

Supplementary Information

Eco-Friendly, Catalyst and Solvent-Free, Synthesis of Acetanilides and *N*-Benzothiazole-2-yl-acetamides

Silvio Cunha^{*a,b} and Lourenço L. B. de Santana^{a,b}

^a*Instituto de Química and ^bInstituto Nacional de Ciência e Tecnologia (INCT) em Energia e Ambiente, Universidade Federal da Bahia, Campus de Ondina, 40170-290 Salvador-BA, Brazil*

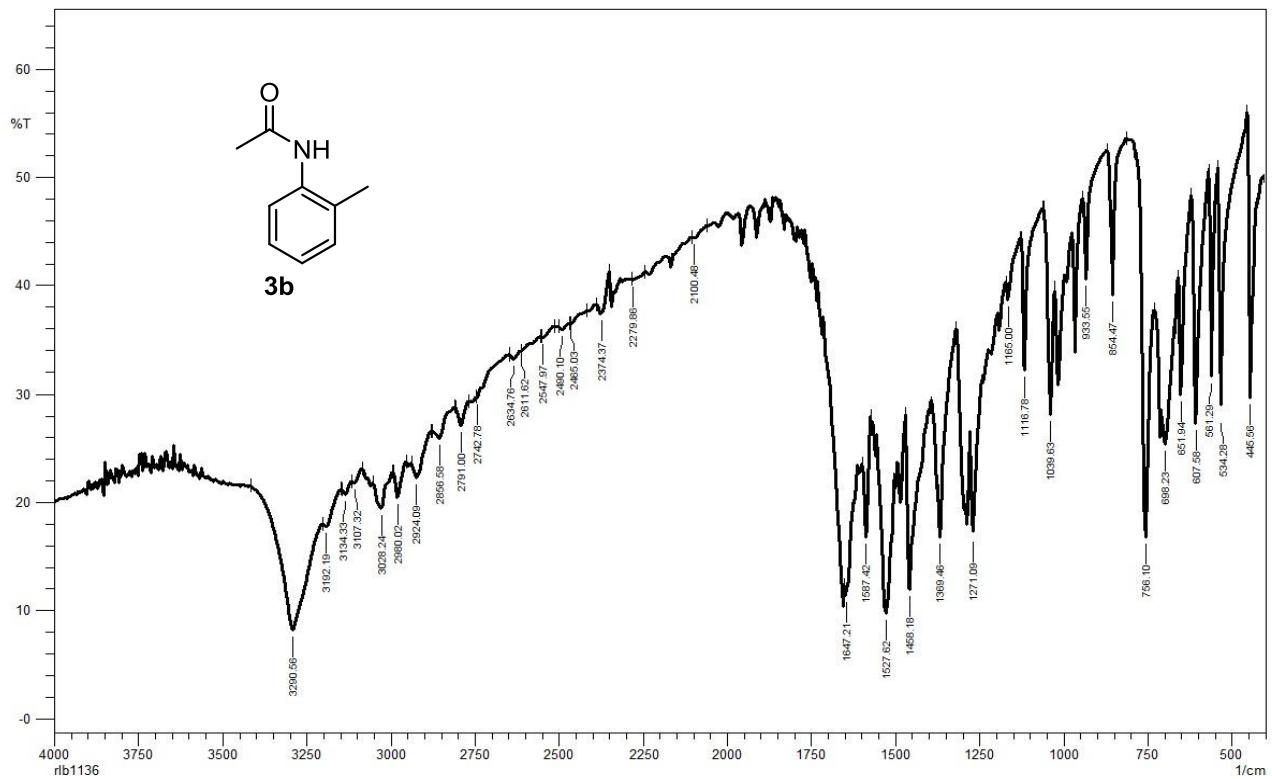


Figure S1. IR spectrum of **3b** (KBr).

*e-mail: silviocdc@ufba.br

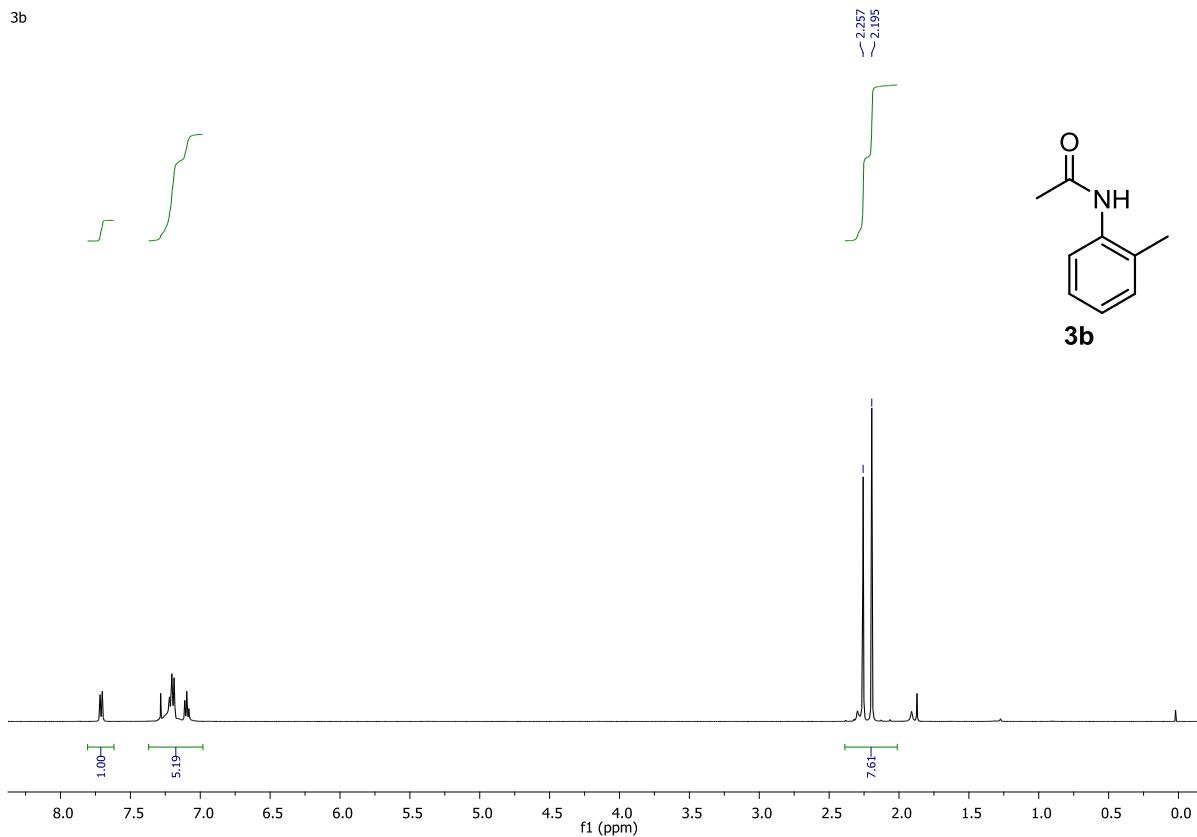


Figure S2. Full ^1H NMR spectrum of **3b** (500 MHz, CDCl_3).

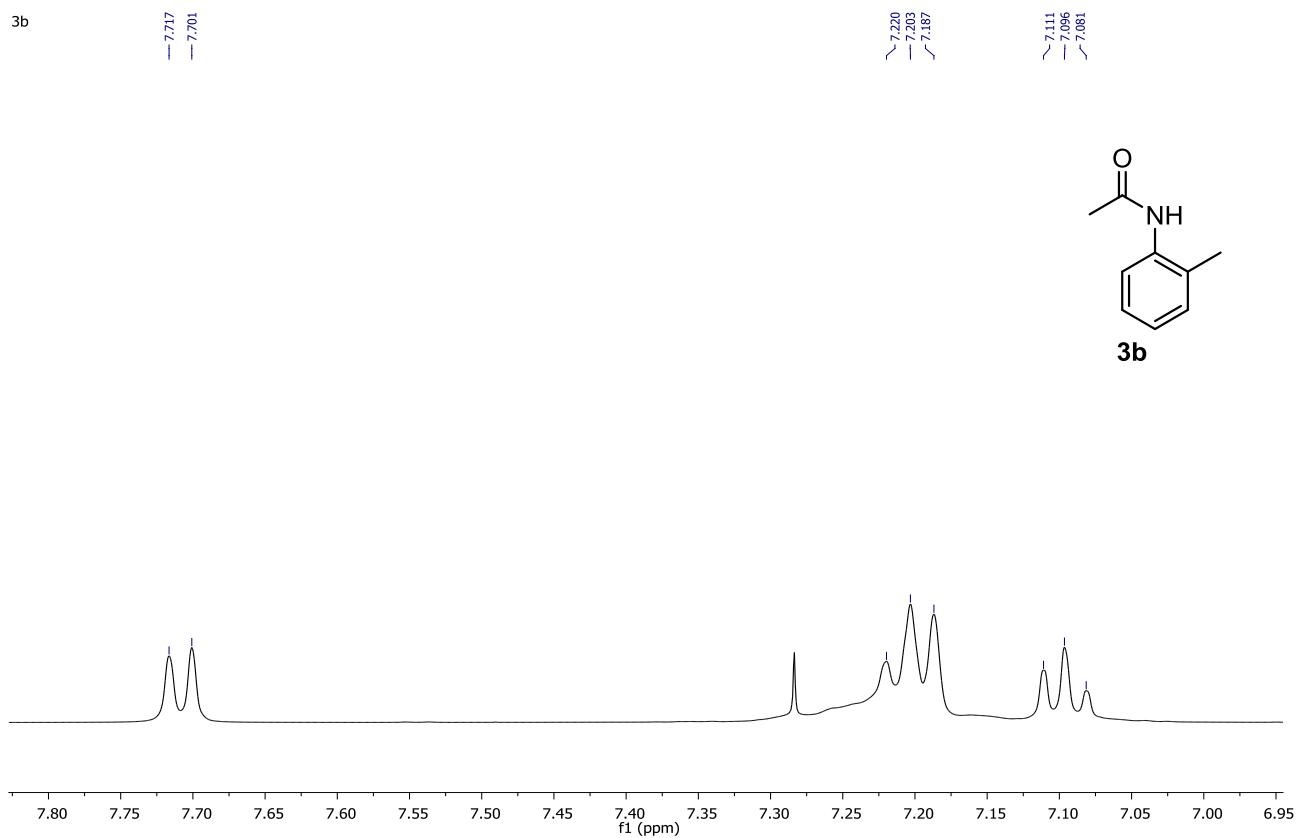


Figure S3. Expanded ^1H NMR spectrum of compound **3b** (500 MHz, CDCl_3).

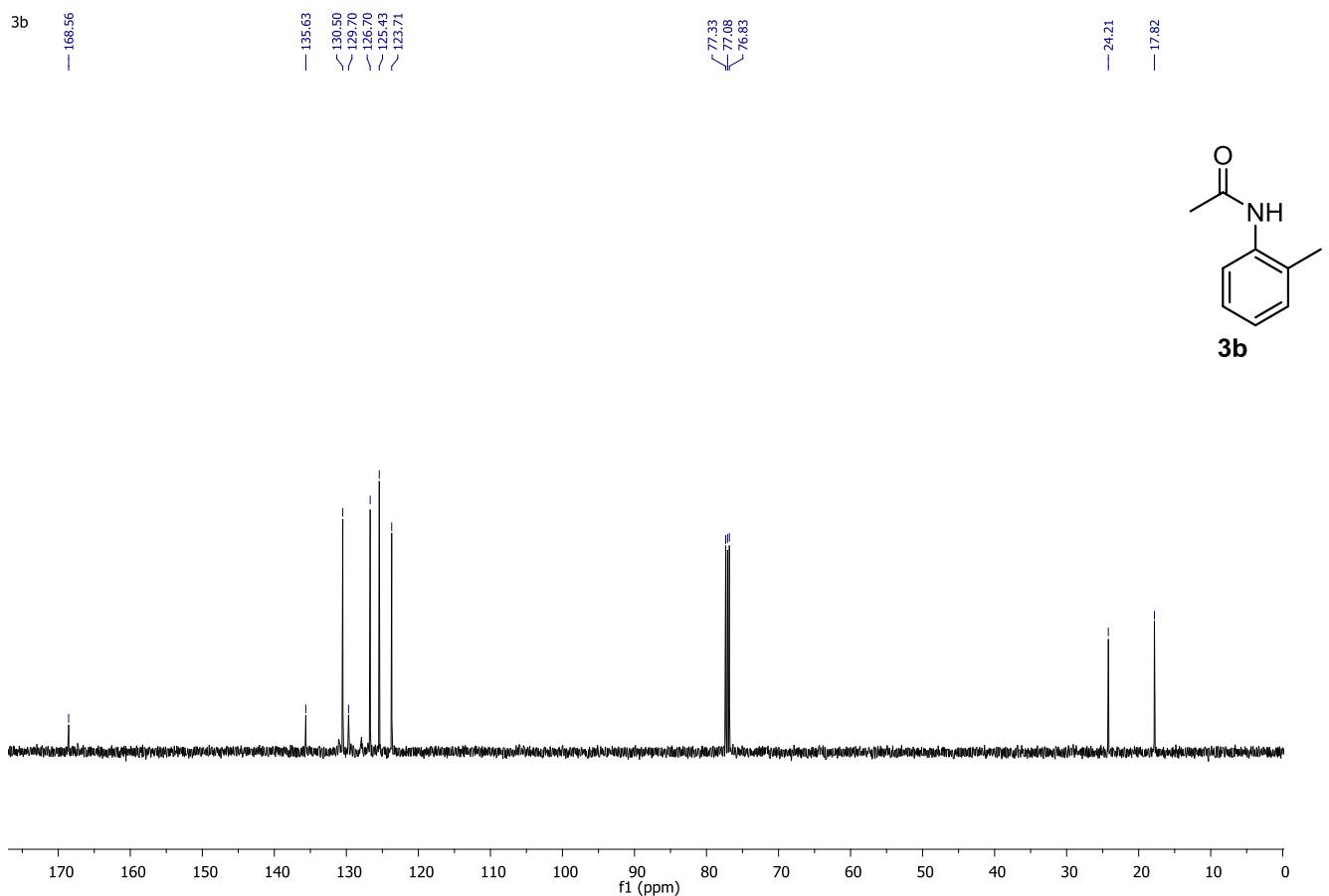


Figure S4. Full ^{13}C NMR spectrum of compound **3b** (125 MHz, CDCl_3).

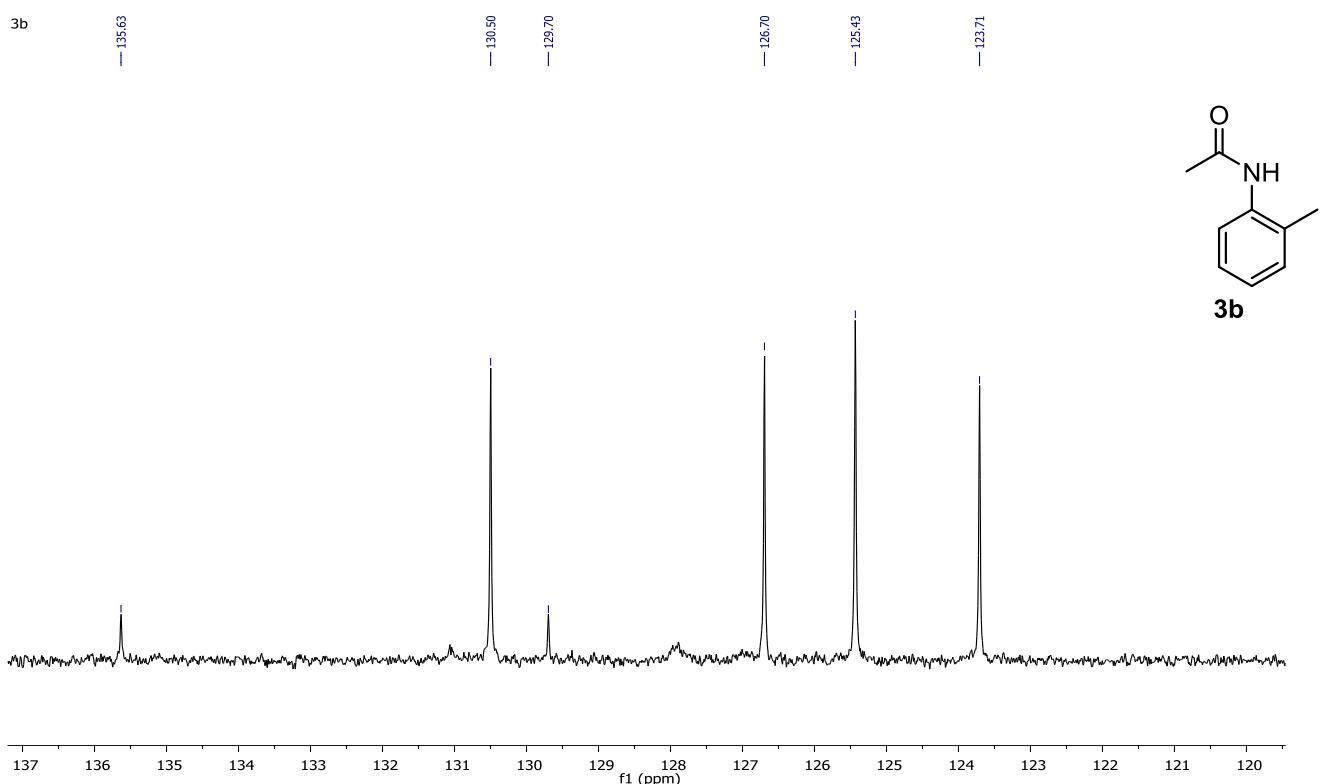


Figure S5. Expanded ^{13}C NMR spectrum of compound **3b** (125 MHz, CDCl_3).

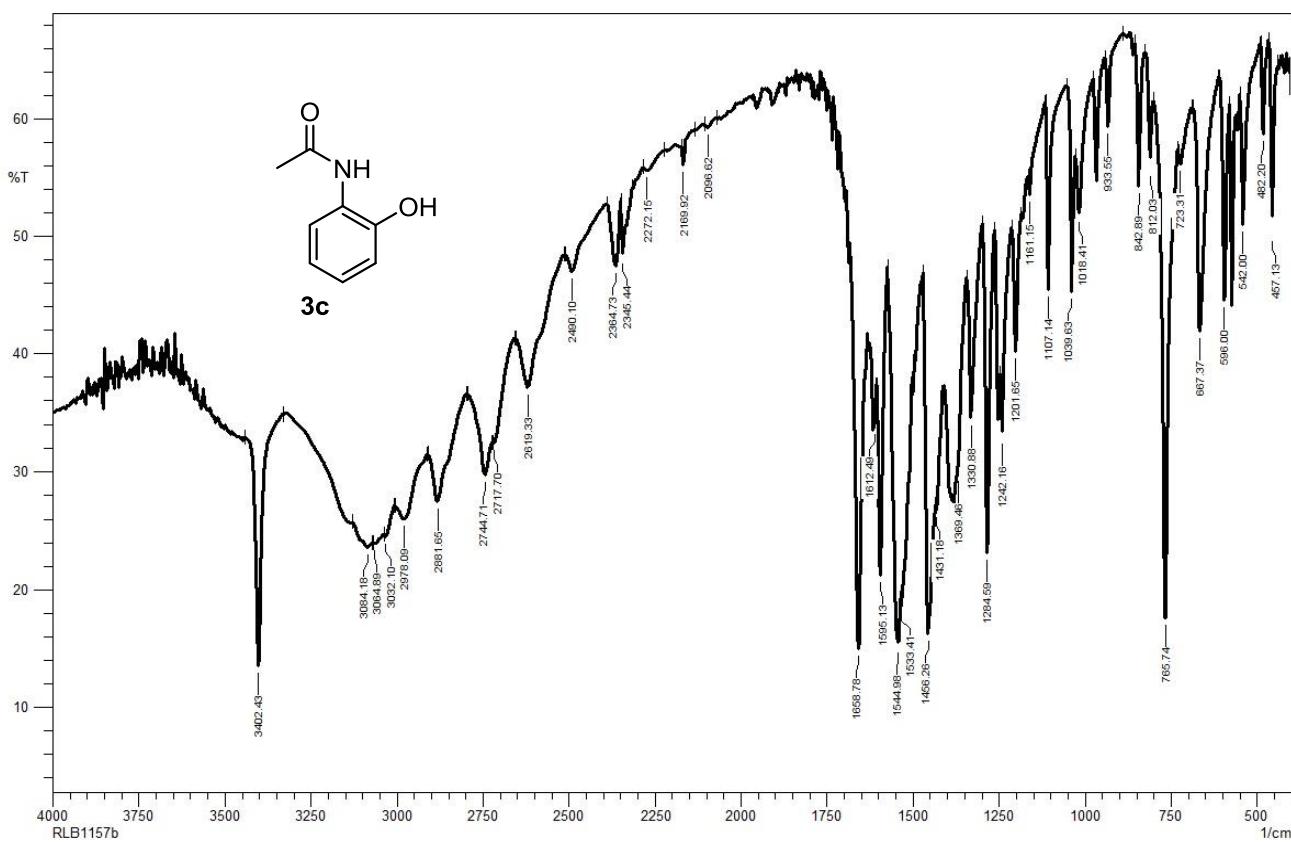


Figure S6. IR spectrum of **3c** (KBr).

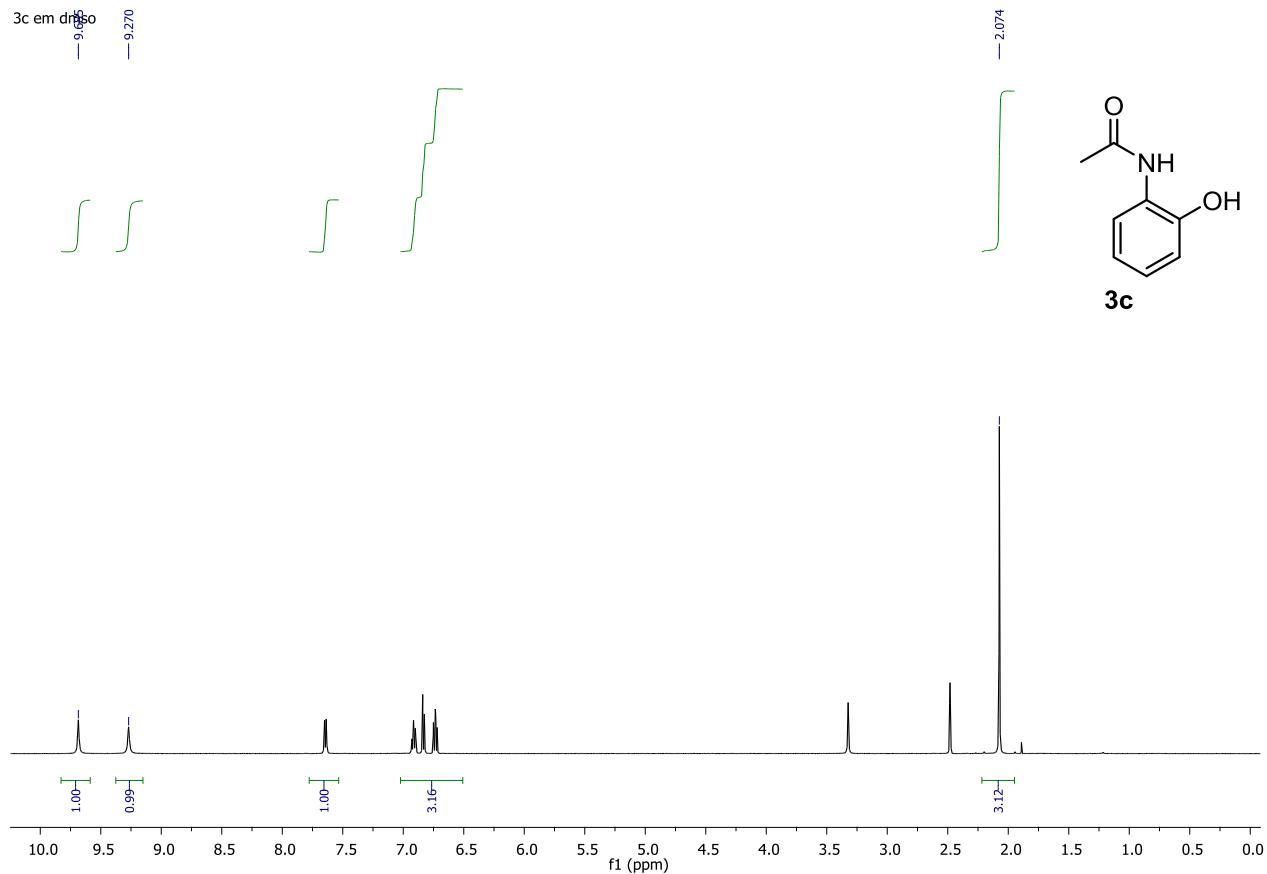


Figure S7. Full ^1H NMR spectrum of **3c** (500 MHz, $\text{DMSO}-d_6$).

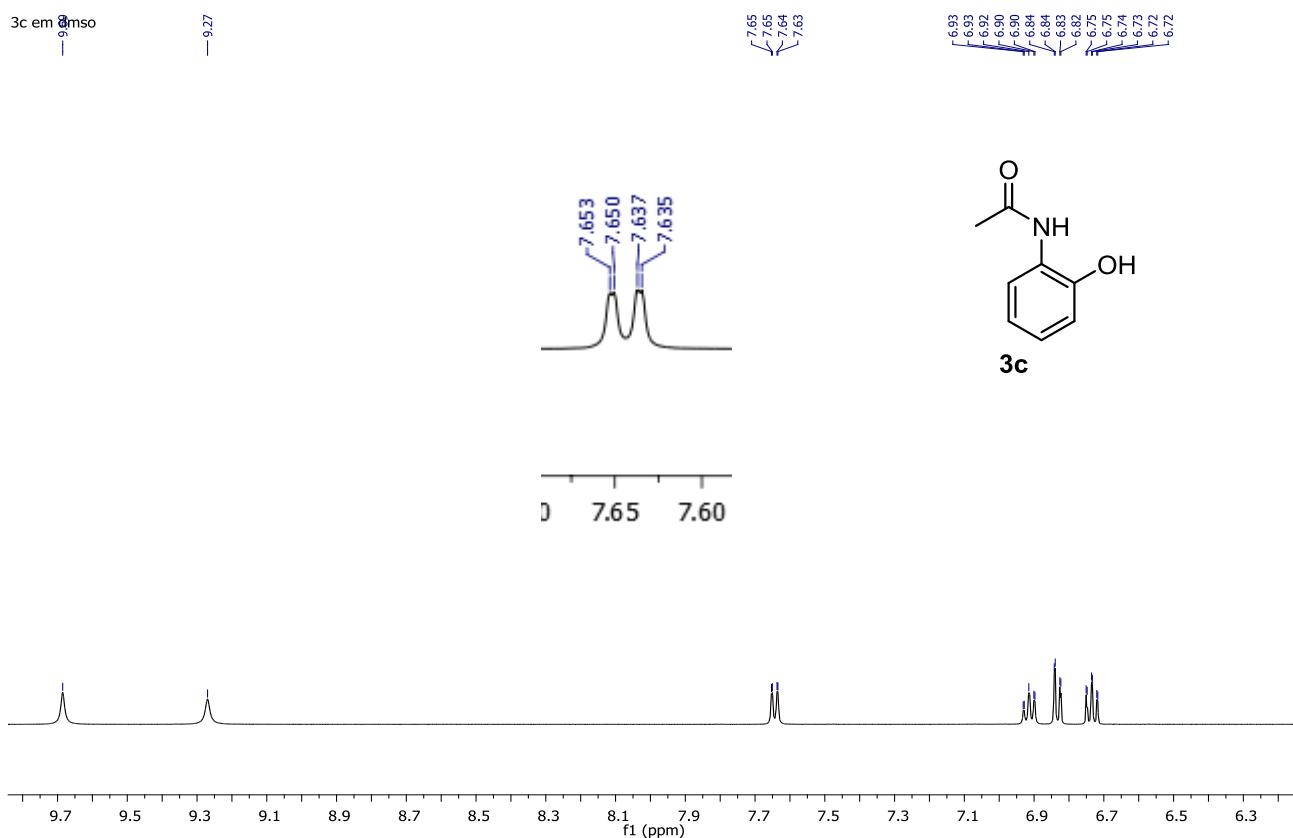


Figure S8. Expanded ^1H NMR spectrum of **3c** (500 MHz, $\text{DMSO}-d_6$).

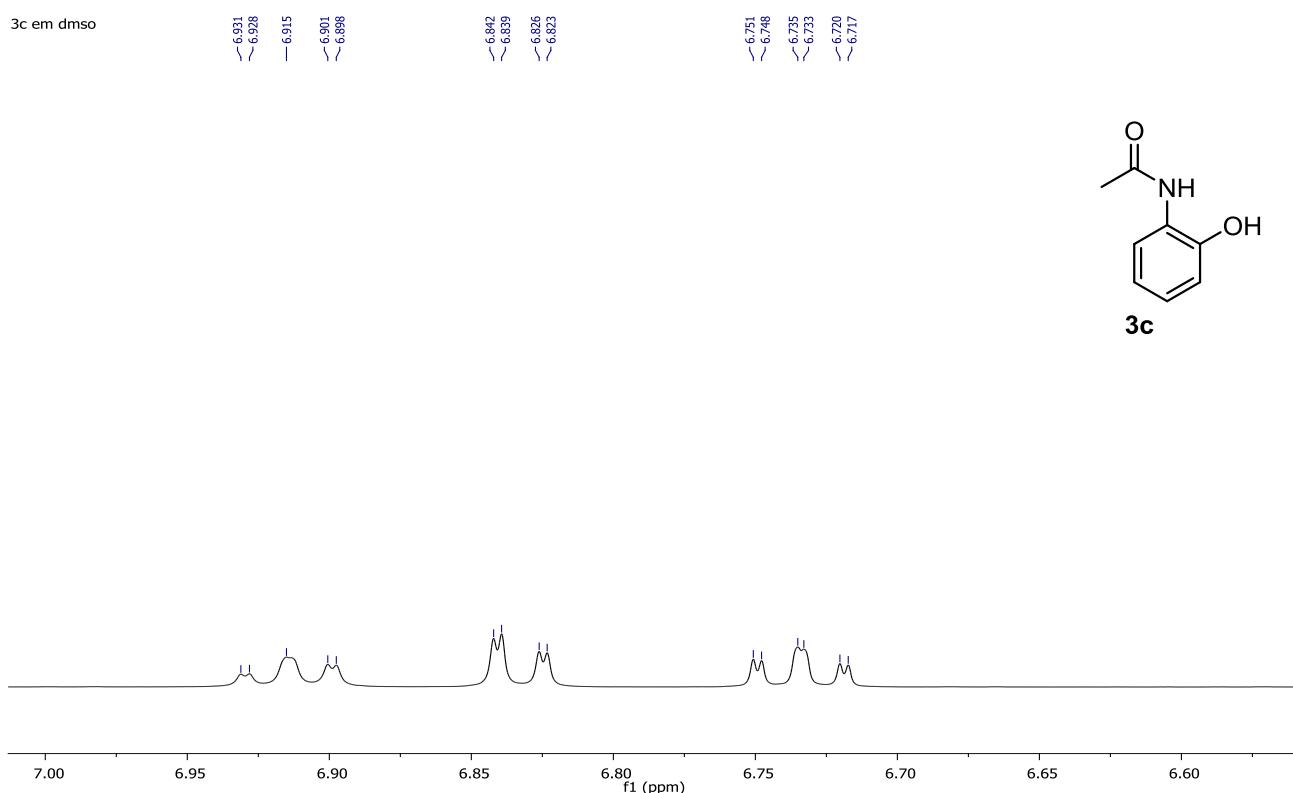


Figure S9. Expanded ^1H NMR spectrum of **3c** (500 MHz, $\text{DMSO}-d_6$).

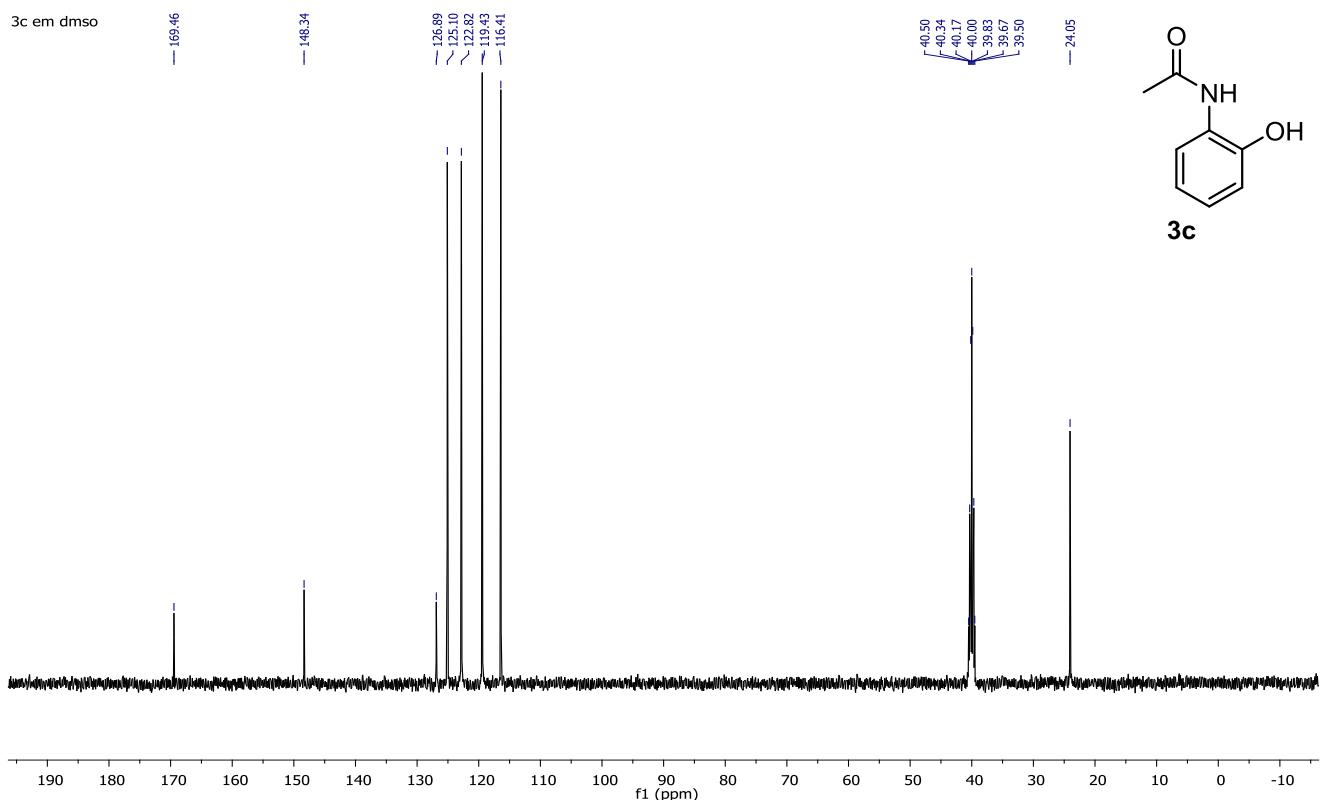


Figure S10. Full ^{13}C NMR spectrum of compound **3c** (125 MHz, $\text{DMSO}-d_6$).

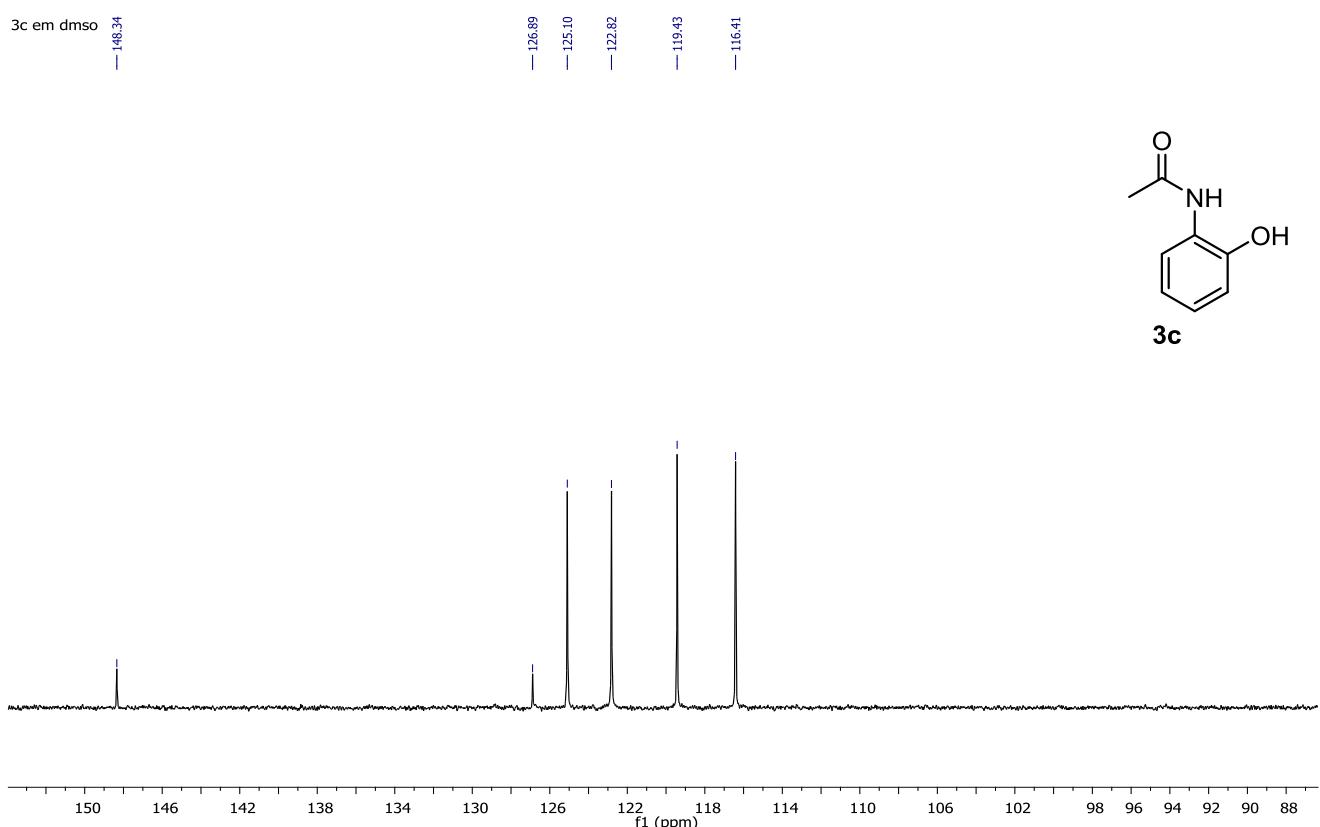


Figure S11. Expanded ^{13}C NMR spectrum of compound **3c** (125 MHz, $\text{DMSO}-d_6$).

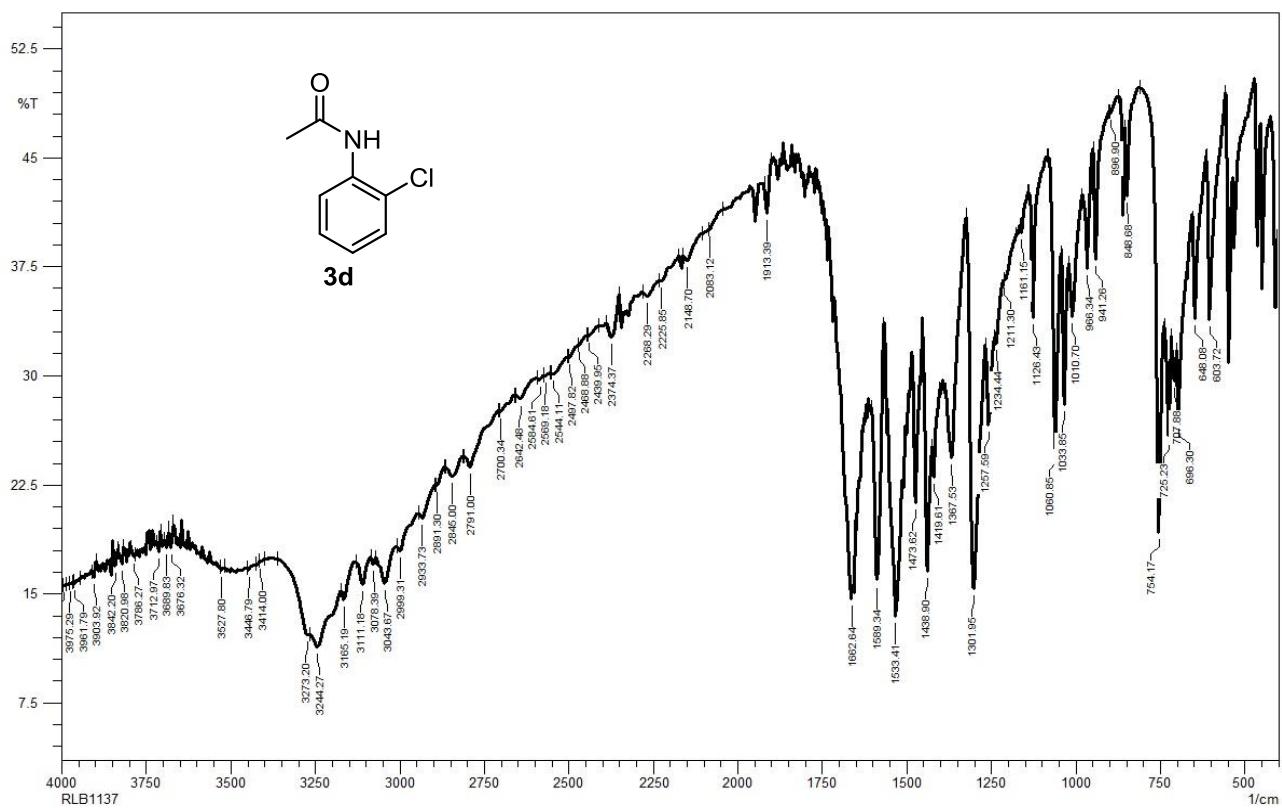


Figure S12. IR spectrum of **3d** (KBr).

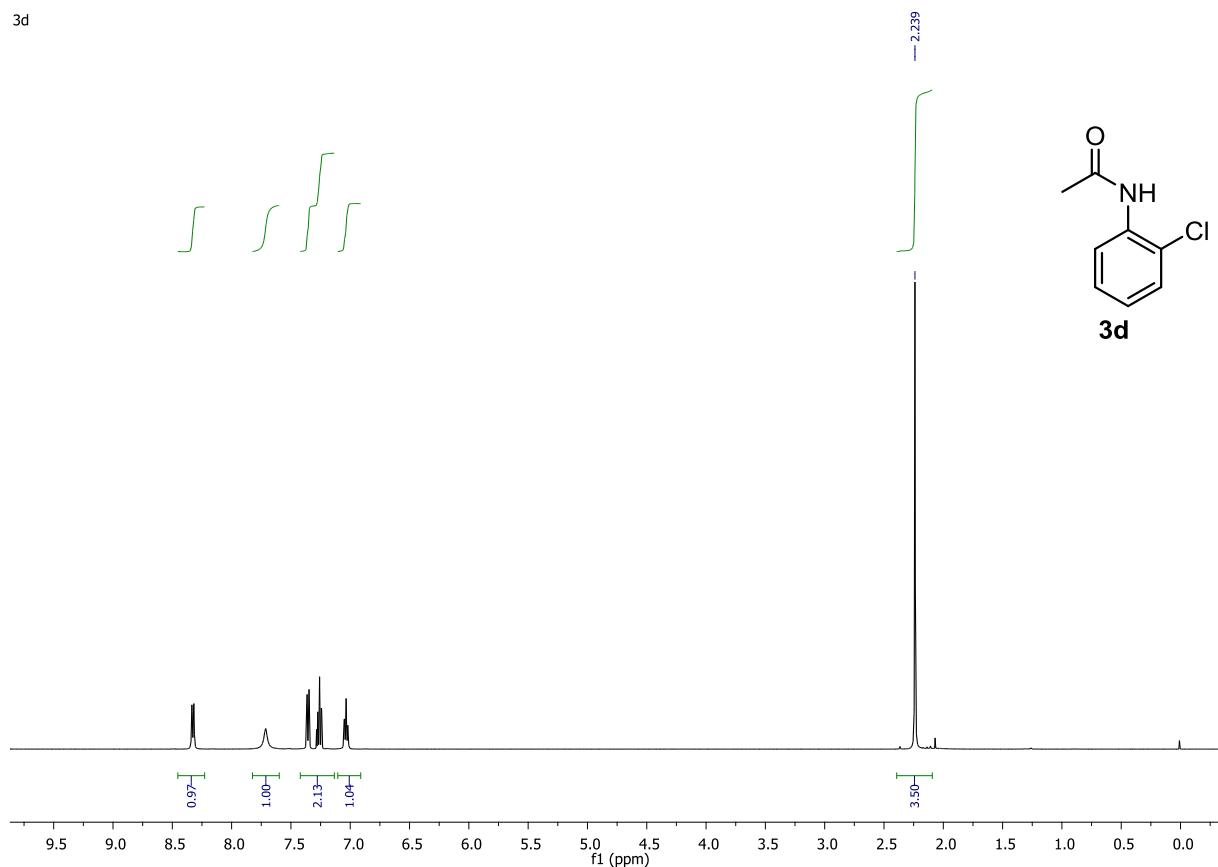


Figure S13. Full ¹H NMR spectrum of **3d** (500 MHz, CDCl₃).

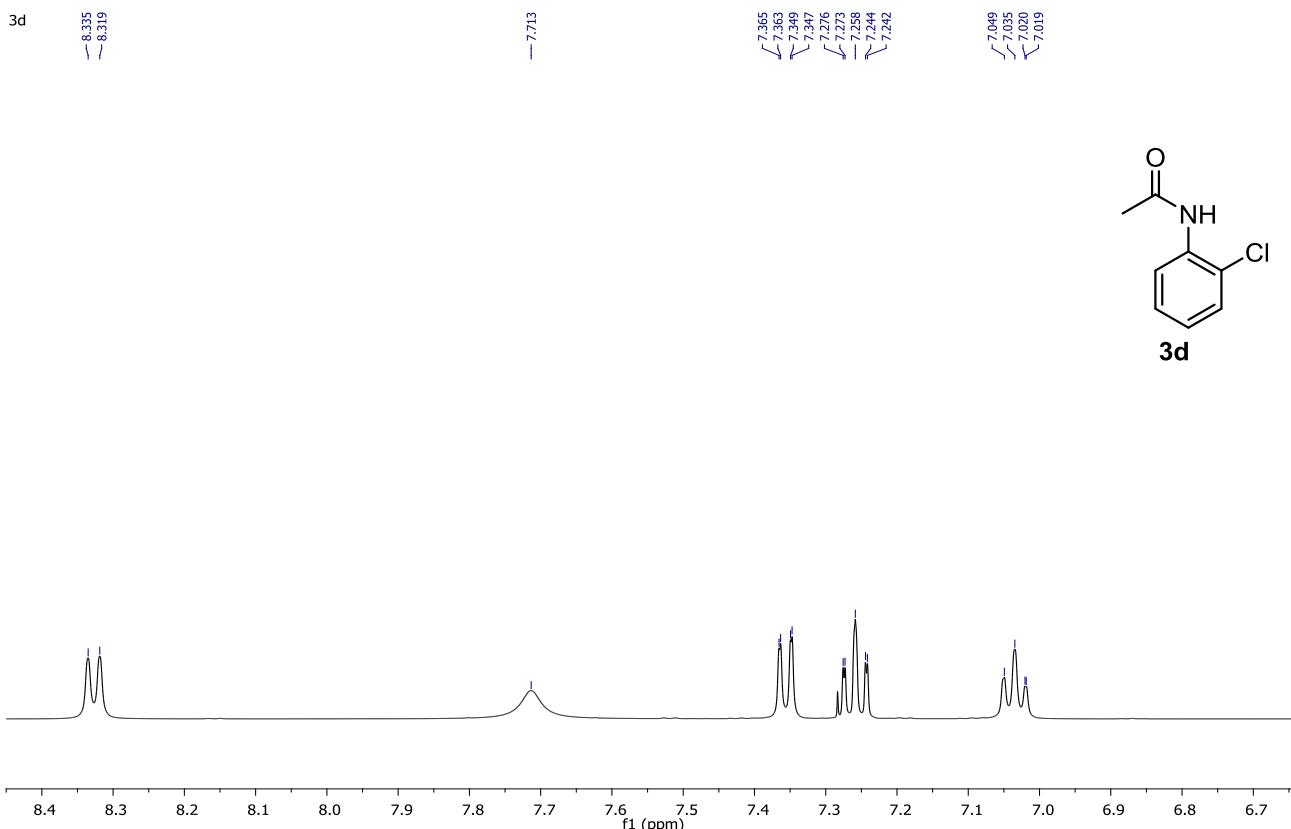


Figure S14. Expanded ¹H NMR spectrum of compound 3d (500 MHz, CDCl₃).

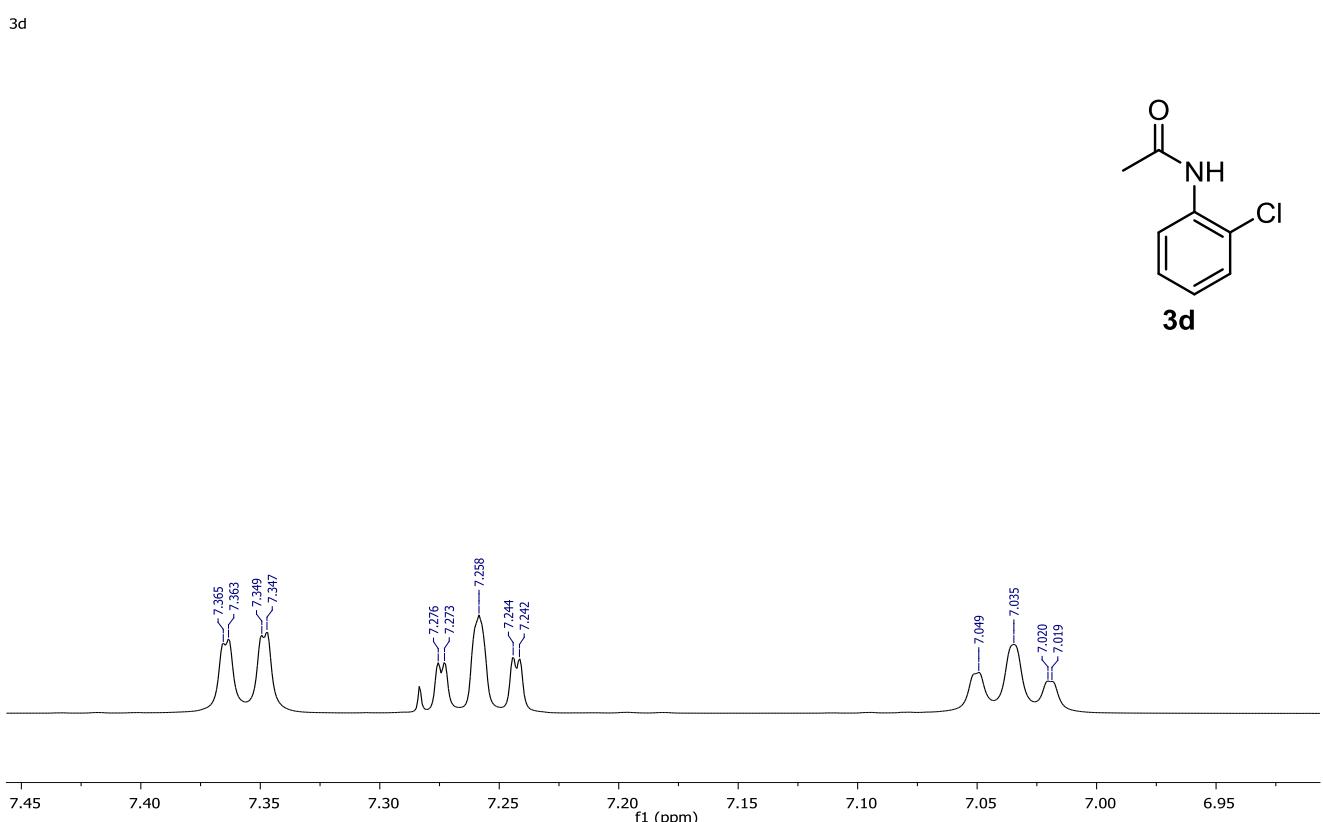


Figure S15. Expanded ¹H NMR spectrum of compound 3d (500 MHz, CDCl₃).

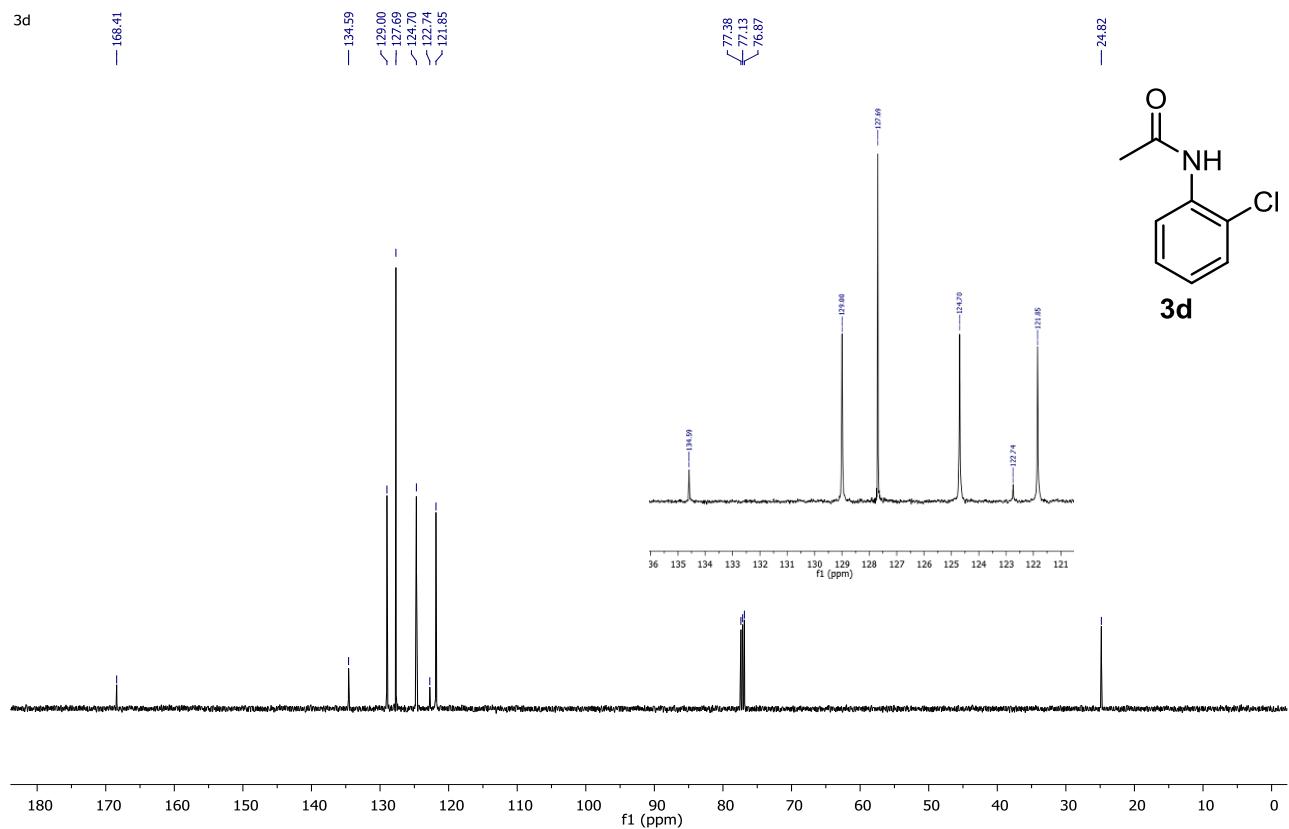


Figure S16. Full ^{13}C NMR spectrum of compound **3d** (125 MHz, CDCl_3).

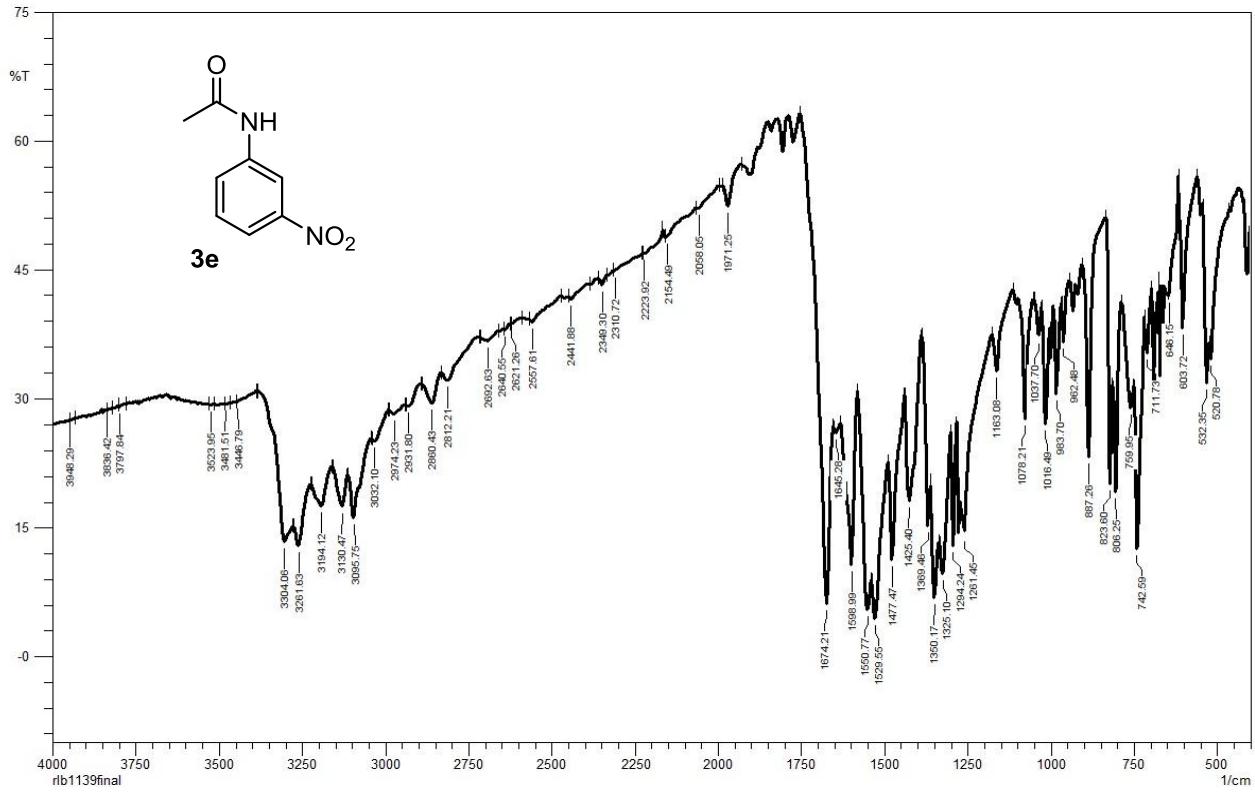


Figure S17. IR spectrum of **3e** (KBr).

3e

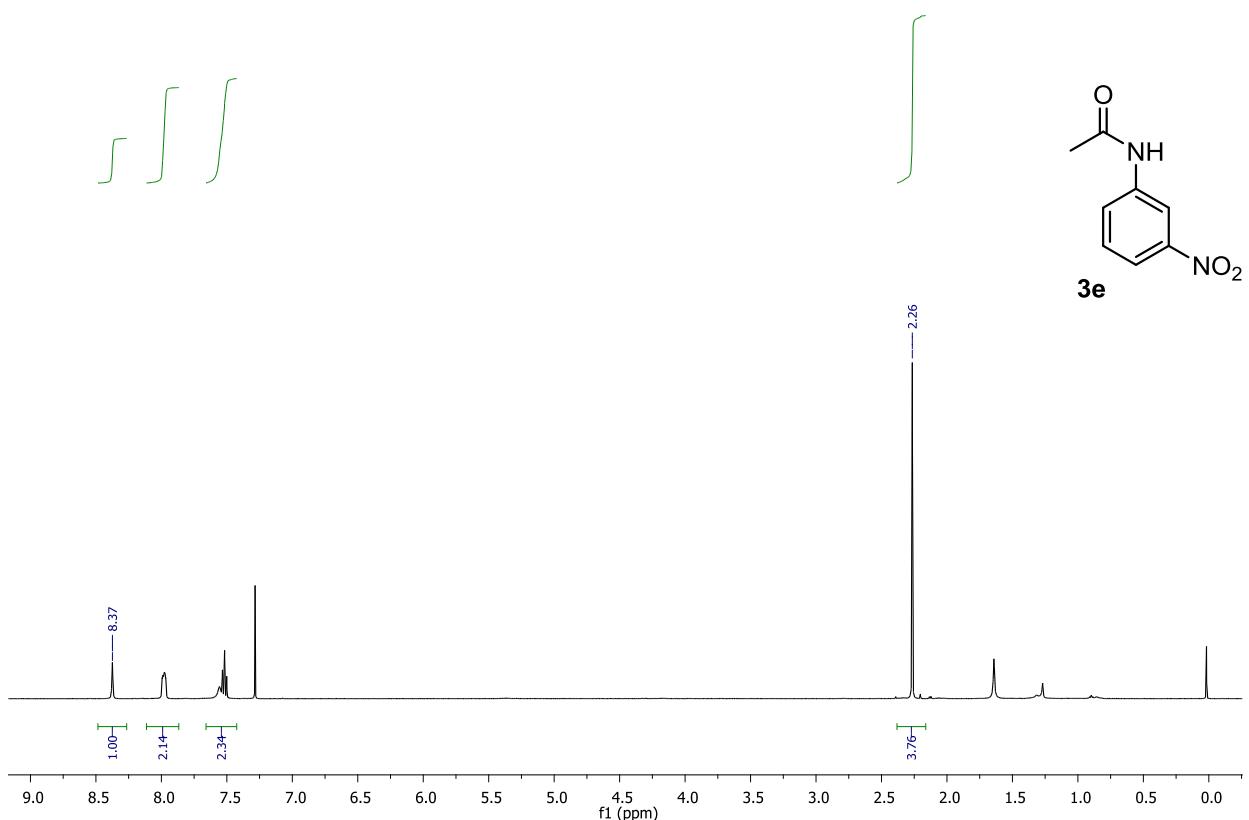


Figure S18. Full ¹H NMR spectrum of **3e** (500 MHz, CDCl₃).

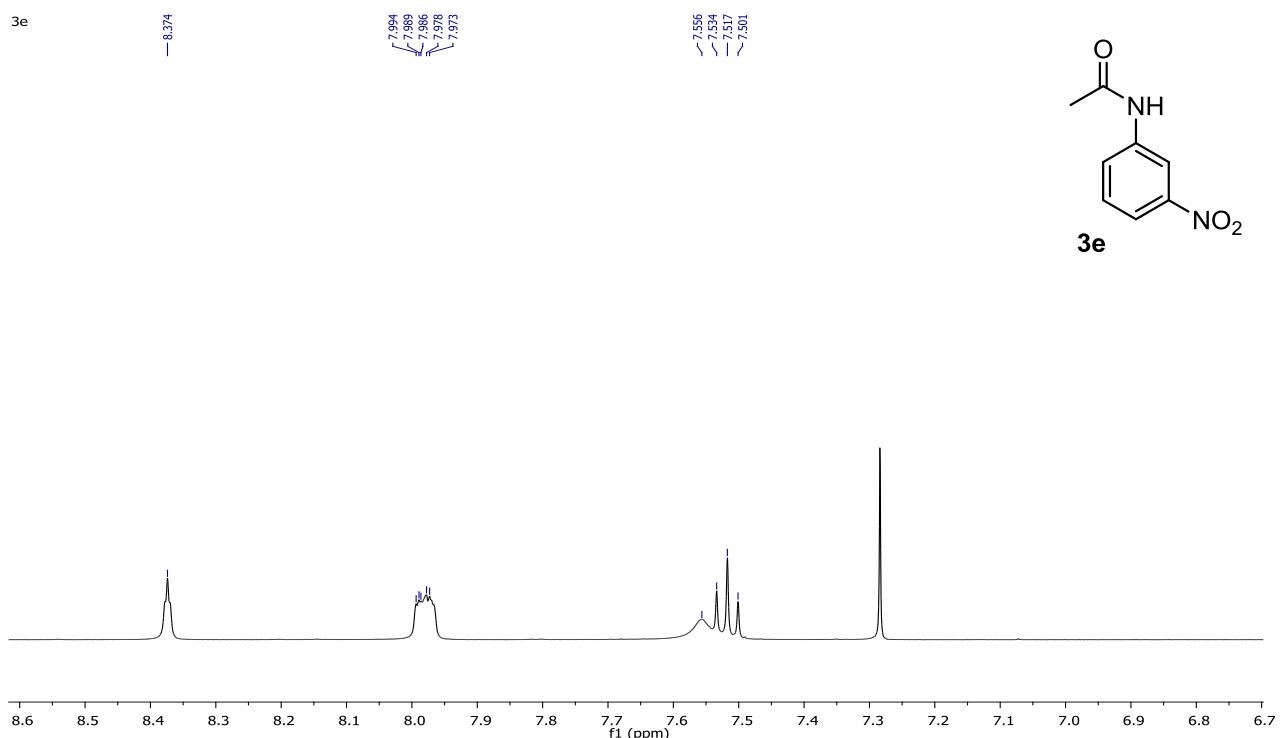


Figure S19. Expanded ¹H NMR spectrum of compound **3e** (500 MHz, CDCl₃).

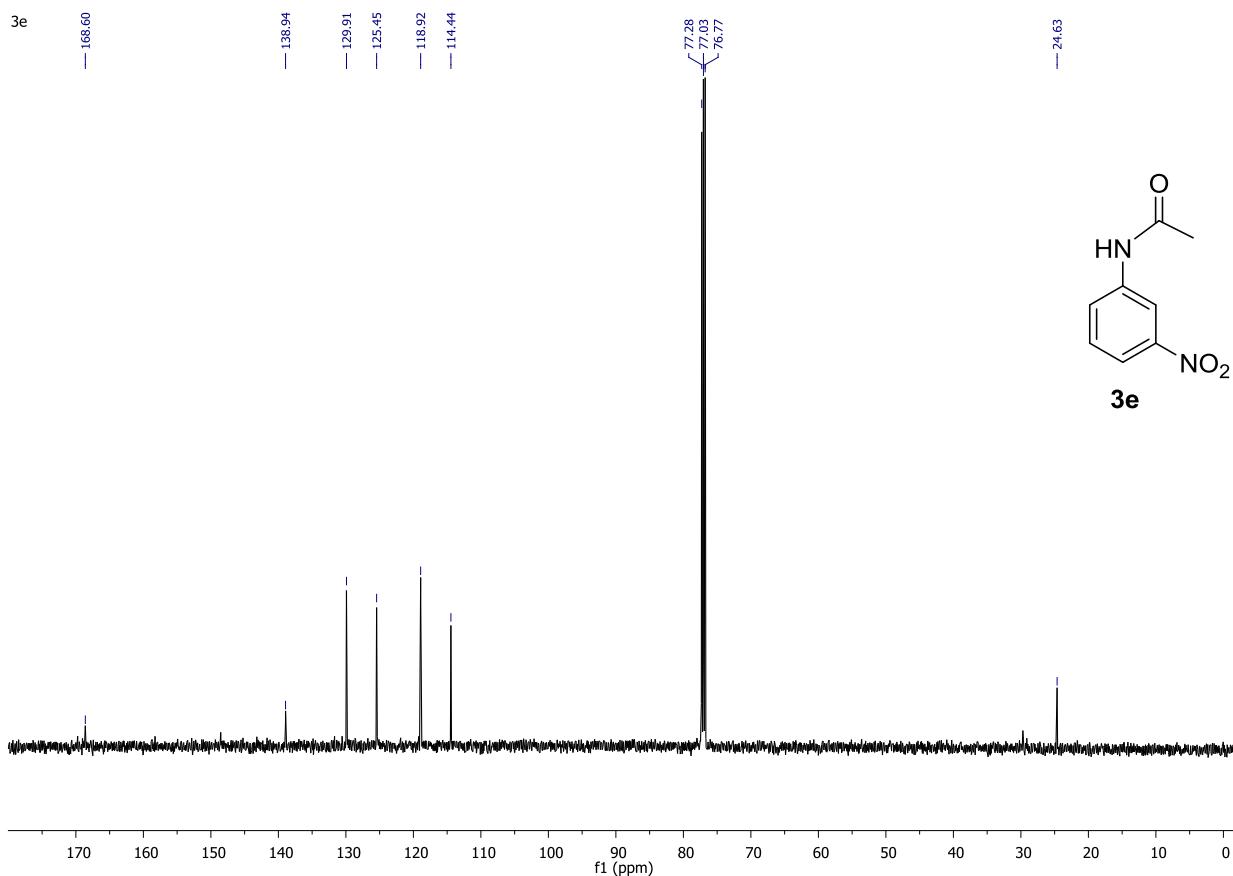


Figure S20. Full ^{13}C NMR spectrum of compound **3e** (125 MHz, CDCl_3).

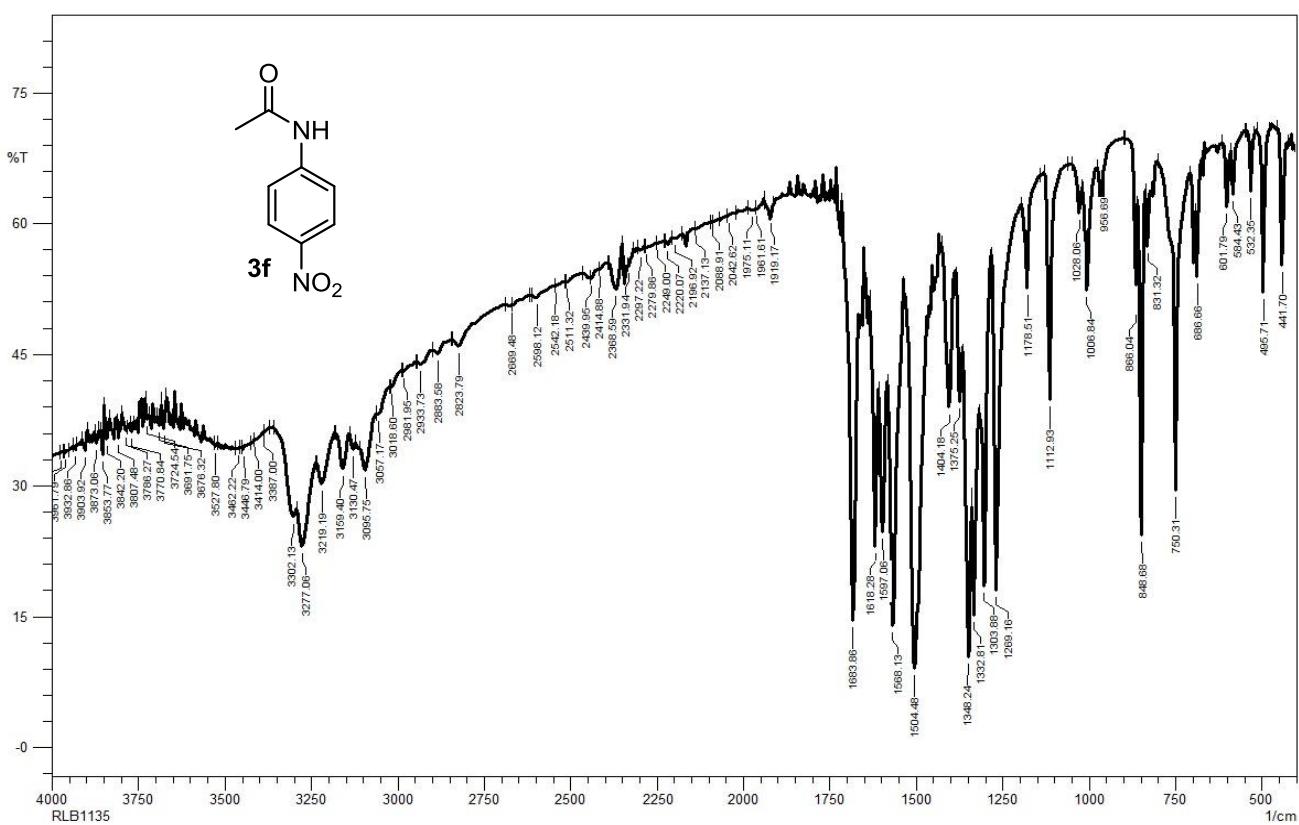


Figure S21. IR spectrum of **3f** (KBr).

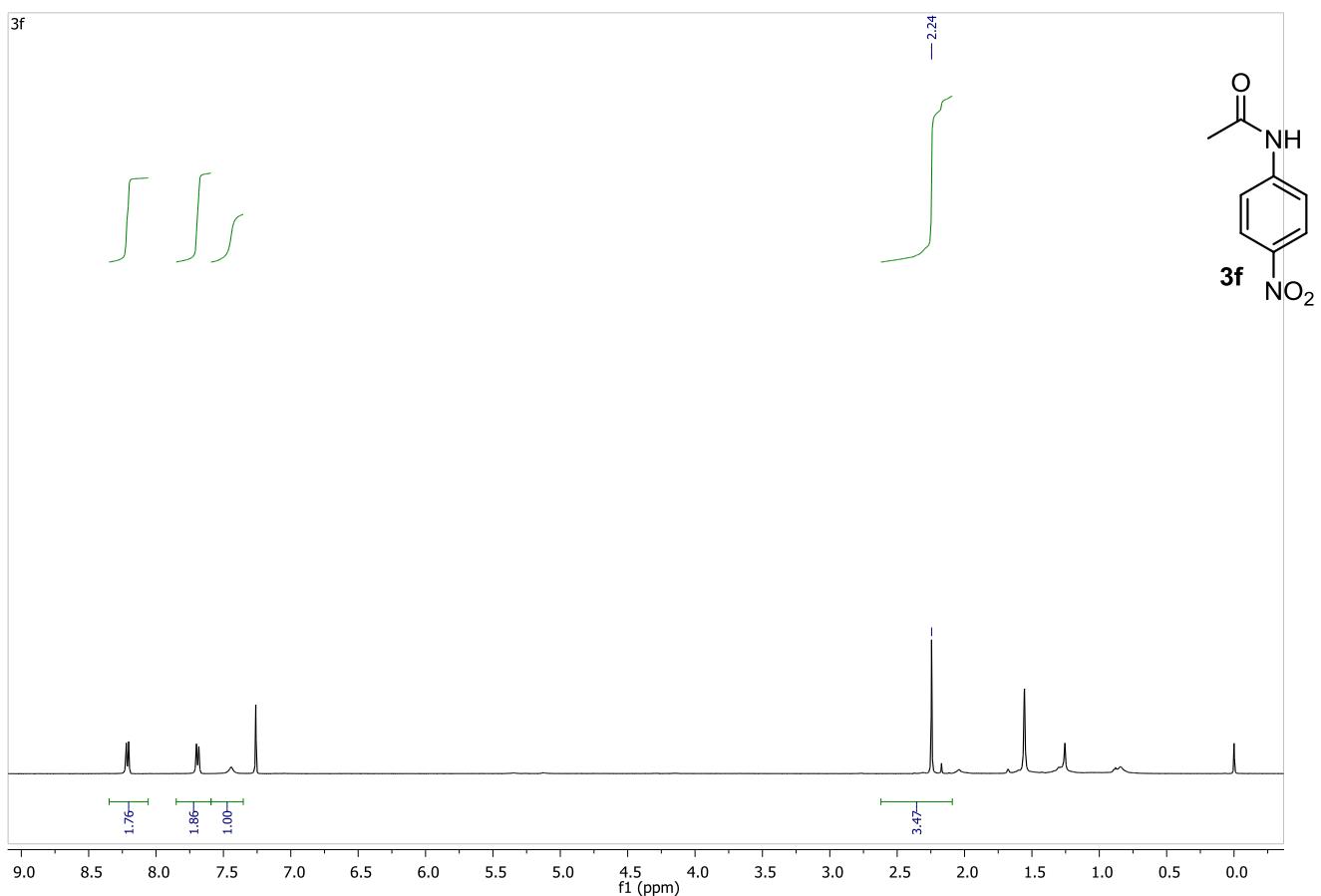


Figure S22. Full ^1H NMR spectrum of compound 3f (500 MHz, CDCl_3).

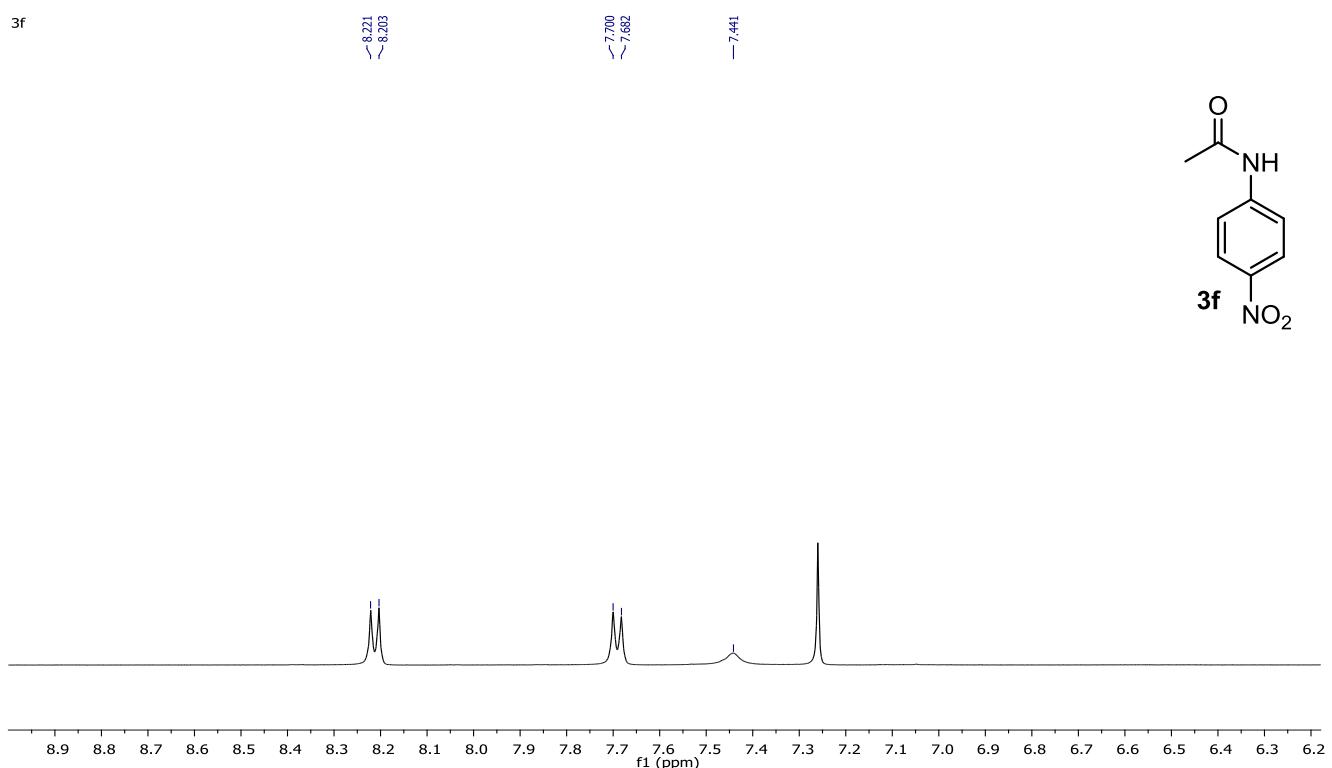


Figure S23. Expanded ^1H NMR spectrum of compound 3f (500 MHz, CDCl_3).

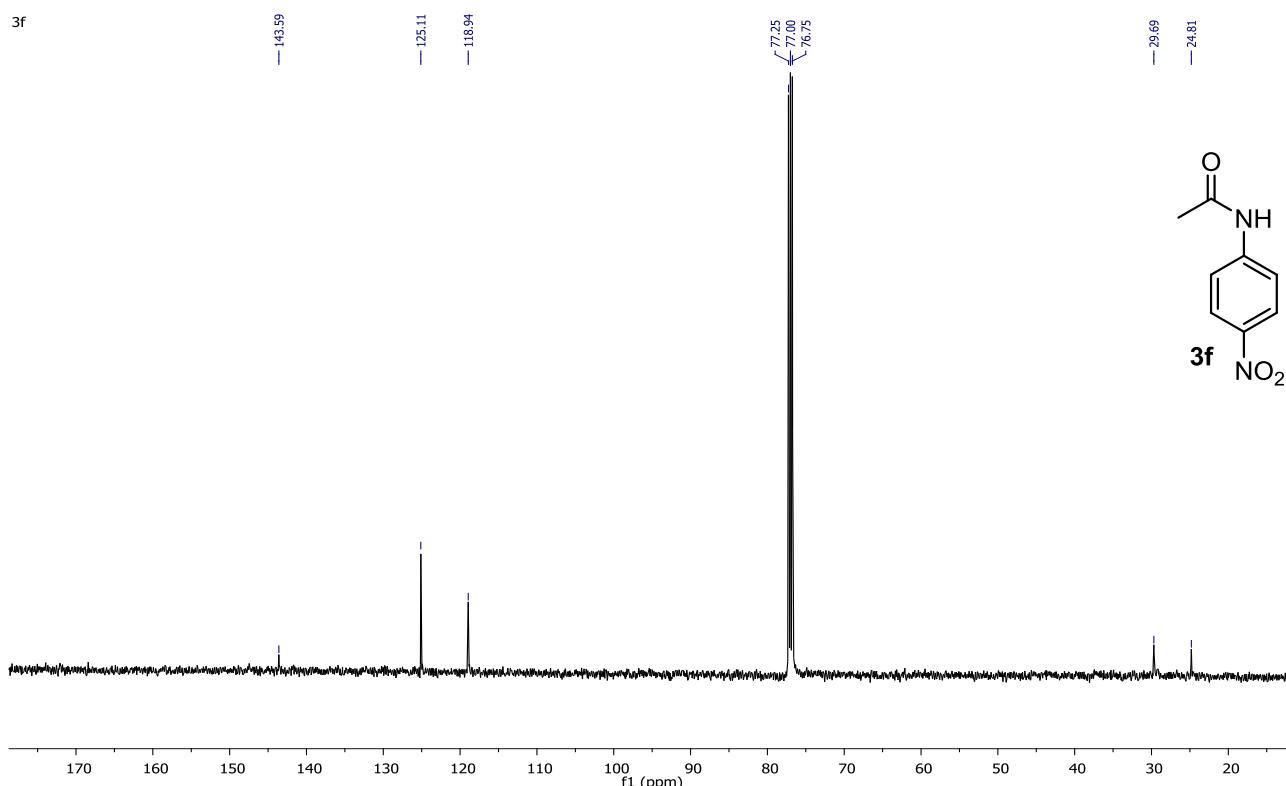


Figure S24. Full ^{13}C NMR spectrum of compound **3f** (125 MHz, CDCl_3).

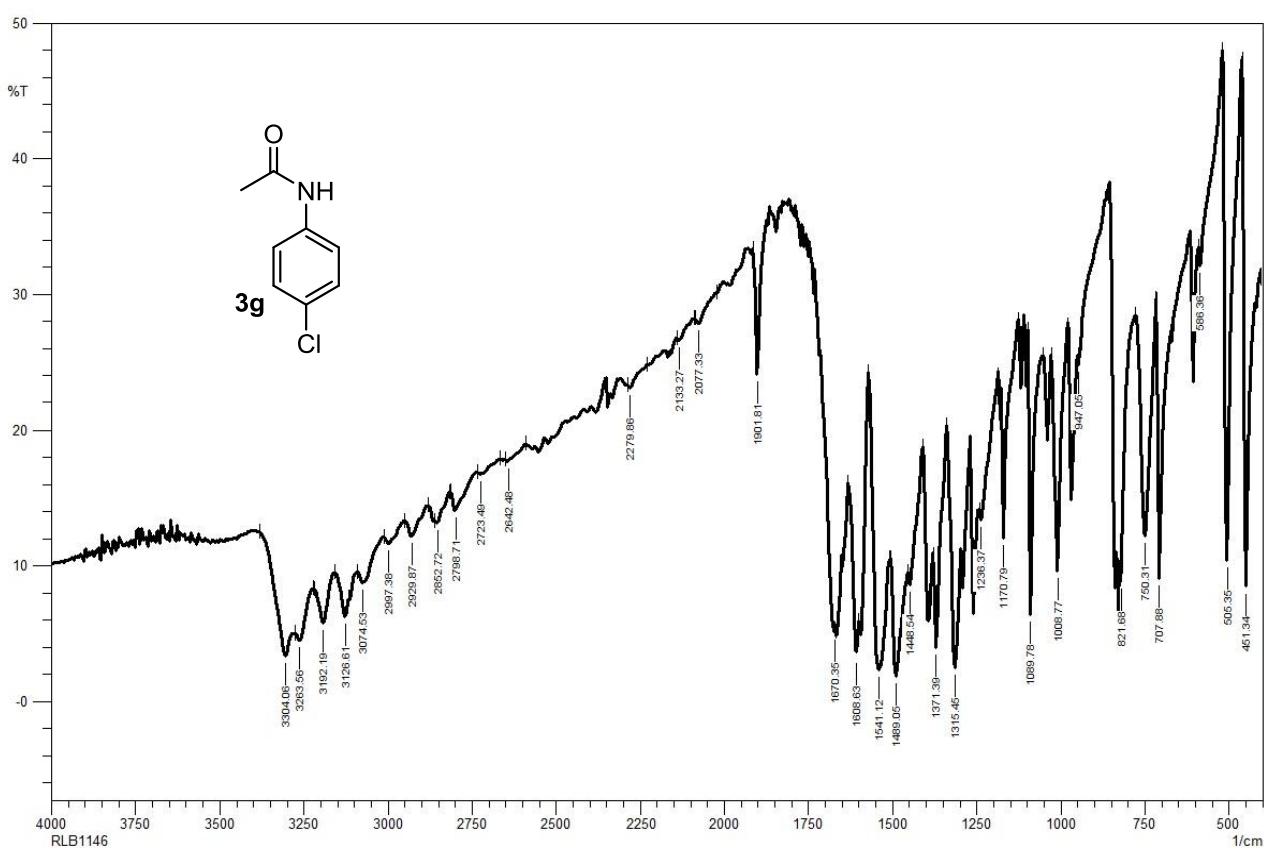


Figure S25. IR spectrum of **3g** (KBr).

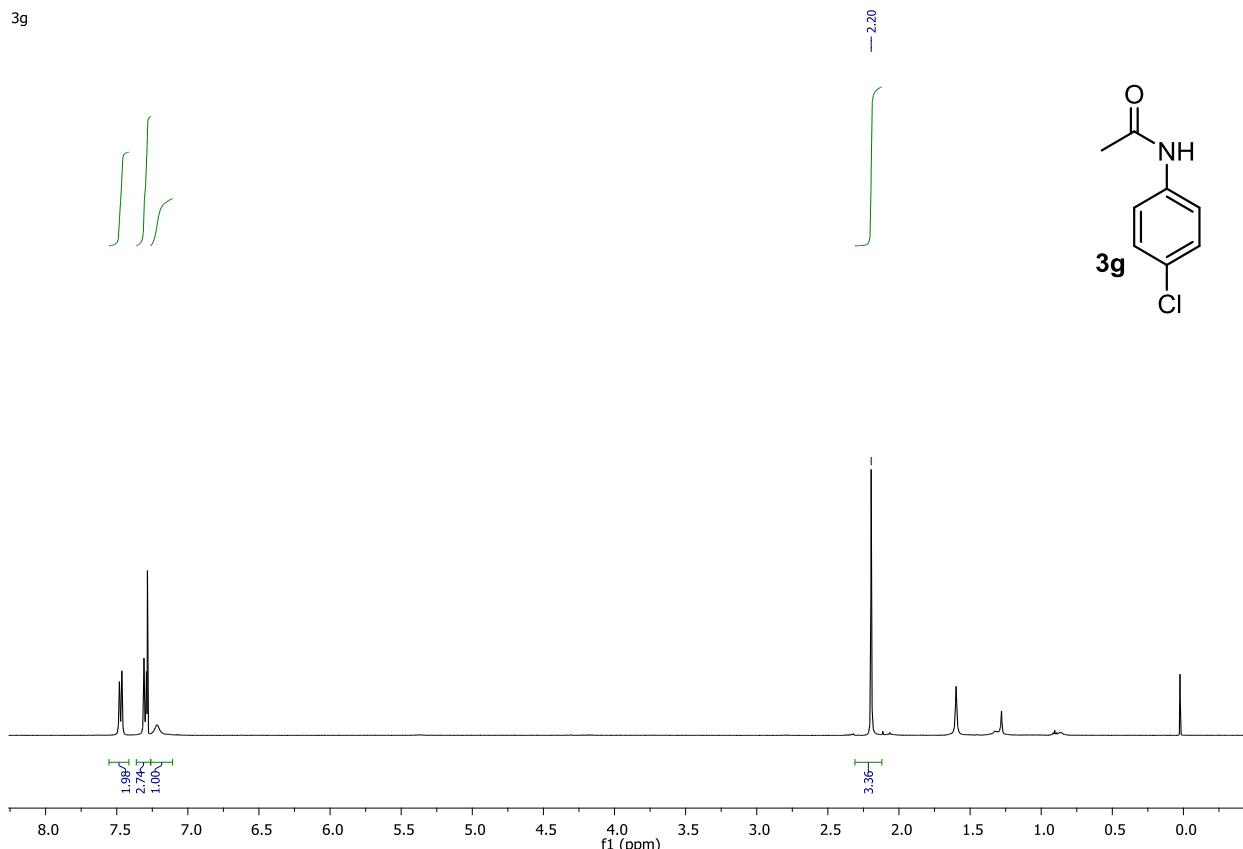


Figure S26. Full ^1H NMR spectrum of compound **3g** (500 MHz, CDCl_3).

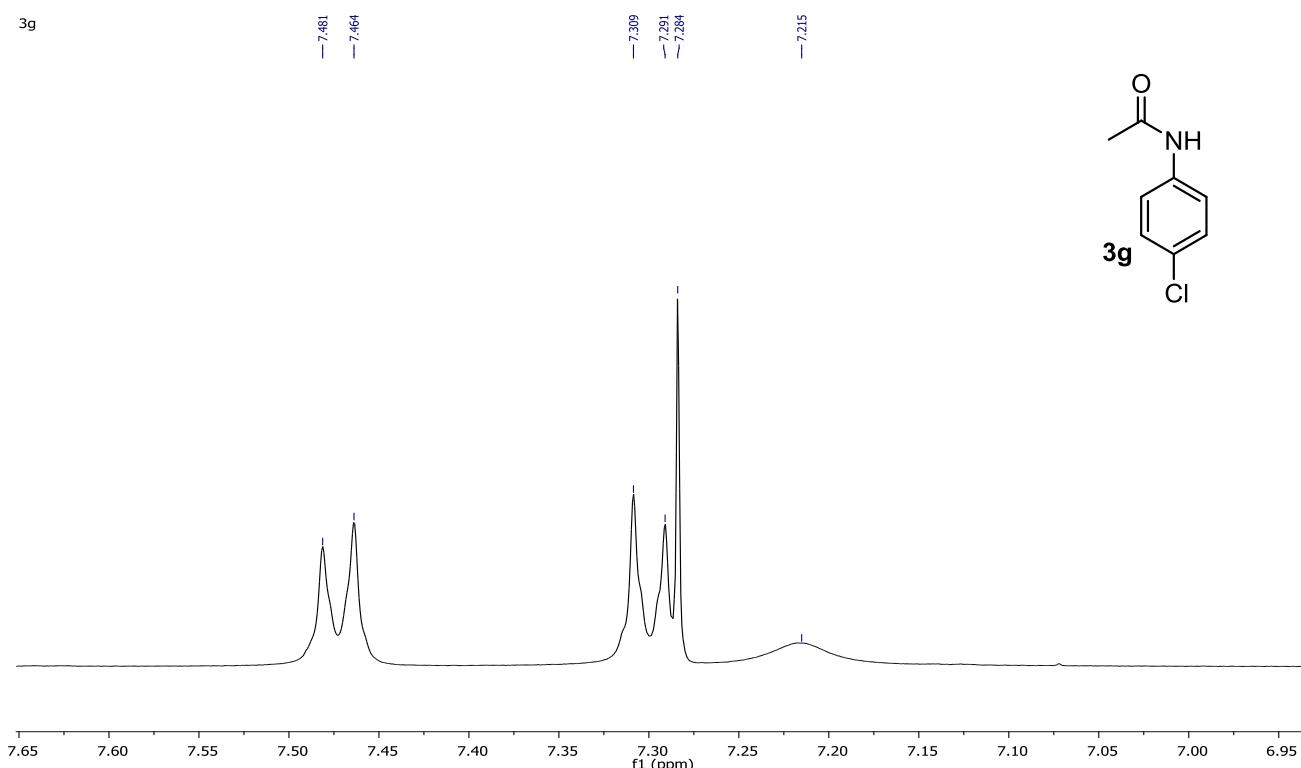


Figure S27. Expanded ^1H NMR spectrum of compound **3g** (500 MHz, CDCl_3).

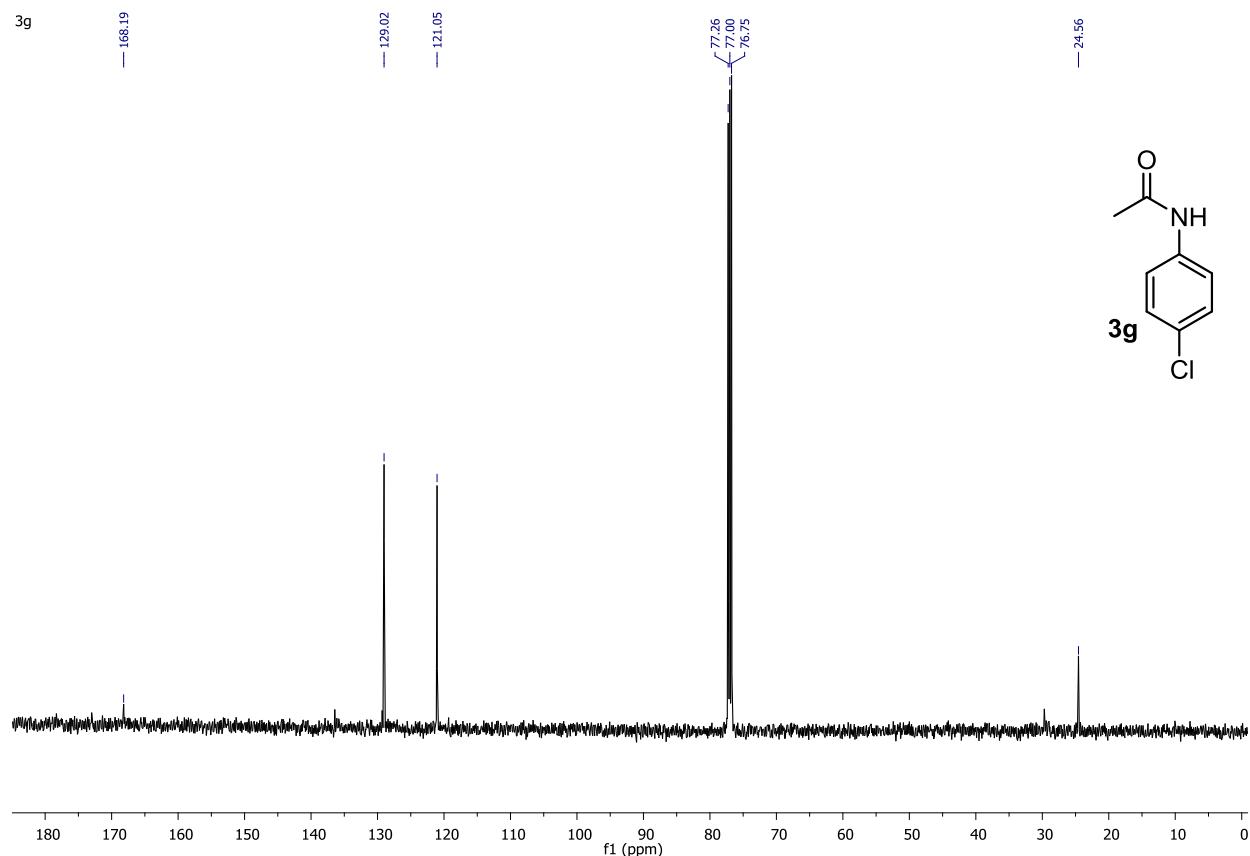


Figure S28. Full ^{13}C NMR spectrum of compound **3g** (125 MHz, CDCl_3).

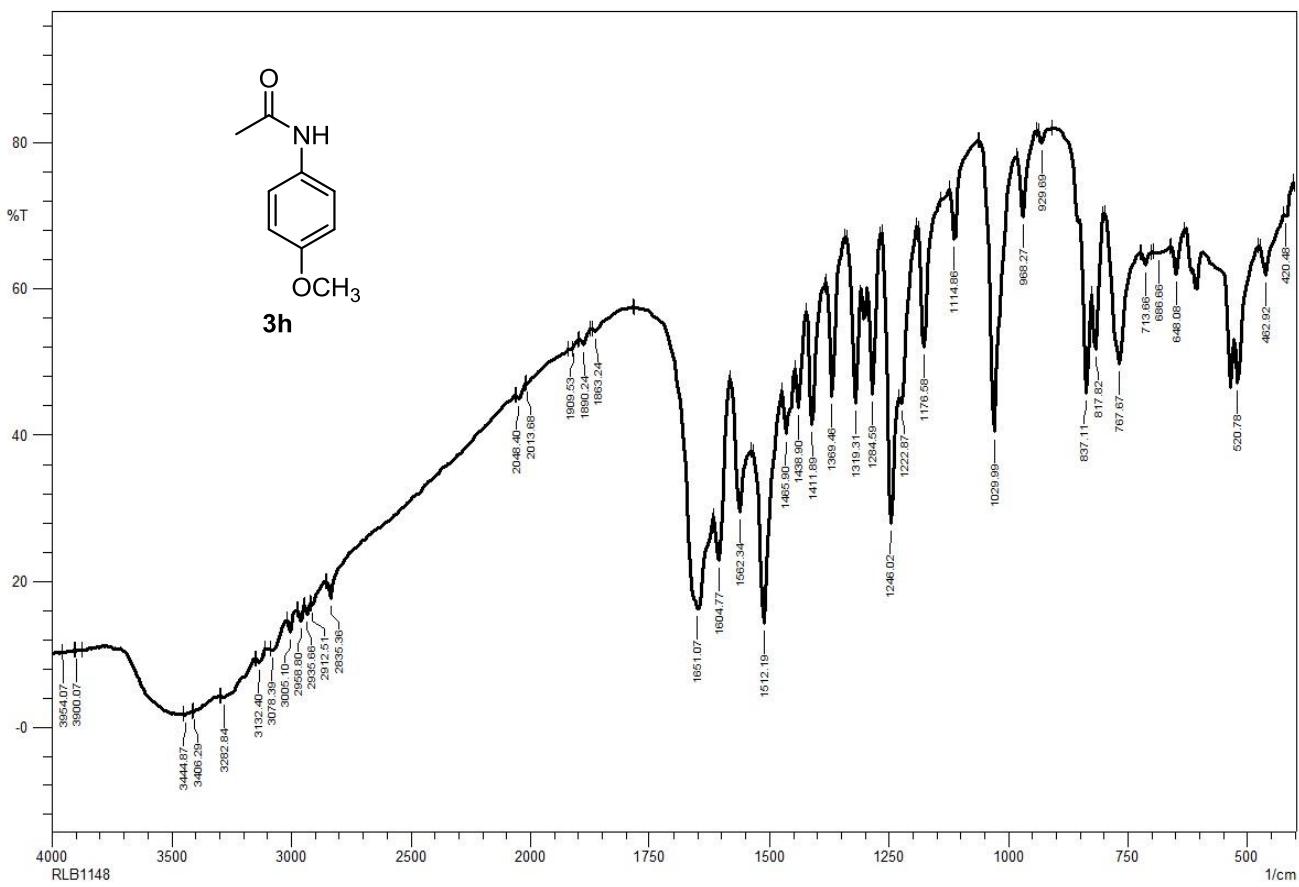


Figure S29. IR spectrum of **3h** (KBr).

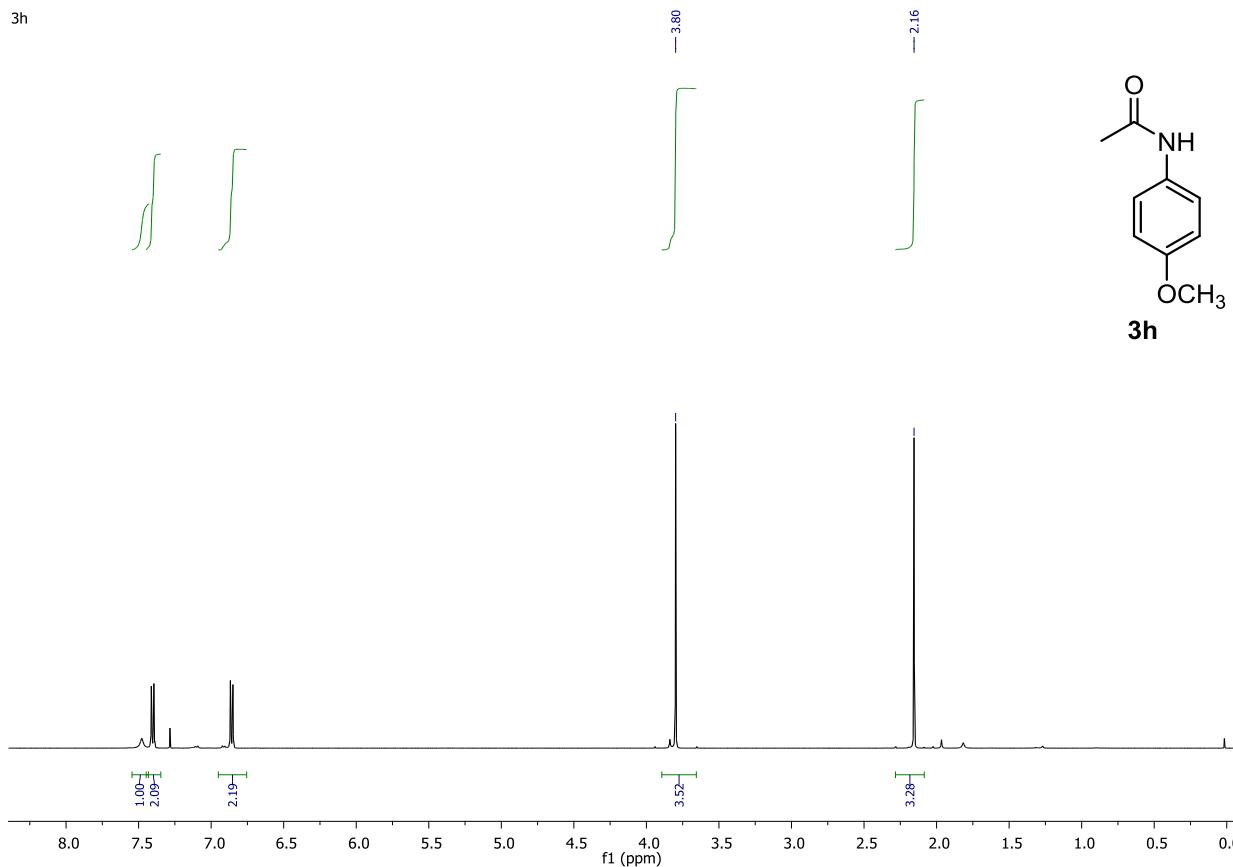


Figure S30. Full ^1H NMR spectrum of **3h** (500 MHz, CDCl_3).

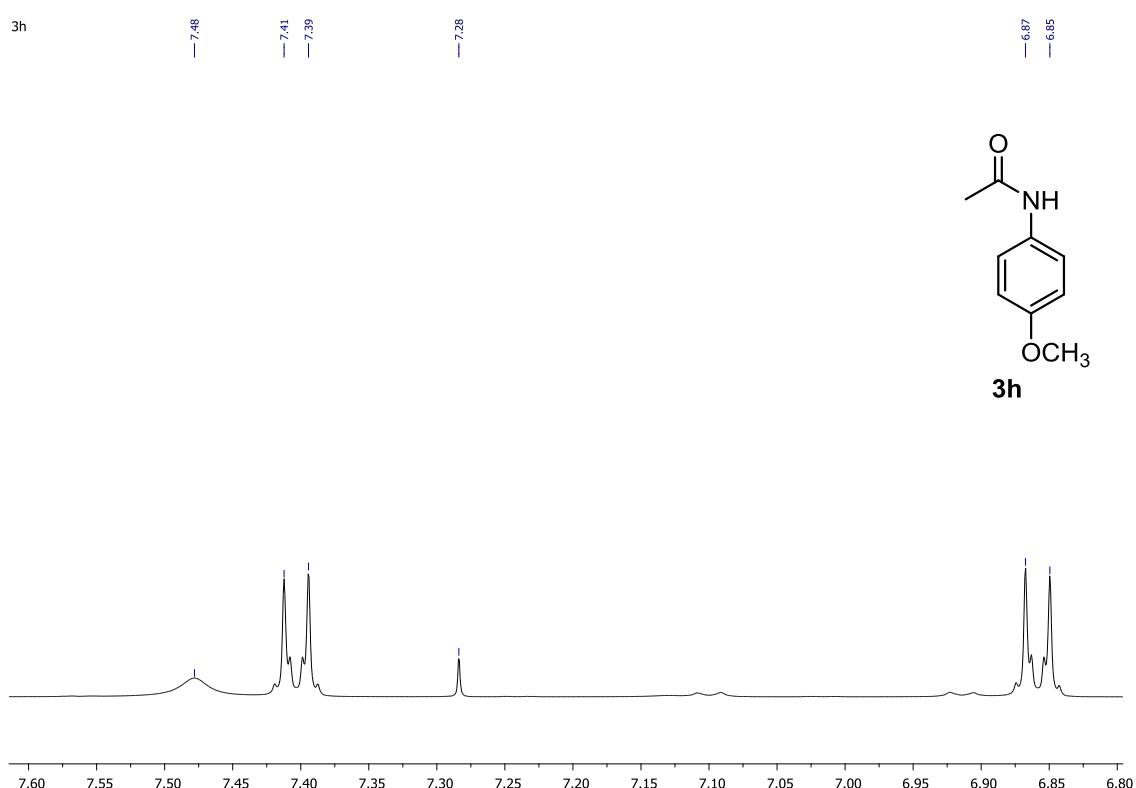


Figure S31. Expanded ^1H NMR spectrum of compound **3h** (500 MHz, CDCl_3).

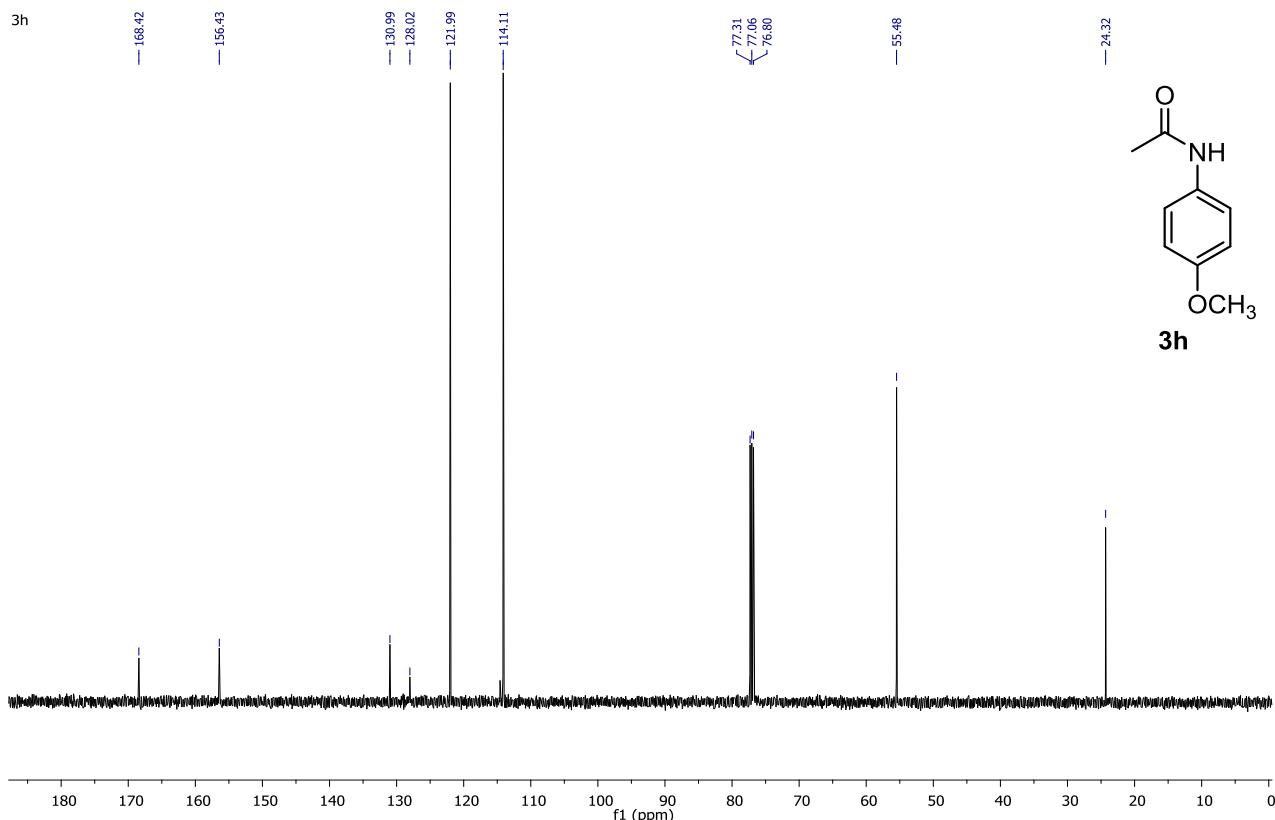


Figure S32. Full ^{13}C NMR spectrum of compound **3h** (125 MHz, CDCl_3).

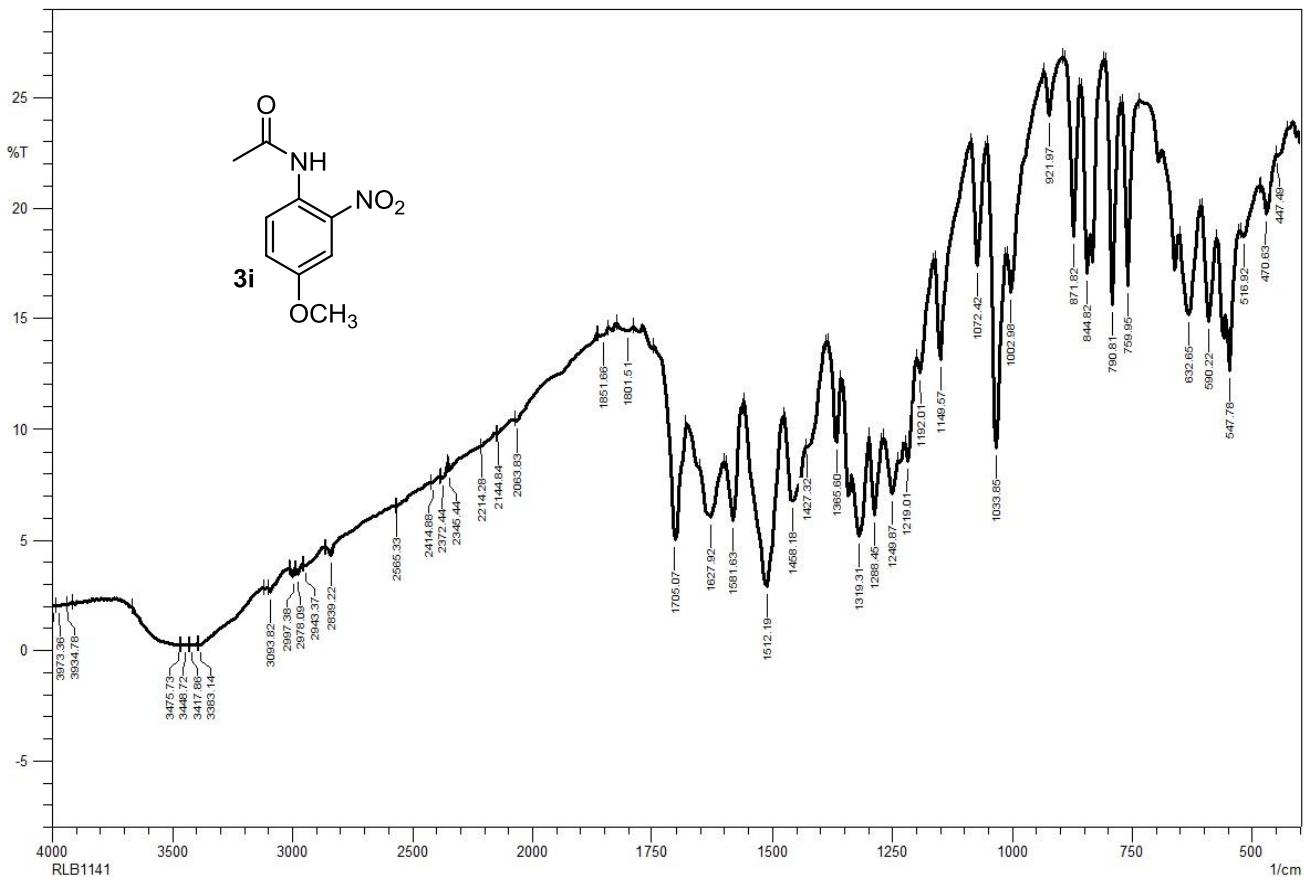


Figure S33. IR spectrum of **3i** (KBr).

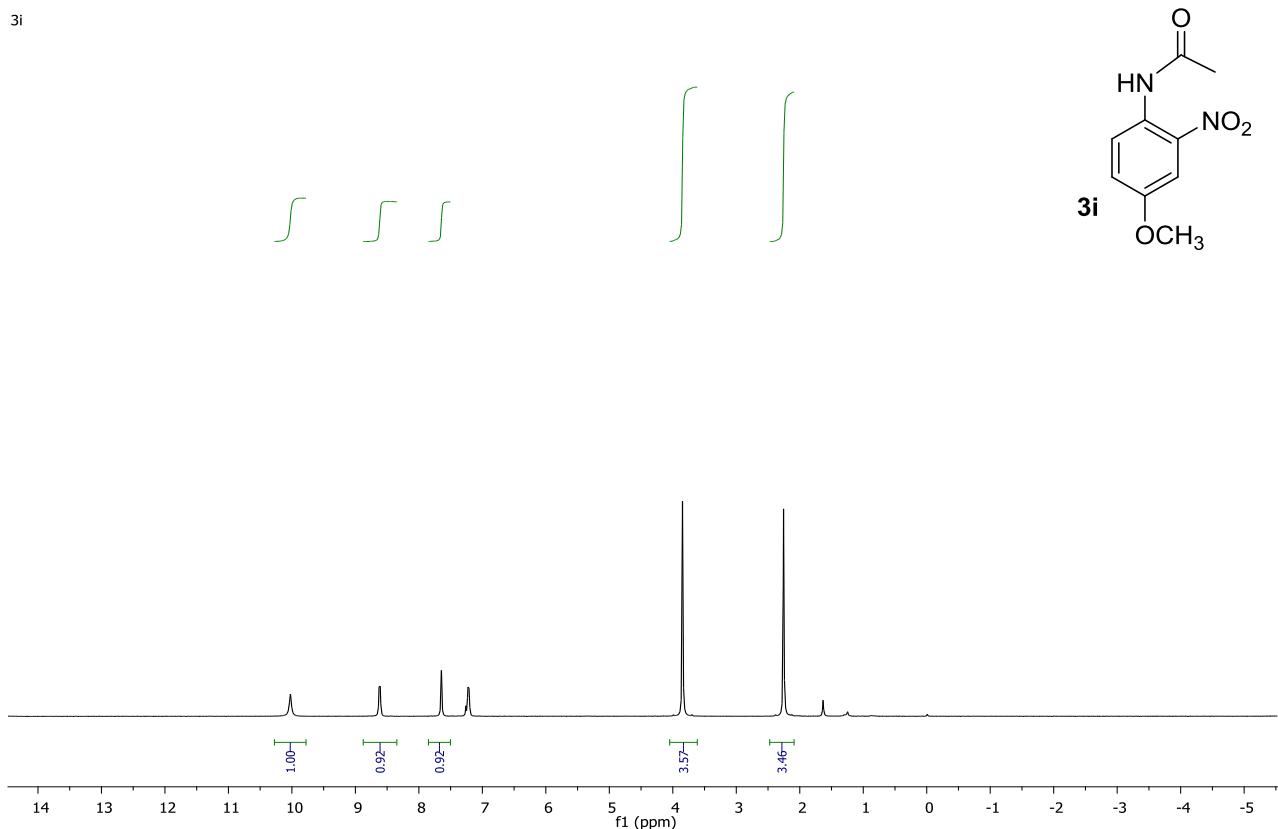


Figure S34. Full ^1H NMR spectrum of compound **3i** (500 MHz, CDCl_3).

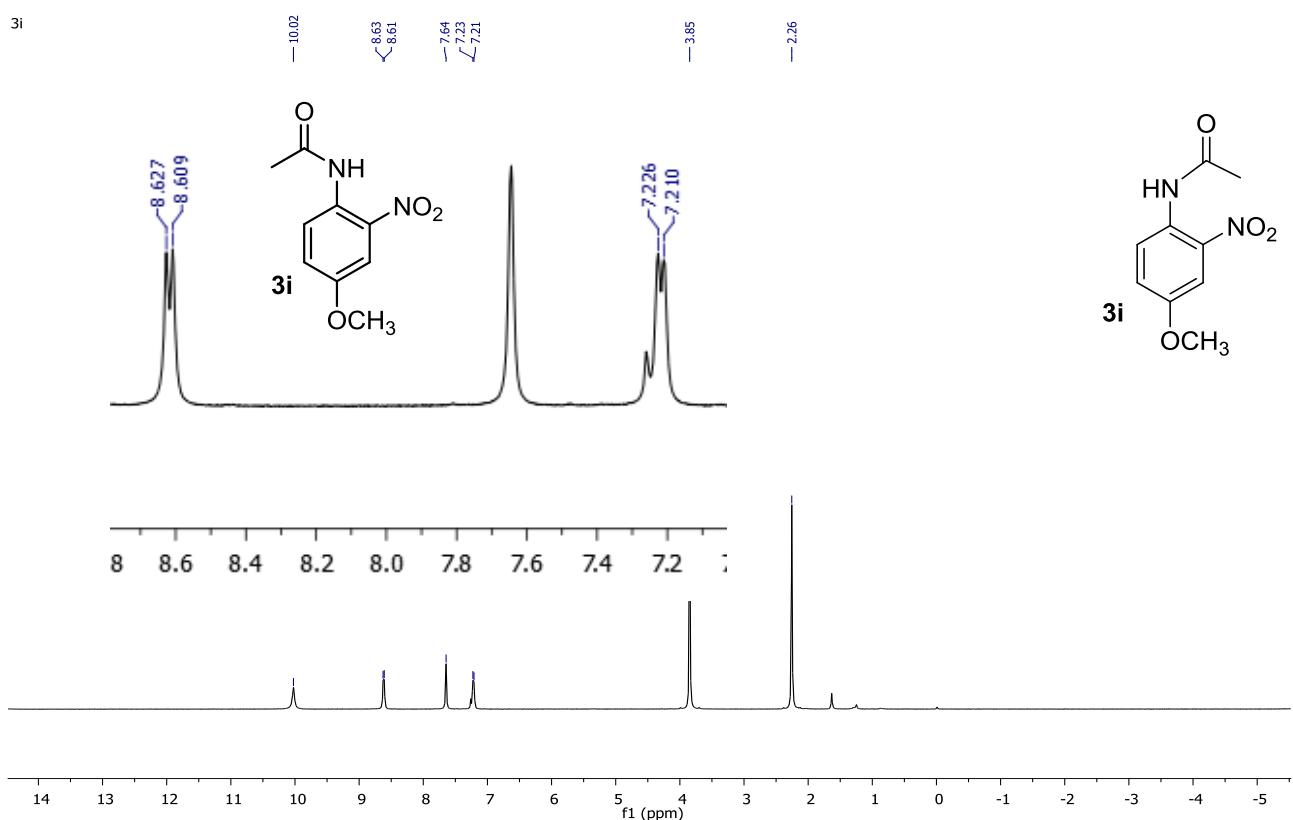


Figure S35. Expanded ^1H NMR spectrum of compound **3i** (500 MHz, CDCl_3).

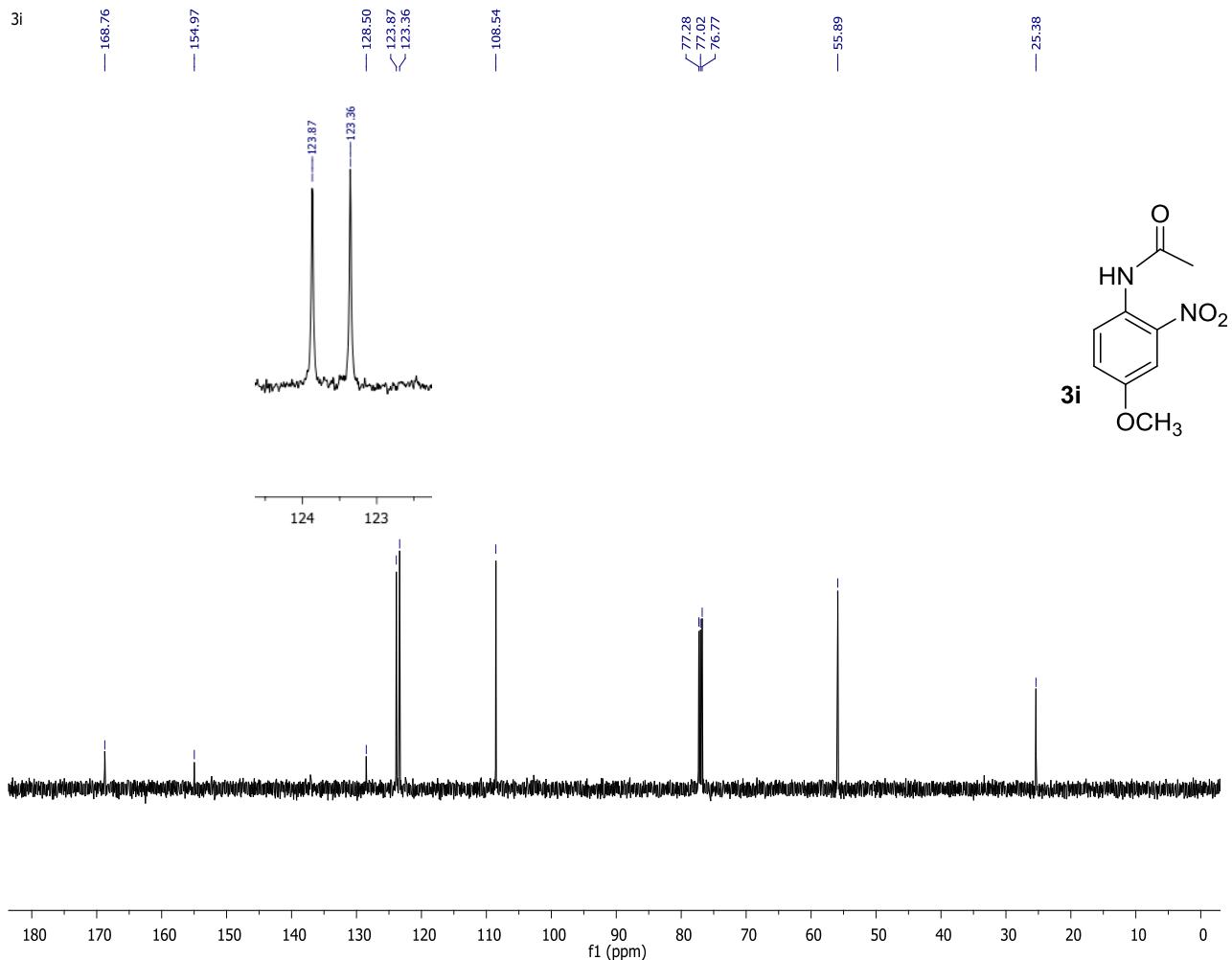


Figure S36. Full ^{13}C NMR spectrum of compound **3i** (125 MHz, CDCl_3).

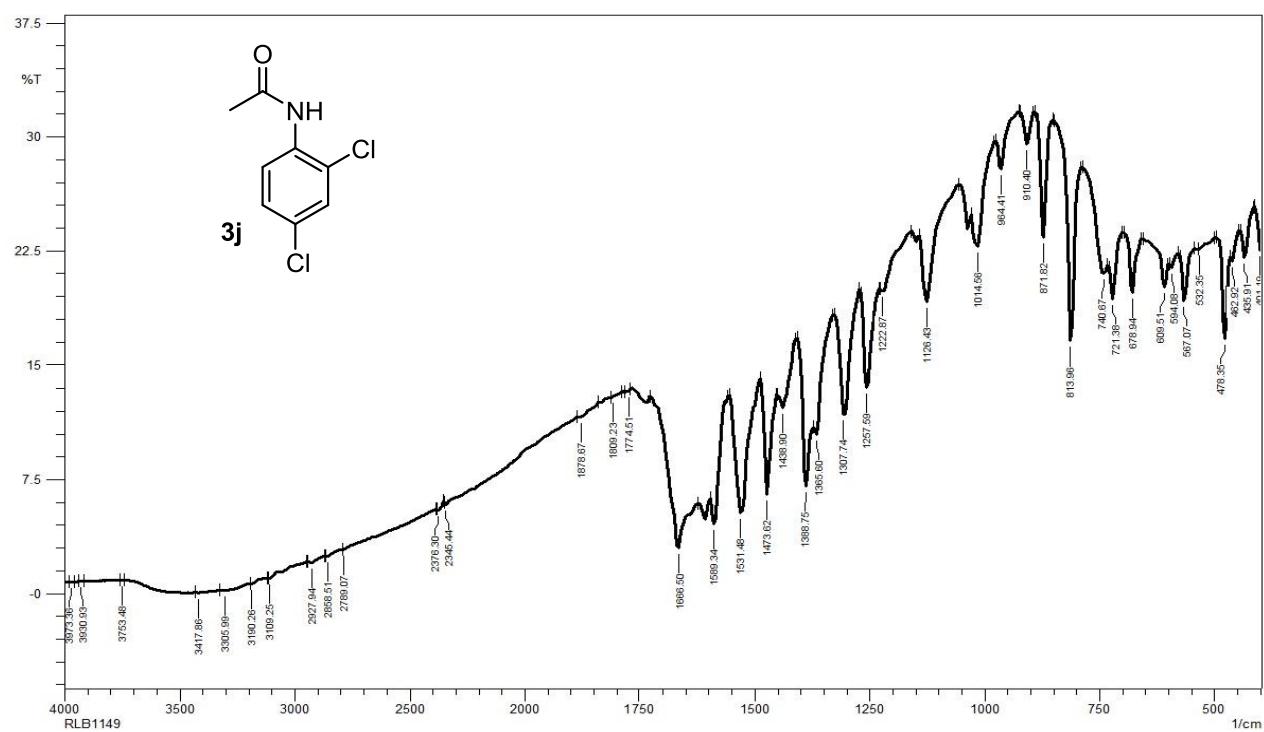


Figure S37. IR spectrum of **3j** (KBr).

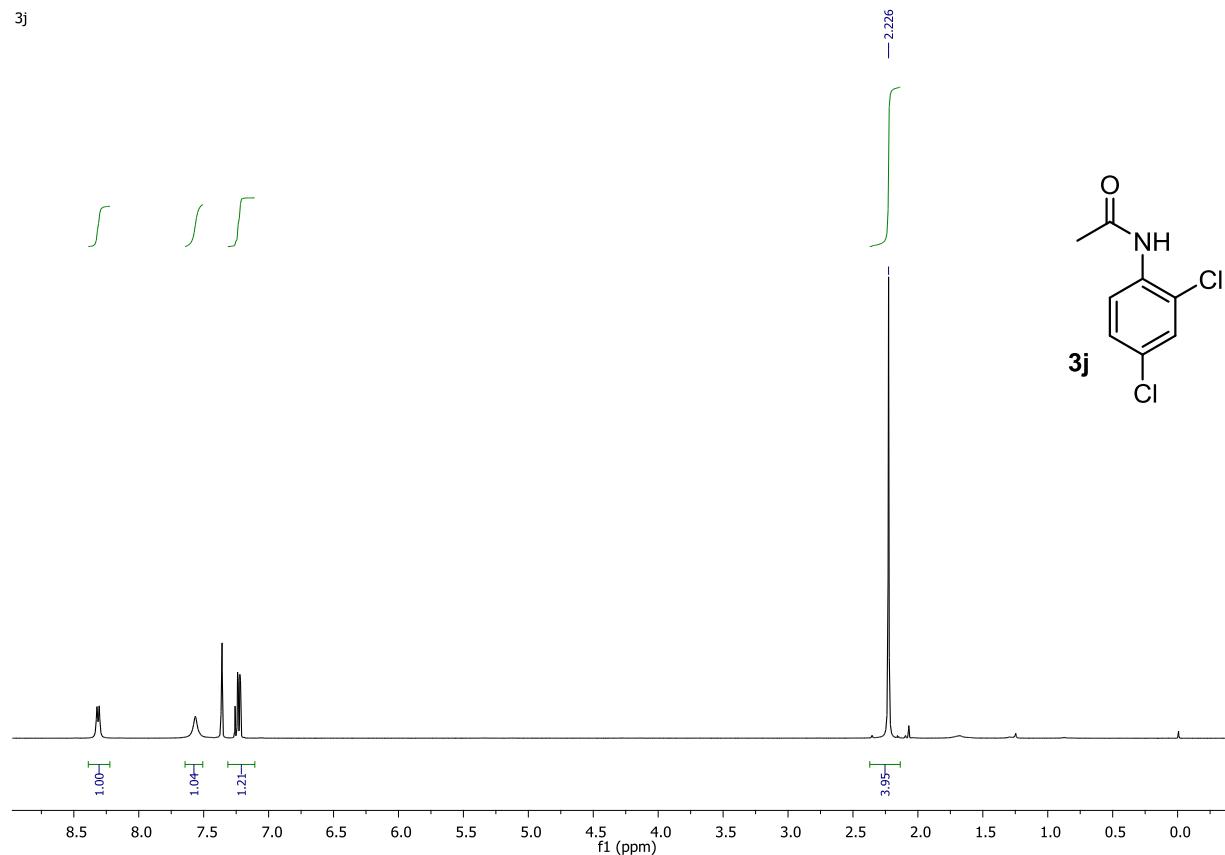


Figure S38. Full ^1H NMR spectrum of compound **3j** (500 MHz, CDCl_3).

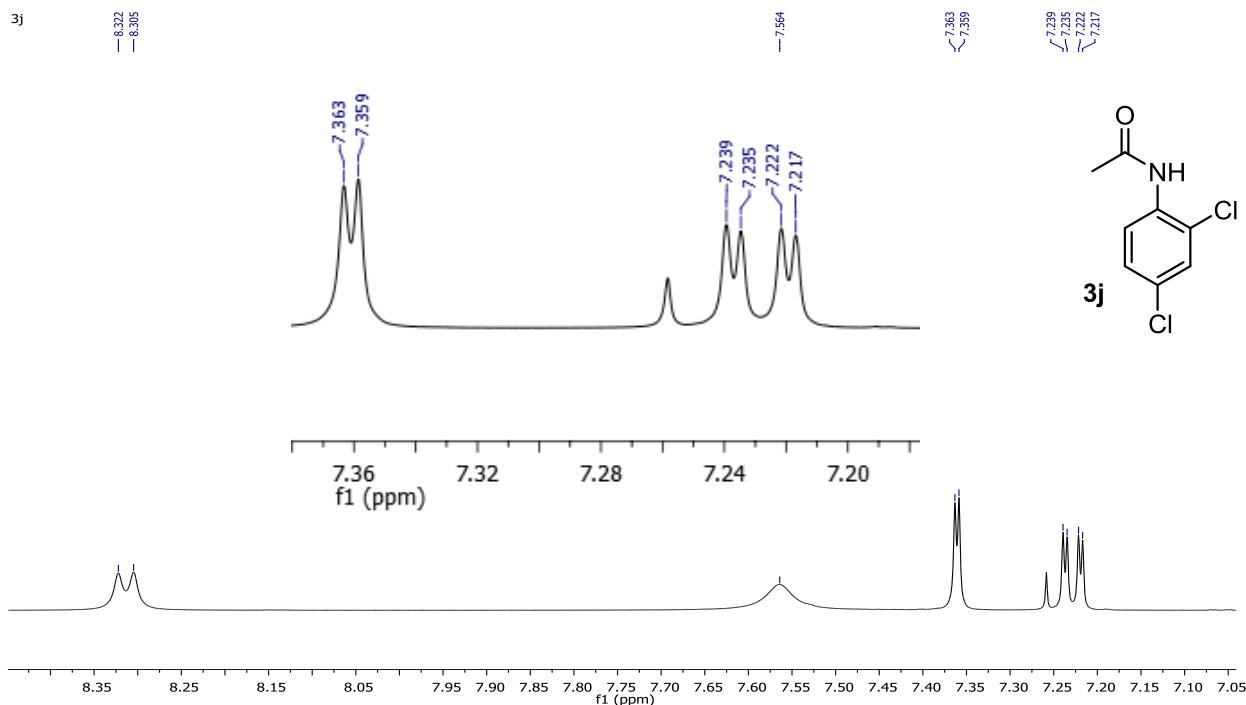


Figure S39. Expanded ^1H NMR spectrum of compound **3j** (500 MHz, CDCl_3).

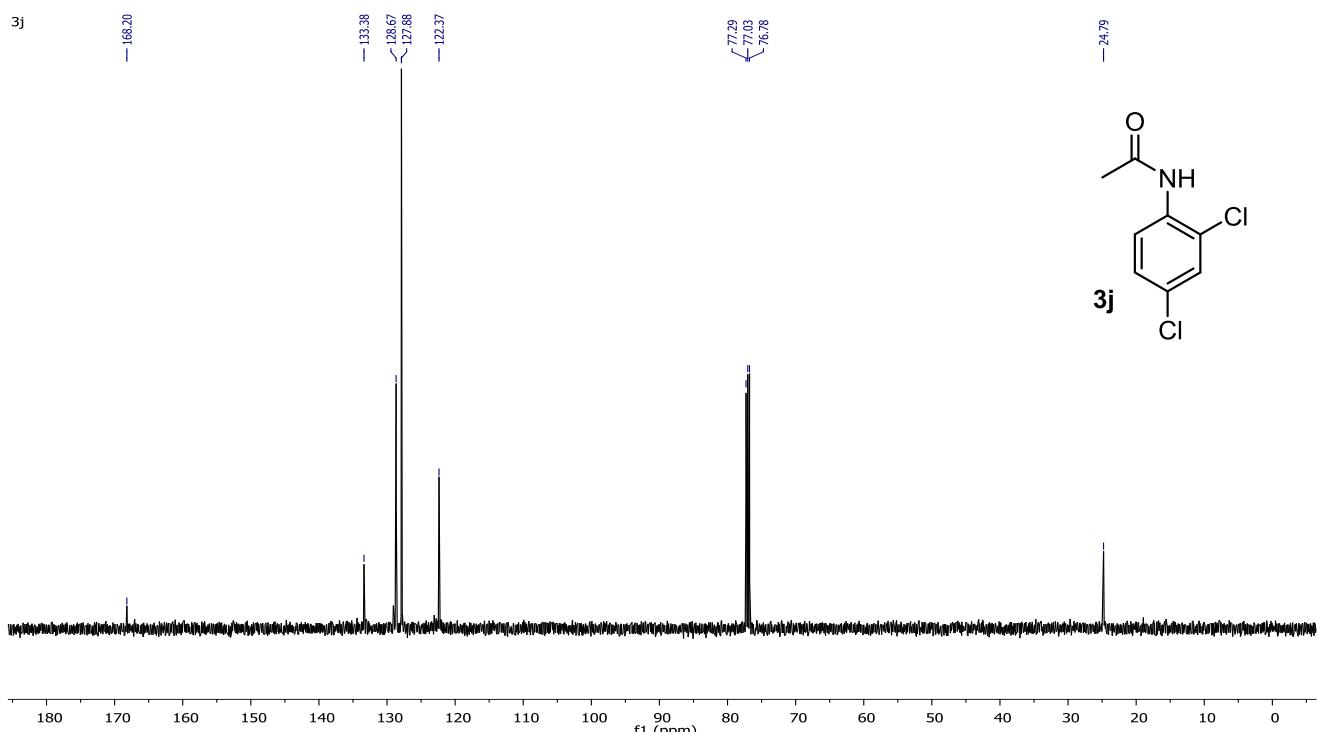


Figure S40. Full ¹³C NMR spectrum of compound **3j** (125 MHz, CDCl₃).

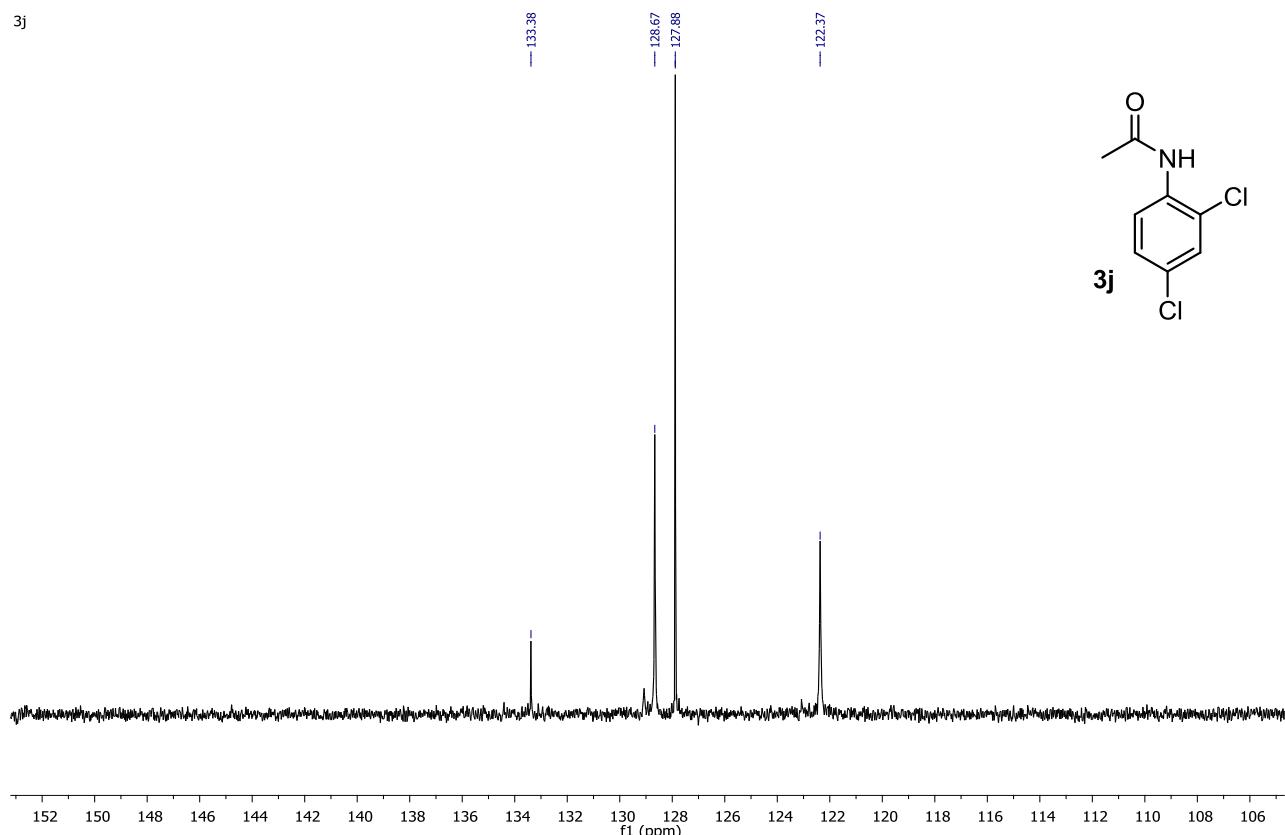


Figure S41. Expanded ¹³C NMR spectrum of compound **3j** (125 MHz, CDCl₃).

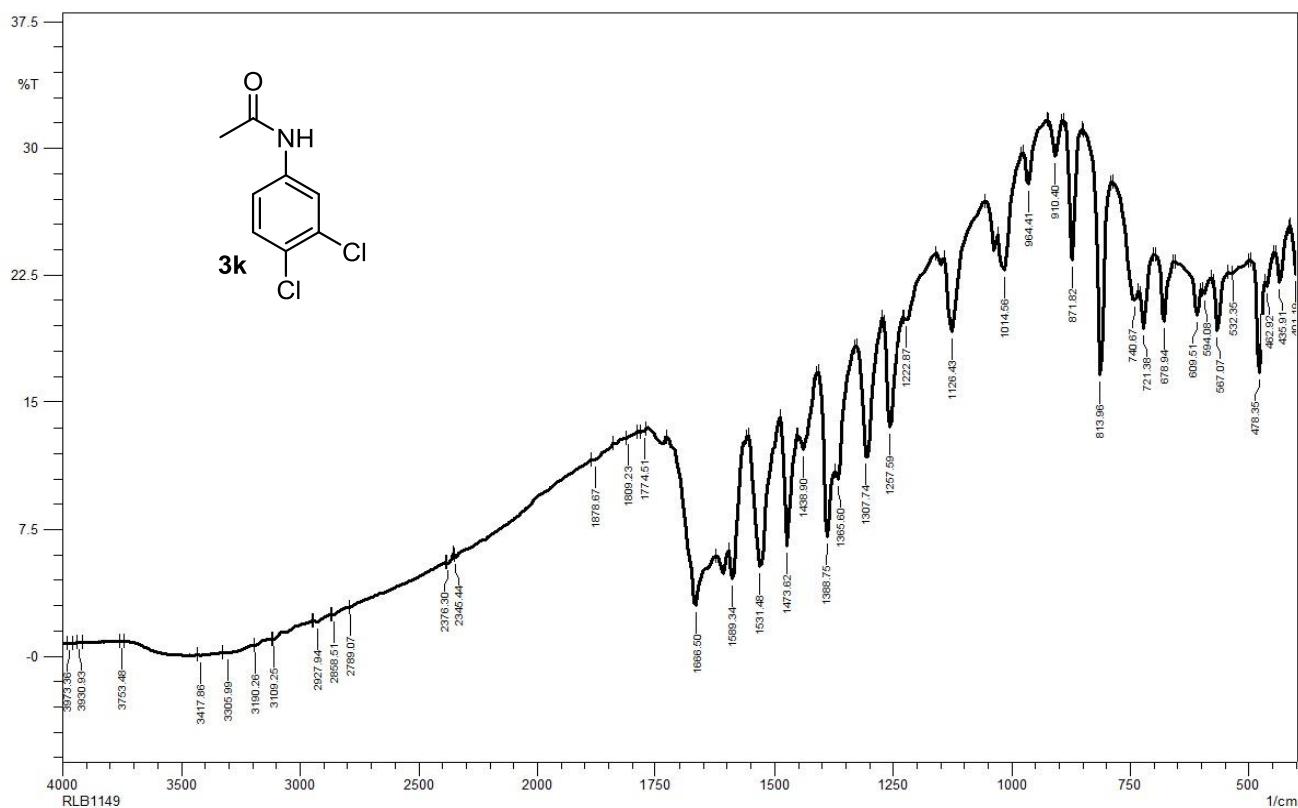


Figure S42. IR spectrum of **3k** (KBr).

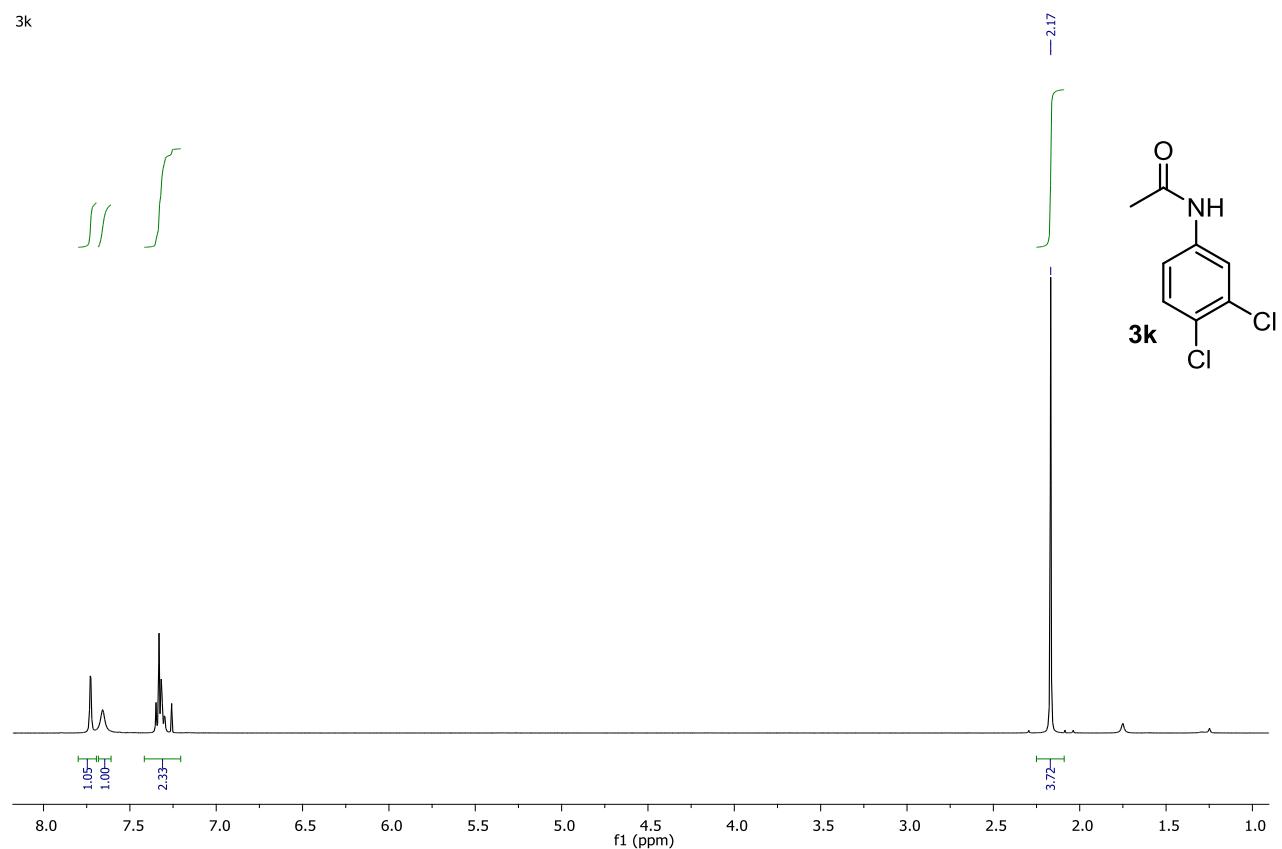


Figure S43. Full ¹H NMR spectrum of compound **3k** (500 MHz, CDCl₃).

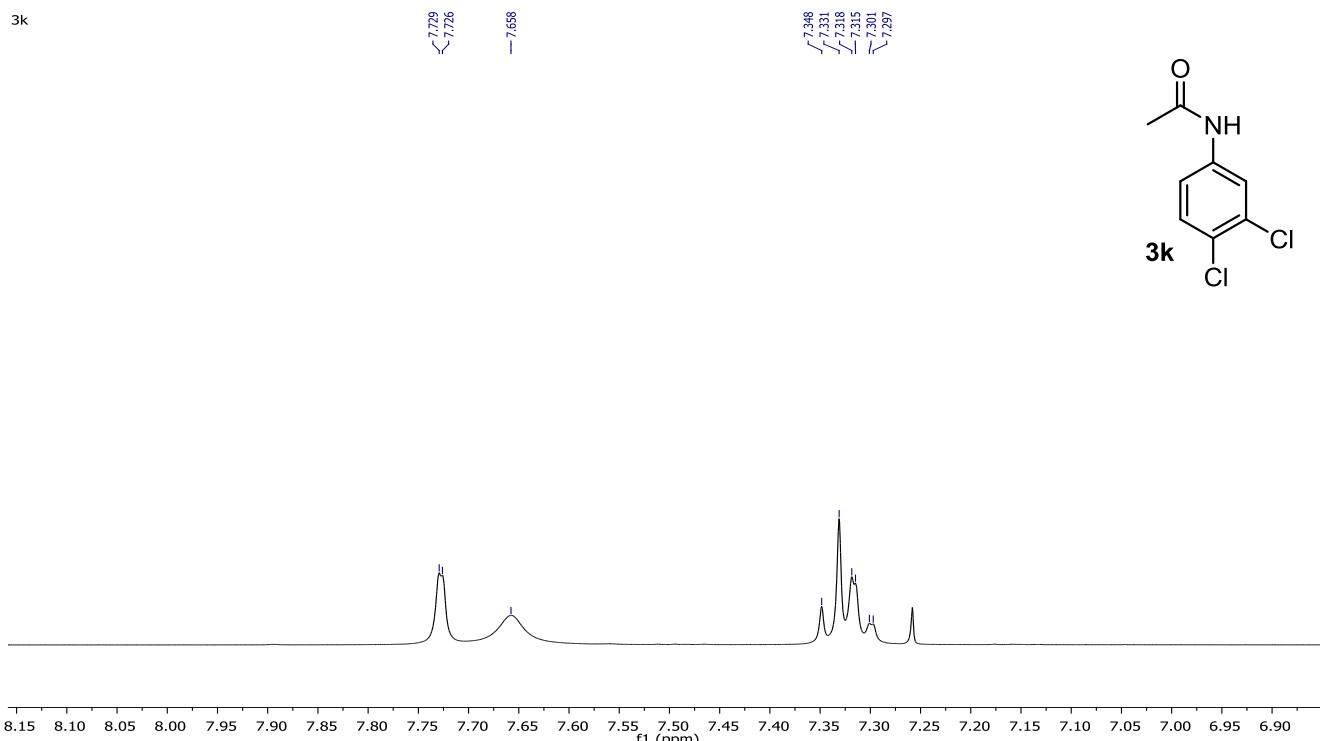


Figure S44. Expanded ^1H NMR spectrum of compound **3k** (500 MHz, CDCl_3).

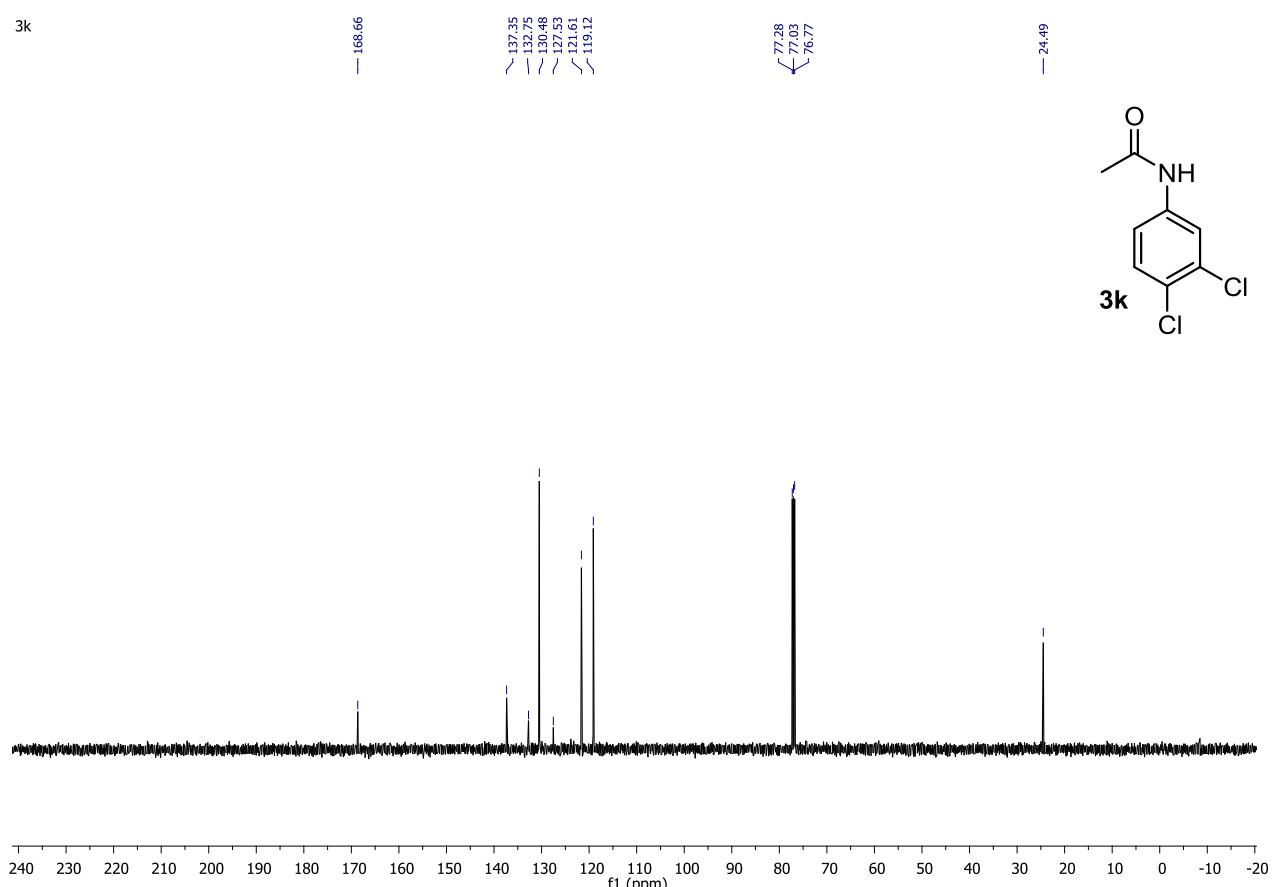


Figure S45. Full ^{13}C NMR spectrum of compound **3k** (125 MHz, CDCl_3).

3k

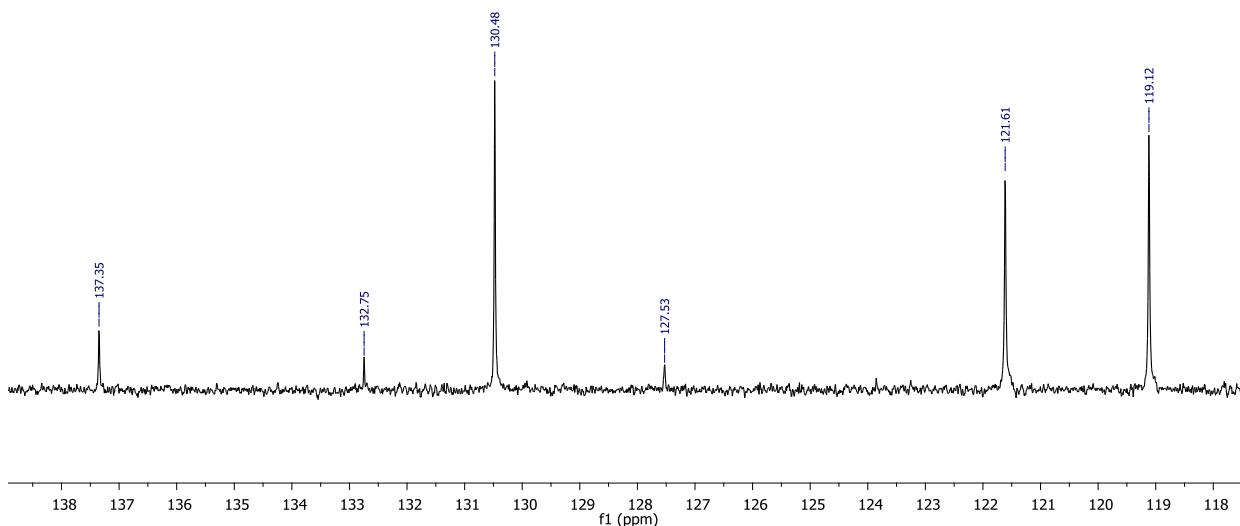
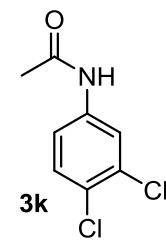


Figure S46. Expanded ^{13}C NMR spectrum of compound **3k** (125 MHz, CDCl_3).

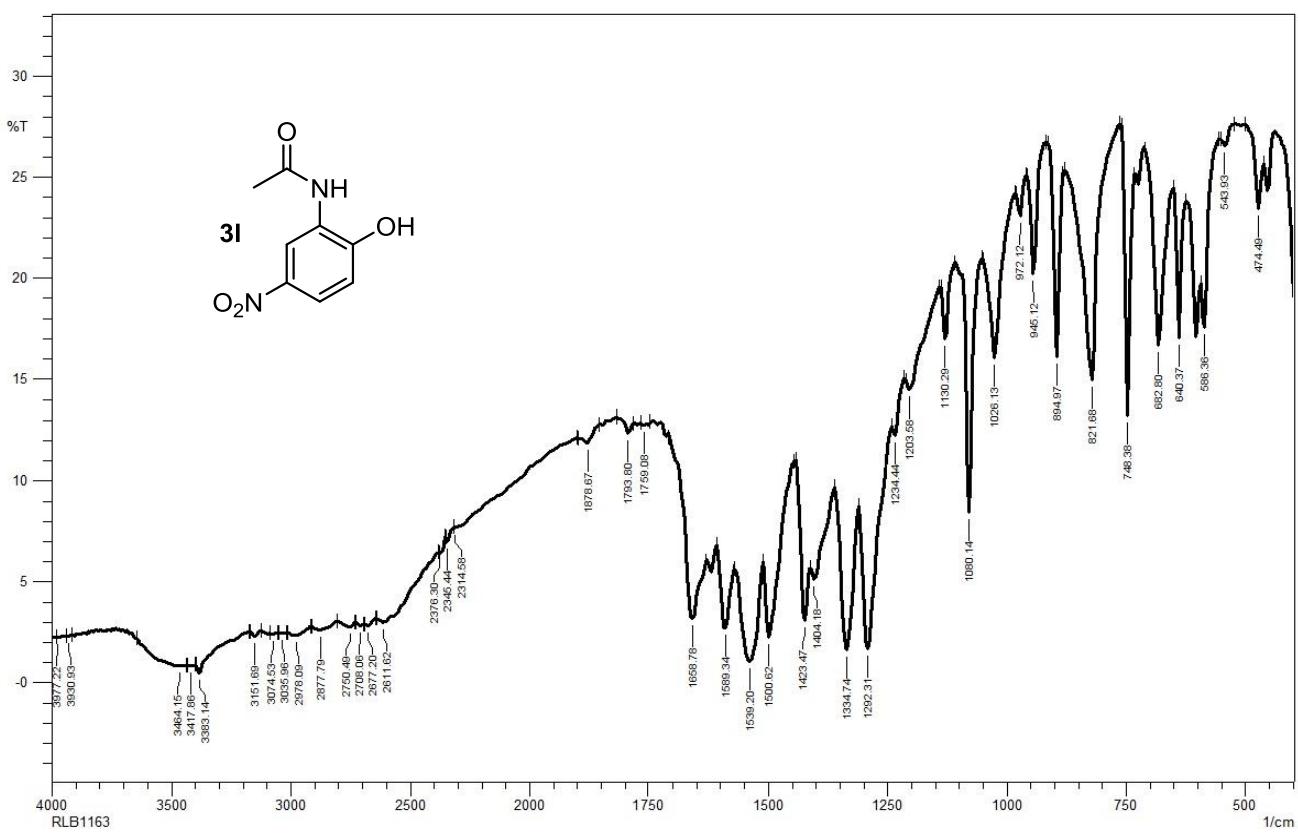


Figure S47. IR spectrum of **3l** (KBr).

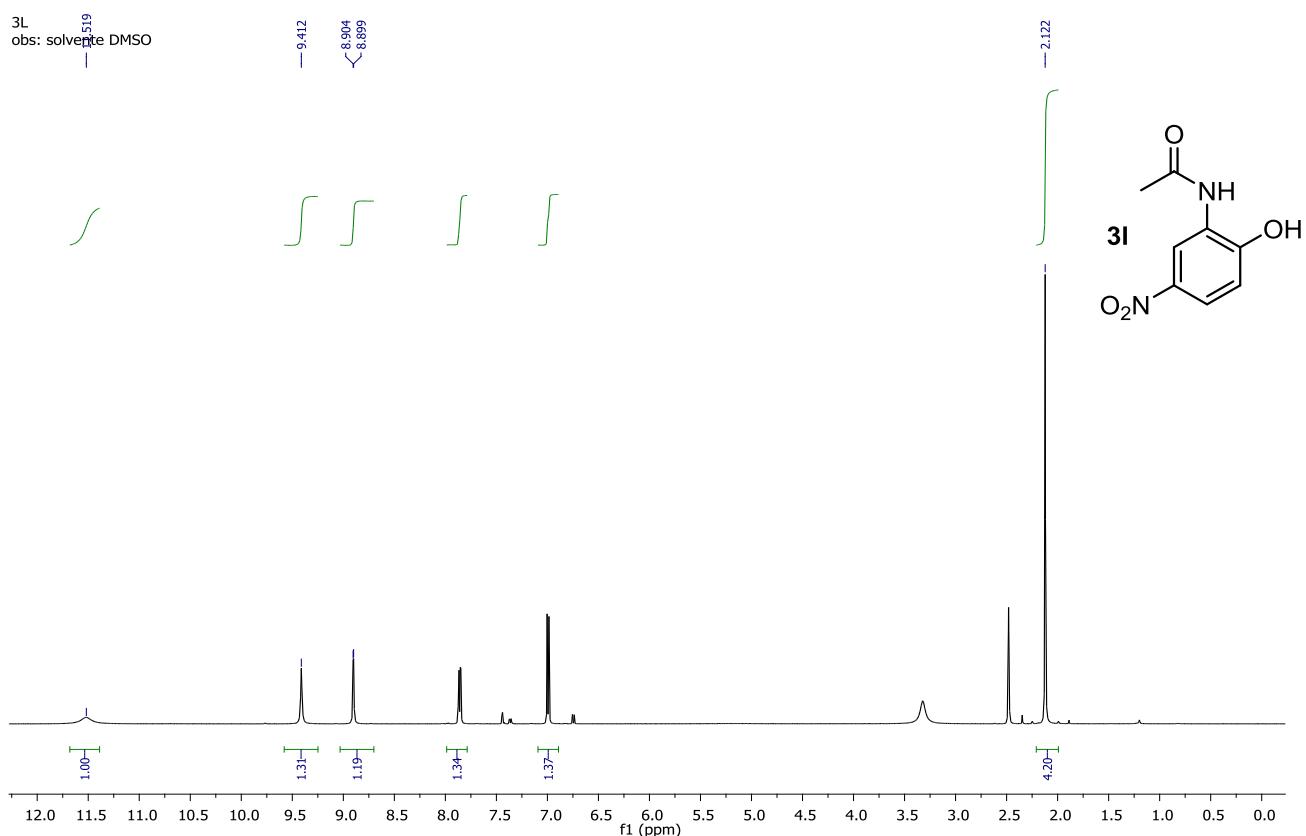


Figure S48. ^1H NMR spectrum of compound **3l** (500 MHz, $\text{DMSO}-d_6$).

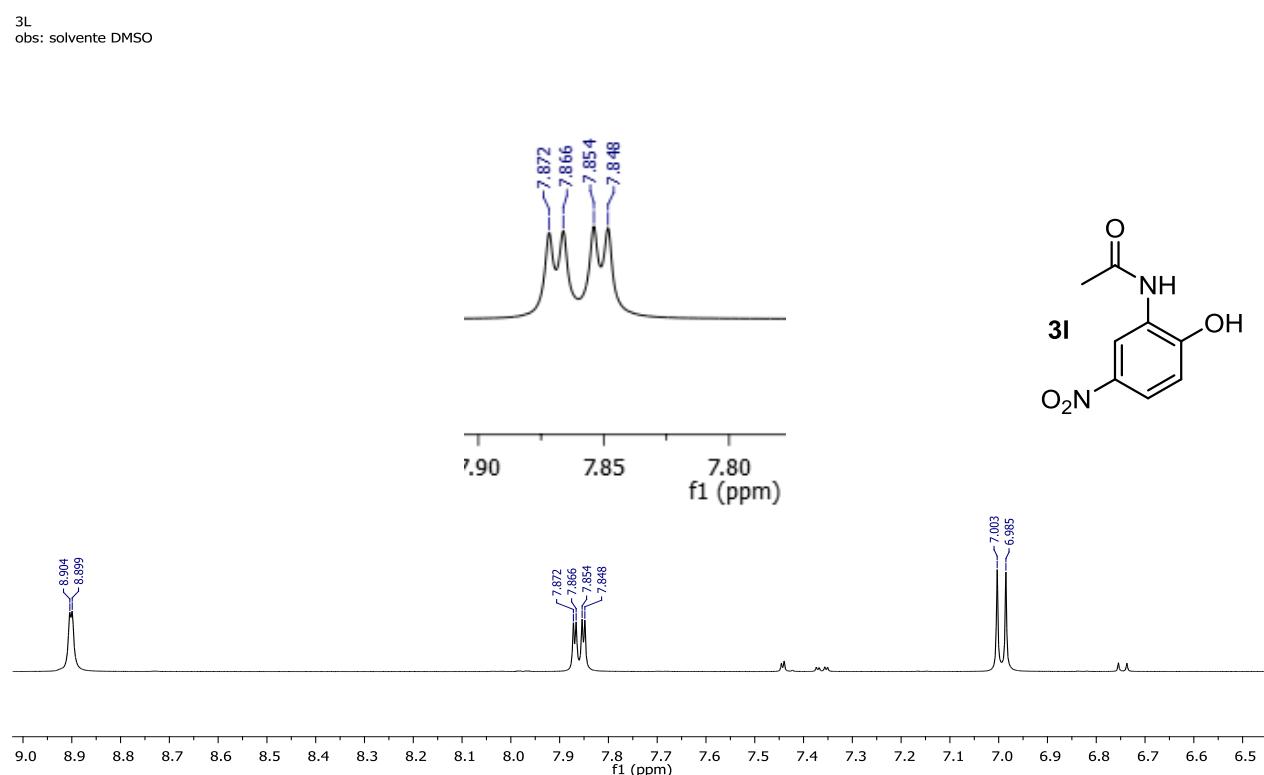


Figure S49. Expanded ^1H NMR spectrum of compound **3l** (500 MHz, $\text{DMSO}-d_6$).

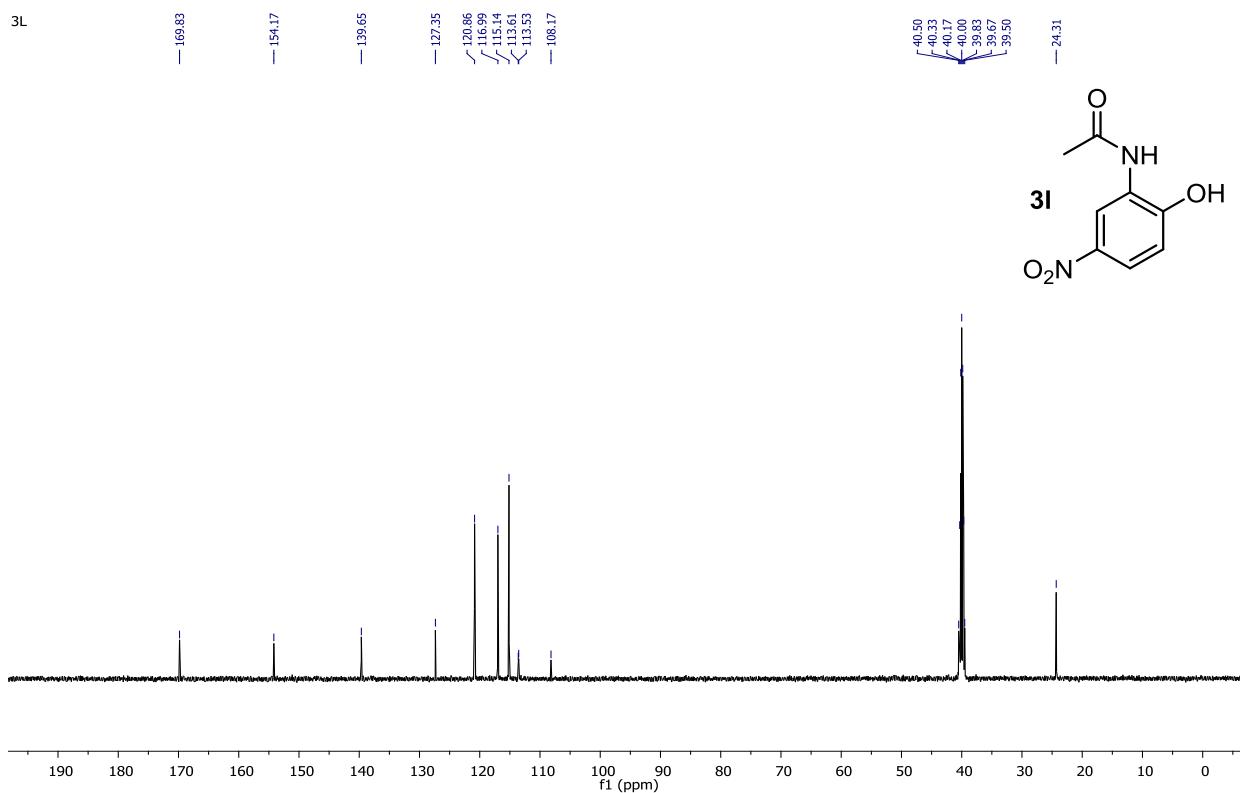


Figure S50. Full ¹³C NMR spectrum of compound **3I** (125 MHz, DMSO-*d*₆).

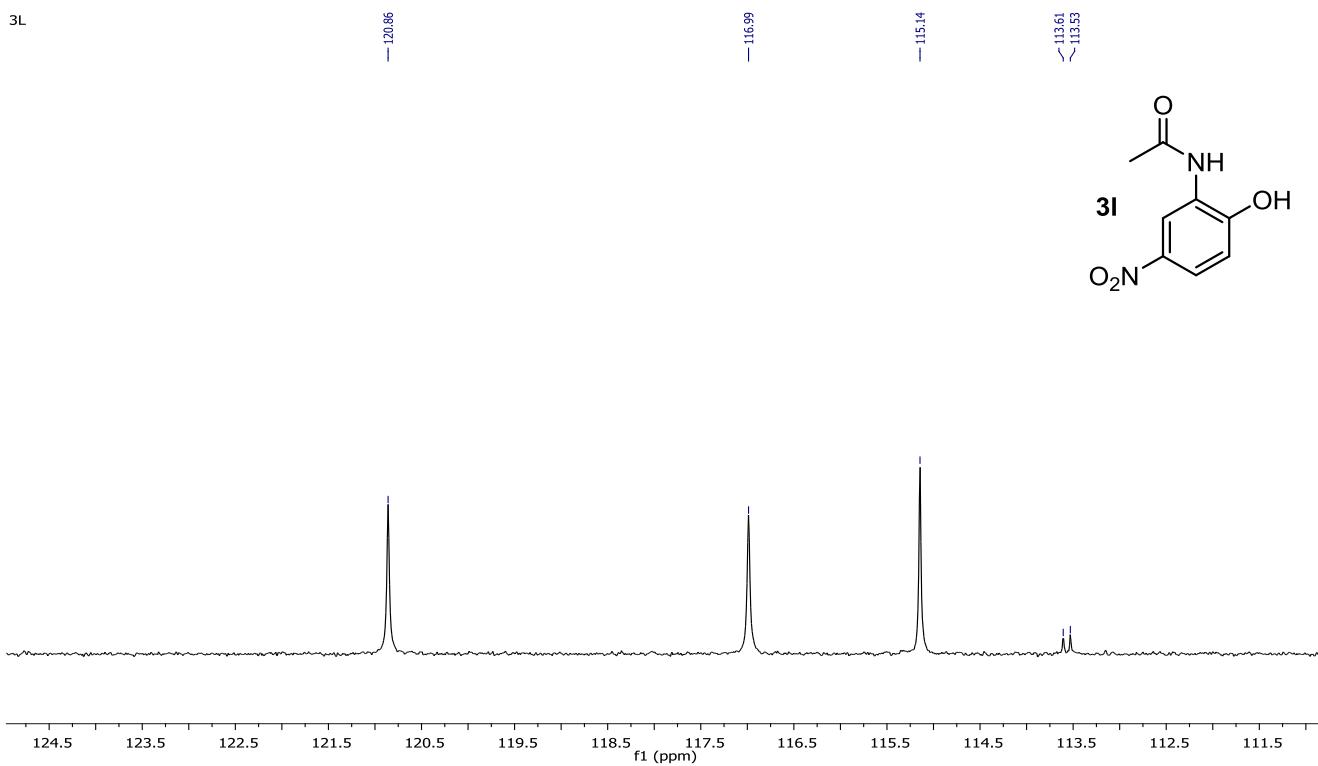


Figure S51. Expanded ¹³C NMR spectrum of compound **3I** (125 MHz, DMSO-*d*₆).

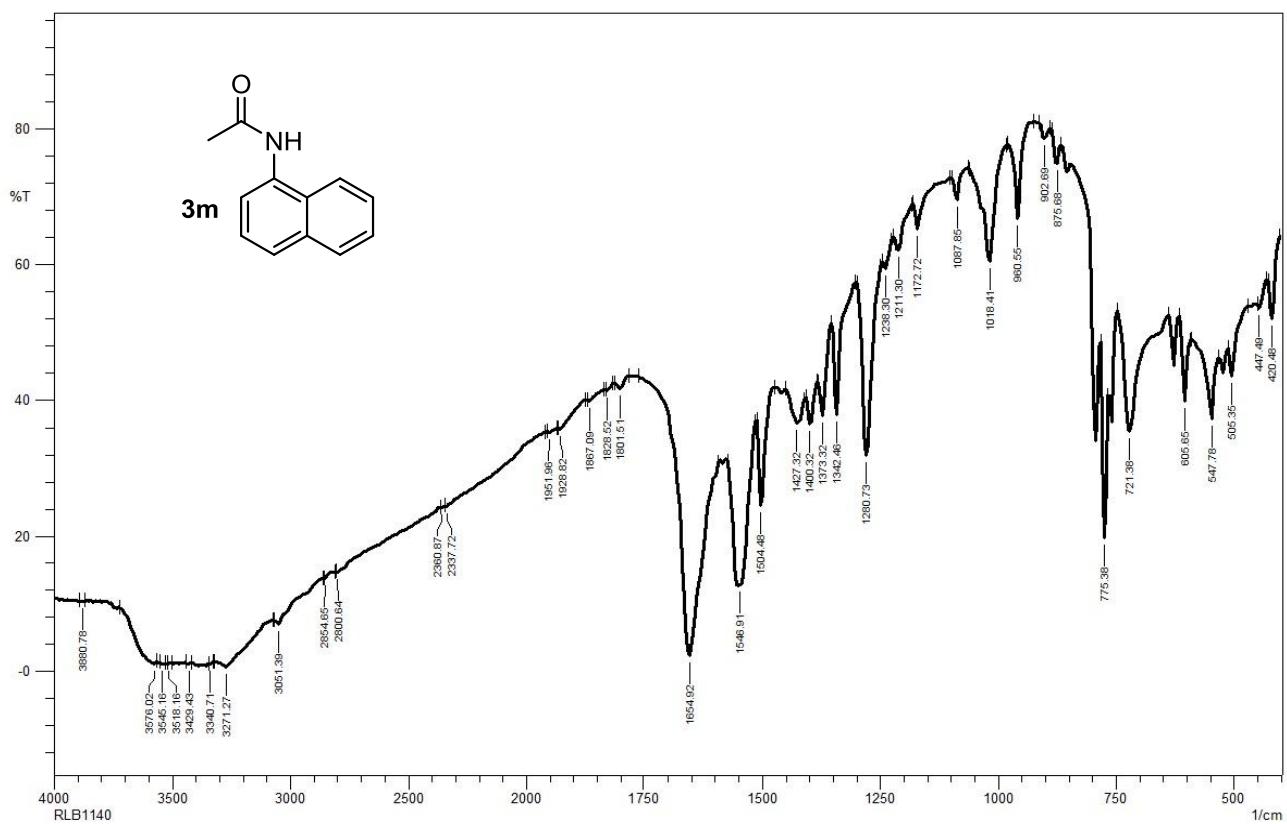


Figure S52. IR spectrum of **3m** (KBr).

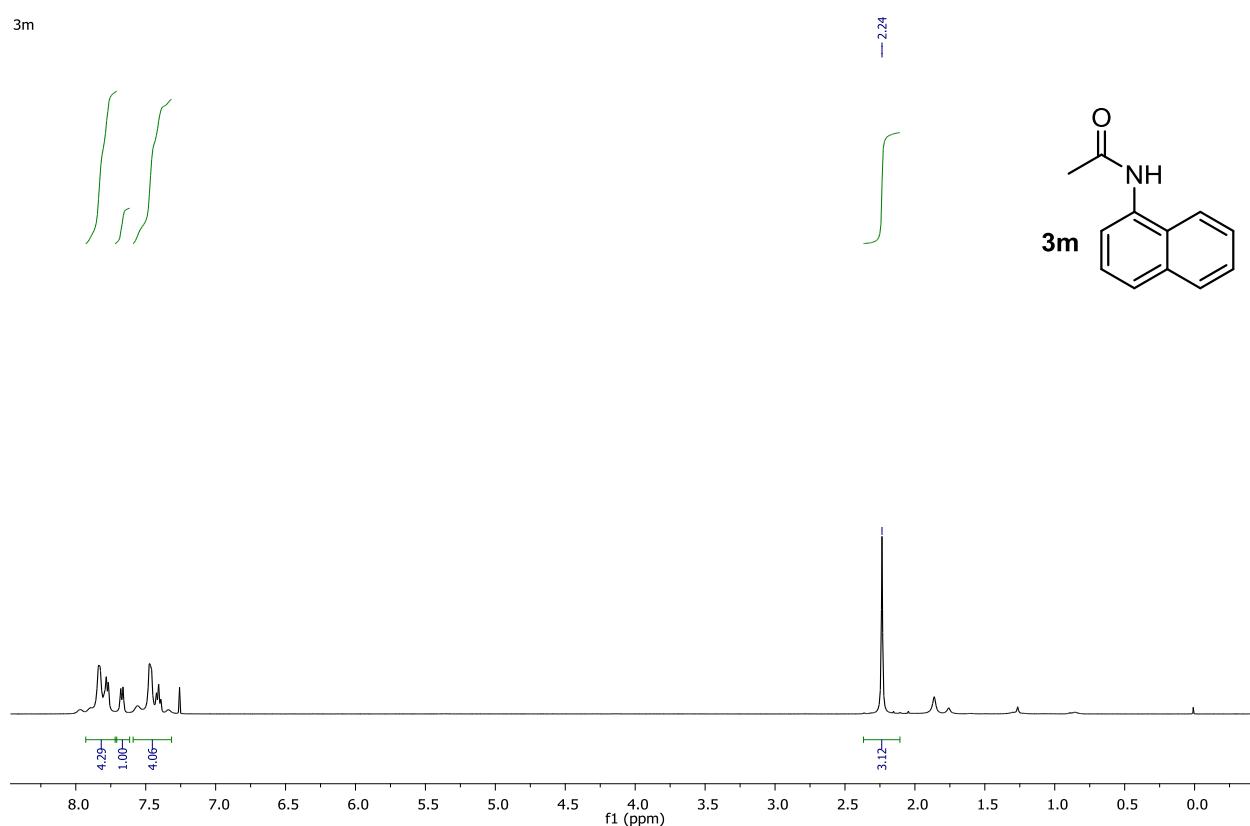


Figure S53. Full ^1H NMR spectrum of compound **3m** (500 MHz, CDCl_3).

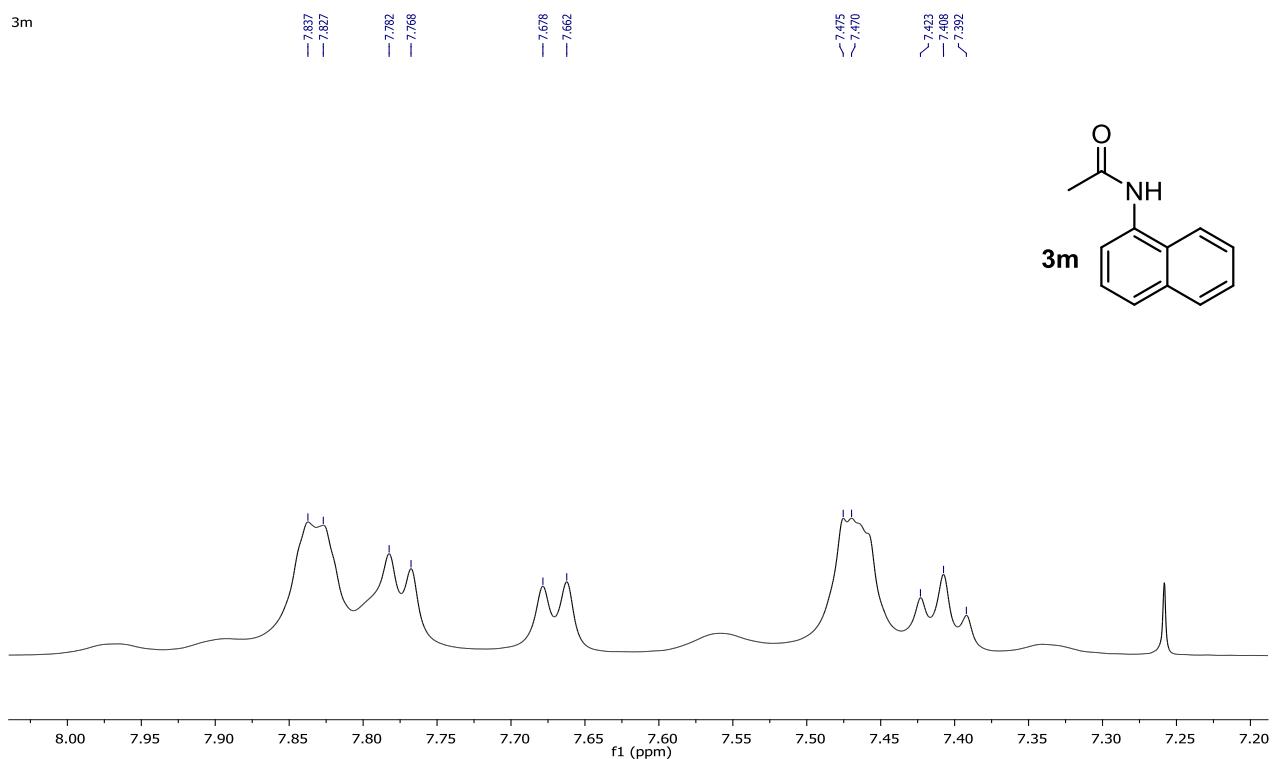


Figure S54. Expanded ^1H NMR spectrum of compound **3m** (500 MHz, CDCl_3).

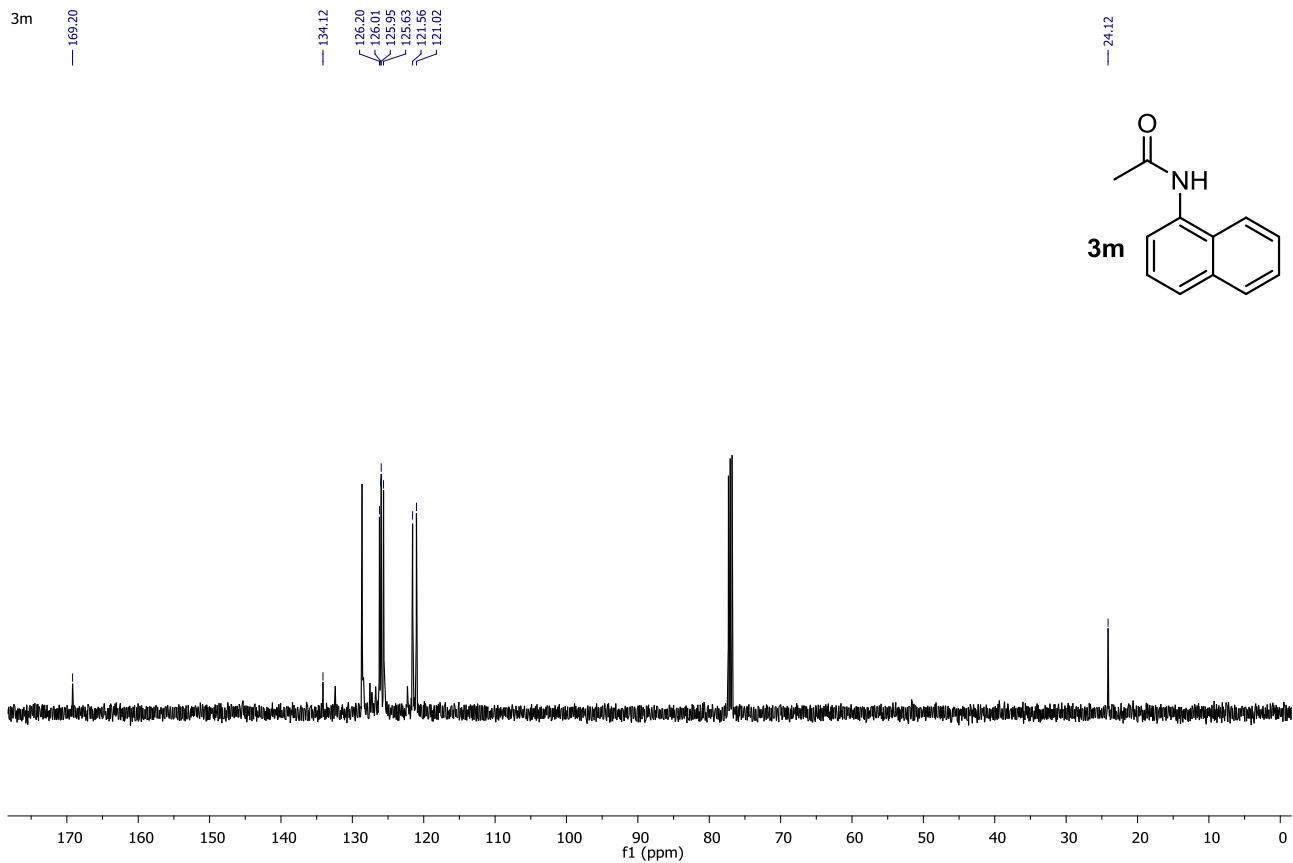


Figure S55. Full ^{13}C NMR spectrum of compound **3m** (125 MHz, CDCl_3).

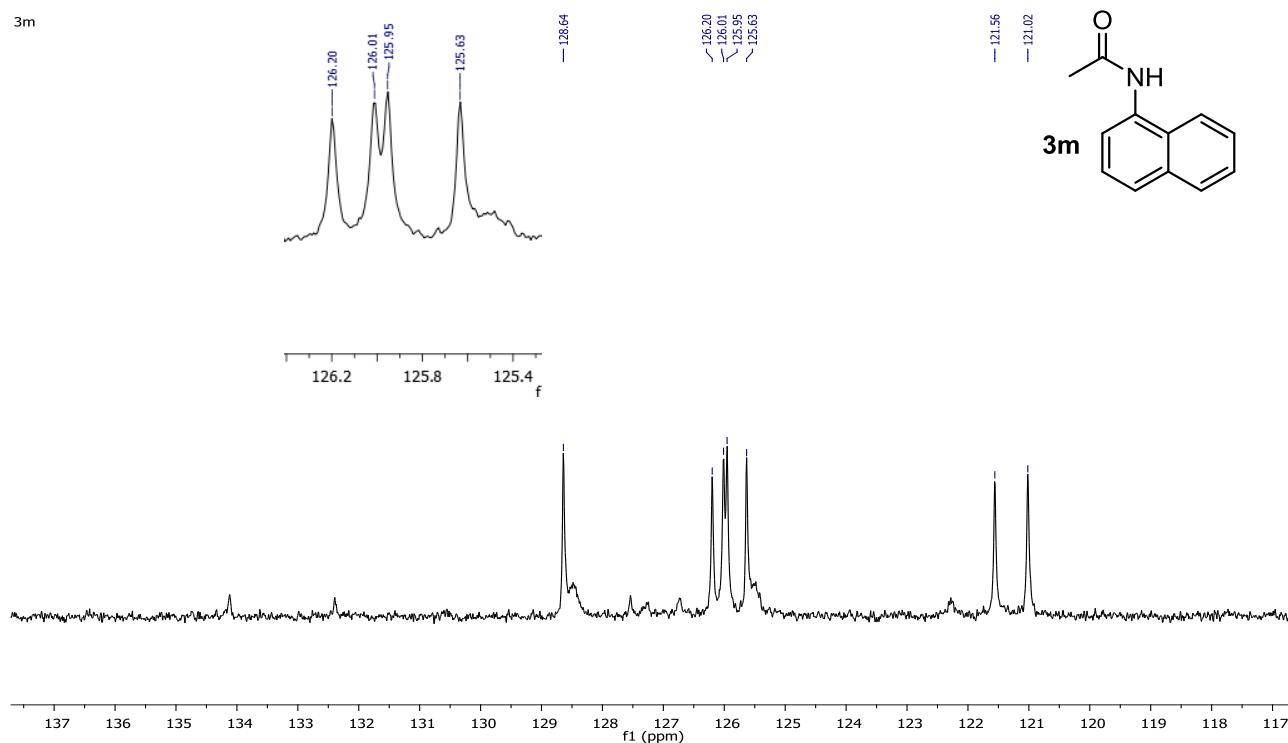


Figure S56. Expanded ^{13}C NMR spectrum of compound **3m** (125 MHz, CDCl_3).

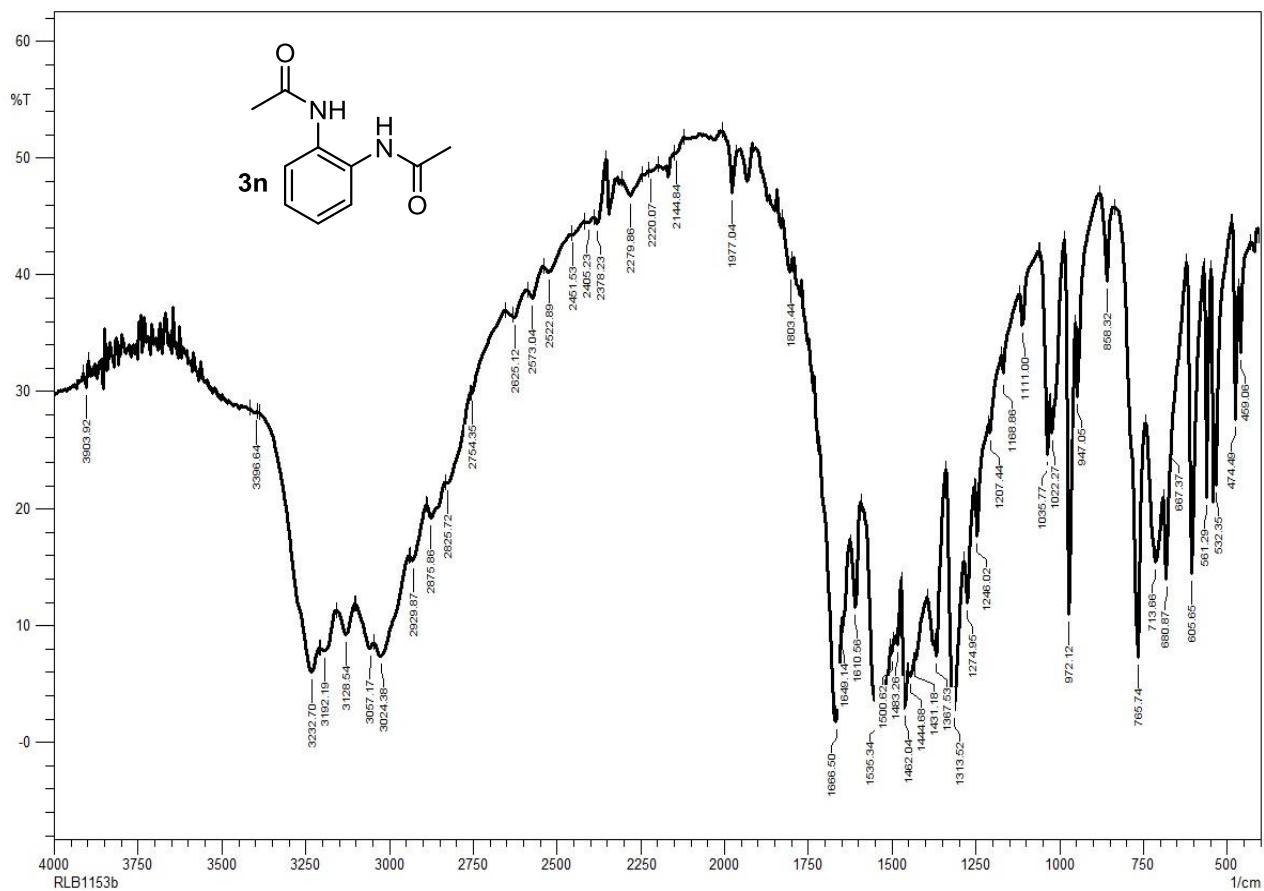


Figure S57. IR spectrum of **3n** (KBr).

3n

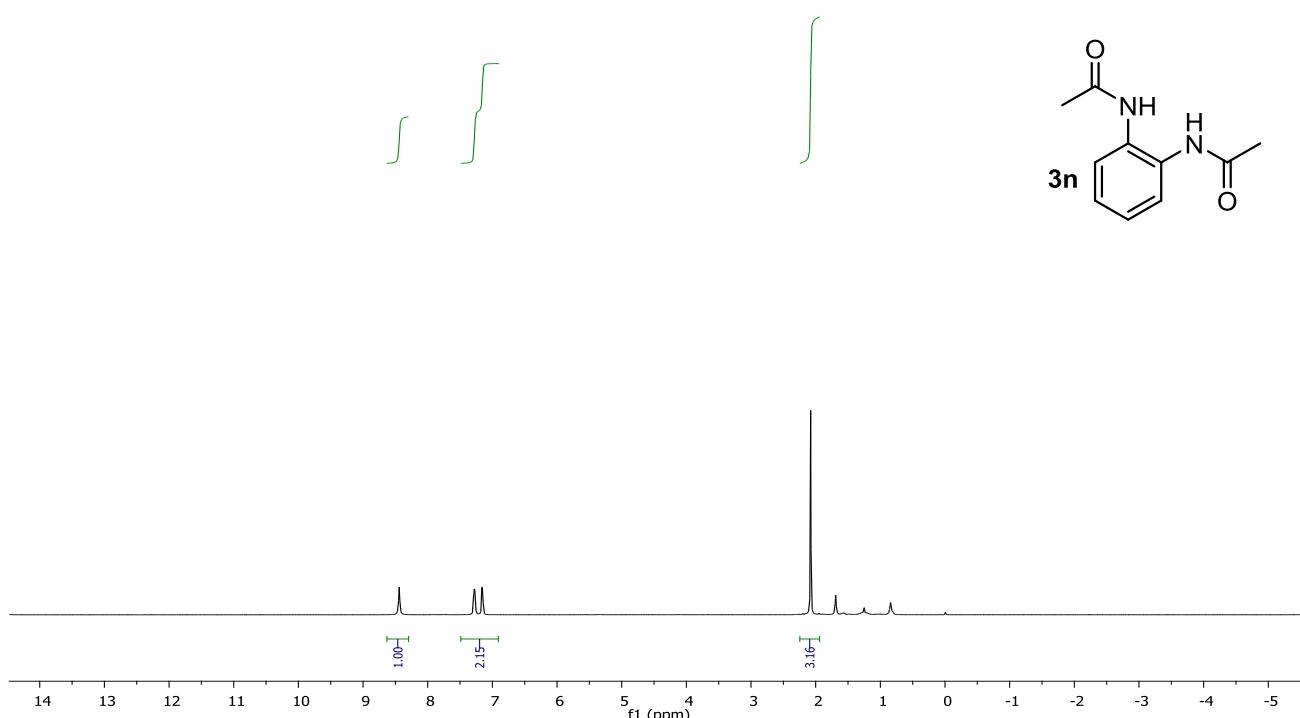


Figure S58. Full ^1H NMR spectrum of compound **3n** (500 MHz, CDCl_3).

3n

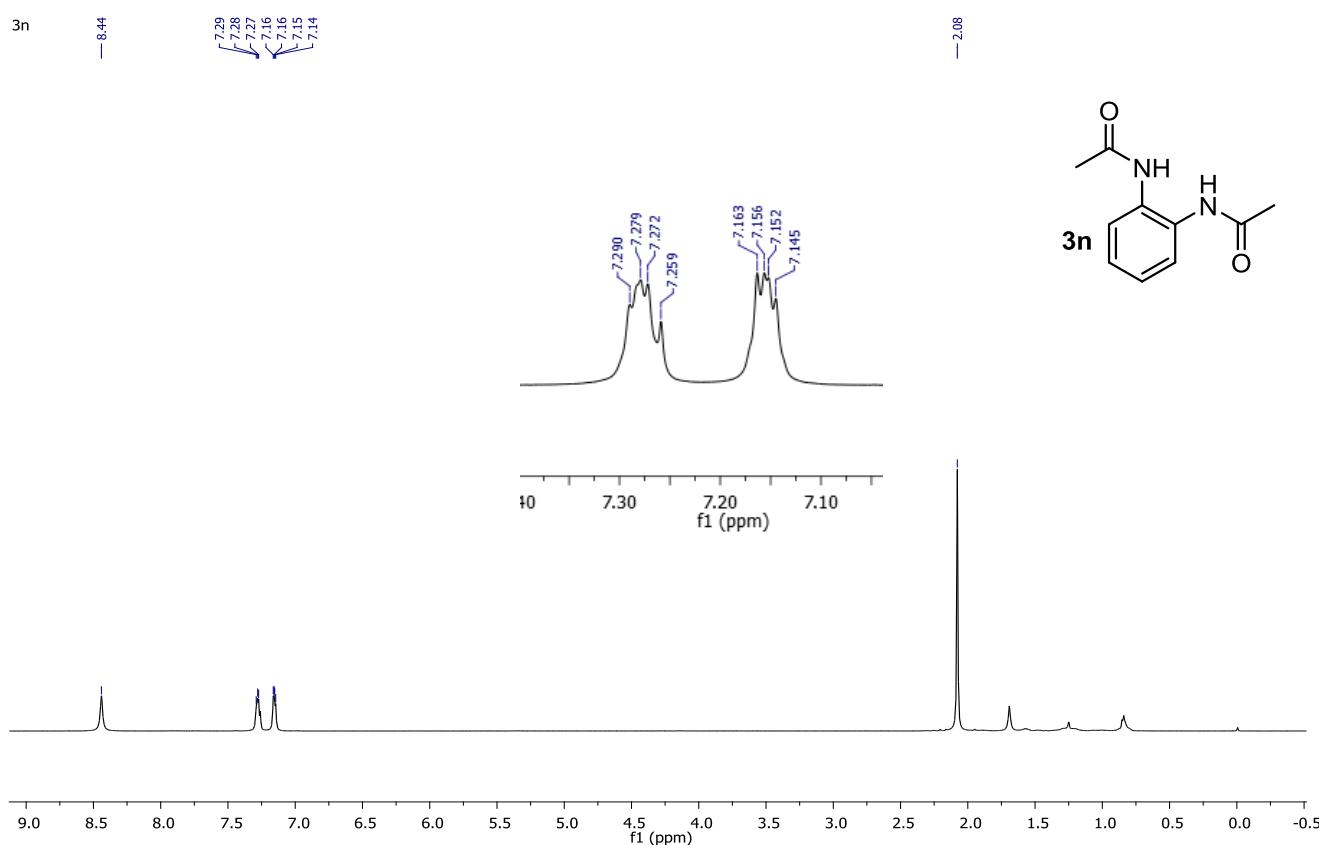


Figure S59. Expanded ^1H NMR spectrum of compound **3n** (500 MHz, CDCl_3).

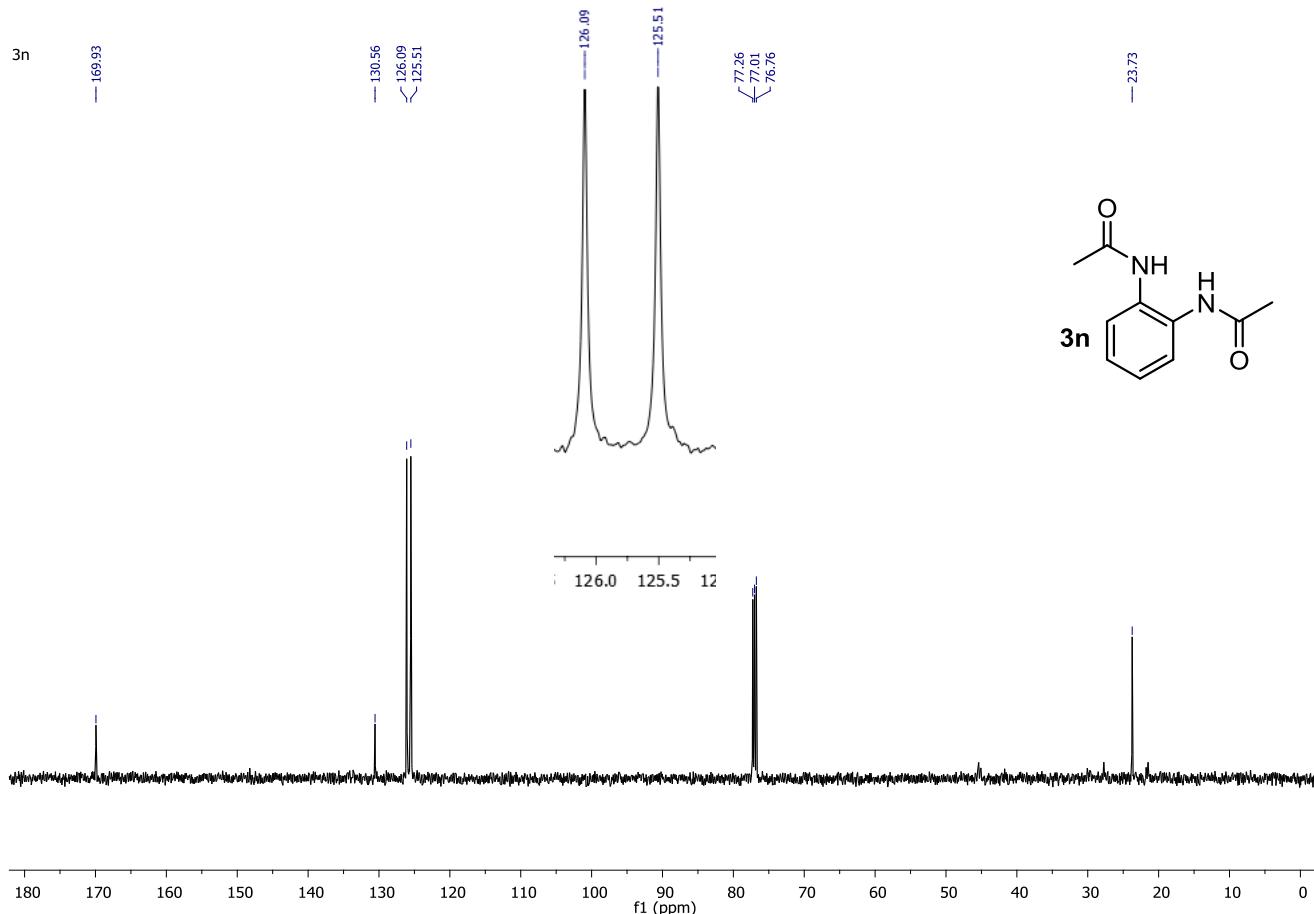


Figure S60. Full ^{13}C NMR spectrum of compound **3n** (125 MHz, CDCl_3).

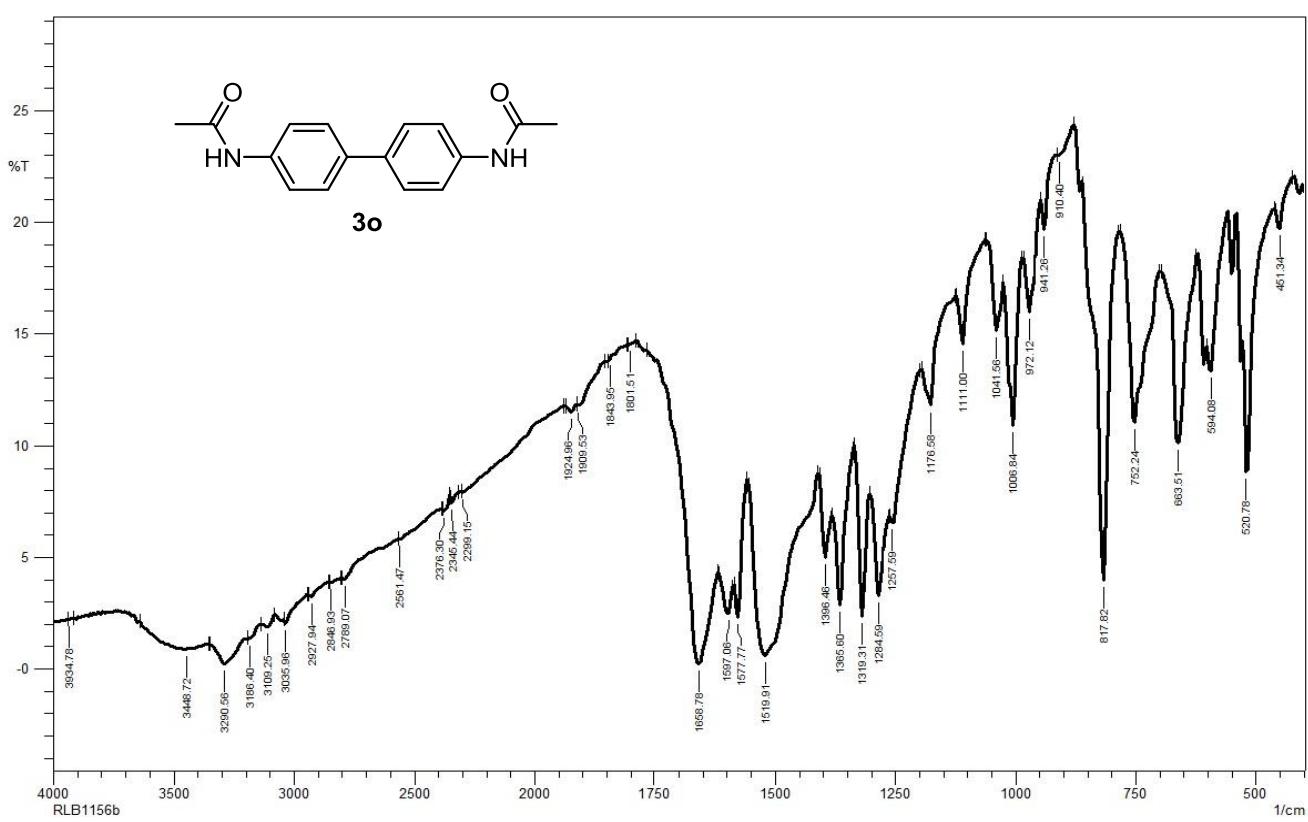


Figure S61. IR spectrum of **3o** (KBr).

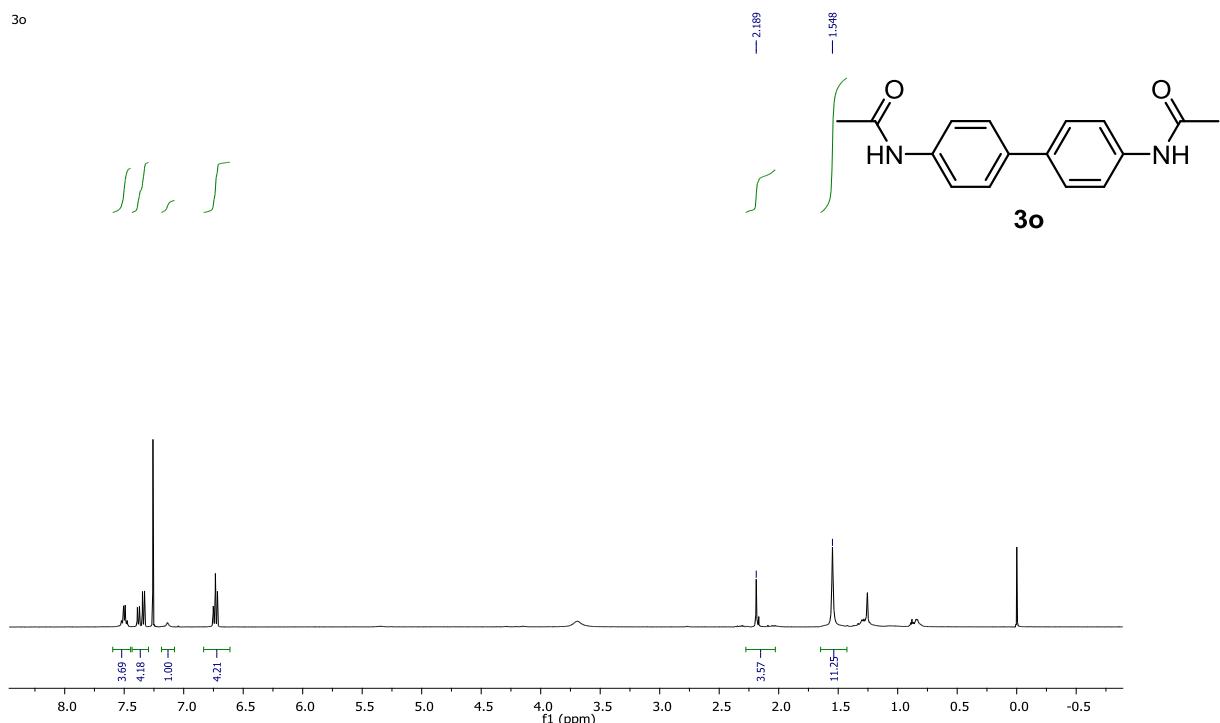


Figure S62. Full ^1H NMR spectrum of **3o** (500 MHz, CDCl_3).

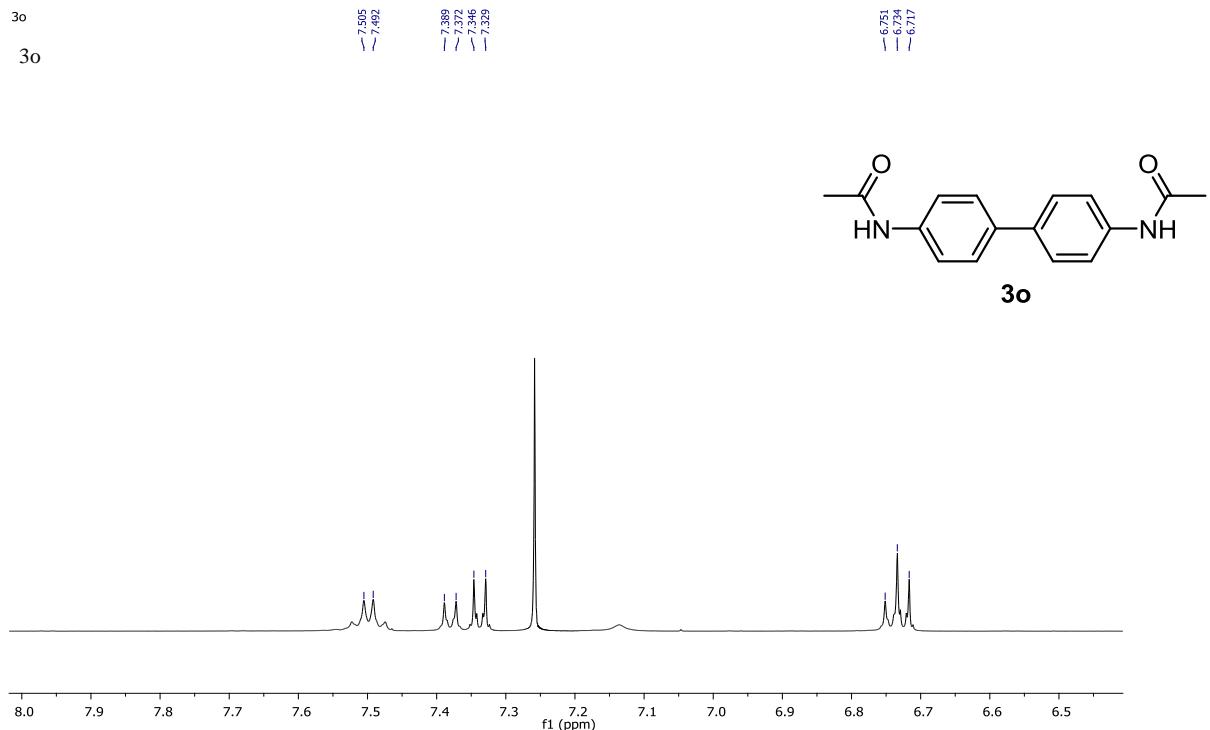


Figure S63. Expanded ^1H NMR spectrum of **3o** (500 MHz, CDCl_3).

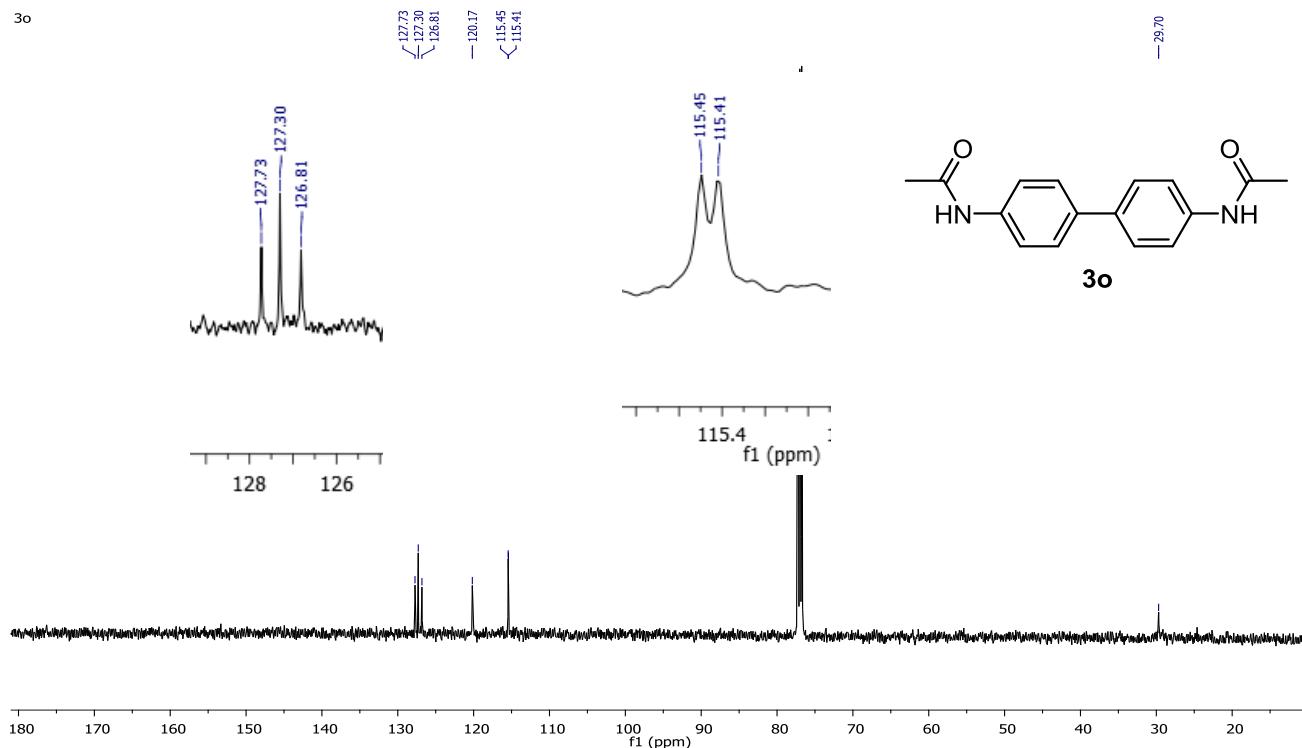


Figure S64. Full ^{13}C NMR spectrum of compound **3o** (125 MHz, CDCl_3).

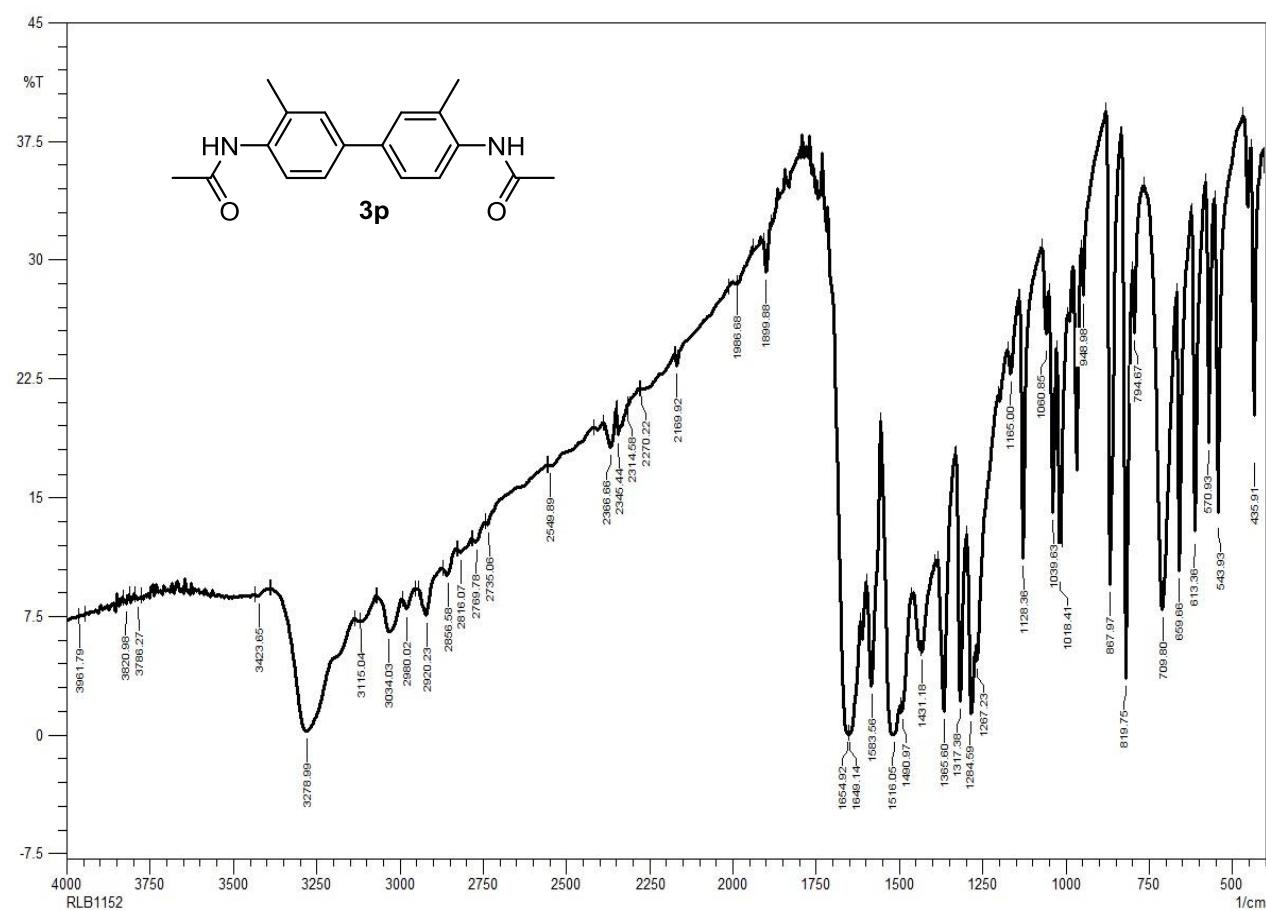


Figure S65. IR spectrum of **3p** (KBr).

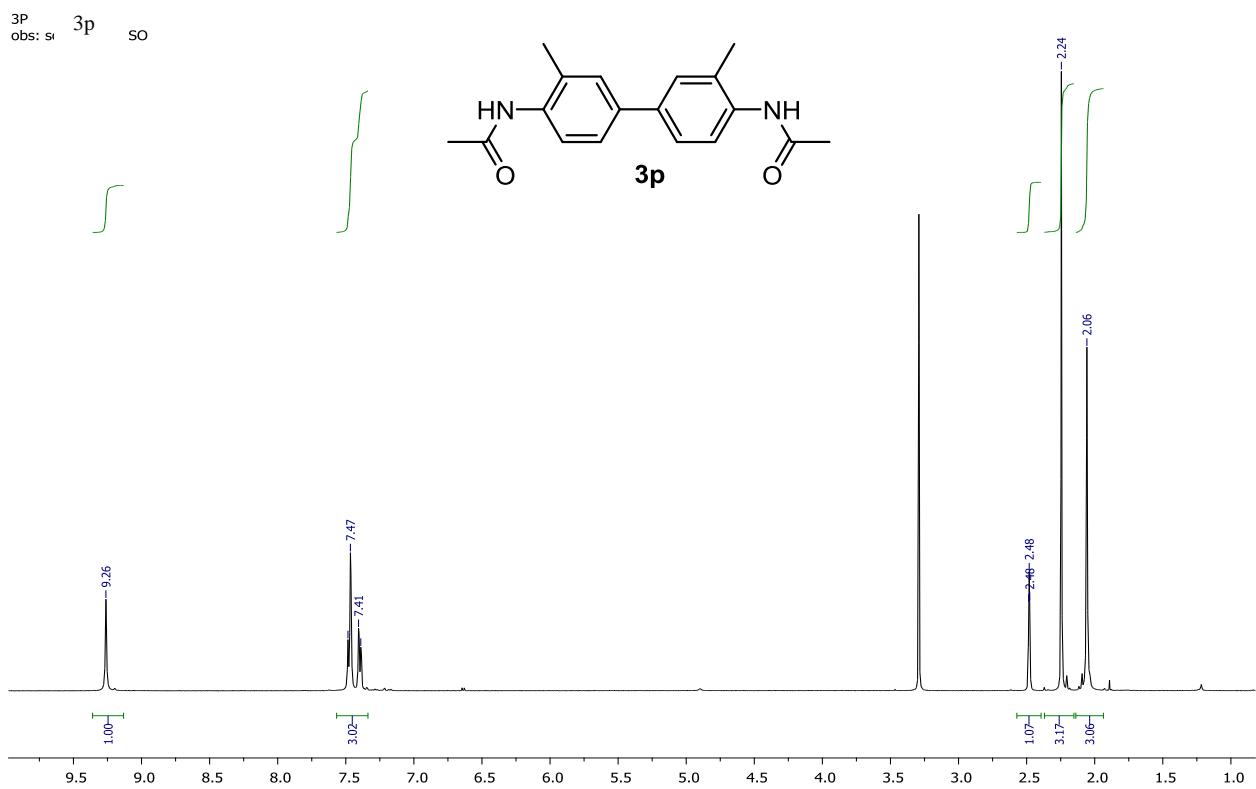


Figure S66. Full ^1H NMR spectrum of **3p** (500 MHz, $\text{DMSO}-d_6$).

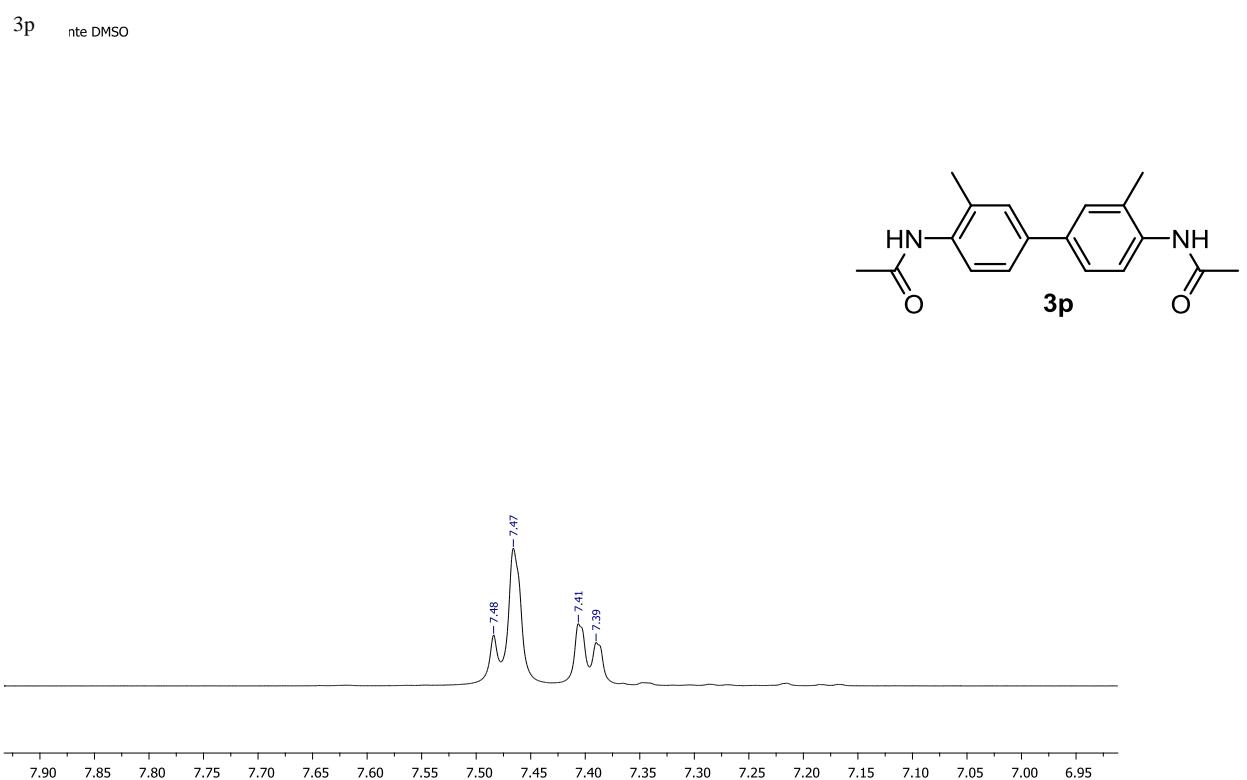


Figure S67. Expanded ^1H NMR spectrum of **3p** (500 MHz, $\text{DMSO}-d_6$).

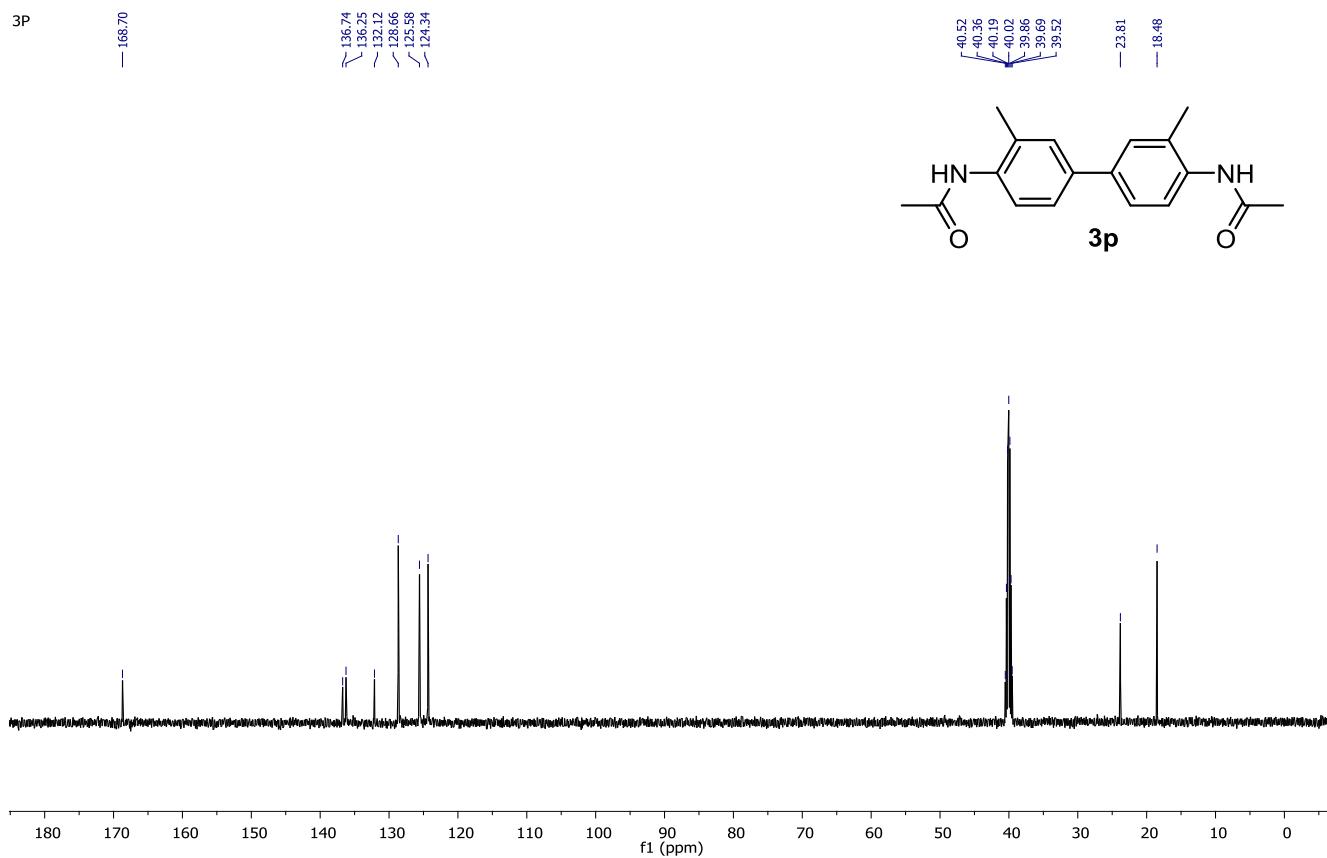


Figure S68. Full ^{13}C NMR spectrum of compound **3p** (125 MHz, $\text{DMSO}-d_6$).

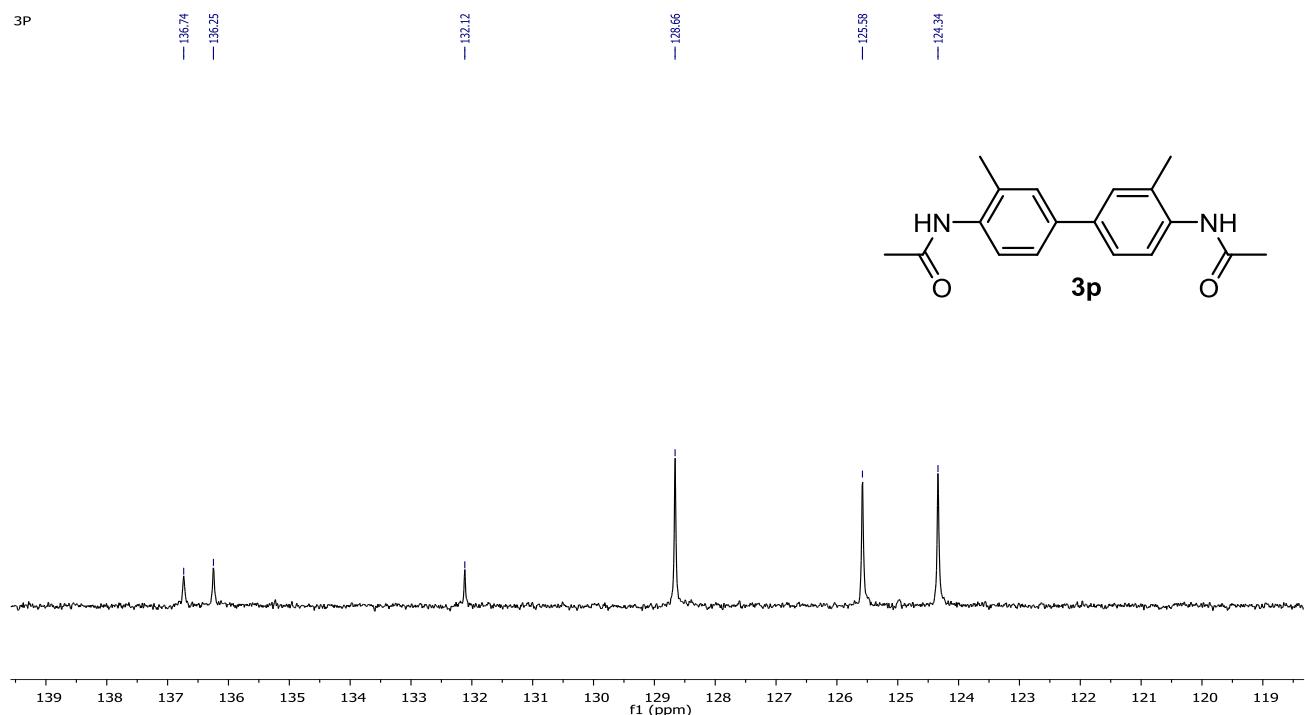


Figure S69. Expanded ^{13}C NMR spectrum of compound **3p** (125 MHz, $\text{DMSO}-d_6$).

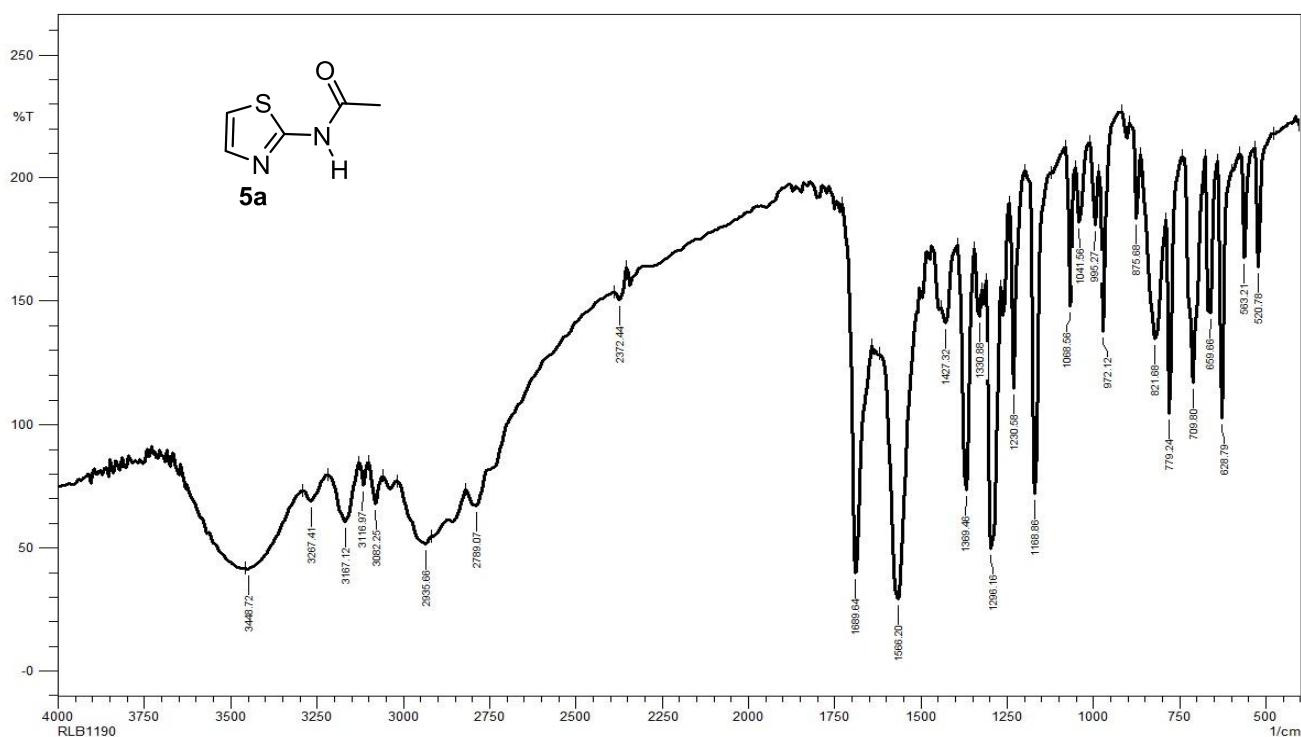


Figure S70. IR spectrum of **5a** (KBr).

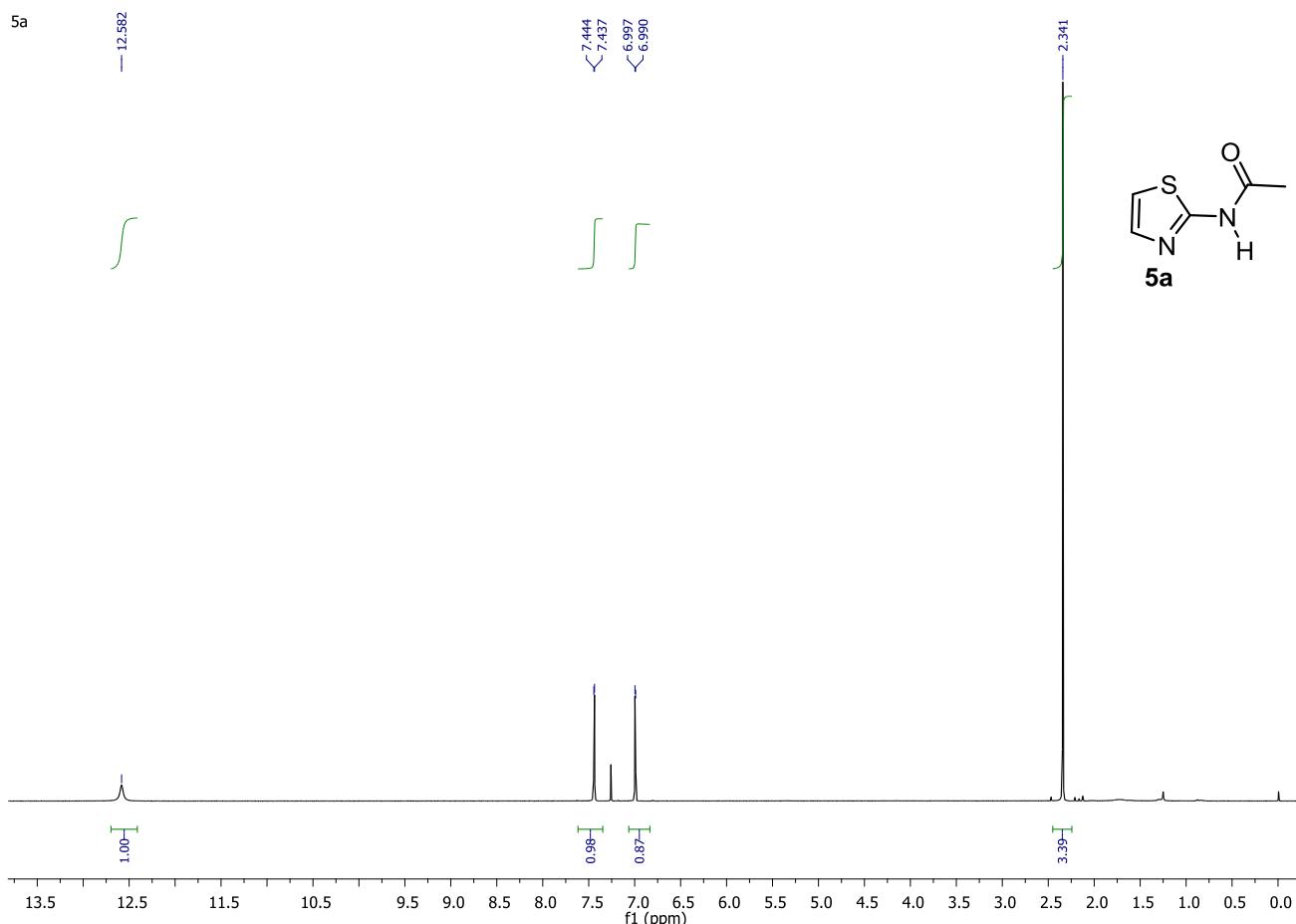


Figure S71. Full ^1H NMR spectrum of compound **5a** (500 MHz, CDCl_3).

5a

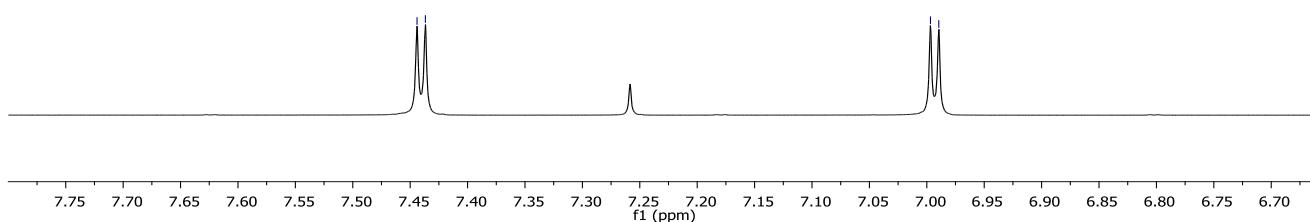
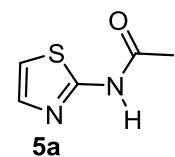
~7.444
~7.437~6.997
~6.990

Figure S72. Expanded ^1H NMR spectrum of compound 5a (500 MHz, CDCl_3).

5a

— 165.09

— 160.28

— 136.09

— 77.27
— 77.02
— 76.76

— 23.08

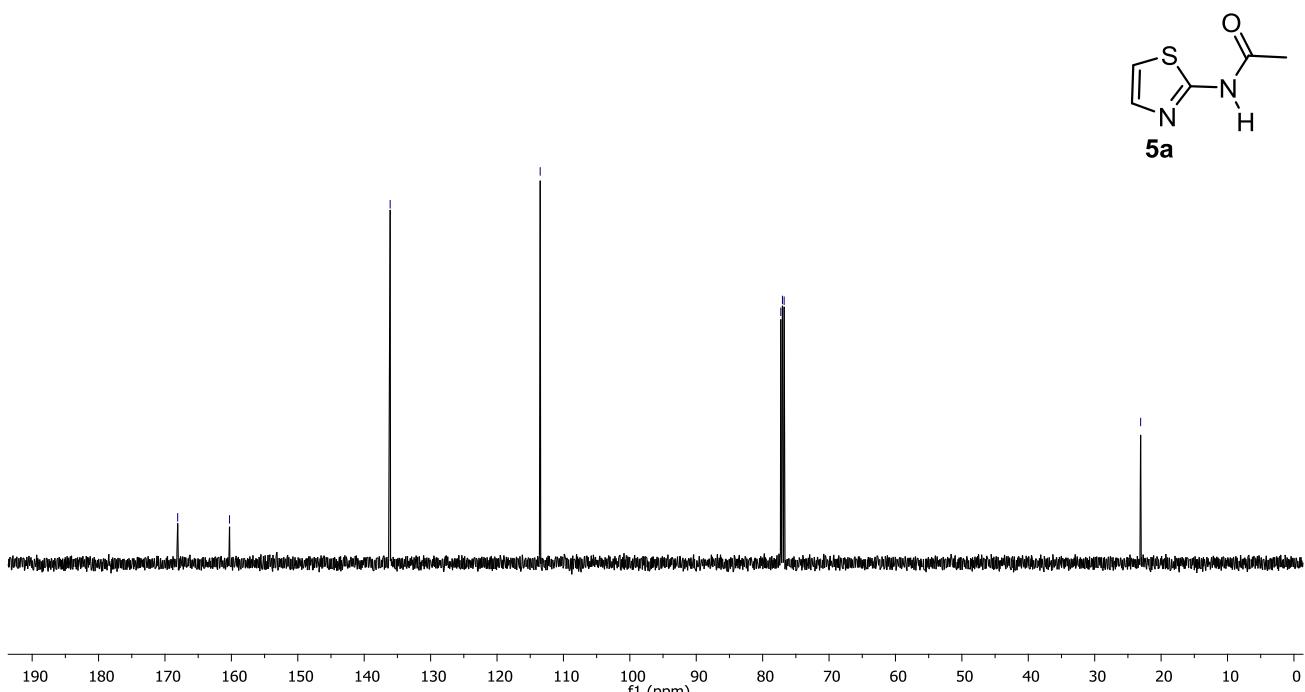
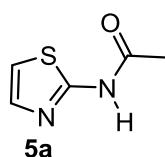


Figure S73. Full ^{13}C NMR spectrum of compound 5a (125 MHz, CDCl_3).

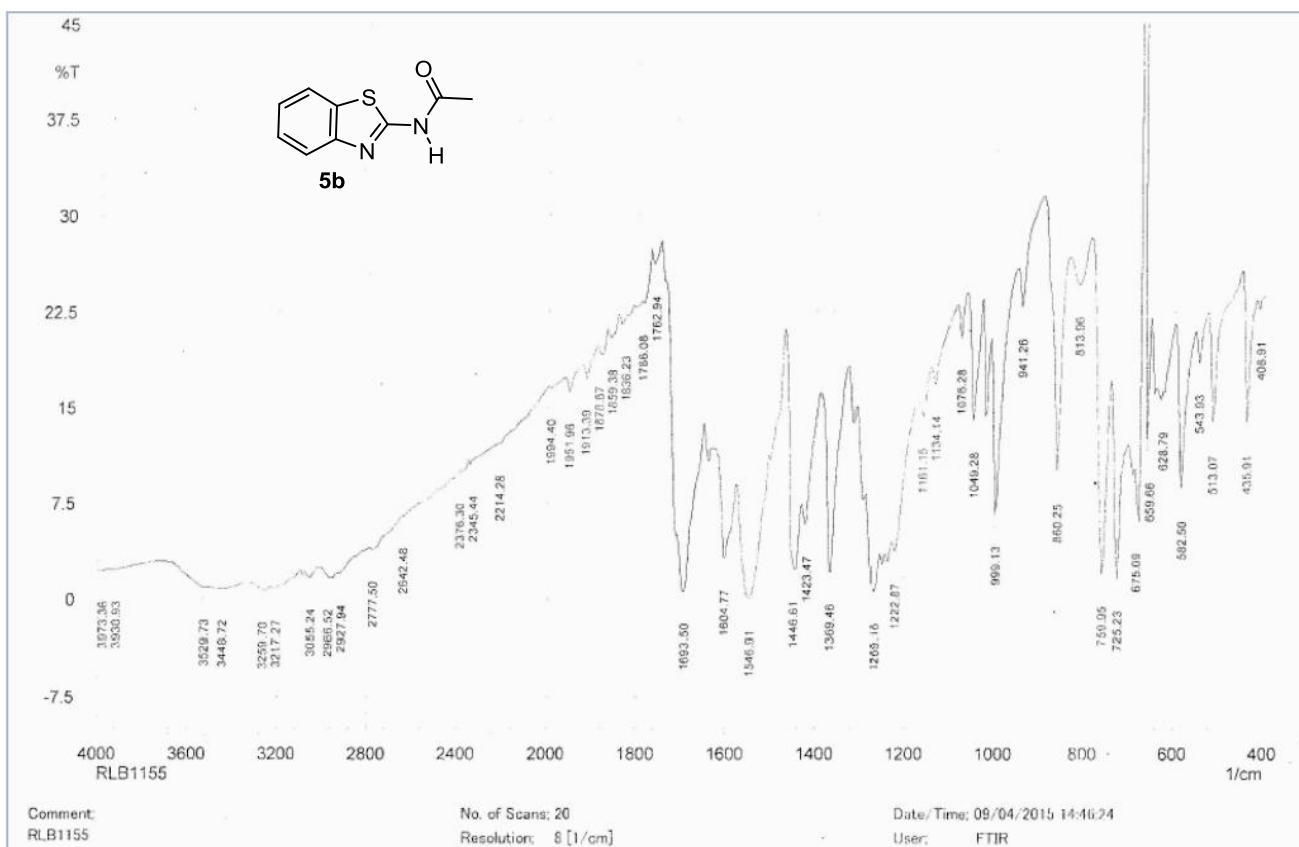


Figure S74. IR spectrum of **5b** (KBr).

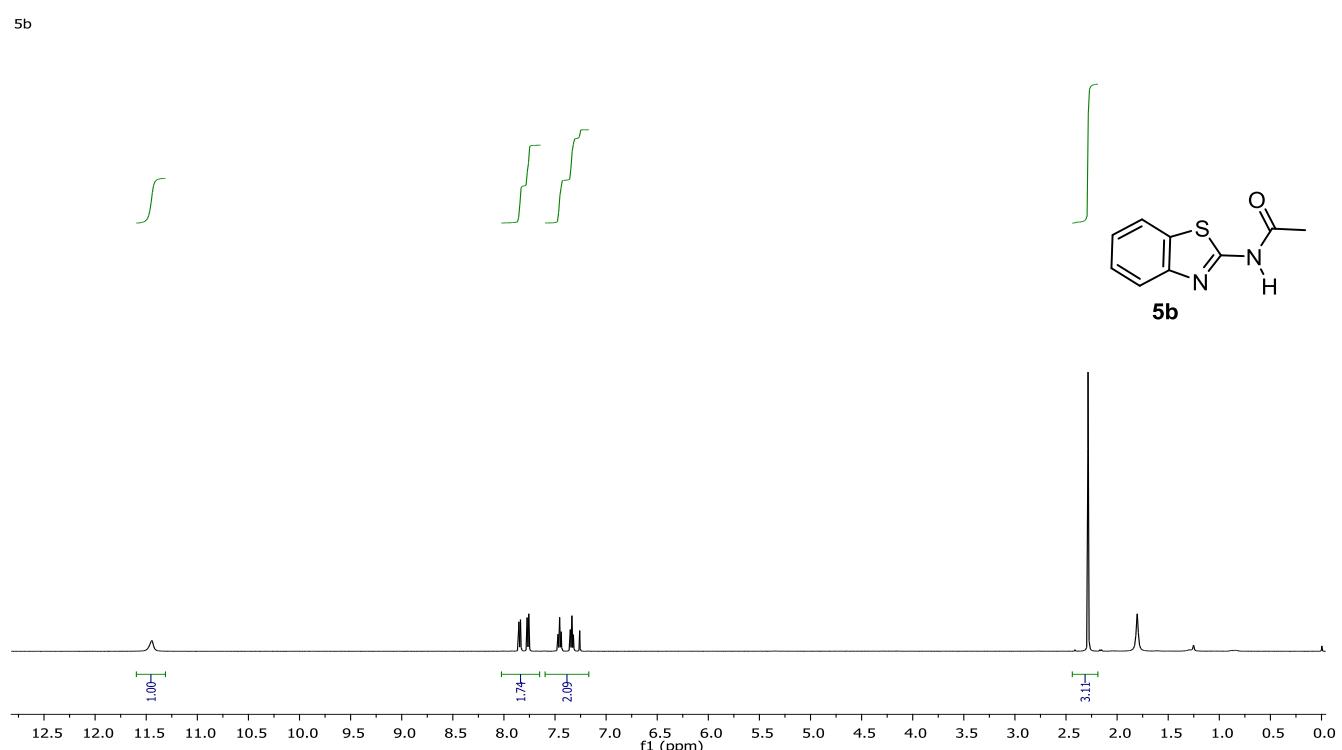


Figure S75. Full ^1H NMR spectrum of compound **5b** (500 MHz, CDCl_3).

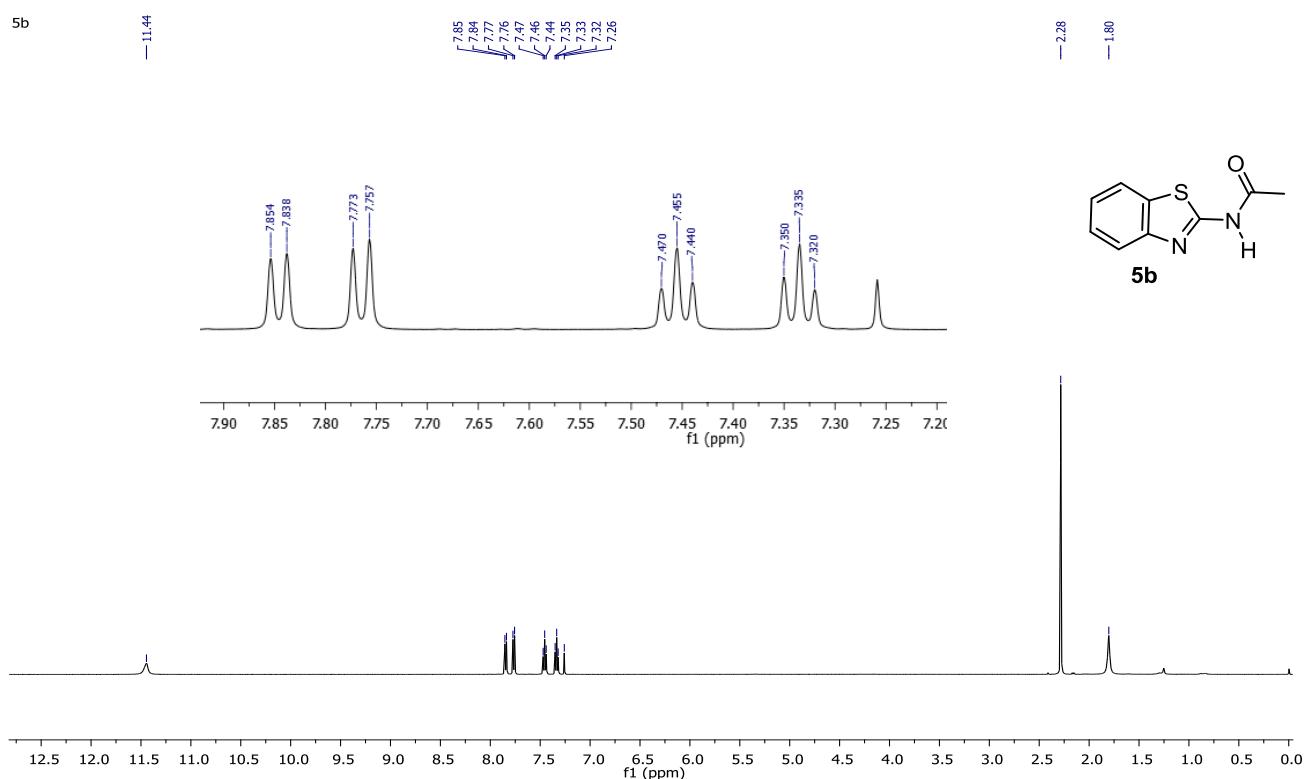


Figure S76. Expanded ^1H NMR spectrum of compound **5b** (500 MHz, CDCl_3).

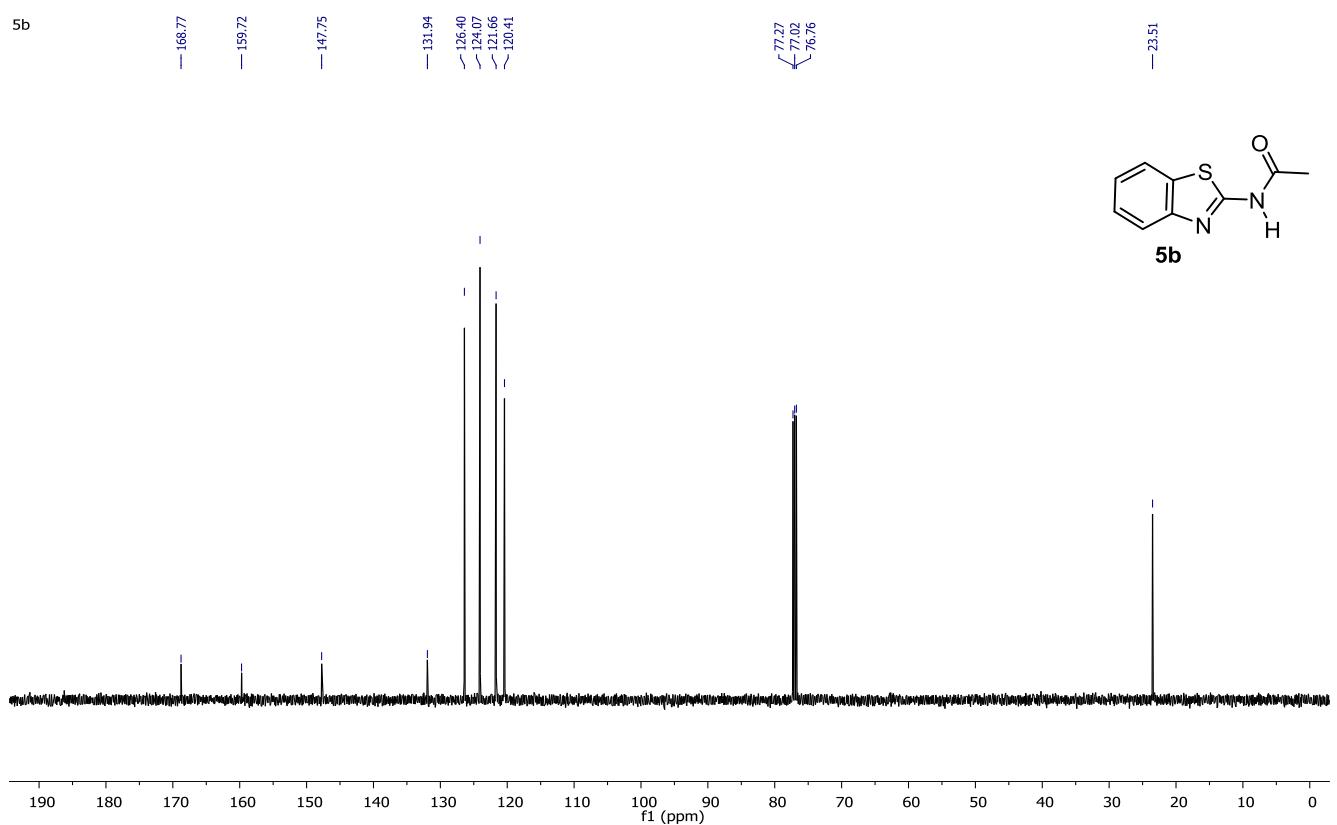


Figure S77. Full ^{13}C NMR spectrum of compound **5b** (125 MHz, CDCl_3).

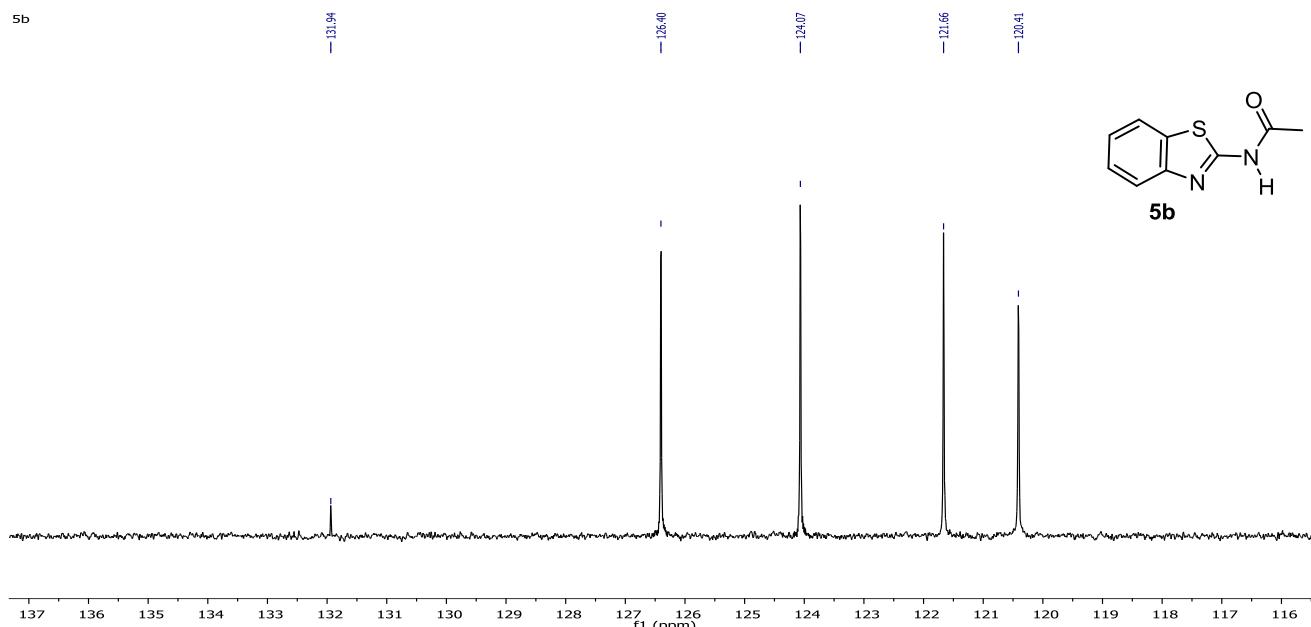


Figure S78. Expanded ^{13}C NMR spectrum of compound **5b** (125 MHz, CDCl_3).

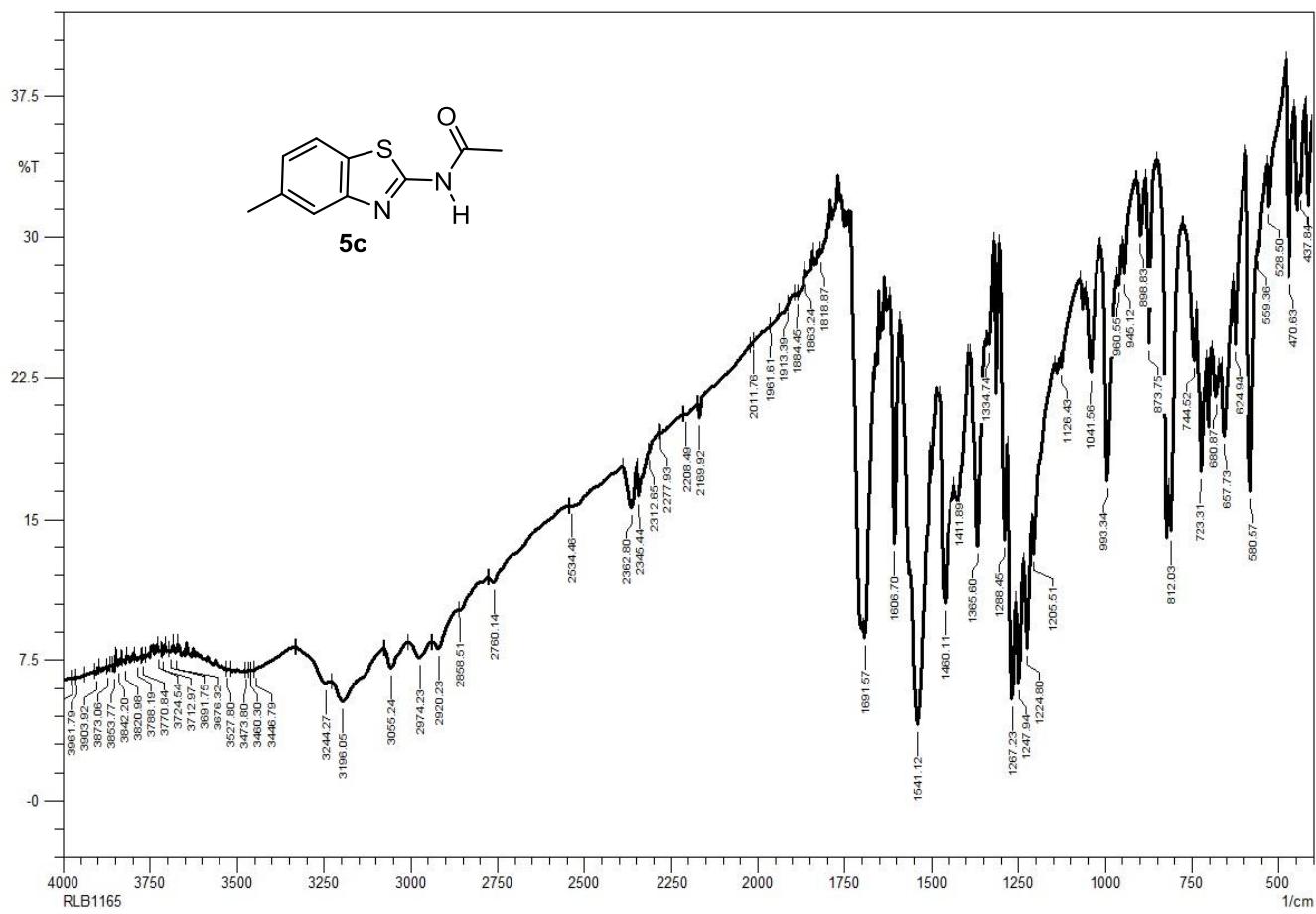


Figure S79. IR spectrum of **5c** (KBr).

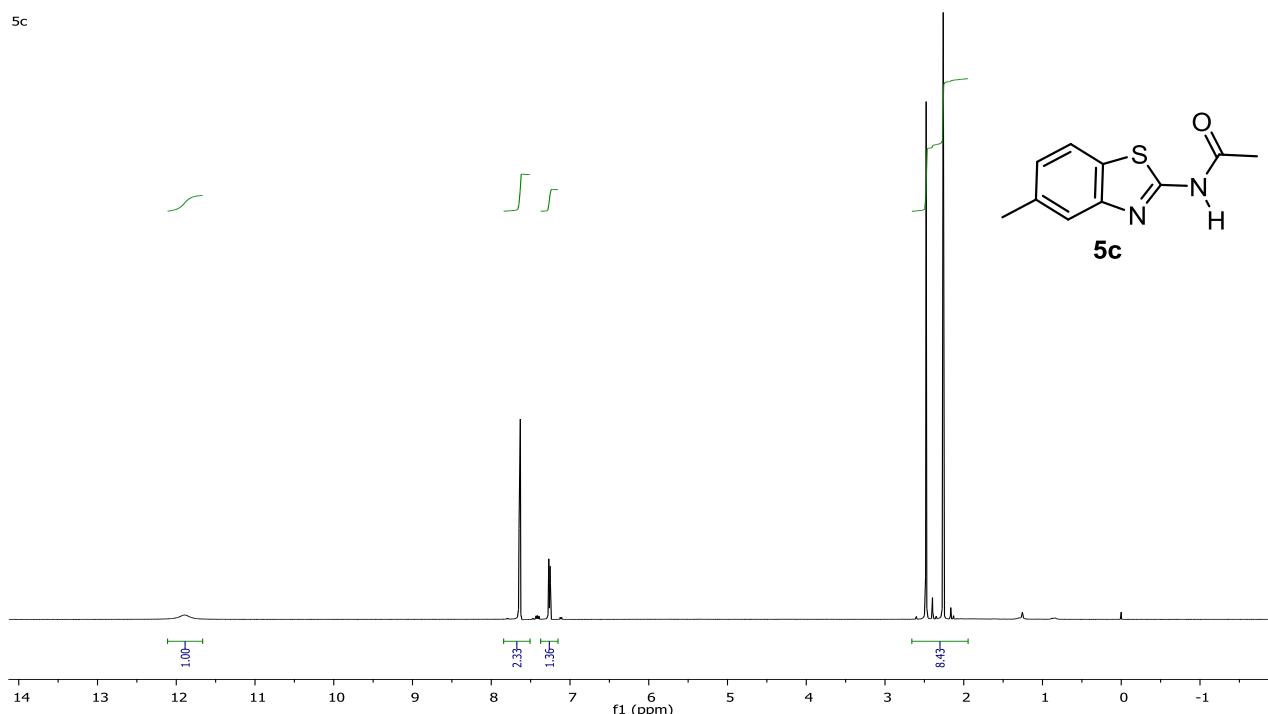


Figure S80. Full ^1H NMR spectrum of compound **5c** (500 MHz, CDCl_3).

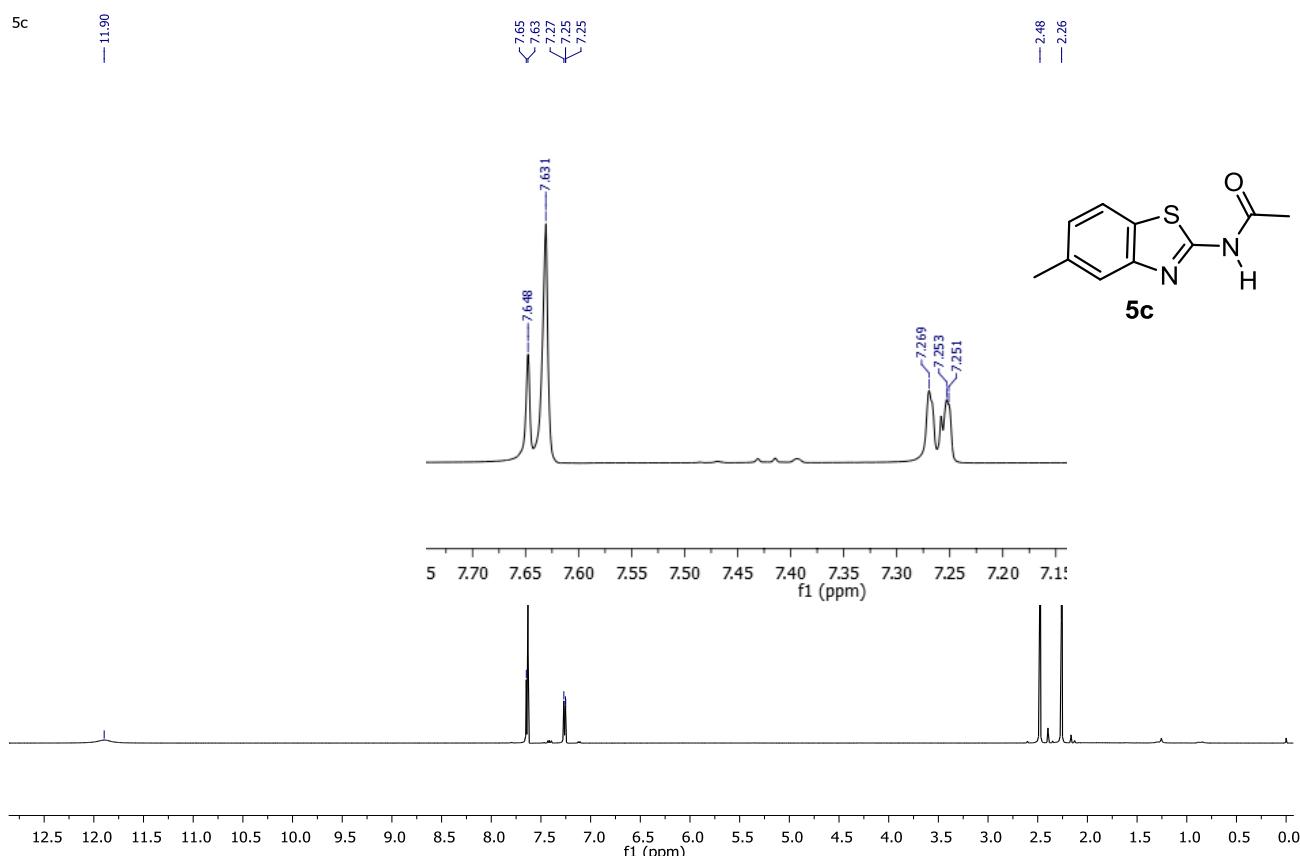


Figure S81. Expanded ^1H NMR spectrum of compound **5c** (500 MHz, CDCl_3).

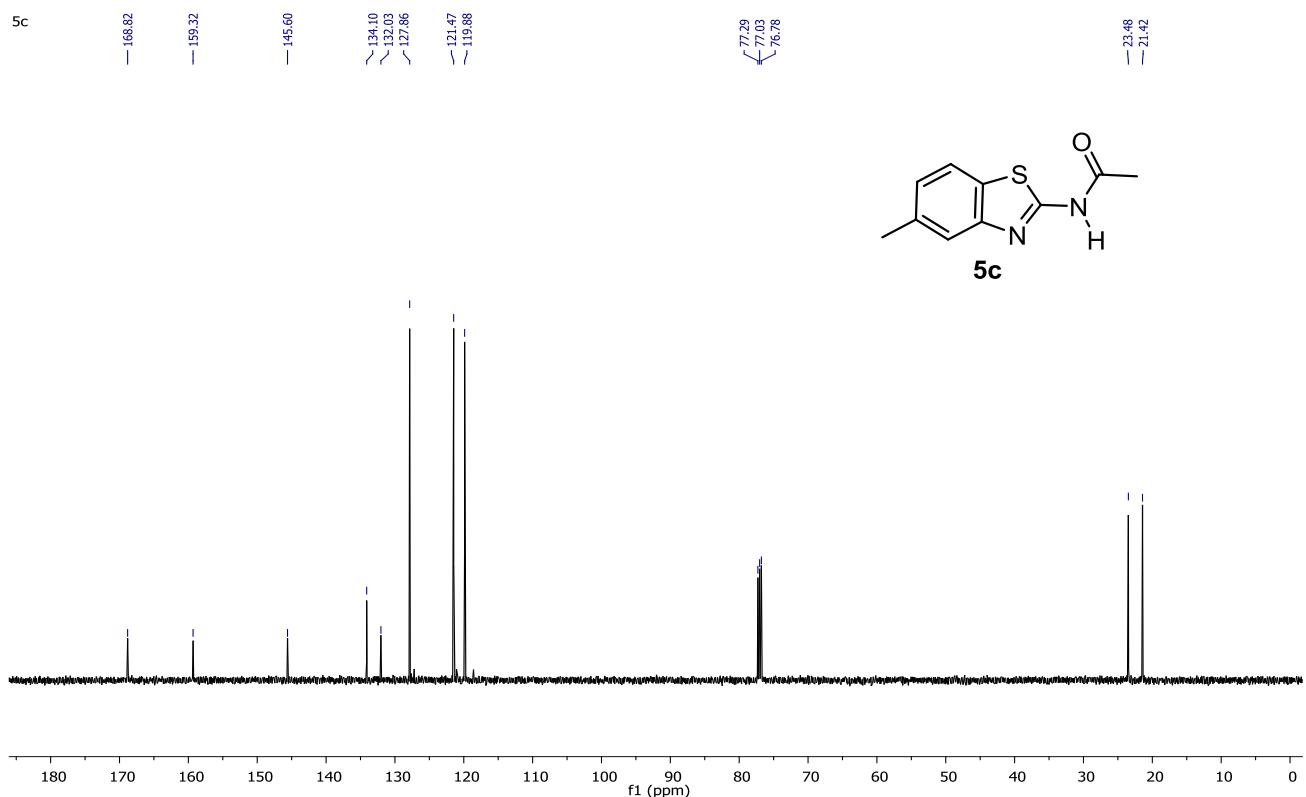


Figure S82. Full ¹³C NMR spectrum of compound 5c (125 MHz, CDCl₃).

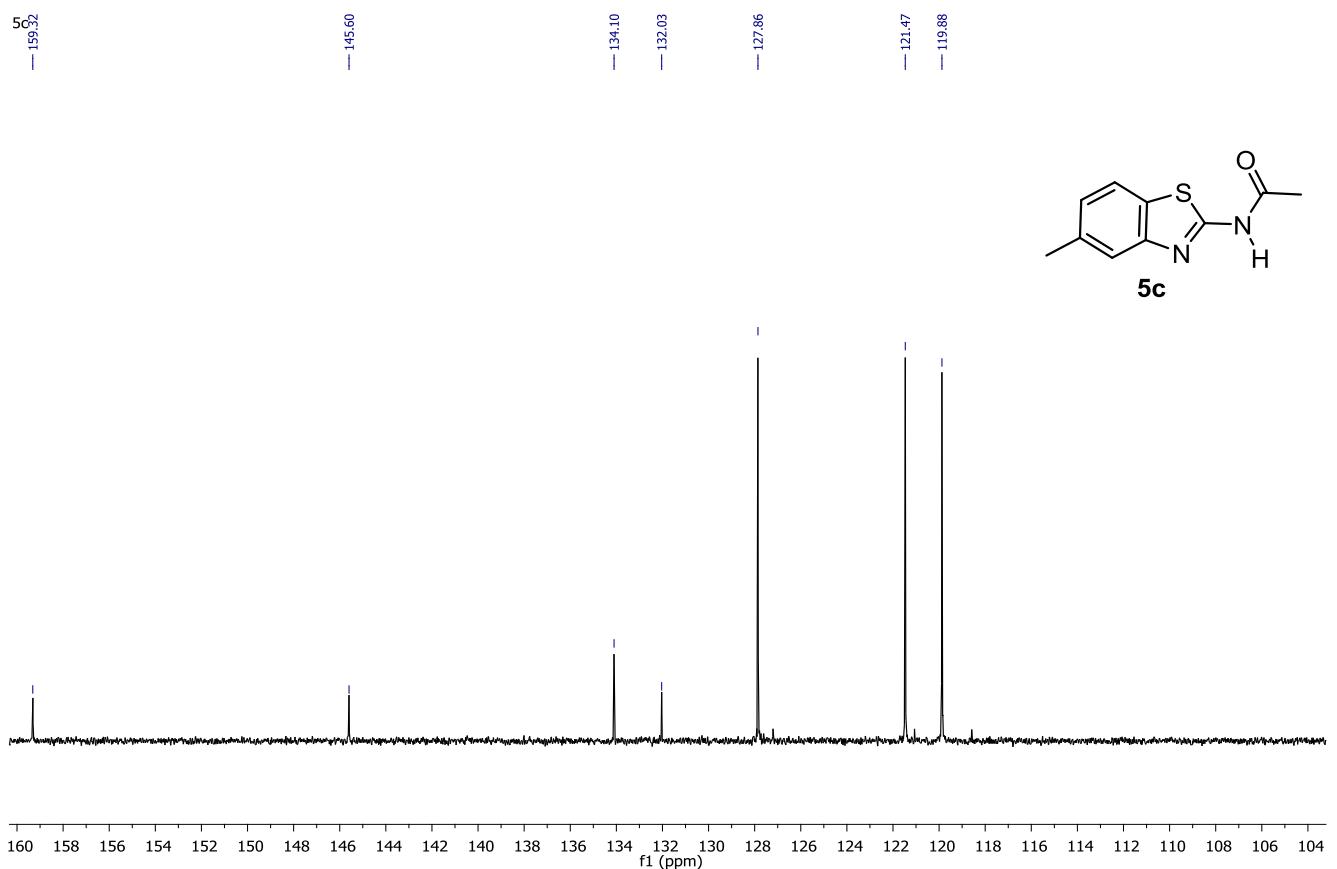


Figure S83. Expanded ¹³C NMR spectrum of compound 5c (125 MHz, CDCl₃).

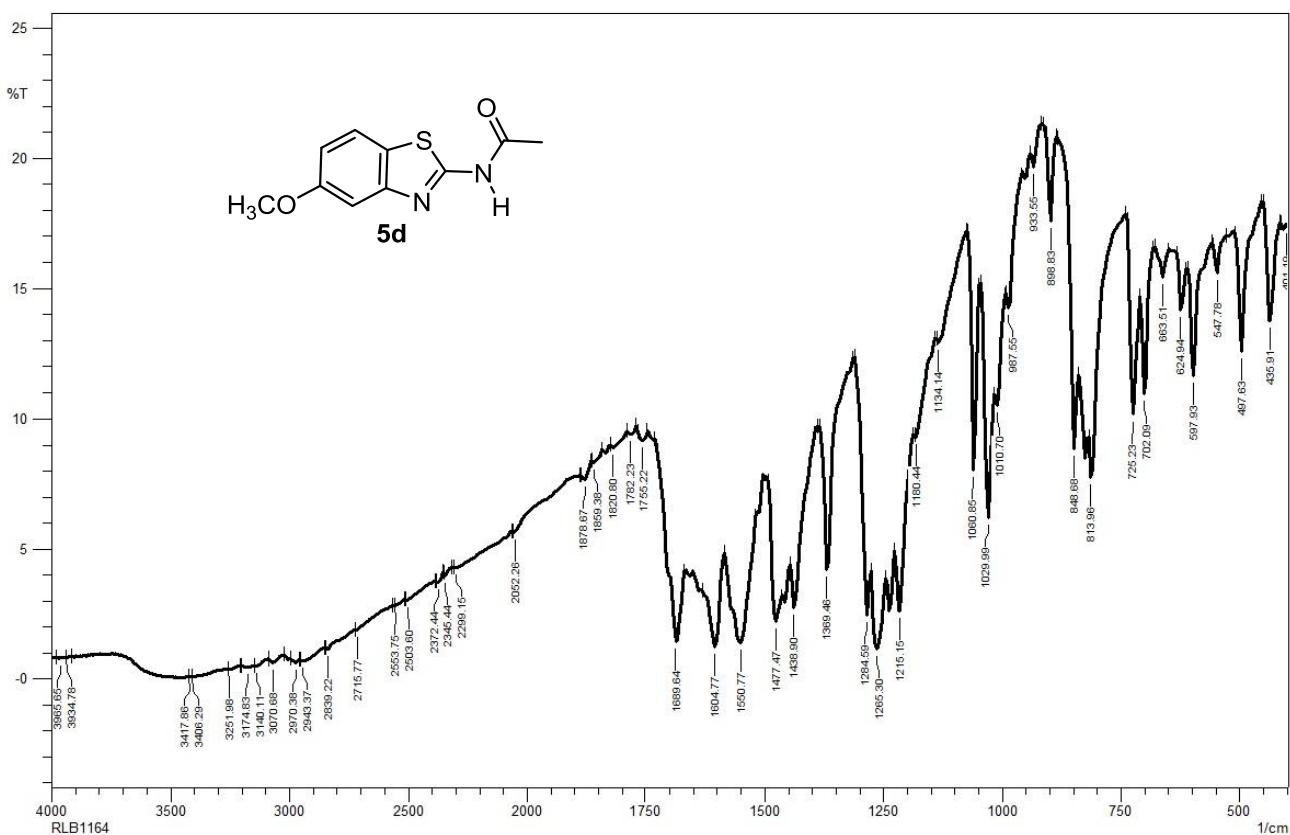


Figure S84. IR spectrum of **5d** (KBr).

5d

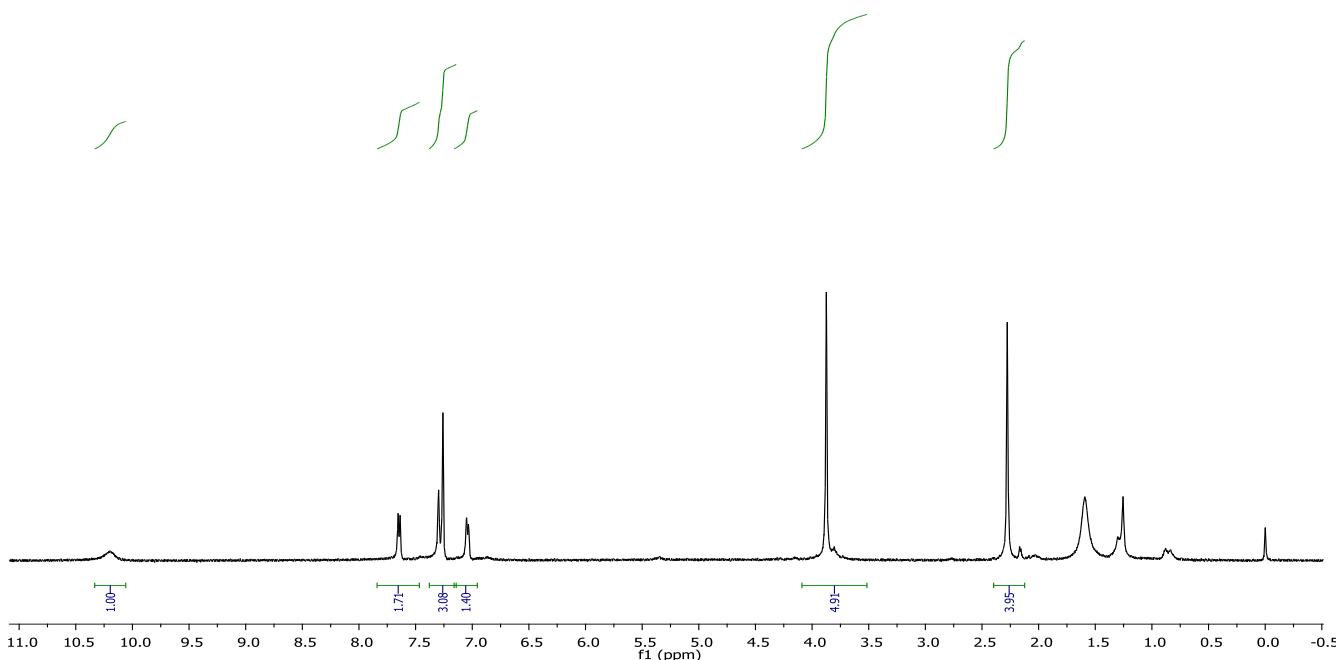


Figure S85. Full ^1H NMR spectrum of compound **5d** (500 MHz, CDCl_3).

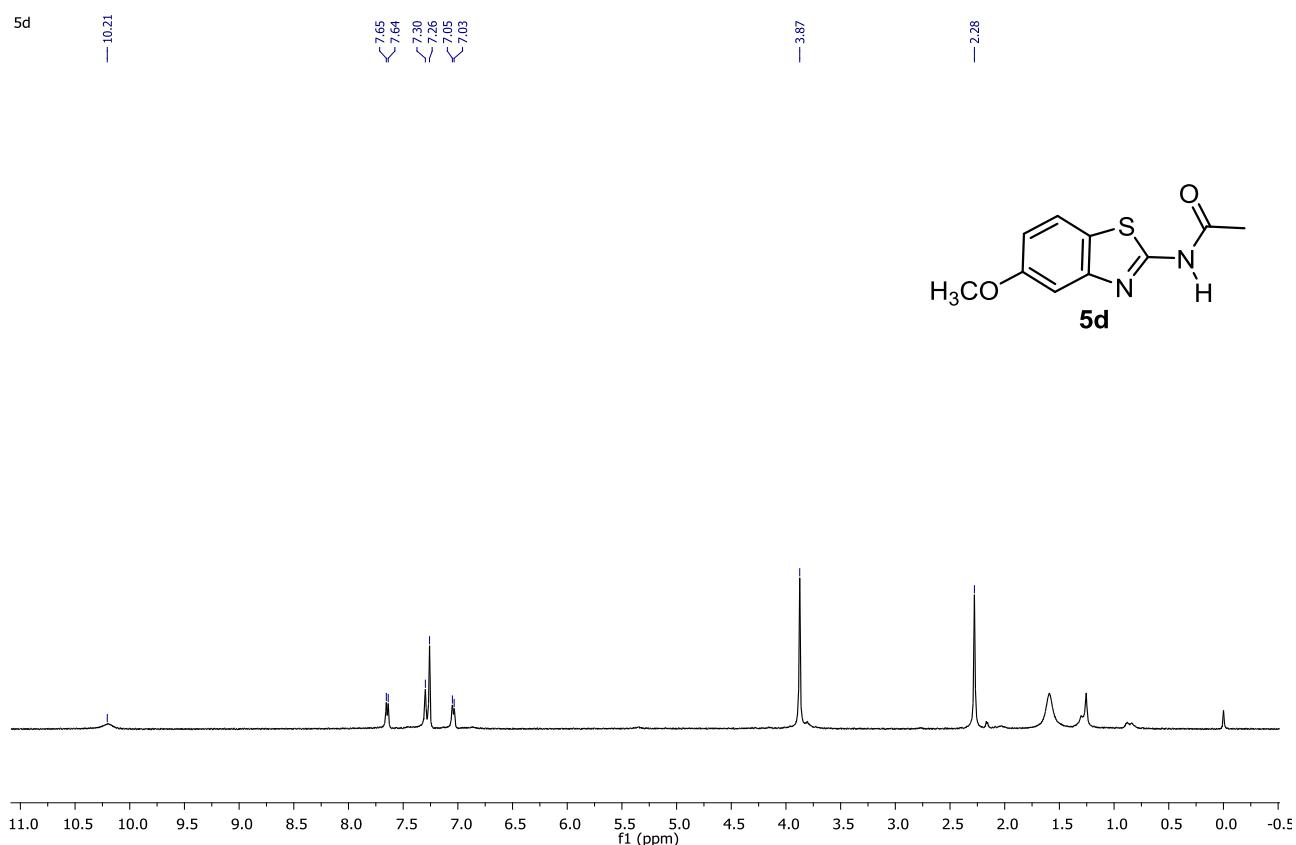


Figure S86. Expanded ^1H NMR spectrum of compound **5d** (500 MHz, CDCl_3).

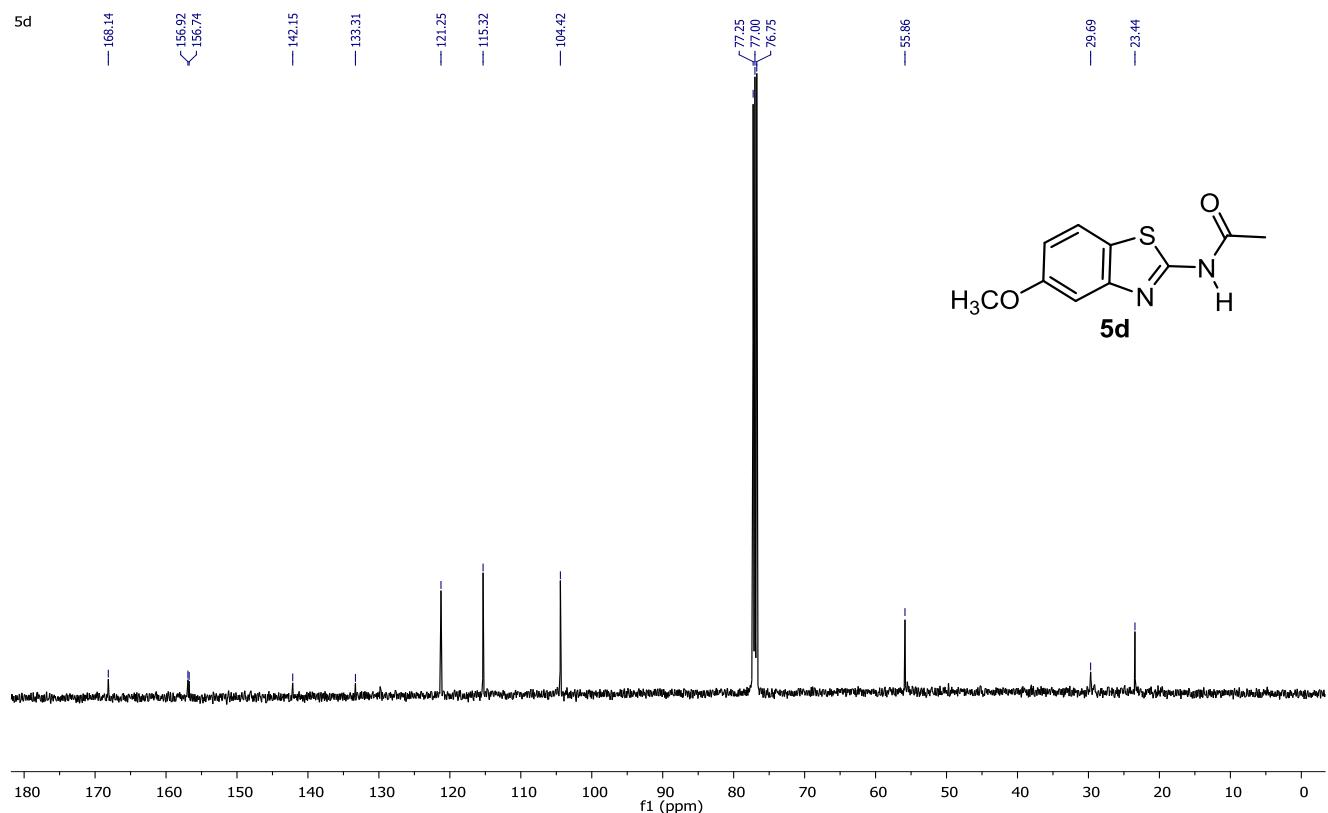


Figure S87. Full ^{13}C NMR spectrum of compound **5d** (125 MHz, CDCl_3).

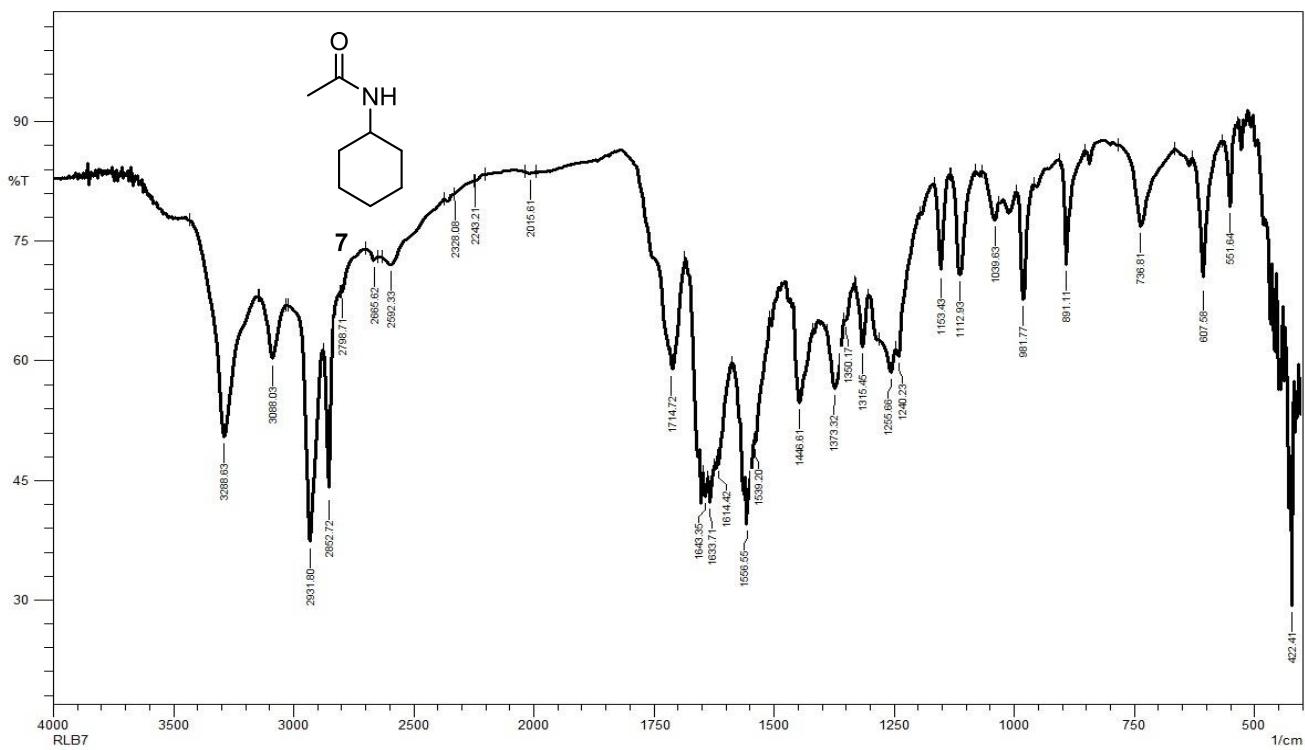


Figure S88. IR spectrum of **7** (KBr).

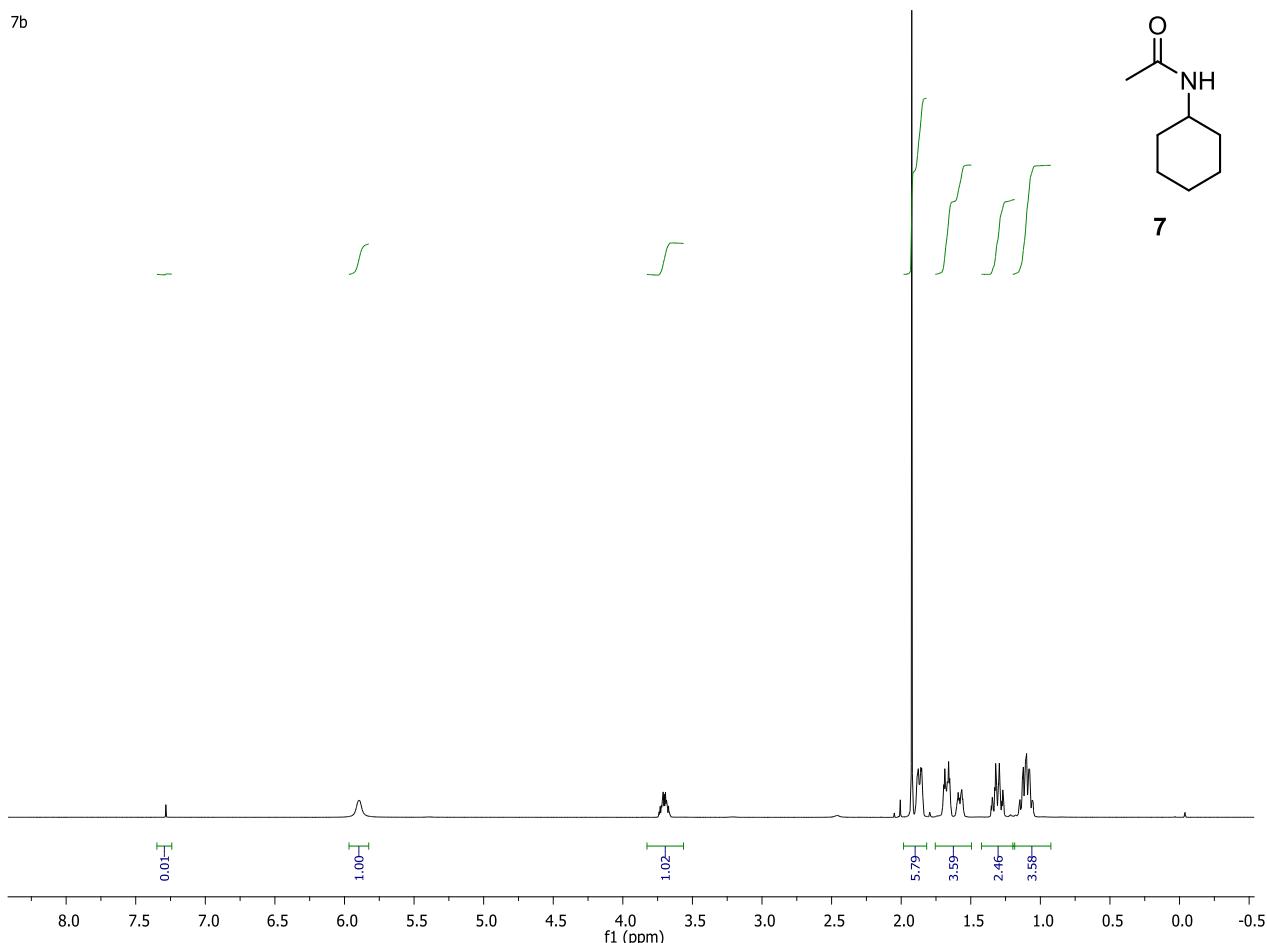
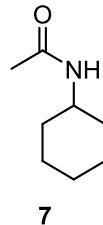


Figure S89. Full ¹H NMR spectrum of **7** (500 MHz, CDCl₃).



7b

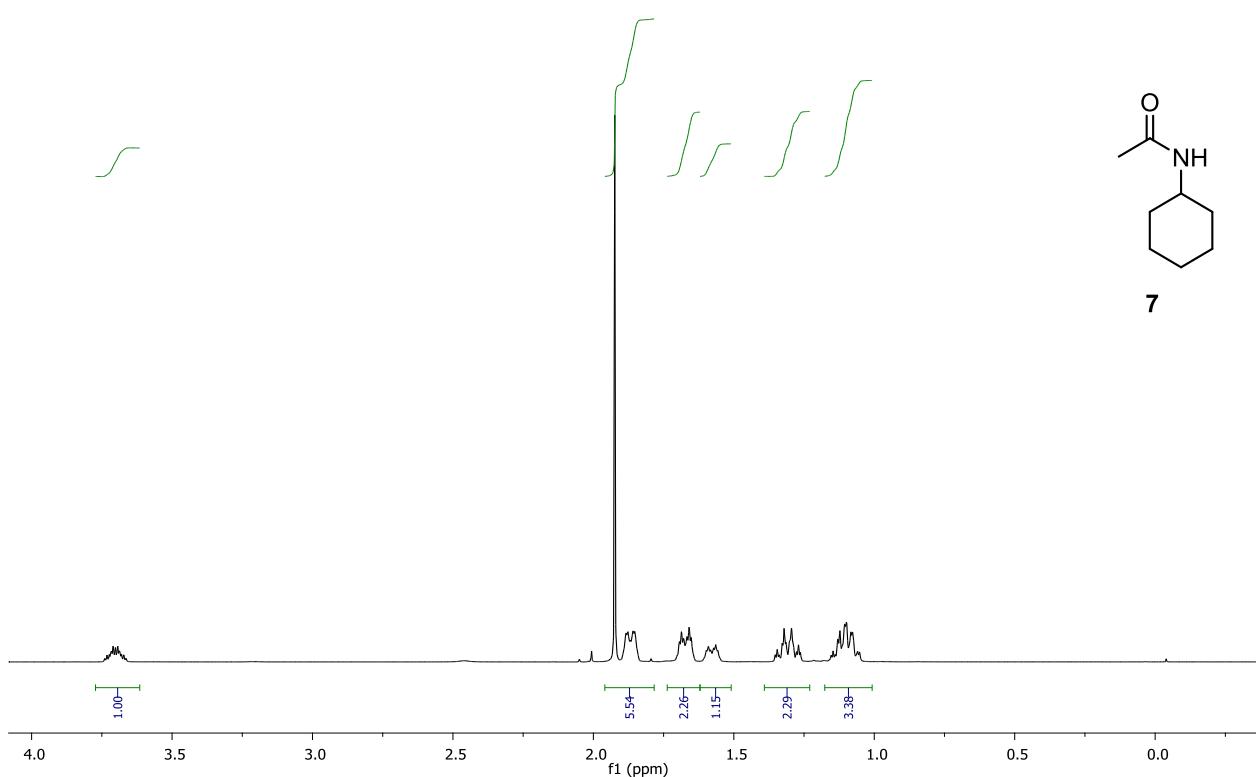


Figure S90. Expanded ¹H NMR spectrum of 7 (500 MHz, CDCl₃).

7b

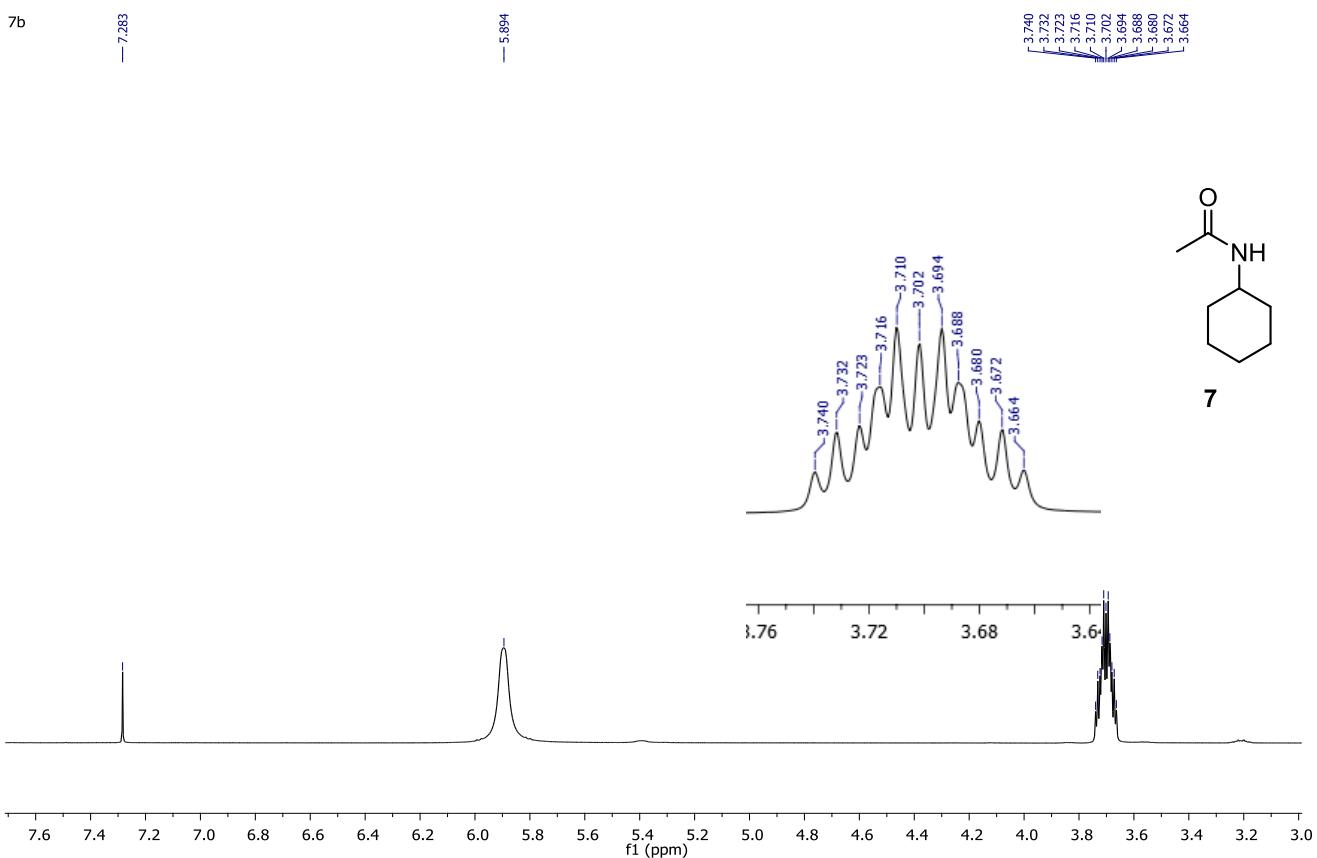


Figure S91. Expanded ¹H NMR spectrum of compound 7 (500 MHz, CDCl₃).

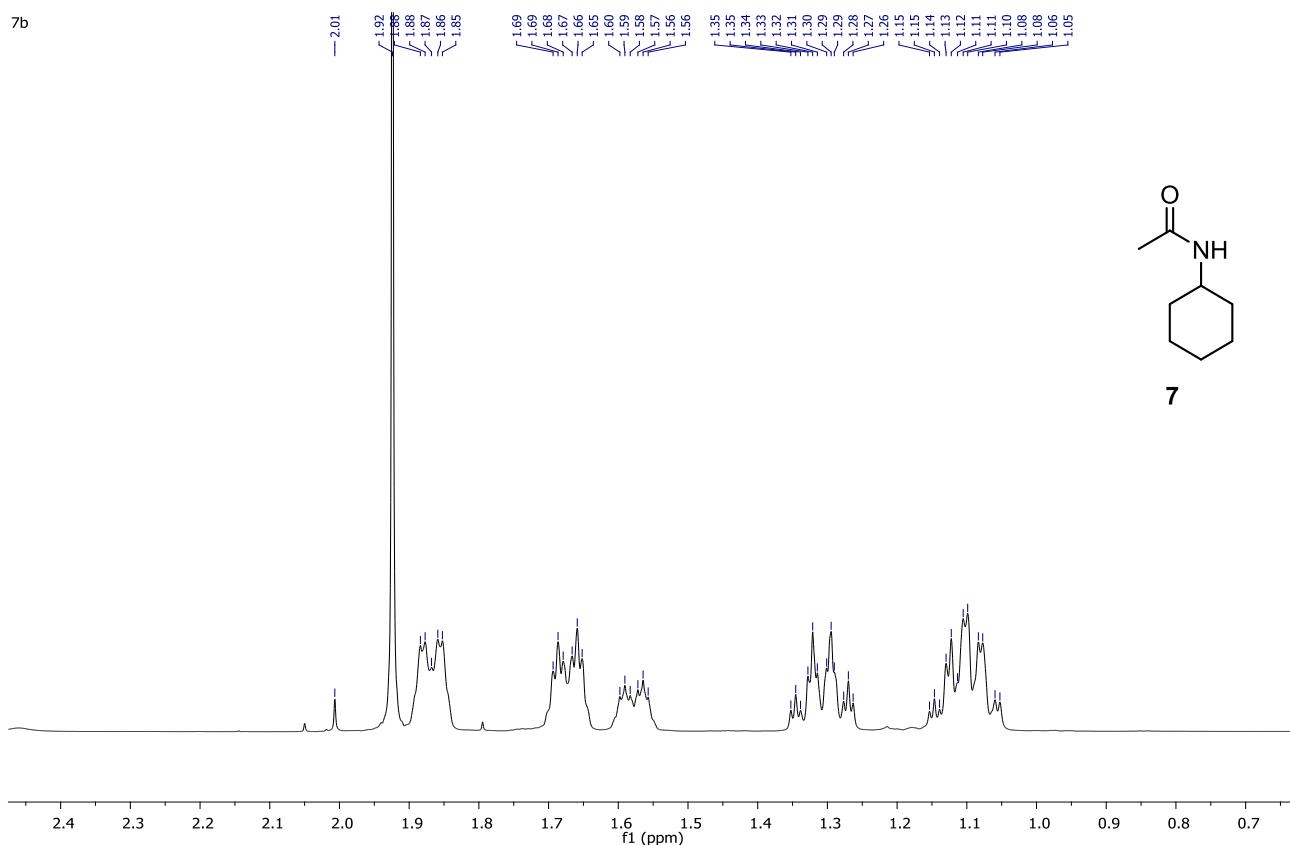


Figure S92. Expanded ^1H NMR spectrum of compound 7 (500 MHz, CDCl_3).

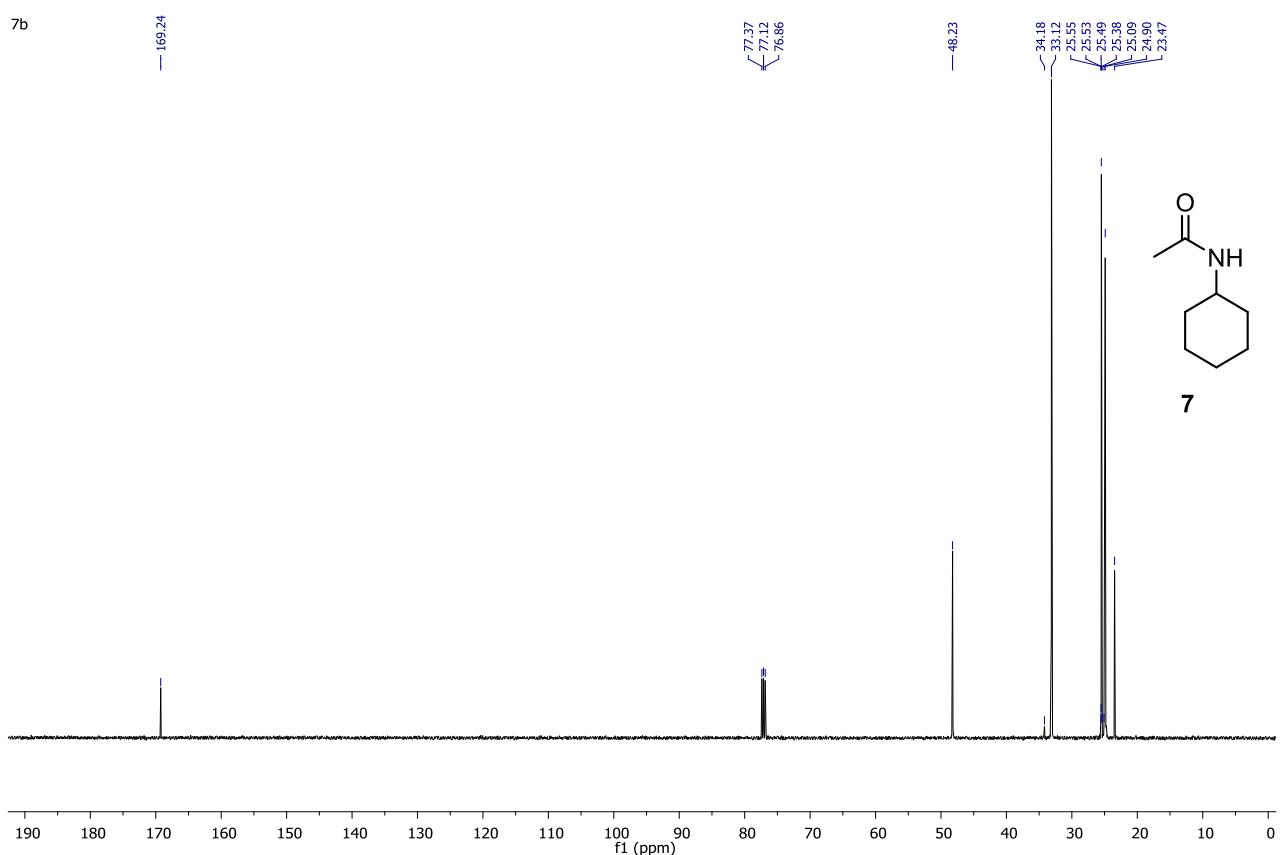


Figure S93. Full ^{13}C NMR spectrum of 7 (125 MHz, CDCl_3).

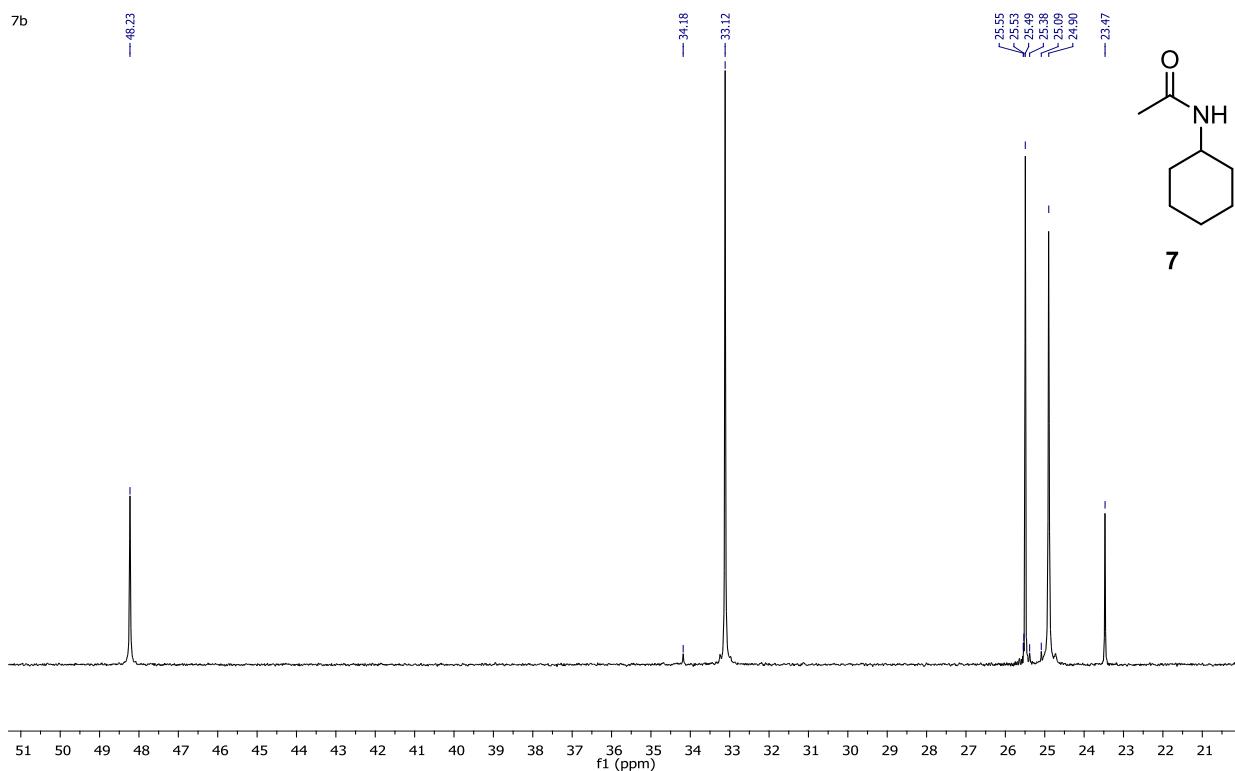


Figure S94. Expanded ¹³C NMR spectrum of **7** (125 MHz, CDCl₃).

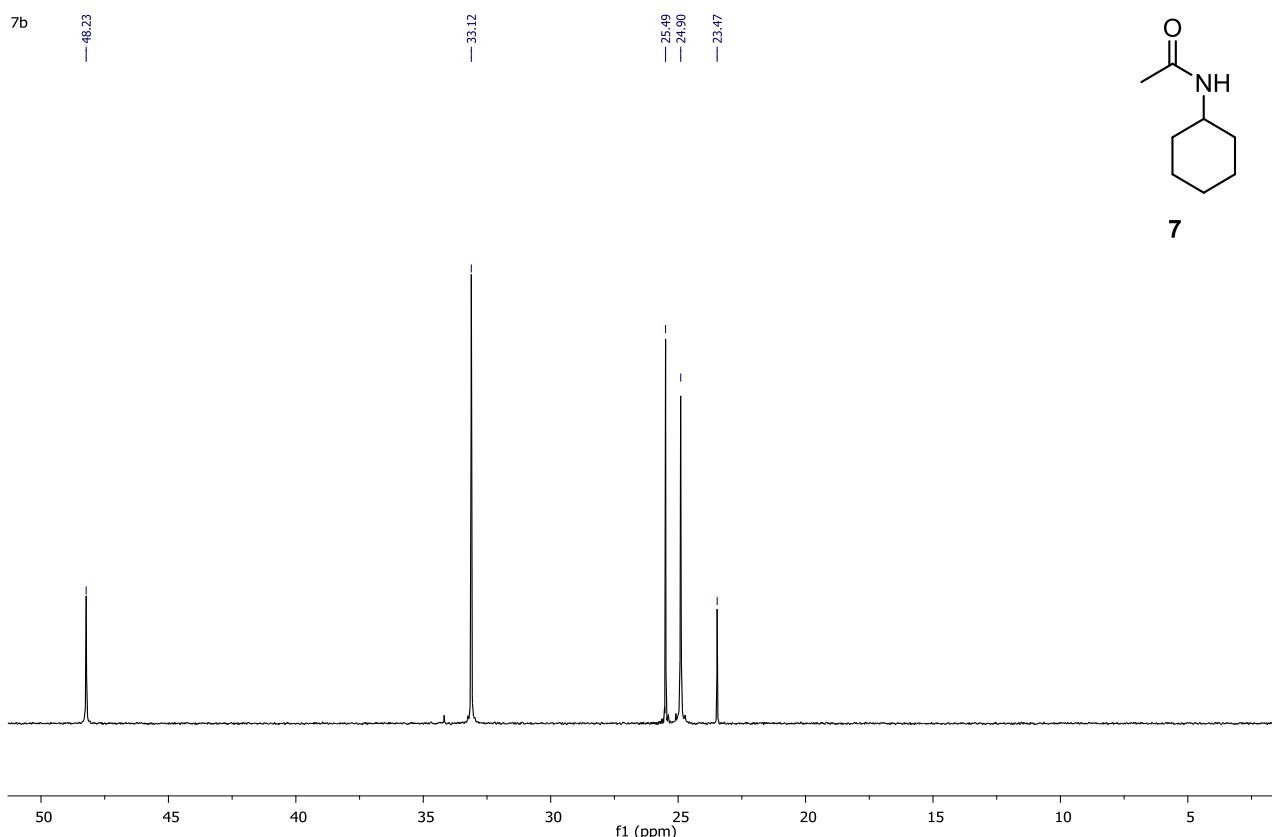


Figure S95. Expanded ¹³C NMR spectrum of **7** (125 MHz, CDCl₃).

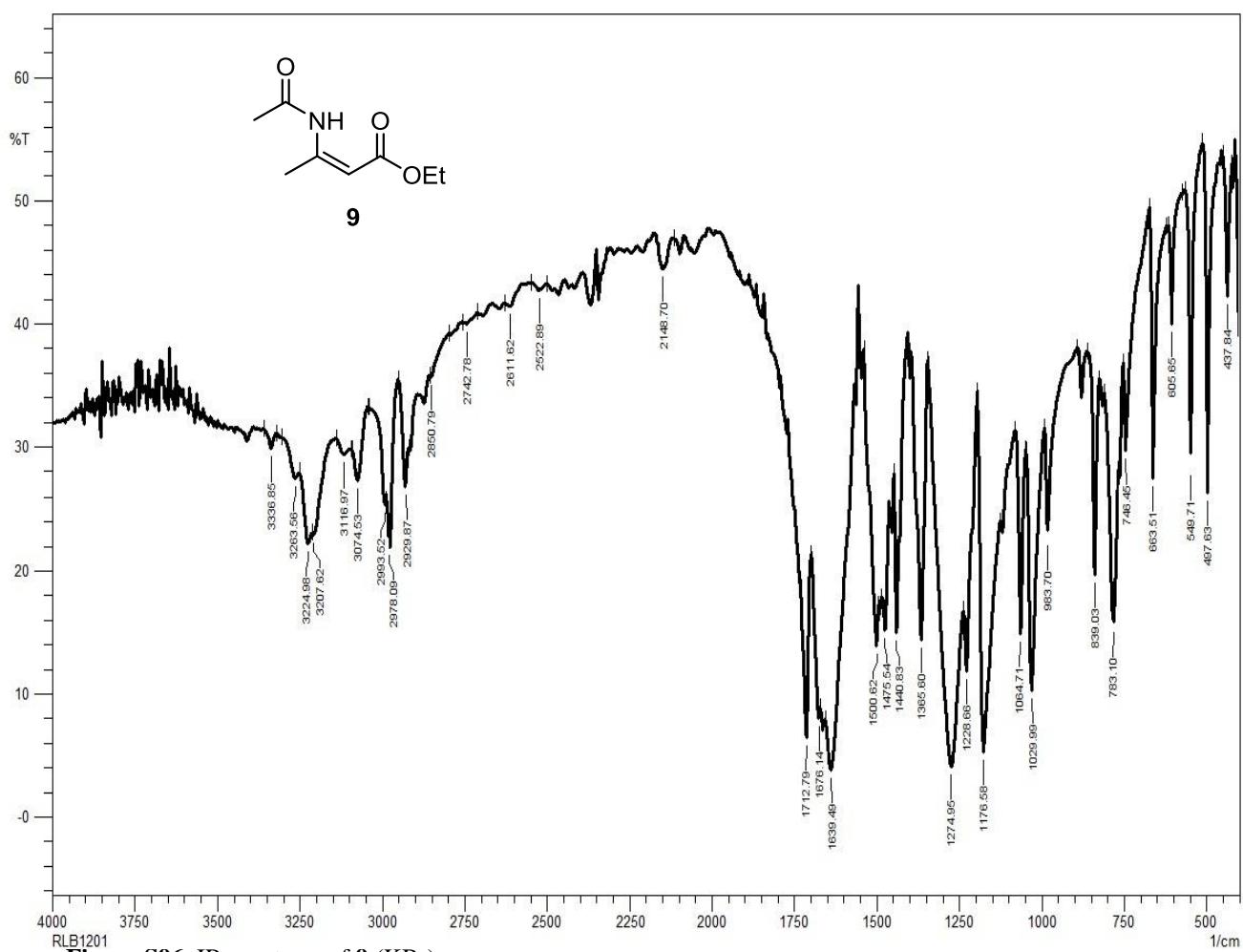


Figure S96. IR spectrum of **9** (KBr).

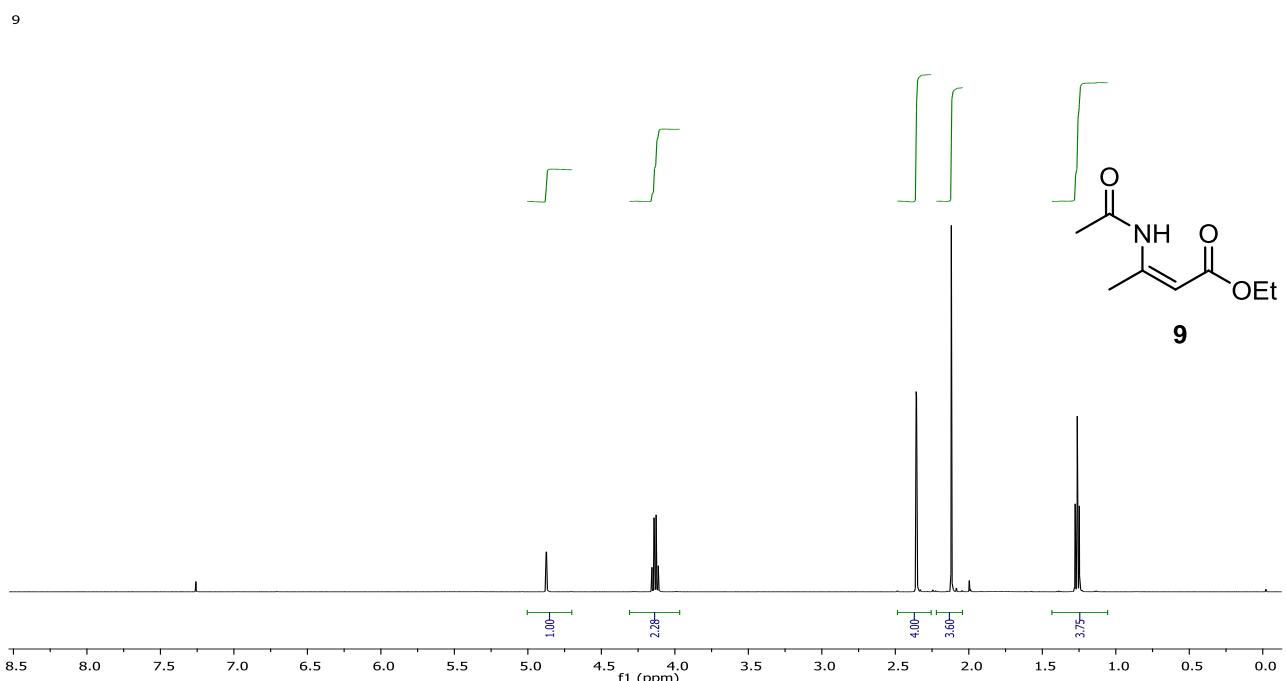


Figure S97. Full ^1H NMR spectrum of **9** (500 MHz, CDCl_3).

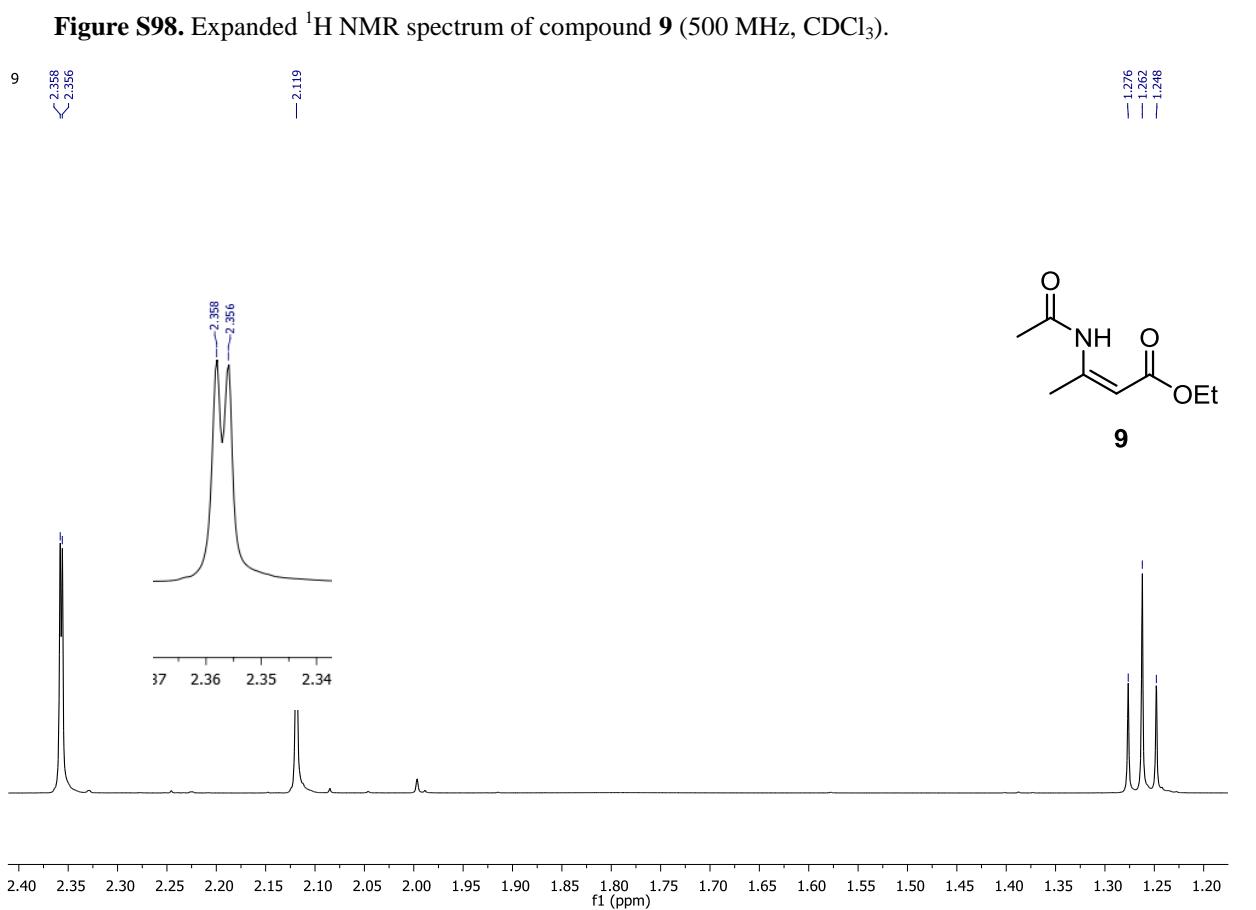
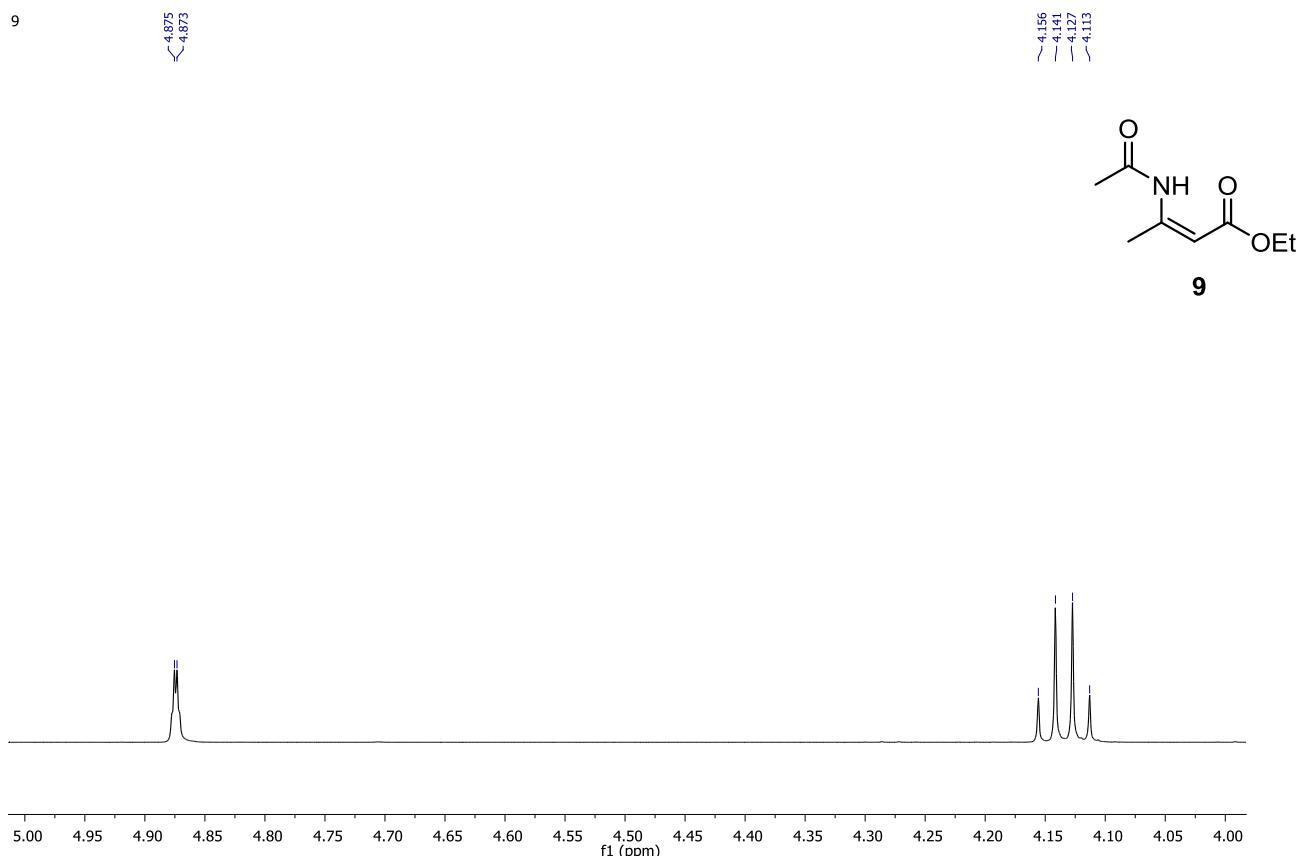


Figure S99. Expanded ^1H NMR spectrum of compound **9** (CDCl_3).

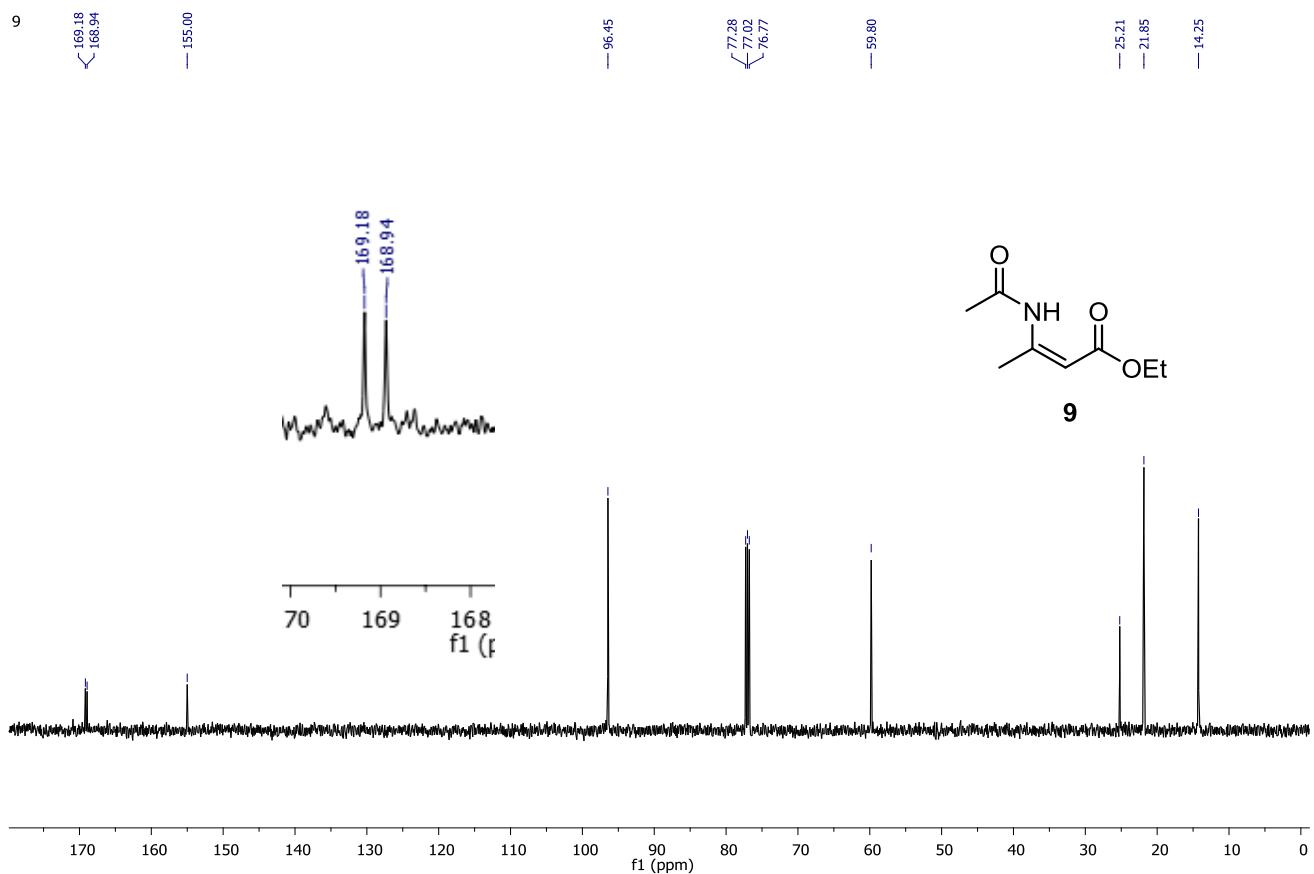


Figure S100. Full ^{13}C NMR spectrum of **9** (125 MHz, CDCl_3).