

Copper-catalyzed aza-Michael addition of 2-aminobenzoate to β -substituted α,β -unsaturated ketones: One-pot synthesis of 3-carbonyl-2-substituted quinolin-4(*IH*)-ones

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Supplementary Information

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■ ^1H NMR and ^{13}C NMR spectra for all products:

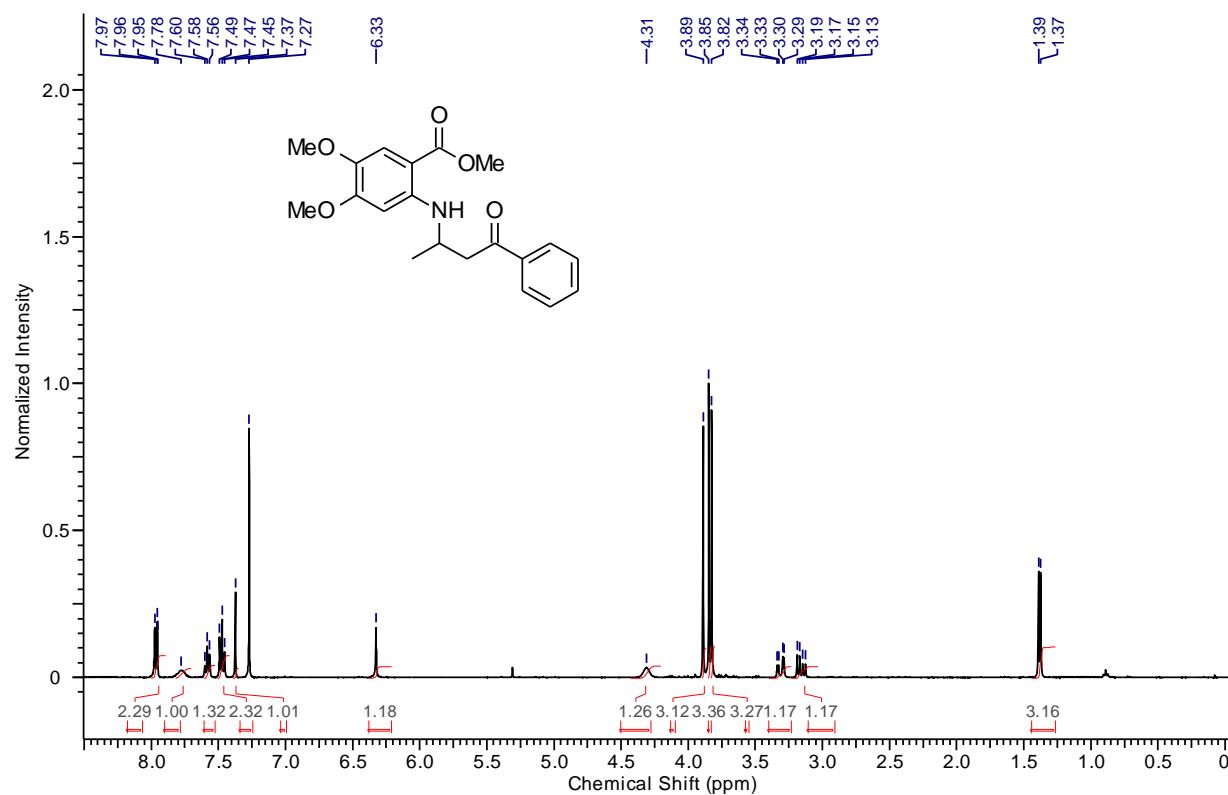


Figure S1. ^1H NMR spectrum of the compound 3a

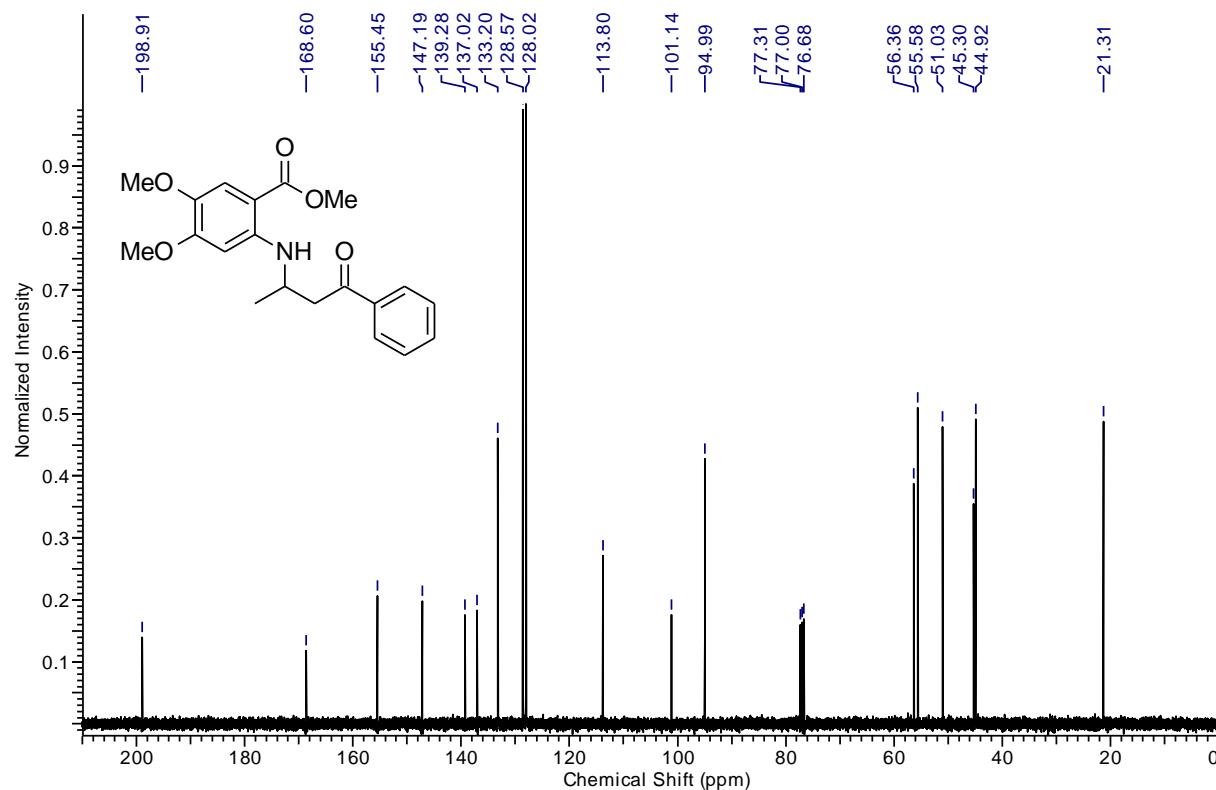


Figure S2. ^{13}C NMR spectrum of the compound 3a

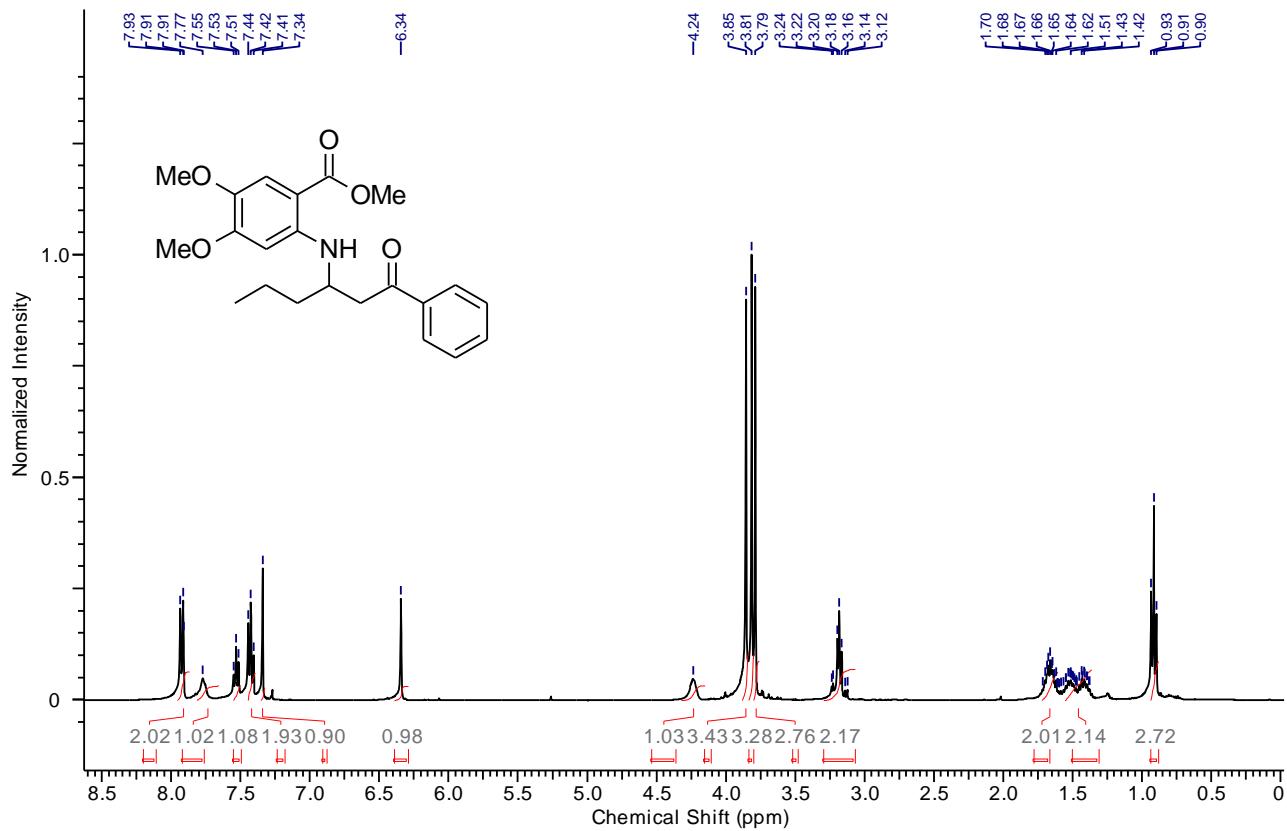


Figure S3. ¹H NMR spectrum of the compound 3b

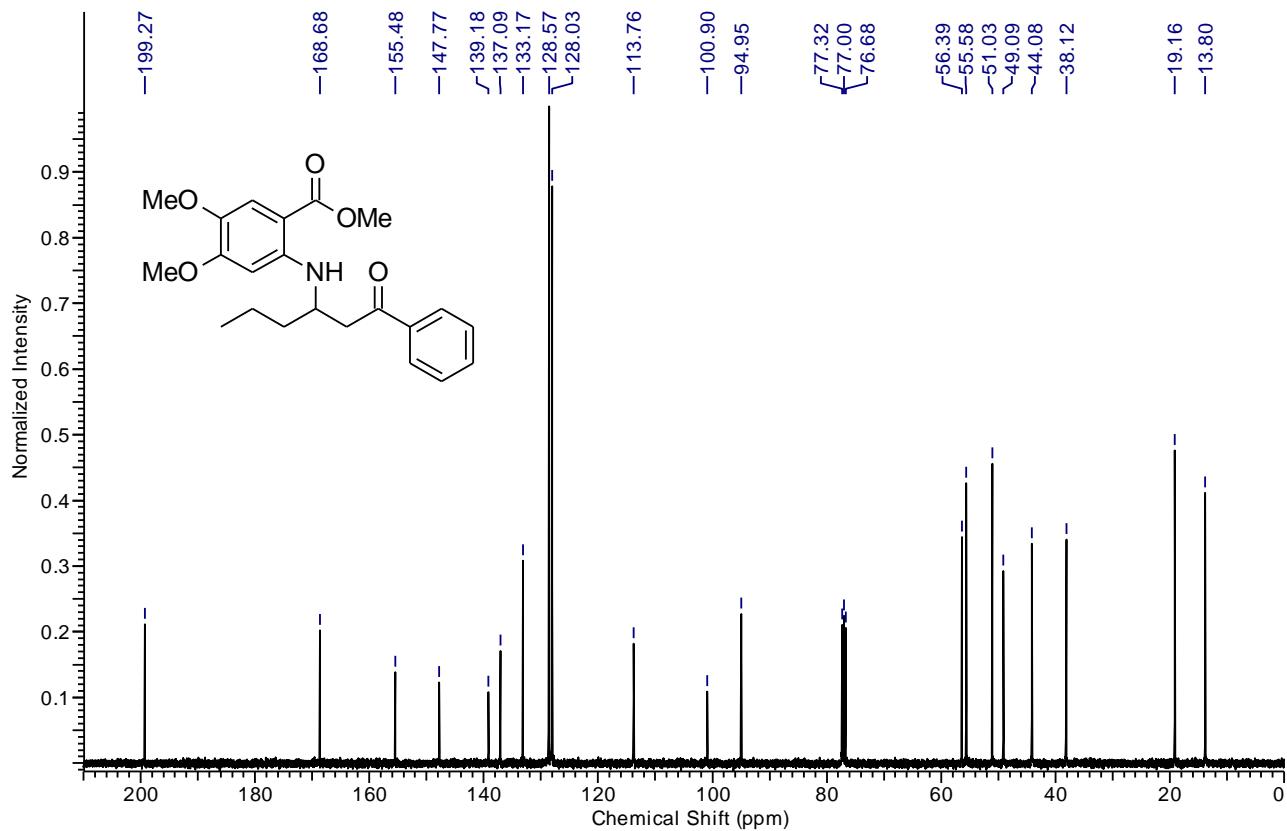


Figure S4. ¹³C NMR spectrum of the compound 3b

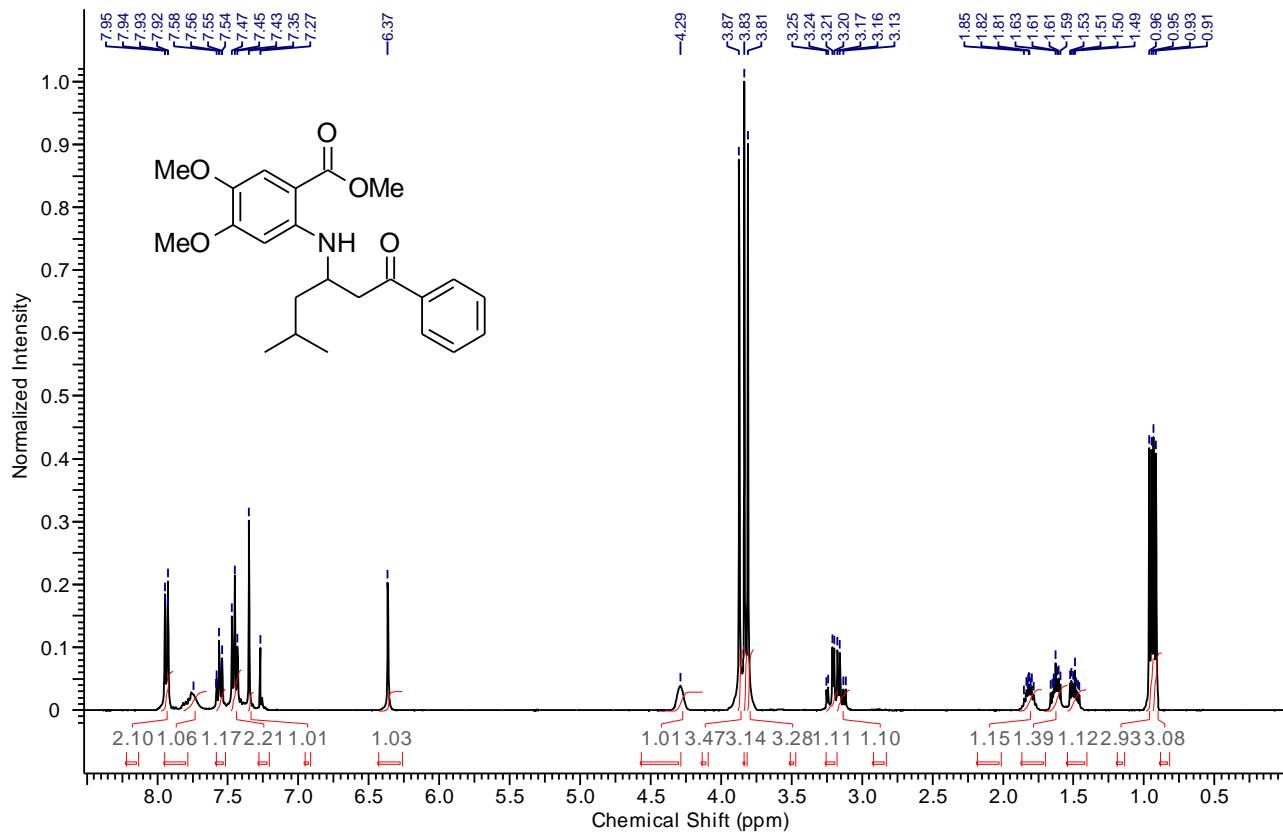


Figure S5. ¹H NMR spectrum of the compound 3c

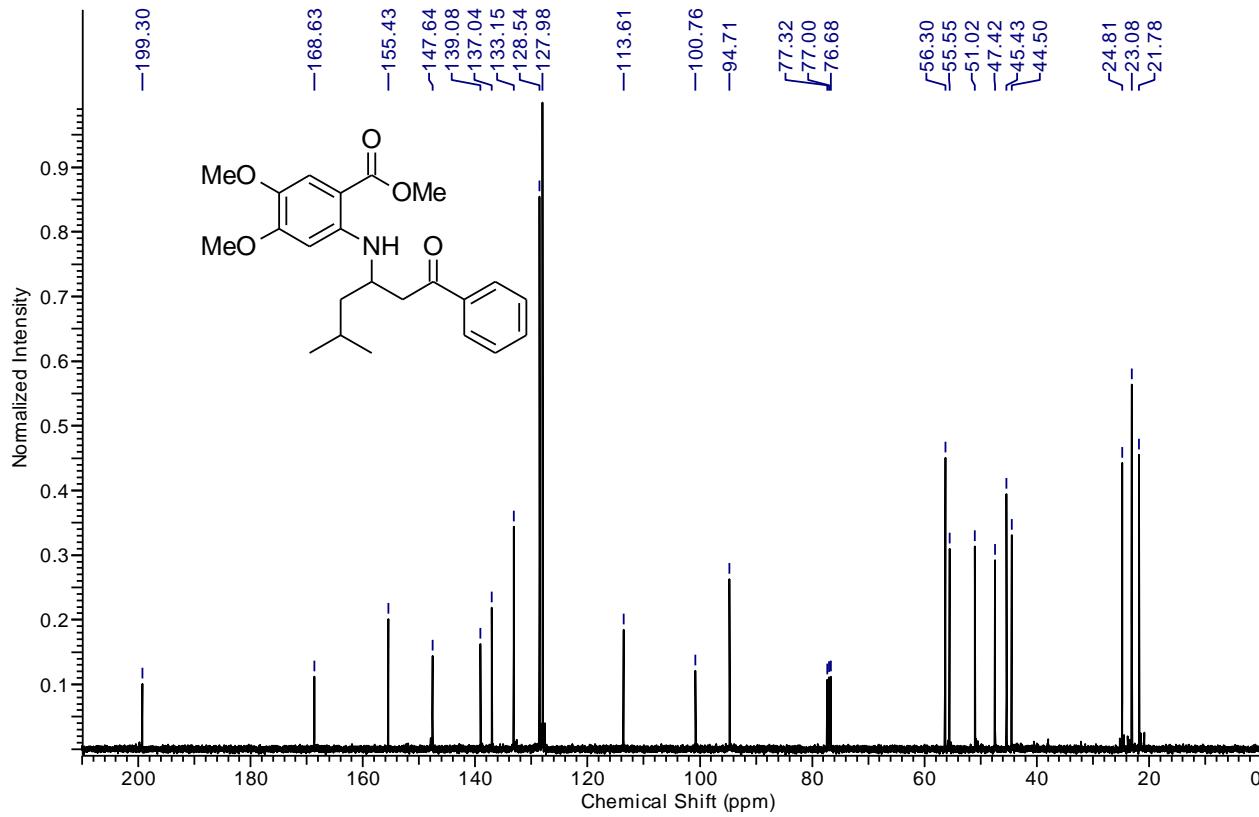


Figure S6. ¹³C NMR spectrum of the compound 3c

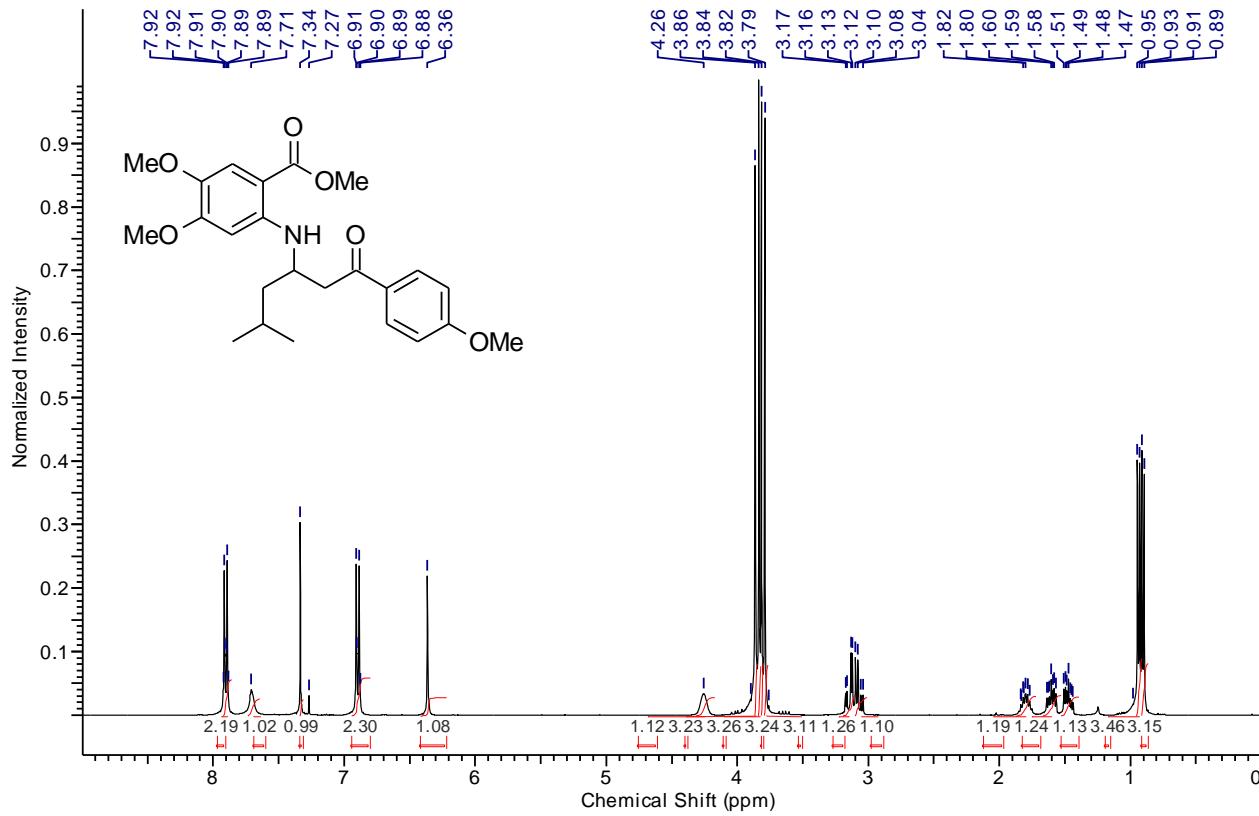


Figure S7. ^1H NMR spectrum of the compound **3d**

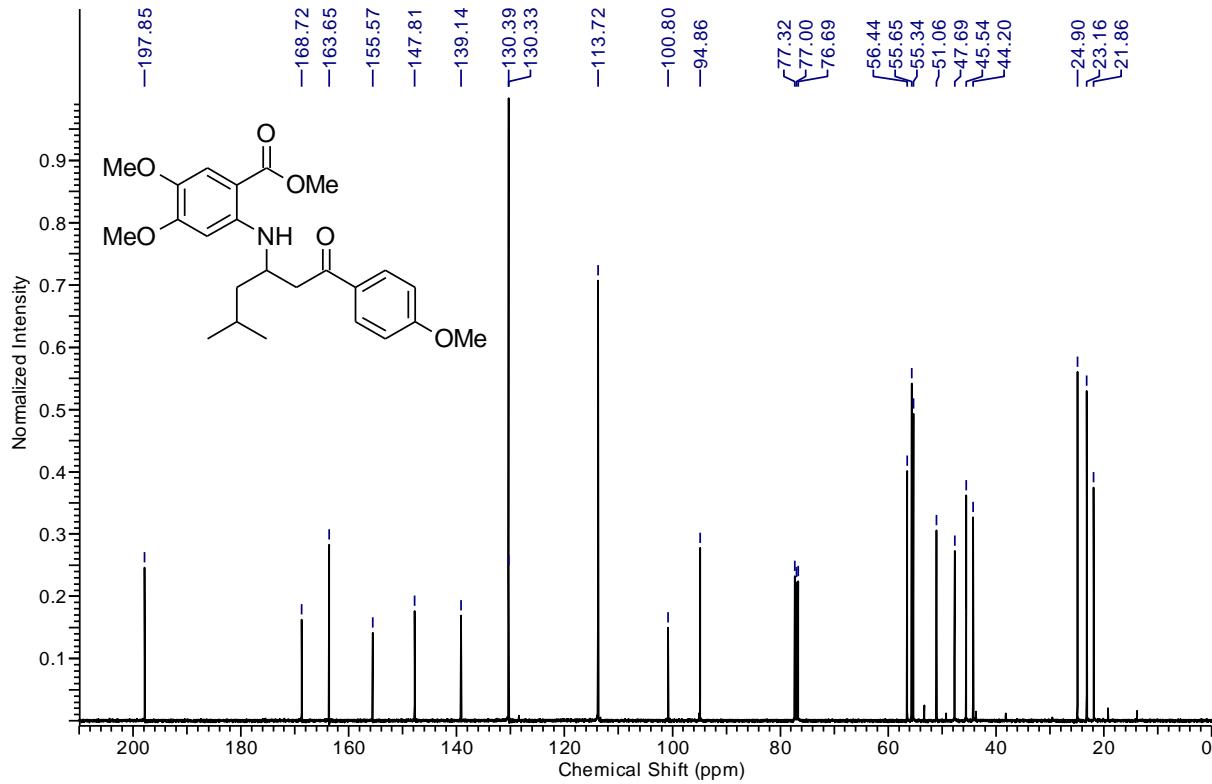


Figure S8. ^{13}C NMR spectrum of the compound **3d**

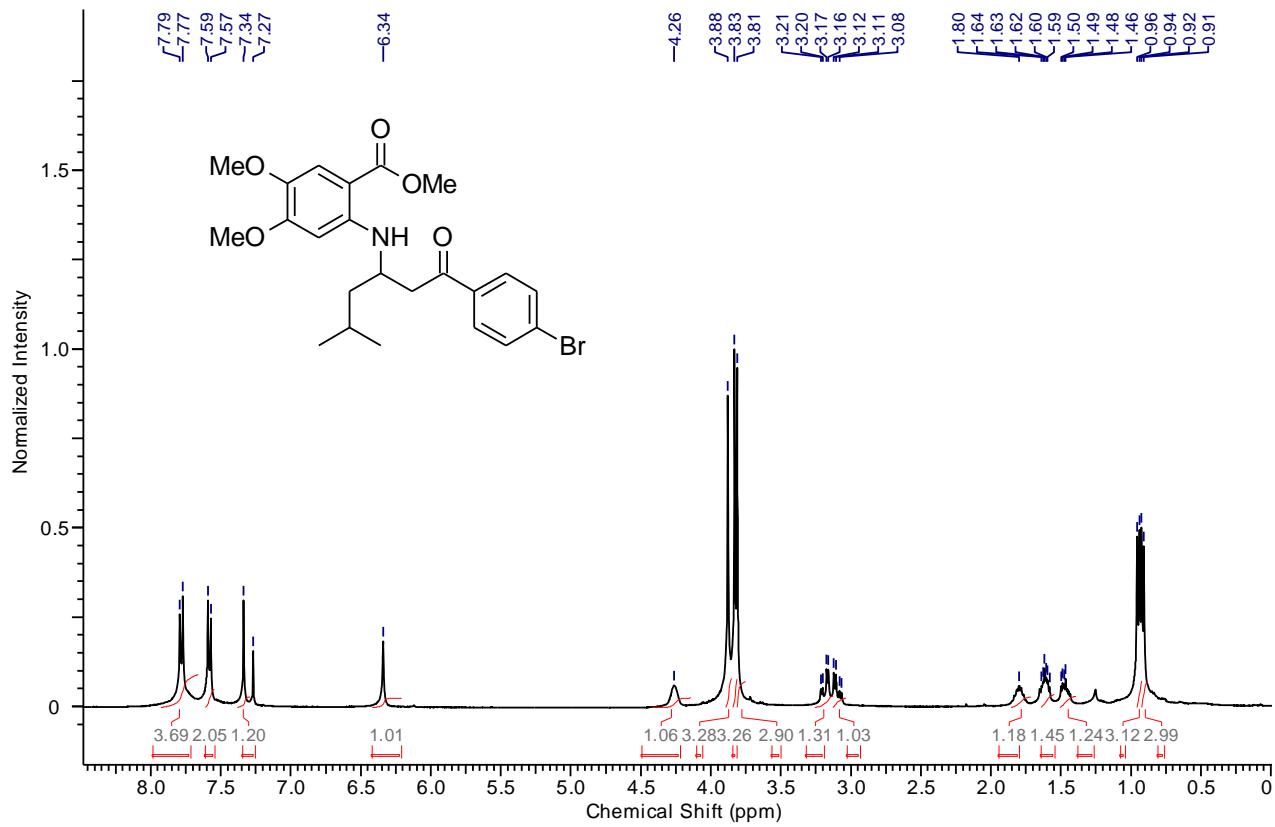


Figure S9. ¹H NMR spectrum of the compound 3e

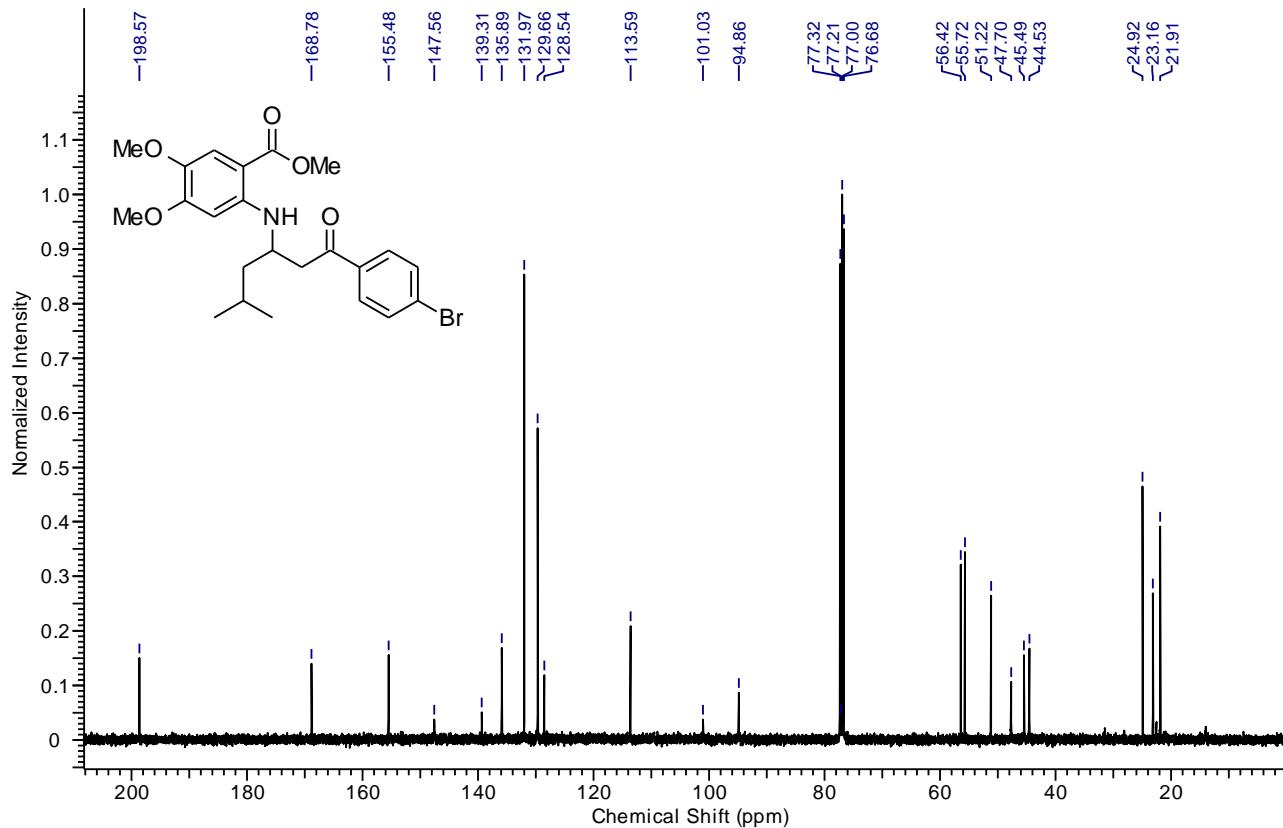


Figure S10. ¹³C NMR spectrum of the compound 3e

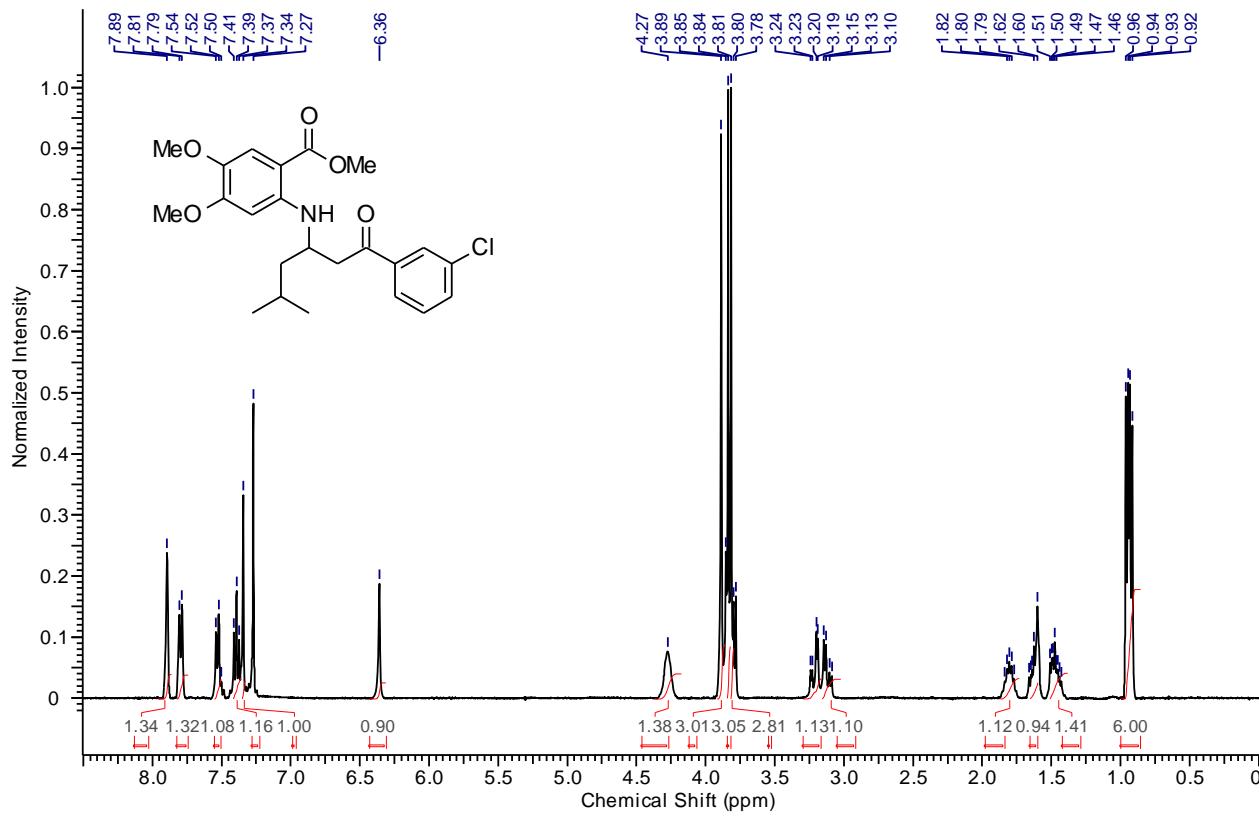


Figure S11. ¹H NMR spectrum of the compound 3f

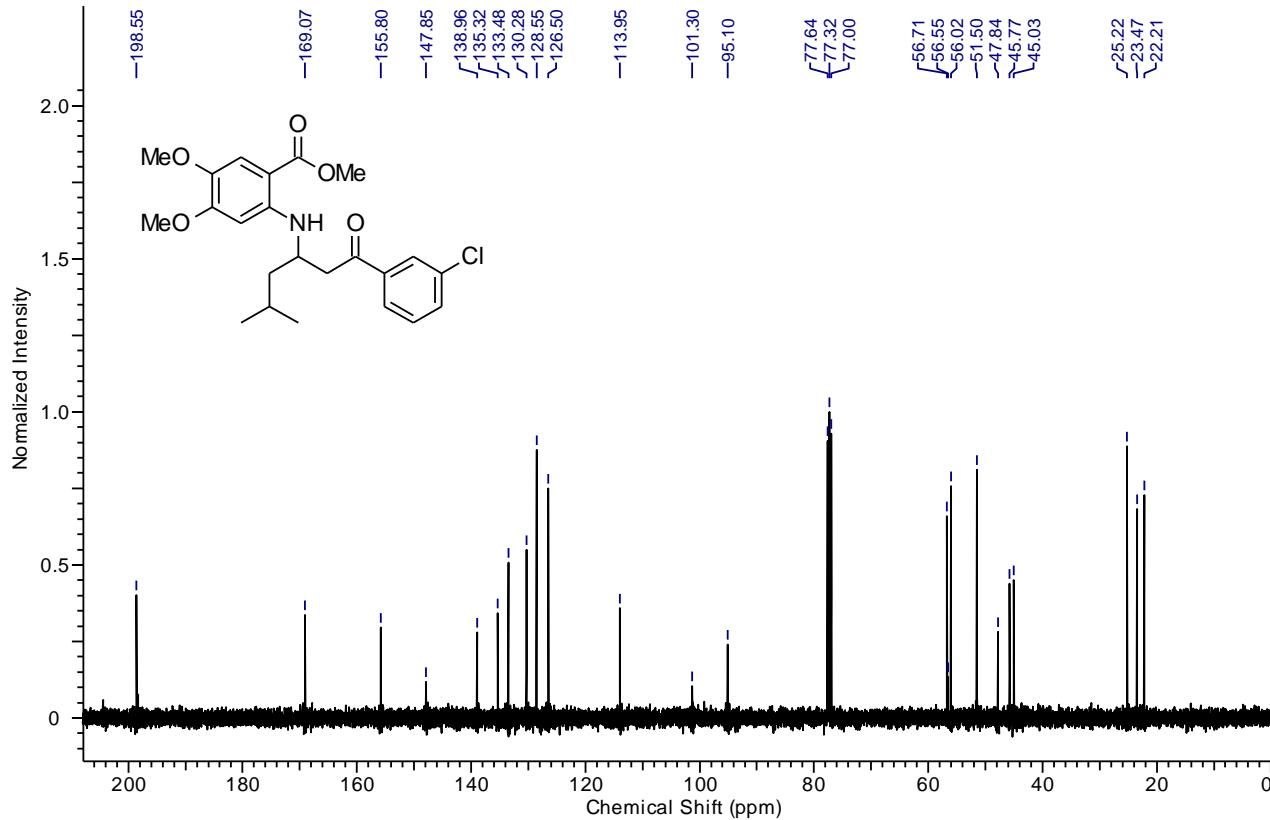


Figure S12. ¹³C NMR spectrum of the compound 3f

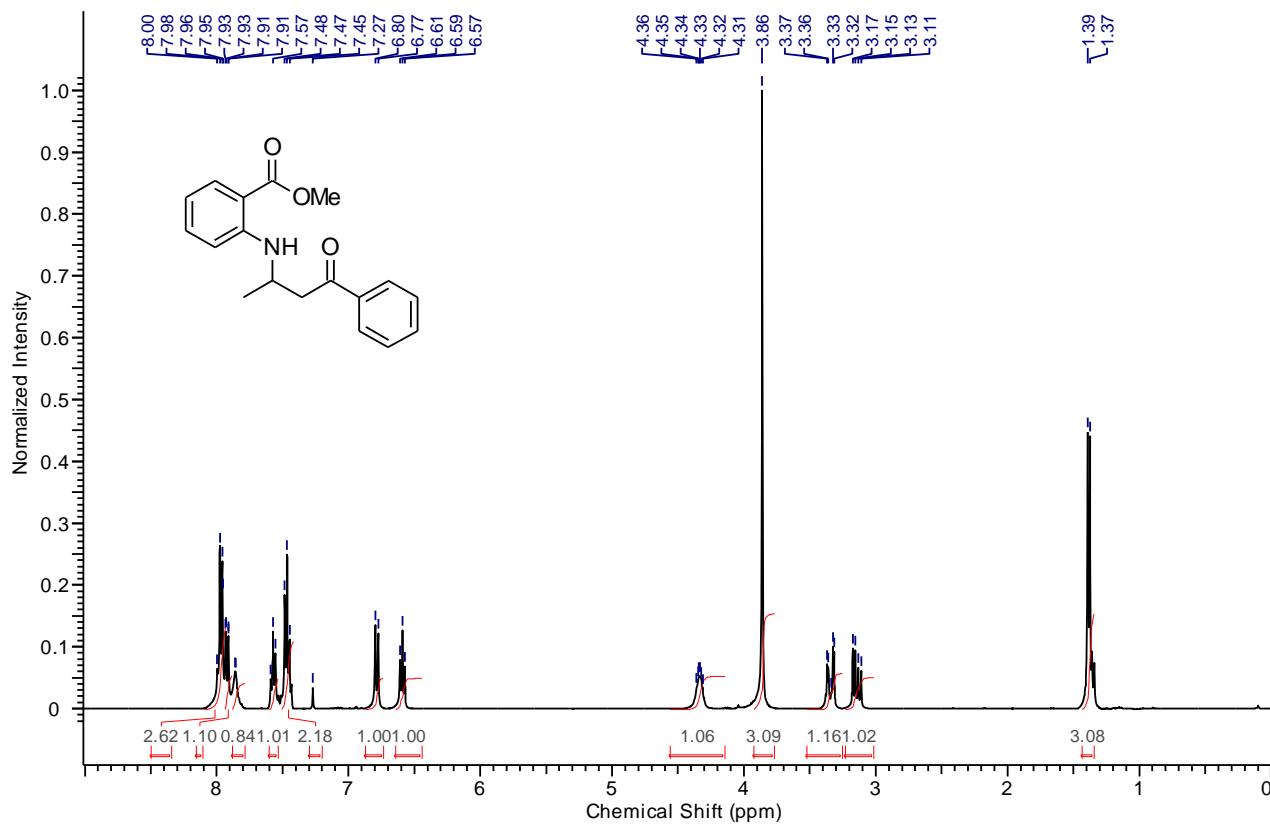


Figure S13. ¹H NMR spectrum of the compound 3g

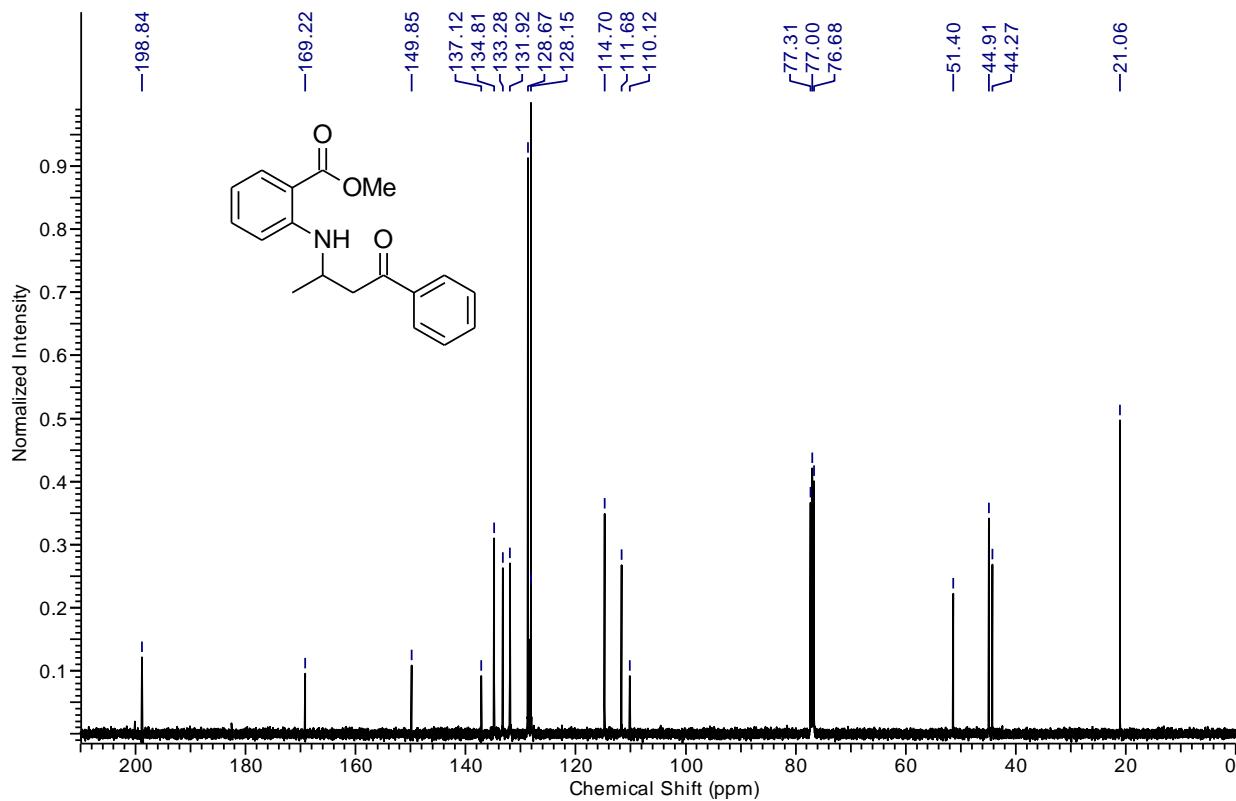


Figure S14. ¹³C NMR spectrum of the compound 3g

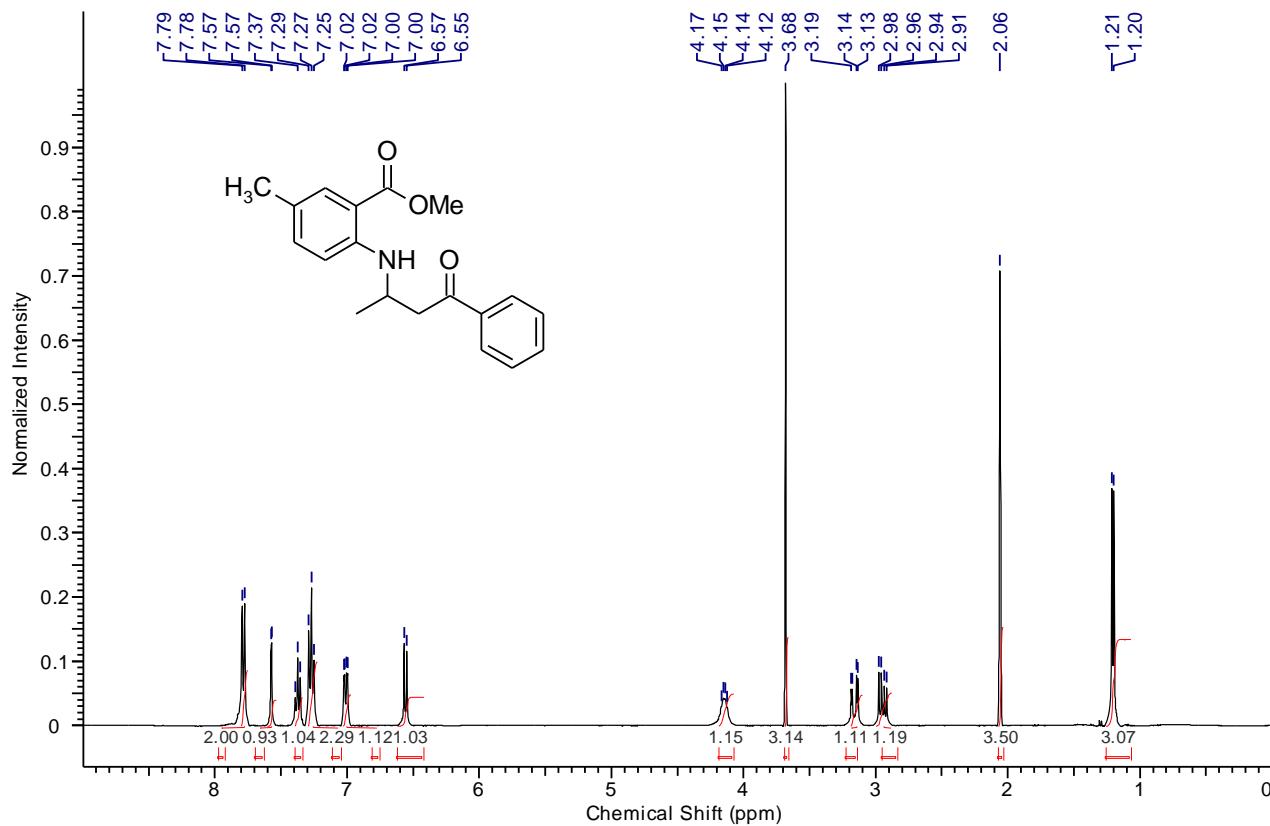


Figure S15. ^1H NMR spectrum of the compound **3h**

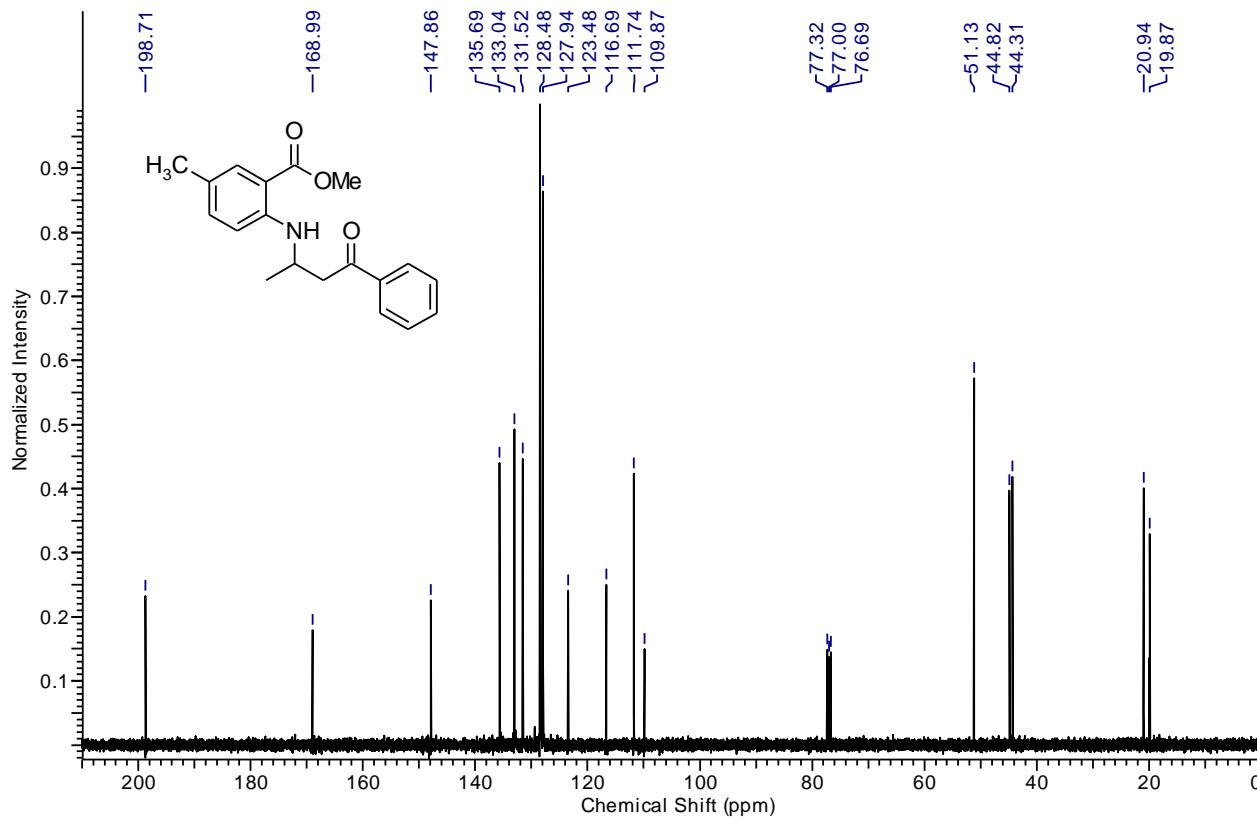


Figure S16. ^{13}C NMR spectrum of the compound **3h**

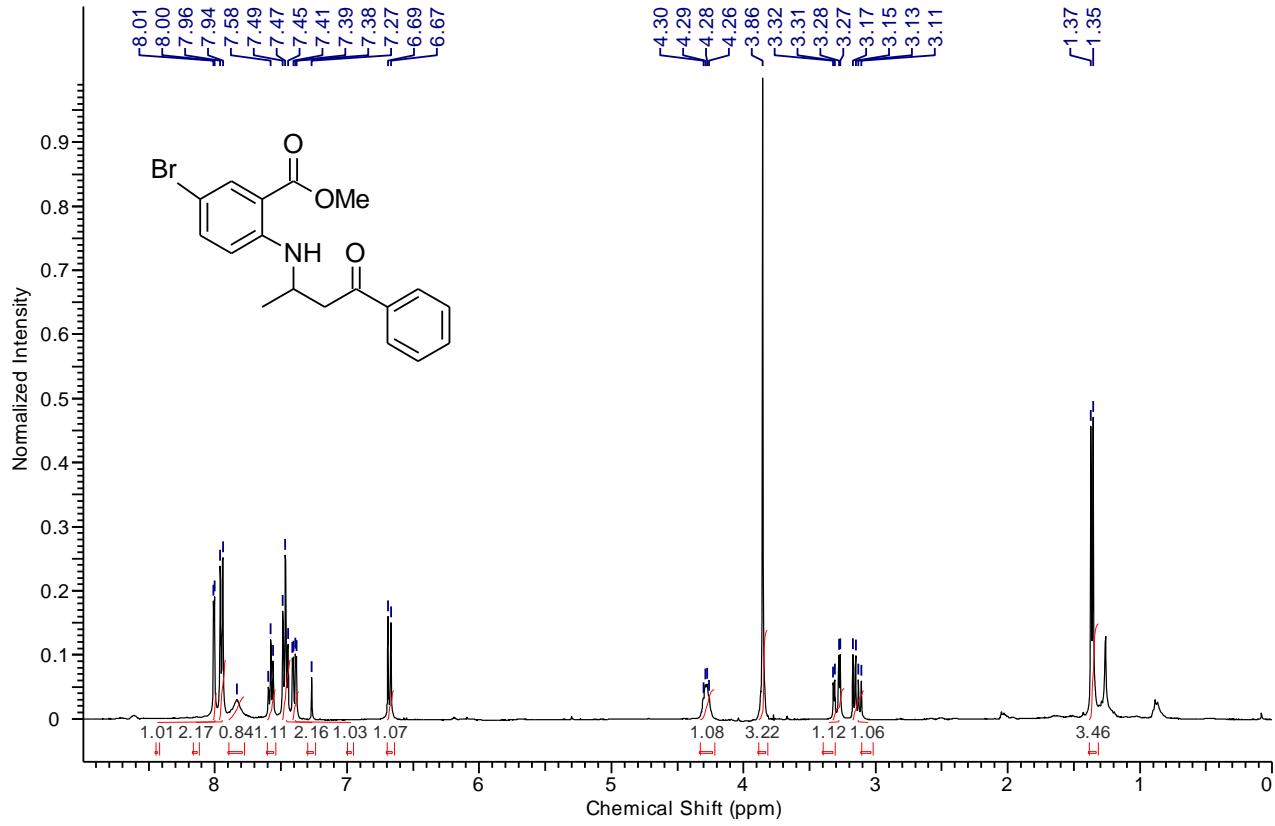


Figure S17. ^1H NMR spectrum of the compound **3i**

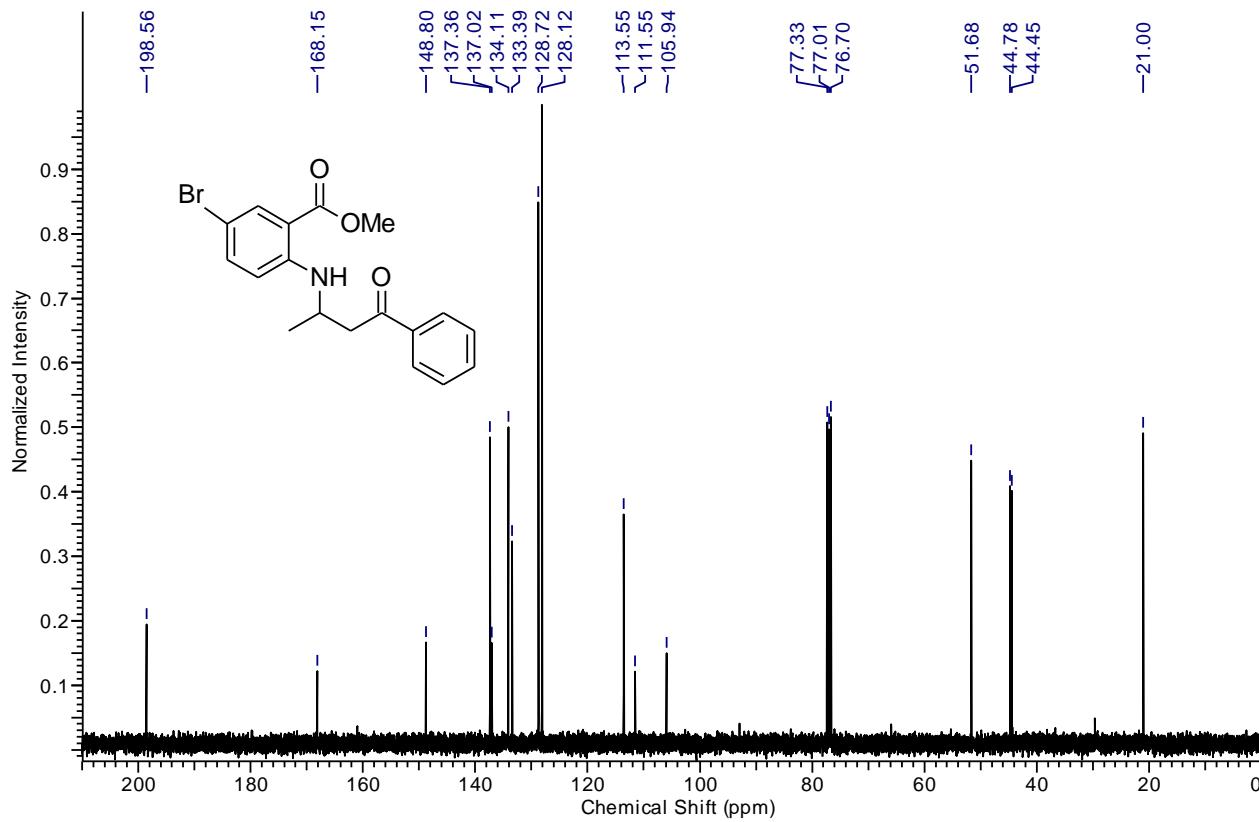


Figure S18. ^{13}C NMR spectrum of the compound **3i**

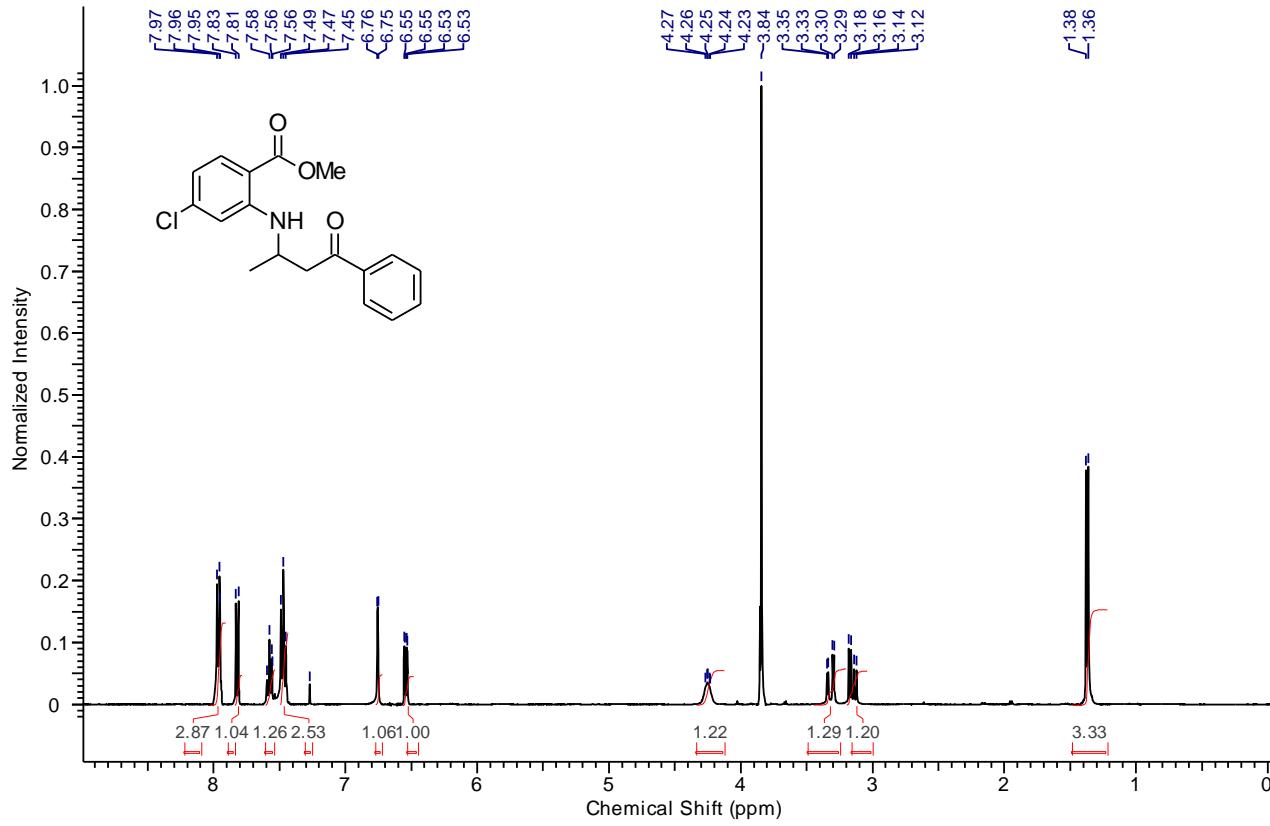


Figure S19. ^1H NMR spectrum of the compound **3j**

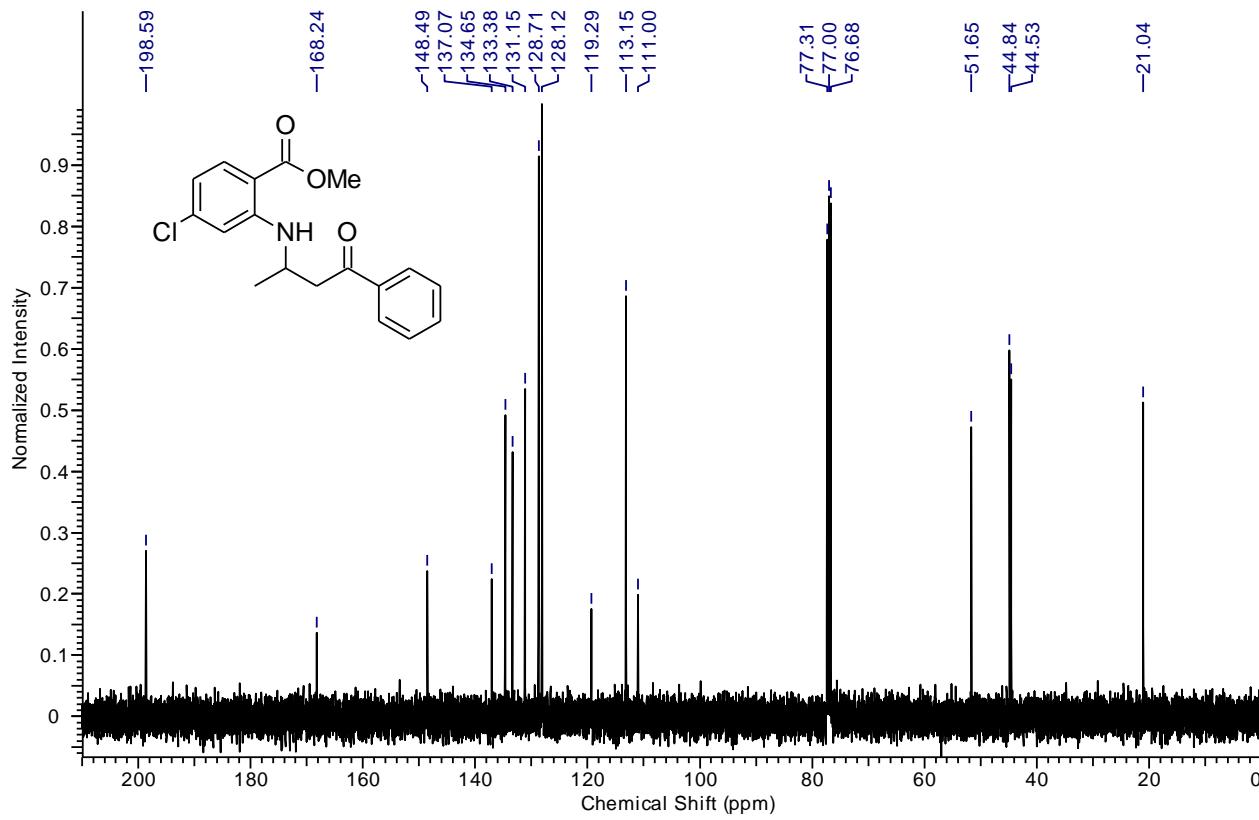


Figure S20. ^{13}C NMR spectrum of the compound **3j**

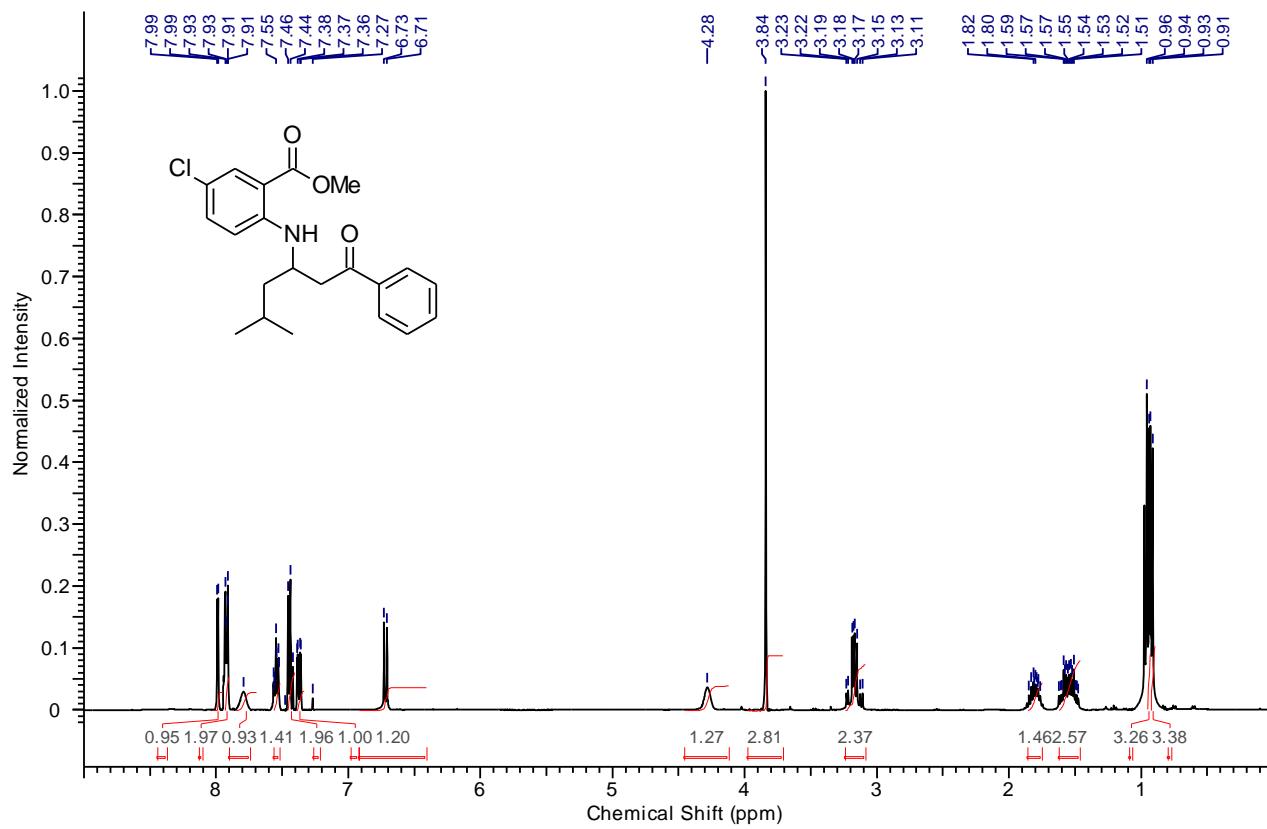


Figure S21. ^1H NMR spectrum of the compound **3k**

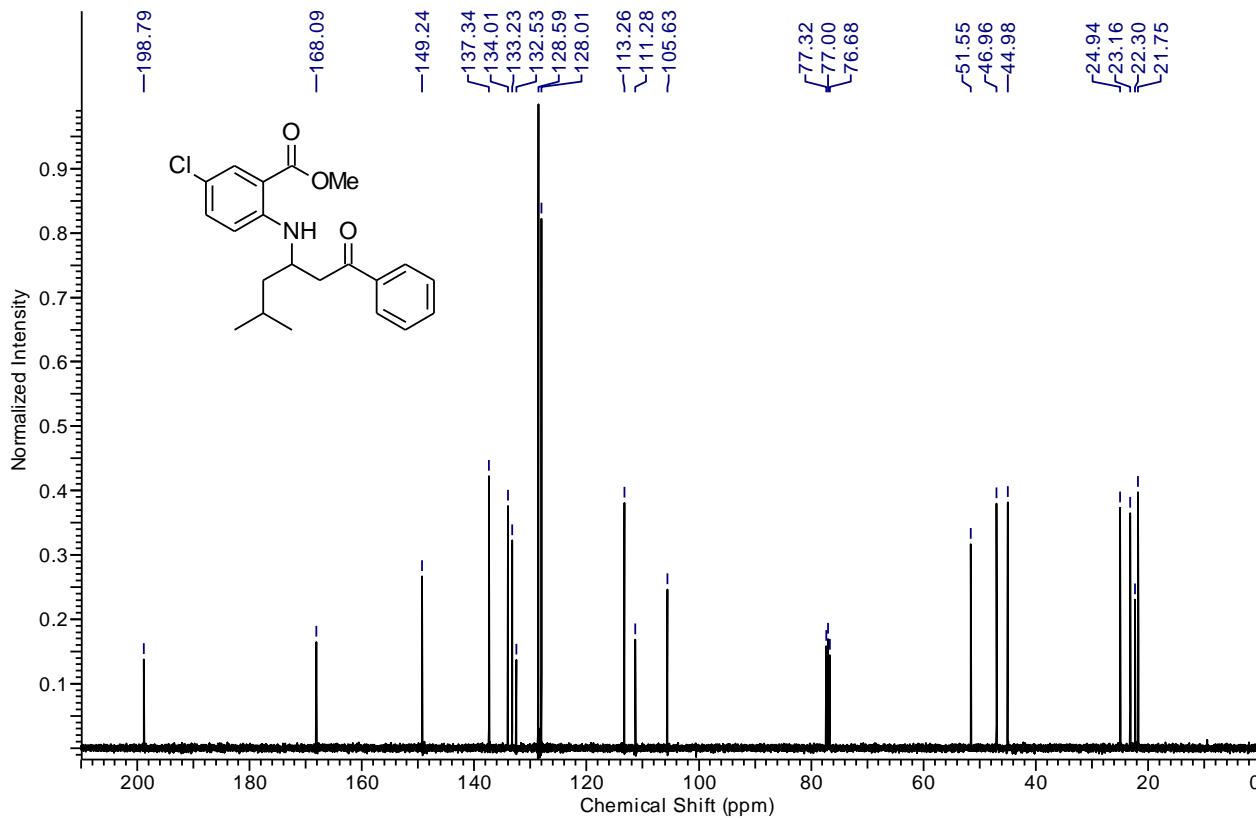


Figure S22. ^{13}C NMR spectrum of the compound **3k**

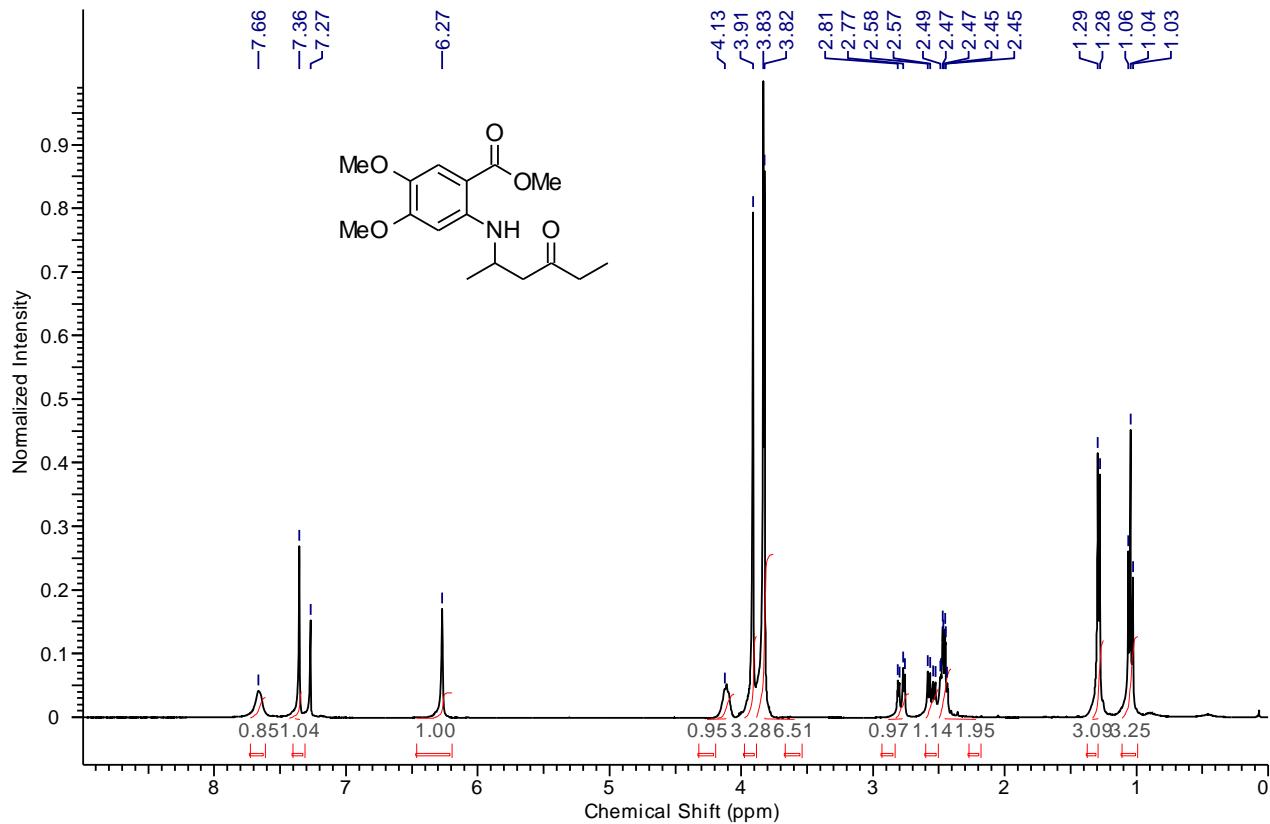


Figure S23. ¹H NMR spectrum of the compound 3l

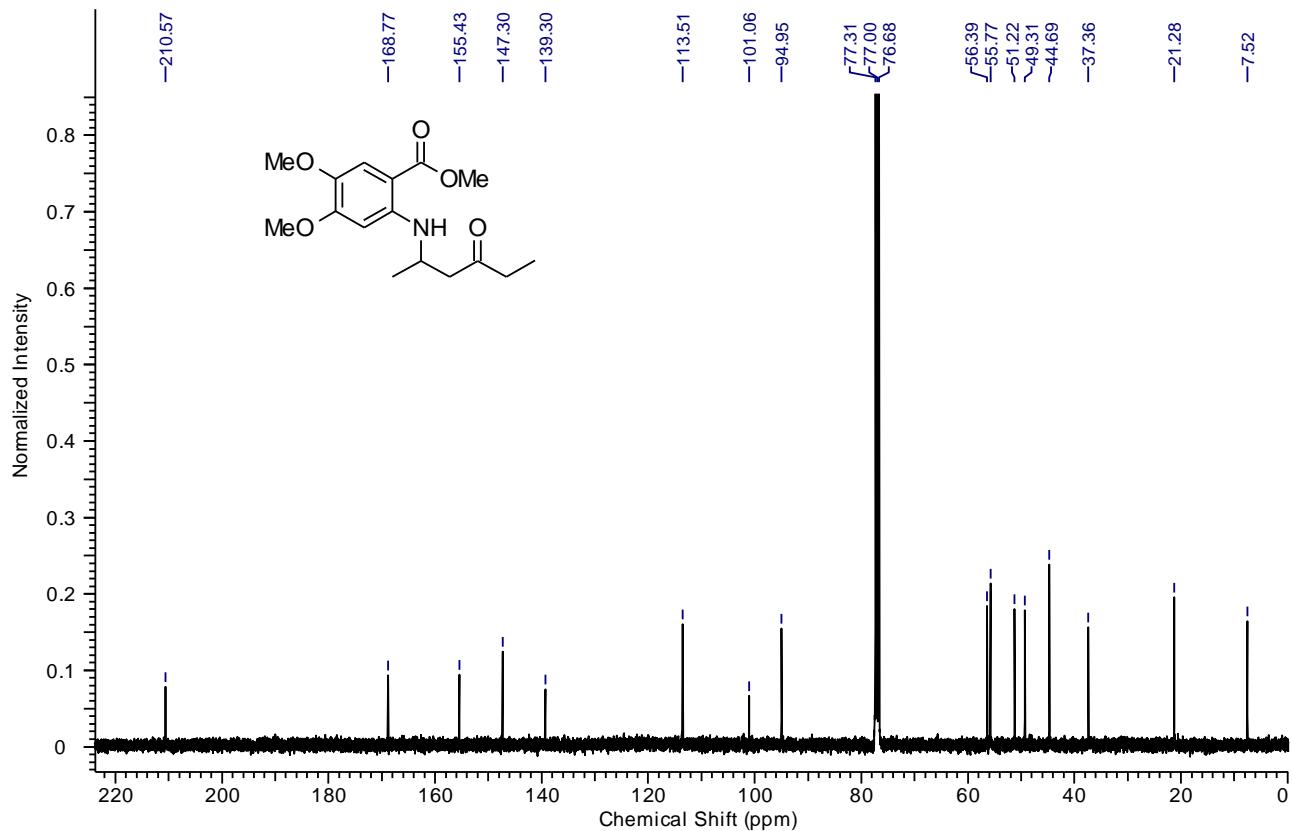


Figure S24. ¹³C NMR spectrum of the compound 3l

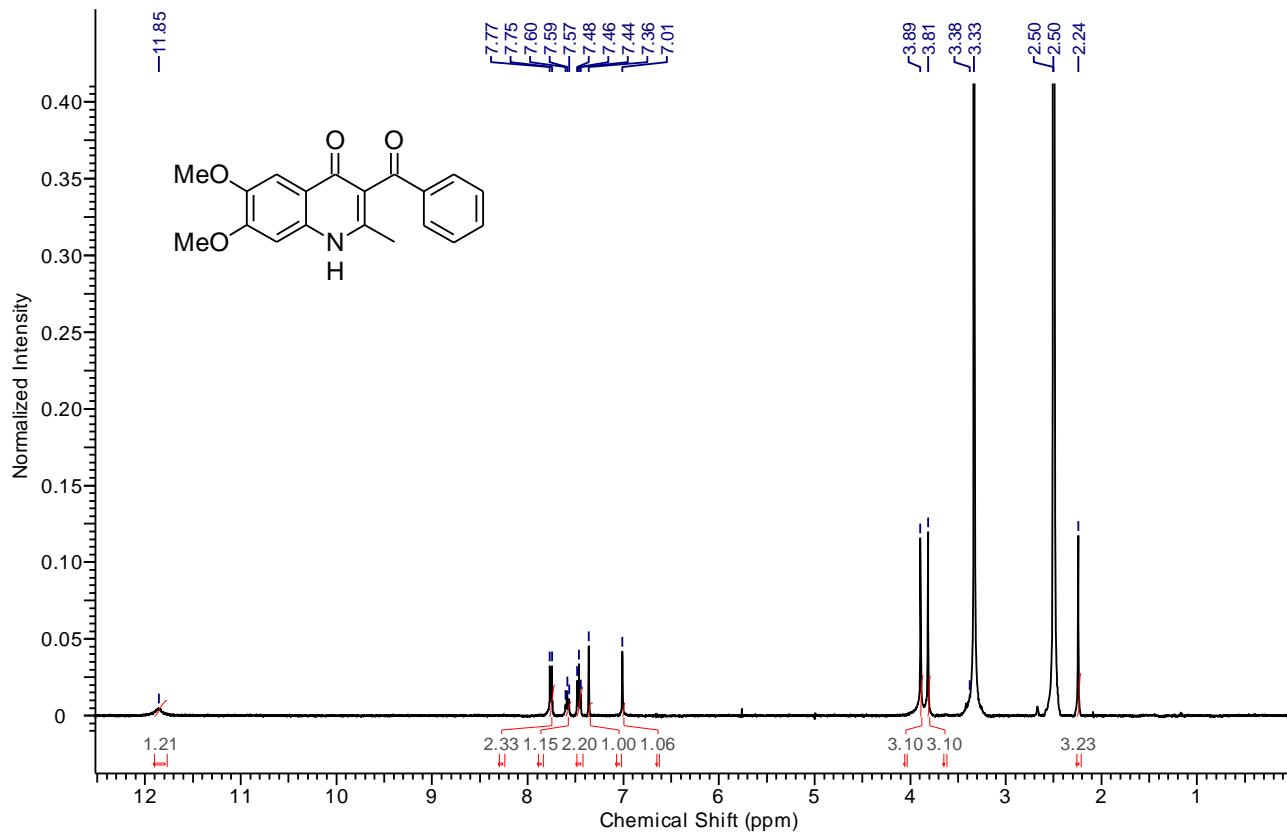


Figure S25. ¹H NMR spectrum of the compound 4a

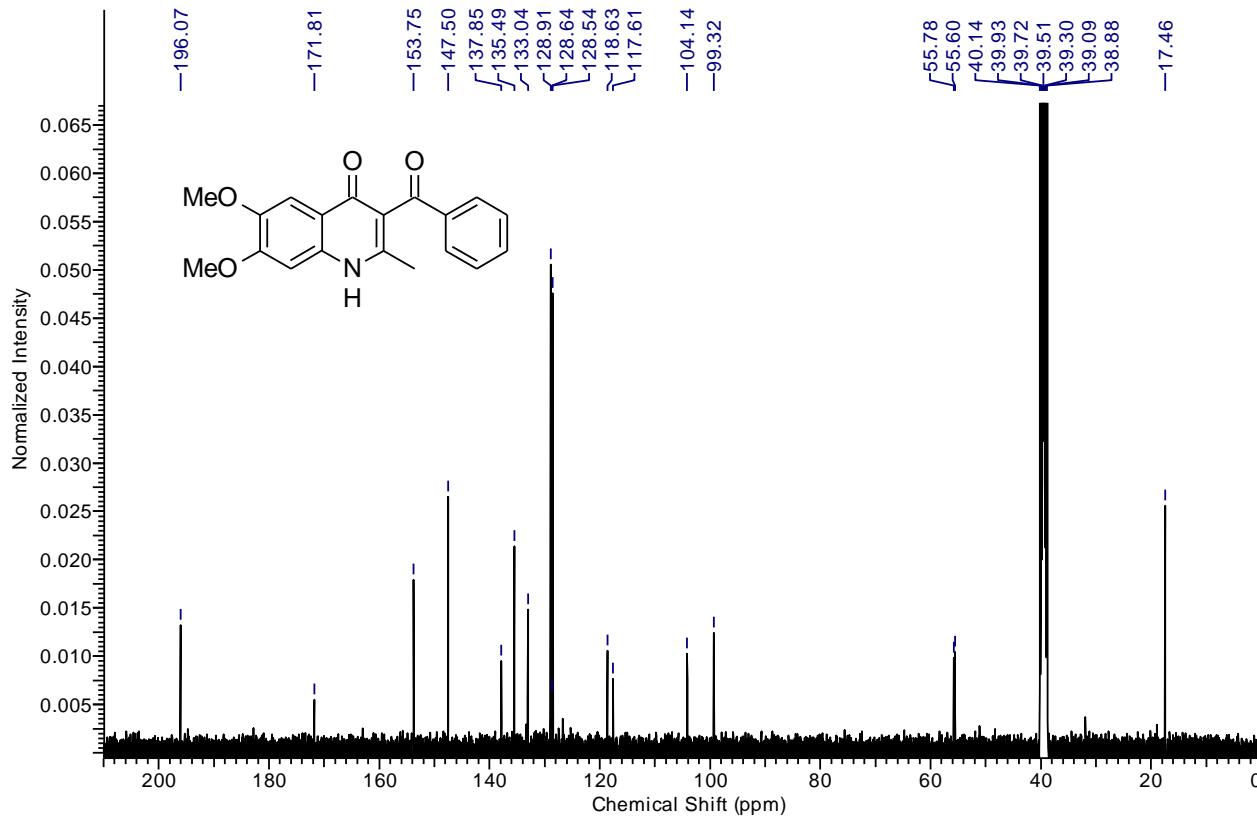


Figure S26. ¹³C NMR spectrum of the compound 4a

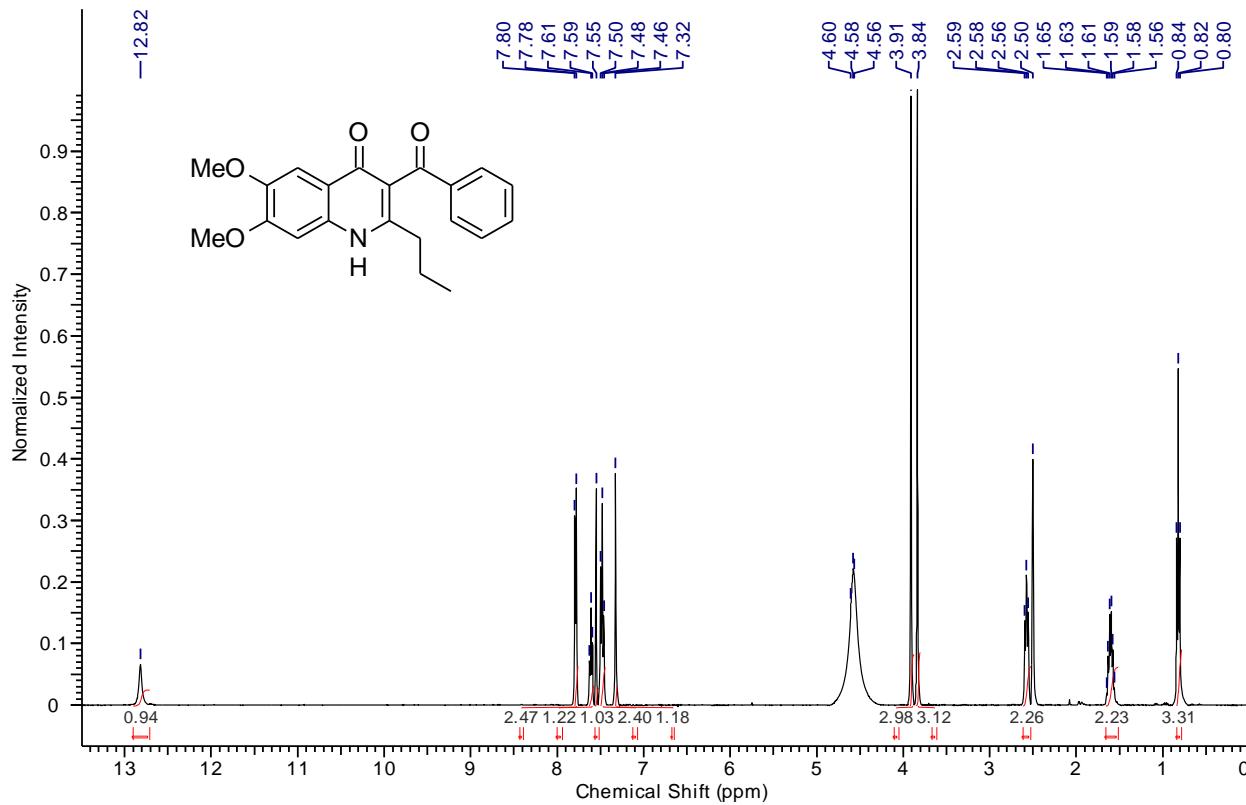


Figure S27. ¹H NMR spectrum of the compound 4b

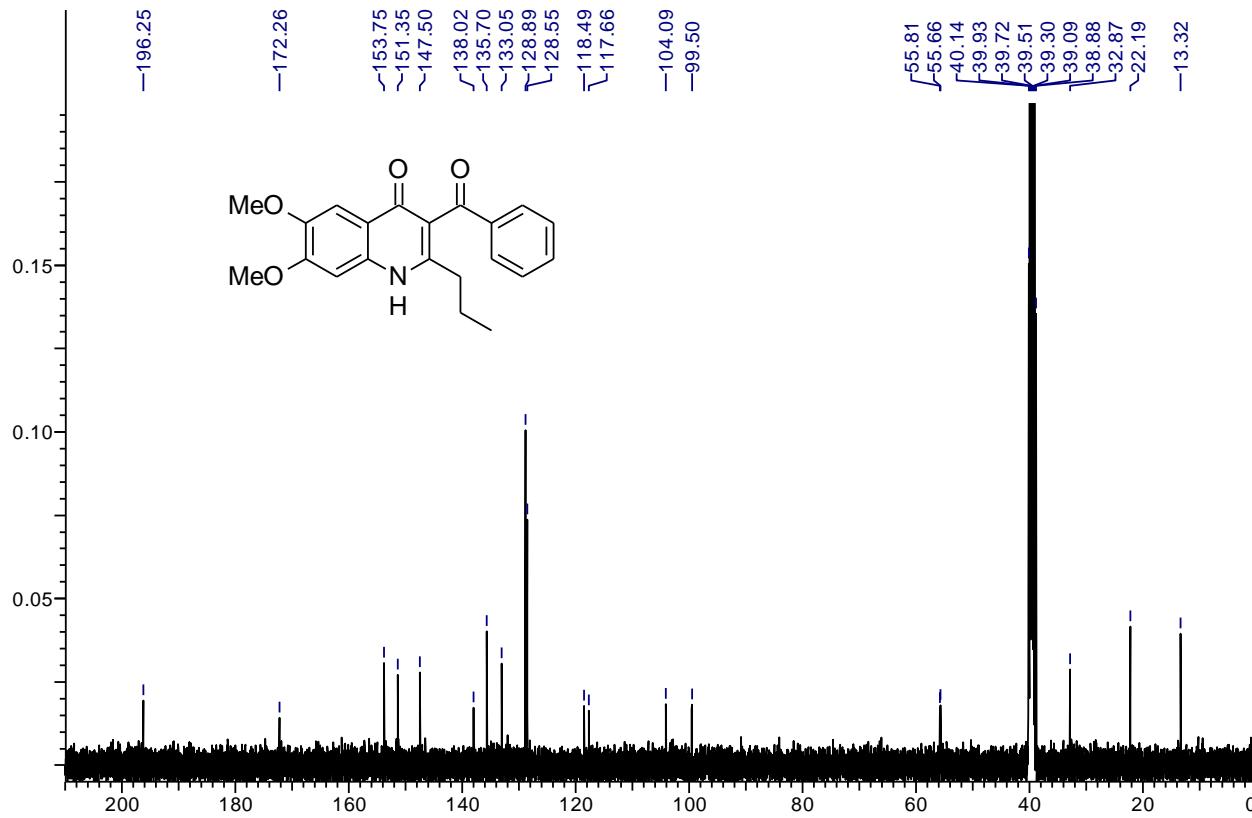


Figure S28. ¹³C NMR spectrum of the compound 4b

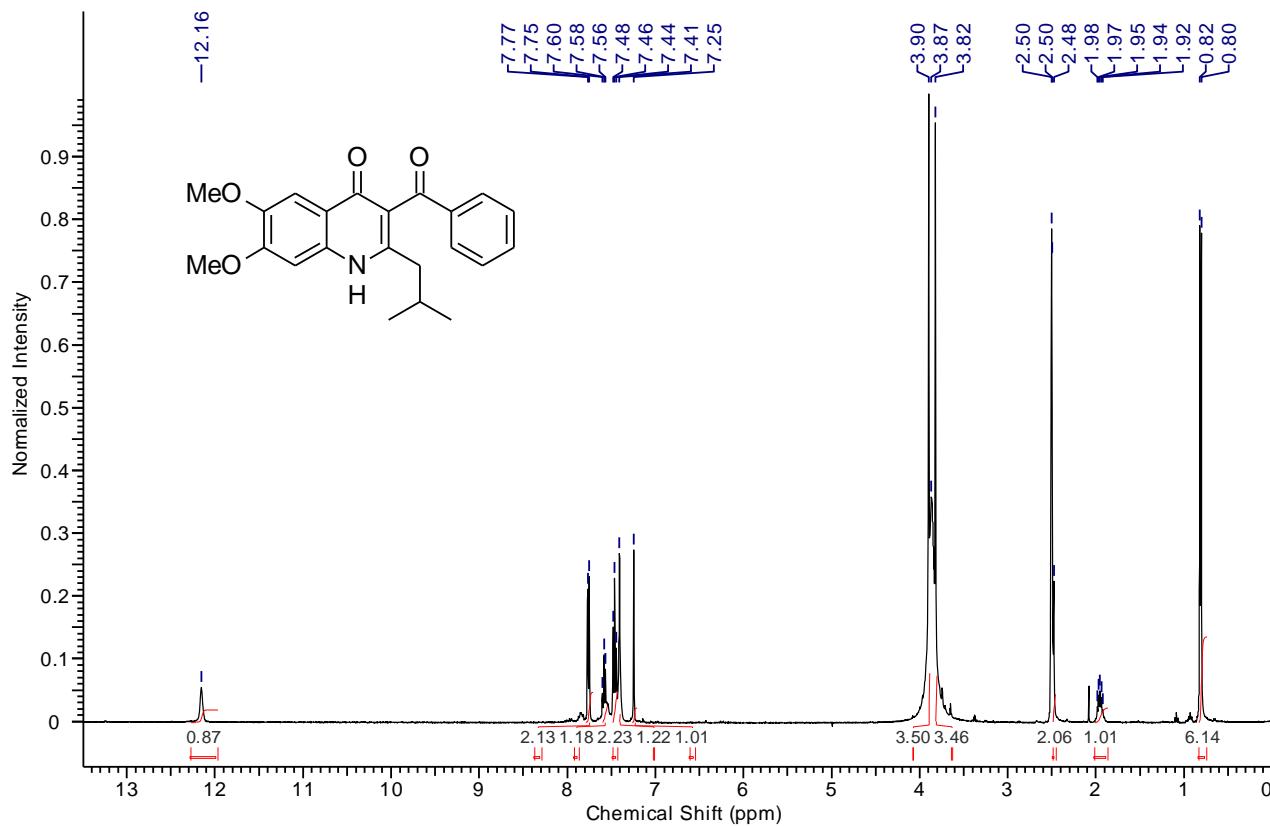


Figure S29. ¹H NMR spectrum of the compound 4c

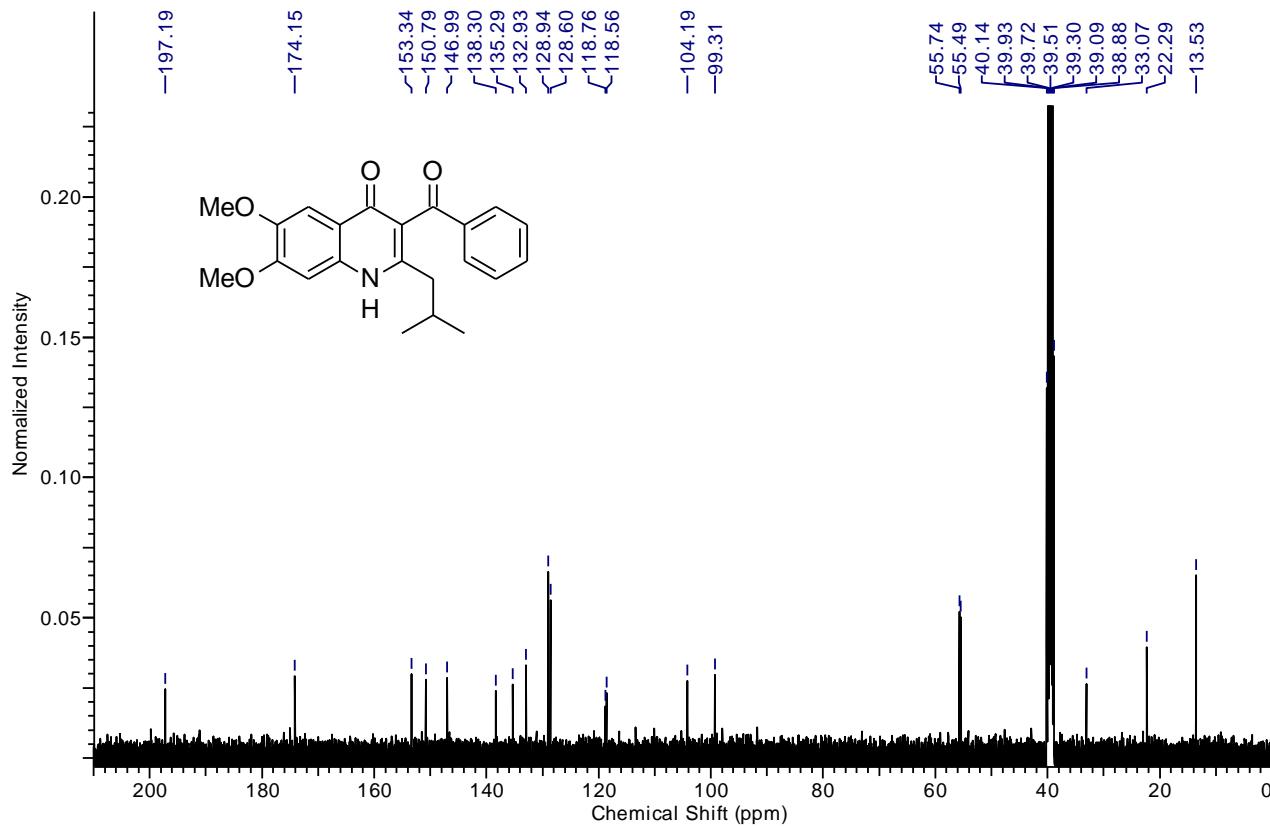


Figure S30. ¹³C NMR spectrum of the compound 4c

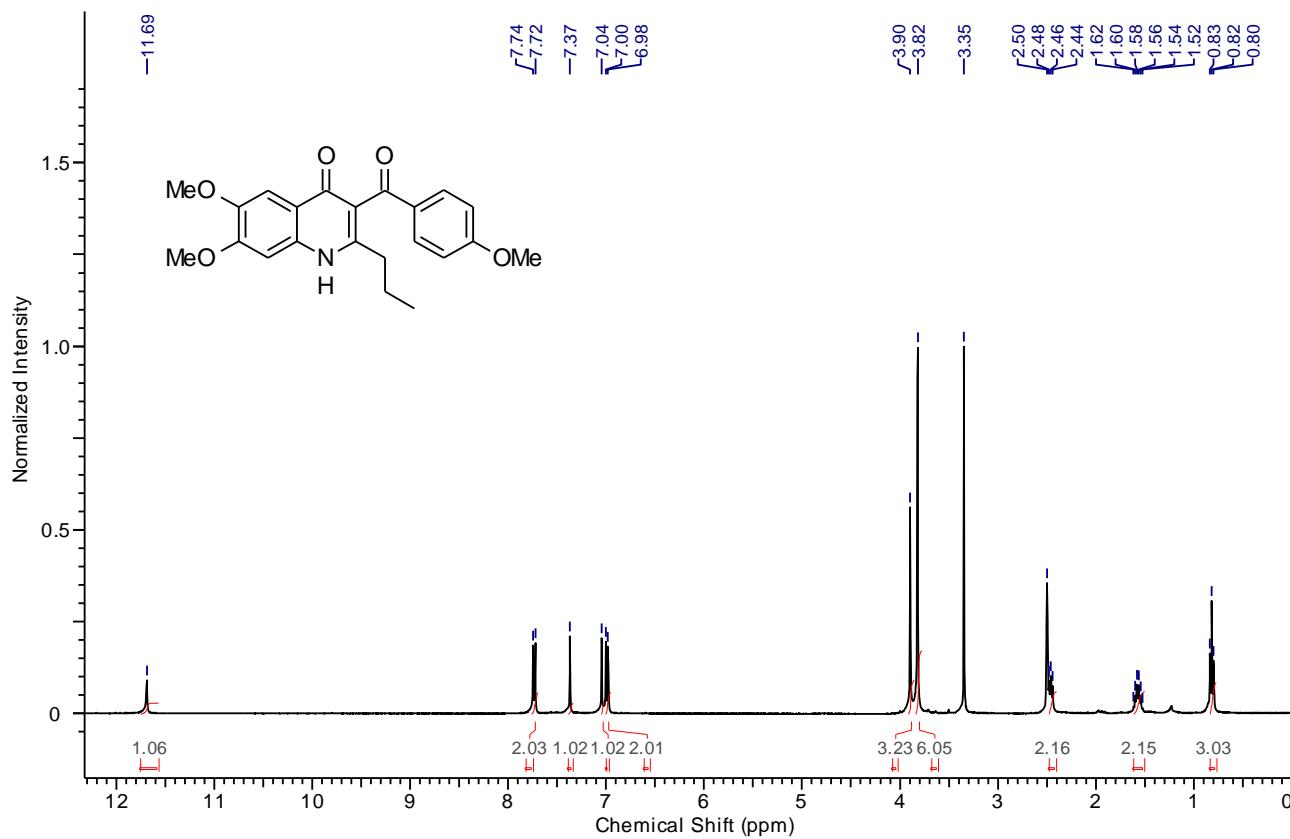


Figure S31. ¹H NMR spectrum of the compound 4d

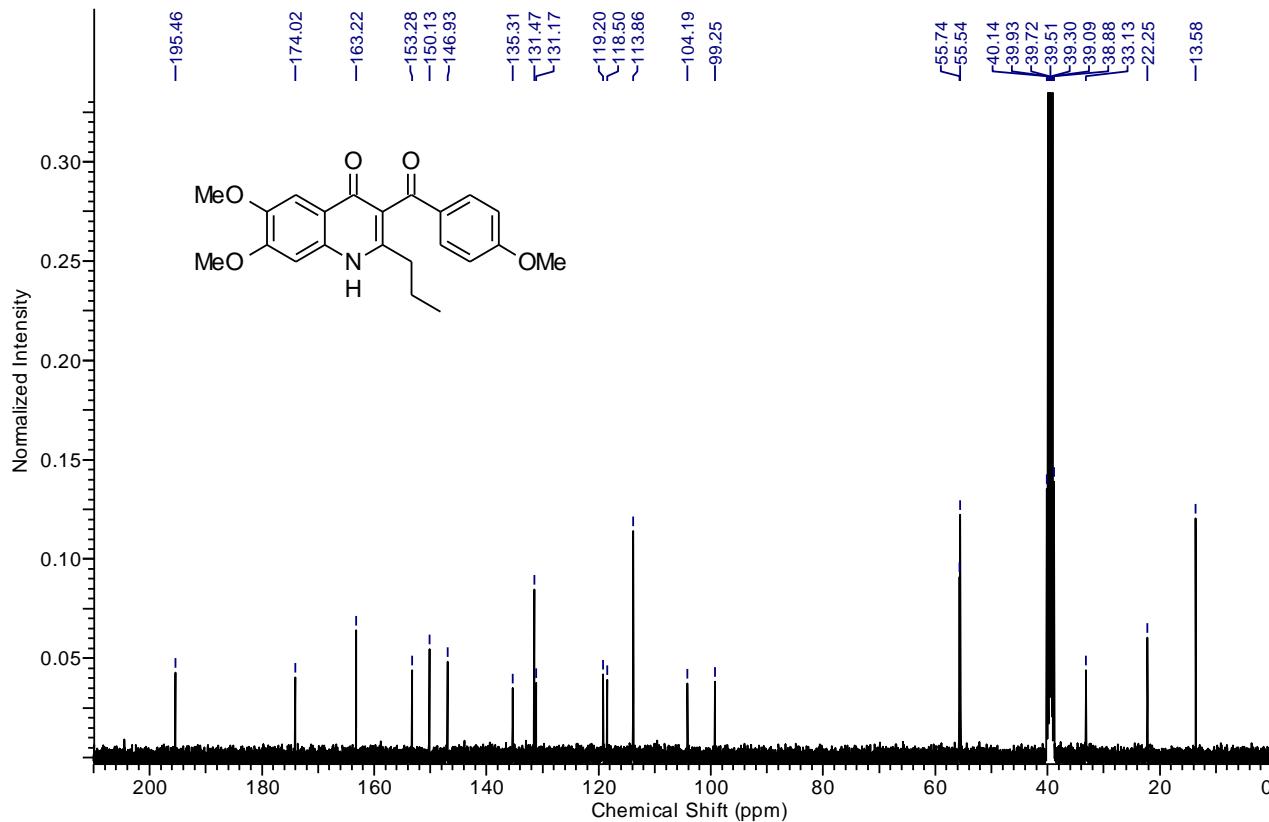


Figure S32. ¹³C NMR spectrum of the compound 4d

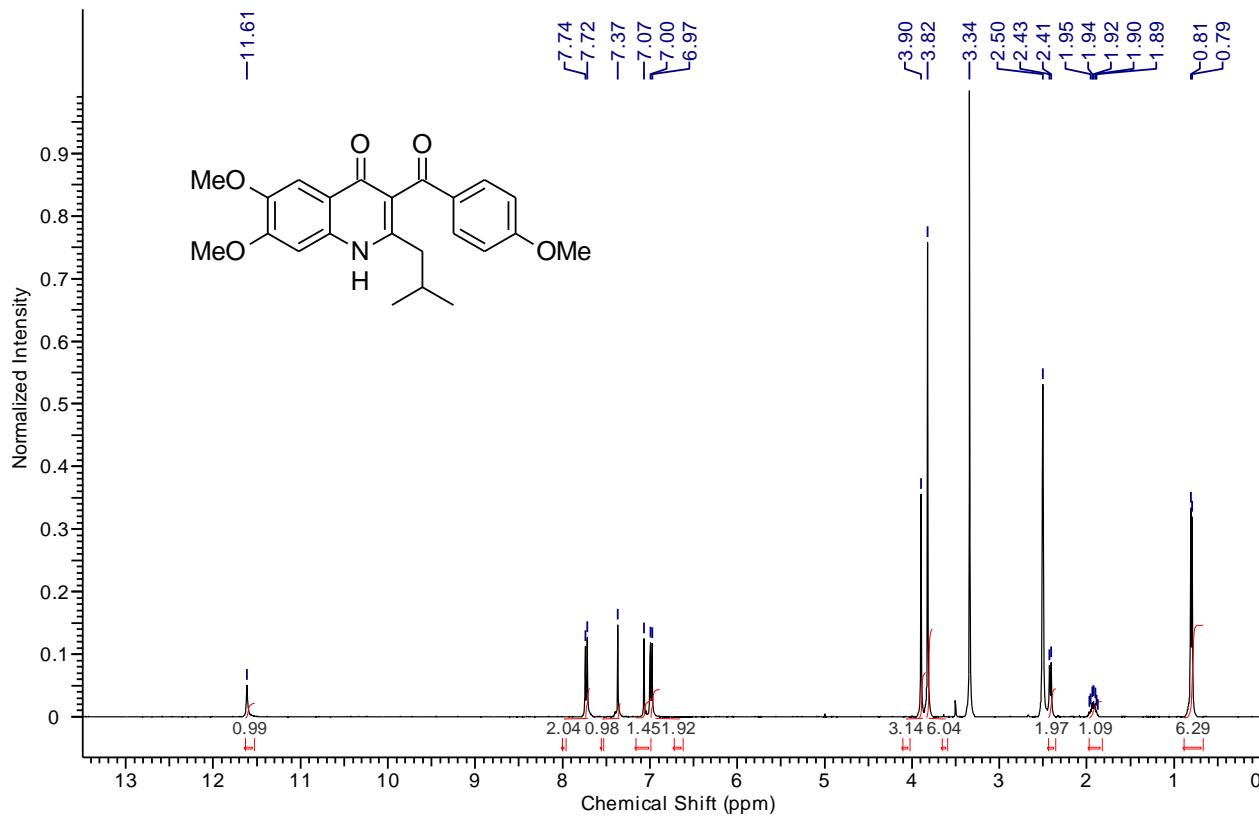


Figure S33. ¹H NMR spectrum of the compound 4e

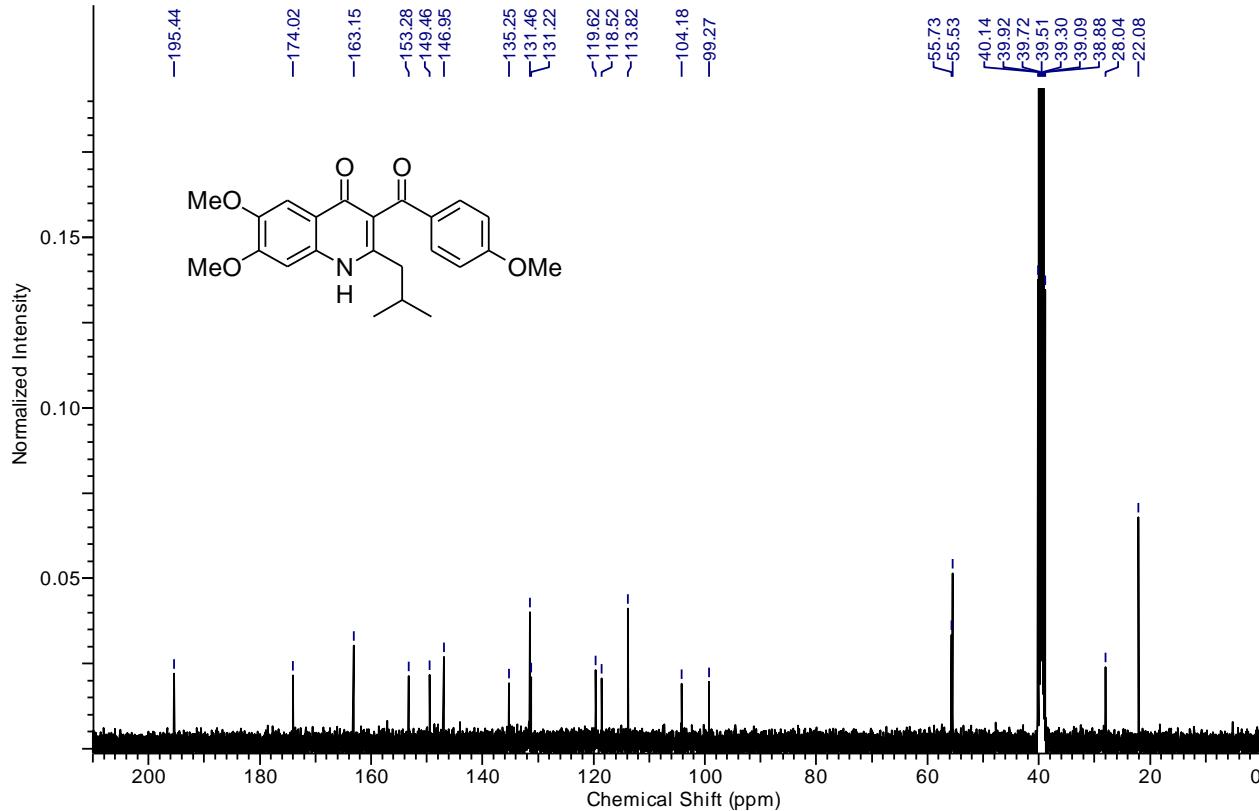


Figure S34. ¹³C NMR spectrum of the compound 4e

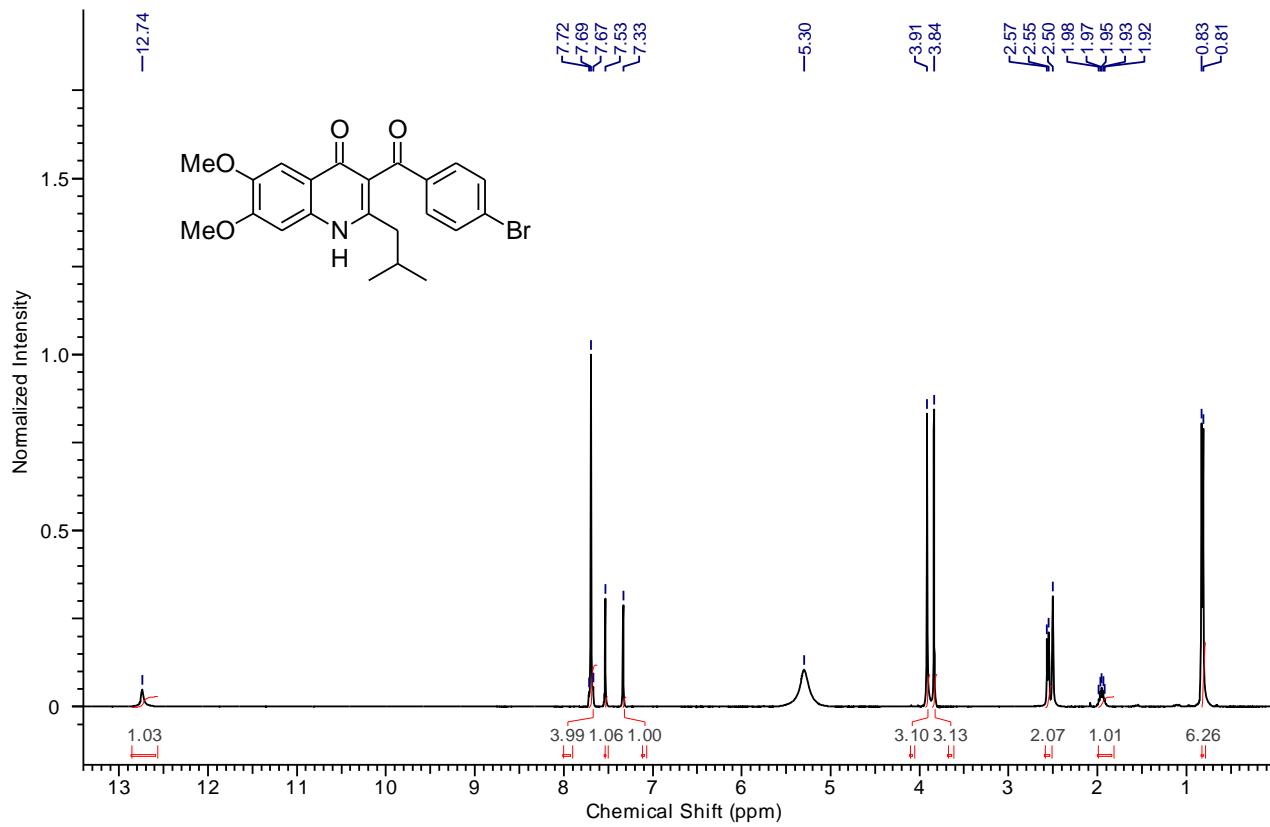


Figure S35. ^1H NMR spectrum of the compound **4f**

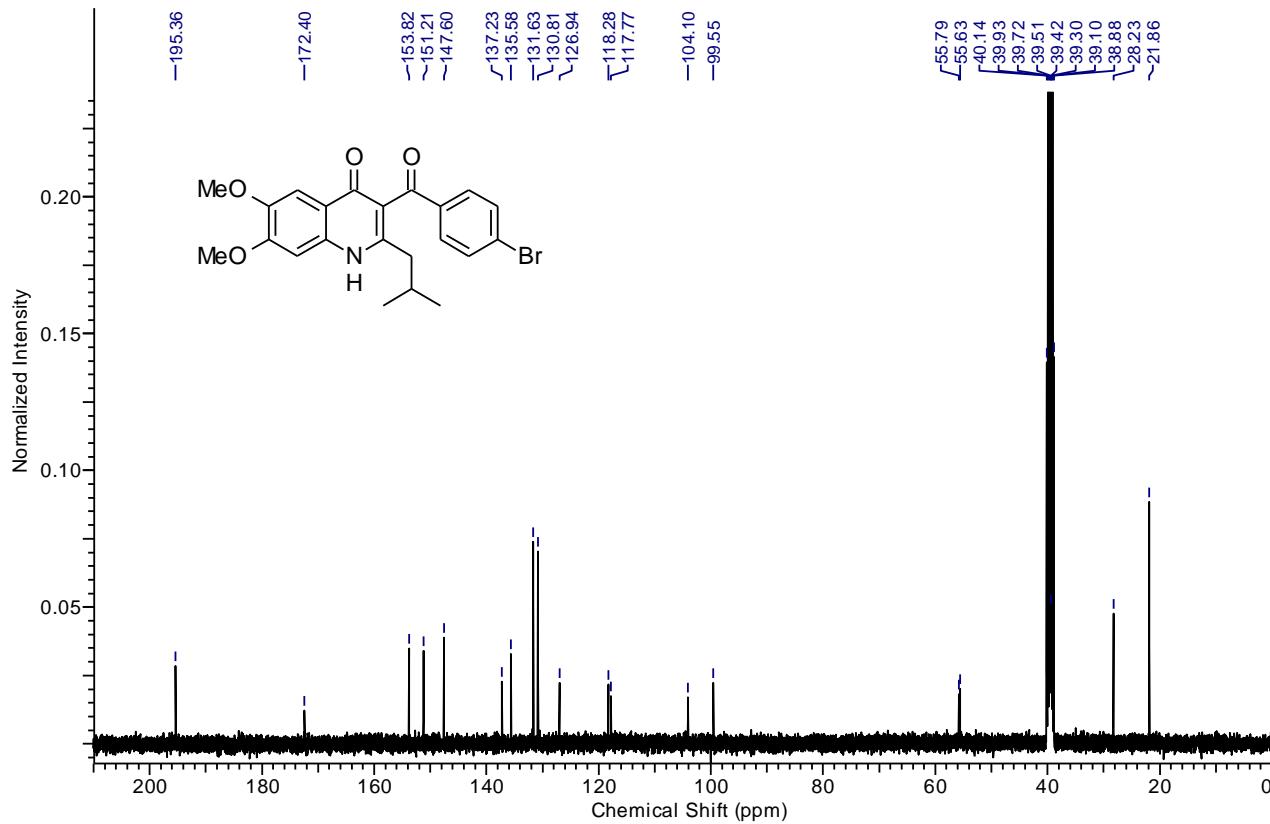


Figure S36. ^{13}C NMR spectrum of the compound **4f**

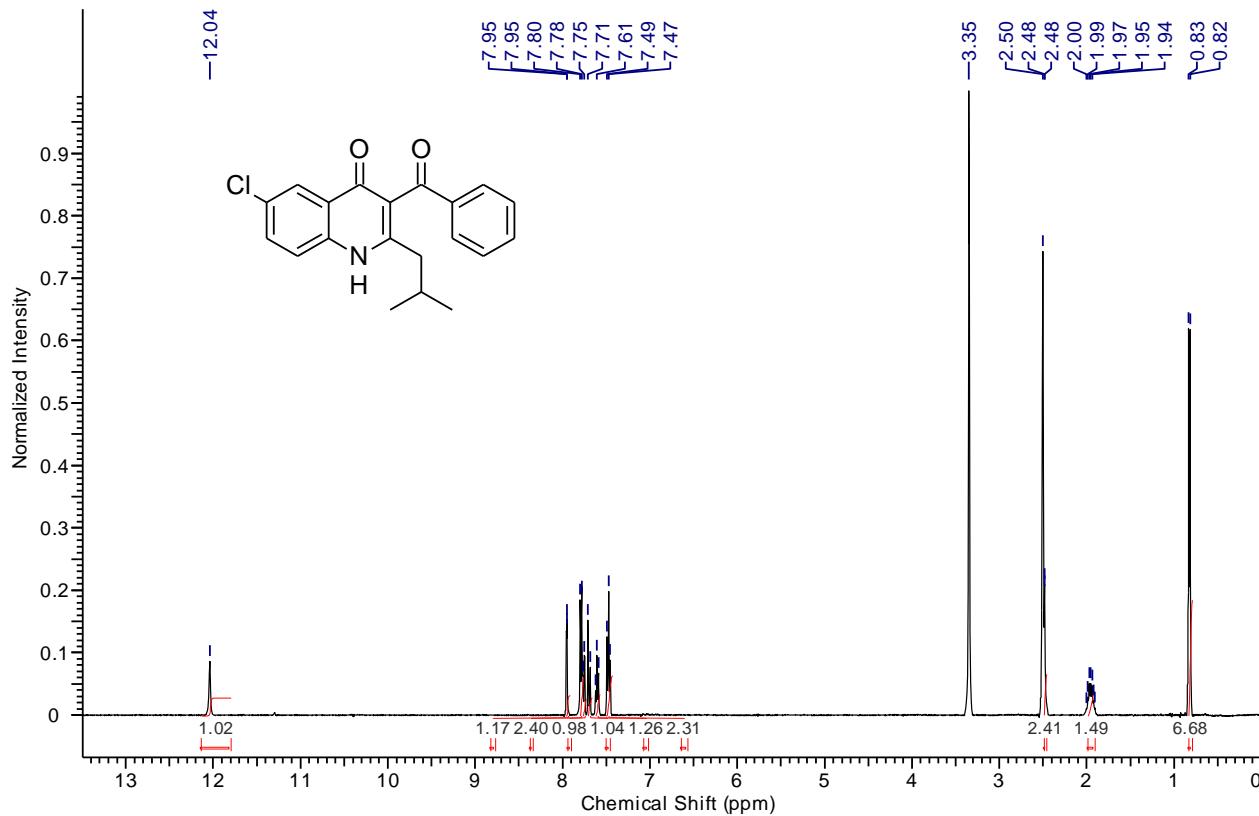


Figure S37. ¹H NMR spectrum of the compound 4g

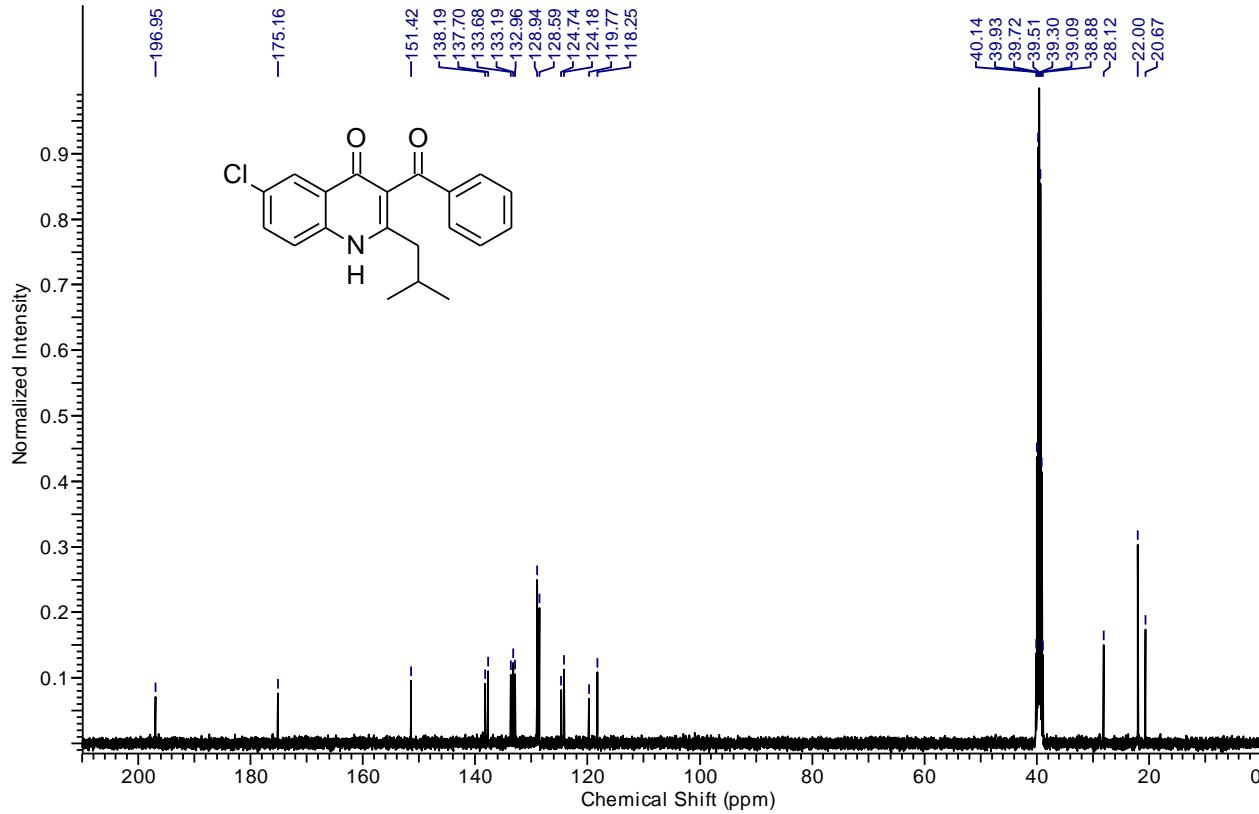


Figure 38. ¹³C NMR spectrum of the compound 4g

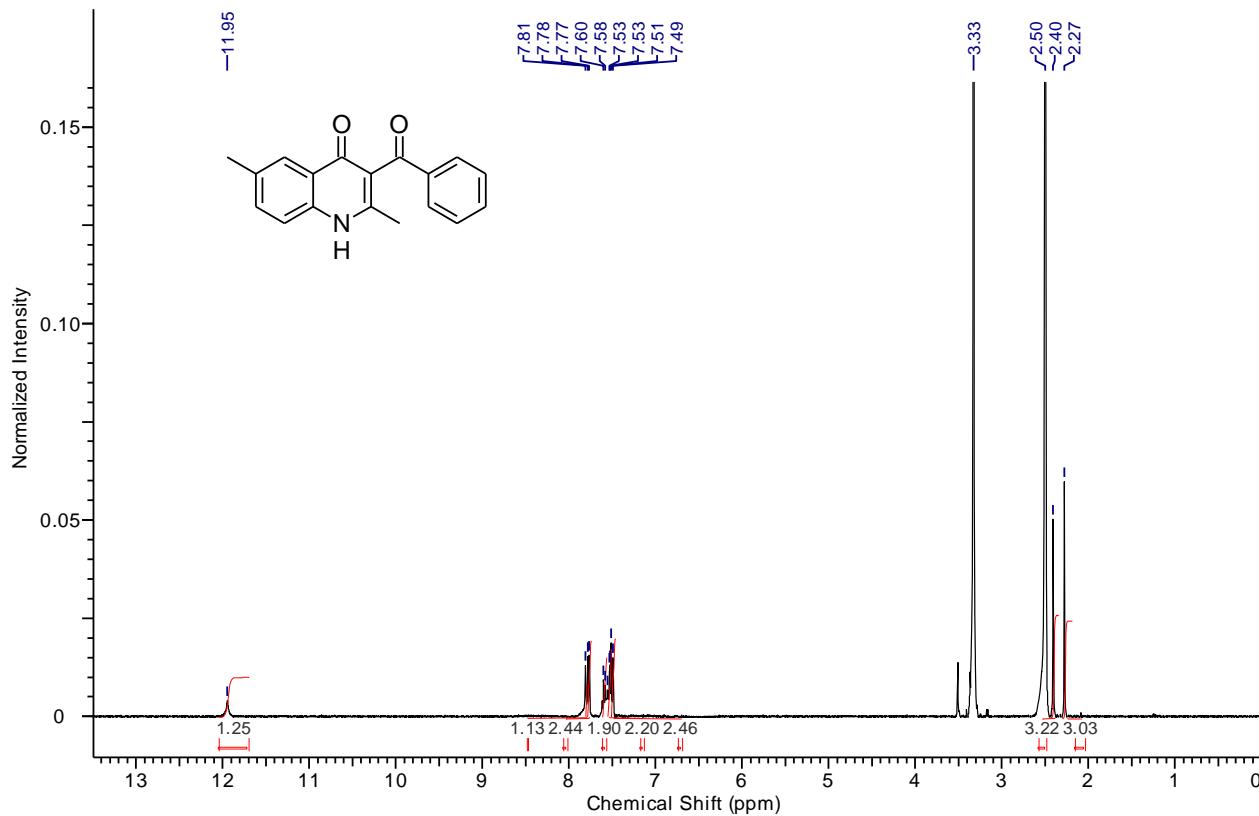


Figure S39. ^1H NMR spectrum of the compound **4h**

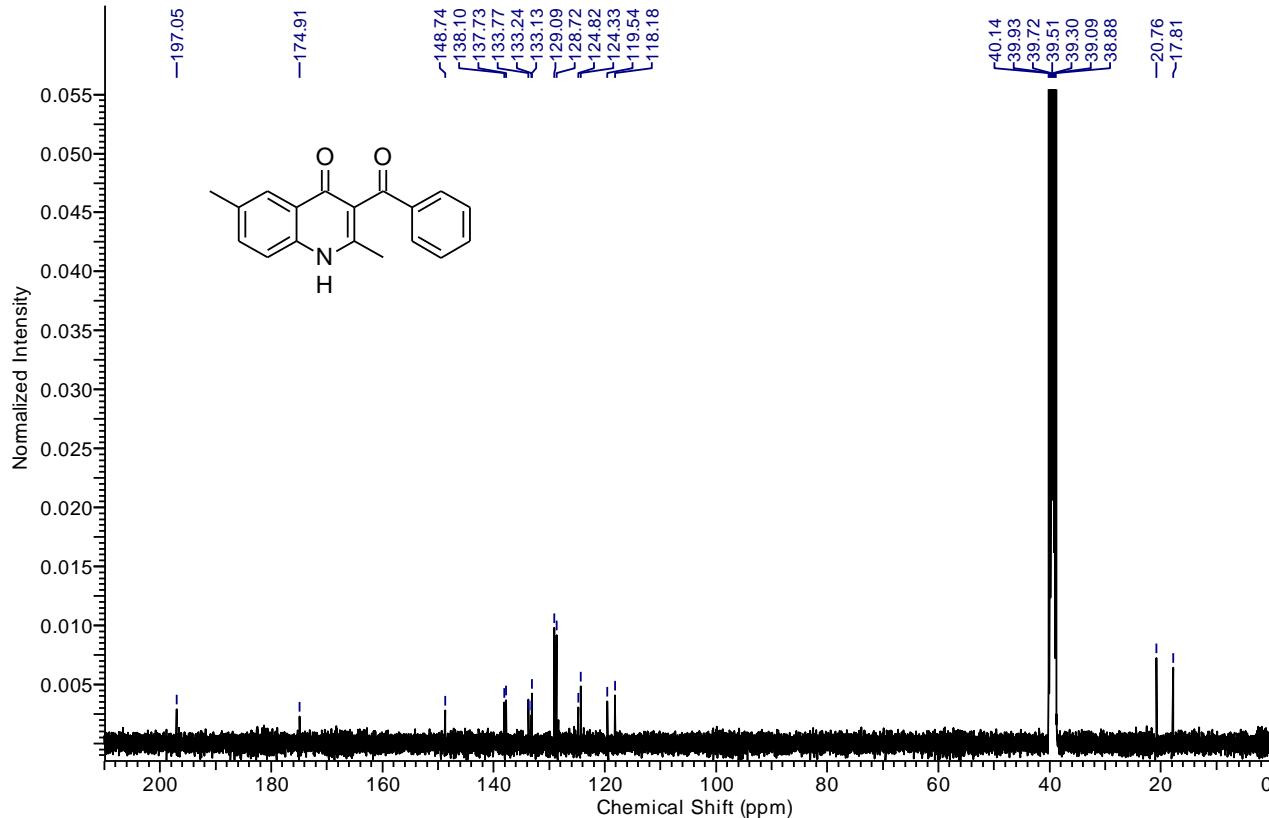


Figure S40. ^{13}C NMR spectrum of the compound **4h**

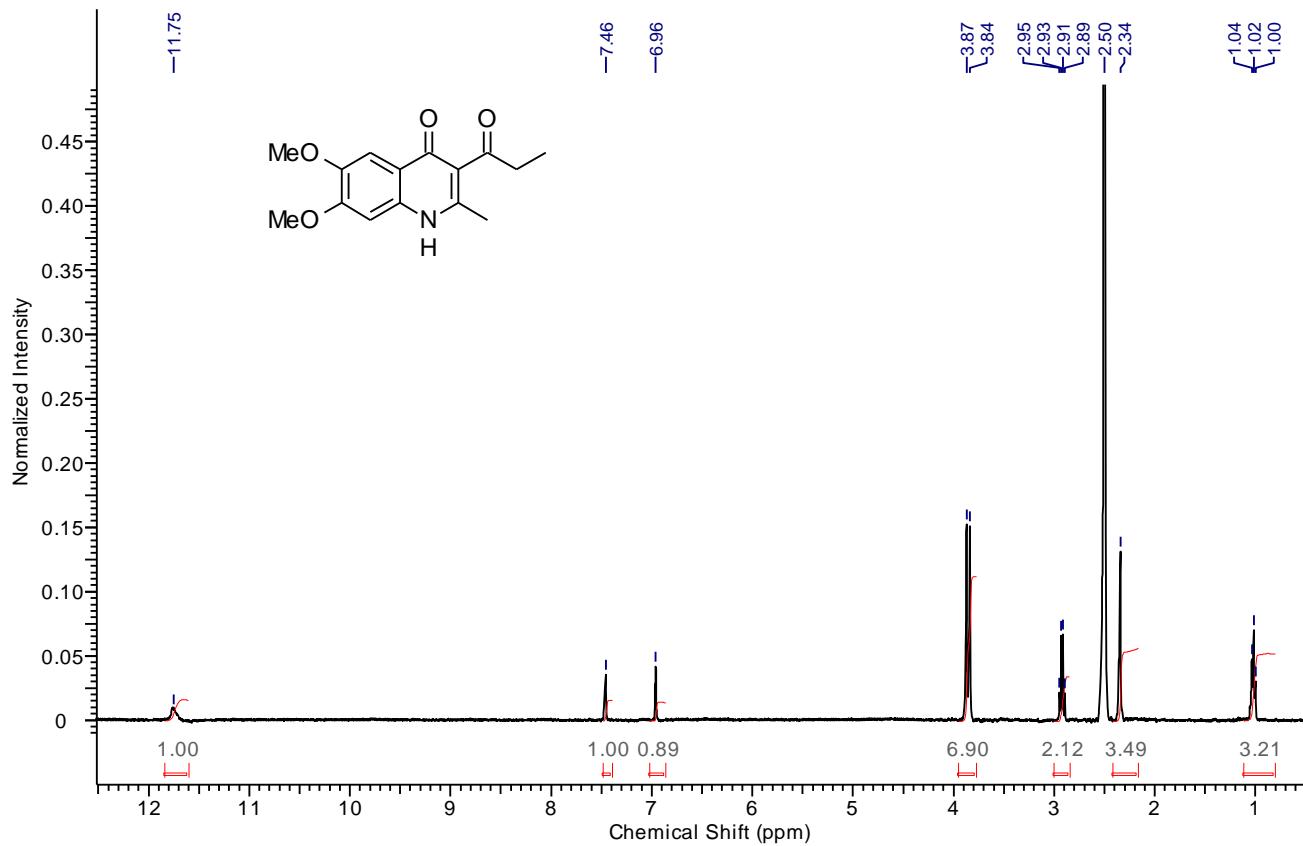


Figure S41. ¹H NMR spectrum of the compound 4i

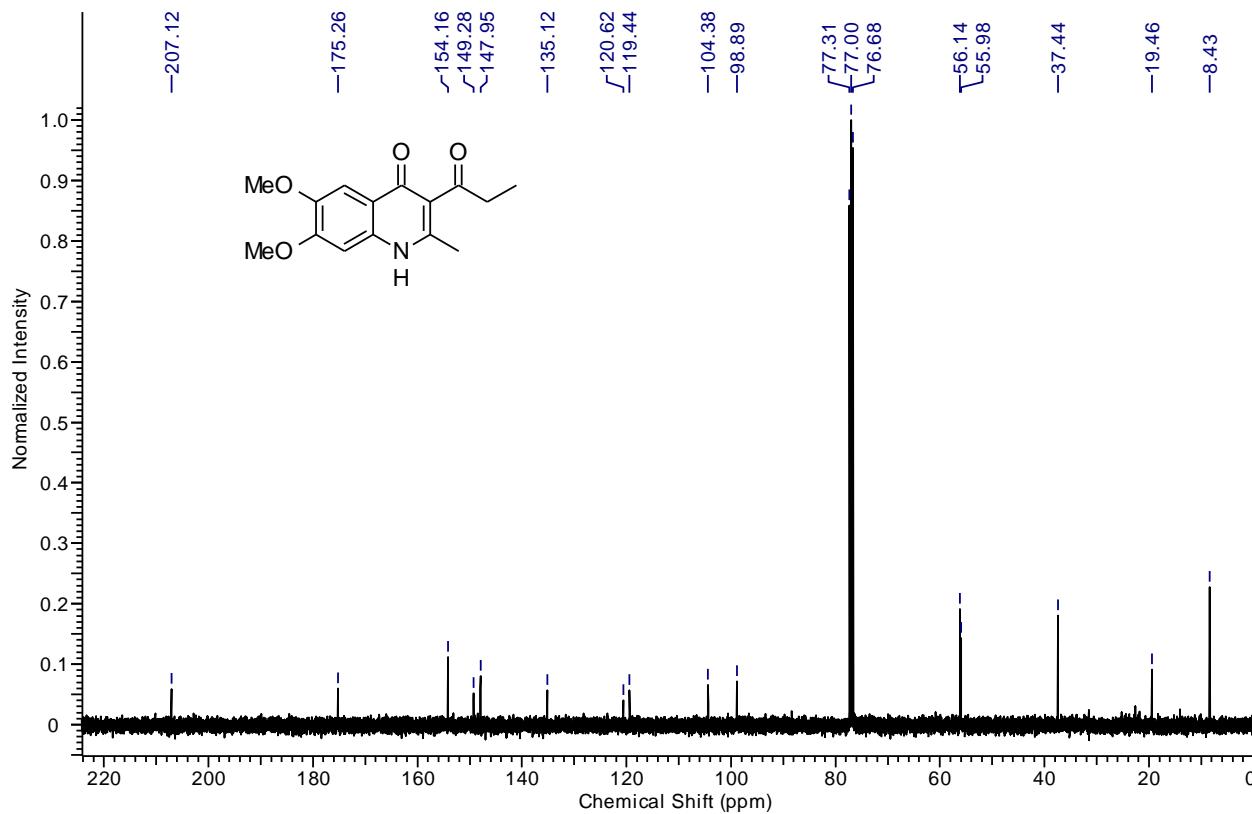


Figure S42. ¹³C NMR spectrum of the compound 4i

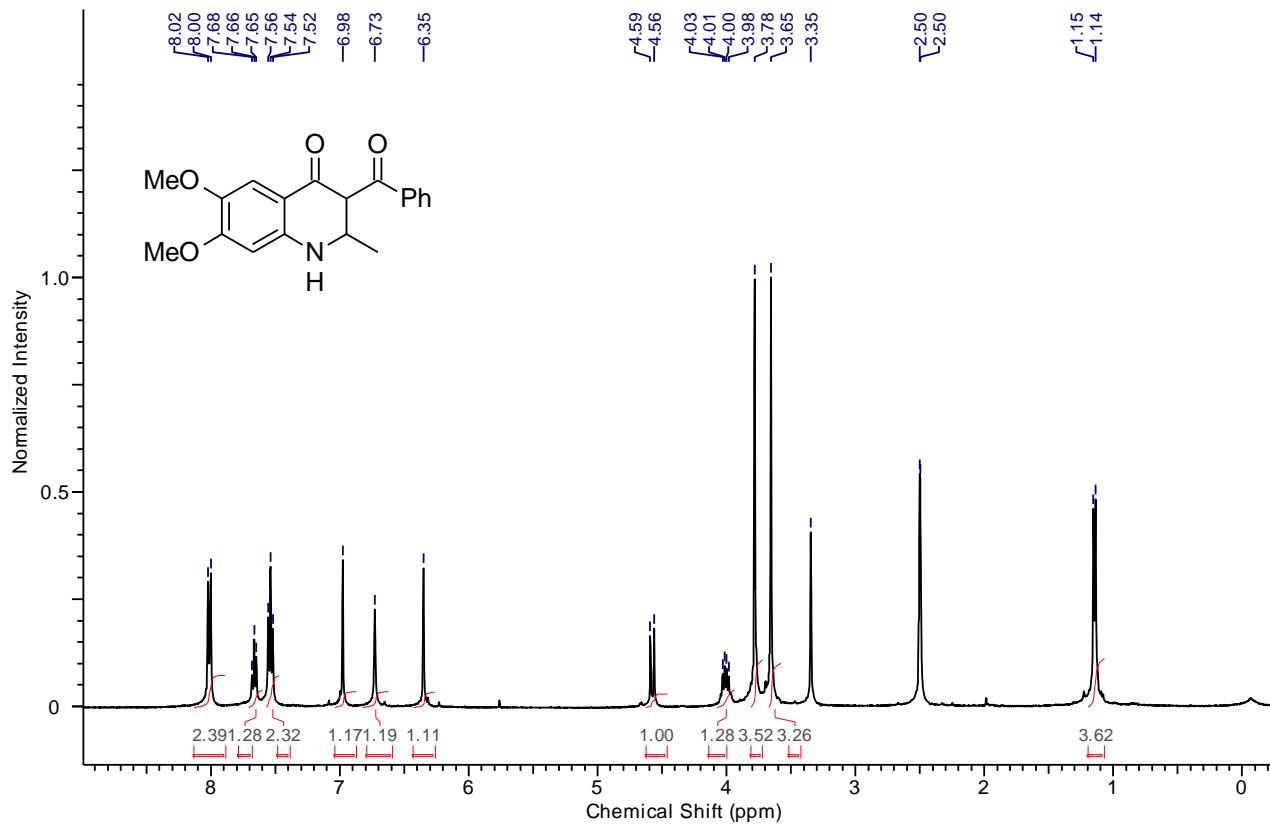


Figure S43. ¹H NMR spectrum of the compound 5a

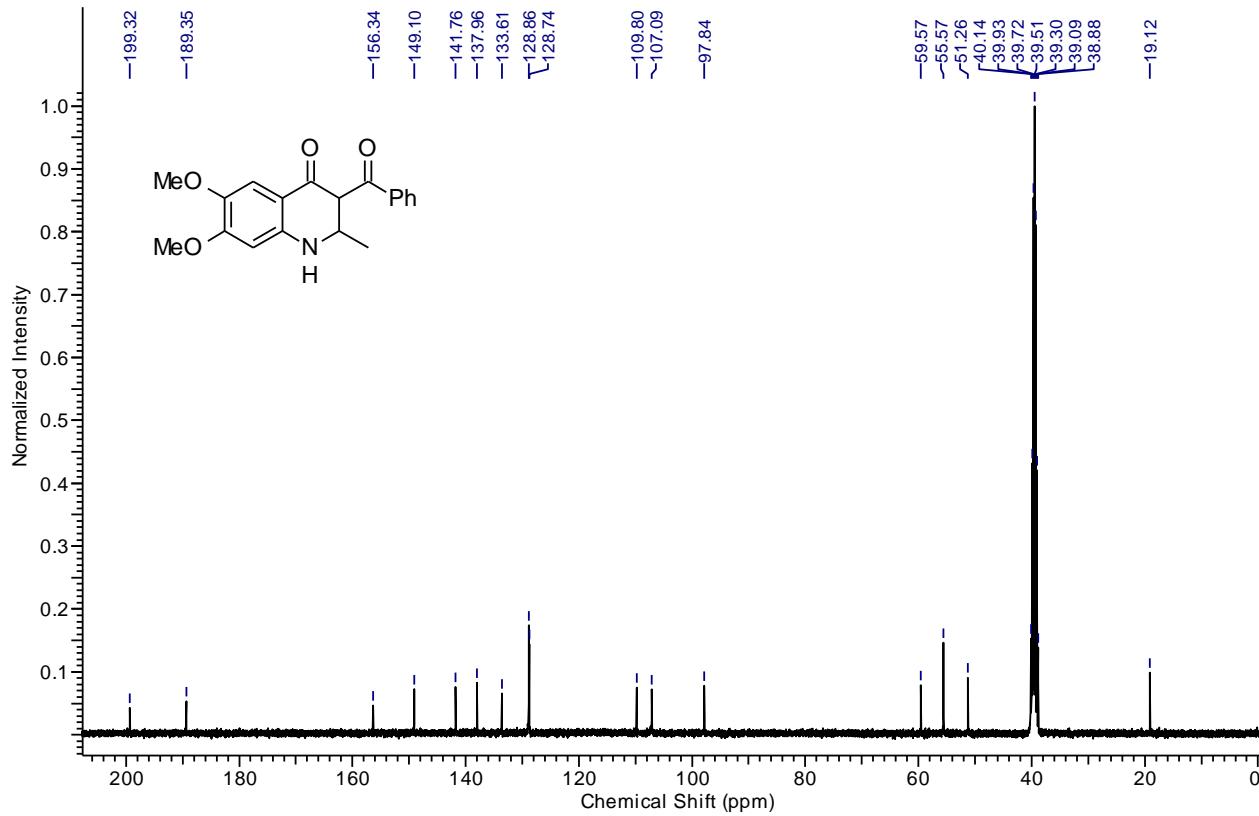


Figure S44. ¹³C NMR spectrum of the compound 5a

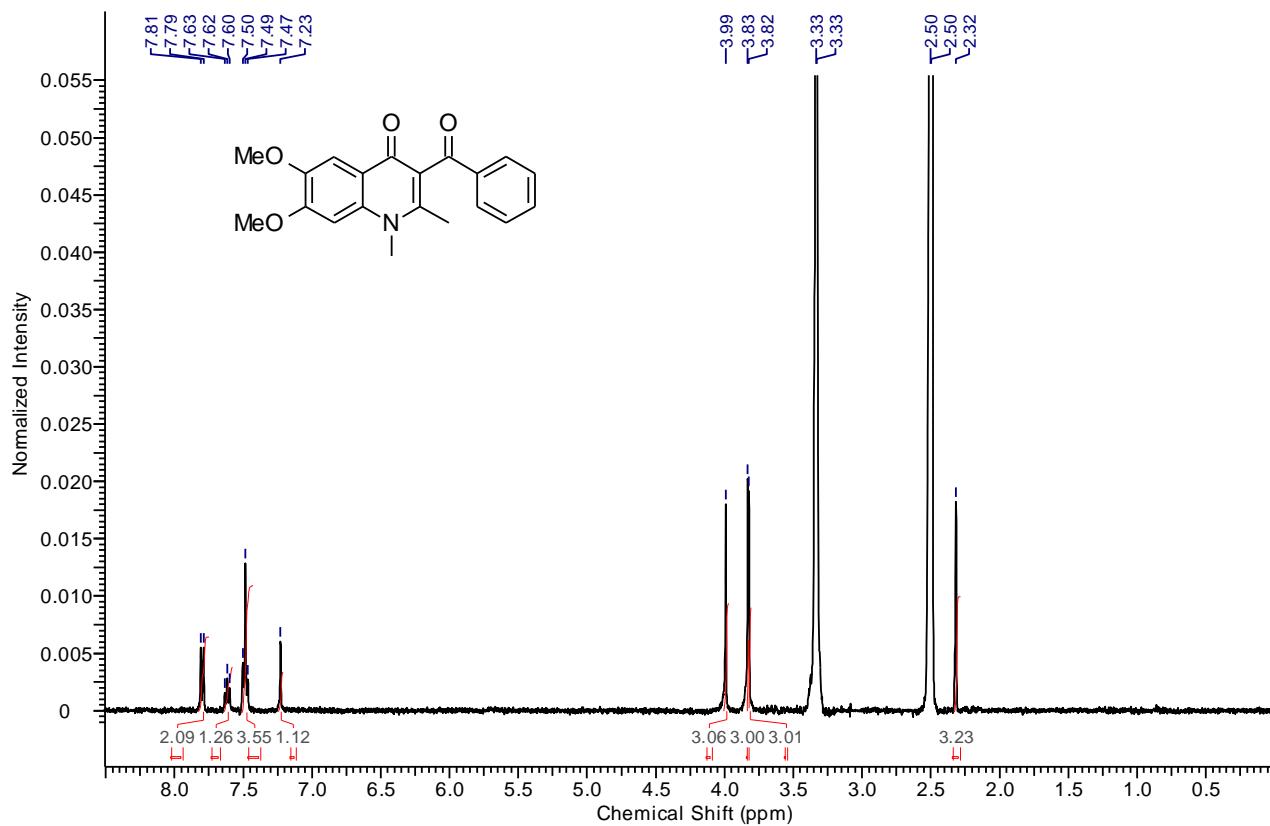


Figure S45. ¹H NMR spectrum of the compound Me-4a

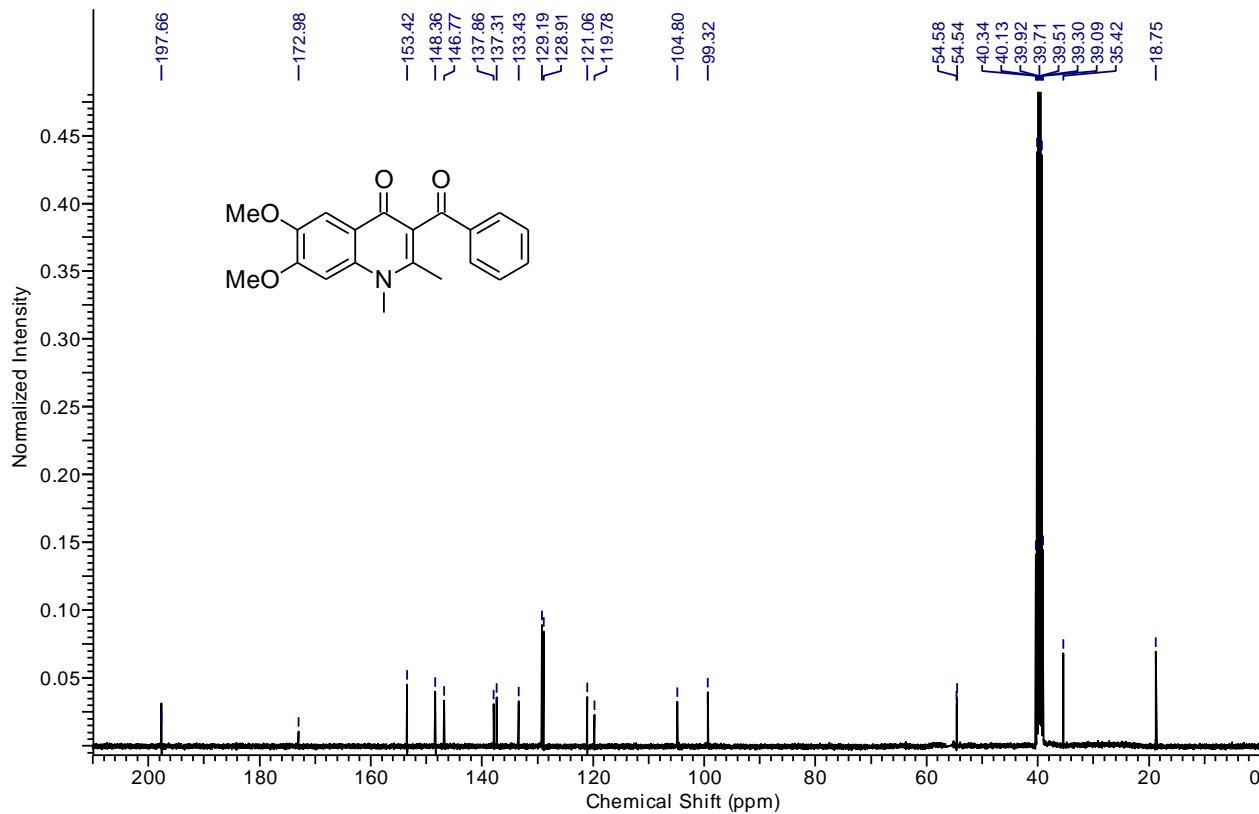


Figure S46. ¹³C NMR spectrum of the compound Me-4a

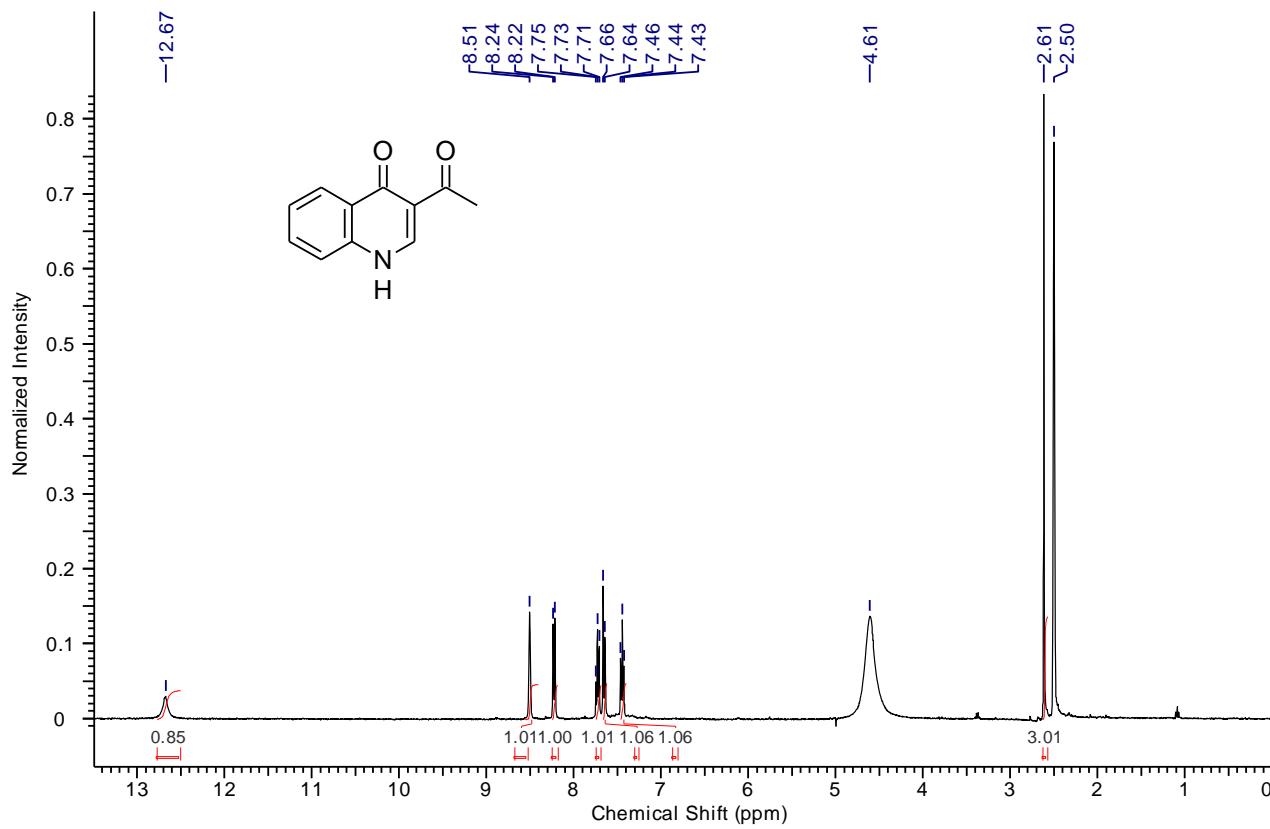


Figure S47. ¹H NMR spectrum of the compound 7a

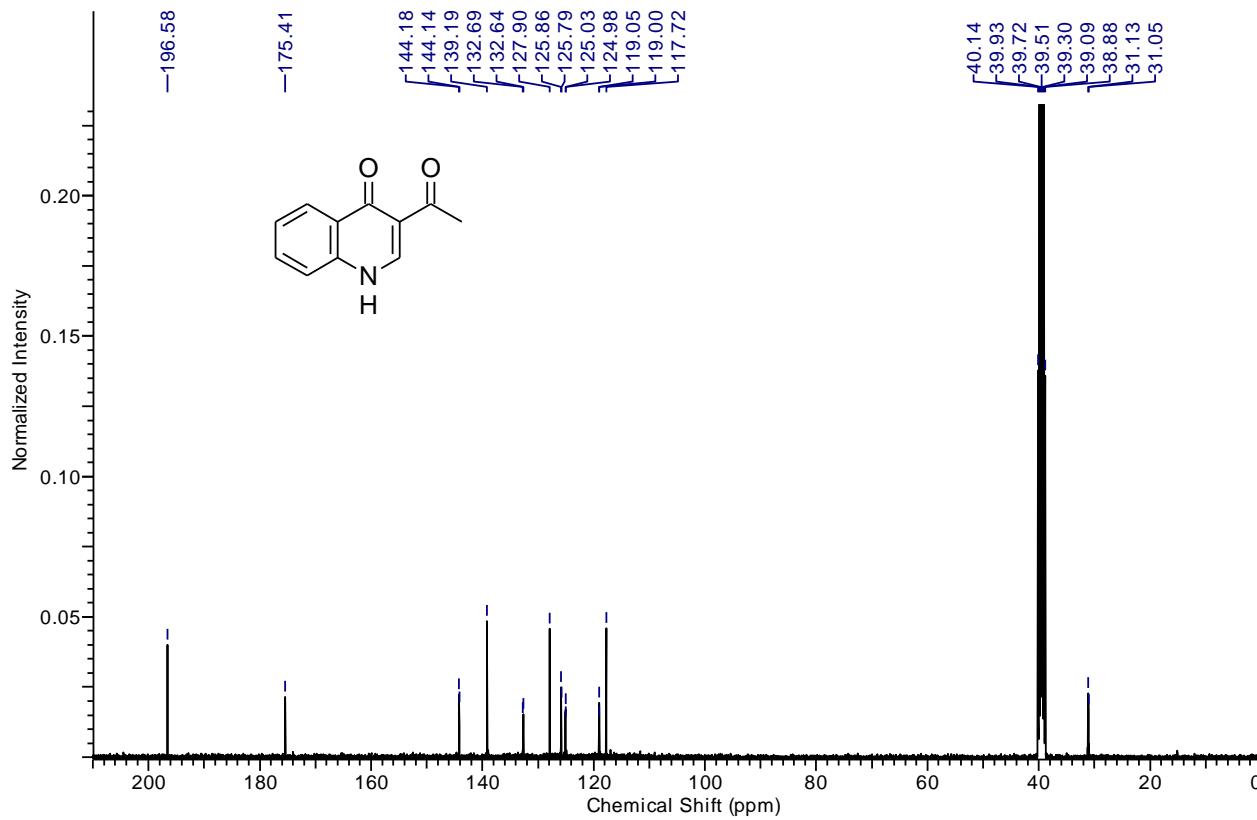


Figure S48. ¹³C NMR spectrum of the compound 7a

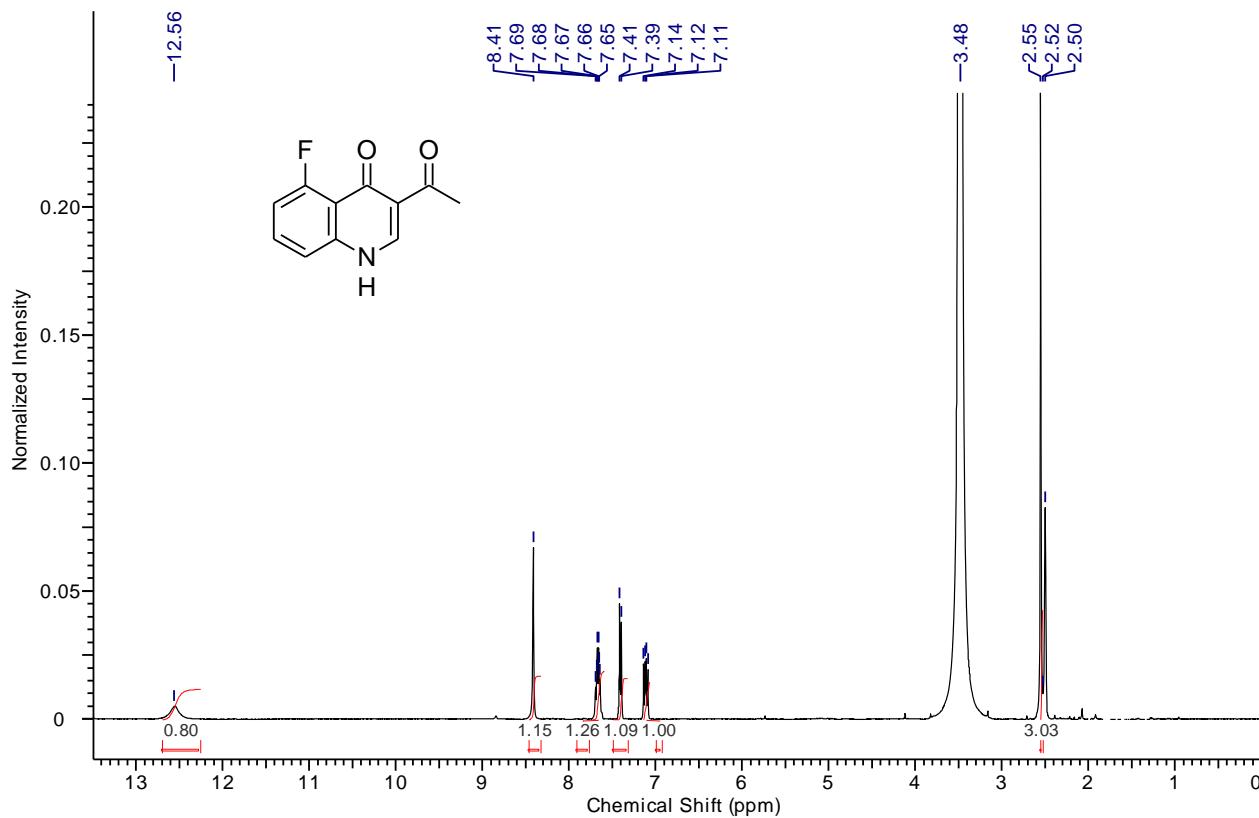


Figure S49. ^1H NMR spectrum of the compound **7b**

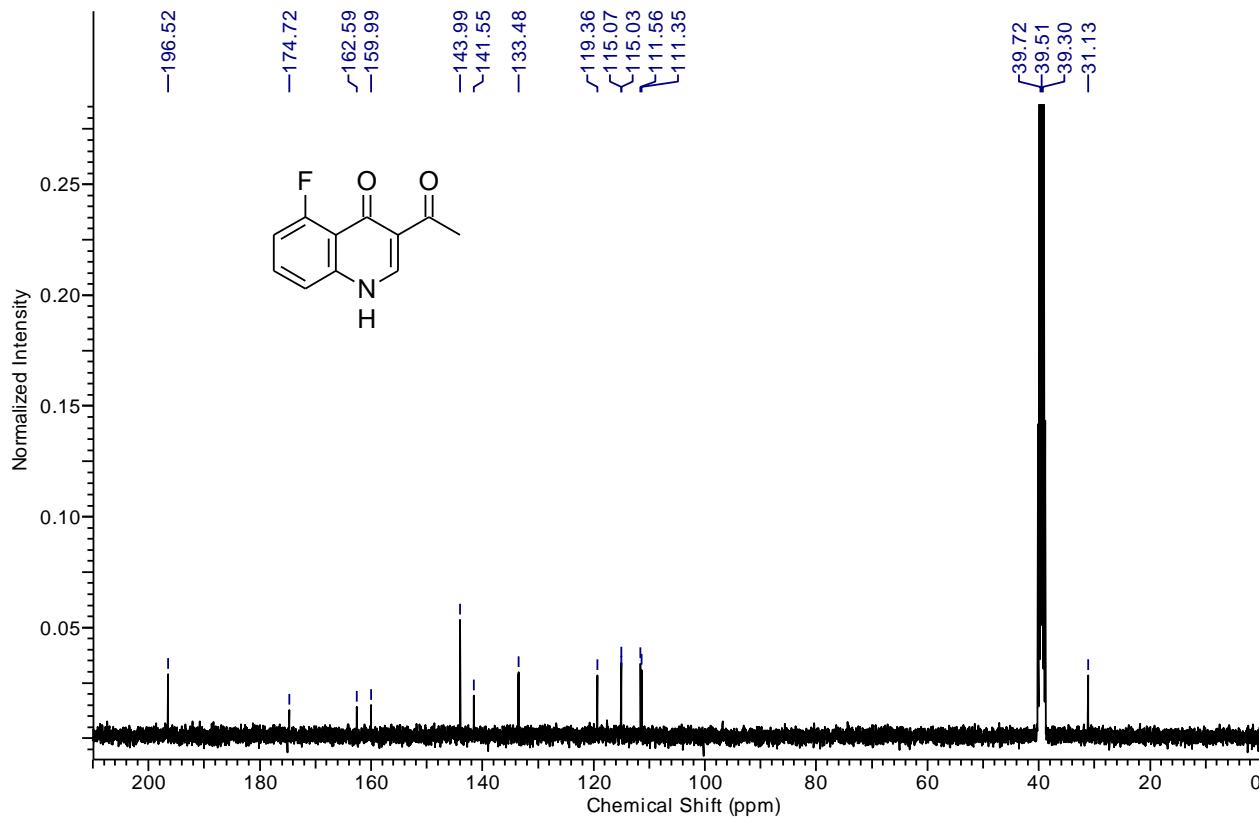


Figure S50. ^{13}C NMR spectrum of the compound **7b**

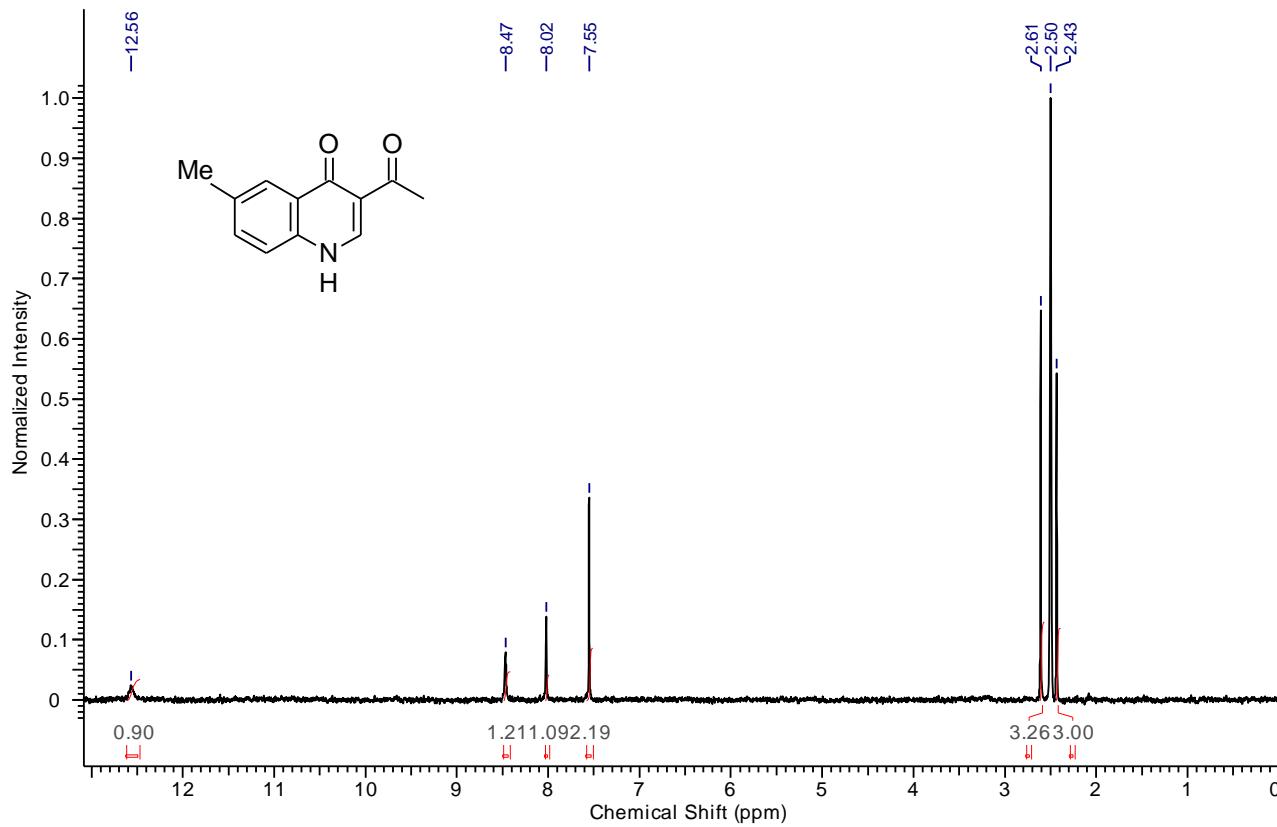


Figure S51. ^1H NMR spectrum of the compound **7c**

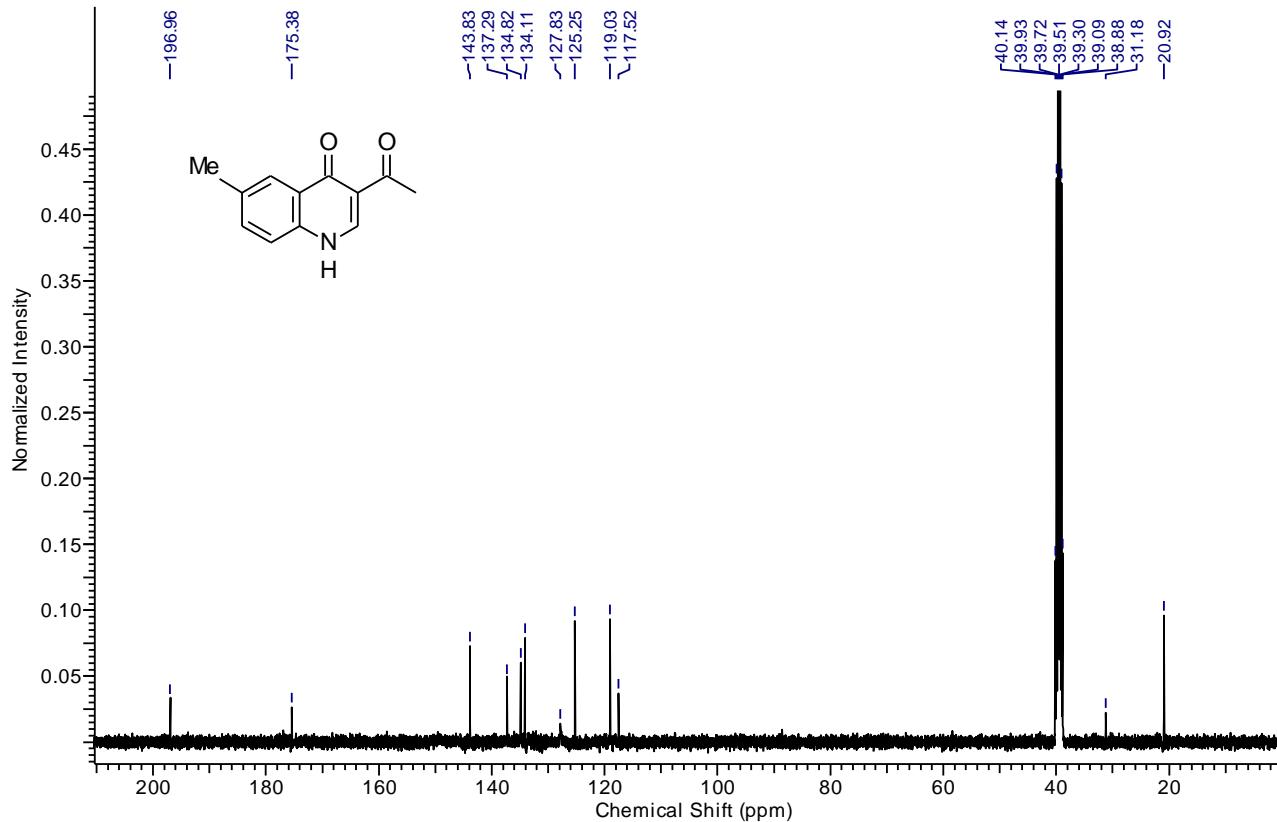


Figure S52. ^{13}C NMR spectrum of the compound **7c**

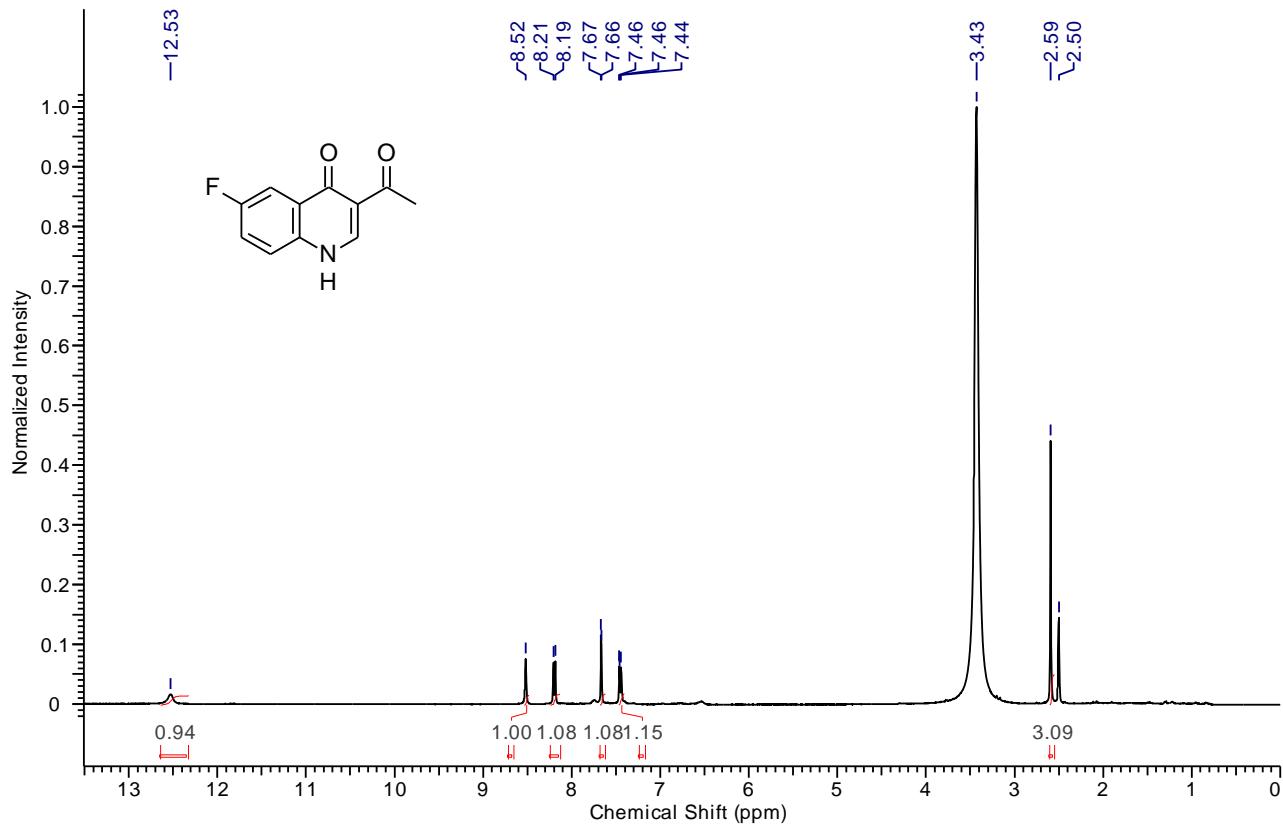


Figure S53. ^1H NMR spectrum of the compound **7d**

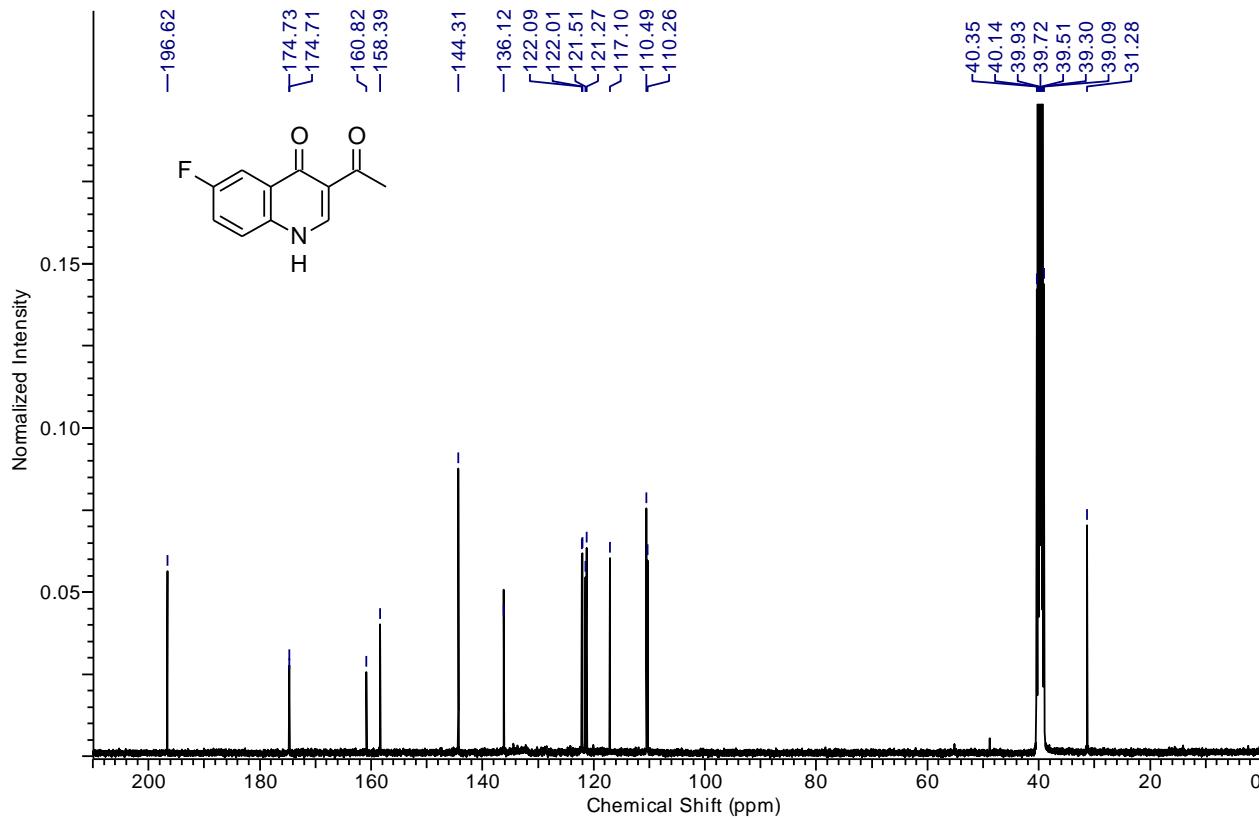


Figure S54. ^{13}C NMR spectrum of the compound **7d**

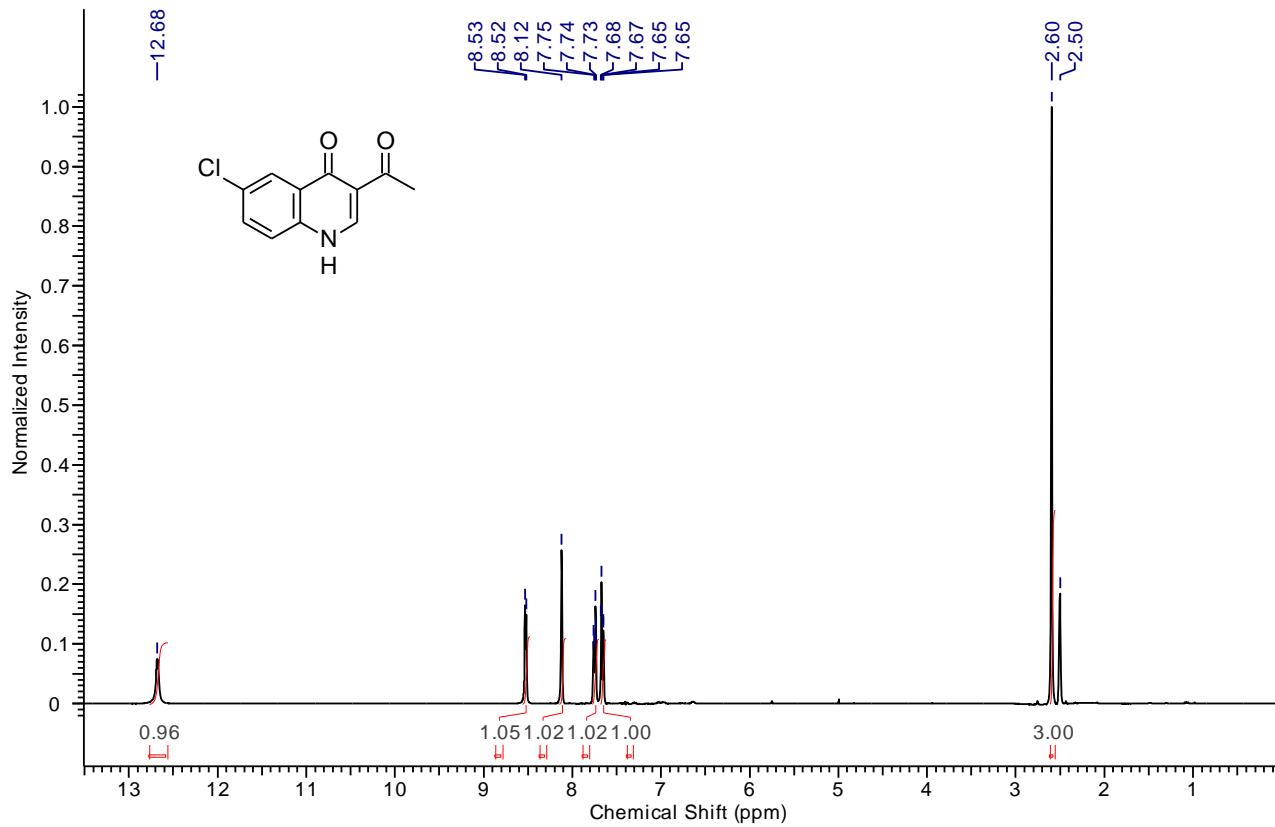


Figure S55. ¹H NMR spectrum of the compound 7e

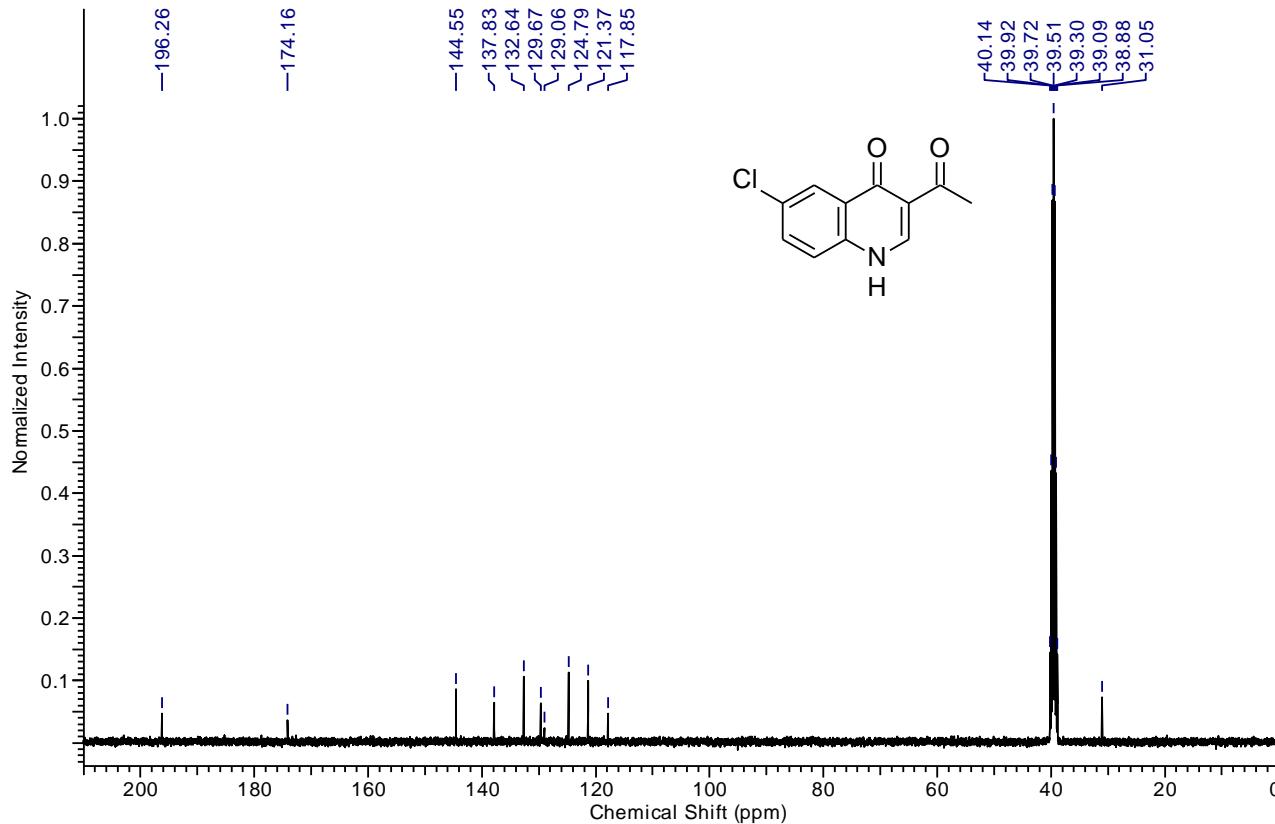


Figure S56. ¹³C NMR spectrum of the compound 7e

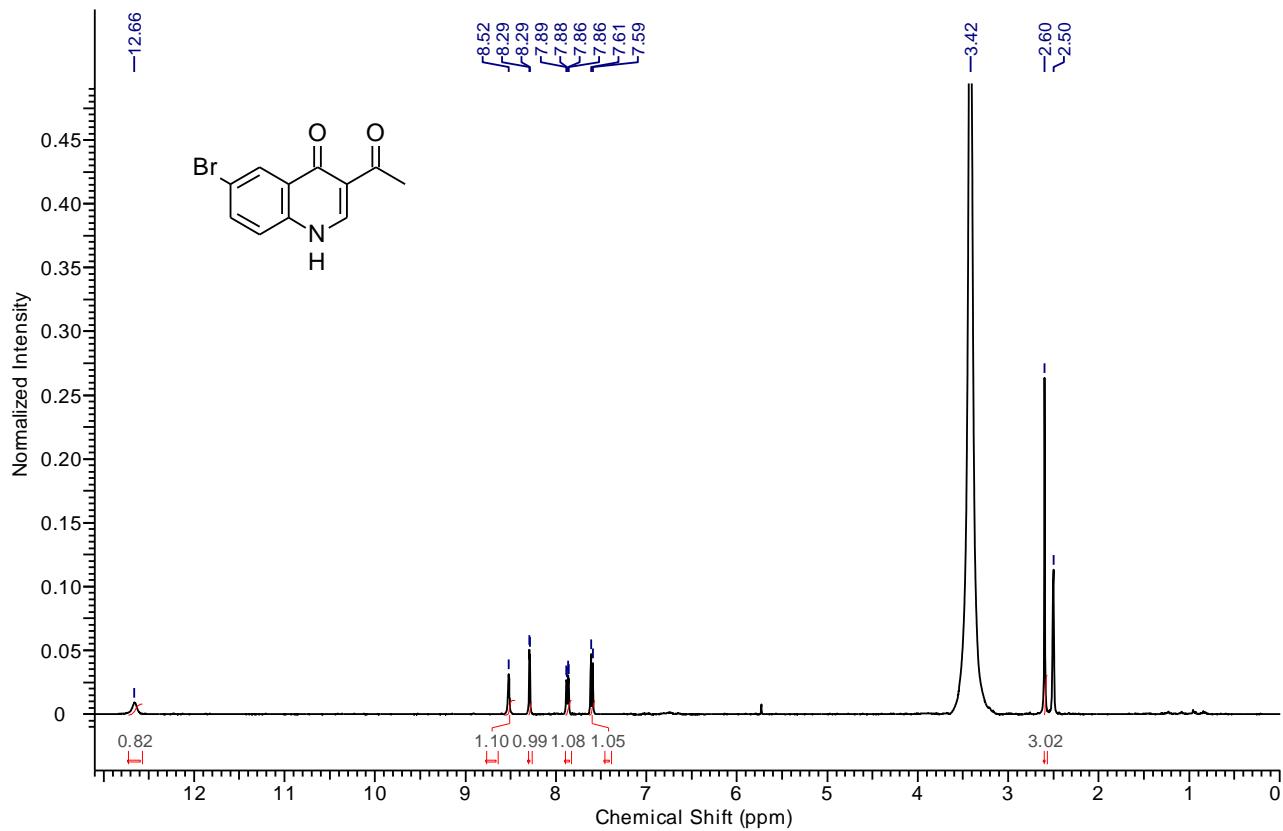


Figure S57. ¹H NMR spectrum of the compound **7f**

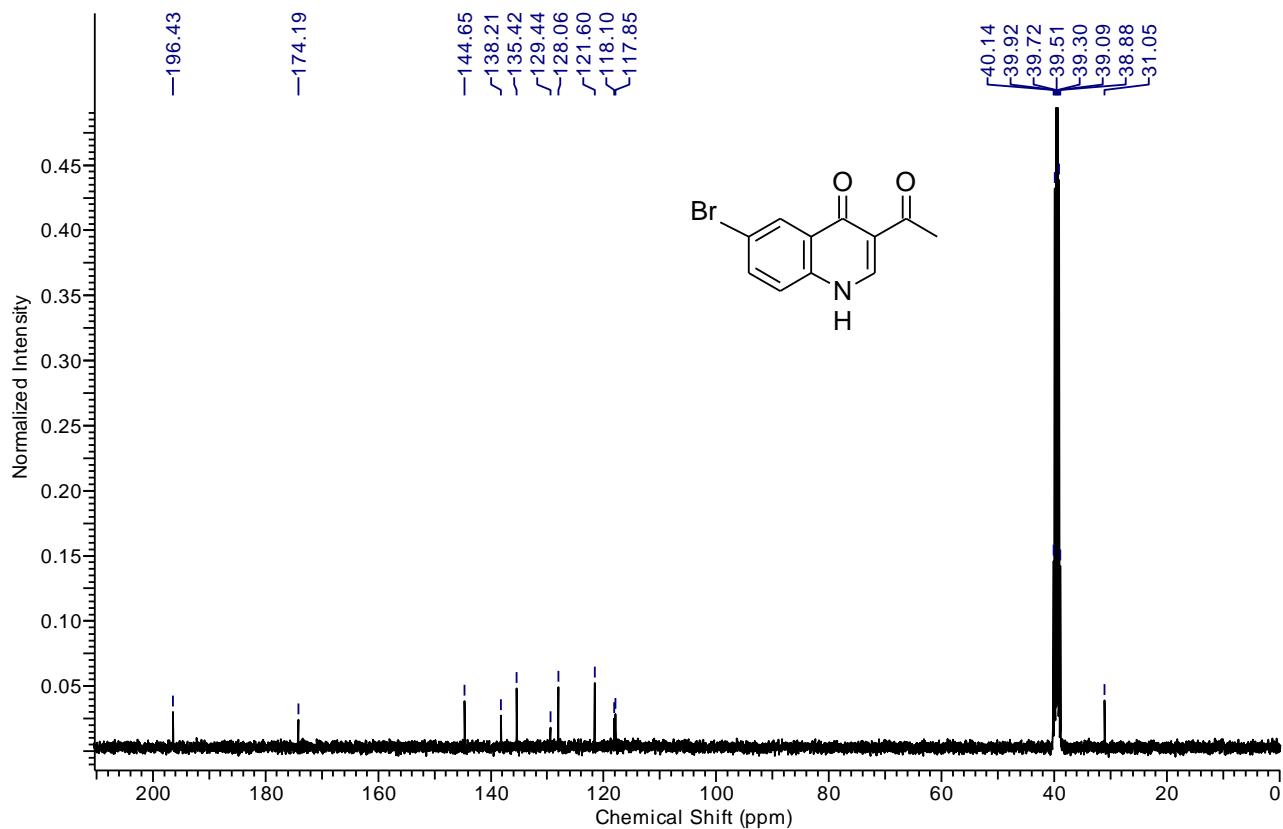


Figure S58. ¹³C NMR spectrum of the compound **7f**

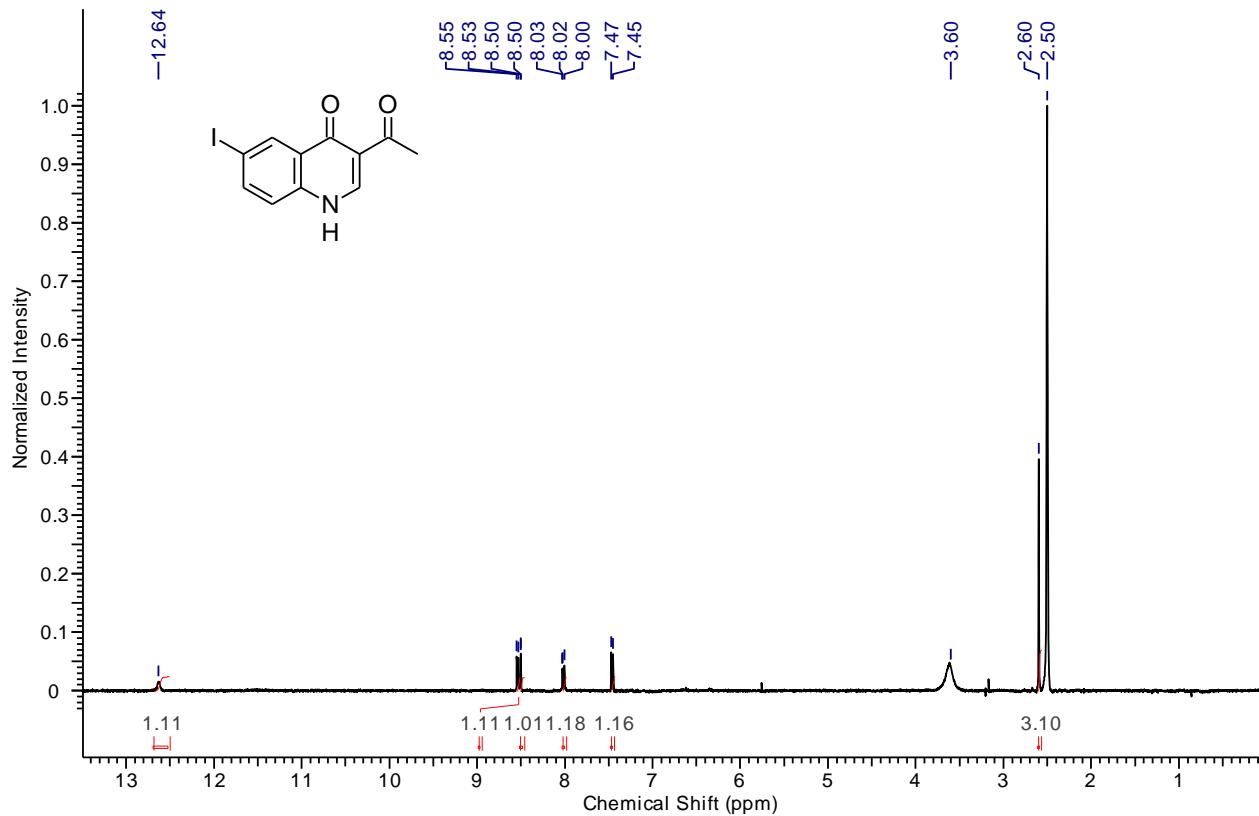


Figure S59. ¹H NMR spectrum of the compound 7g

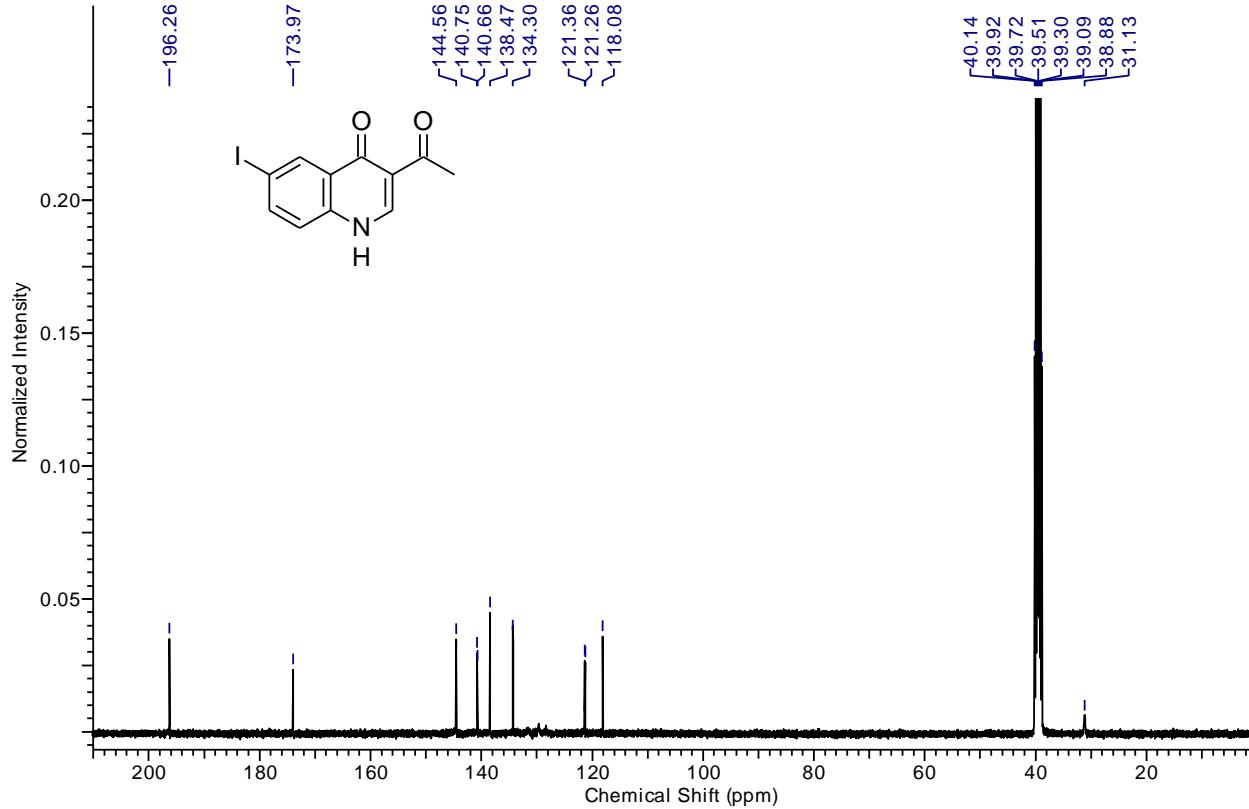


Figure S60. ¹³C NMR spectrum of the compound 7g

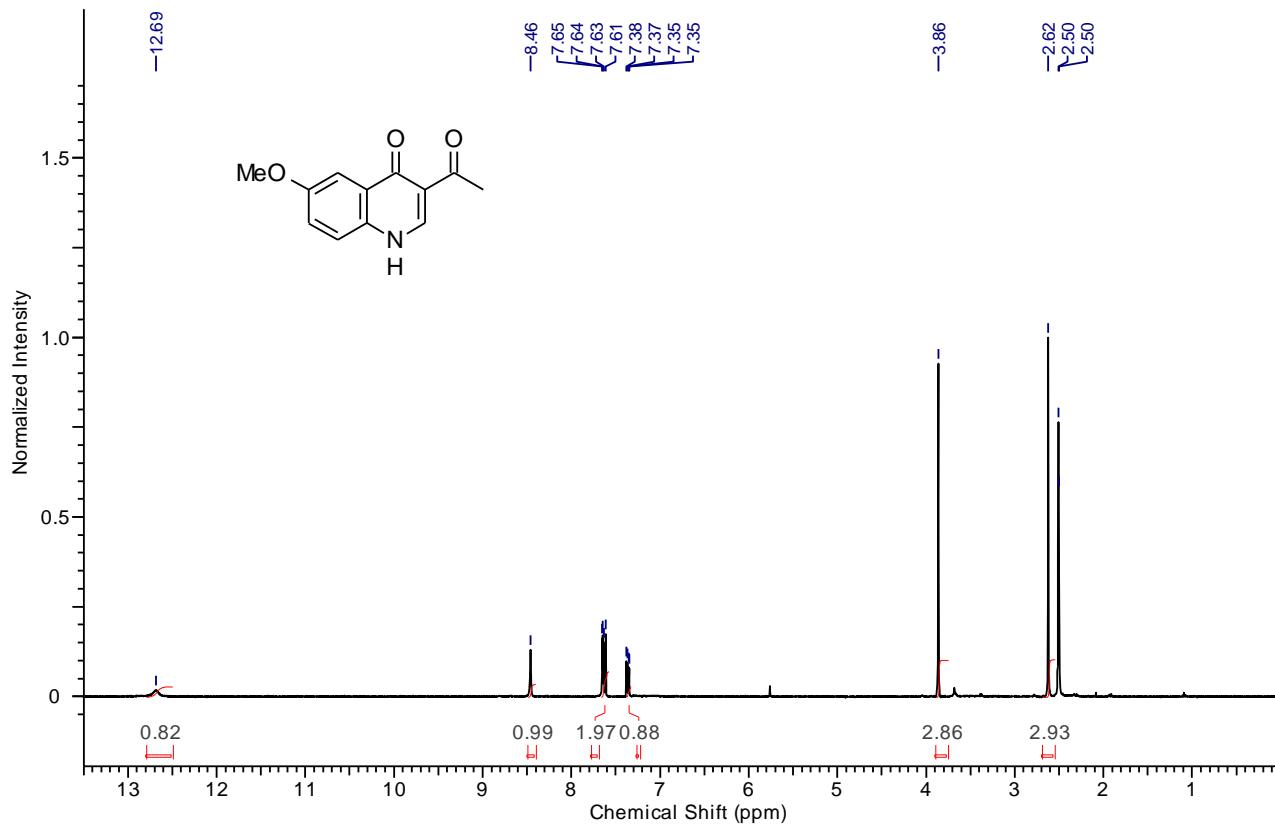


Figure S61. ¹H NMR spectrum of the compound 7h

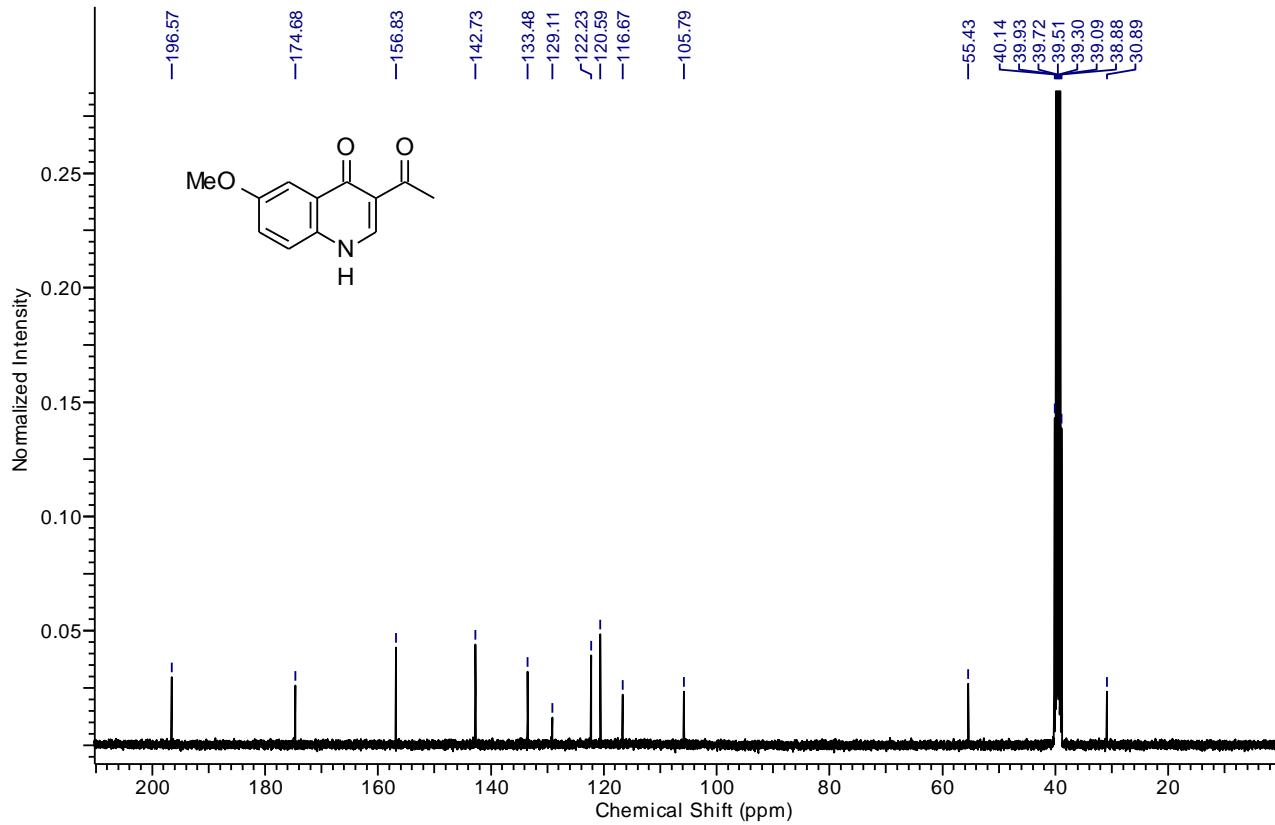


Figure S62. ¹³C NMR spectrum of the compound 7h

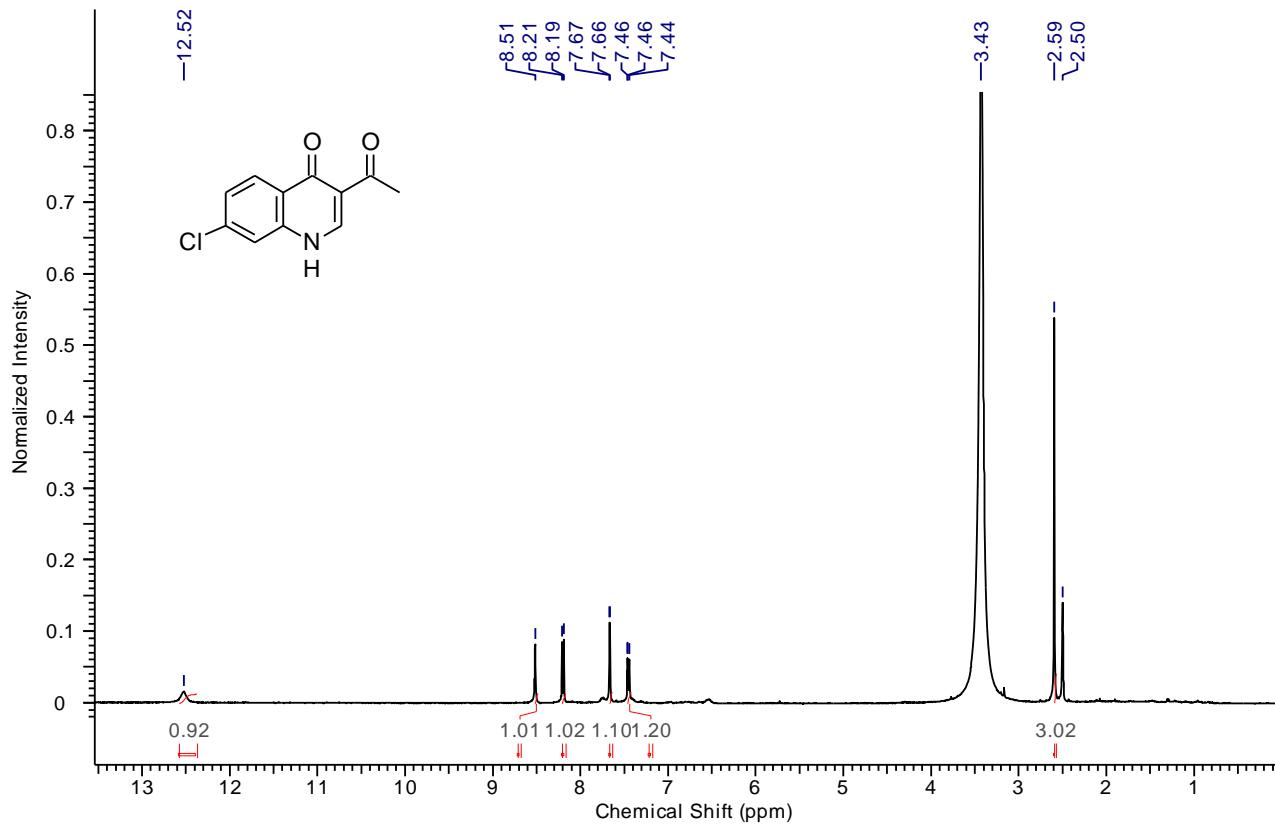


Figure S63. ¹H NMR spectrum of the compound **7i**

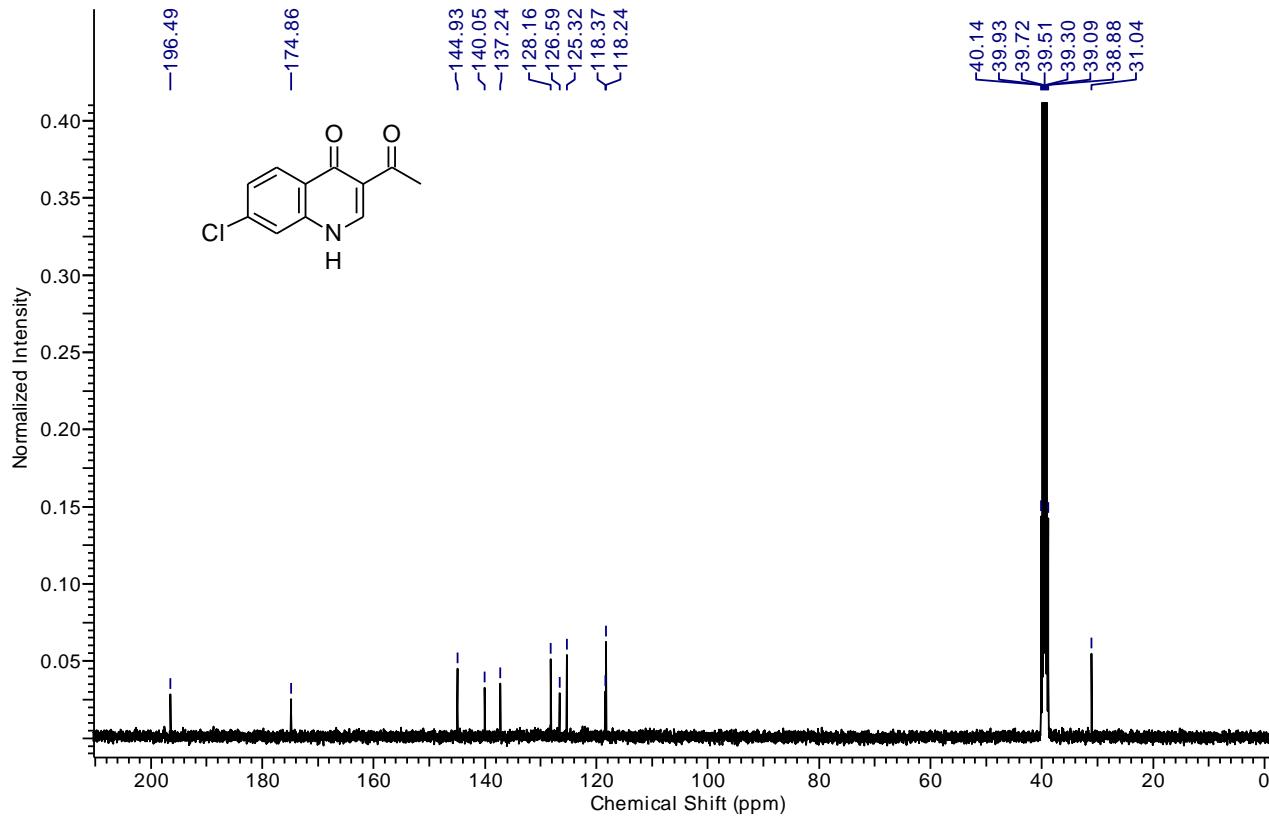


Figure S64. ¹³C NMR spectrum of the compound **7i**

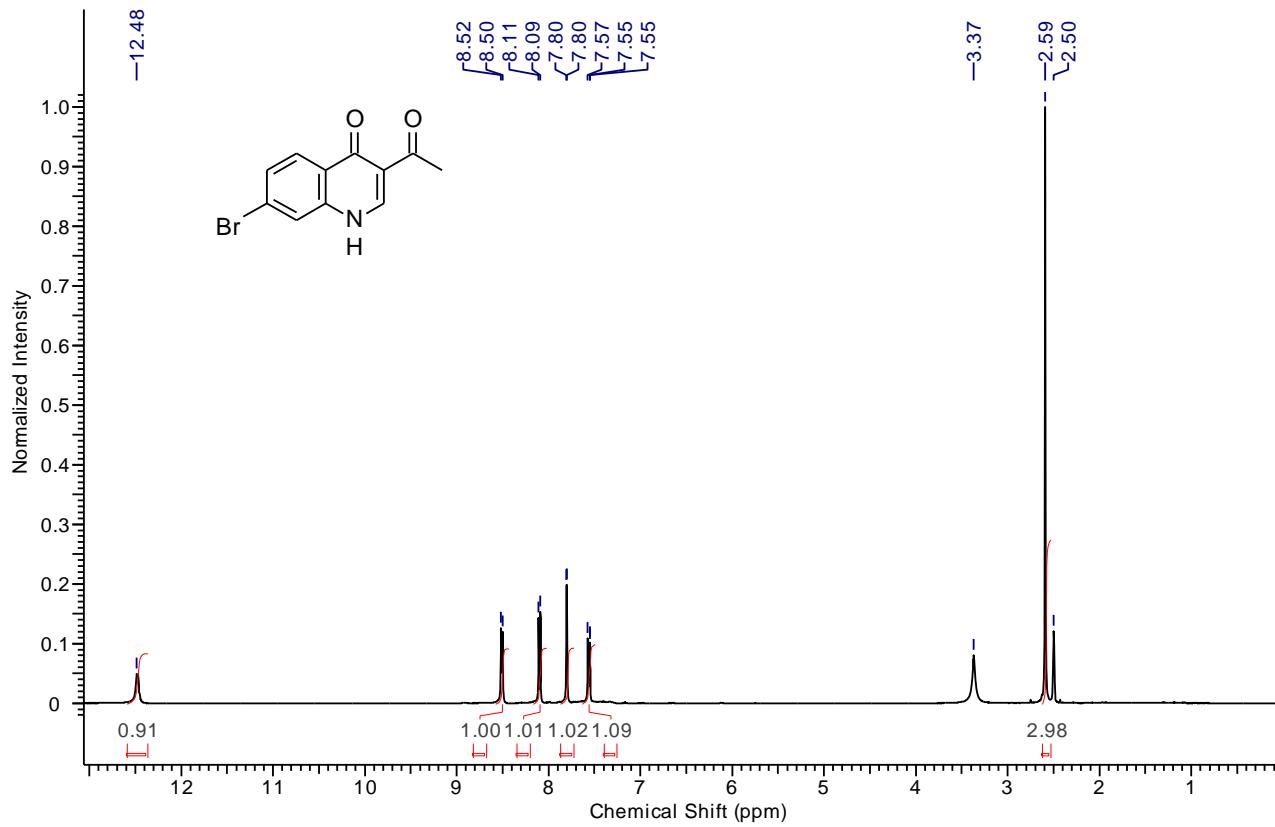


Figure S65. ¹H NMR spectrum of the compound **7j**

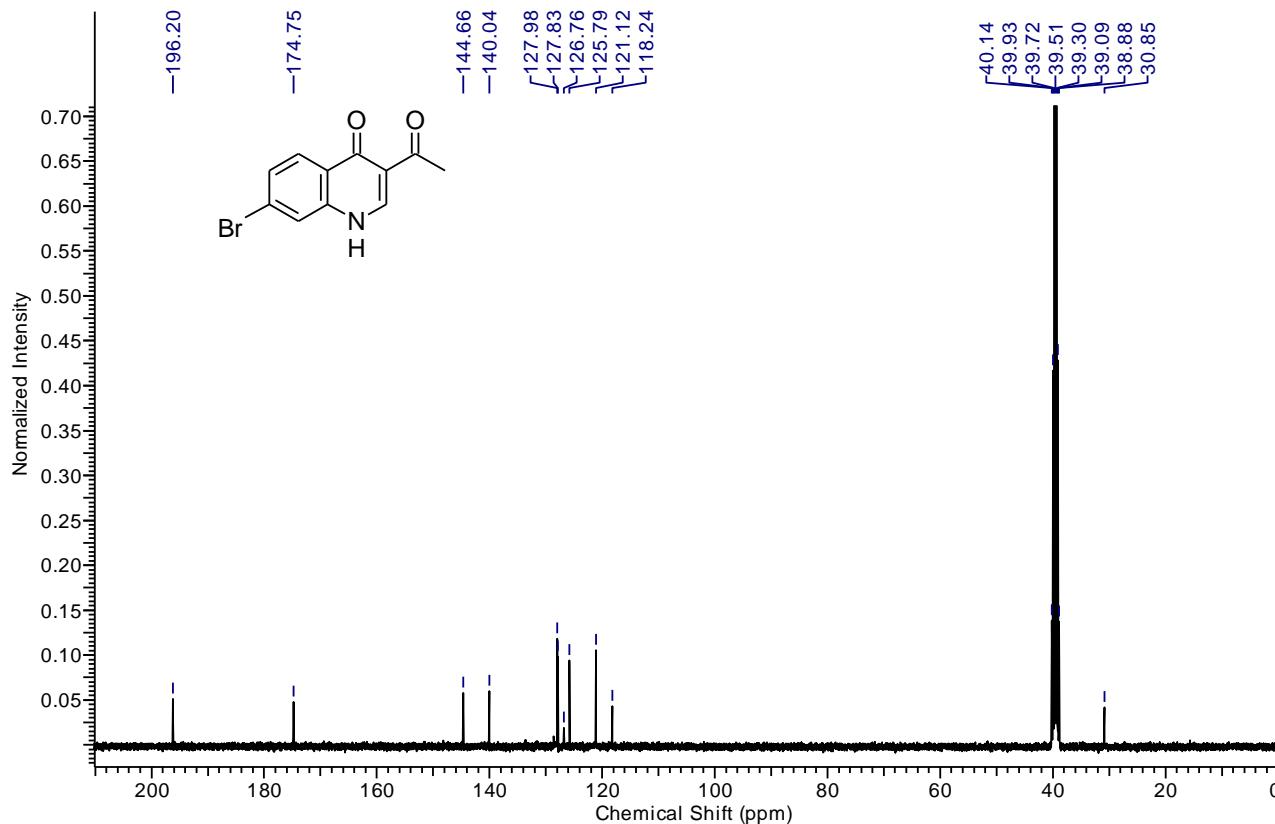


Figure S66. ¹³C NMR spectrum of the compound **7j**

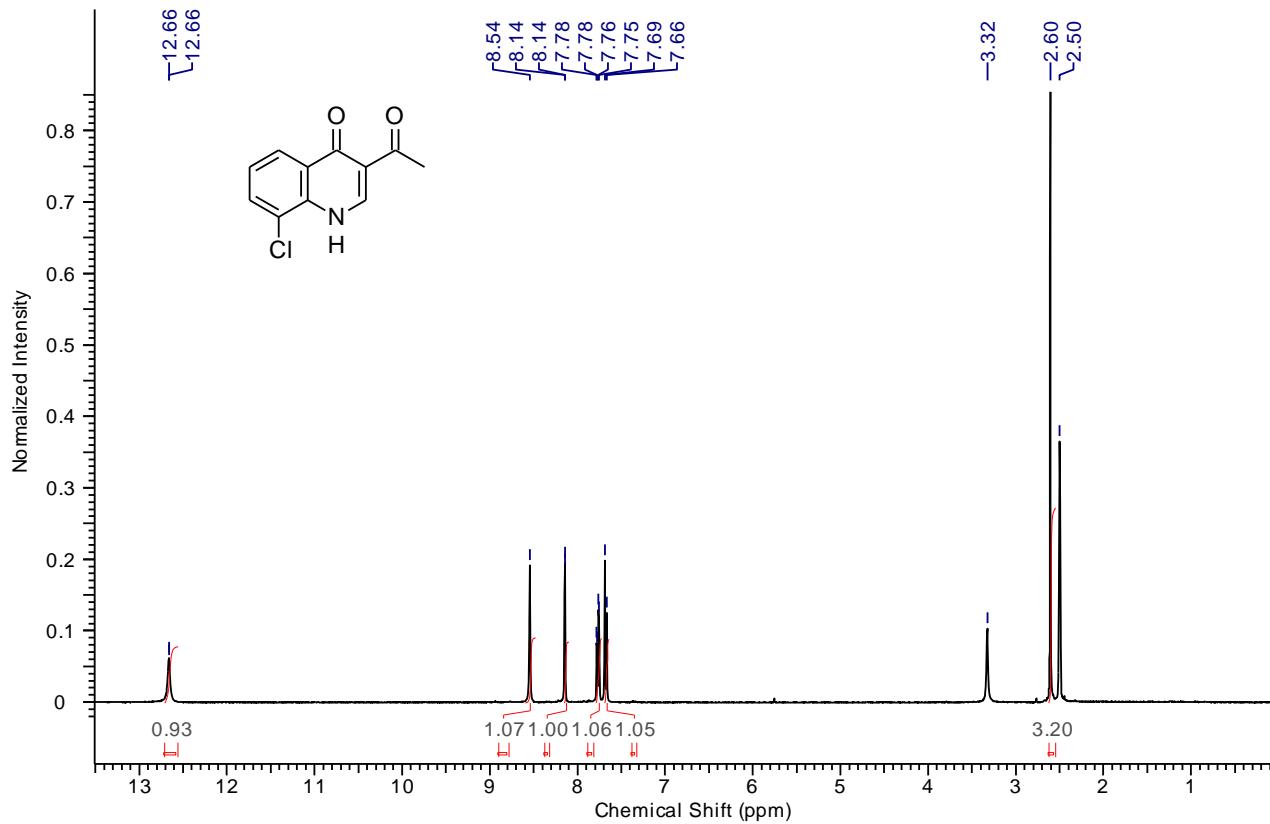


Figure S67. ¹H NMR spectrum of the compound 7k

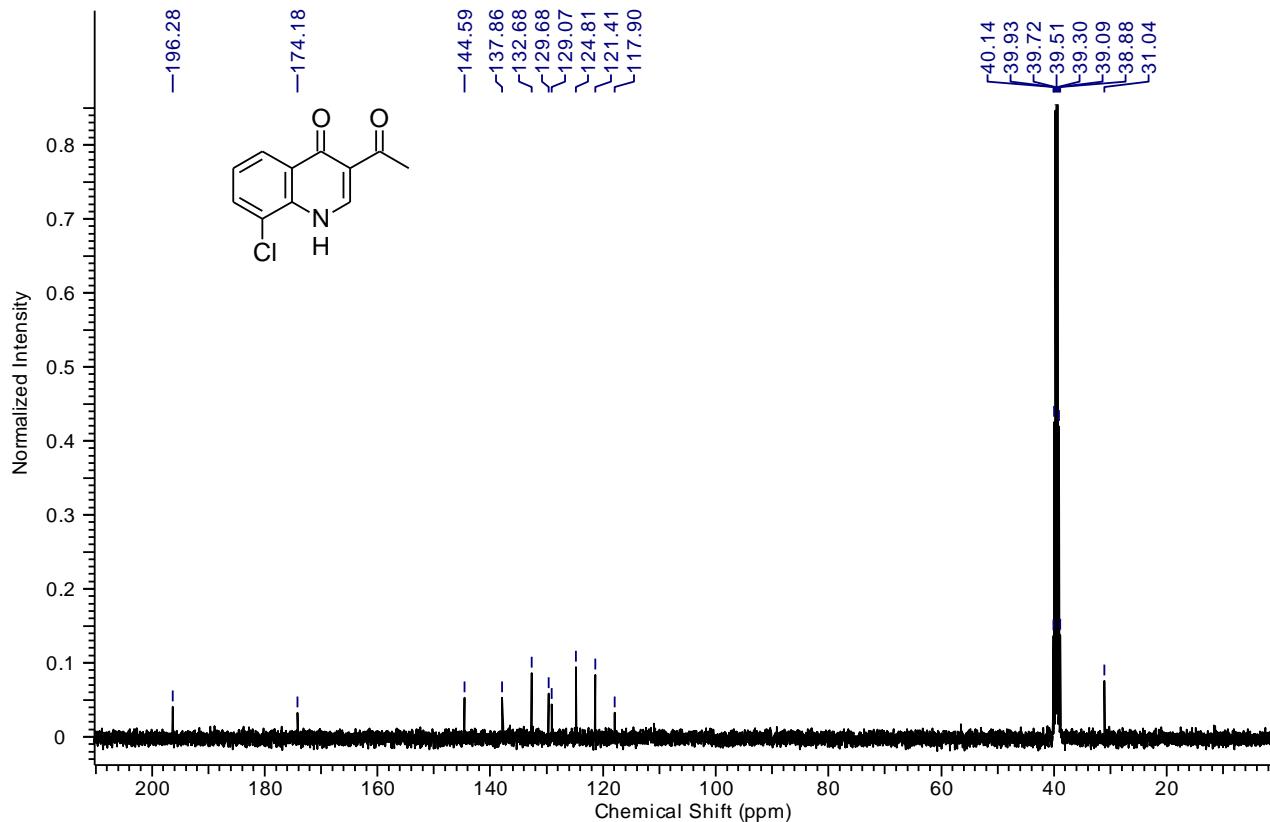


Figure S68. ¹³C NMR spectrum of the compound 7k

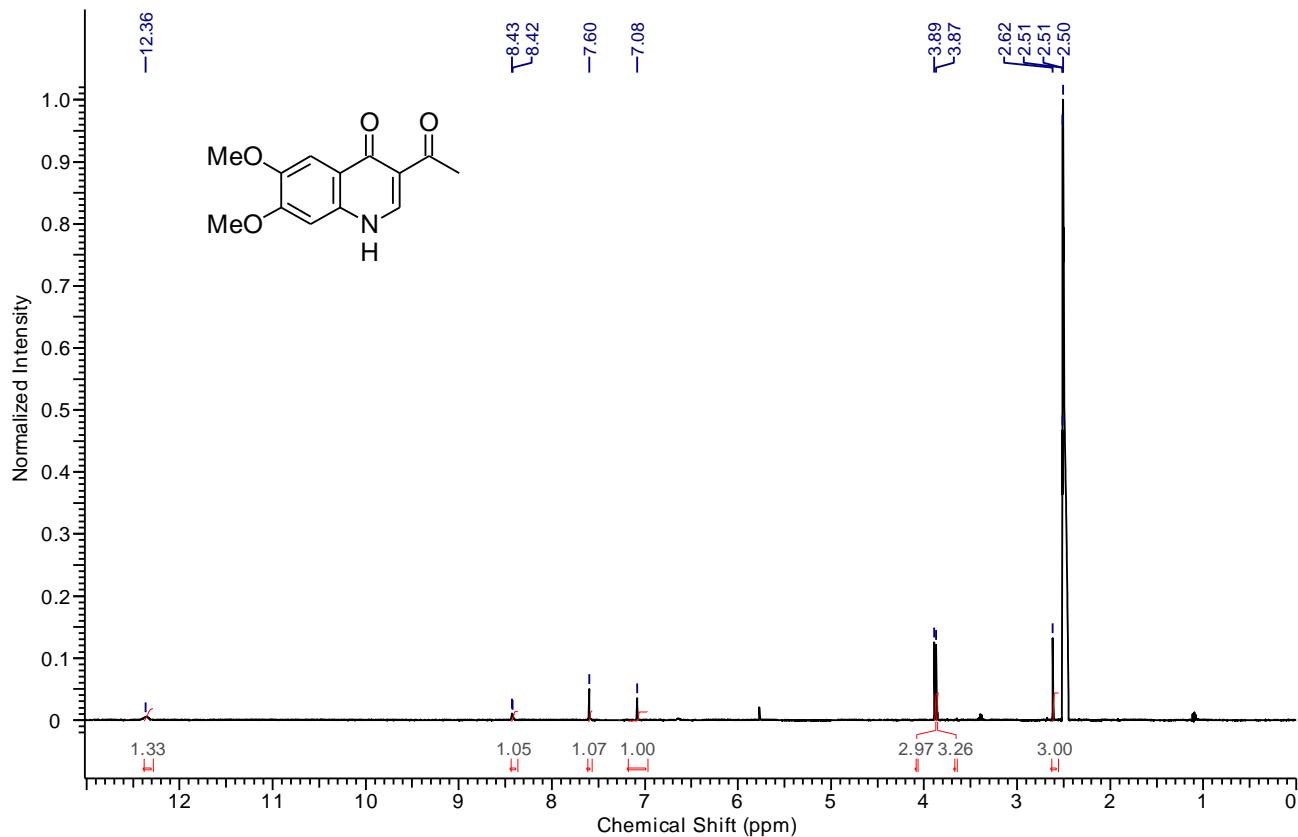


Figure S69. ^1H NMR spectrum of the compound **7l**

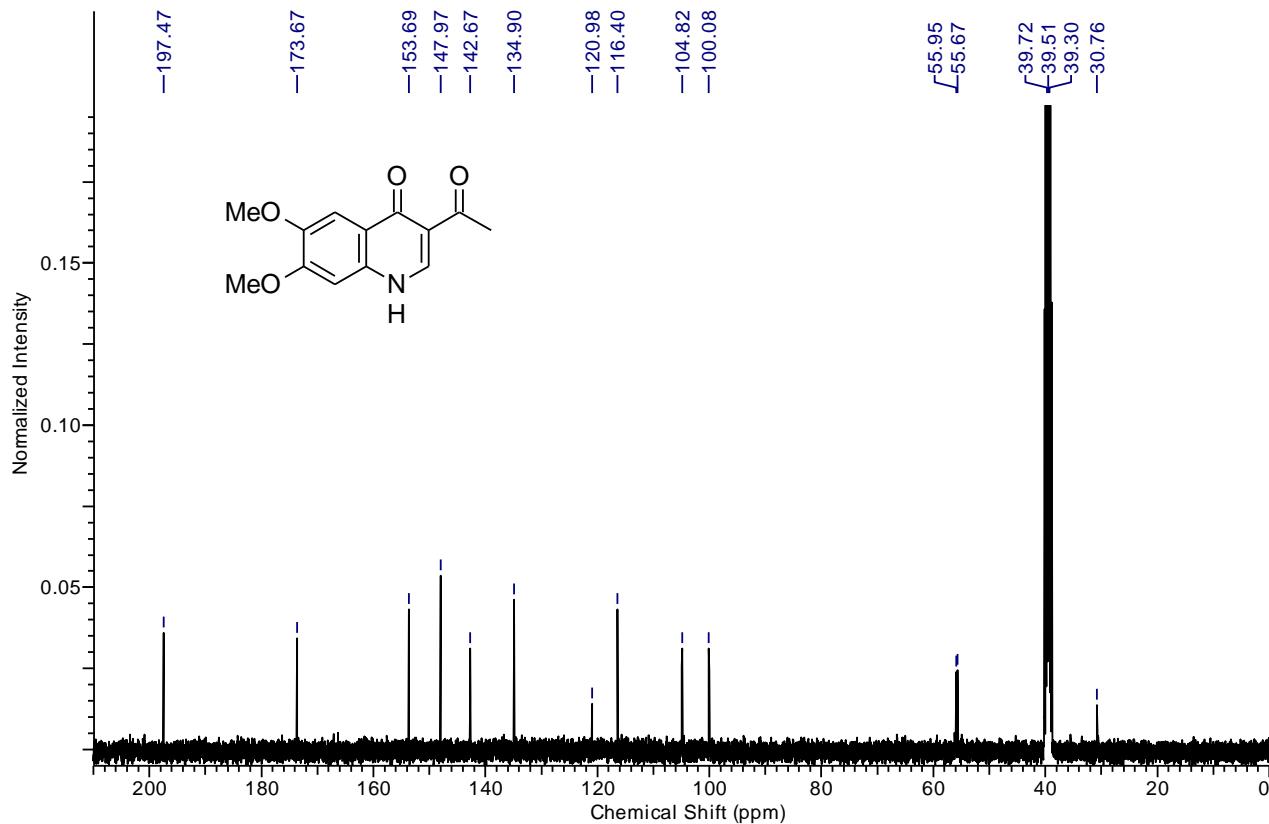


Figure S70. ^{13}C NMR spectrum of the compound **7l**

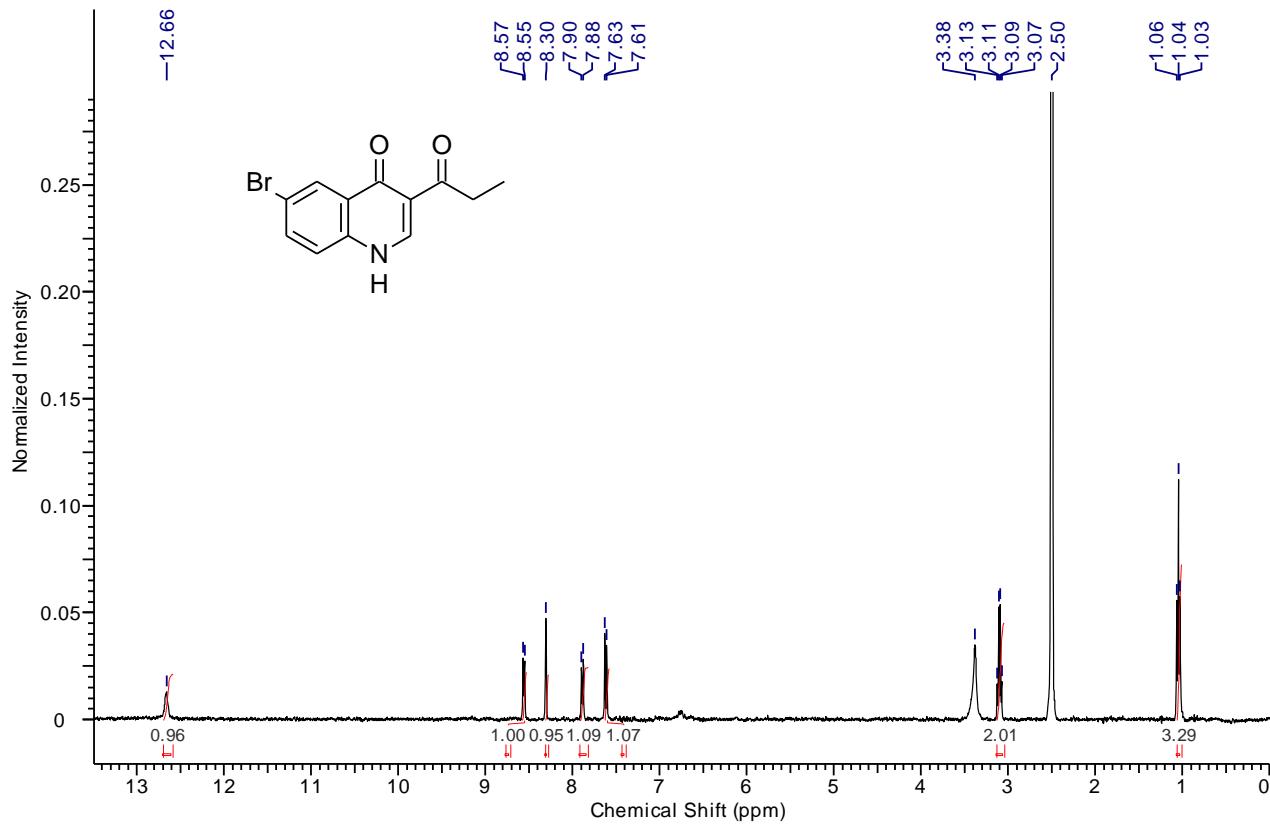


Figure S71. ^1H NMR spectrum of the compound **7m**

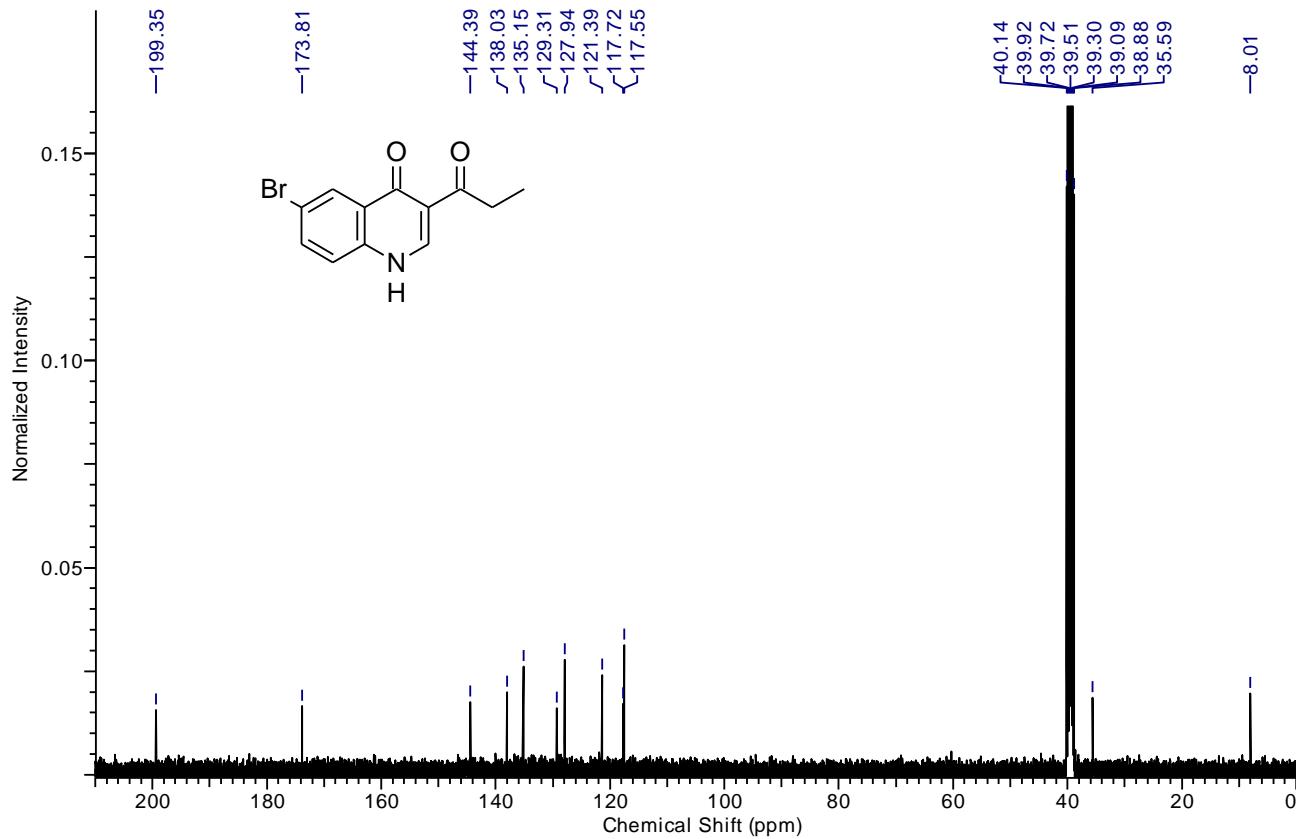


Figure S72. ^{13}C NMR spectrum of the compound **7m**

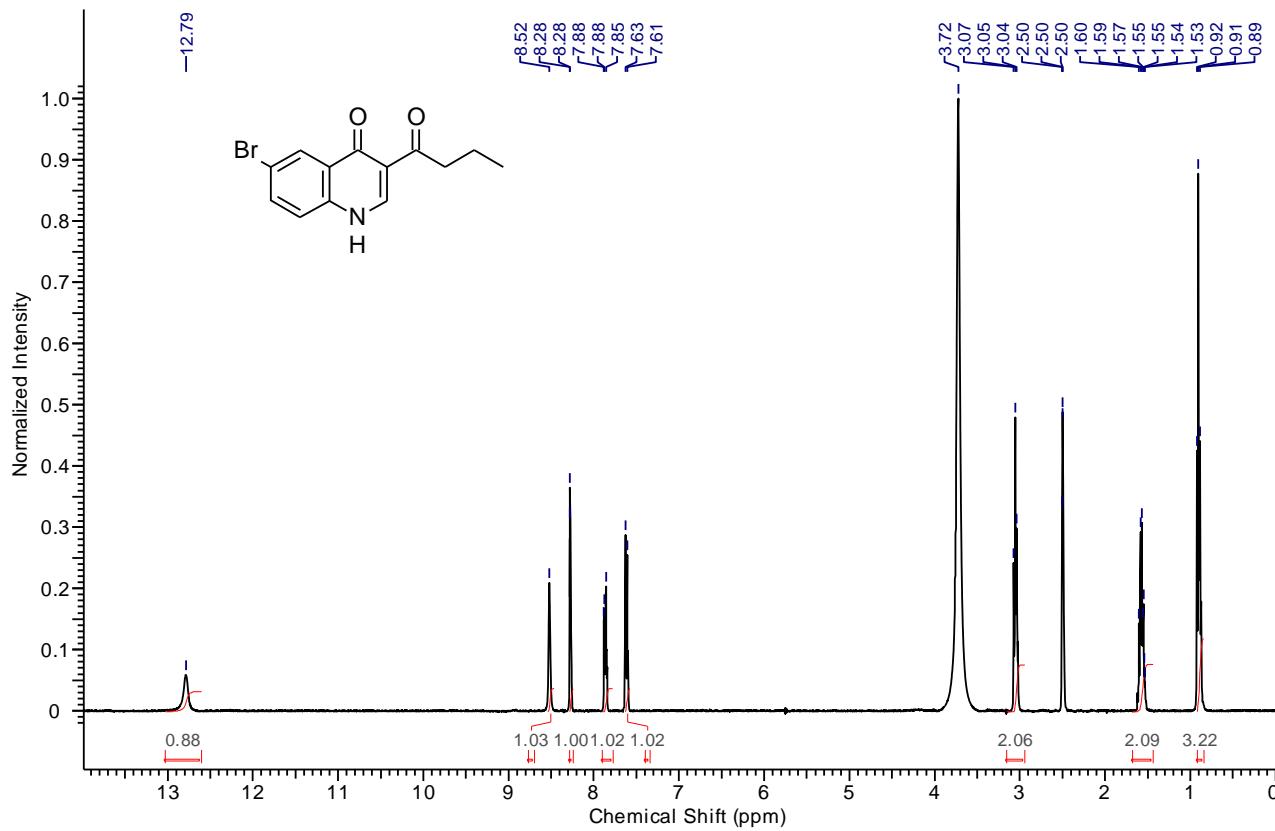


Figure S73. ¹H NMR spectrum of the compound 7n

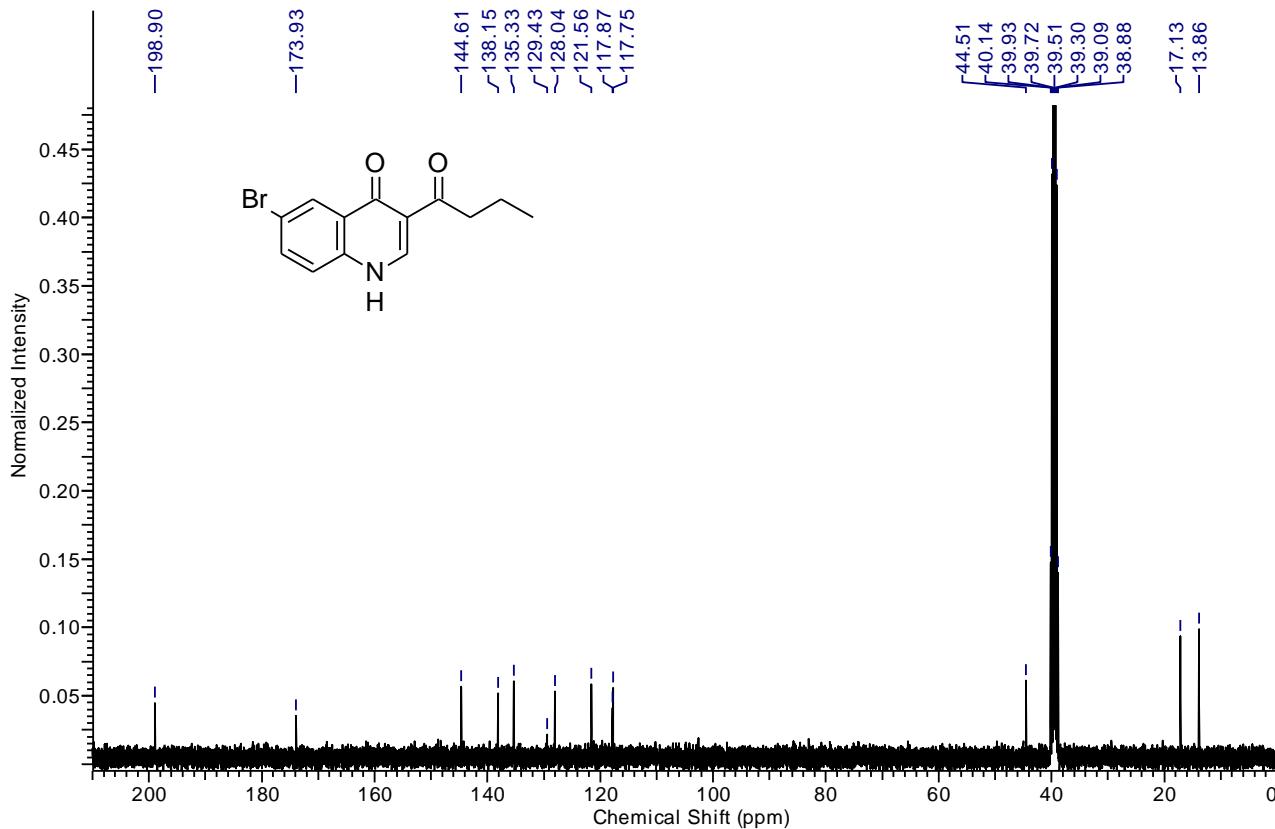


Figure S74. ¹³C NMR spectrum of the compound 7n

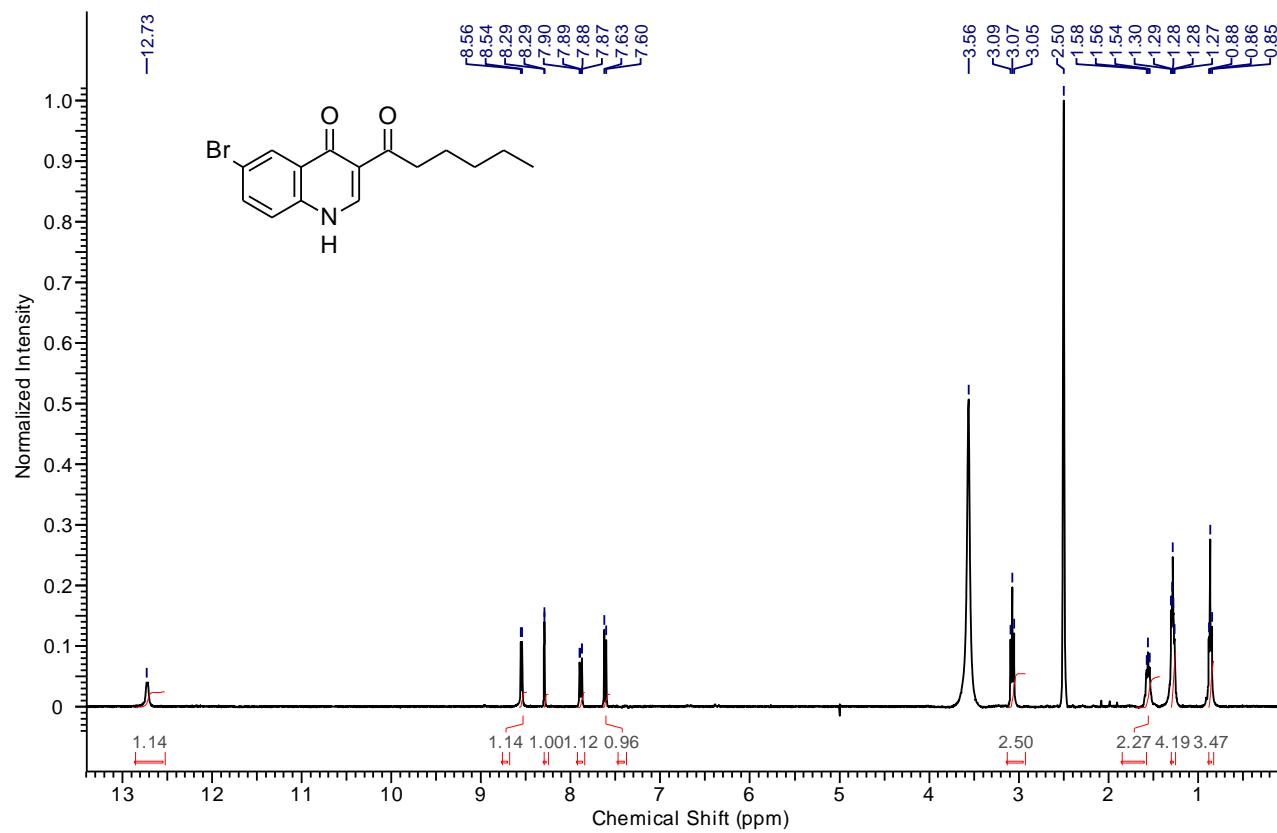


Figure S75. ^1H NMR spectrum of the compound **7o**

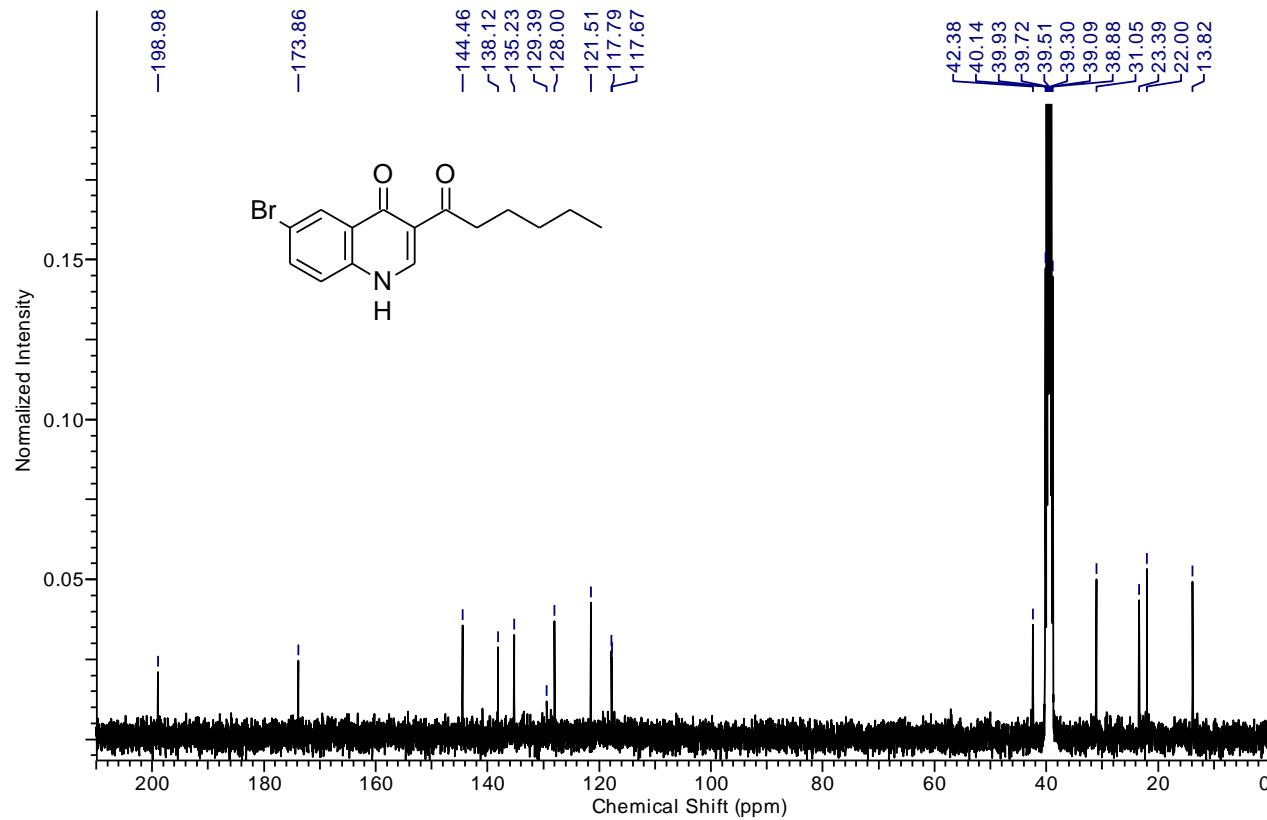


Figure S76. ^{13}C NMR spectrum of the compound **7o**

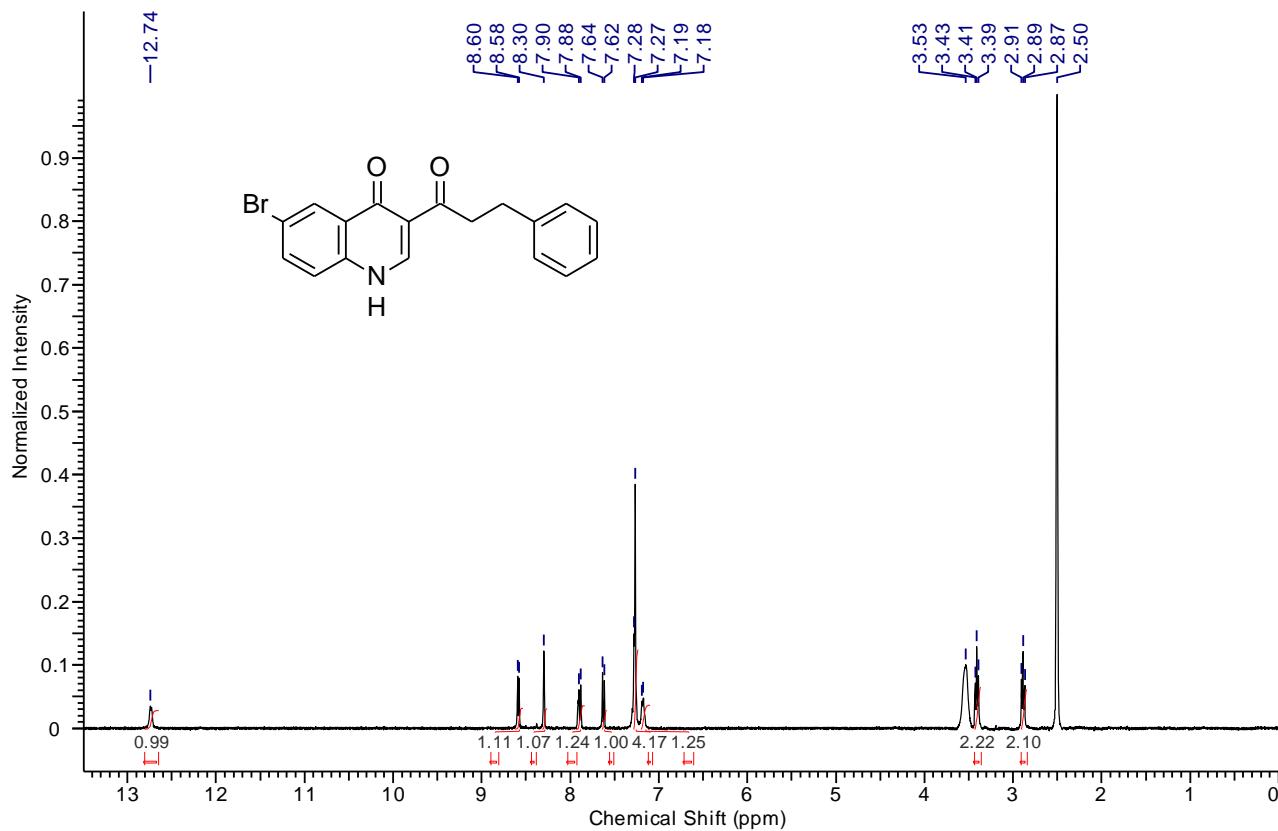


Figure S77. ¹H NMR spectrum of the compound 7p

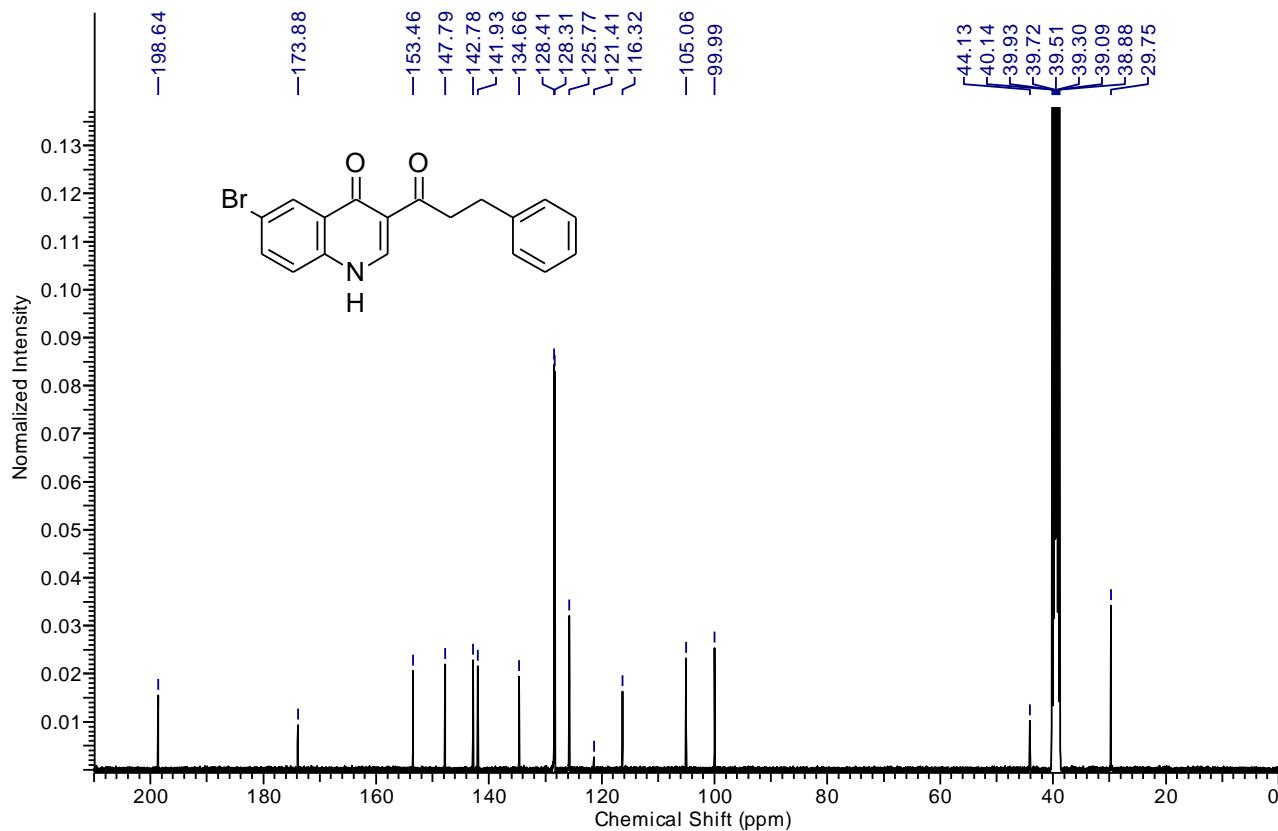


Figure S78. ¹³C NMR spectrum of the compound 7p

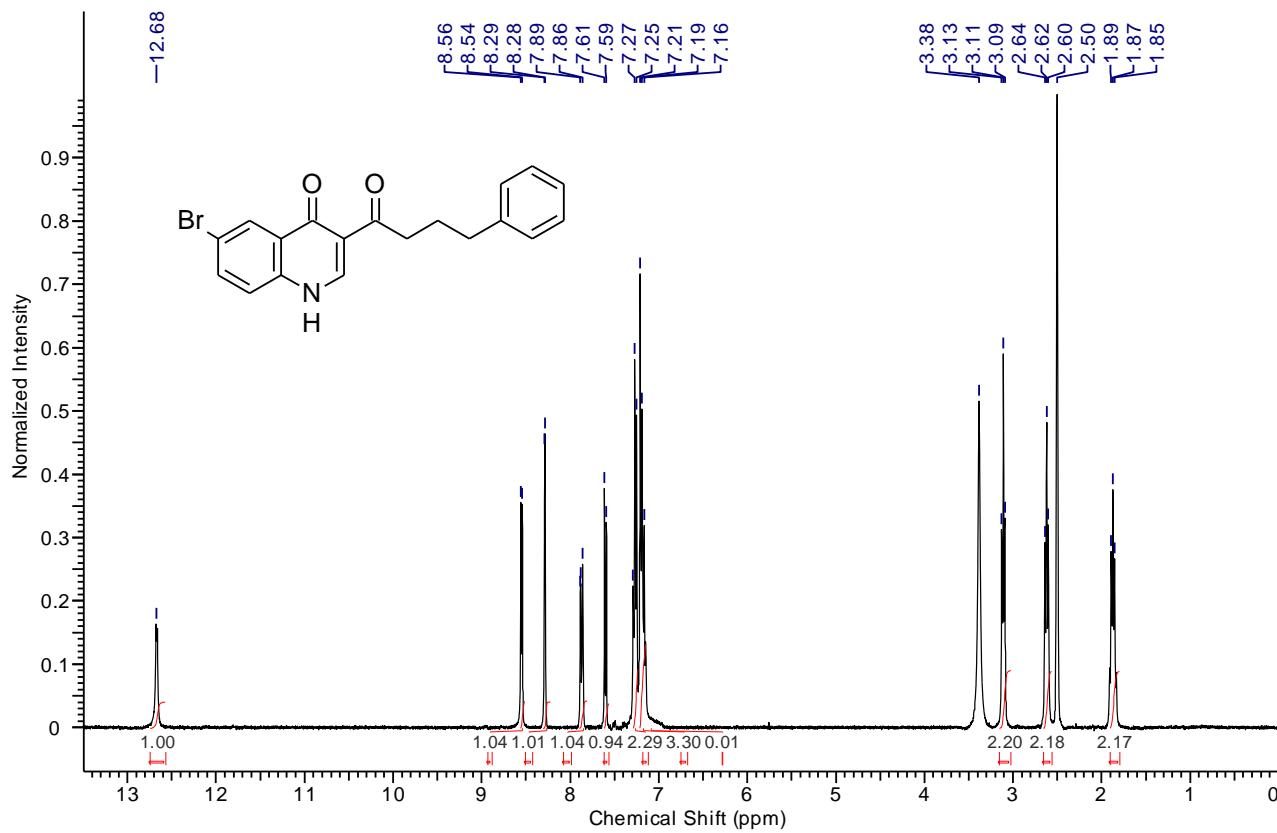


Figure S79. ¹H NMR spectrum of the compound 7q

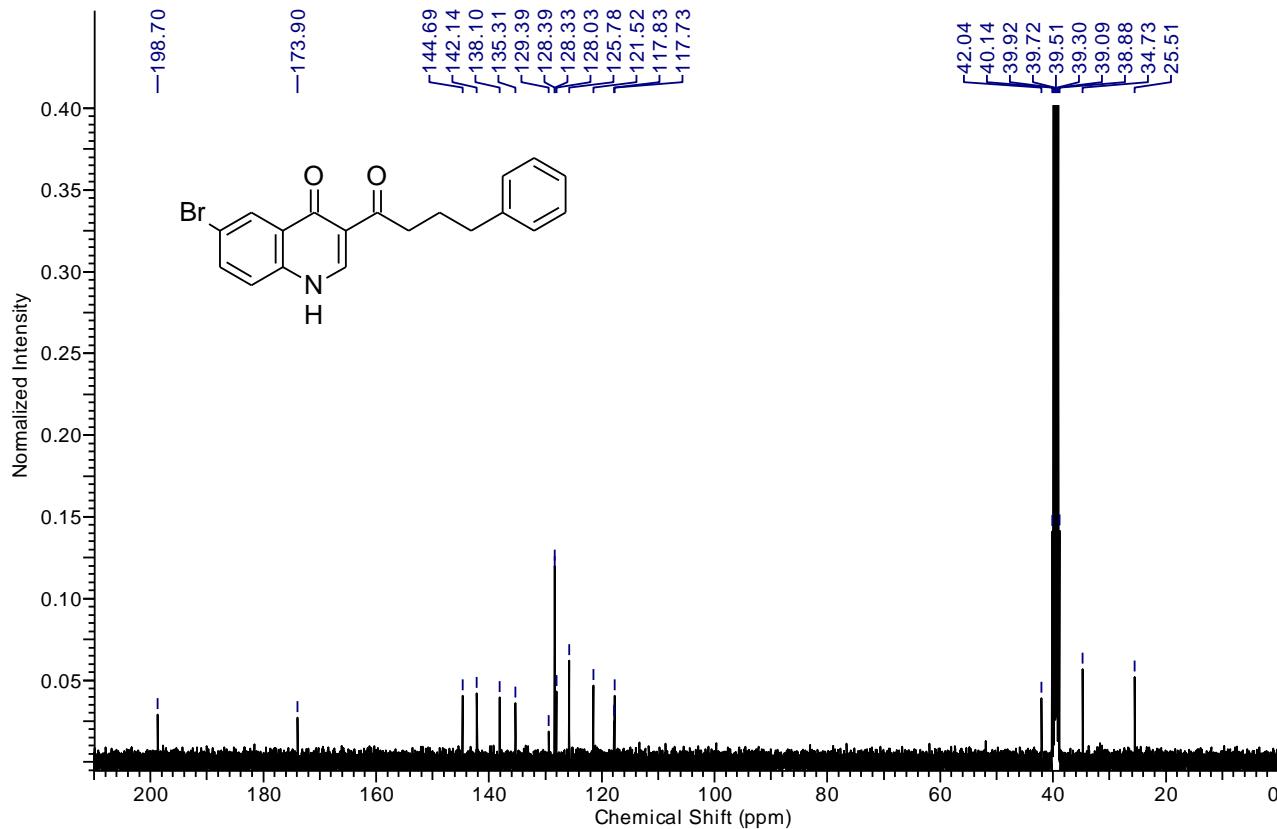


Figure S80. ¹³C NMR spectrum of the compound 7q

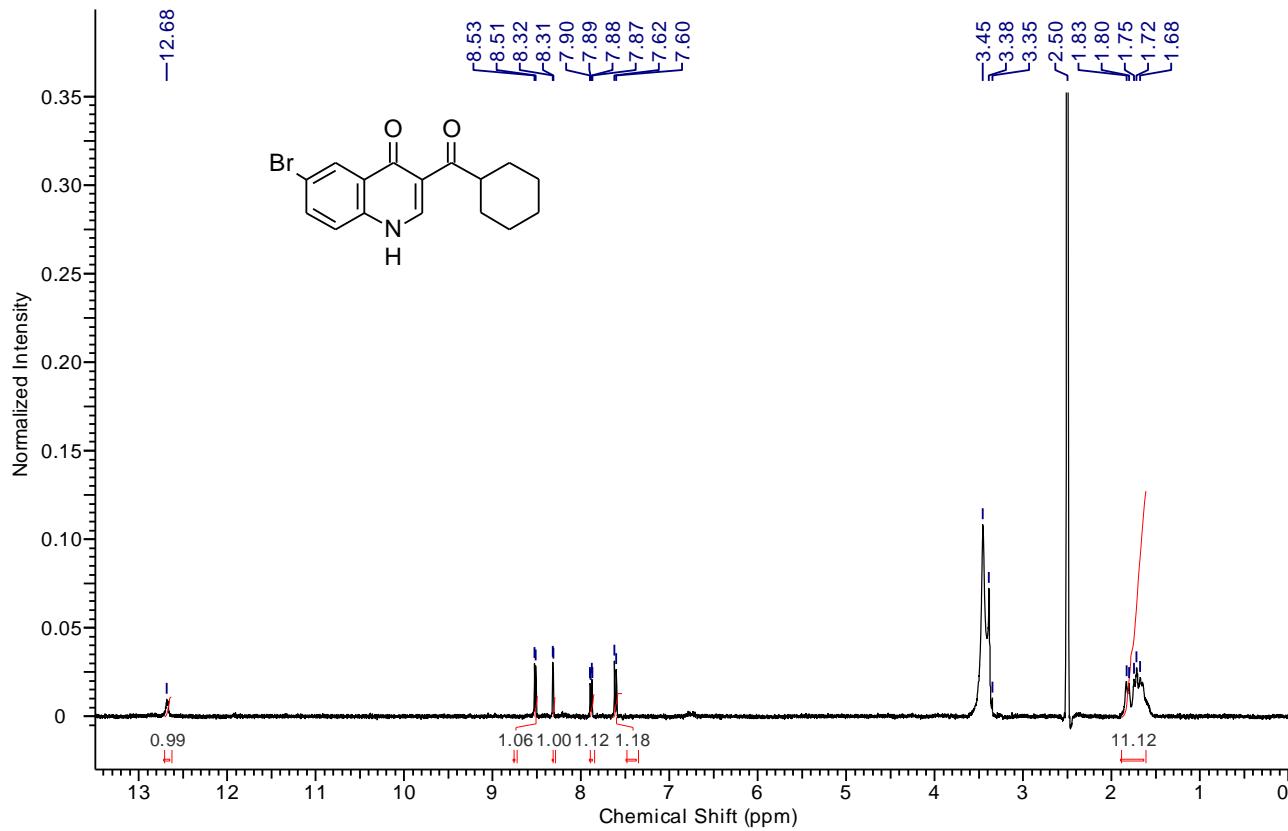


Figure S81. ¹H NMR spectrum of the compound 7r

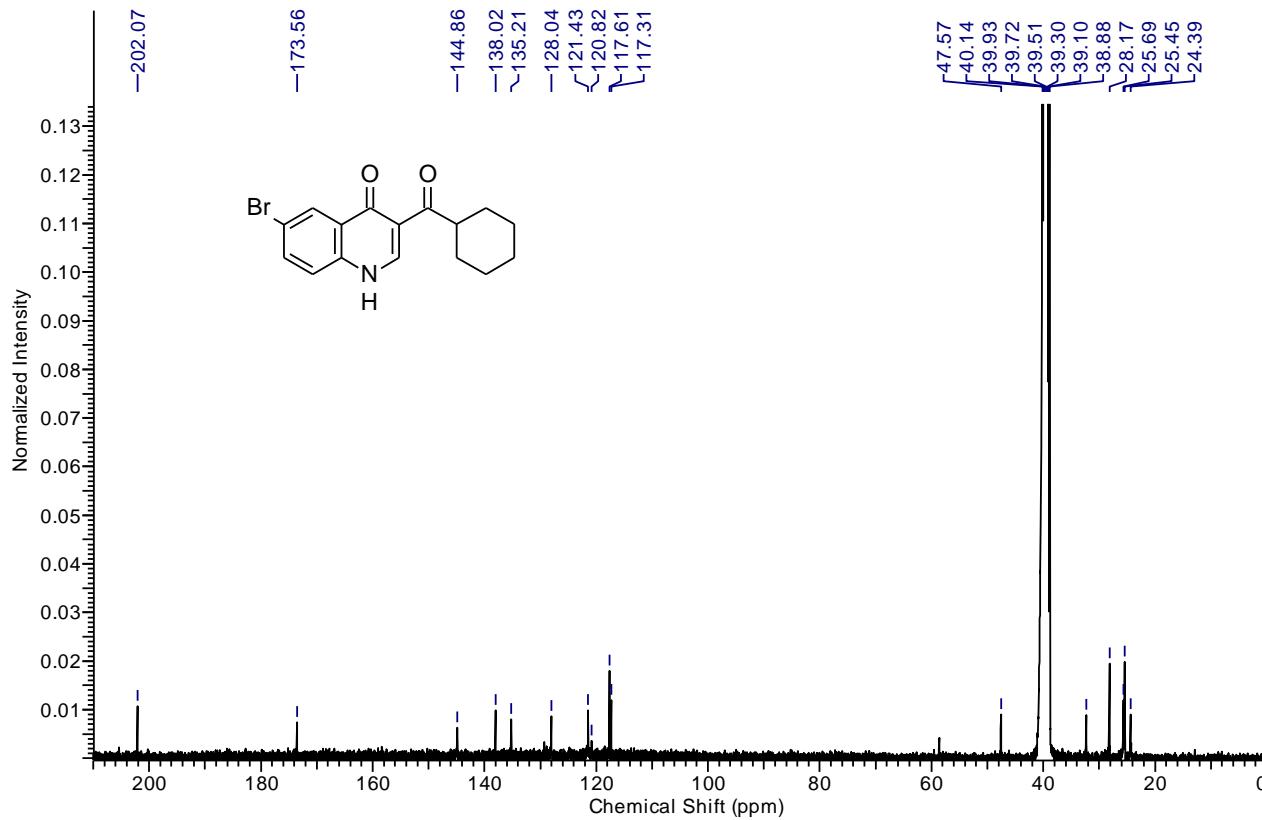


Figure S82. ¹³C NMR spectrum of the compound 7r

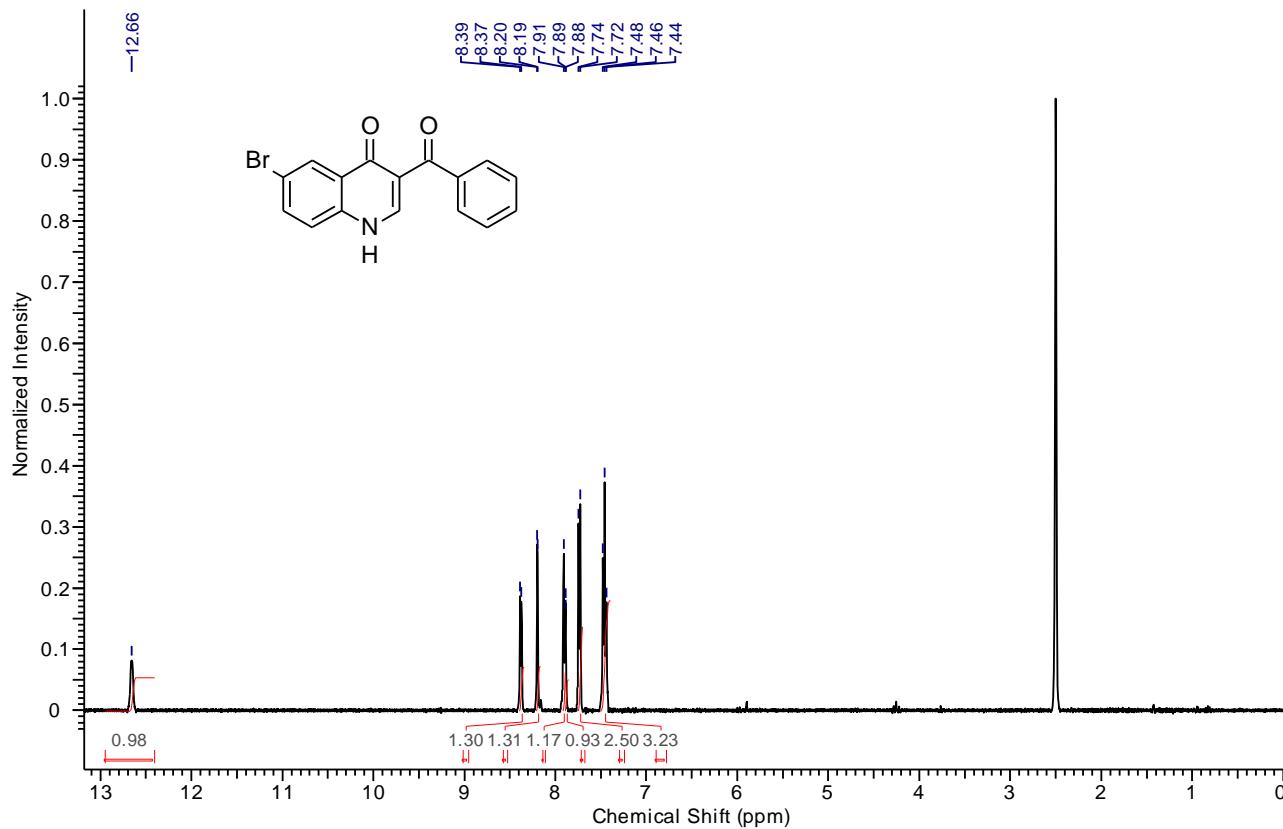


Figure S83. ^1H NMR spectrum of the compound **7s**

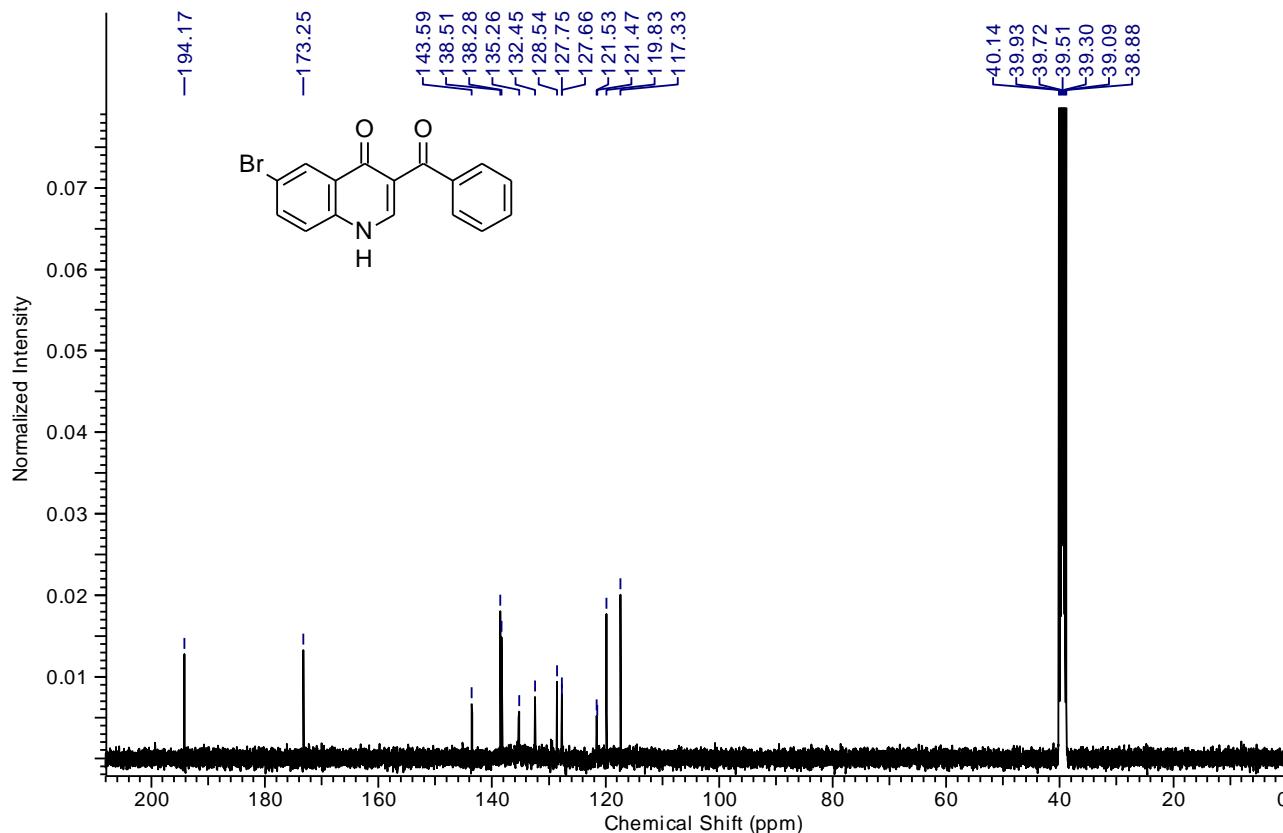


Figure S84. ^{13}C NMR spectrum of the compound **7s**

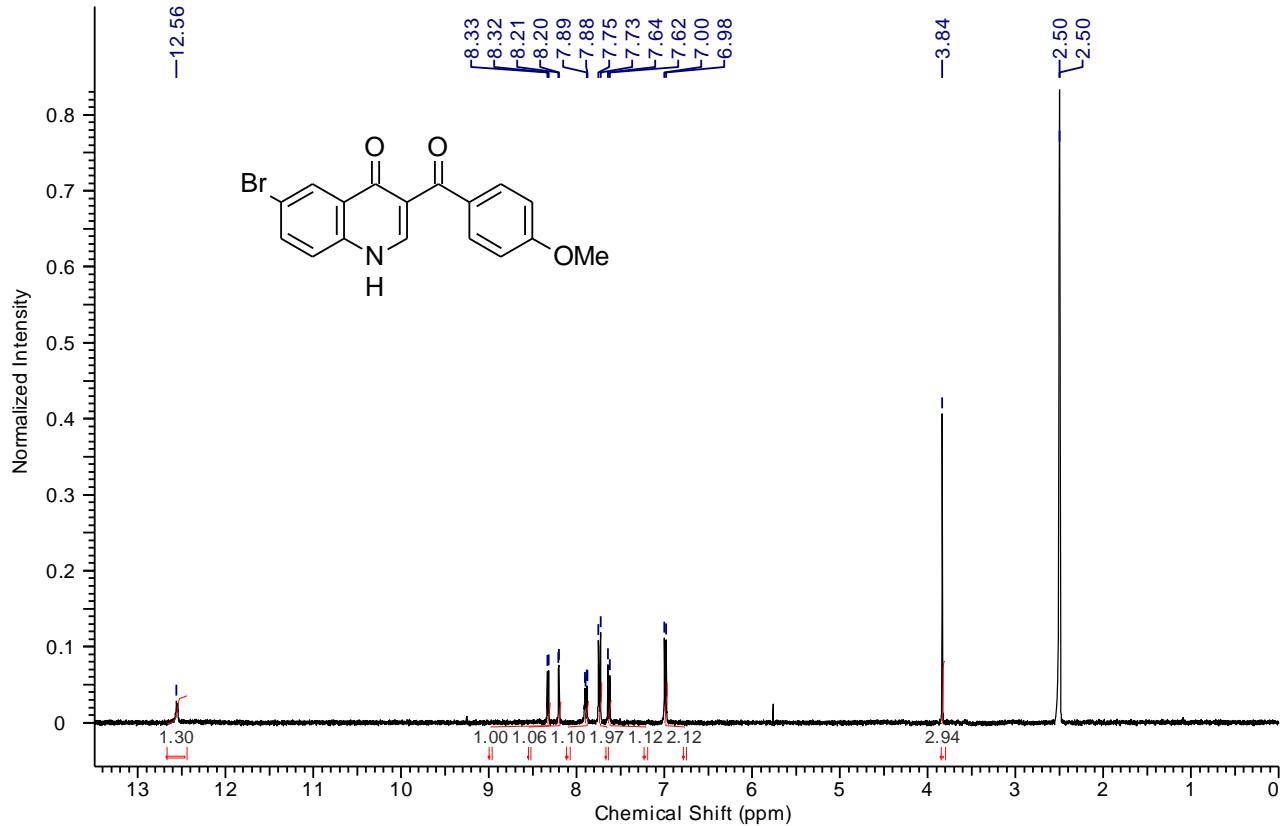


Figure S85. ^1H NMR spectrum of the compound **7t**

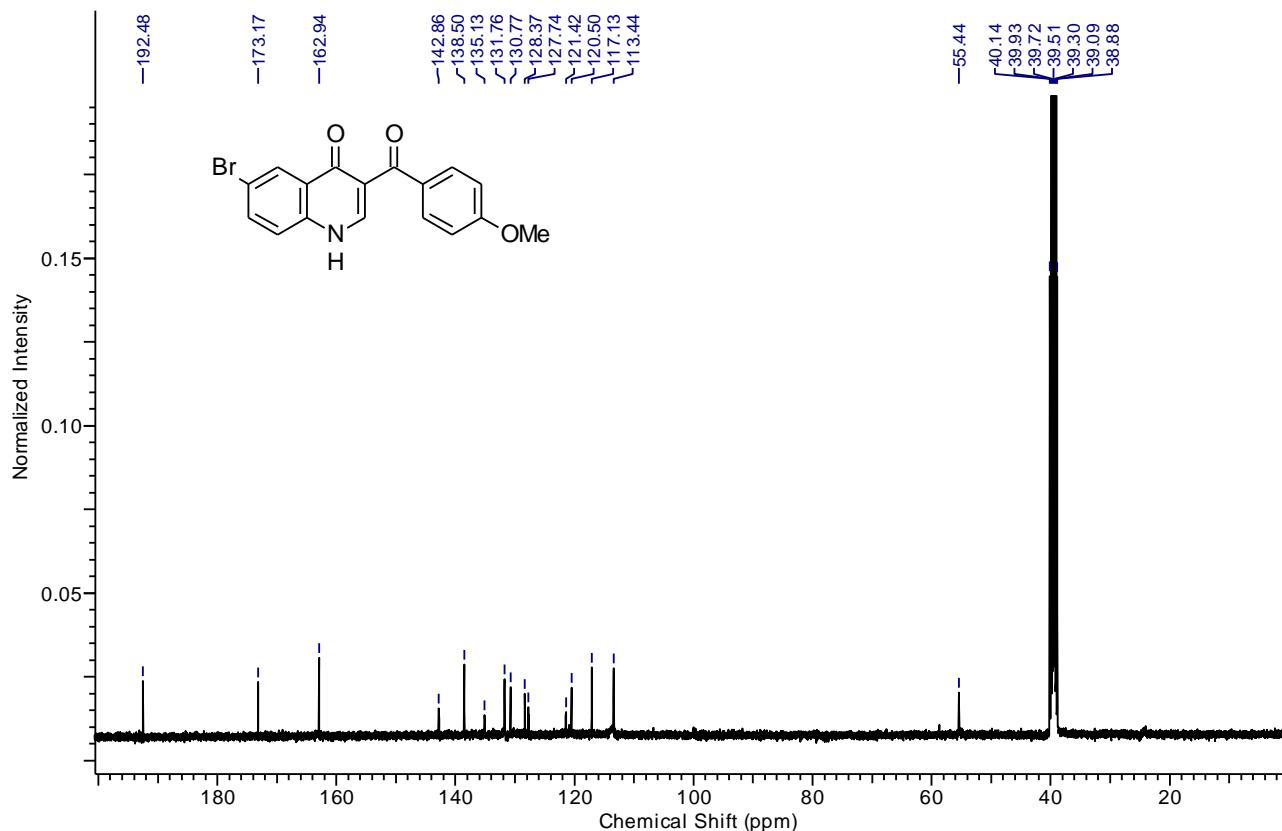


Figure S86. ^{13}C NMR spectrum of the compound **7t**

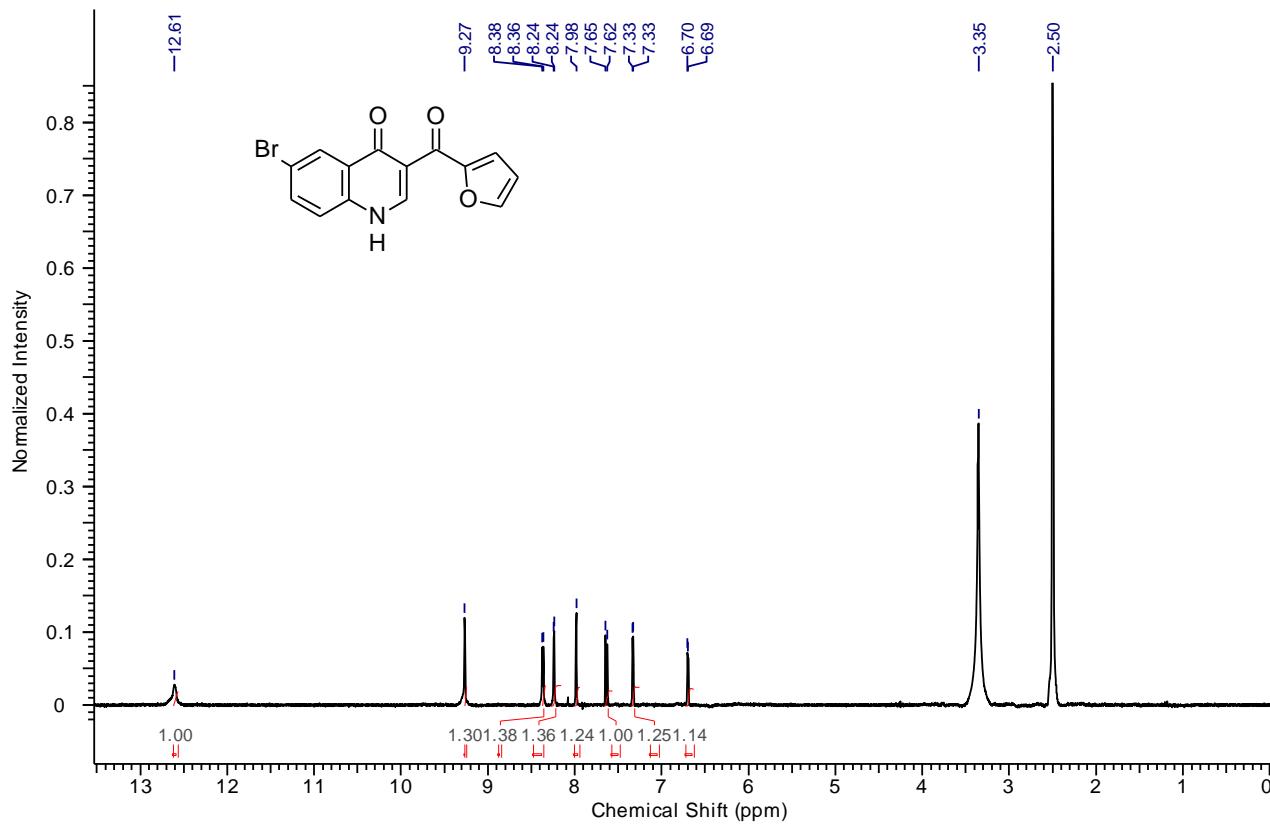


Figure S87. ¹H NMR spectrum of the compound 7u

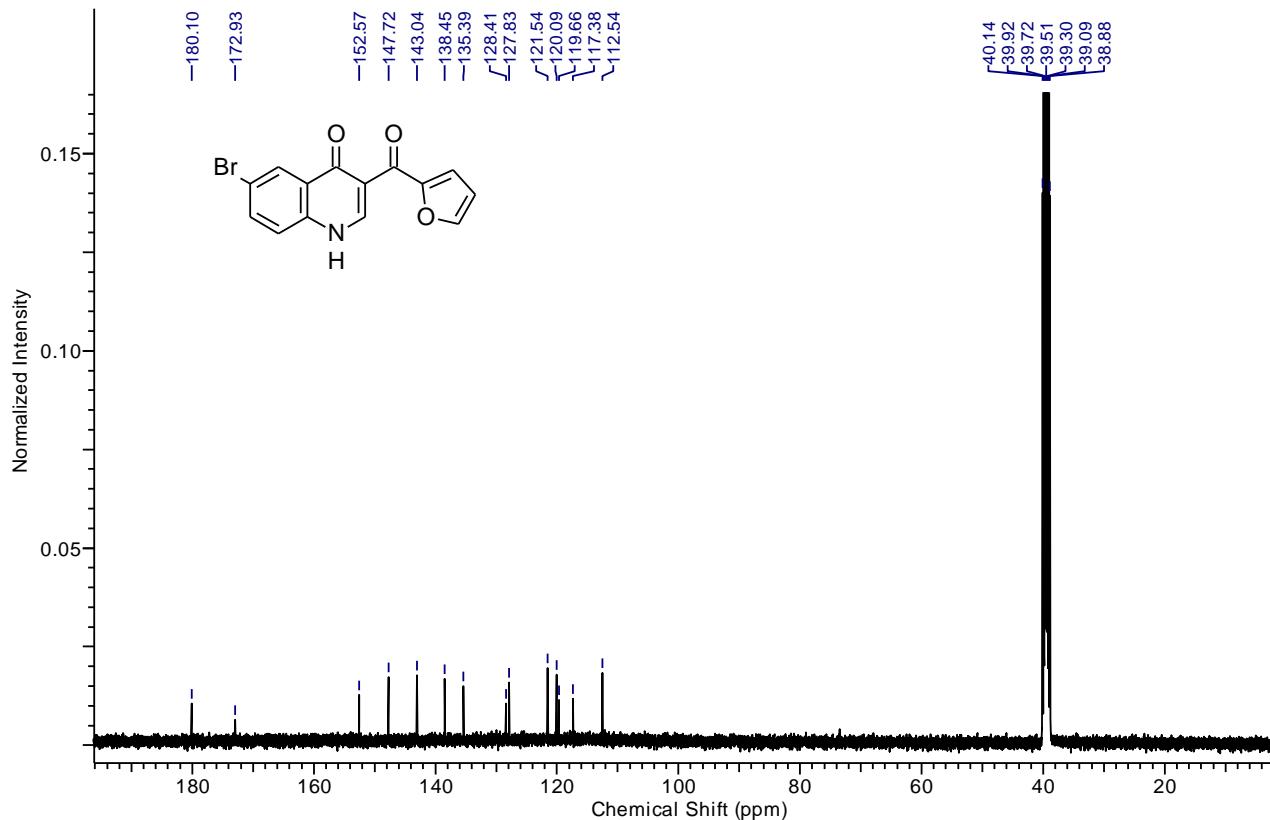


Figure S88. ¹³C NMR spectrum of the compound 7u

■ 2D-NOSEY proton NMR spectra of compounds **4a**, Me-**4a**, **7b**, and **7f** and ¹H NOESY correlations

