

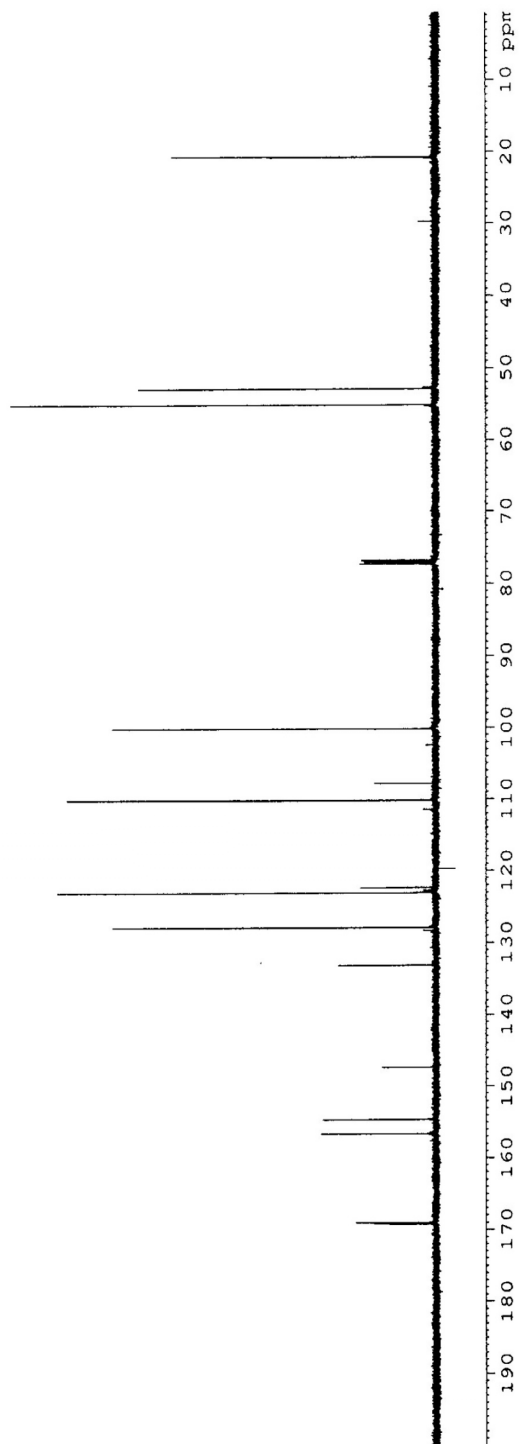
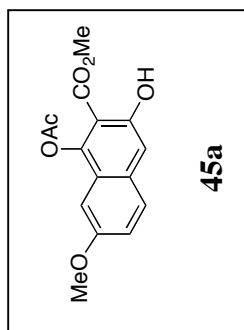
Perylenequinone Natural Products: Enantioselective Synthesis of the Oxidized Pentacyclic Core

Carol A. Mulrooney, Barbara J. Morgan, Xiaolin Li and Marisa C. Kozlowski*

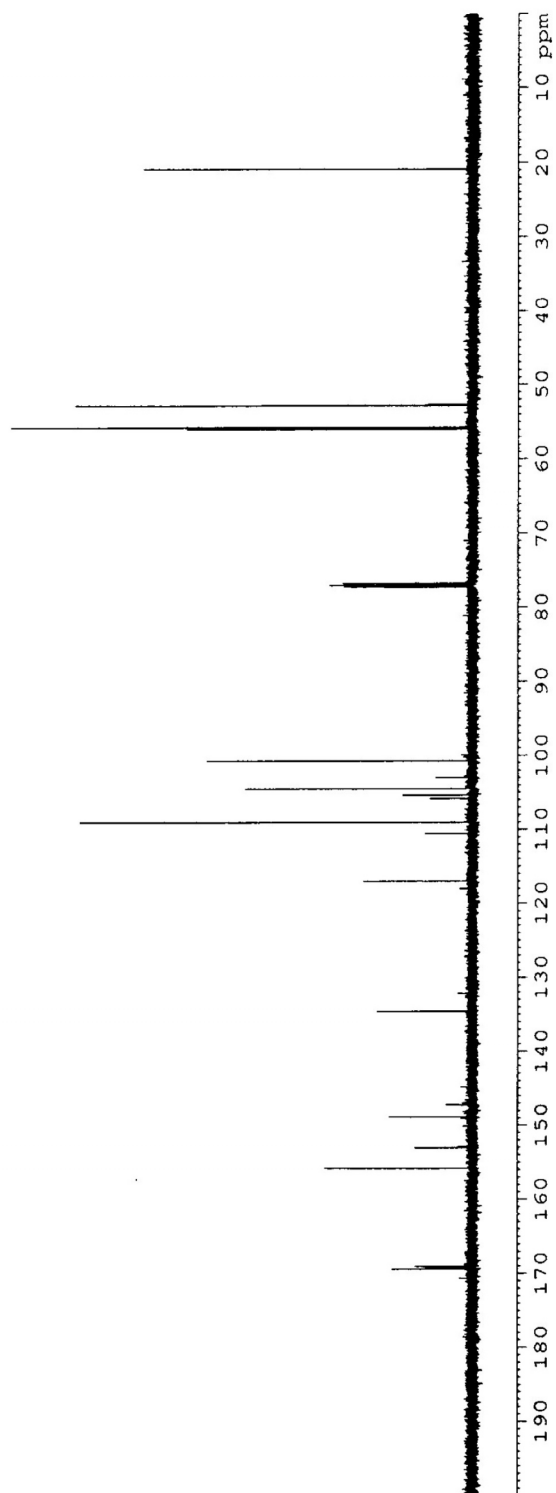
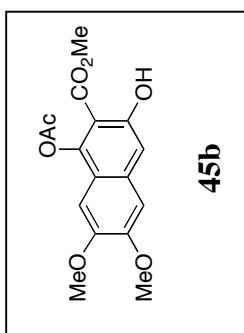
*Department of Chemistry, Roy and Diana Vagelos Laboratories, University of Pennsylvania,
Philadelphia, Pennsylvania 19104*

Supporting Information, Part 2

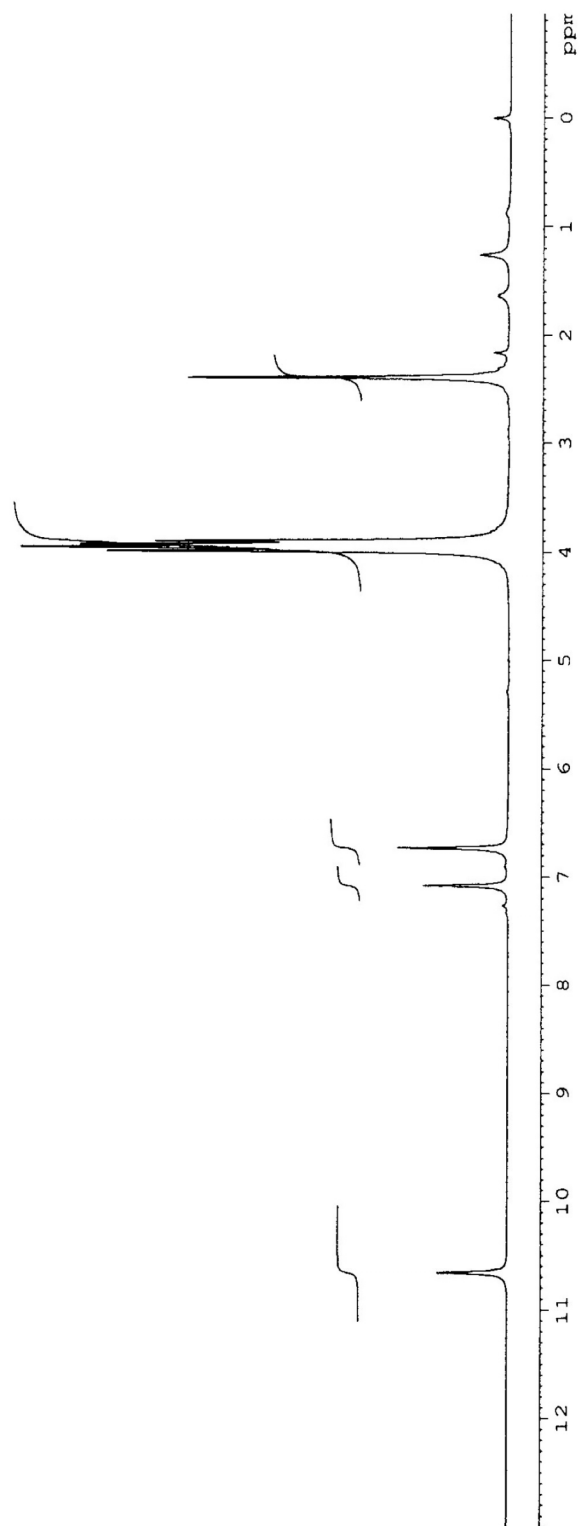
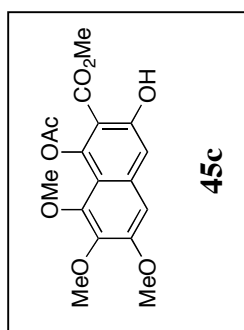
| | |
|--|----------------|
| Spectral Data of Intermediates | S32-S86 |
| Spectral Data of Perylenequinone 39 | S87-S89 |



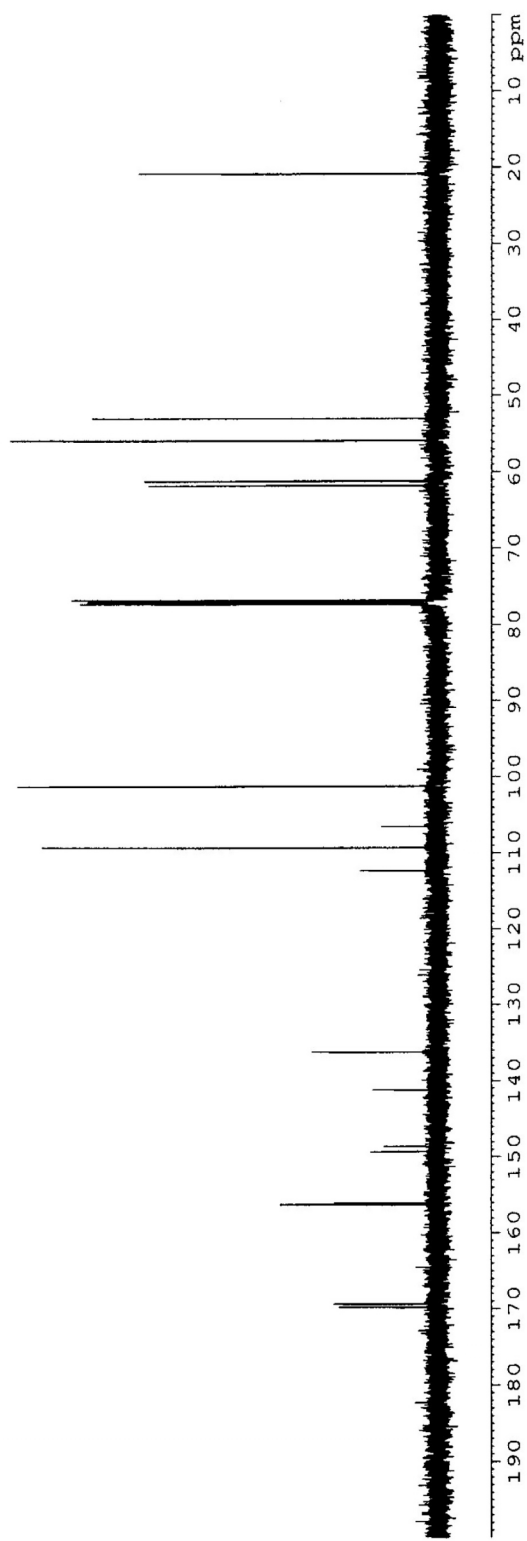
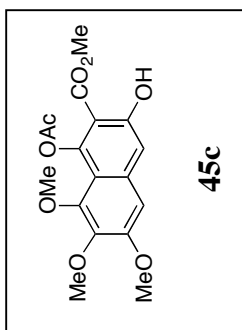
Scheme 8. 125 MHz ¹³C NMR Spectrum of Compound **45a** in CDCl₃



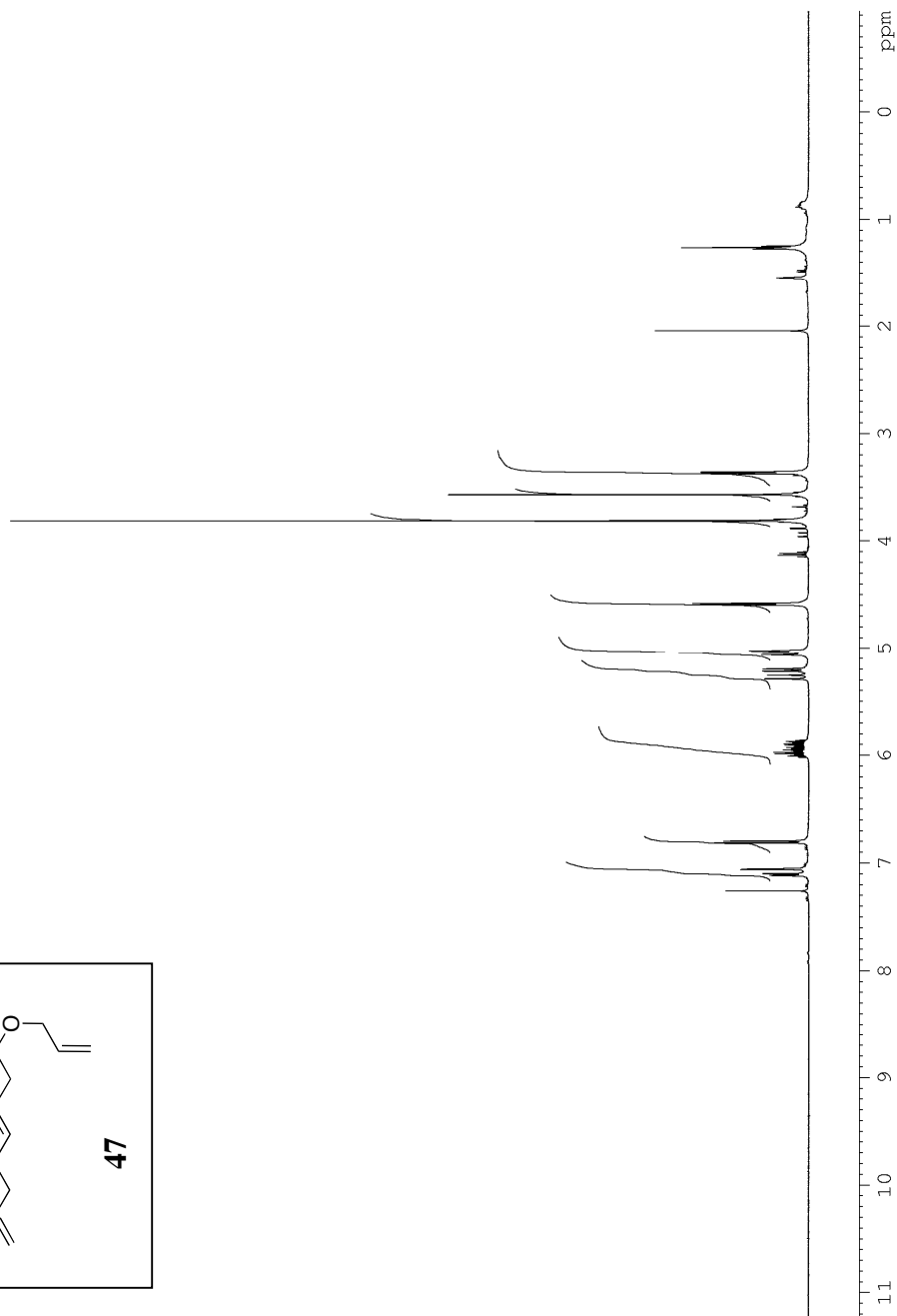
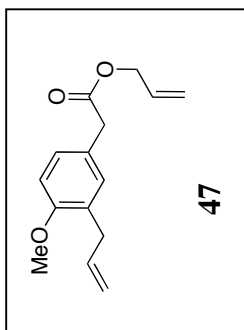
Scheme 8. 125 MHz ¹³C NMR Spectrum of Compound **45b** in CDCl₃



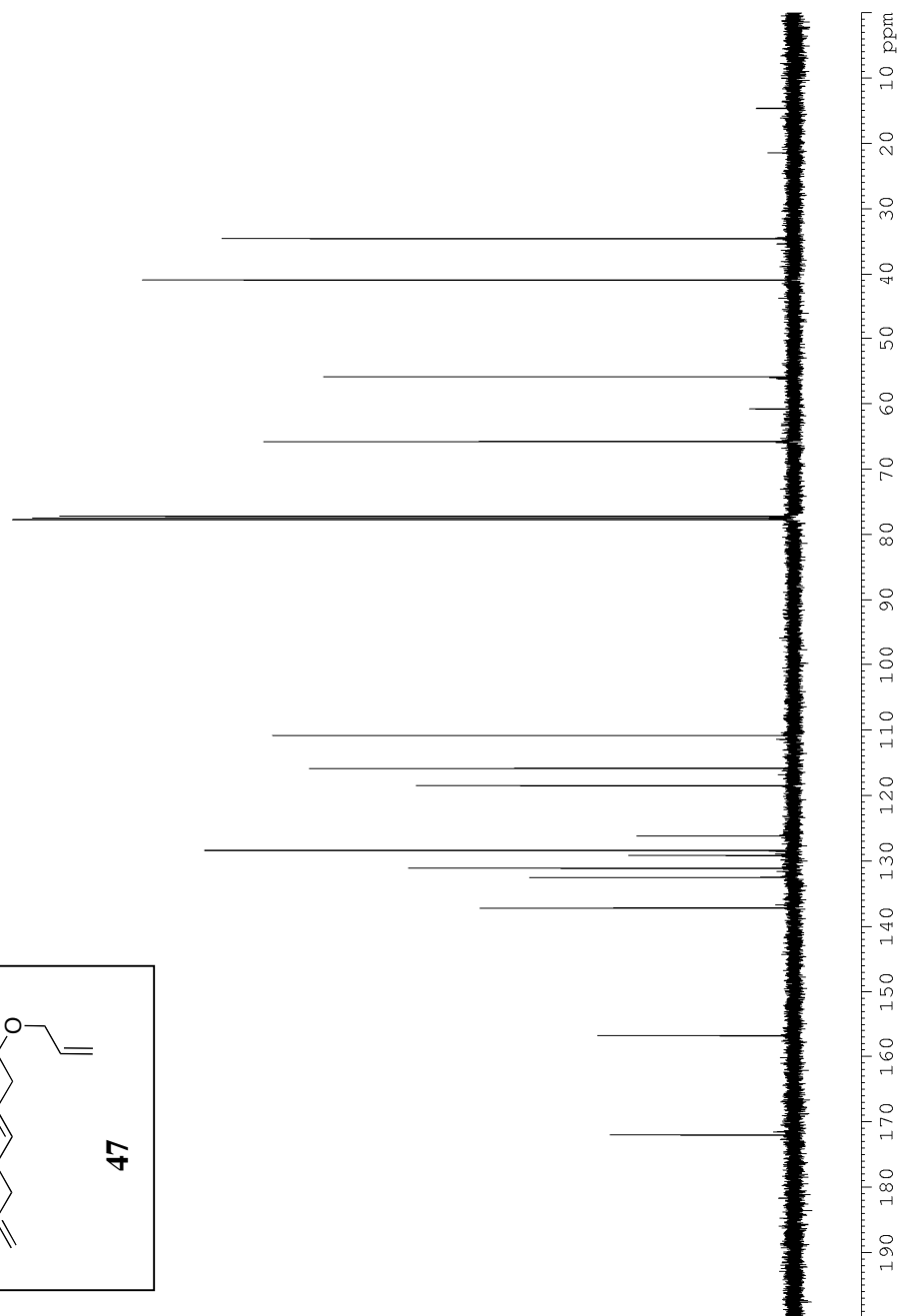
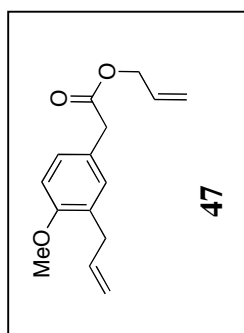
Scheme 8. 500 MHz ¹H NMR Spectrum of Compound **45c** in CDCl₃



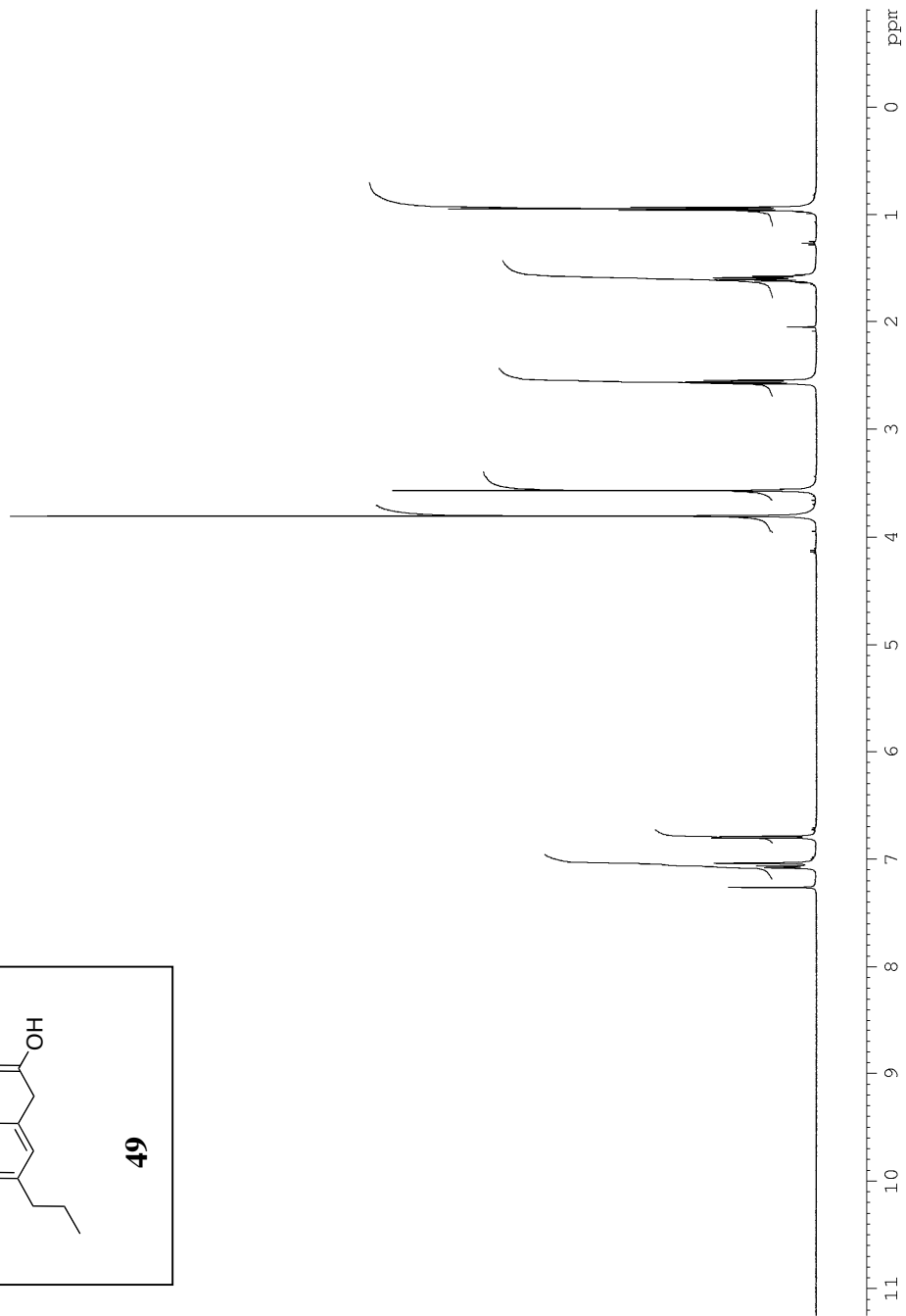
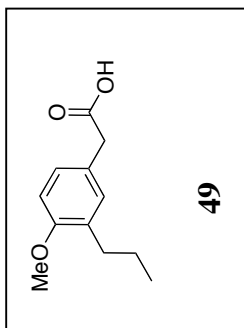
Scheme 8. 125 MHz ¹³C NMR Spectrum of Compound **45c** in CDCl₃



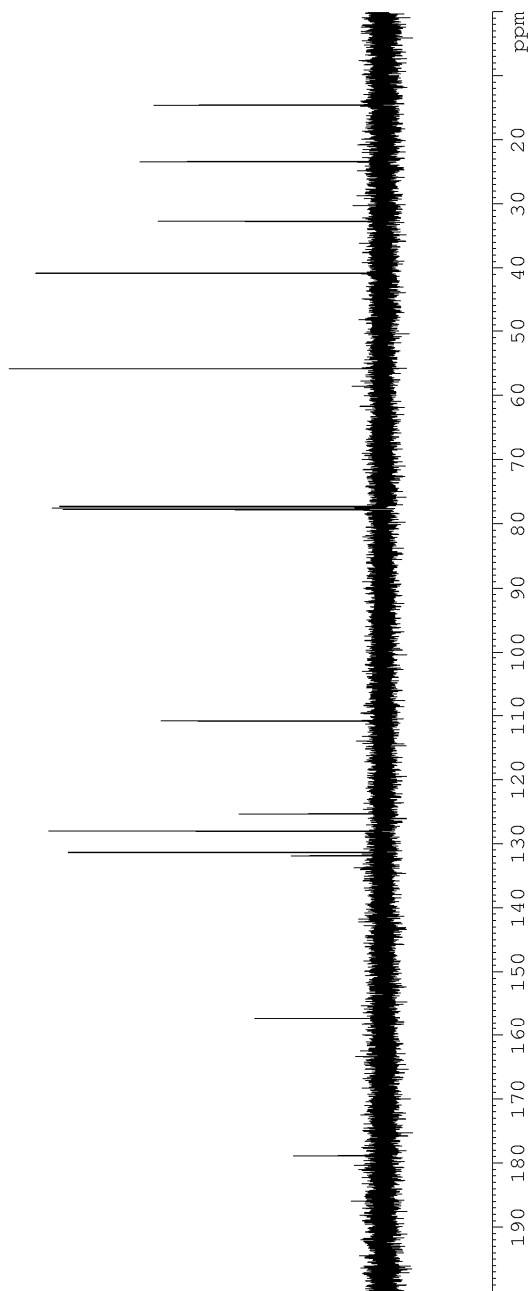
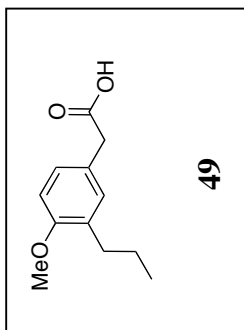
Scheme 9. 360 MHz ¹H NMR Spectrum of Compound **47** in CDCl₃



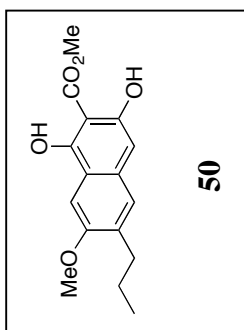
Scheme 9. 125 MHz ¹³C NMR Spectrum of Compound **47** in CDCl₃



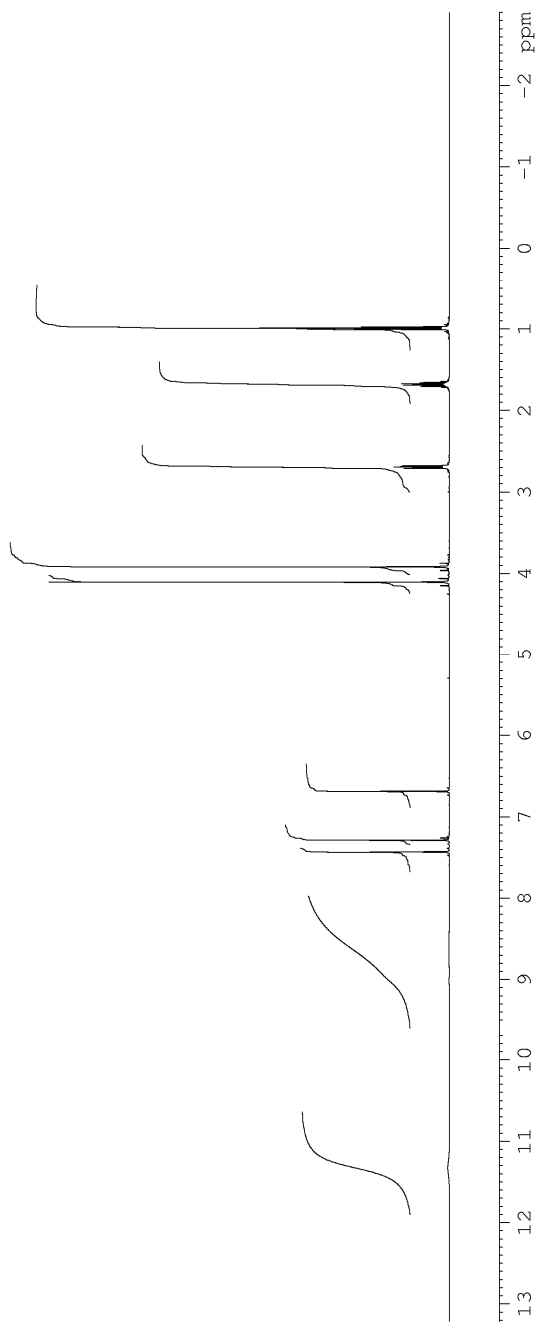
Scheme 9. 500 MHz ^1H NMR Spectrum of Compound **49** in CDCl_3



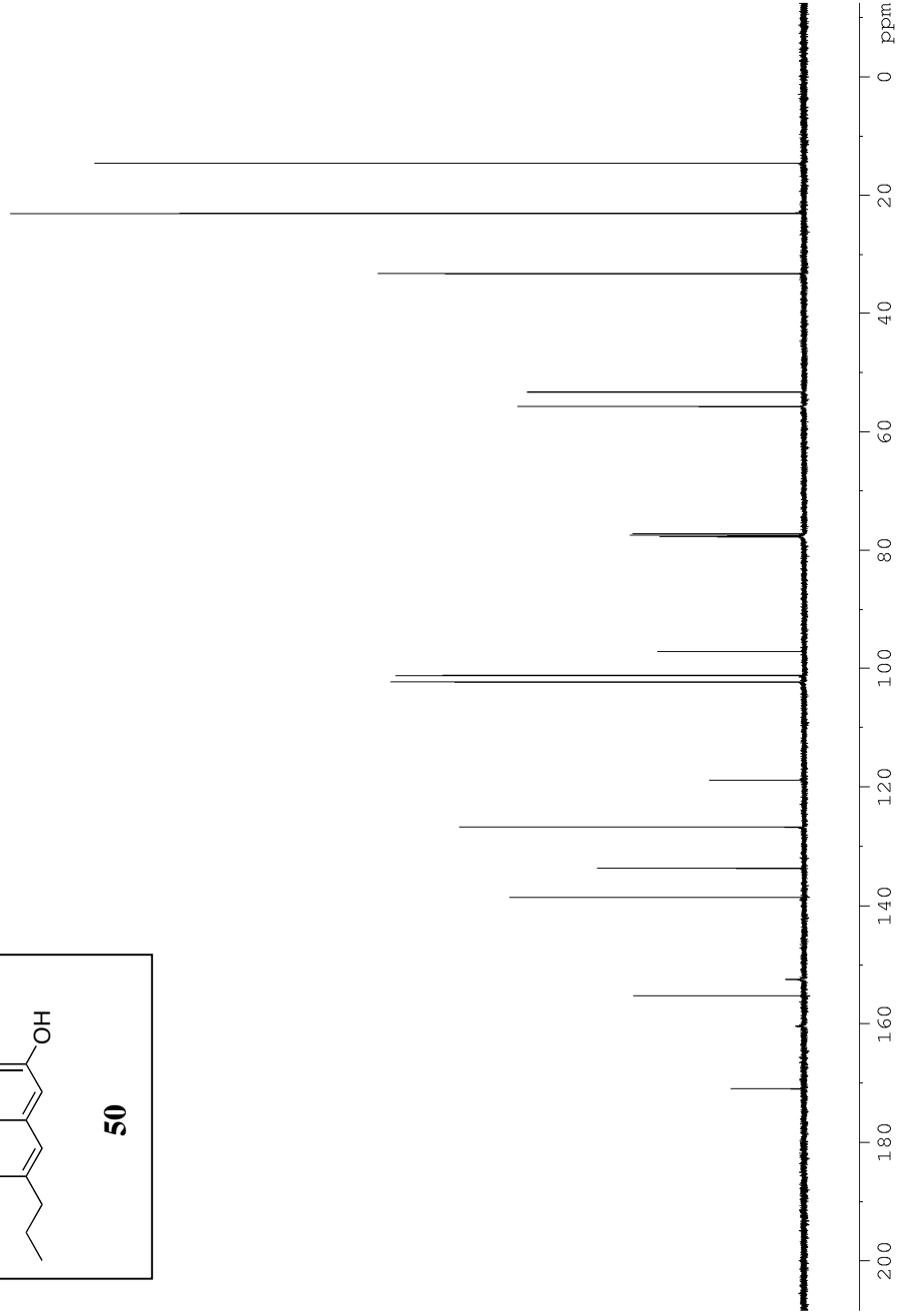
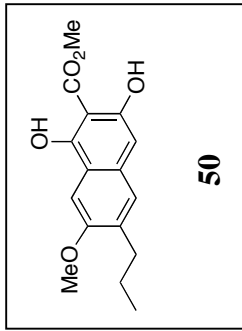
Scheme 9. 125 MHz ¹³C NMR Spectrum of Compound **49** in CDCl₃



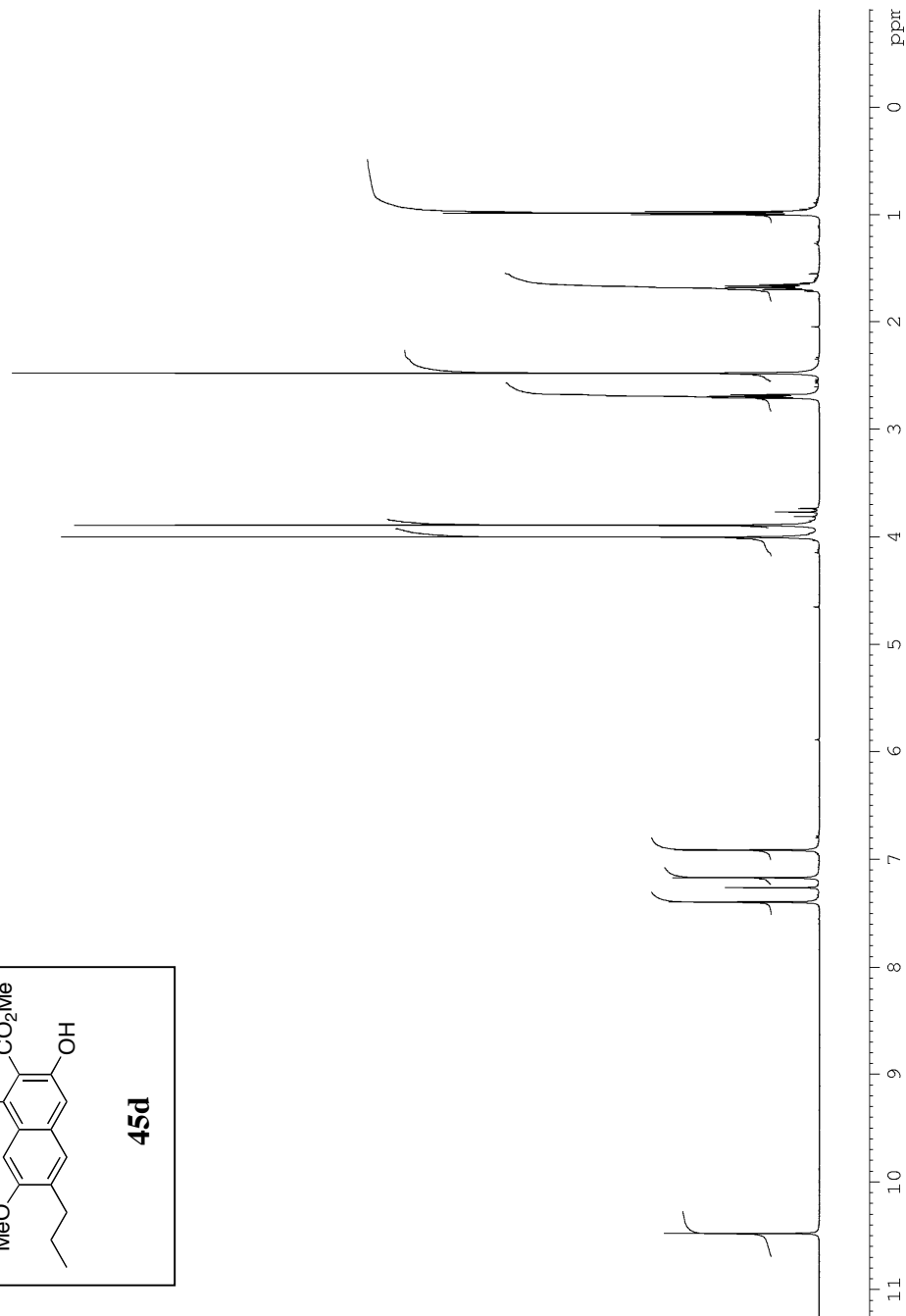
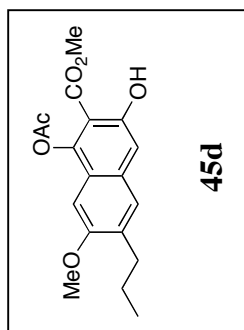
50



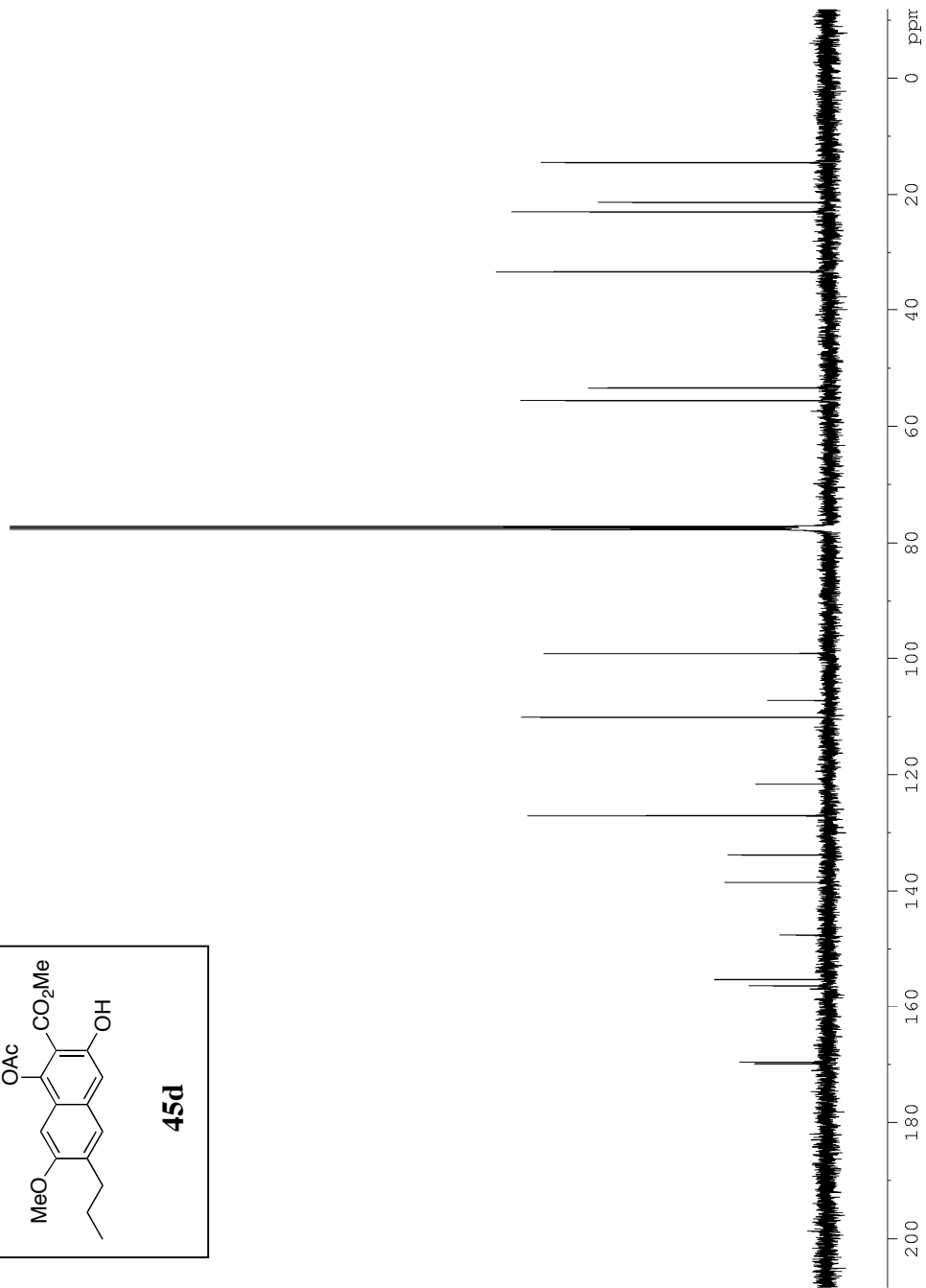
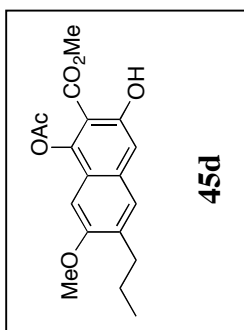
Scheme 9. 500 MHz ¹H NMR Spectrum of Compound **50** in CDCl₃



Scheme 9. 125 MHz ^{13}C NMR Spectrum of Compound **50** in CDCl_3



Scheme 9. 500 MHz ¹H NMR Spectrum of Compound **45d** in CDCl₃



Scheme 9. 125 MHz ¹³C NMR Spectrum of Compound **45d** in CDCl₃

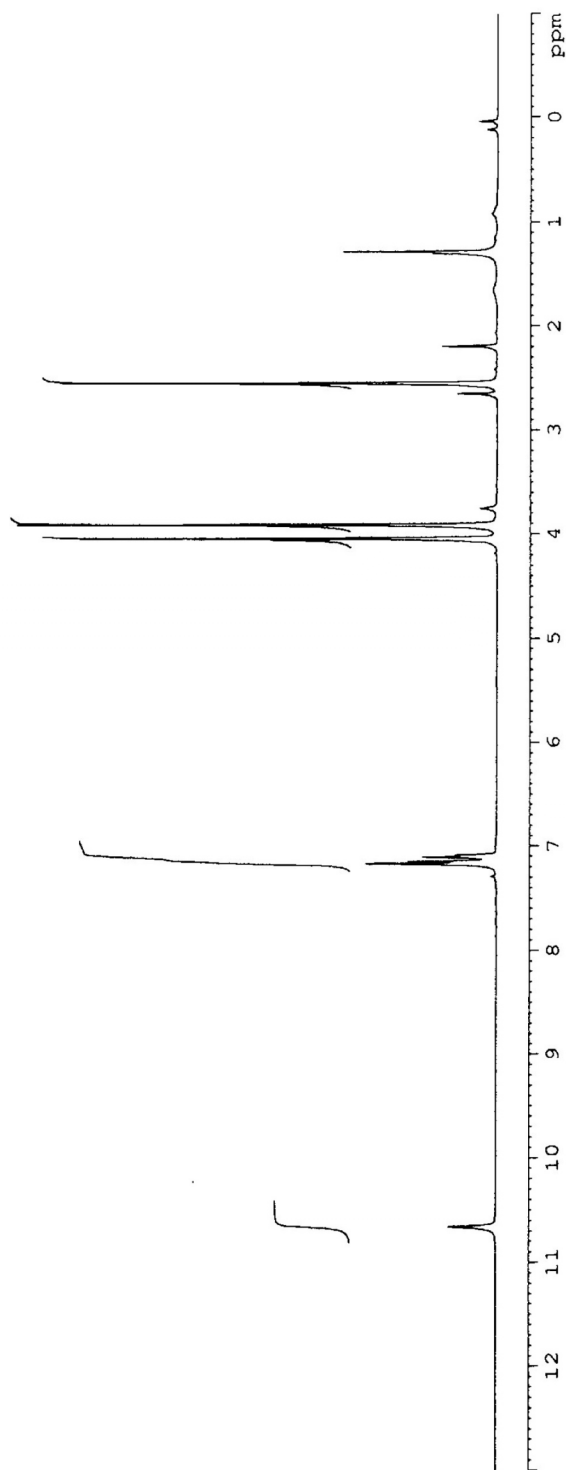
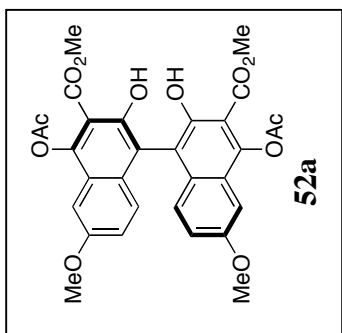


Table 1. 500 MHz ^1H NMR Spectrum of Compound **52a** in CDCl_3

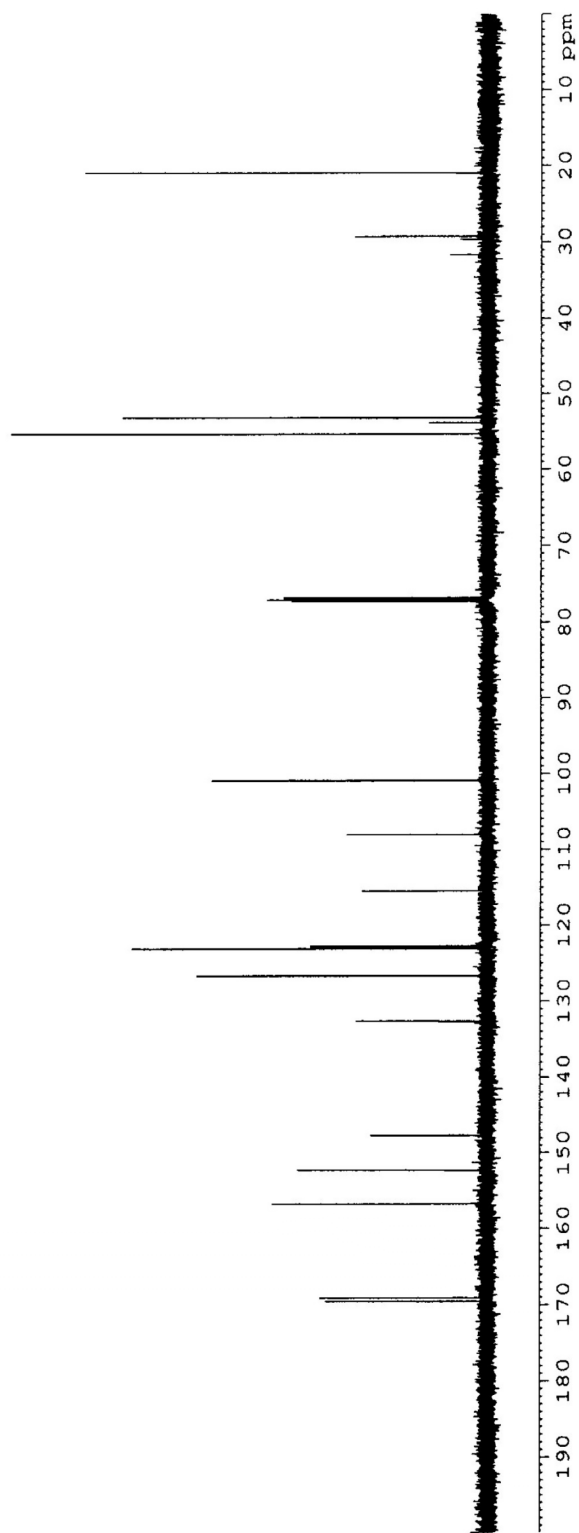
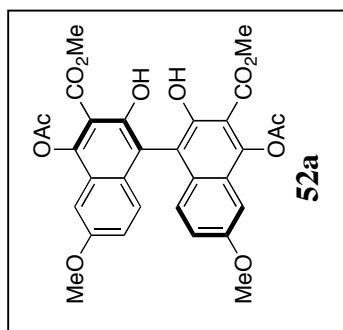


Table 1. 125 MHz ^{13}C NMR Spectrum of Compound **52a** in CDCl_3

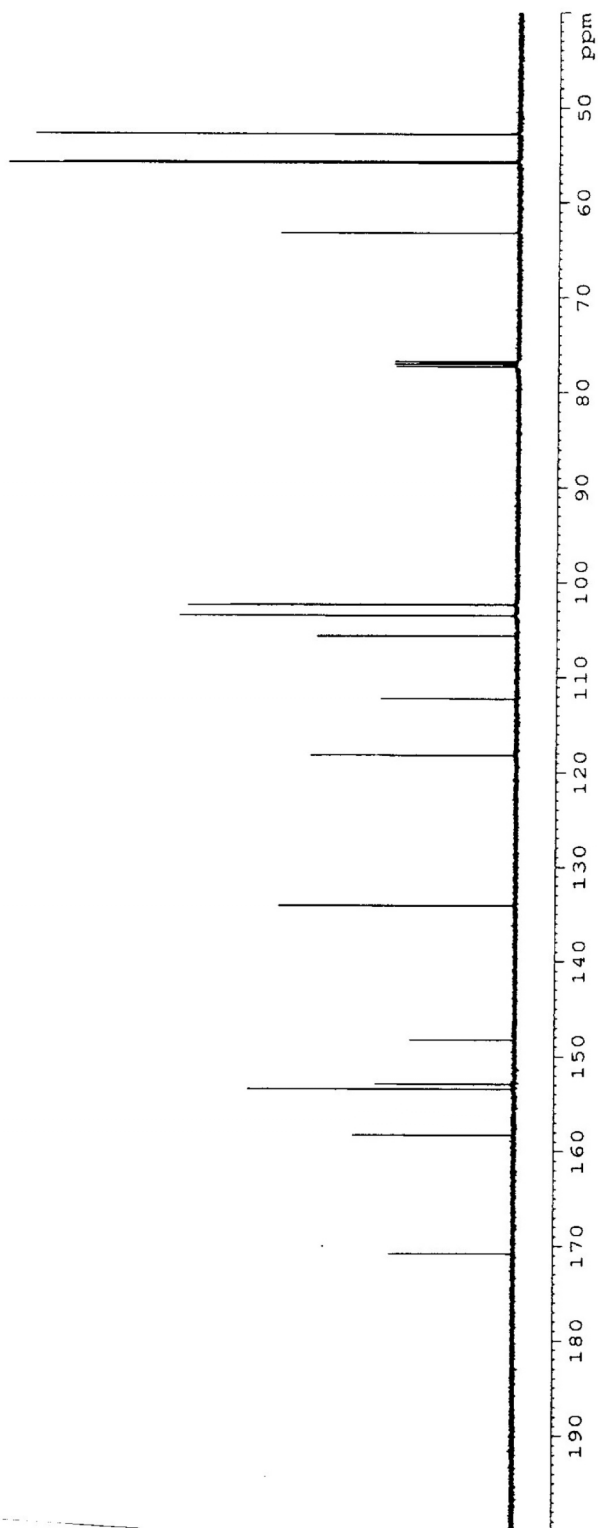
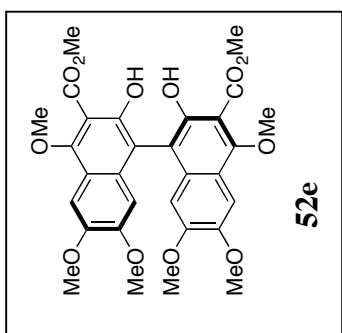


Table 1. 125 MHz ^{13}C NMR Spectrum of Compound **52e** in CDCl_3

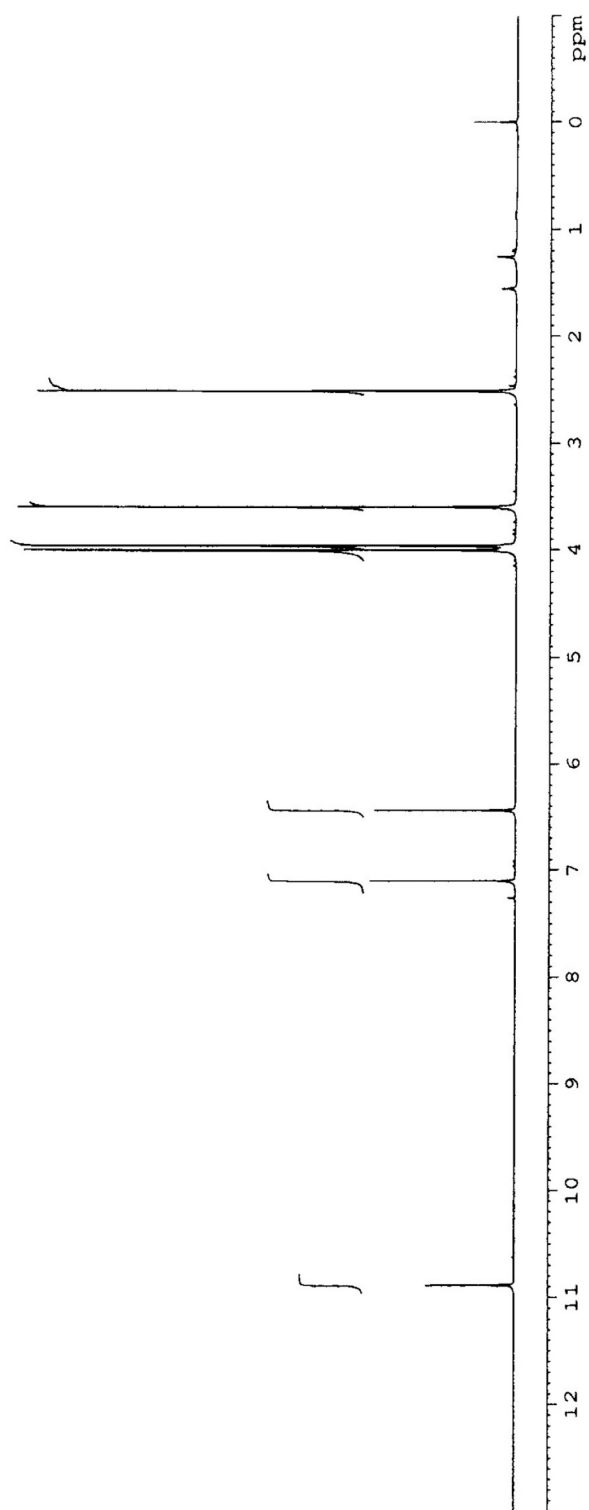
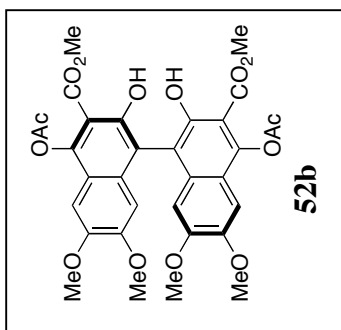


Table 1. 500 MHz ¹H NMR Spectrum of Compound **52b** in CDCl₃

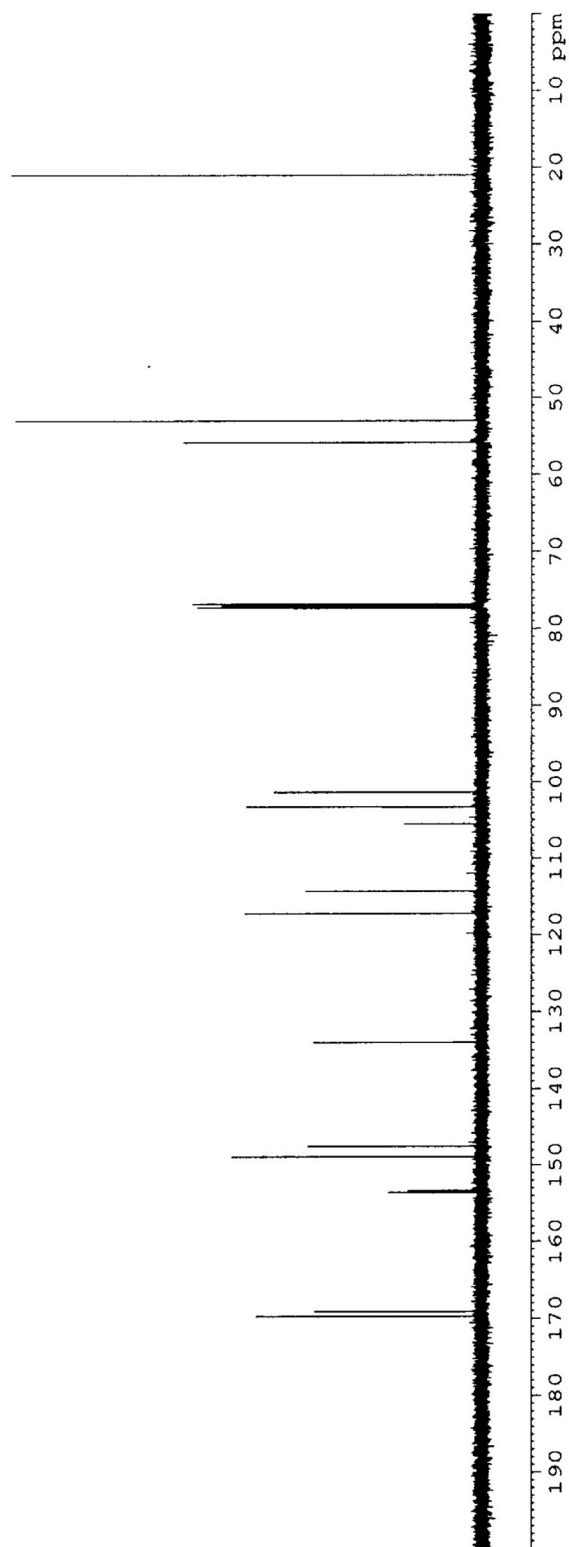
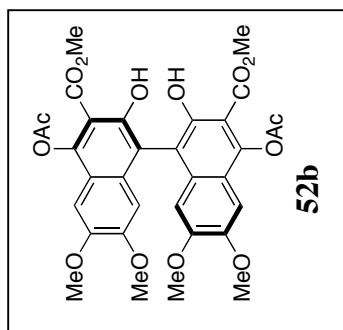


Table 1. 125 MHz ^{13}C NMR Spectrum of Compound **52b** in CDCl_3

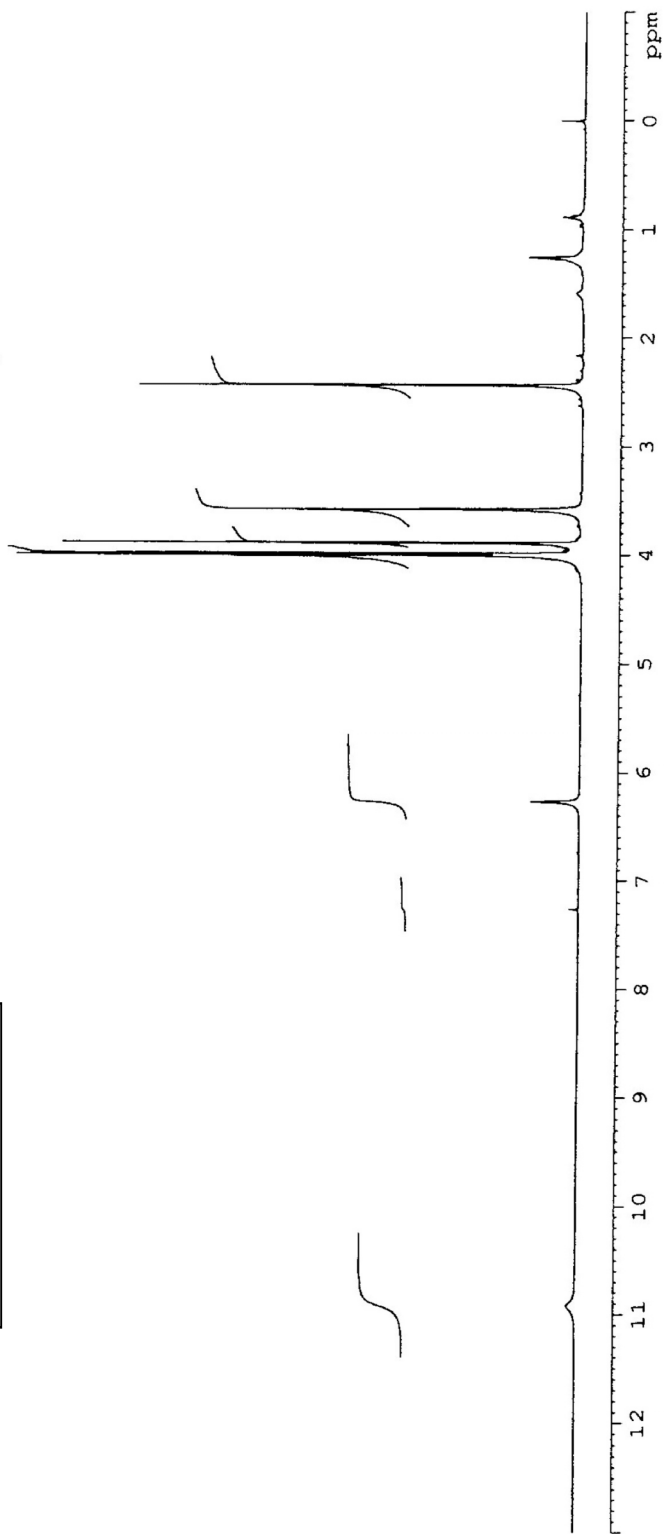
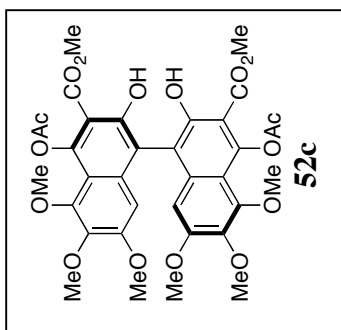


Table 1. 500 MHz ¹H NMR Spectrum of Compound **52c** in CDCl₃

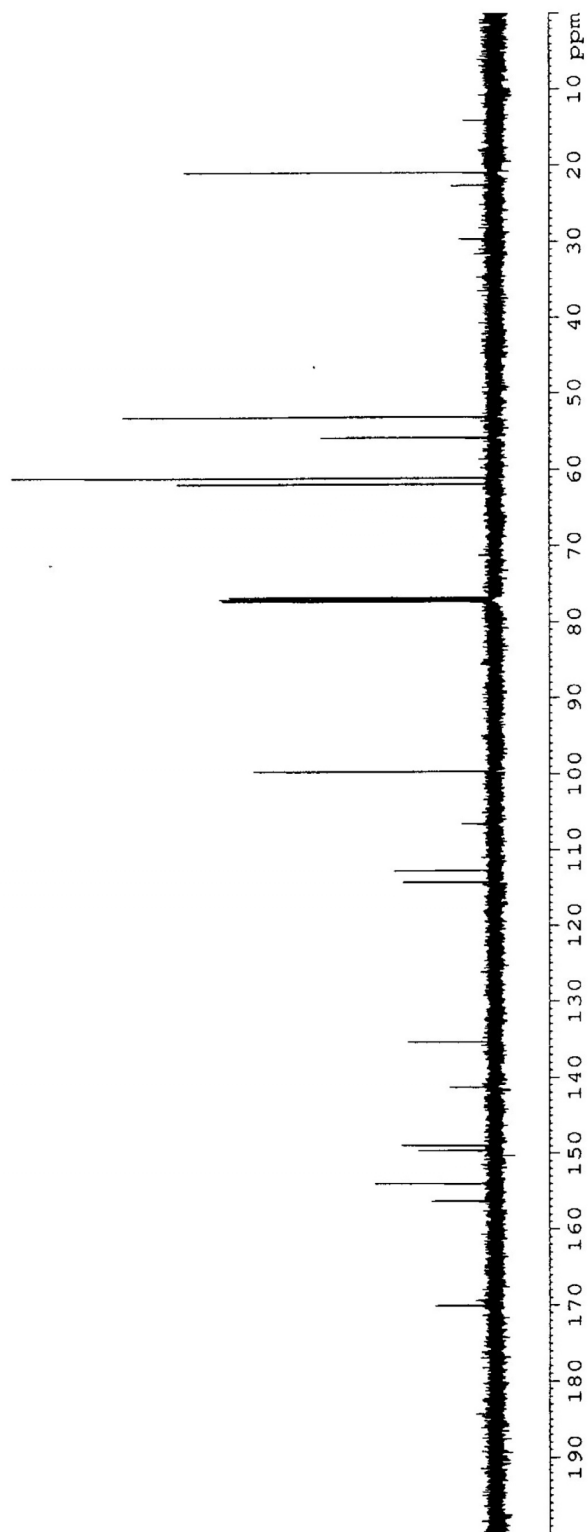
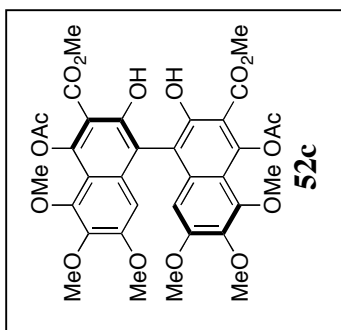


Table 1. 125 MHz ^{13}C NMR Spectrum of Compound **52c** in CDCl_3

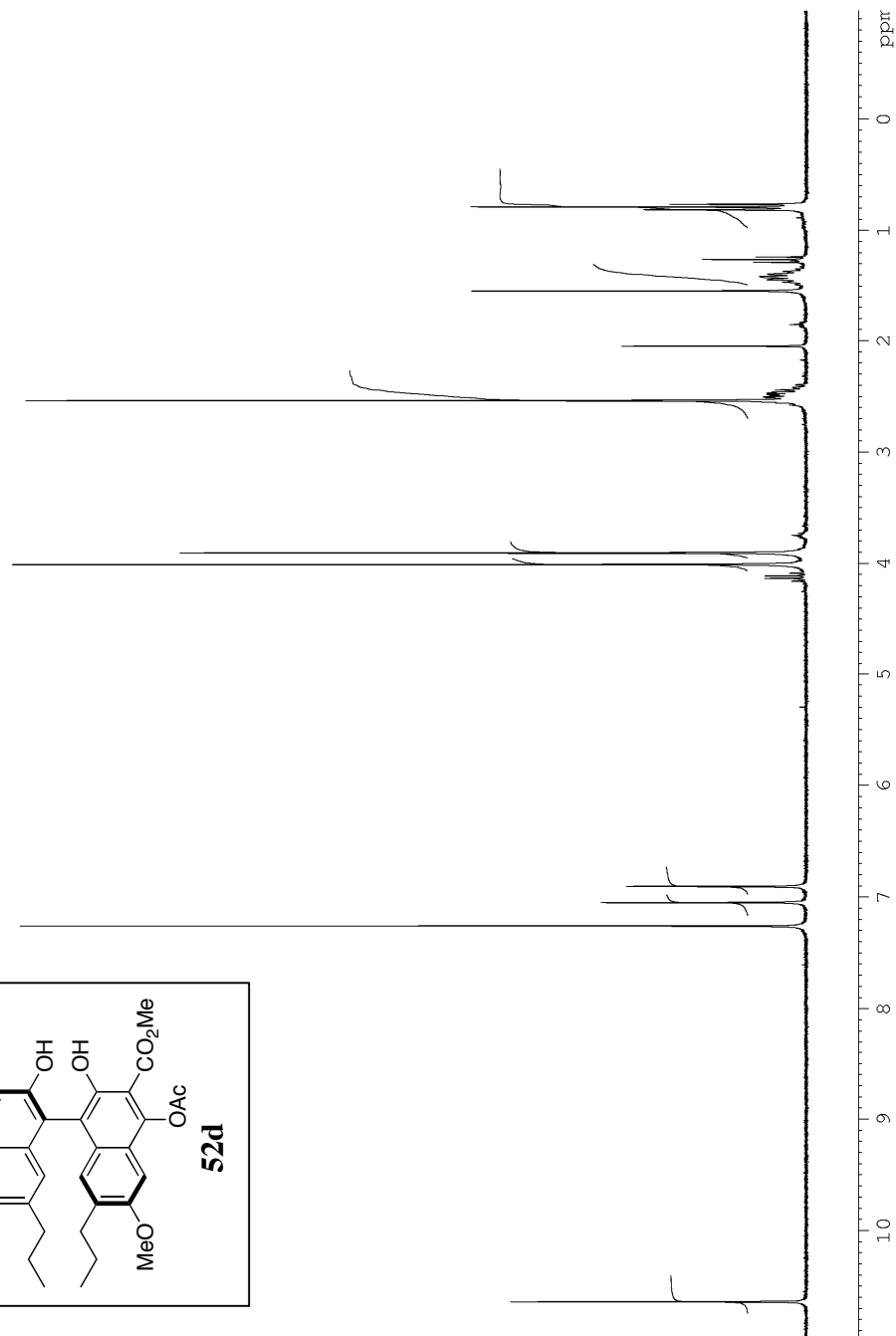
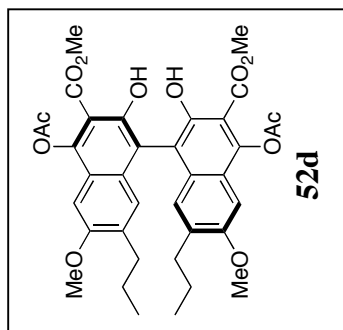


Table 1. 300 MHz ¹H NMR Spectrum of Compound **52d** in CDCl₃

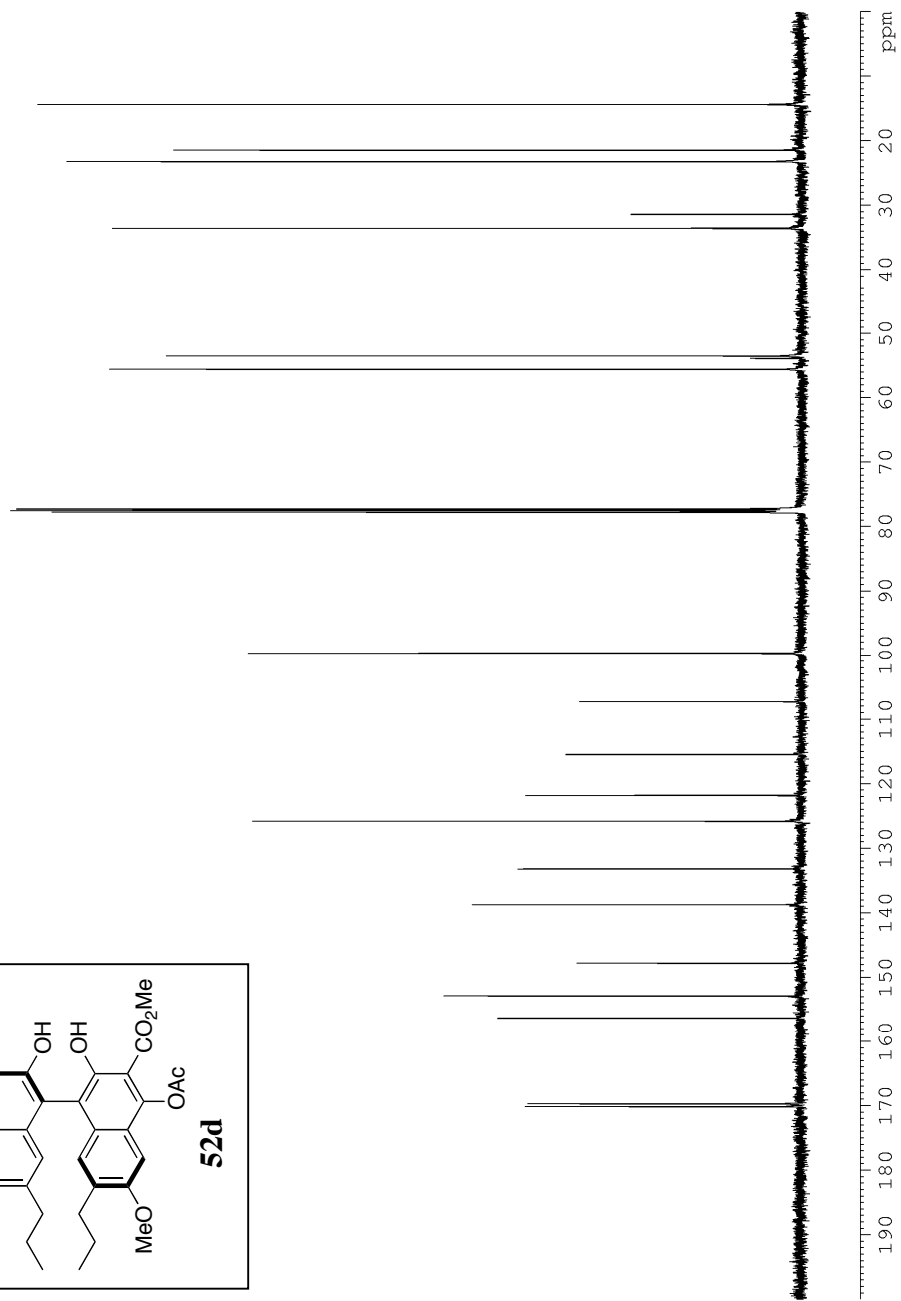
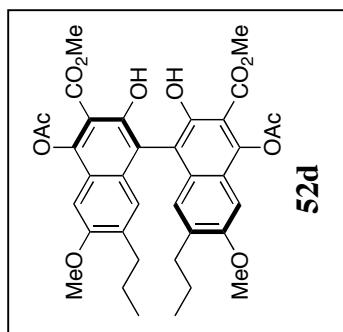
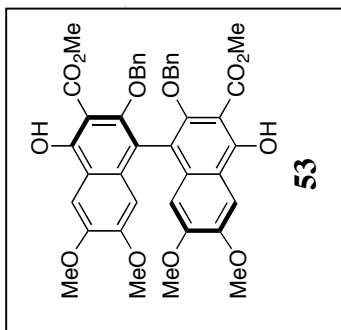
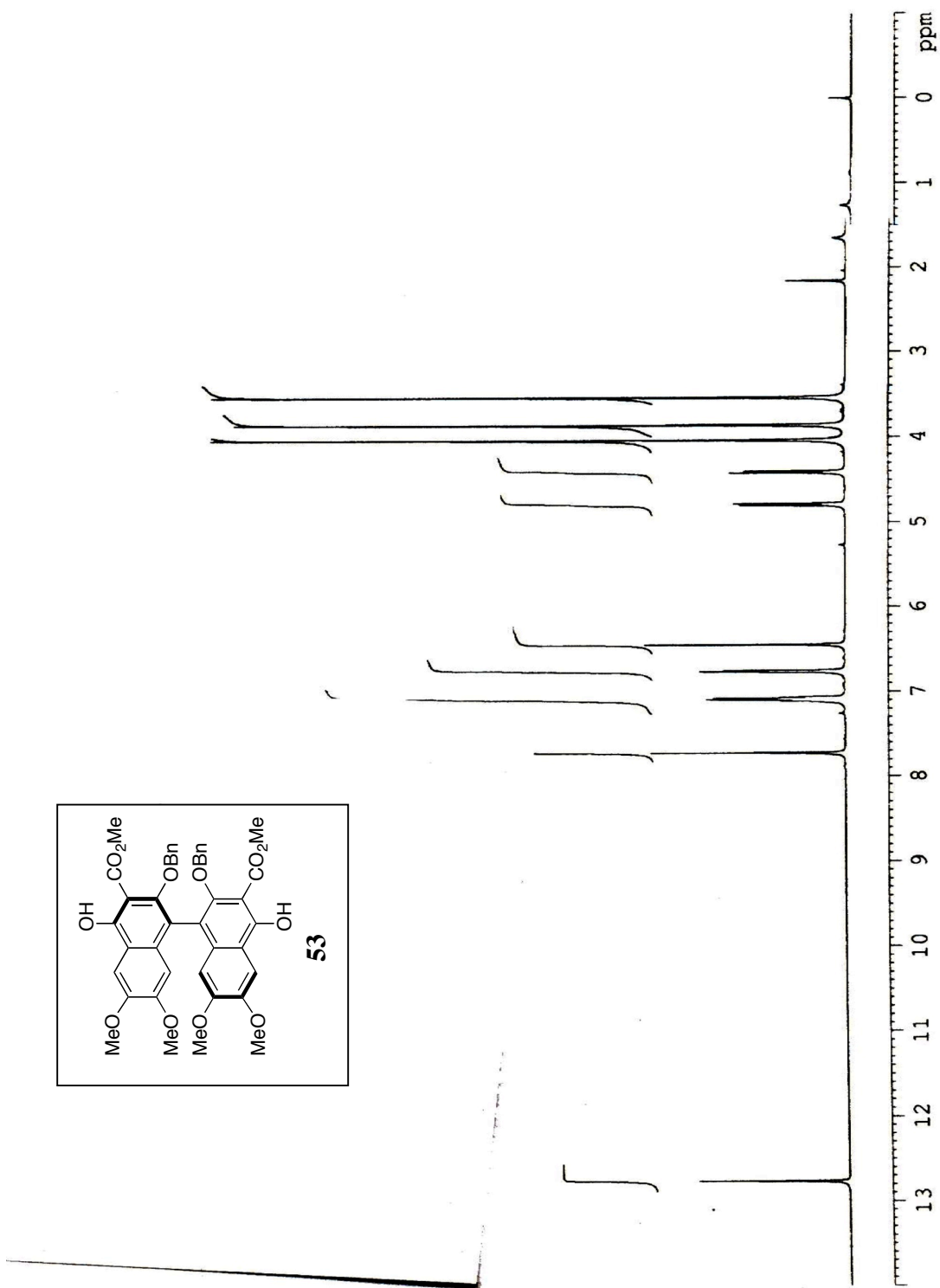
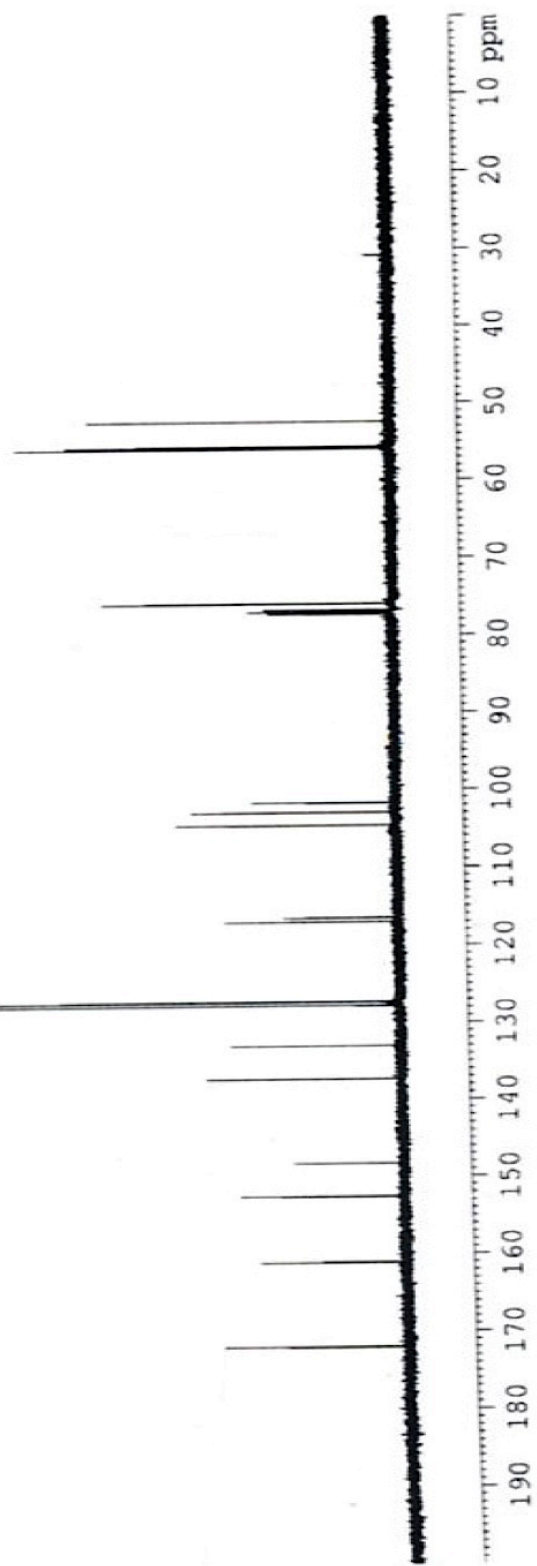
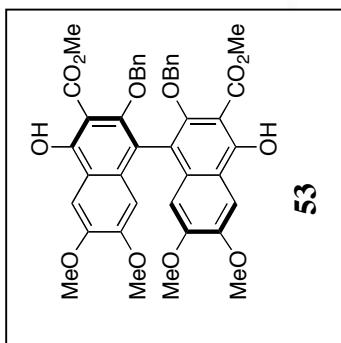


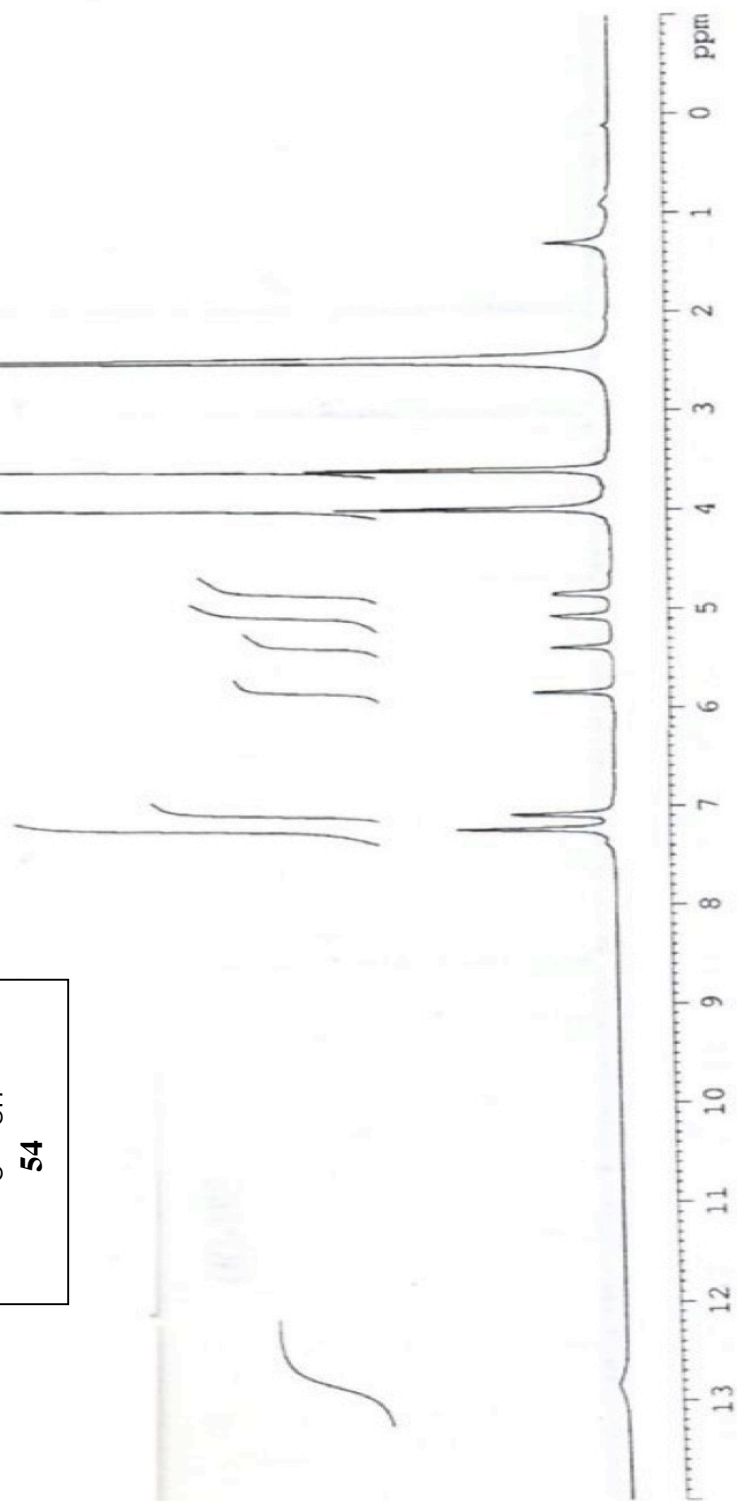
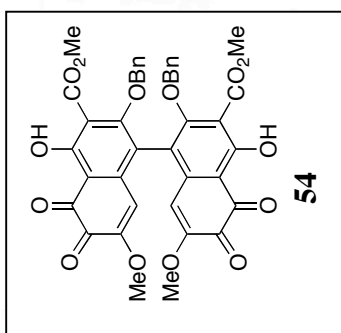
Table 1. 125 MHz ^{13}C NMR Spectrum of Compound **52d** in CDCl_3



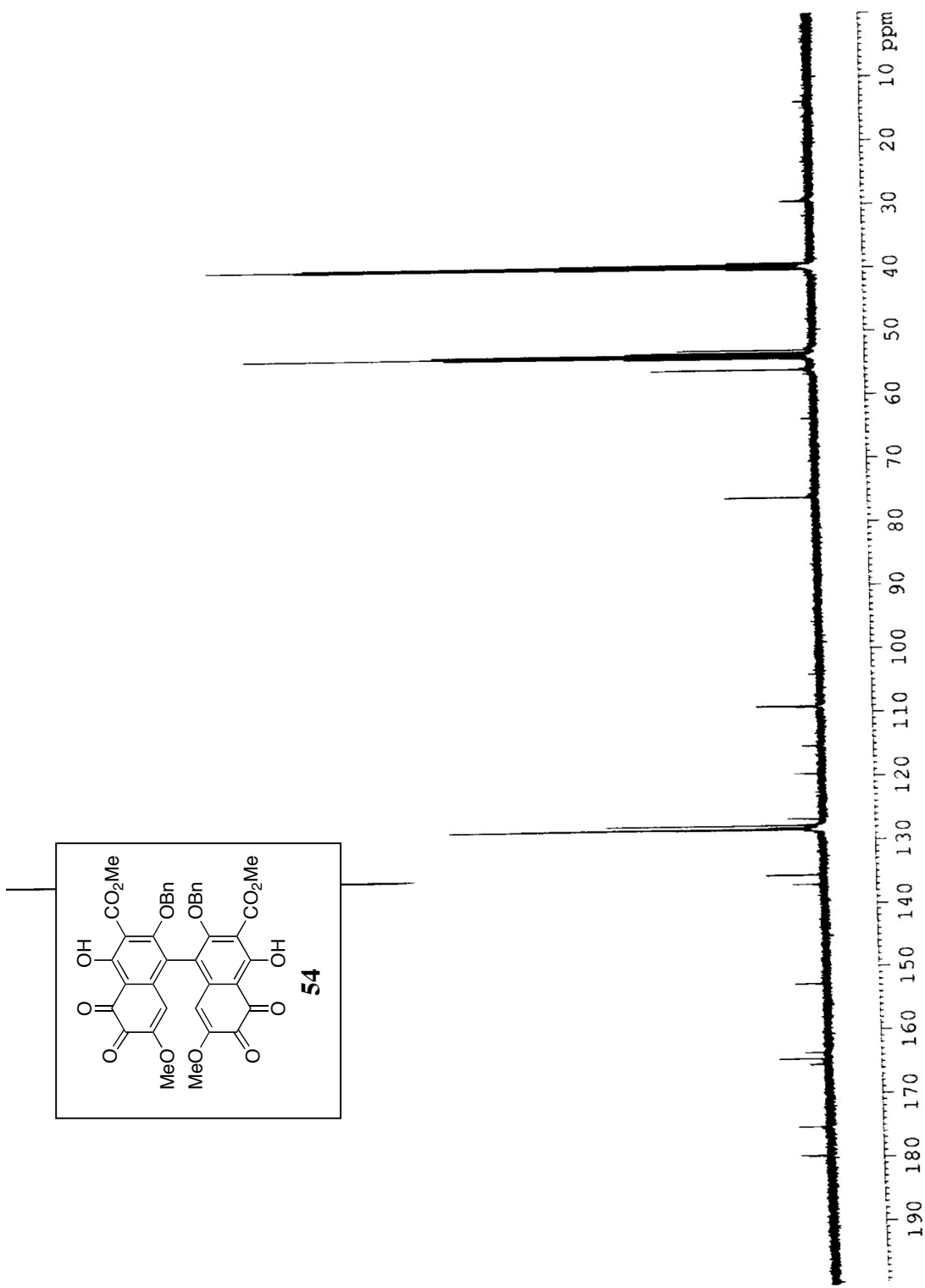
Scheme 10. 500 MHz ¹H NMR Spectrum of Compound **53** in CDCl₃



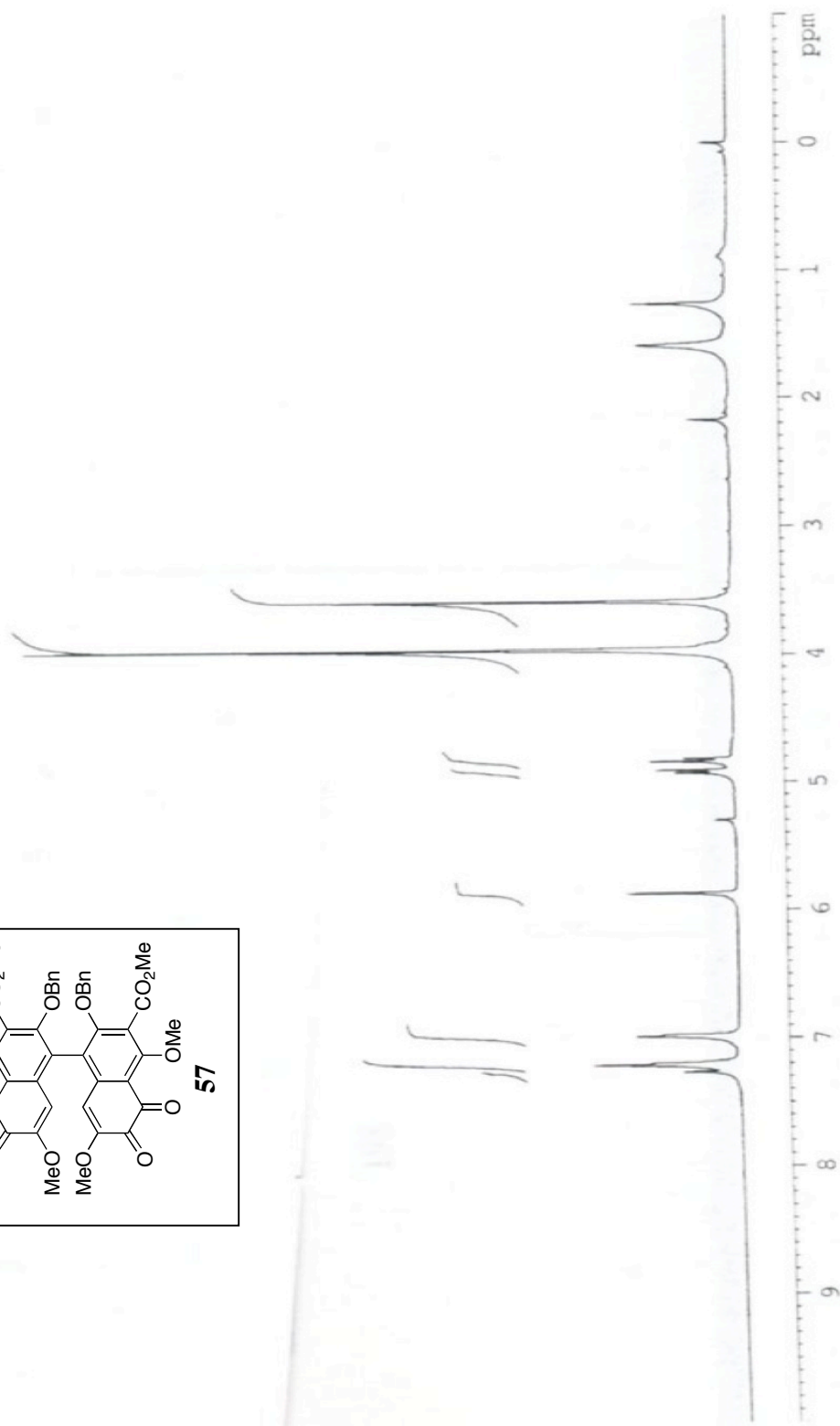
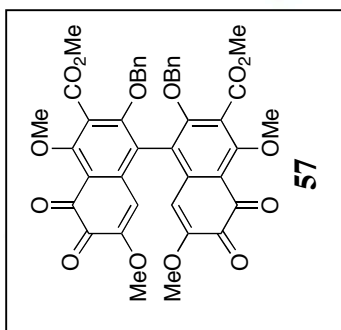
Scheme 10. 125 MHz ^{13}C NMR Spectrum of Compound **53** in CDCl_3



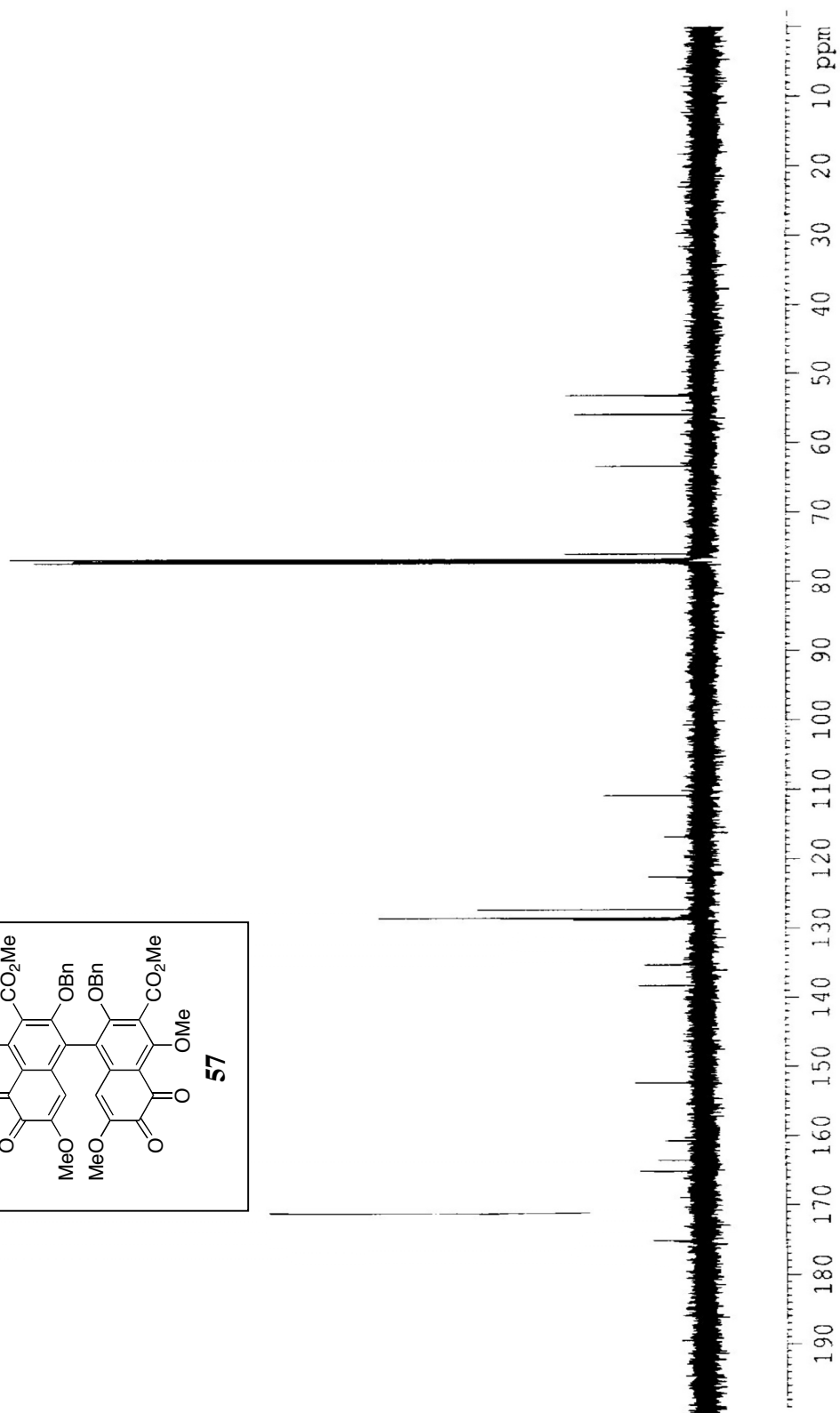
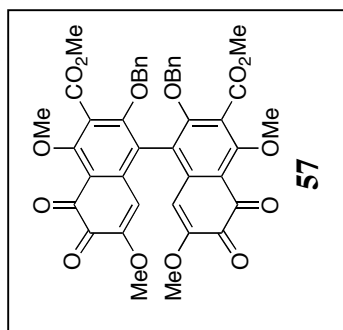
Scheme 10. 500 MHz ¹H NMR Spectrum of Compound **54** in CD₂Cl₂/d₆-DMSO



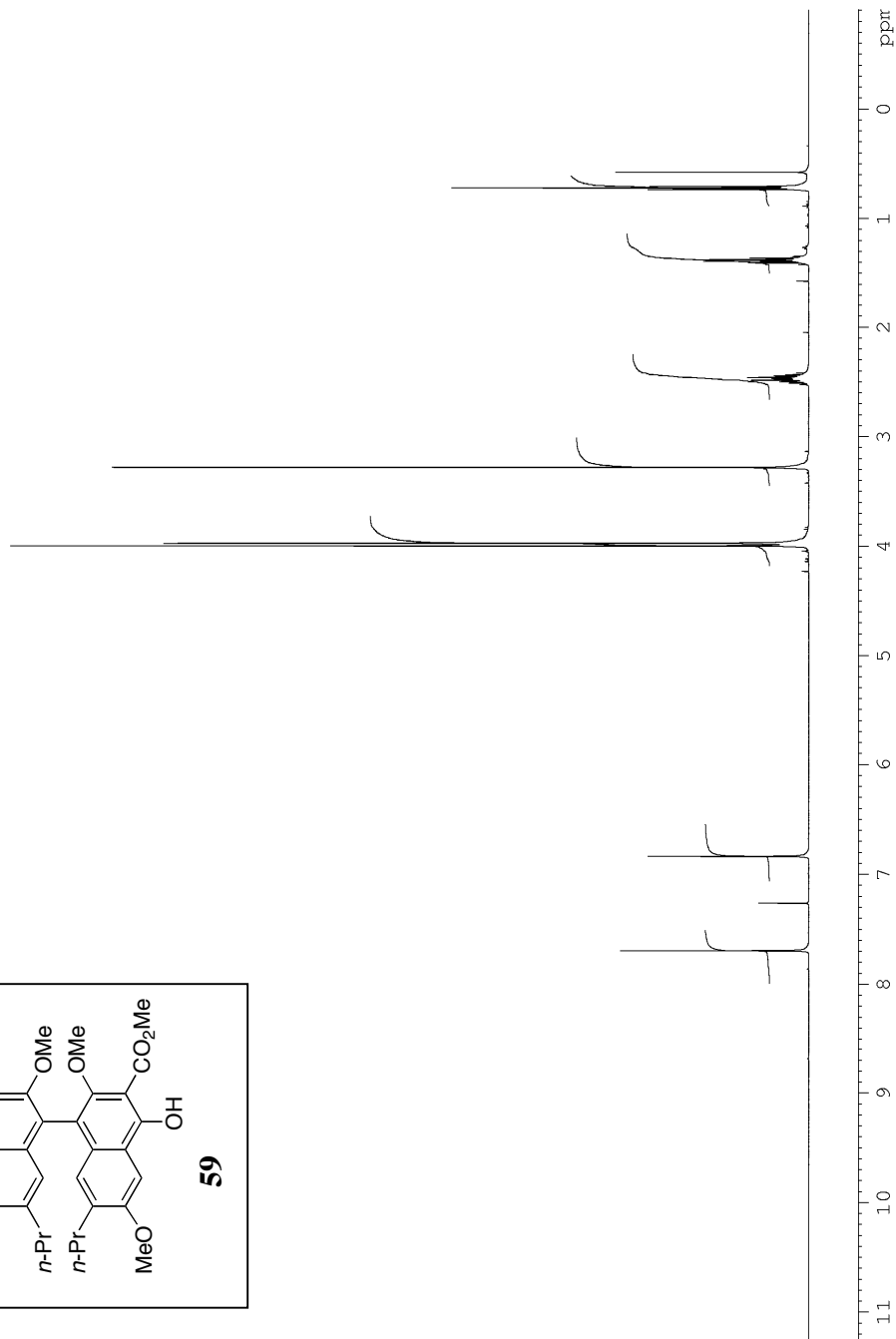
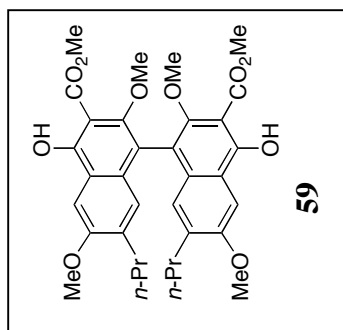
Scheme 10. 125 MHz ¹³C NMR Spectrum of Compound **54** in CD₂Cl₂/d₆-DMSO



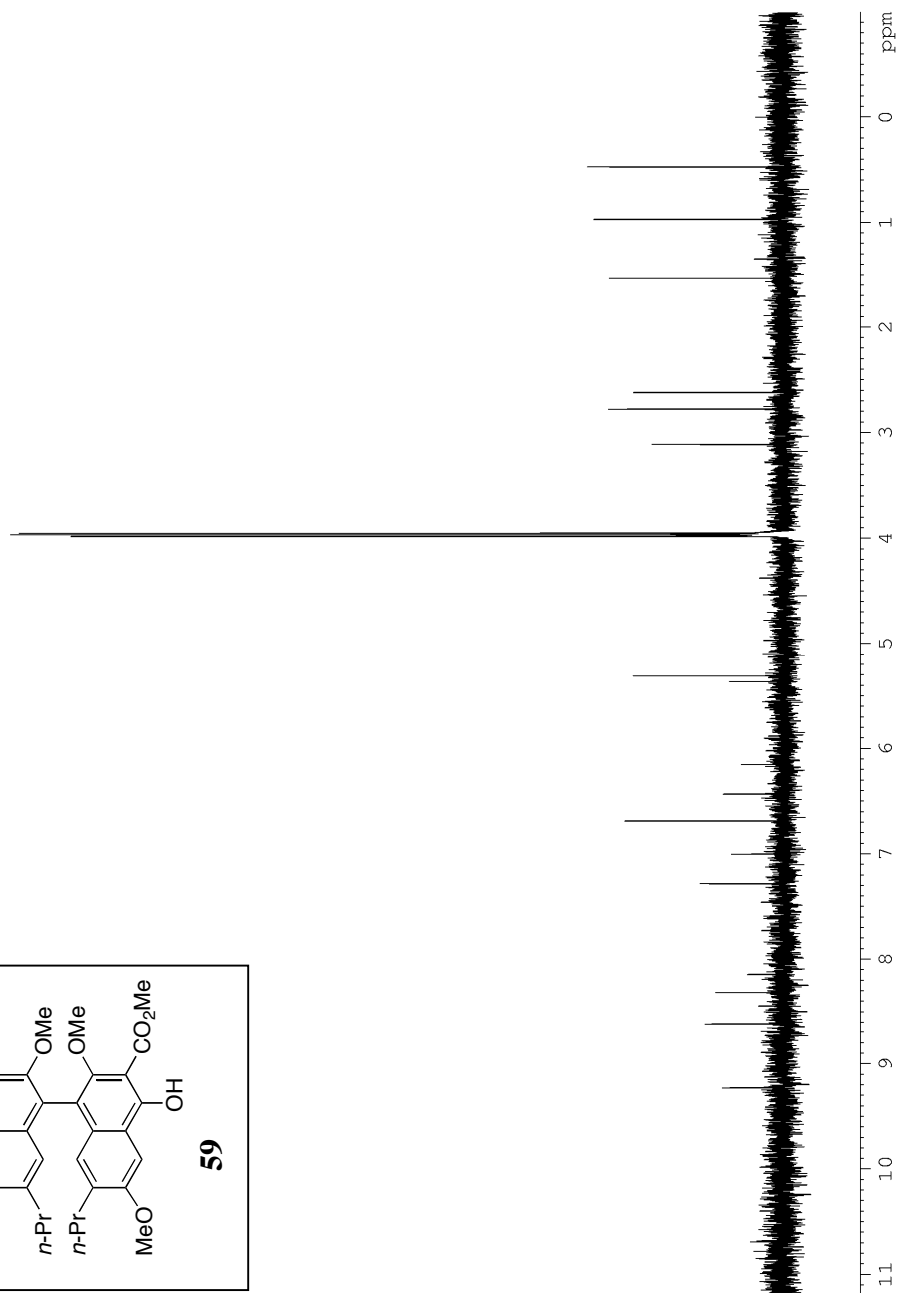
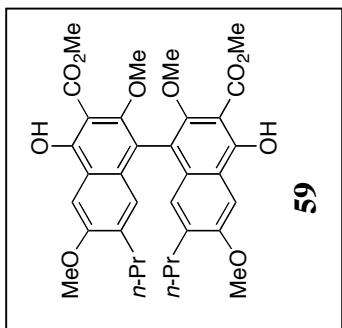
Equation 3. 500 MHz ^1H NMR Spectrum of Compound **57** in CDCl_3



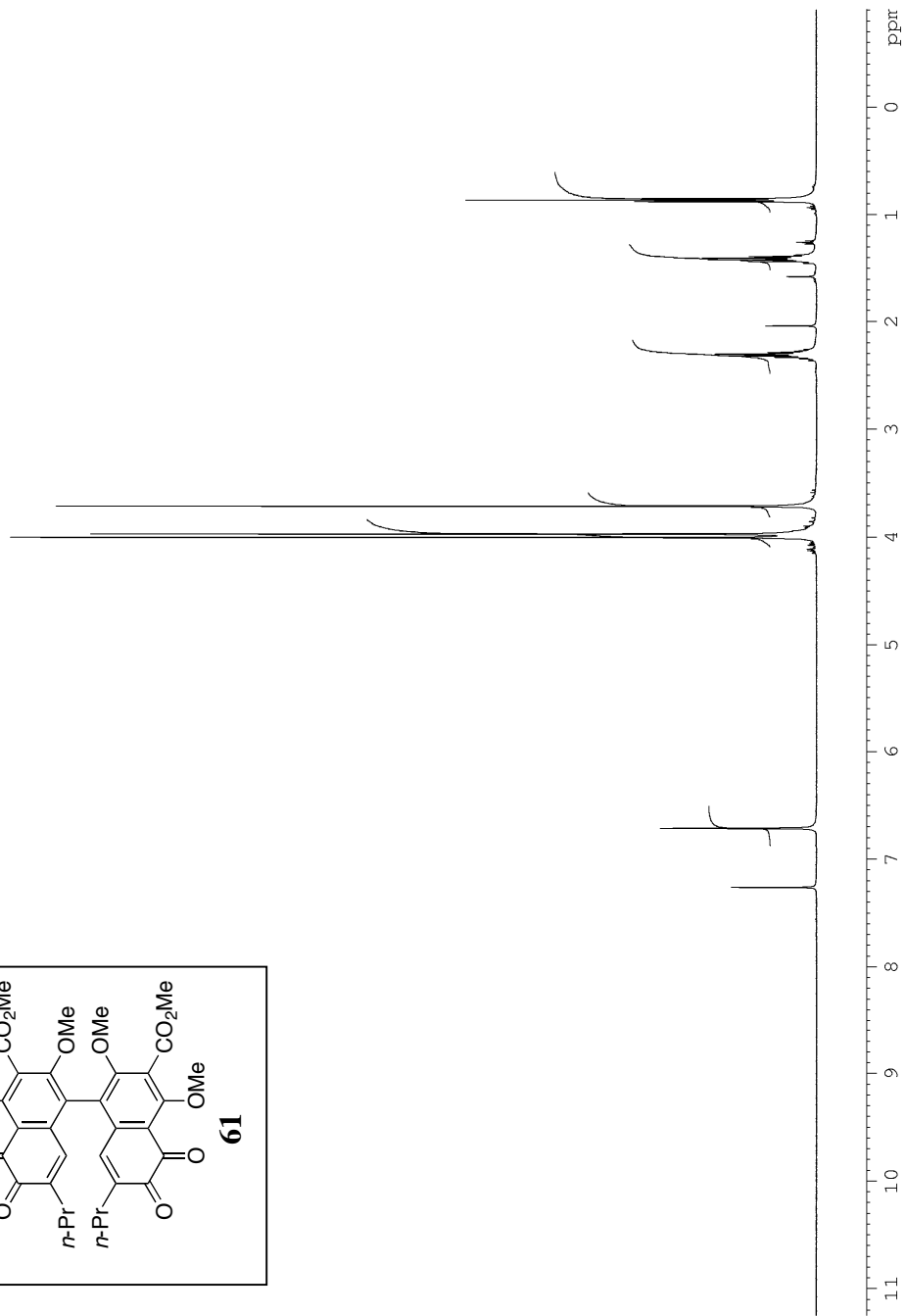
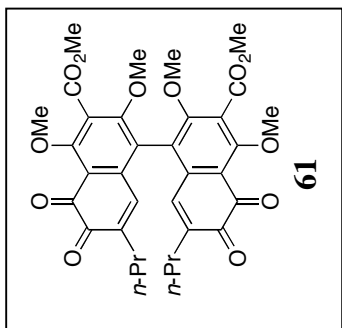
Equation 3. 125 MHz ^{13}C NMR Spectrum of Compound **57** in CDCl_3



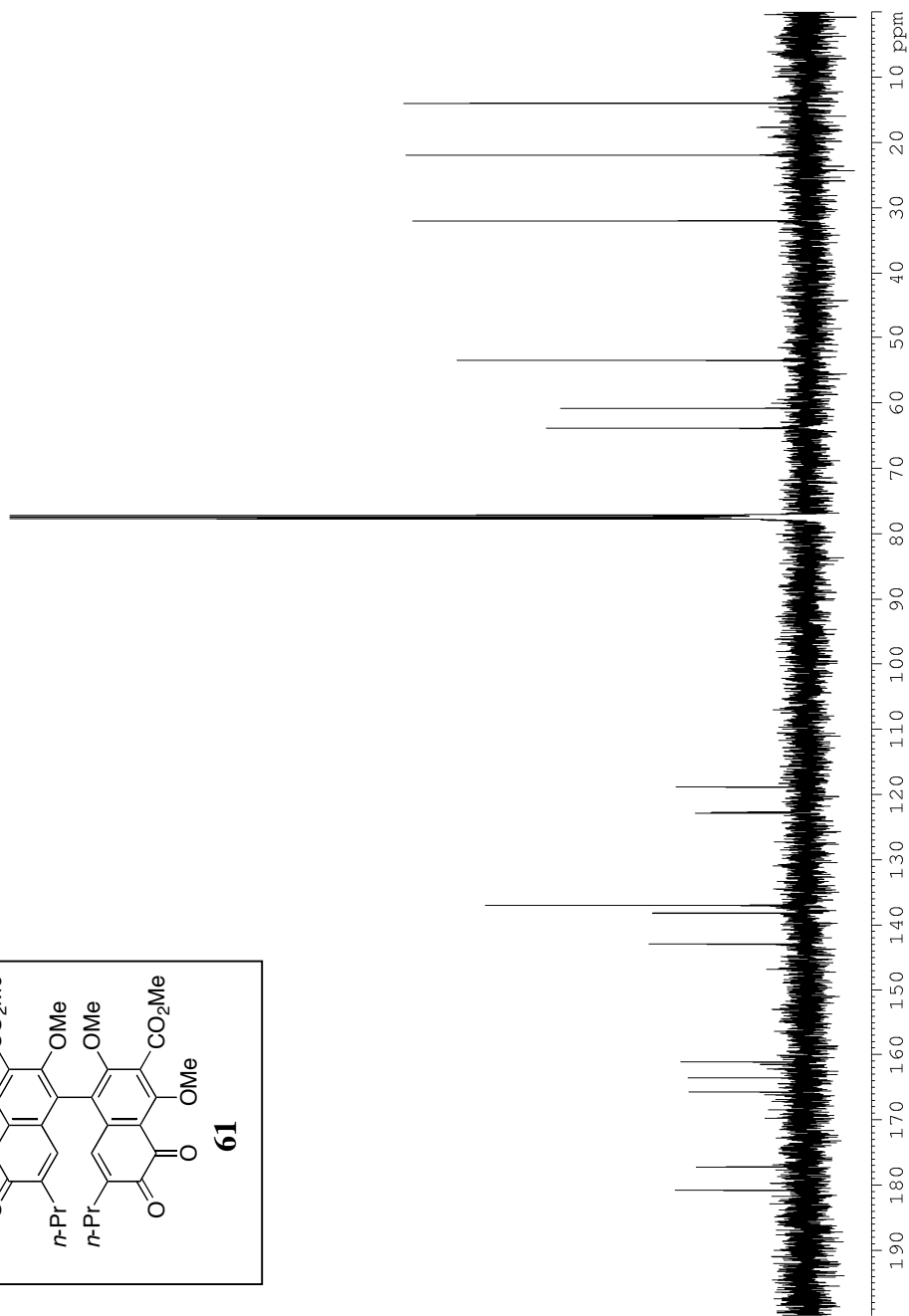
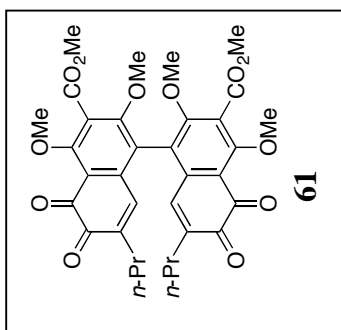
Scheme 11. 500 MHz ¹H NMR Spectrum of Compound **59** in CDCl₃



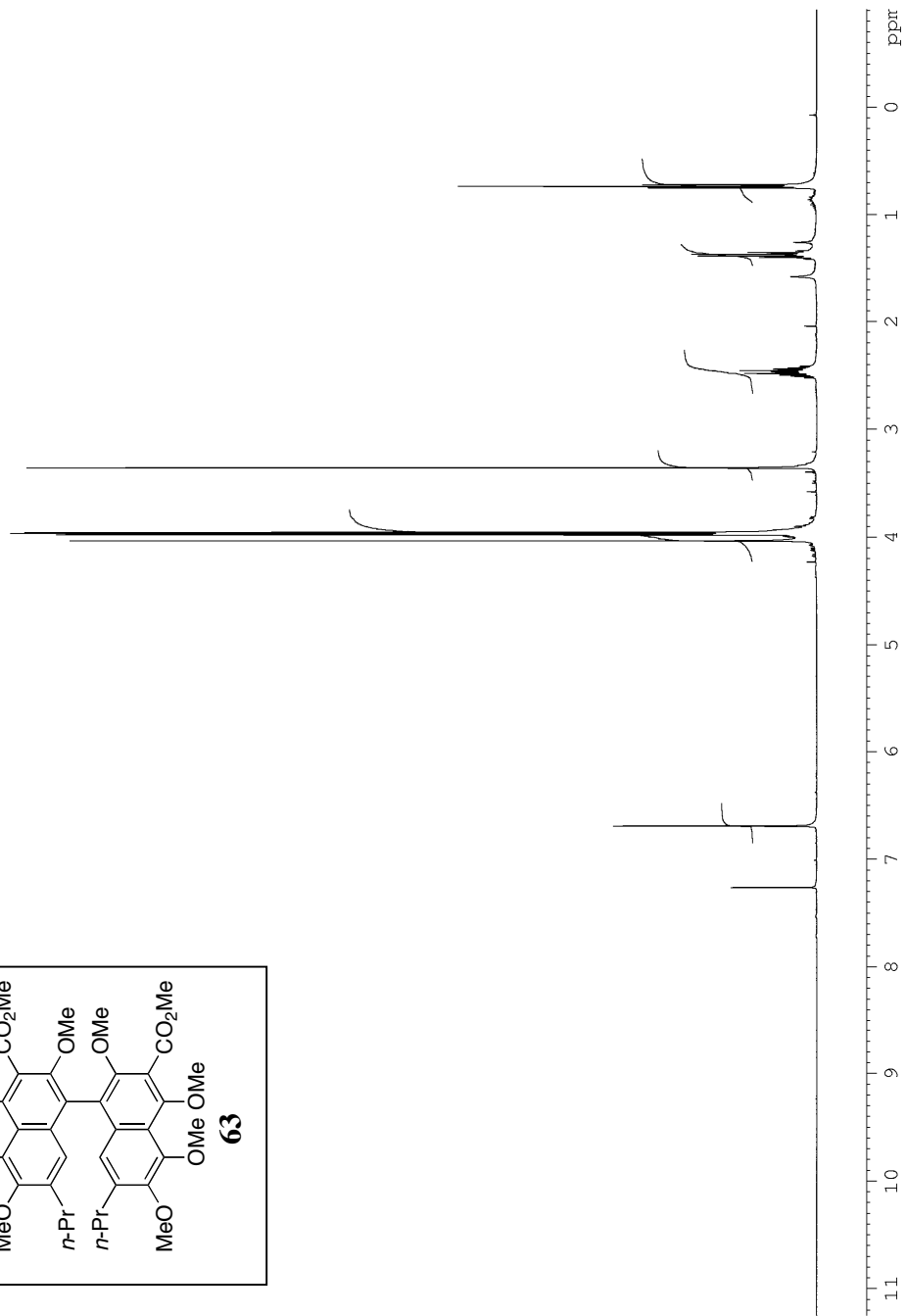
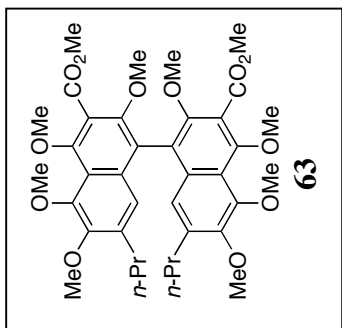
Scheme 11. 125 MHz ¹³C NMR Spectrum of Compound **59** in CDCl₃



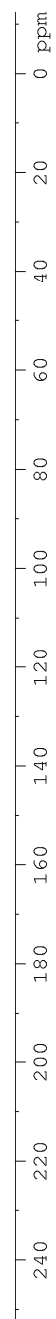
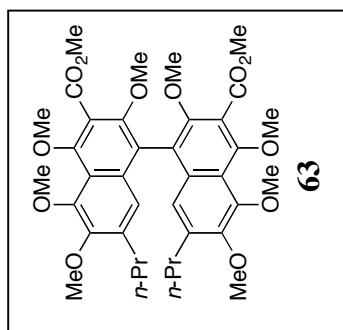
Scheme 11. 500 MHz ^1H NMR Spectrum of Compound **61** in CDCl_3



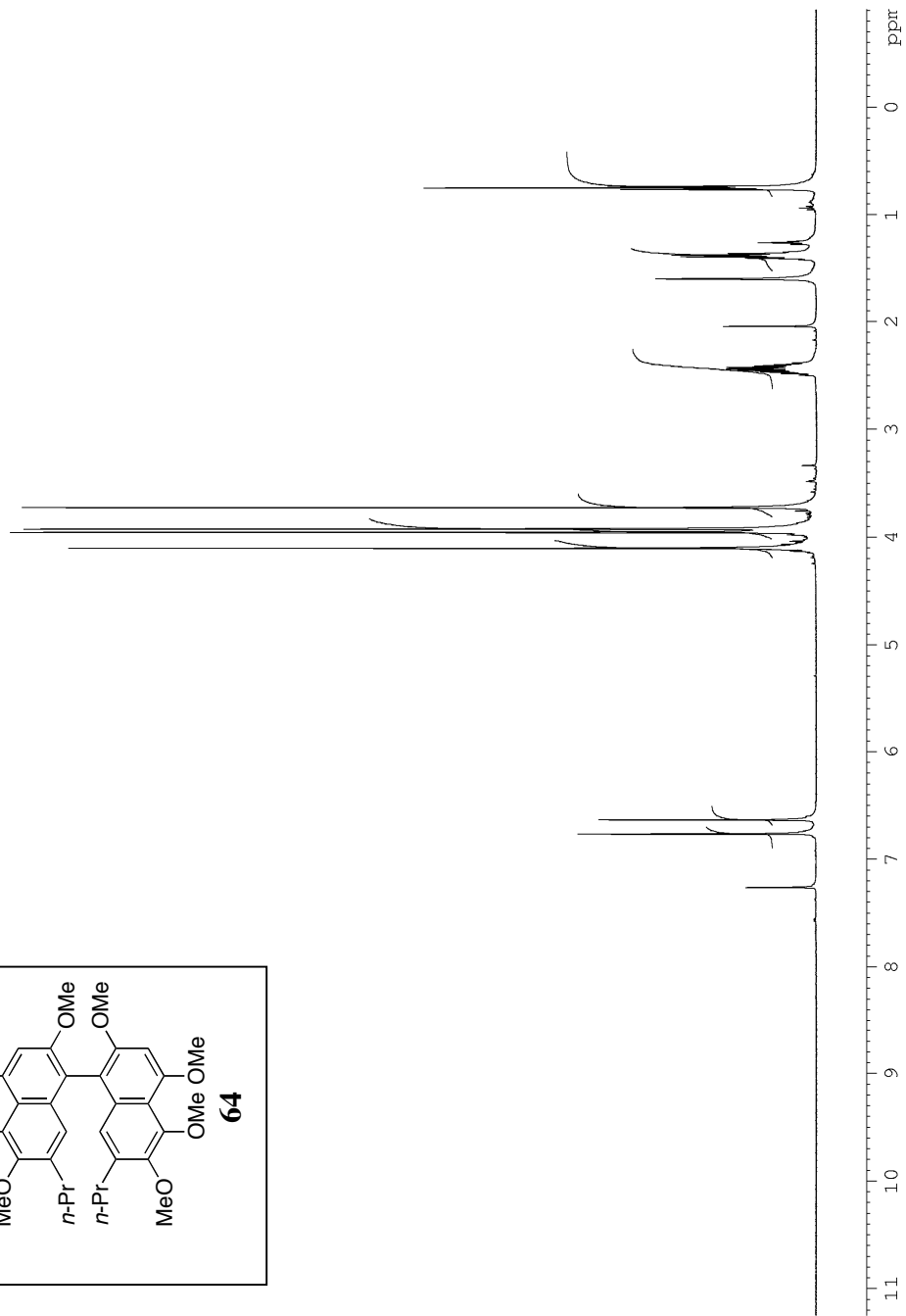
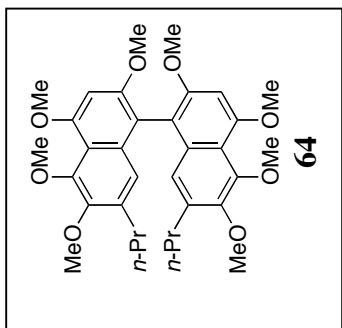
Scheme 11. 125 MHz ^{13}C NMR Spectrum of Compound **61** in CDCl_3



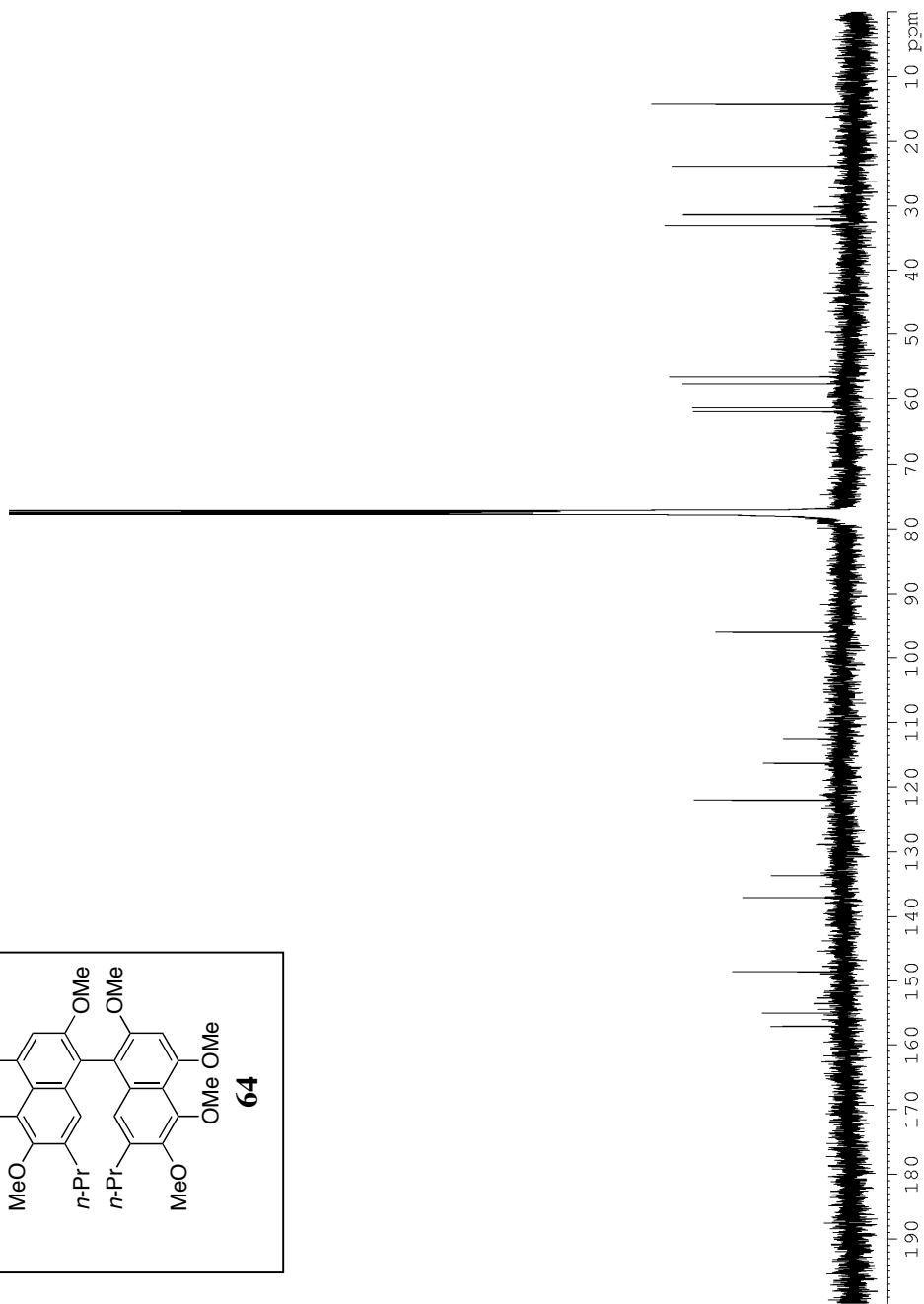
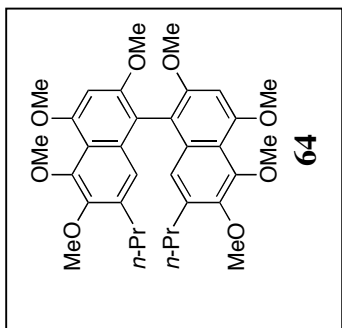
Scheme 12. 500 MHz ¹H NMR Spectrum of Compound **63** in CDCl₃



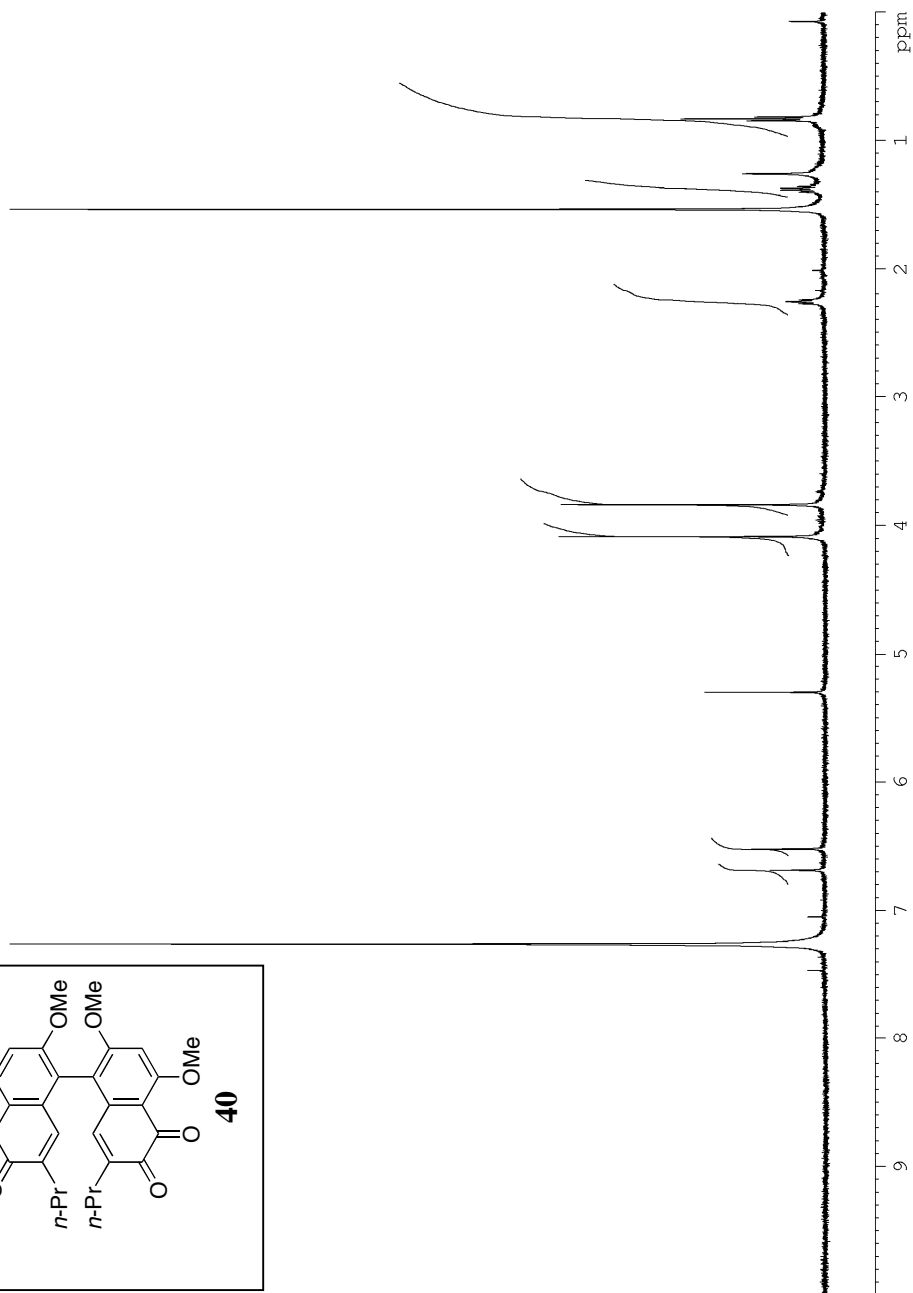
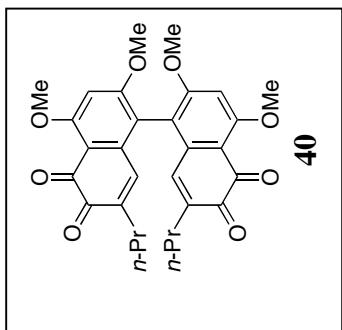
Scheme 12. 125 MHz ¹³C NMR Spectrum of Compound **63** in CDCl₃



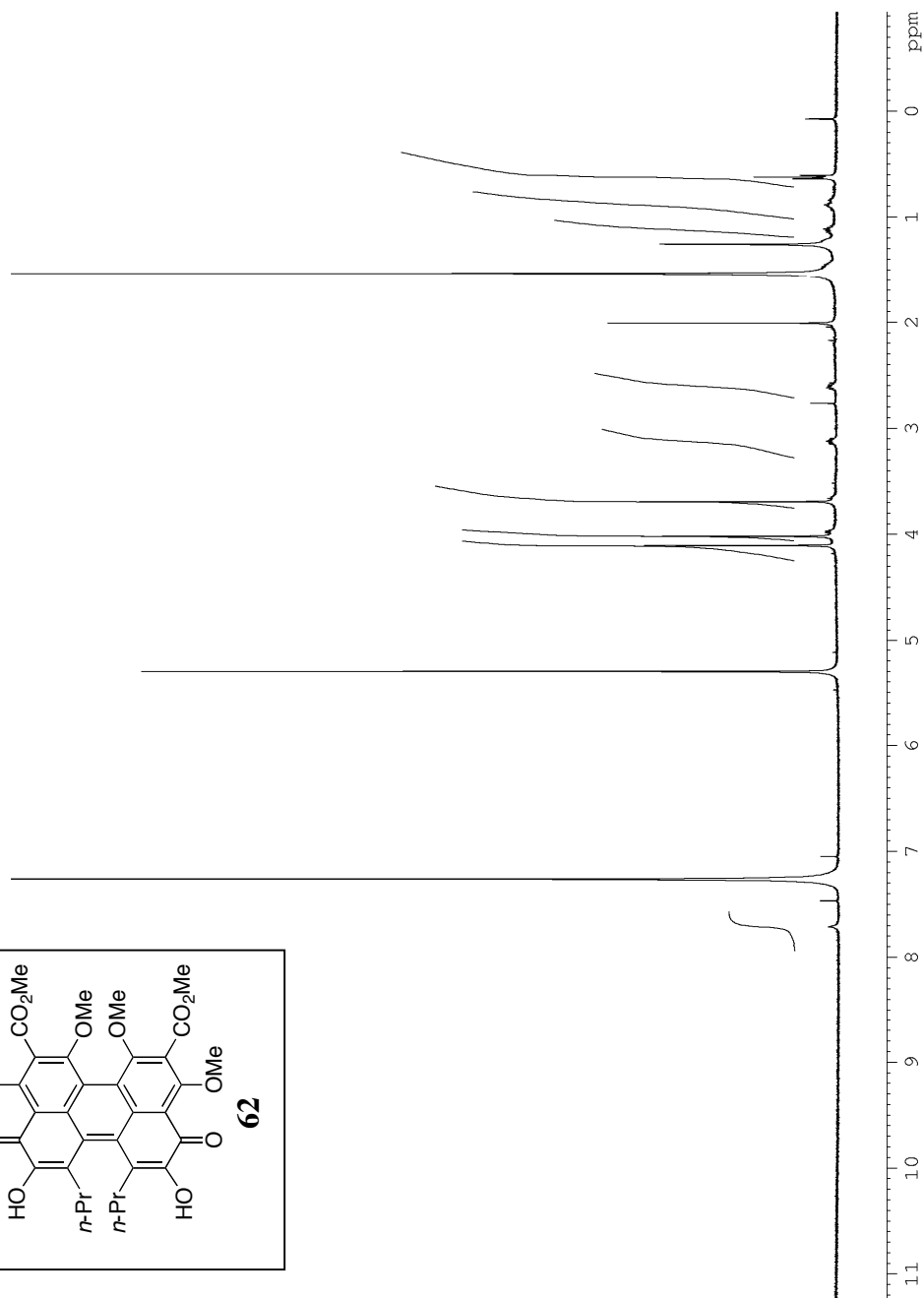
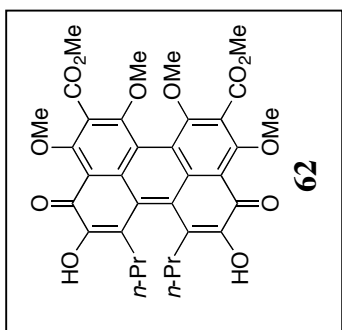
Scheme 12. 500 MHz ¹H NMR Spectrum of Compound **64** in CDCl₃



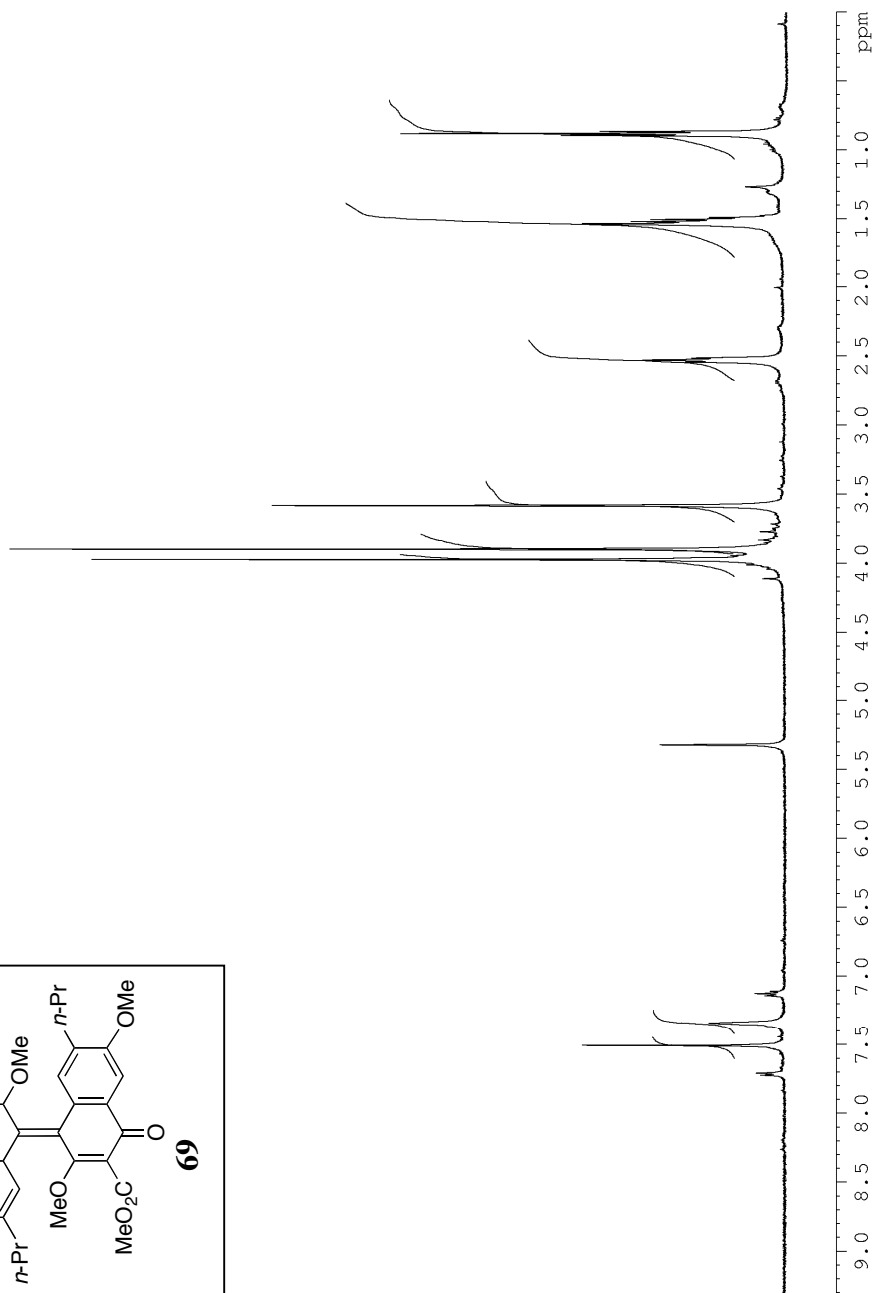
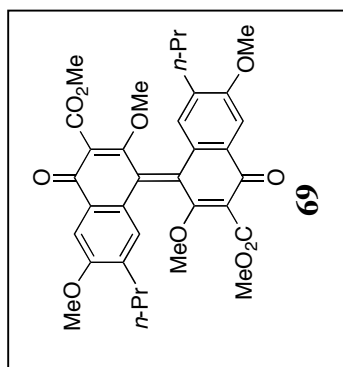
Scheme 12. 125 MHz ^{13}C NMR Spectrum of Compound **64** in CDCl_3



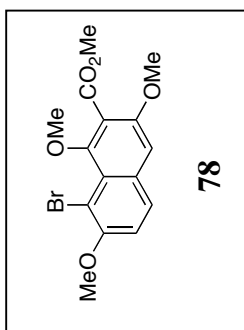
Scheme 12. 500 MHz ¹H NMR Spectrum of Compound **40** in CDCl₃



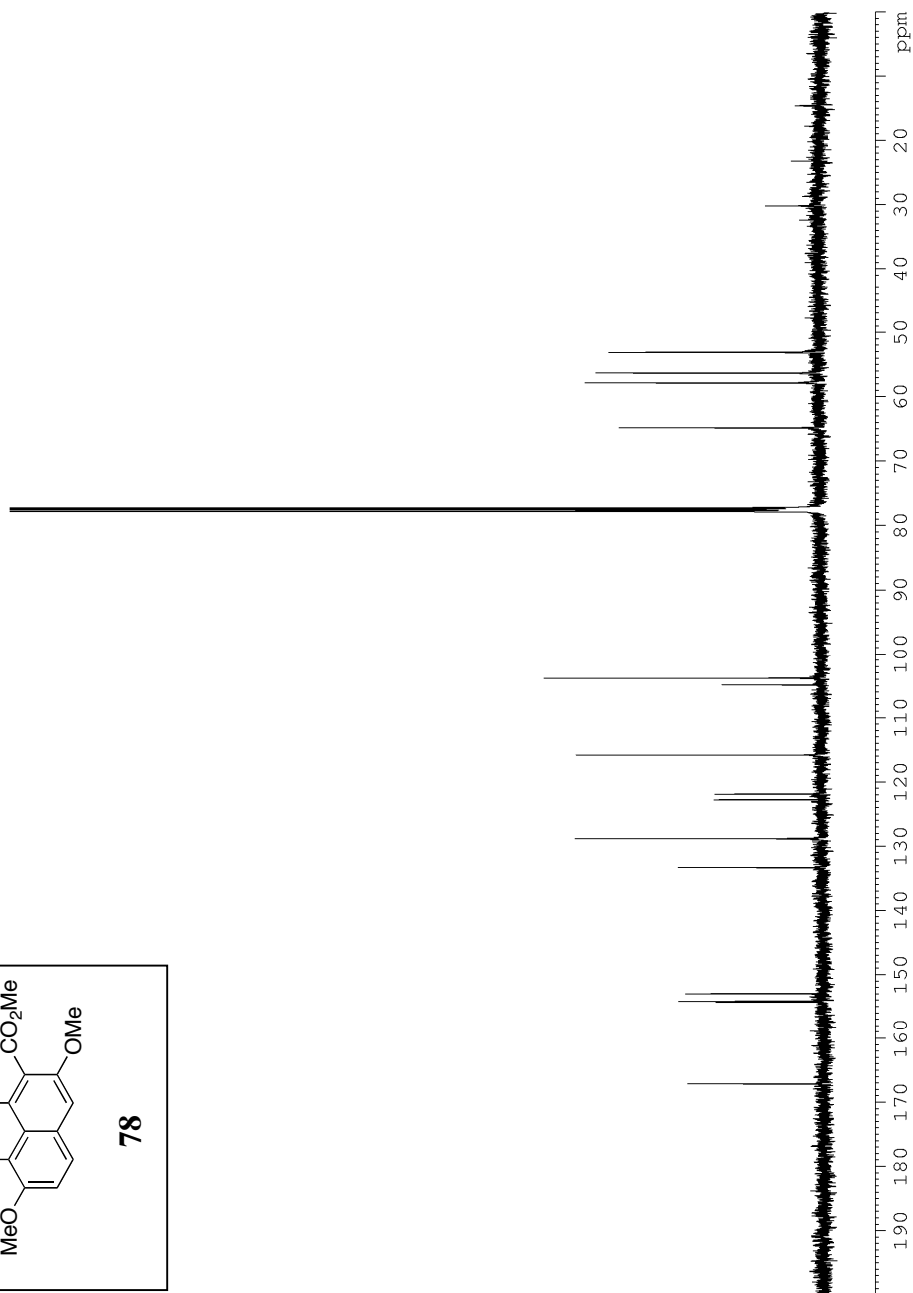
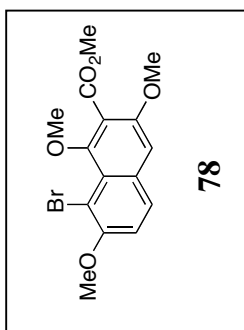
Scheme 13. 500 MHz ^1H NMR Spectrum of Compound **62** in CDCl_3



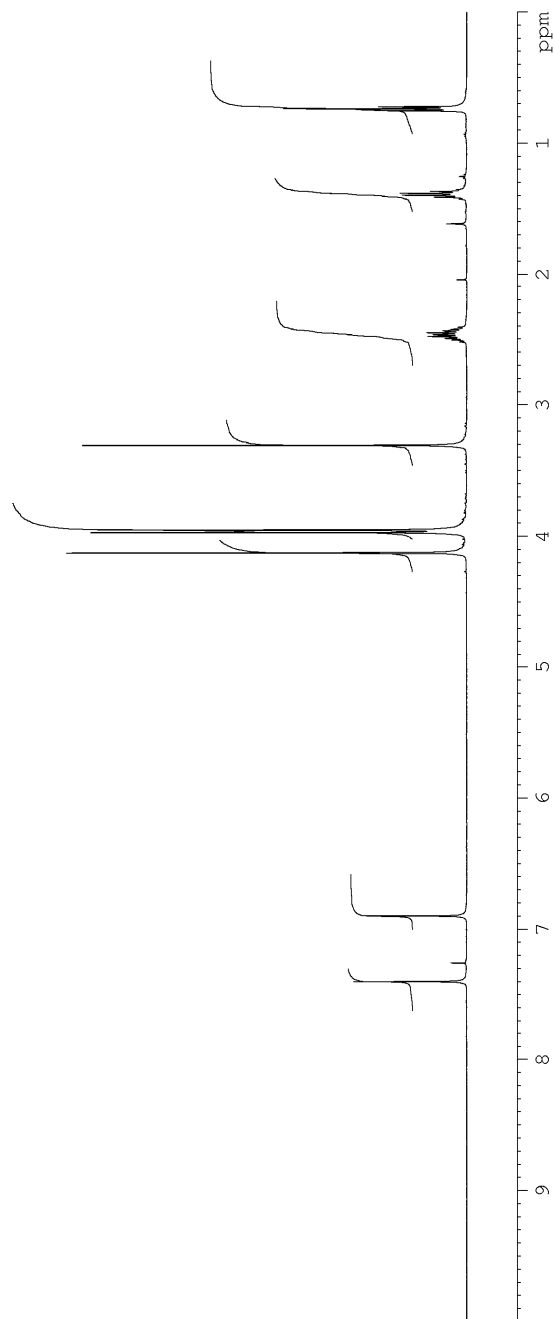
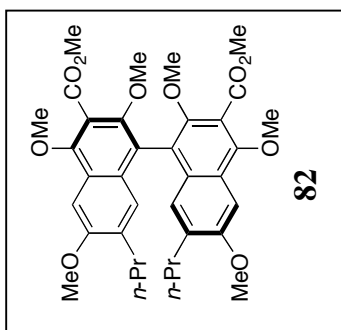
Scheme 14. 500 MHz ¹H NMR Spectrum of Compound **69** in CDCl₃



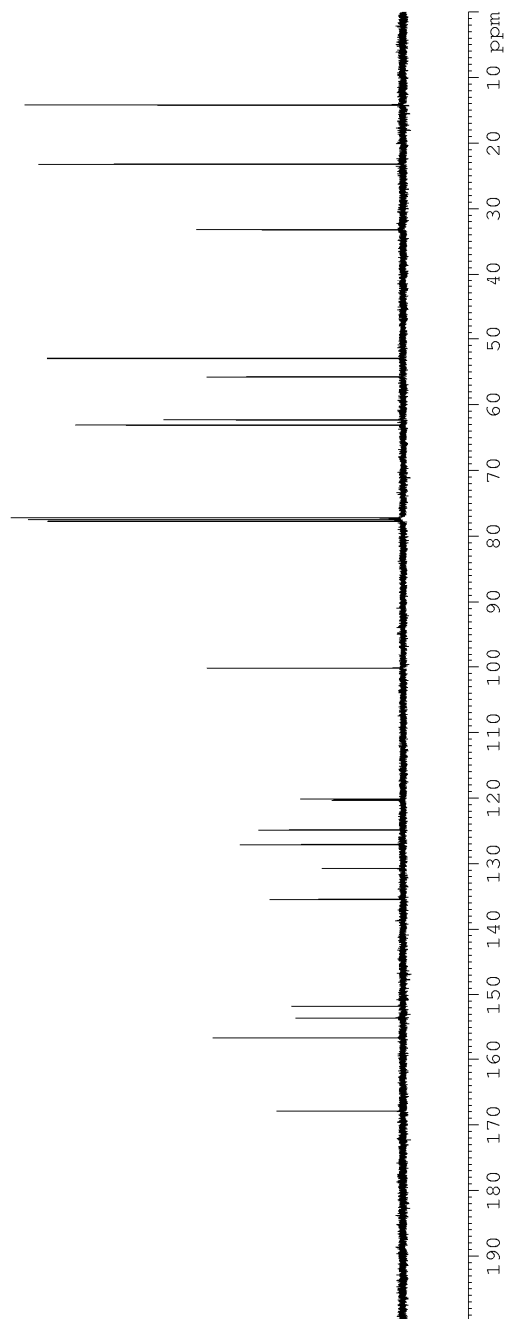
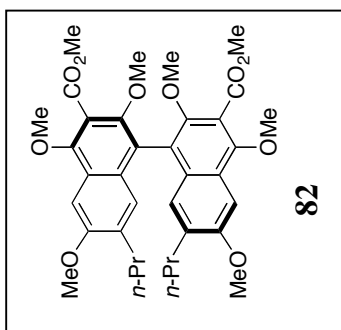
Scheme 16. 360 MHz ¹H NMR Spectrum of Compound **78** in CDCl₃



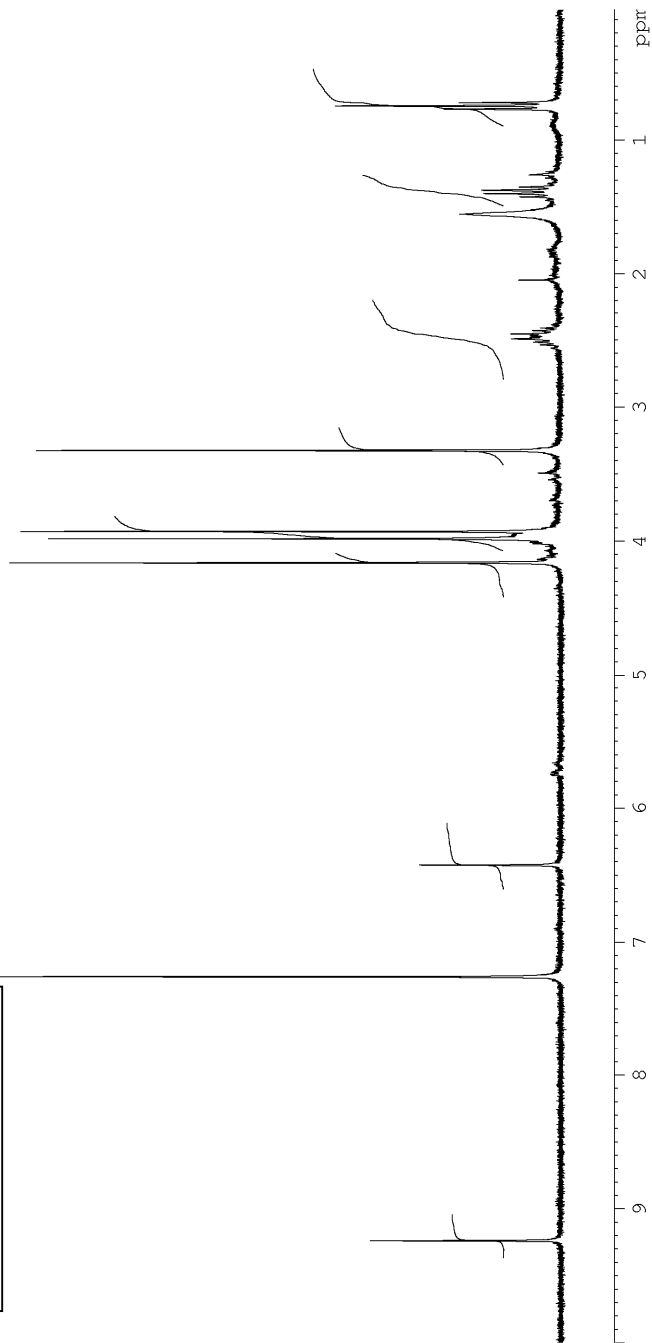
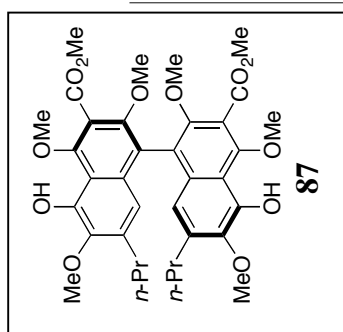
Scheme 16. 125 MHz ¹³C NMR Spectrum of Compound **78** in CDCl₃



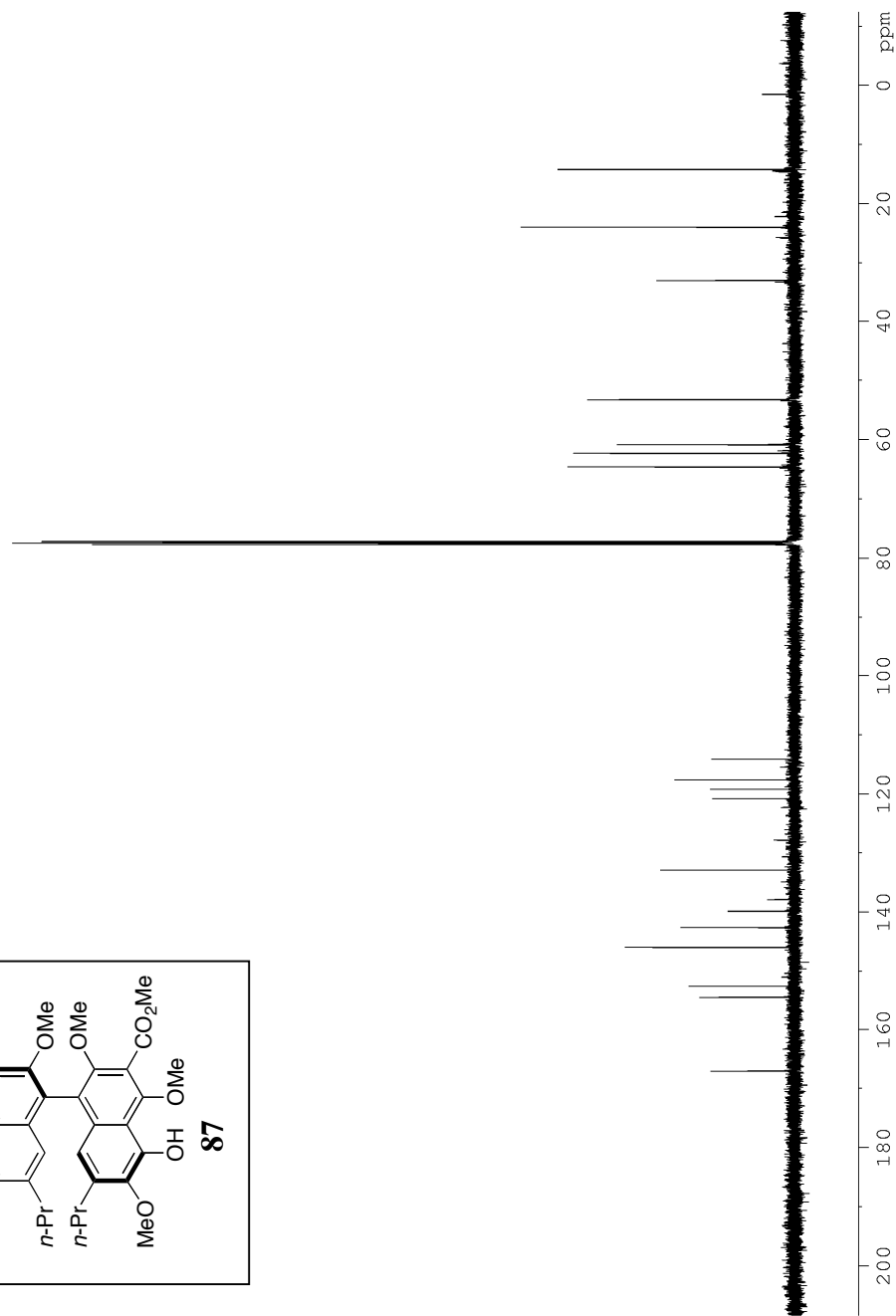
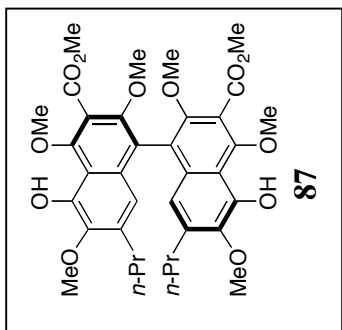
Scheme 18. 500 MHz ¹H NMR Spectrum of Compound **82** in CDCl₃



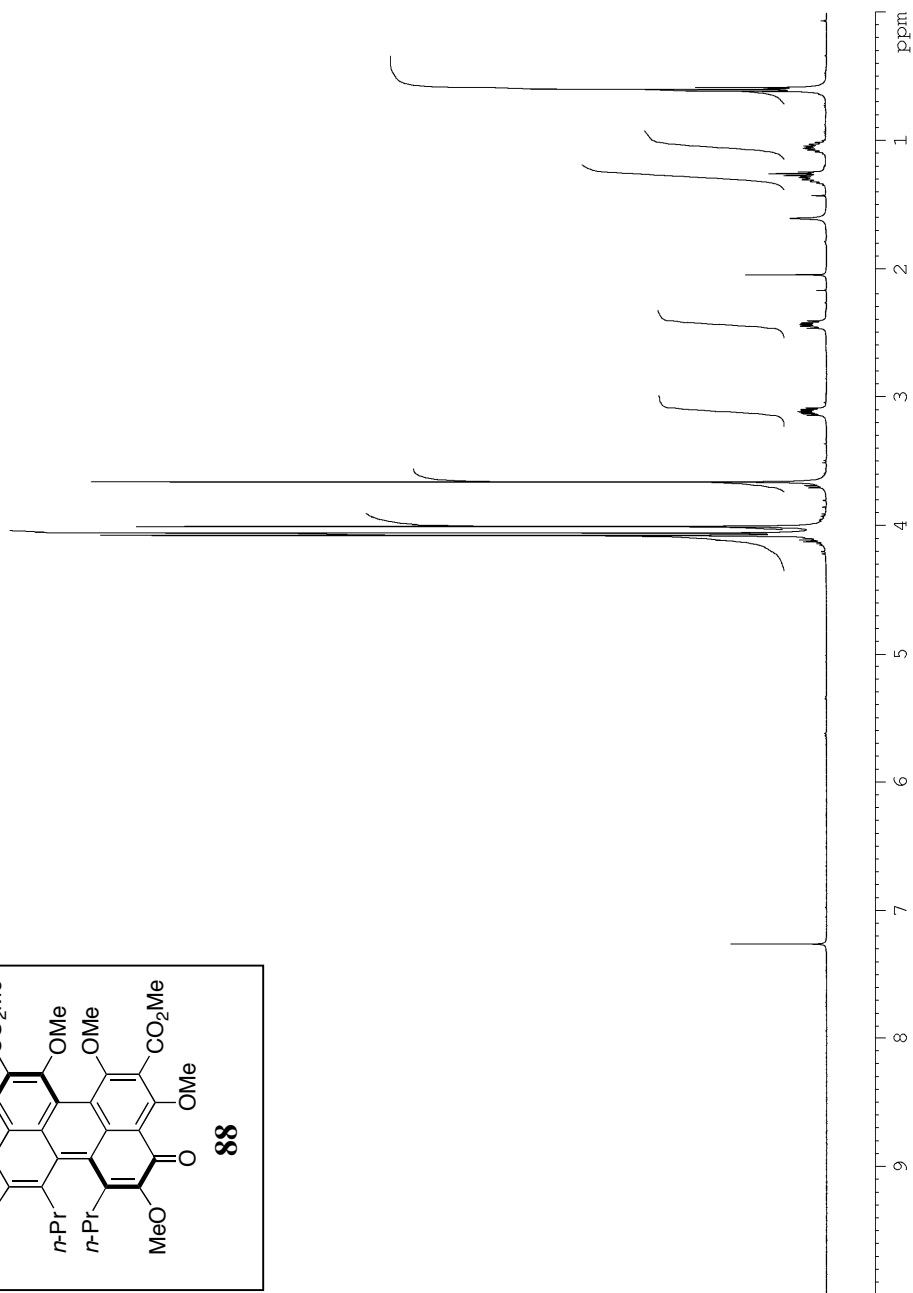
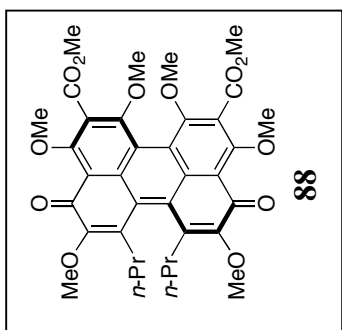
Scheme 18. 125 MHz ¹³C NMR Spectrum of Compound **82** in CDCl₃



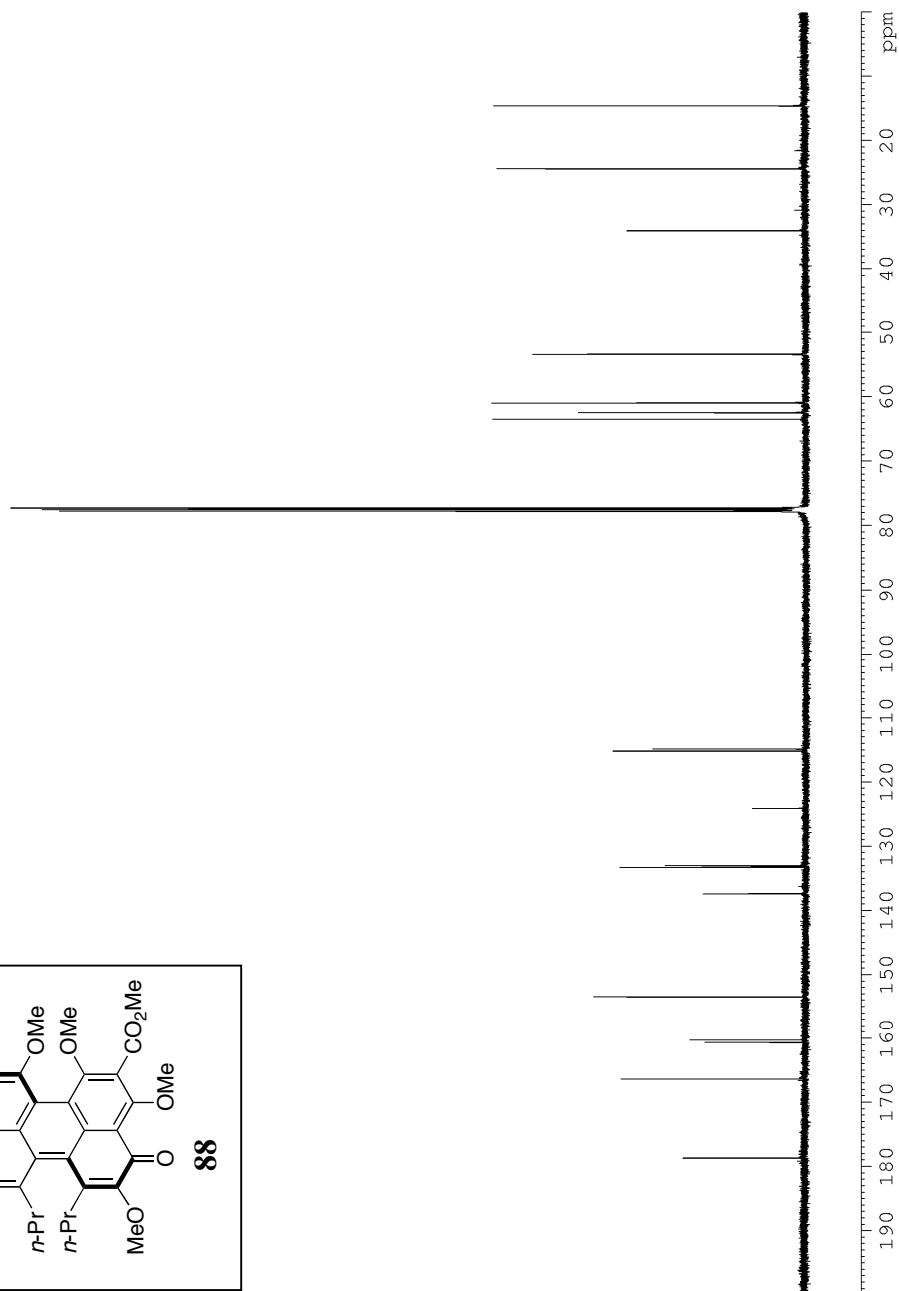
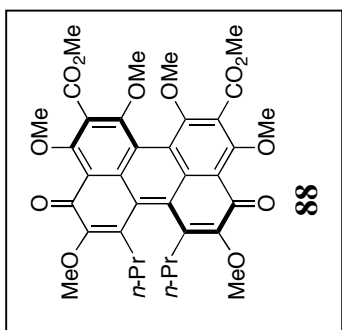
Scheme 18. 500 MHz ^1H NMR Spectrum of Compound **87** in CDCl_3



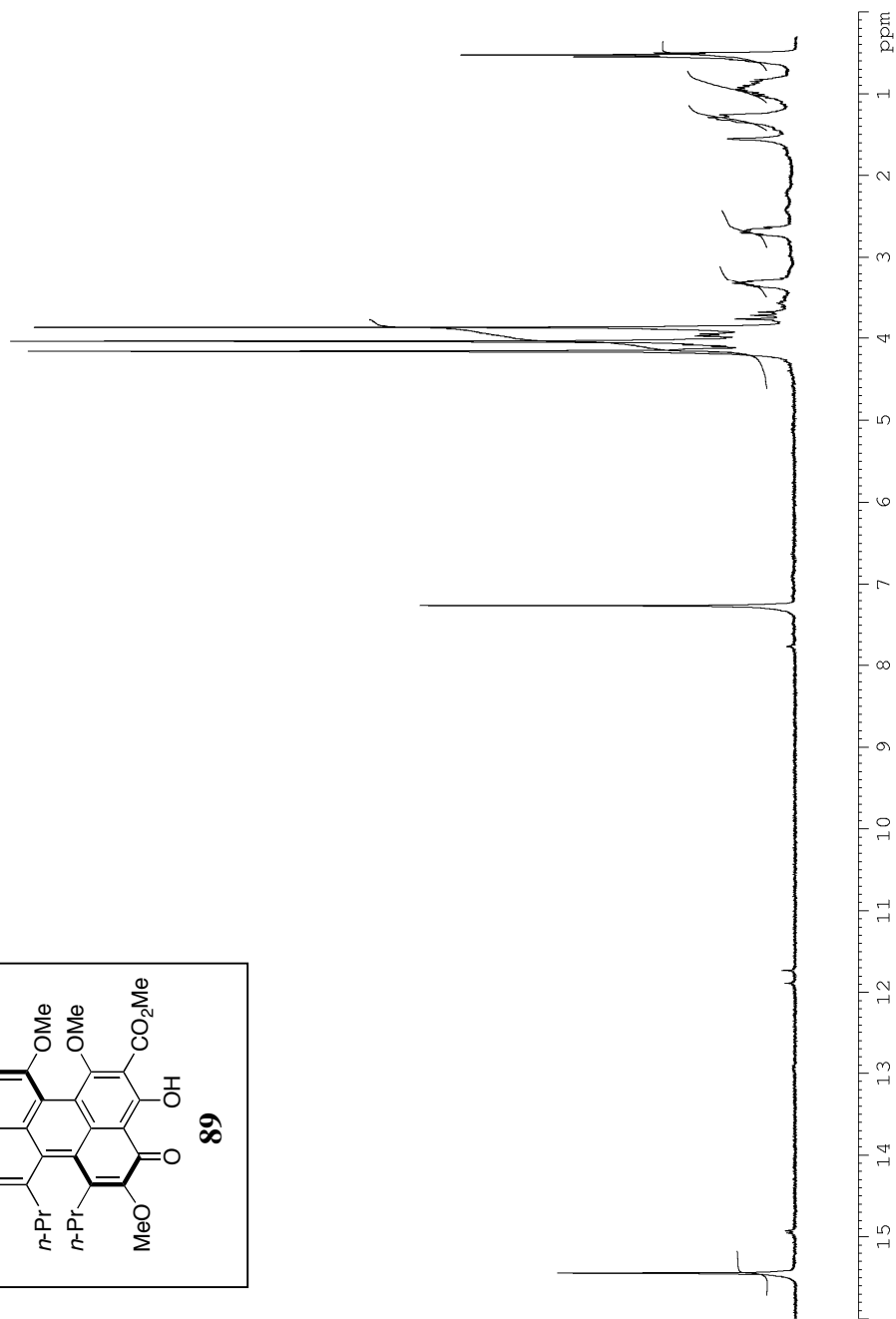
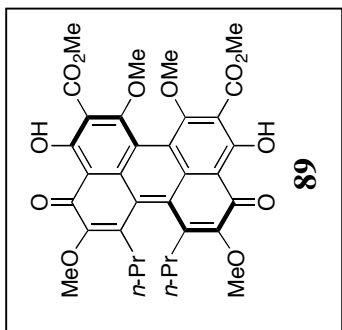
Scheme 18. 125 MHz ^{13}C NMR Spectrum of Compound **87** in CDCl_3



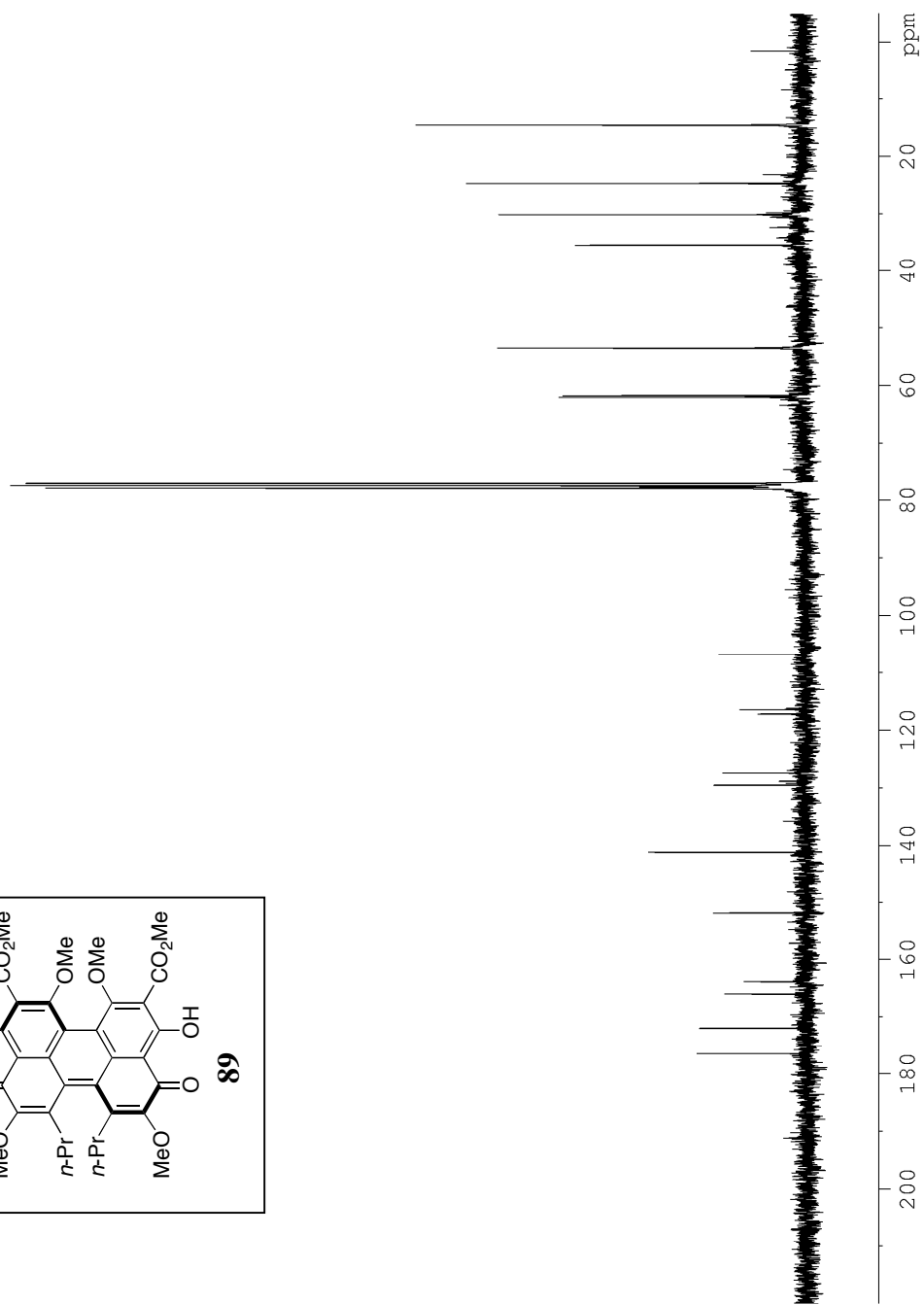
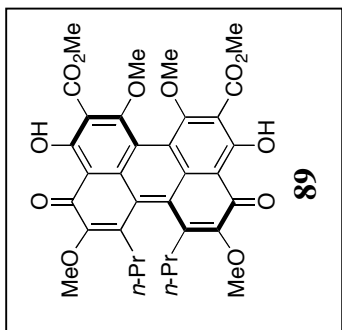
Scheme 19. 500 MHz ^1H NMR Spectrum of Compound **88** in CDCl_3



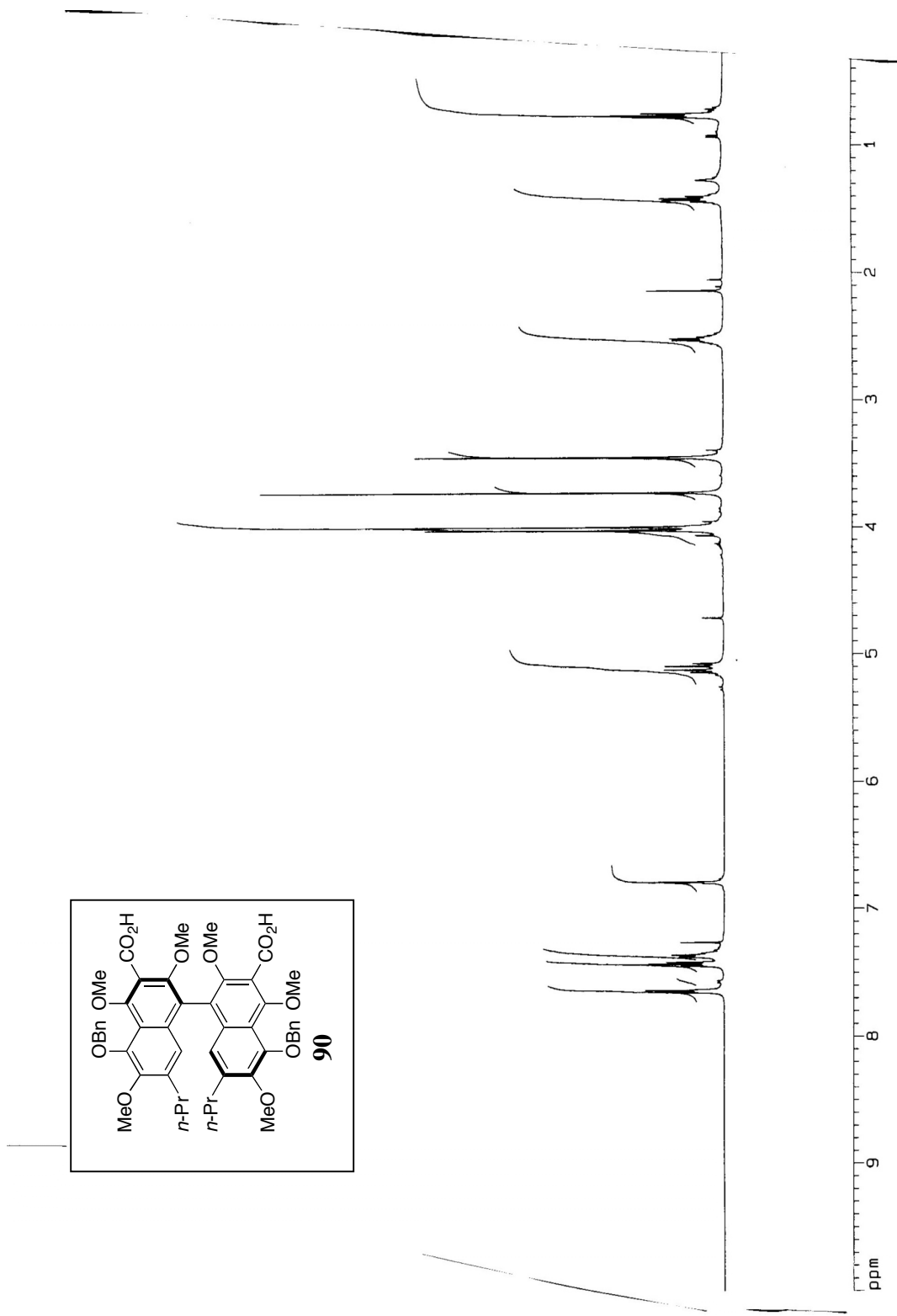
Scheme 19. 125 MHz ^{13}C NMR Spectrum of Compound **88** in CDCl_3



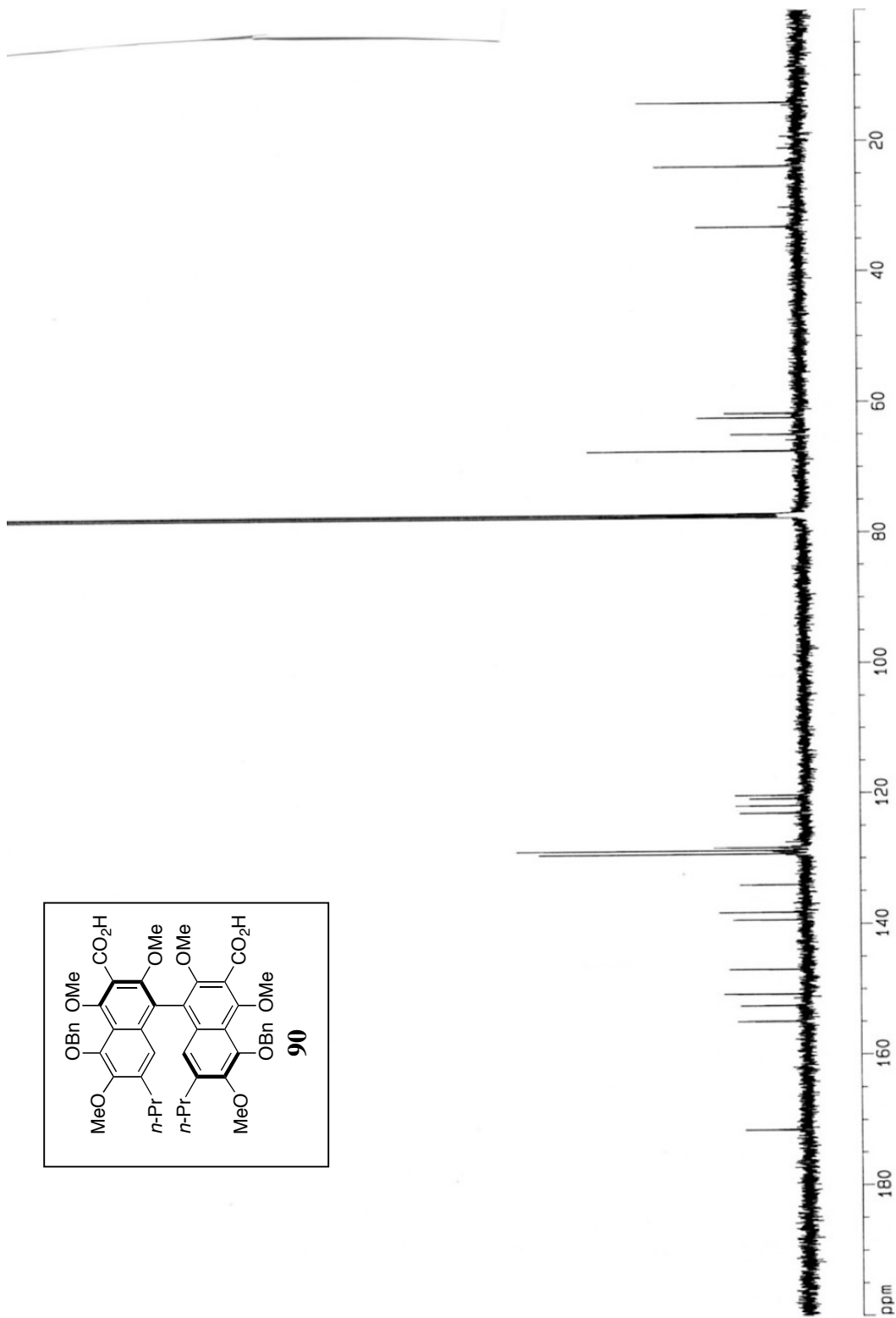
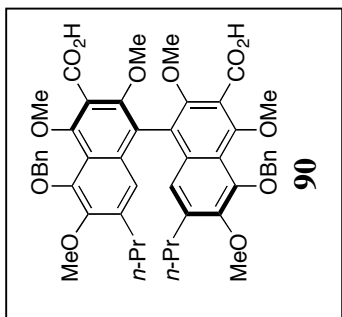
Scheme 19. 500 MHz ^1H NMR Spectrum of Compound **89** in CDCl_3



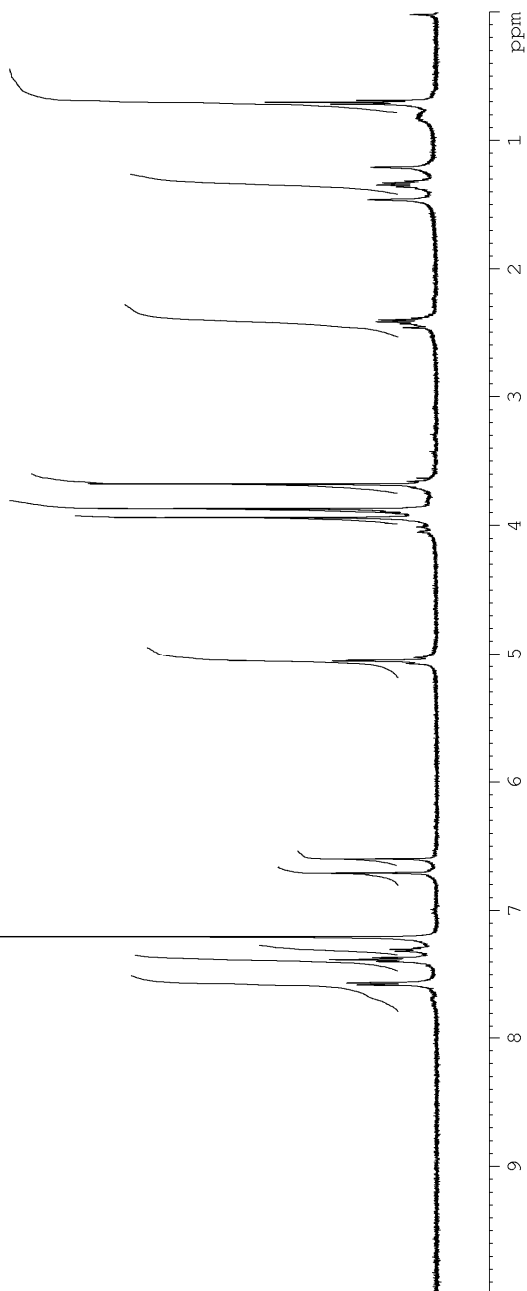
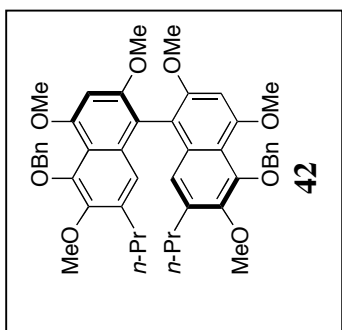
Scheme 19. 125 MHz ^{13}C NMR Spectrum of Compound **89** in CDCl_3



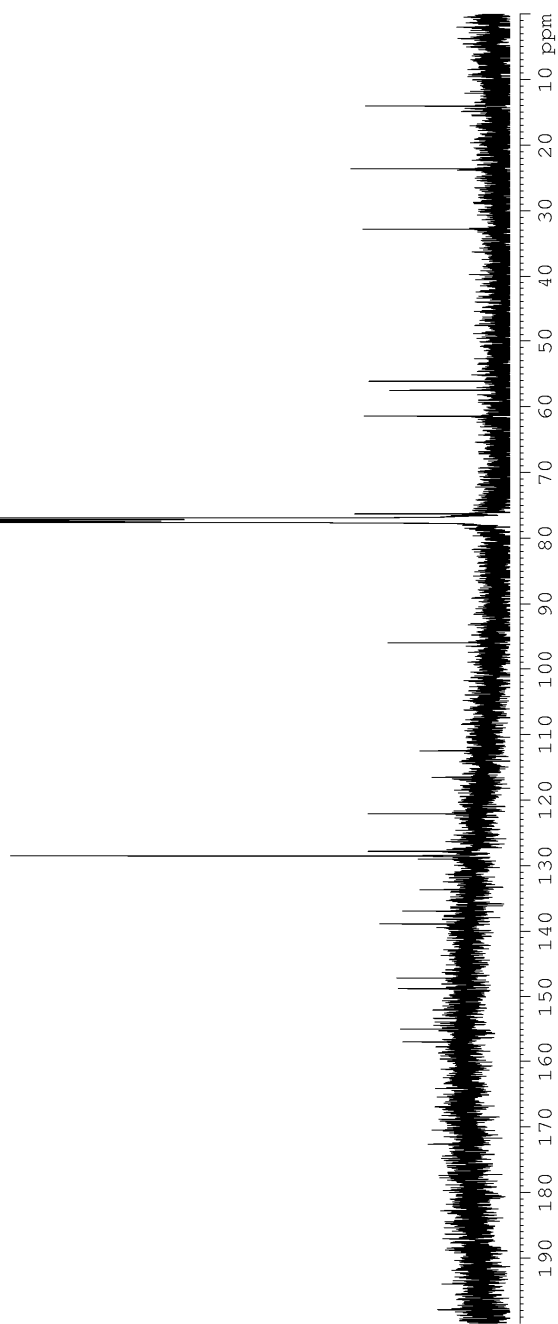
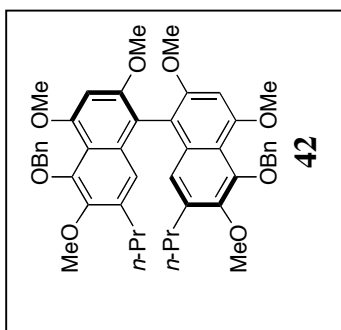
Scheme 20. 500 MHz ¹H NMR Spectrum of Compound **90** in CDCl₃



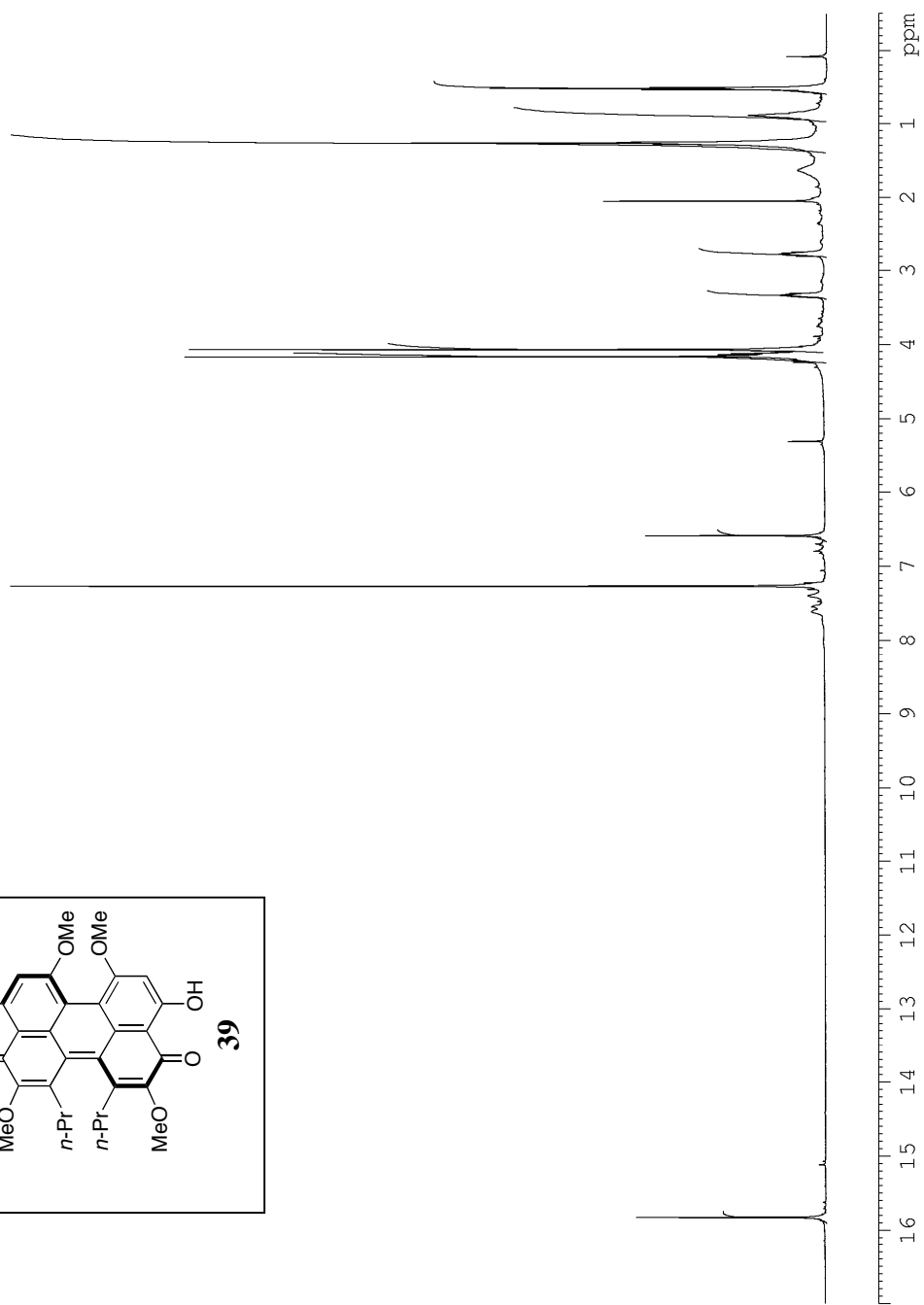
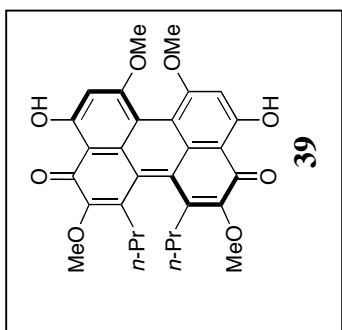
Scheme 20. 125 MHz ^{13}C NMR Spectrum of Compound **90** in CDCl_3



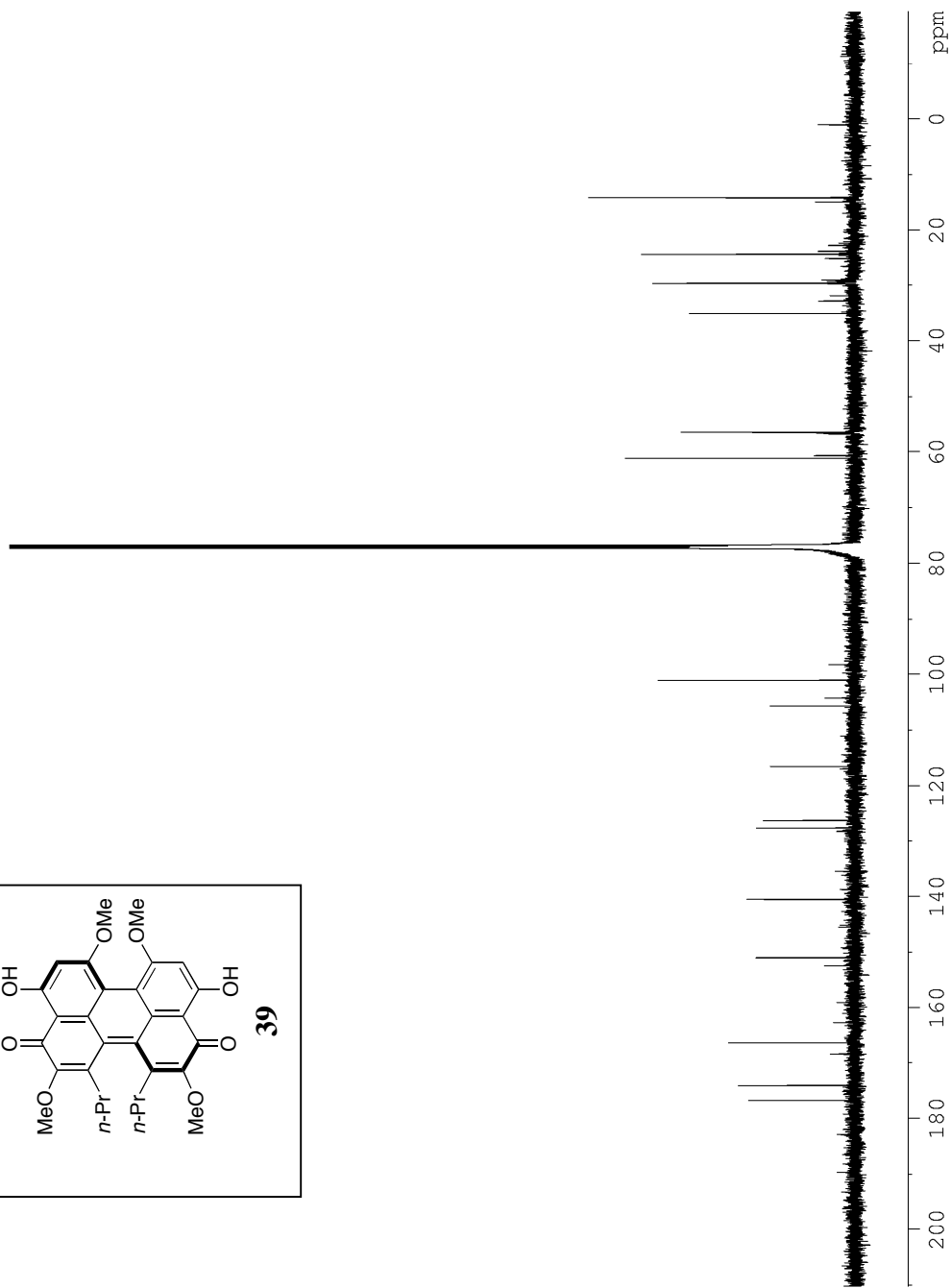
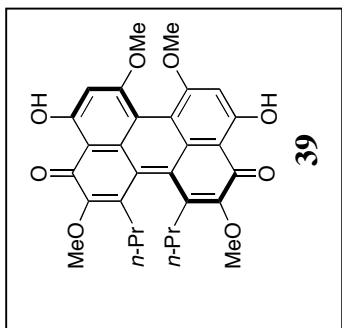
Scheme 20. 500 MHz ^1H NMR Spectrum of Compound **42** in CDCl_3



Scheme 20. 125 MHz ^{13}C NMR Spectrum of Compound **42** in CDCl_3



Scheme 20. 300 MHz ^1H NMR Spectrum of Compound **39** in CDCl_3



Scheme 20. 125 MHz ^{13}C NMR Spectrum of Compound **39** in CDCl_3

CD Spectrum of 39 in MeOH, 0.3 mM.

CD Spectra of C7-propyl analogs (*M*)-39

