**Supporting Information**

For

**An efficient *one-step* synthesis of a new series of multifunctional olefins**

**Olfa Mhasni\*1,2, Julien Legros3 and Farhat Rezgui2**

*1Laboratory of Materials, Treatement and Analysis LMTA, LR 15 INRAP 03, National Institute of Research and Physico-Chemical Analysis (INRAP), Biotechpôle Sidi Thabet 2020, Tunisia.*

*2University of Tunis El Manar, Laboratory of Stuctural (Bio) Organic Chemistry and Polymers, LR99ES14, Faculty of Sciences, Campus, 2092 Tunis, Tunisia.*

*3Laboratory COBRA University of Rouen Normandy 1, rue Lucien Tesni*`*ere, Mont-Saint-Aignan F-76821 France*

**\*** Corresponding author. Email: [olfa.mha@gmail.com](mailto:olfa.mha@gmail.com)

**1H and 13C NMR and HRMS Spectra of all products**

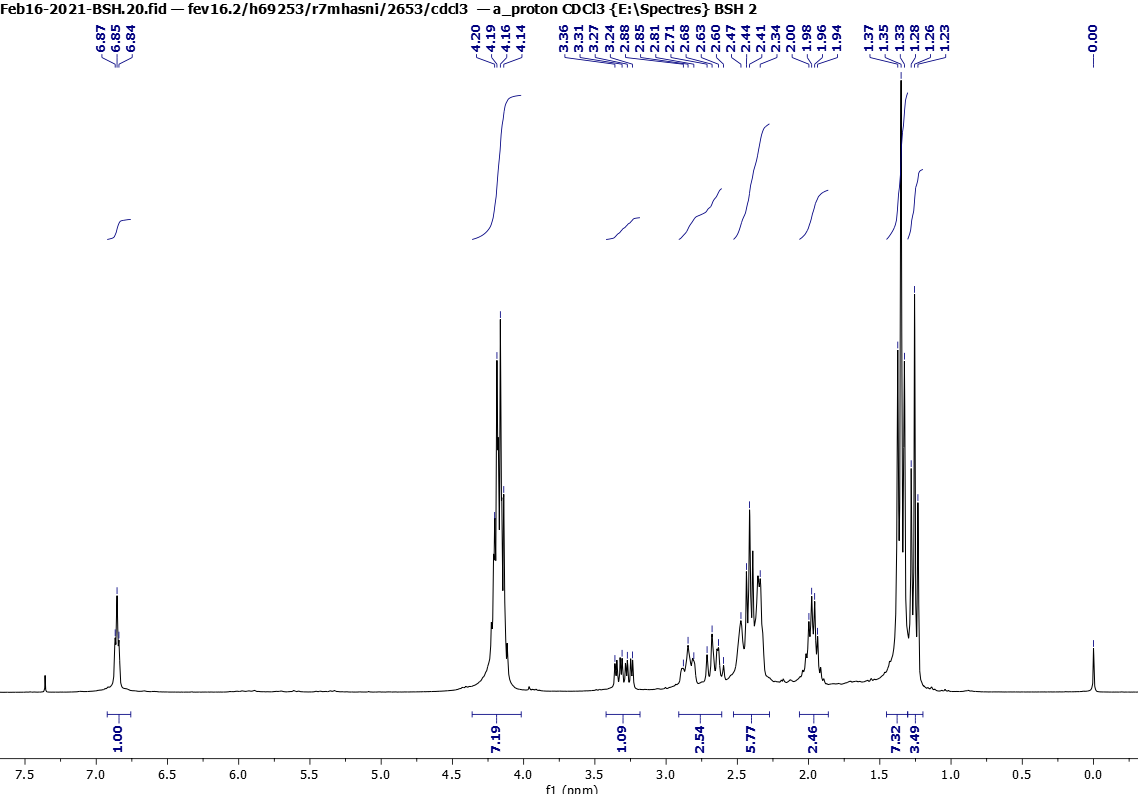
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ESI-HRMS spectra ……………………………………….………....………………..….. S29-S41

**1H/13C NMR Spectra for compounds 5, 6, 7a-c, 8a-c, 9a-d, 10**



Figure 1. 1H NMR (300 MHz, CDCl3) spectra of **5**

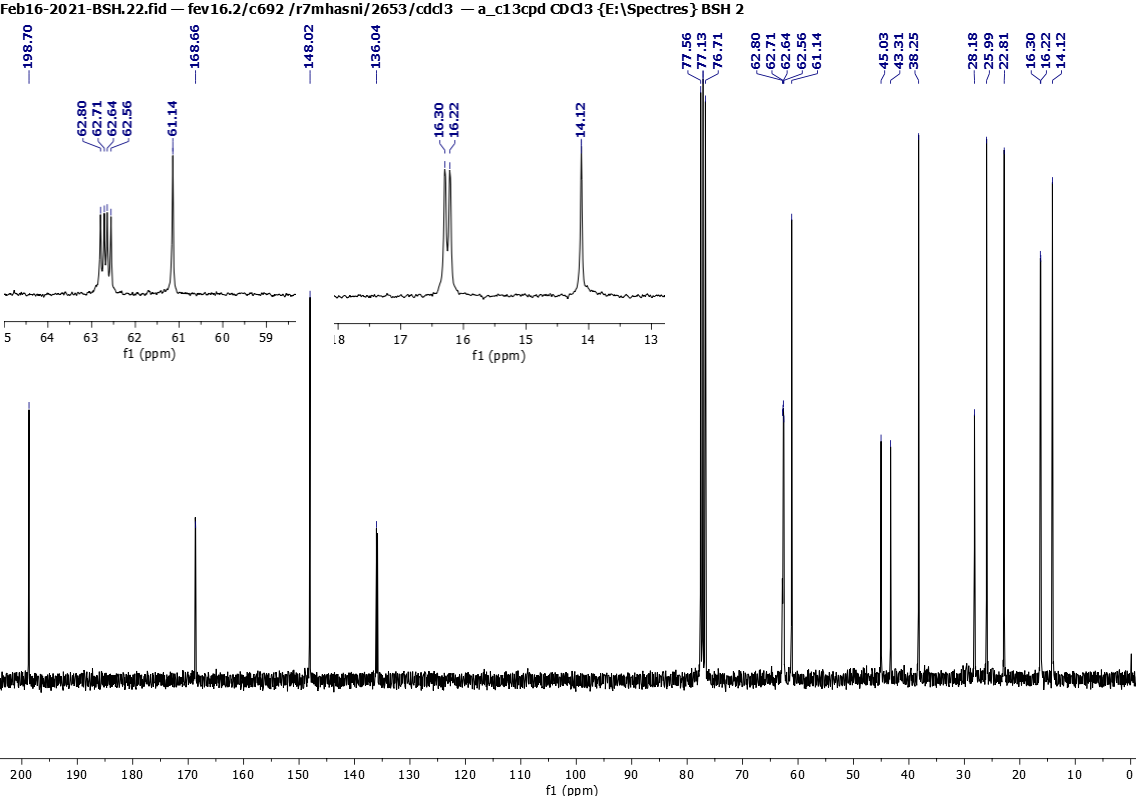


Figure 2. 13C NMR (75 MHz, CDCl3) spectra of **5**

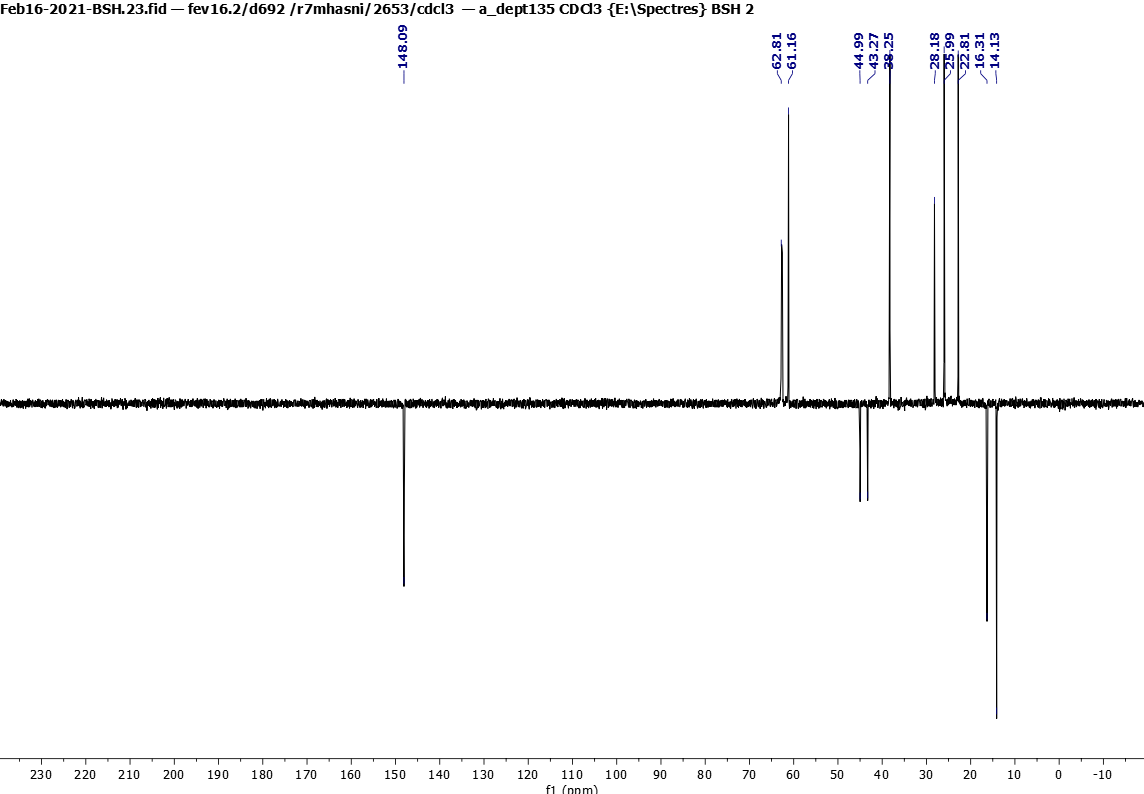
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Figure 3. dept 135 NMR (75 MHz, CDCl3) spectra of **5**

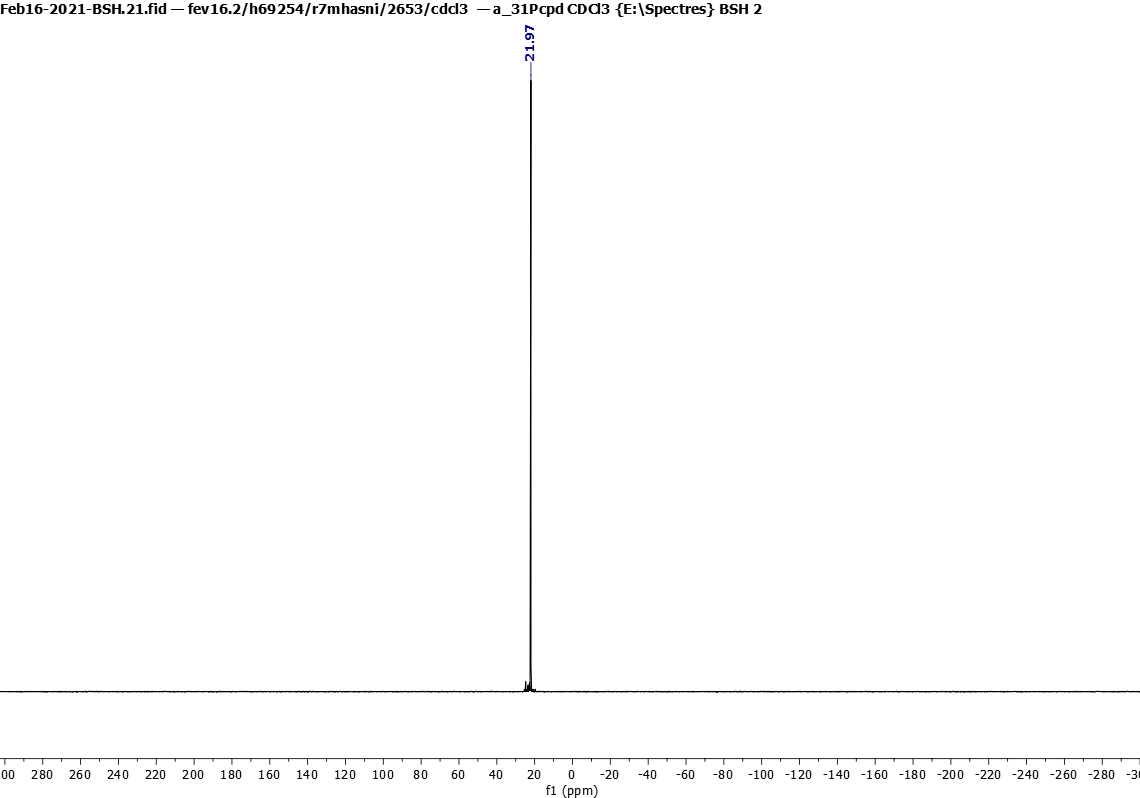
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Figure 4. 31P NMR (121 MHz, CDCl3) spectra of **5**



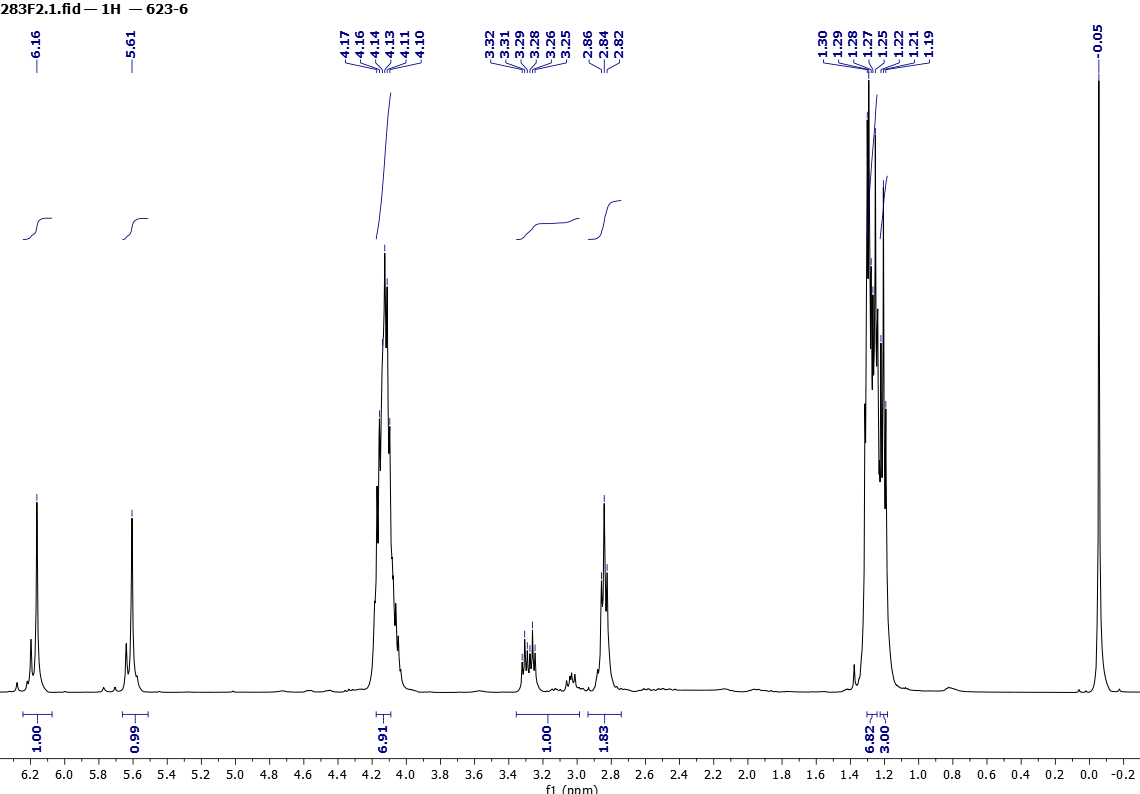


Figure 5. 1H NMR (500 MHz, CDCl3) spectra of **6**

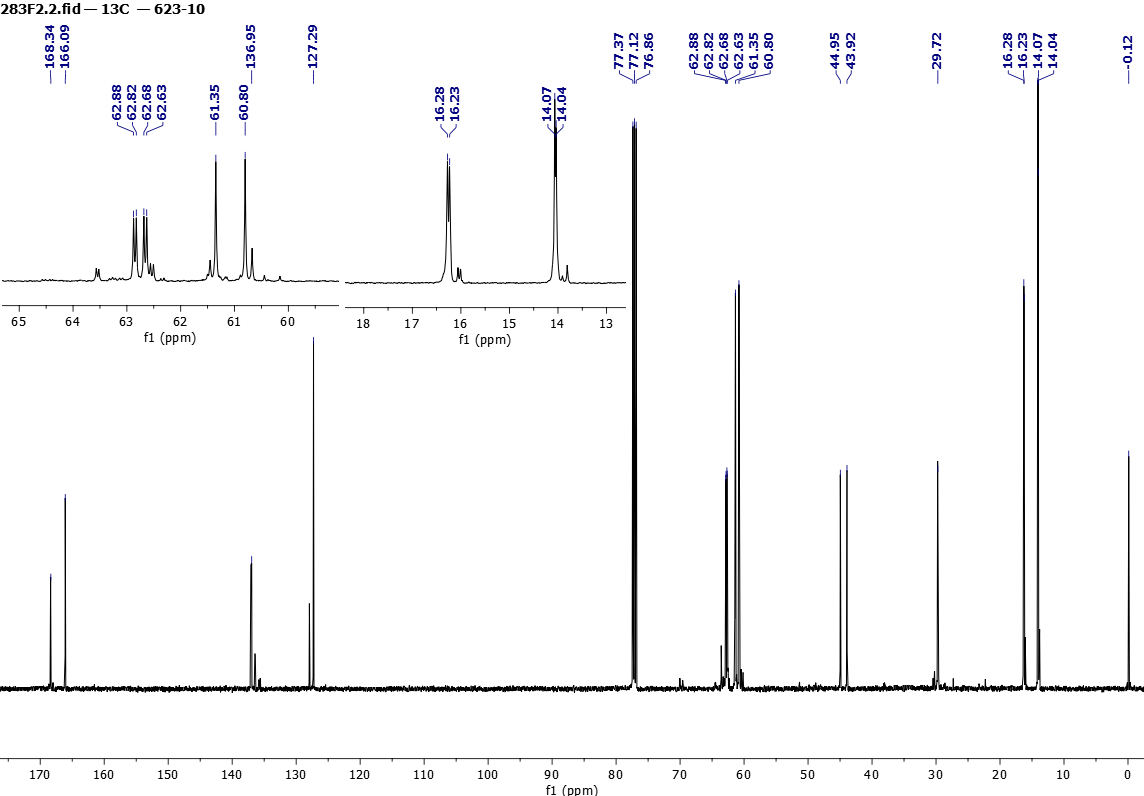


Figure 6. 13C NMR (125 MHz, CDCl3) spectra of **6**

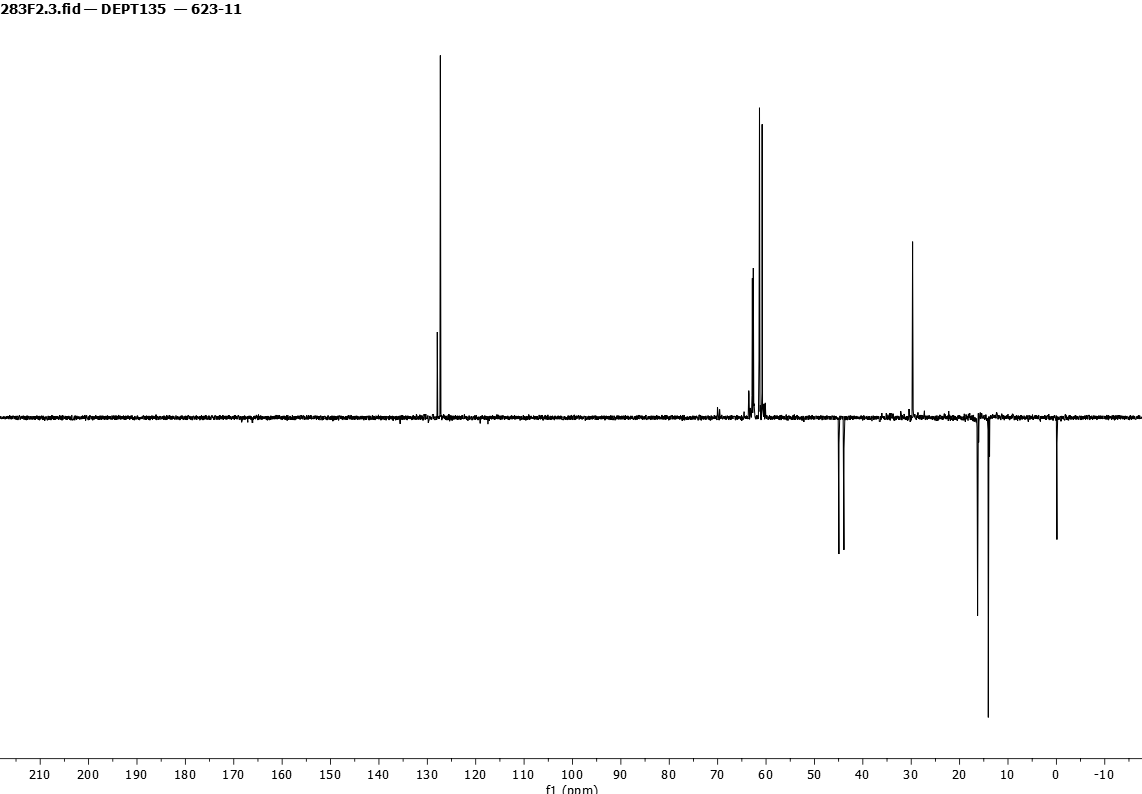
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Figure 7. dept 135 NMR (125 MHz, CDCl3) spectra of **6**

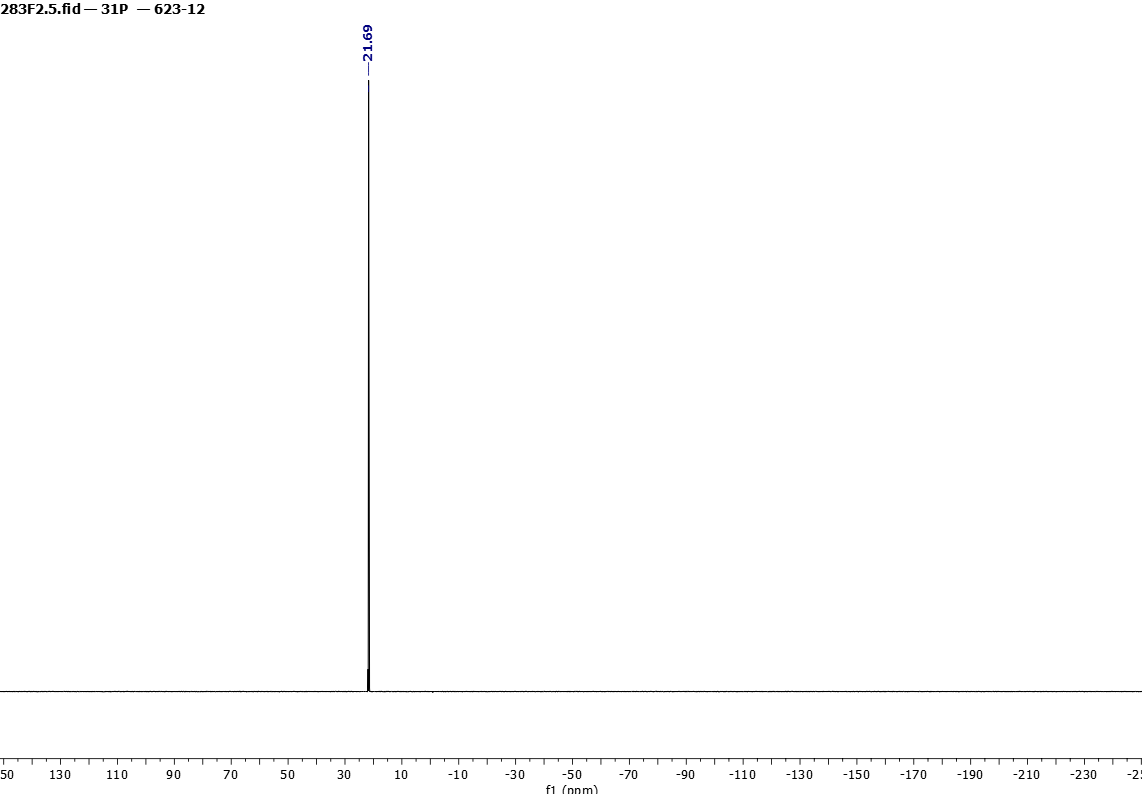
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Figure 8. 31P NMR (202 MHz, CDCl3) spectra of **6**



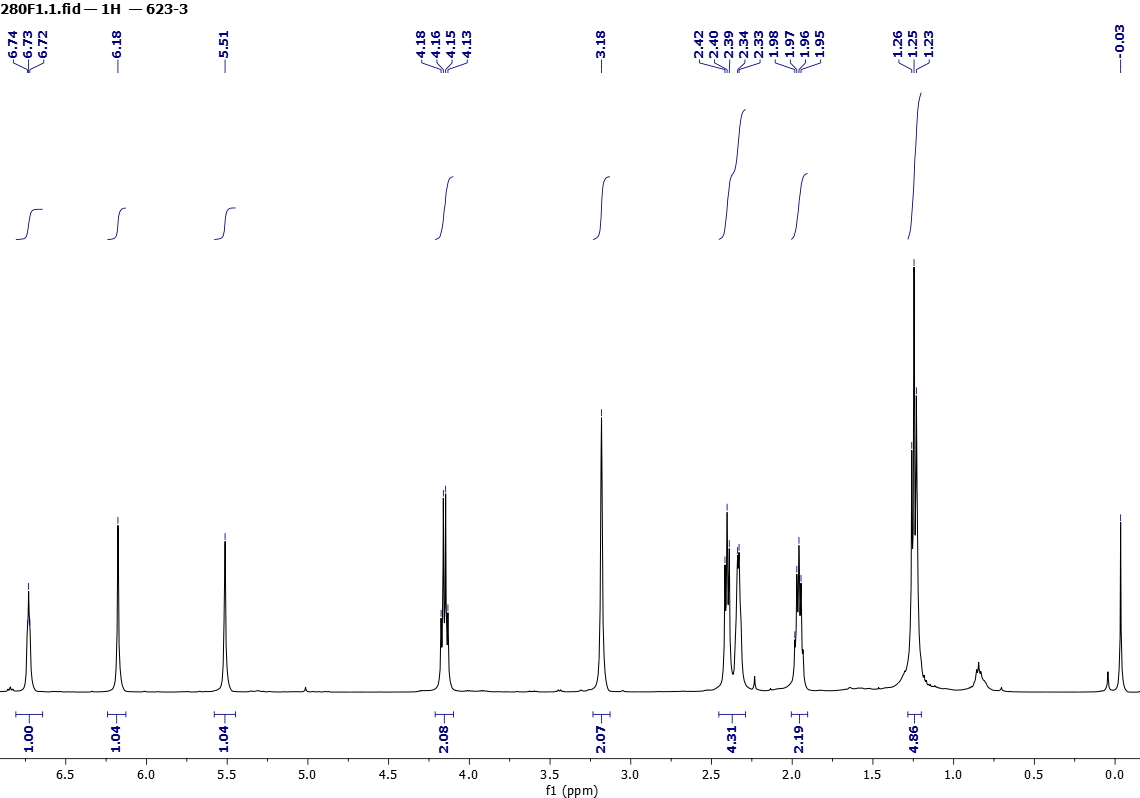


Figure 9. 1H NMR (500 MHz, CDCl3) spectra of **7a**

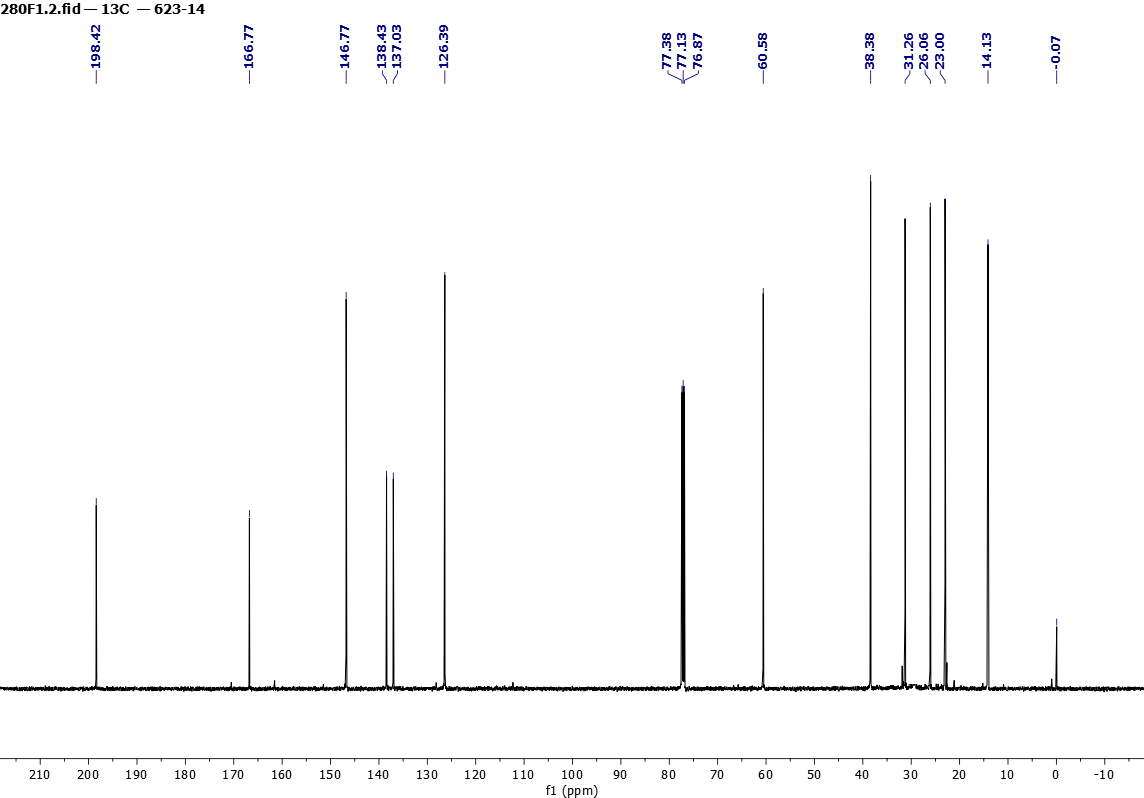


Figure 10. 13C NMR (125 MHz, CDCl3) spectra of **7a**

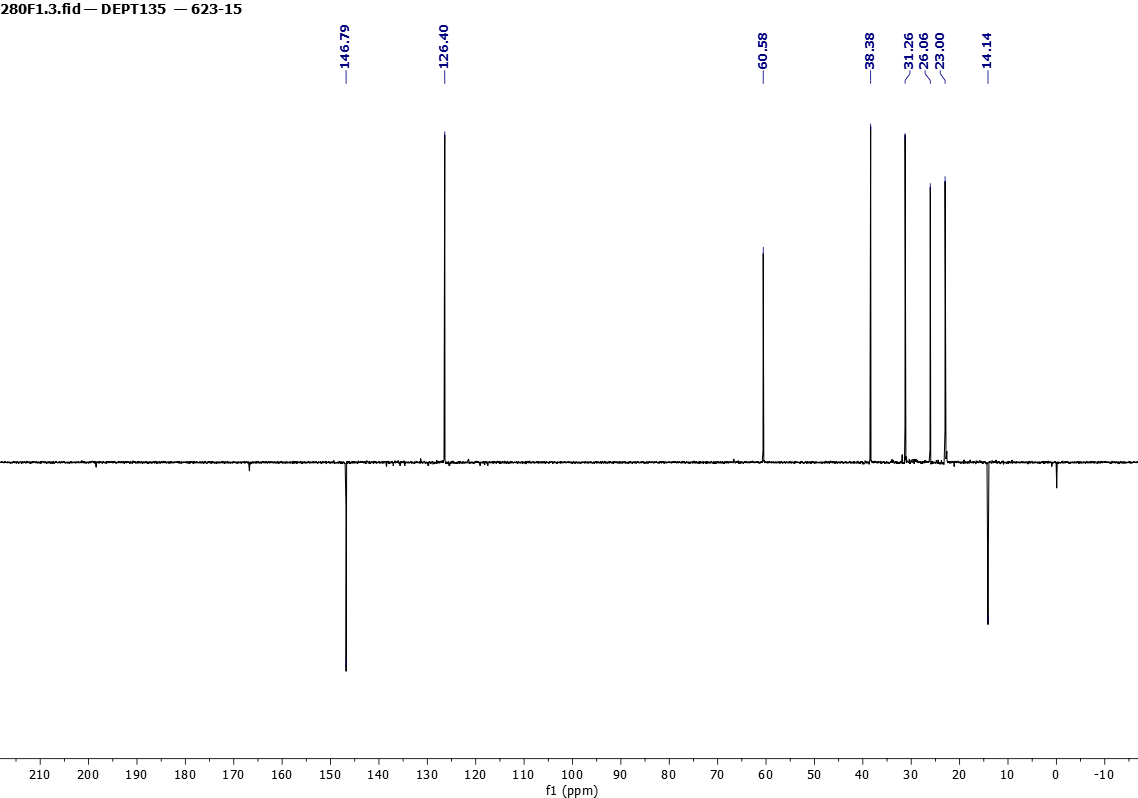
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Figure 11. dept 135 NMR (125 MHz, CDCl3) spectra of **7a**



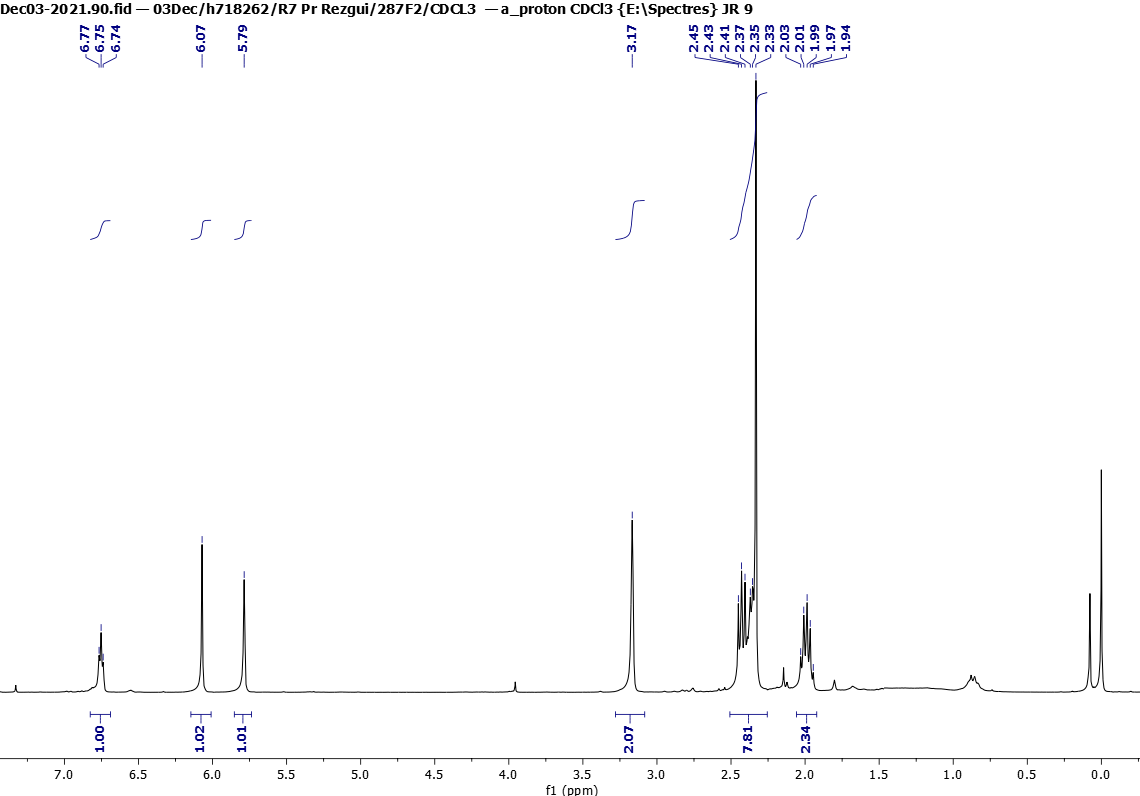


Figure 12. 1H NMR (300 MHz, CDCl3) spectra of **7b**

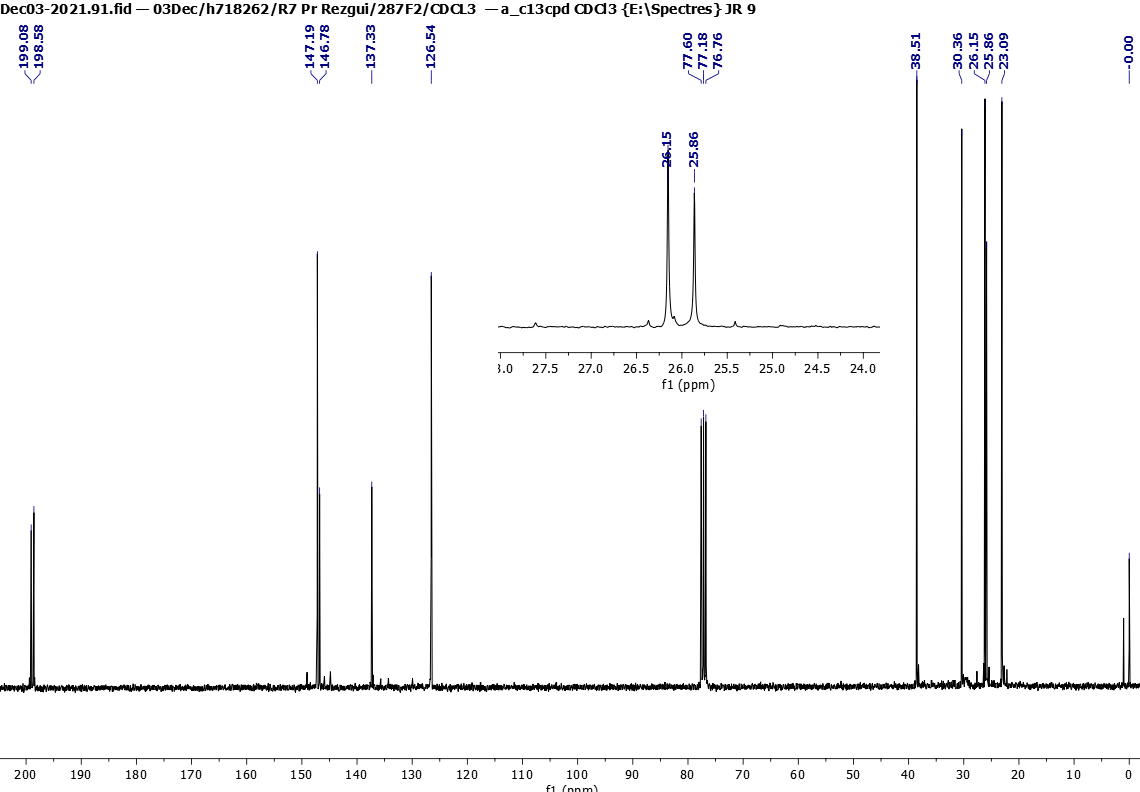


Figure 13. 13C NMR (75 MHz, CDCl3) spectra of **7b**

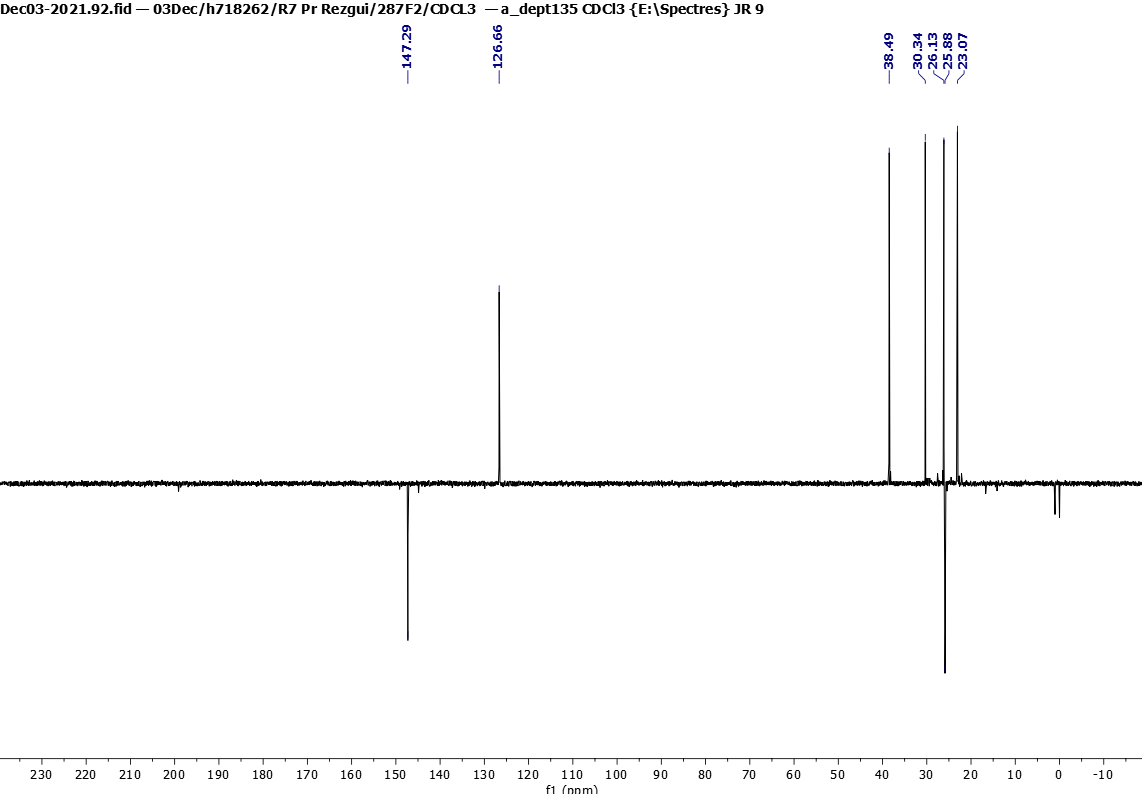
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Figure 14. dept 135 NMR (75 MHz, CDCl3) spectra of **7b**



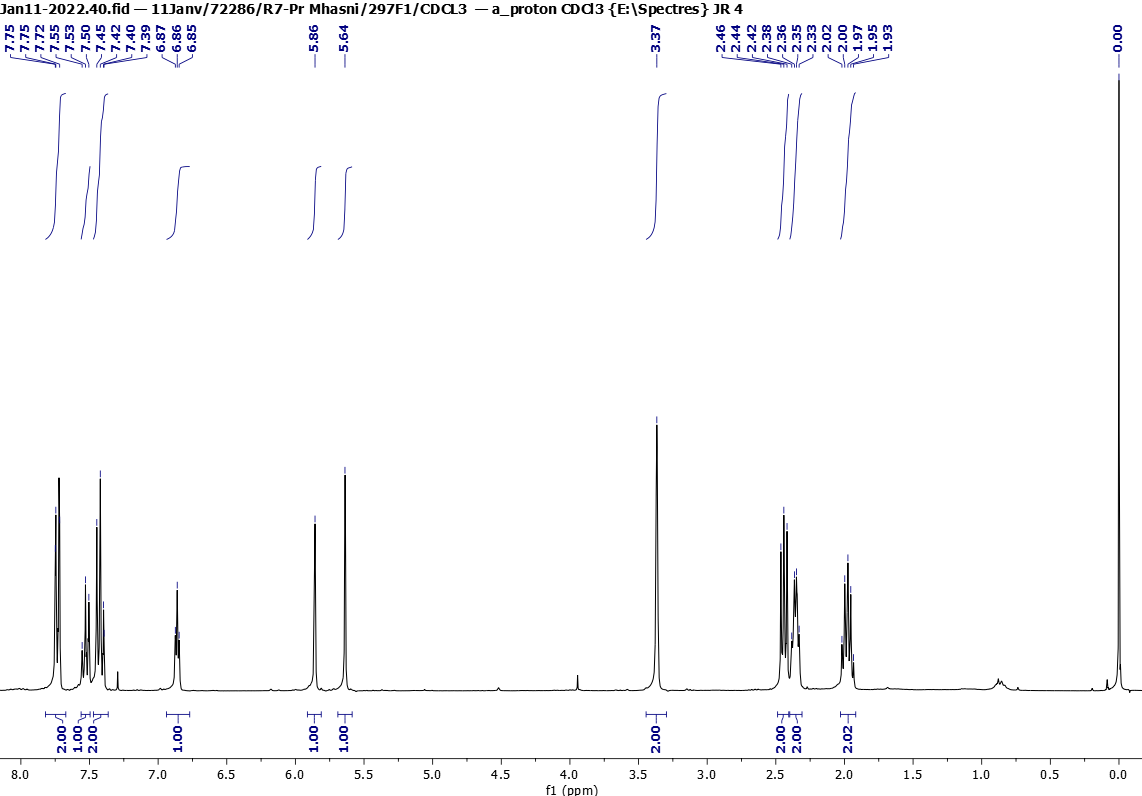


Figure 15. 1H NMR (300 MHz, CDCl3) spectra of **7c**

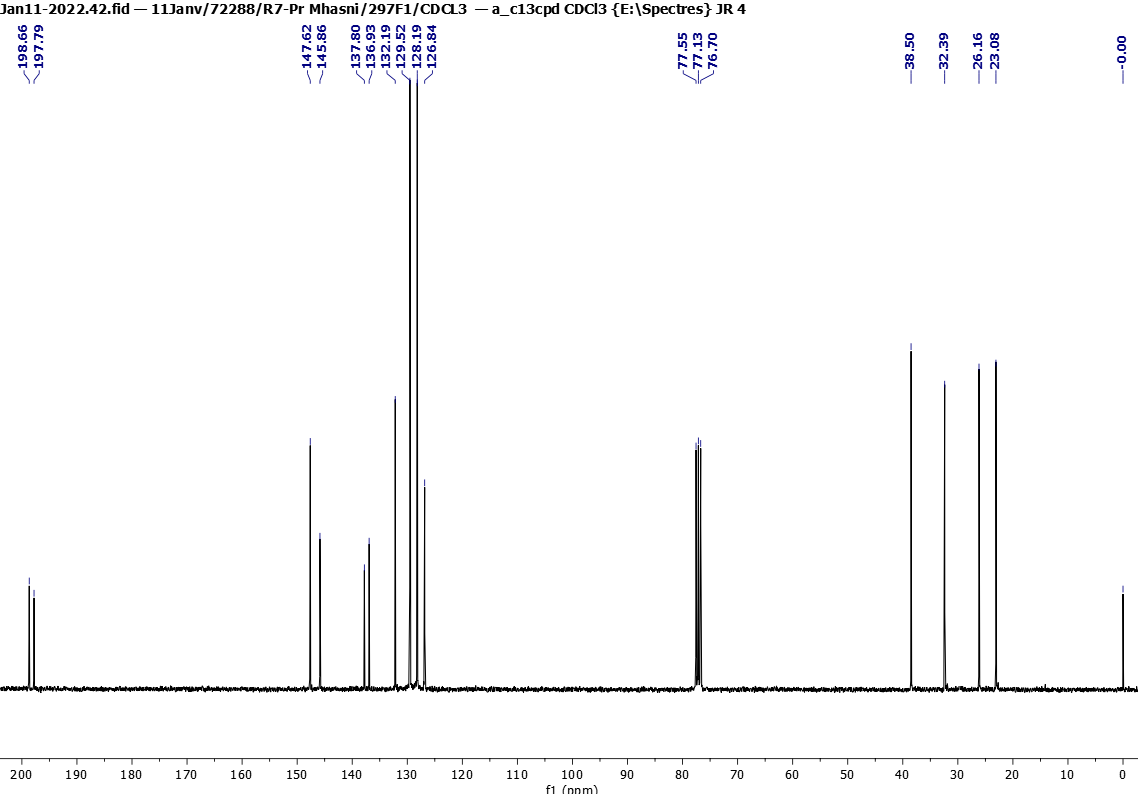


Figure 16. 13C NMR (75 MHz, CDCl3) spectra of **7c**

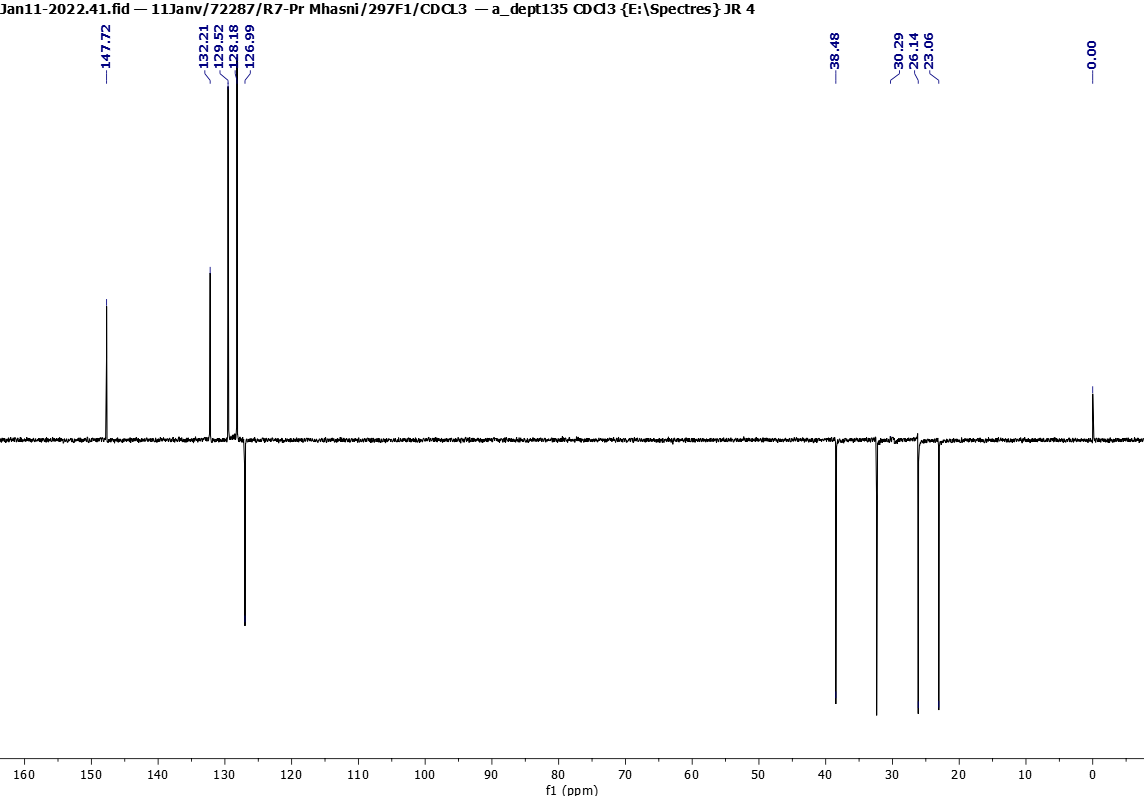
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Figure 17. dept 135 NMR (75 MHz, CDCl3) spectra of **7c**



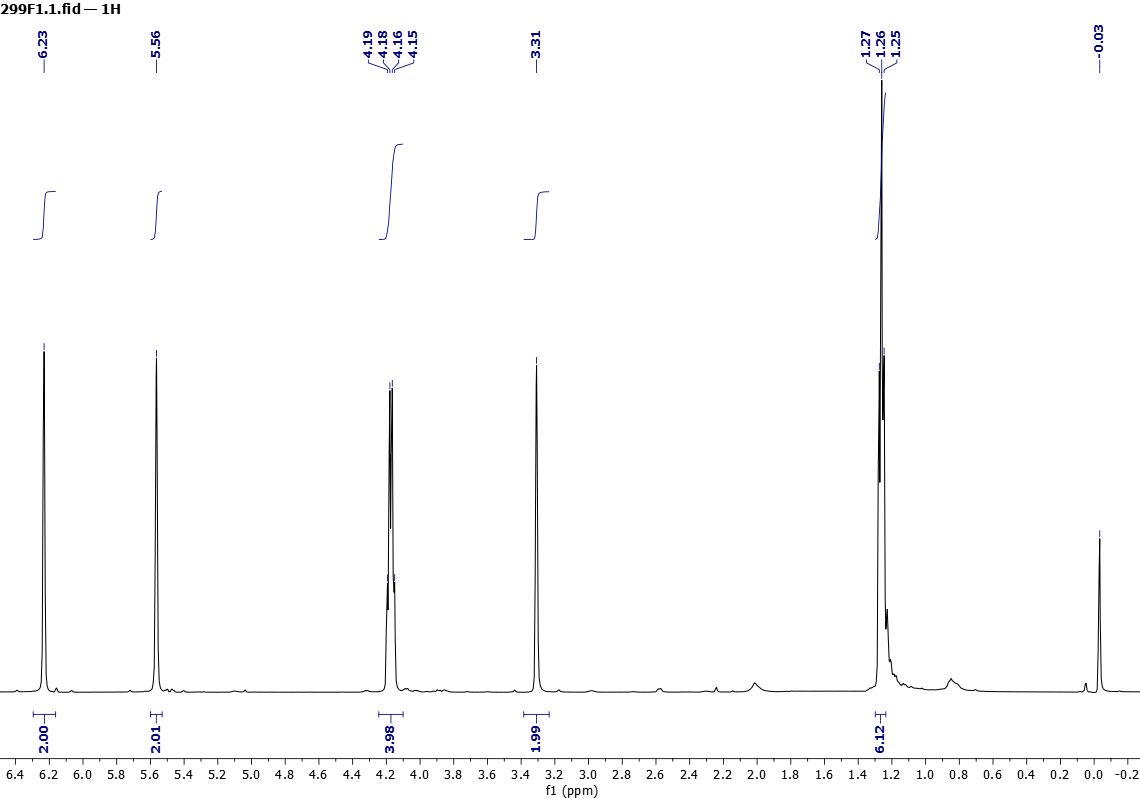


Figure 18. 1H NMR (500 MHz, CDCl3) spectra of **8a**

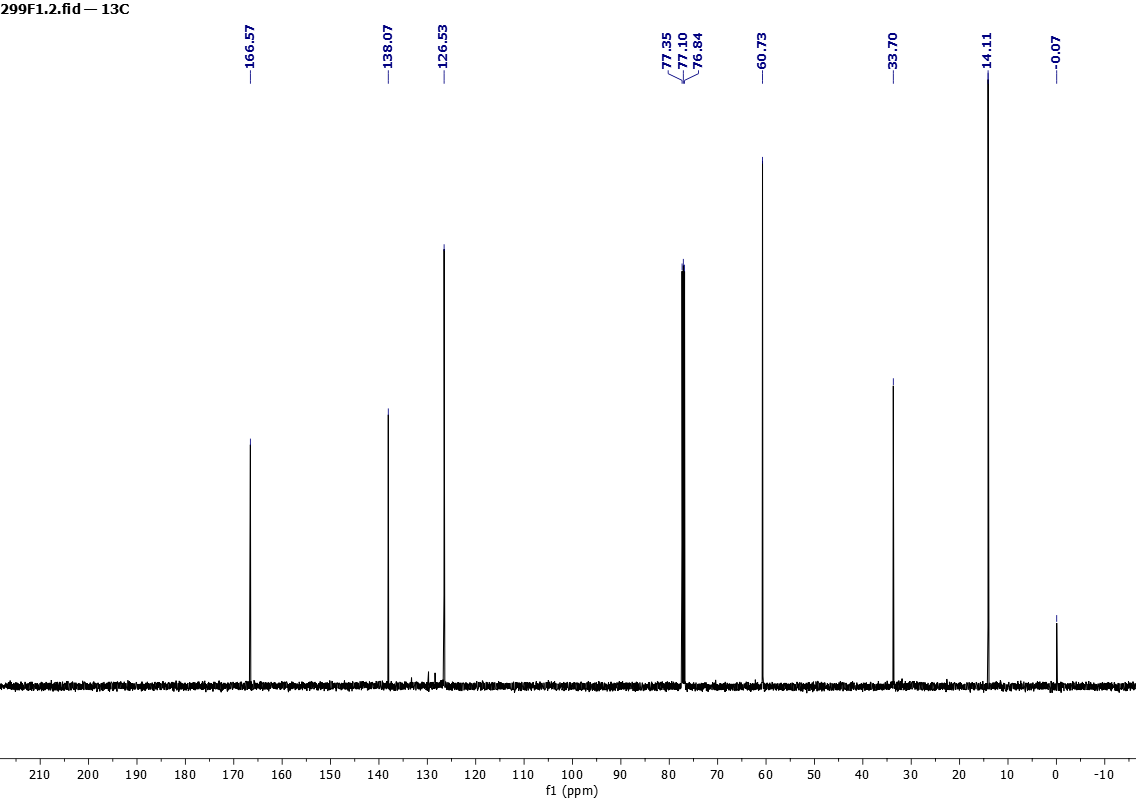


Figure 19. 13C NMR (125 MHz, CDCl3) spectra of **8a**

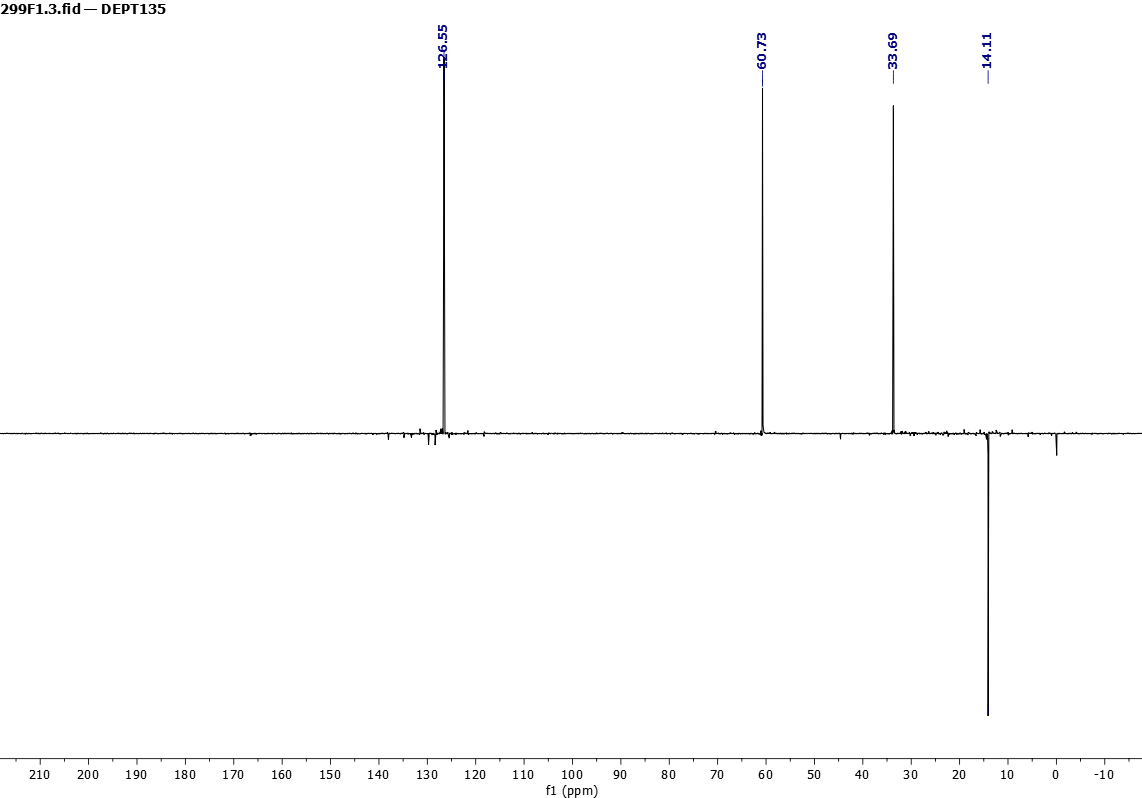
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Figure 20. dept 135 NMR (75 MHz, CDCl3) spectra of **8a**



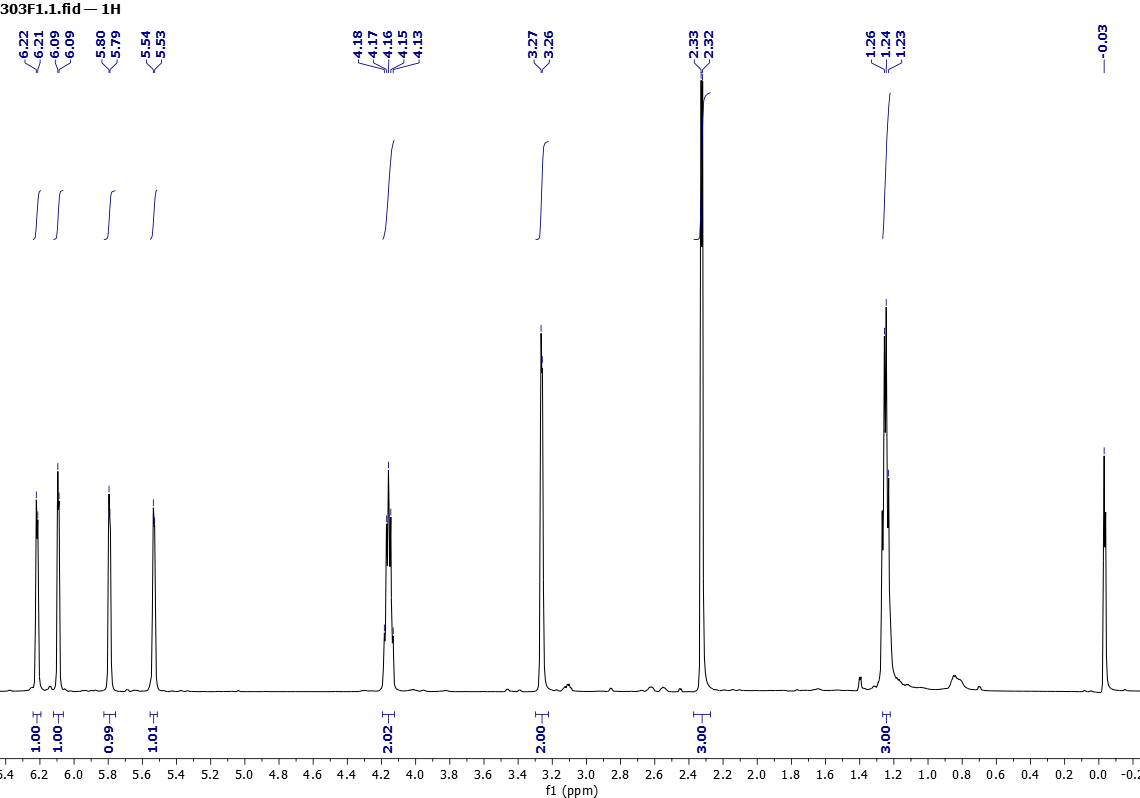


Figure 21. 1H NMR (500 MHz, CDCl3) spectra of **8b**

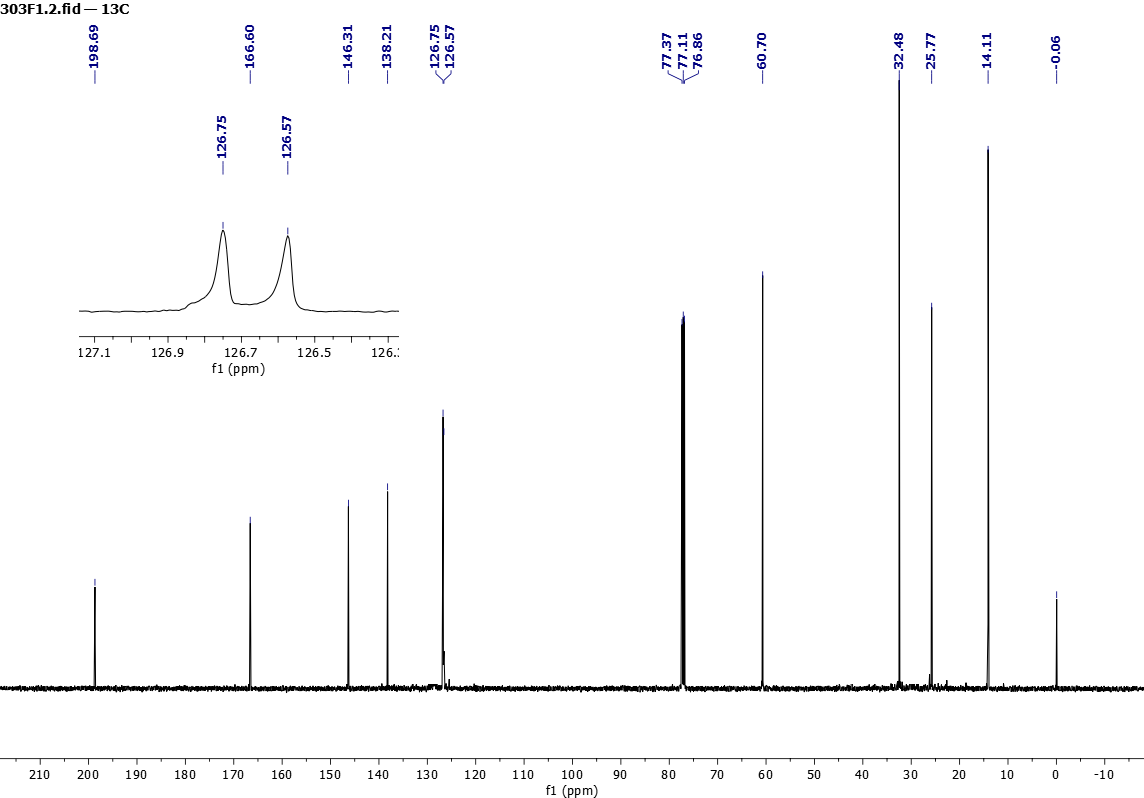


Figure 22. 13C NMR (125 MHz, CDCl3) spectra of **8b**

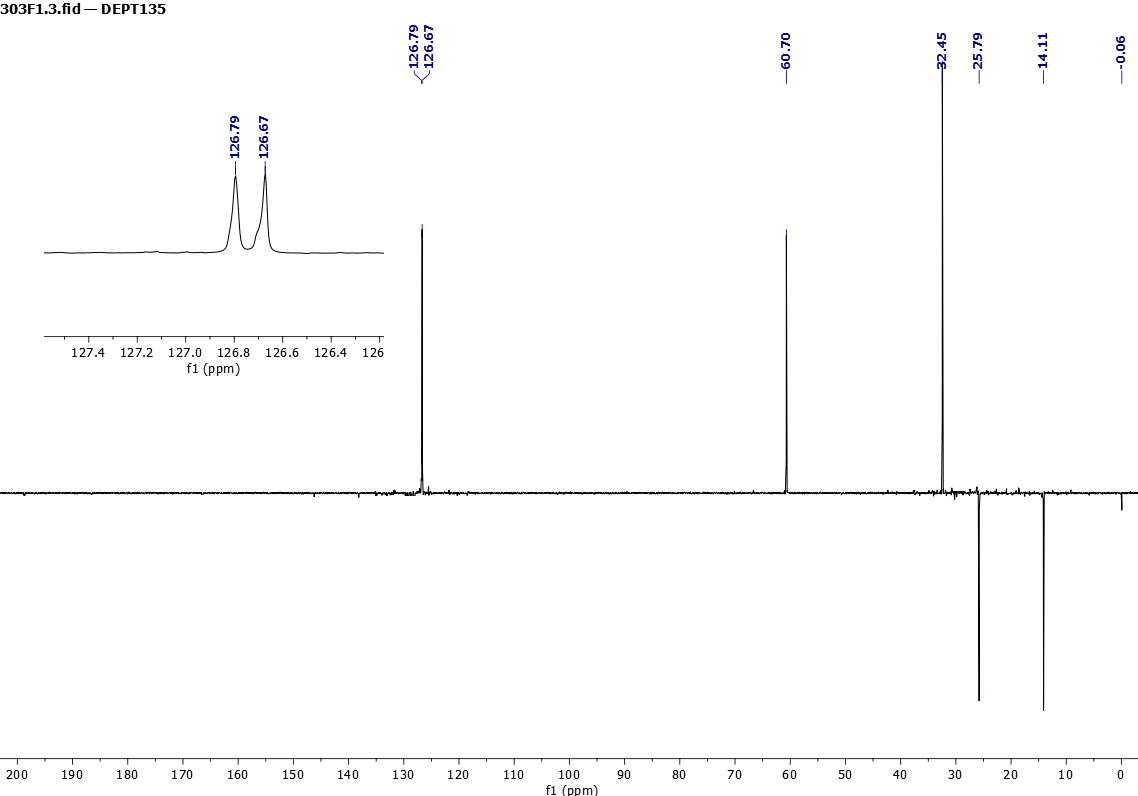
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Figure 23. dept 135 NMR (75 MHz, CDCl3) spectra of **8b**



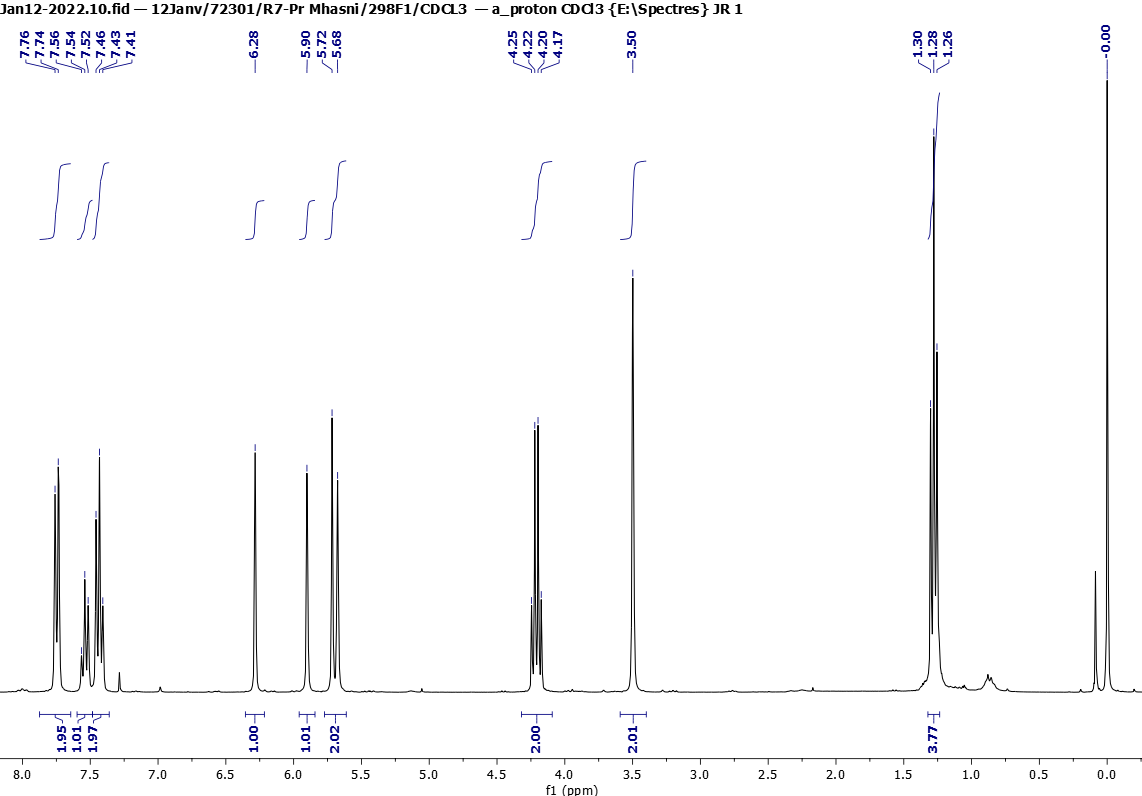


Figure 24. 1H NMR (300 MHz, CDCl3) spectra of **8c**

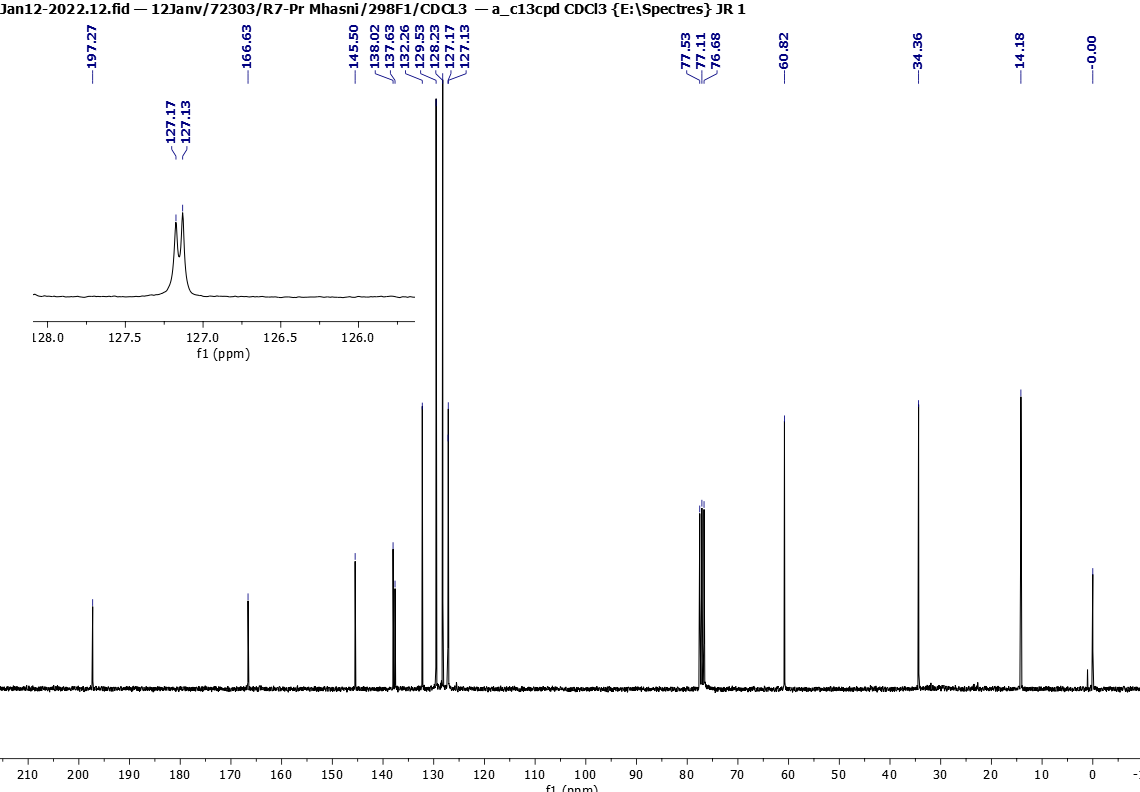


Figure 25. 13C NMR (75 MHz, CDCl3) spectra of **8c**

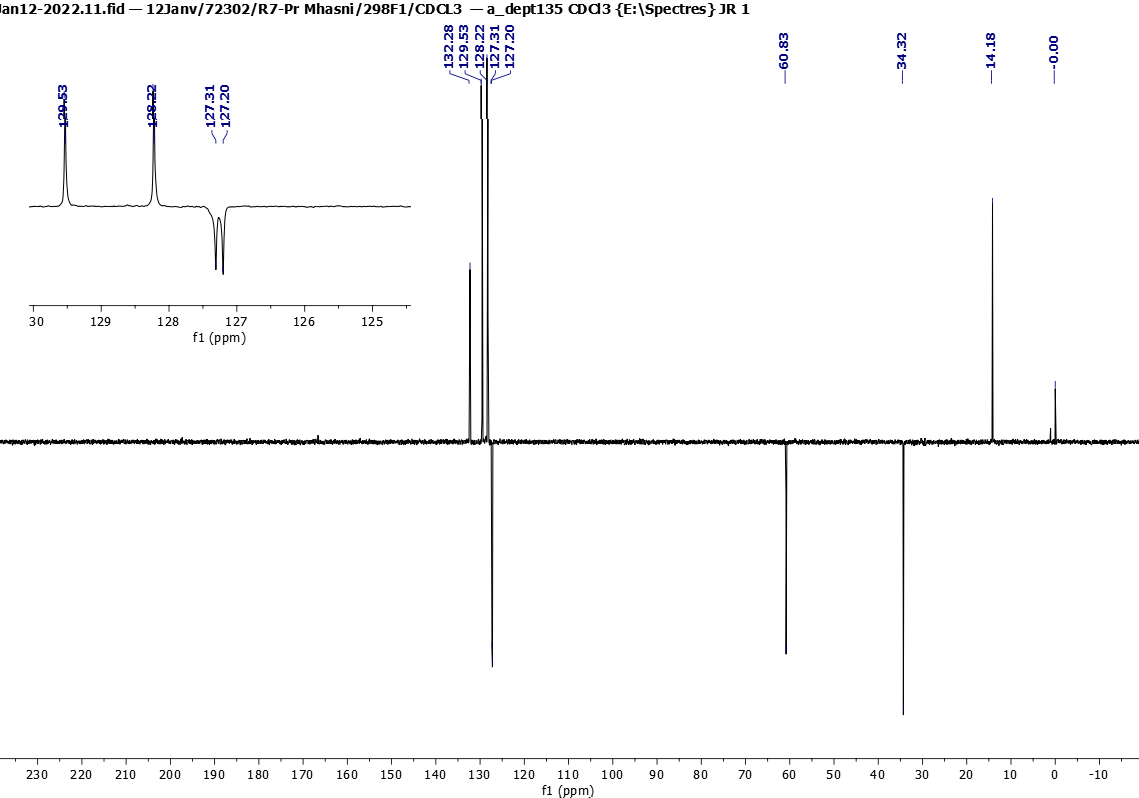
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Figure 26. dept 135 NMR (75 MHz, CDCl3) spectra of **8c**



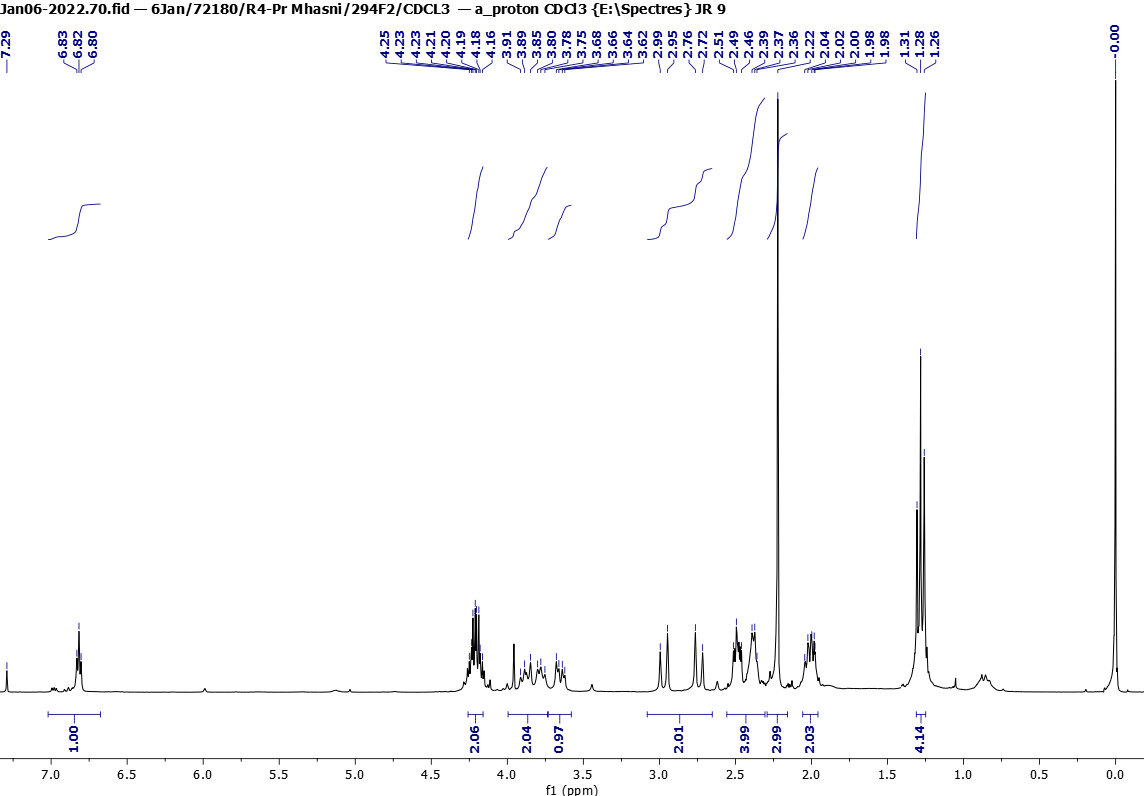


Figure 17. 1H NMR (300 MHz, CDCl3) spectra of **9a**

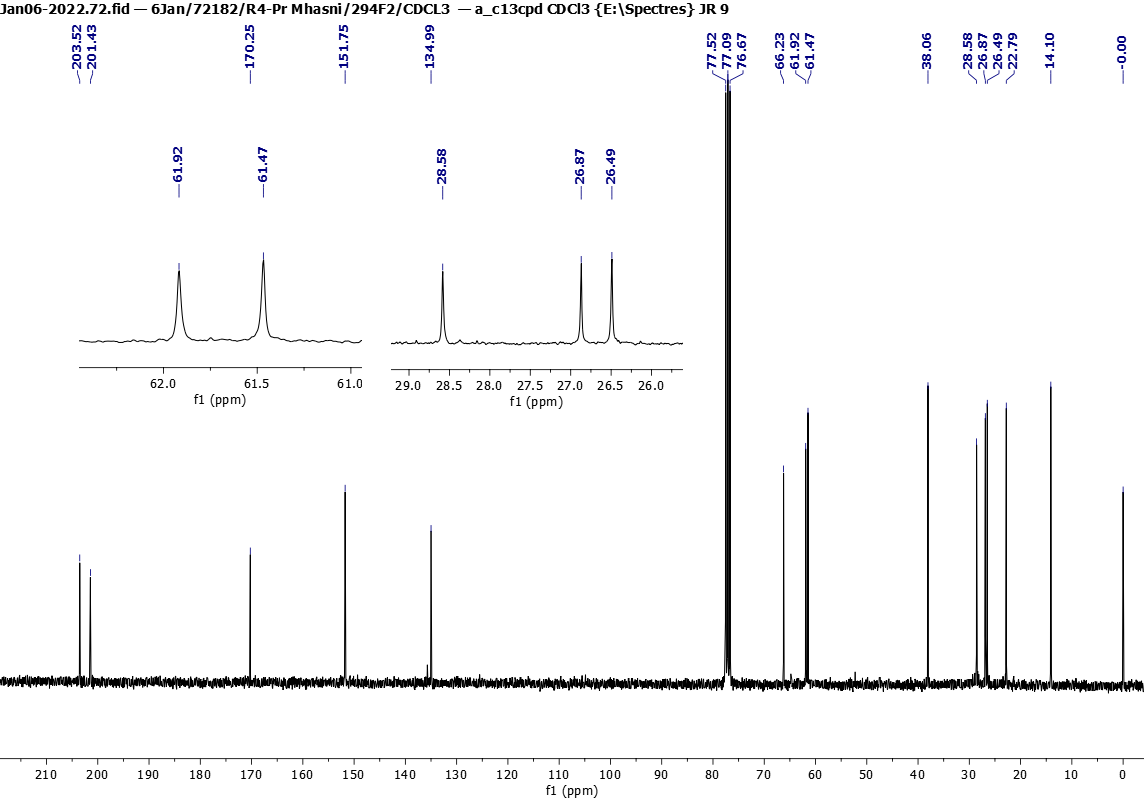


Figure 18. 13C NMR (75 MHz, CDCl3) spectra of **9a**

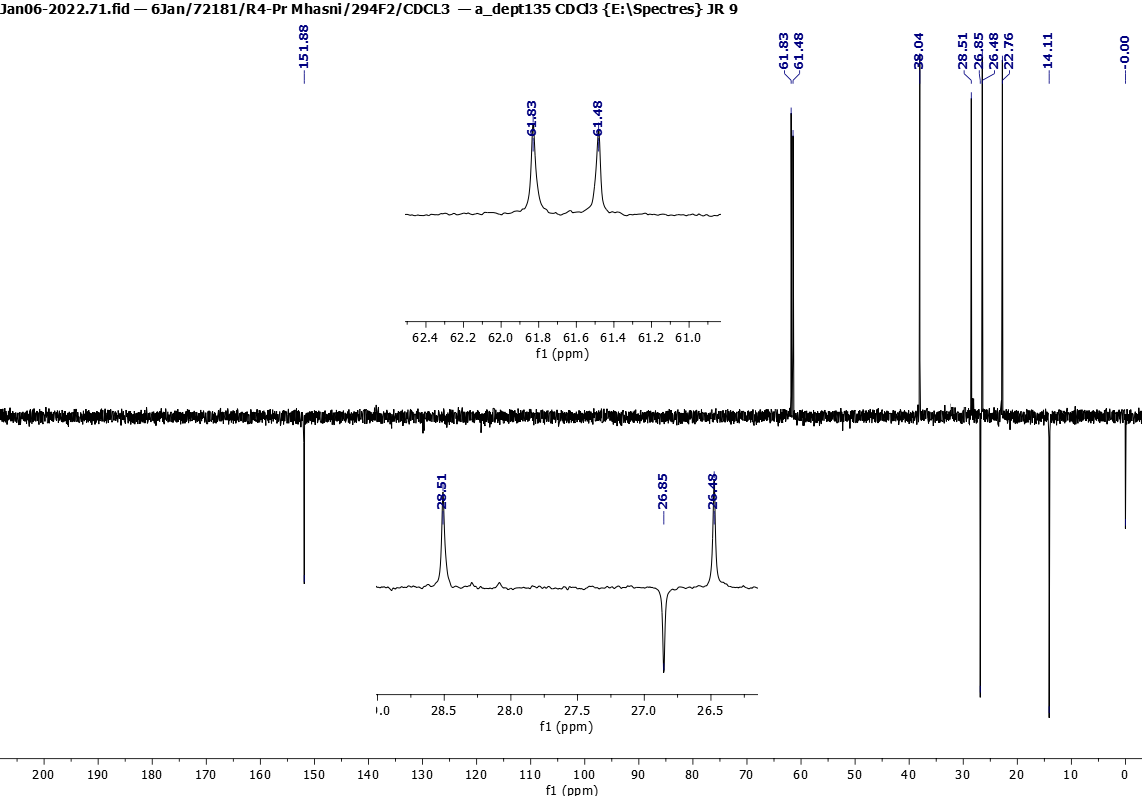


Figure 19. dept 135 NMR (75 MHz, CDCl3) spectra of **9a**



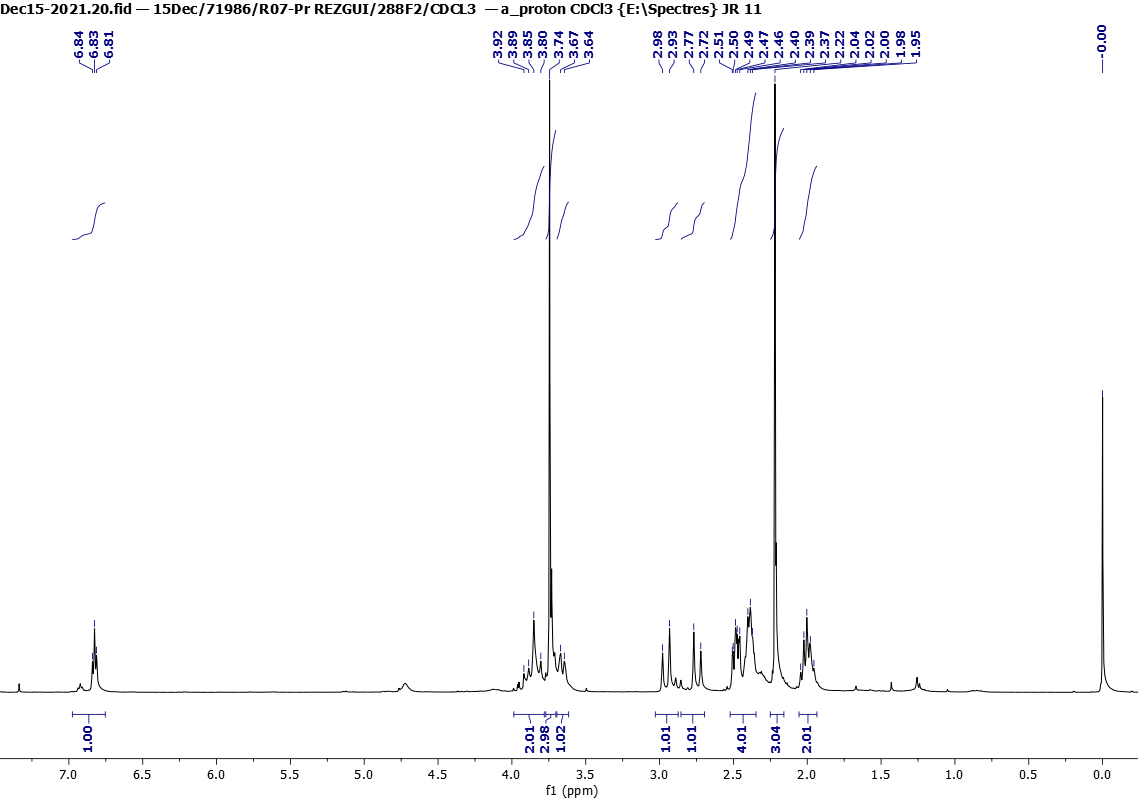


Figure 20. 1H NMR (300 MHz, CDCl3) spectra of **9b**

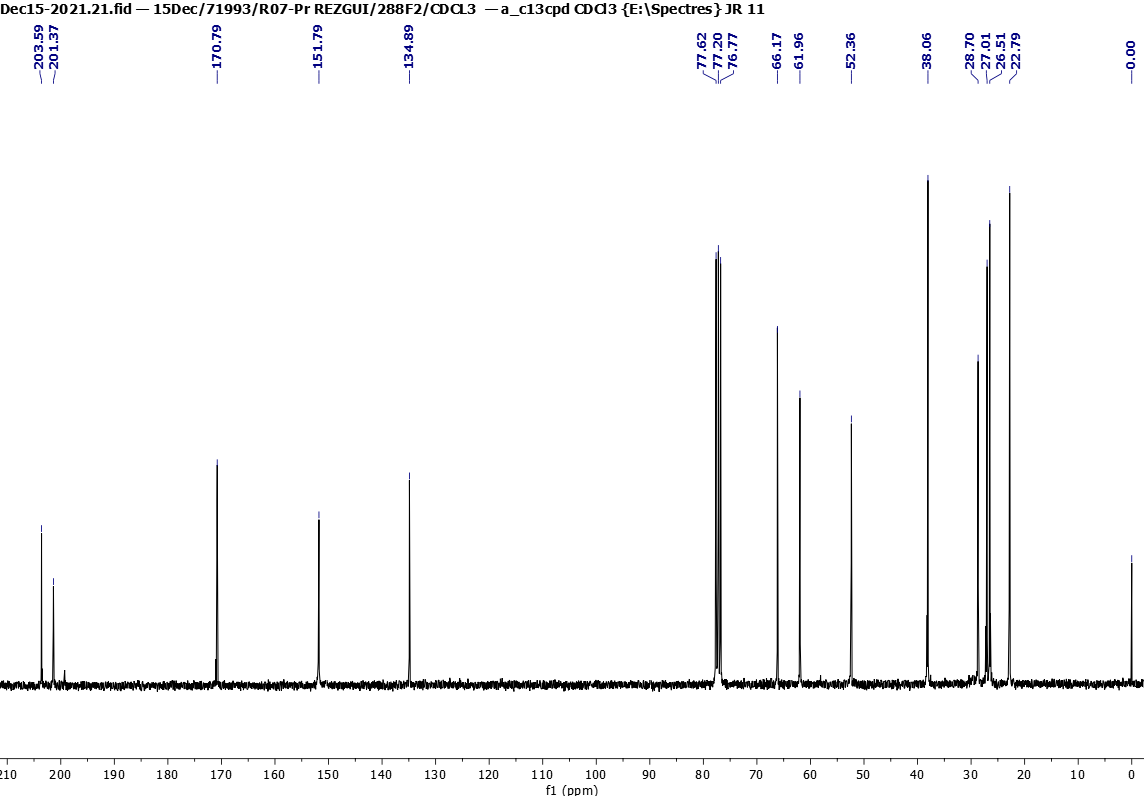
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Figure 21. 13C NMR (75 MHz, CDCl3) spectra of **9b**

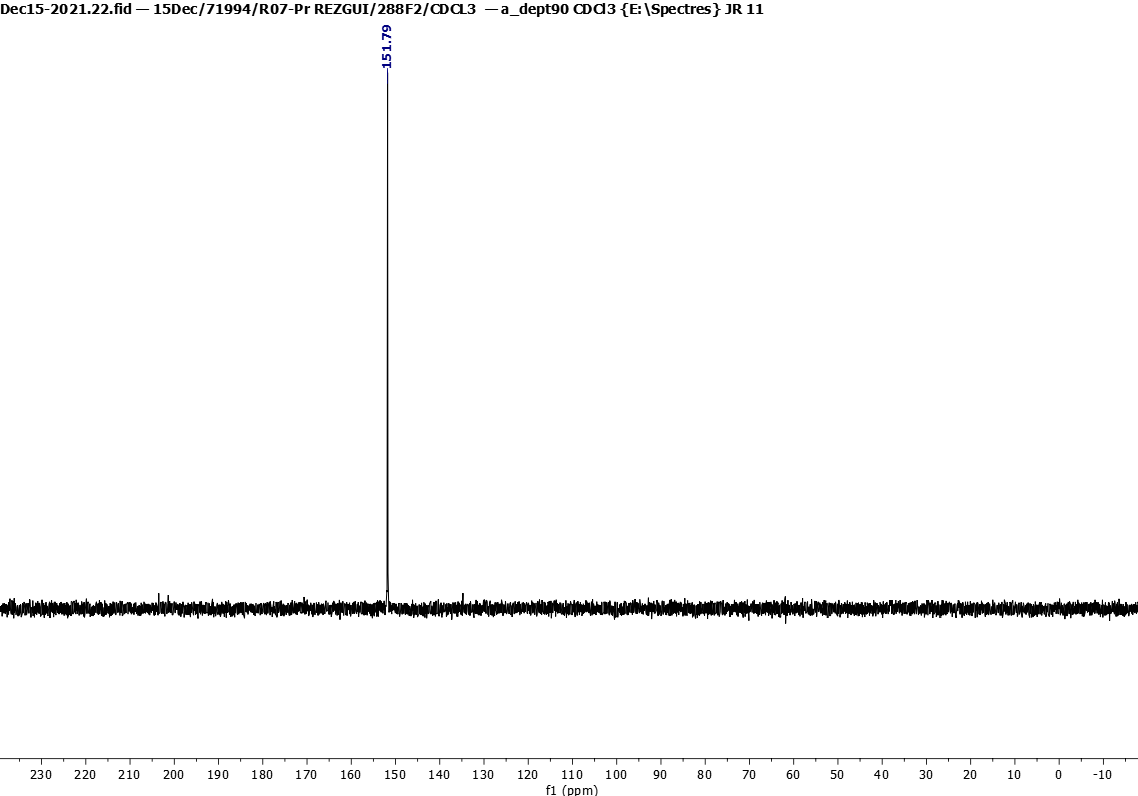


Figure 22. dept 90 NMR (75 MHz, CDCl3) spectra of **9b**





Figure 23. 1H NMR (300 MHz, CDCl3) spectra of **9c**

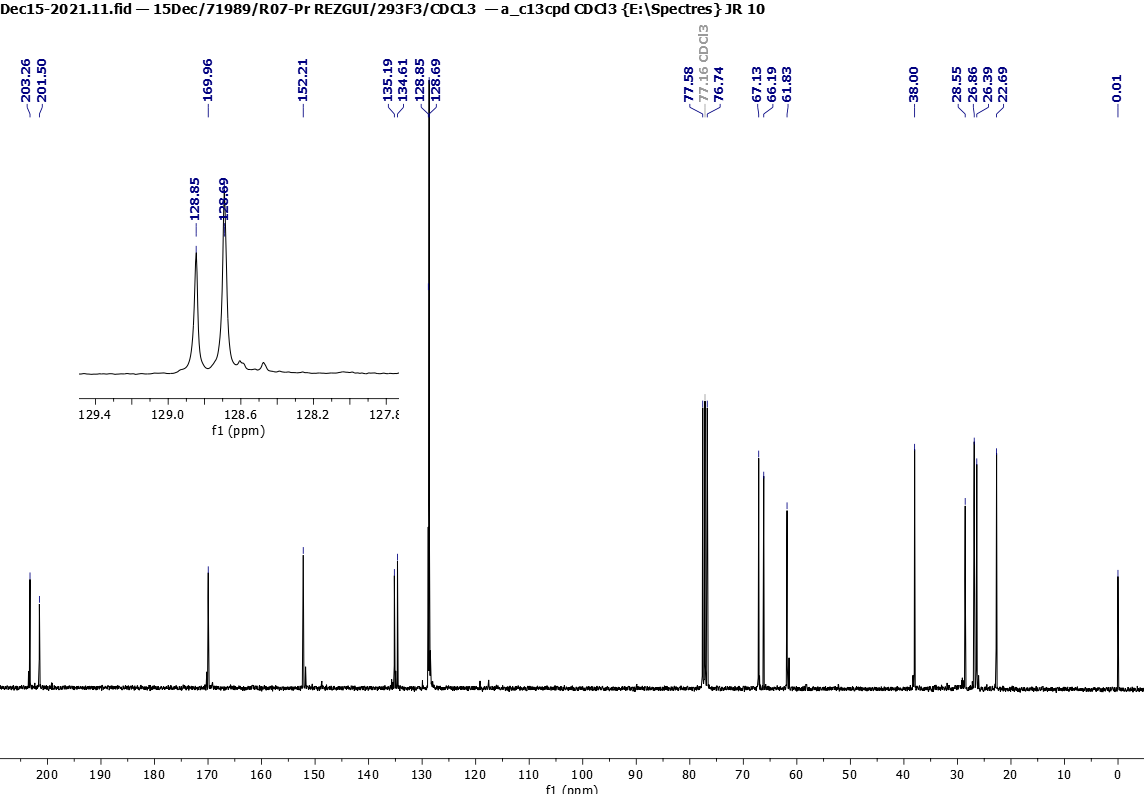


Figure 24. 13C NMR (75 MHz, CDCl3) spectra of **9c**

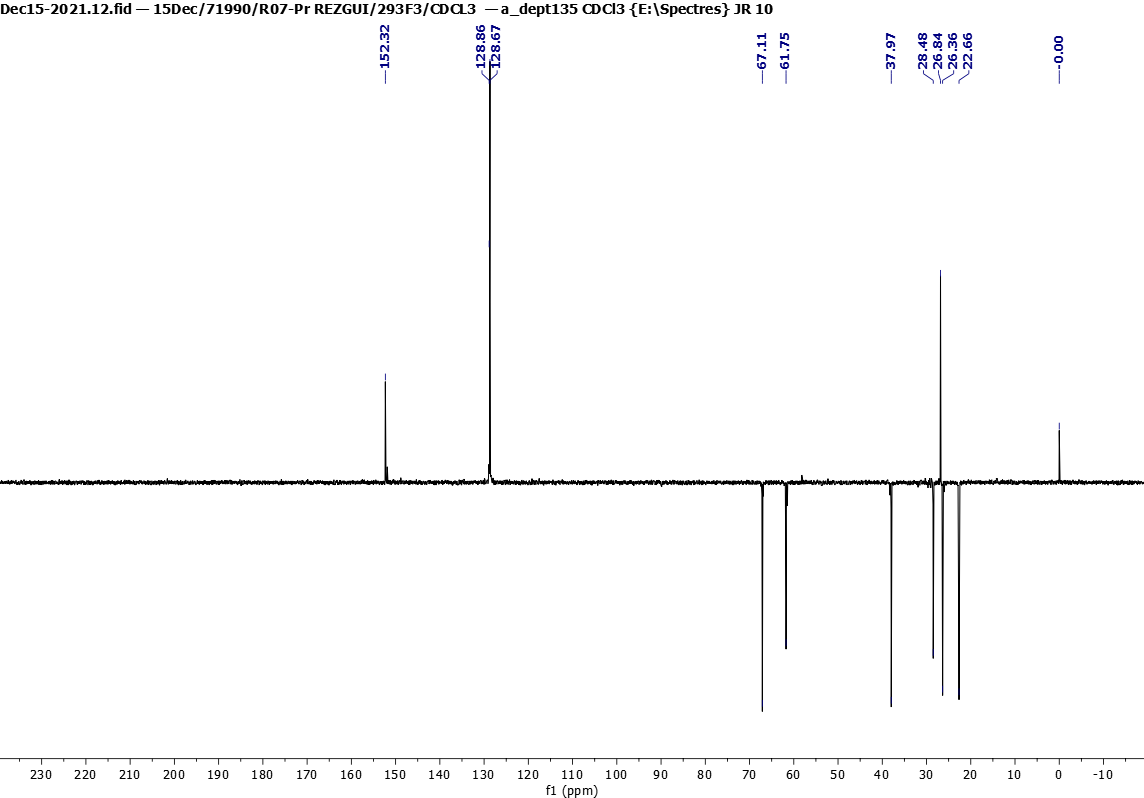


Figure 25. dept 135 NMR (75 MHz, CDCl3) spectra of **9c**



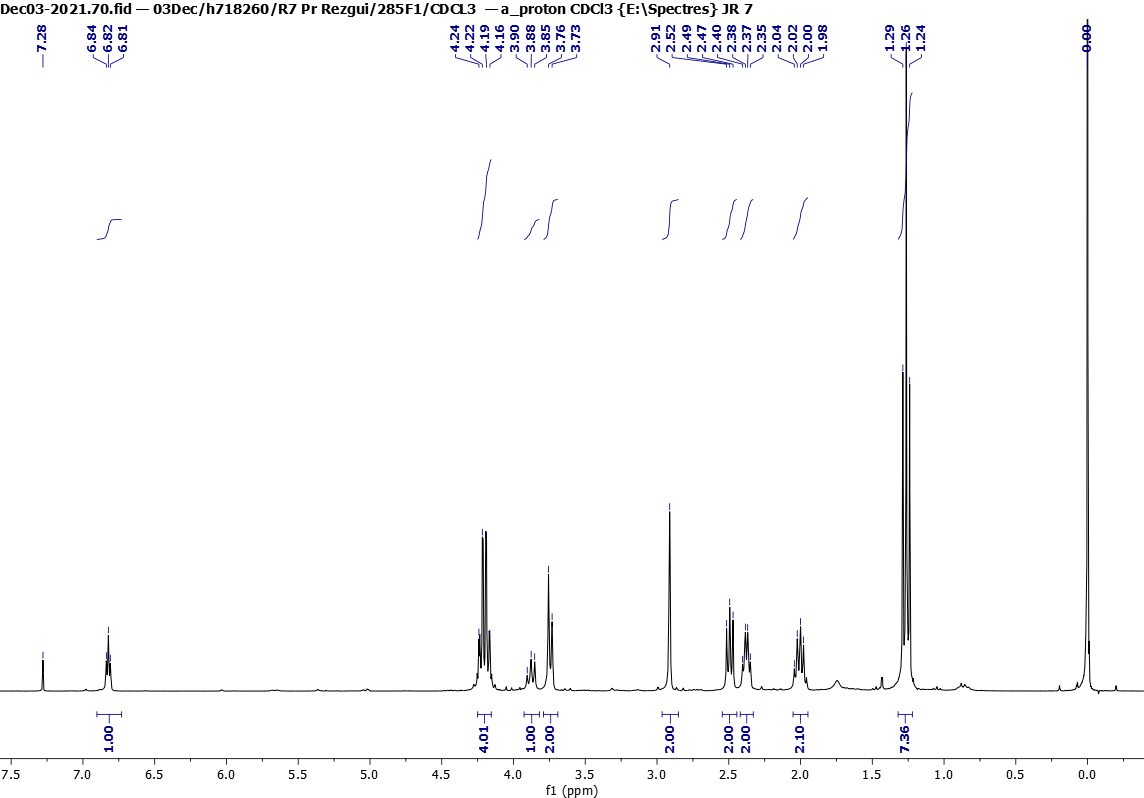


Figure 26. 1H NMR (300 MHz, CDCl3) spectra of **9d**

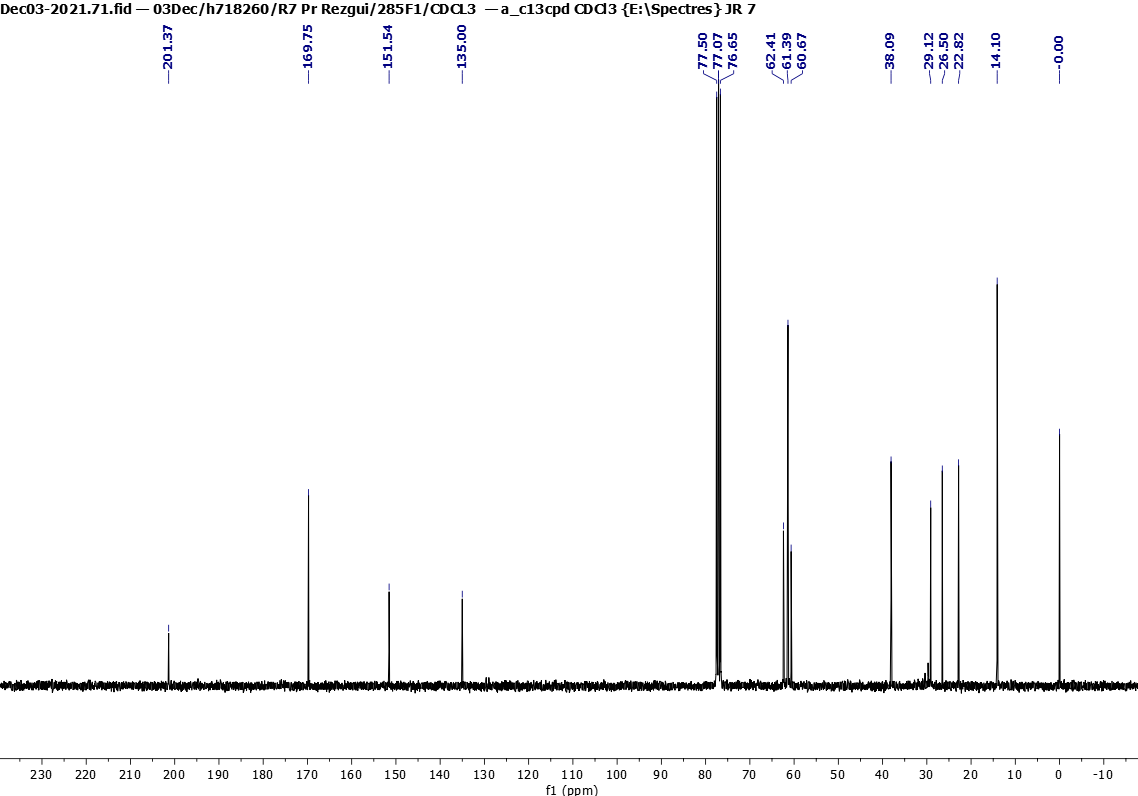


Figure 27. 13C NMR (75 MHz, CDCl3) spectra of **9d**

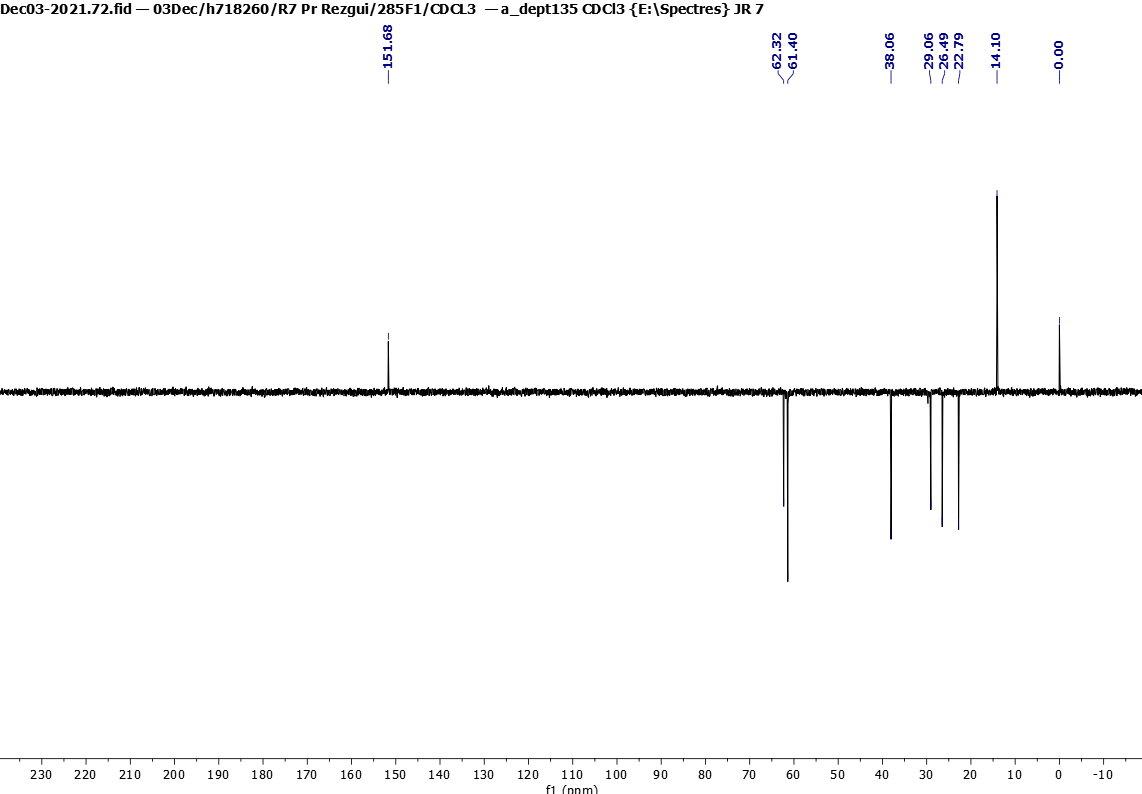


Figure 28. dept 135 NMR (75 MHz, CDCl3) spectra of **9d**



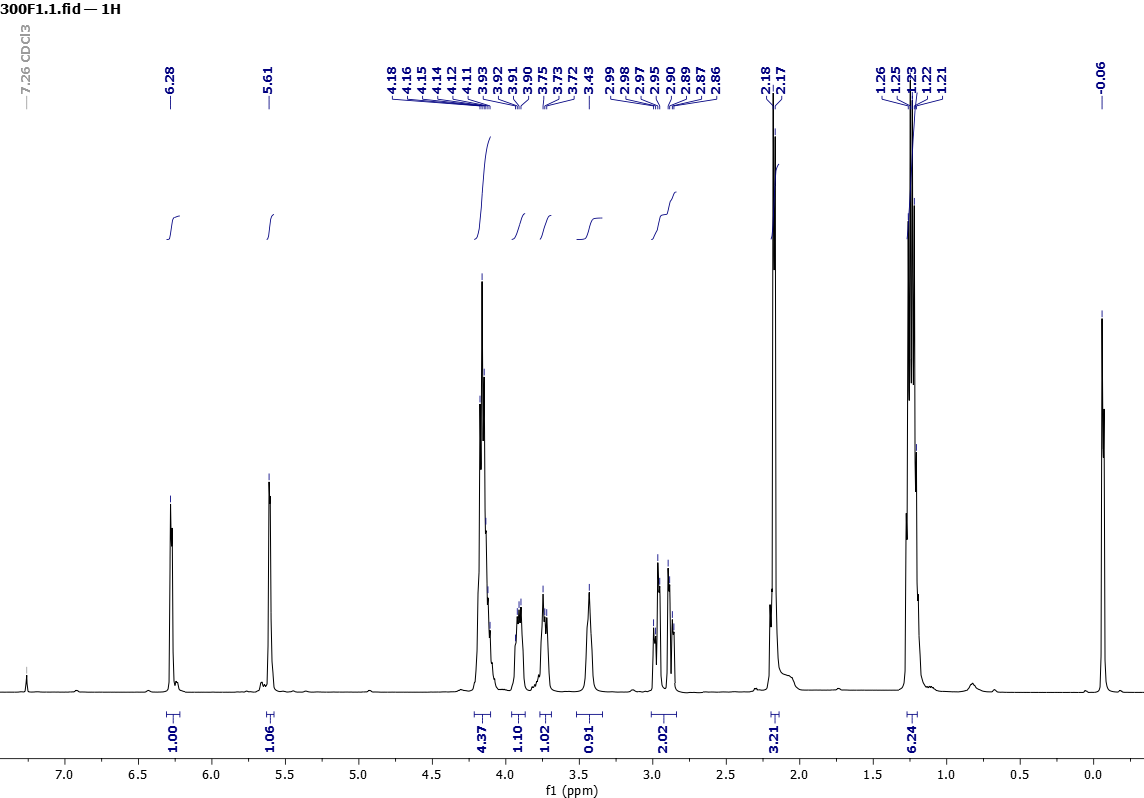


Figure 29. 1H NMR (500 MHz, CDCl3) spectra of **10**

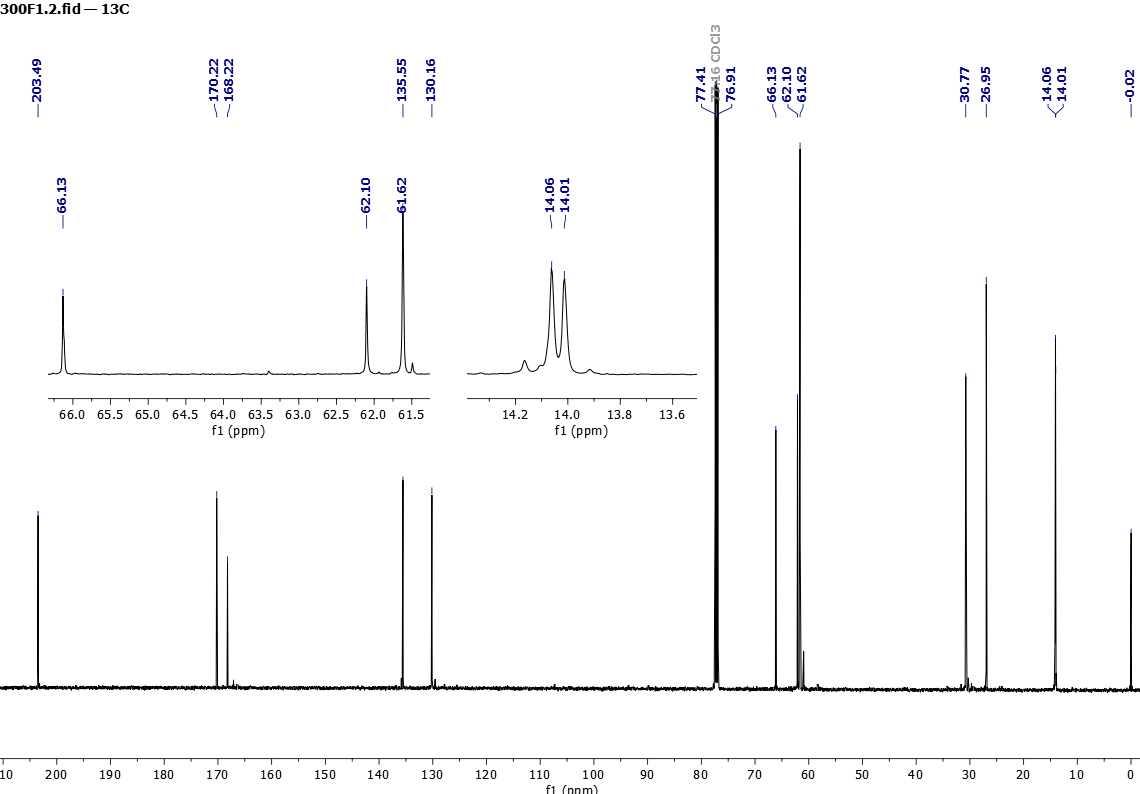


Figure 30. 13C NMR (125 MHz, CDCl3) spectra of **10**

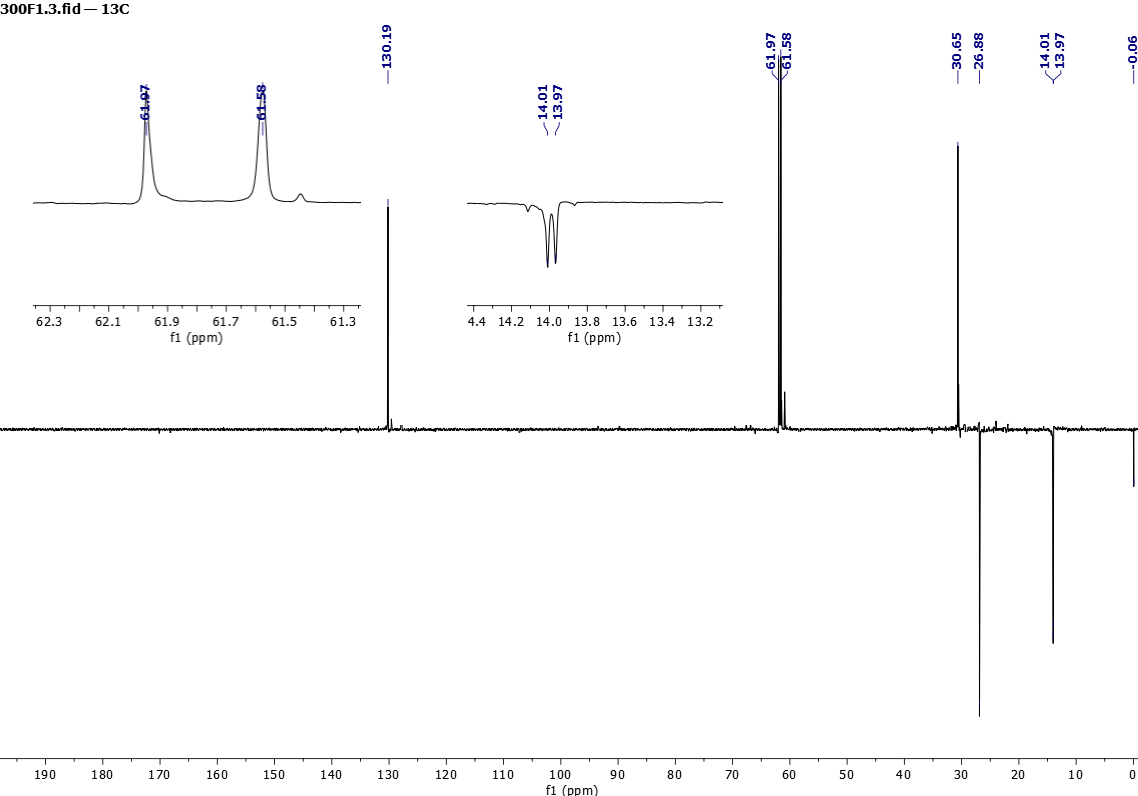


Figure 31. dept 135 NMR (125 MHz, CDCl3) spectra of **10**

**ESI-HRMS spectra for compounds 5, 6, 7a-c, 8a-c, 9a-d, 10**



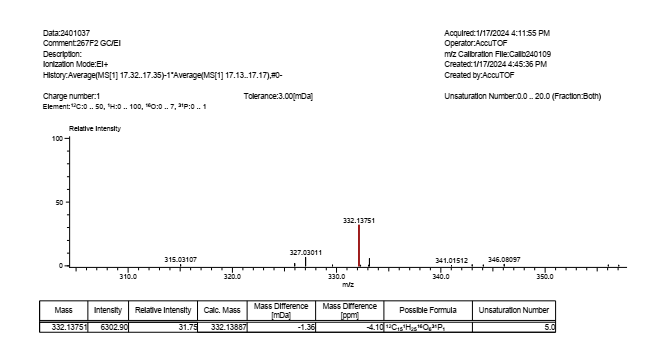


Figure 35. ESI-HRMS spectra of **5**



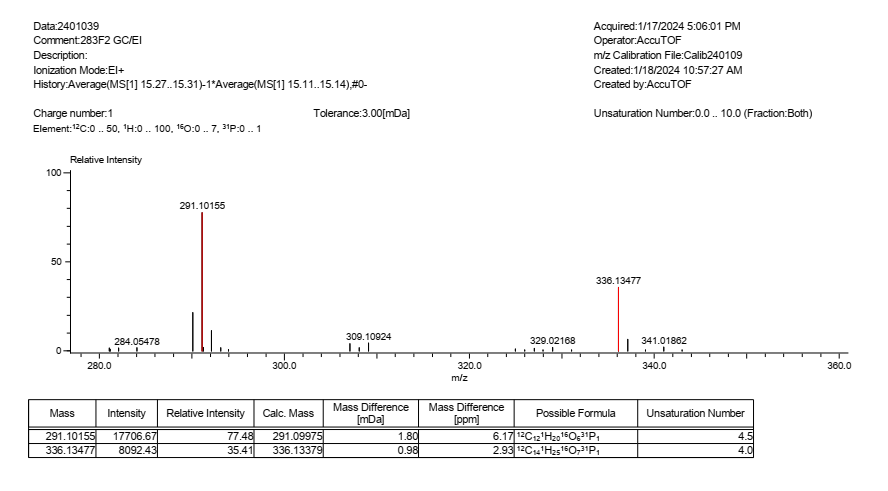


Figure 36. ESI-HRMS spectra of **6**



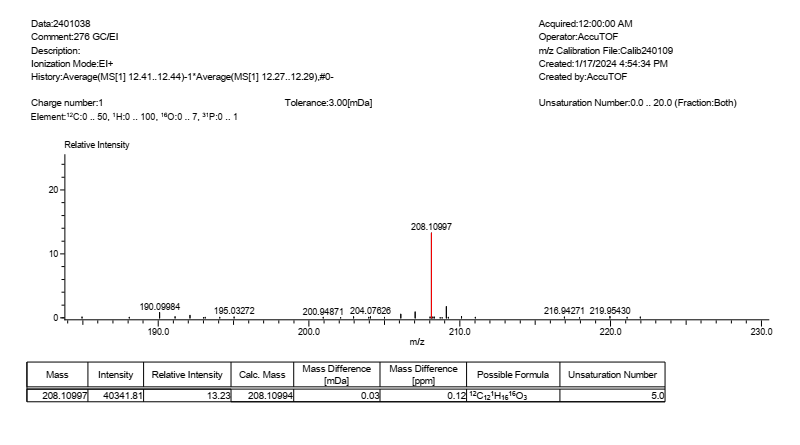


Figure 37. ESI-HRMS spectra of **7a**



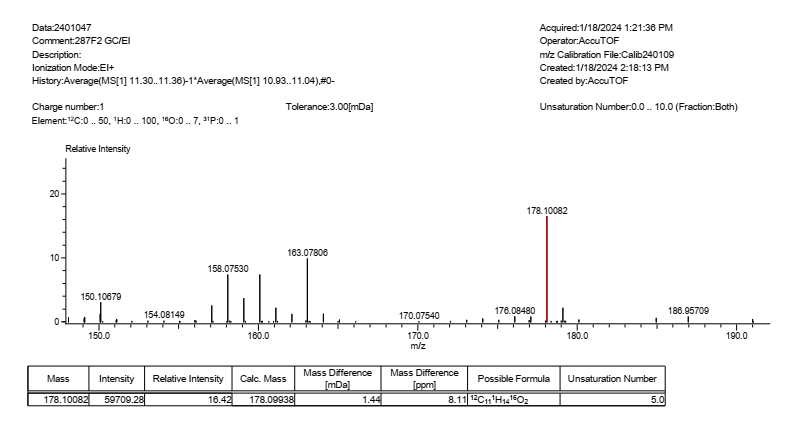


Figure 38. ESI-HRMS spectra of **7b**



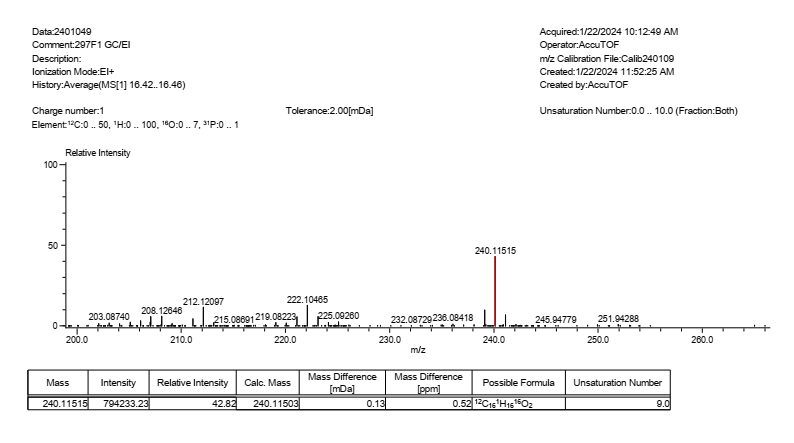


Figure 39. ESI-HRMS spectra of **7c**



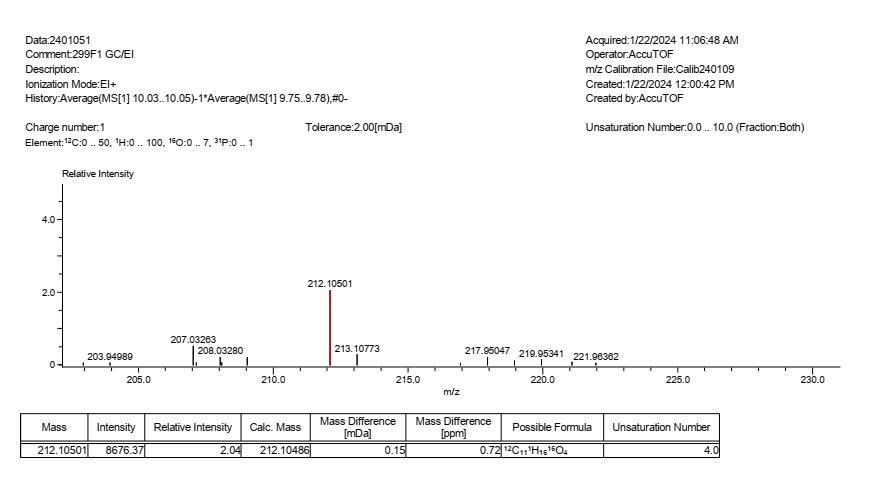


Figure 40. ESI-HRMS spectra of **8a**



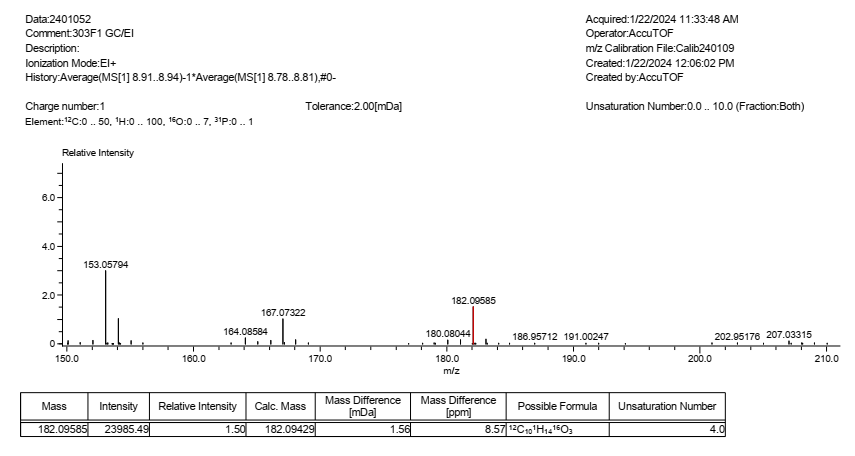


Figure 41. ESI-HRMS spectra of **8b**



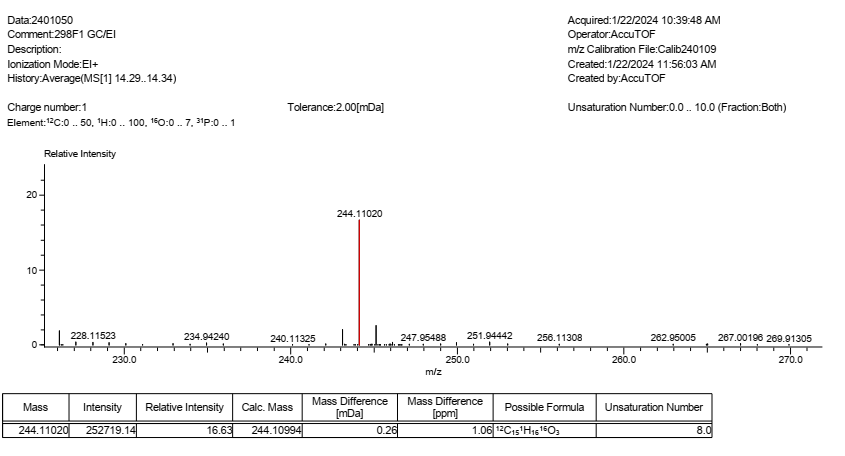


Figure 42. ESI-HRMS spectra of **8c**



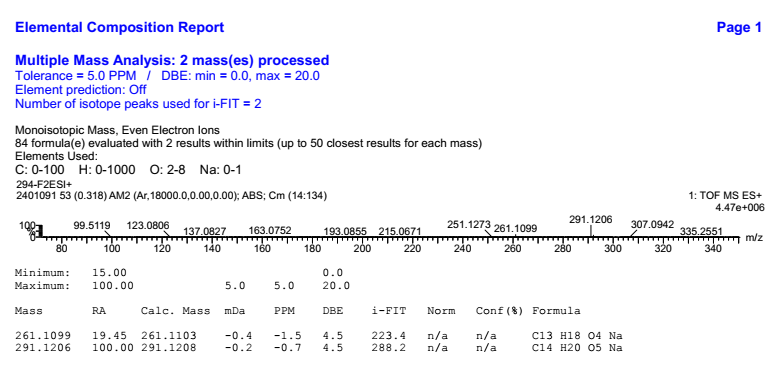


Figure 43. ESI-HRMS spectra of **9a**



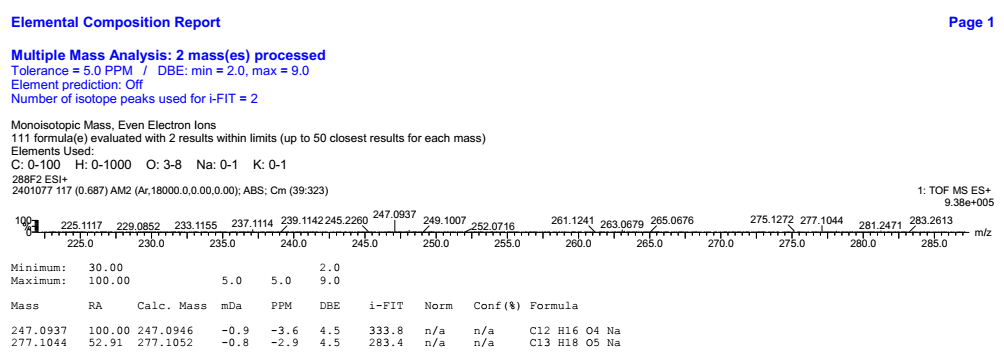


Figure 44. ESI-HRMS spectra of **9b**



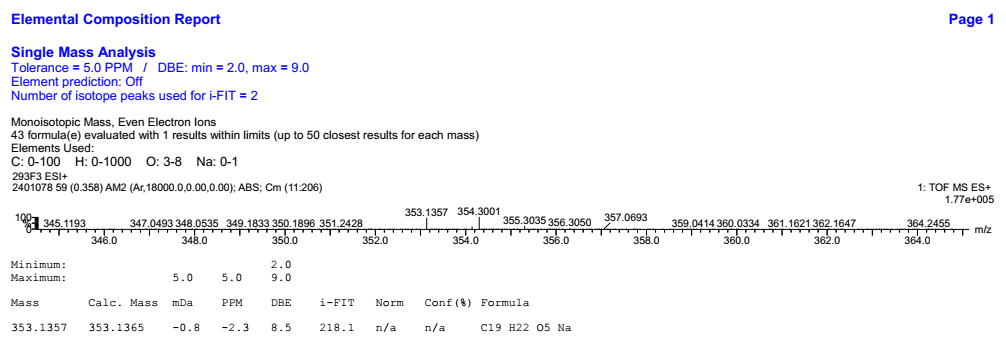


Figure 45. ESI-HRMS spectra of **9c**



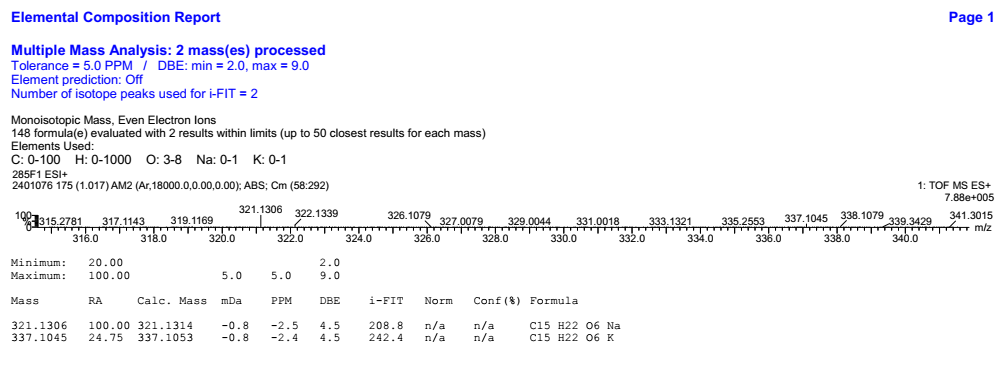


Figure 46. ESI-HRMS spectra of **9d**



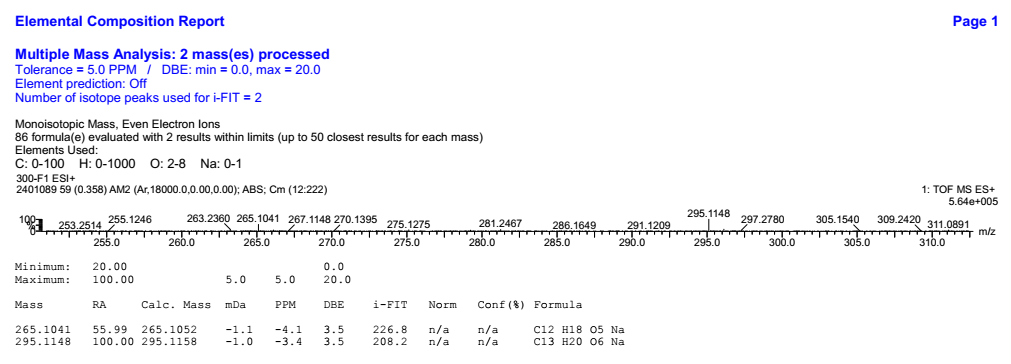


Figure 47. ESI-HRMS spectra of **10**