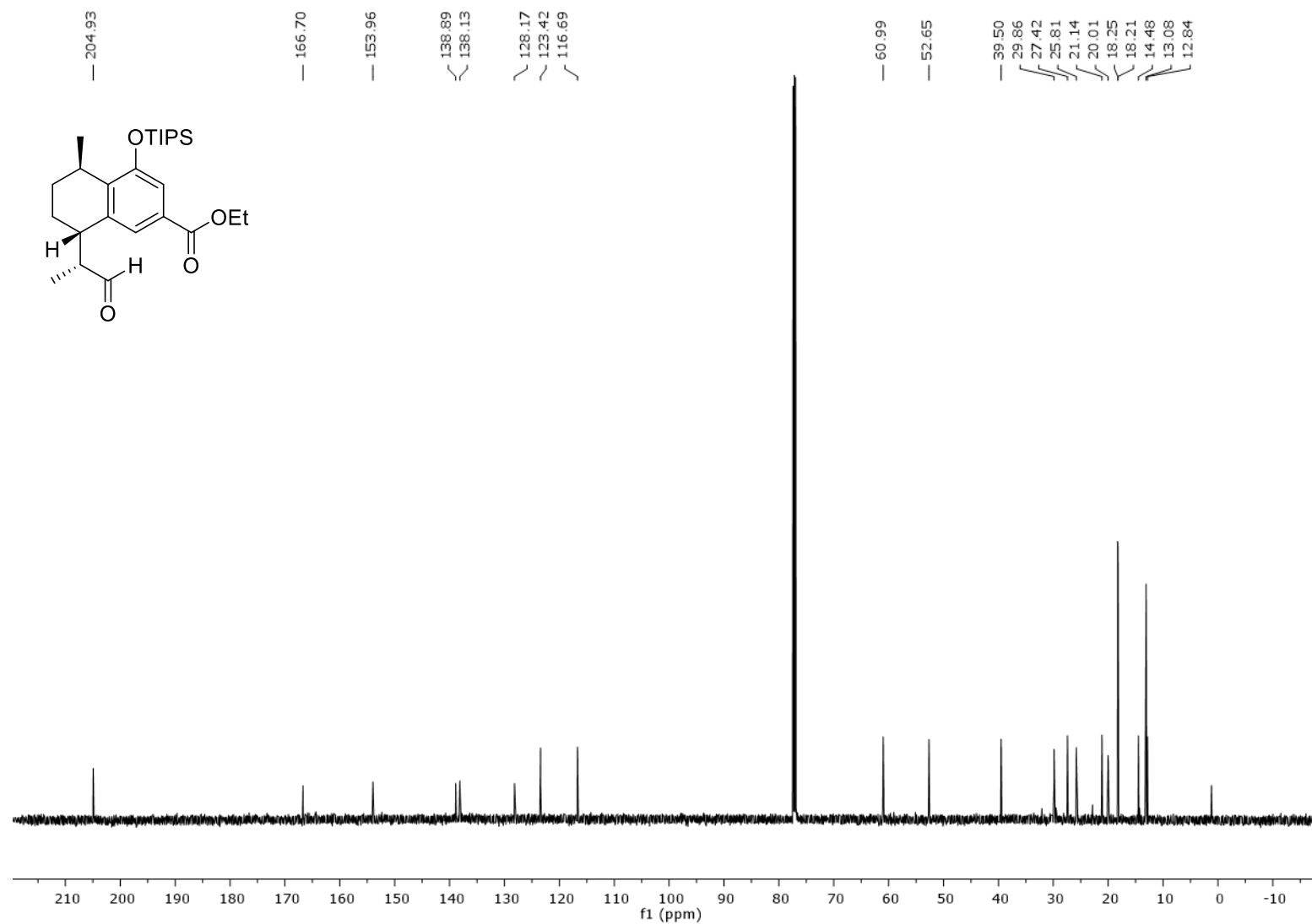


Figure S30: ^{13}C NMR spectrum of **23** (150 MHz, CDCl_3)

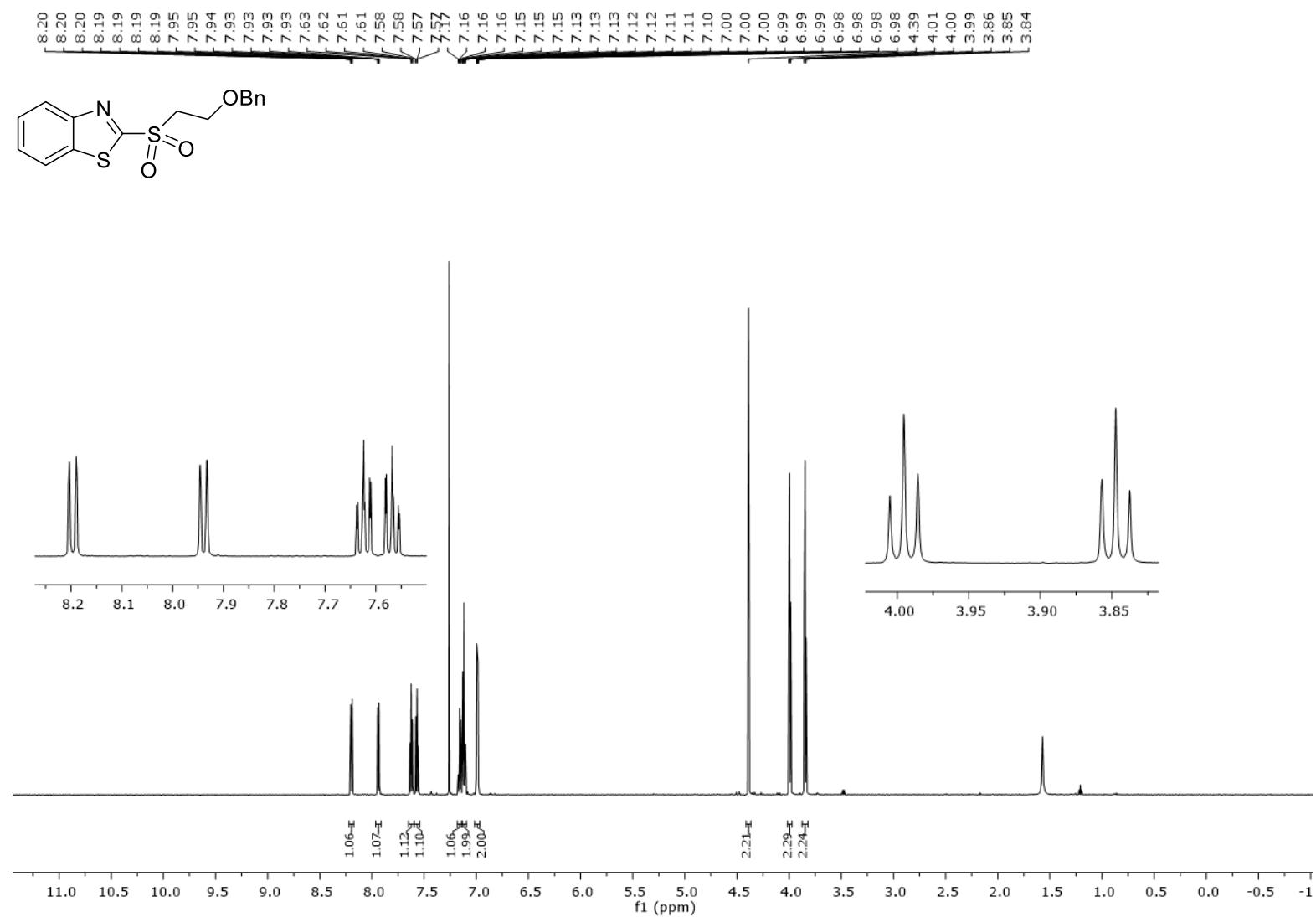


Figure S31: ¹H NMR spectrum of **24** (600 MHz, CDCl₃)

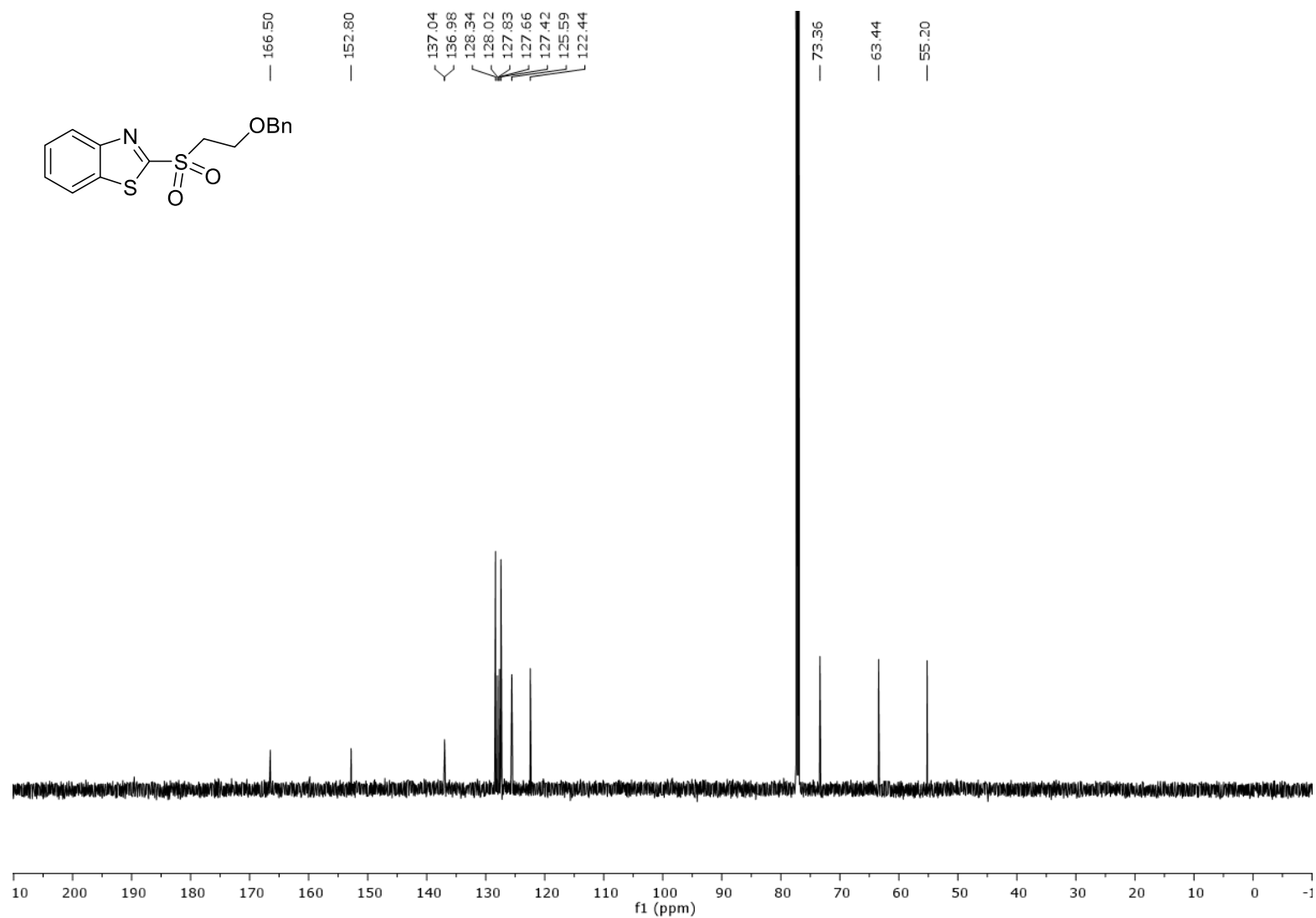
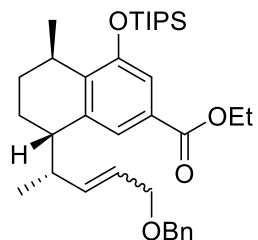


Figure S32: ^{13}C NMR spectrum of **24** (150 MHz, CDCl_3)



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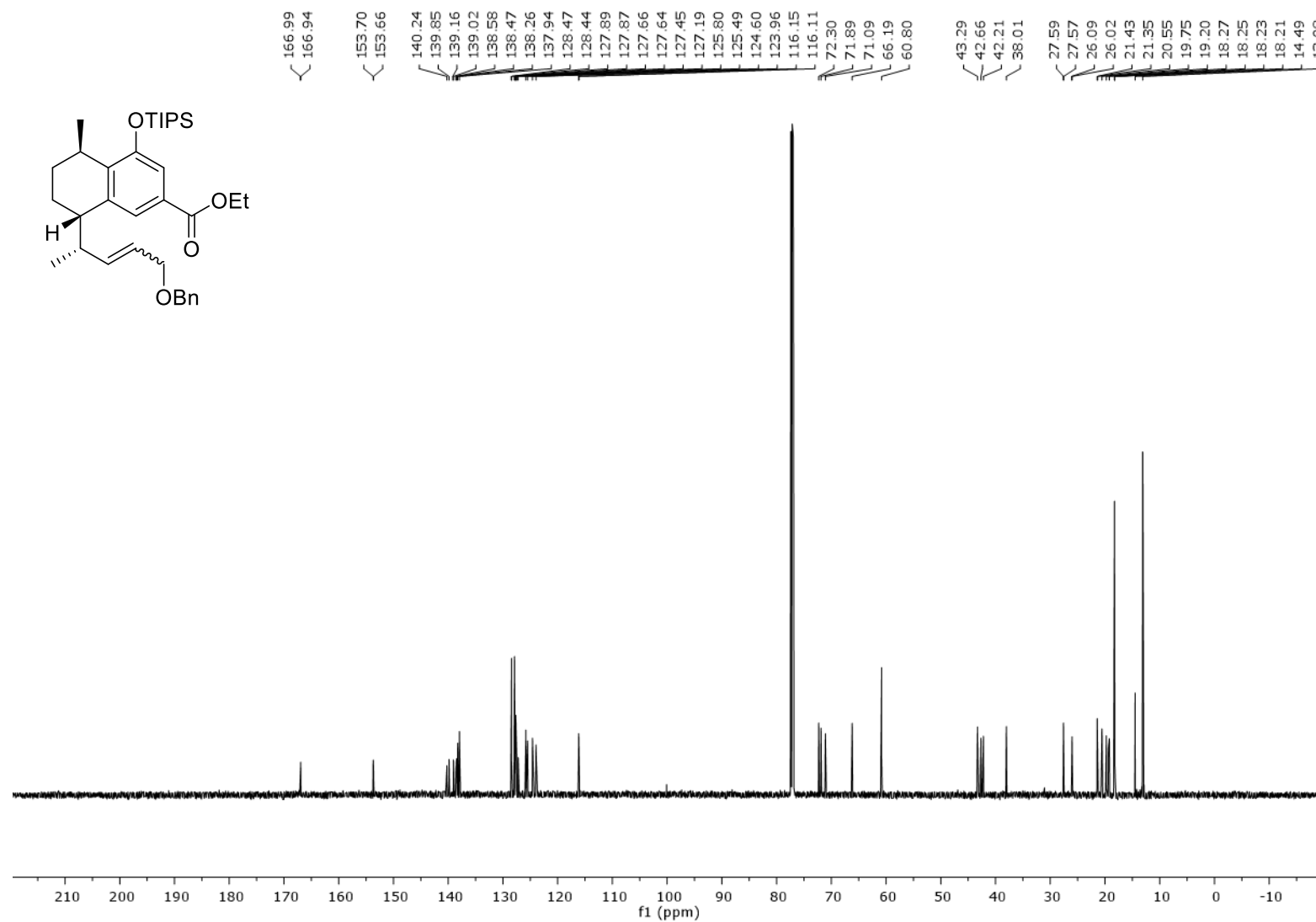


Figure S34: ^{13}C NMR spectrum of **27** (150 MHz, CDCl_3)

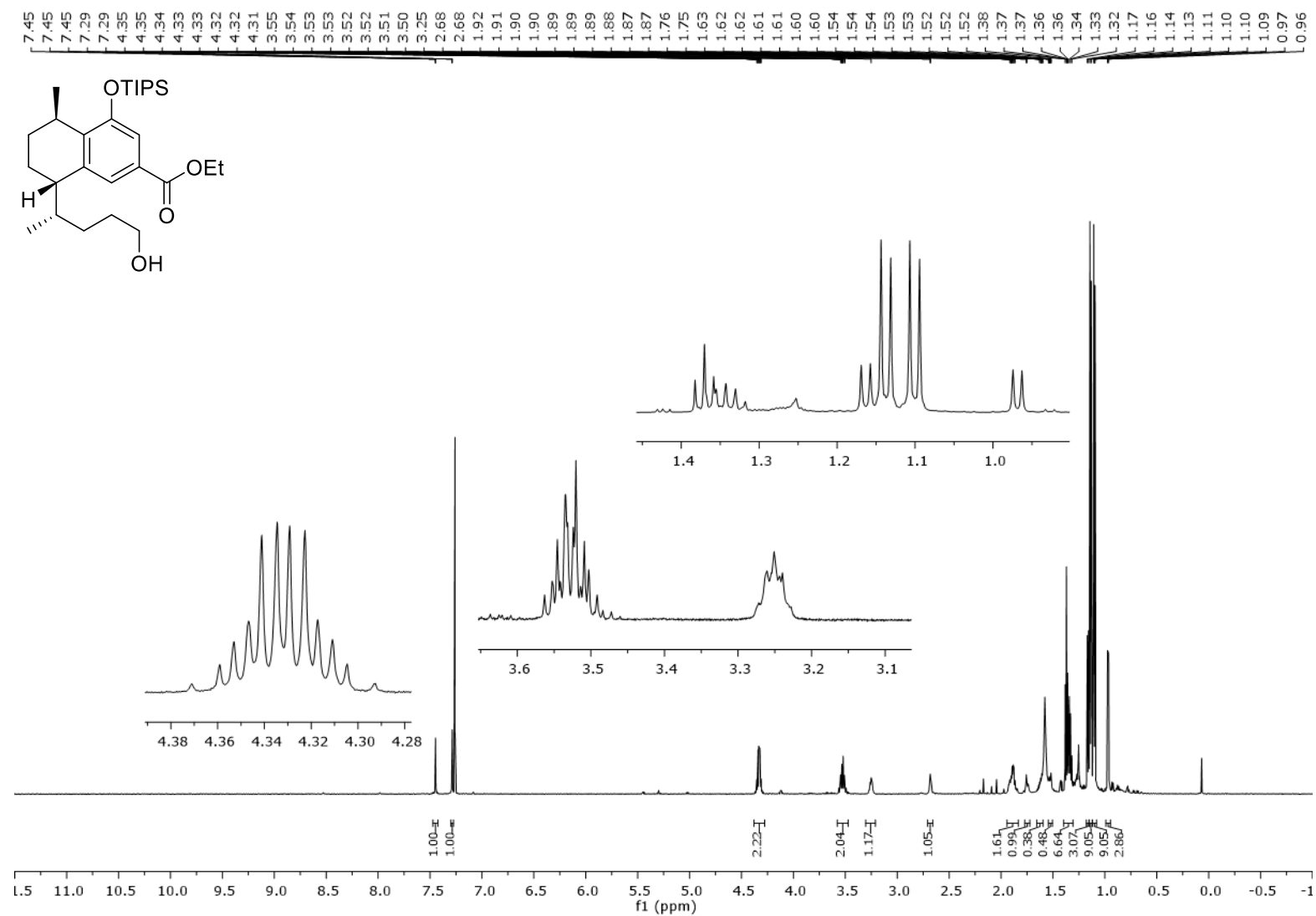


Figure S35: ^1H NMR spectrum of **28** (600 MHz, CDCl_3)

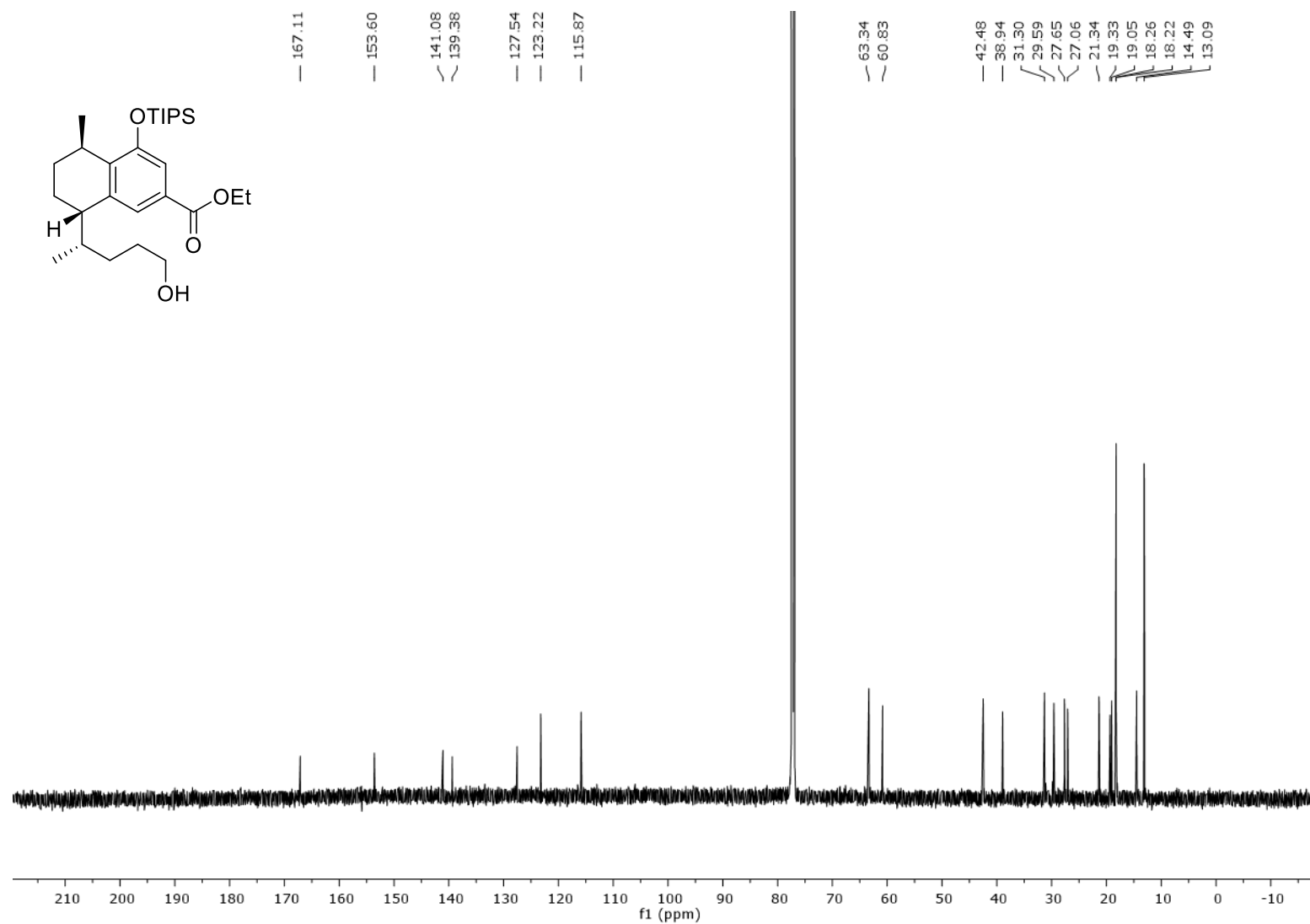


Figure S36: ^{13}C NMR spectrum of **28** (150 MHz, CDCl_3)

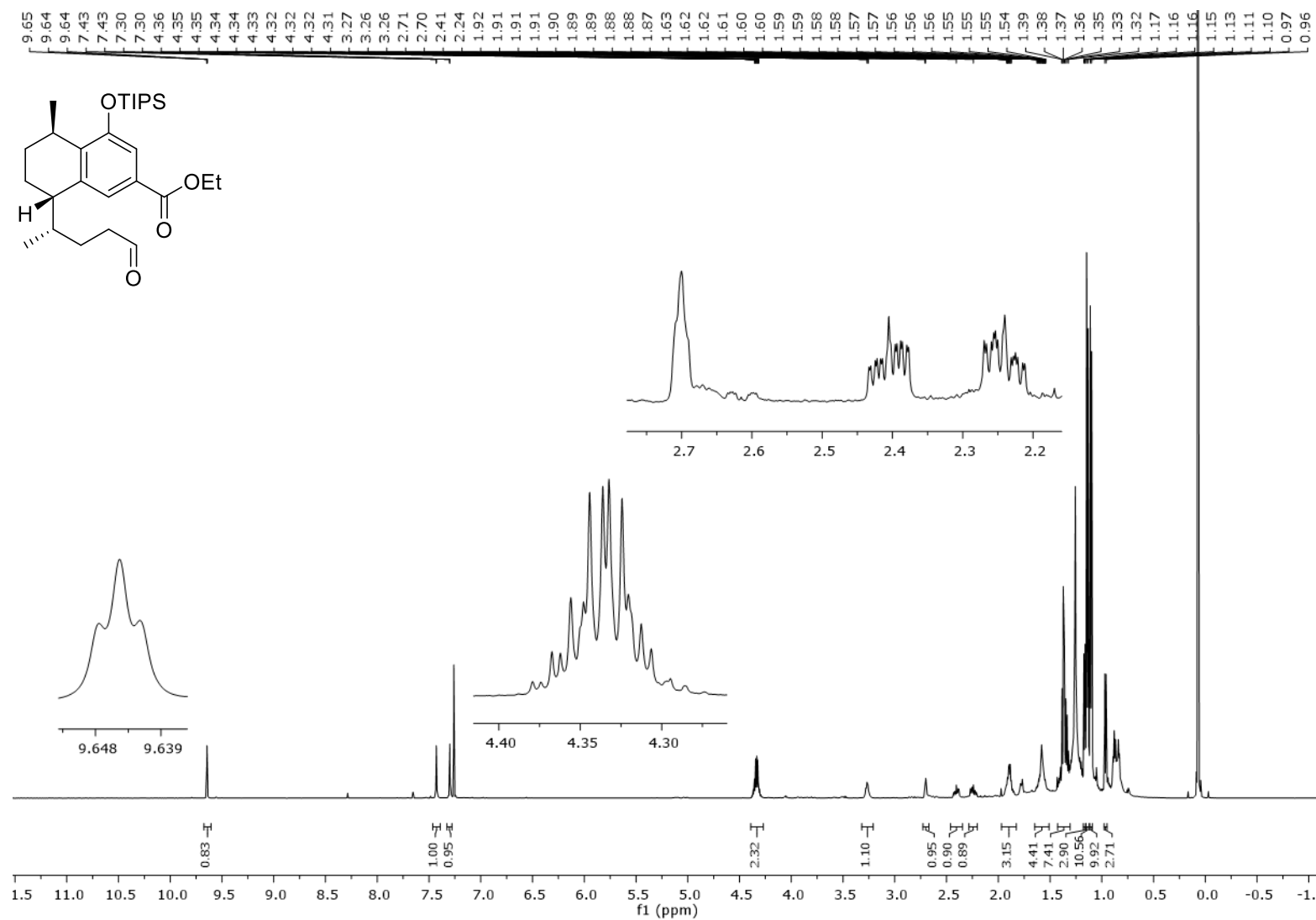


Figure S37: ^1H NMR spectrum of **29** (600 MHz, CDCl_3)

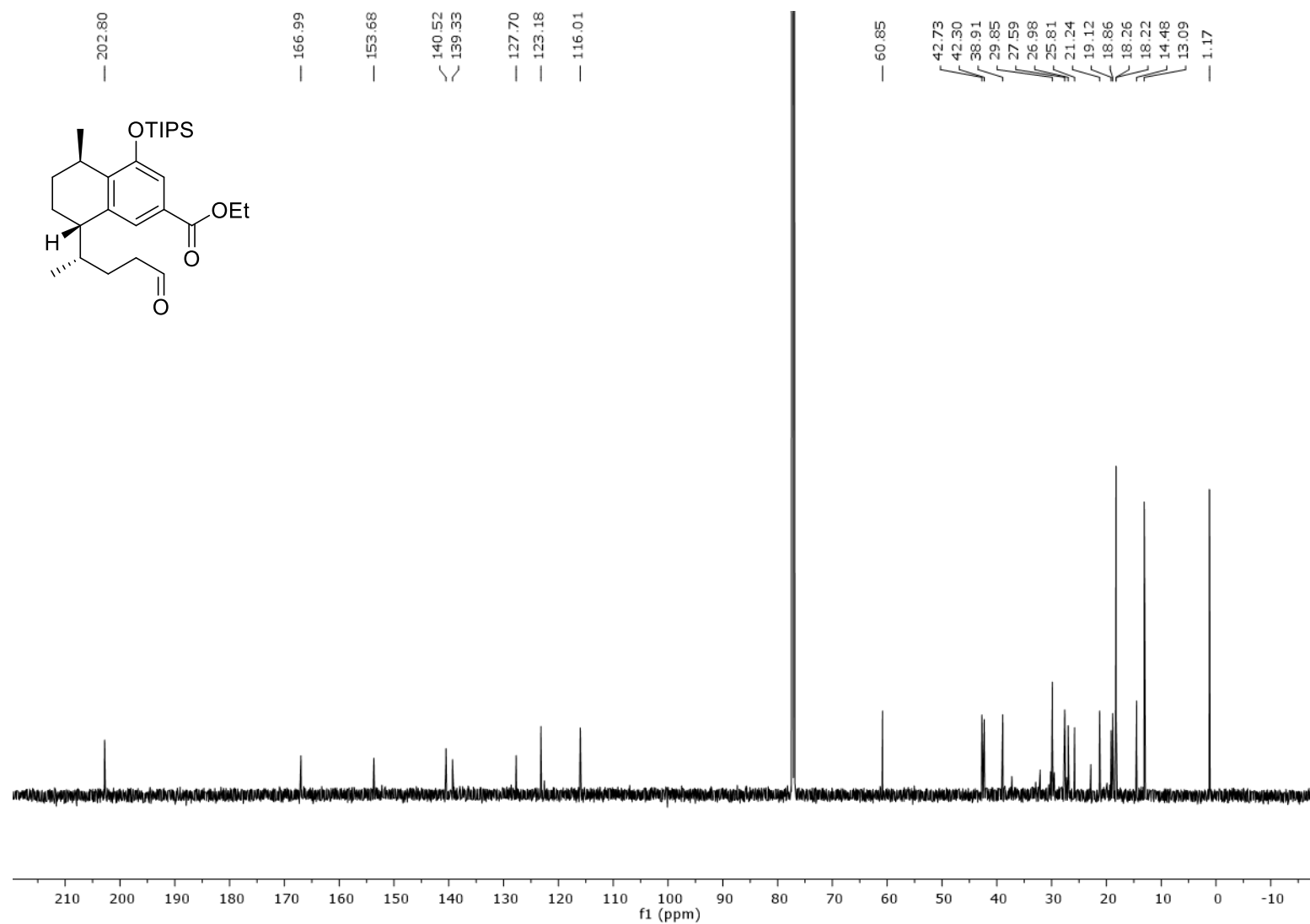


Figure S38: ^{13}C NMR spectrum of **29** (150 MHz, CDCl_3)

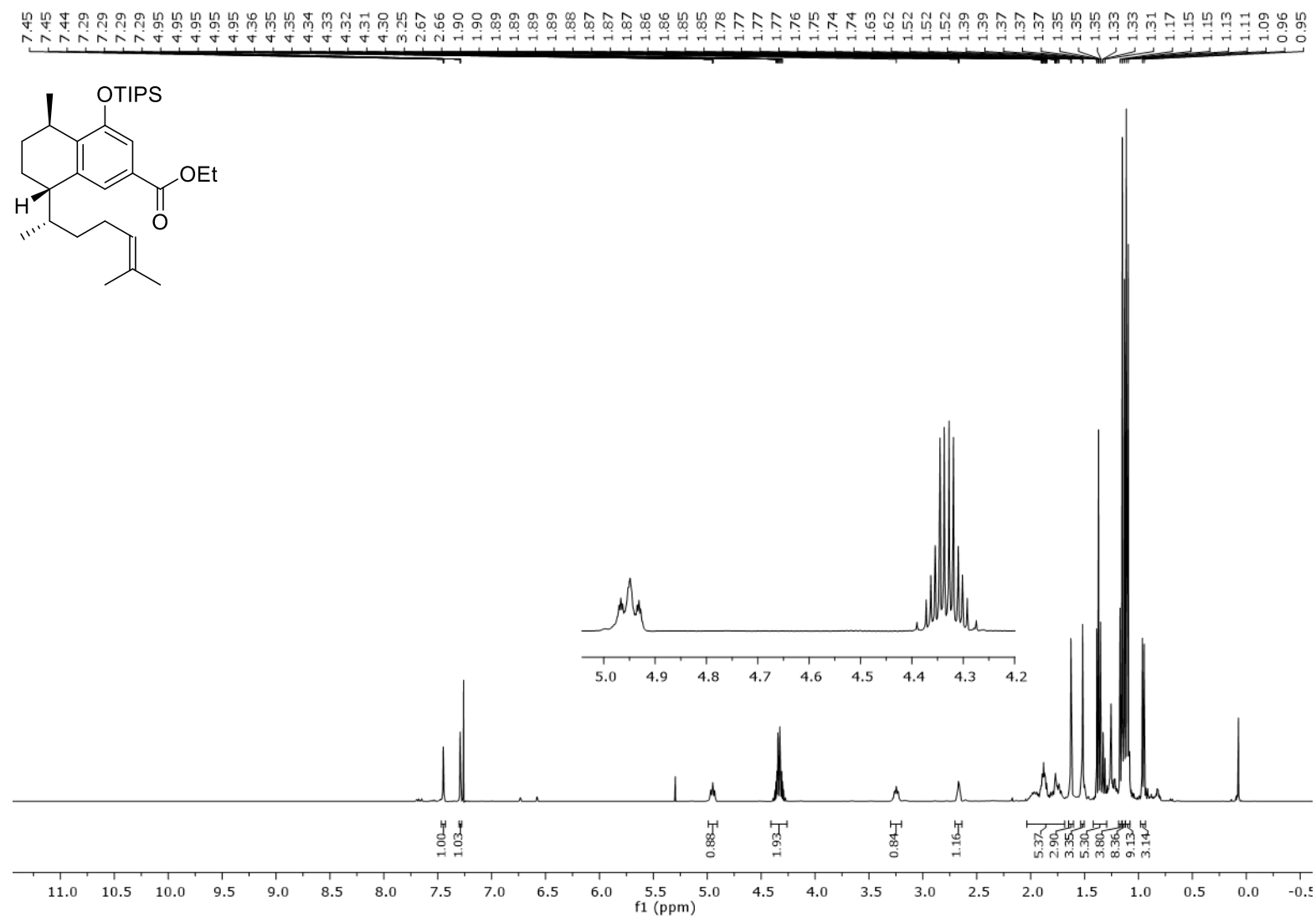


Figure S39: ^1H NMR spectrum of **30** (400 MHz, CDCl_3)

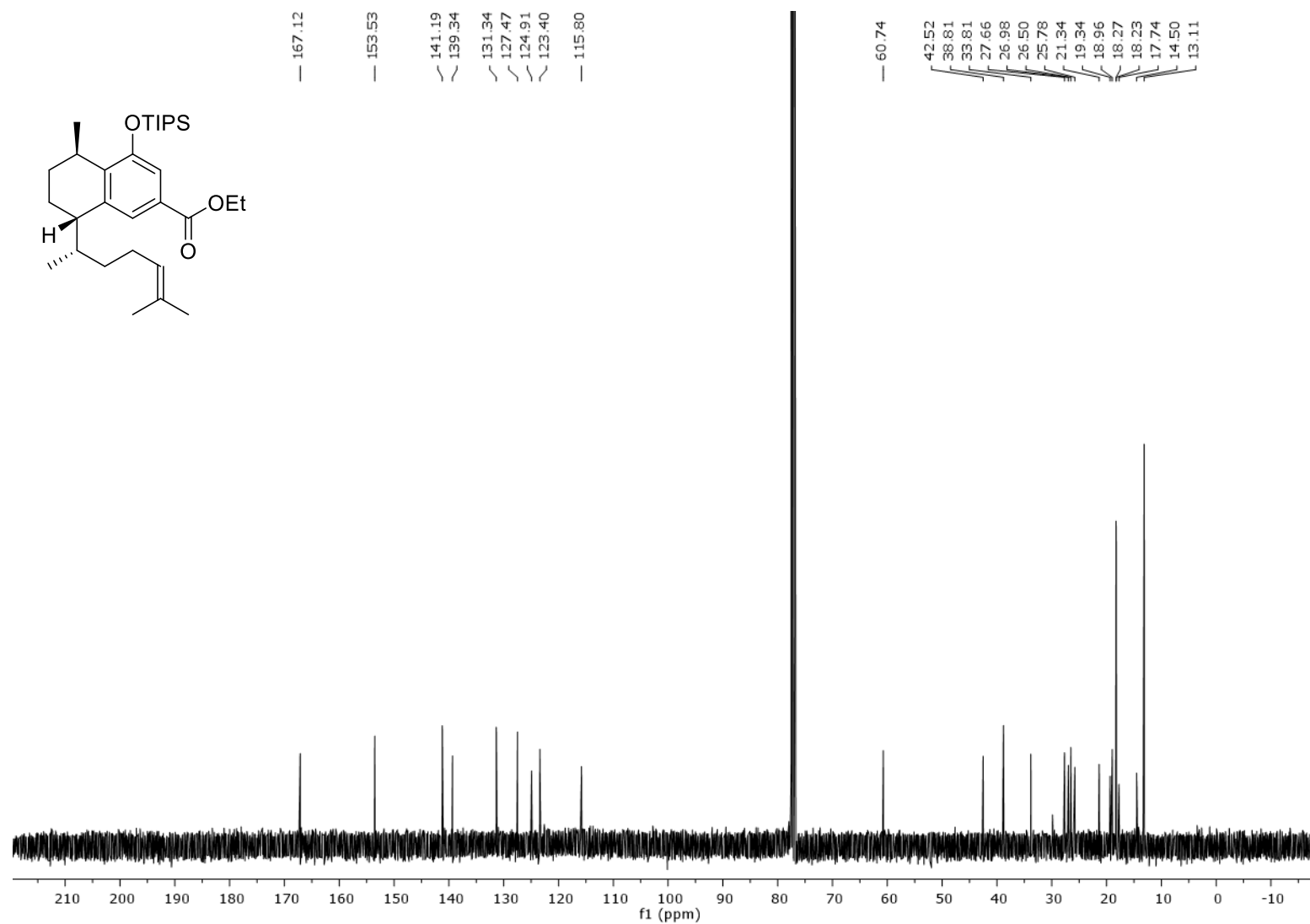


Figure S40: ^{13}C NMR spectrum of **30** (100 MHz, CDCl_3)

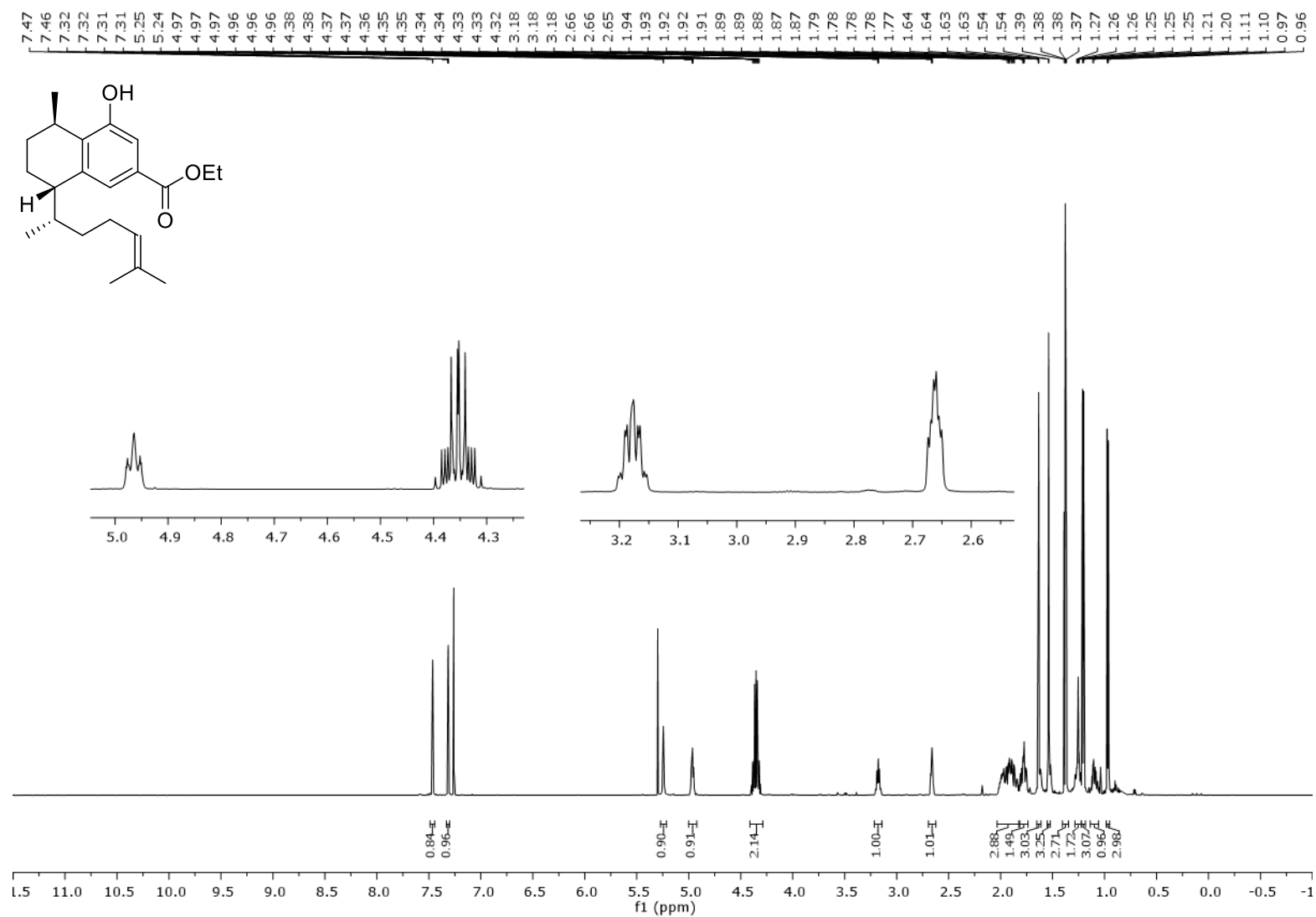


Figure S41: ¹H NMR spectrum of **31** (600 MHz, CDCl₃)

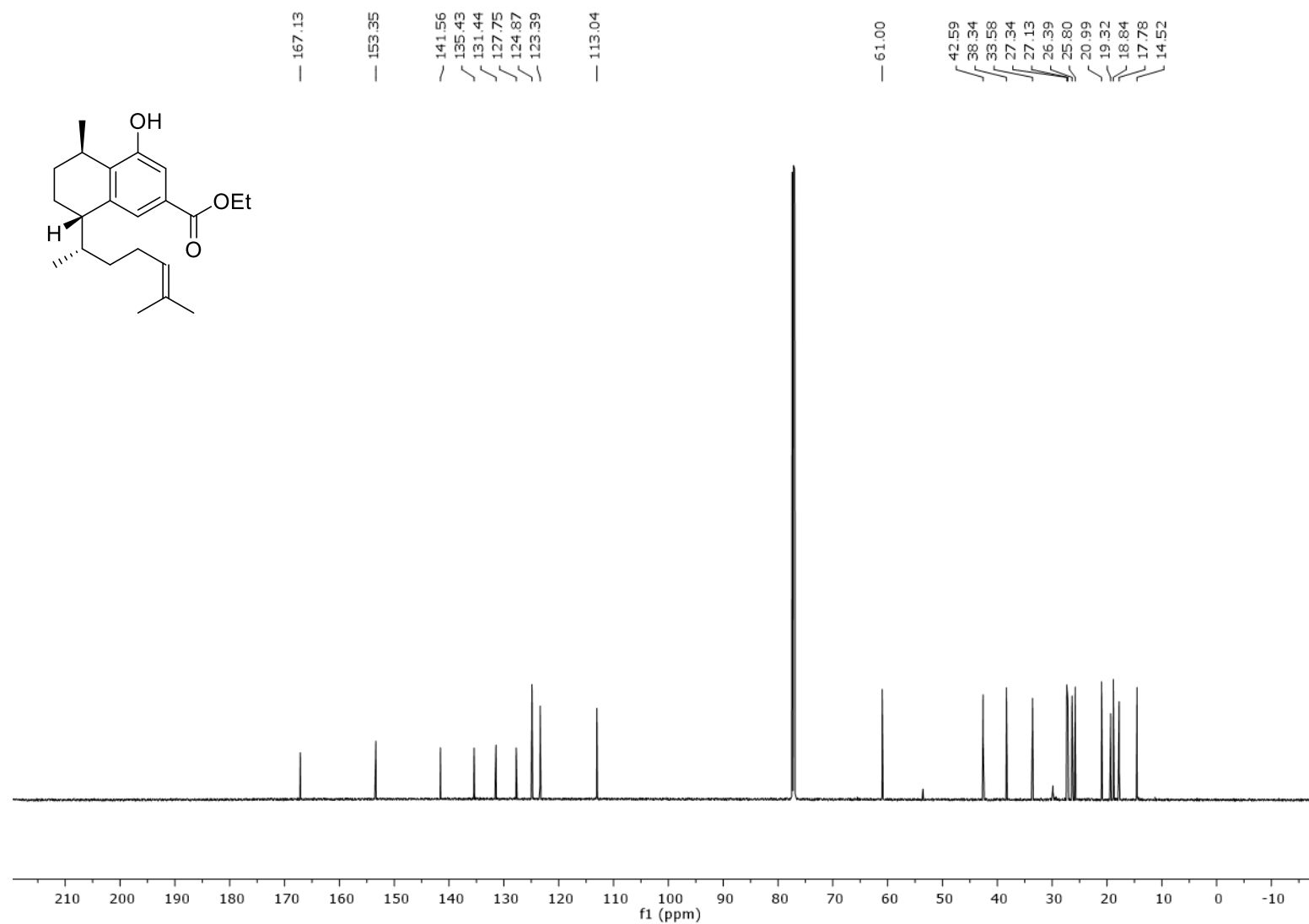


Figure S42: ^{13}C NMR spectrum of **31** (150 MHz, CDCl_3)

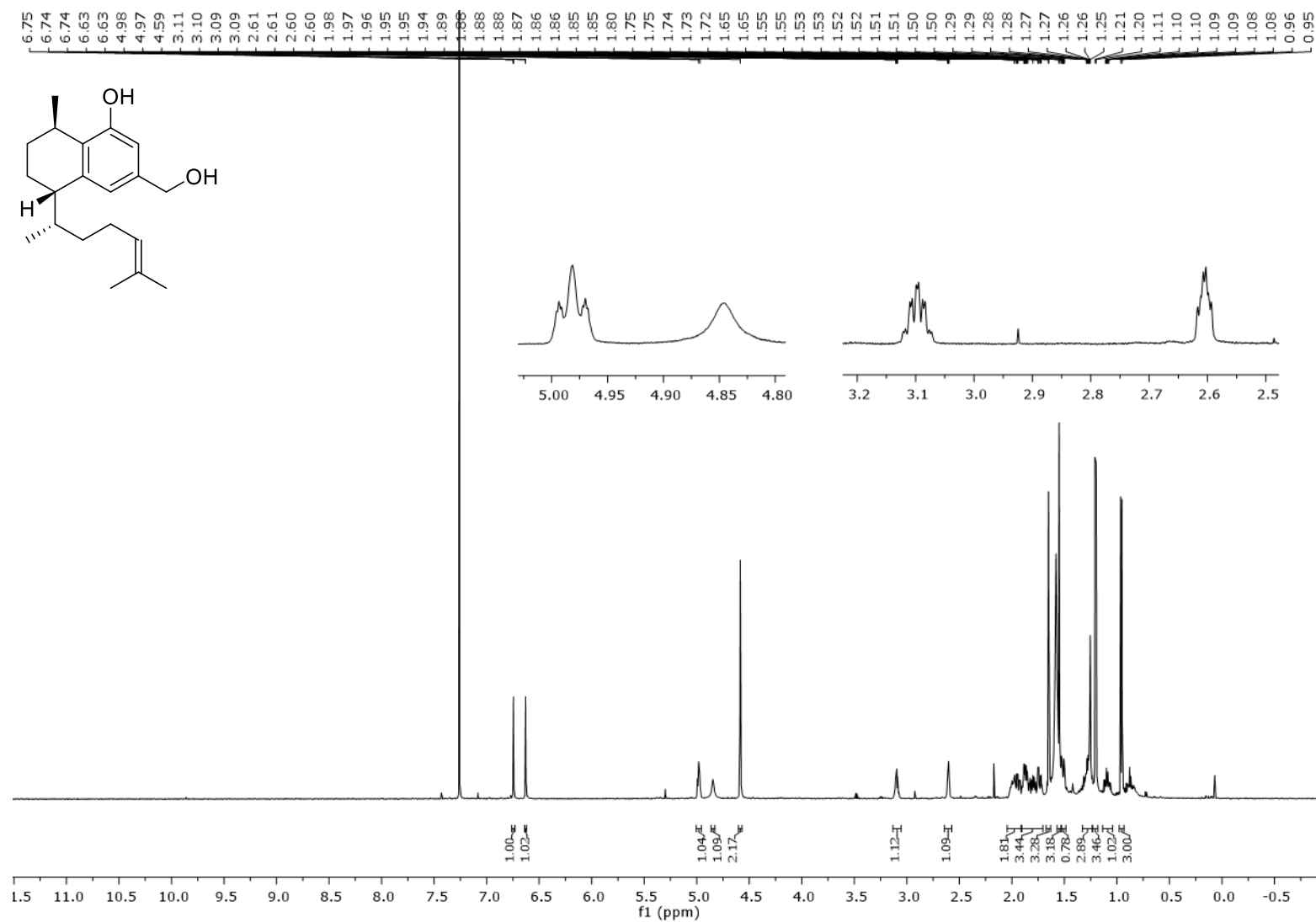


Figure S43: ¹H NMR spectrum of **1** (600 MHz, CDCl₃)

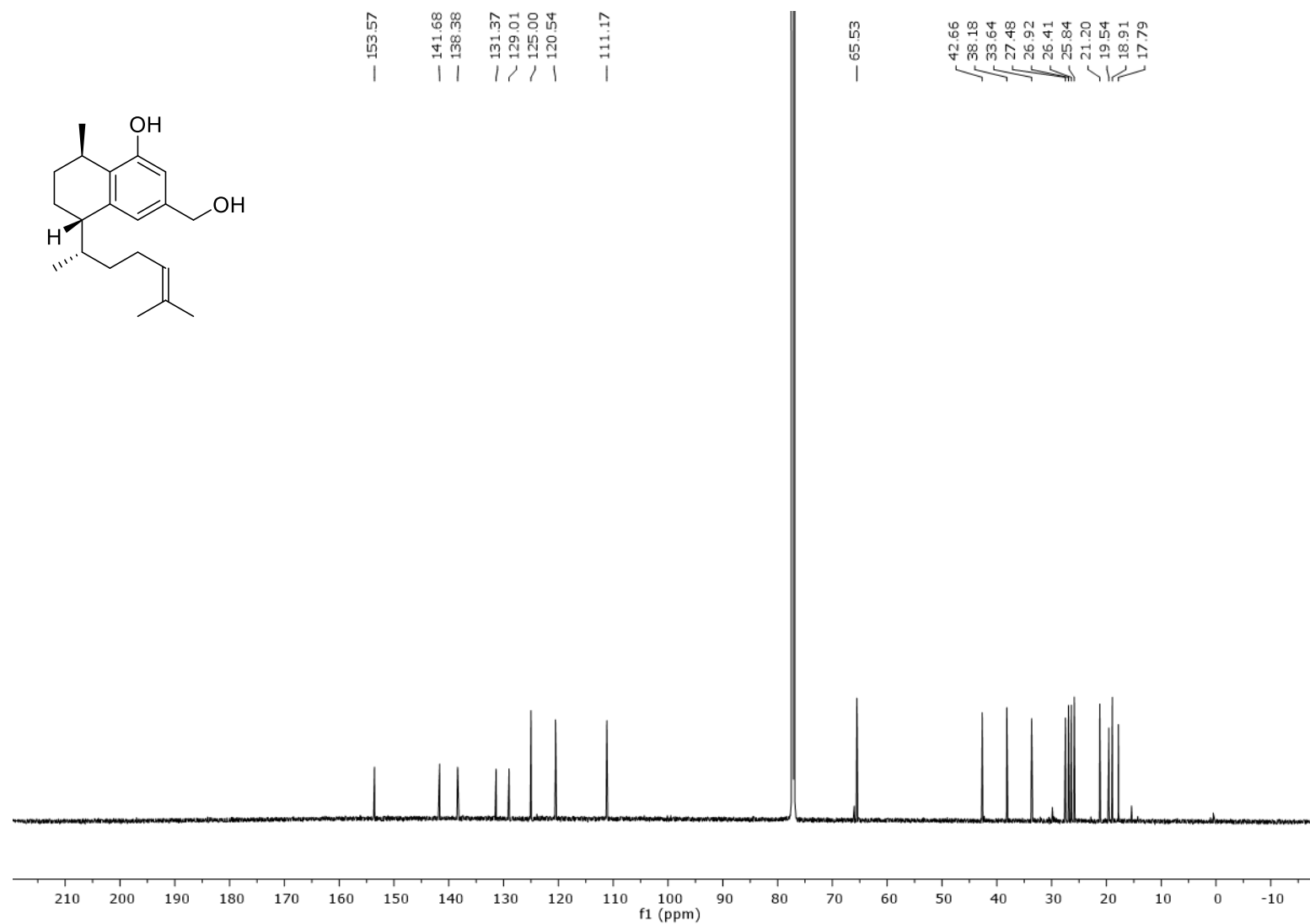


Figure S44: ^{13}C NMR spectrum of **1** (150 MHz, CDCl_3)

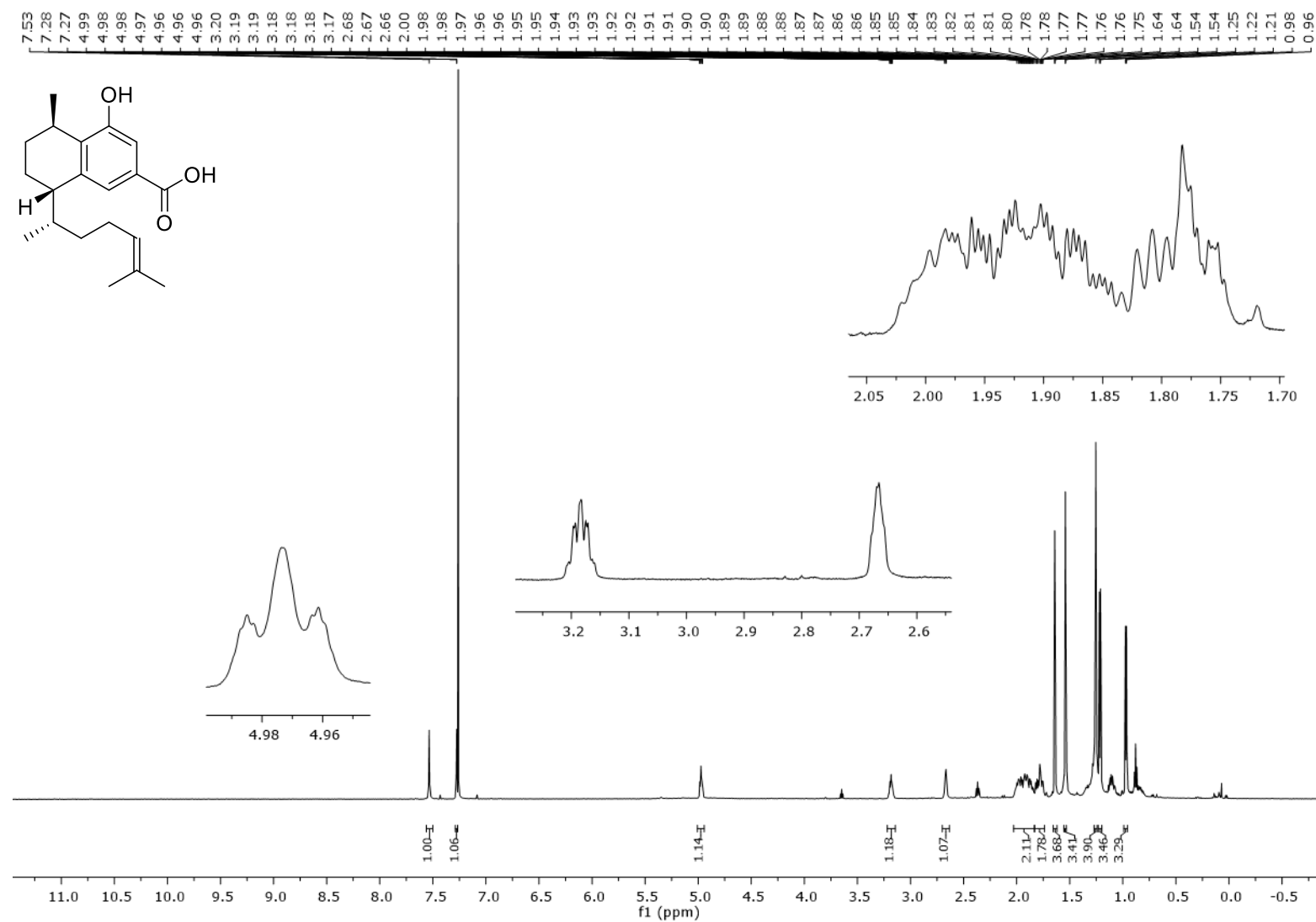


Figure S45: ¹H NMR spectrum of **2** (600 MHz, CDCl₃)

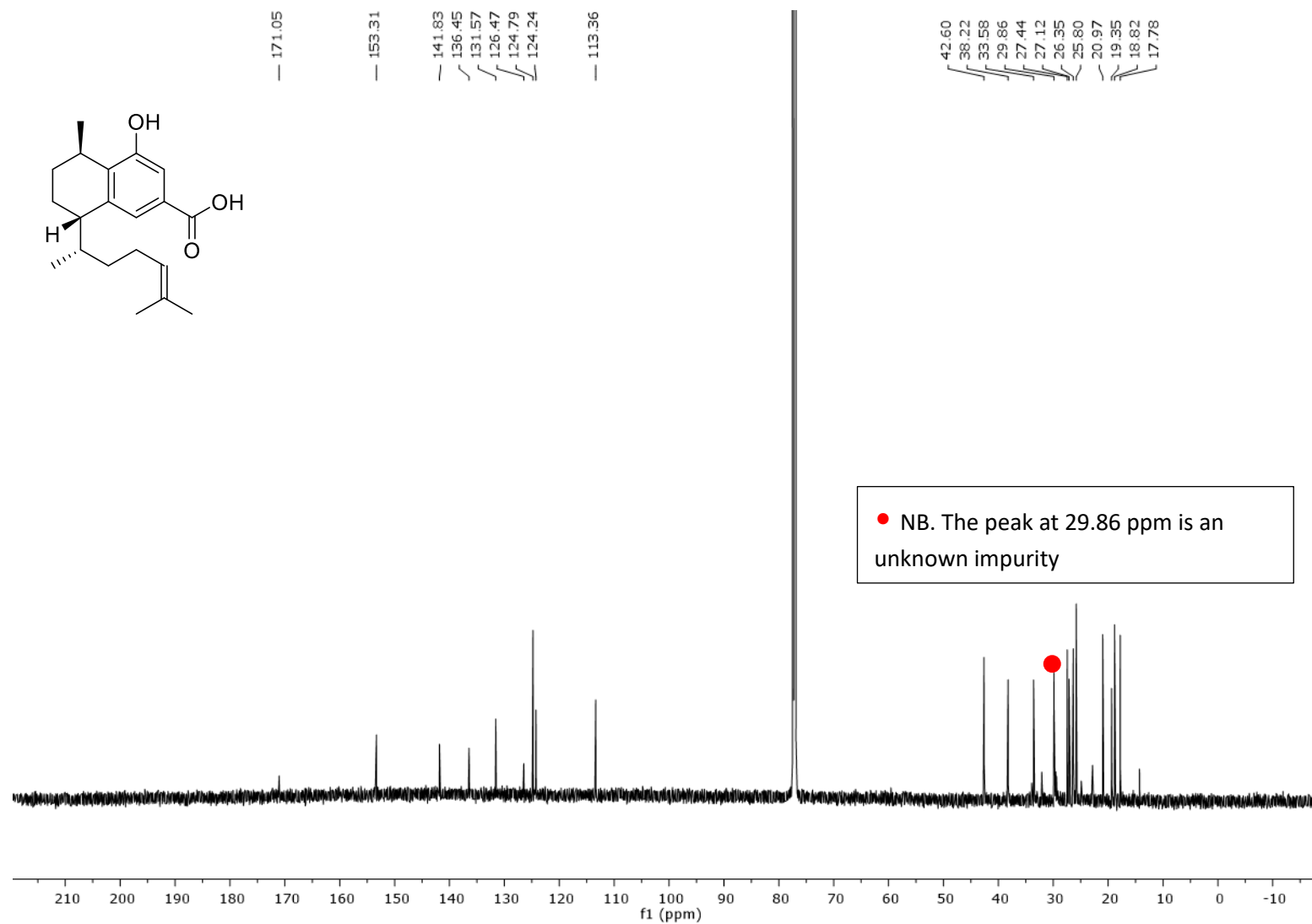


Figure S46: ^{13}C NMR spectrum of **2** (150 MHz, CDCl_3)