

Supporting Information

Synthesis, Fungicidal Activity and Plant Protective Properties of 1,2,3-Thiadiazole and Isothiazole-Based *N*-acyl-*N*-arylaninates

Tatiana A. Kalinina ^{1,*}, Valeriya I. Balandina ¹, Konstantin L. Obydenov ¹, Pavel A. Slepukhin ², Zhijin Fan ³, Vasiliy A. Bakulev ¹ and Tatiana V. Glukhareva ¹

¹ Ural Federal University named after the first President of Russia B.N. Yeltsin, 19 Mira Street, 620002 Ekaterinburg, Russia

² Postovsky Institute of Organic Synthesis, Ural Branch of Russian Academy of Sciences, 22/20 S. Kovalevskaya Street, 620108 Ekaterinburg, Russia

³ State Key Laboratory of Elemento-Organic Chemistry, College of Chemistry, Nankai University, No. 94, Weijin Road, 300071 Tianjin, China

* Correspondence: t.a.kalinina@urfu.ru; v.a.bakulev@urfu.ru; Tel.: +7-3433754818

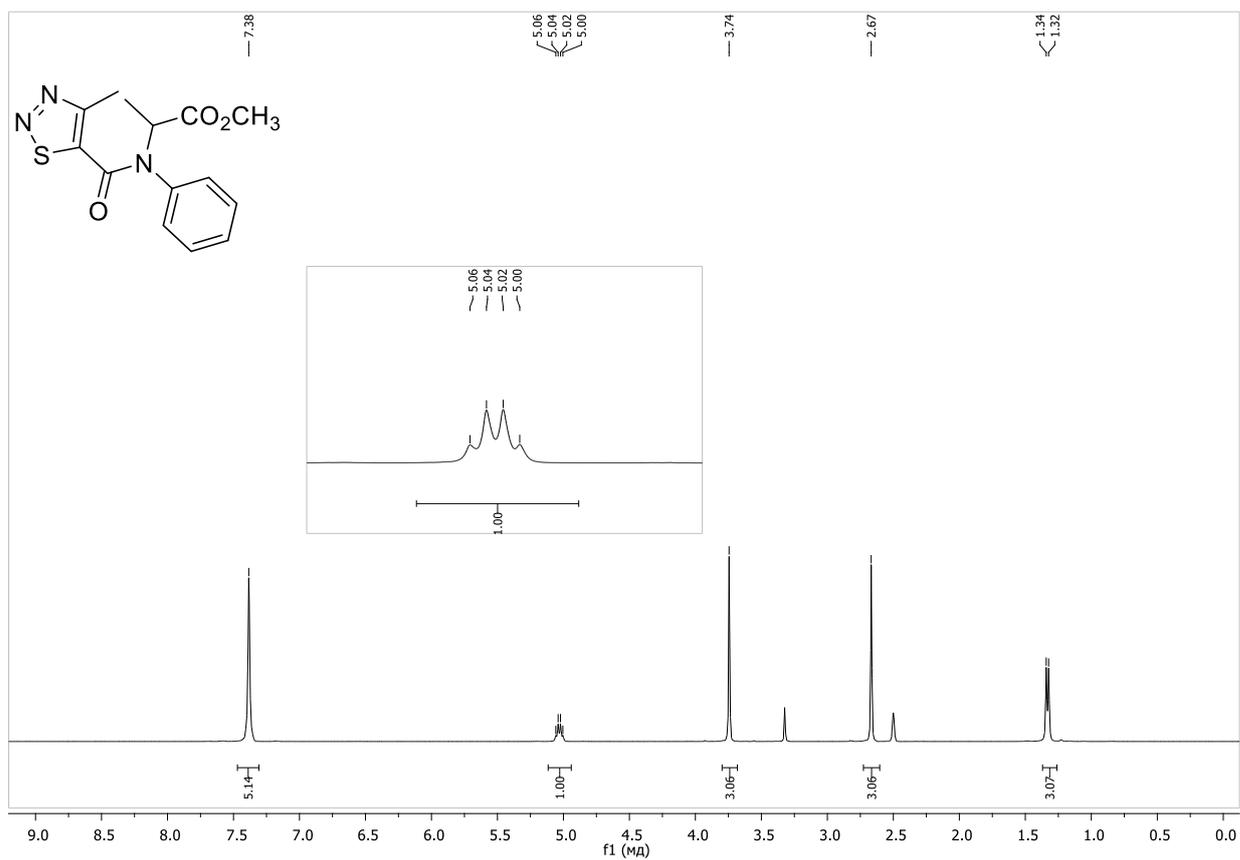


Figure S1. ¹H NMR of compound 1a

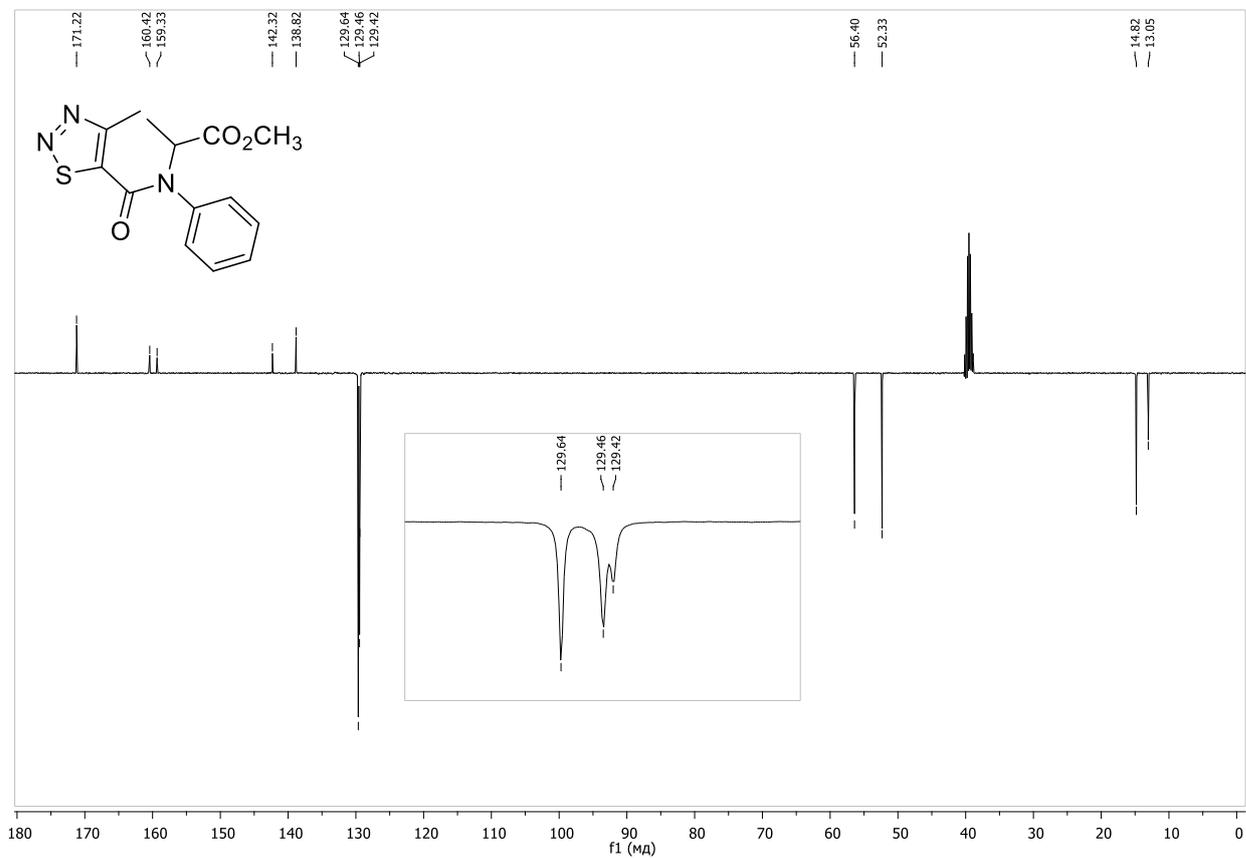


Figure S2. ¹³C NMR of compound 1a

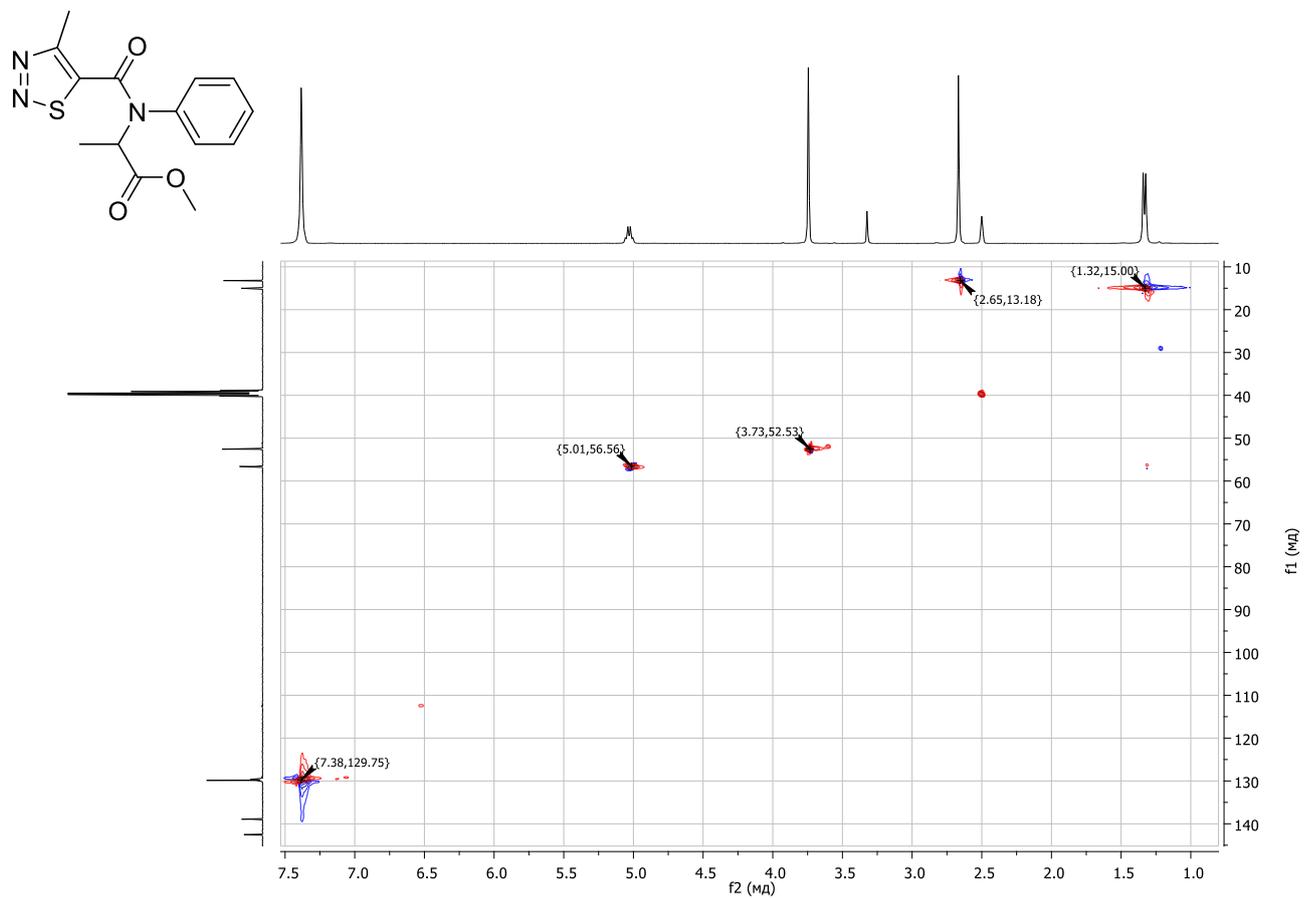


Figure S3. Part of the HSQC ^1H - ^{13}C NMR spectrum of **1a**

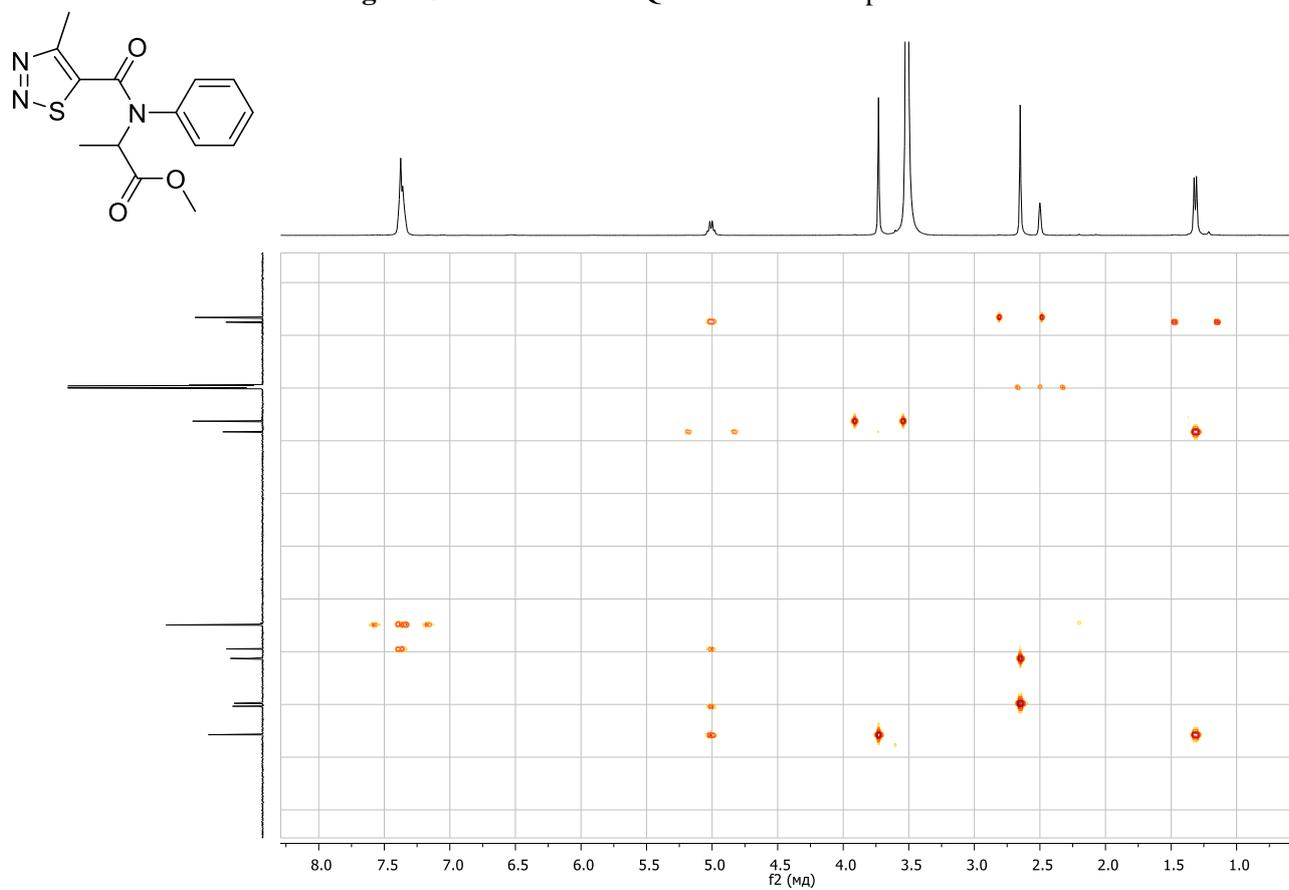


Figure S4. The HMBC ^1H - ^{13}C NMR spectrum of **1a**

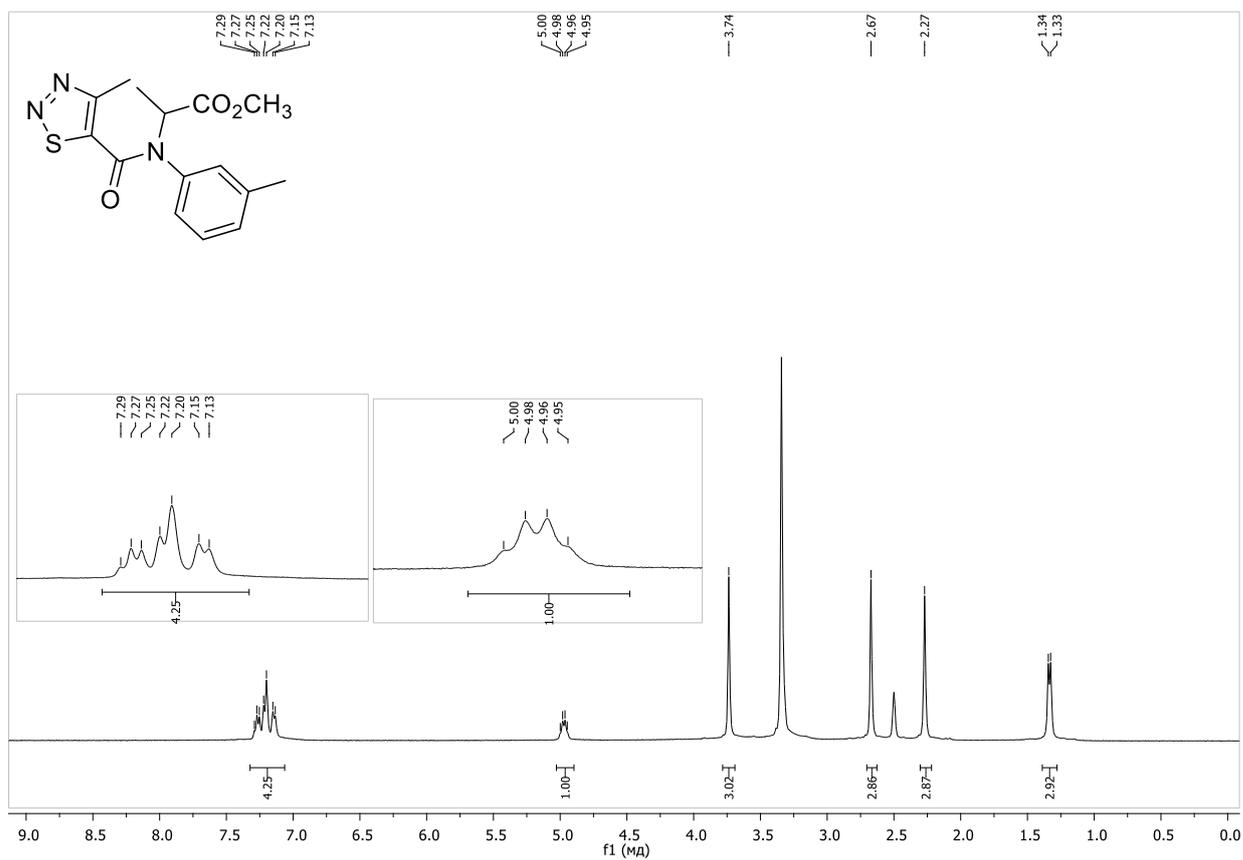


Figure S5. ¹H NMR of compound 1b

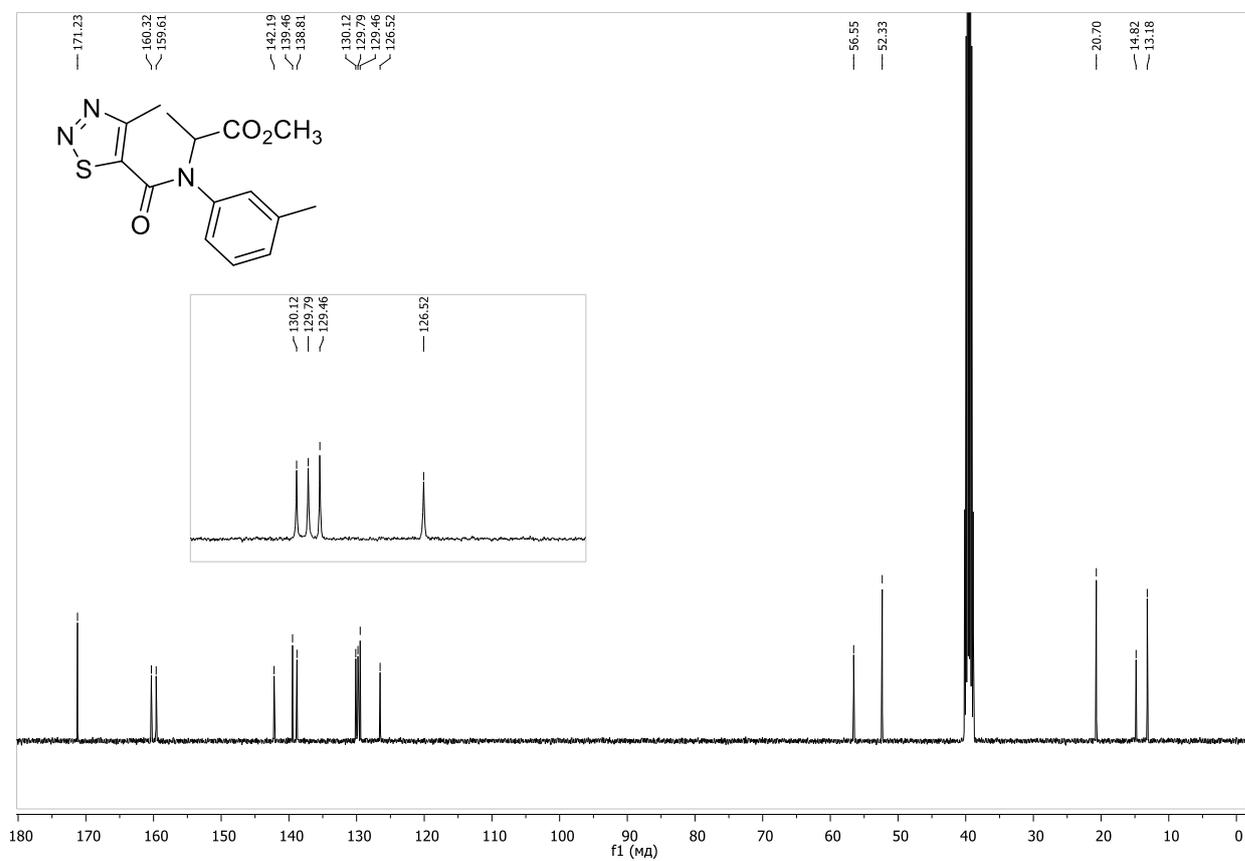


Figure S6. ¹³C NMR of compound 1b

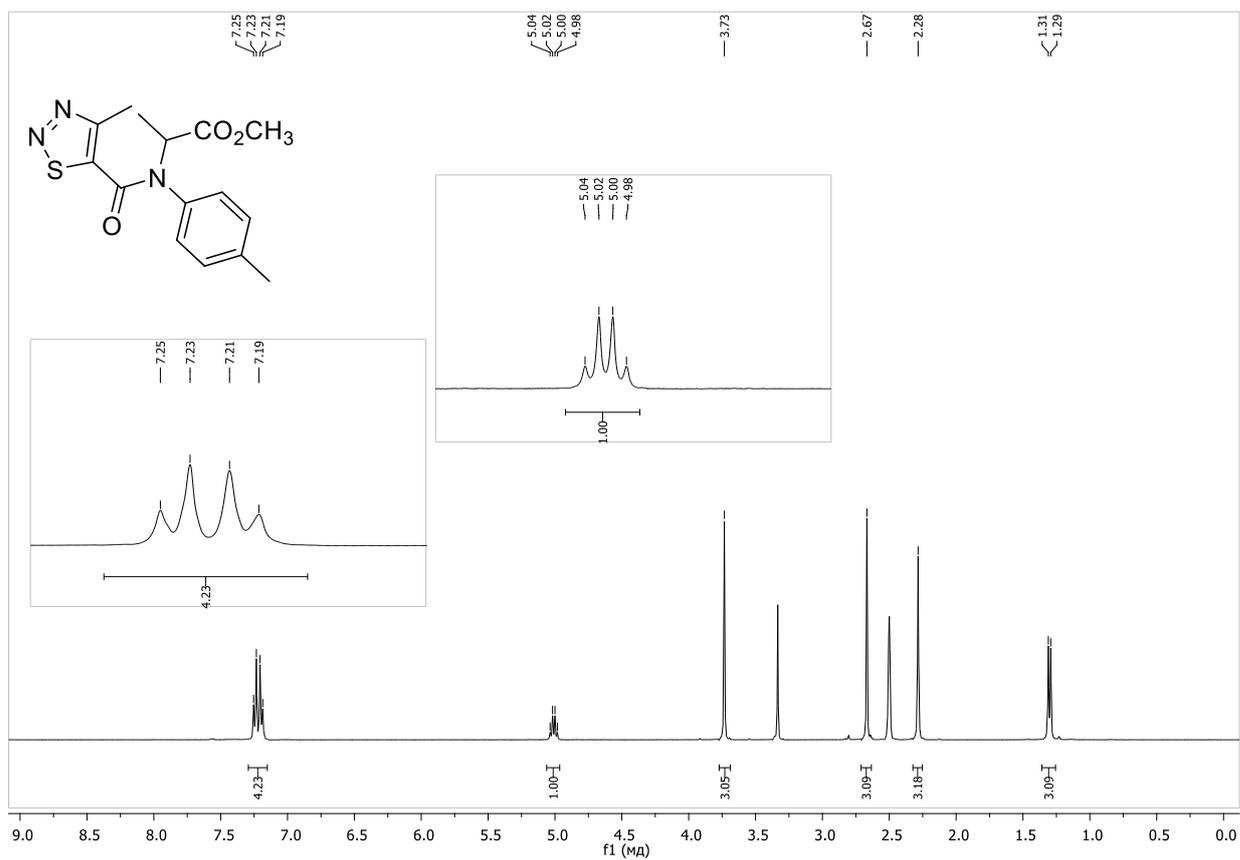


Figure S7. ¹H NMR of compound **1c**

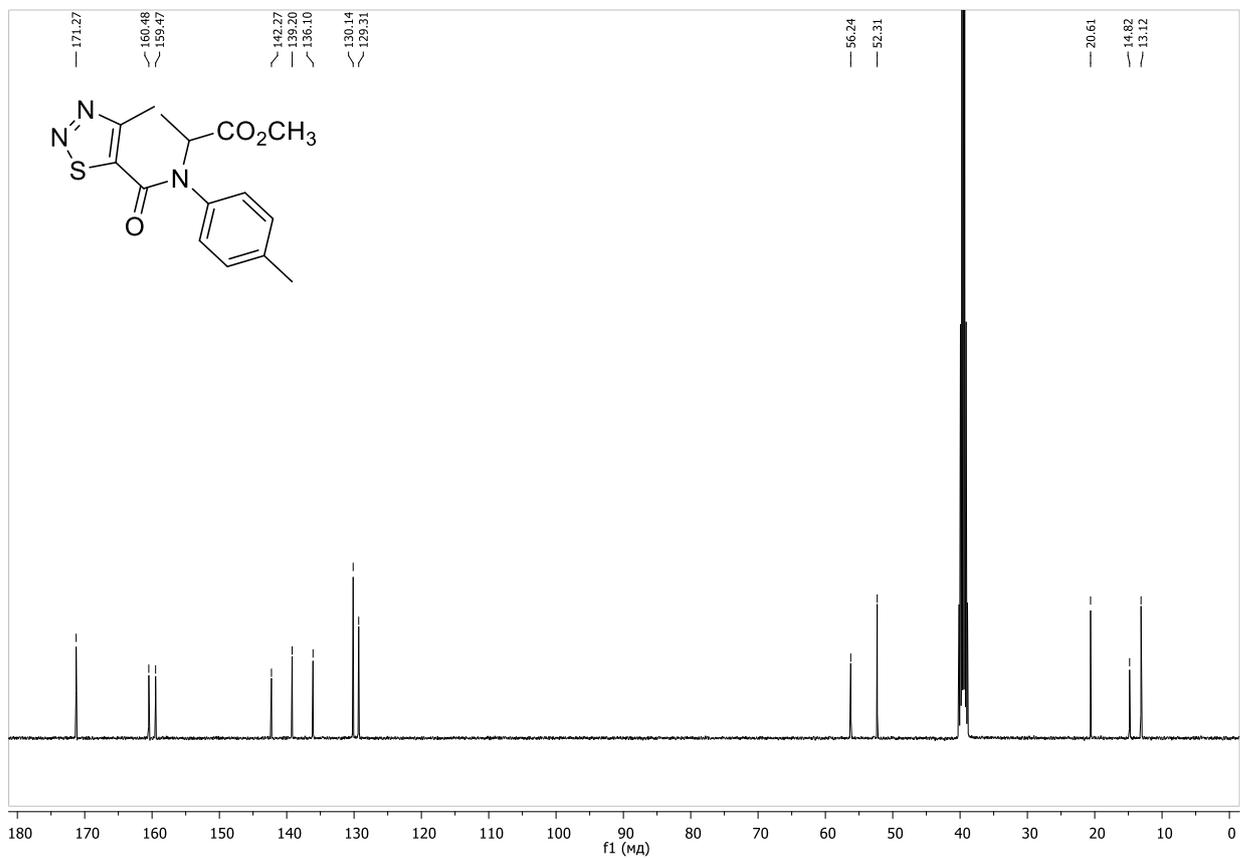


Figure S8. ¹³C NMR of compound **1c**

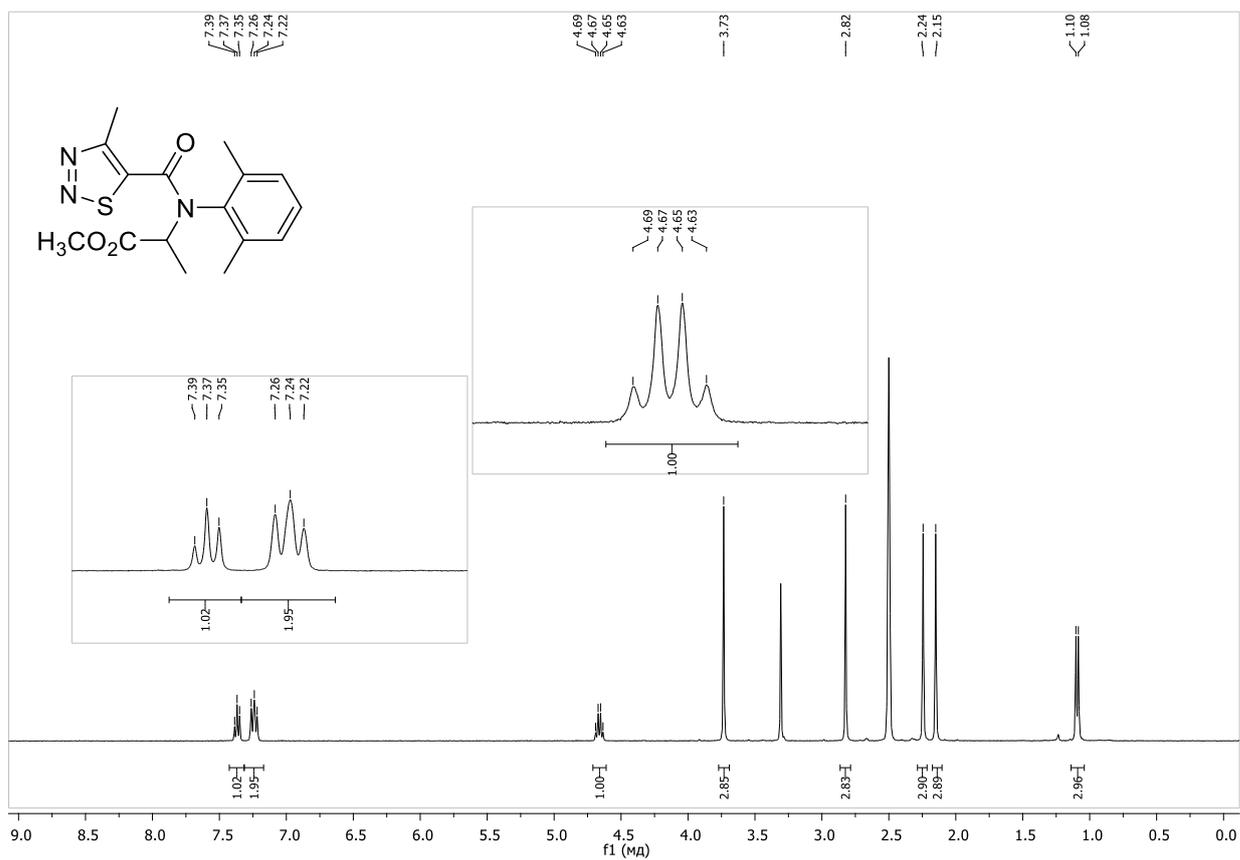


Figure S9. ¹H NMR of compound **1d**

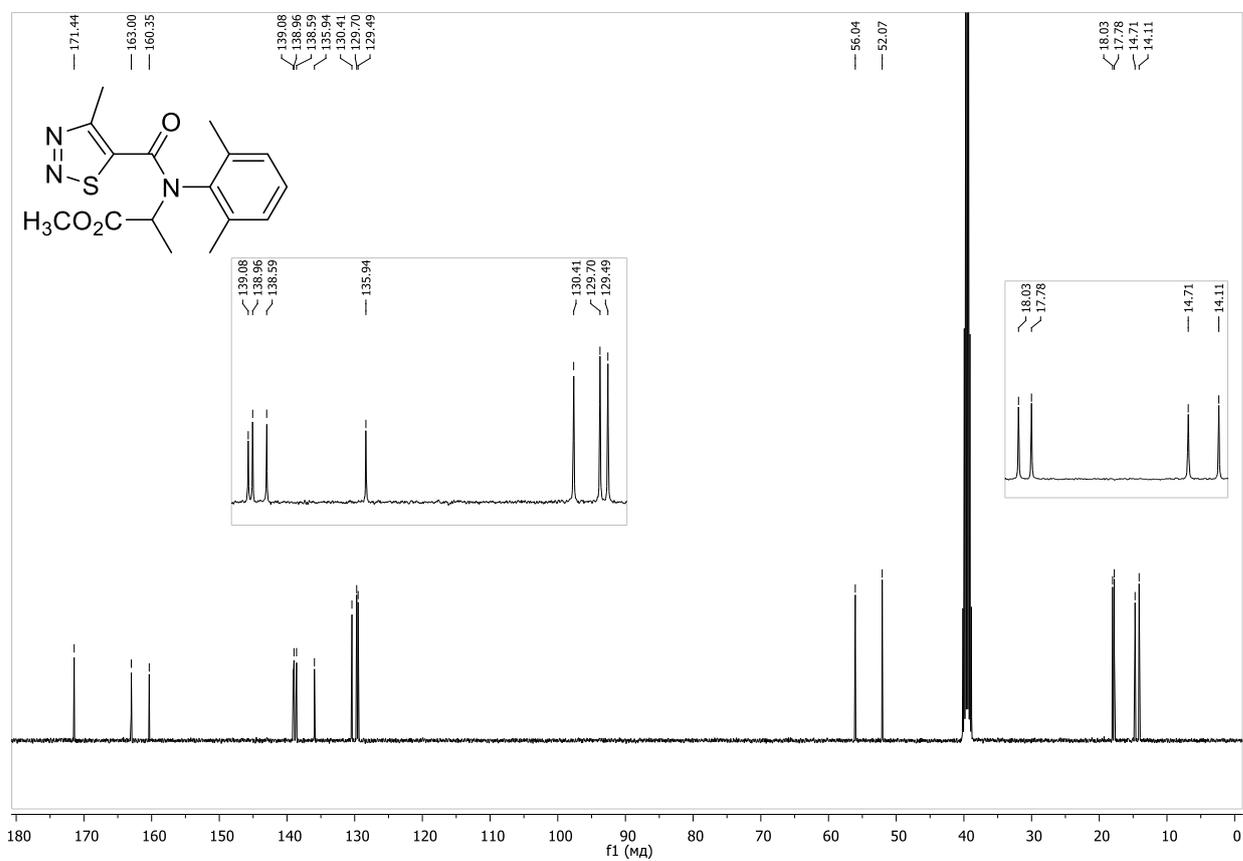


Figure S10. ¹³C NMR of compound **1d**

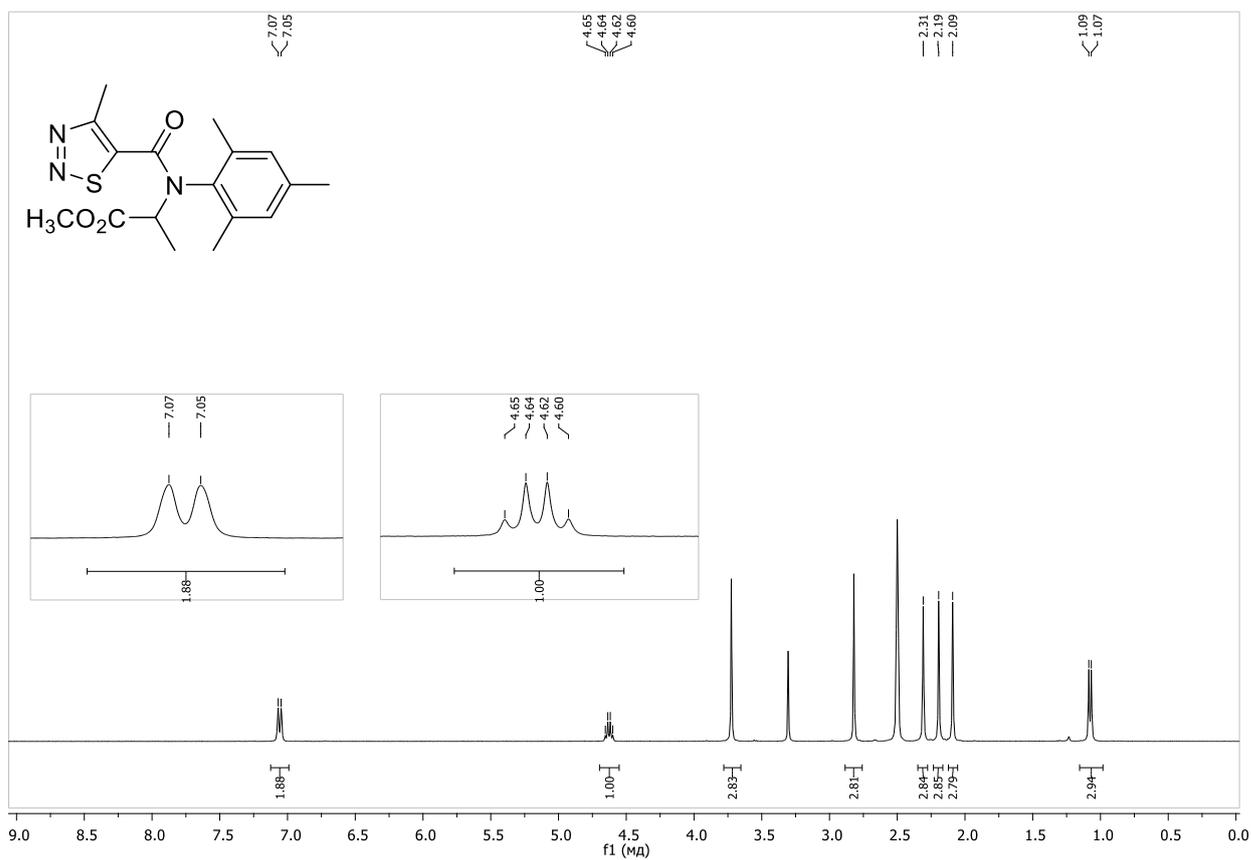


Figure S11. $^1\text{H NMR}$ of compound **1e**

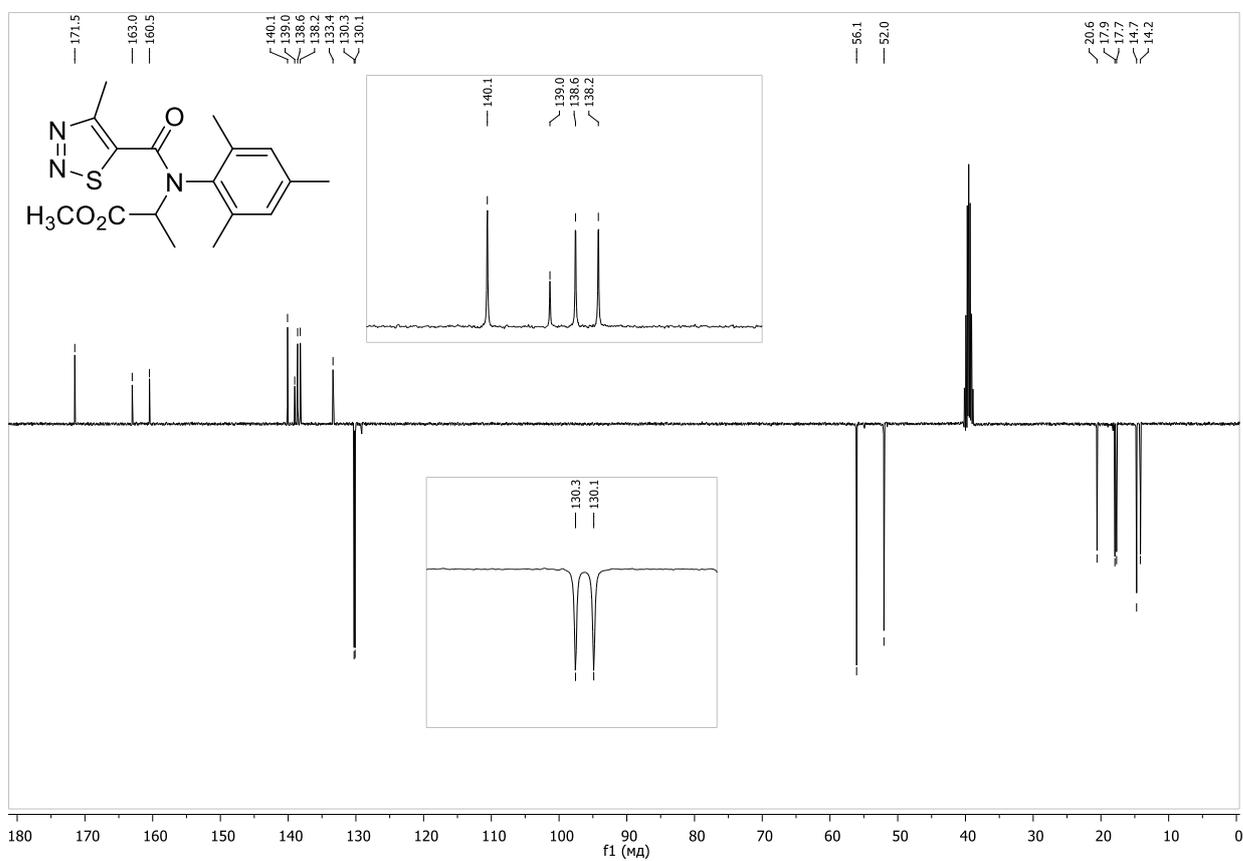


Figure S12. $^{13}\text{C NMR}$ of compound **1e**

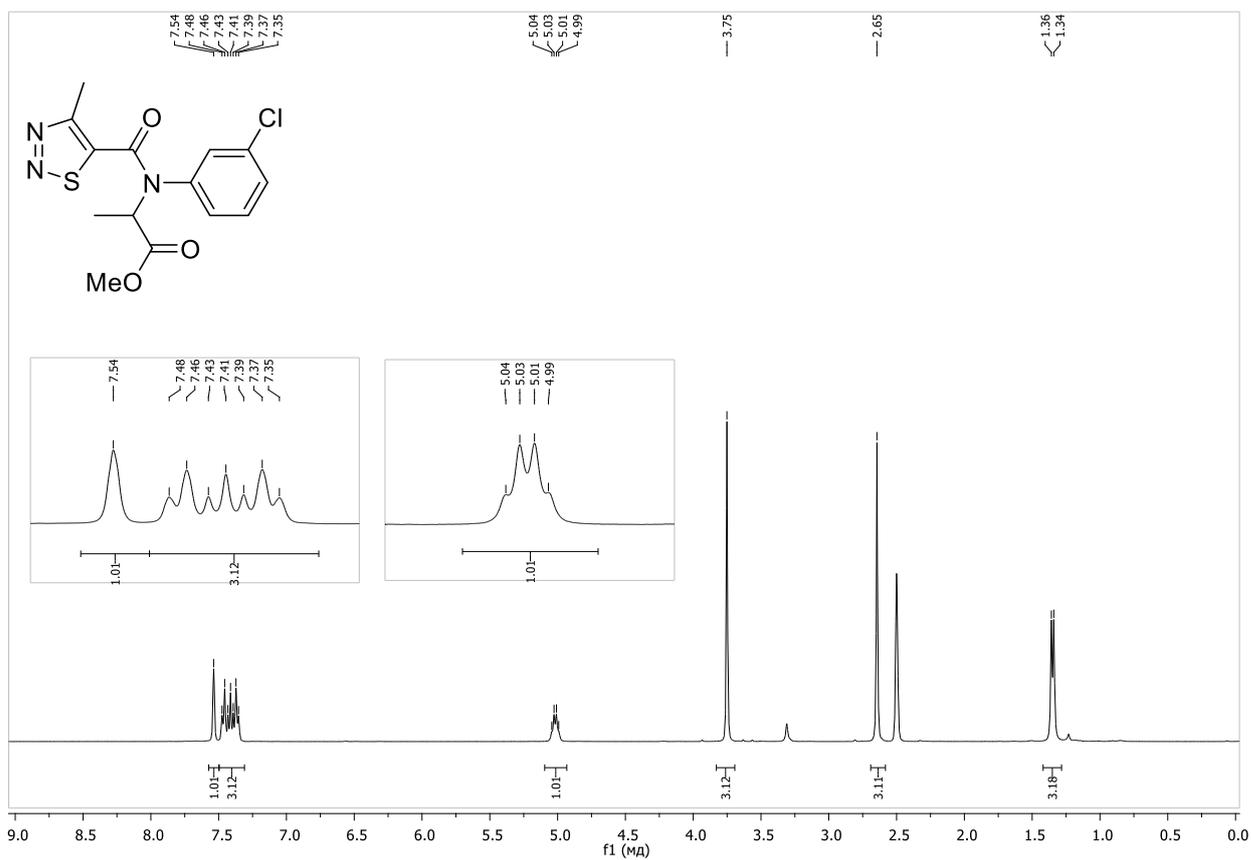


Figure S13. ^1H NMR of compound **1f**

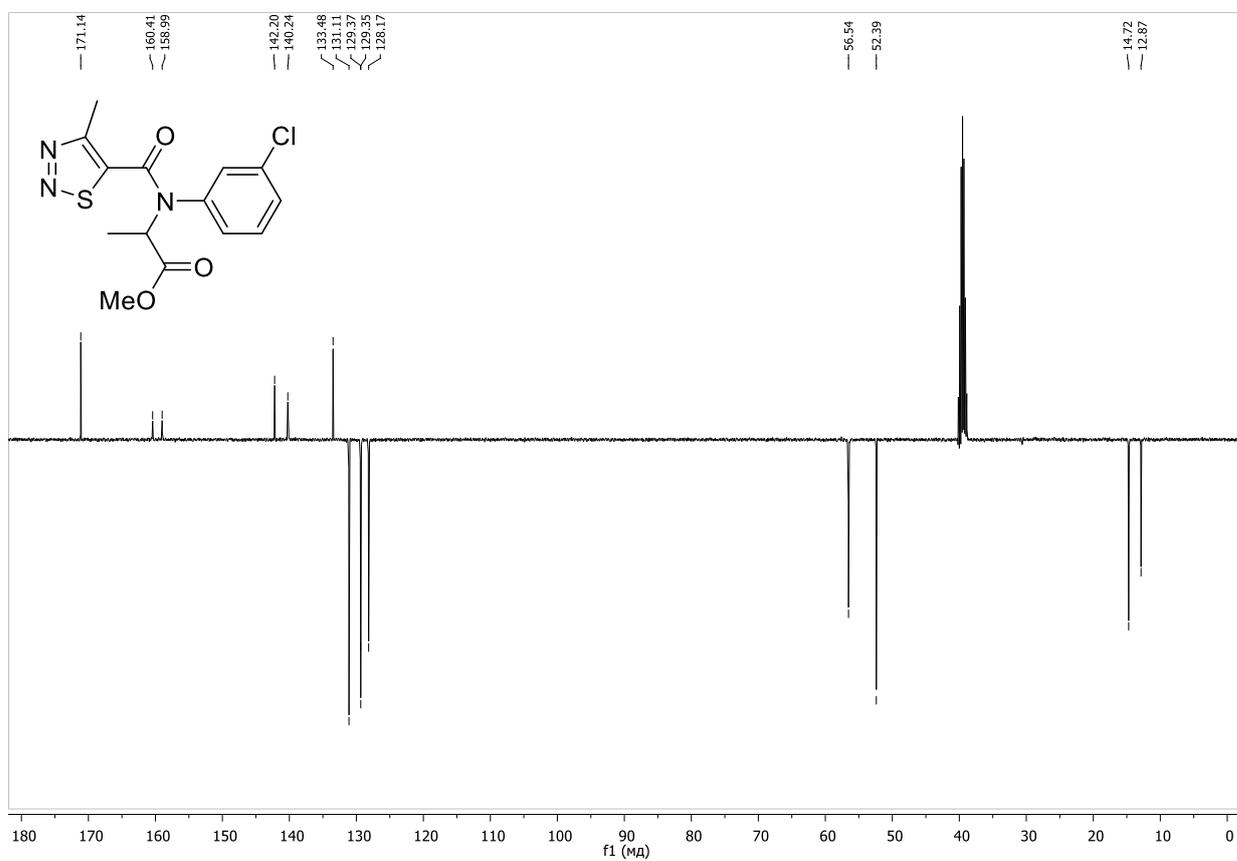


Figure S14. ^{13}C NMR of compound **1f**

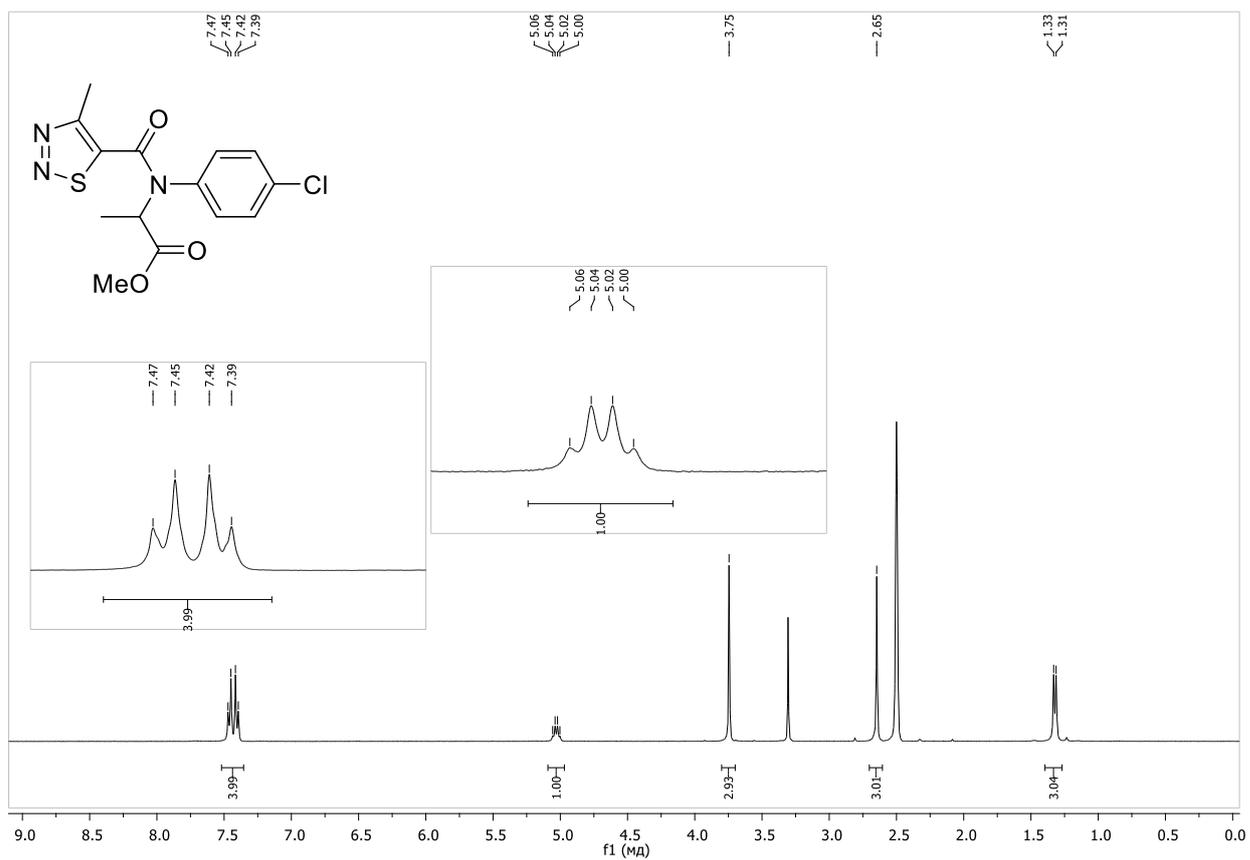


Figure S15. $^1\text{H NMR}$ of compound **1g**

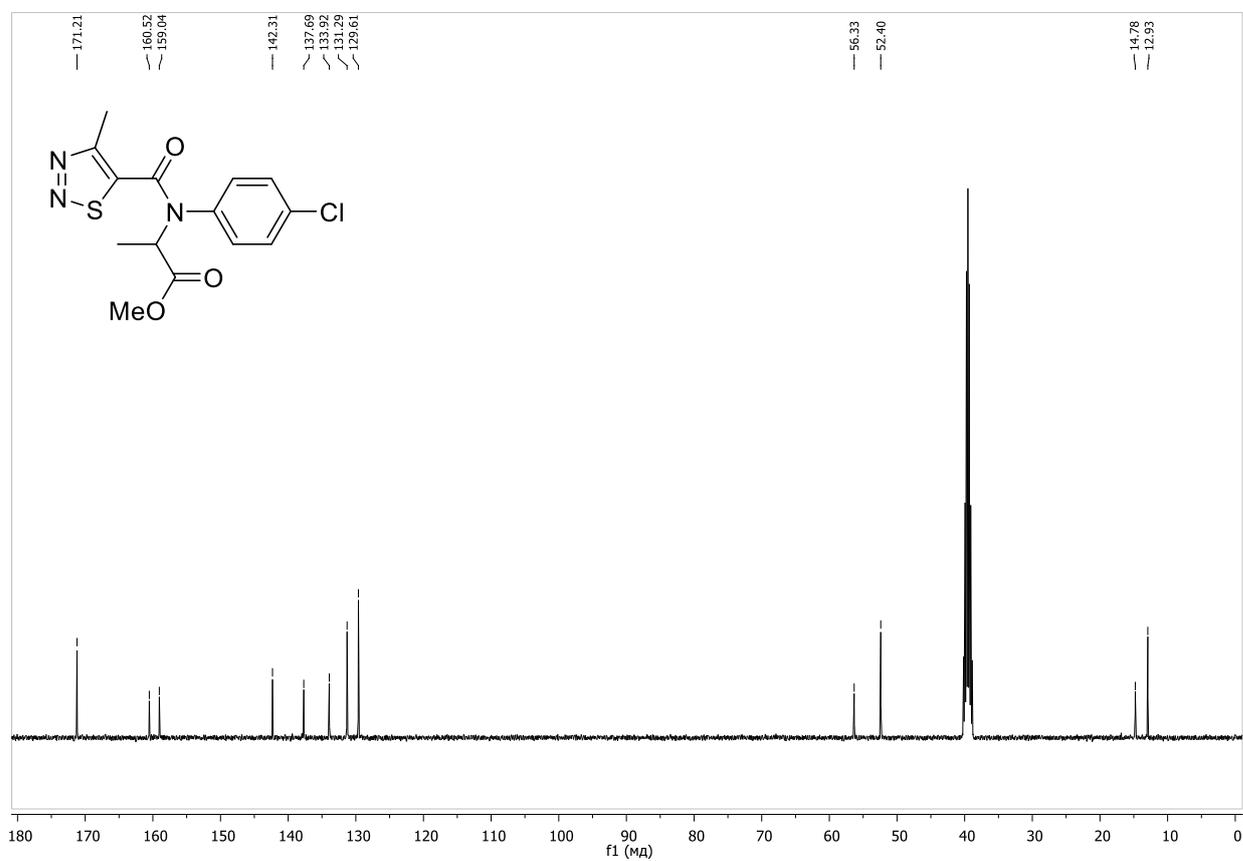


Figure S16. $^{13}\text{C NMR}$ of compound **1f**

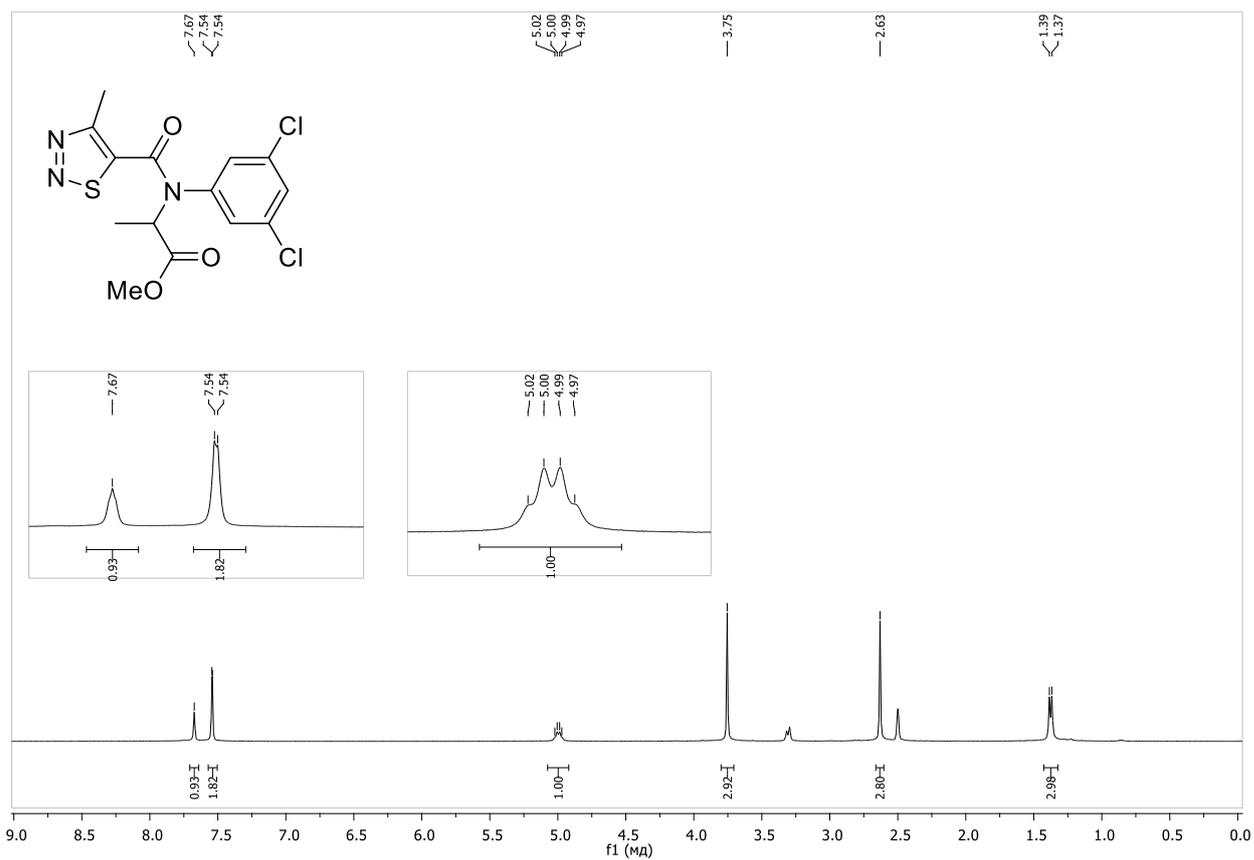


Figure S17. ^1H NMR of compound **1h**

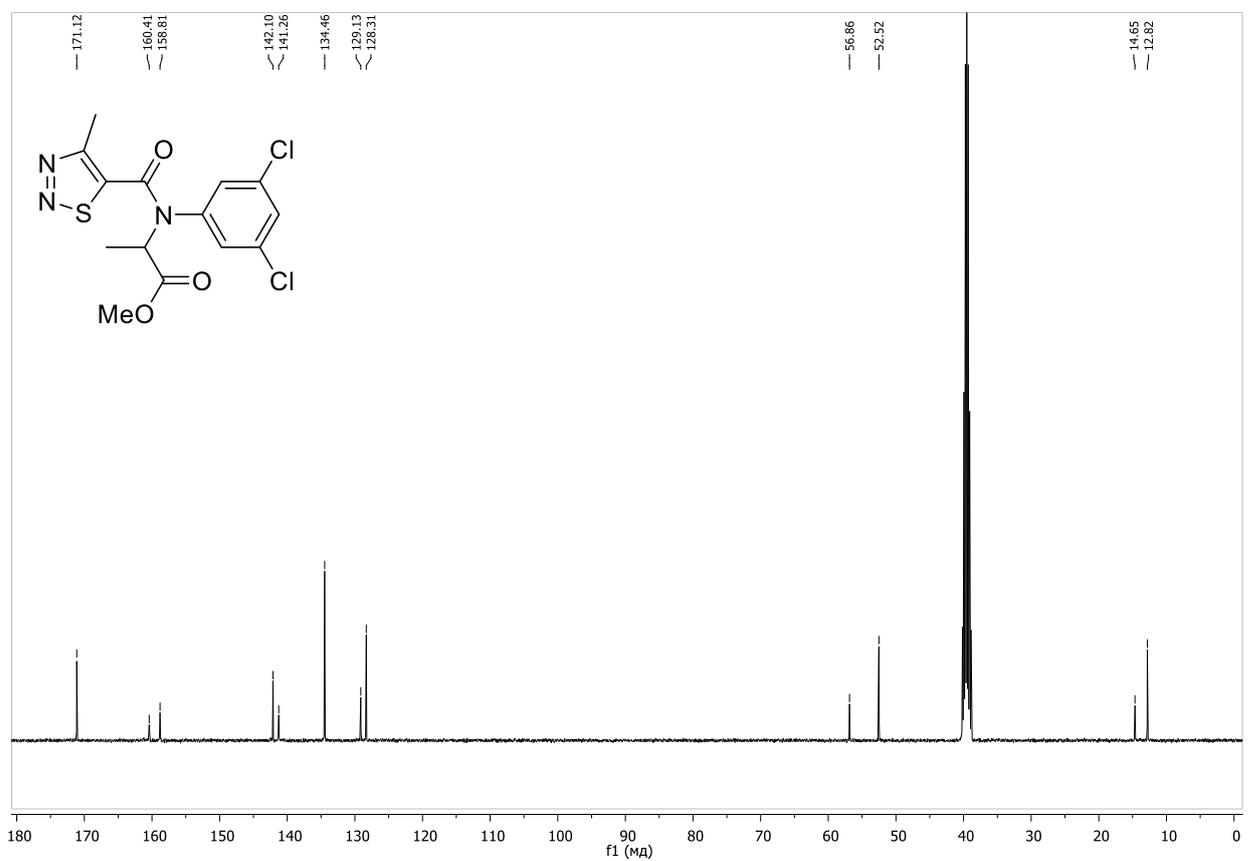


Figure S18. ^{13}C NMR of compound **1h**

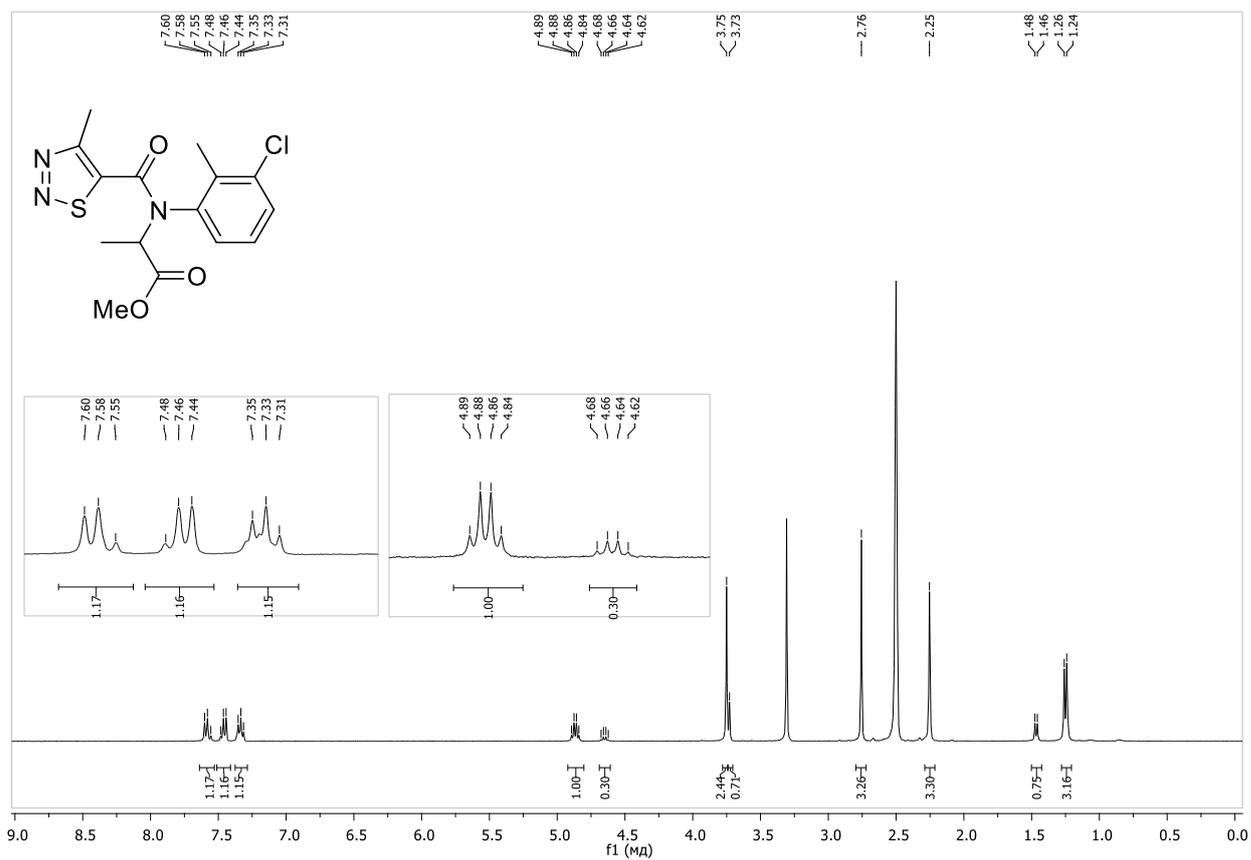


Figure S19. ¹H NMR of compound **1i**

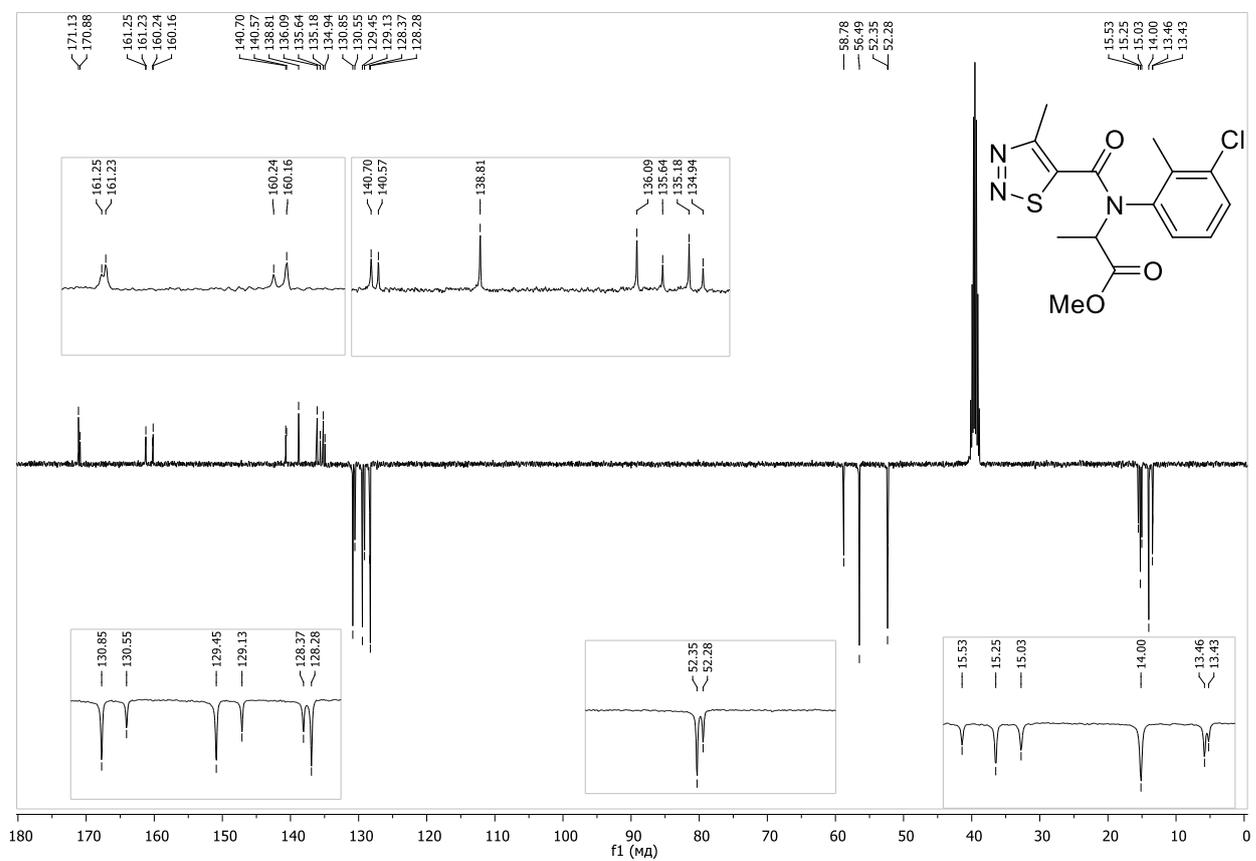


Figure S20. ¹³C NMR of compound **1i**

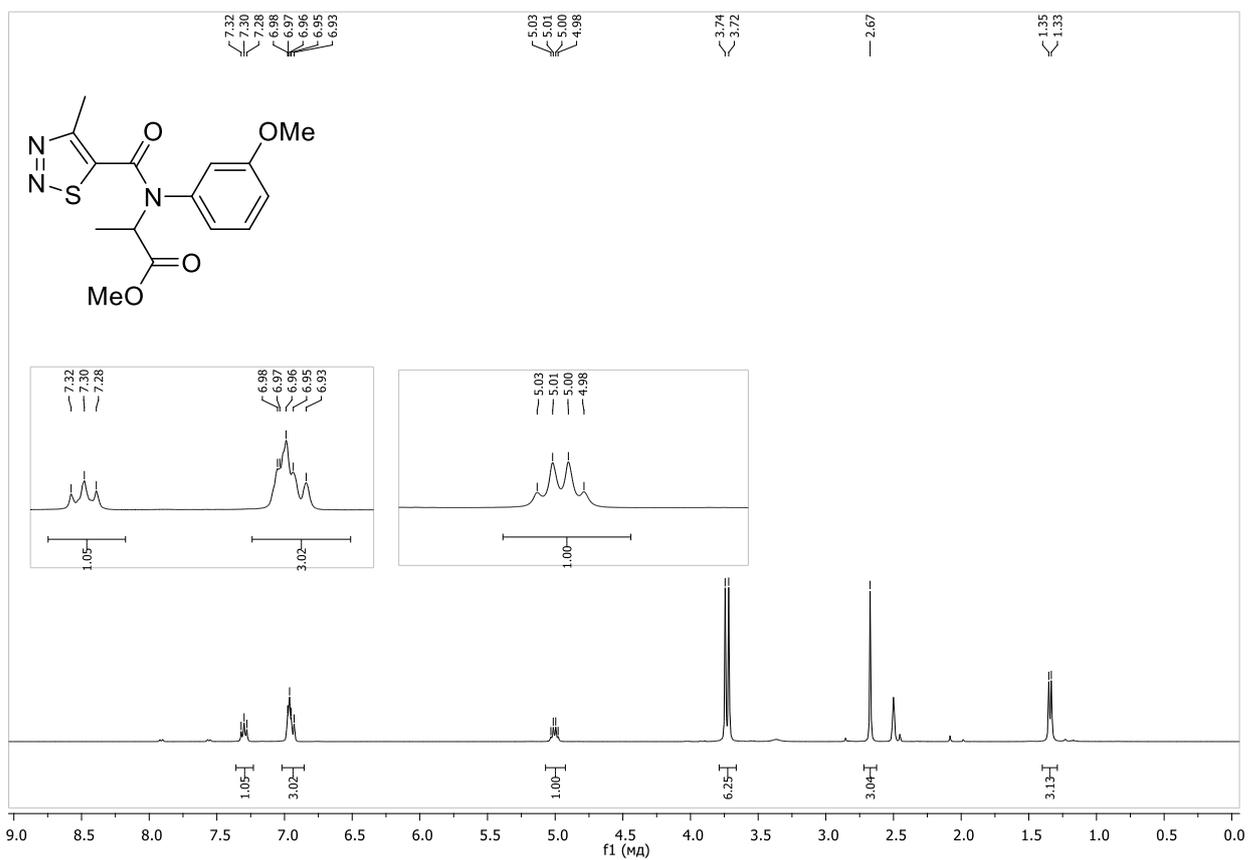


Figure S21. ¹H NMR of compound **1j**

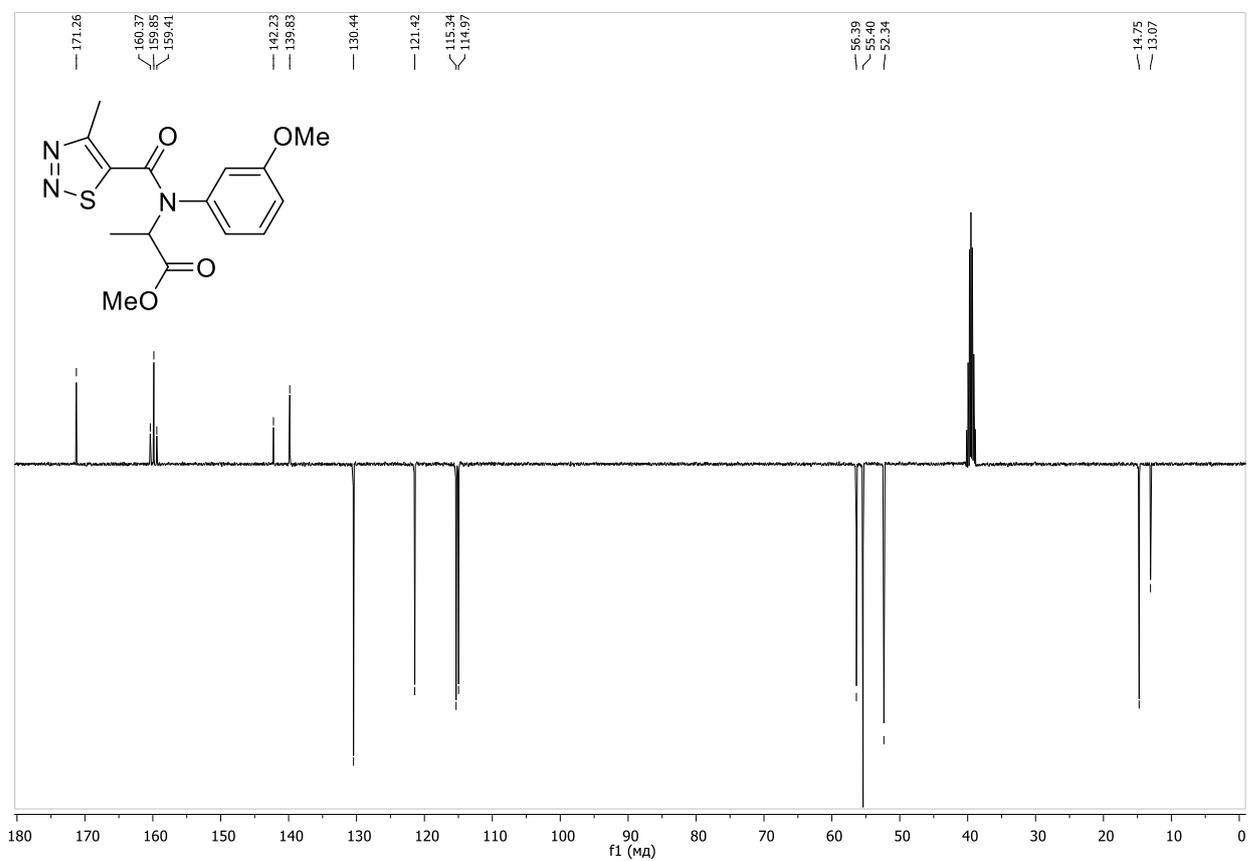


Figure S22. ¹³C NMR of compound **1j**

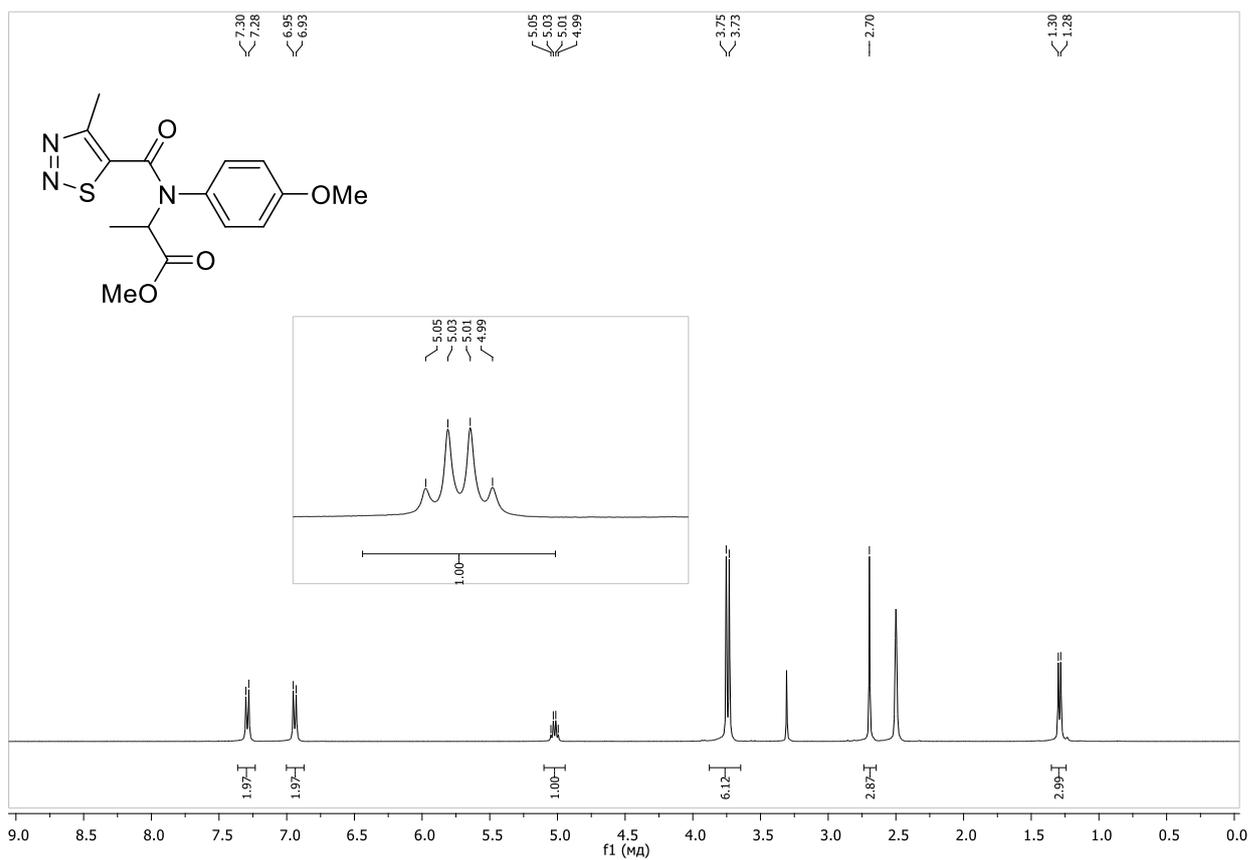


Figure S23. ¹H NMR of compound **1k**

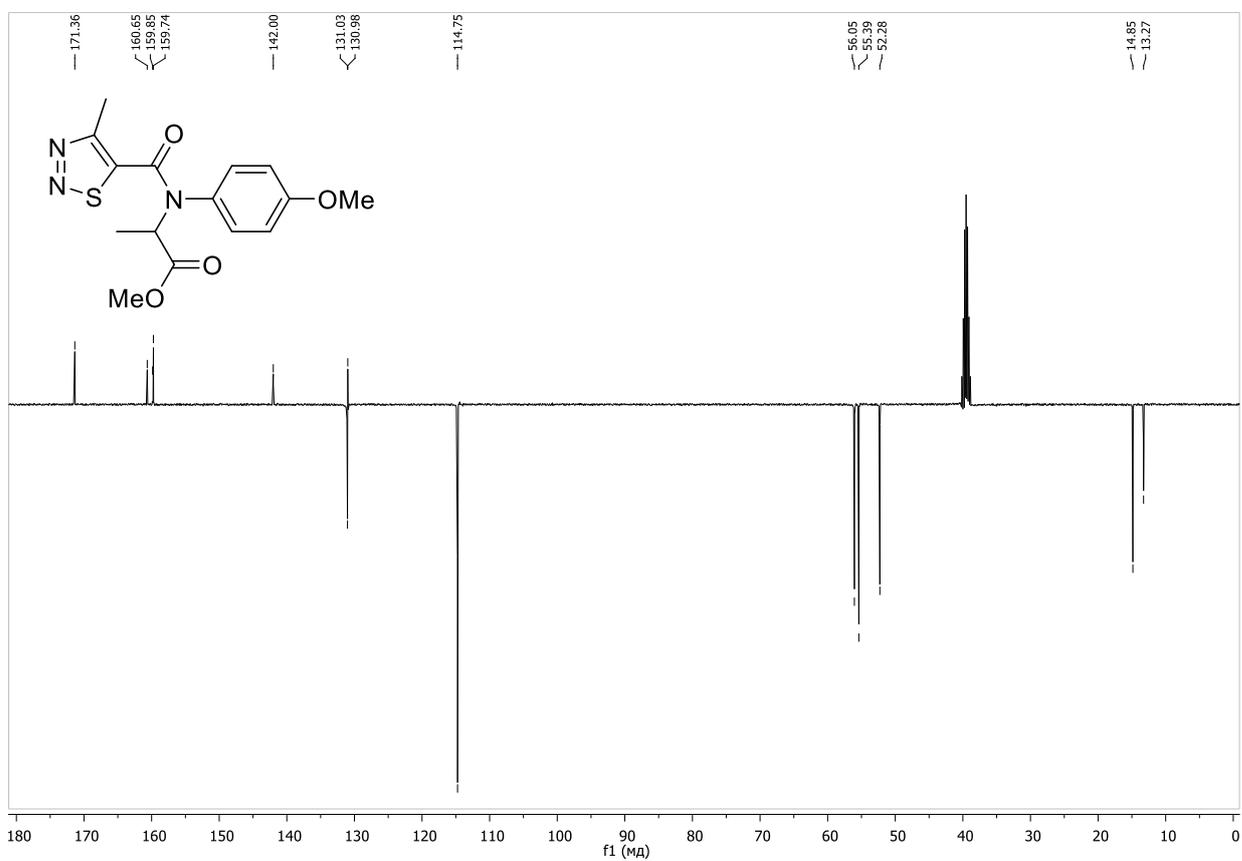


Figure S24. ¹³C NMR of compound **1k**

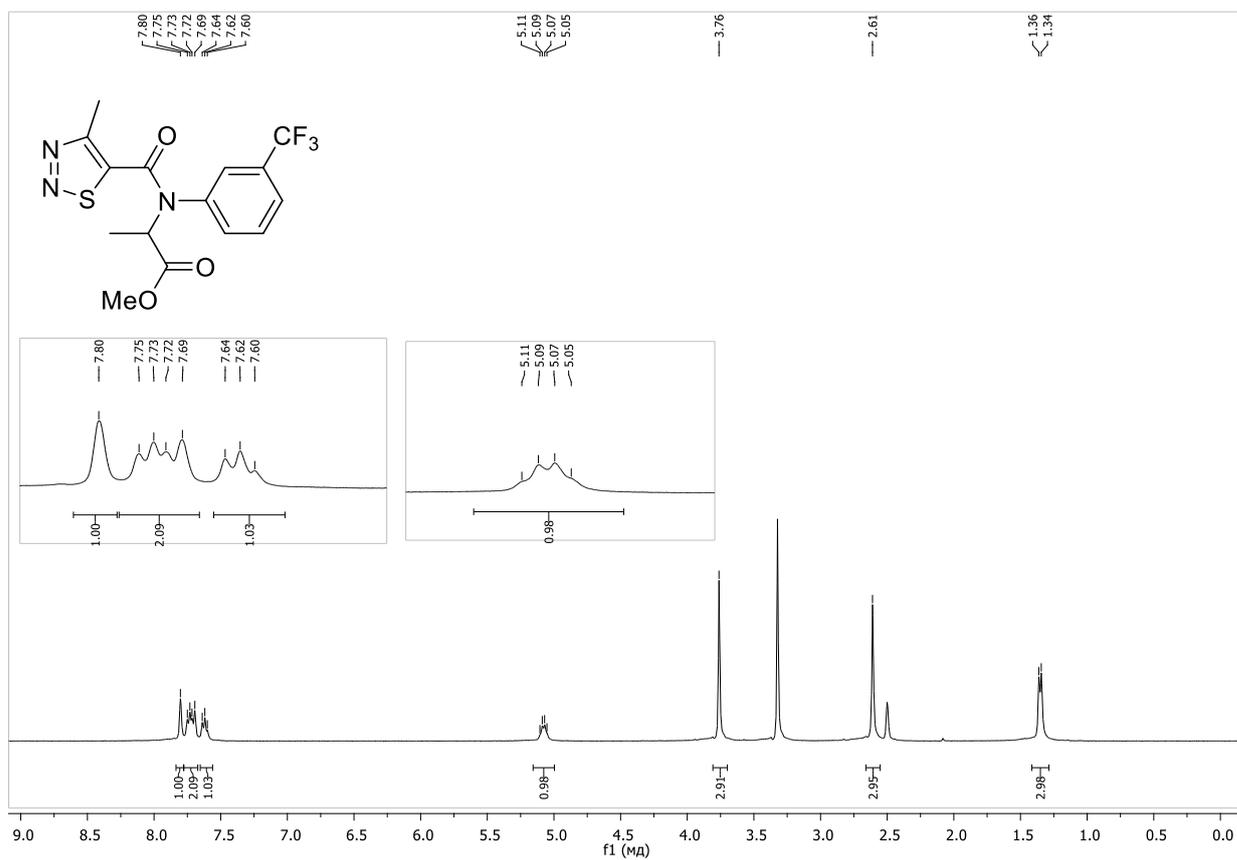


Figure S25. ^1H NMR of compound 11

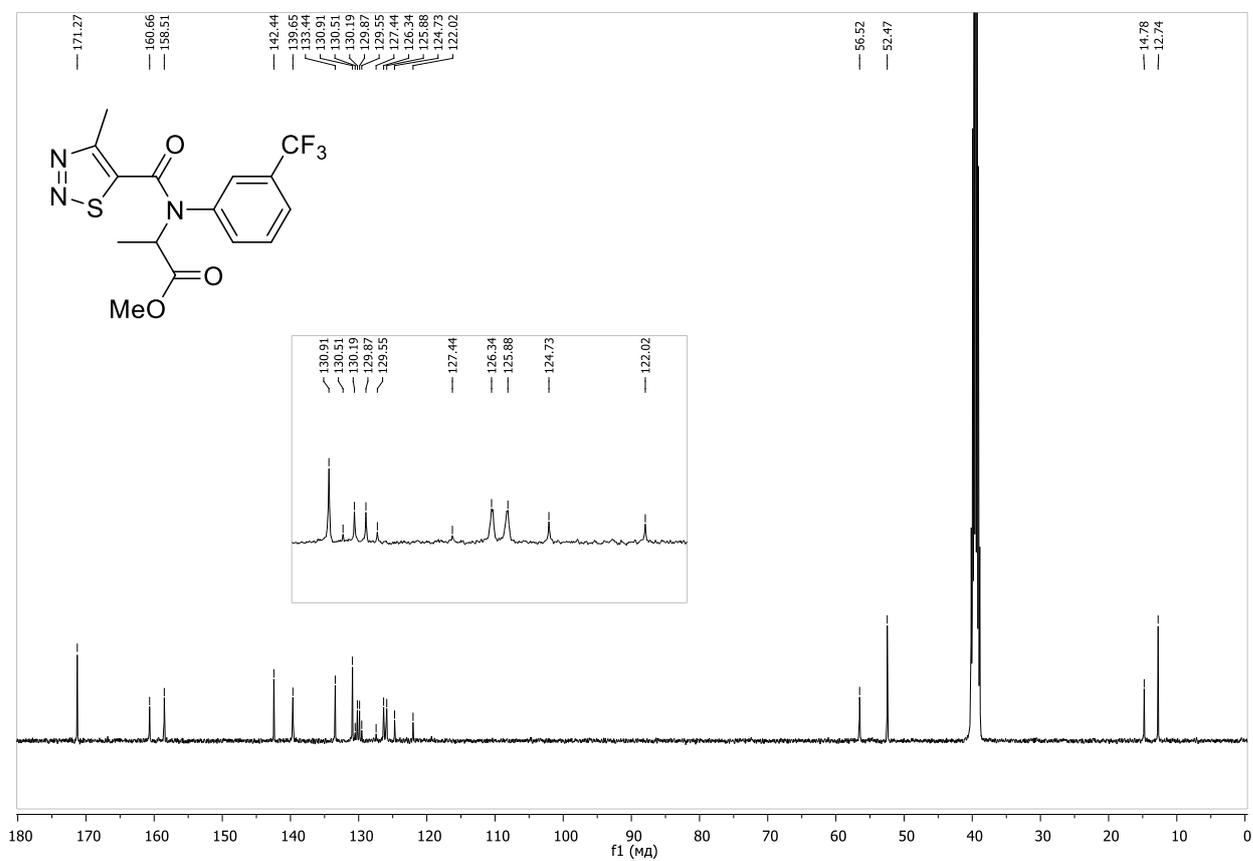


Figure S26. ^{13}C NMR of compound 11

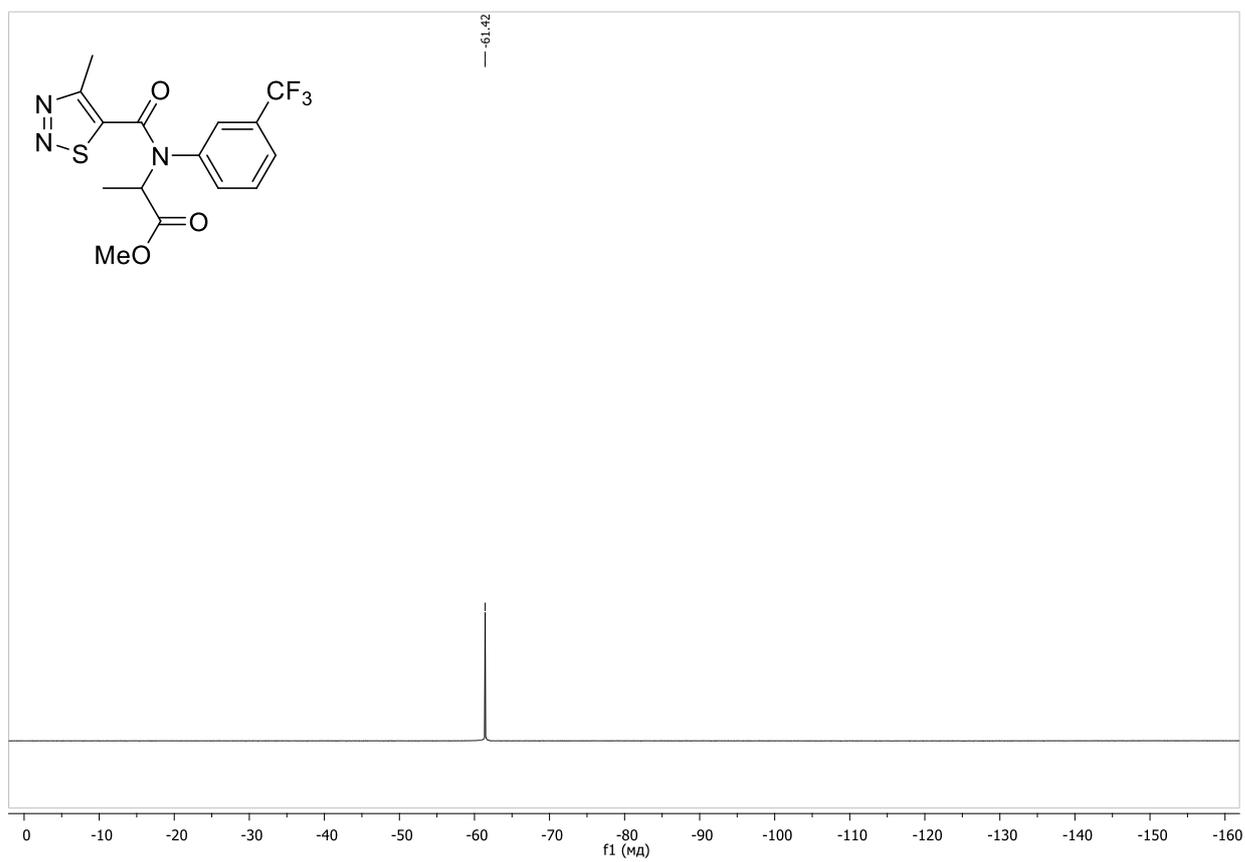


Figure S27. ^{19}F NMR of compound **11**

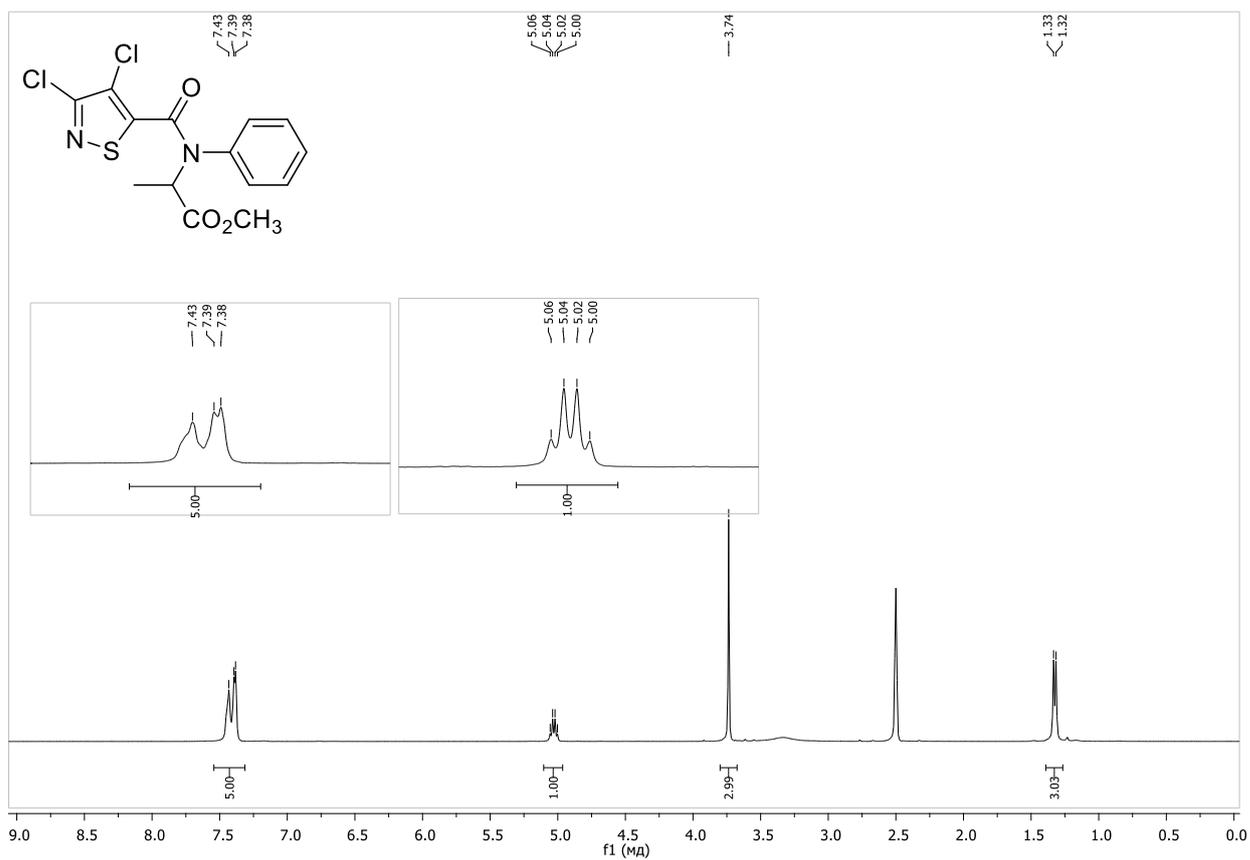


Figure S28. ¹H NMR of compound 2a

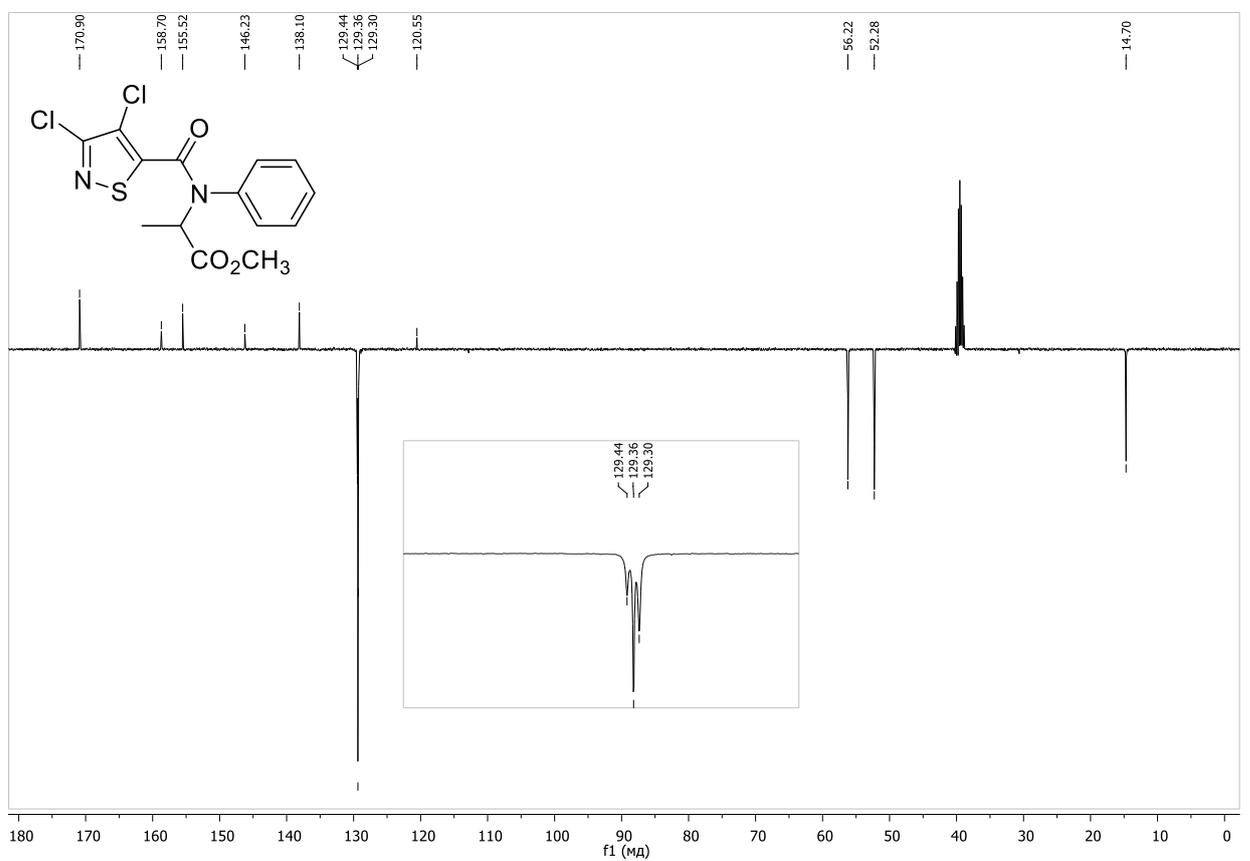


Figure S29. ¹³C NMR of compound 2a

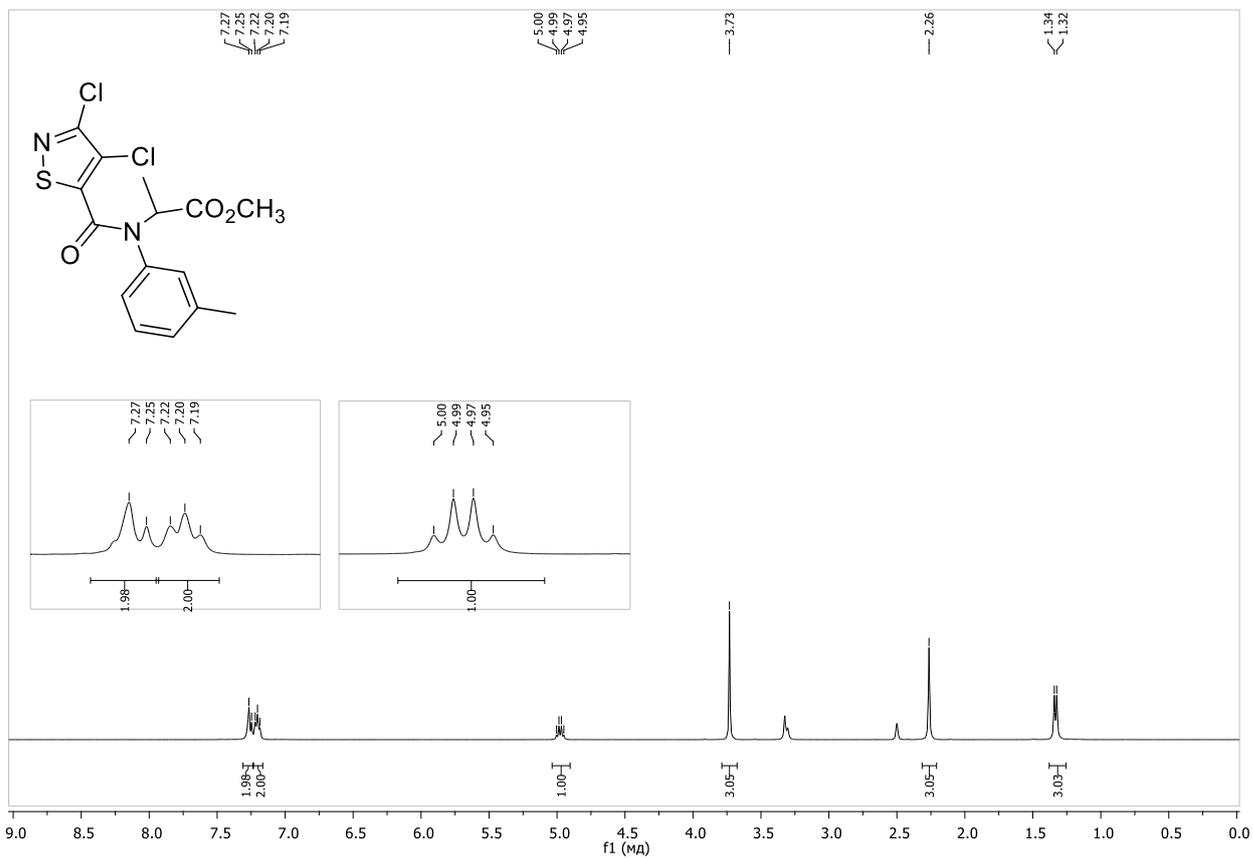


Figure S30. ¹H NMR of compound 2b

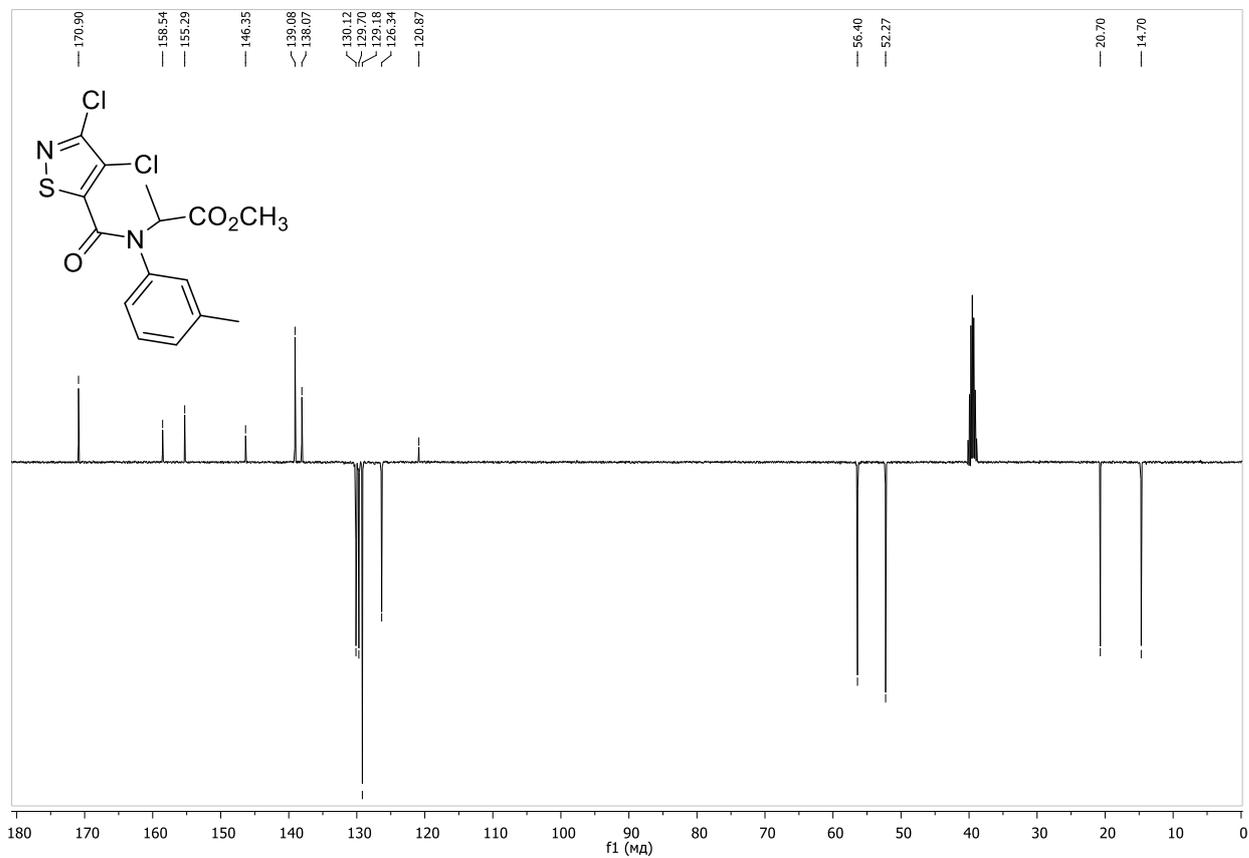
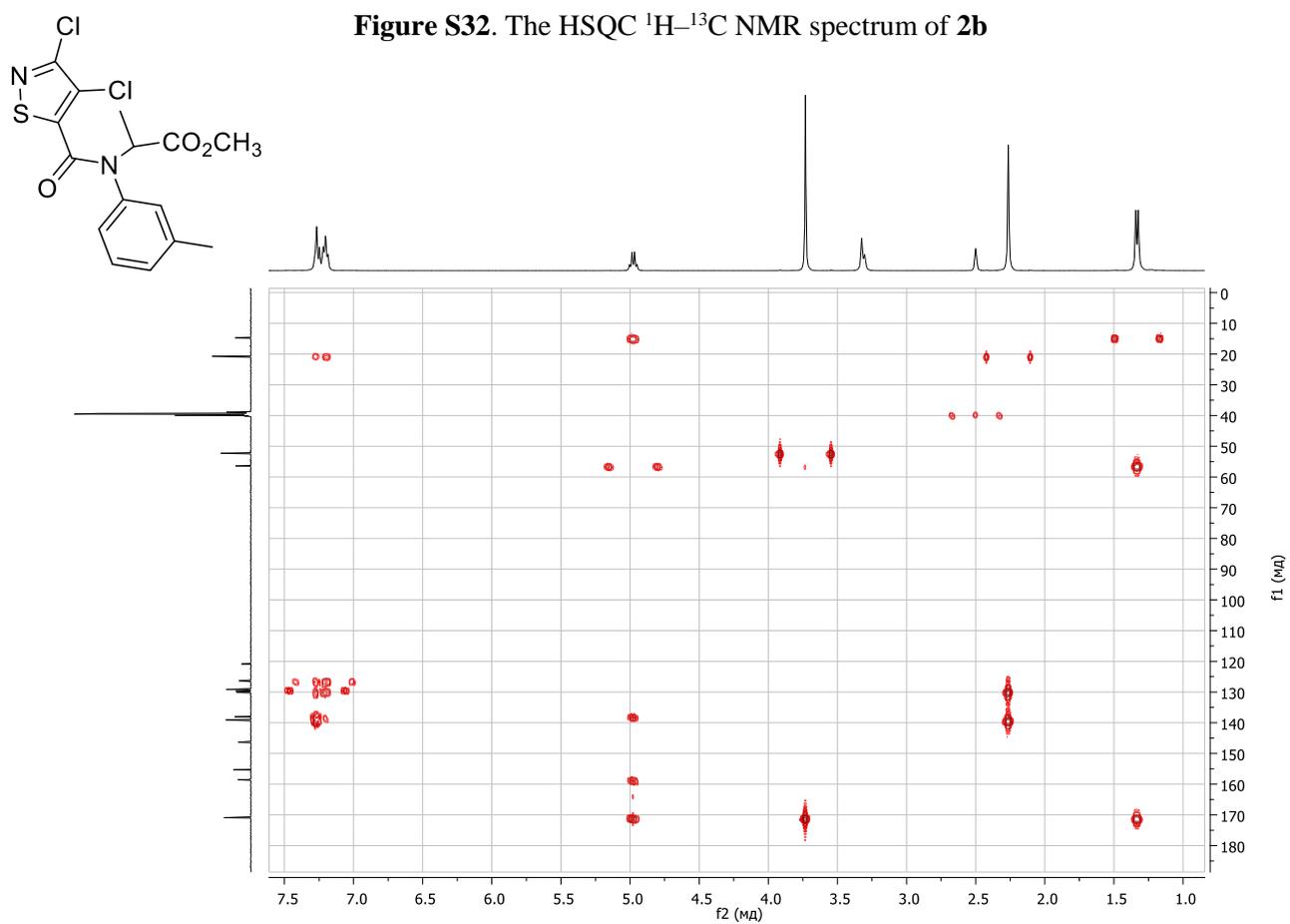
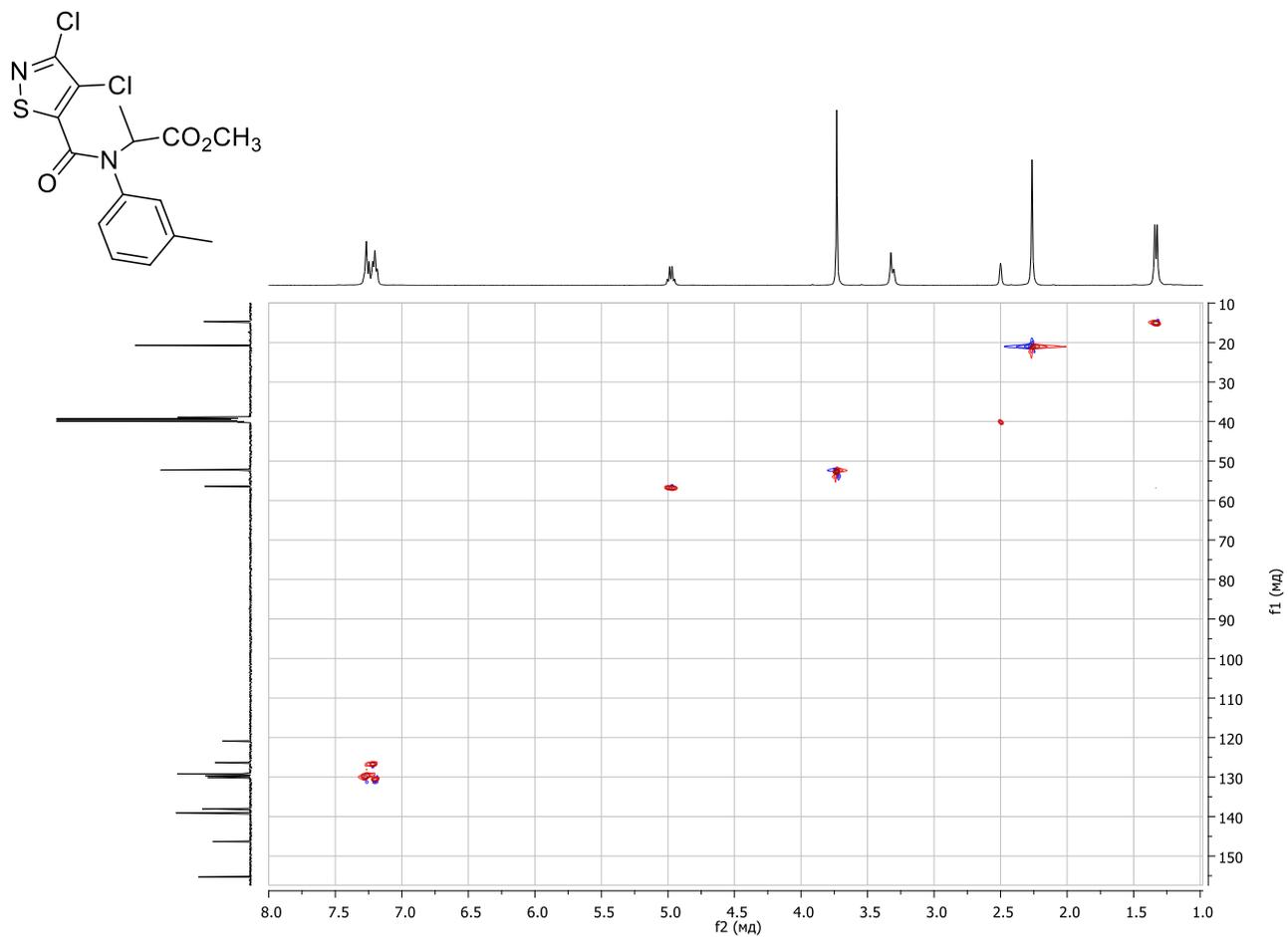


Figure S31. ¹³C NMR of compound 2b



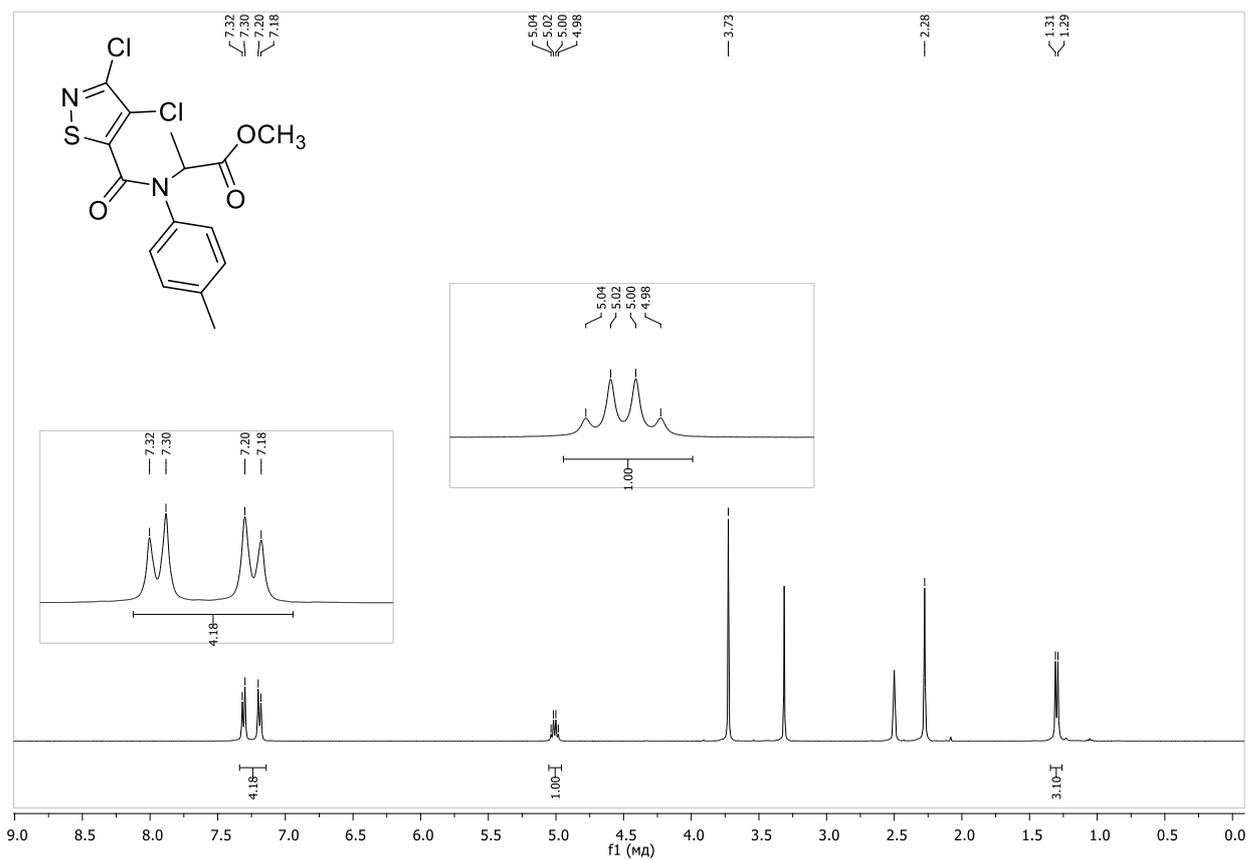


Figure S34. ¹H NMR of compound 2c

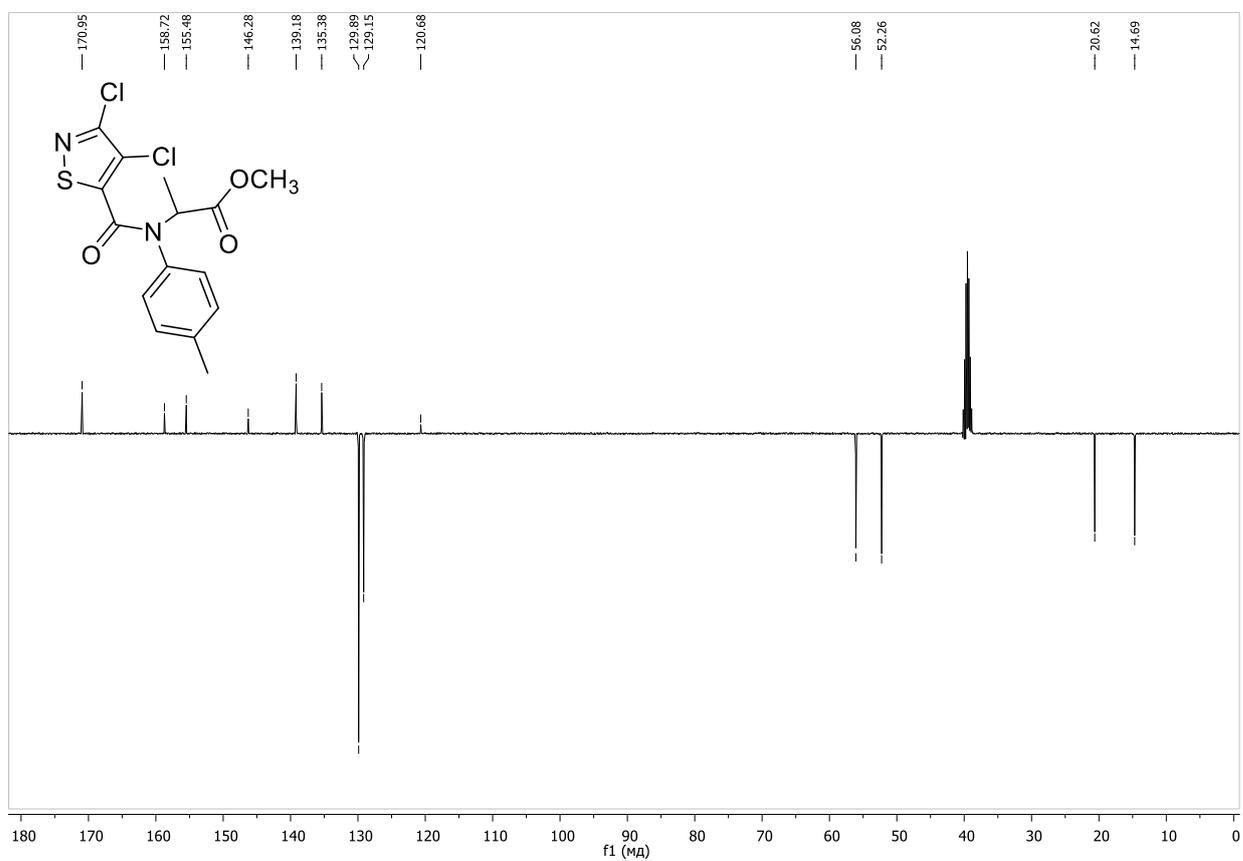


Figure S35. ¹³C NMR of compound 2c

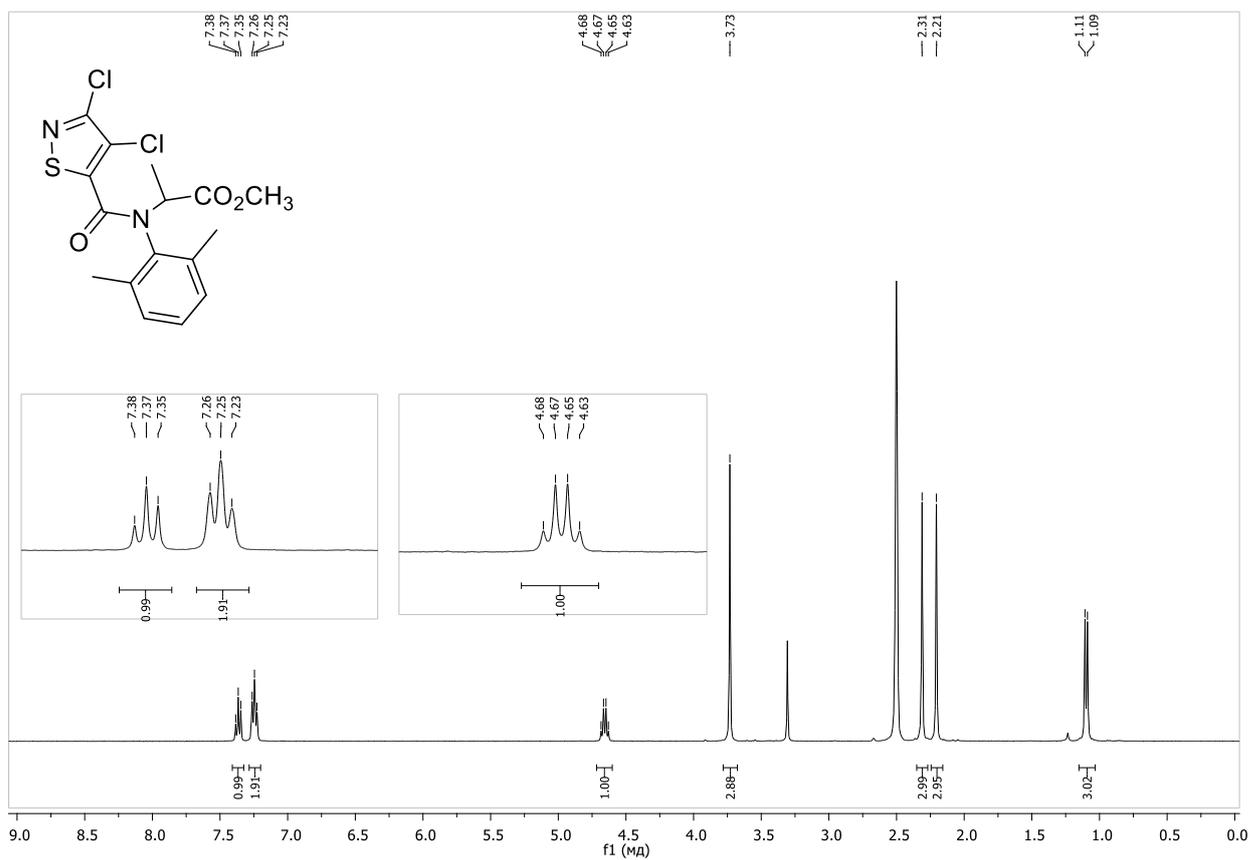


Figure S36. ¹H NMR of compound 2d

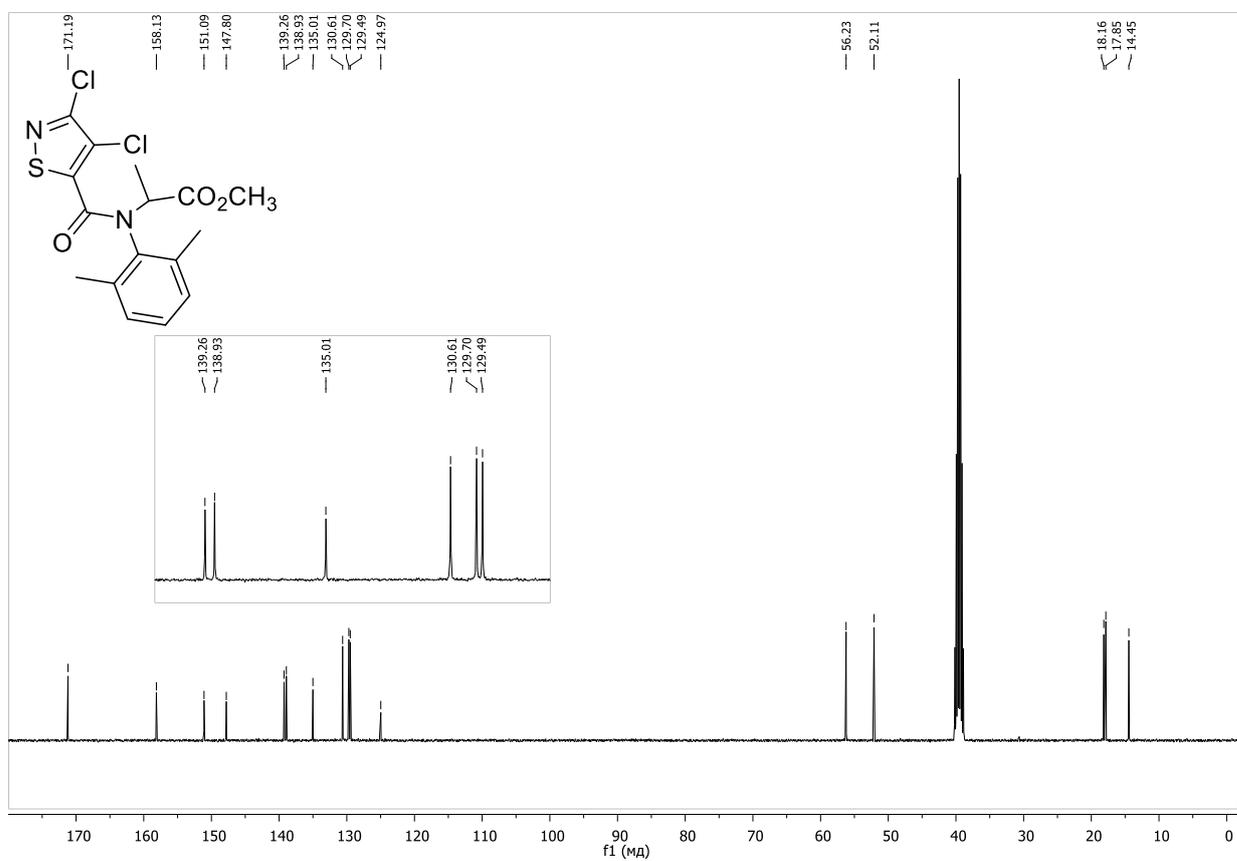


Figure S37. ¹³C NMR of compound 2d

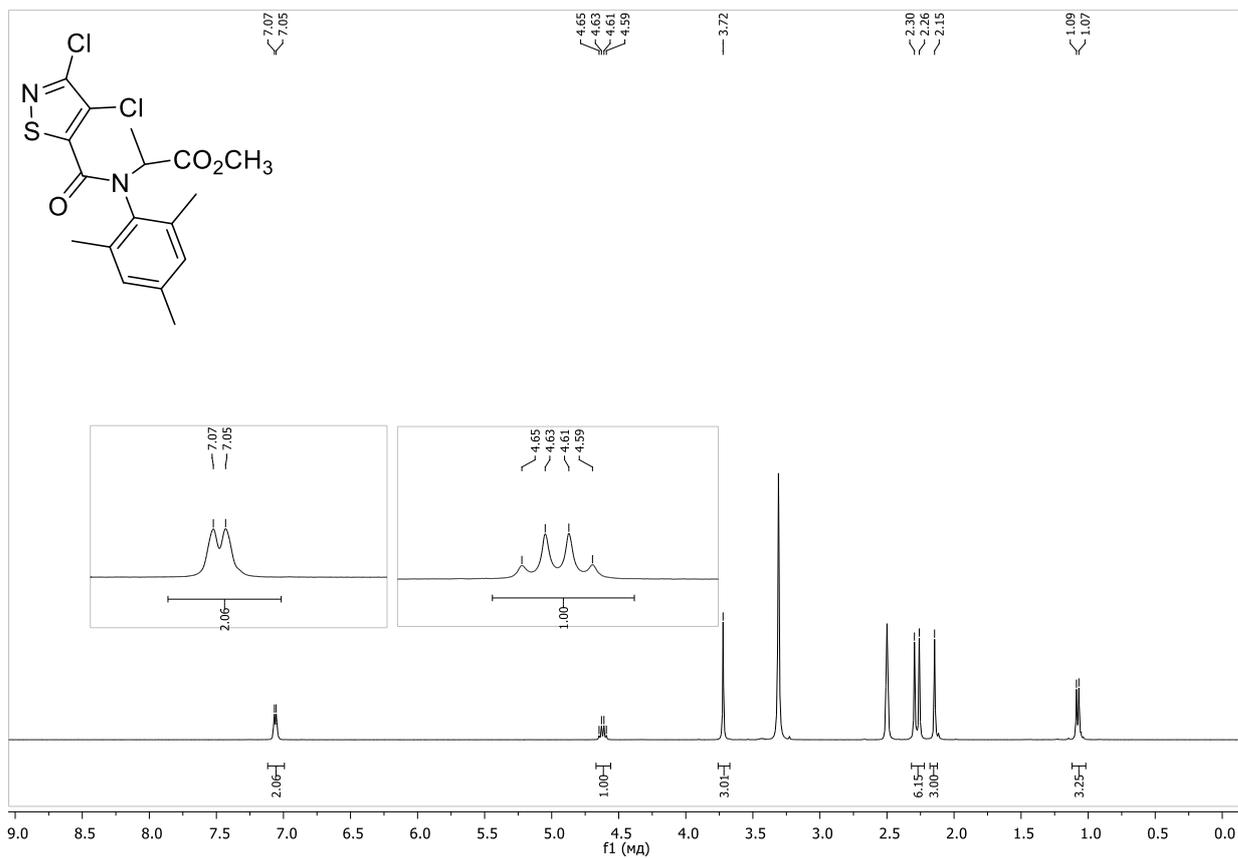


Figure S38. ¹H NMR of compound 2e

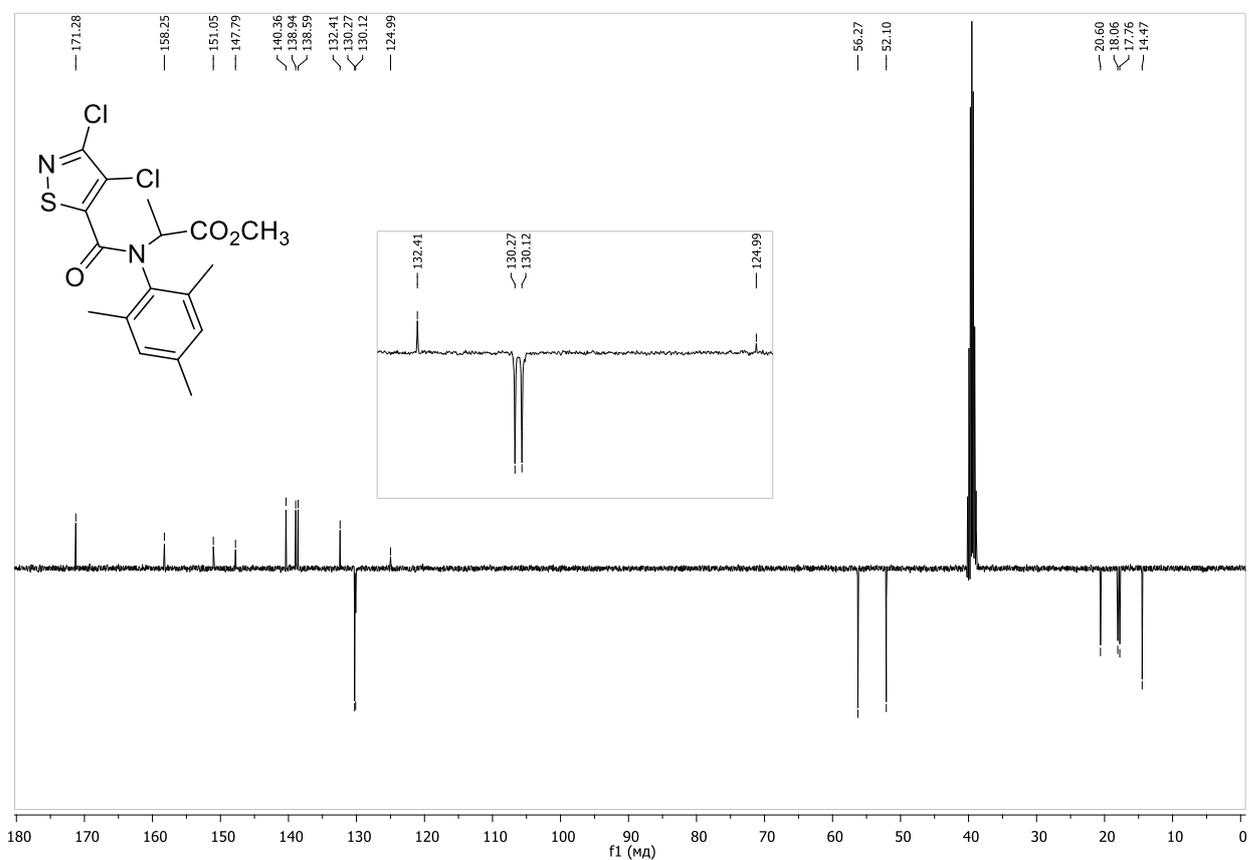


Figure S39. ¹³C NMR of compound 2e

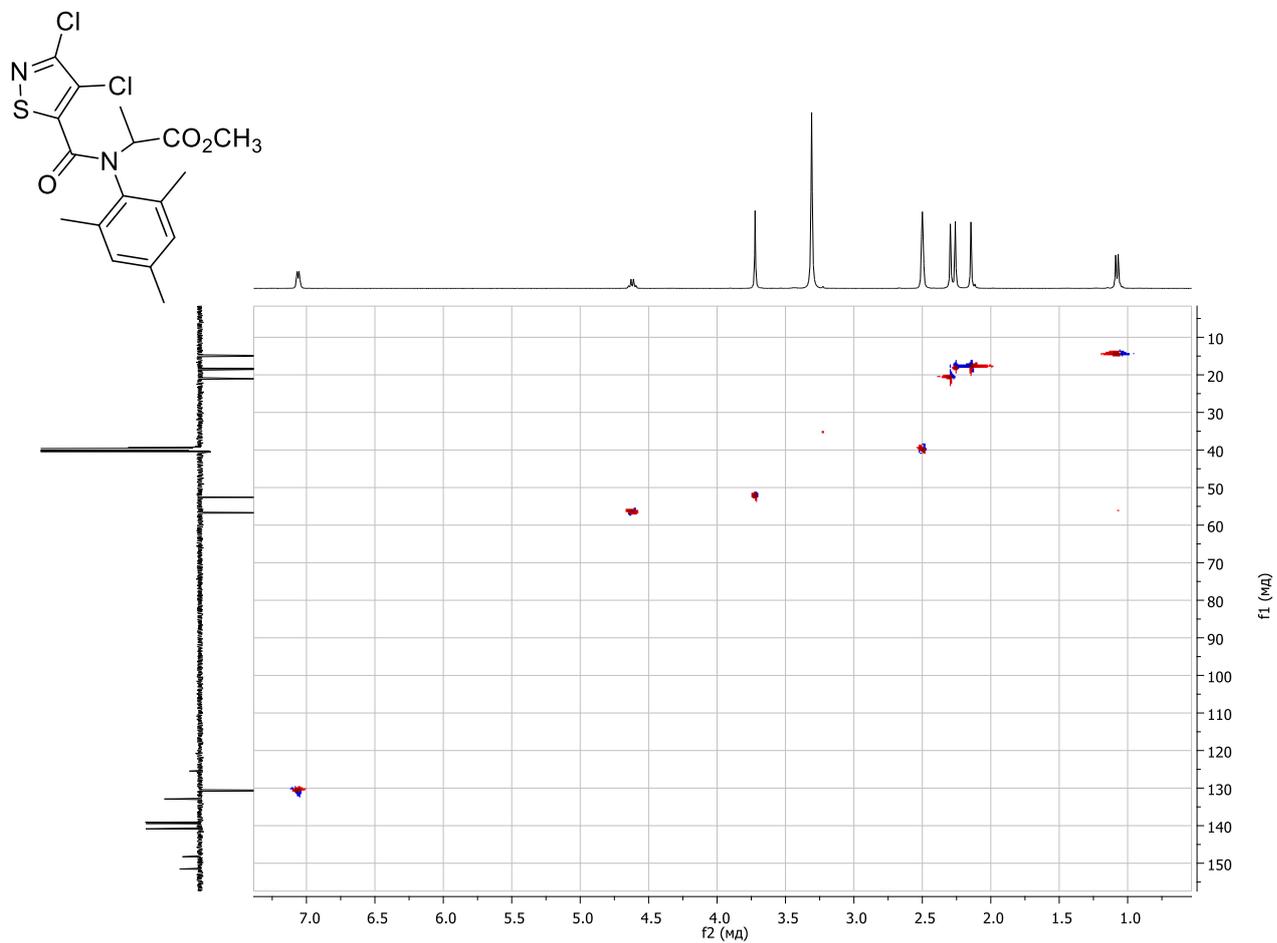


Figure S40. The HSQC ^1H - ^{13}C NMR spectrum of 2e

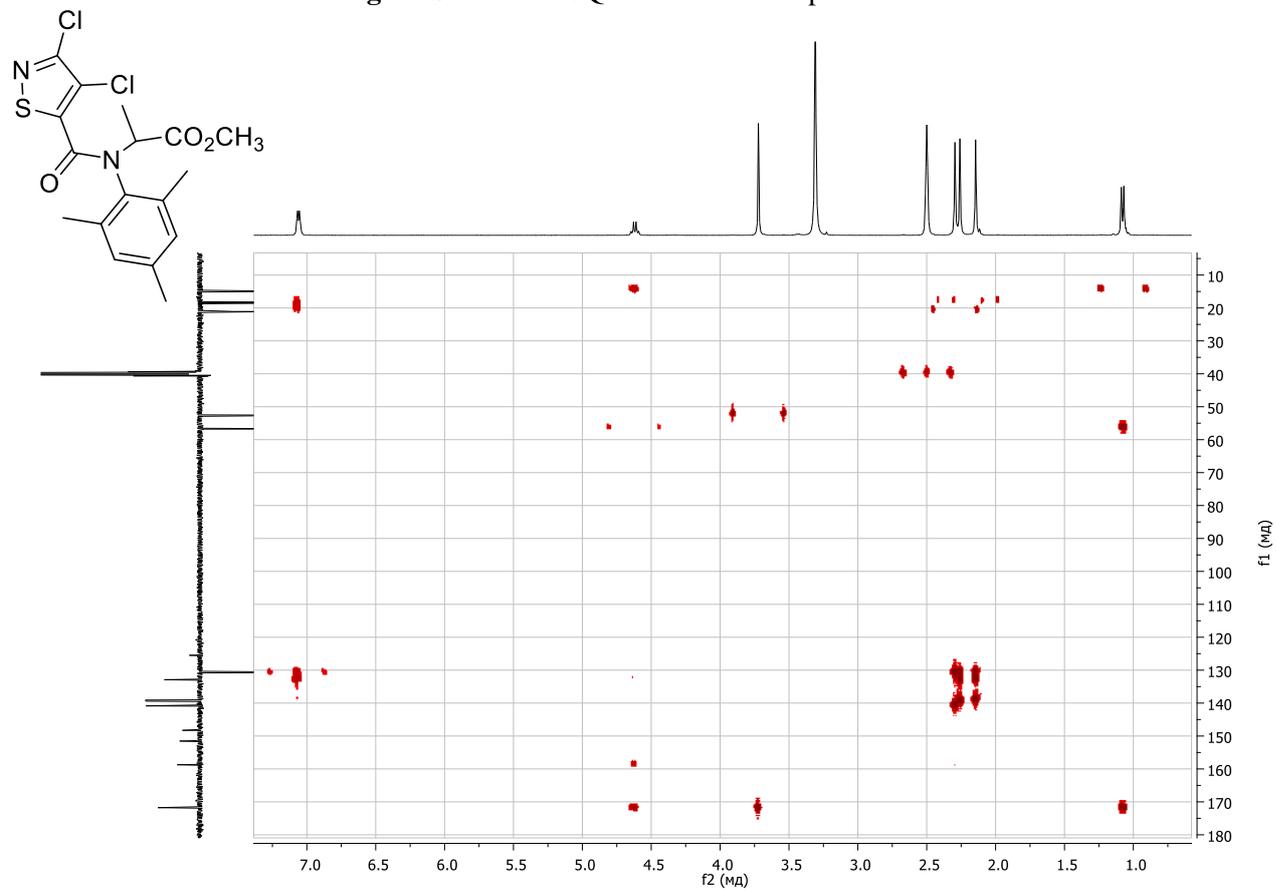


Figure S41. The HMBC ^1H - ^{13}C NMR spectrum of 2e

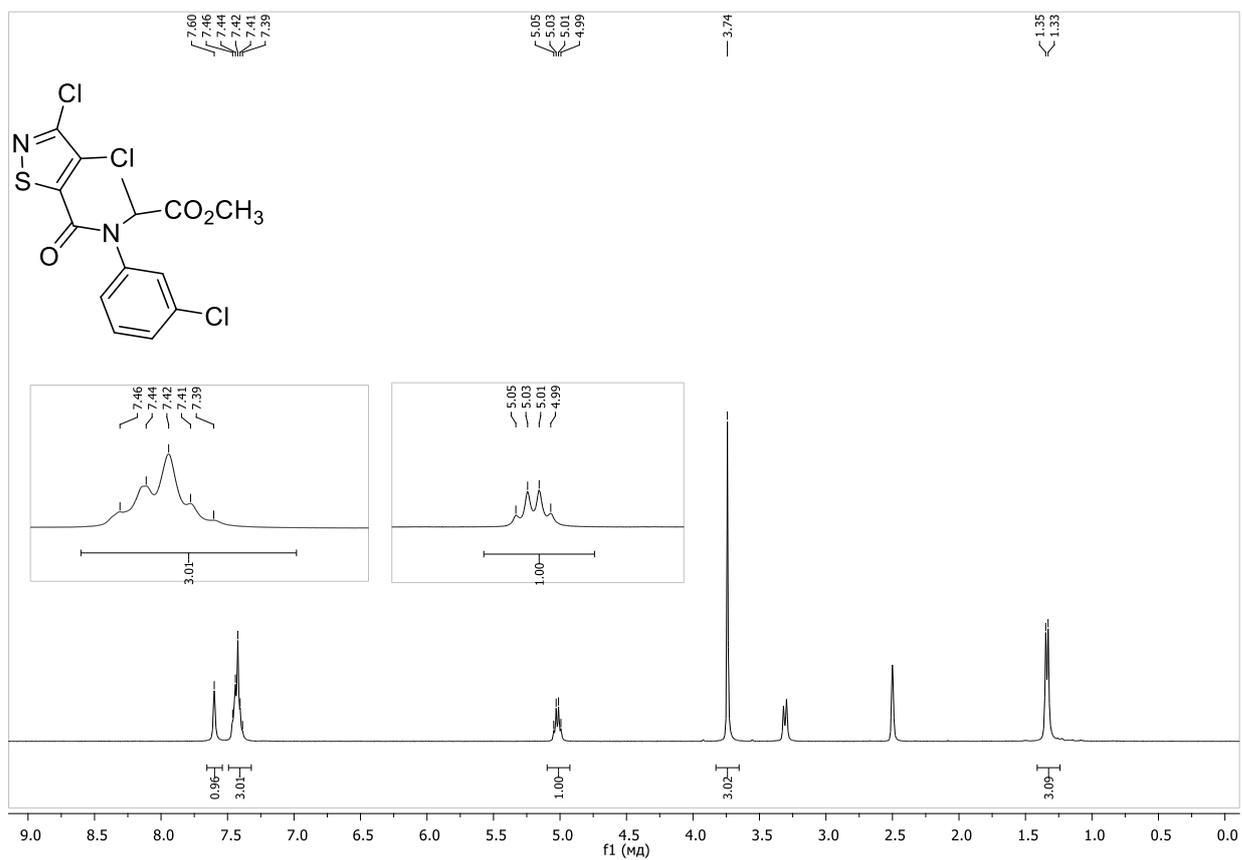


Figure S42. ¹H NMR of compound **2f**

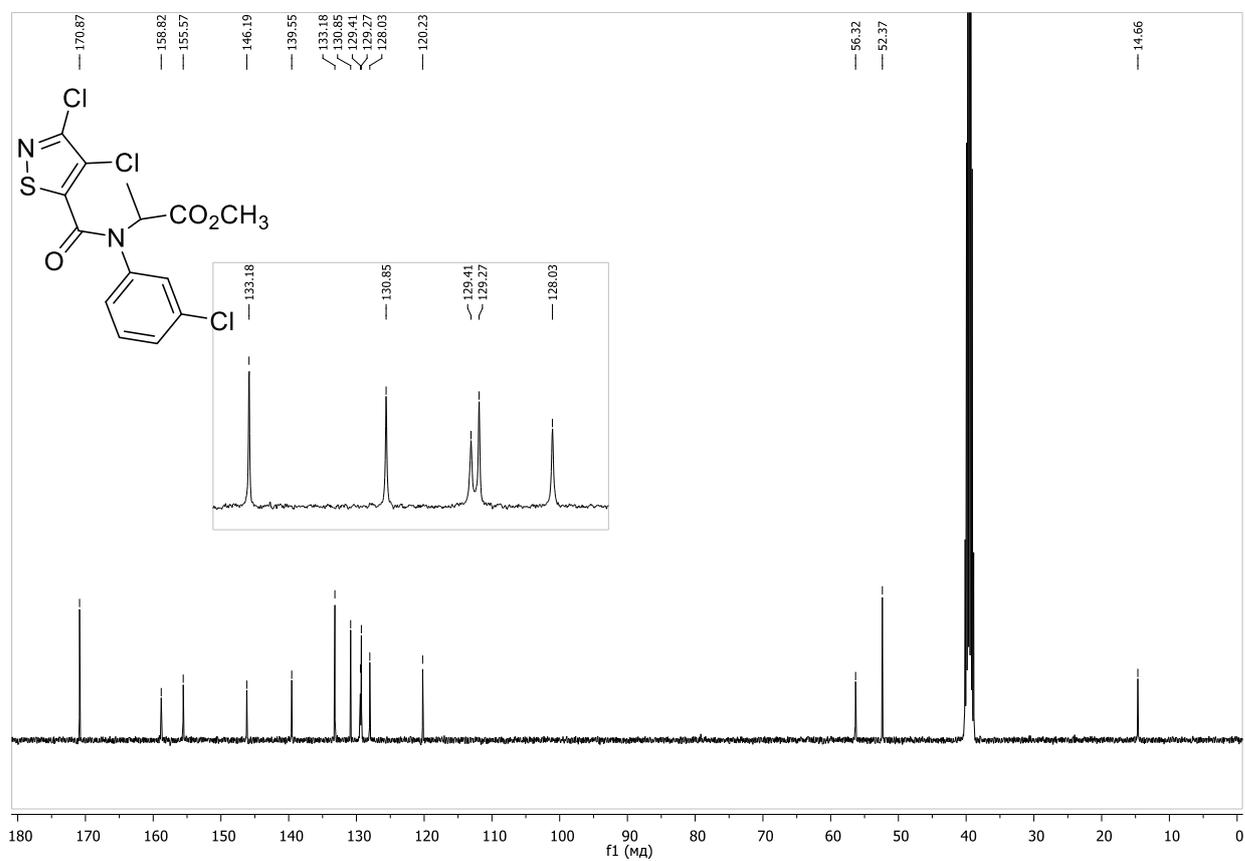


Figure S43. ¹³C NMR of compound **2f**

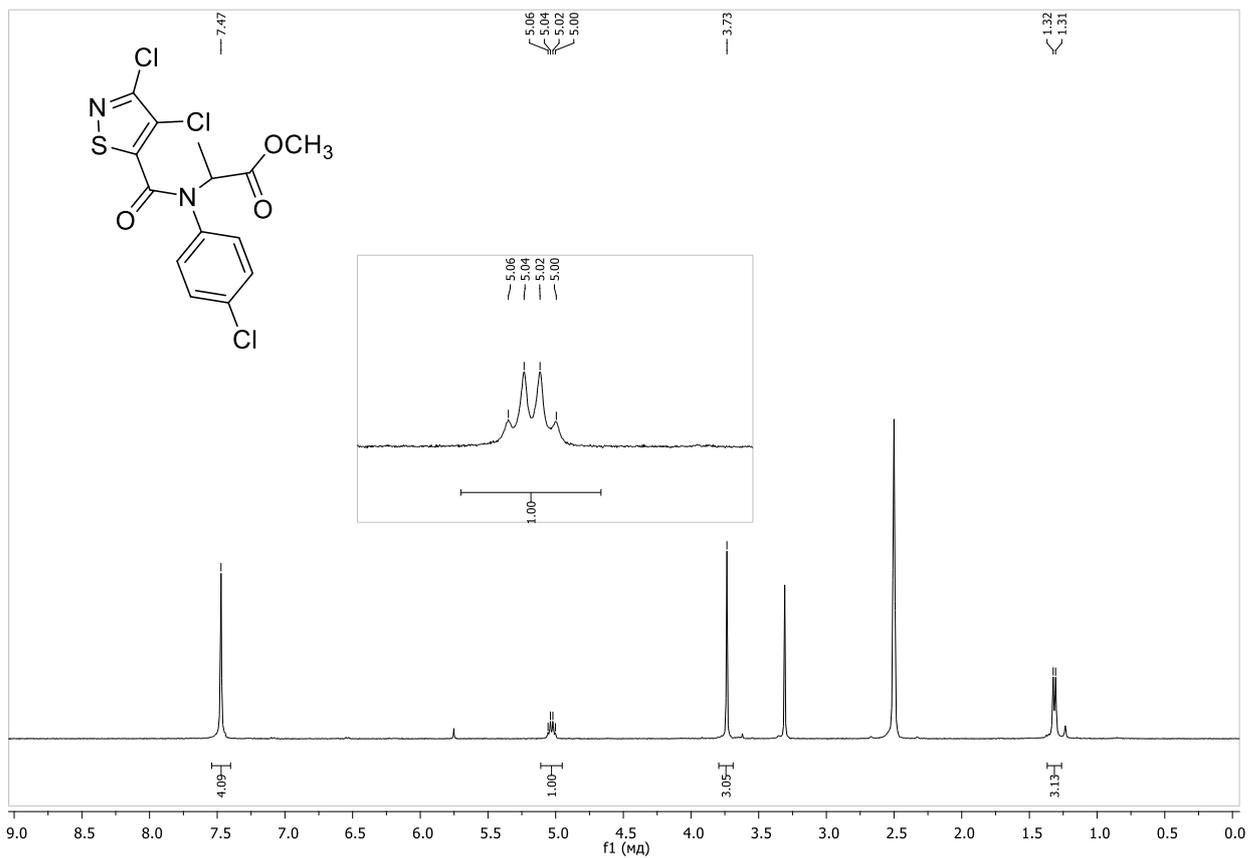


Figure S44. ¹H NMR of compound 2g

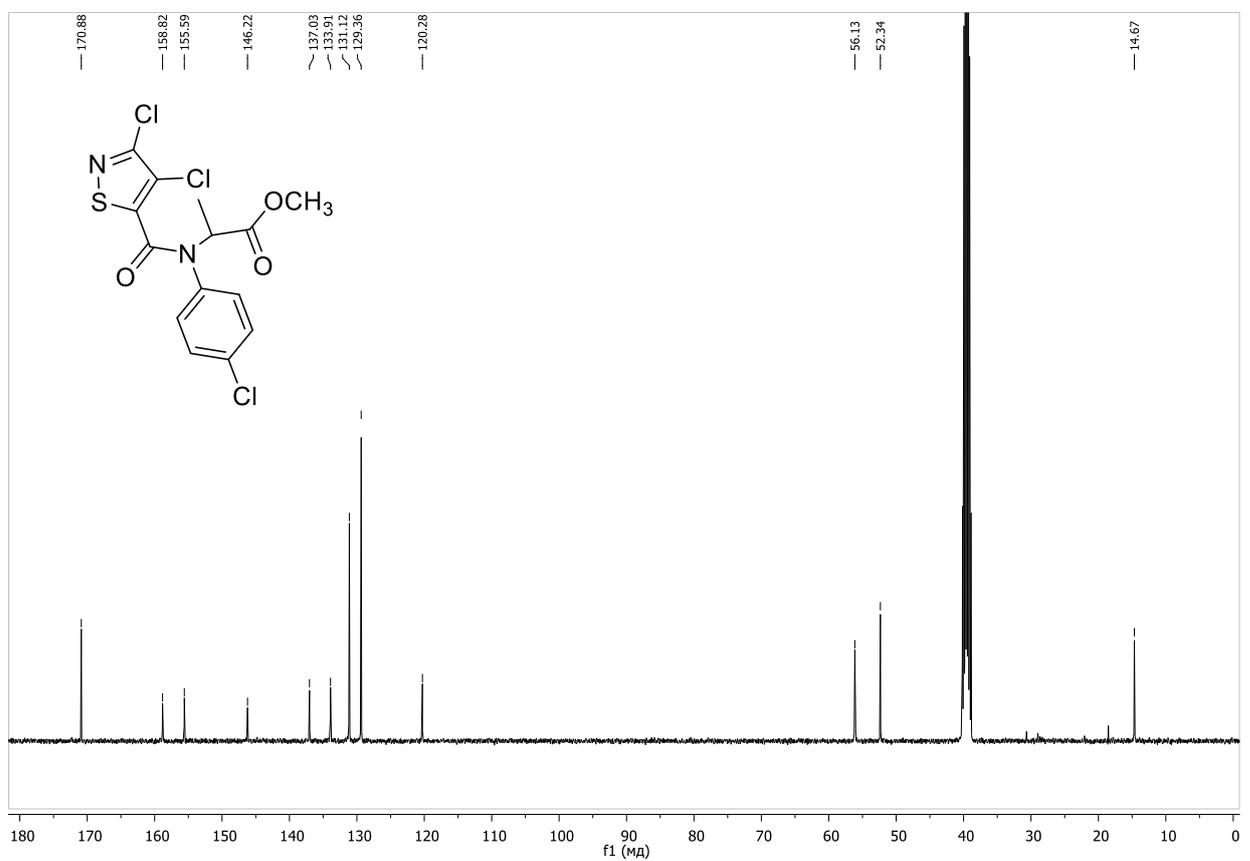


Figure S45. ¹³C NMR of compound 2g

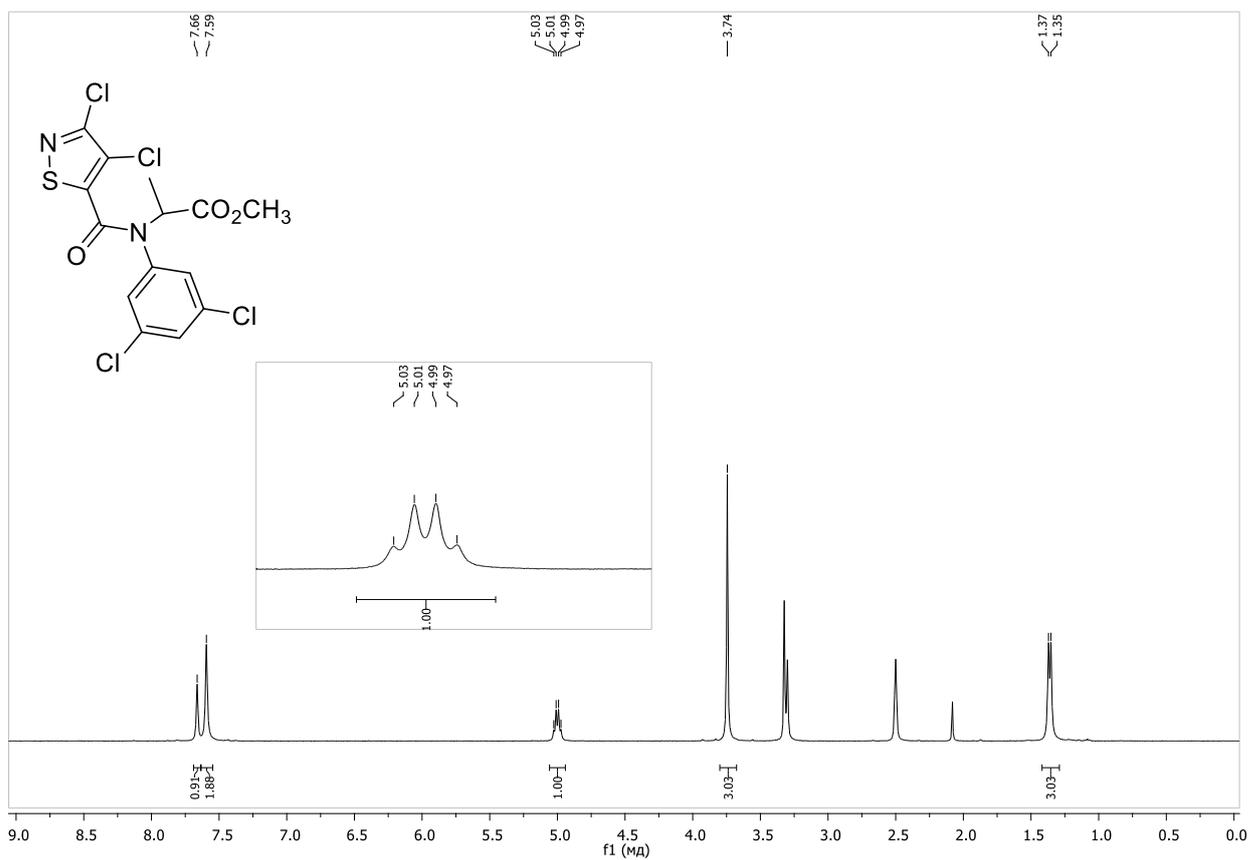


Figure S46. ¹H NMR of compound 2h

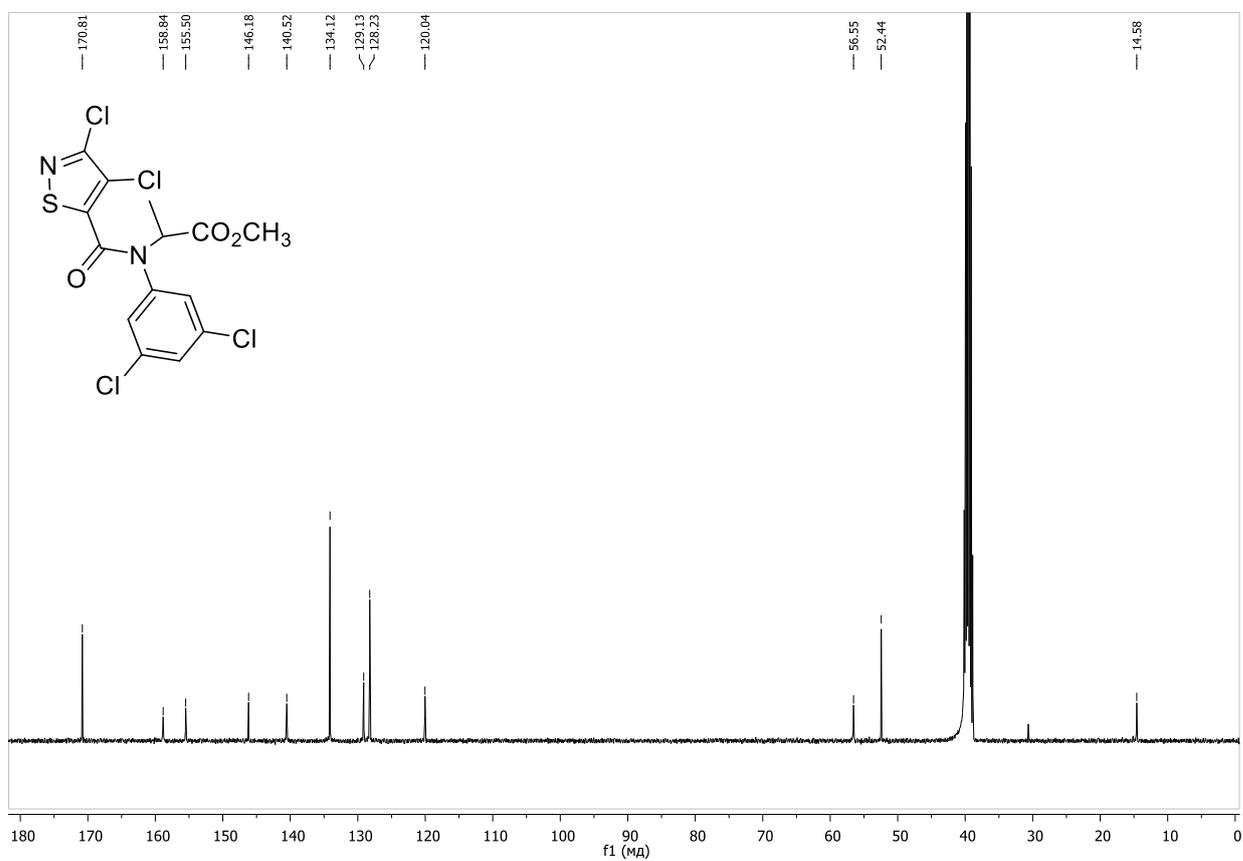


Figure S47. ¹³C NMR of compound 2h

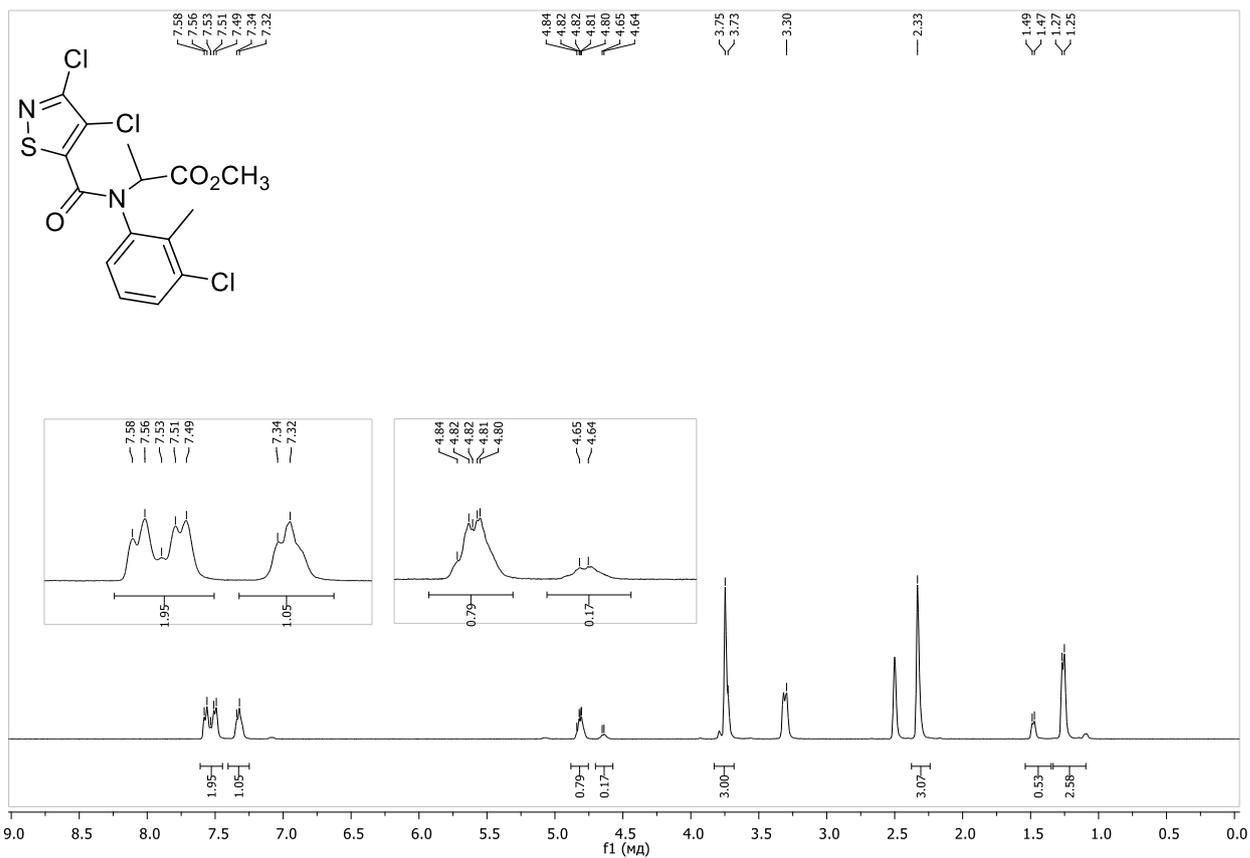


Figure S48. ¹H NMR of compound 2i

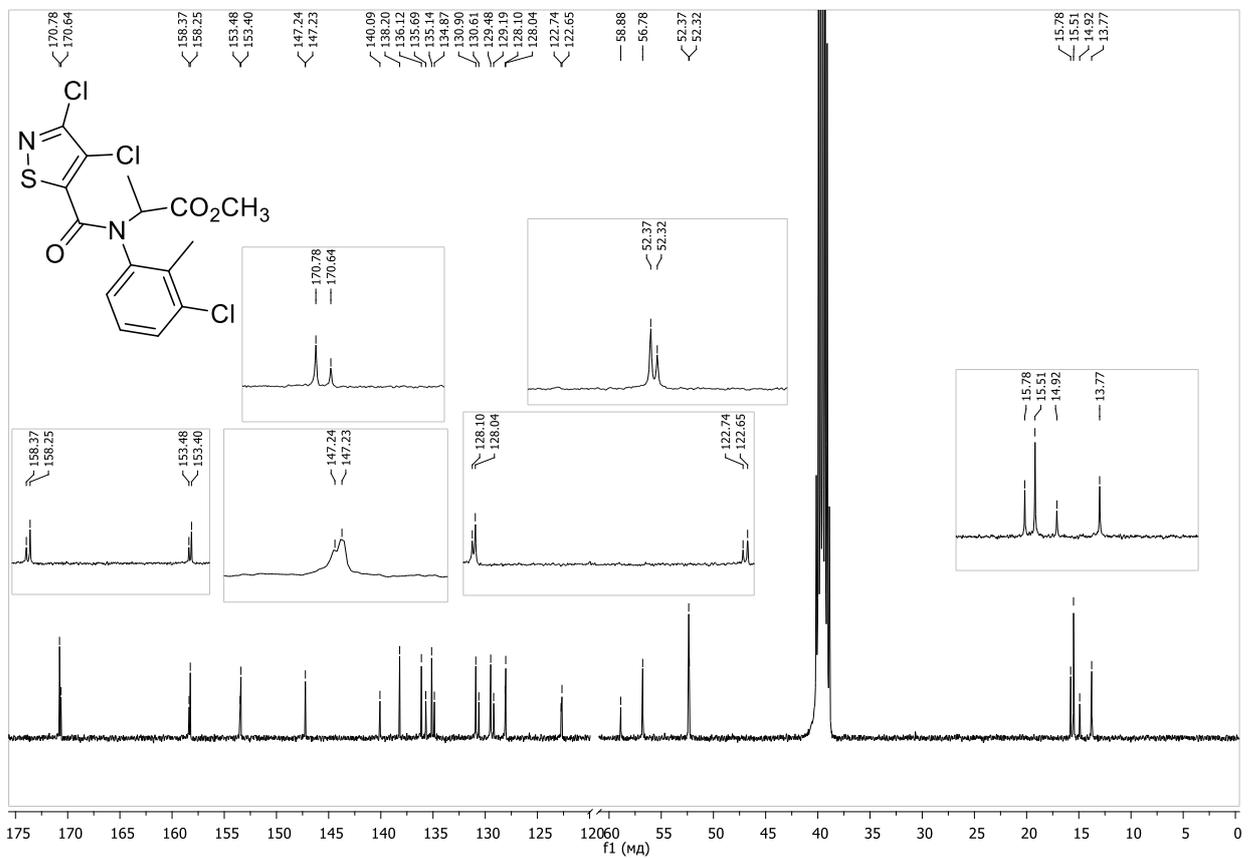


Figure S49. ¹³C NMR of compound 2i

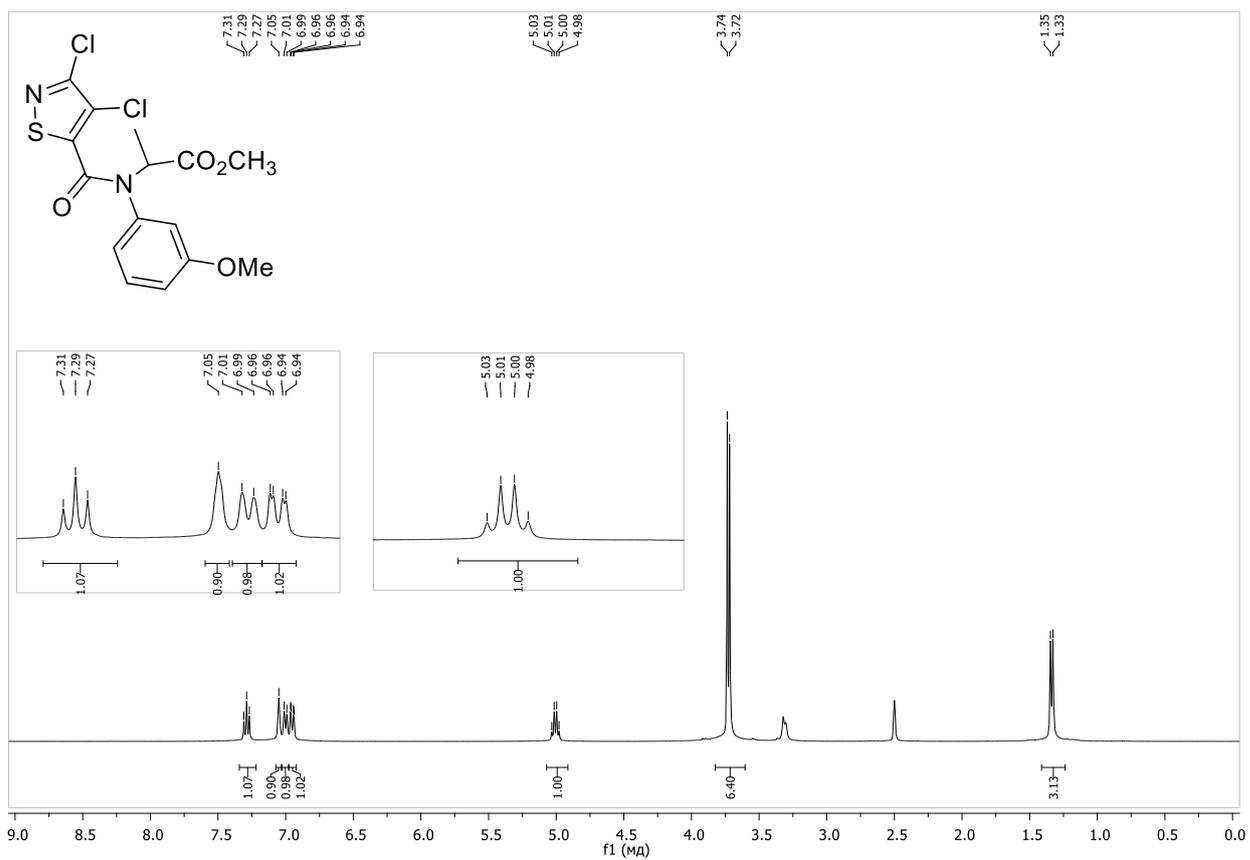


Figure S50. ¹H NMR of compound **2j**

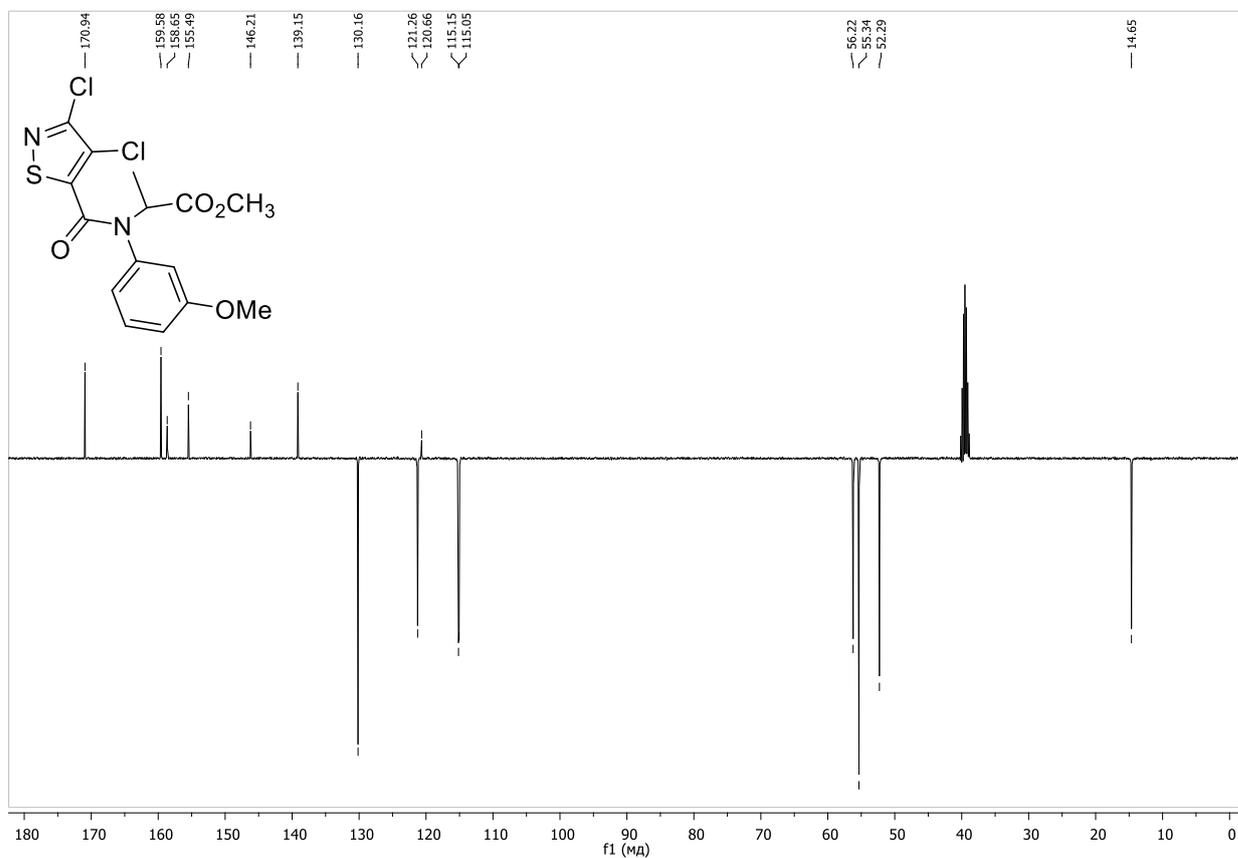


Figure S51. ¹³C NMR of compound **2j**

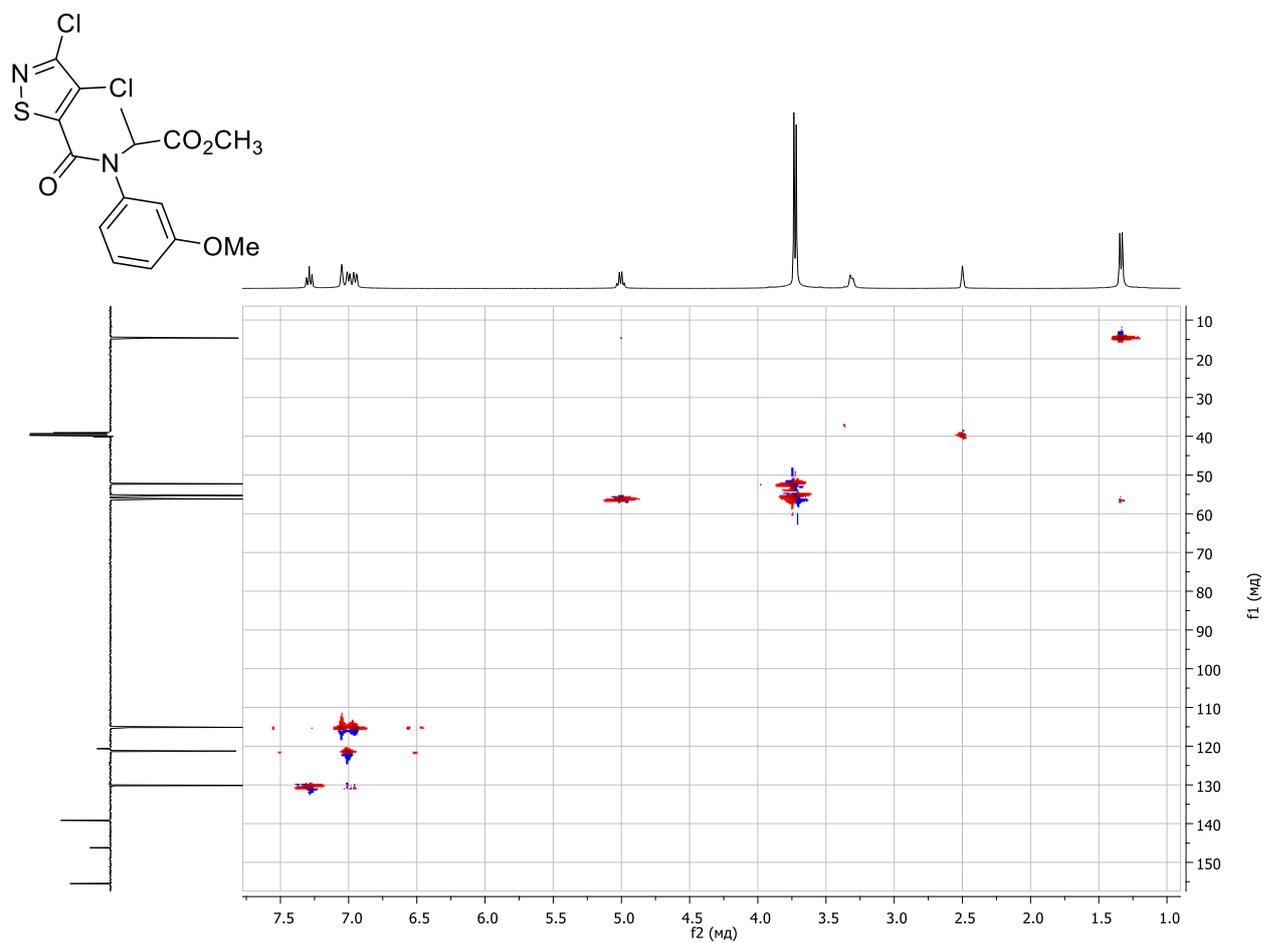


Figure S52. The HSQC ^1H - ^{13}C NMR spectrum of **2j**

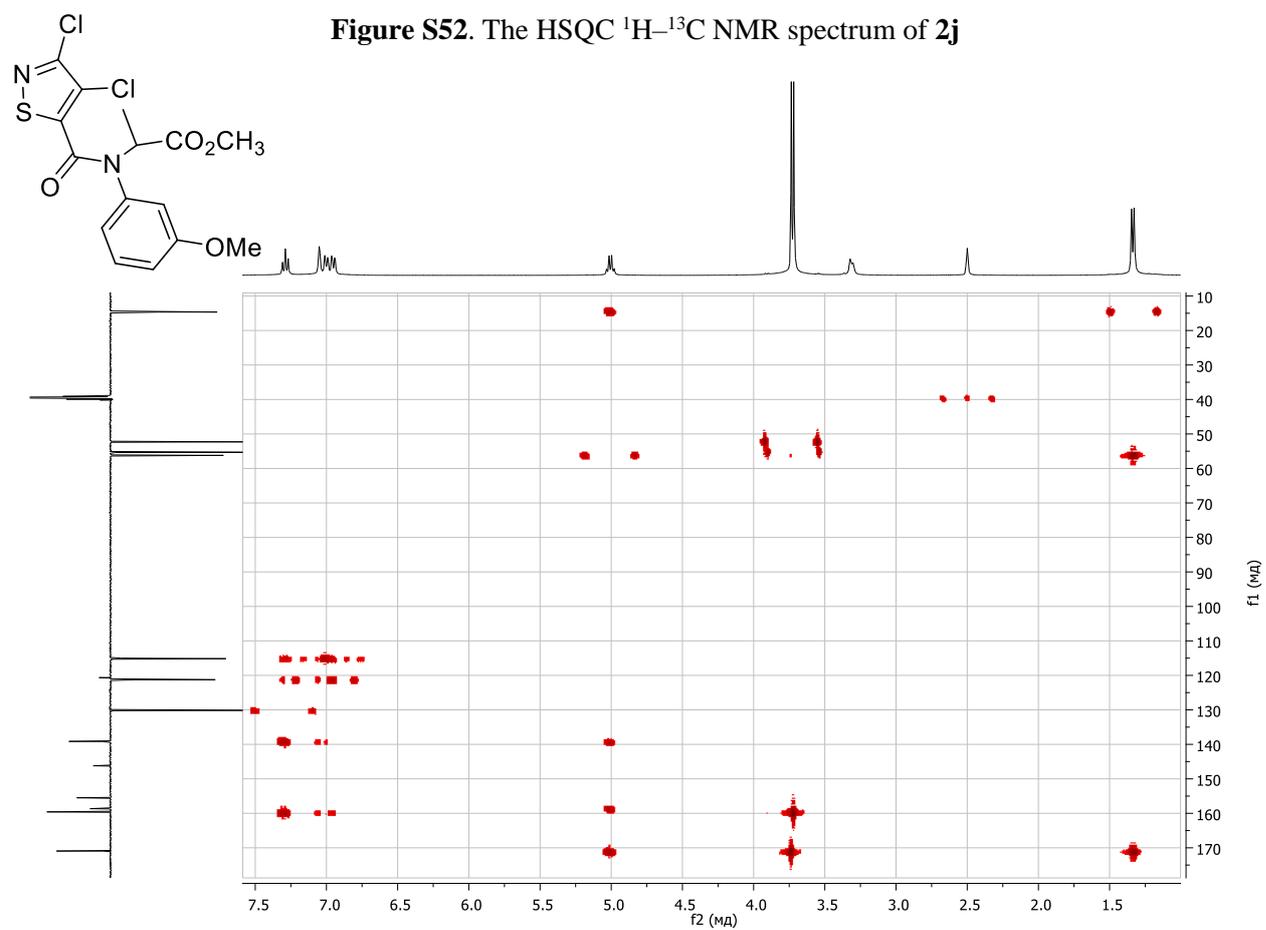


Figure S53. The HMBC ^1H - ^{13}C NMR spectrum of **2j**

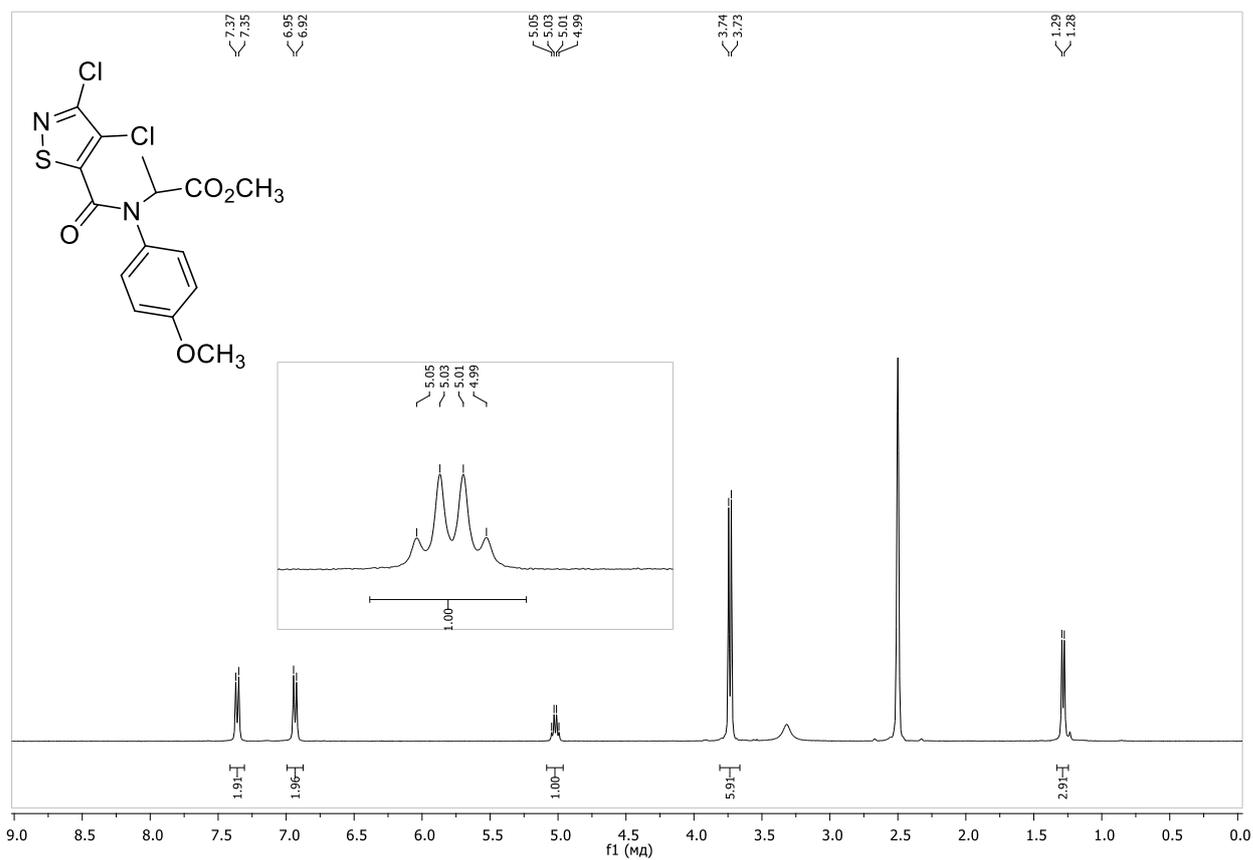


Figure S54. ¹H NMR of compound 2k

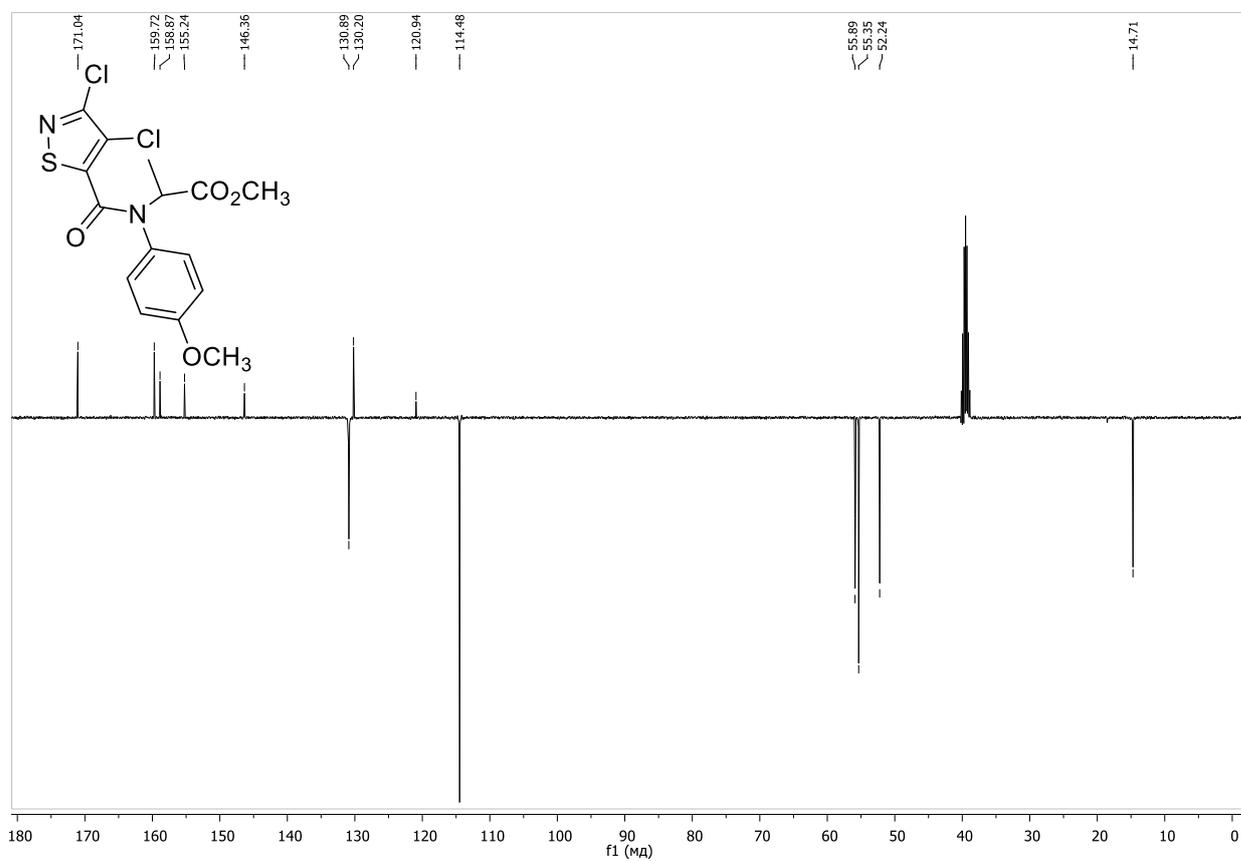


Figure S55. ¹³C NMR of compound 2k

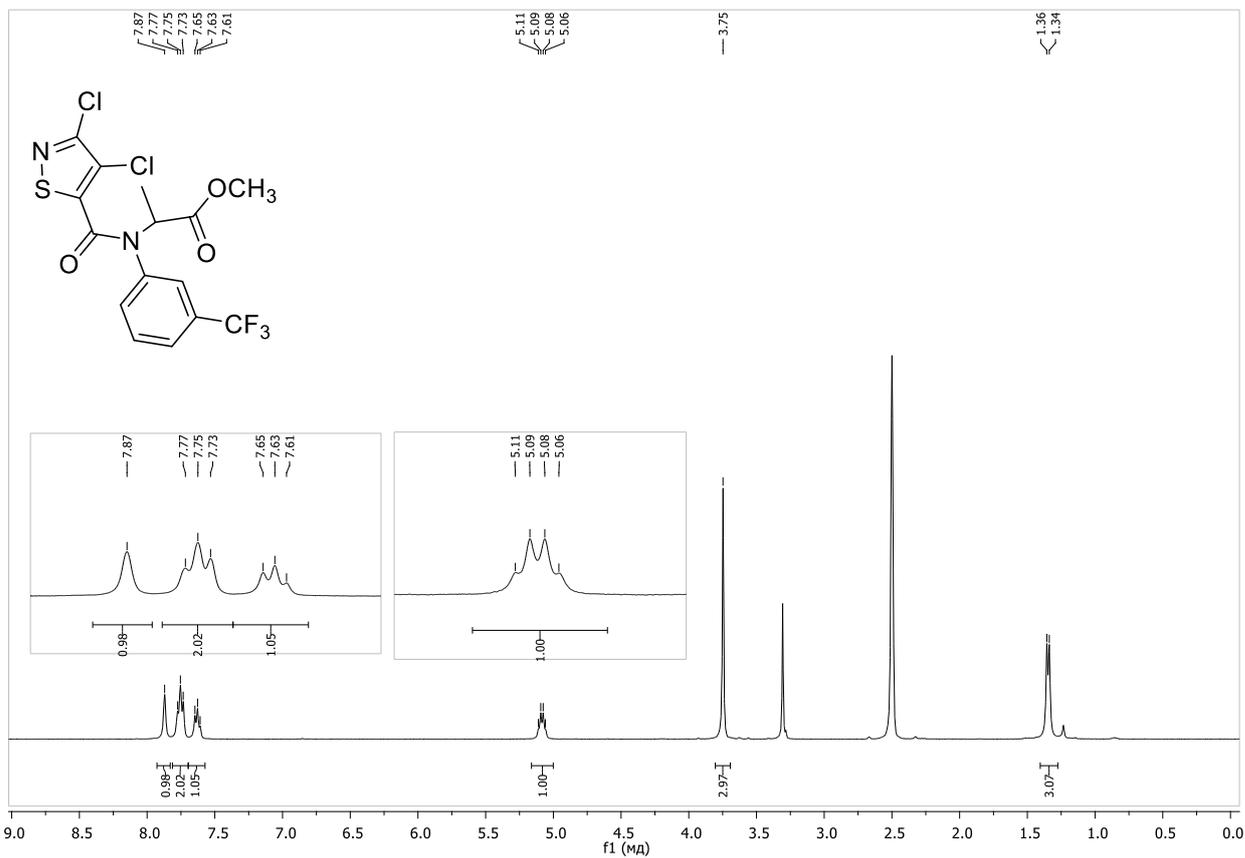


Figure S56. ¹H NMR of compound **2I**

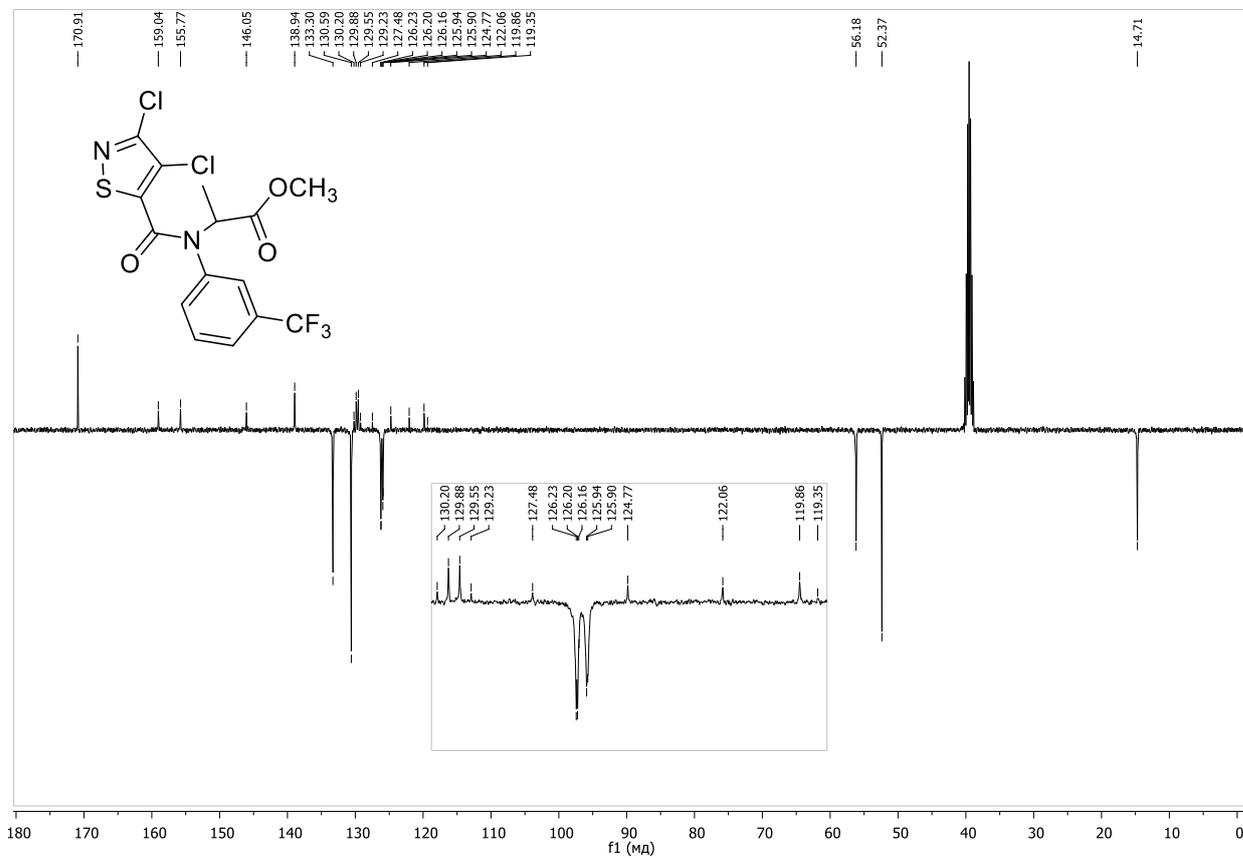


Figure S57. ¹³C NMR of compound **2I**