Supplementary Material

Synthesis of *N*-acylbenzotriazole using acid anhydride

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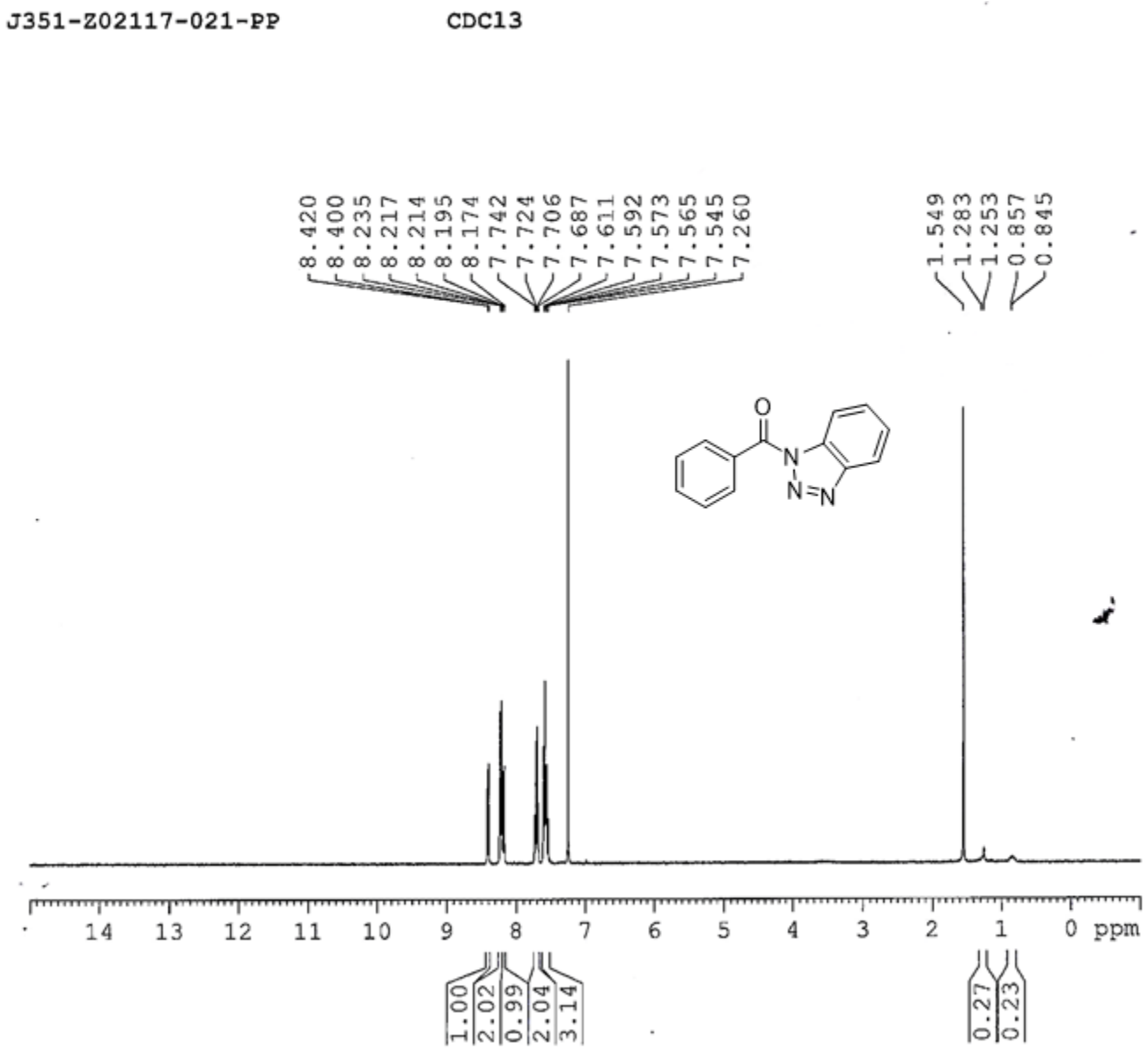
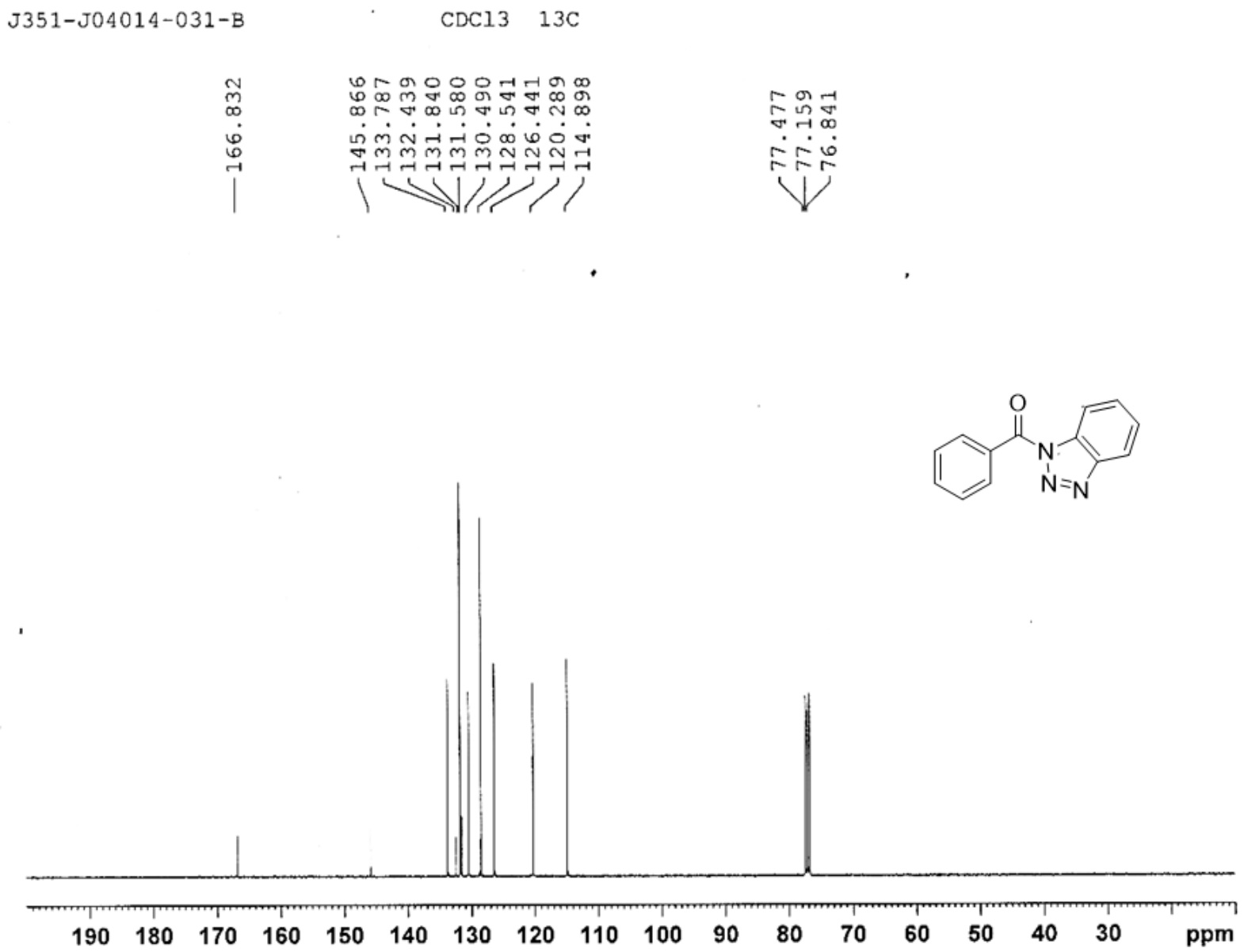
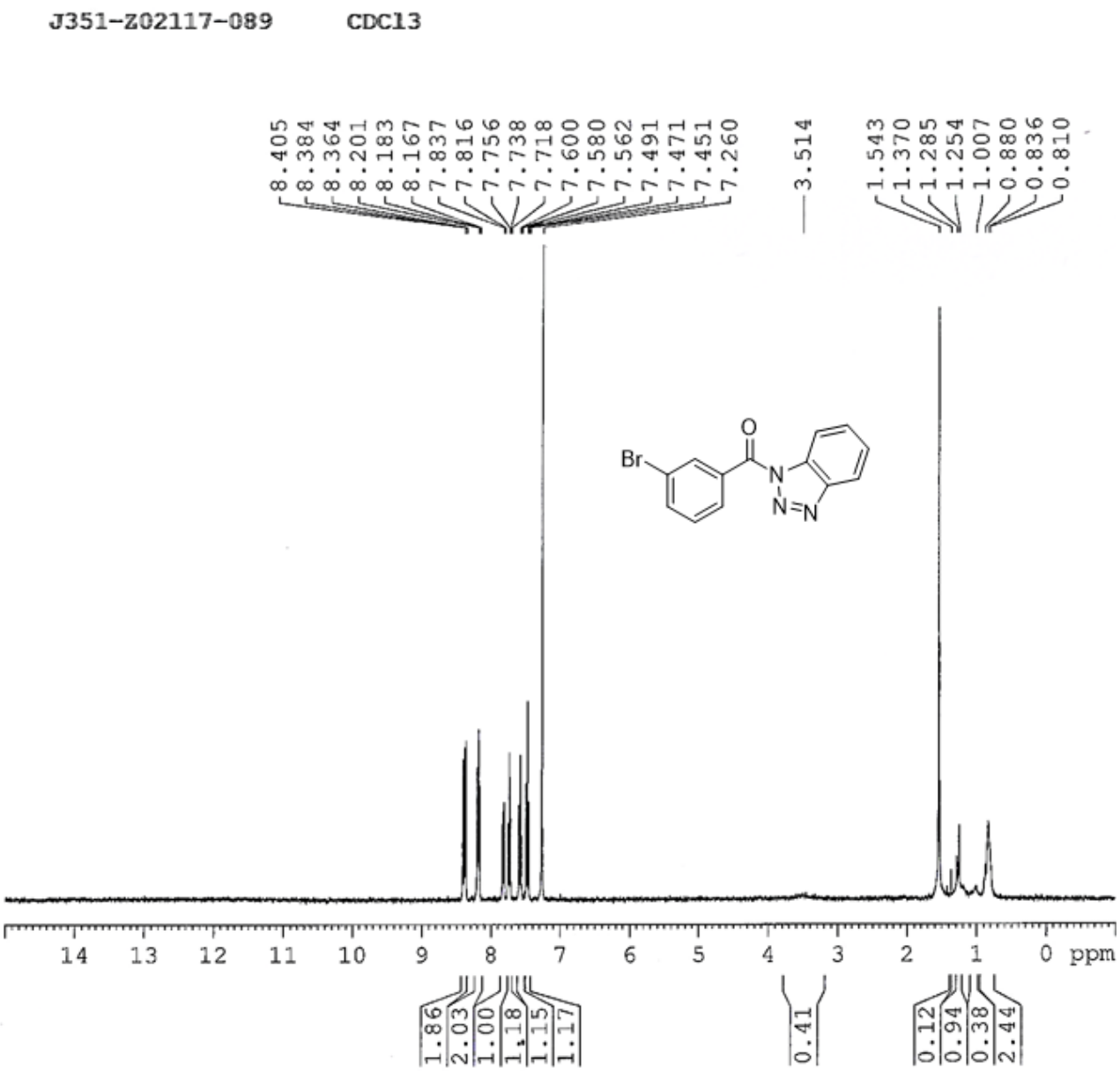
^{1}H and ^{13}C NMR Spectra of *N*-acyl-benzotriazole (**2a**-**2y**)



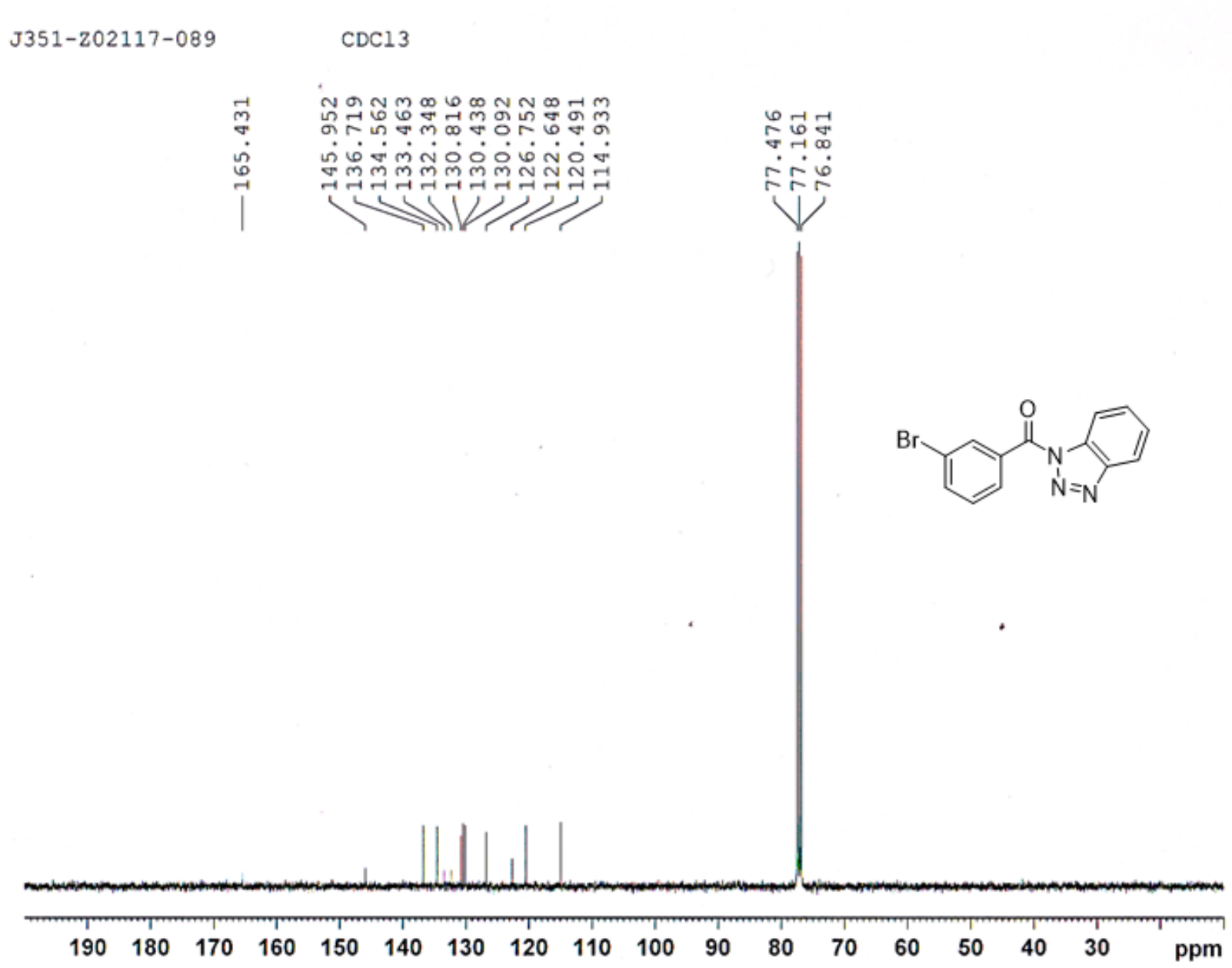
Spectra 1. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2a** [With the impurity of water (1.54 ppm) and grease (1.27, 0.85 ppm)]



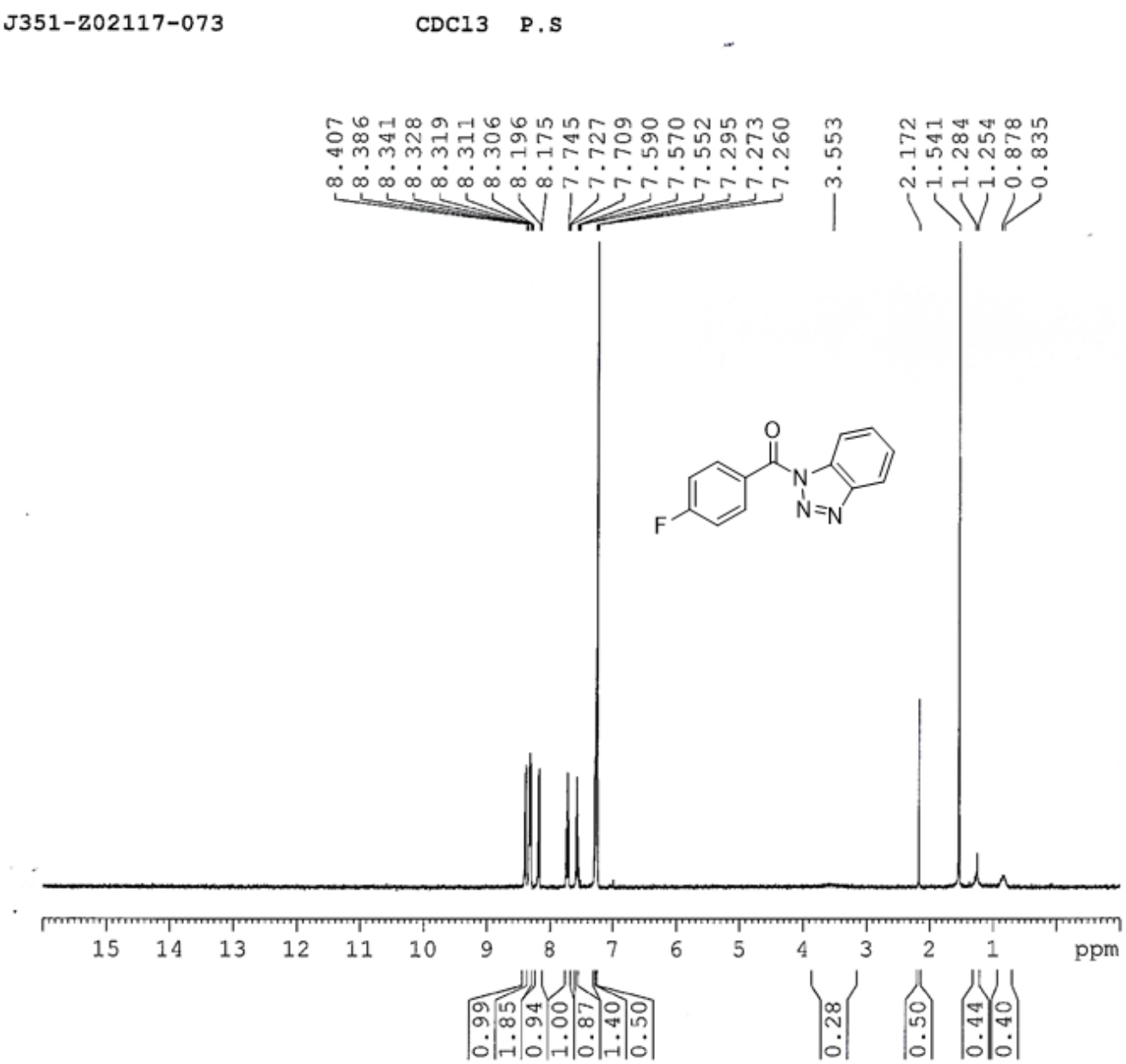
Spectra 2. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2a**



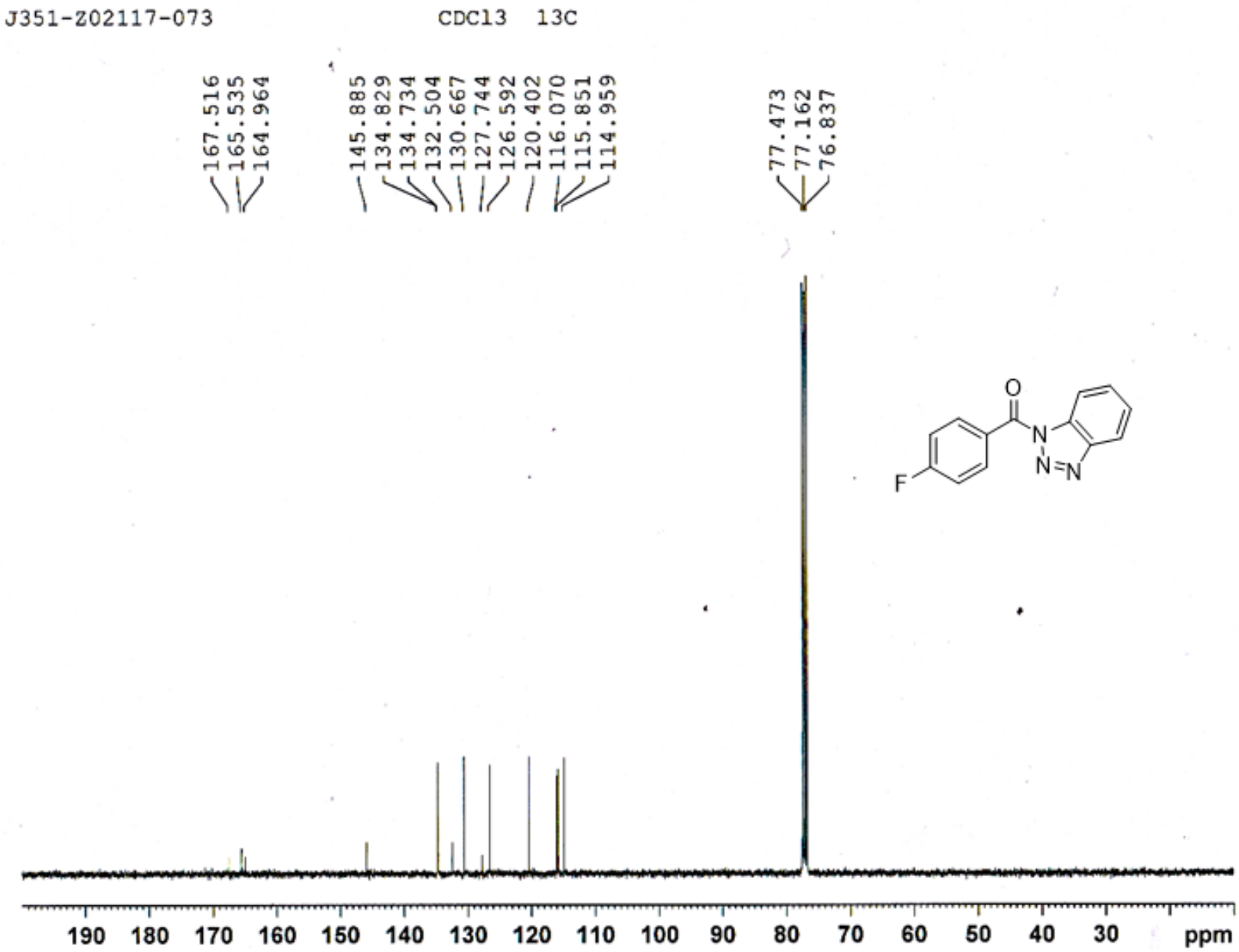
Spectra 3. ^{1}H NMR (400 MHz, CDCl3) of compound **2b** [With the impurity of water (1.54 ppm) , methanol (3.51 ppm) and grease (1.27, 0.83 ppm)]



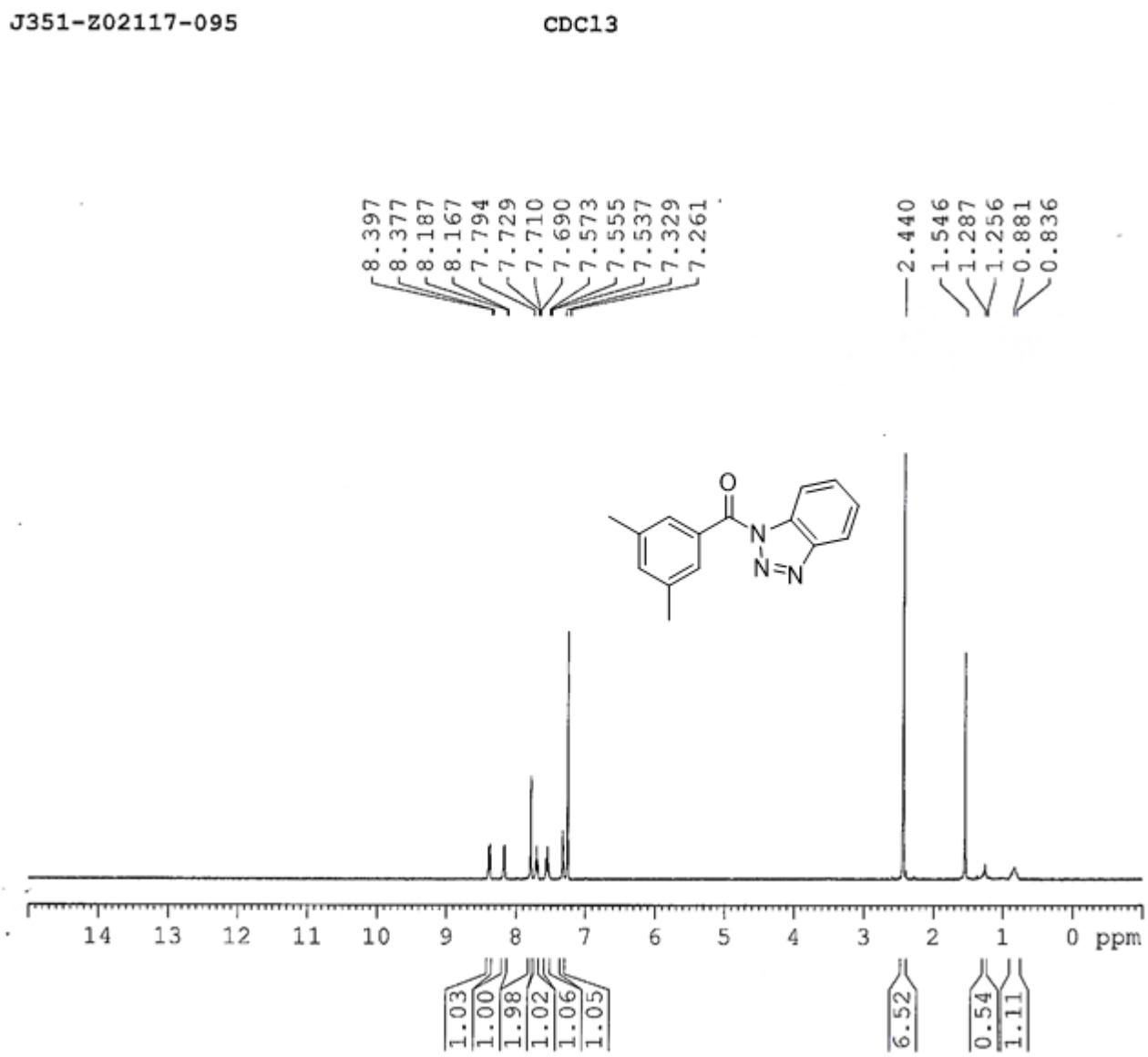
Spectra 4. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2b**



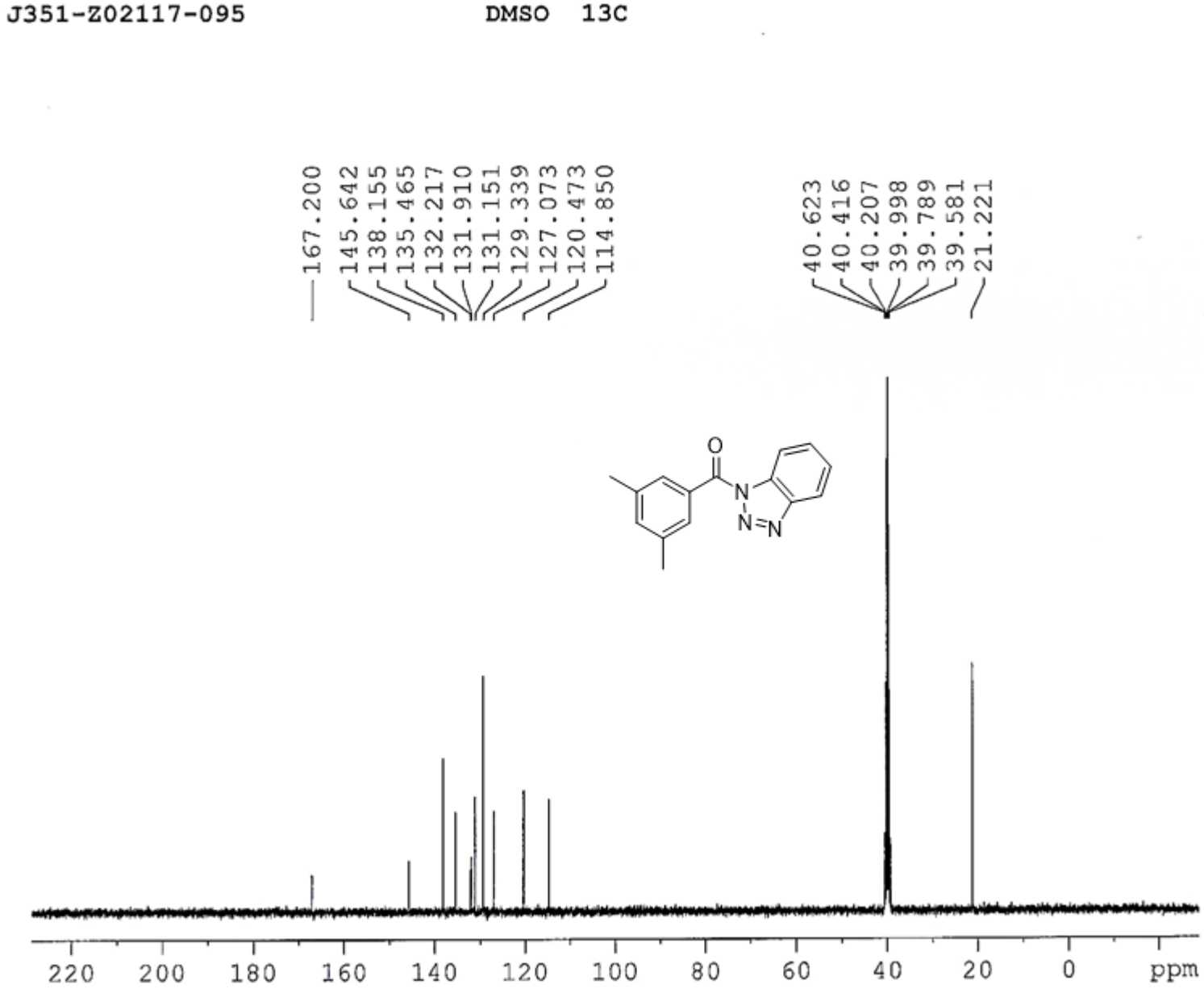
Spectra 5. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2c** [With the impurity of water (1.54 ppm), methanol (3.55 ppm), acetone (2.17 ppm) and grease(1.27, 0.86 ppm)]



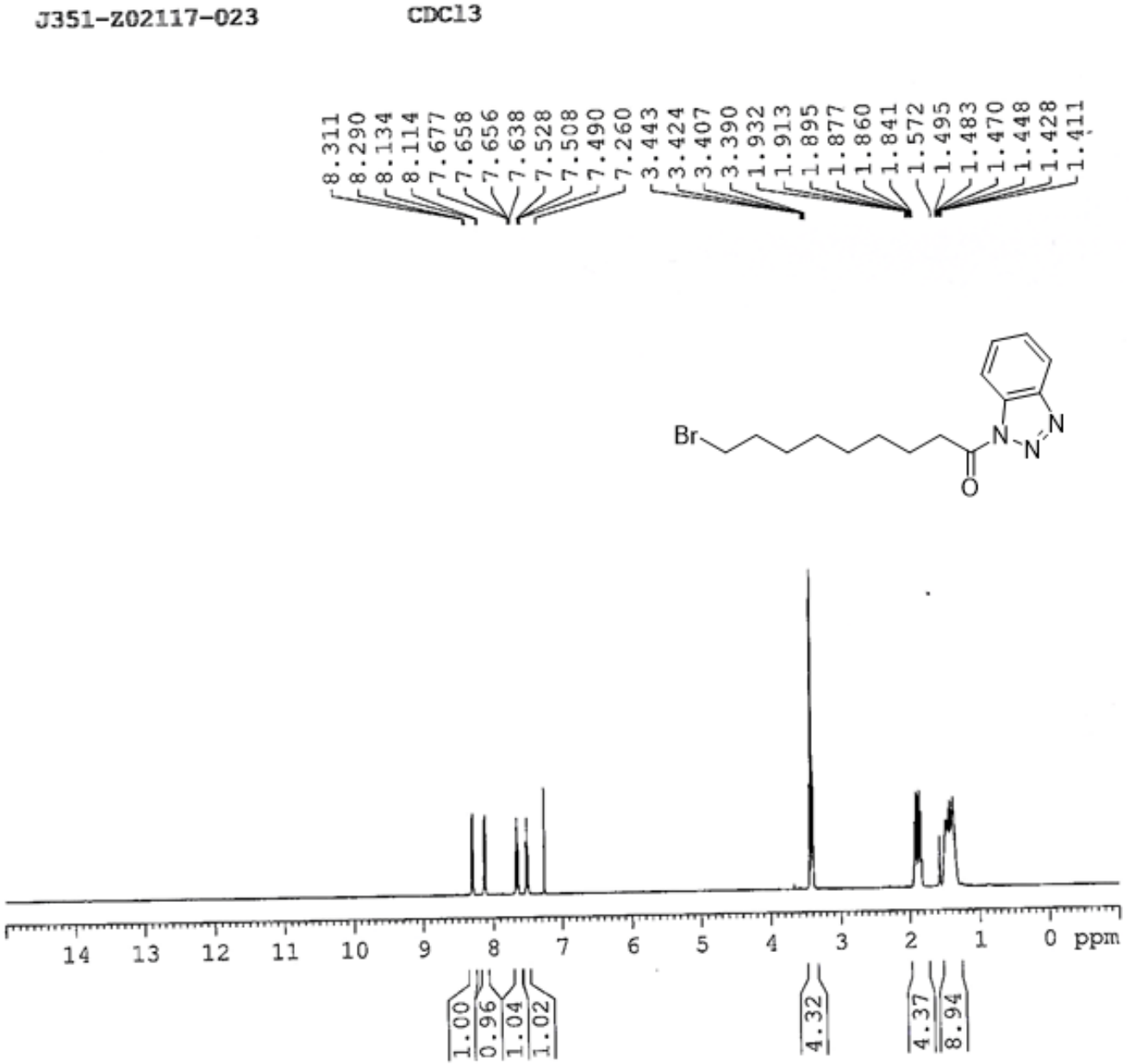
Spectra 6. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2c**



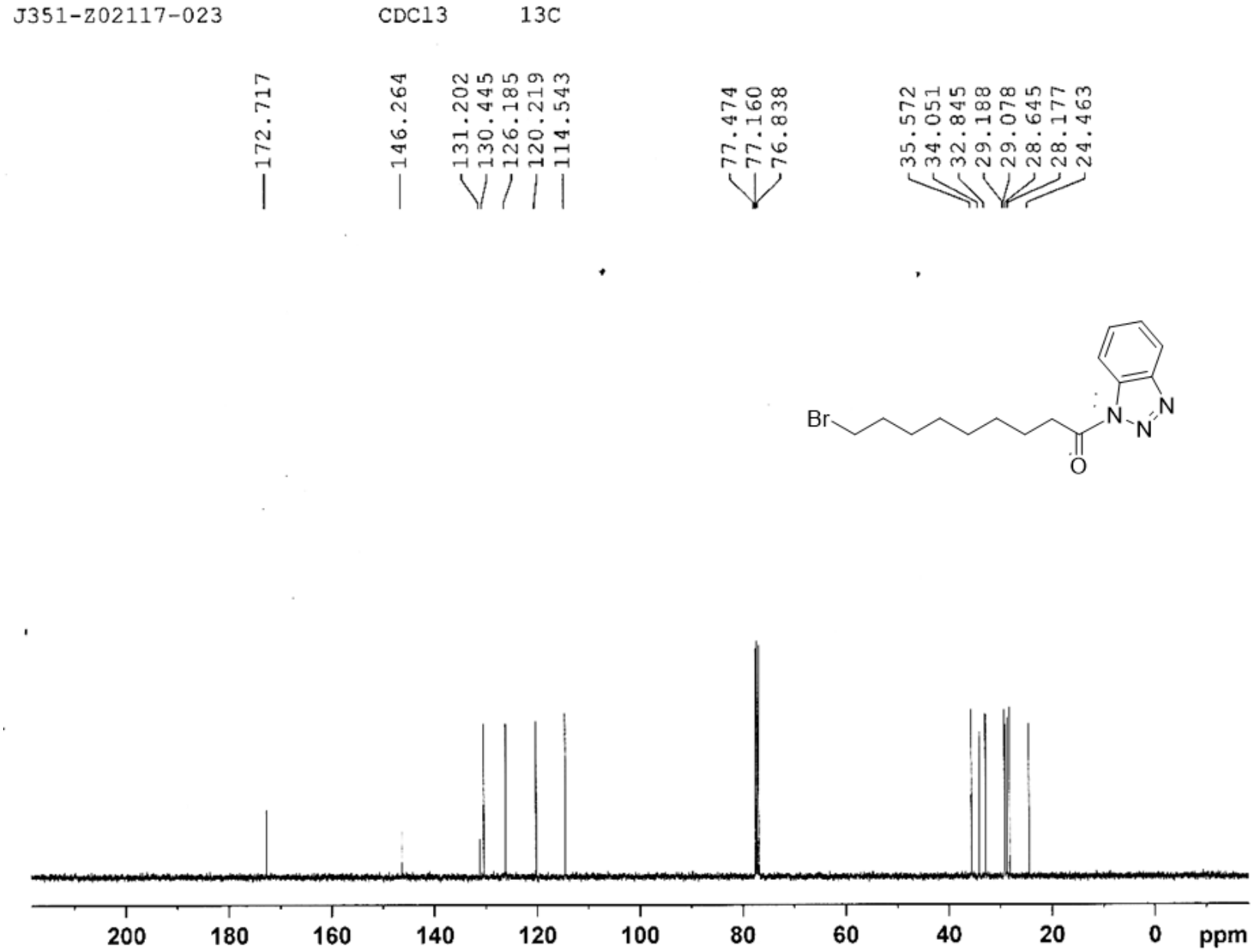
Spectra 7. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2d** [With the impurity of water (1.54 ppm) and grease (1.27, 0.86 ppm)]



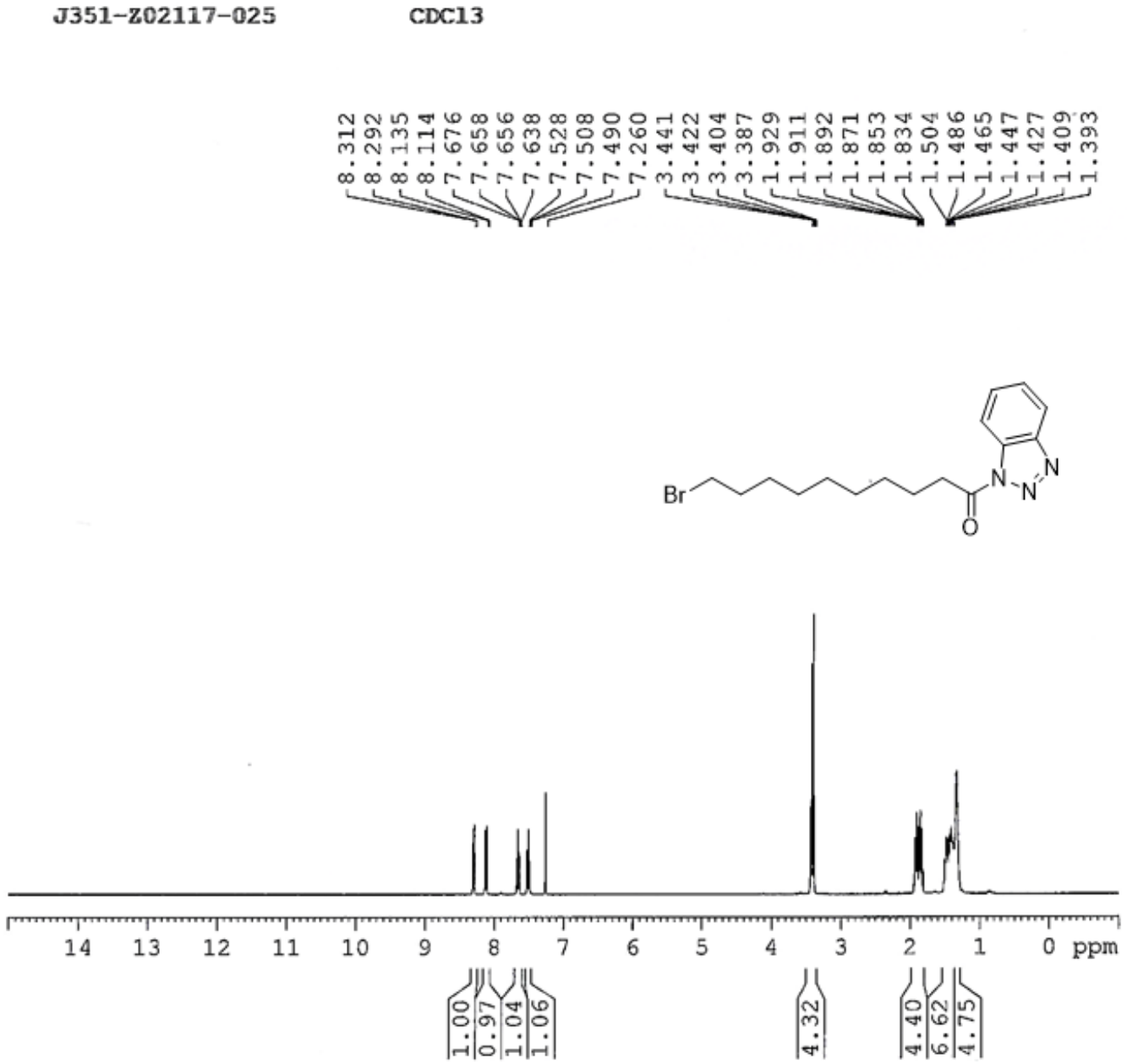
Spectra 8. ^{13}C NMR (100 MHz, DMSO-d_6) of compound **2d**



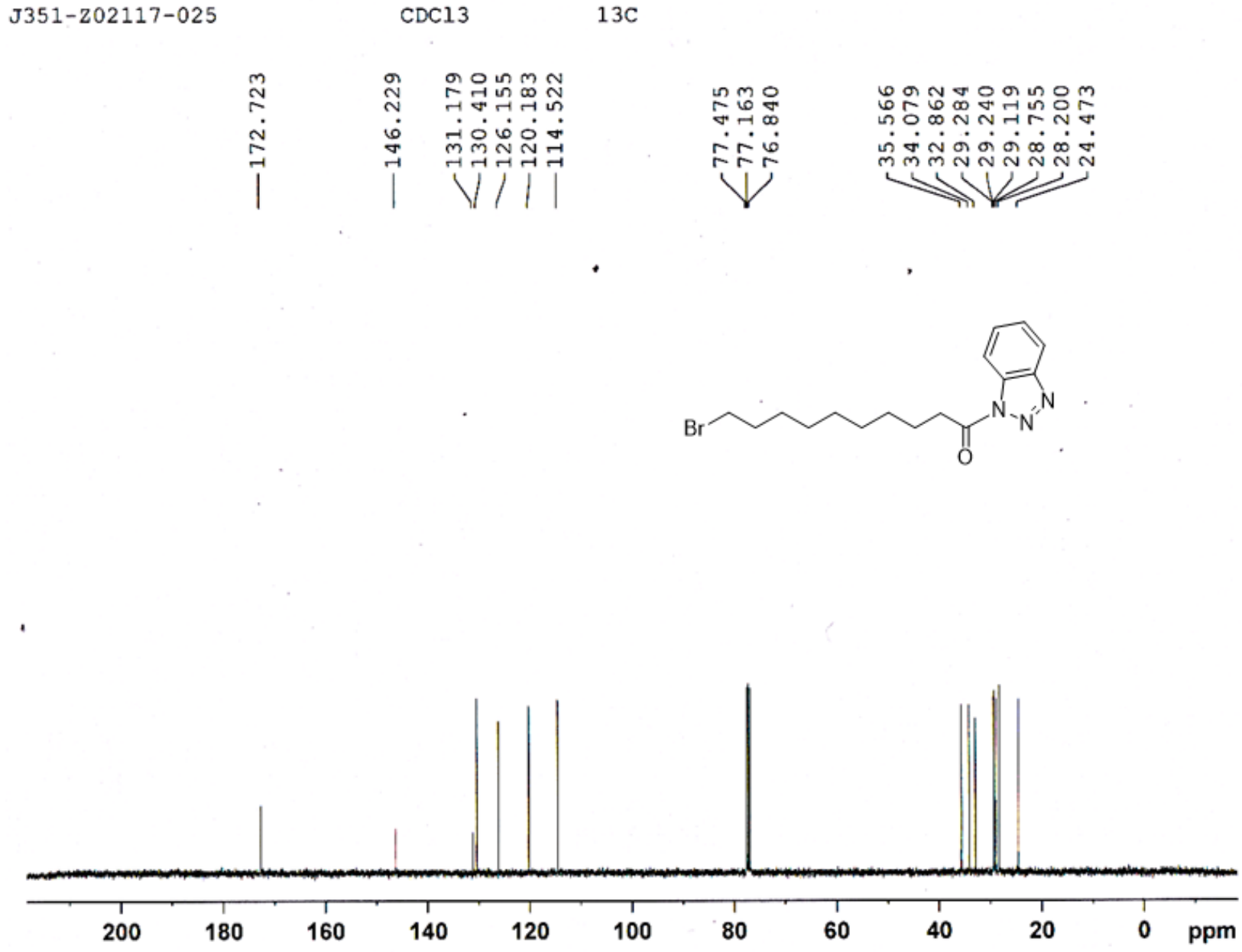
Spectra 9. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2e**



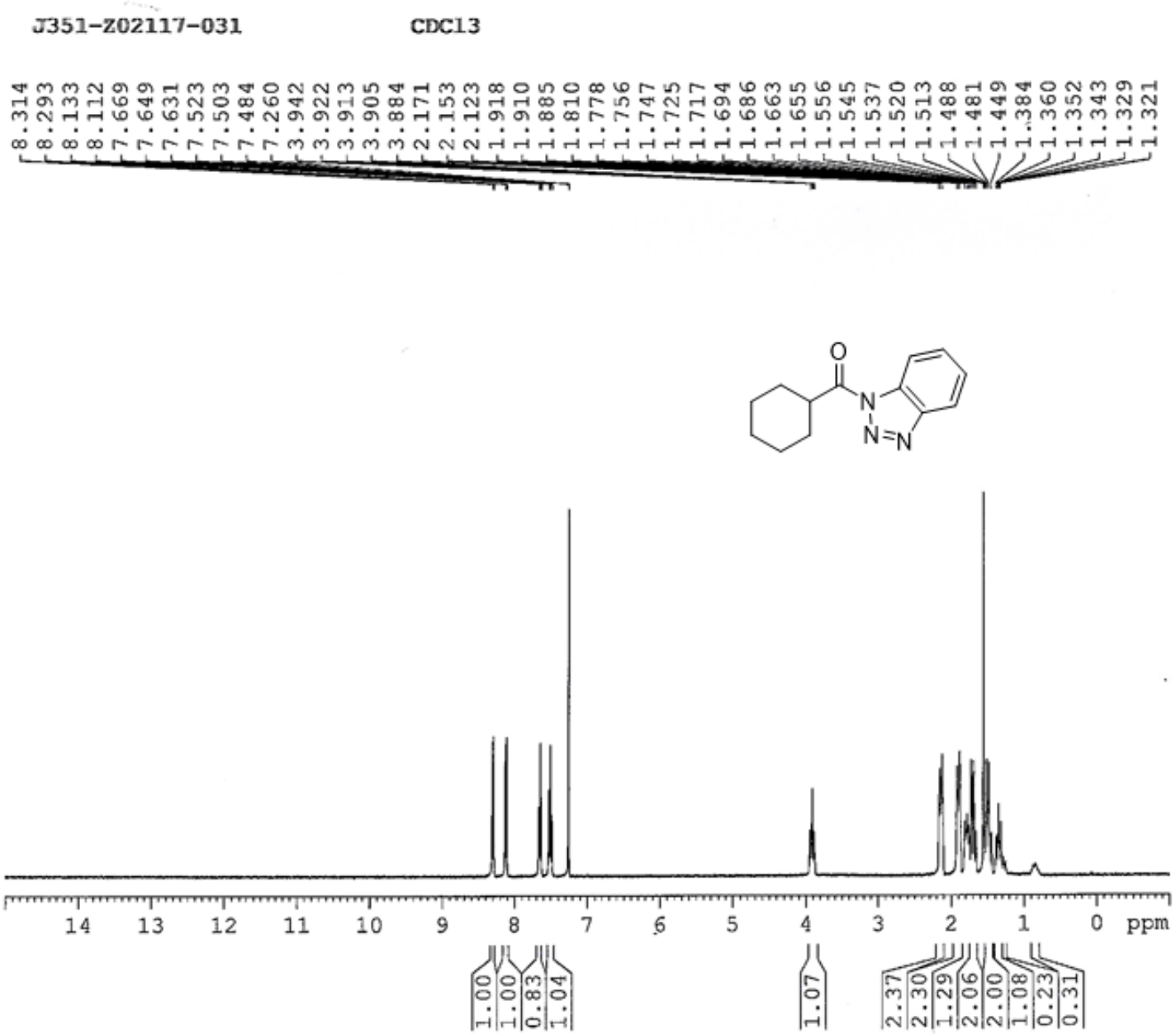
Spectra 10. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2e**



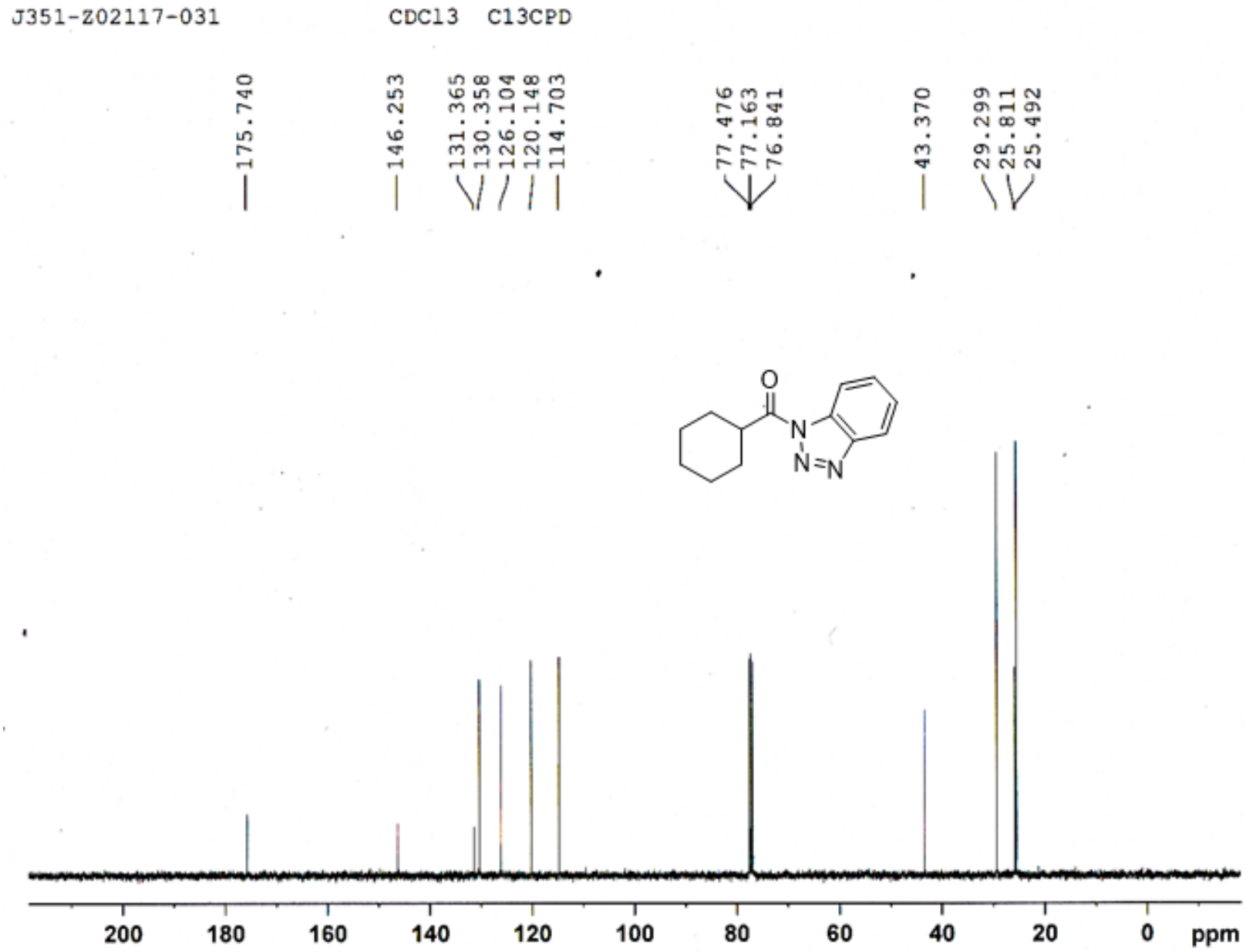
Spectra 11. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2f**



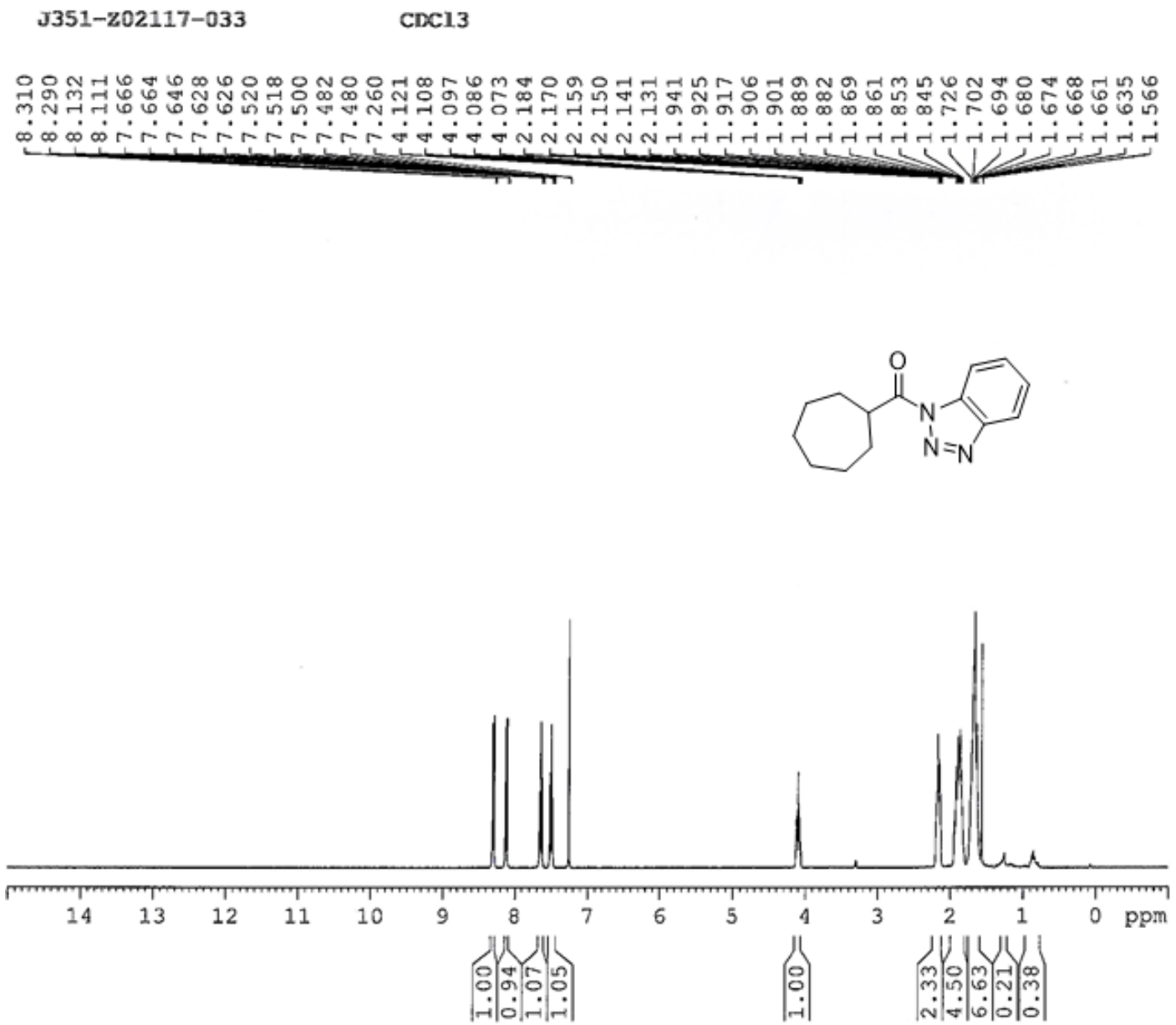
Spectra 12. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2f**



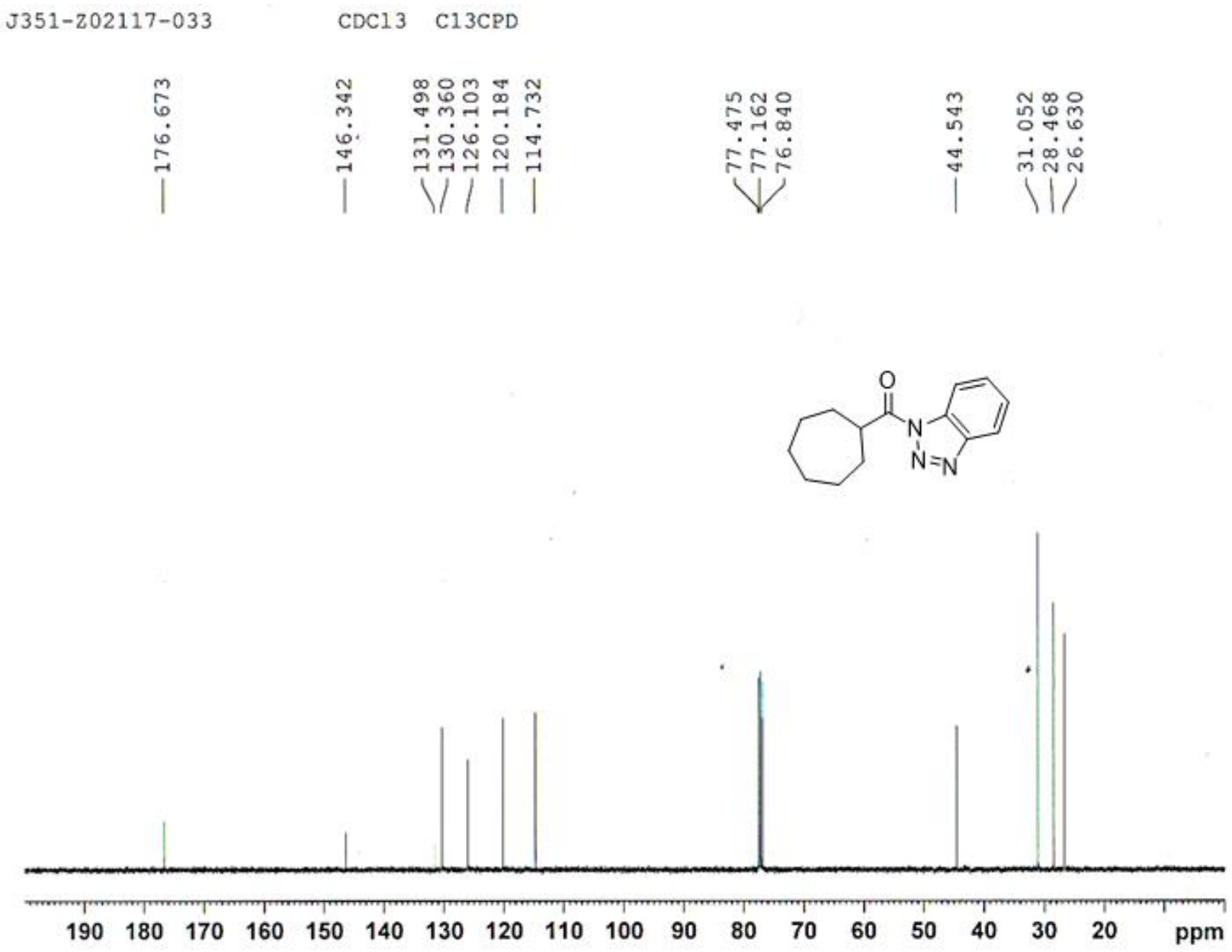
Spectra 13. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2g** [With the impurity of water (1.54 ppm)]



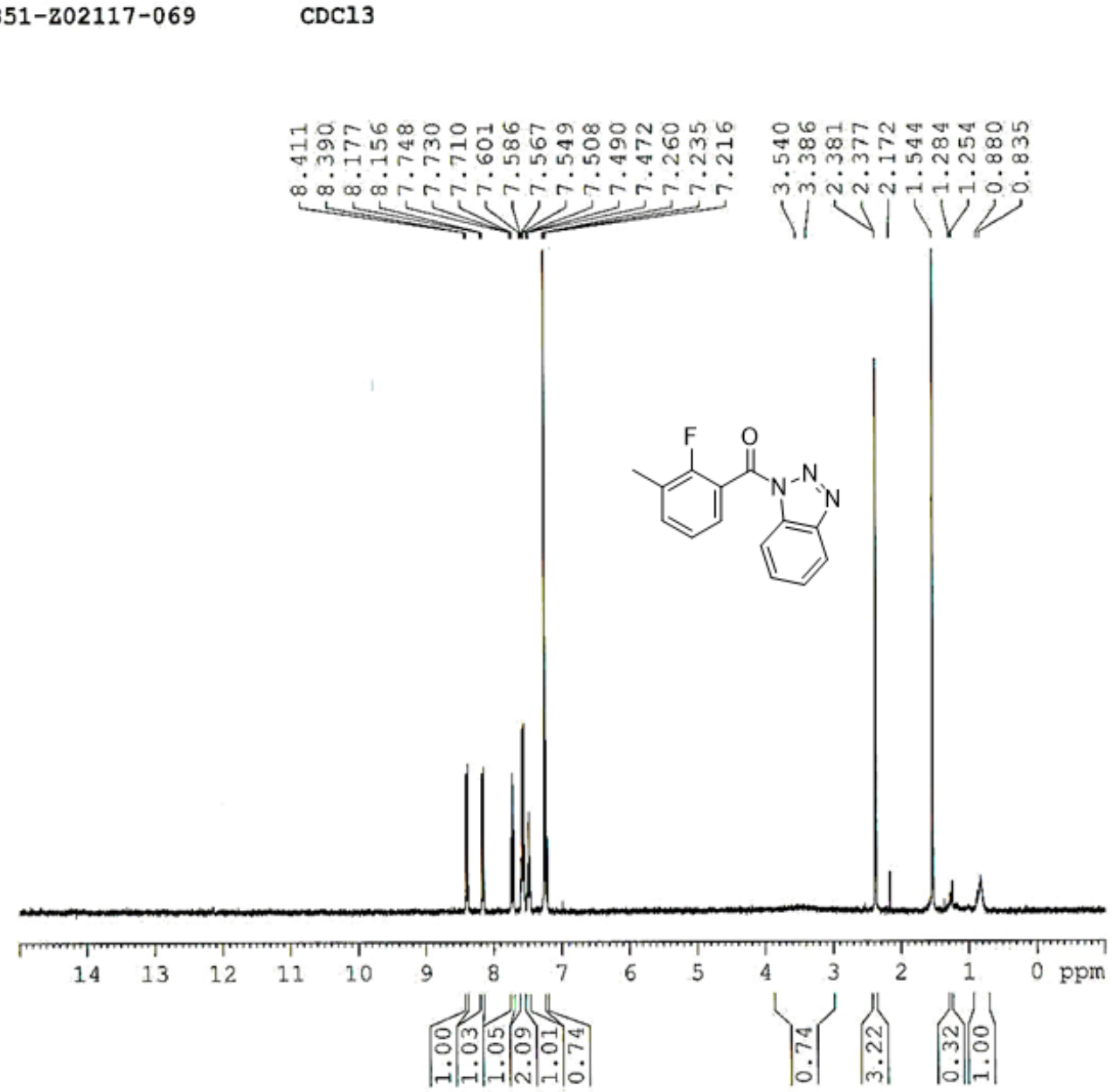
Spectra 14. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2g**



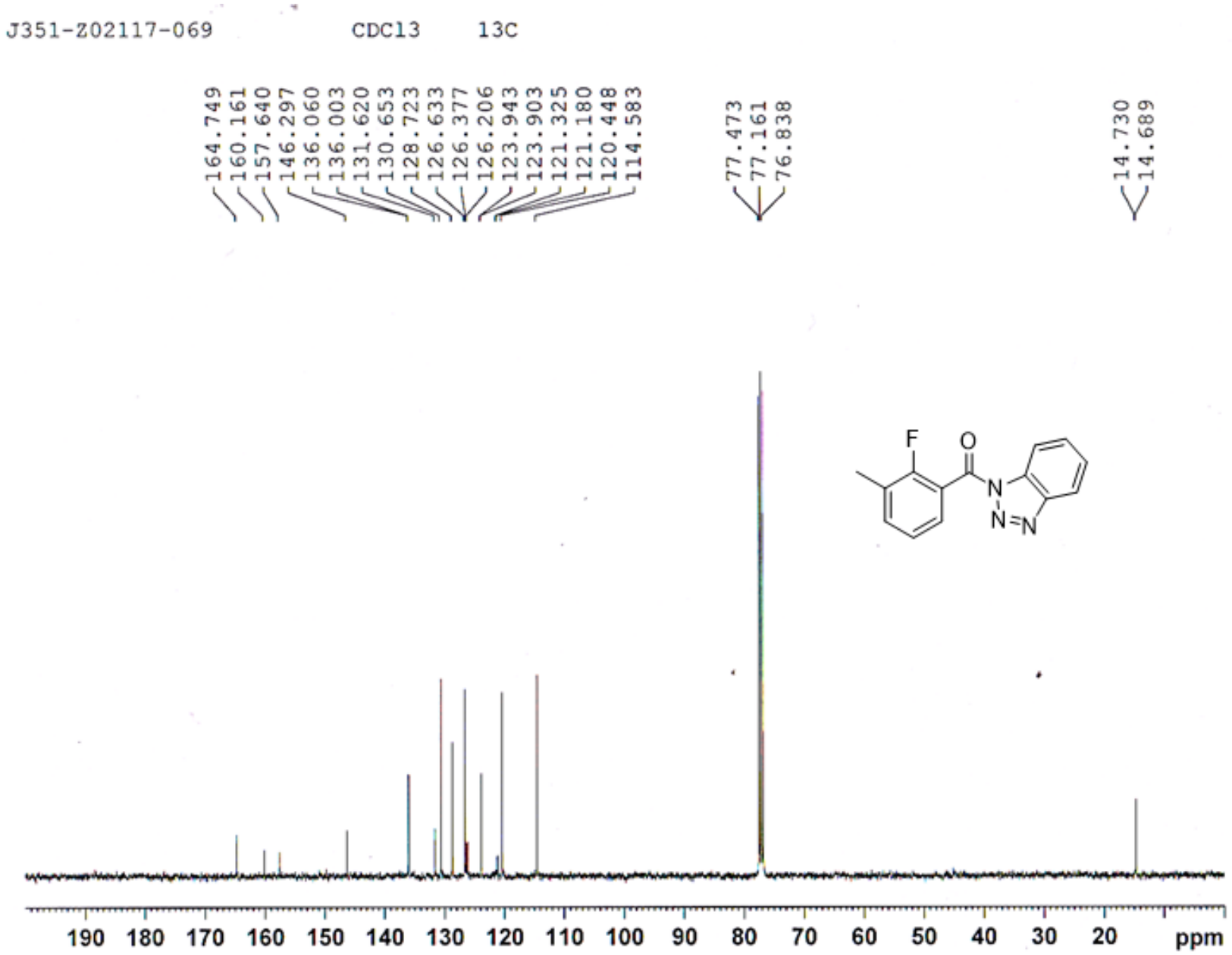
Spectra 15. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2h** [With the impurity of water (1.54 ppm) and grease (1.27, 0.86 ppm)]



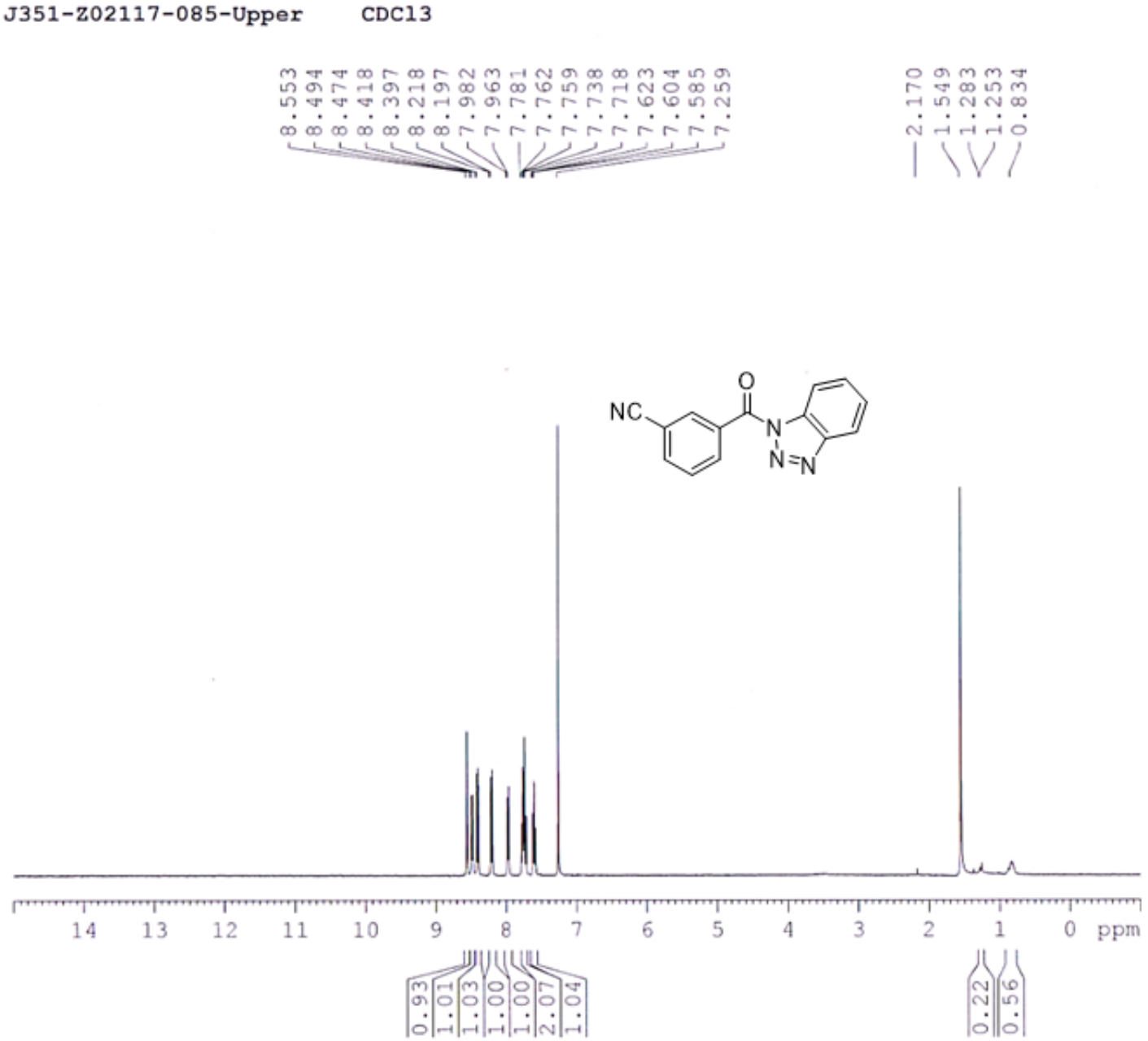
Spectra 16. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2h**



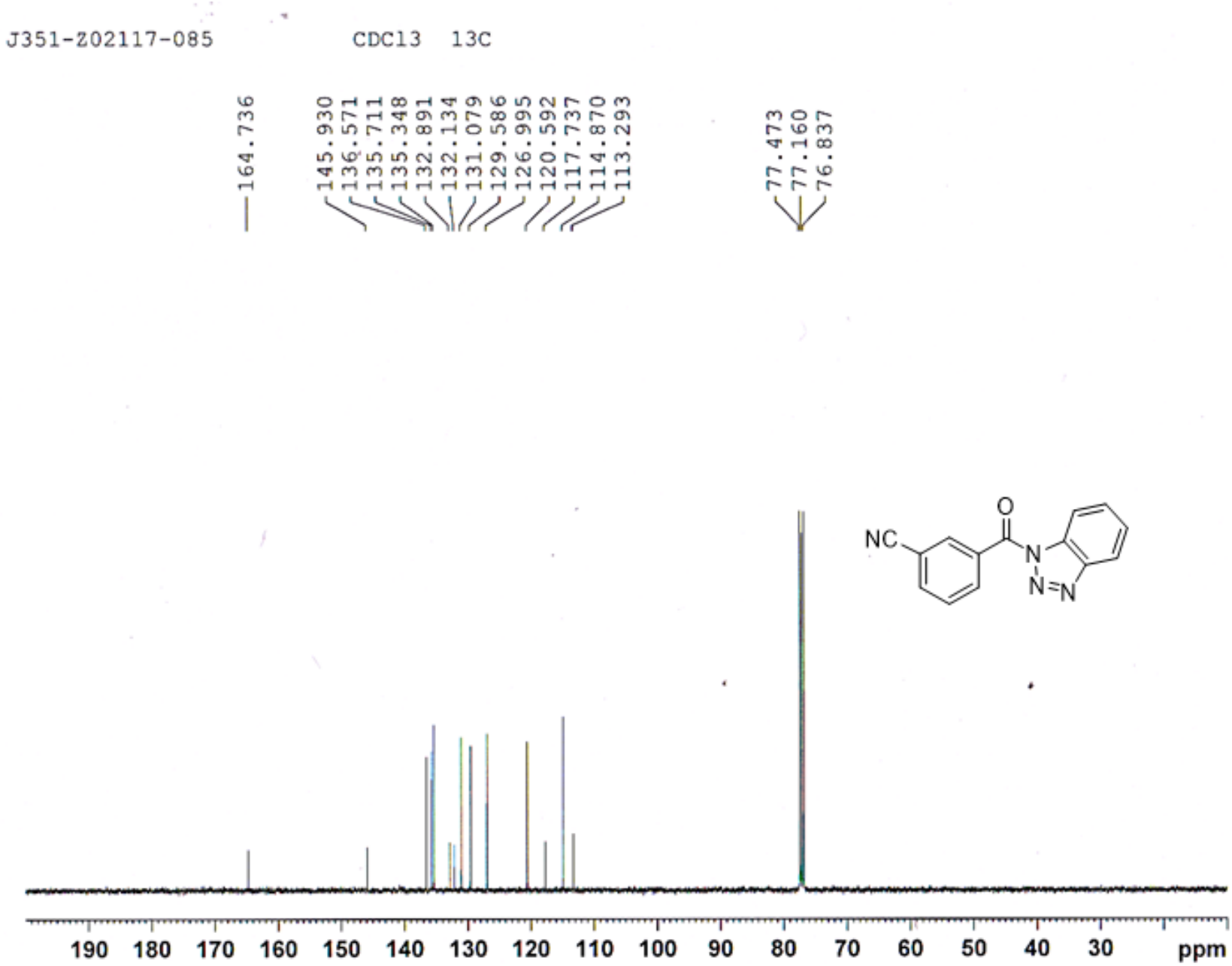
Spectra 17. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2i** [With the impurity of water (1.54 ppm), methanol (3.54 ppm), Acetone (2.17 ppm) and grease (1.27, 0.86 ppm)]



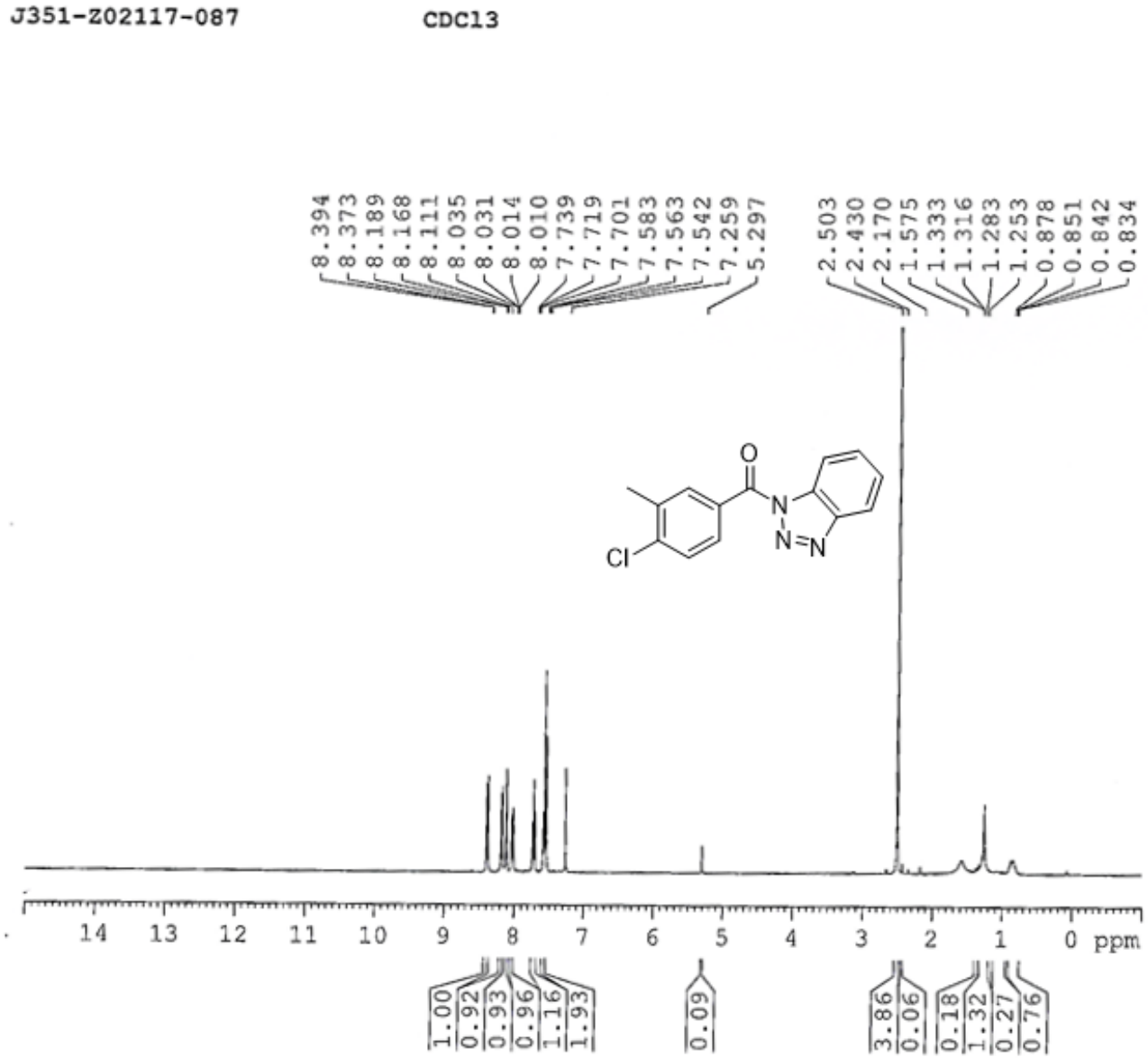
Spectra18. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2i**



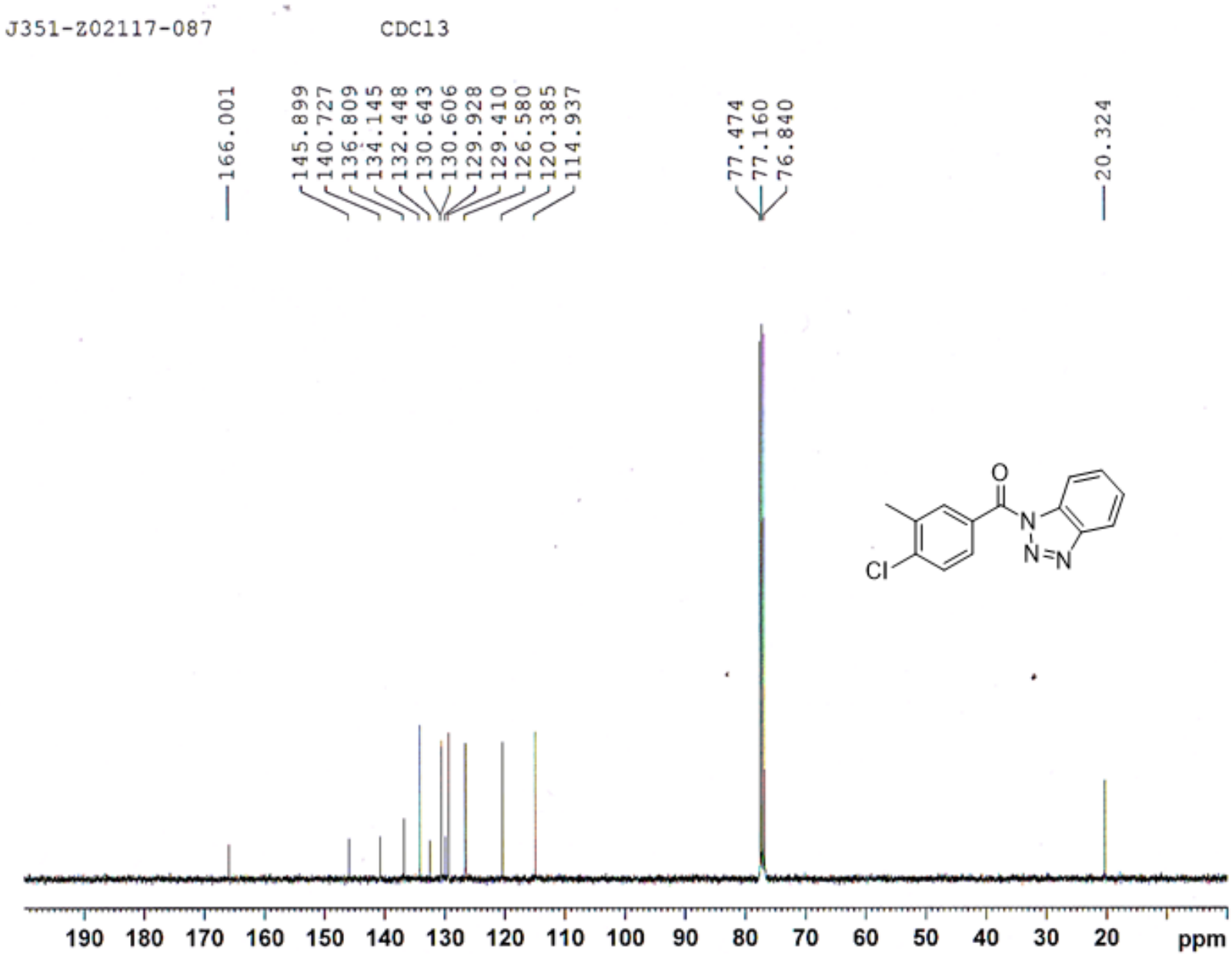
Spectra 19. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2j** [With the impurity of water (1.54 ppm) and grease (1.27 ppm, 0.83 ppm)]



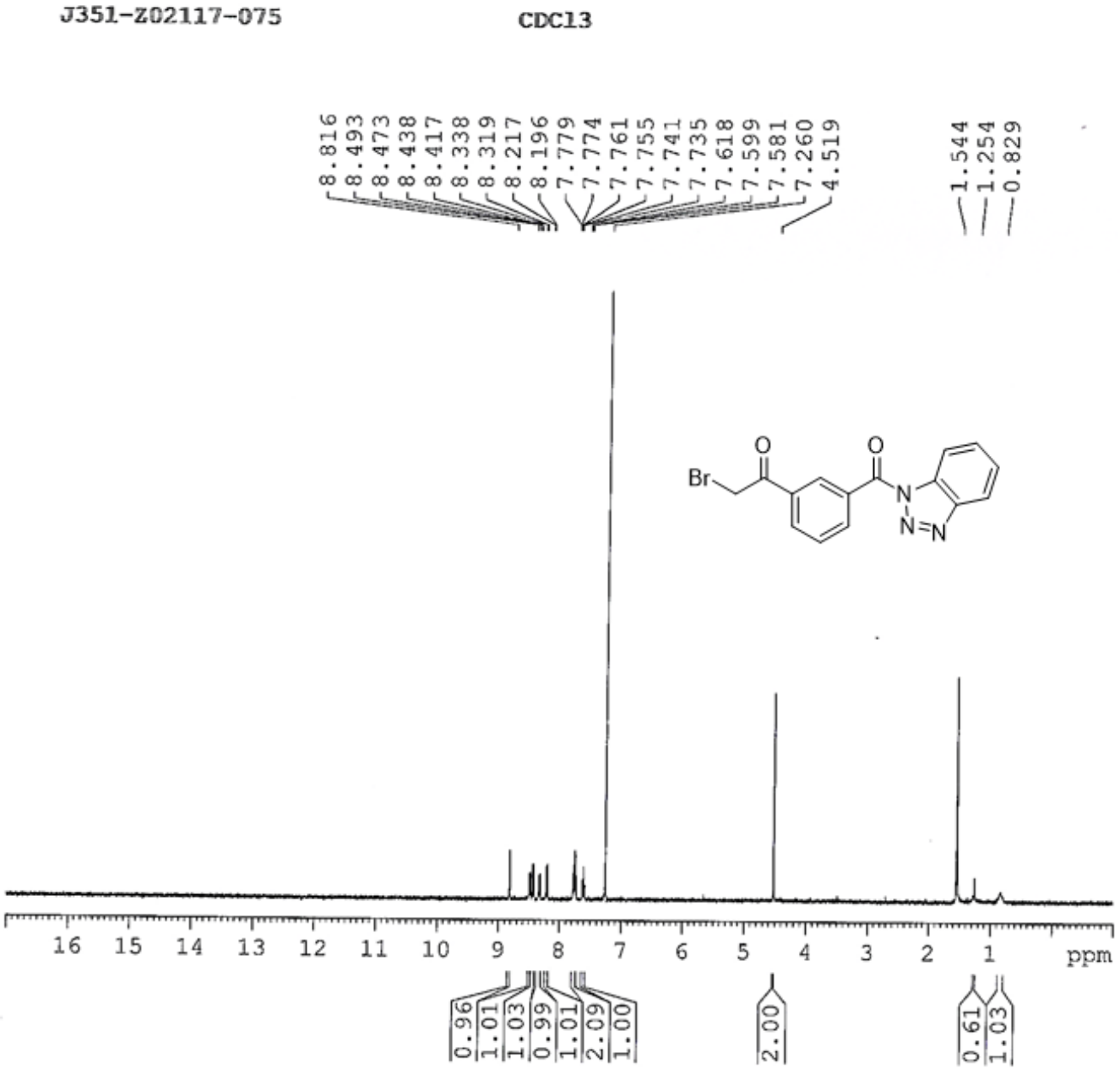
Spectra 20. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2j**



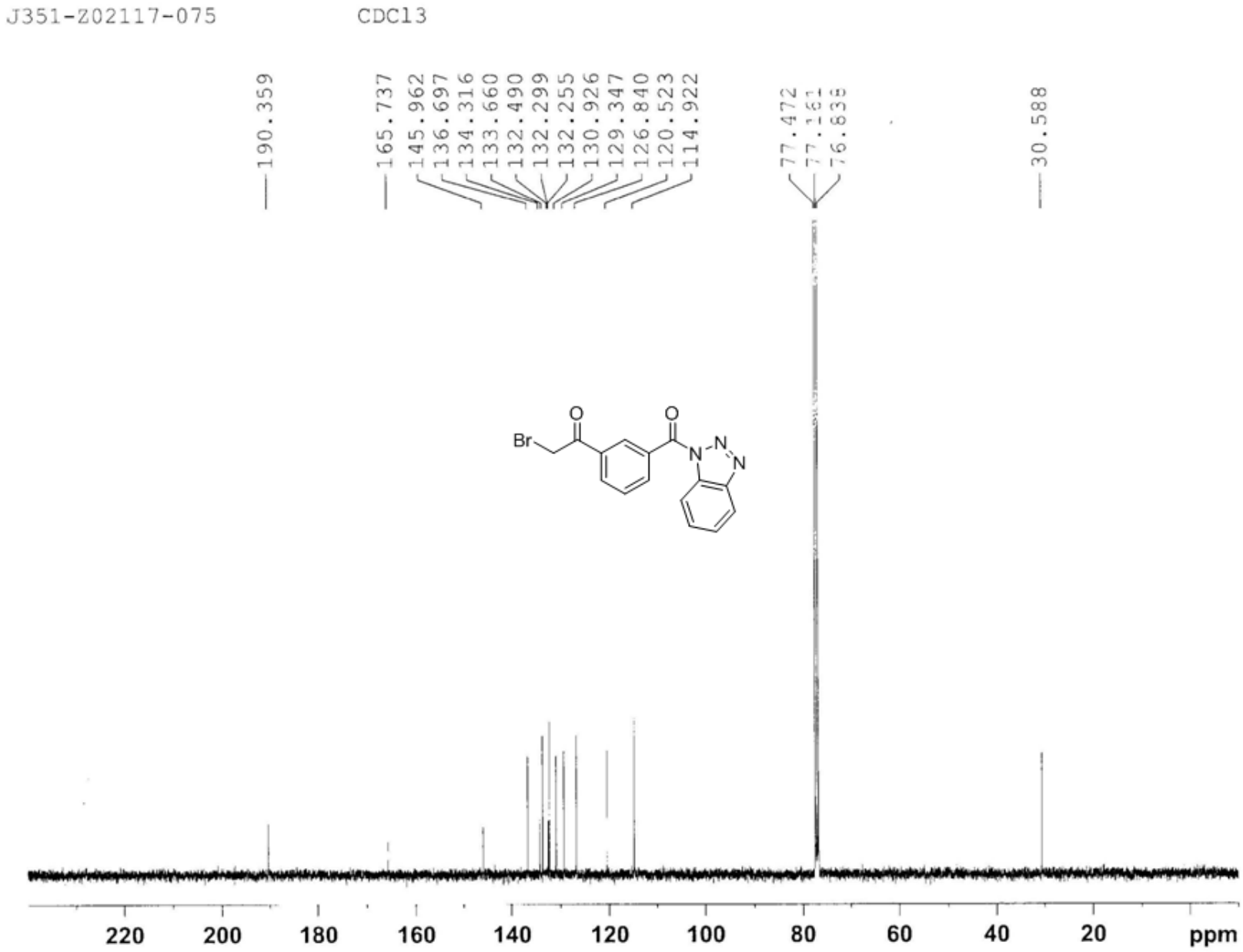
Spectra 21. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2k** [With the impurity of Dichloromethane (5.29 ppm), water (1.57 ppm) and grease (1.28, 0.85 ppm)]



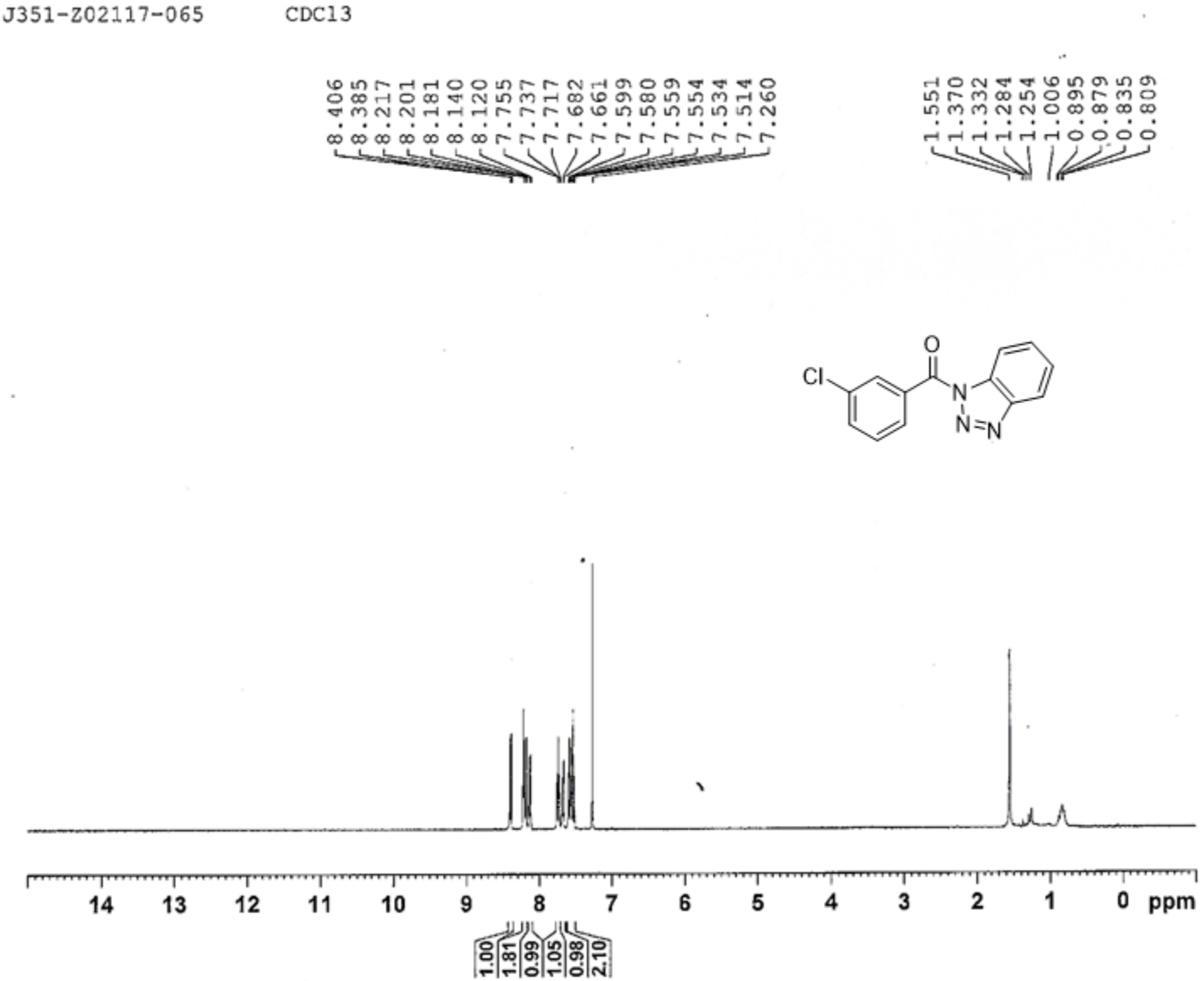
Spectra 22. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2k**



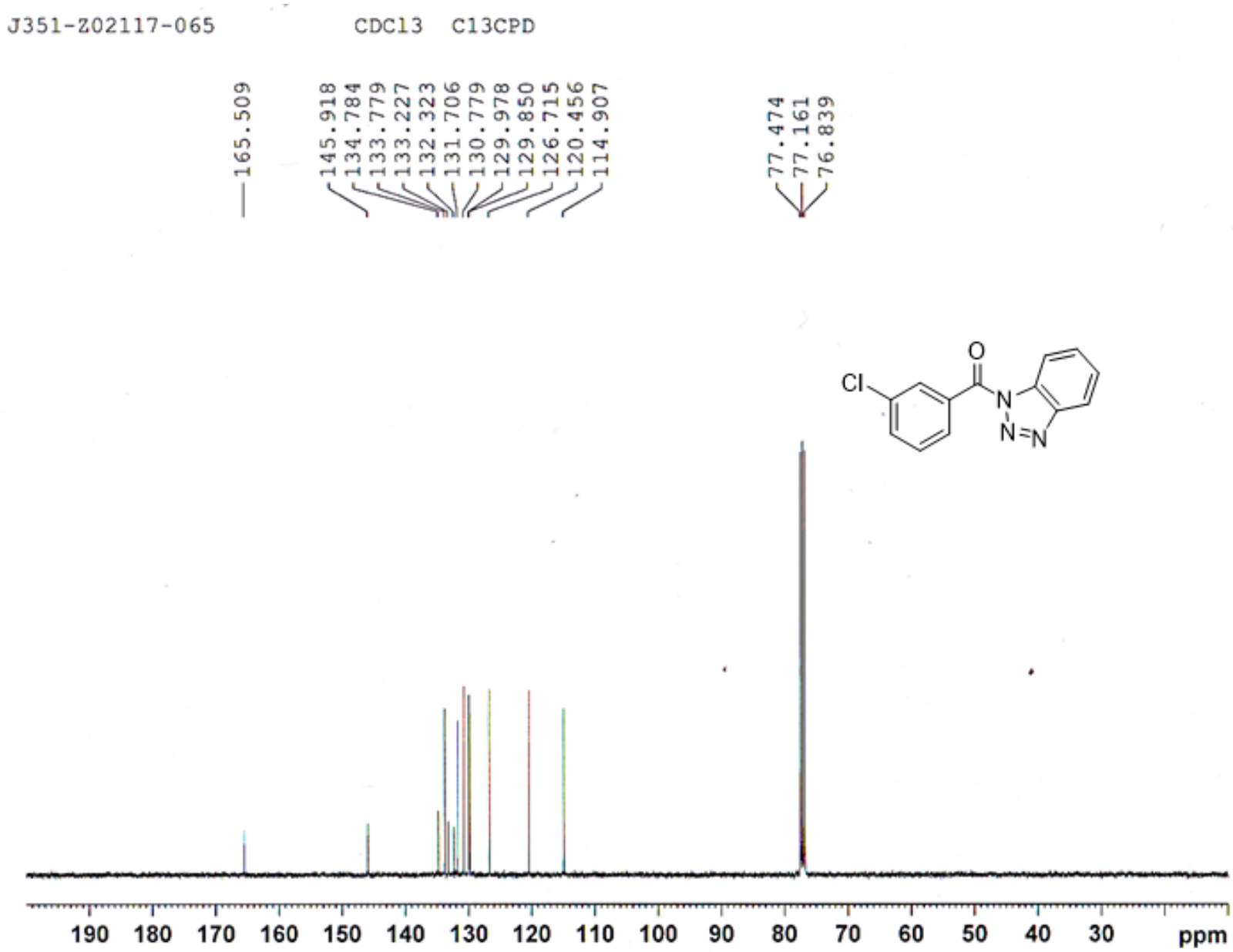
Spectra 23. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2l** [With the impurity of water (1.54 ppm) and grease (1.25, 0.83 ppm)]



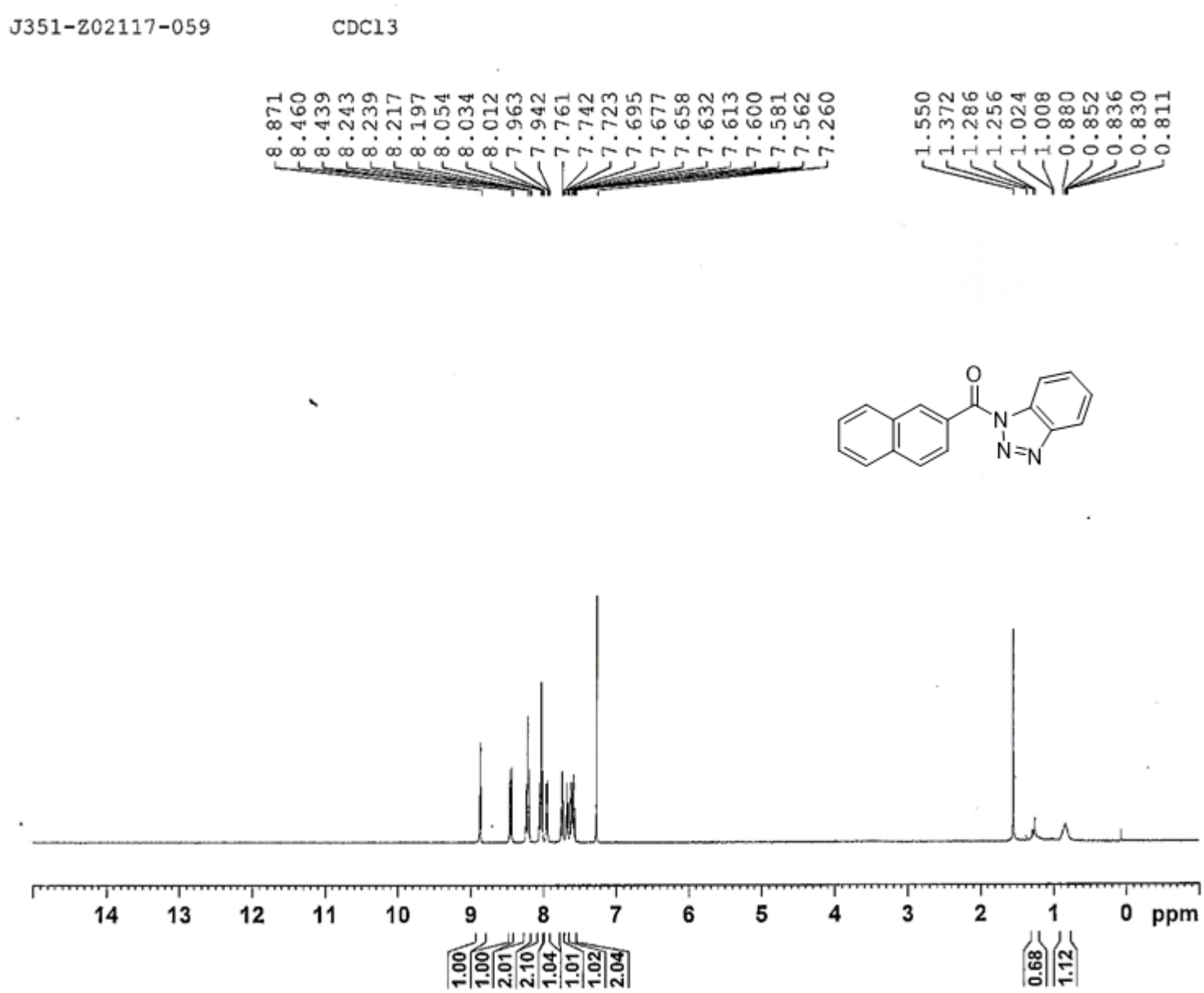
Spectra 24. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2l**



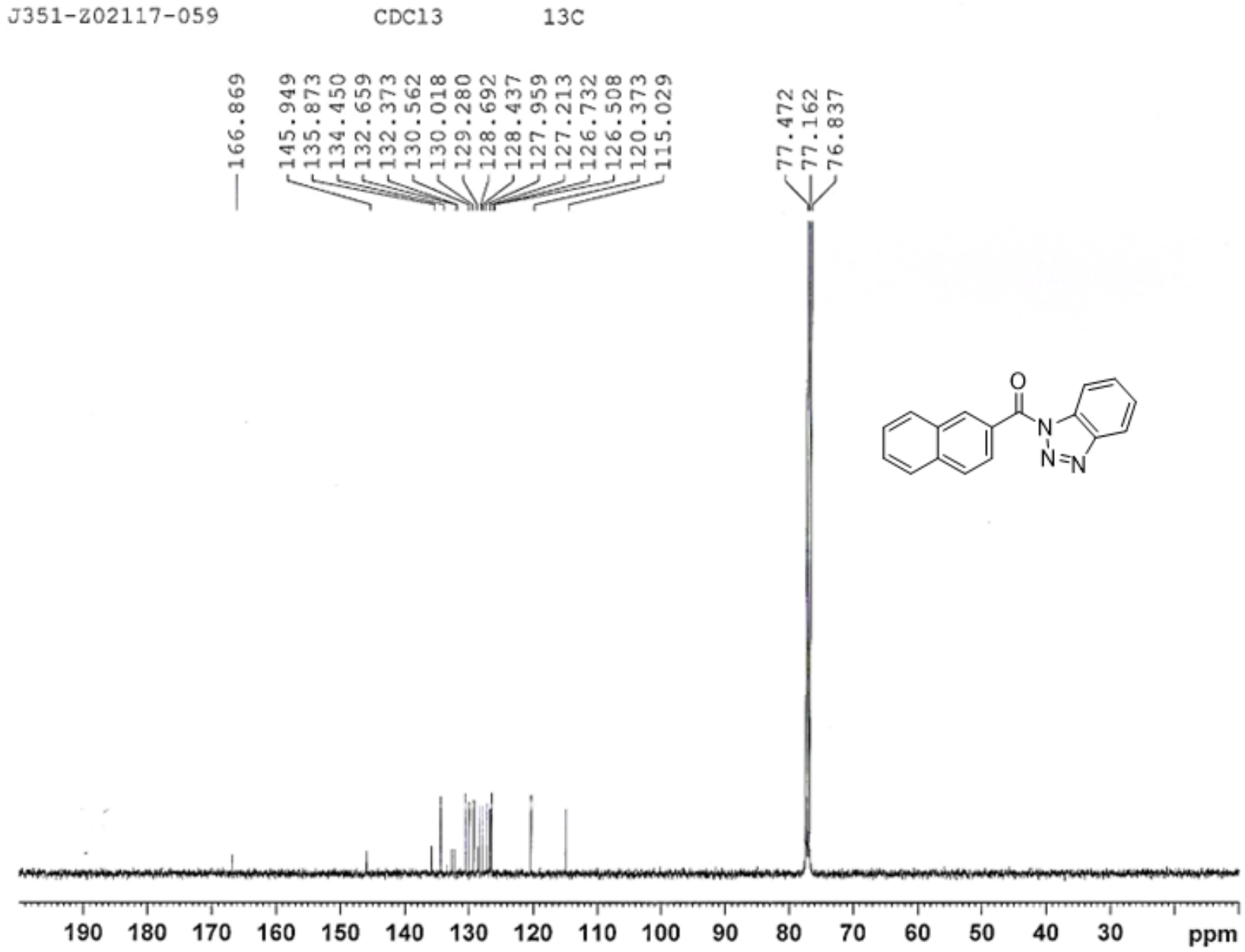
Spectra 25. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2m [**With the impurity of water (1.54 ppm) and grease (1.28, 0.86 ppm)]



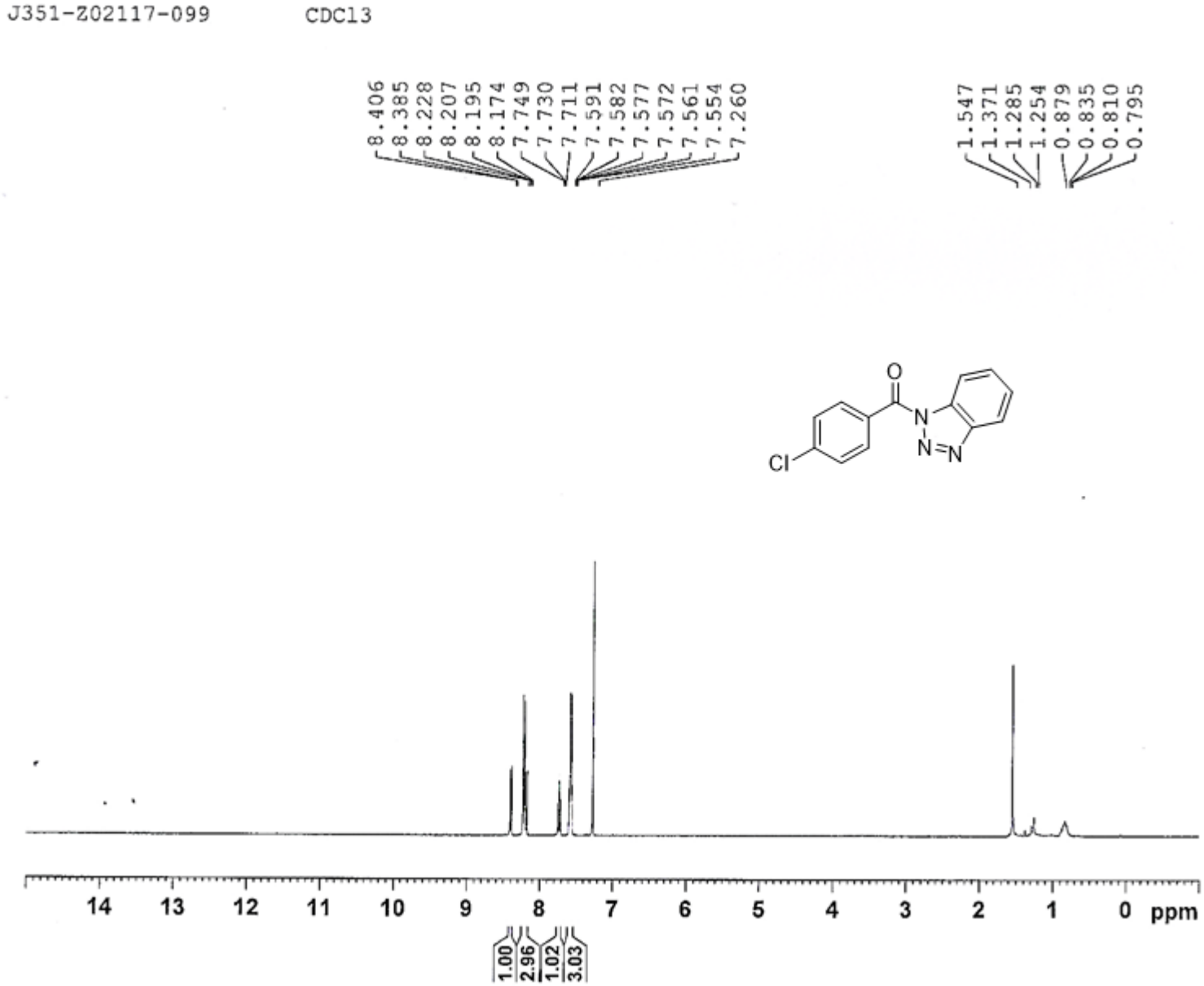
Spectra 26. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2m**



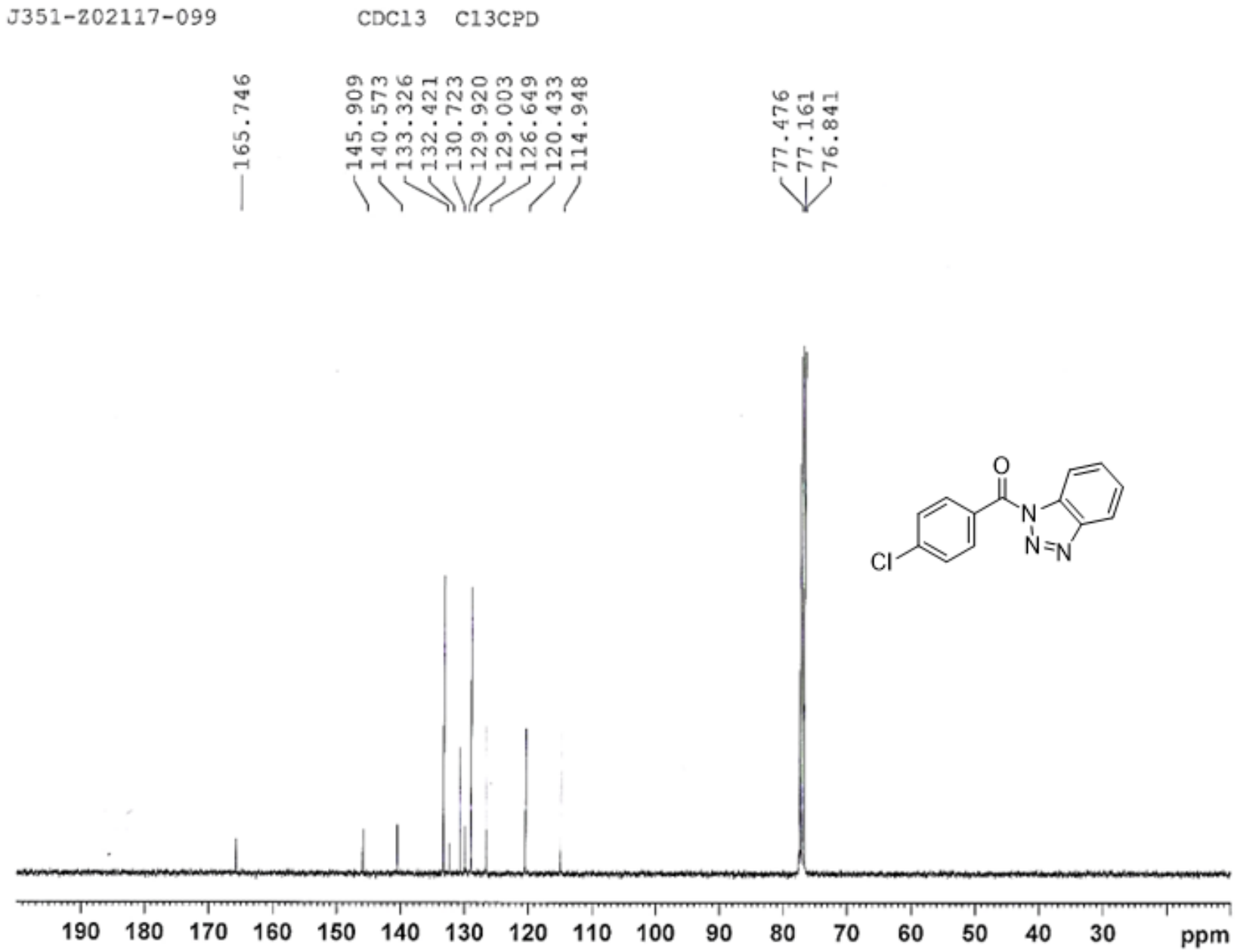
Spectra 27. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2n** [With the impurity of water (1.55 ppm) and grease (1.27, 0.86 ppm)]



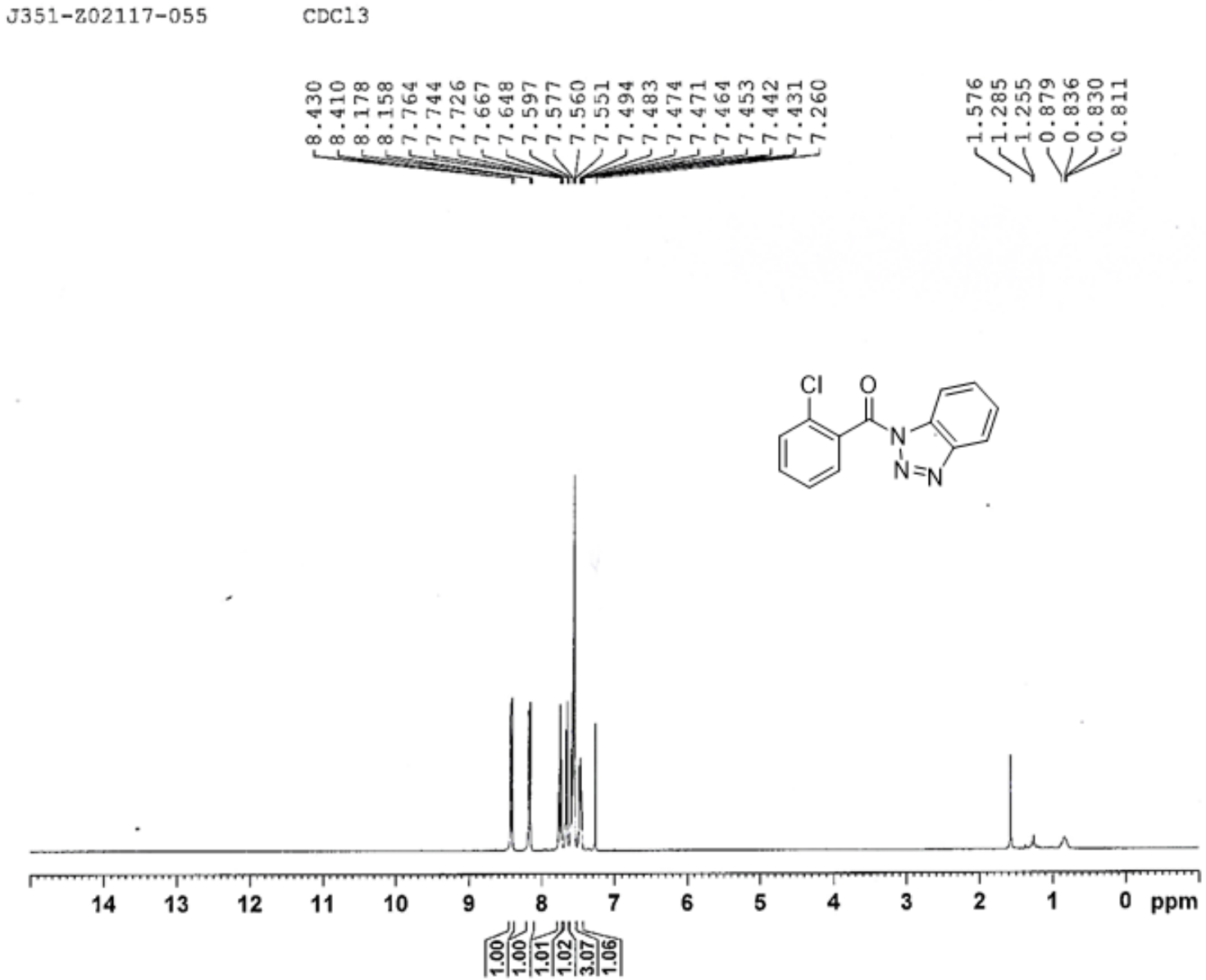
Spectra28. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2n**



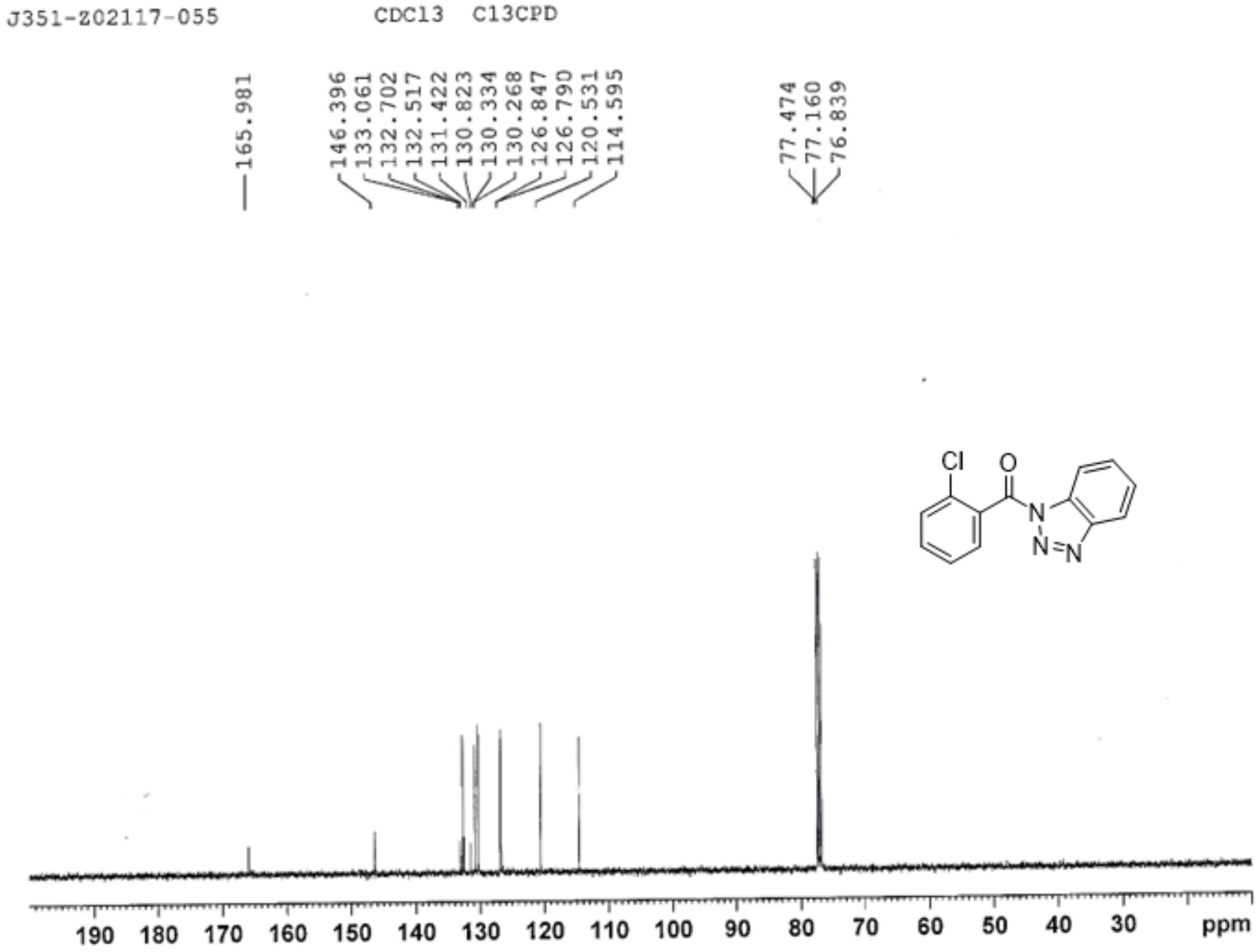
Spectra 29. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2o** [With the impurity of water (1.54 ppm) and grease (1.27, 0.83 ppm)]



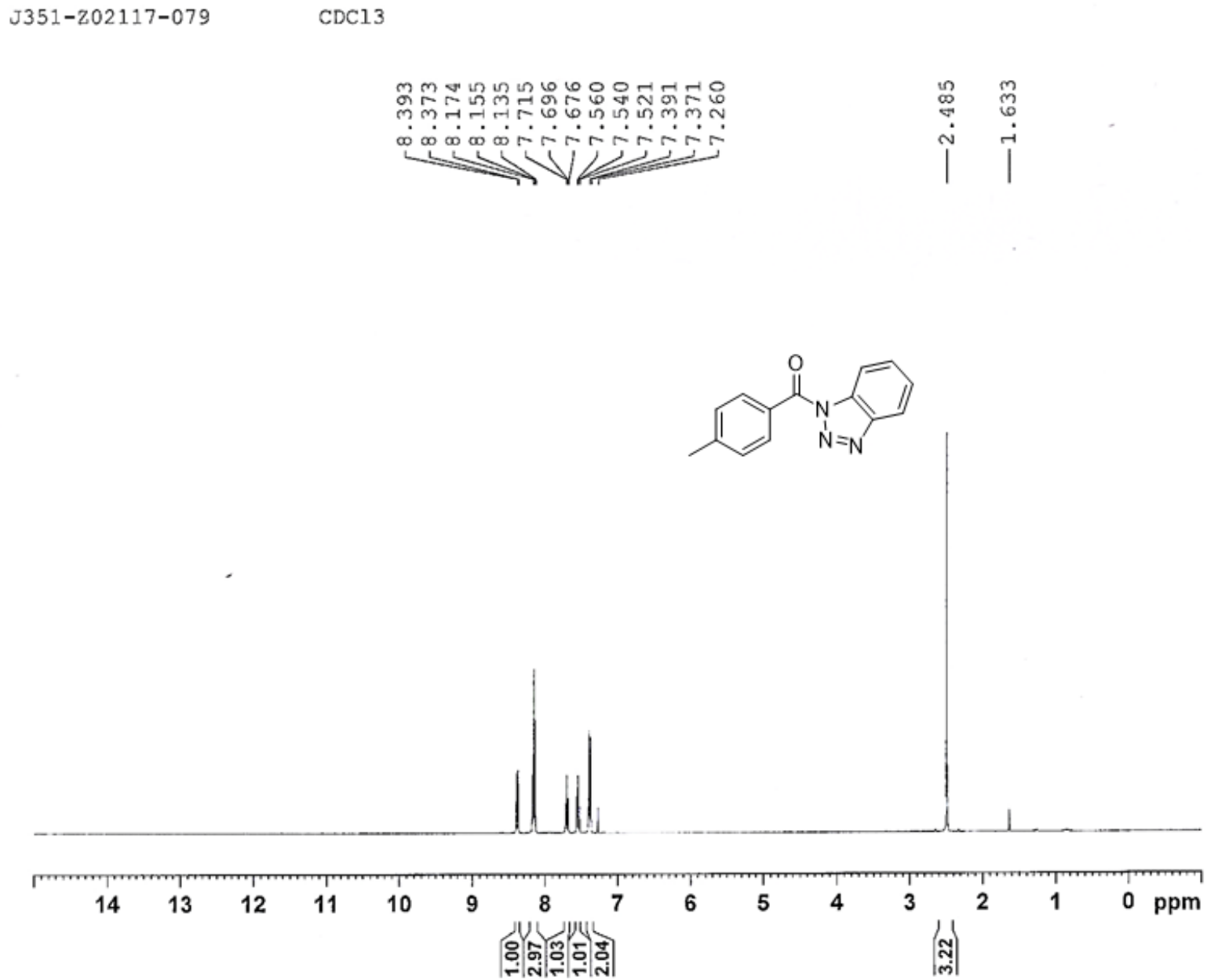
Spectra 30. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2o**



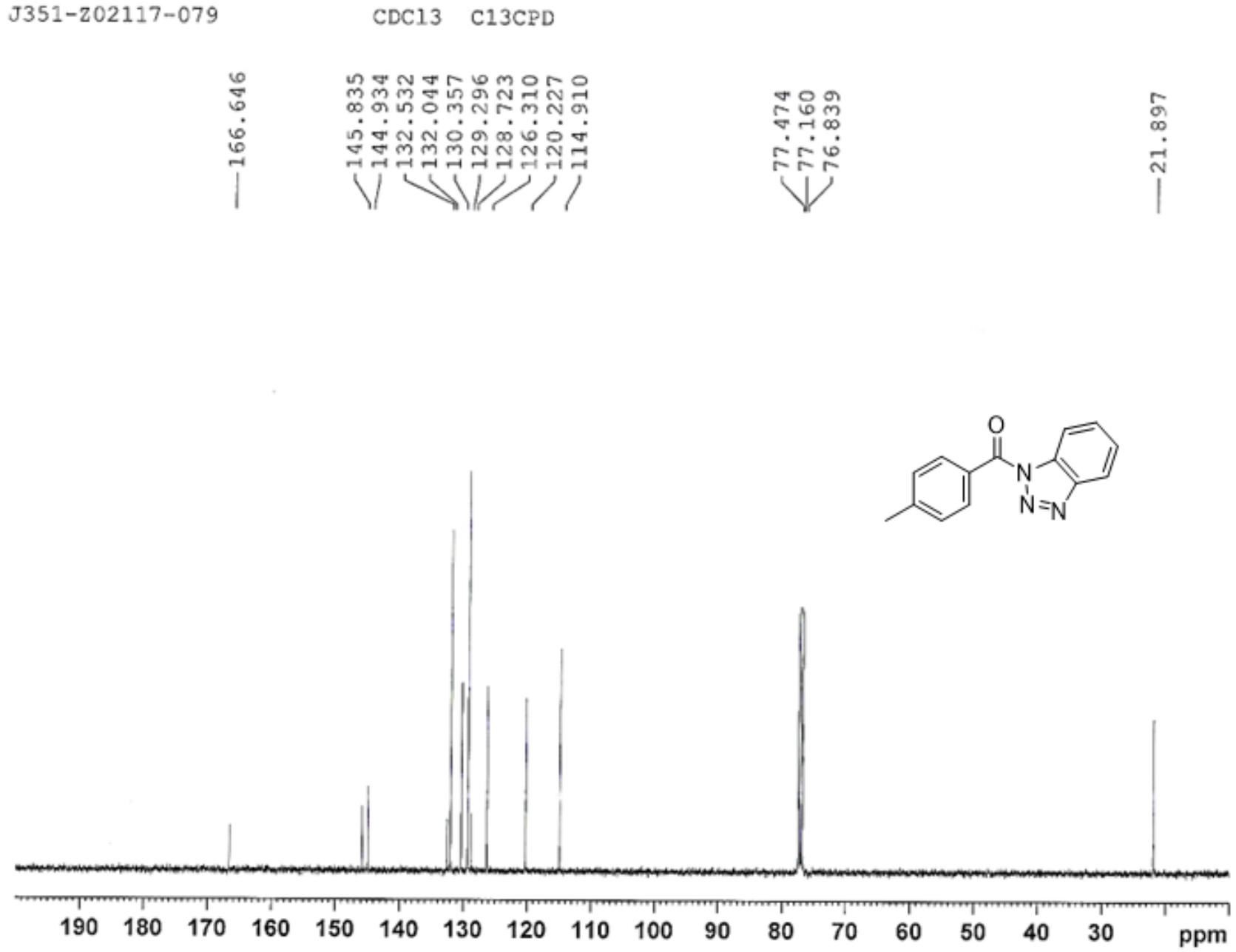
Spectra 31. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2p** [With the impurity of water (1.57 ppm) and grease (1.27, 0.86 ppm)]



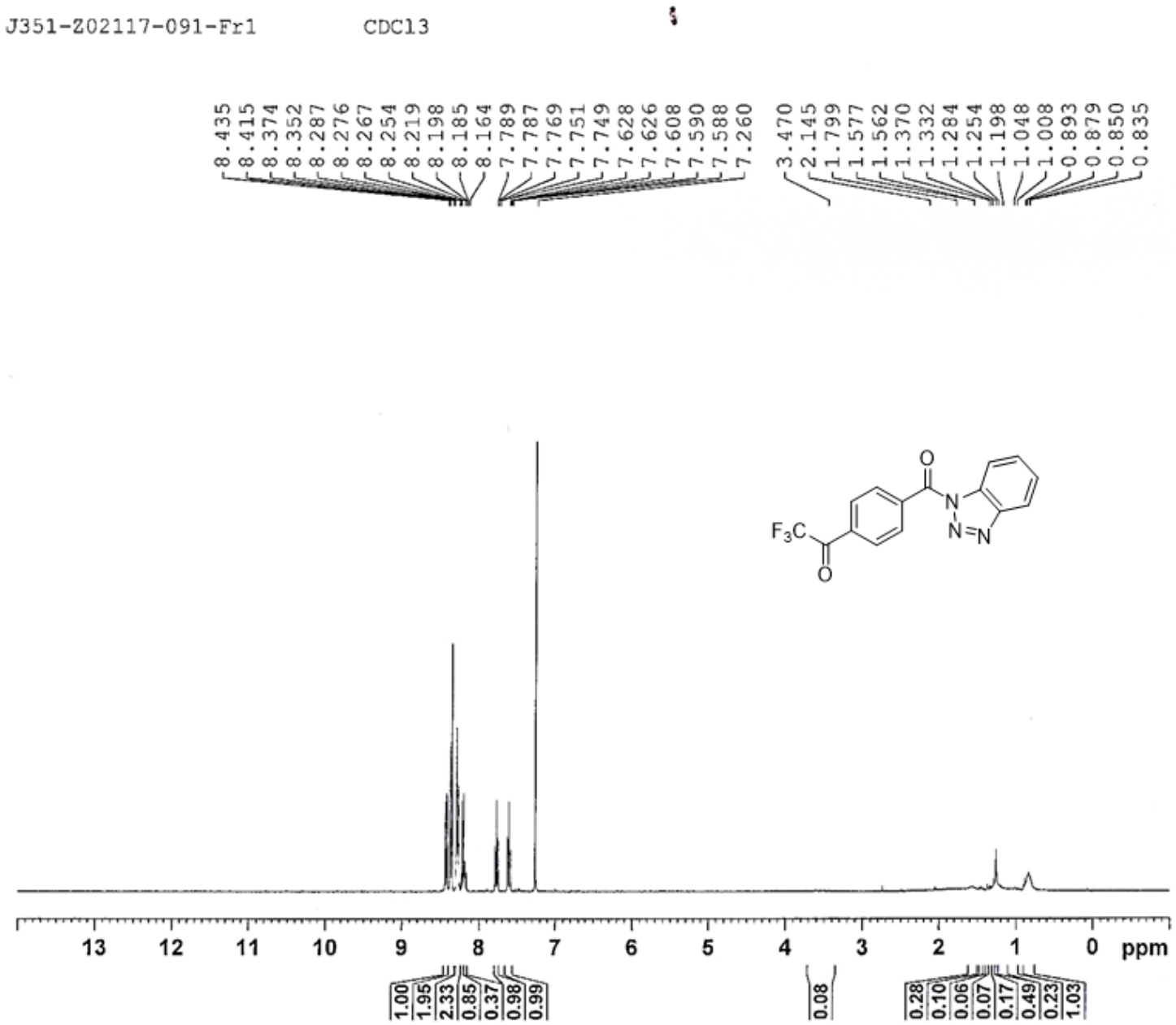
Spectra 32. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2p**



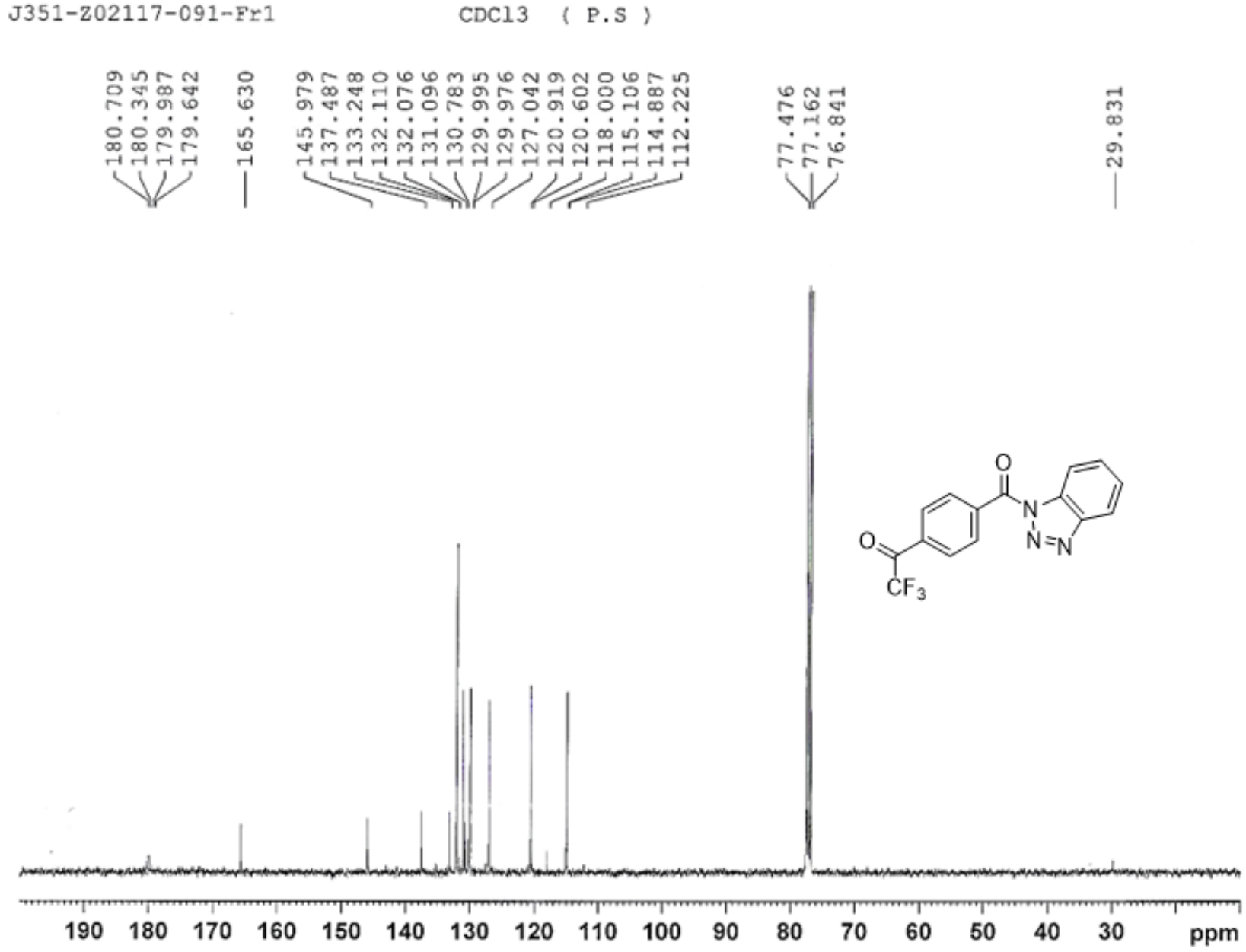
Spectra 33. ^{1}H NMR (400 MHz, $CDCl_3$) of compound **2q**



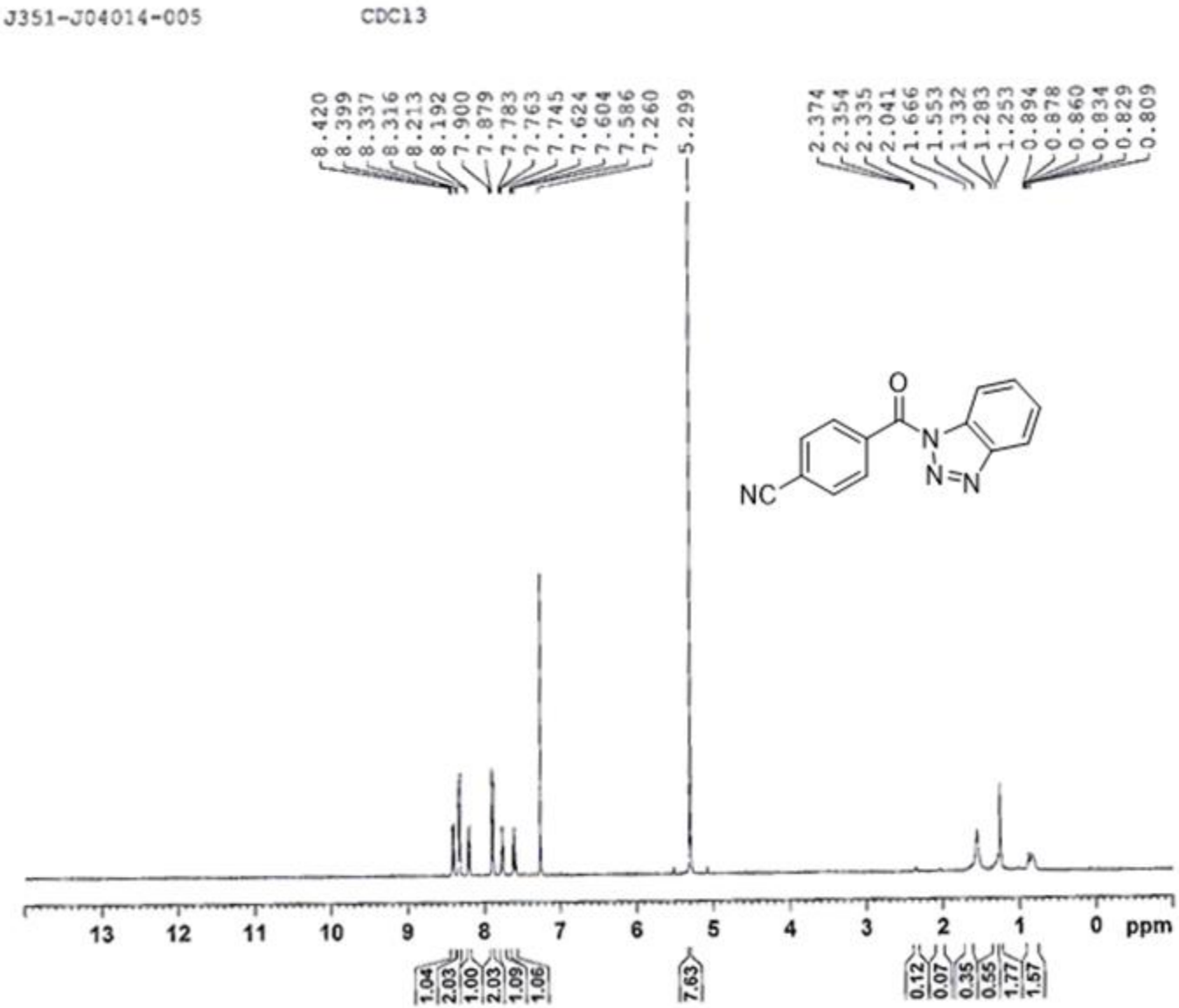
Spectra 34. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2q**



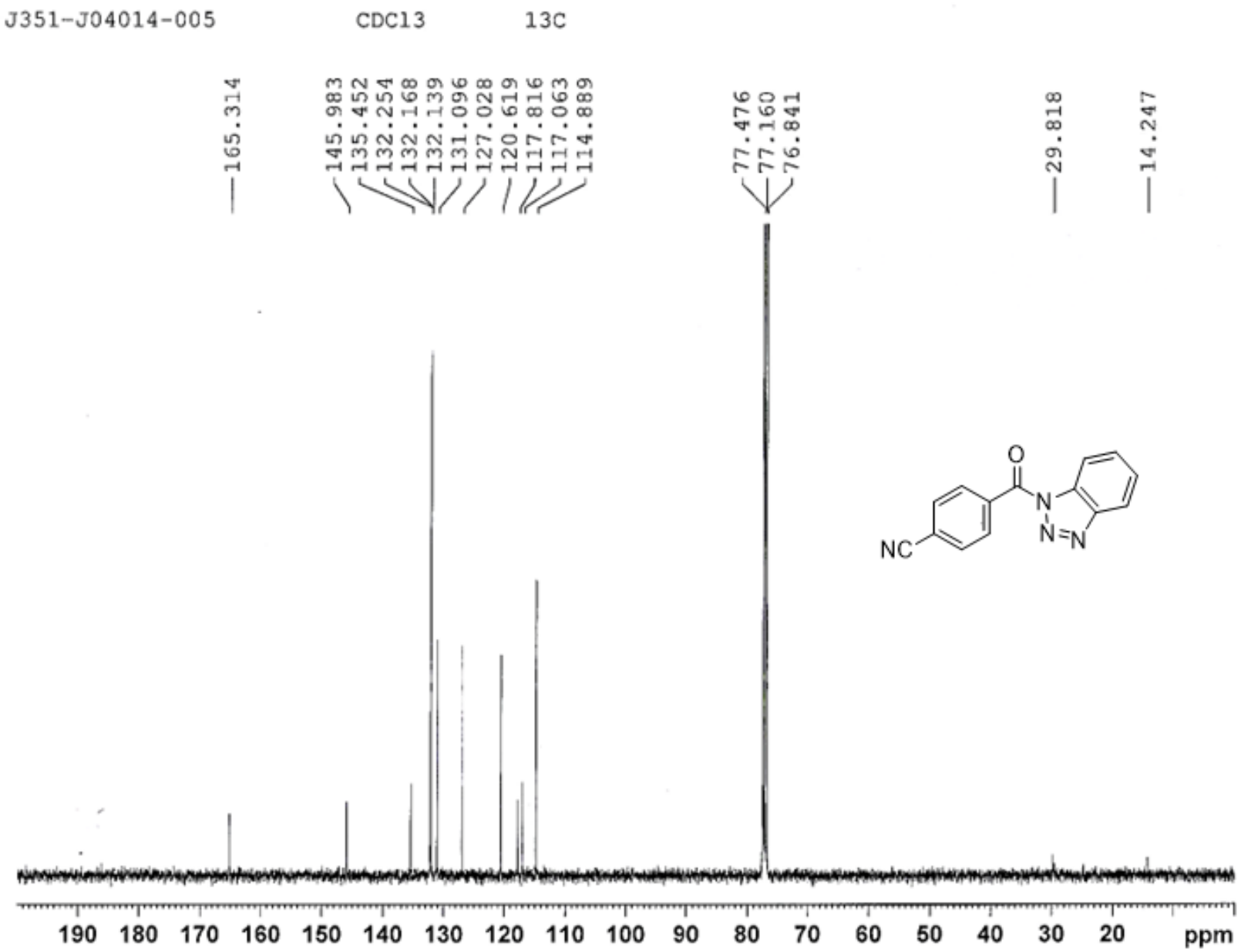
Spectra 35. ^{1}H NMR (400 MHz,$CDCl_3$) of compound **2r** [With the impurity of methanol (3.47 ppm), acetone (2.15 ppm), water (1.56 ppm) and grease (1.27, 0.86 ppm)]



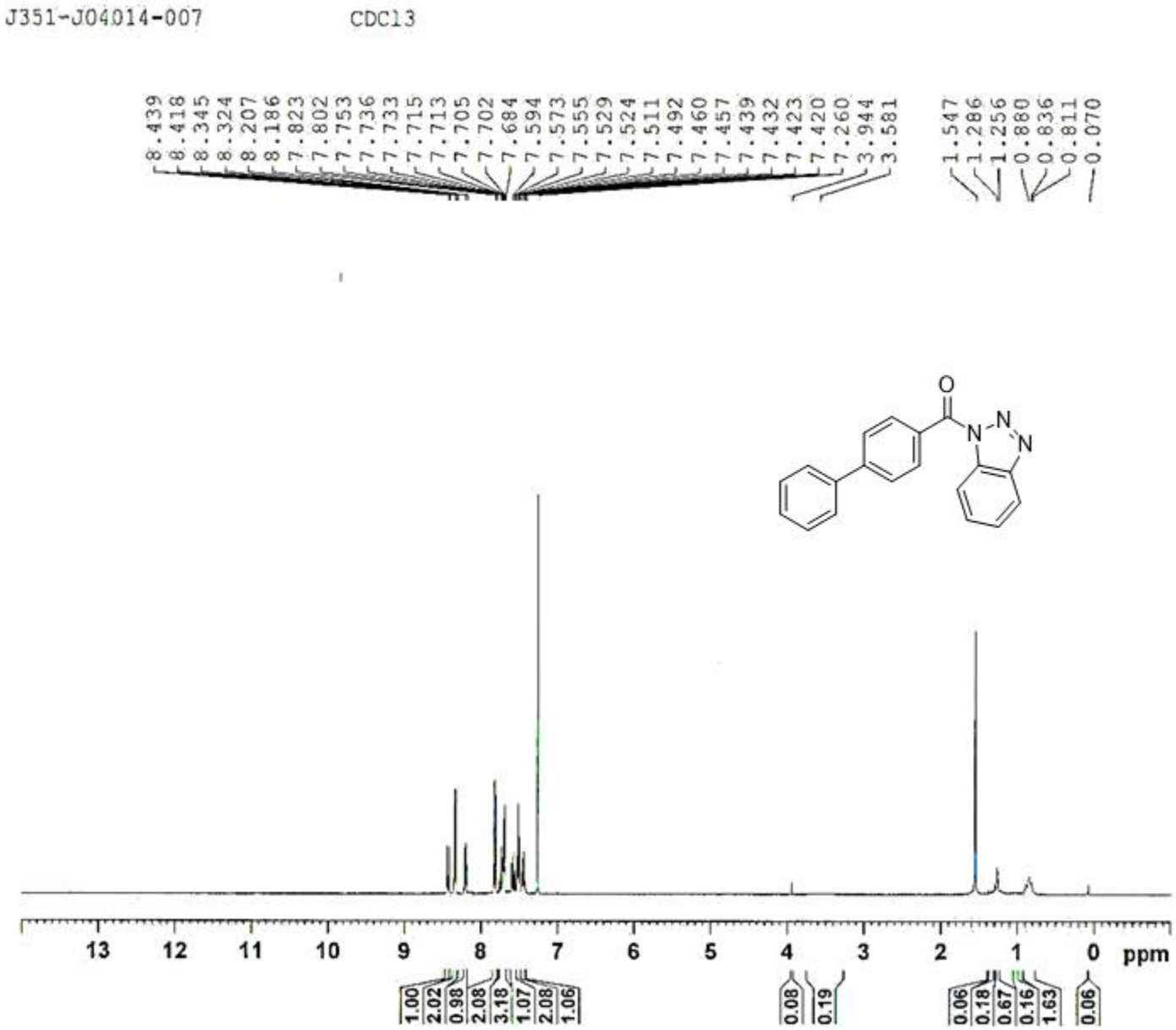
Spectra 36. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2r**



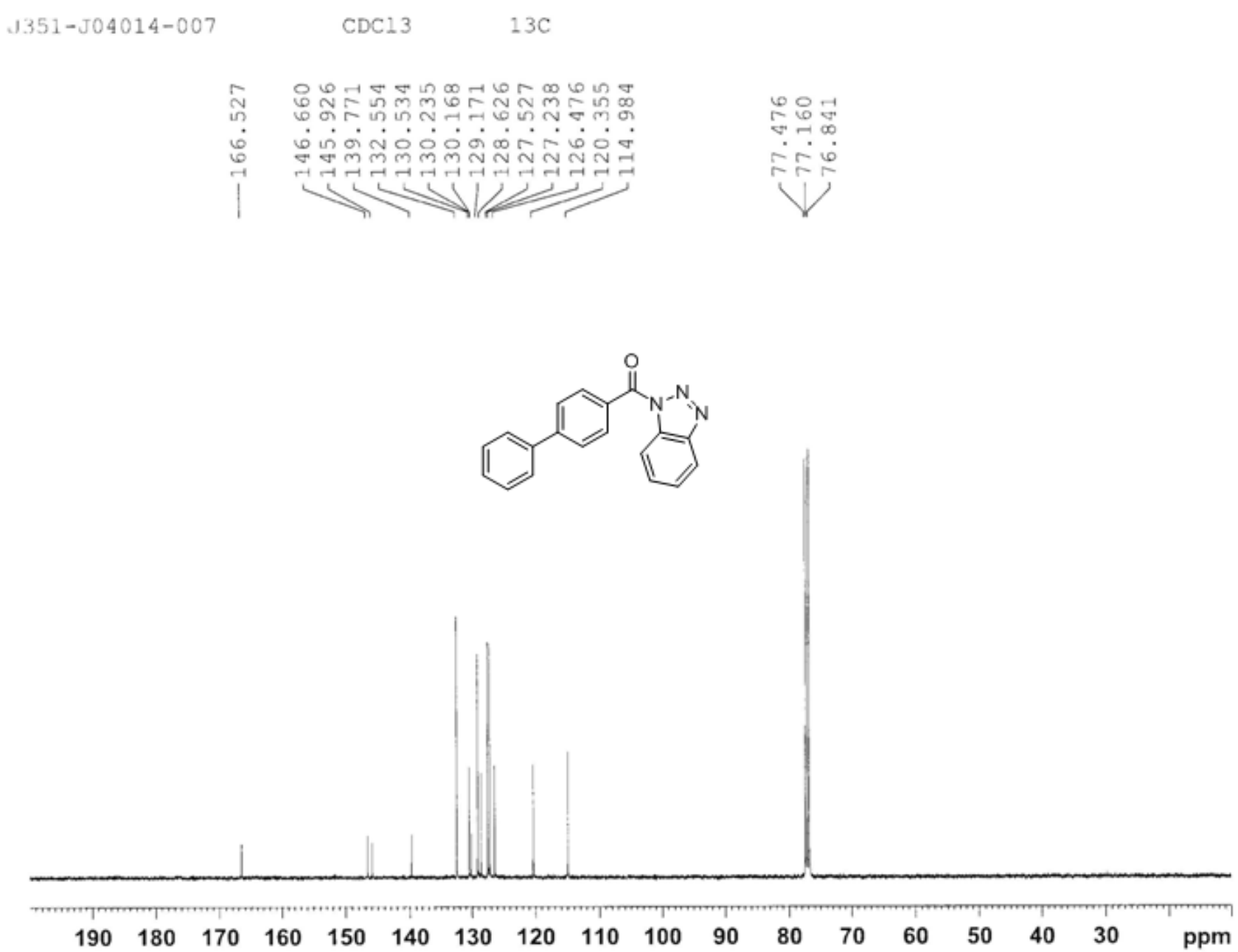
Spectra 37. ^{1}H NMR (400 MHz,$CDCl_3$) of compound **2s** [With the impurity of Dichloromethane (5.29 ppm), water (1.57 ppm) and grease (1.27, 0.86 ppm)]



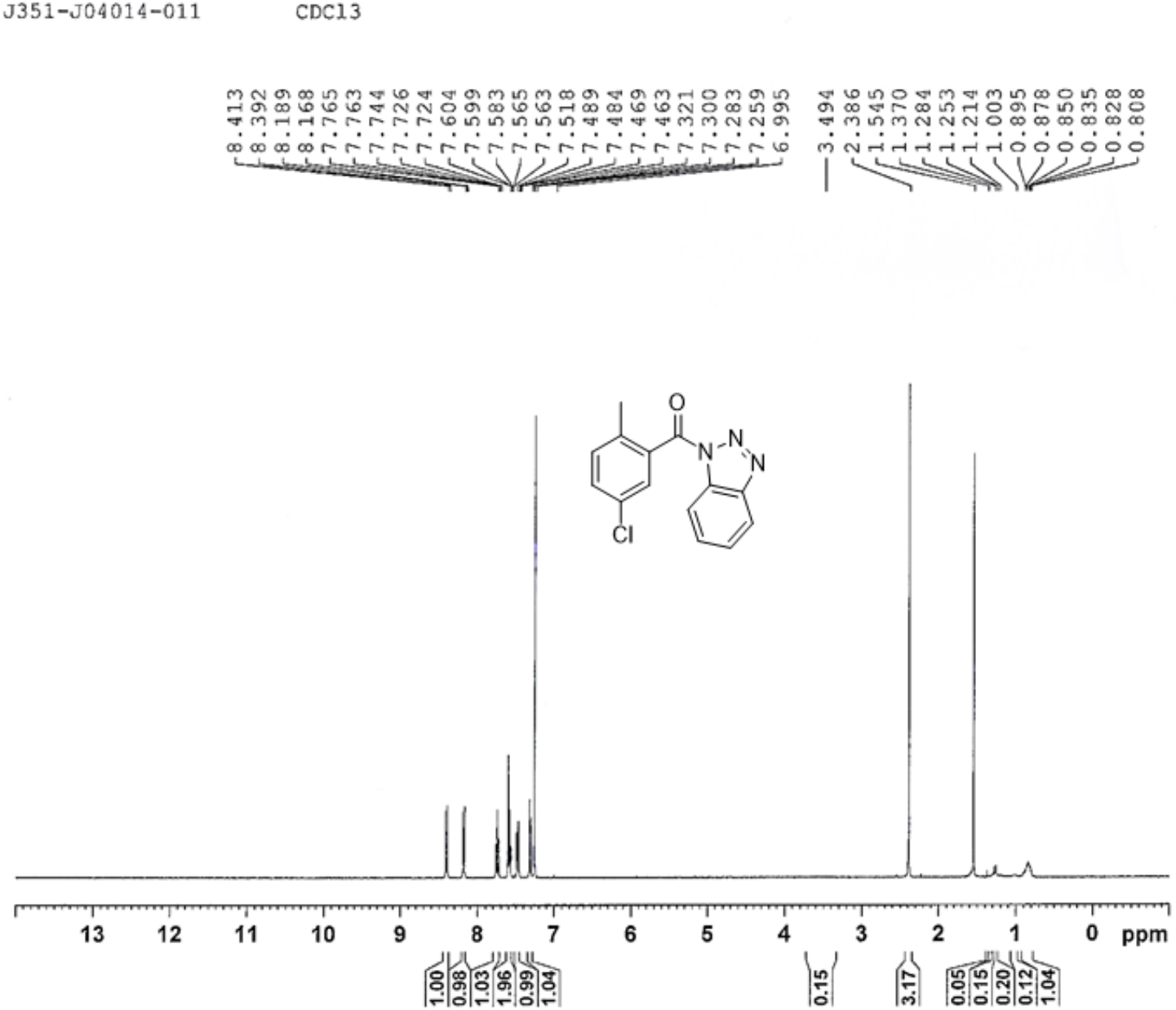
Spectra 38. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2s** [With the impurity of grease (29.8, 14.2 ppm)]



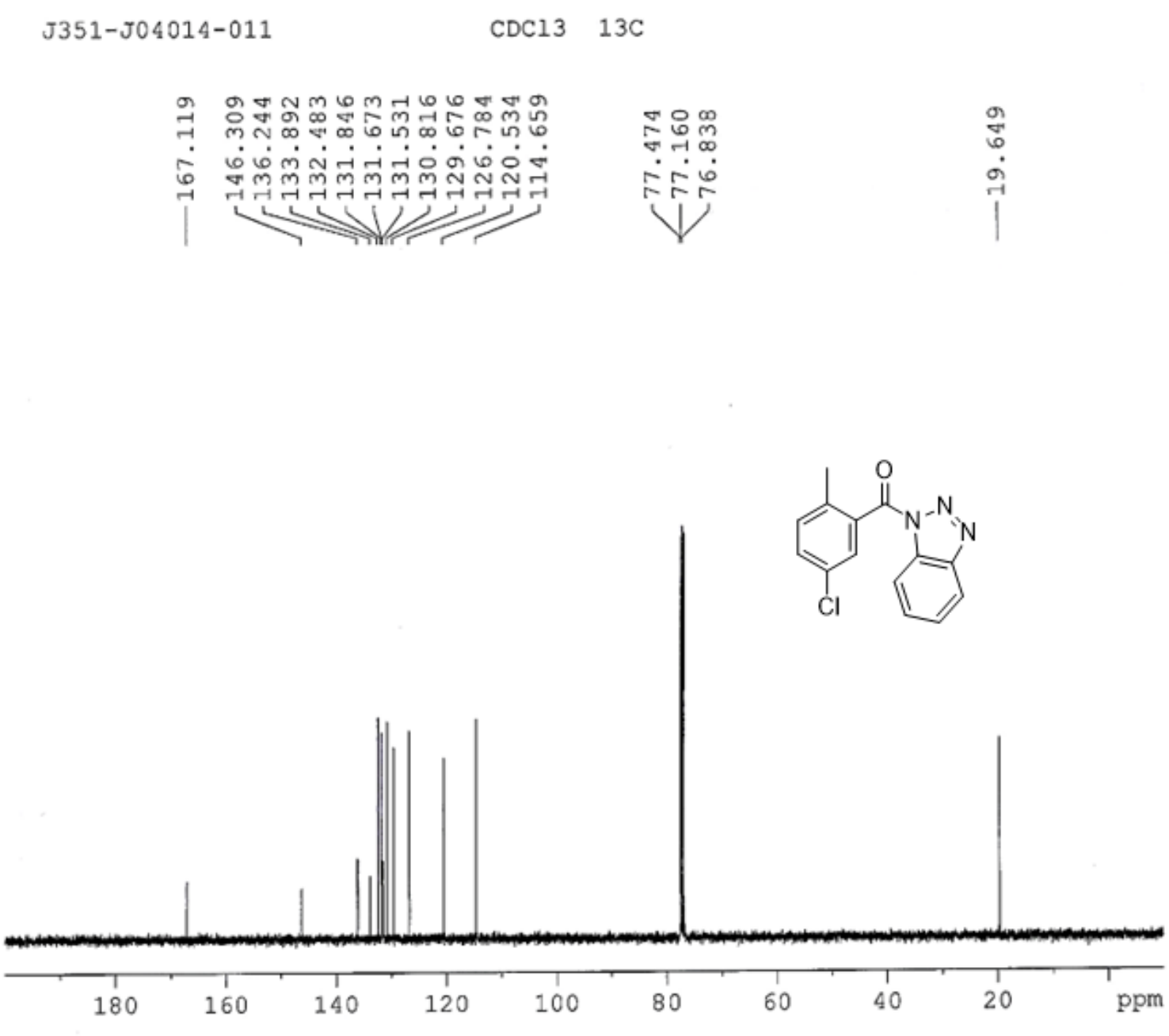
Spectra 39. ^{1}H NMR (500 MHz$CDCl_3$) of compound **2t** [With the impurity of water (1.54 ppm) and grease (1.27, 0.86 ppm)]



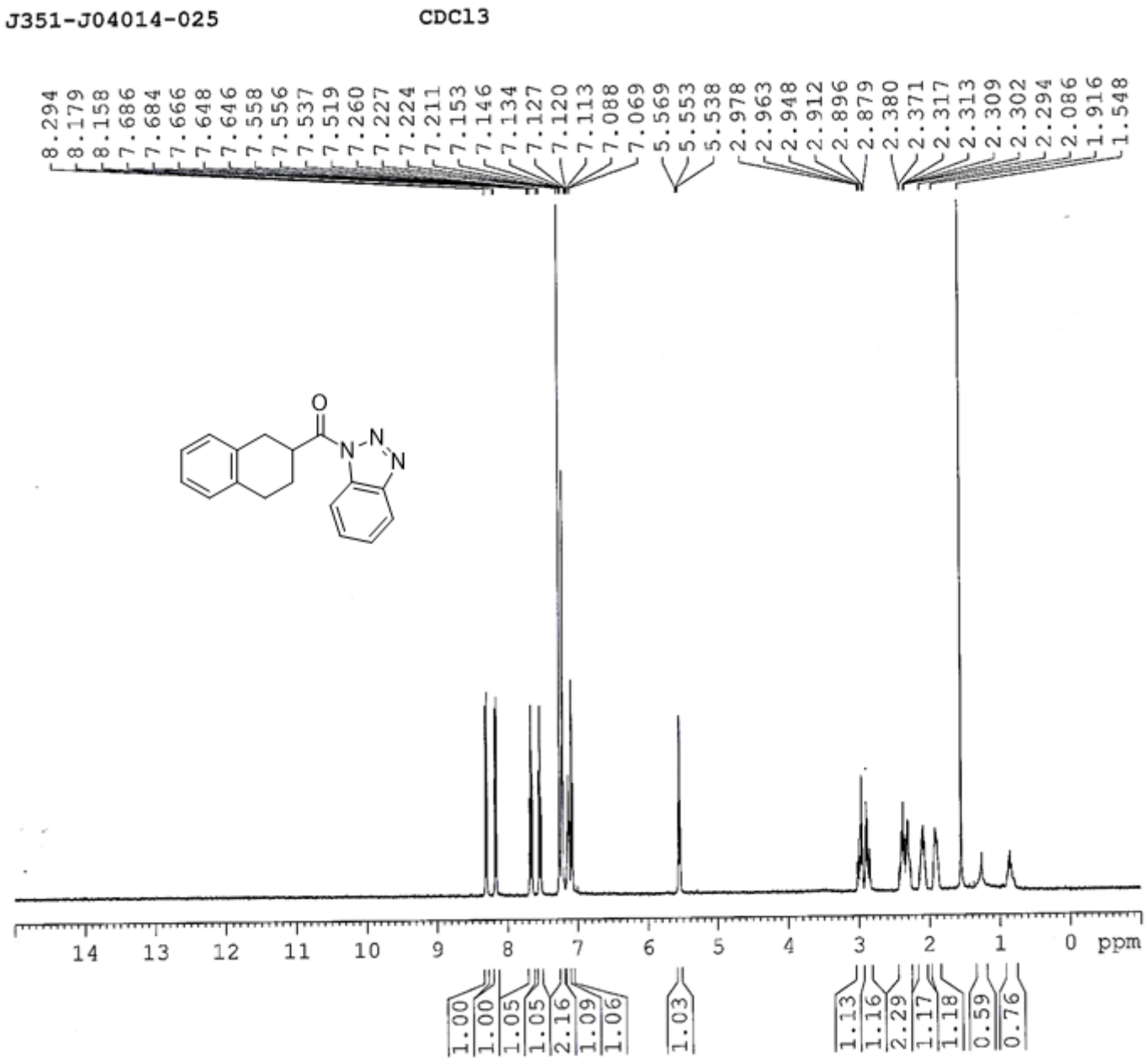
Spectra 40. ^{13}C NMR (100 MHz,$CDCl_3$) of compound **2t**



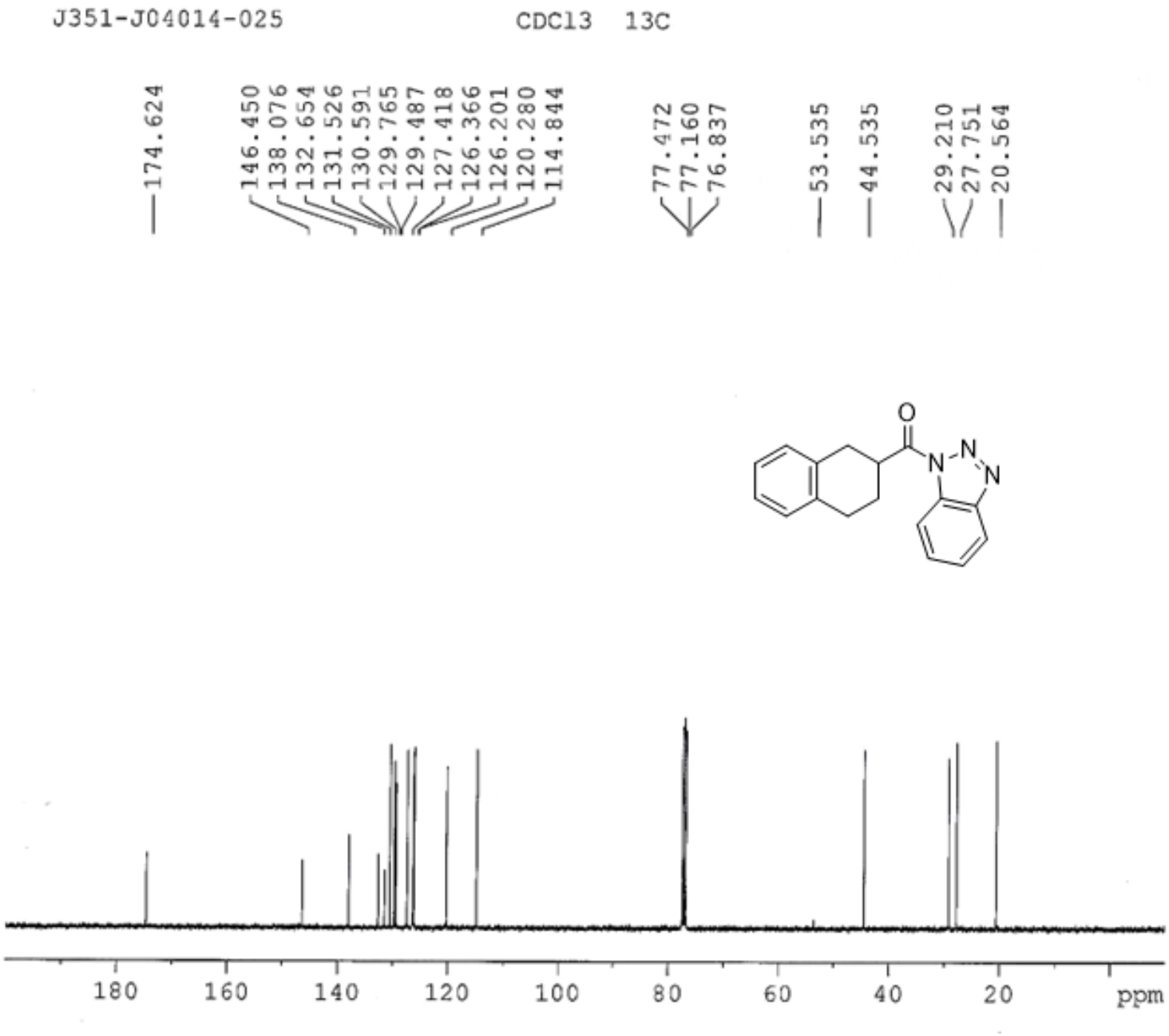
Spectra 41. ^{1}H NMR (400 MHz,$CDCl_3$) of compound **2u** [With the impurity of methanol (3.49 ppm), water (1.54 ppm) and grease (1.27, 0.86 ppm)]



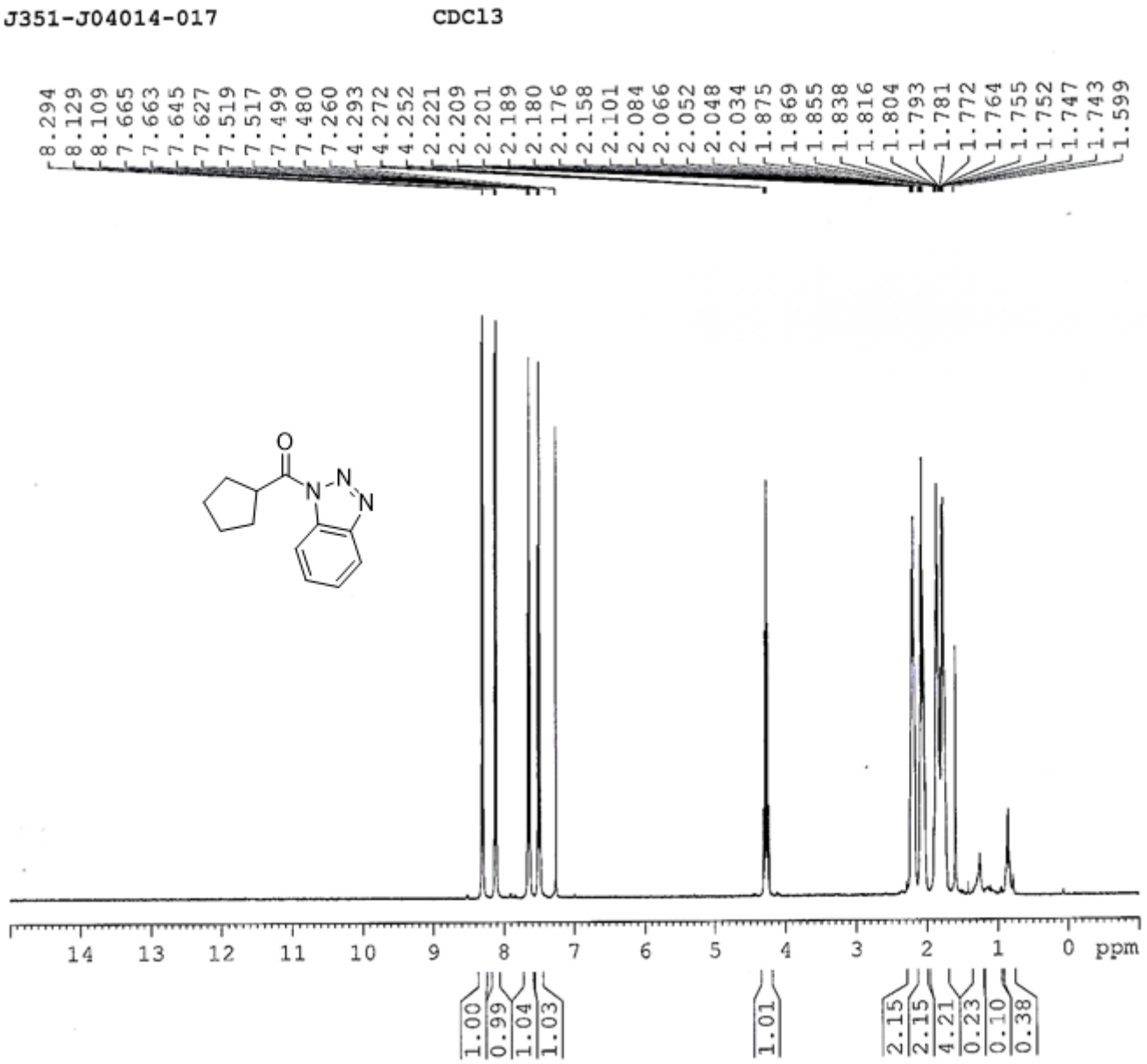
Spectra 42. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2u**



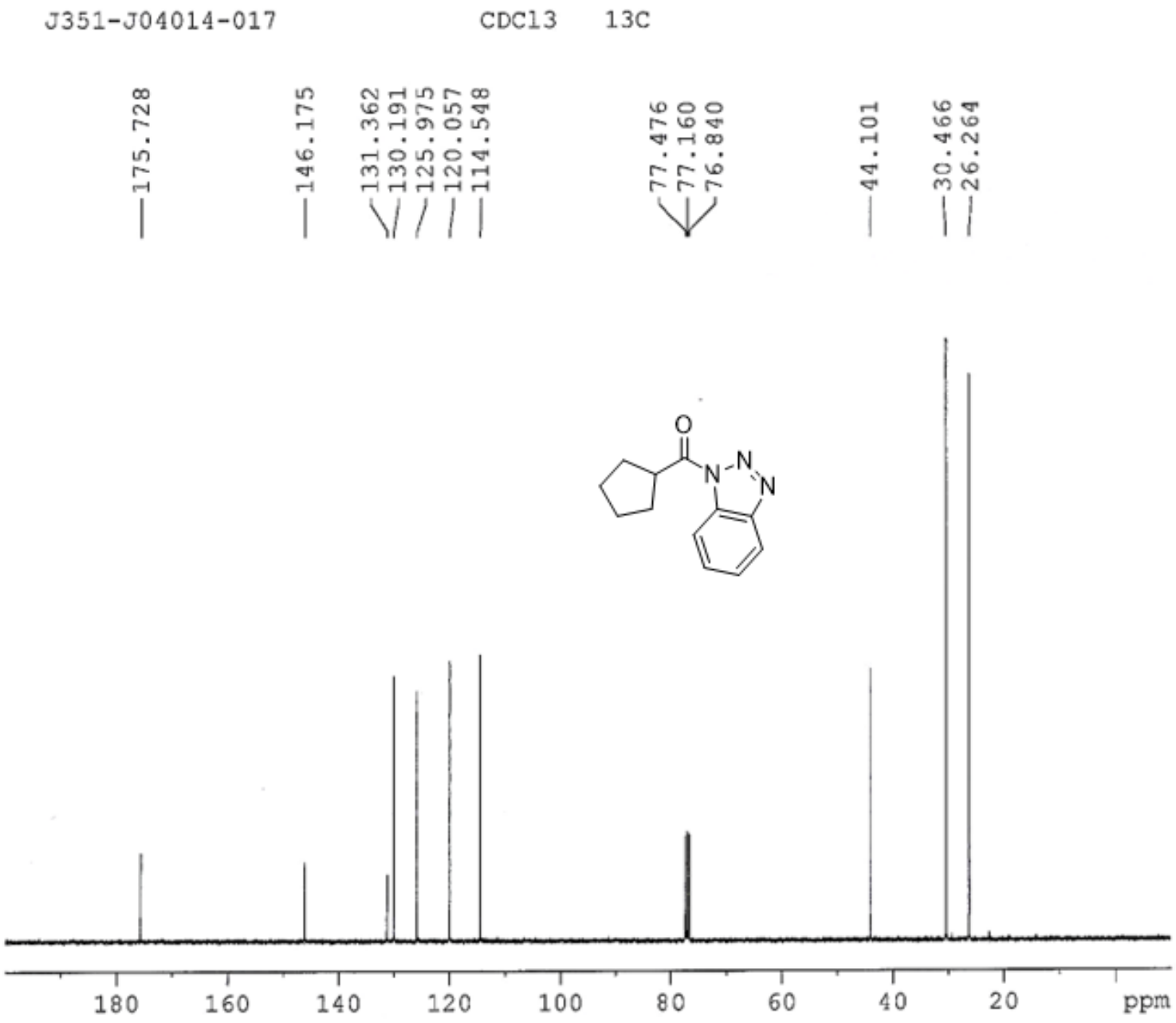
Spectra 43. ^{1}H NMR (400 MHz,$CDCl_3$) of compound **2v [**With the impurity of water (1.54 ppm) and grease (1.27, 0.86 ppm)]



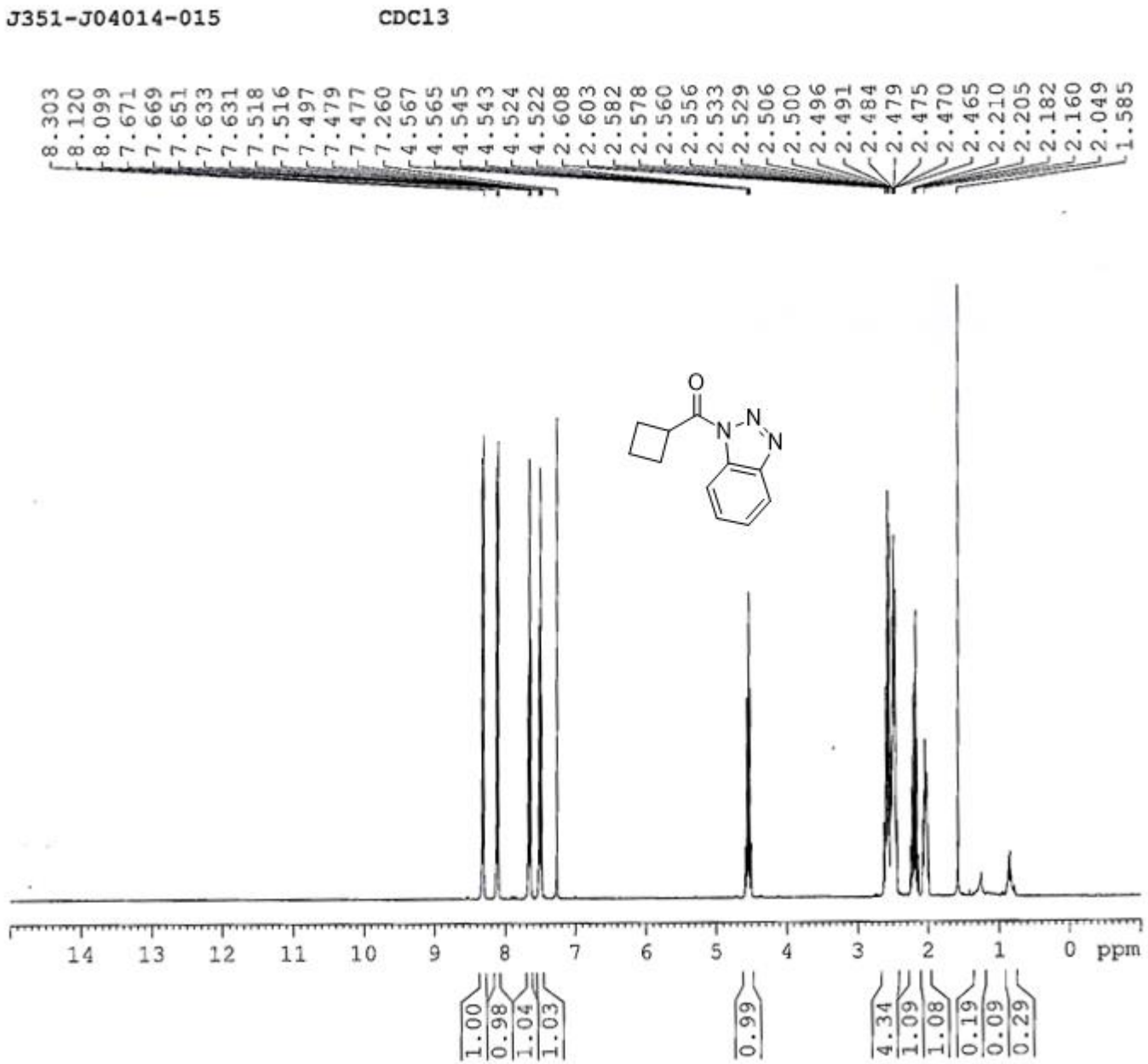
Spectra 44. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2v**



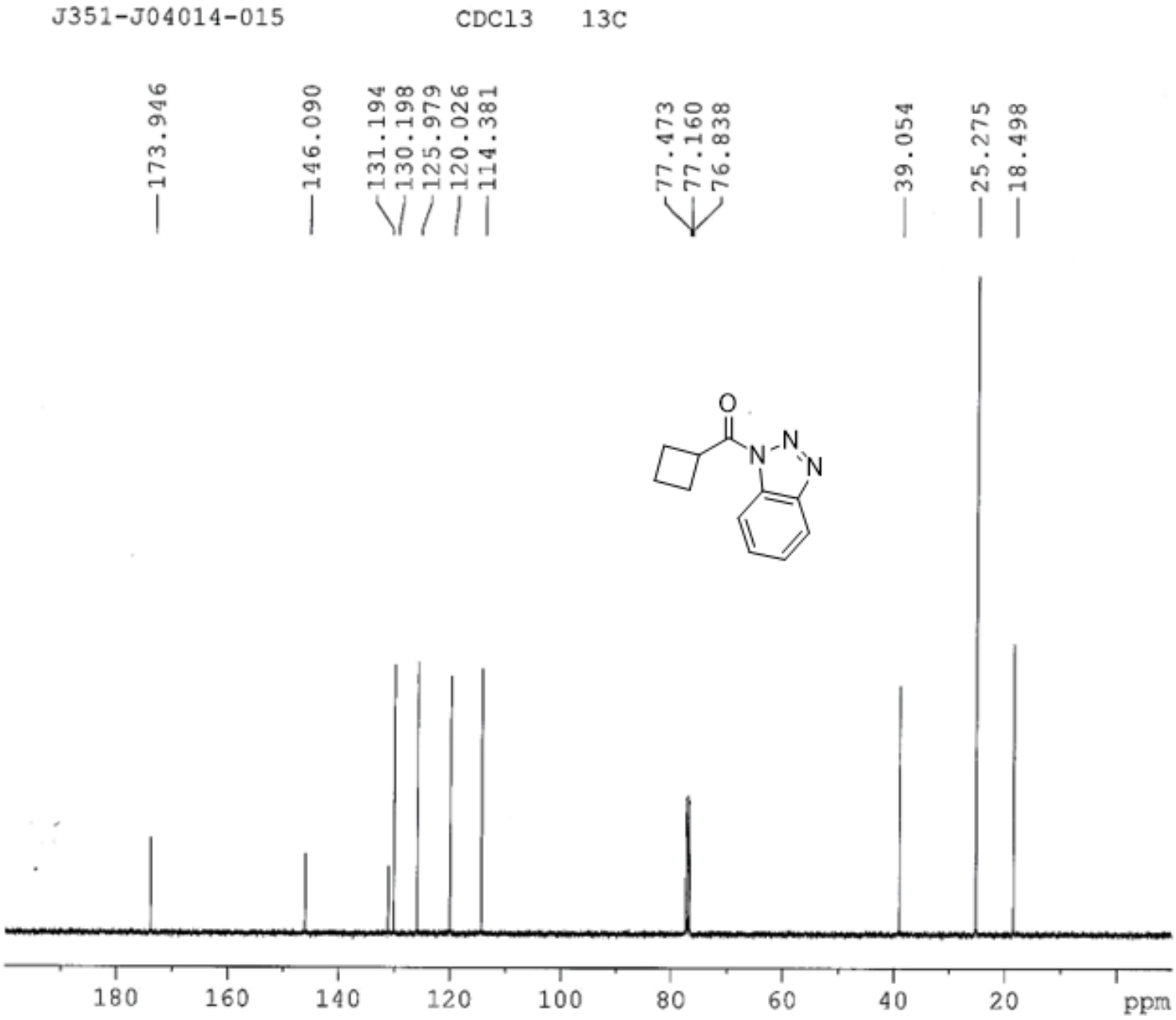
Spectra 45. ^{1}H NMR (400 MHz,$CDCl_3$) of compound **2w** [With the impurity of water (1.59 ppm) and grease (1.27, 0.86 ppm)]



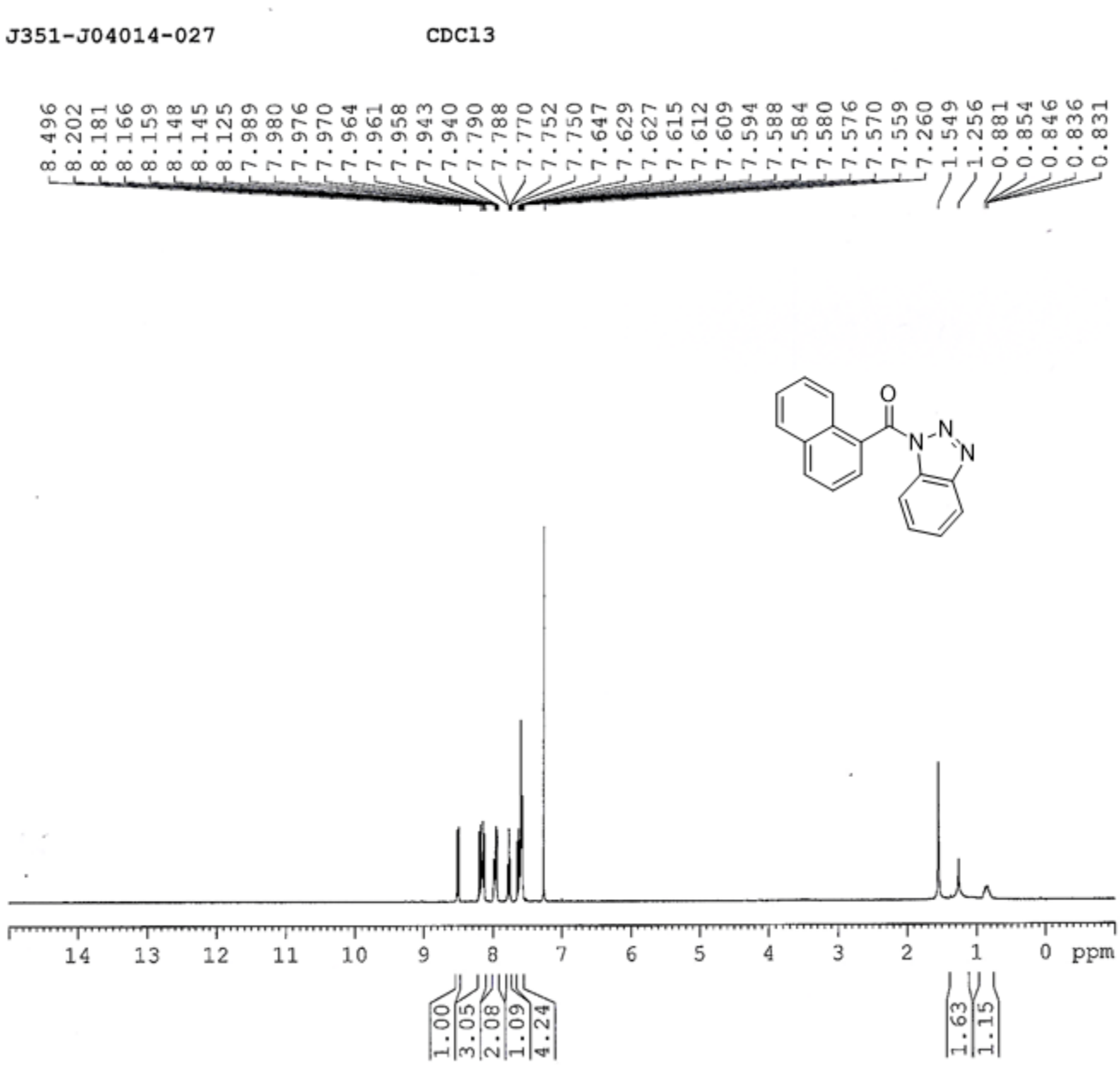
Spectra 46. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2w**



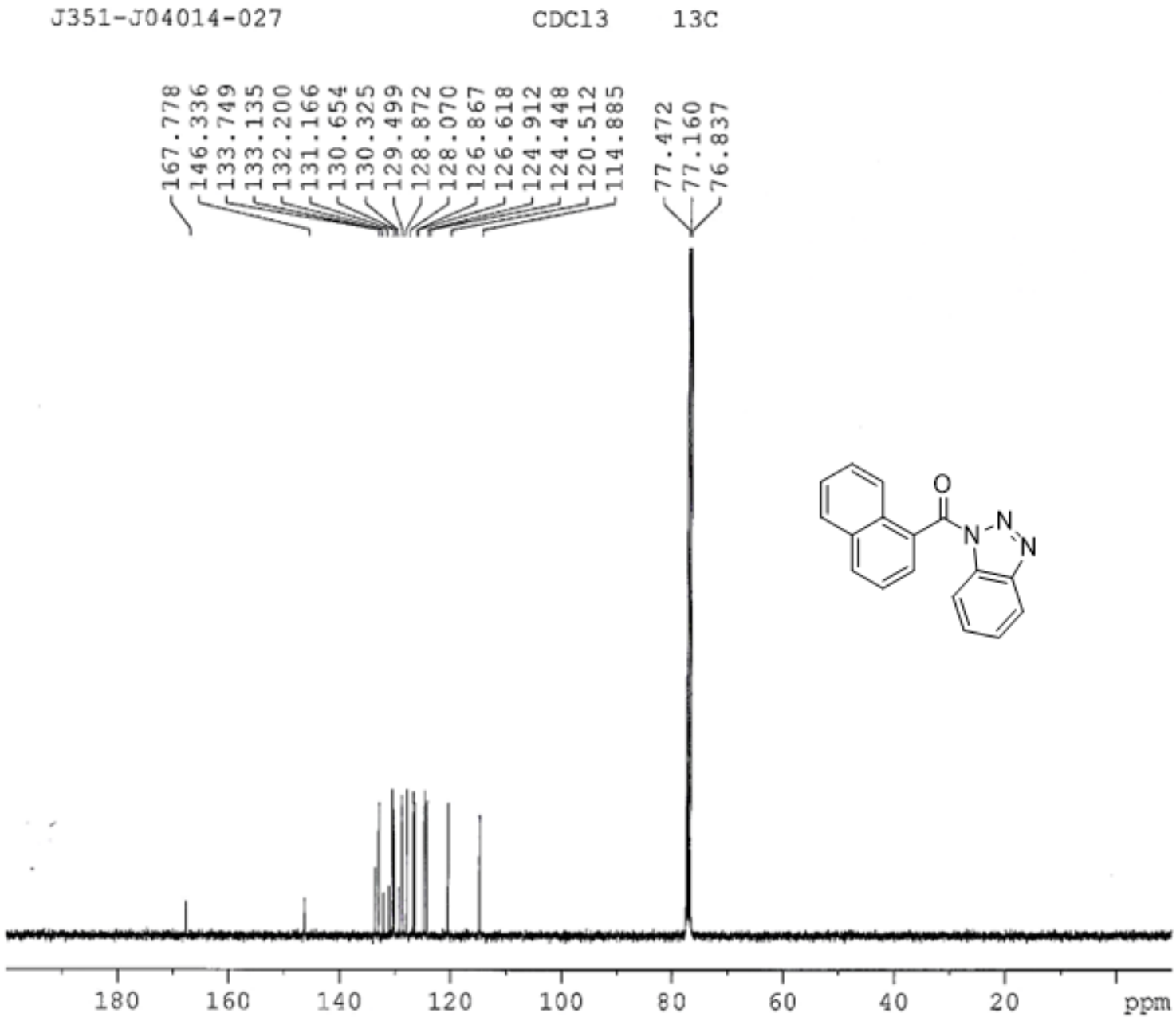
Spectra 47. ^{1}H NMR (400 MHzCDCl$_3$) of compound **2x [**With the impurity of water (1.58 ppm) and grease (1.27, 0.86 ppm)



Spectra 48. ^{13}C NMR (100 MHz,$CDCl_3$) of compound **2x**



Spectra 49. ^{1}H NMR (400 MHz,$CDCl_3$) of compound **2y [**With the impurity of water (1.54 ppm) and grease(1.26, 0.86 ppm)



Spectra 50. ^{13}C NMR (100 MHz, $CDCl_3$) of compound **2y**