Electronic Supplementary Material (ESI) for RSC Advances.

Support Information

α-alkylidene δ-lactones inhibit quorum sensing phenotypes in *Chromobacterium* strain CV026 showing interaction within the CviR receptor

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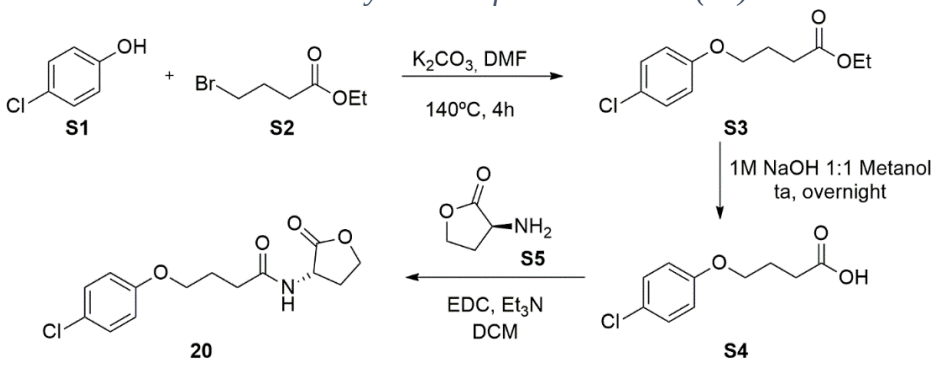
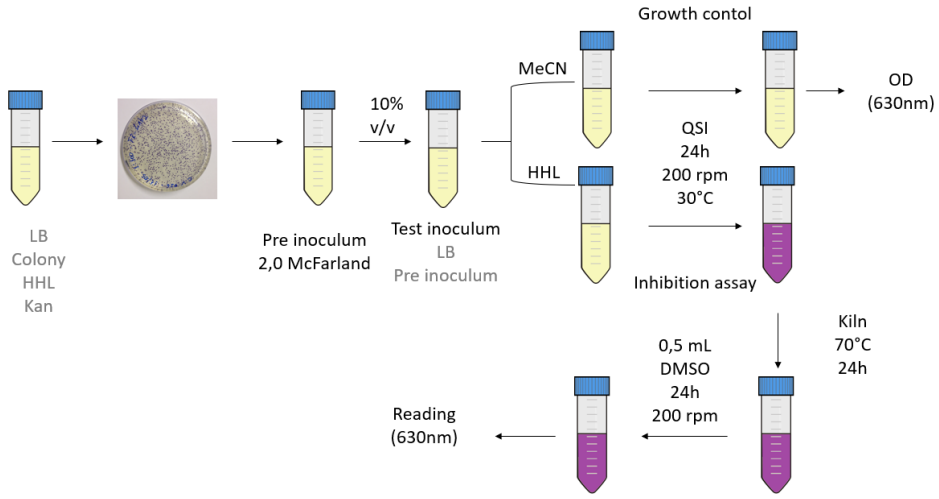
Content:

Scheme S1. *Synthesis of chlorolactone (**20**)*



Scheme S2. *Violacein quantification assay.*



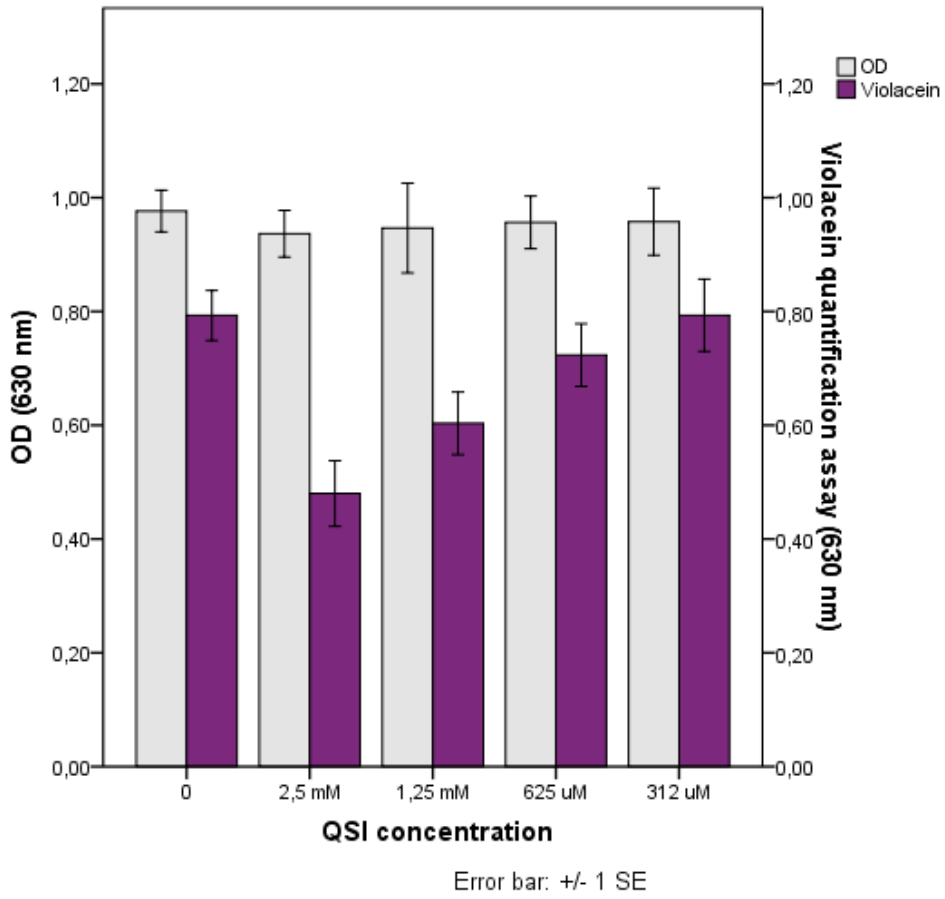


Figure S1. Violacein quantification assay for **10*E***.

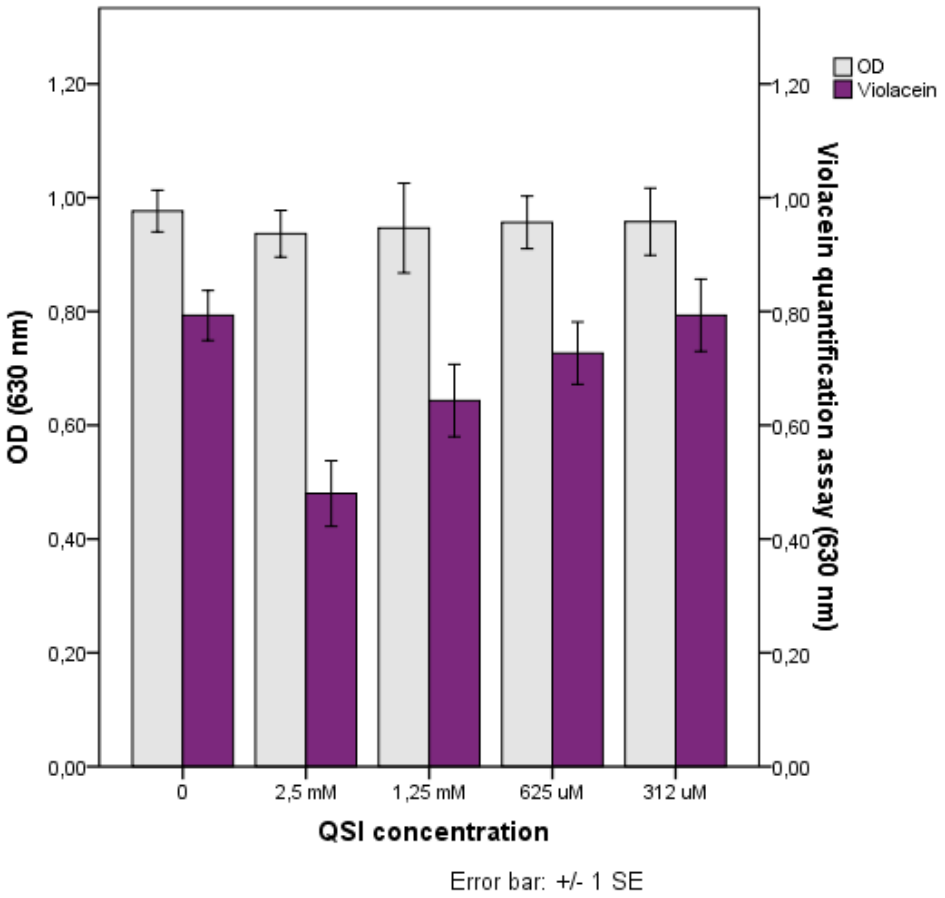


Figure S2. Violacein quantification assay for **10*Z***.

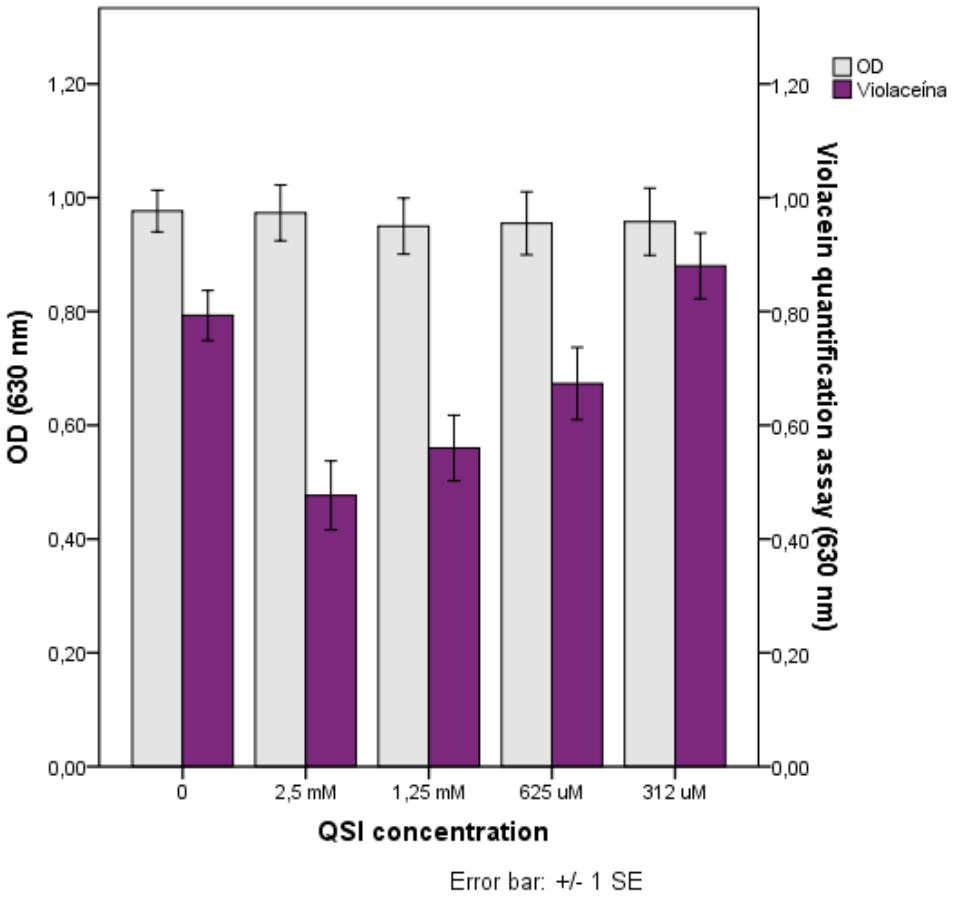


Figure S3. Violacein quantification assay for **11*E***.

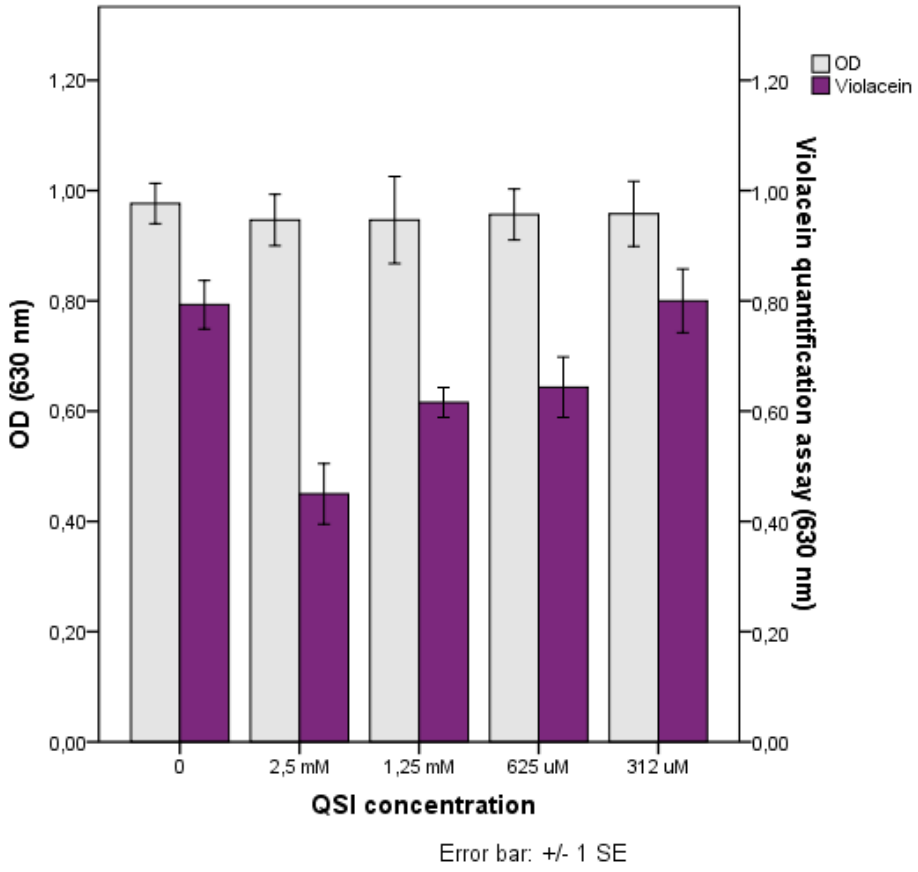


Figure S4. Violacein quantification assay for **11*Z***.

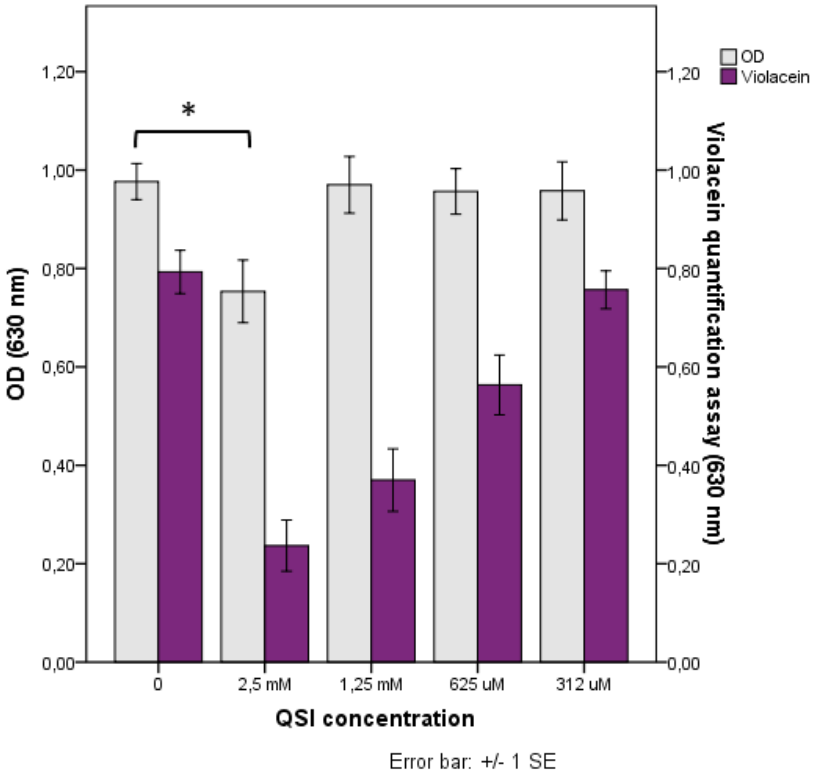


Figure S5. Violacein quantification assay for **12*E***.

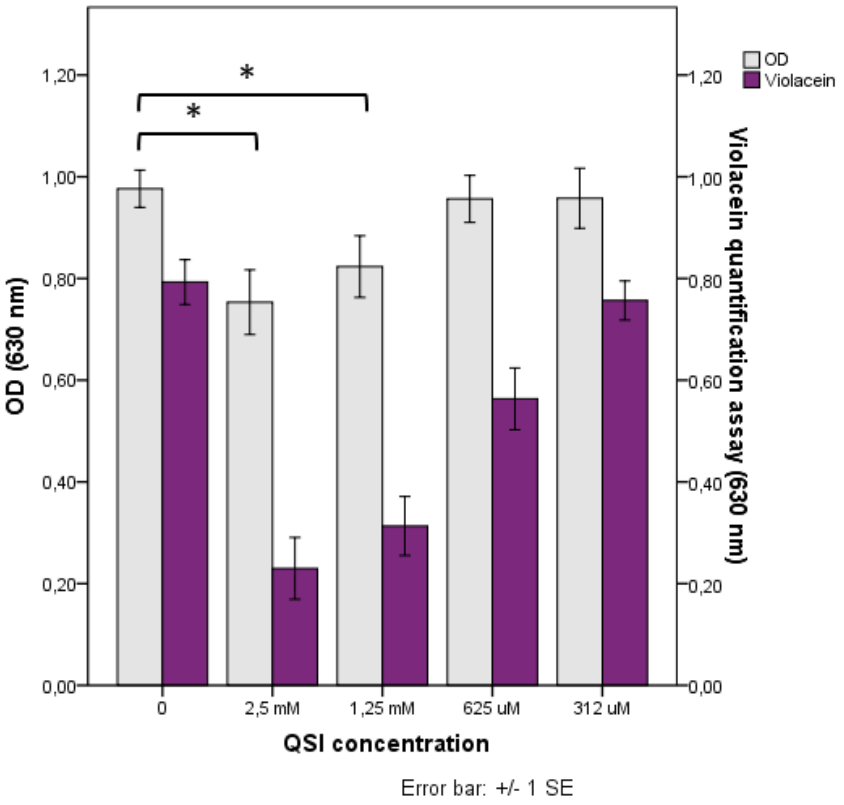


Figure S6. Violacein quantification assay for **12*Z***.

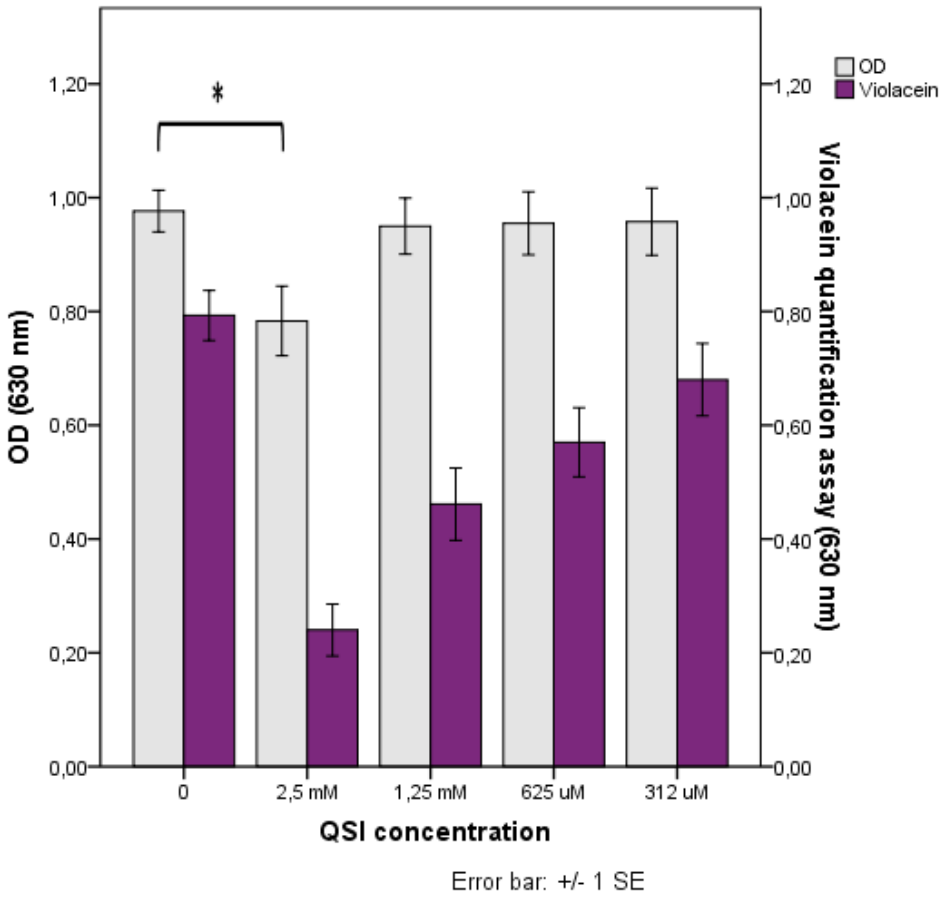


Figure S7. Violacein quantification assay for **13*E***.

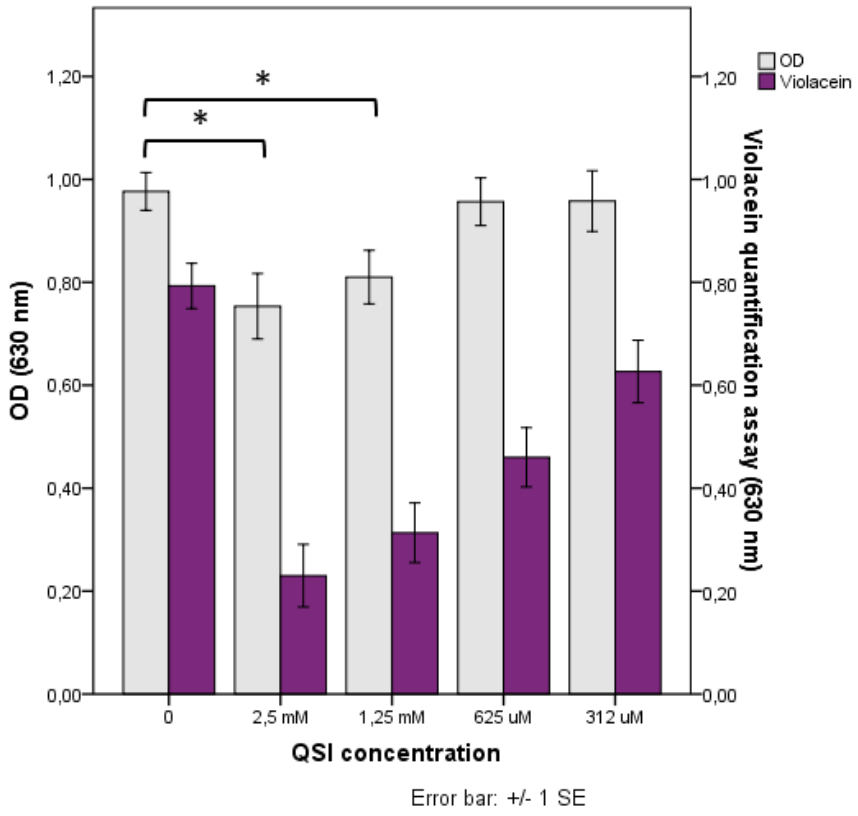


Figure S8. Violacein quantification assay for **13*Z***.

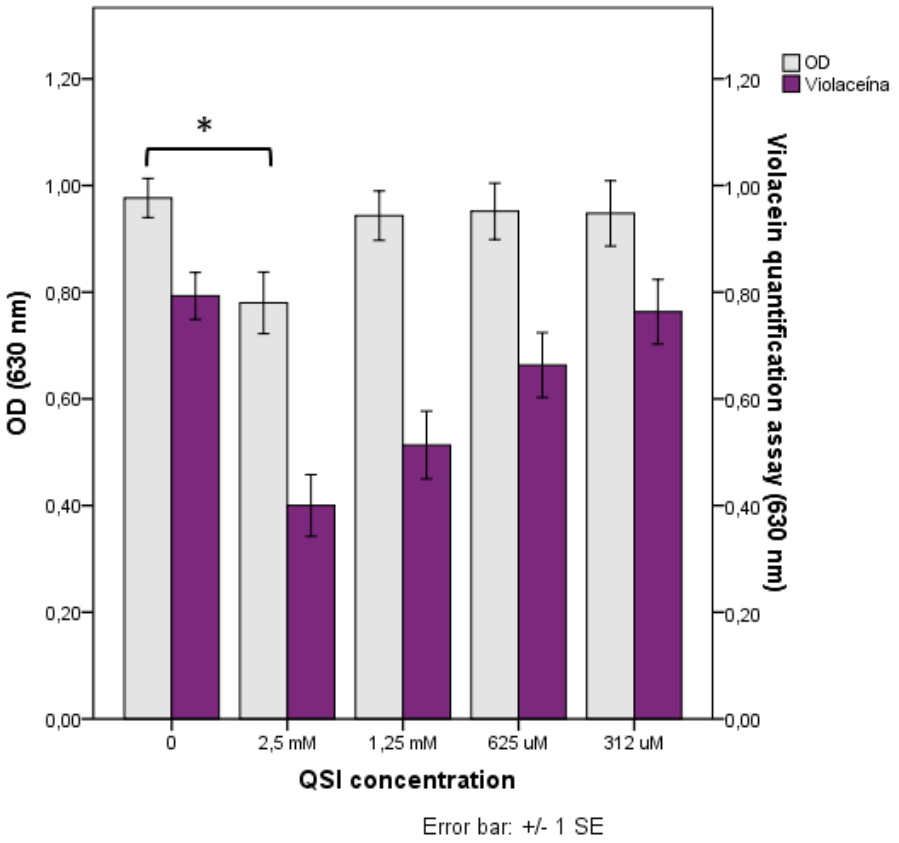


Figure S9. Violacein quantification assay for **14*E***.

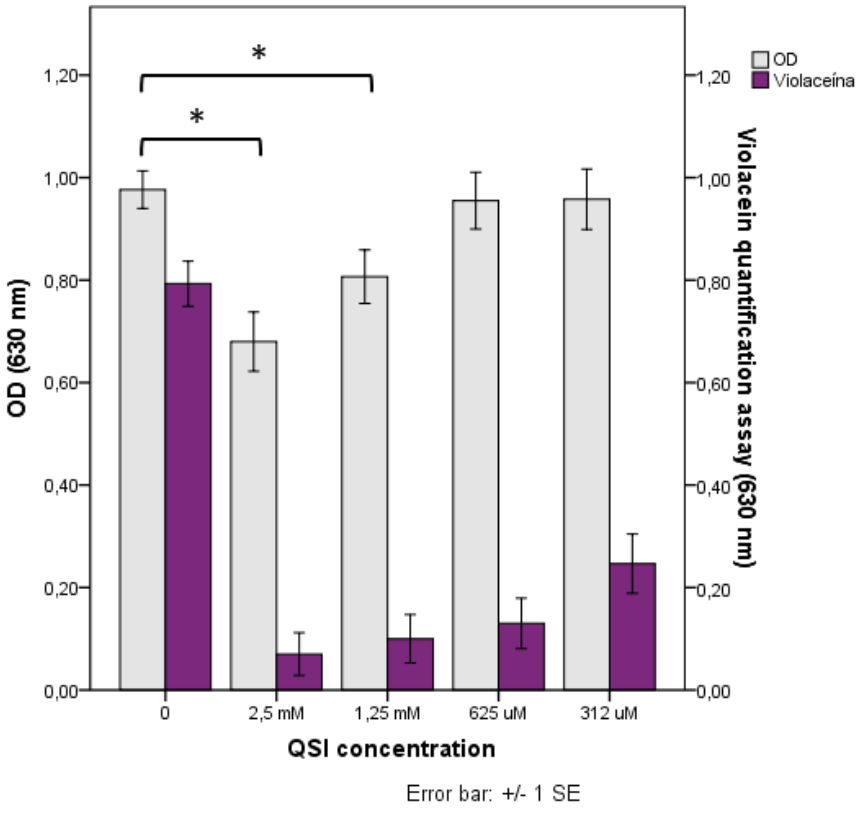


Figure S10. Violacein quantification assay for **15*E***.

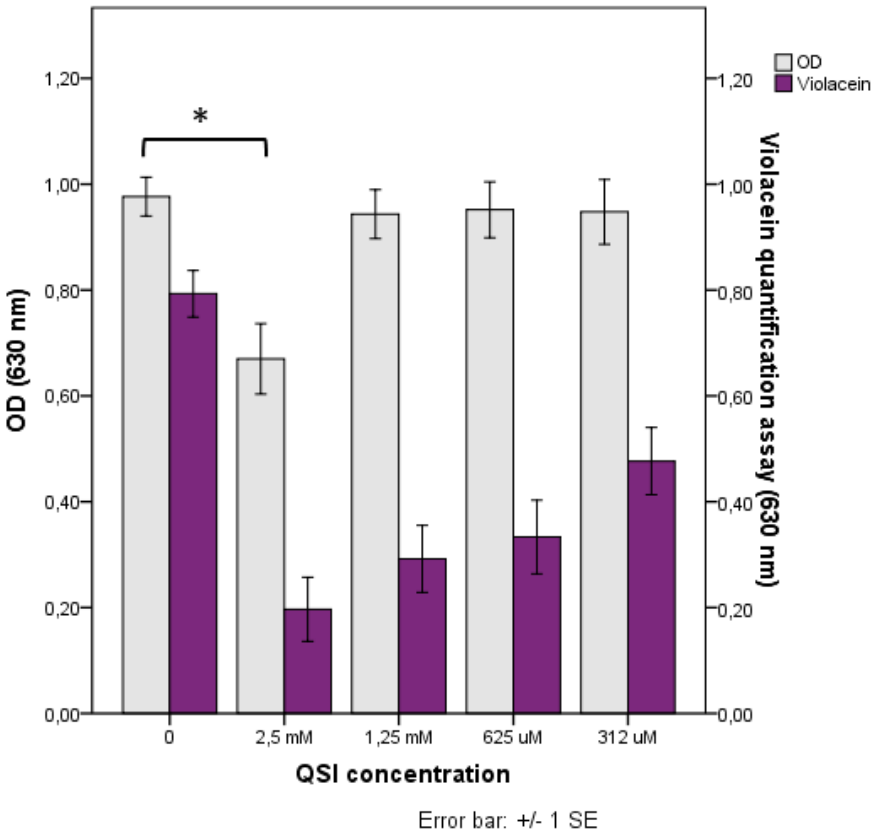


Figure S11. Violacein quantification assay for **16*E***.

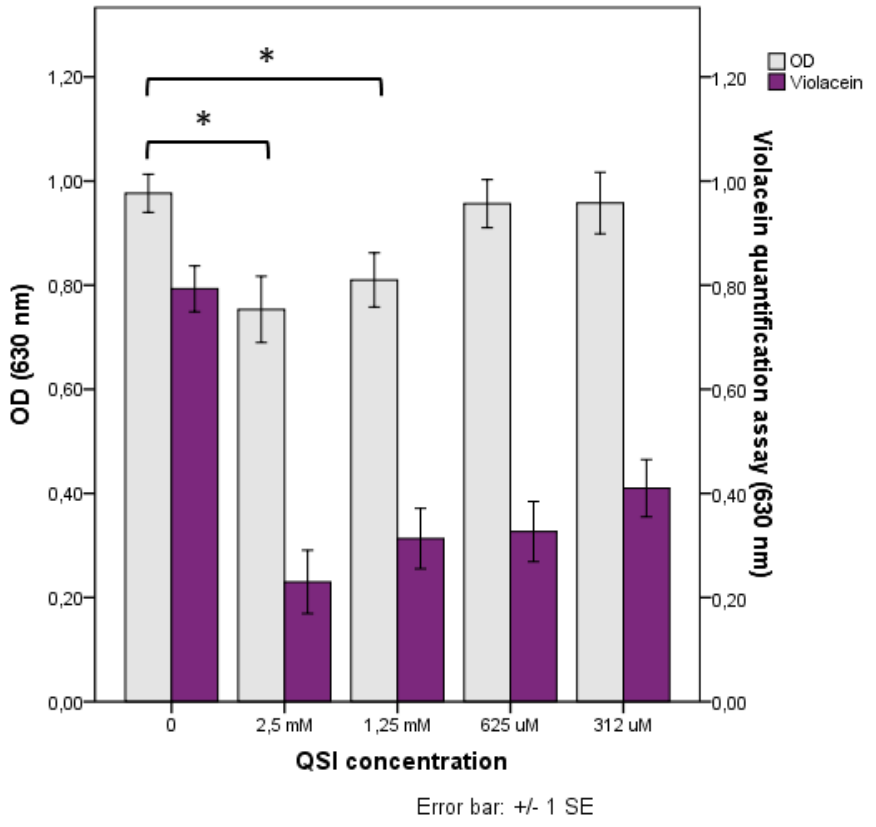


Figure S12. Violacein quantification assay for **17*E***.

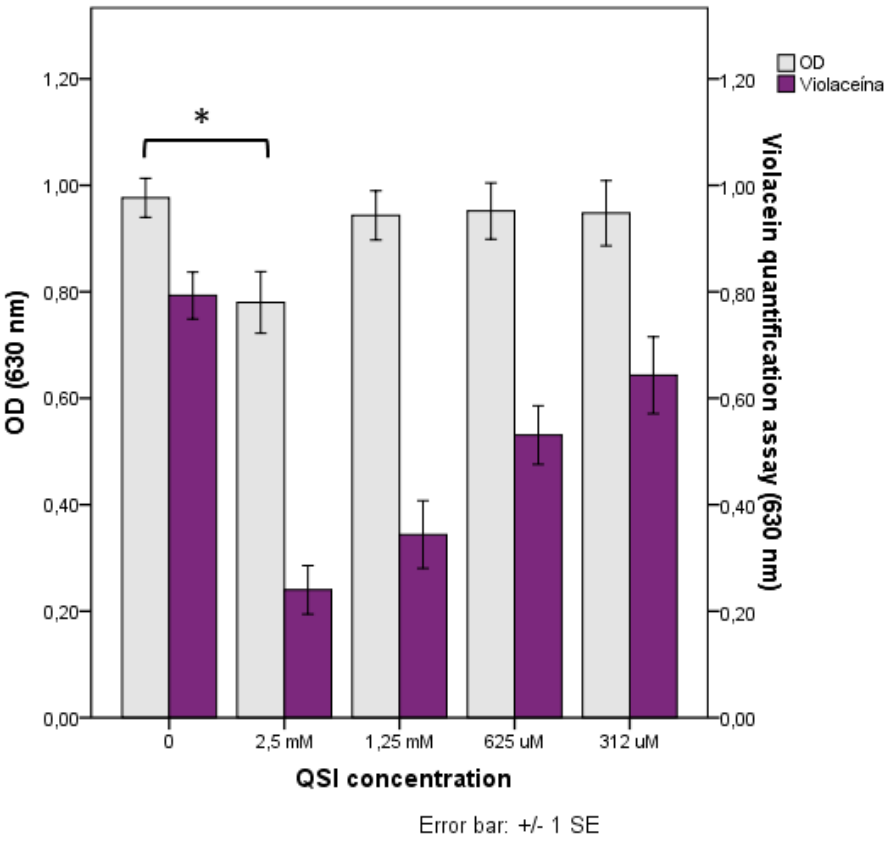


Figure S13. Violacein quantification assay for **18*E***.

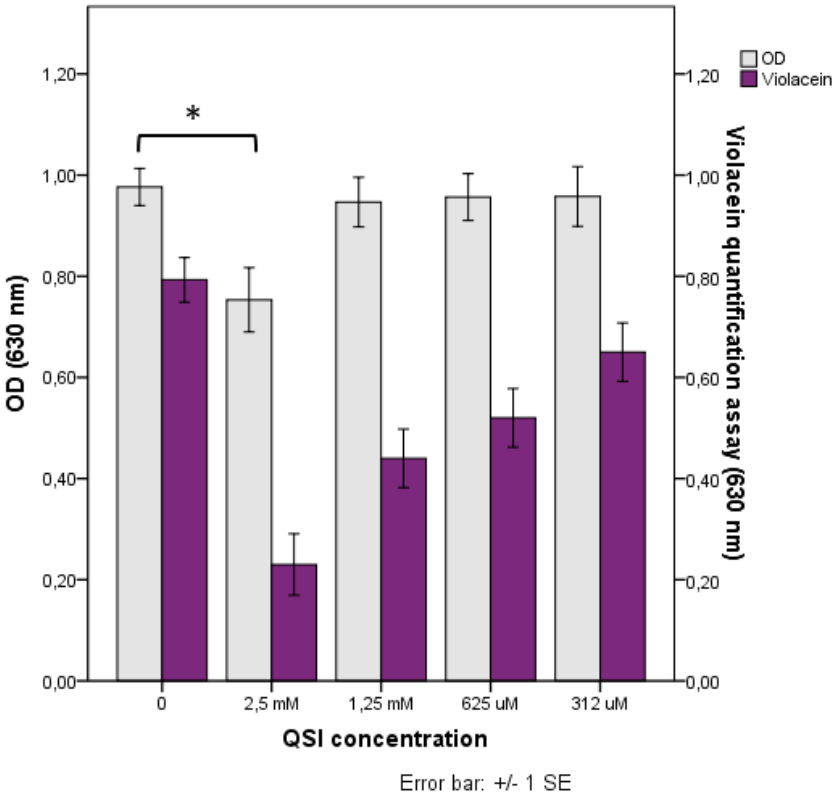


Figure S14. Violacein quantification assay for **19*E***.

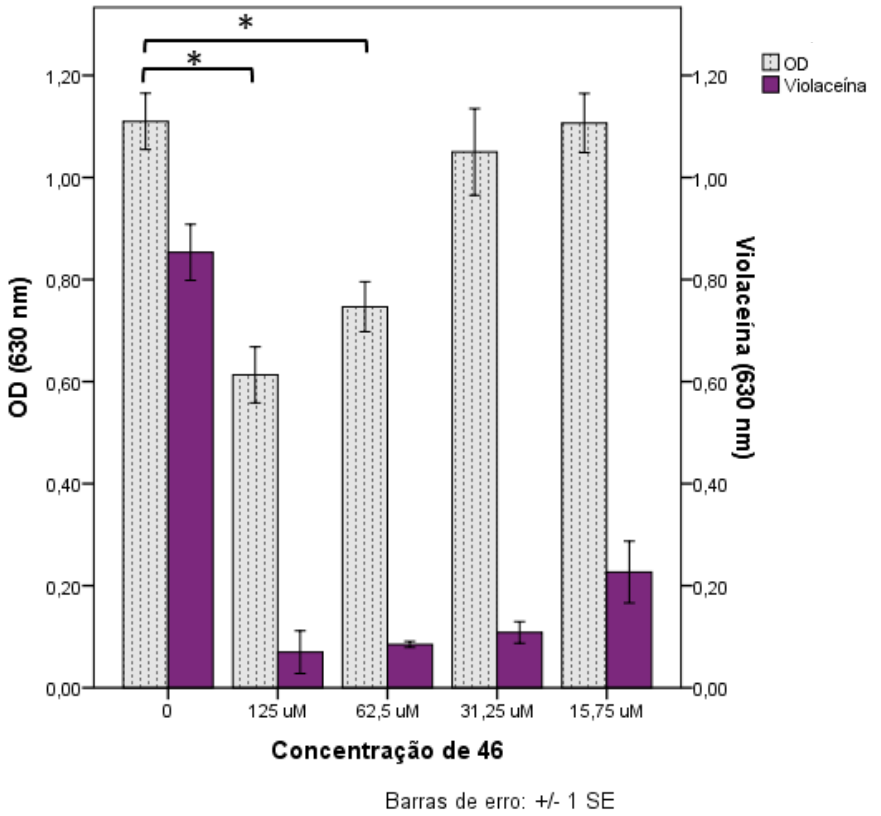


Figure S15. Violacein quantification assay for **20**.

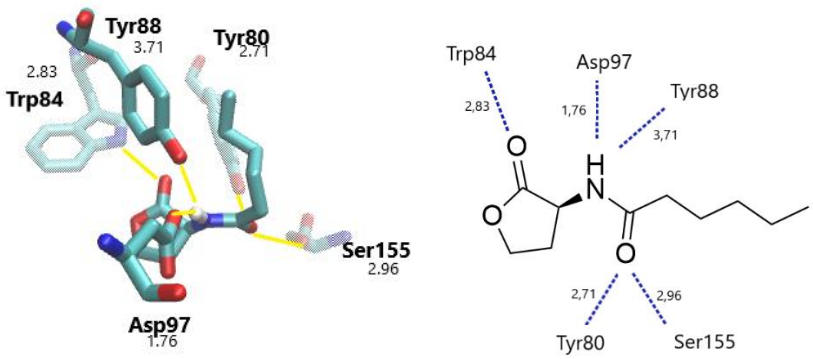


Figure S16. Ligand binding domain for **2**/CviR.

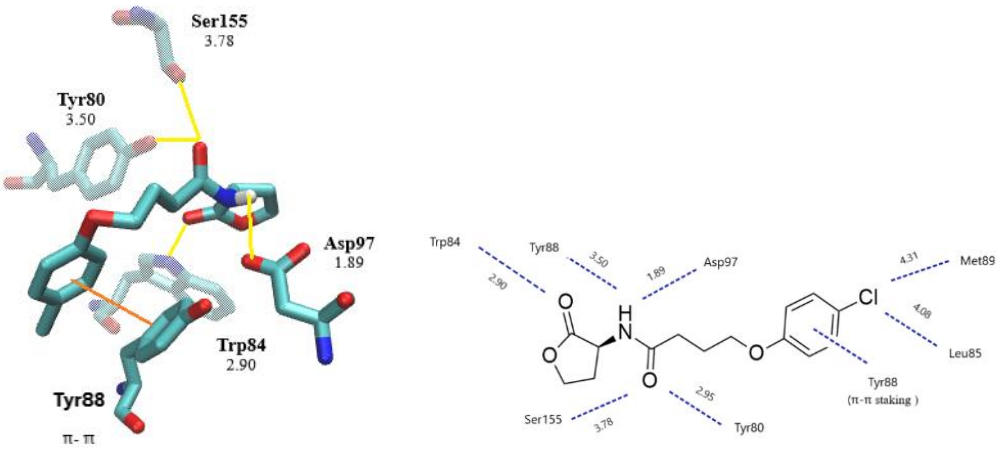


Figure S17. Ligand binding domain for **20**/CviR.

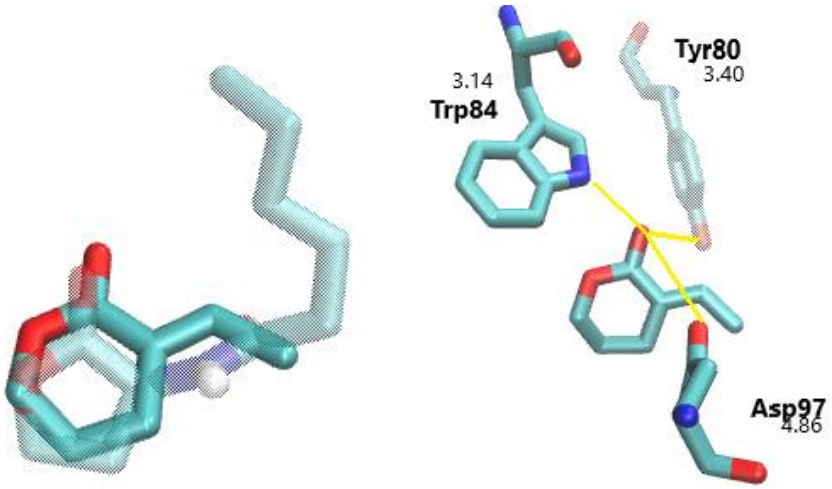


Figure S18. Overlap of **2** with **10E**, and ligand binding domain for **10E**/CviR, respectively.

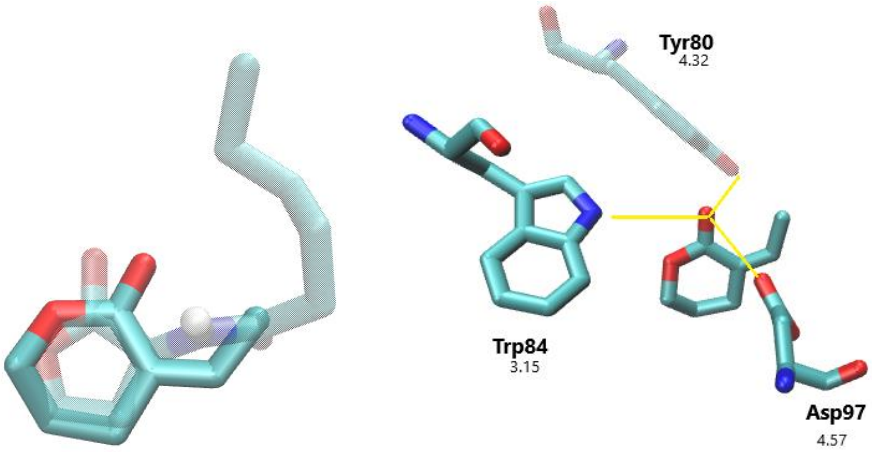


Figure S19. Overlap of **2** with **10Z**, and ligand binding domain for **10Z**/CviR, respectively.

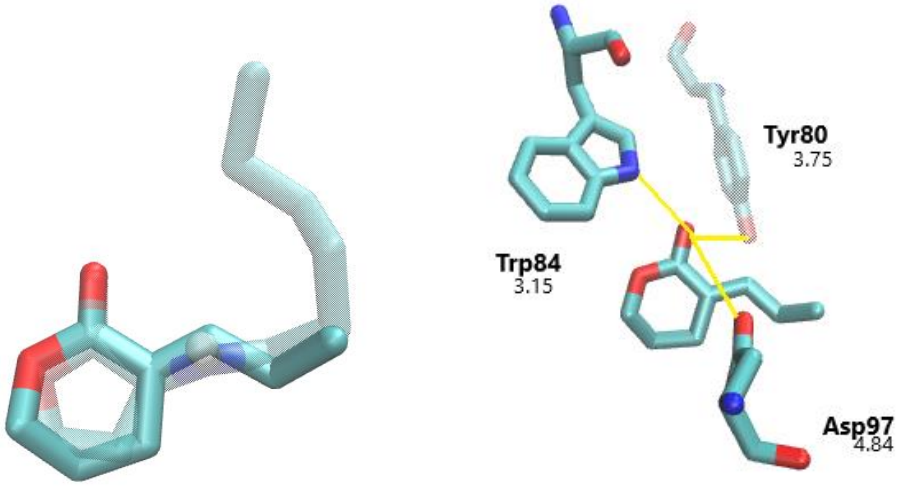


Figure S20. Overlap of **2** with **11E**, and ligand binding domain for **11E**/CviR, respectively.

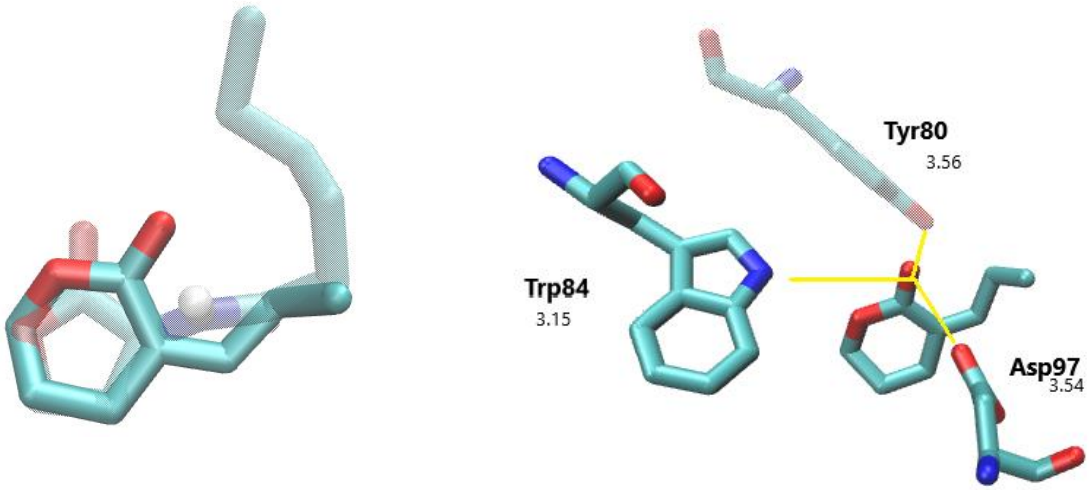


Figure S21. Overlap of **2** with **11Z**, and ligand binding domain for **11Z**/CviR, respectively.

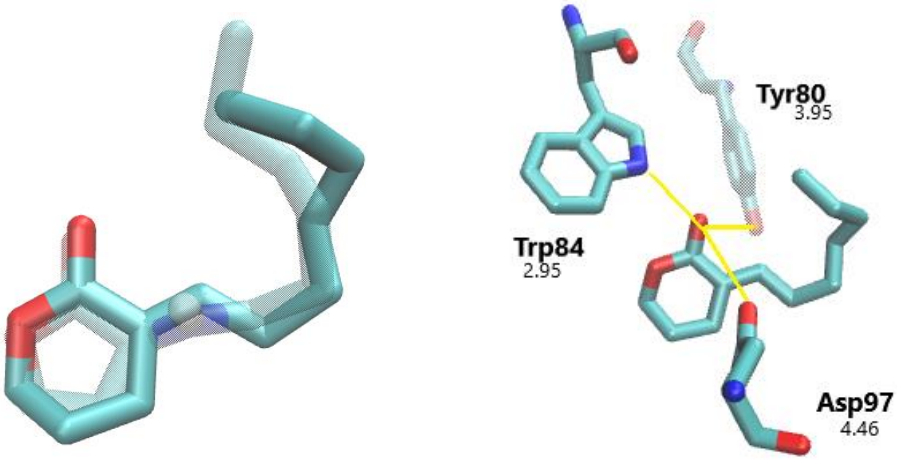


Figure S22. Overlap of **2** with **12E**, and ligand binding domain for **12E**/CviR, respectively.

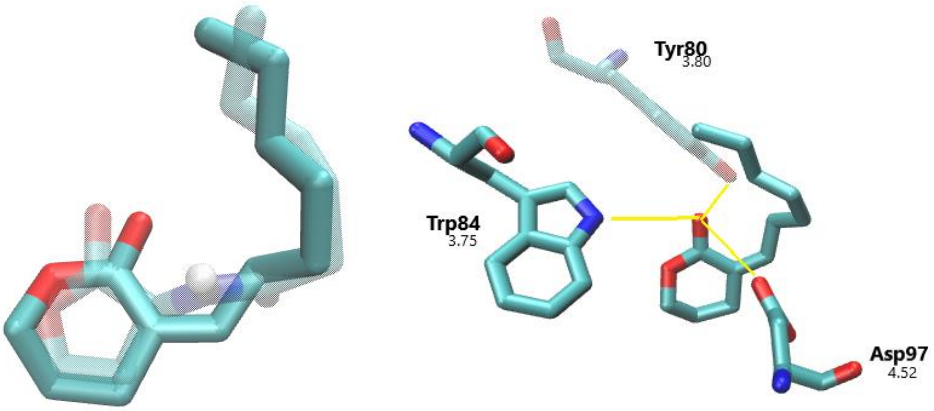


Figure S23. Overlap of **2** with **12Z**, and ligand binding domain for **12Z**/CviR, respectively.

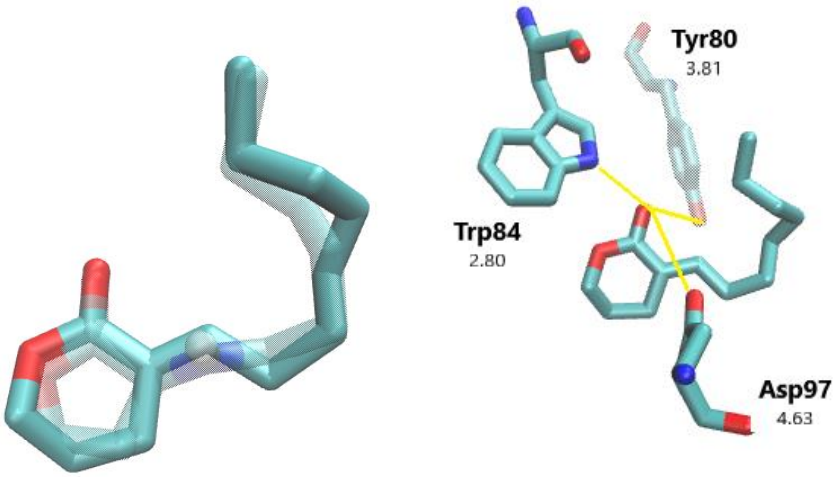


Figure S24. Overlap of **2** with **13E**, and ligand binding domain for **13E**/CviR, respectively.

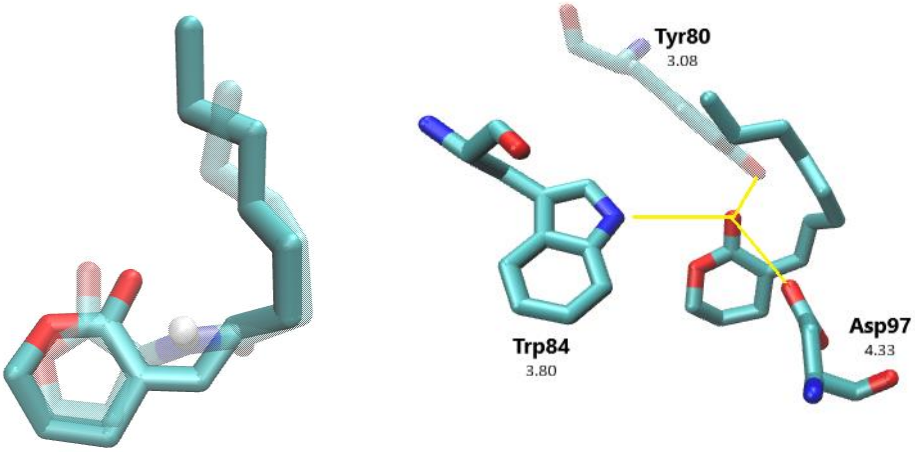


Figure S25. Overlap of **2** with **13Z**, and ligand binding domain for **13Z**/CviR, respectively.

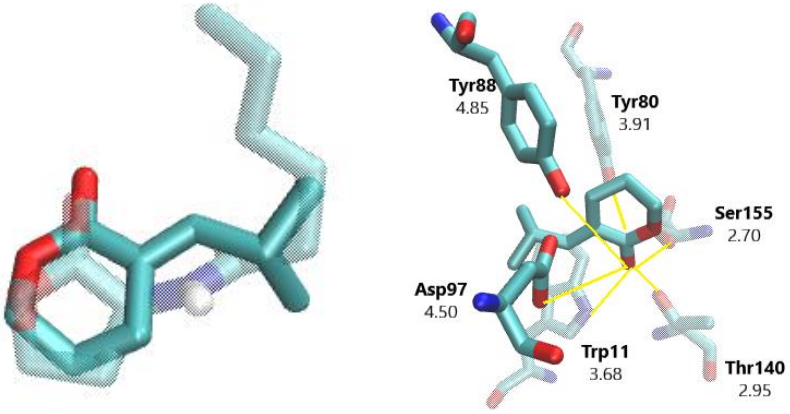


Figure S26. Overlap of **2** with **14E**, and ligand binding domain for **14E**/CviR, respectively.

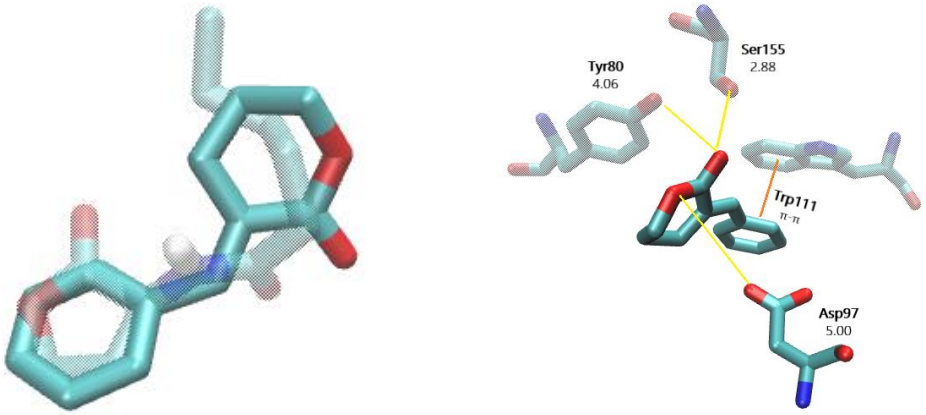


Figure S27. Overlap of **2** with **15E**, and ligand binding domain for **15E**/CviR, respectively.

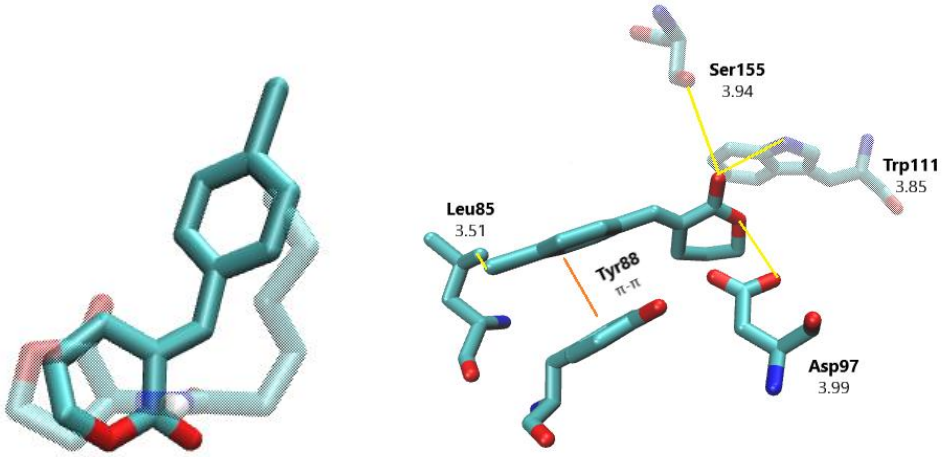


Figure S28. Overlap of **2** with **16E**, and ligand binding domain for **16E**/CviR, respectively.

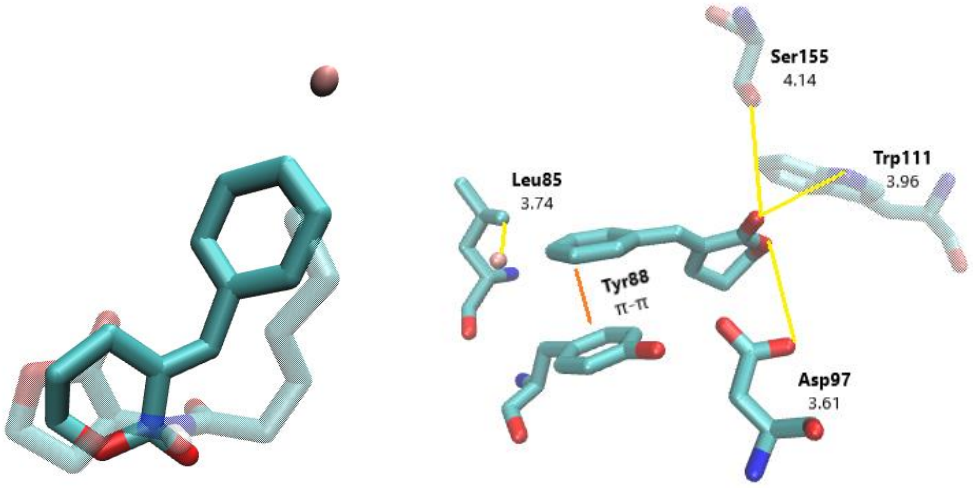


Figure S29. Overlap of **2** with **17E**, and ligand binding domain for **17E**/CviR, respectively.

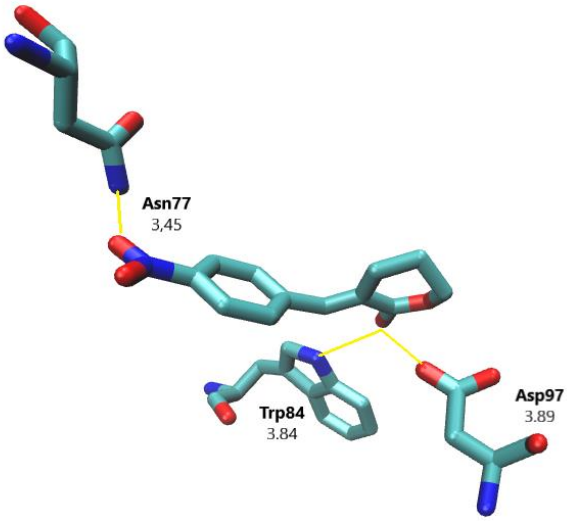


Figure S30. Overlap of **2** with **18E**, and ligand binding domain for **18E**/CviR, respectively.

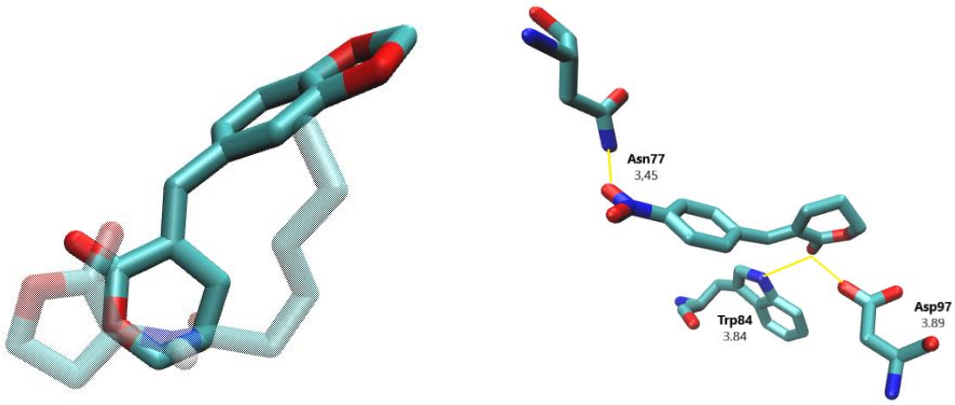


Figure S31. Overlap of **2** with **19E**, and ligand binding domain for **19E**/CviR, respectively.

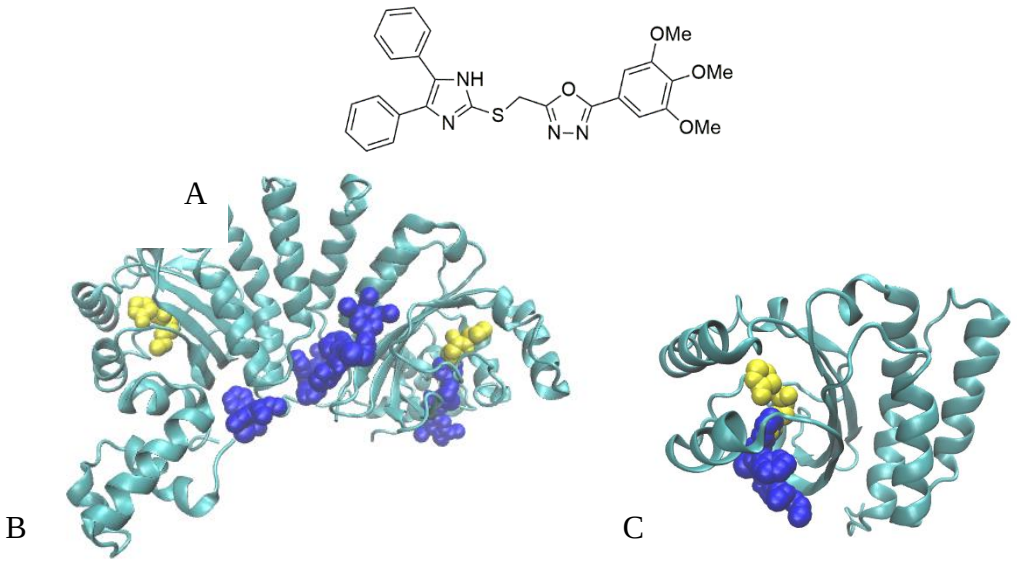
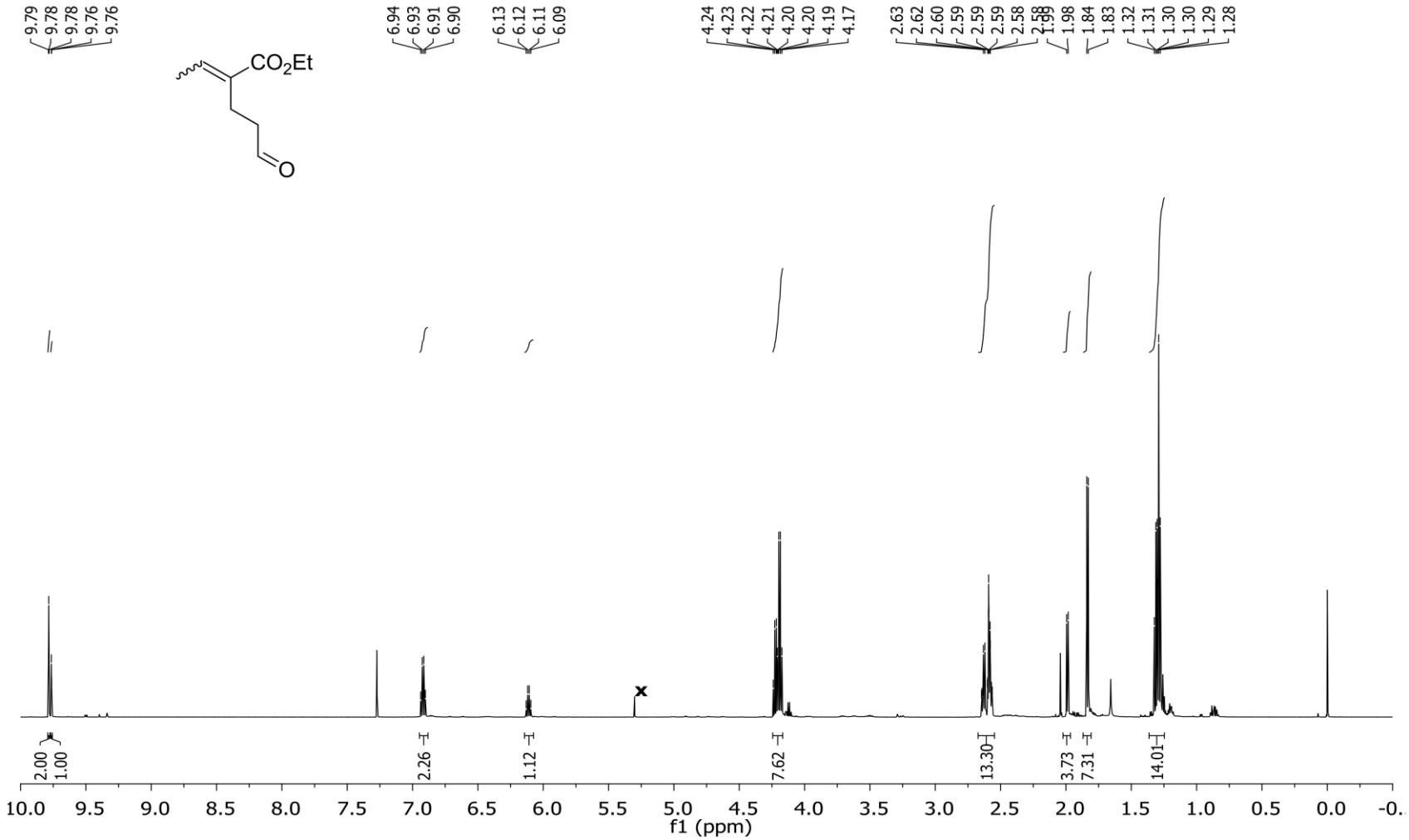


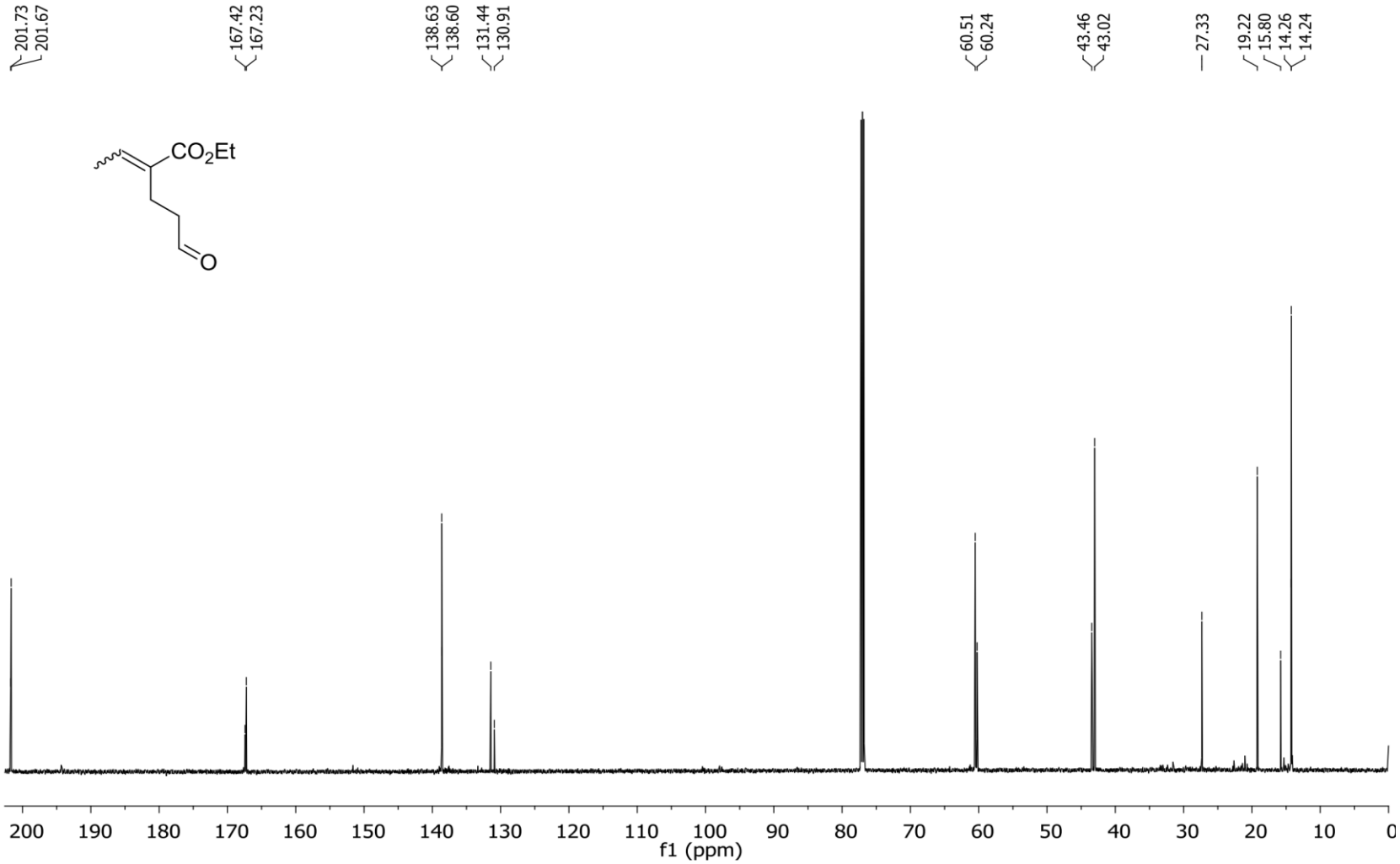
Figure S32. (A): Chemical structure of **21**.; B: CviR (PDB ID: 3PQ5) complex with **21**(blue), in yellow is shown HHL to exemplify the LBD.; (C): LBD complex with **21**(blue), in yellow is shown HHL (**2**) to exemplify the LBD.

2. NMR spectrums:

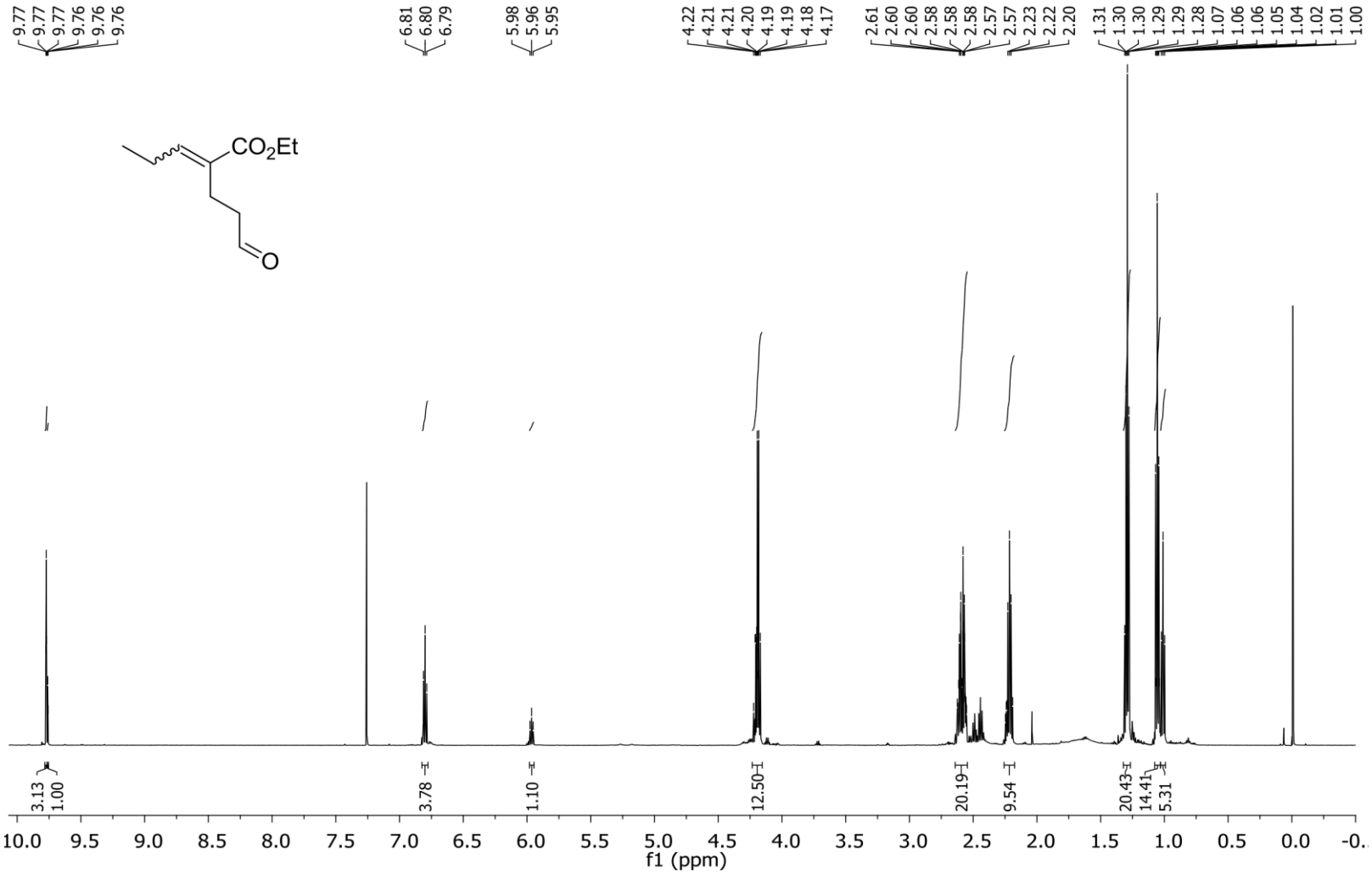
S2.1. ^{1}H NMR (600 MHz) spectrum of **8 (*E*/*Z*) R = Methyl** in $CDCl_3$.



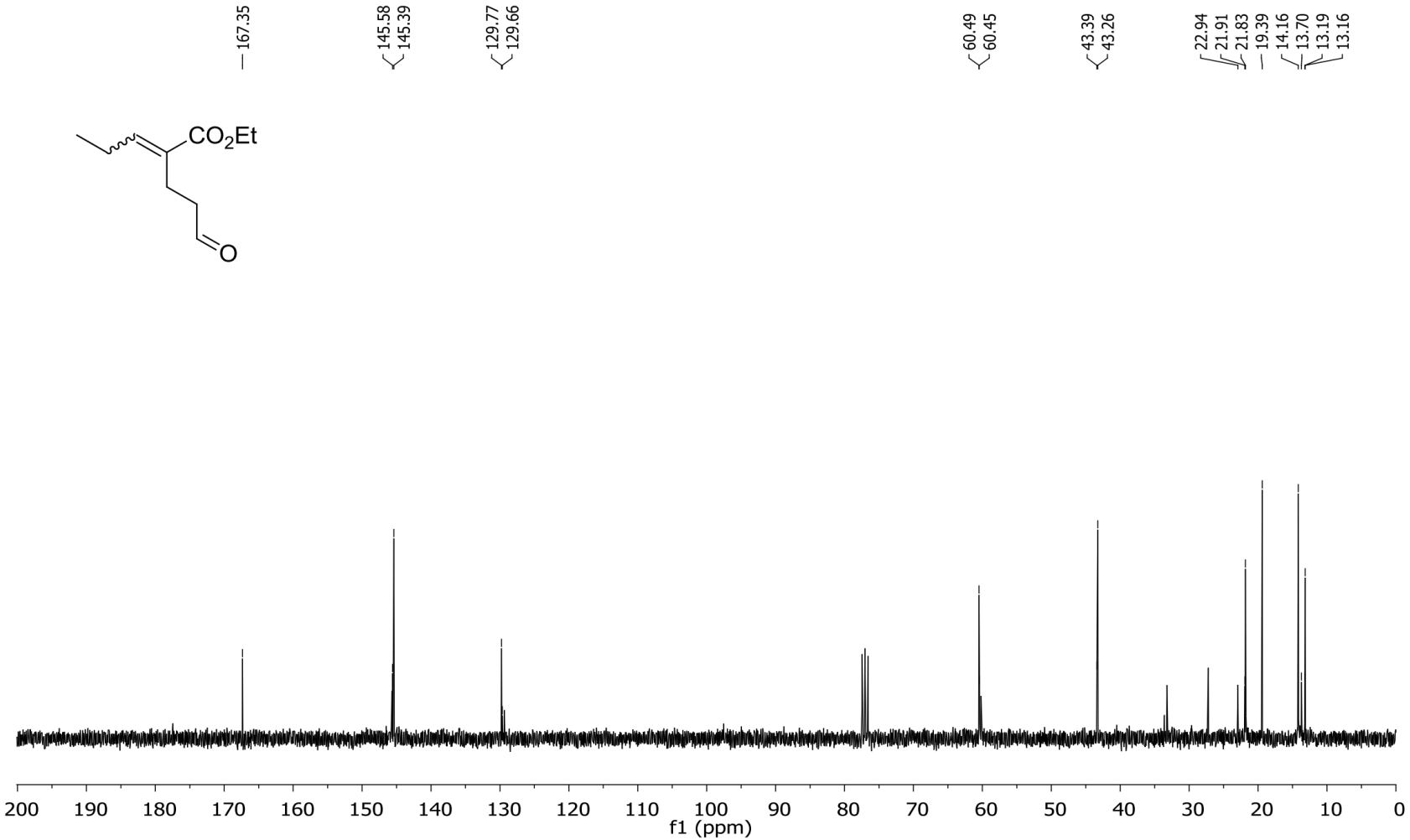
S2.2. ^{13}C NMR (75 MHz) spectrum of **8 (*E*/*Z*) R = Methyl** in $CDCl_3$



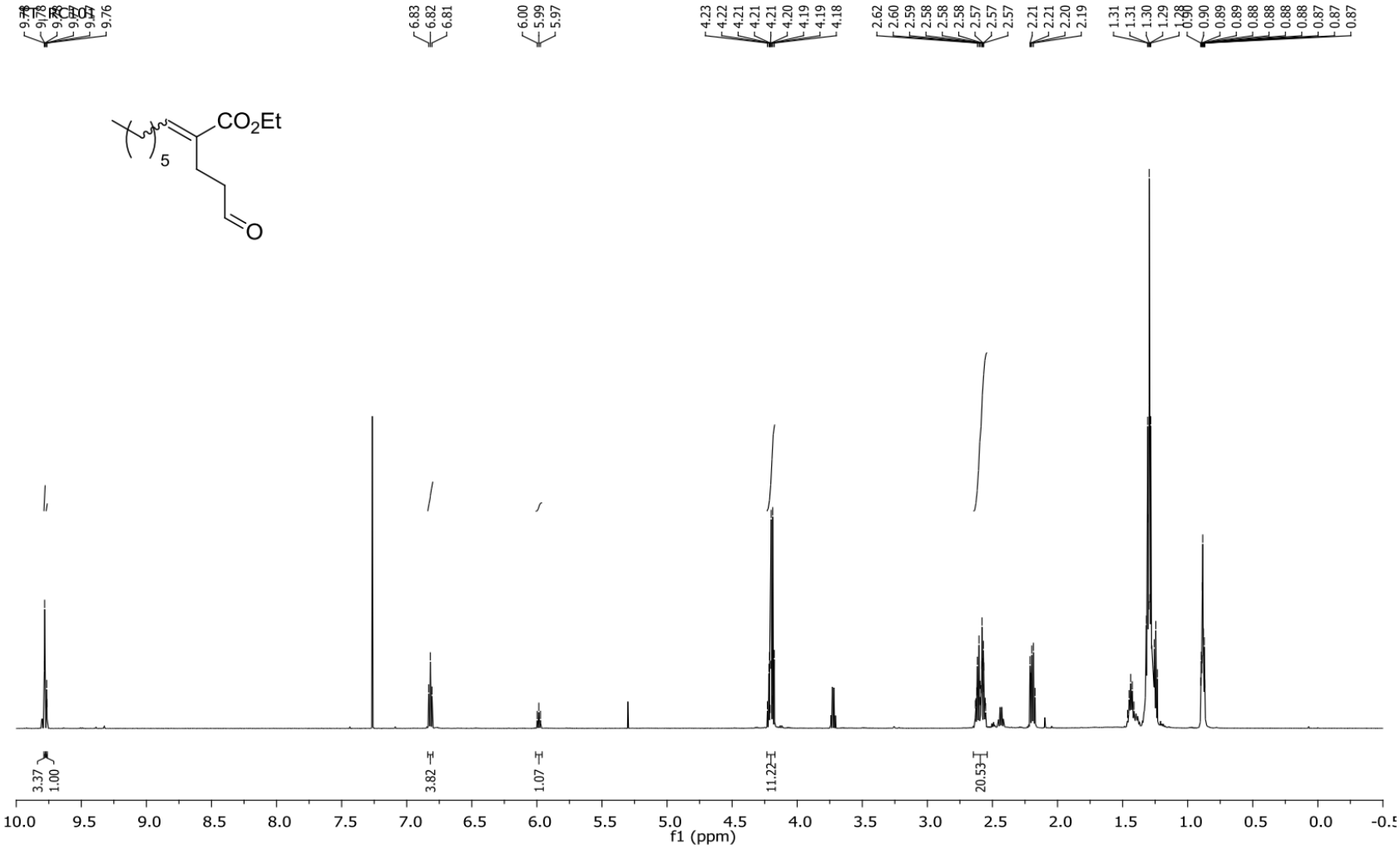
S2.3. ^{1}H NMR (600 MHz) spectrum of **8 (*E*/*Z*) R = Ethyl** in $CDCl_3$.



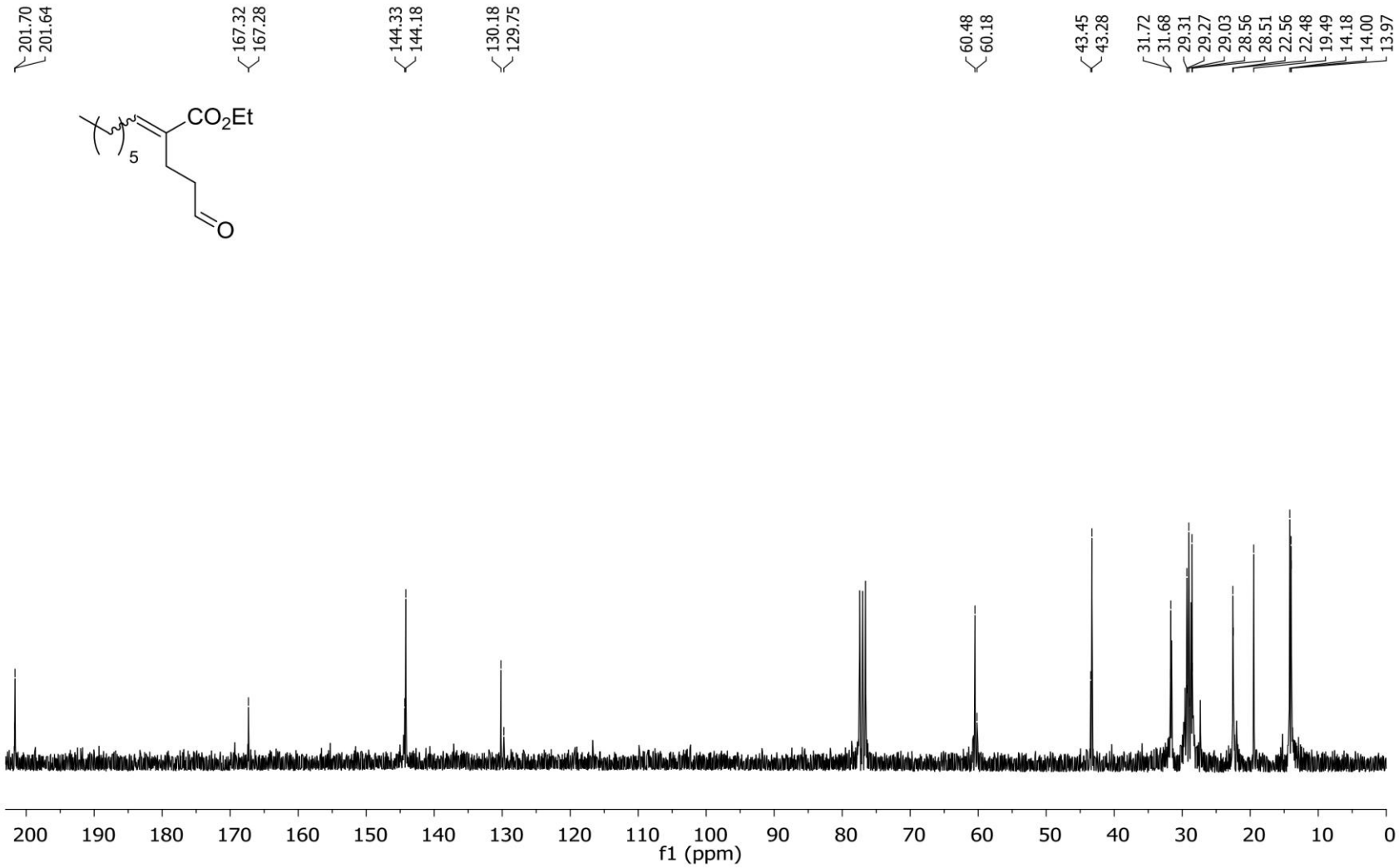
S2.4. ^{13}C NMR (75 MHz) spectrum of **8 (*E*/*Z*) R = Ethyl** in $CDCl_3$.



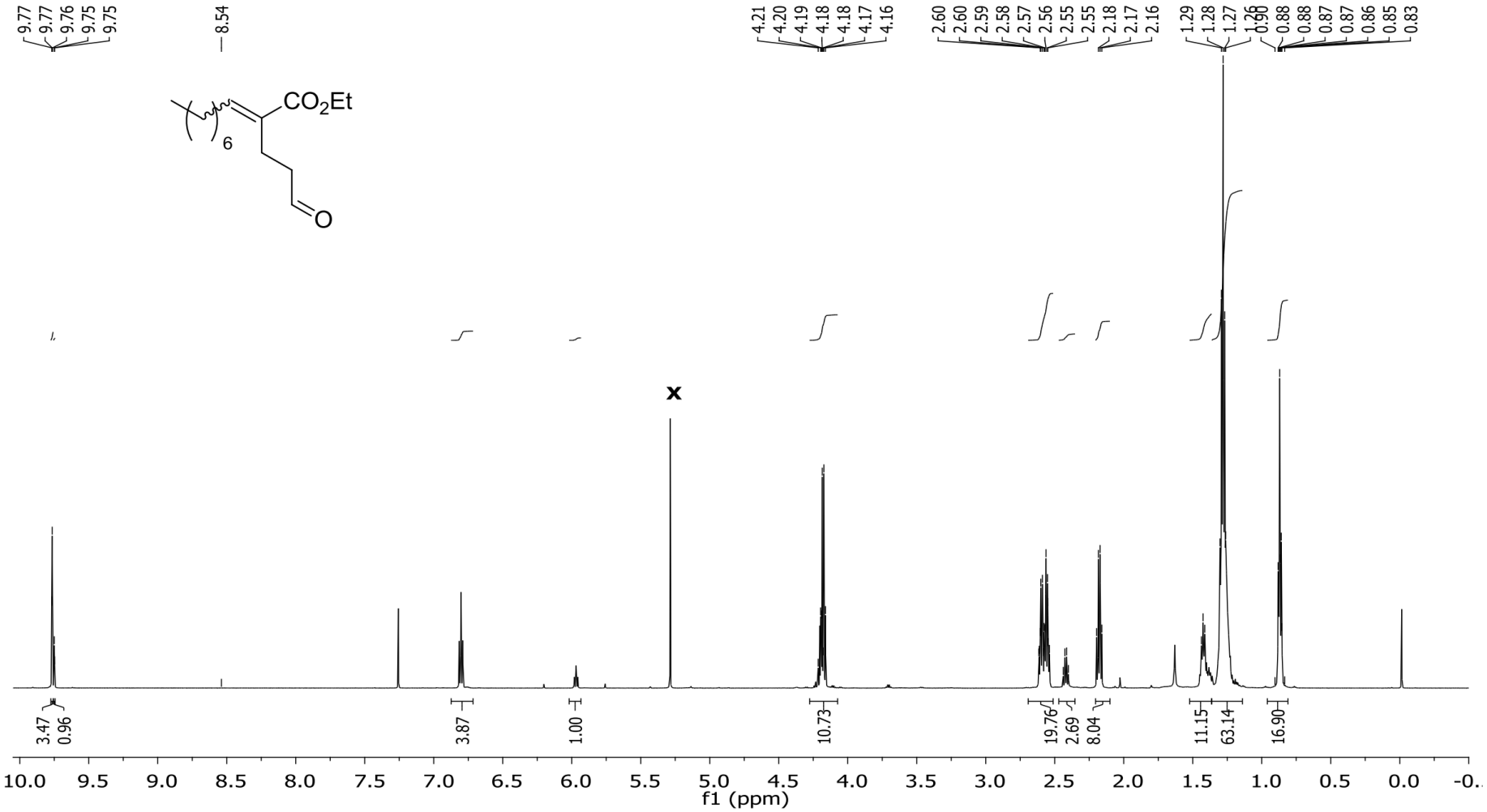
S2.5. ^{1}H NMR (600 MHz) spectrum of **8 (*E*/*Z*) R = *n*-Hexyl** in $CDCl_3$.



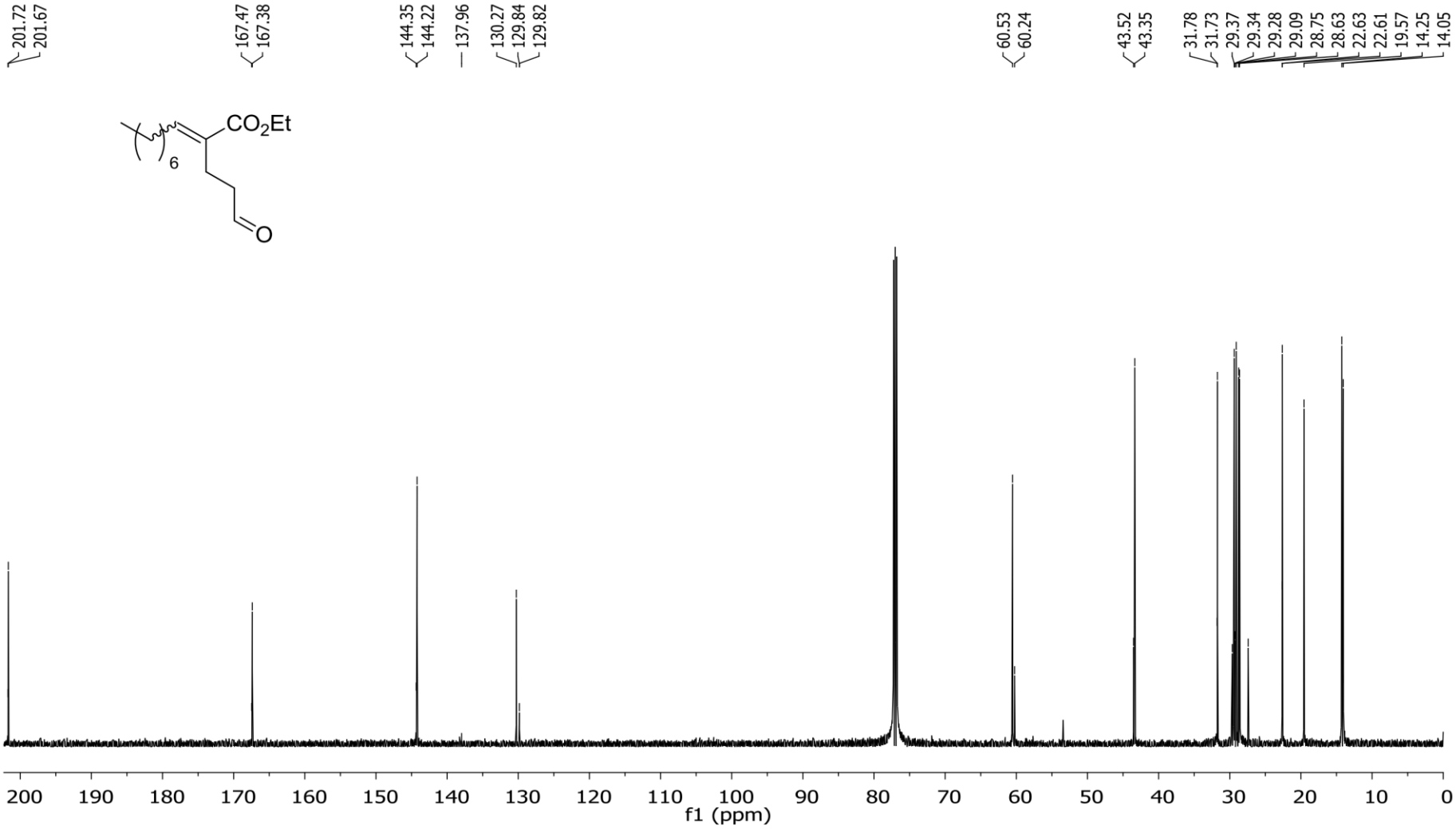
S2.6. ^{13}C NMR (151 MHz) spectrum of **8 (*E*/*Z*) R = *n*-Hexyl** in $CDCl_3$.



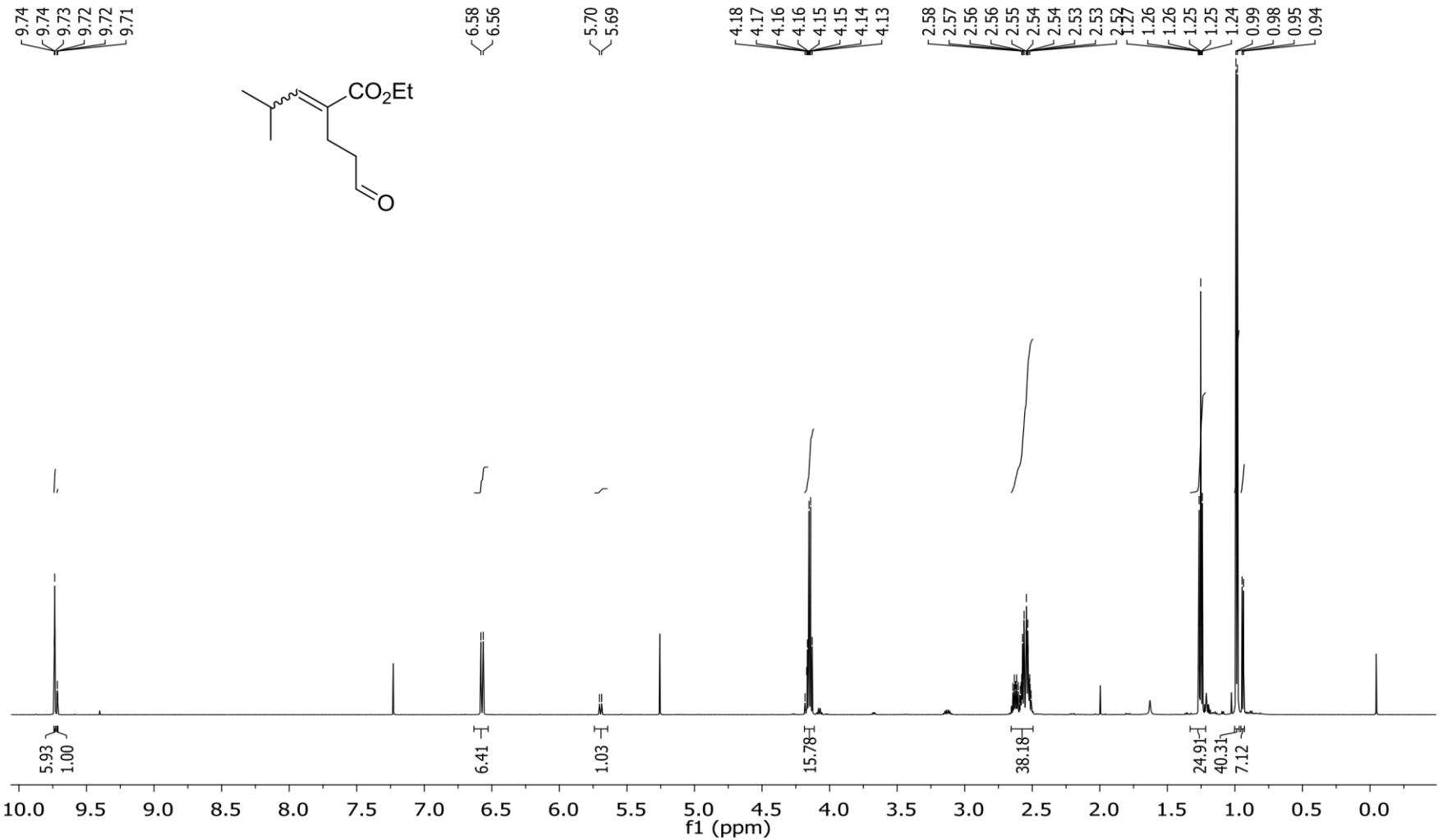
S2.7. ^{1}H NMR (600 MHz) spectrum of **8 (*E*/*Z*) R = *n*-Heptyl** in $CDCl_3$.



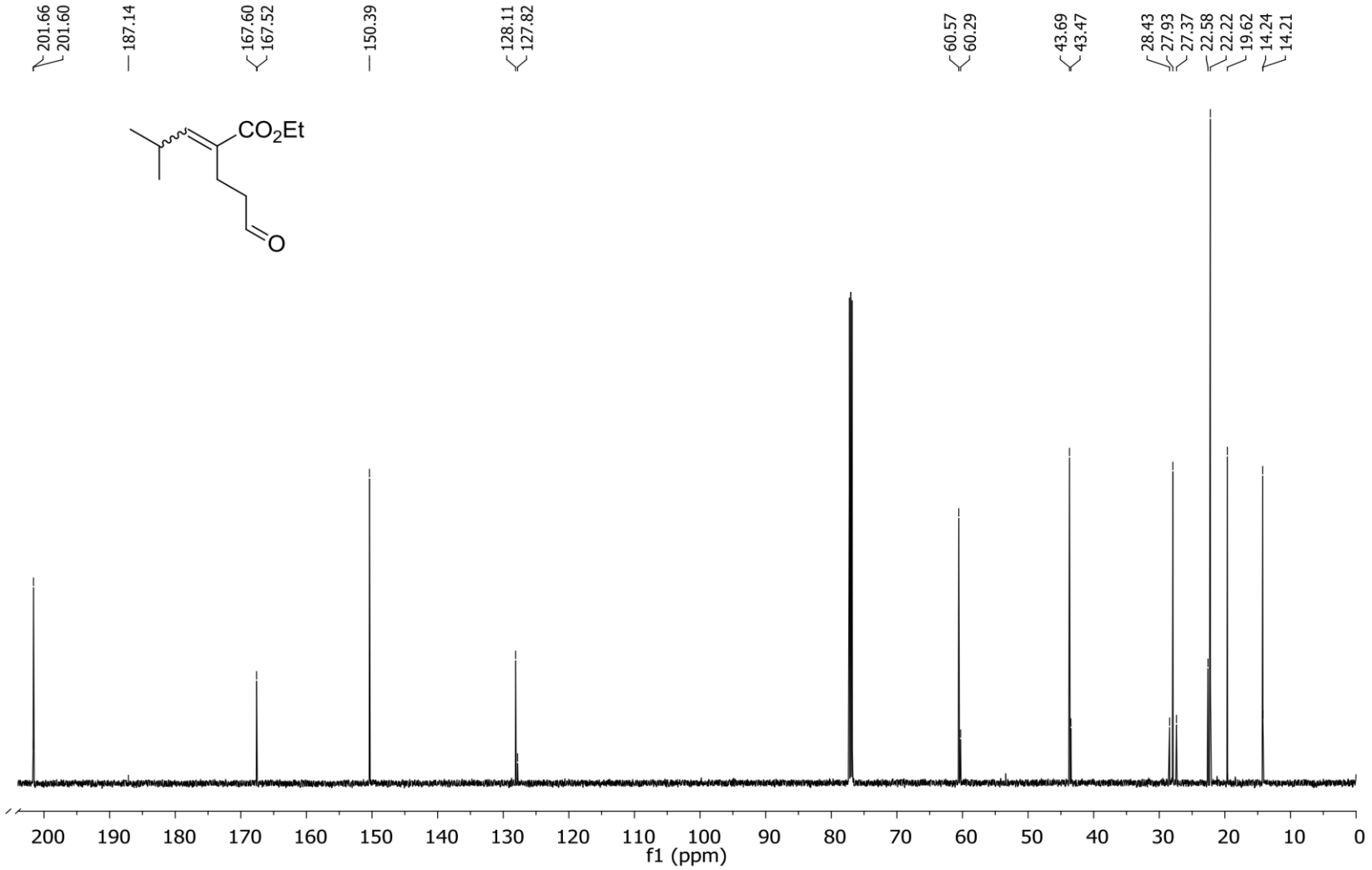
S2.8. ^{13}C NMR (151 MHz) spectrum of **8 (*E*/*Z*) R = *n*-Heptyl** in $CDCl_3$.



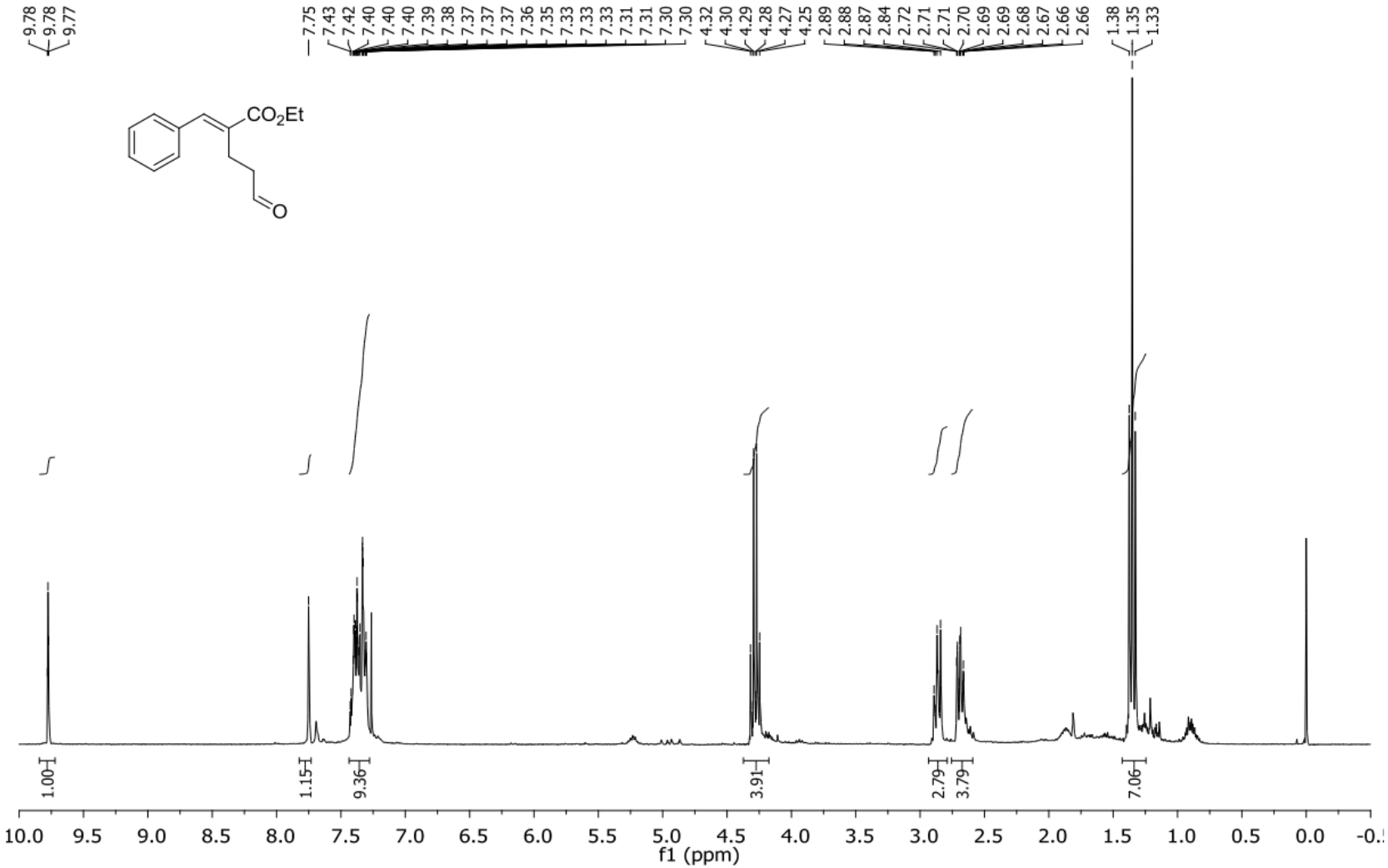
S2.9. ^{1}H NMR (600 MHz) spectrum of **8 (*E*/*Z*) R = *iso*-Propyl** in $CDCl_3$.



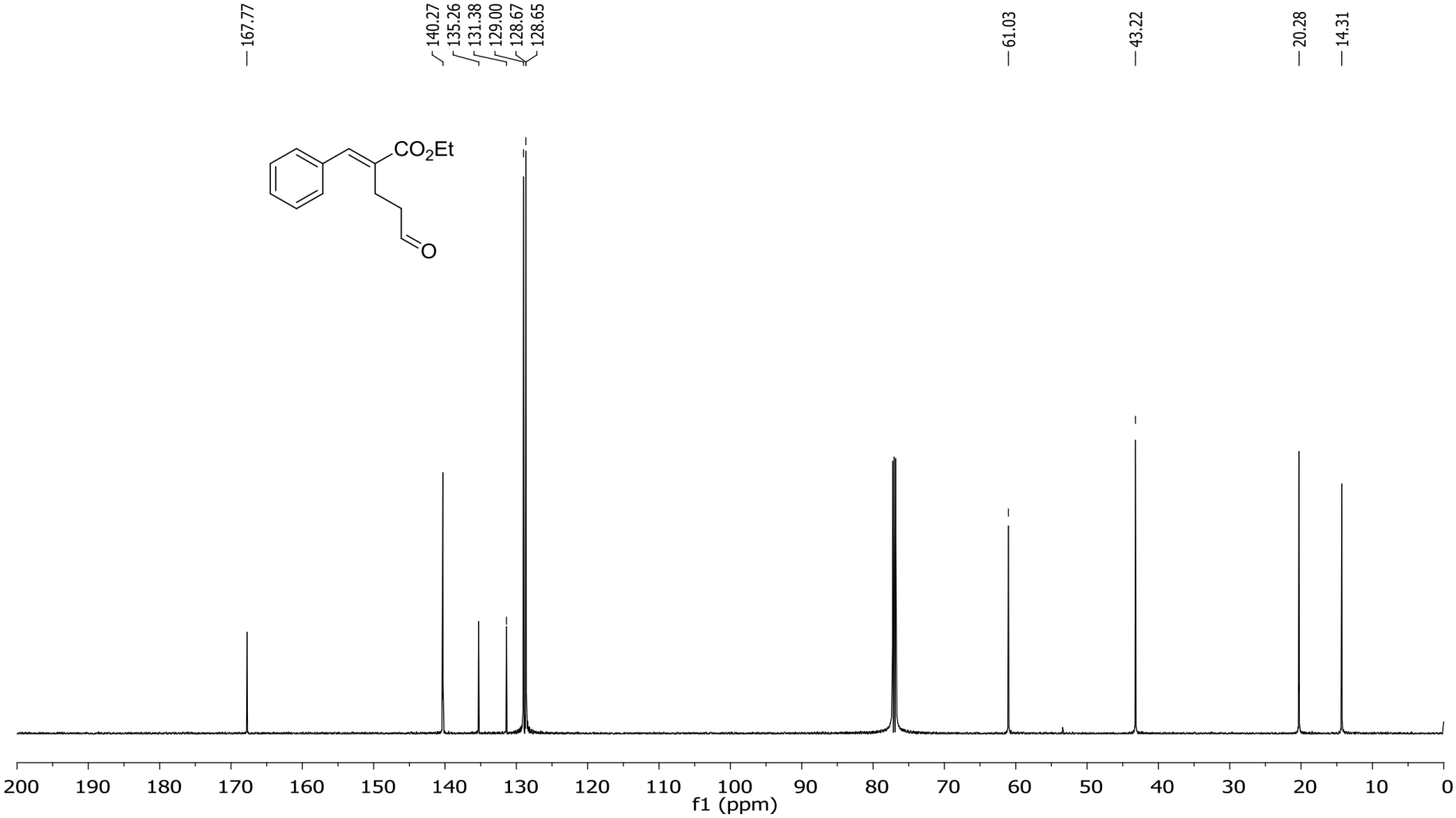
S2.10. ^{13}C NMR (151 MHz) spectrum of **8 (*E*/*Z*) R = *iso*-Propyl** in $CDCl_3$.



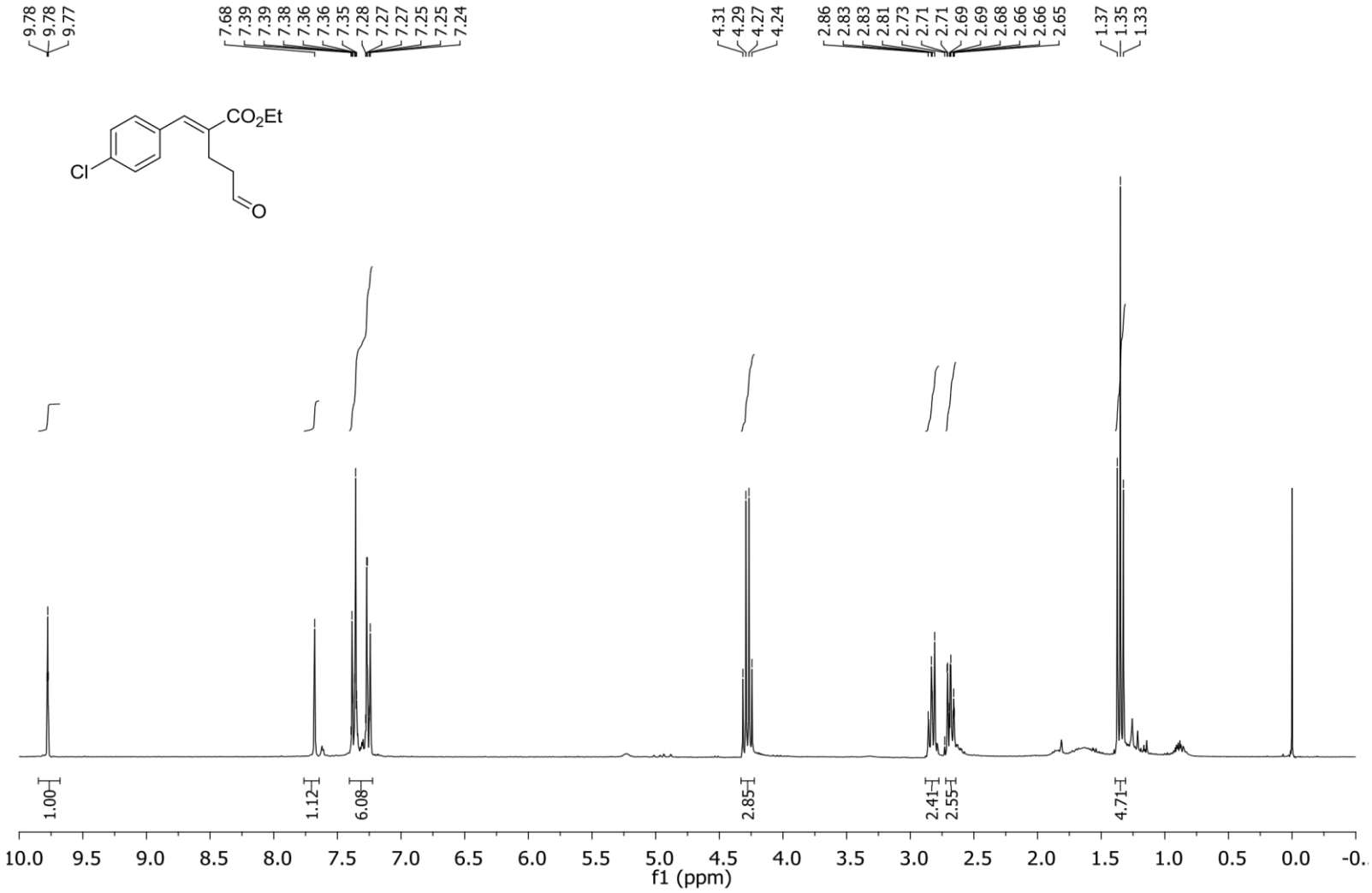
S2.11. ^{1}H NMR (600 MHz) spectrum of **8 (*E*) R = Phenyl** in $CDCl_3$.



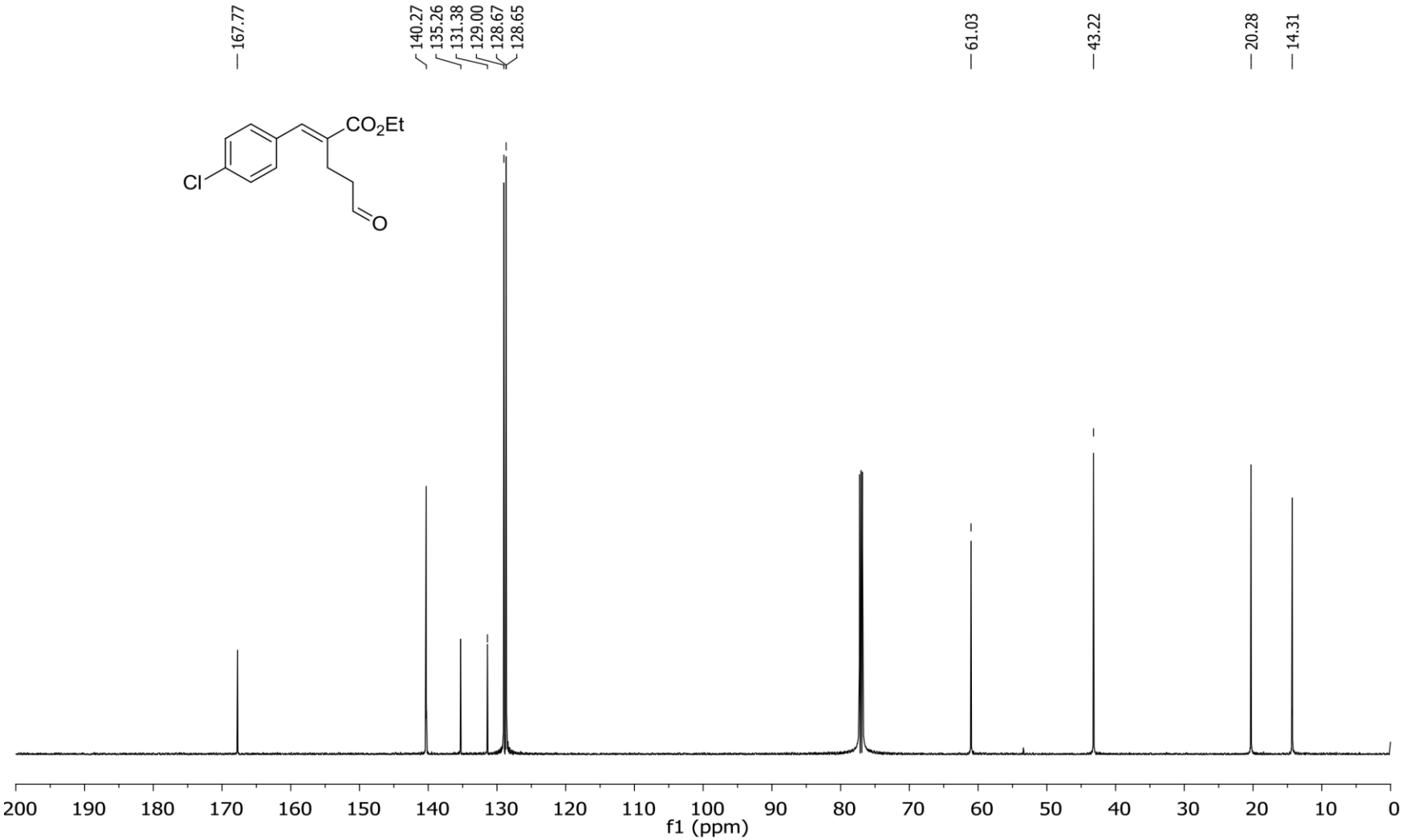
S2.12. ^{13}C NMR (151 MHz) spectrum of **8 (*E*) R = Phenyl** in $CDCl_3$.



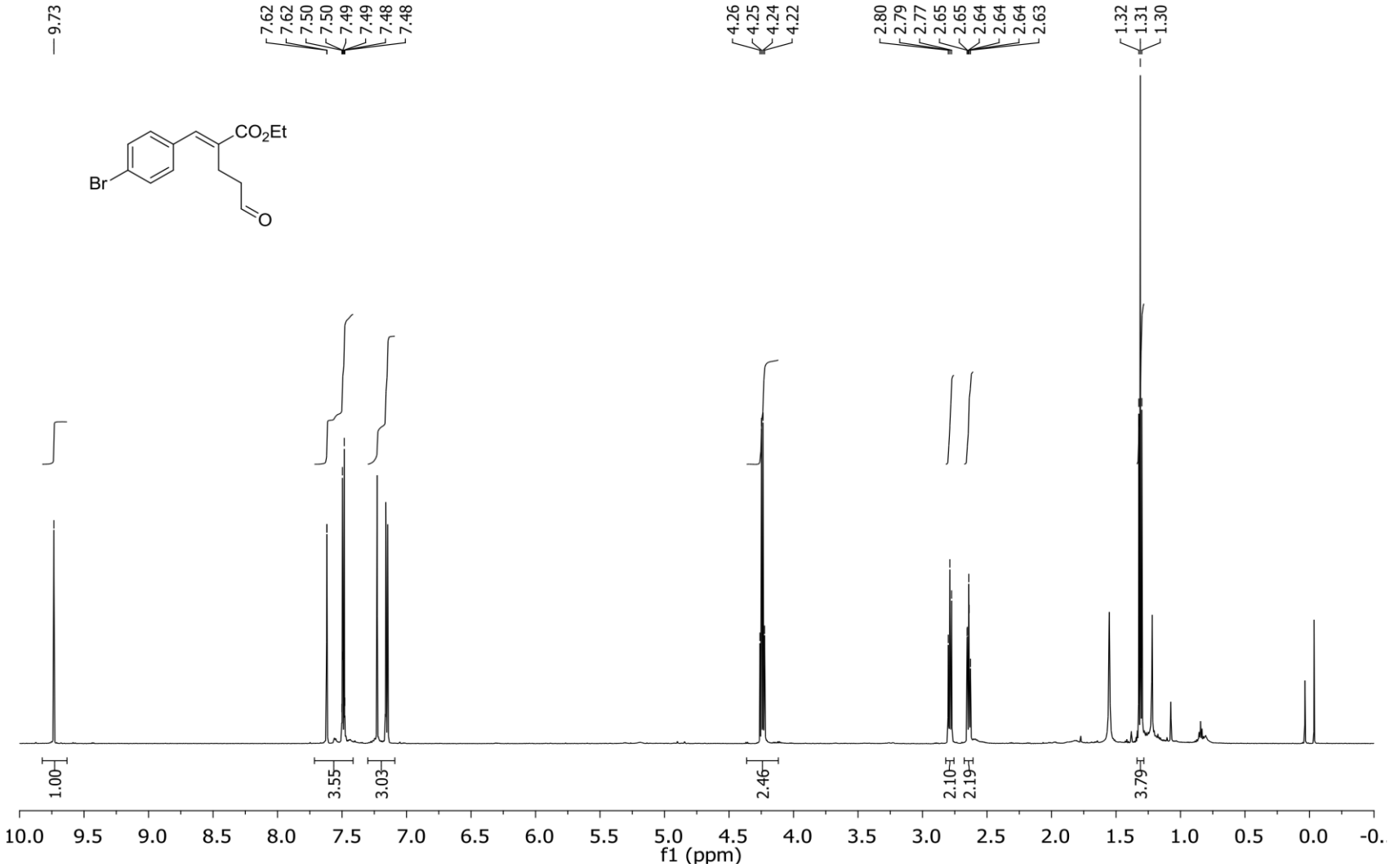
S2.13. ^{1}H NMR (300 MHz) spectrum of **8 (*E*) R = 4-Cl-Phenyl** in $CDCl_3$.



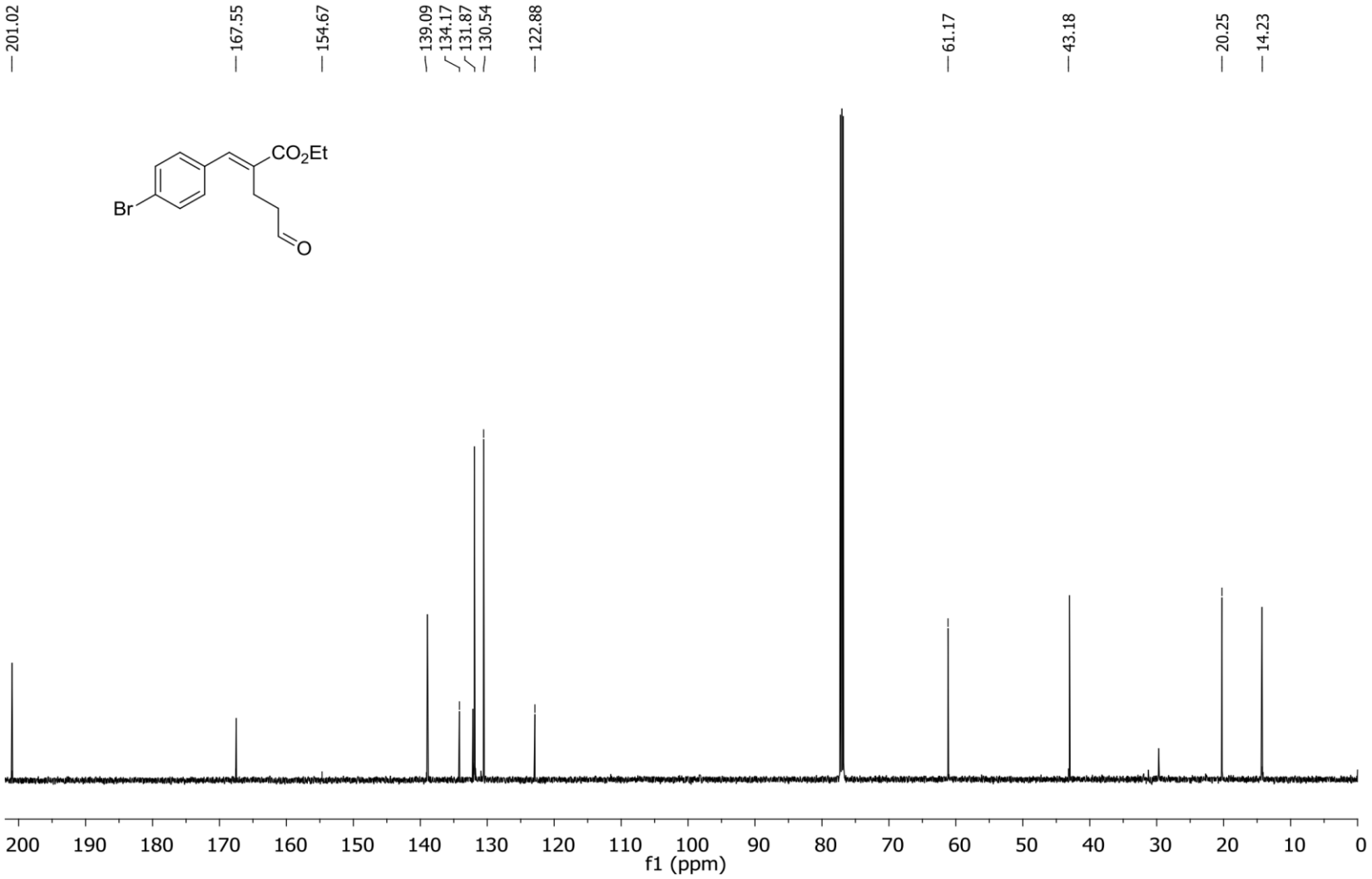
S2.14. ^{13}C NMR (151 MHz) spectrum of **8 (*E*) R = 4-Cl-Phenyl** in $CDCl_3$.



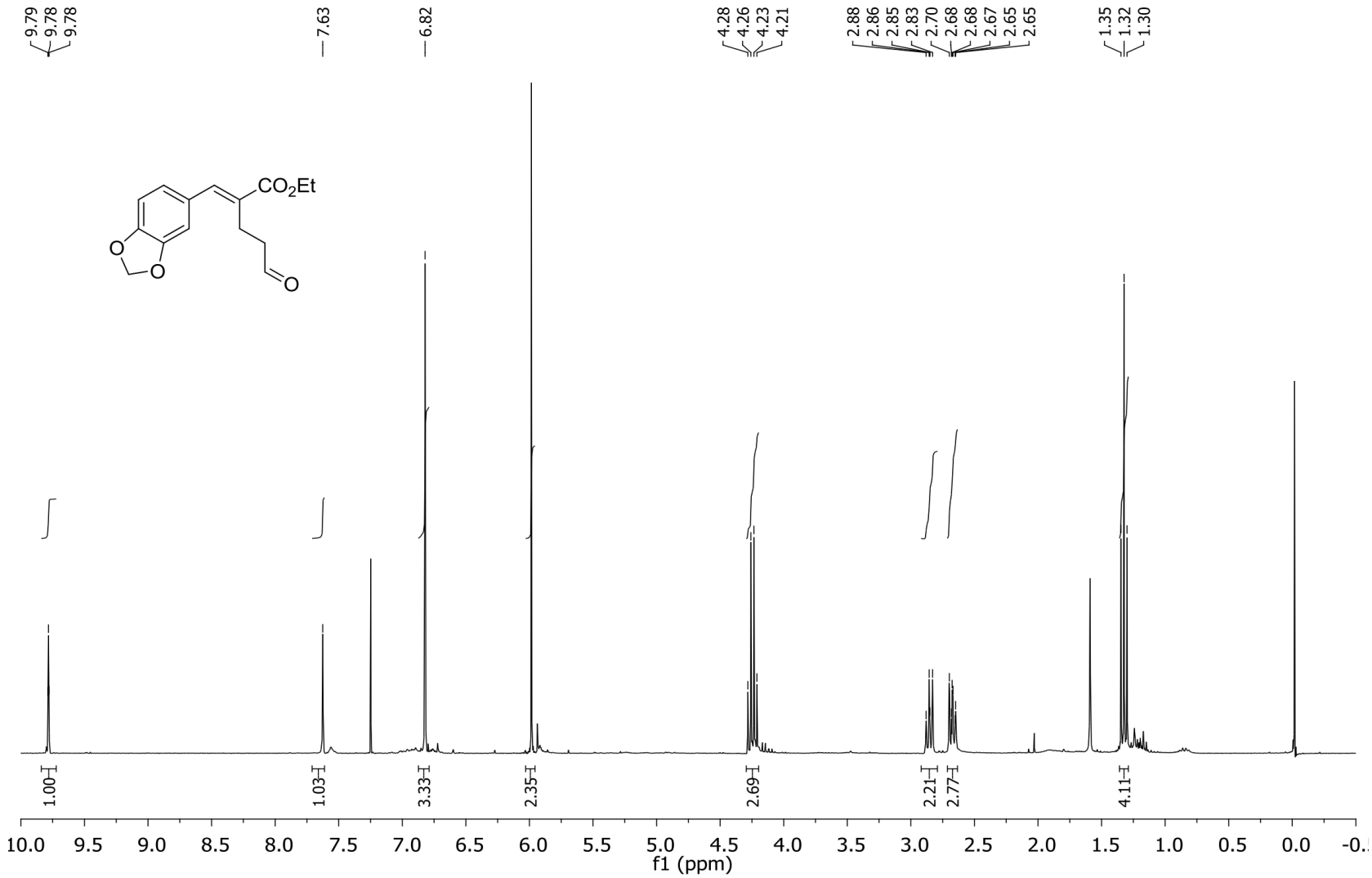
S2.15. ^{1}H NMR (600 MHz) spectrum of **8 (*E*) R = 4-Br-Phenyl** in $CDCl_3$.



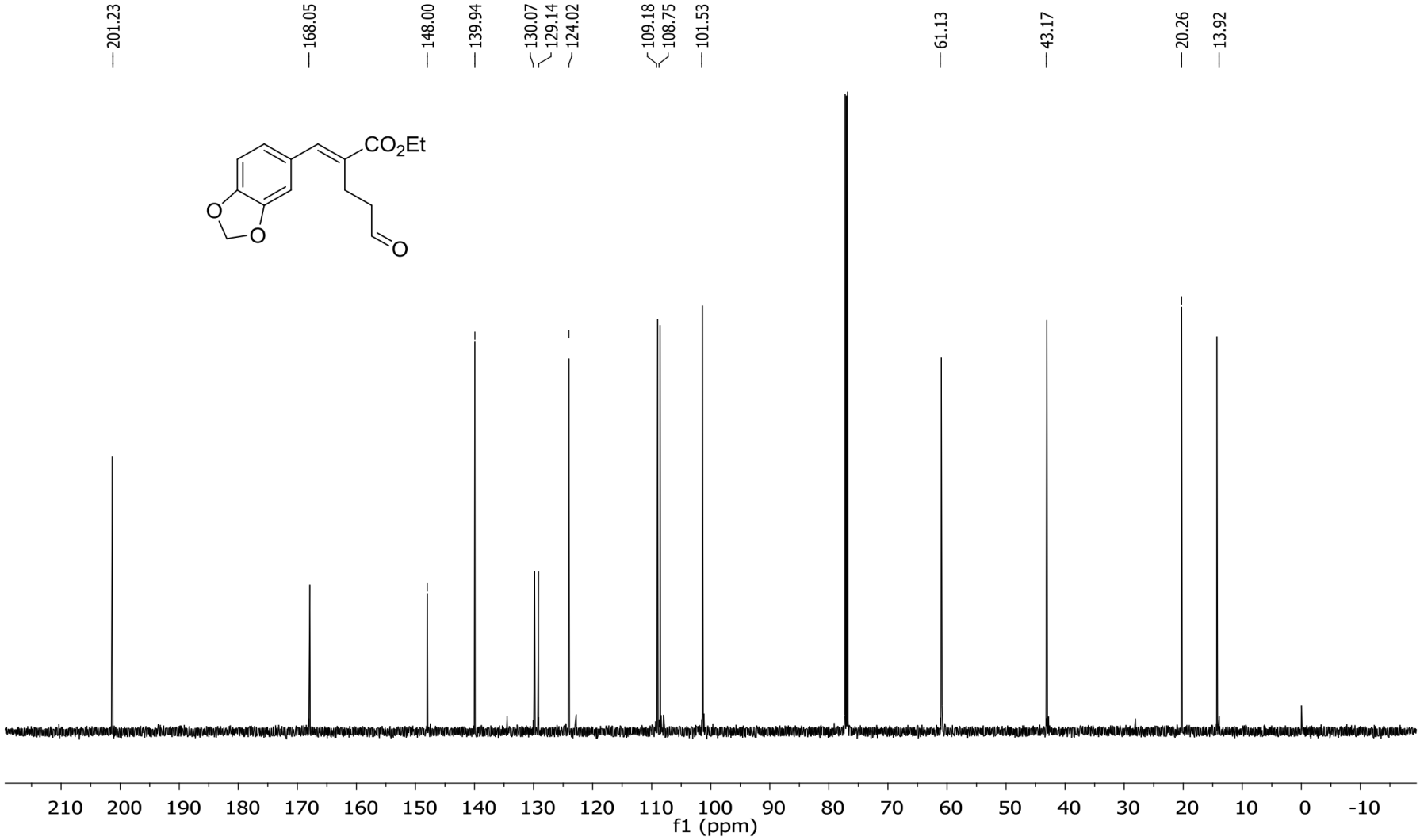
S2.16. ^{13}C NMR (151 MHz)spectrum of **8 (*E*) R = 4-Br-Phenyl** in $CDCl_3$.



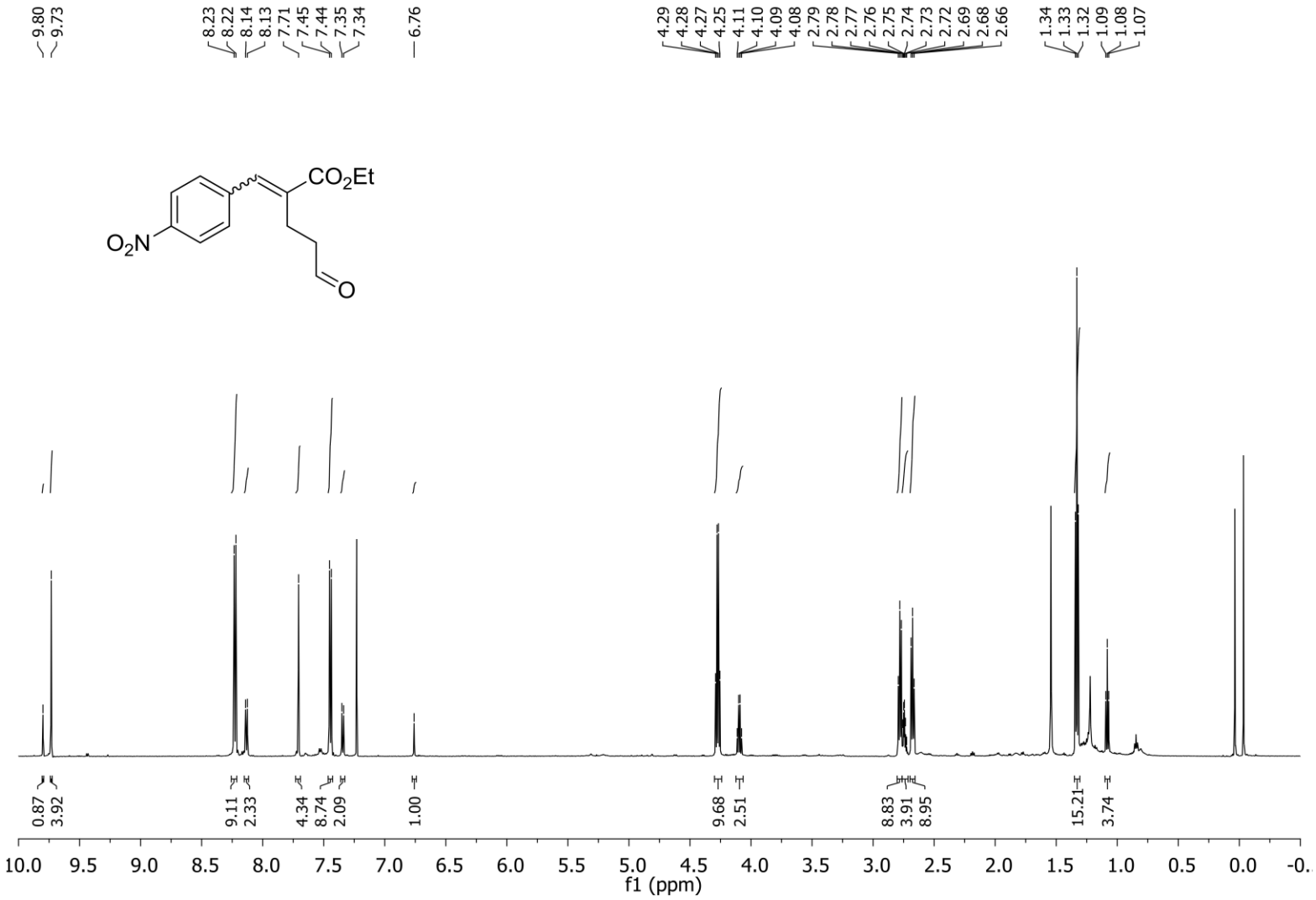
S2.17. ^{1}H NMR (600 MHz) spectrum of **8 (*E*) R = 3,4-Methylenedioxyphenyl** in $CDCl_3$.



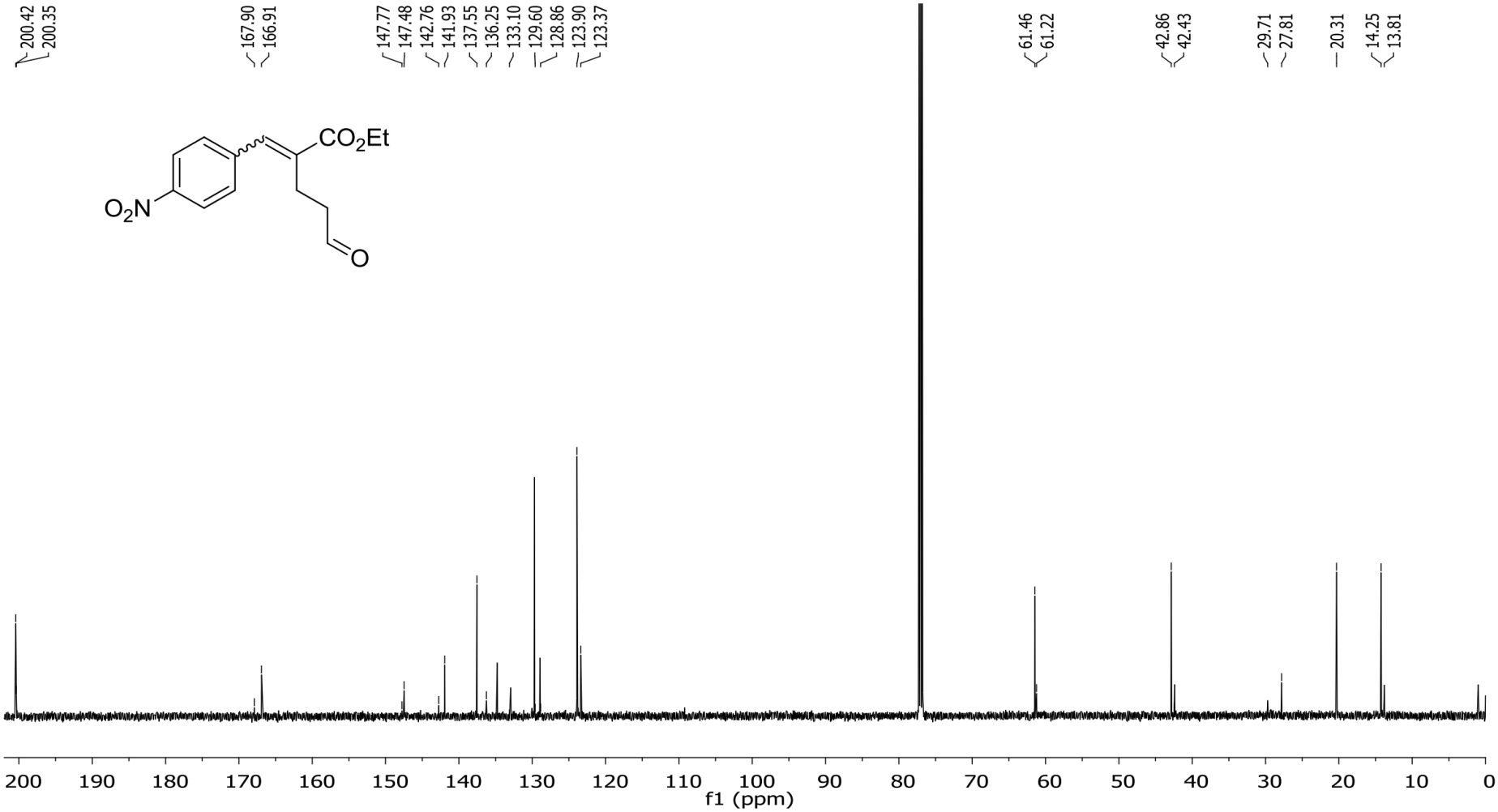
S2.18. ^{13}C NMR (151 MHz) spectrum of **8 (*E*) R = 3,4-Methylenedioxyphenyl** in $CDCl_3$.



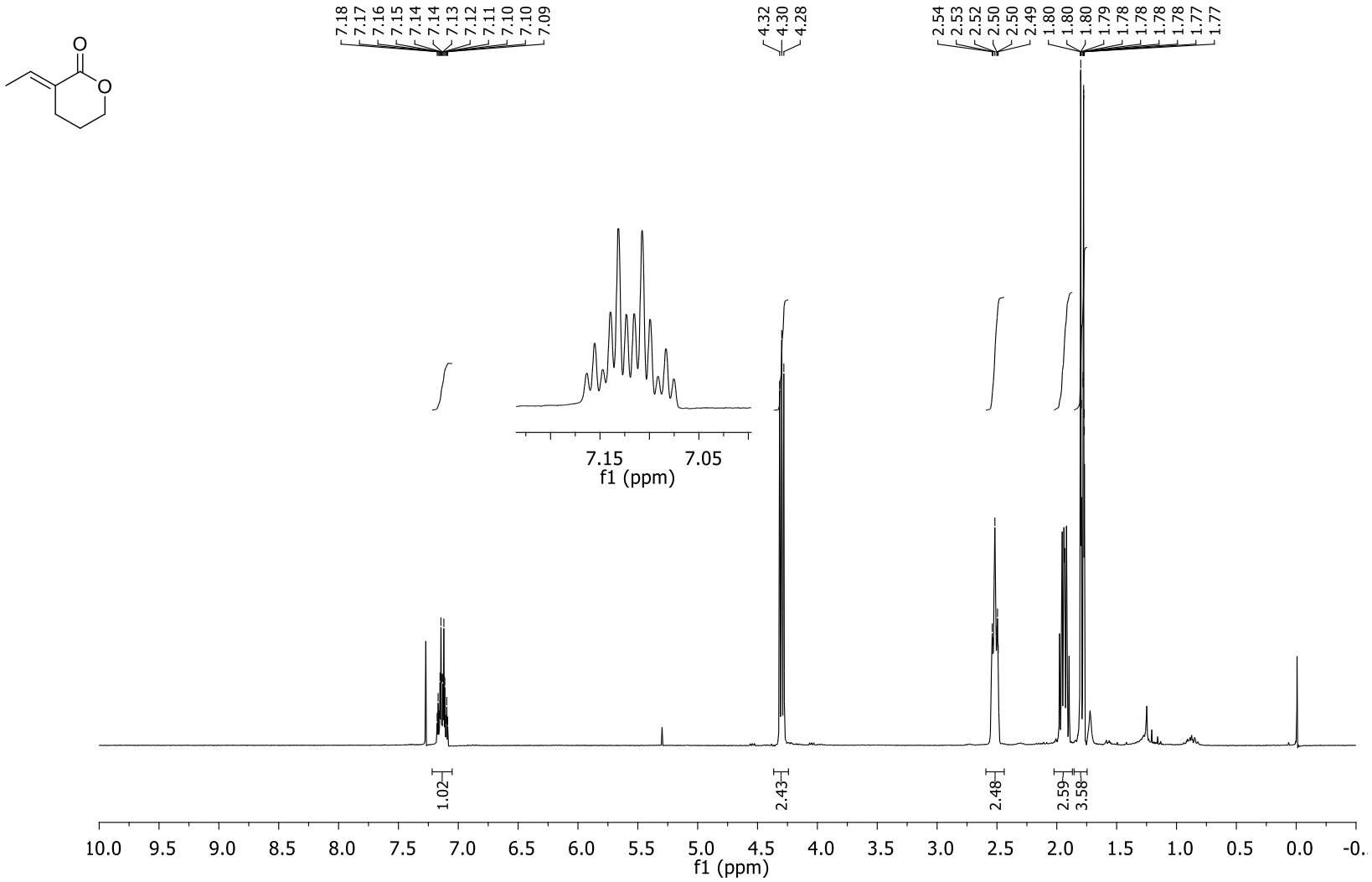
S2.19. ^{1}H NMR (600 MHz) spectrum of **8 (*E*) R = 4-NO_2-Phenyl** in $CDCl_3$.



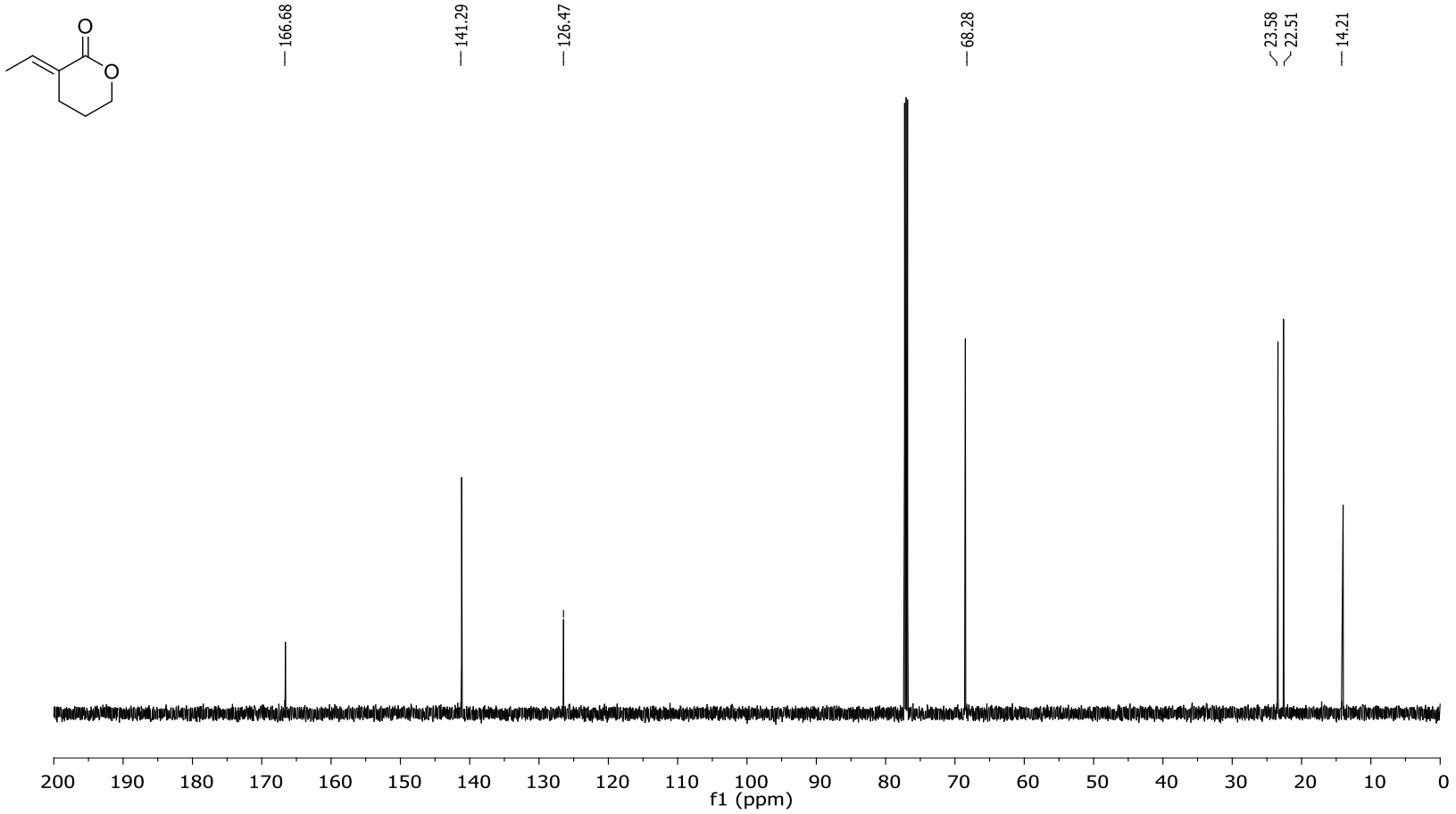
S2.20. ^{13}C NMR (151 MHz) spectrum of **8 (*E*) R = 4-NO_2-Phenyl** in $CDCl_3$.



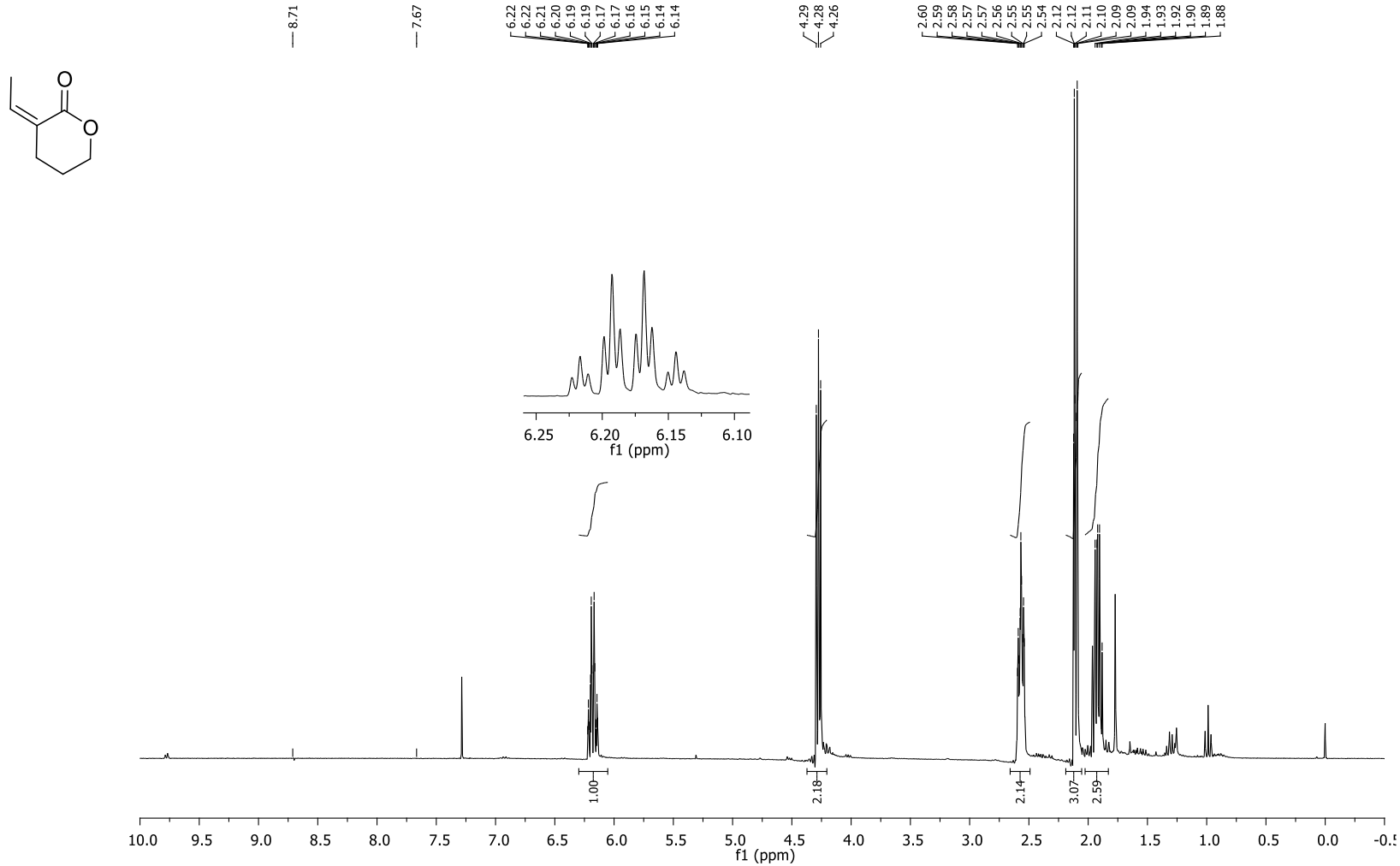
S2.21. ^{1}H NMR (600 MHz) spectrum of **10E** in $CDCl_3$.



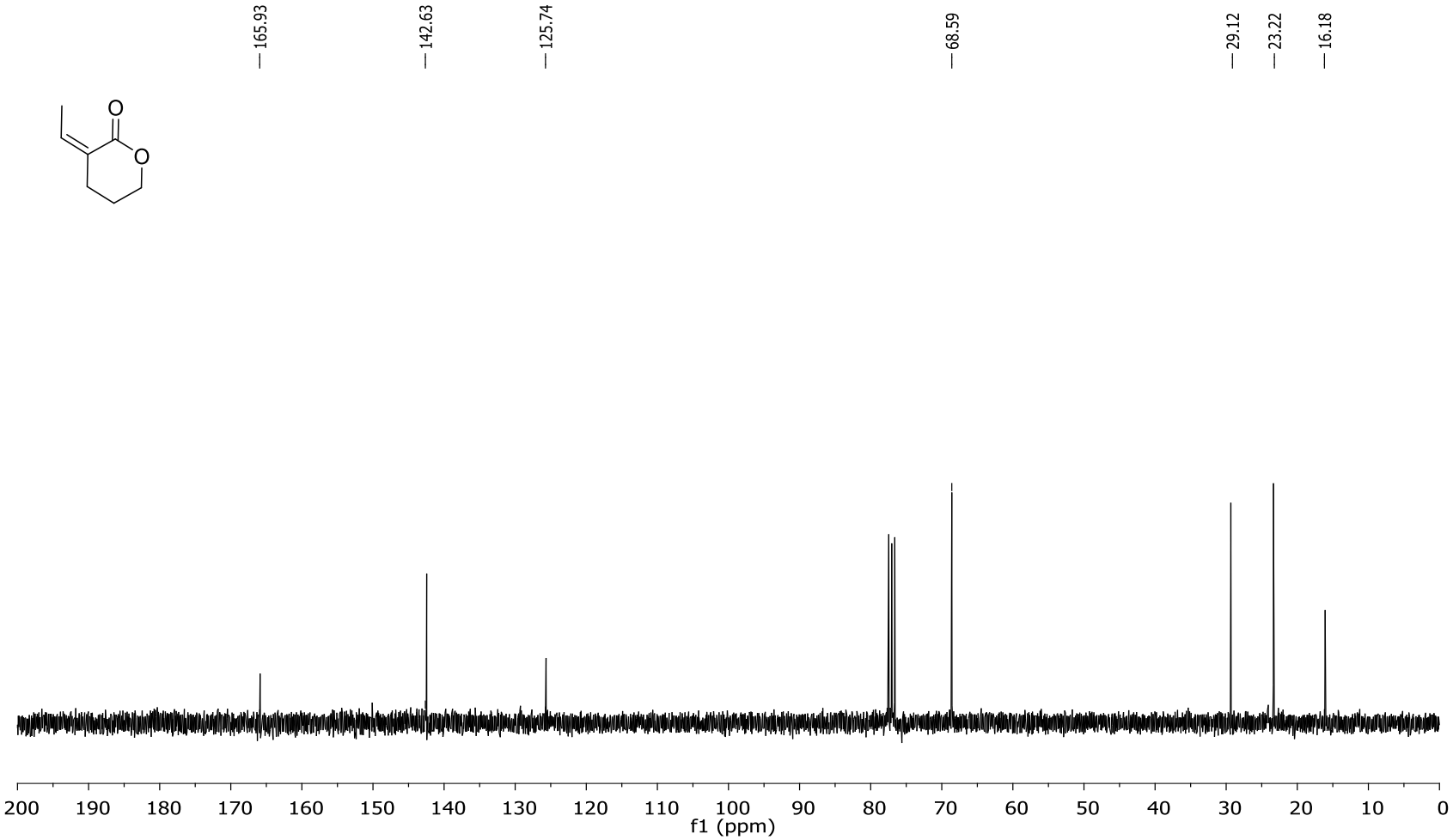
S2.22. ^{13}C NMR (151 MHz) spectrum of **10E** in $CDCl_3$.



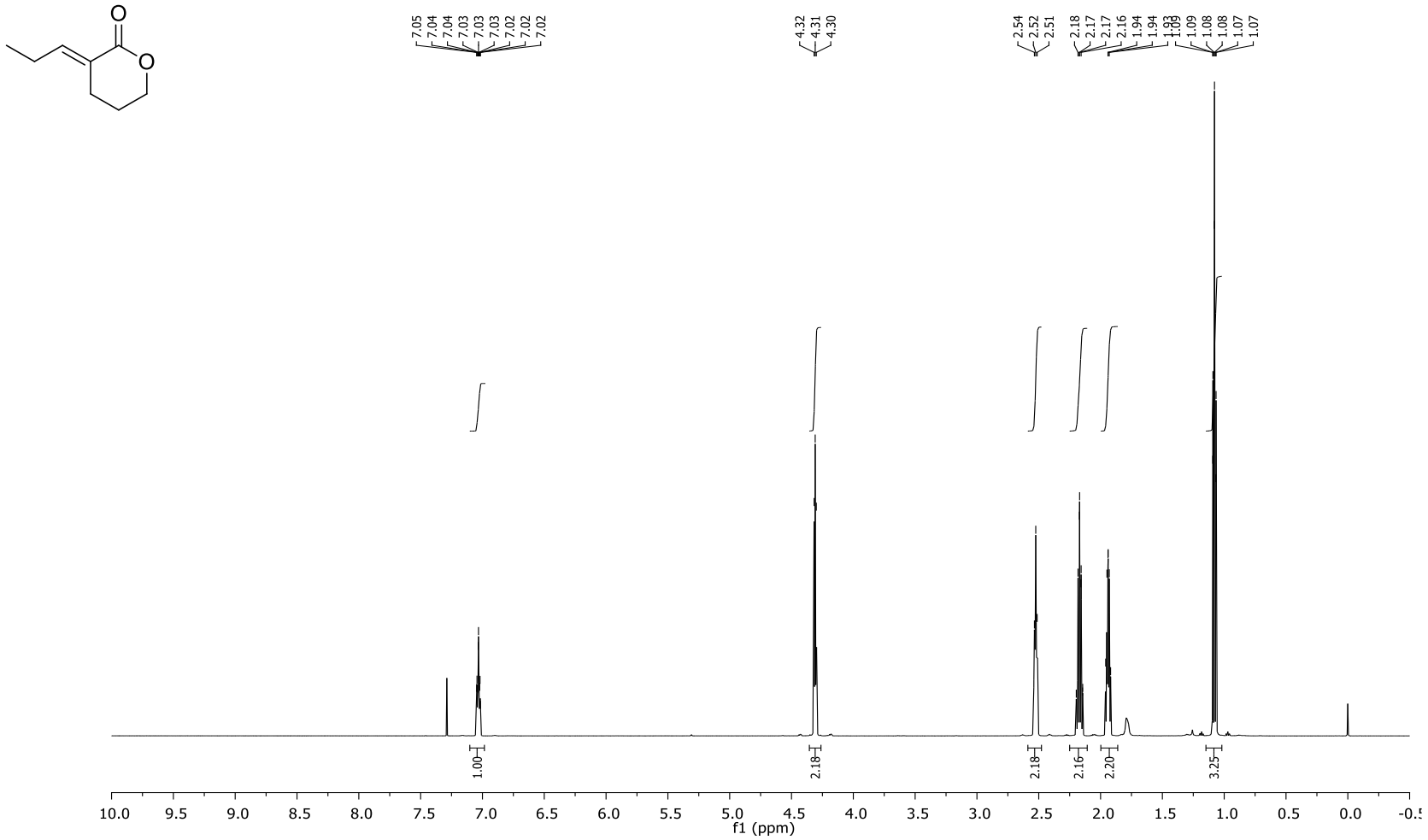
S2.23. ^{1}H NMR (300 MHz) spectrum of **10Z** in $CDCl_3$.



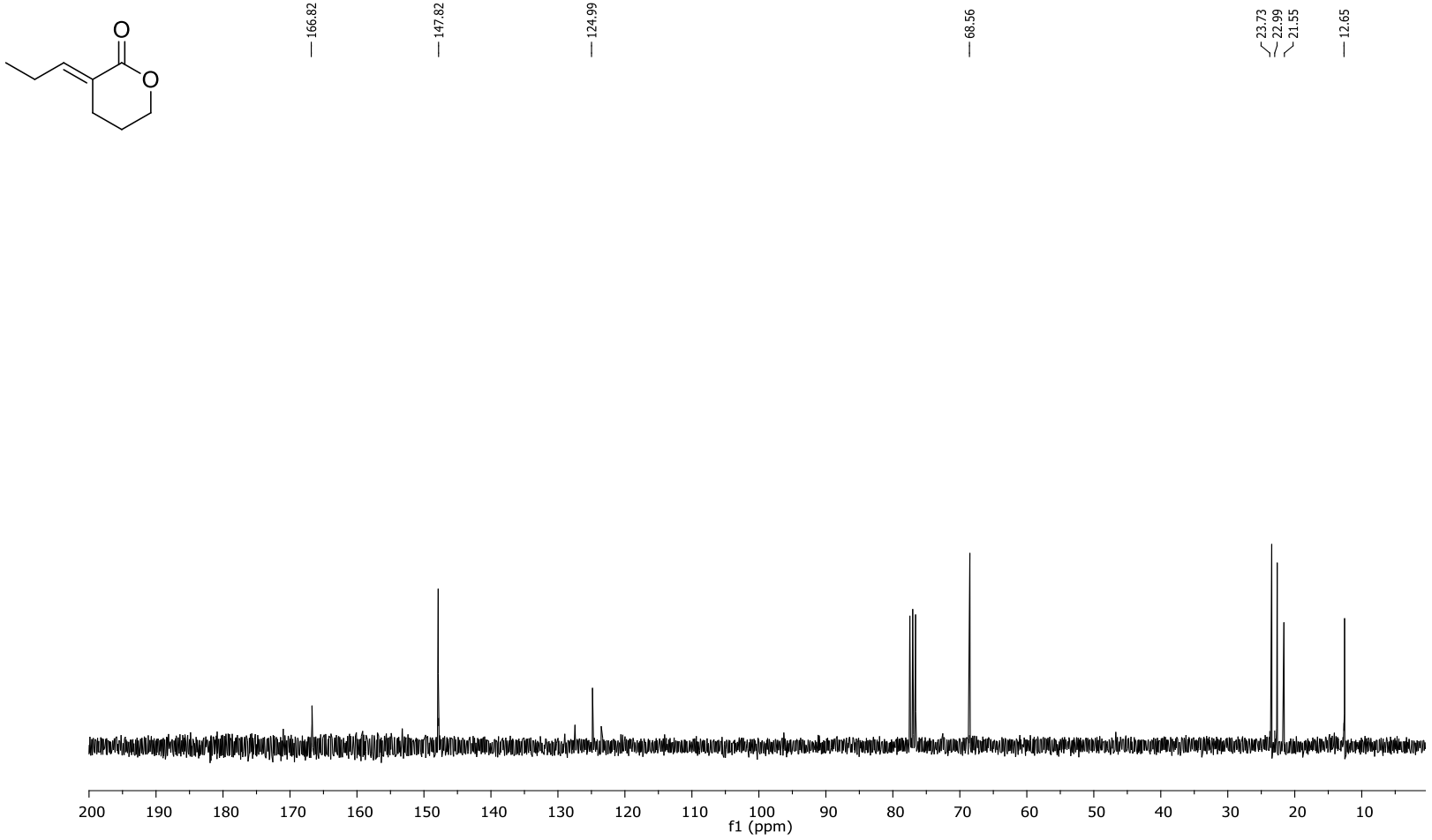
S2.24. ^{13}C NMR (75 MHz) spectrum of **10Z** in $CDCl_3$.



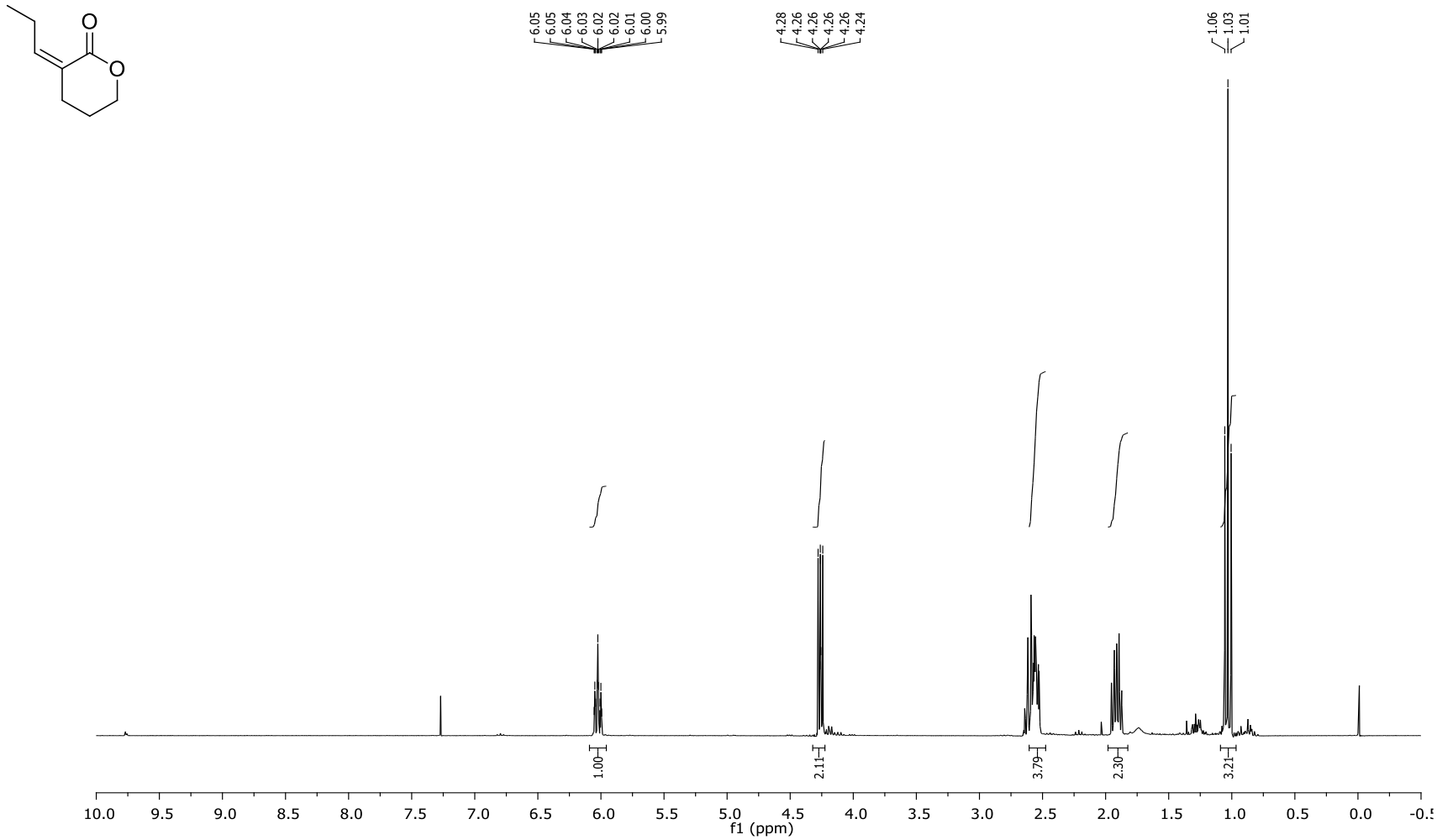
S2.25. ^{1}H NMR (600 MHz) spectrum of **11E** in $CDCl_3$.



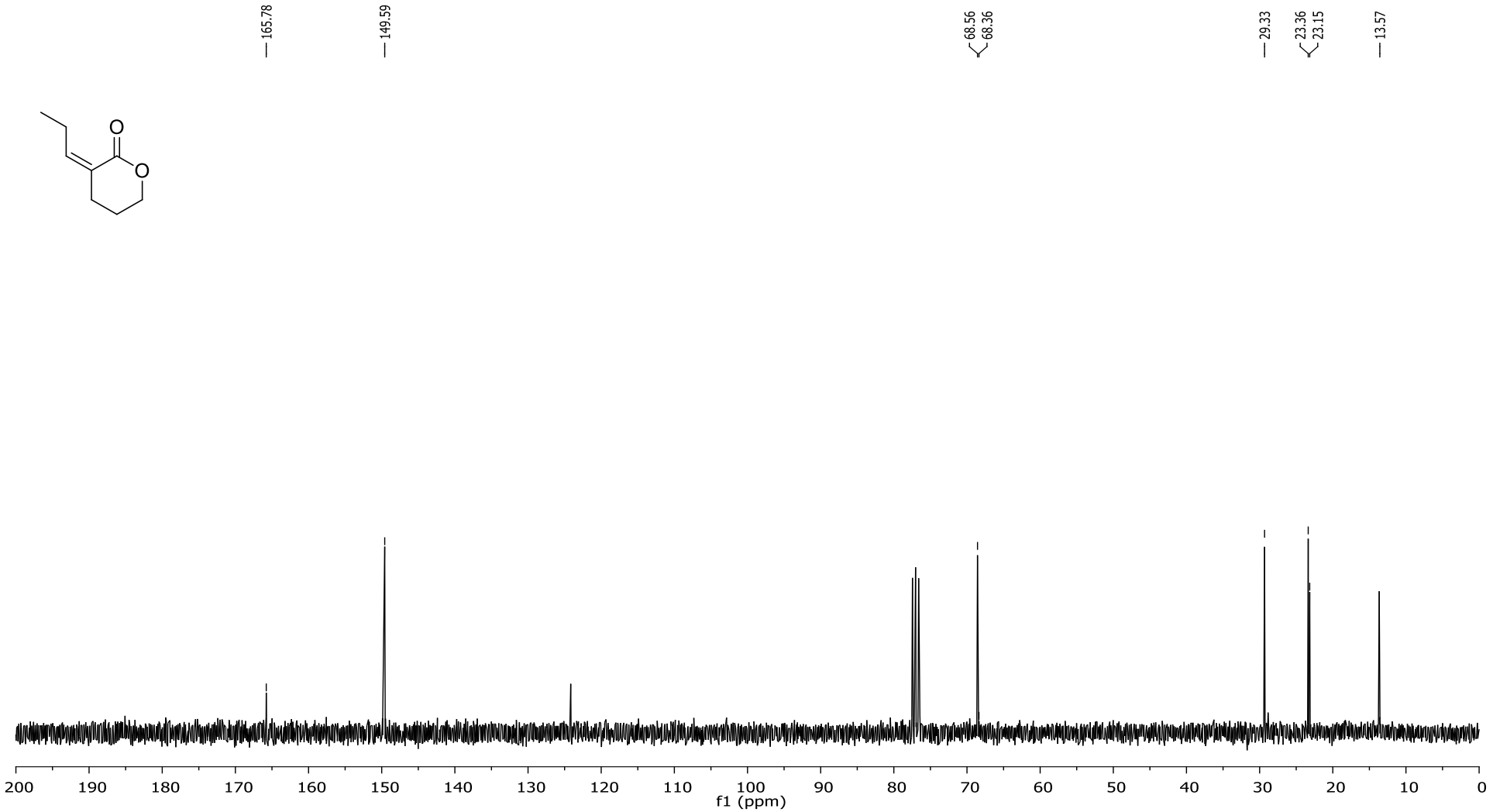
S2.26. ^{13}C NMR (75 MHz) spectrum of **11E** in $CDCl_3$.



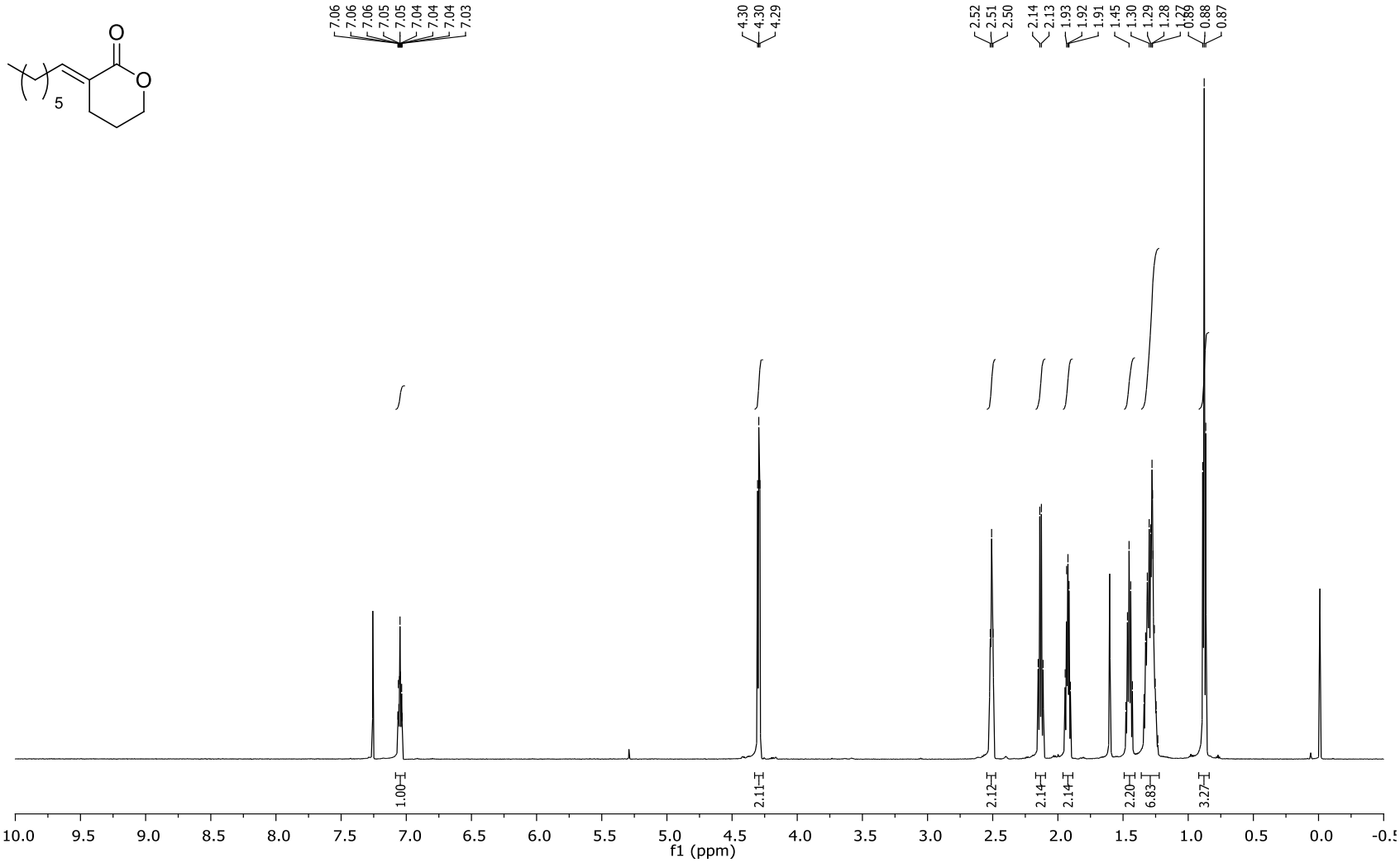
S2.27. ^{1}H NMR (300 MHz) spectrum of **11Z** in $CDCl_3$.



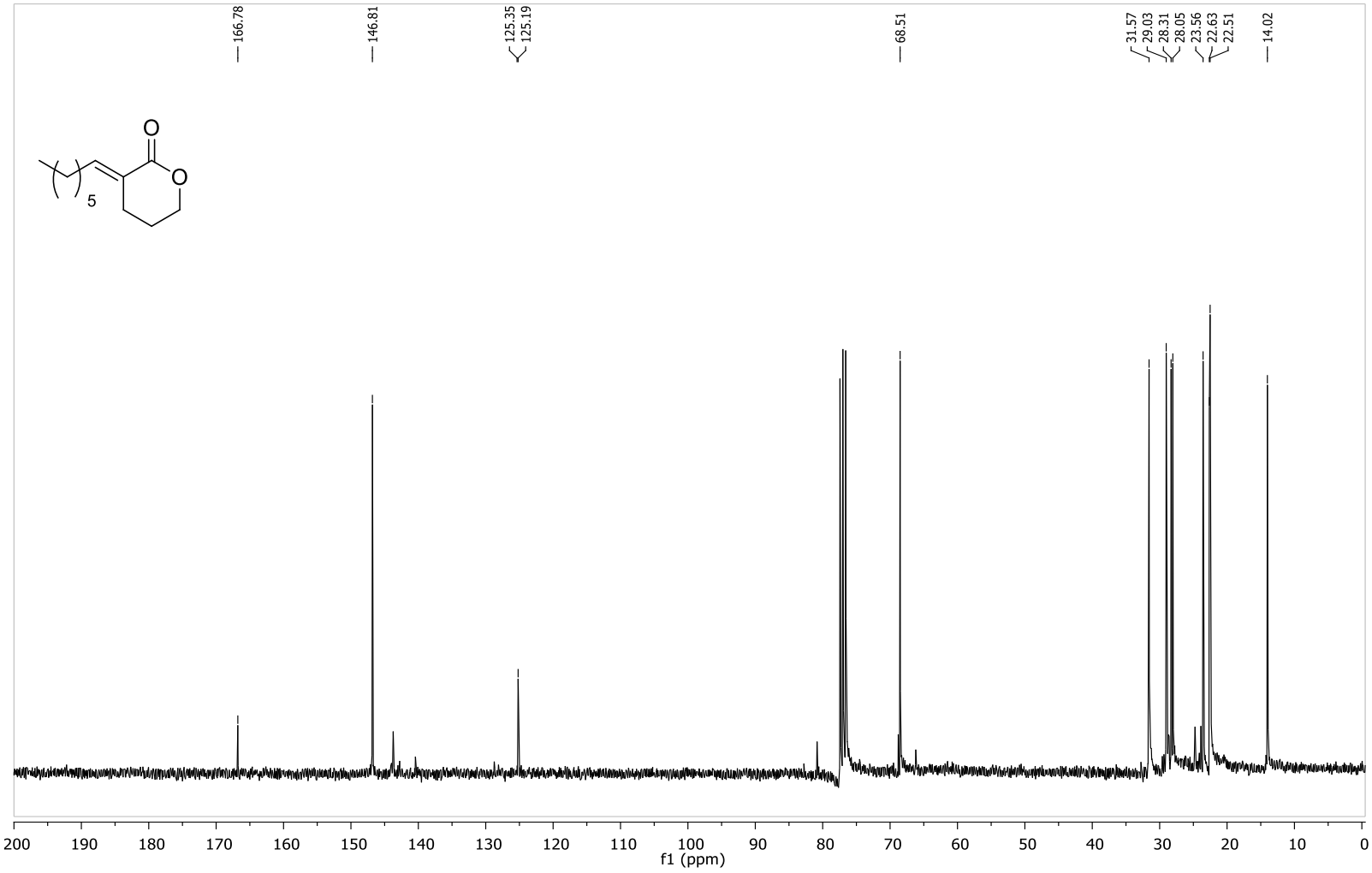
S2.28. ^{13}C NMR (75 MHz) spectrum of **11Z** in $CDCl_3$.



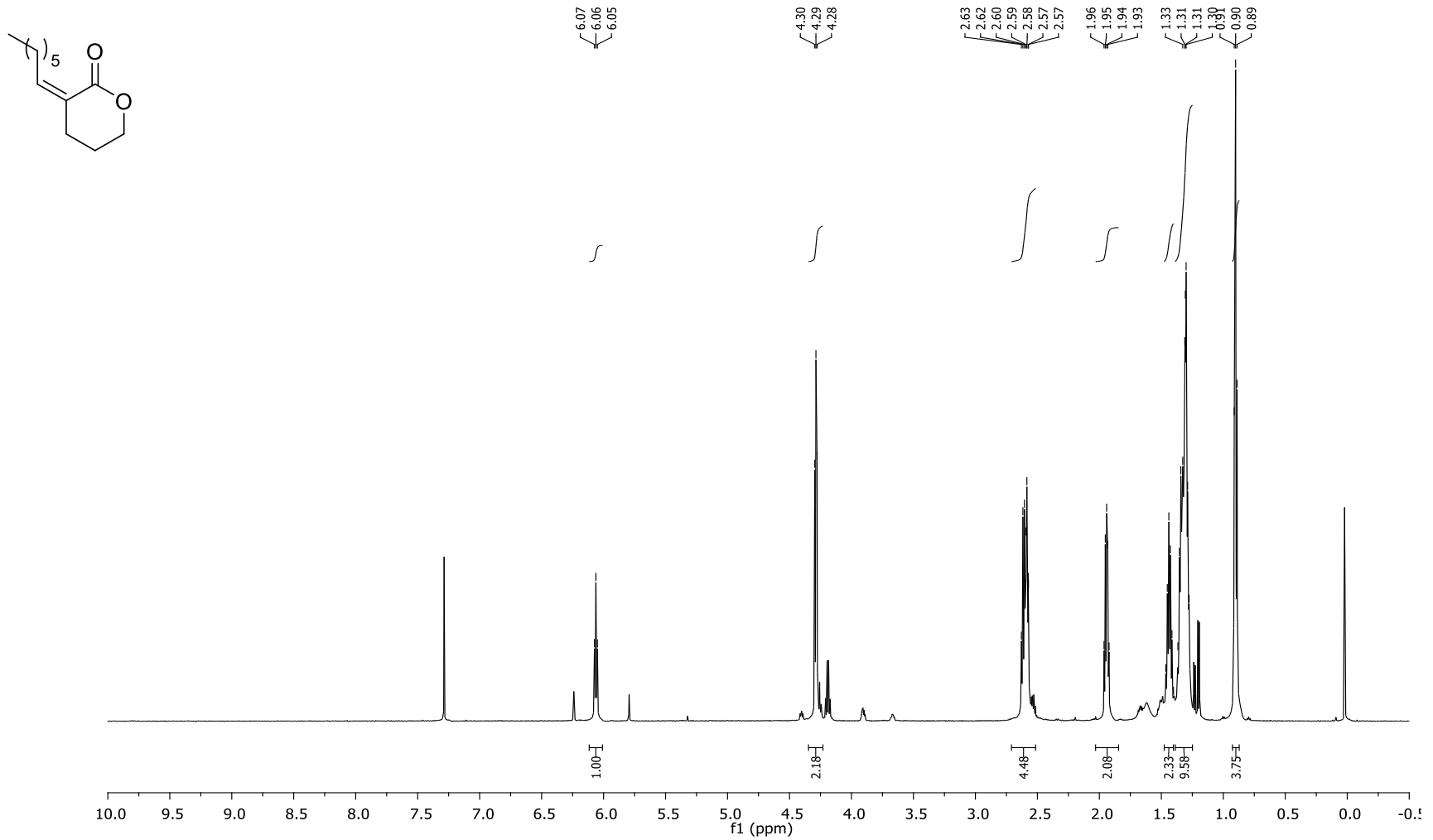
S2.29. ^{1}H NMR (600 MHz) spectrum of **12E** in $CDCl_3$.



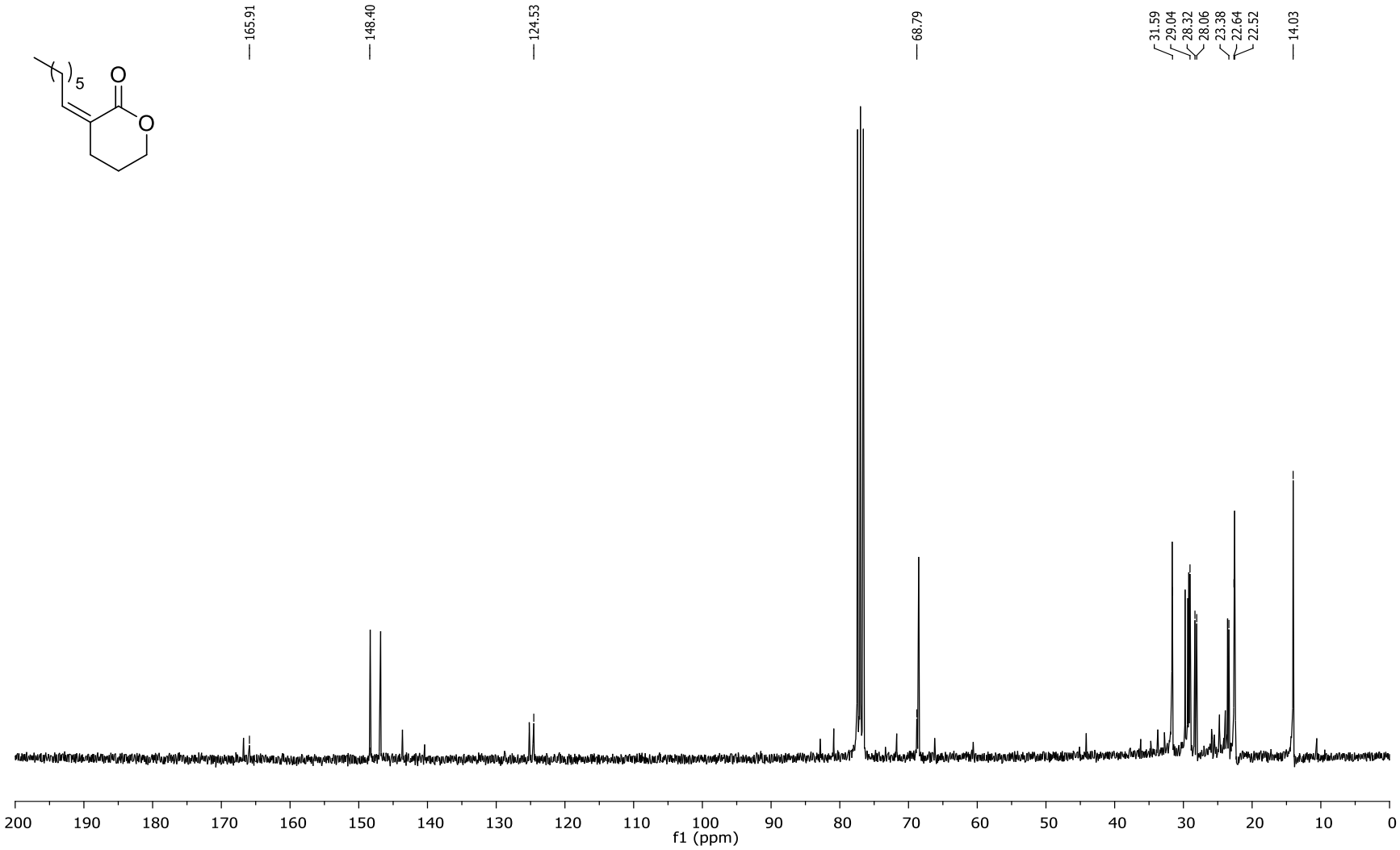
S2.30. ^{13}C NMR (75 MHz) spectrum of **12E** in $CDCl_3$.



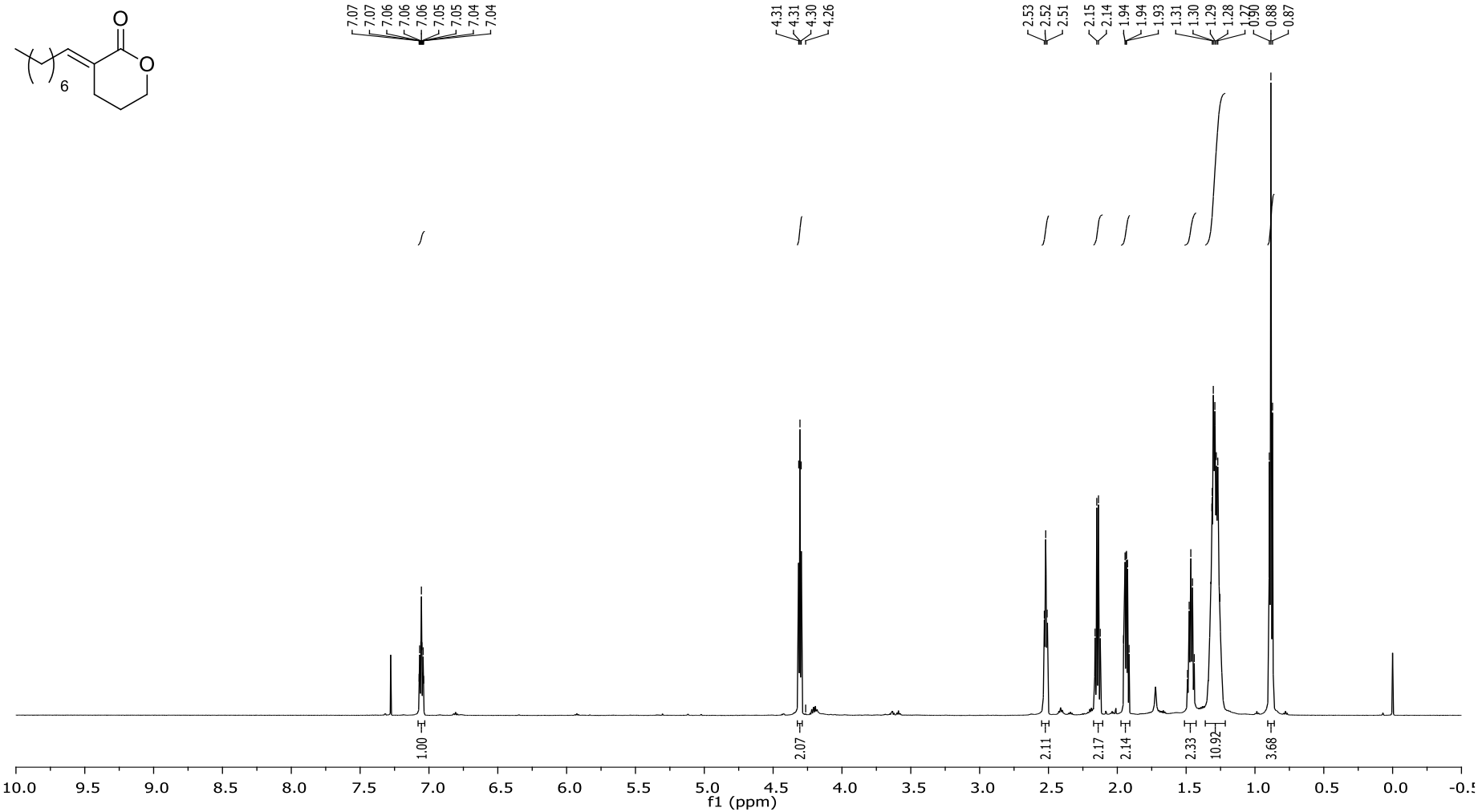
S2.31. ^{1}H NMR (600 MHz) spectrum of **12Z** in $CDCl_3$.



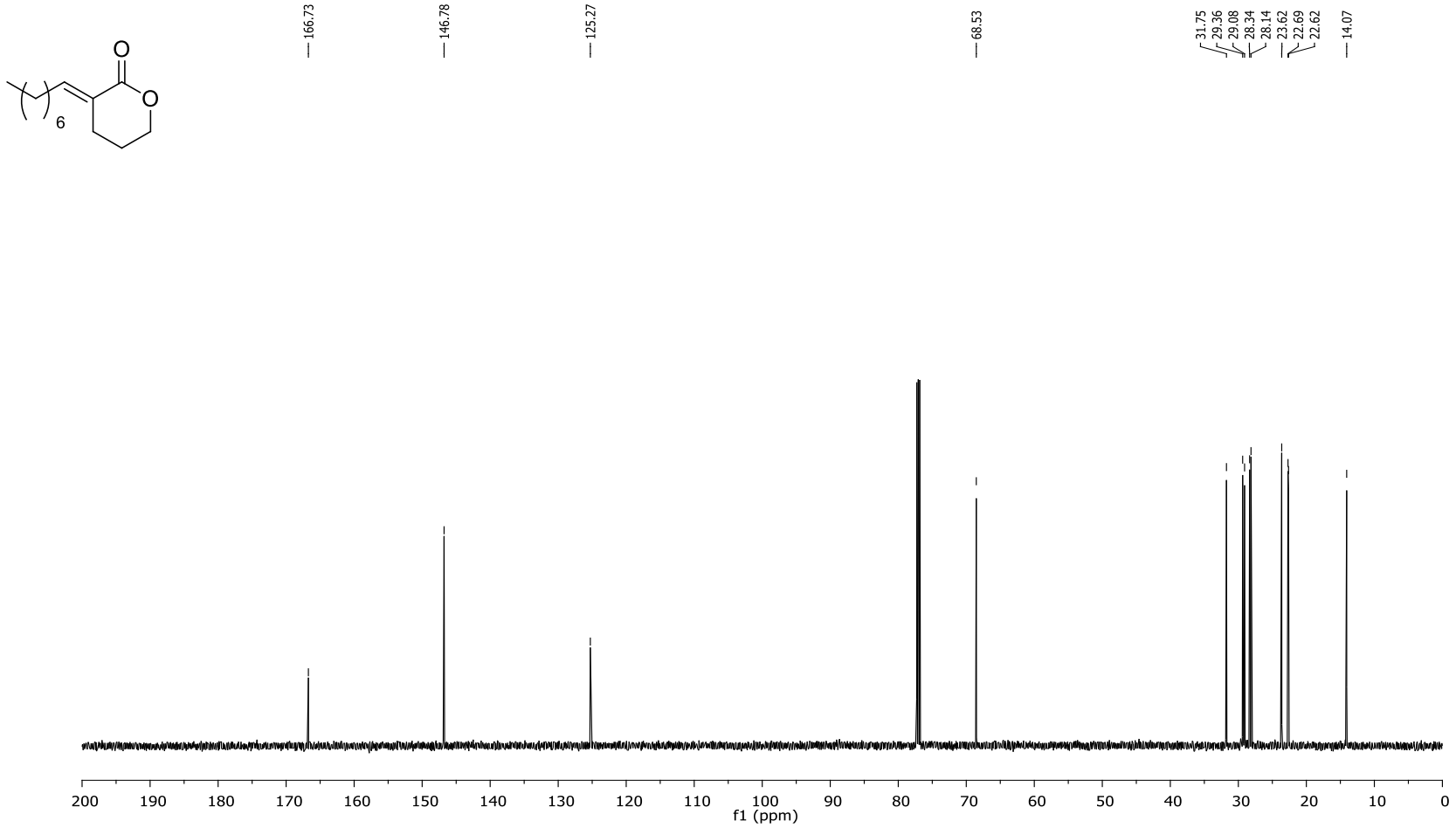
S2.32. ^{13}C NMR (75 MHz) spectrum of **12Z** in $CDCl_3$.



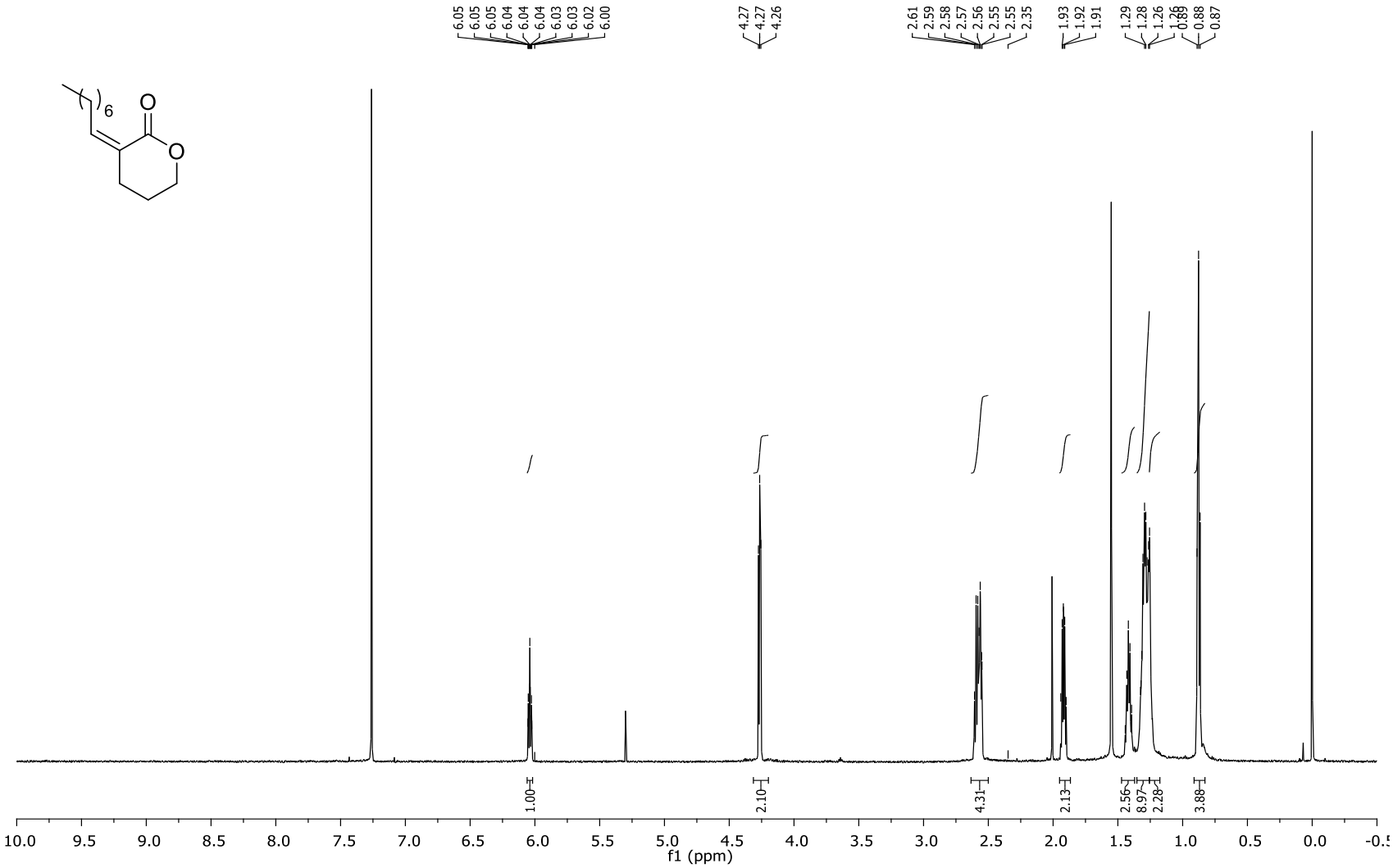
S2.33. ^{1}H NMR (600 MHz) spectrum of **13E** in $CDCl_3$.



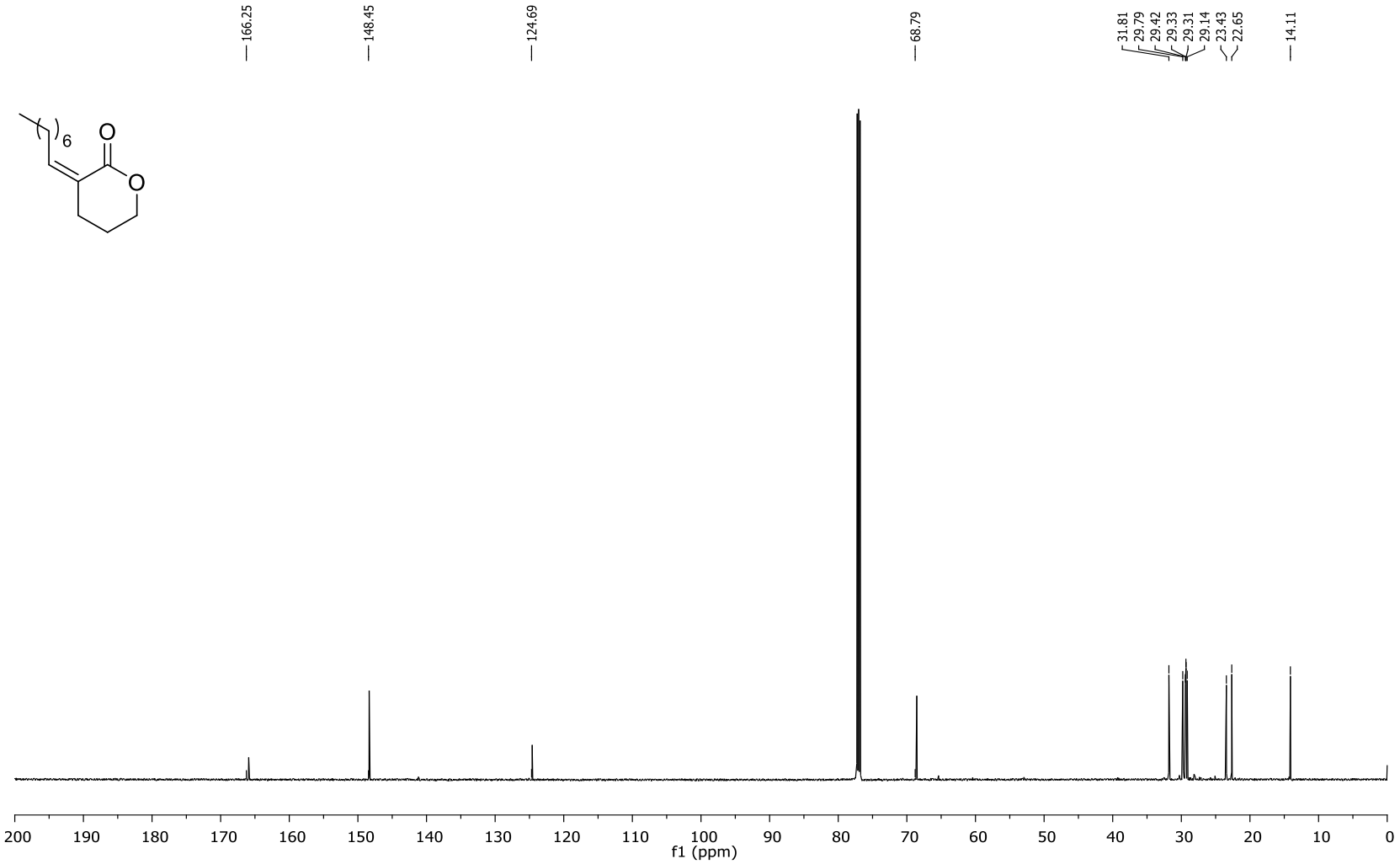
S2.34. ^{13}C NMR (151 MHz) spectrum of **13E** in $CDCl_3$.



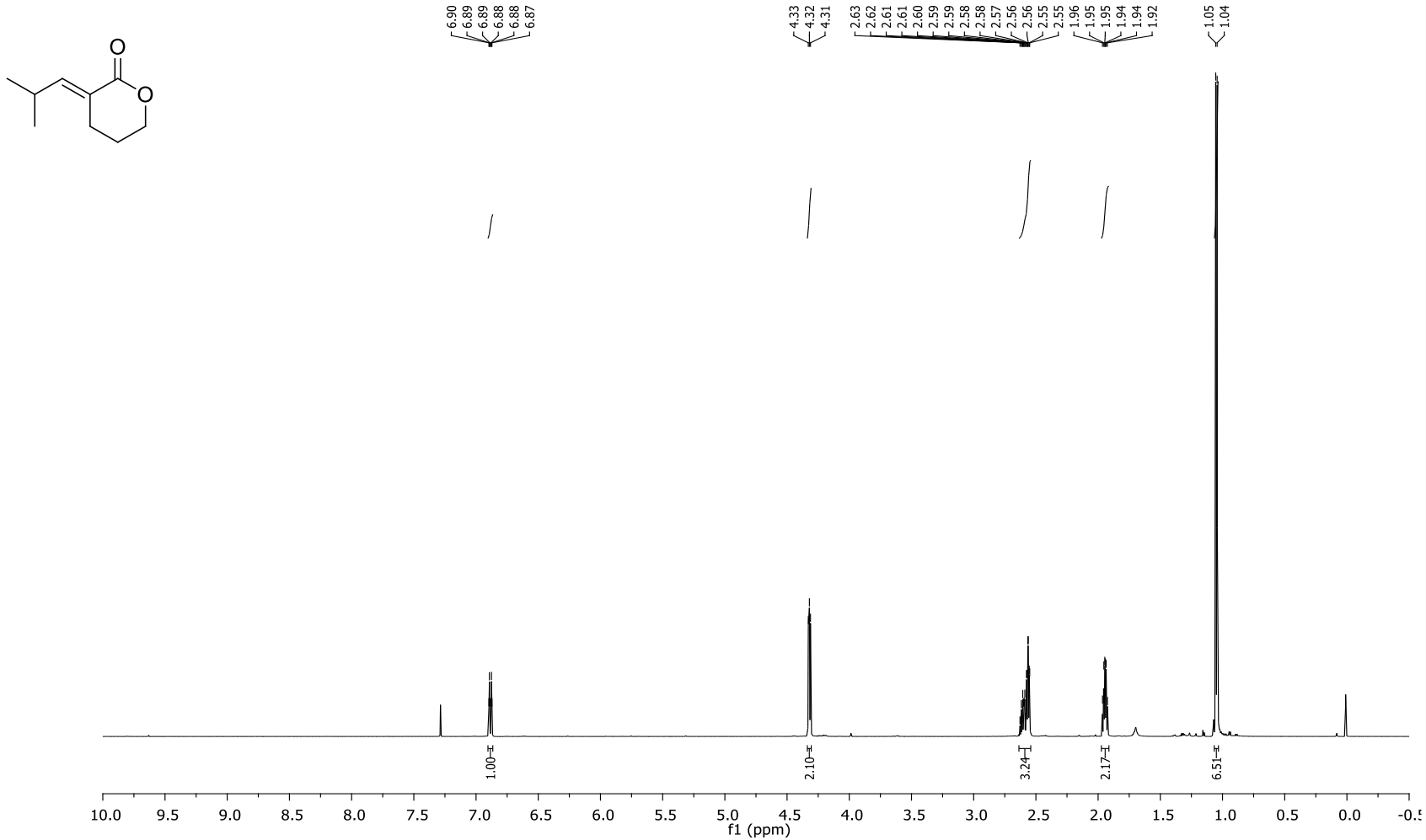
S2.35. ^{1}H NMR (600 MHz) spectrum of **13Z** in $CDCl_3$.



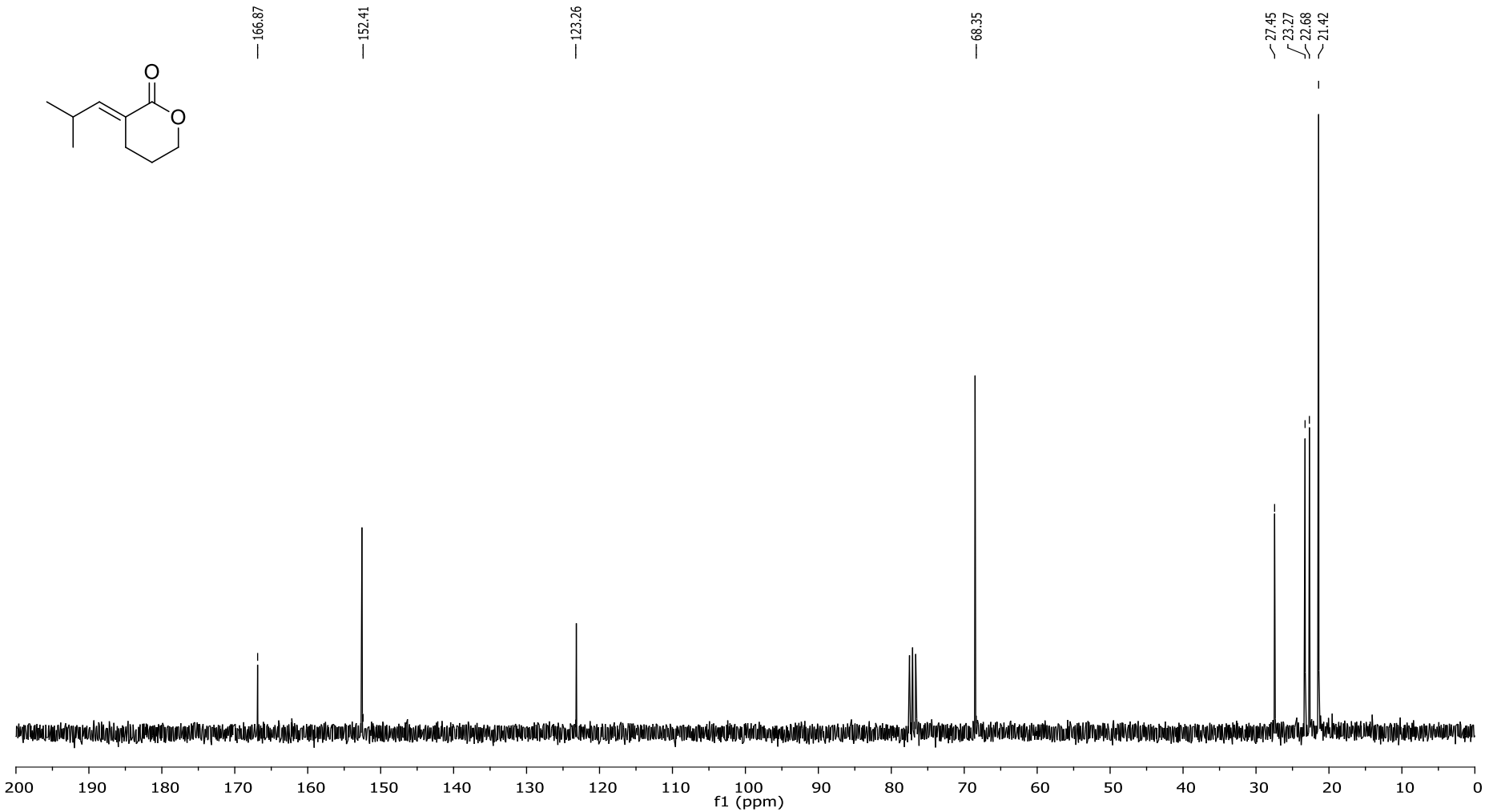
S2.36. ^{13}C NMR (151 MHz) spectrum of **13Z** in $CDCl_3$.



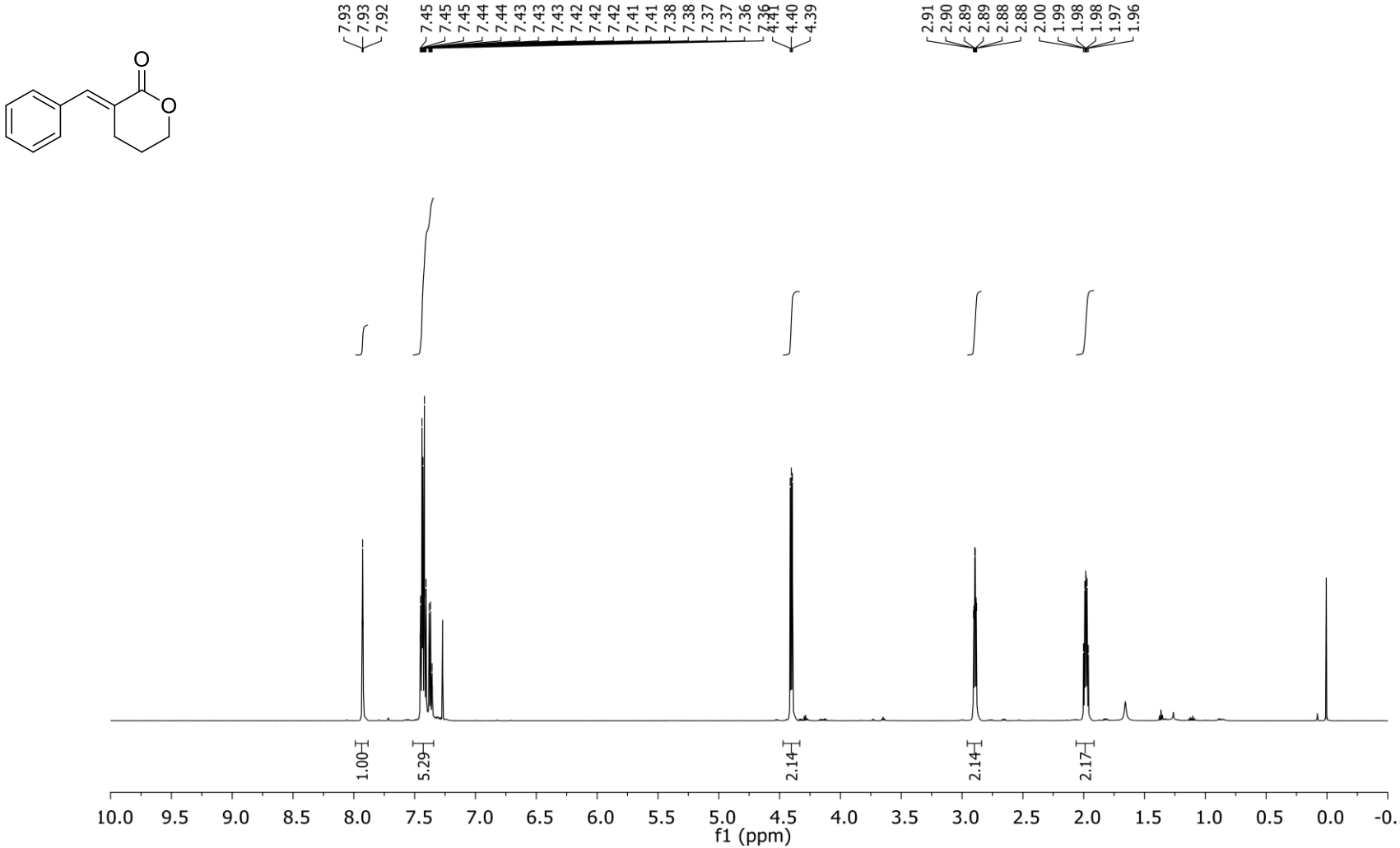
S2.37. ^{1}H NMR (600 MHz) spectrum of **14E** in $CDCl_3$.



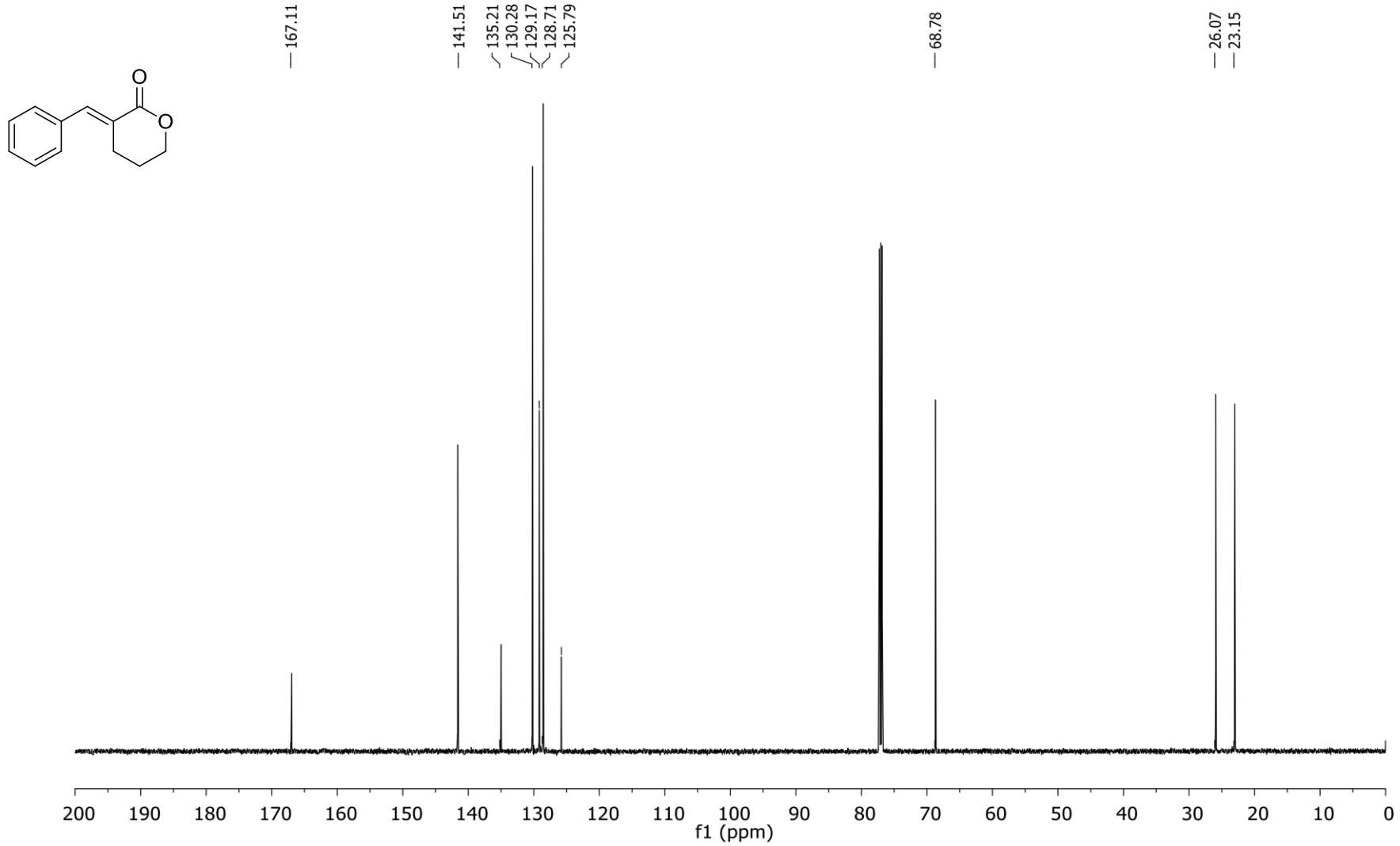
S2.38. ^{13}C NMR (75 MHz) spectrum of **14E** in $CDCl_3$.



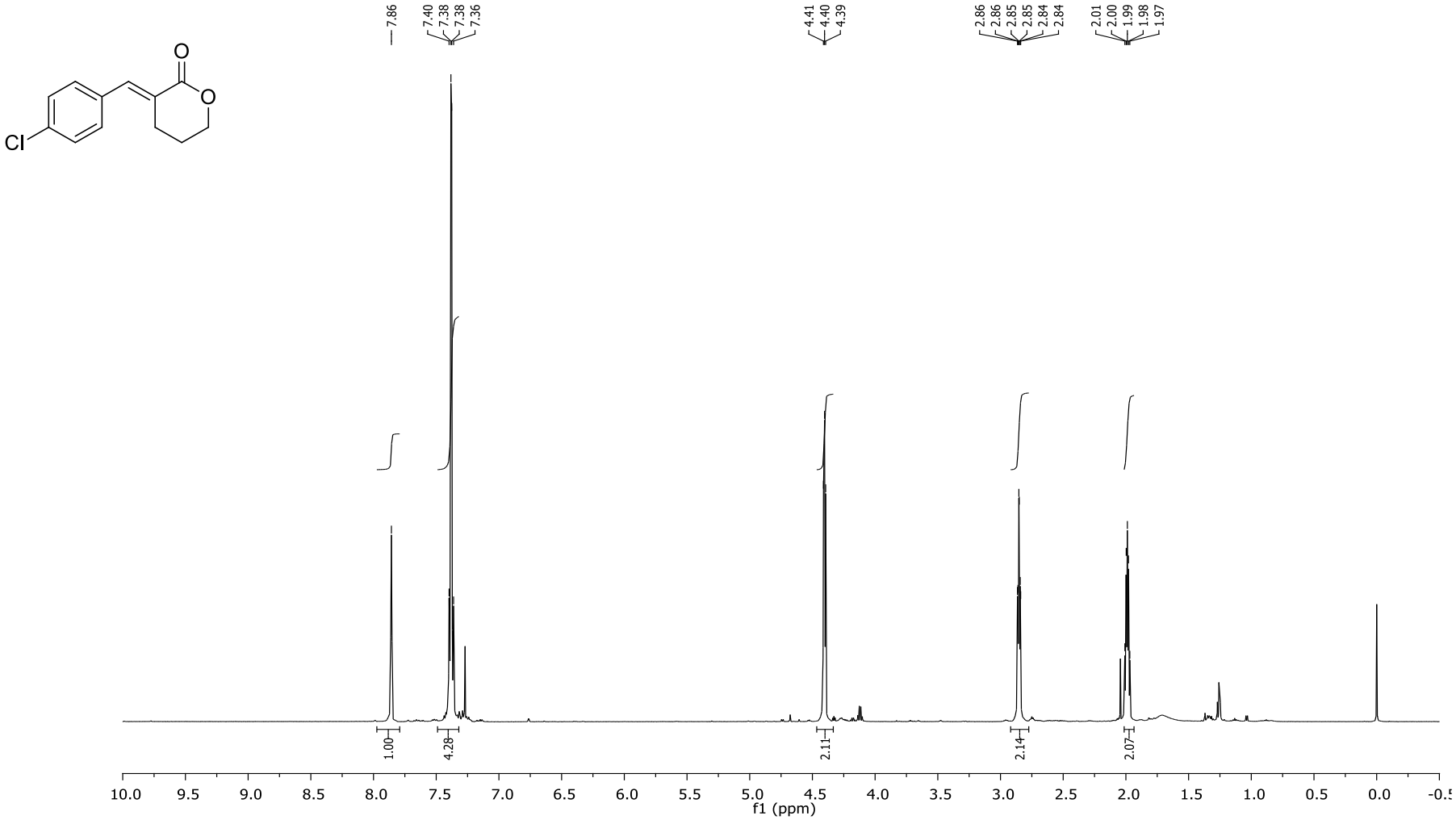
S2.39. ^{1}H NMR (600 MHz) spectrum of **15E** in $CDCl_3$.



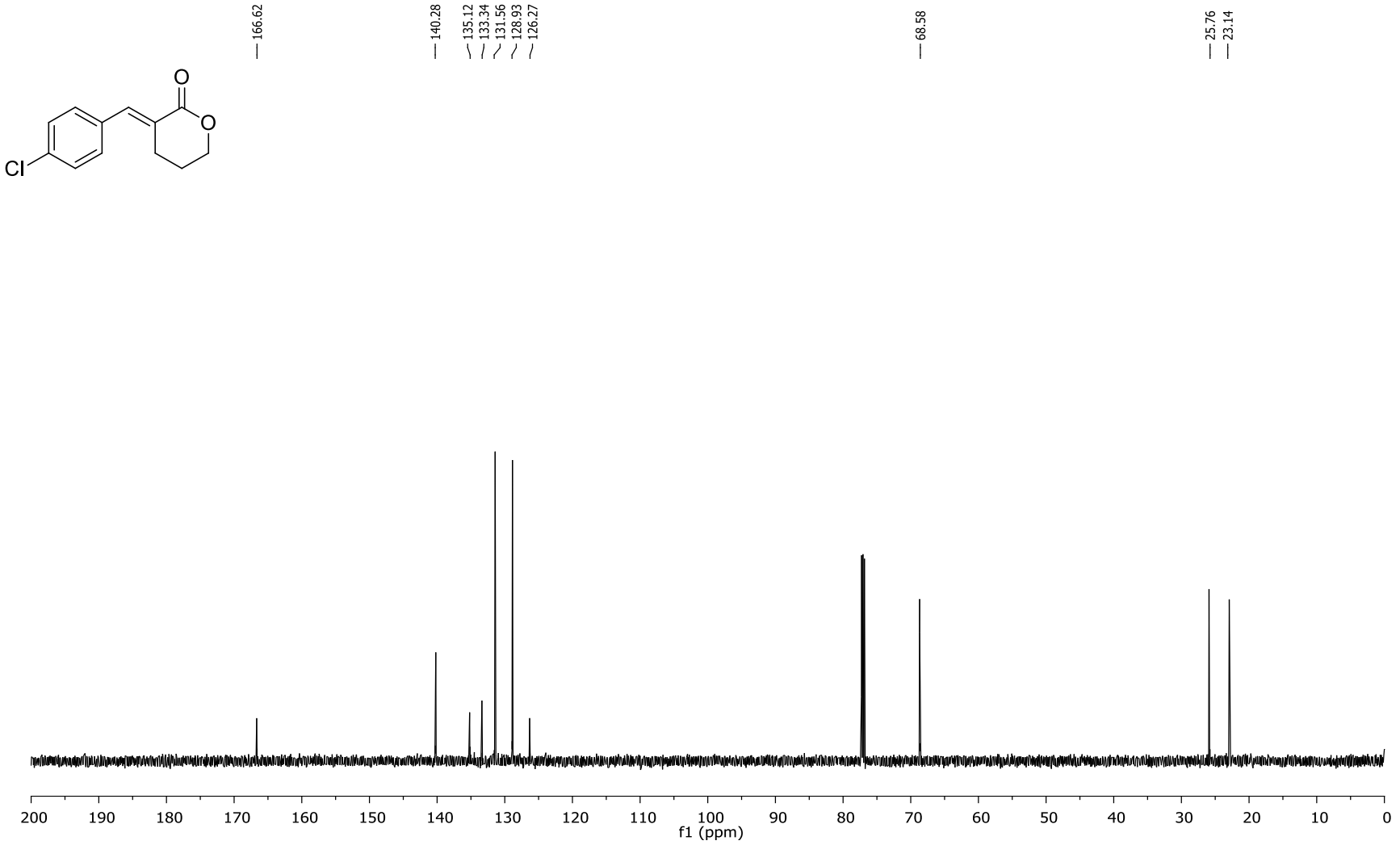
S2.40. ^{13}C NMR (151 MHz) spectrum of **15E** in $CDCl_3$.



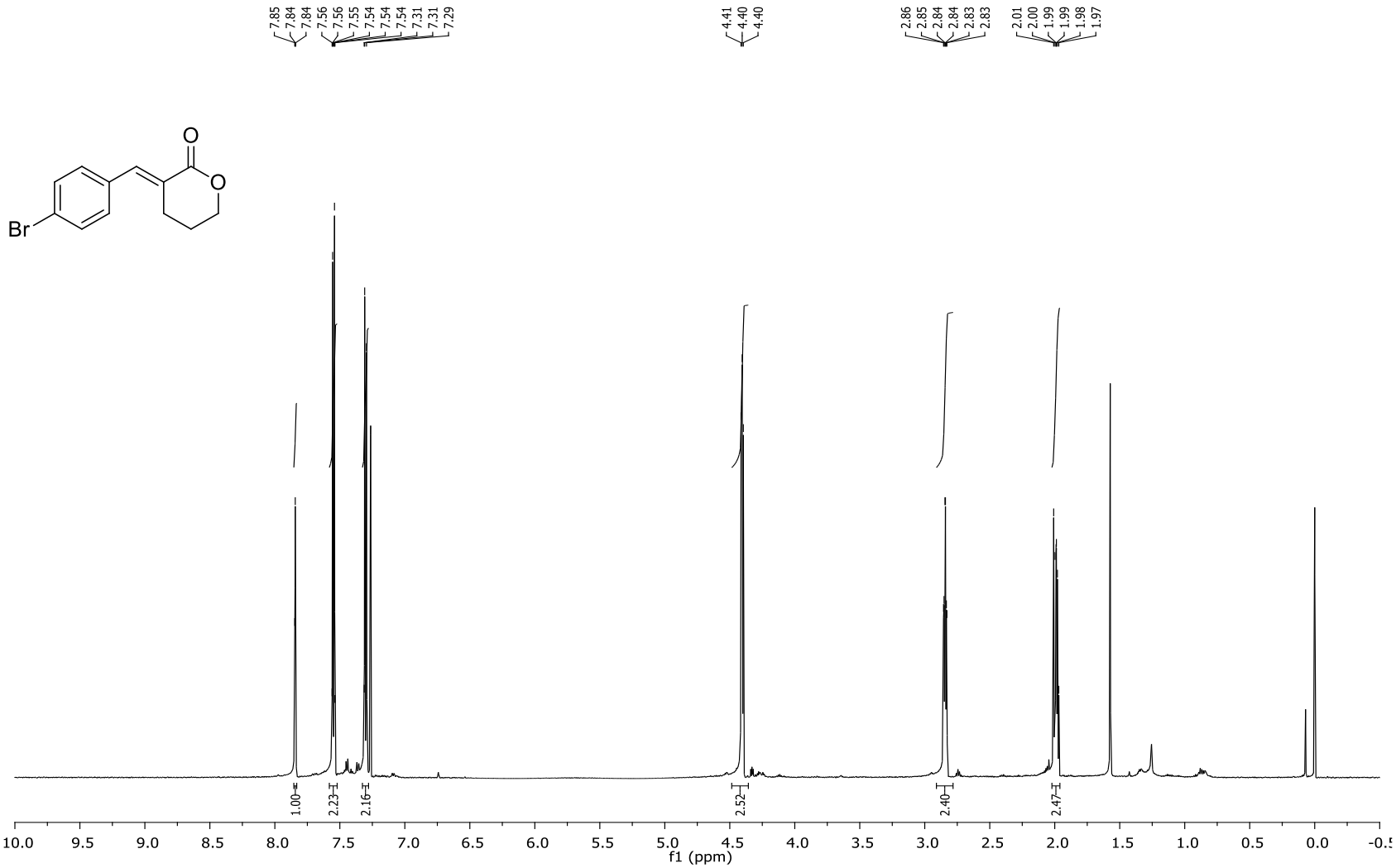
S2.41. ^{1}H NMR (600 MHz) spectrum of **16E** in $CDCl_3$ in $CDCl_3$.



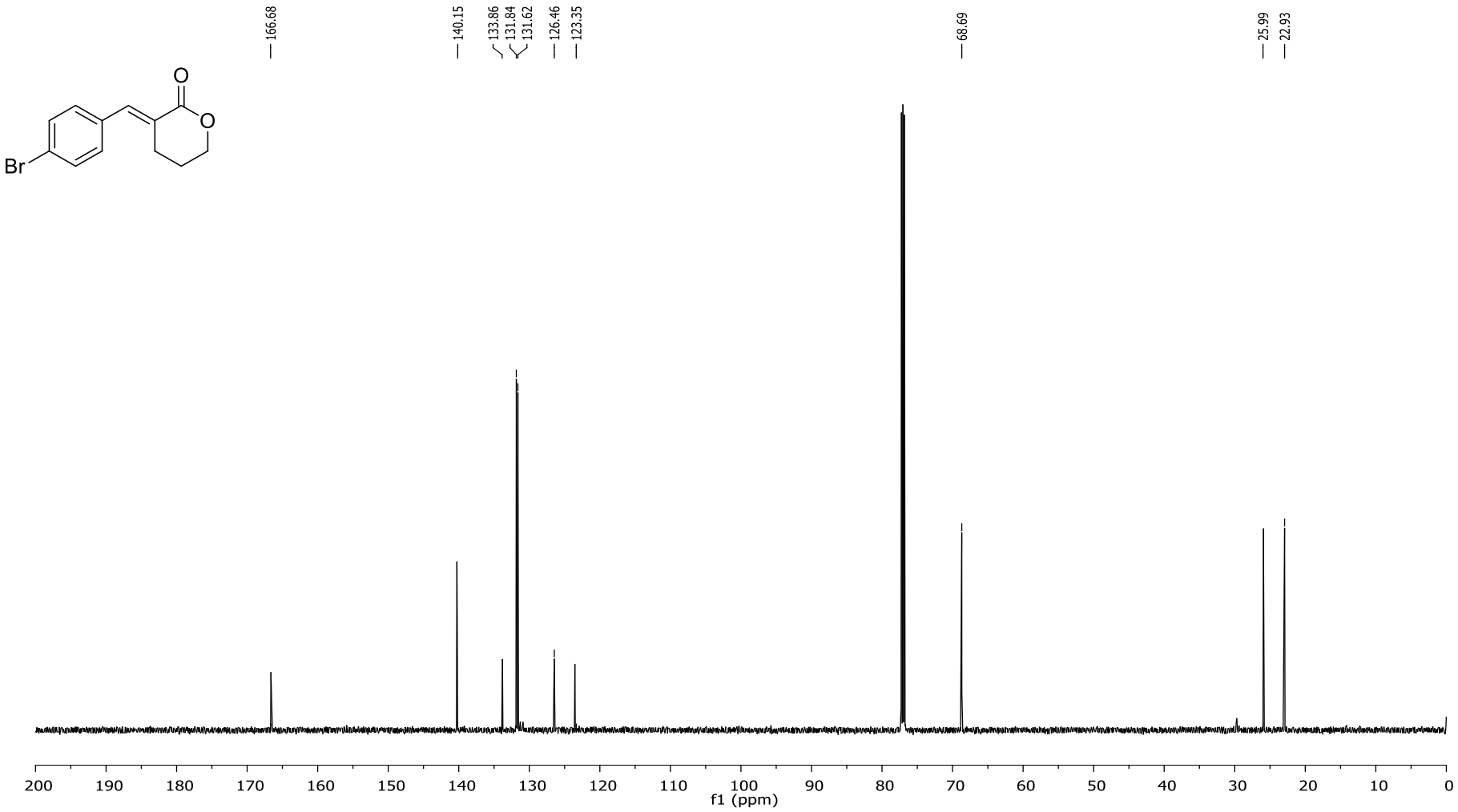
S2.42. ^{13}C NMR (151 MH) spectrum of **16E** in $CDCl_3$.



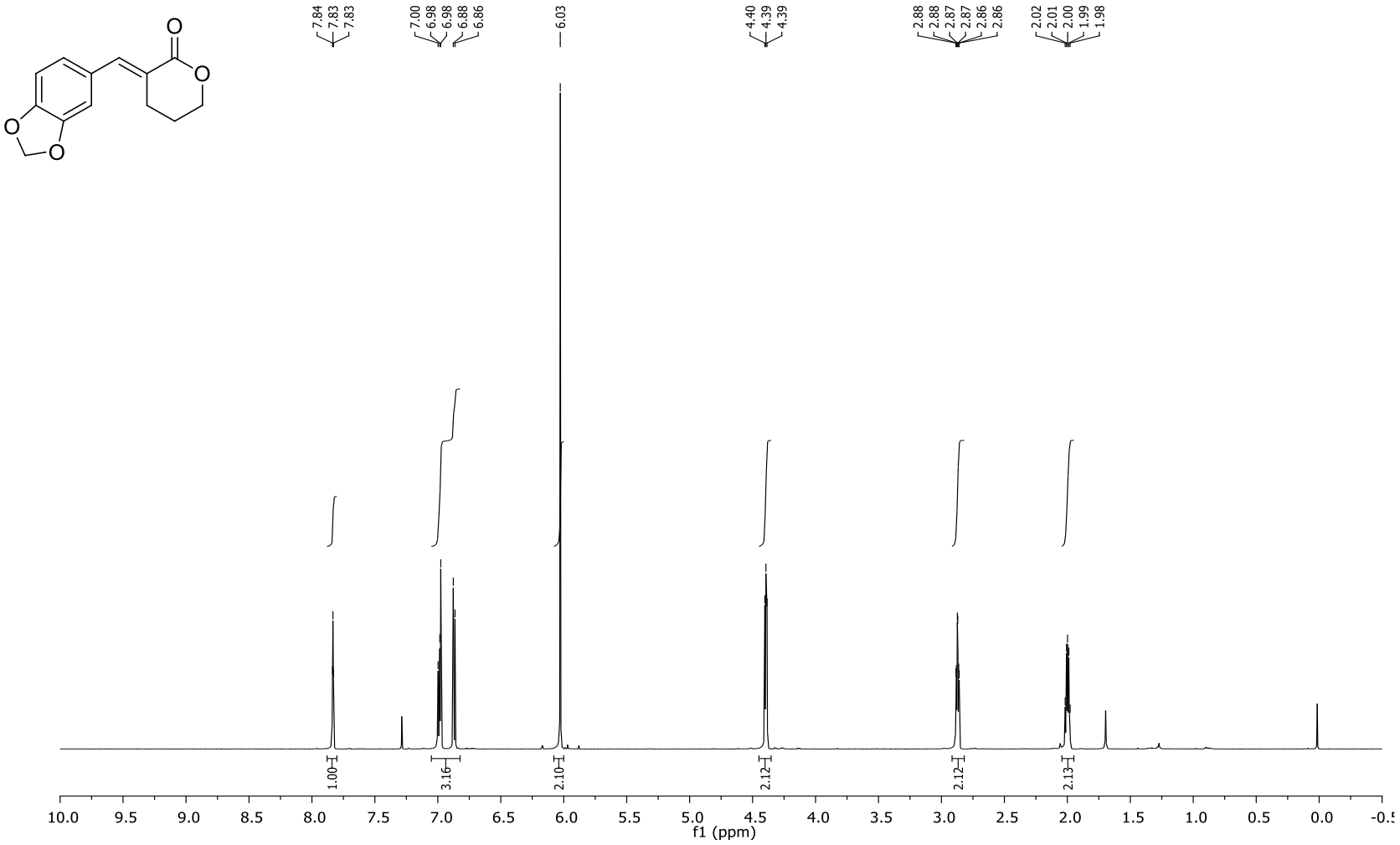
S2.43. ^{1}H NMR (600 MHz) spectrum of **17E** in $CDCl_3$ in $CDCl_3$.



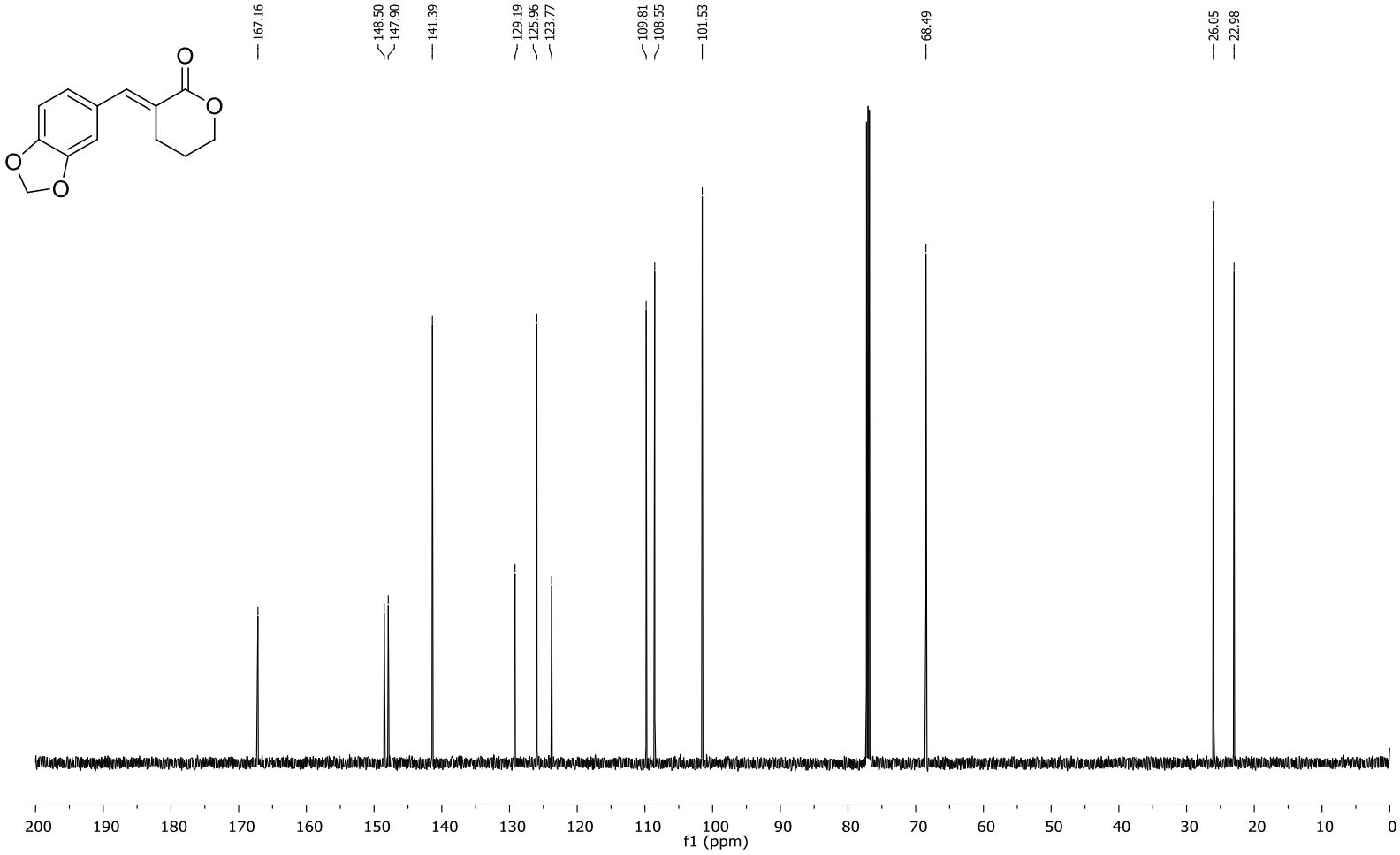
S2.44. ^{13}C NMR (151 MHz) spectrum of **17E** in $CDCl_3$.



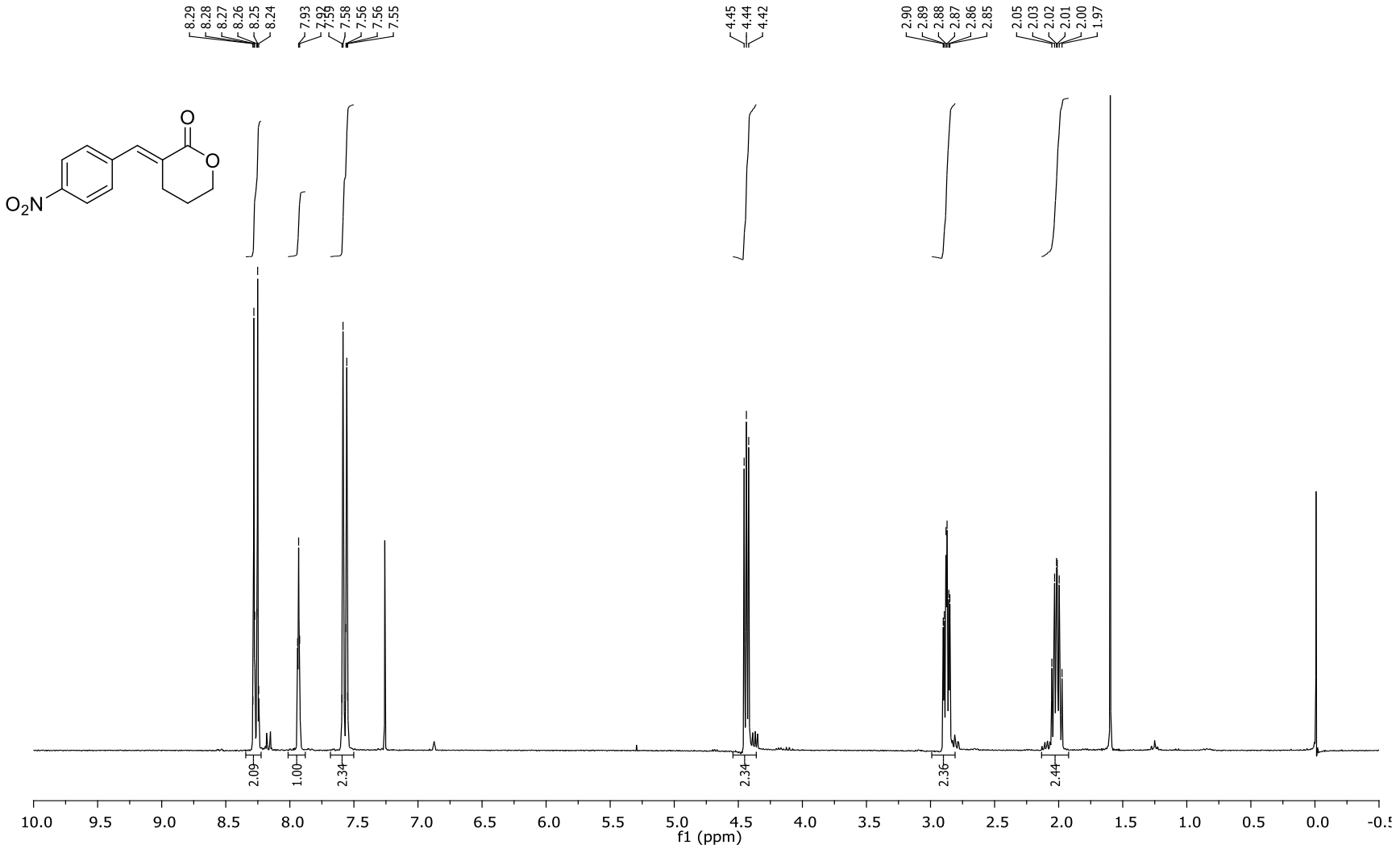
S2.45. ^{1}H NMR (600 MHz) spectrum of **18E** in $CDCl_3$.



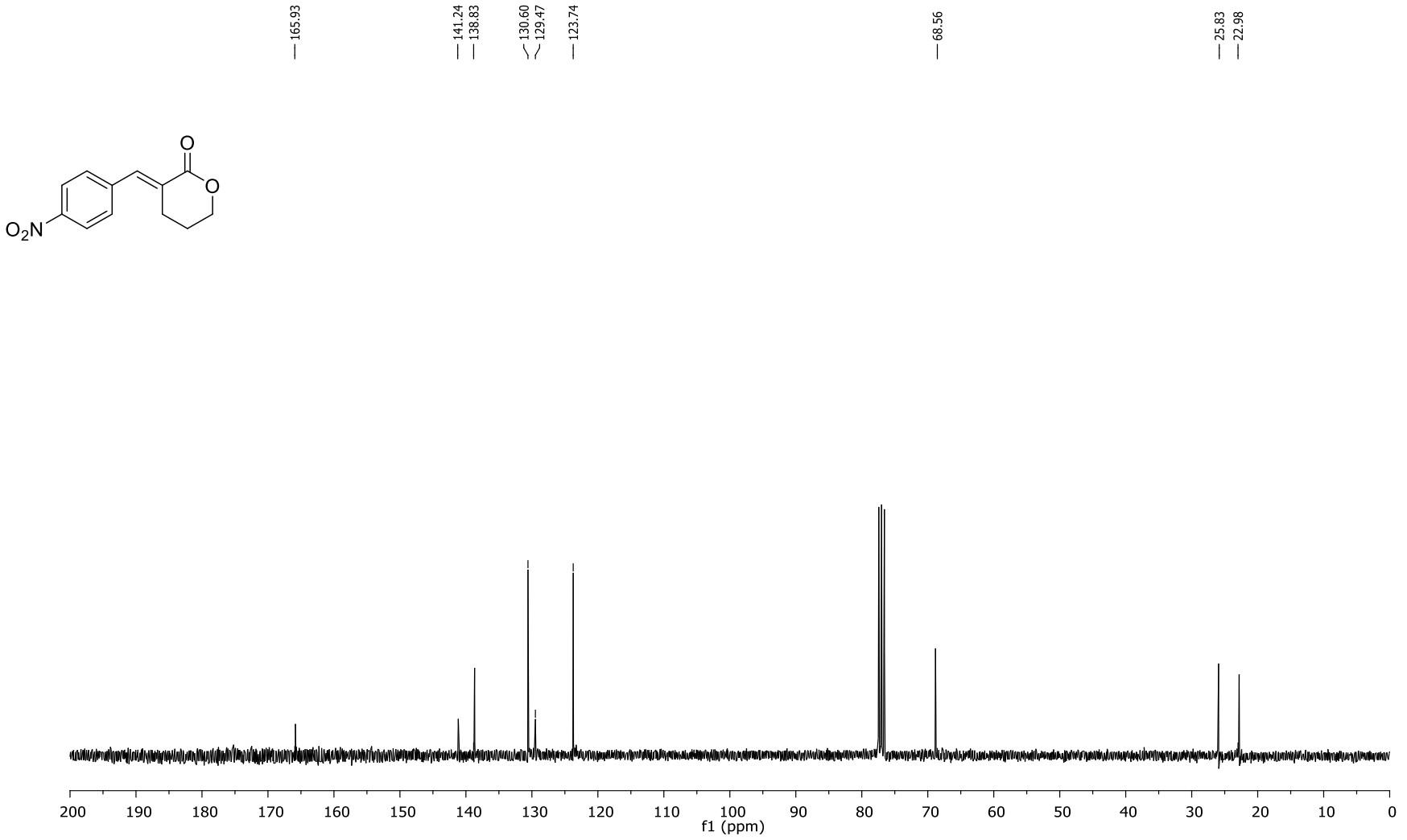
S2.46. ^{13}C NMR (151 MHz) spectrum of **18E** in $CDCl_3$.



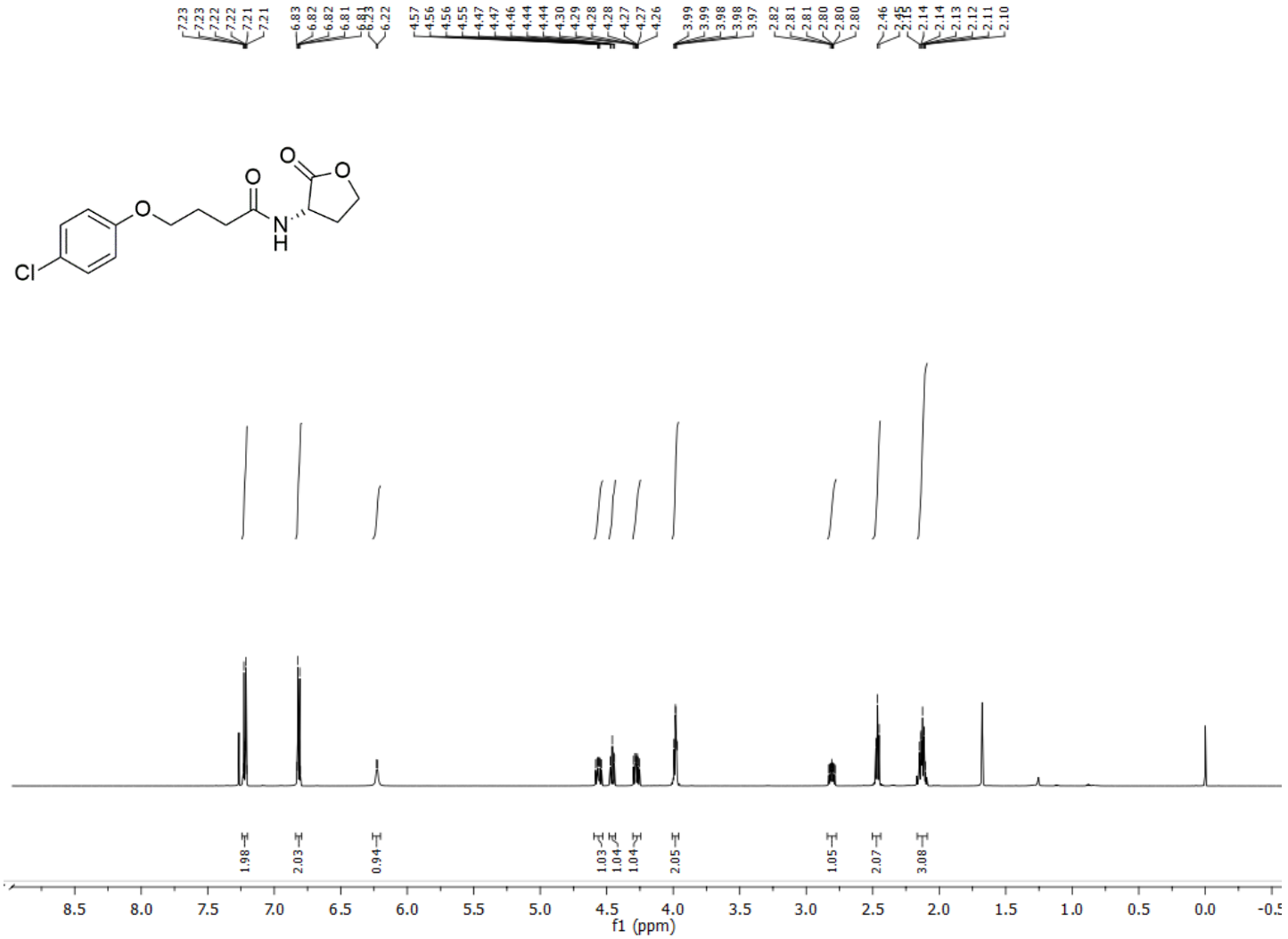
S2.47. ^{1}H NMR (300 MHz) spectrum of **19E** in $CDCl_3$.



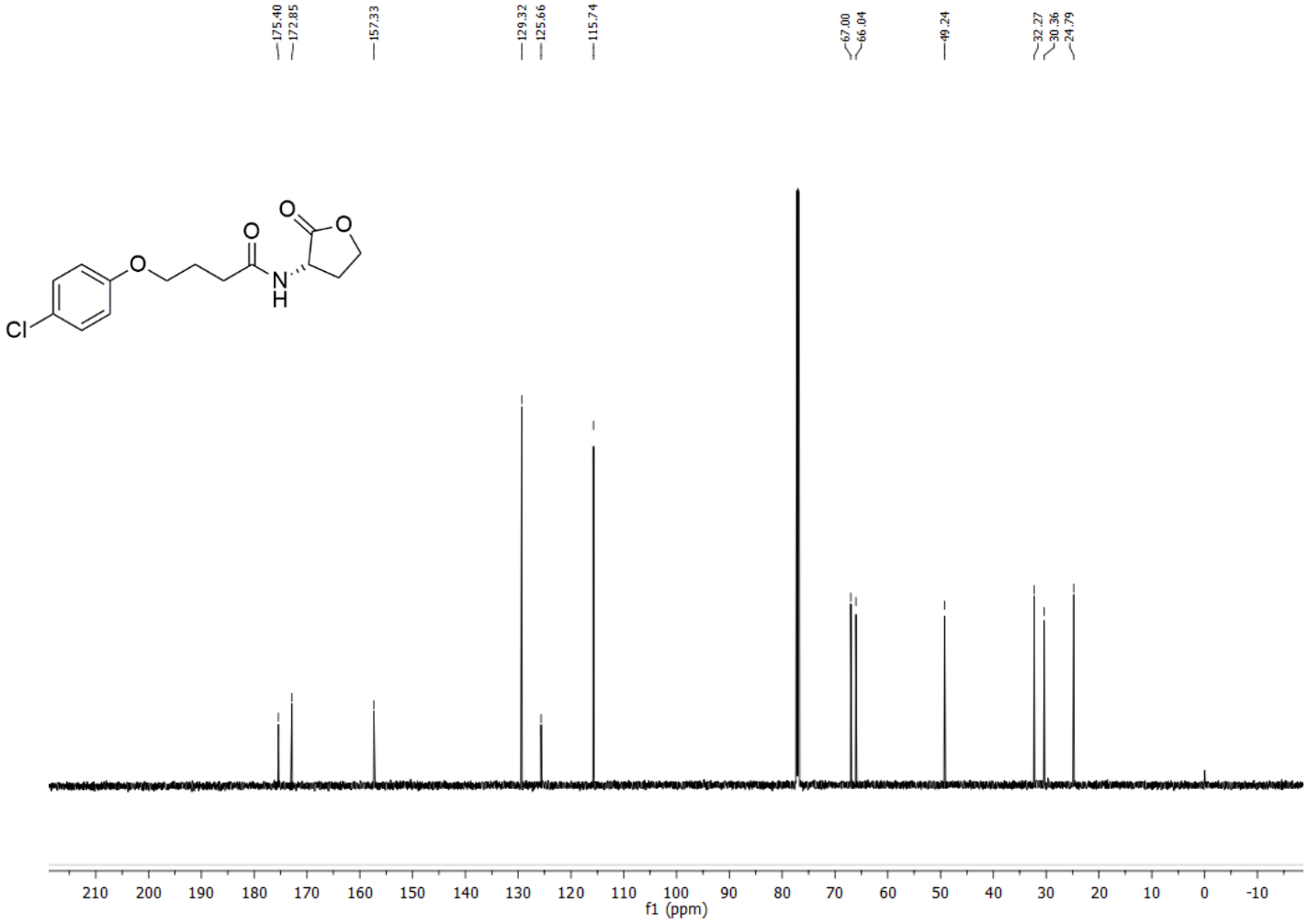
S2.48. ^{13}C NMR (75 MHz) spectrum of **19E** in $CDCl_3$.



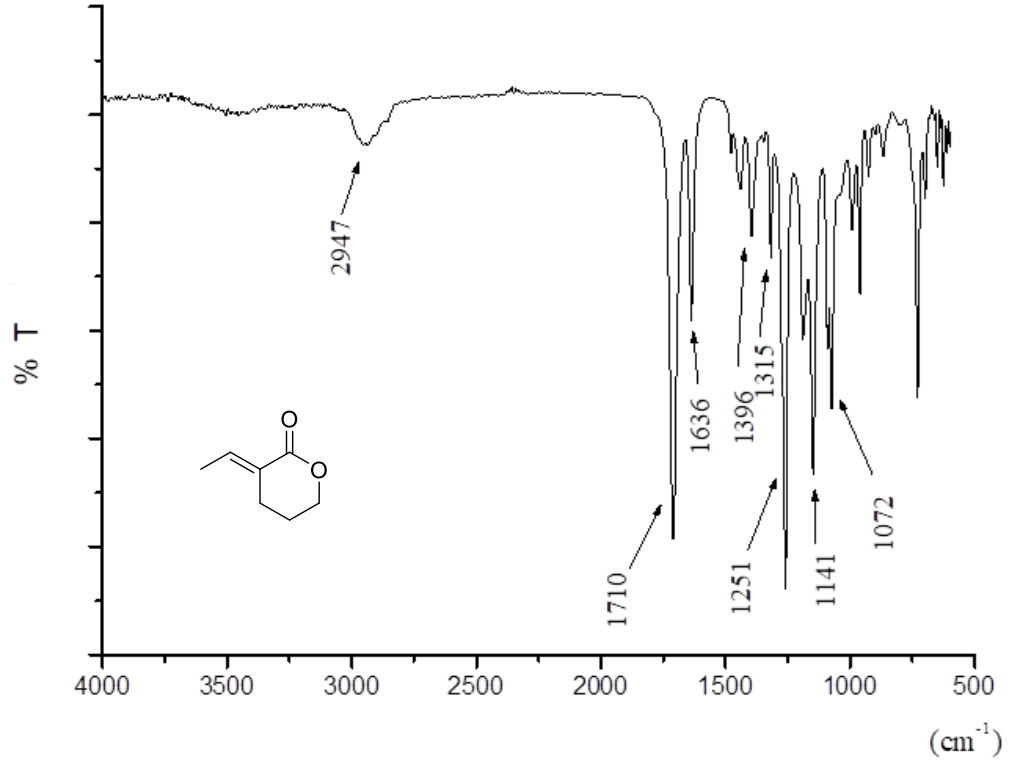
S2.49. ^{1}H NMR spectrum of **20** in $CDCl_3$.



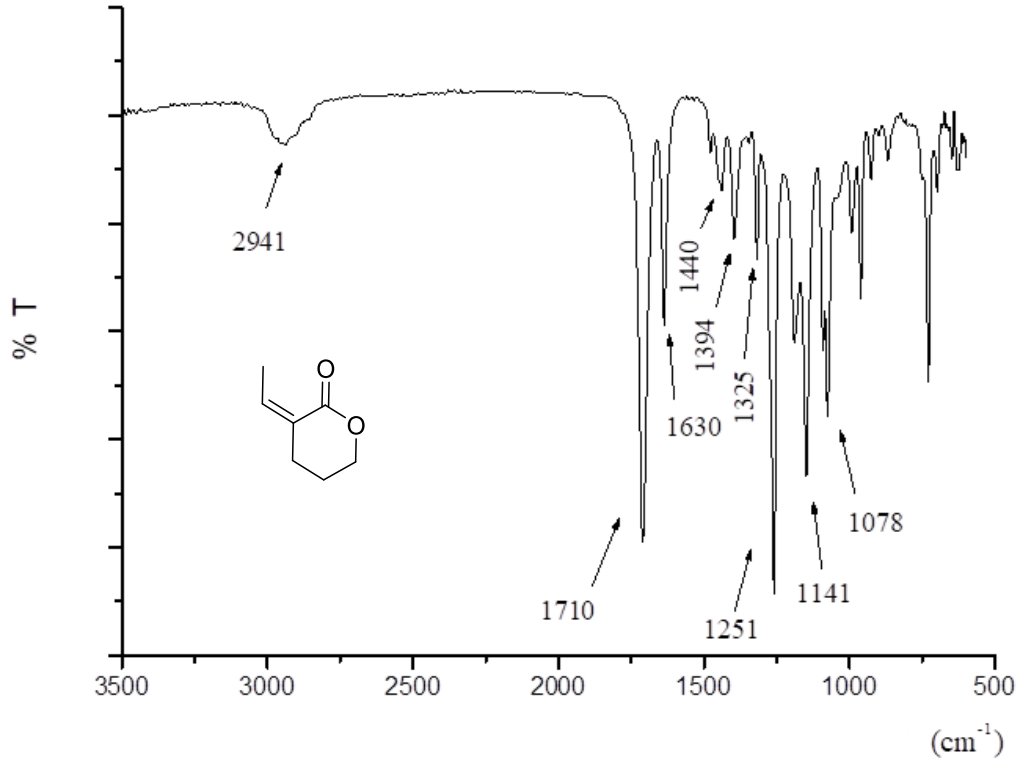
S2.50. ^{13}C NMR spectrum of **20** in $CDCl_3$.



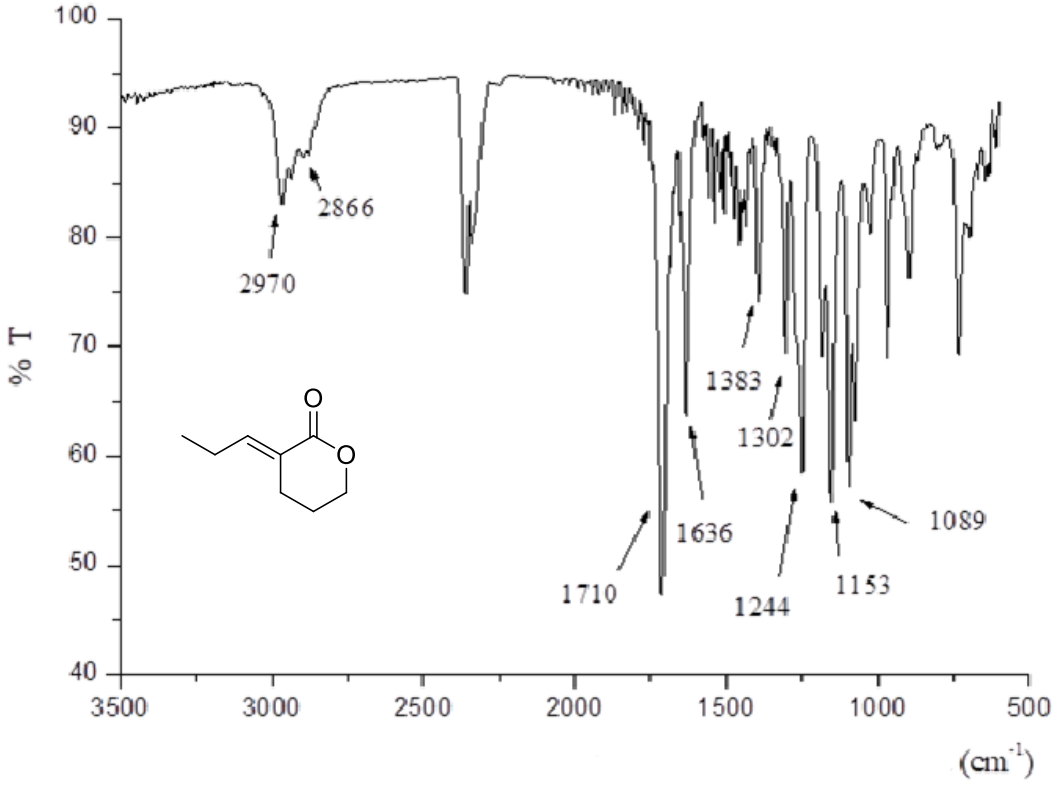
S3.1. IR (ATR) spectrum of 10E.



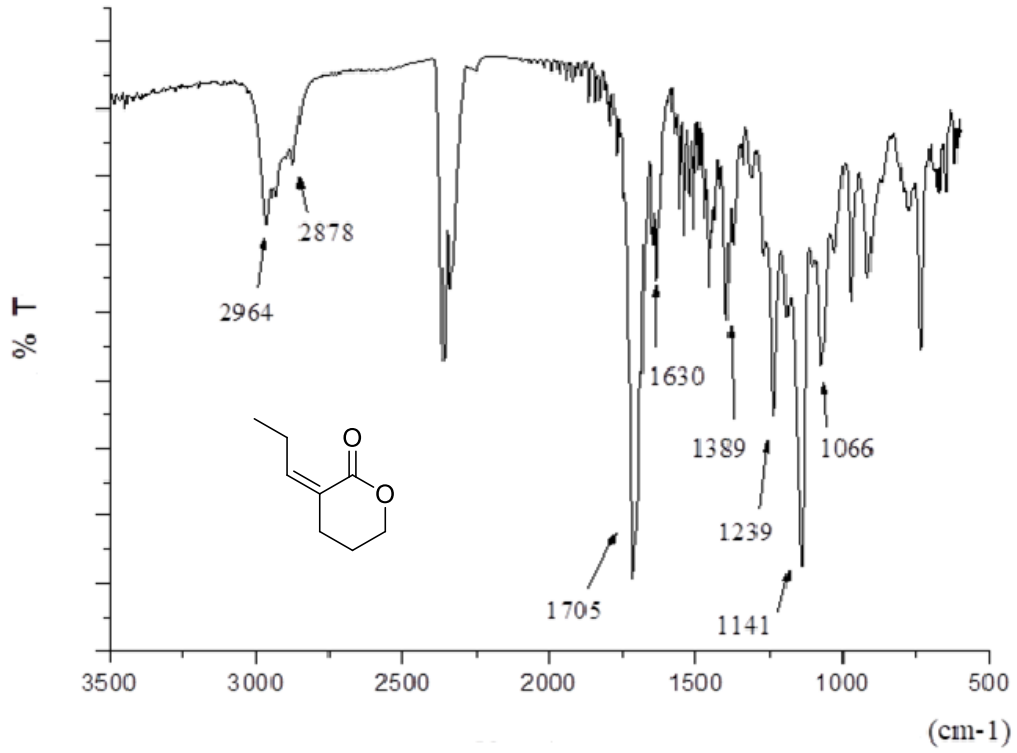
S3.2. IR (ATR) spectrum of 10Z.



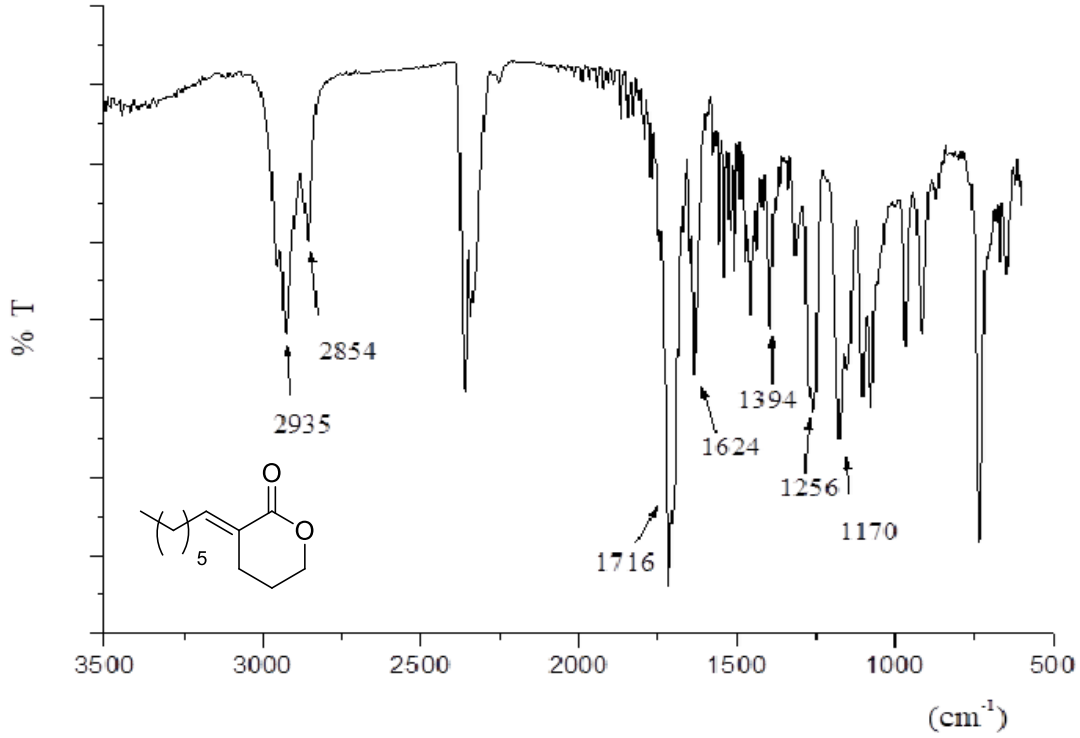
S3.3. IR (ATR) spectrum of 11E.



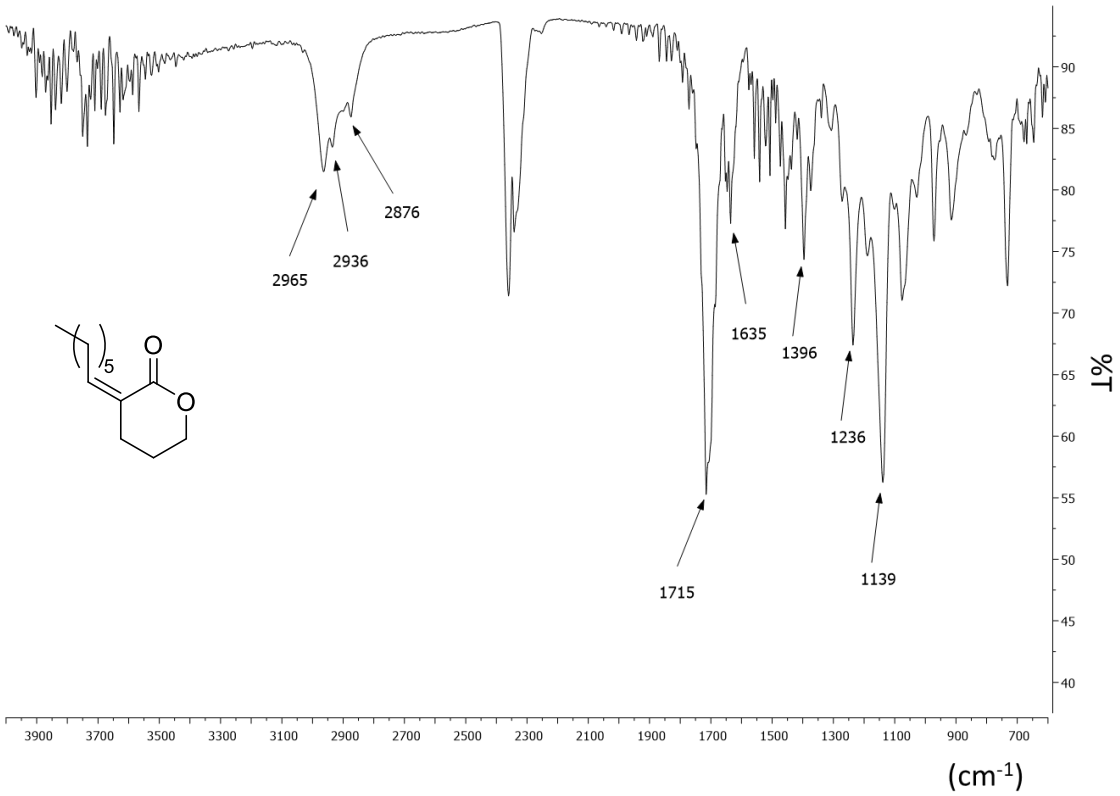
S3.4. IR (ATR) spectrum of 11Z



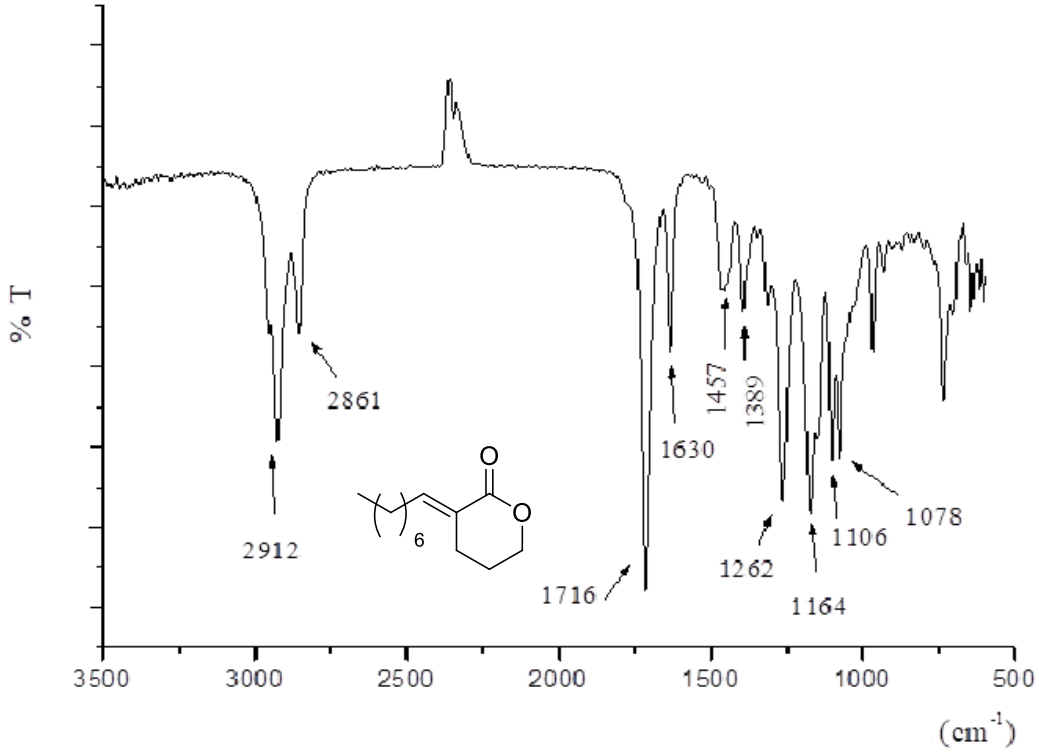
S3.5. IR (ATR) spectrum of 12E.



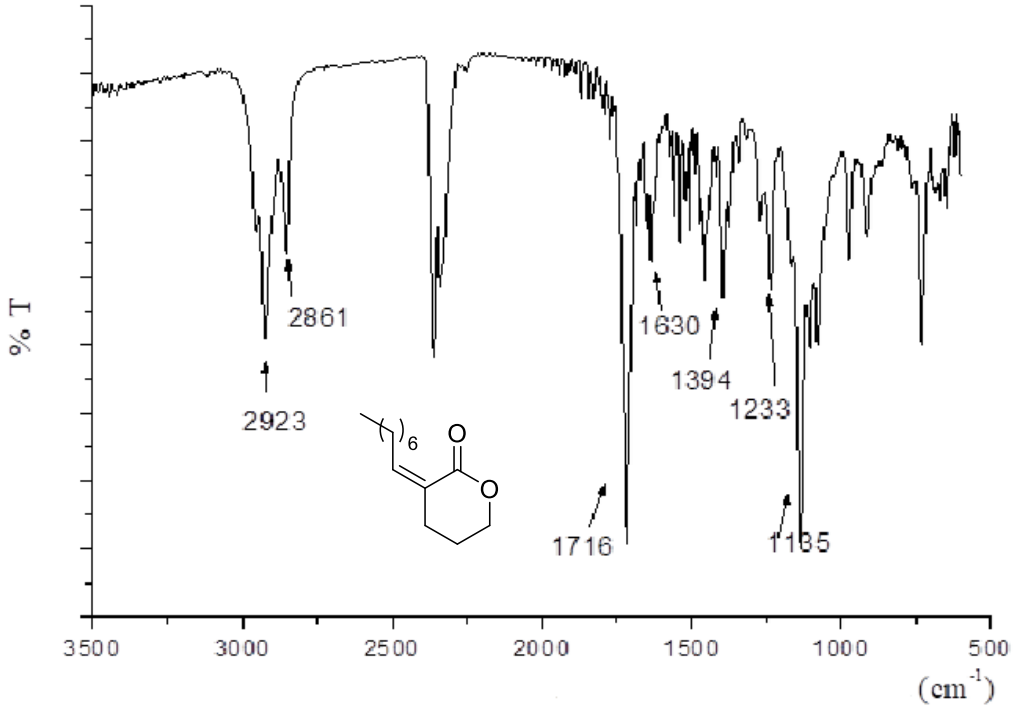
S3.6. IR (ATR) spectrum of 12Z.



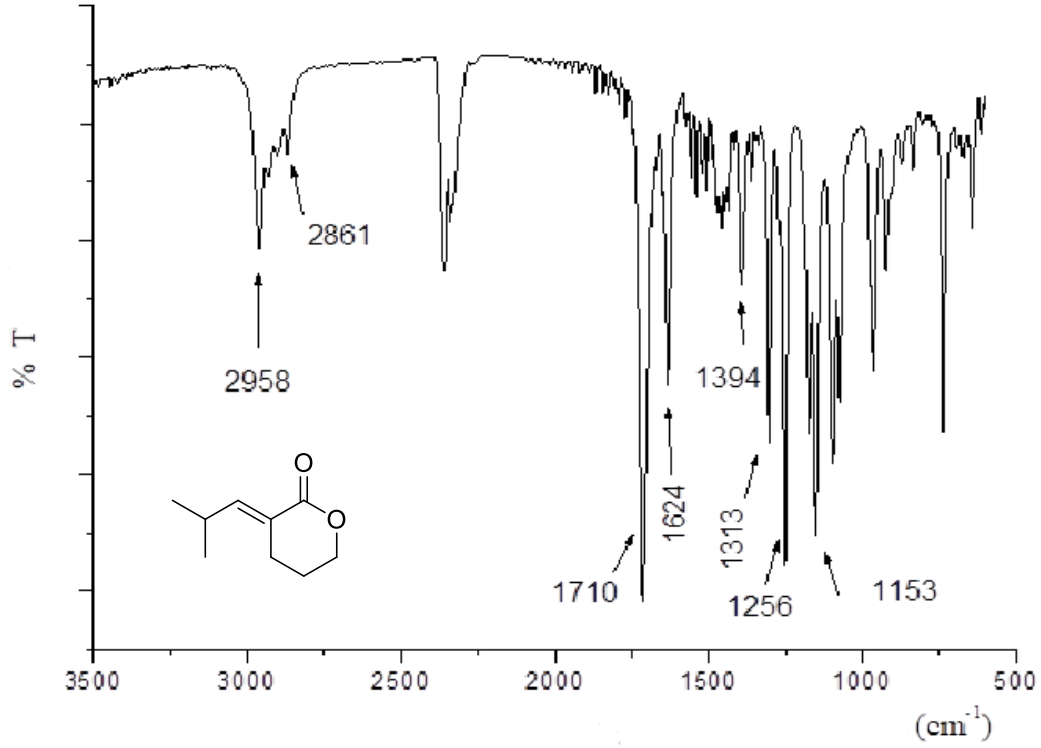
S3.7.IR (ATR) spectrum of 13E.



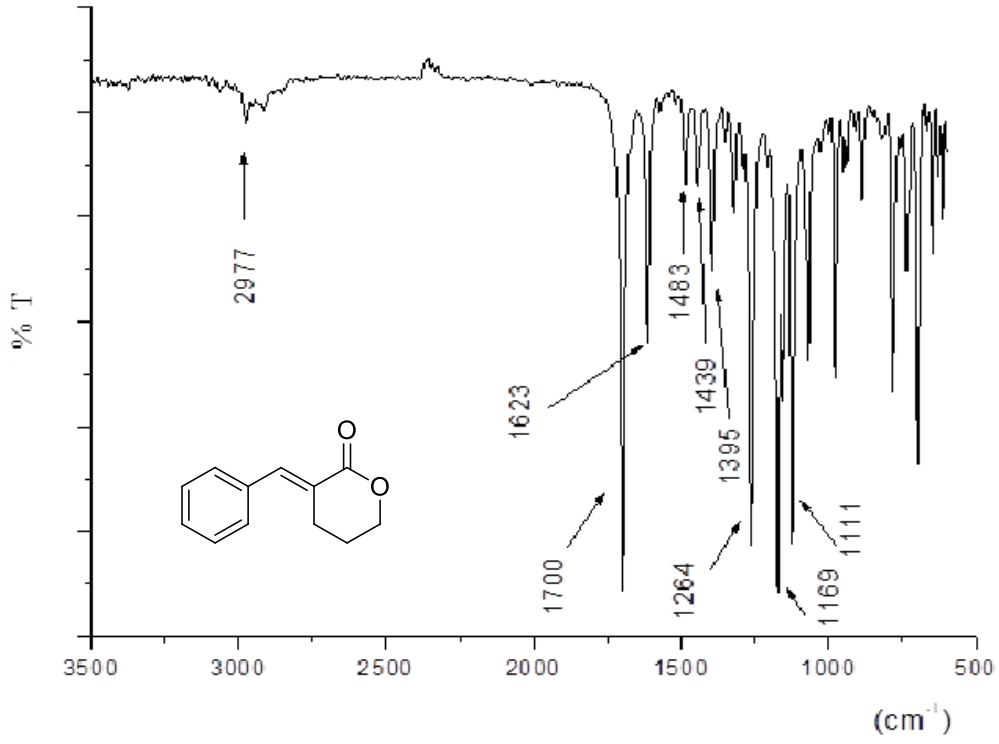
S3.8. IR (ATR) spectrum of 13Z.



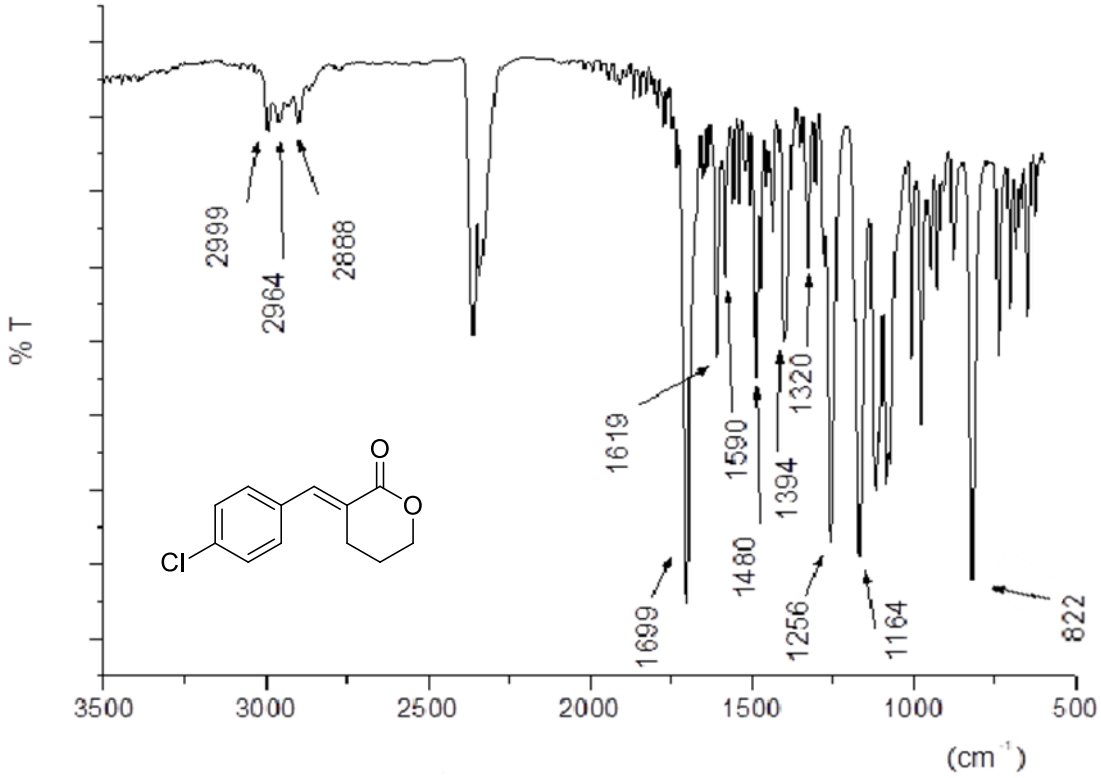
S3.9. IR (ATR) spectrum of 14E.



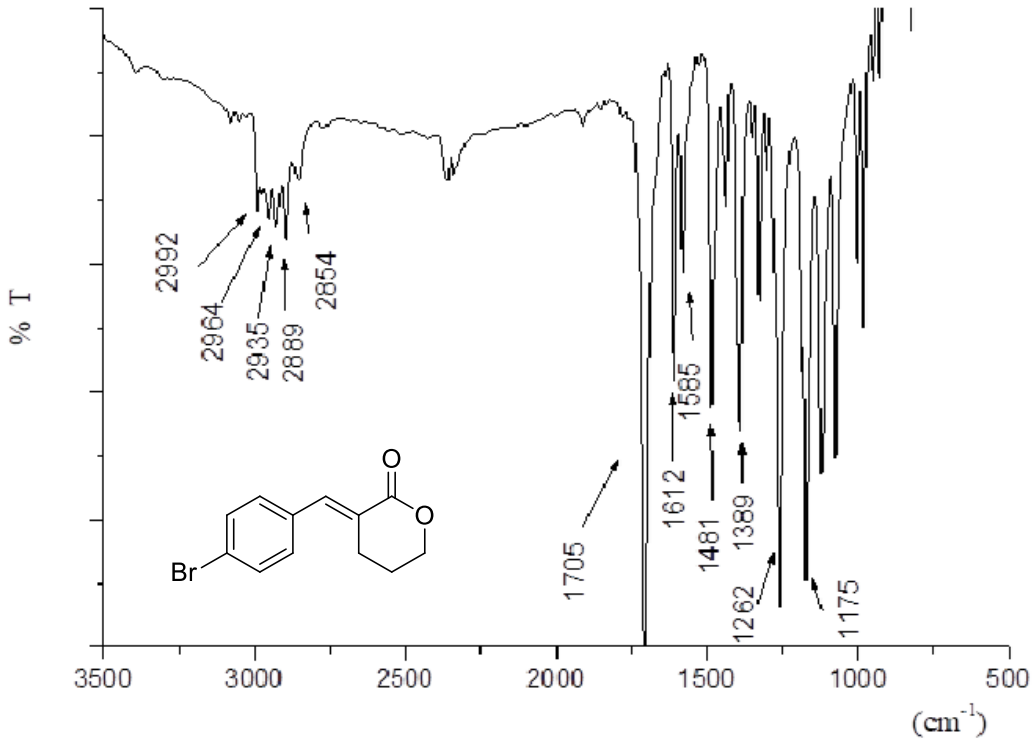
S3.10. IR (ATR) spectrum of 15E.



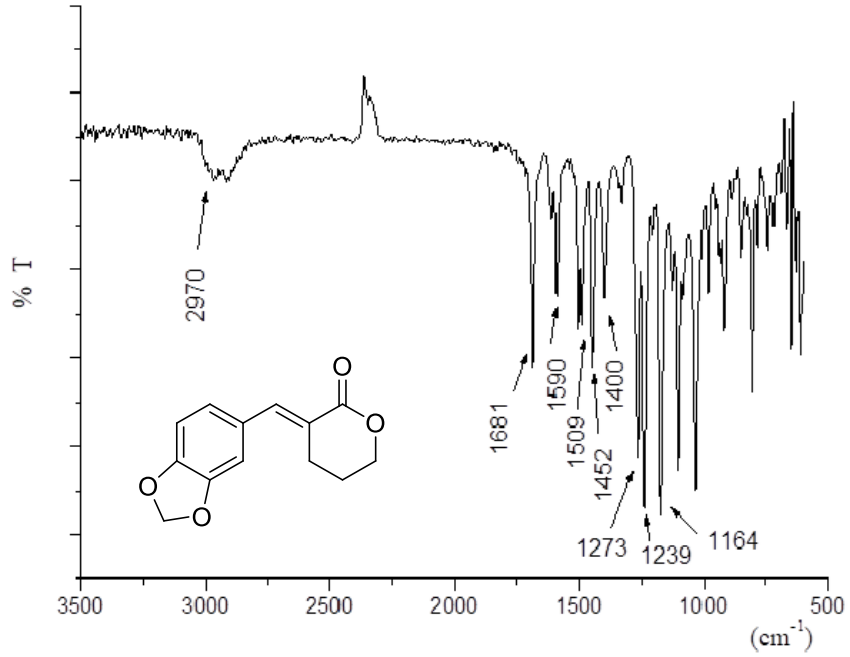
S3.11. IR (ATR) spectrum of 16E.



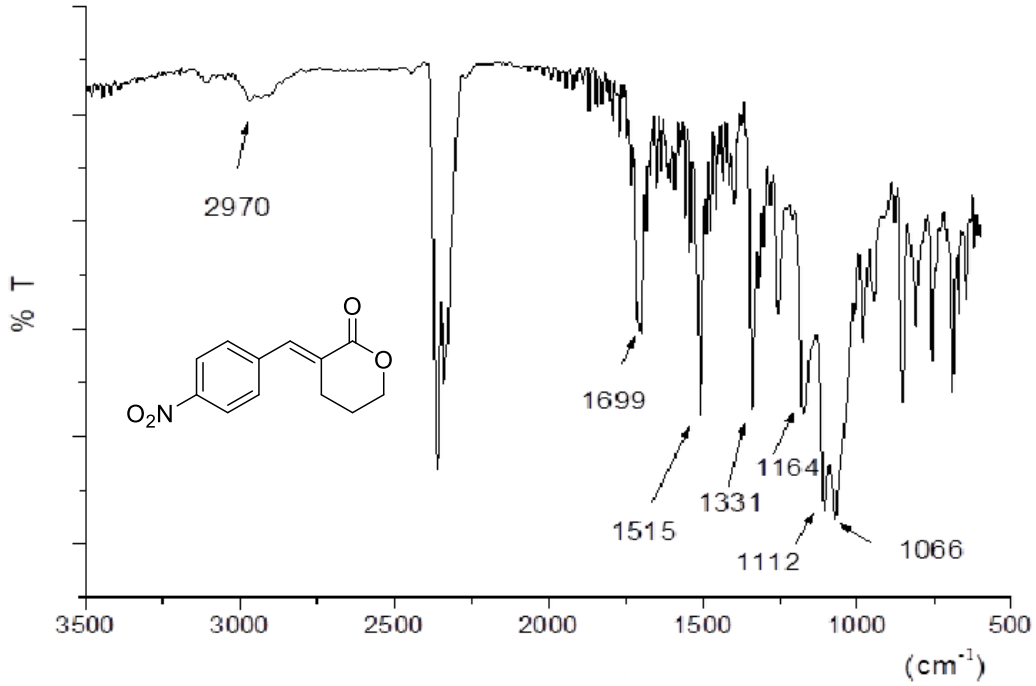
S3.12. IR (ATR) spectrum of 17E.



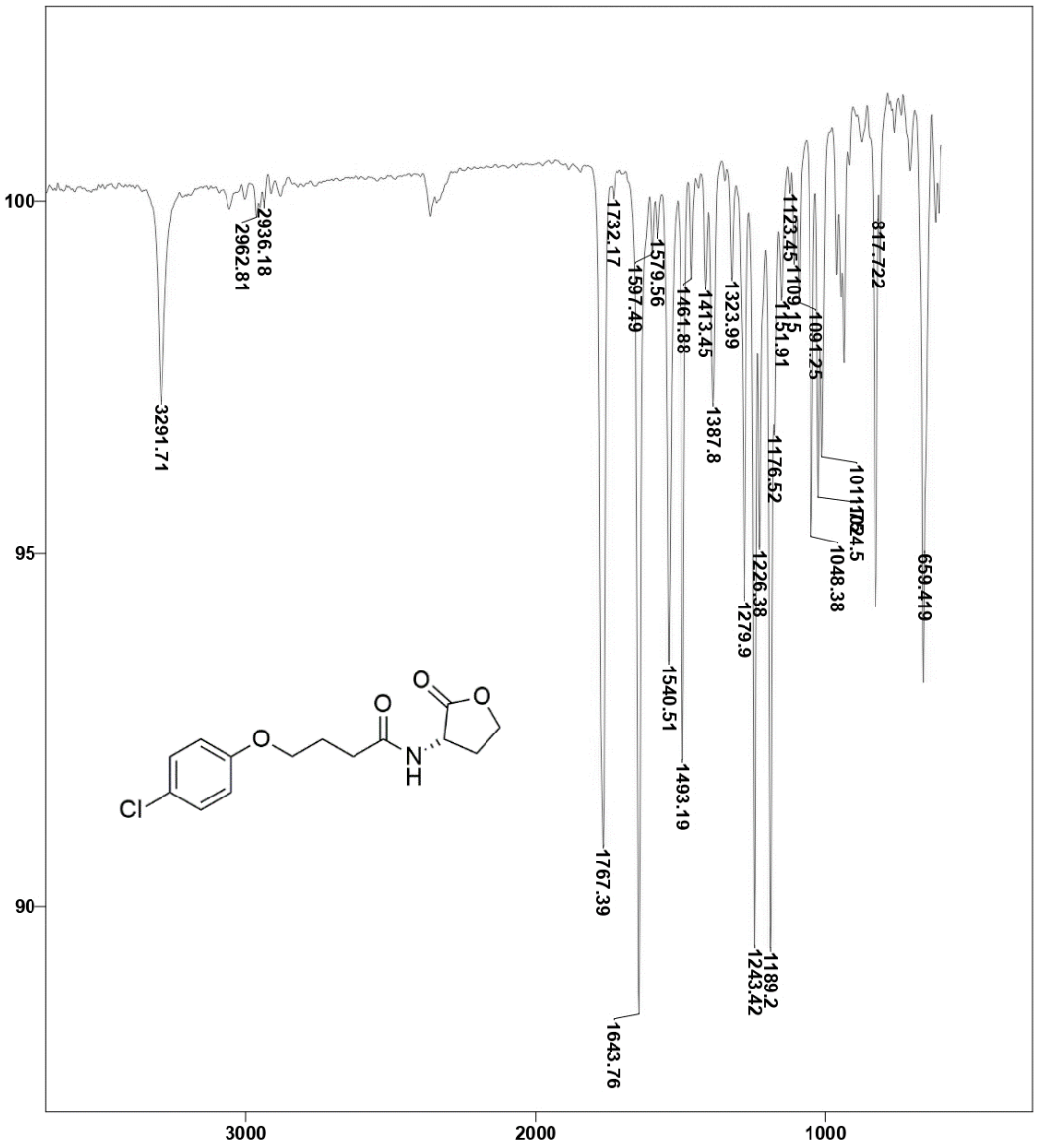
S3.13. IR (ATR) spectrum of 18E.



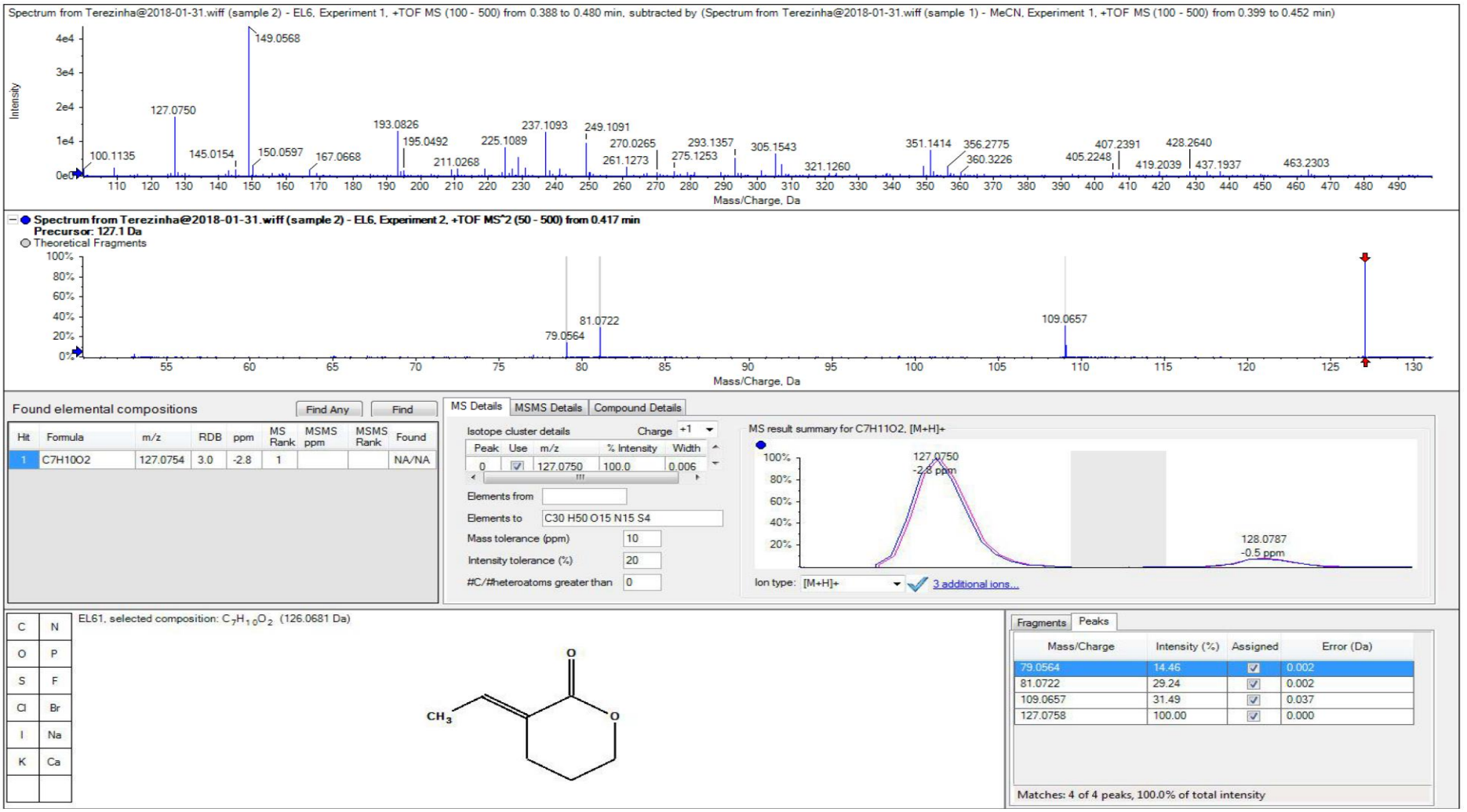
S3.14. IR (ATR) spectrum of 19E.



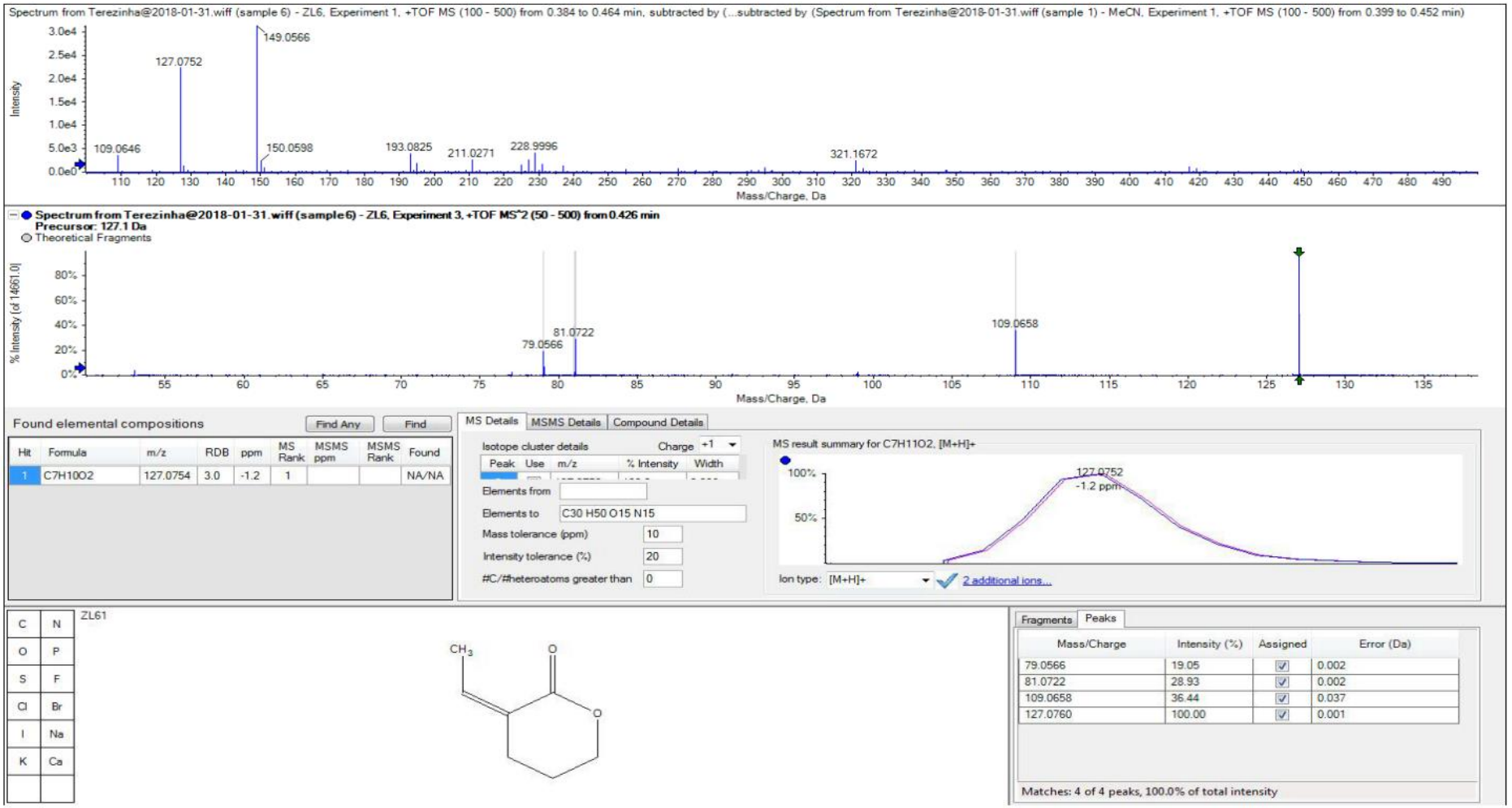
S3.15. IR (ATR) spectrum of 20.



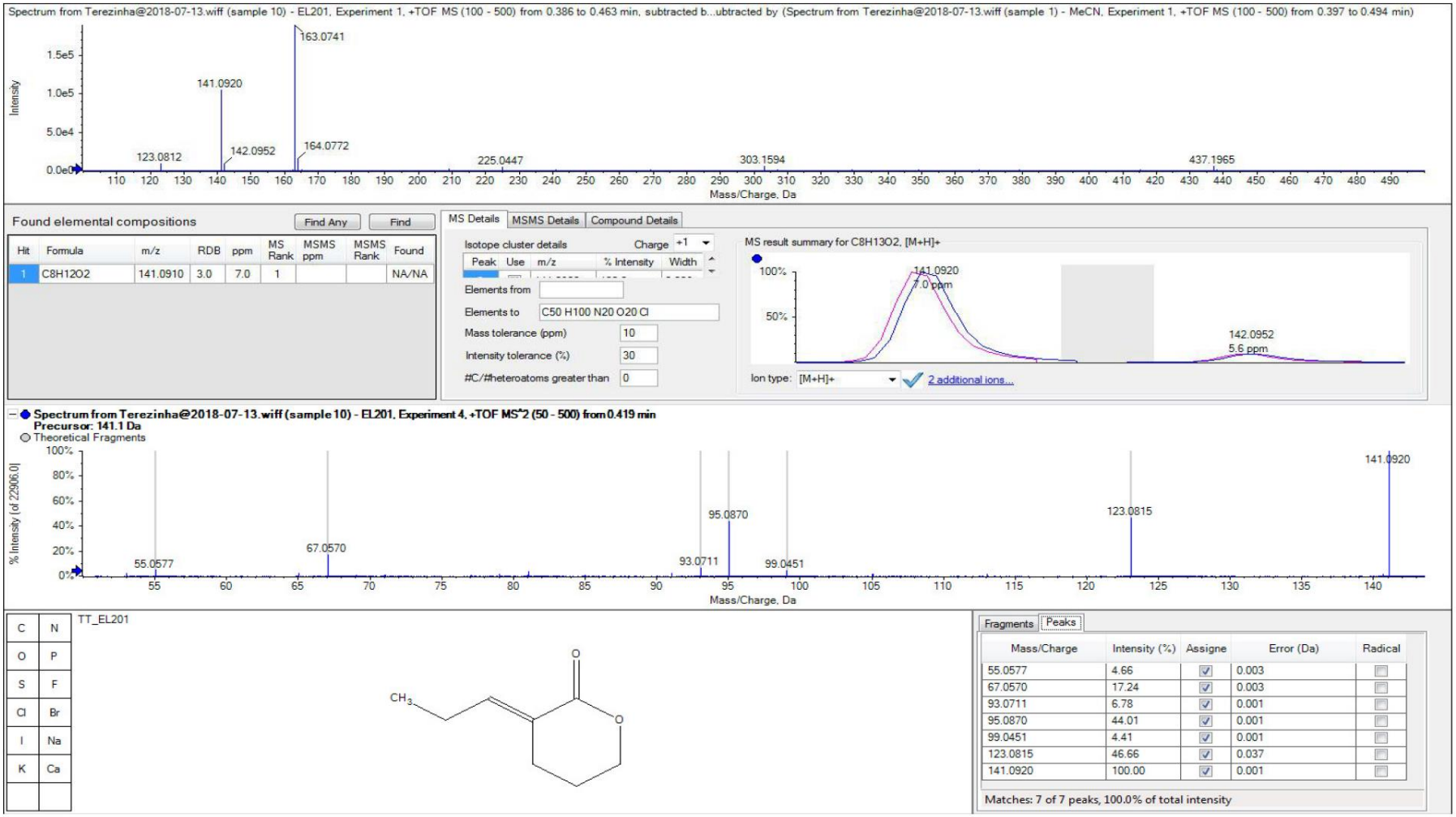
S4.1. HRMS data of 10E.



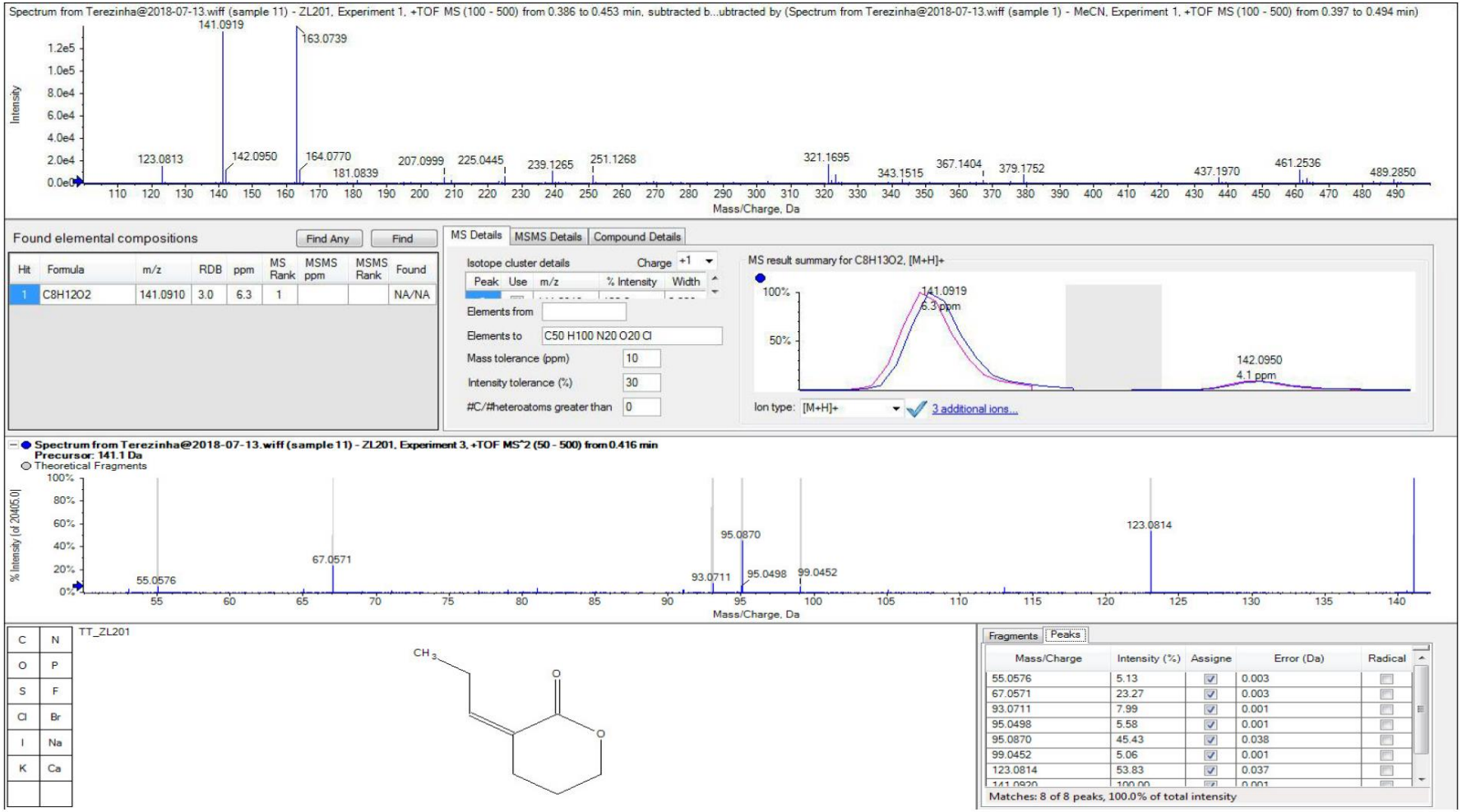
S4.2. HRMS data of 10Z.



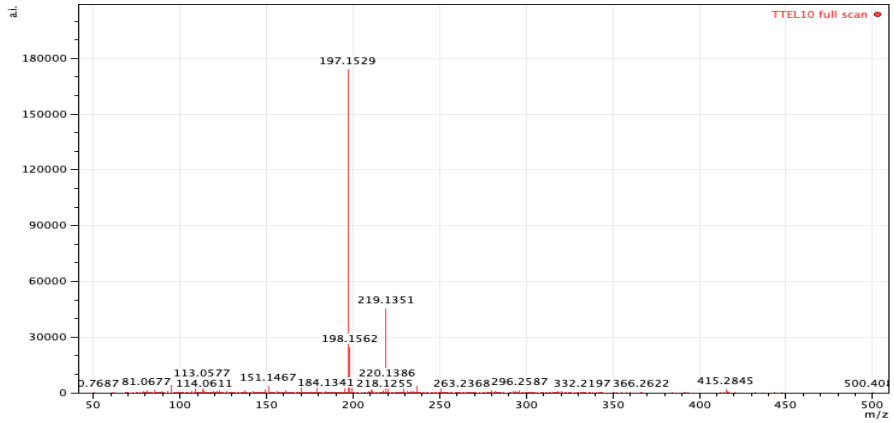
S4.3. HRMS data of 11E.

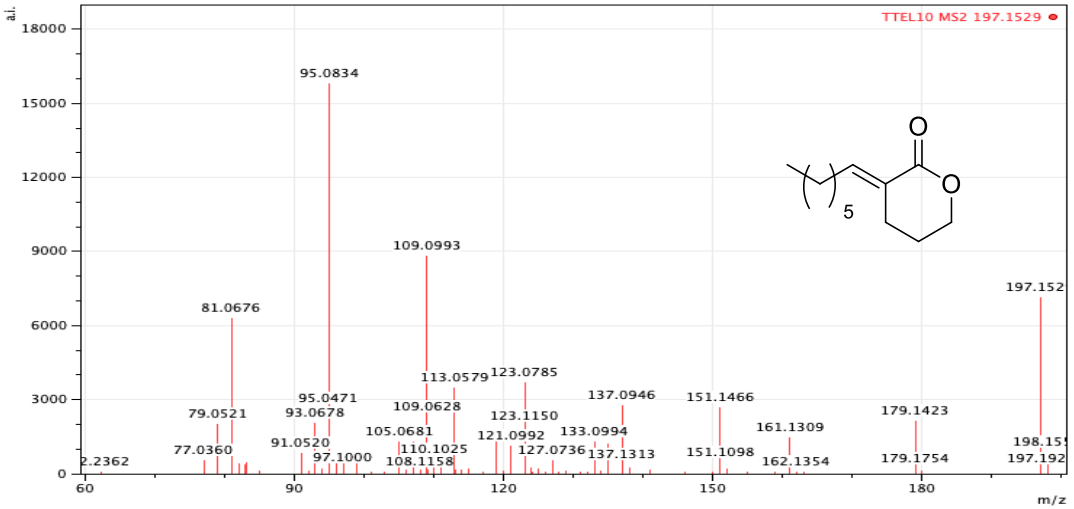


S4.4. HRMS data of 11Z.

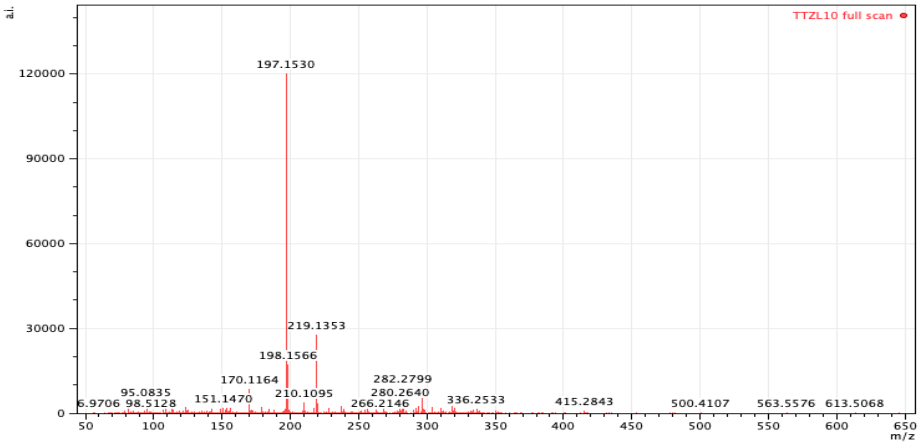


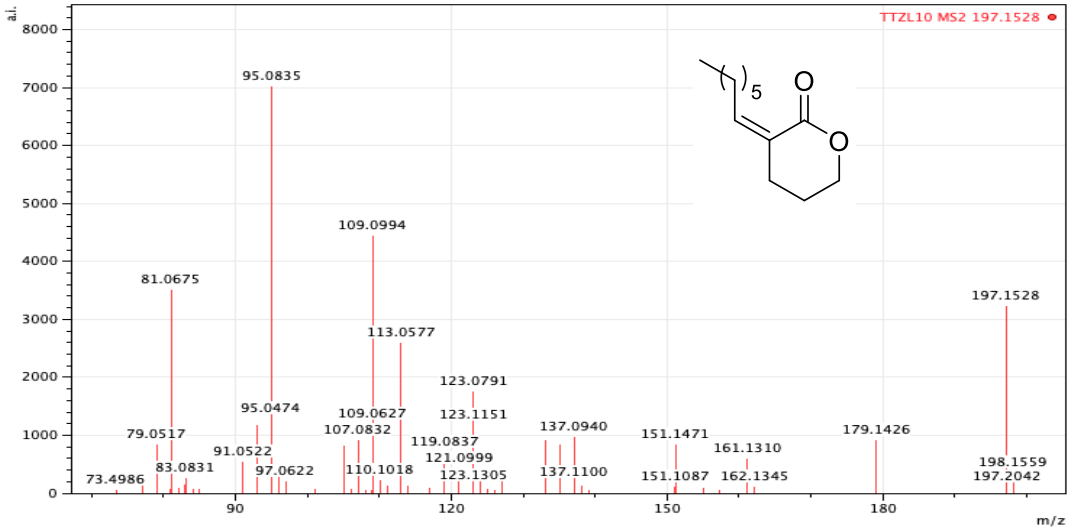
S4.5. HRMS data of 12E.



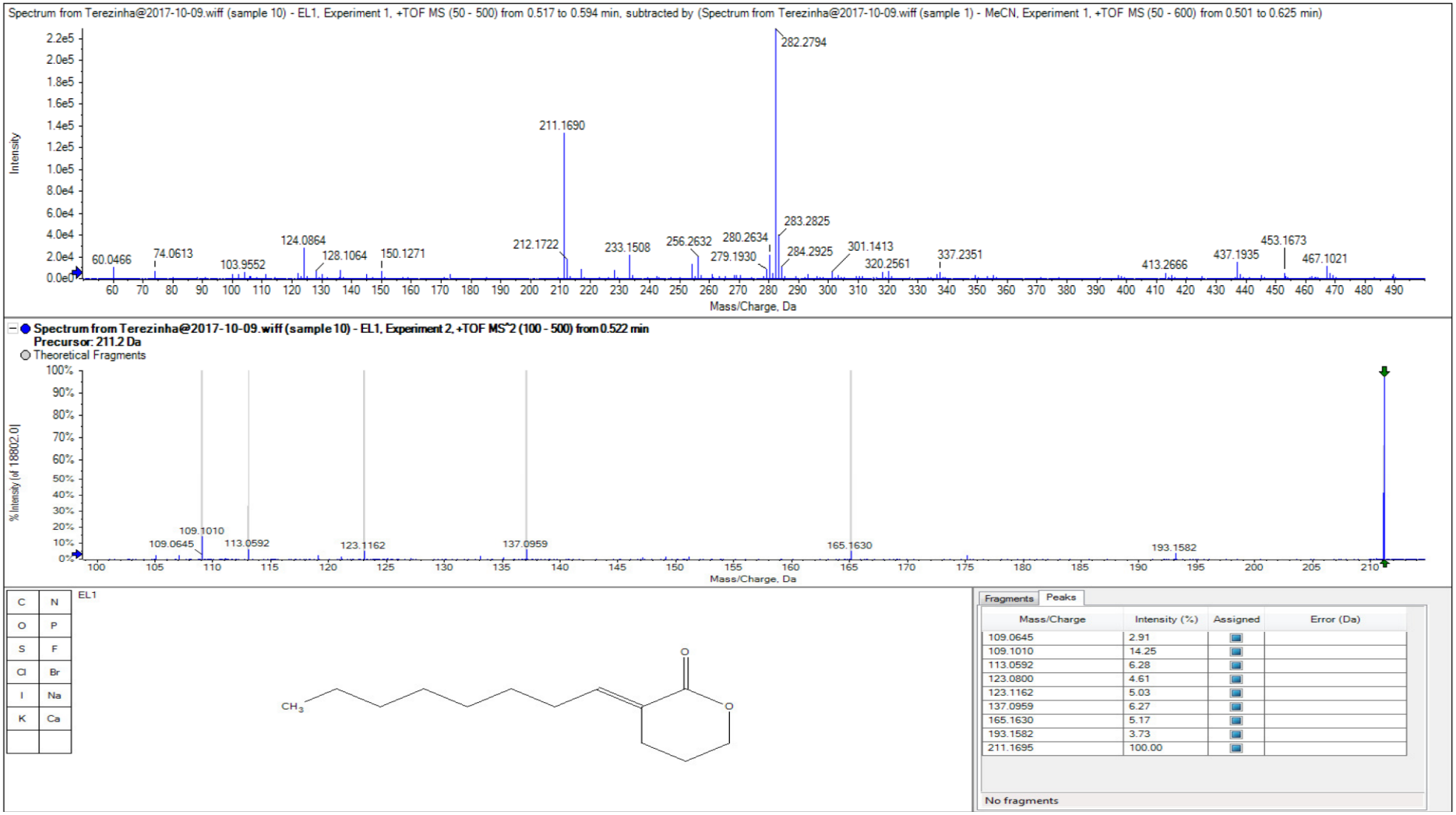


S4.6. HRMS data of 12Z.

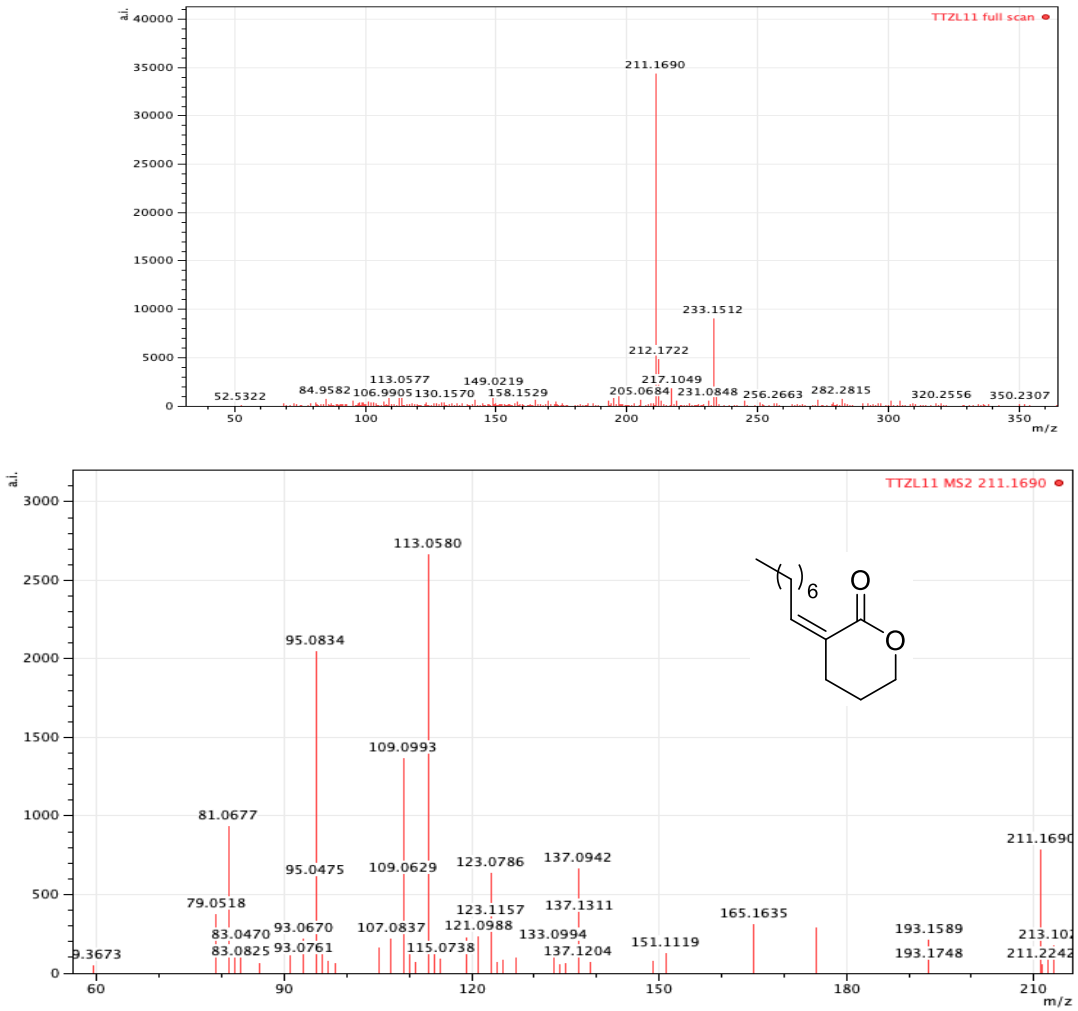




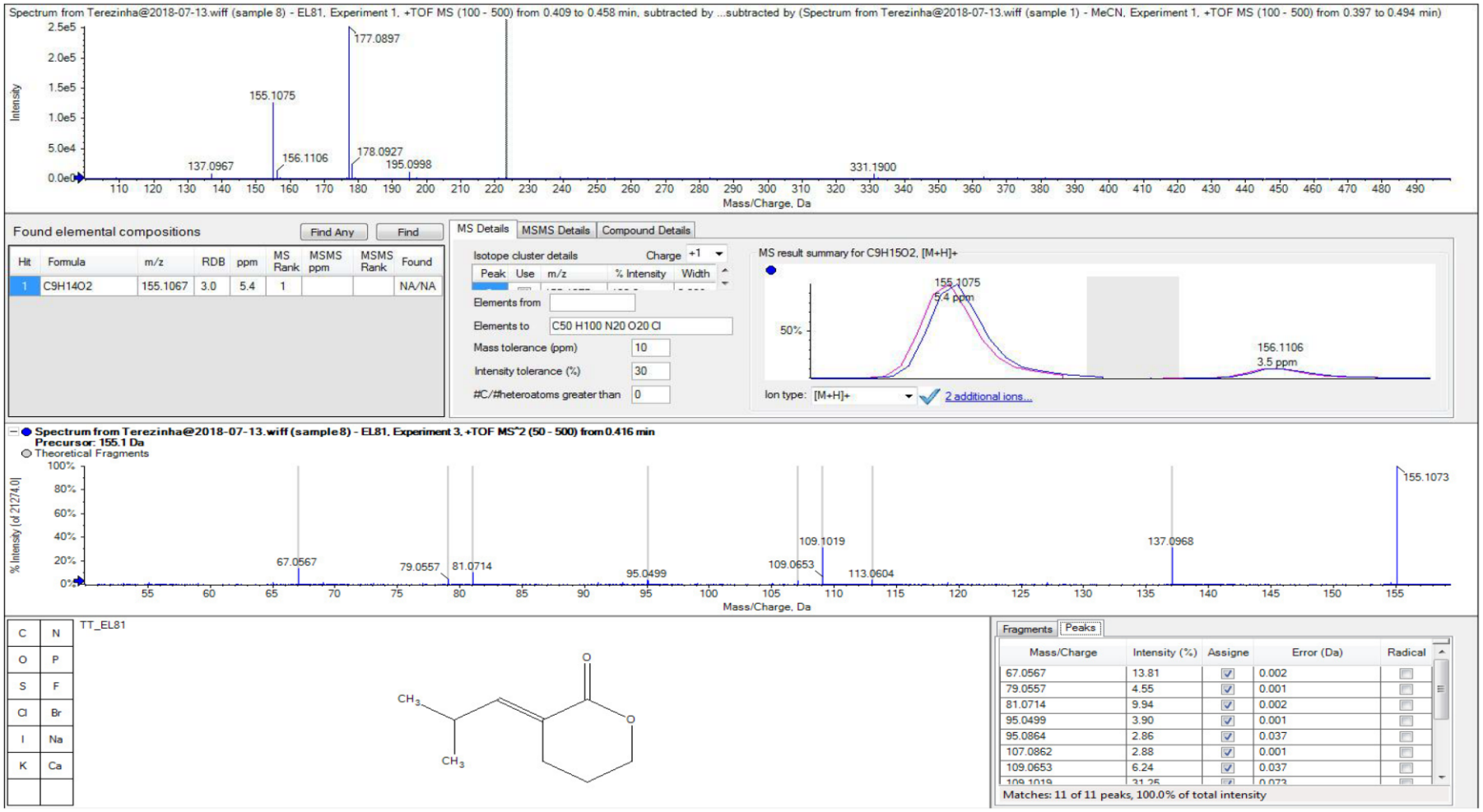
S4.7. HRMS data of 13E.



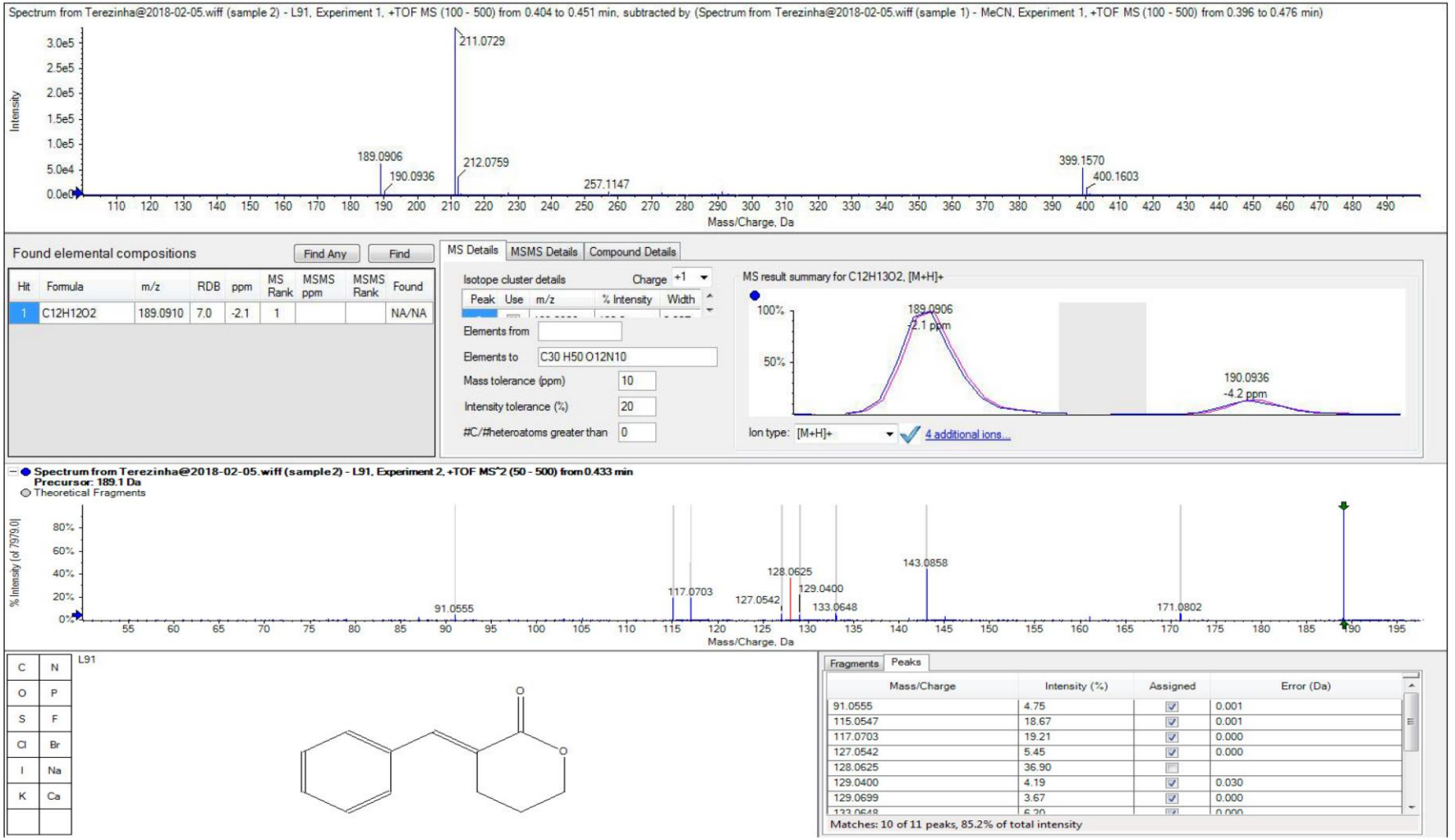
S4.8. HRMS data of 13Z.



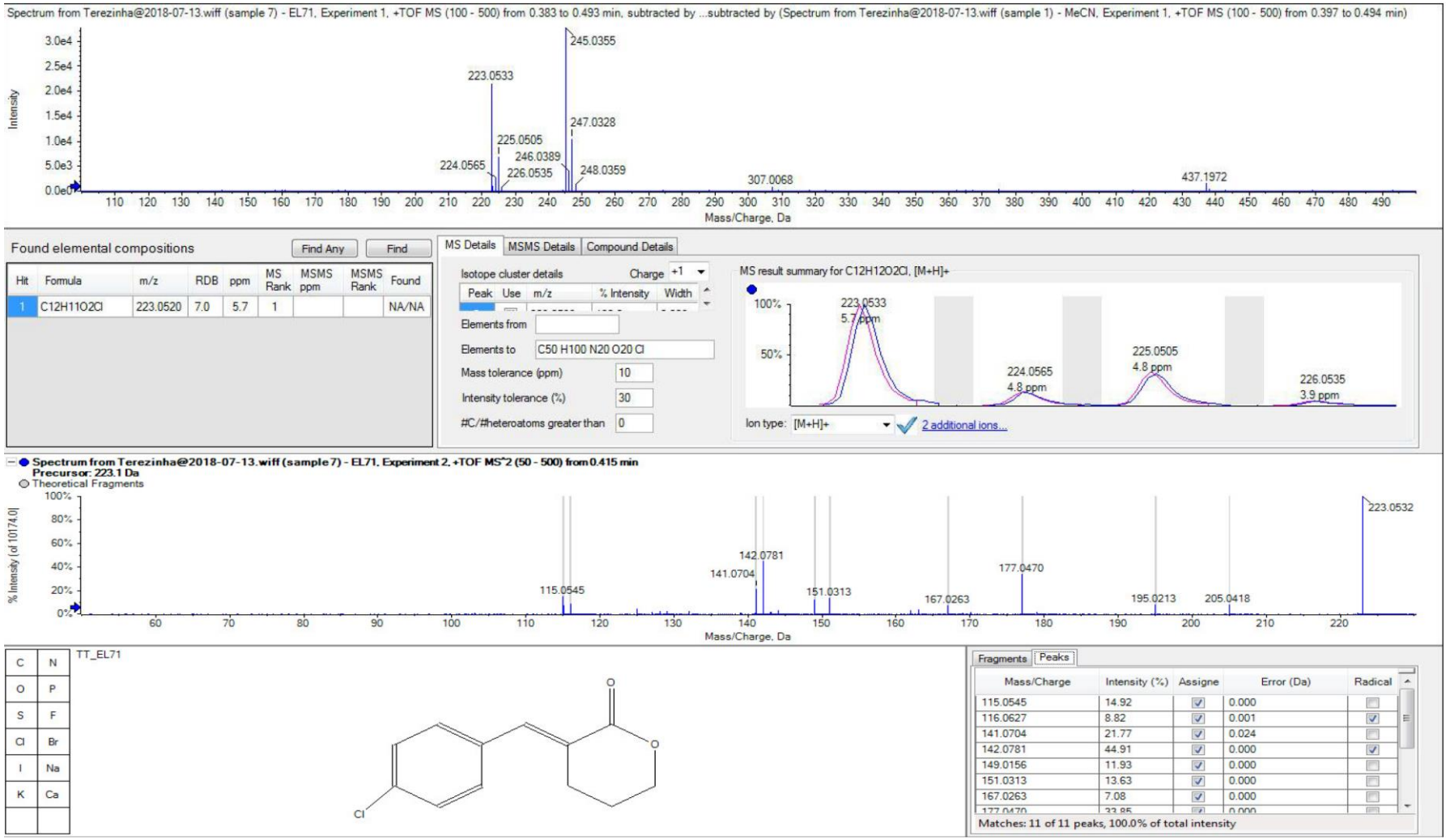
S4.9. HRMS data of 14E.



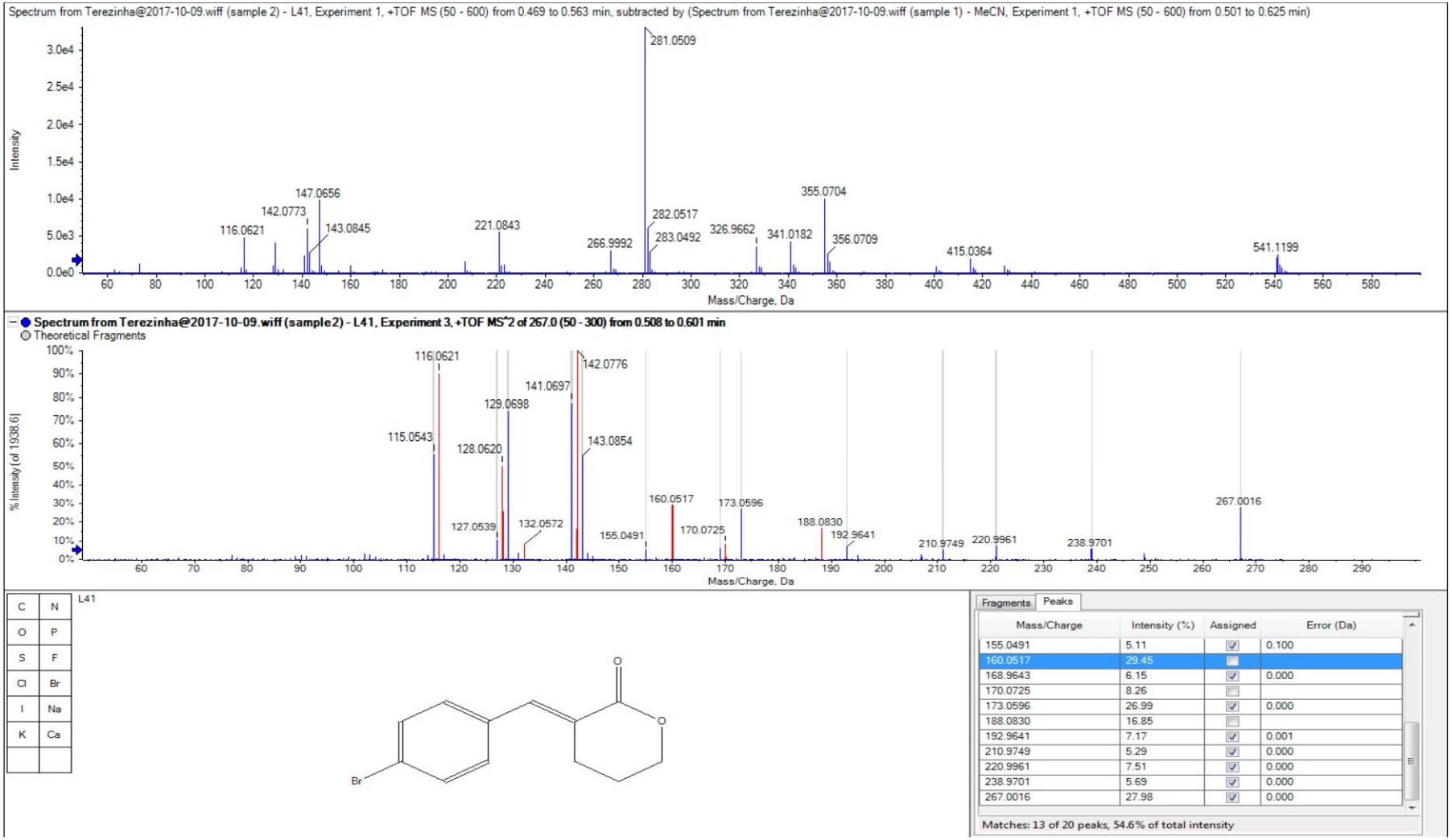
S4.10. HRMS data of 15E.



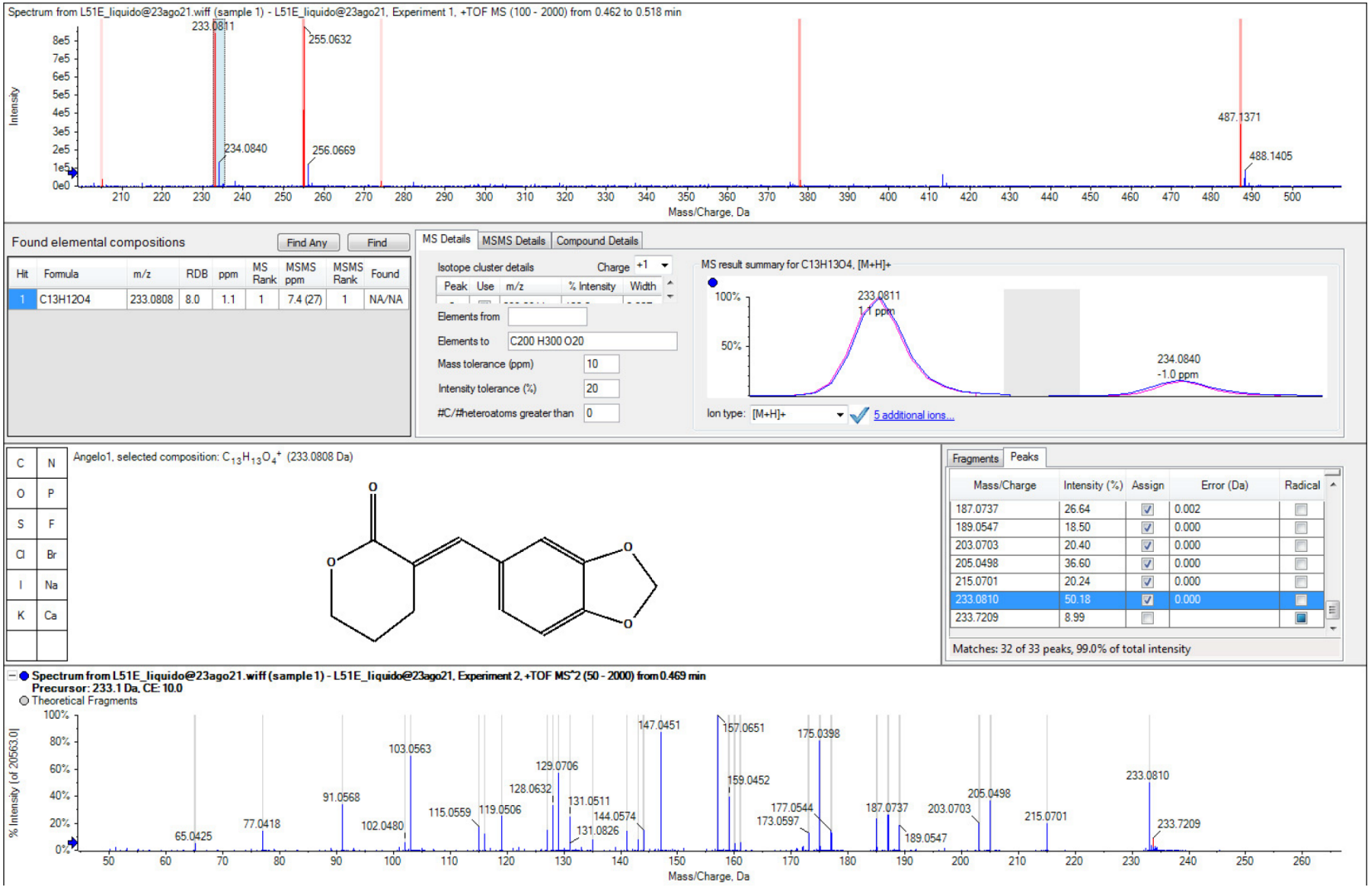
S4.11. HRMS data of 16E.



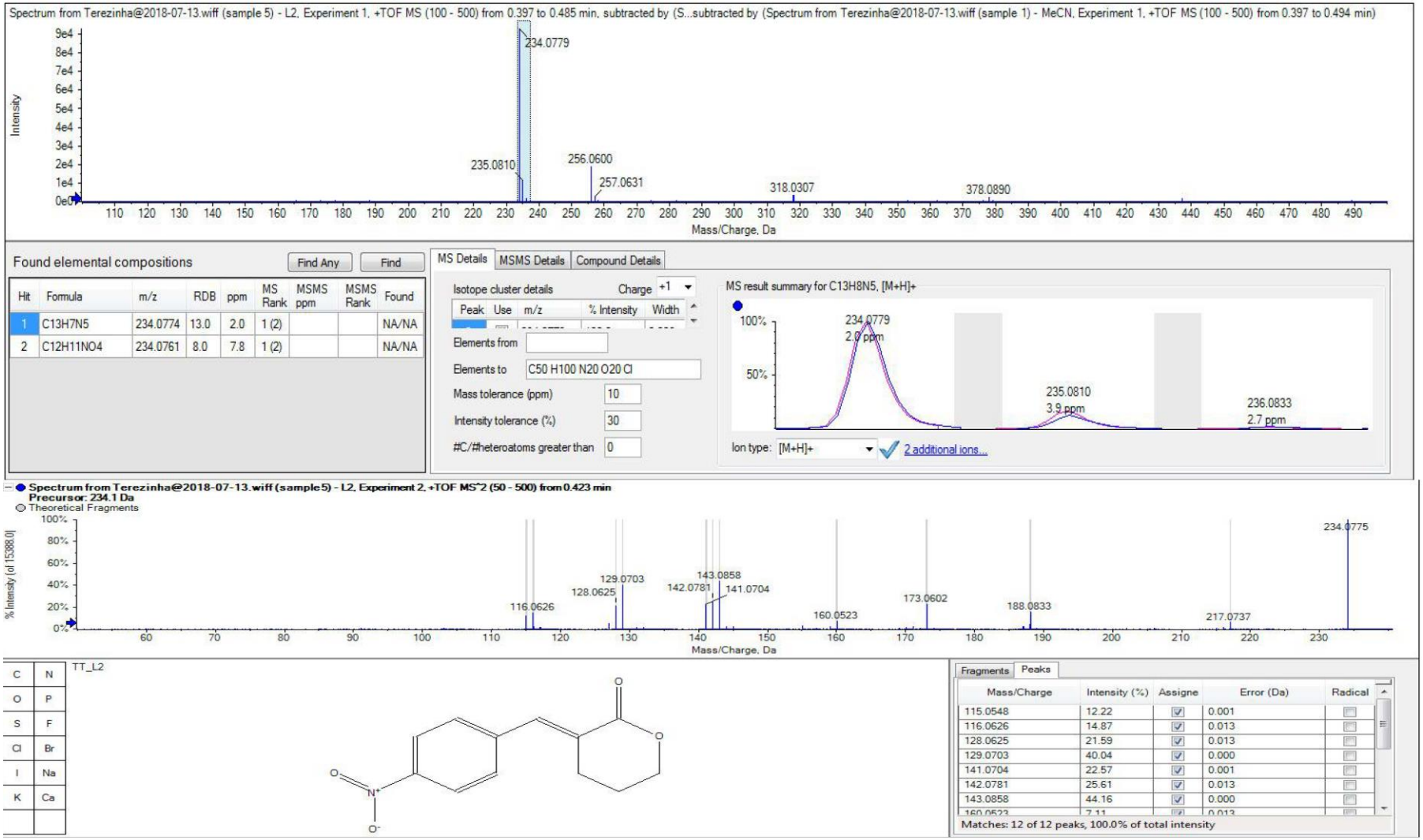
S4.12. HRMS data of 17E.



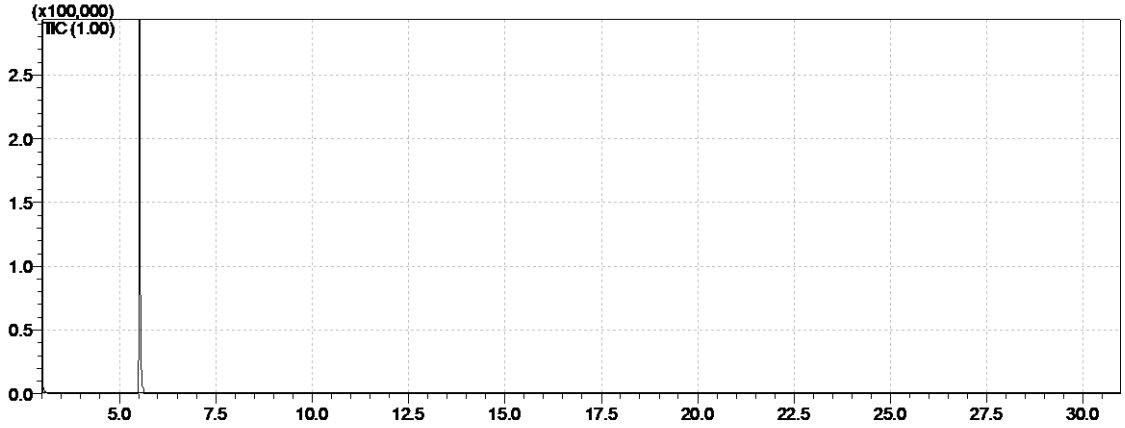
S4.13. HRMS data of 18E



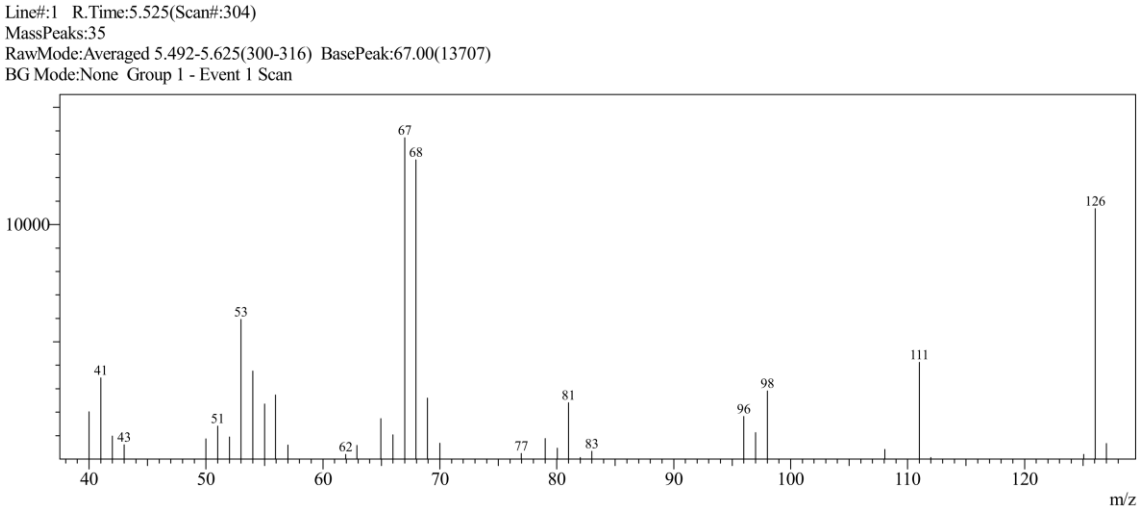
S4.14. HRMS data of 19E.



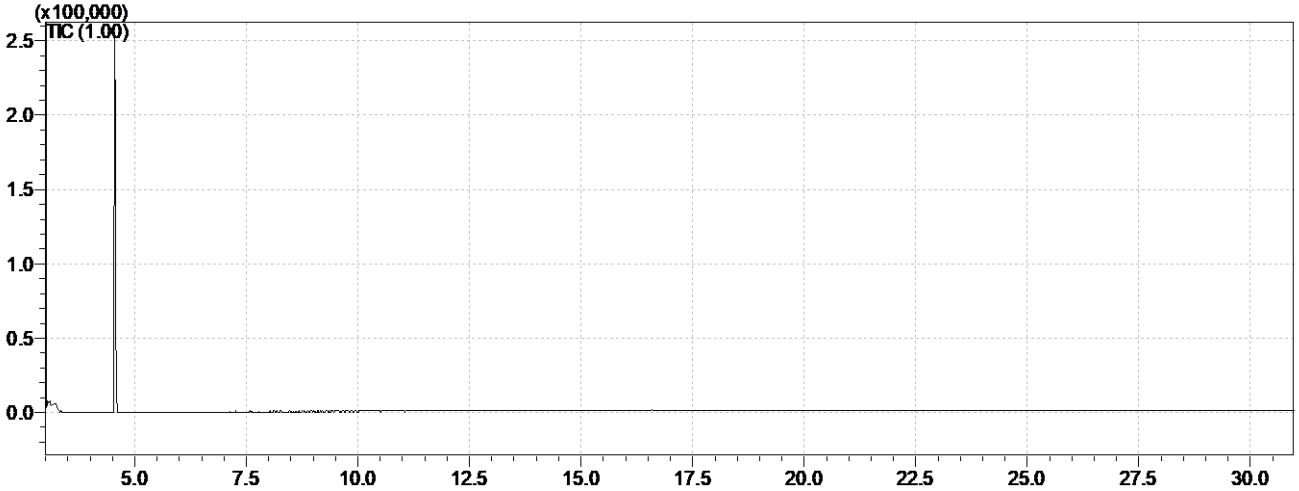
S5.1. GC-MS data of 10E.



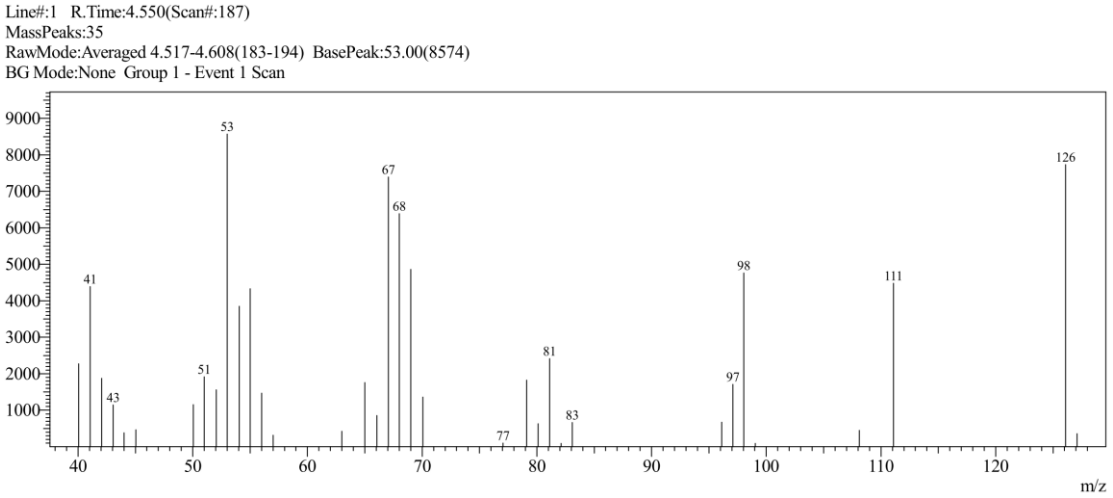
Purity: 98.1 %



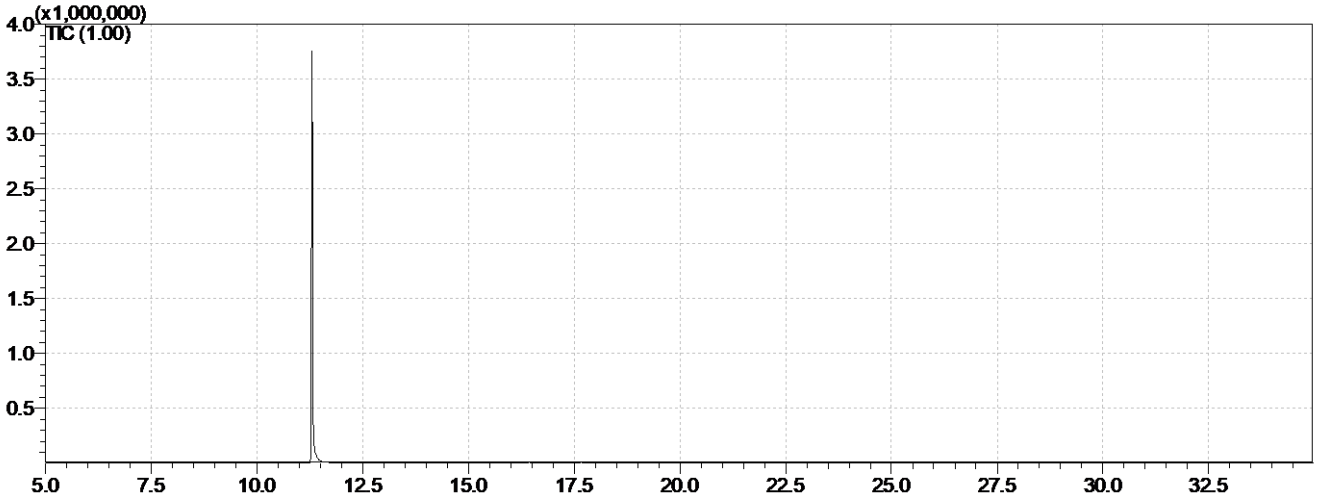
S5.2. GC-MS data of 10Z.



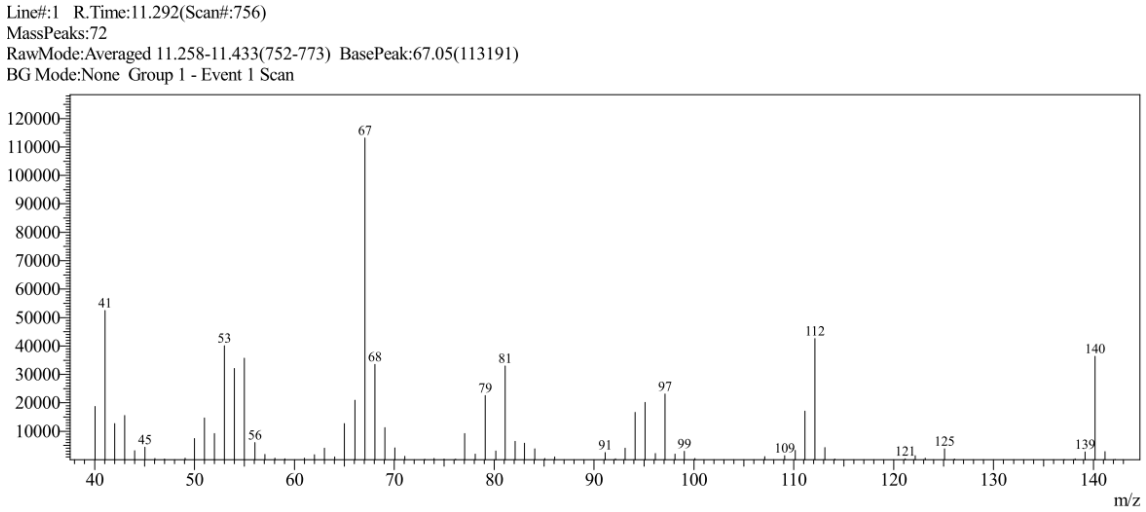
Purity: 96.9 %



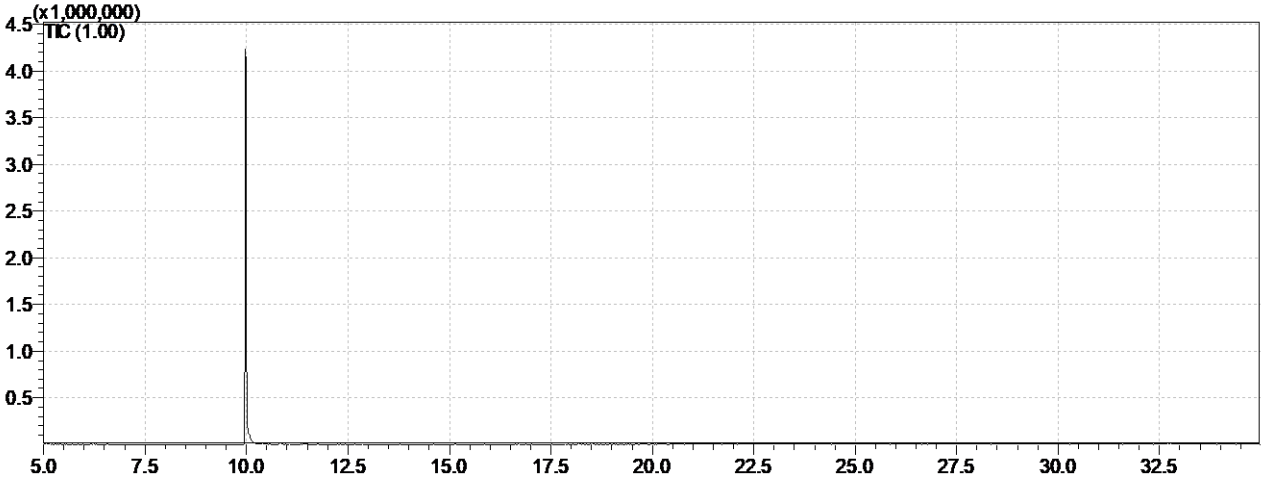
S5.3. GC-MS data of 11E.



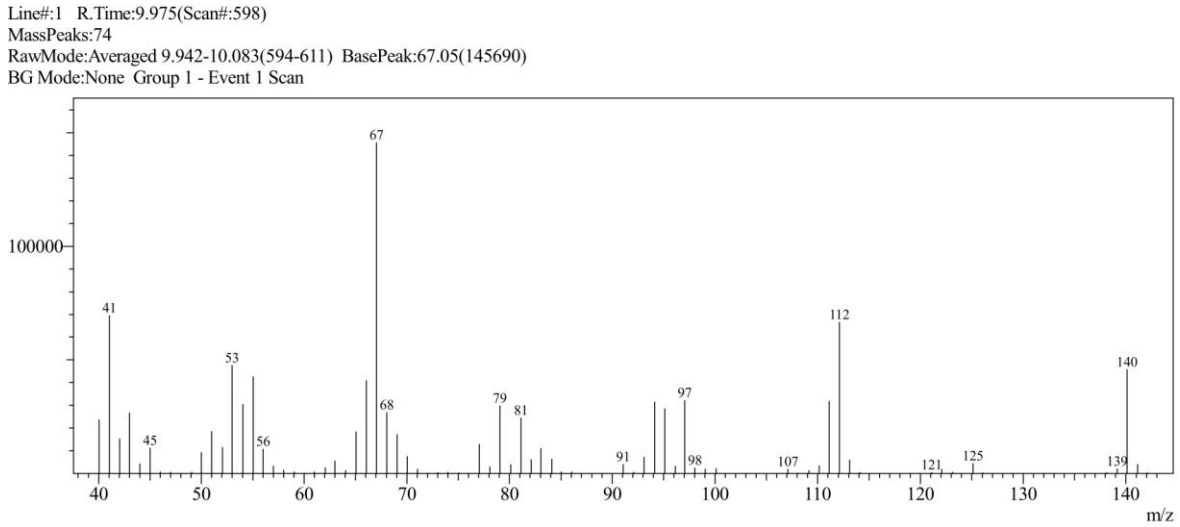
Purity: 99.6 %



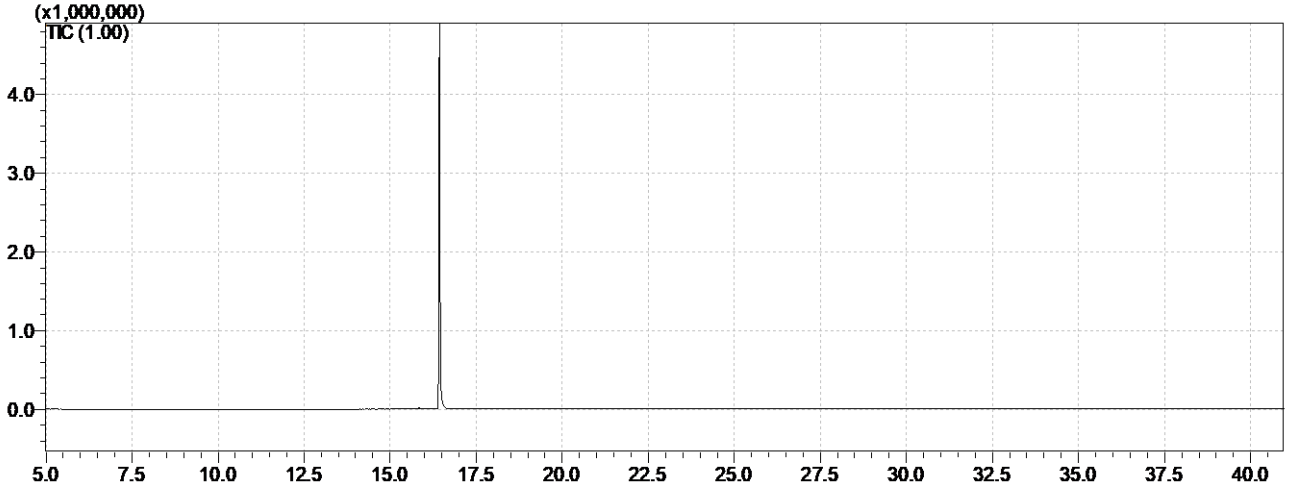
S5.4. GC-MS data of 11Z.



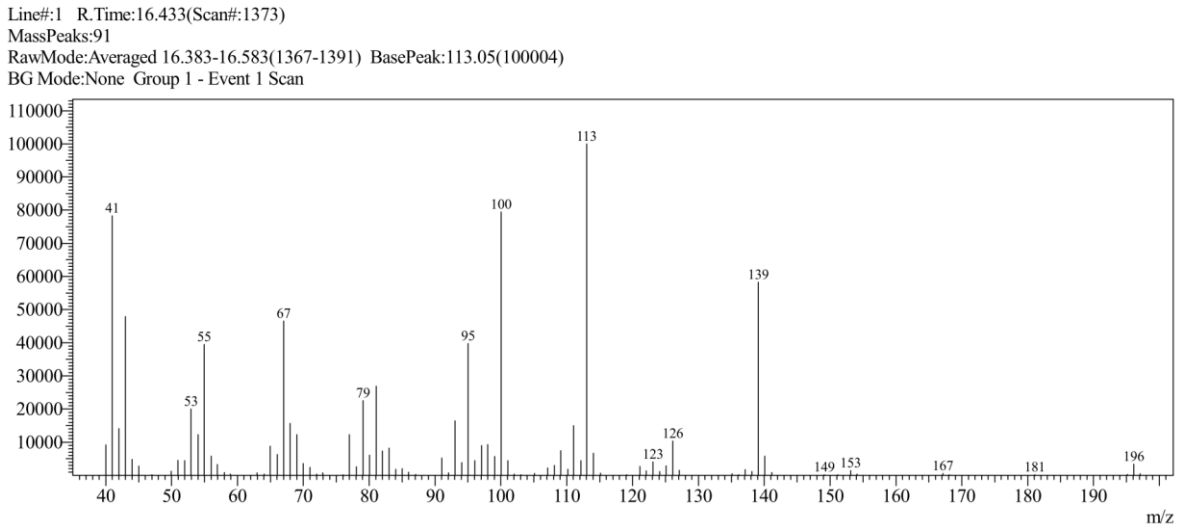
Purity: 98.9 %



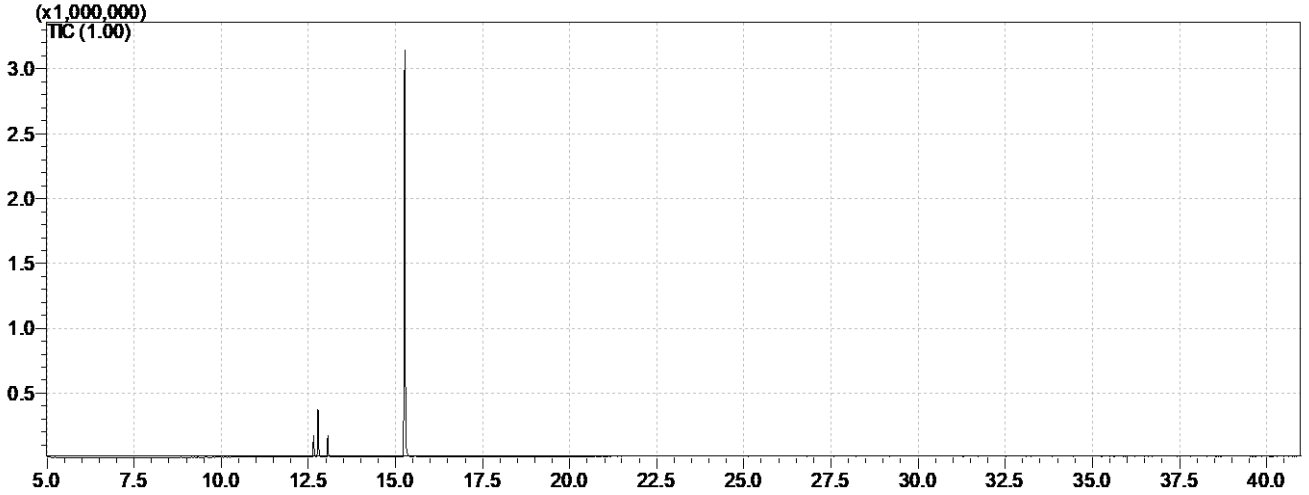
S5.5. GC-MS data of 12E.



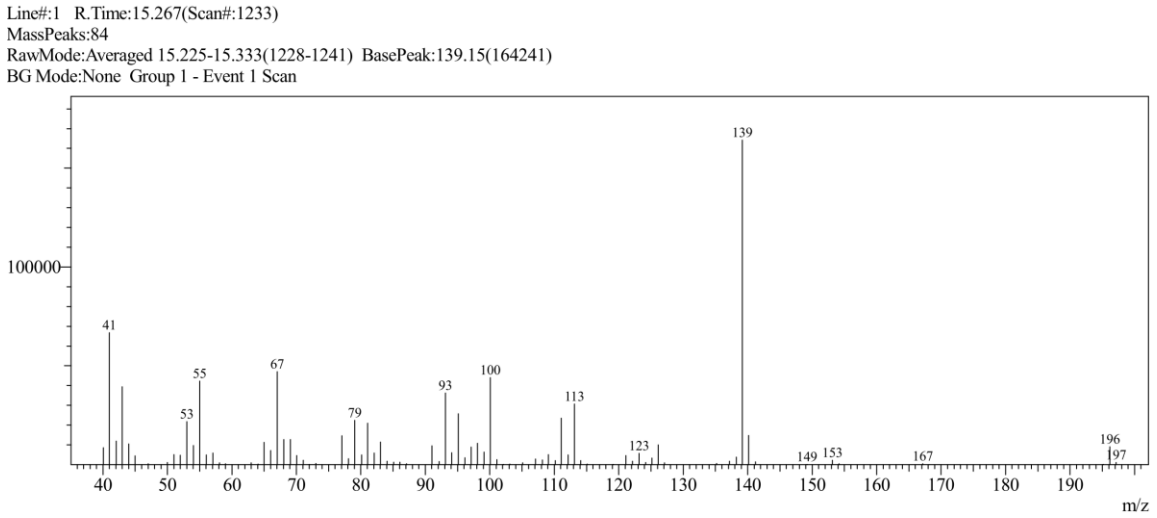
Purity: 98.8 %



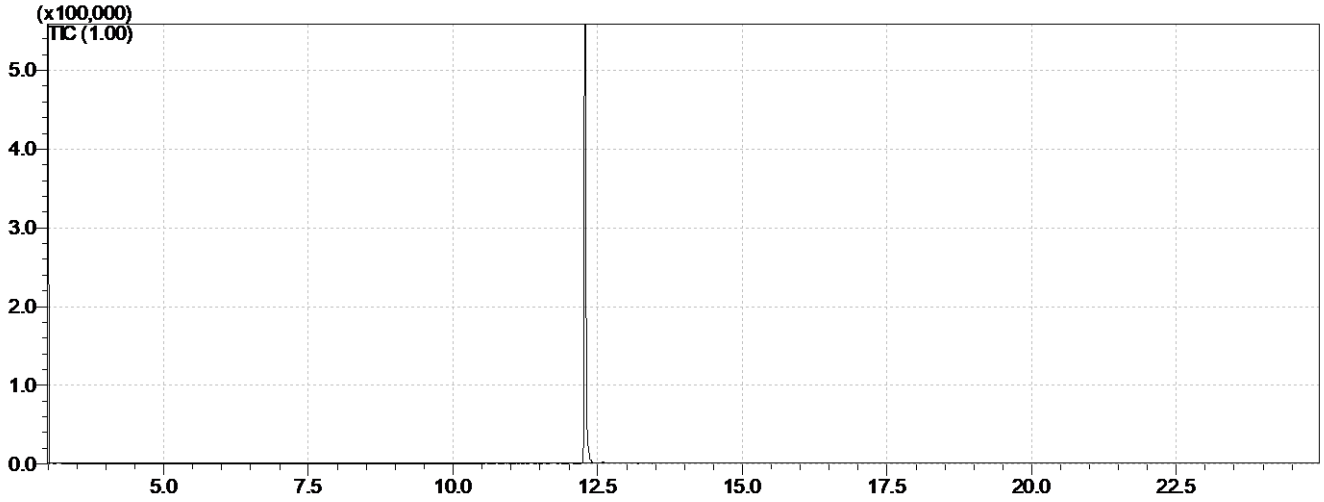
S5.6. GC-MS data of 12Z.



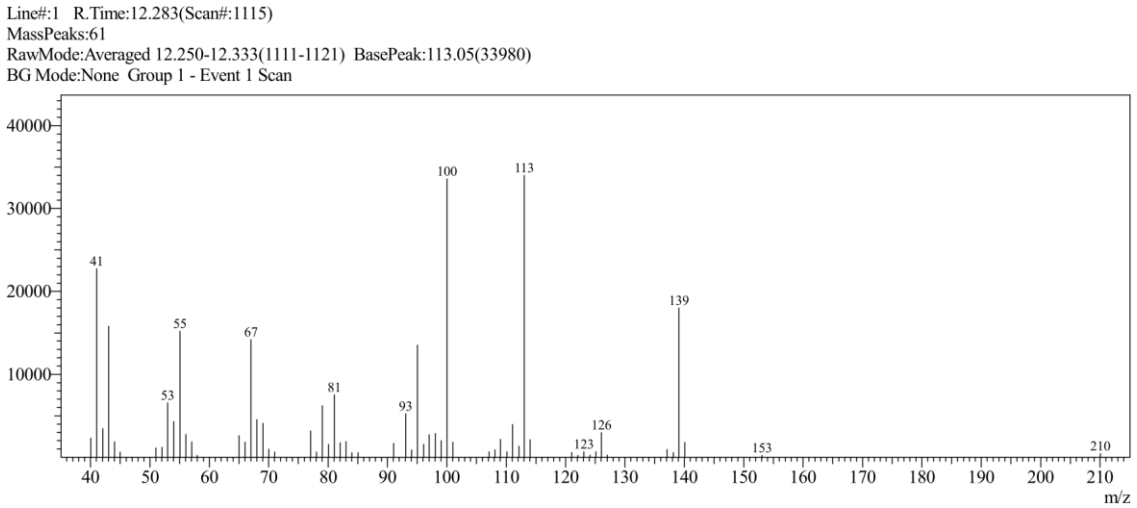
Purity: 82.3 %



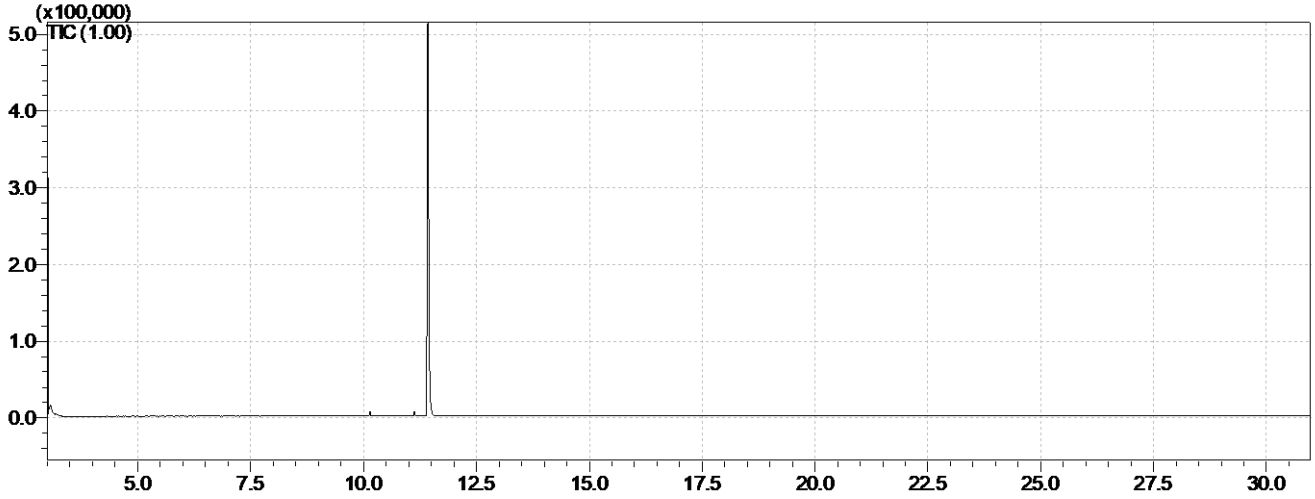
S5.7. GC-MS data of 13E.



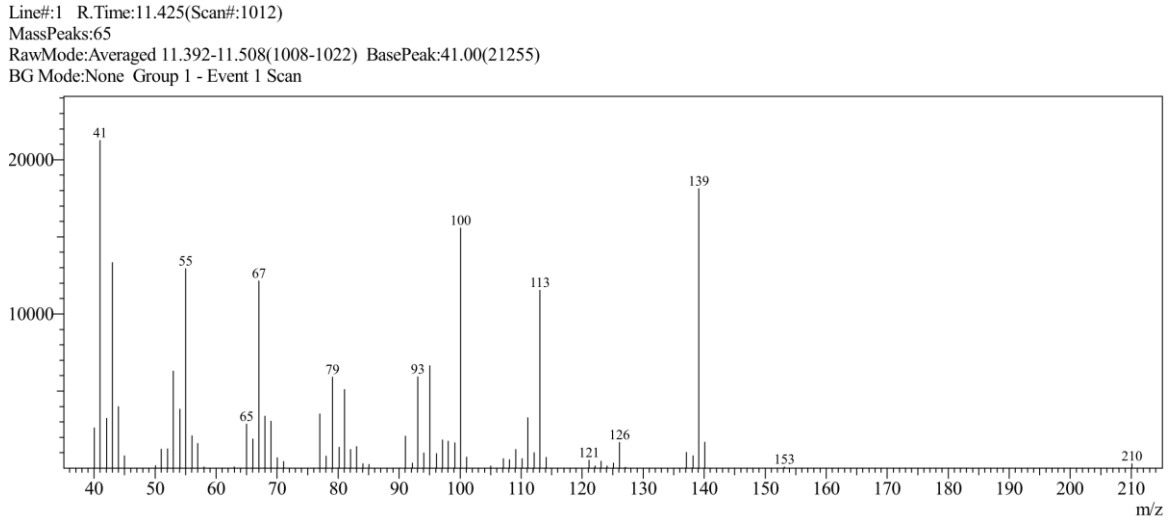
Purity: 99.7 %



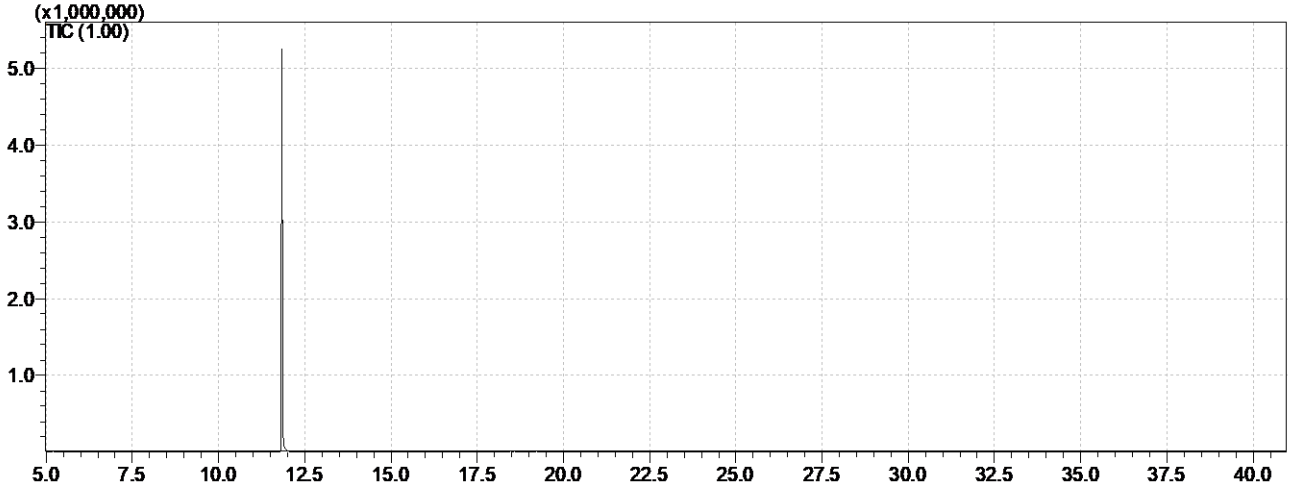
S5.8. GC-MS data of 13Z.



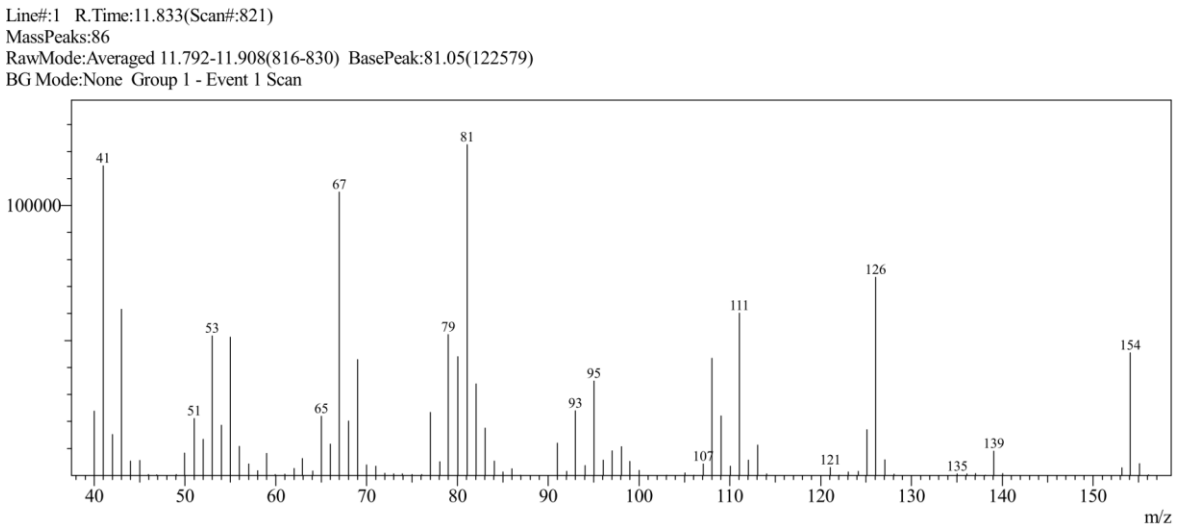
Purity: 98.8 %



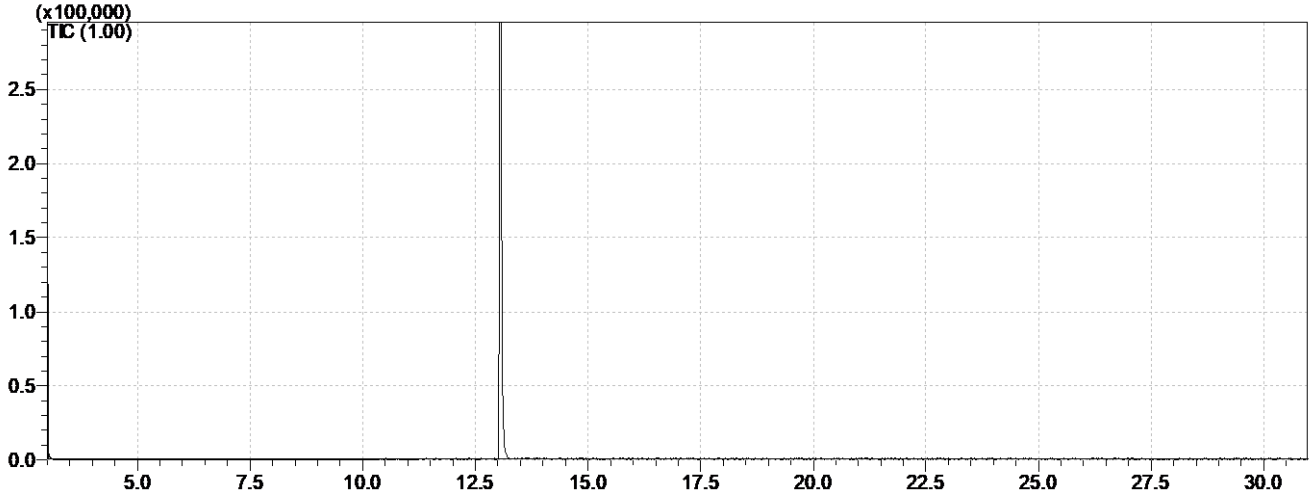
S5.9. GC-MS data of 14E.



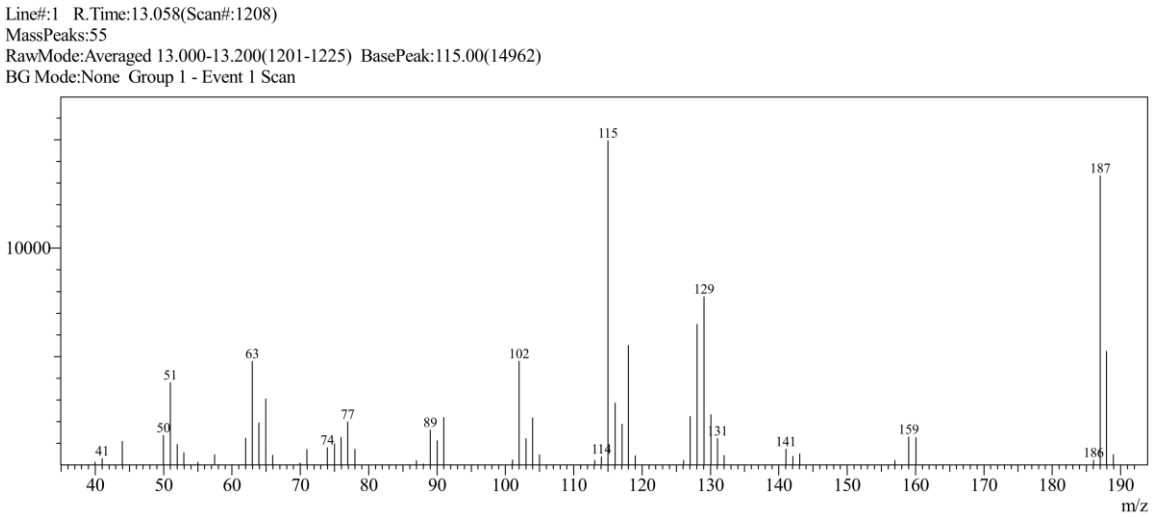
Purity: 99.8 %



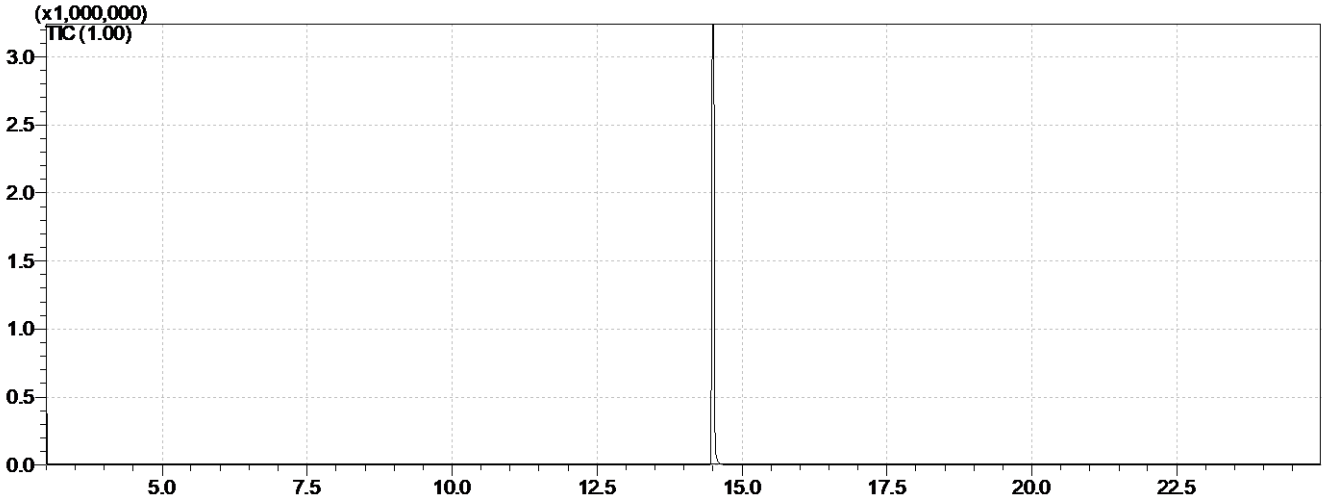
S5.10. GC-MS data of 15E.



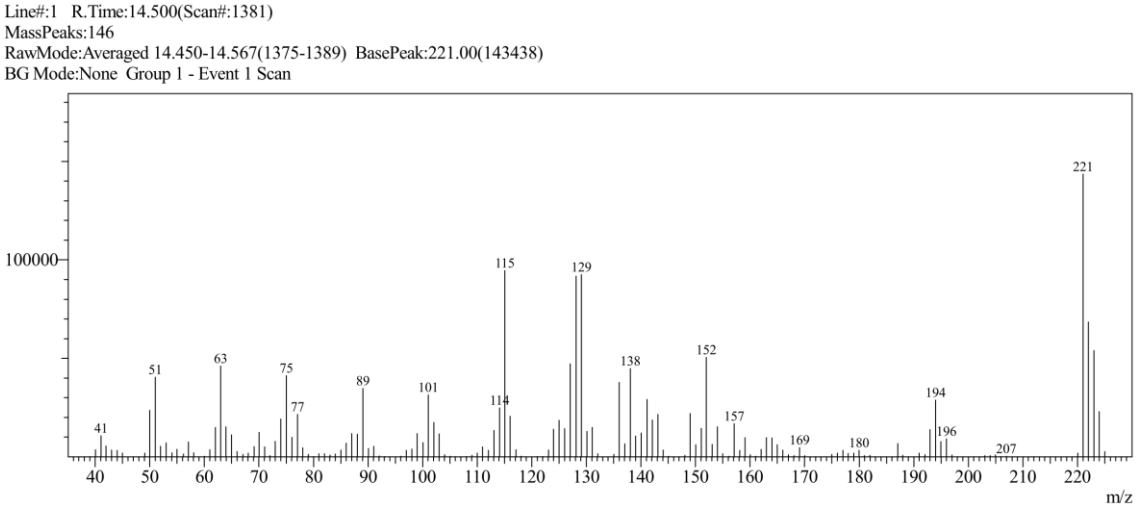
Purity: 99.9 %



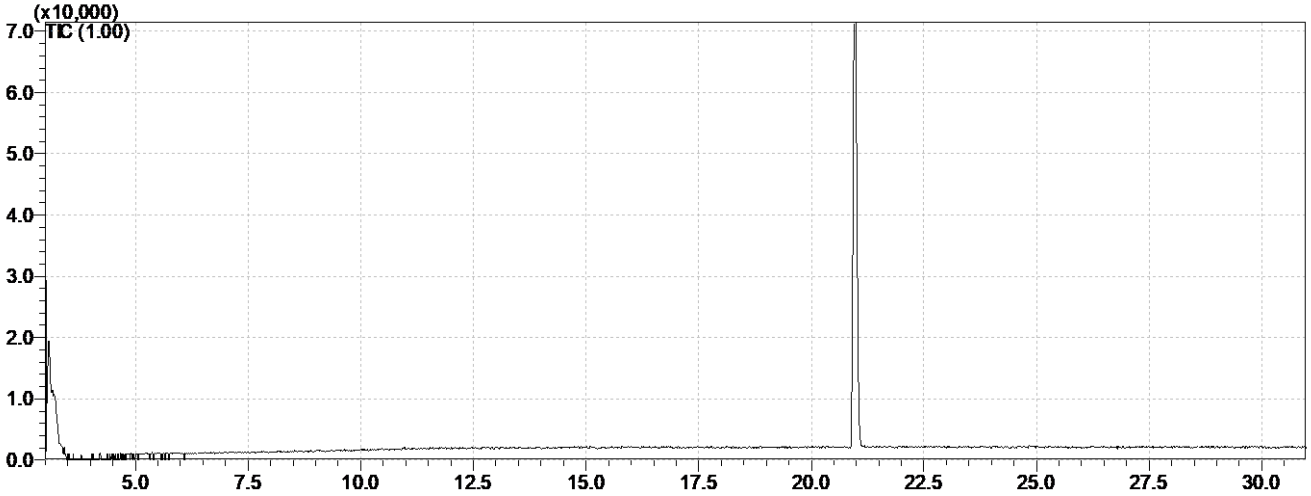
S5.11. GC-MS data of 16E.



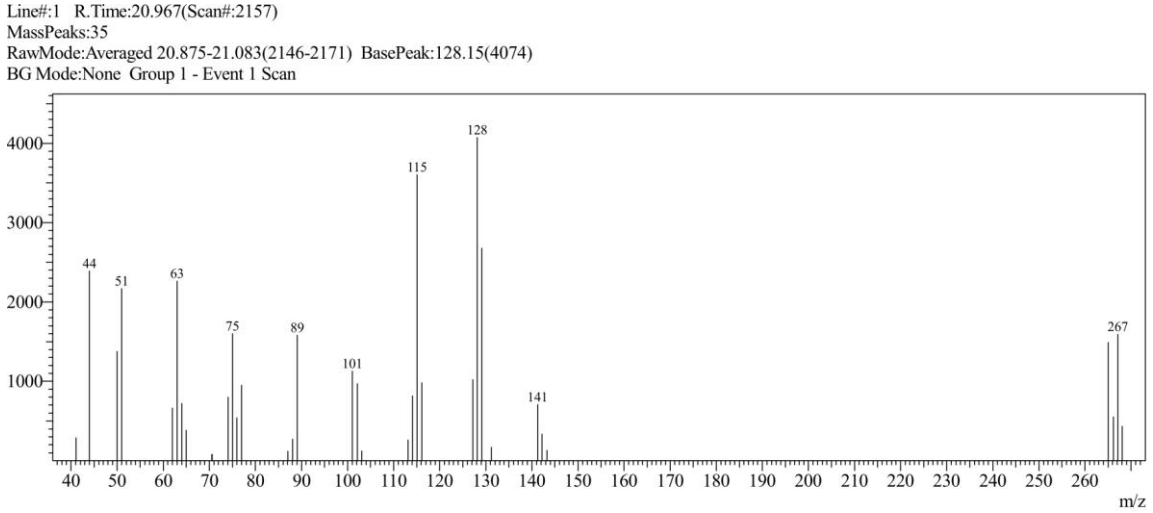
Purity: 99.9 %



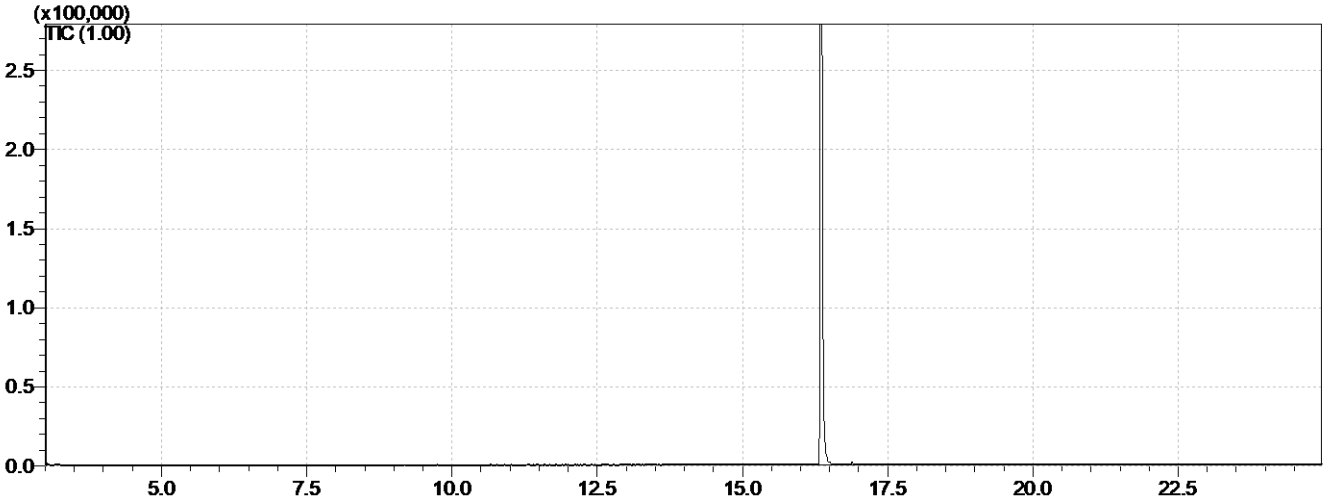
S5.12. GC-MS data of 17E.



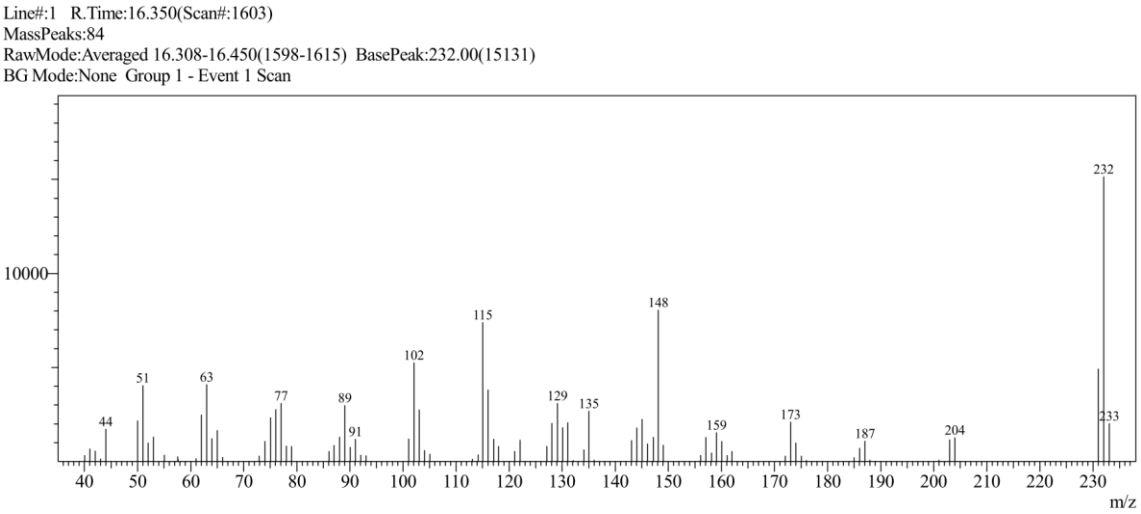
Purity: 99.9 %



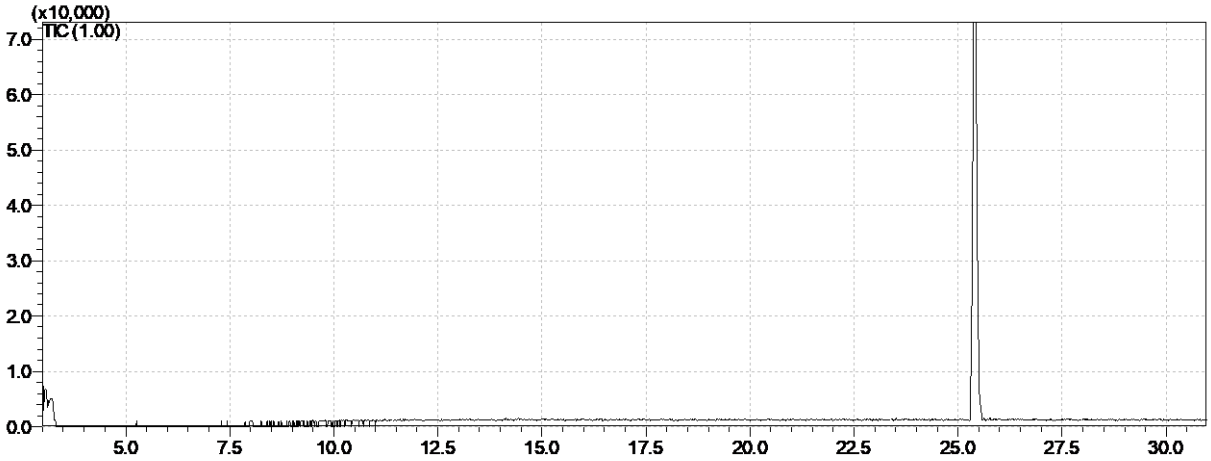
S5.13. GC-MS data of 18E.



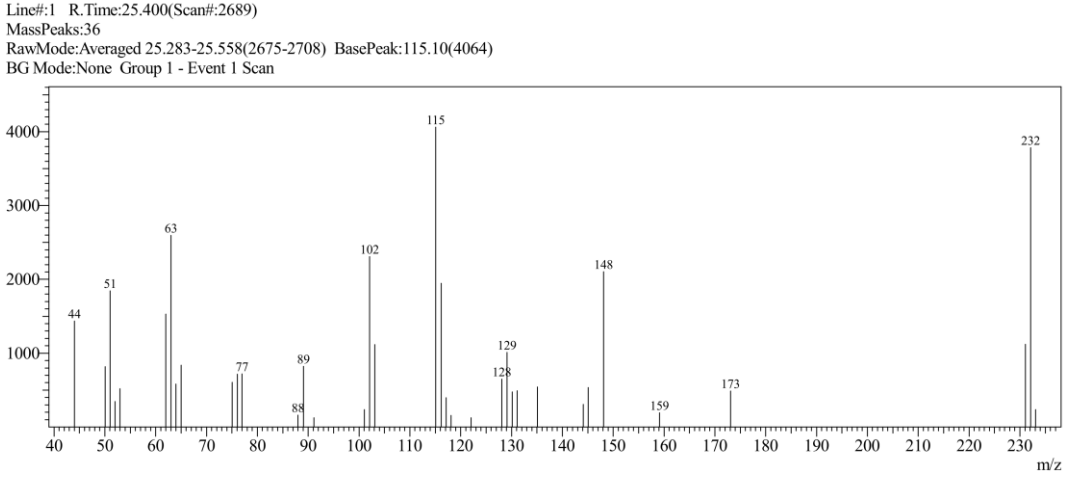
Purity: 99.9 %



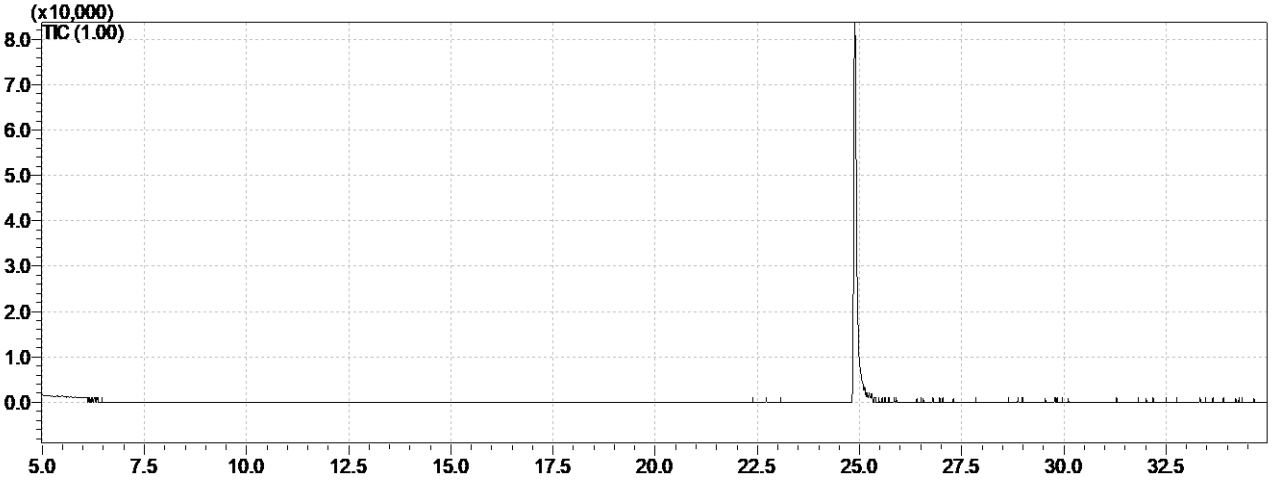
S5.14. GC-MS data of 19E.



Purity: 99.9 %



S5.14. GC-MS data of 20.



Putiry: > 99.9 %