Access to Functionalized Quaternary Stereocenters via the Copper-Catalyzed Conjugate Addition of Monoorganozinc Bromide Reagents Enabled by *N,N*-Dimethylacetamide

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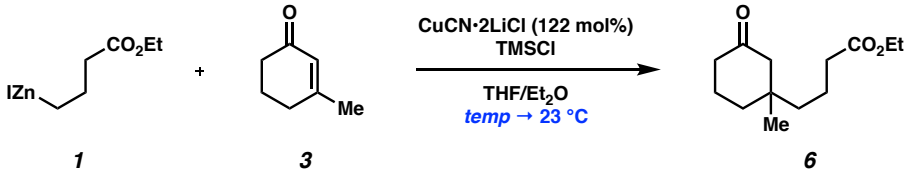
Preliminary Screening Data

Early optimization studies did not reveal a dependence on temperature (for the addition of the enone/Lewis acid solution to the cuprate reagent) or the equivalence of **1** with respect to yield (Table S1). We therefore chose 2 equiv RZnX at 0 °C for convenience, as well as the ability to mitigate any potential mild reaction exotherm.

Table S1. Preliminary Optimization of Temperature and Equivalence of **1** in the Production of **6**.



1 ***3*** ***6***

entry[a]	*equiv 1*	*initial temp (°C)*	*yield (%)*[b]
1	1.4	–78	43
2	1.4	–10	47
3	1.4	0	48
4	2.0	0	48
5	1.4	23	49
6	2.0	23	48

[a] 1.00 mmol scale ***3*** and 2.4 TMSCl for up to 24 h. [b] Isolated yields.

List of NMR Spectral Figures

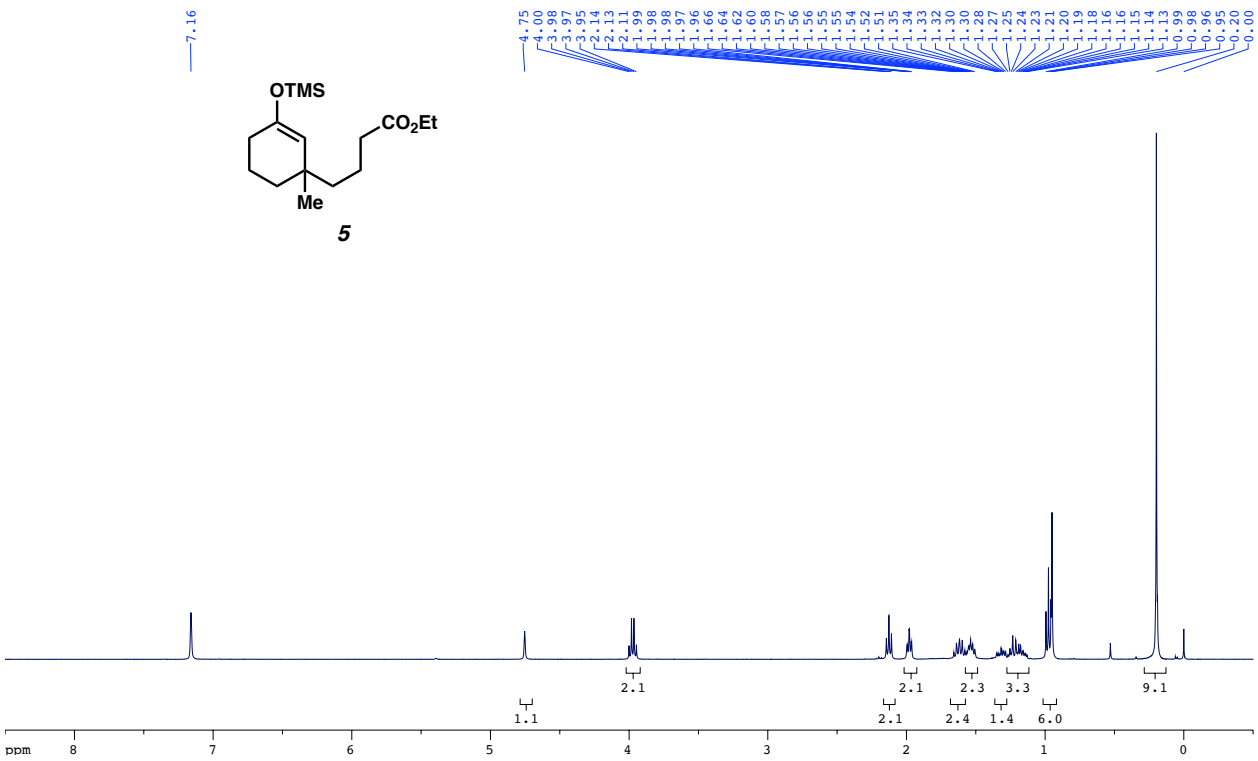


Figure S1. ^{1}H NMR spectrum (400 MHz, C_6D_6) of **5**.

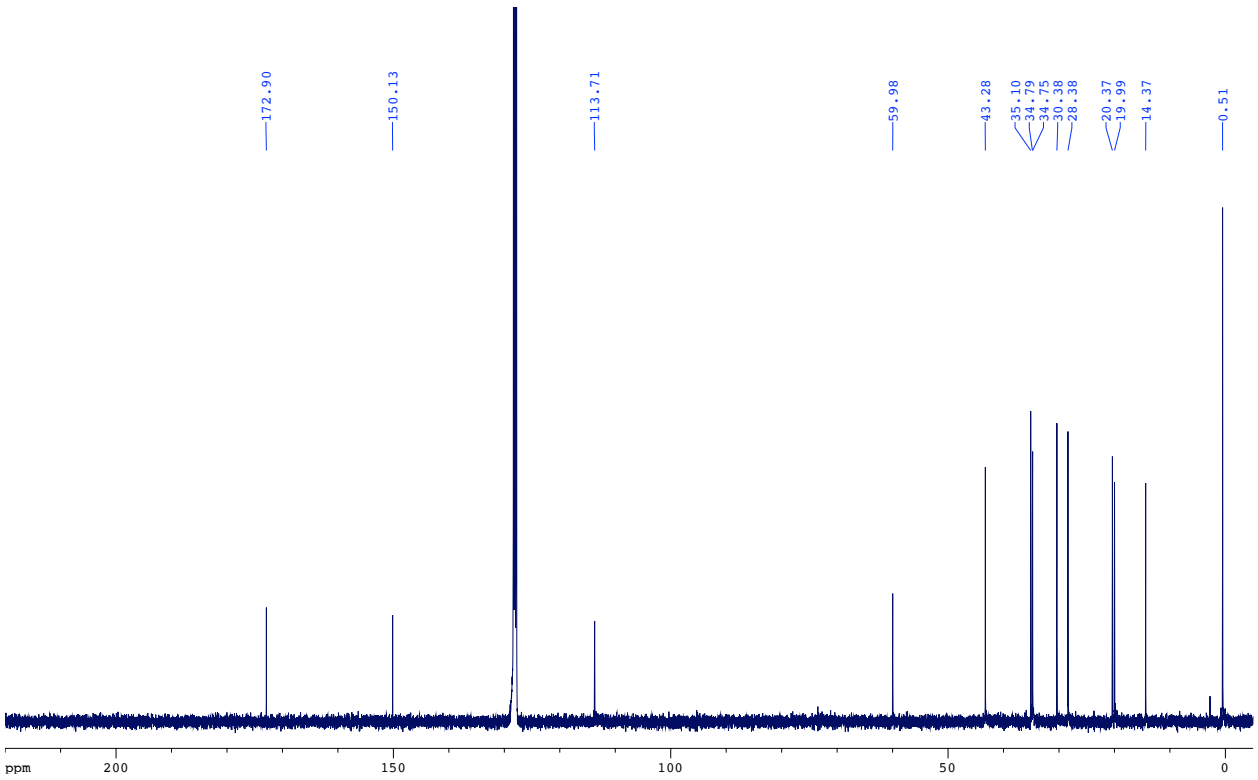


Figure S2. ^{13}C{^{1}H} NMR spectrum (101 MHz, C_6D_6) of **5**.

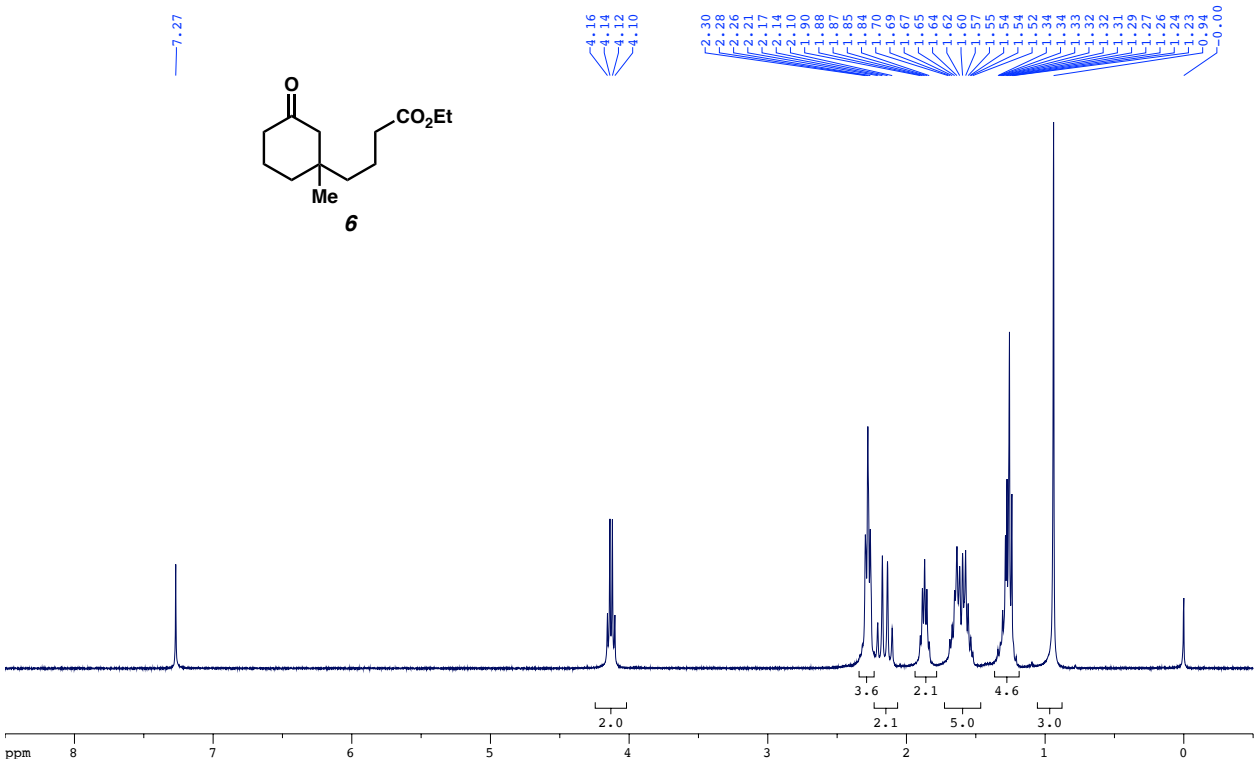


Figure S3. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **6**.

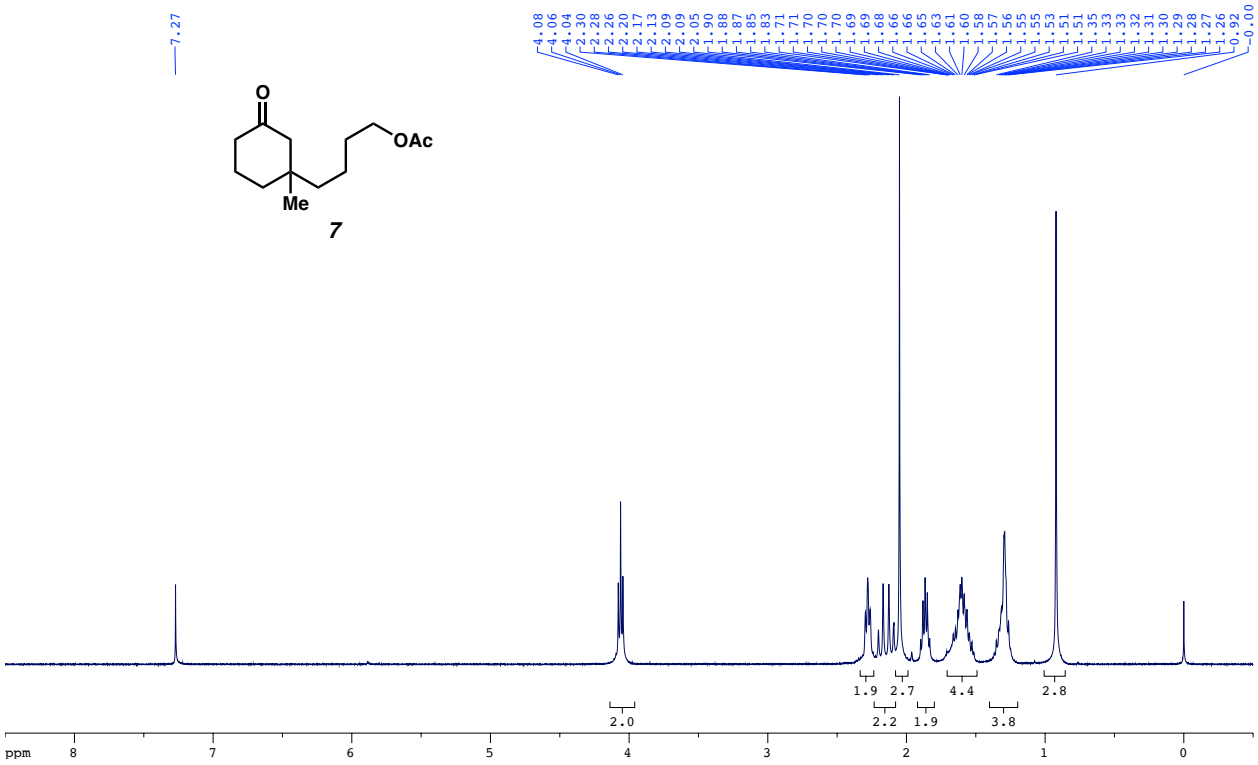


Figure S4. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **7**.

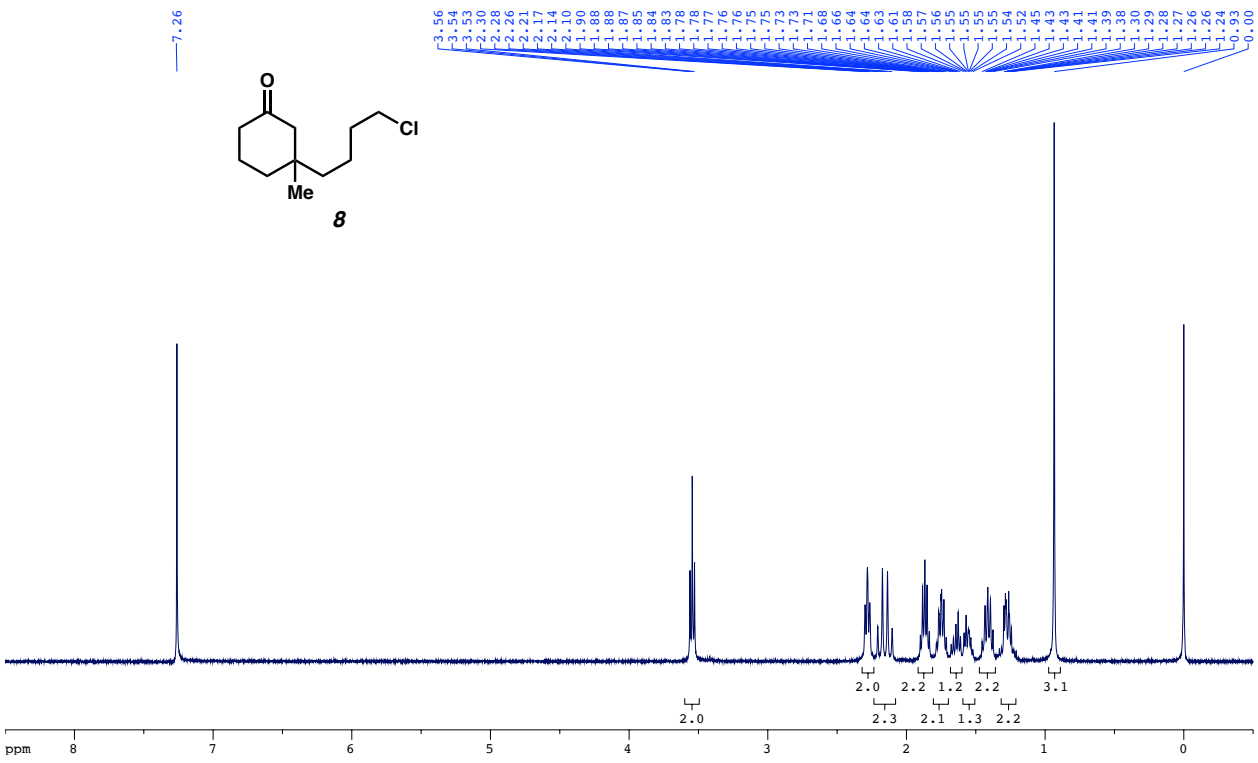


Figure S5. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **8**.

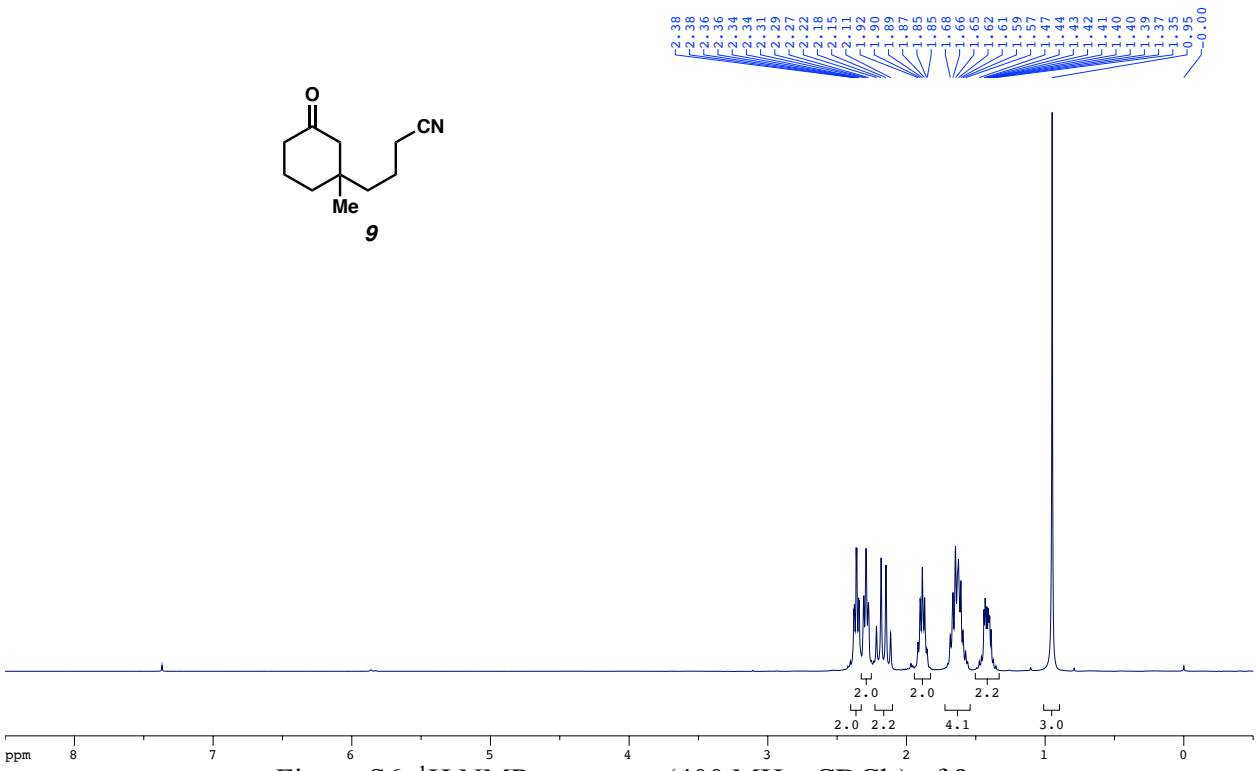


Figure S6. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **9**.

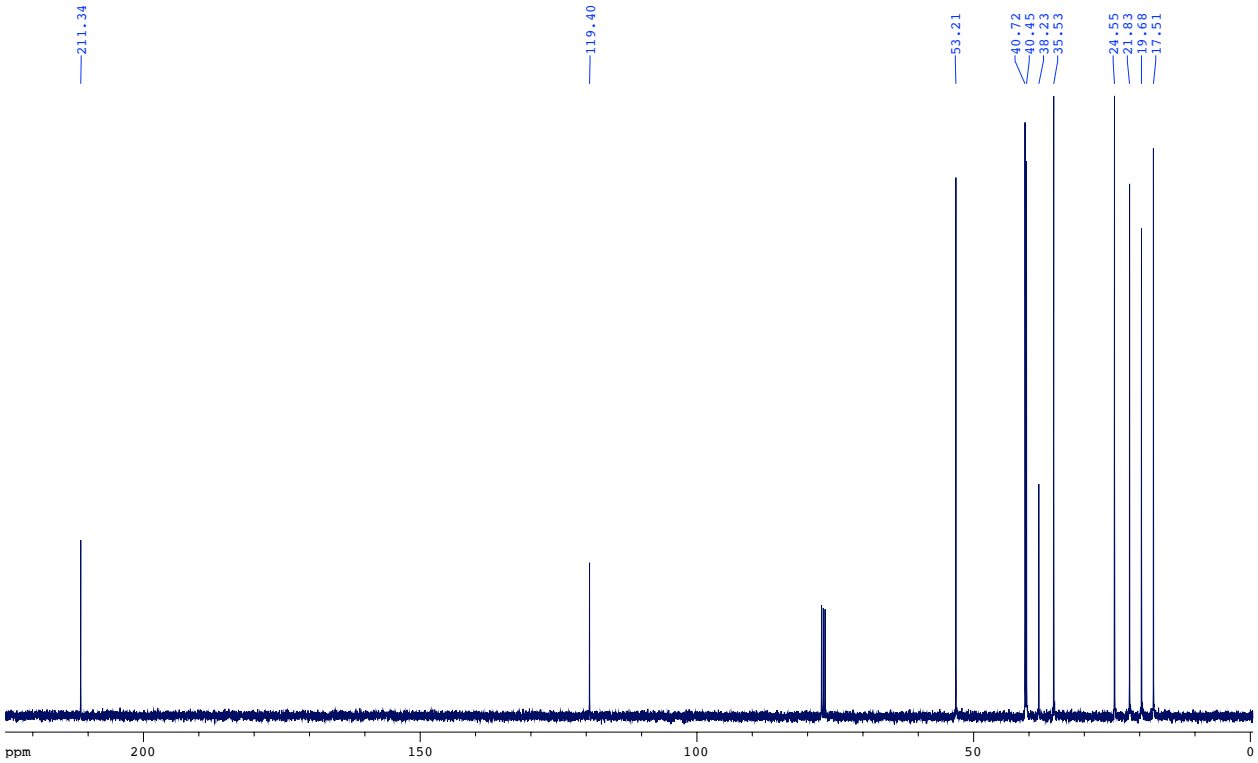


Figure S7. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **9**.

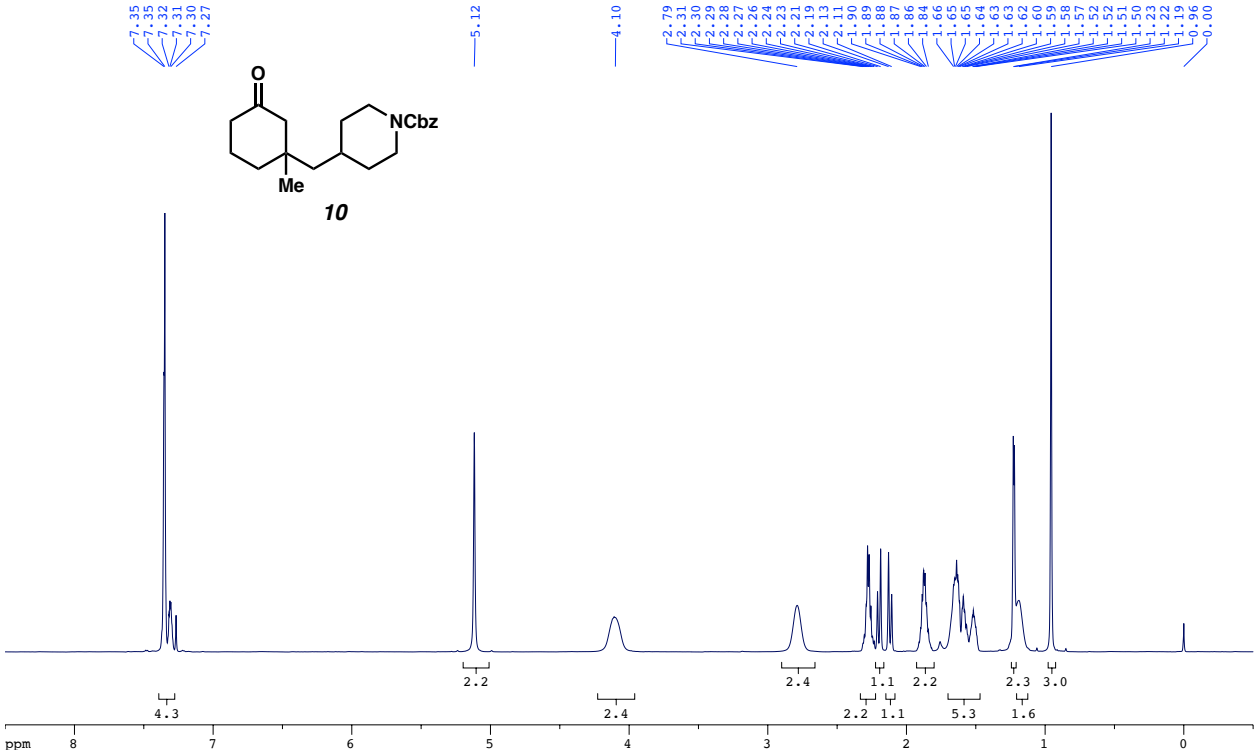


Figure S8. ^{1}H NMR spectrum (600 MHz, $CDCl_3$) of **10**.

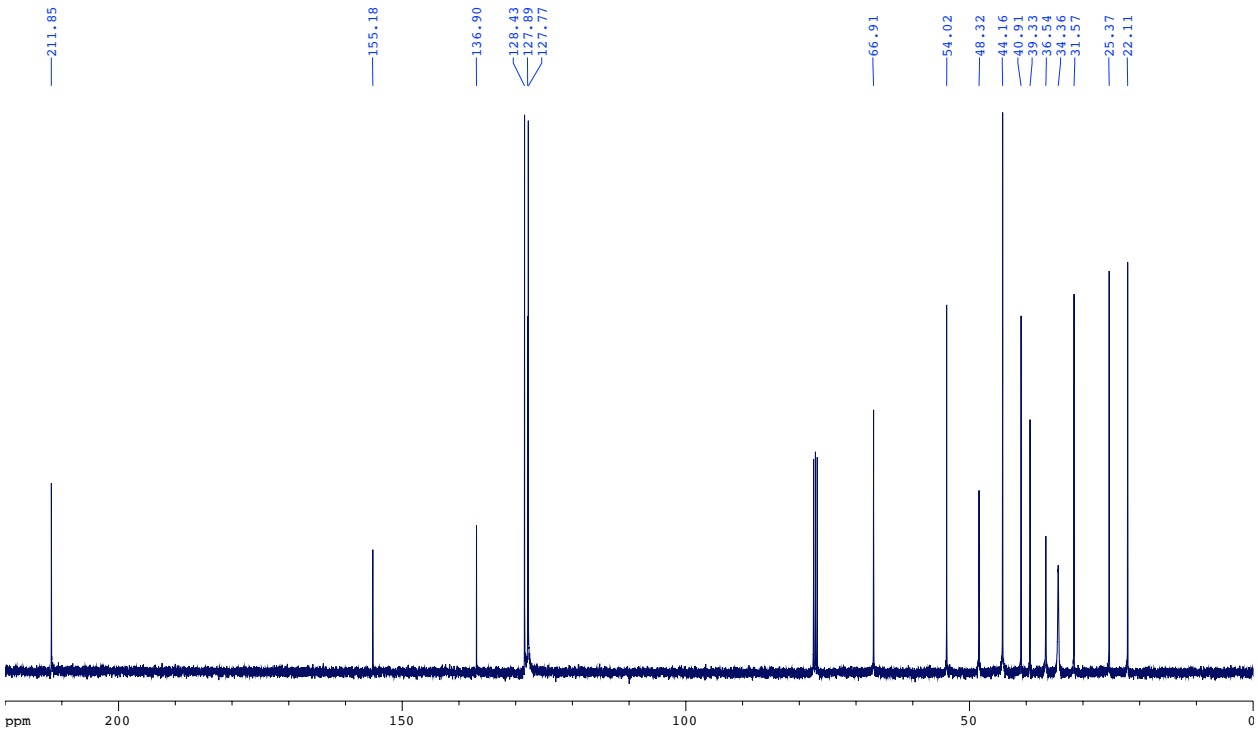


Figure S9. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **10**.

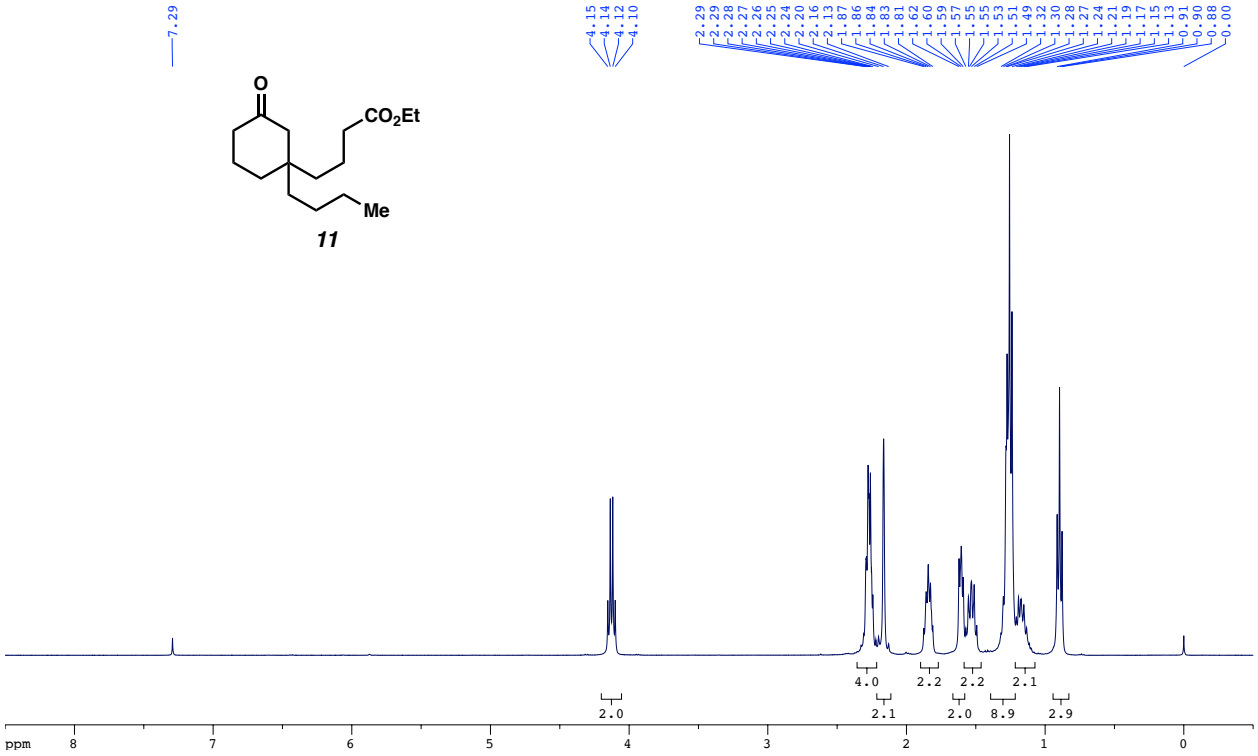


Figure S10. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **11**.

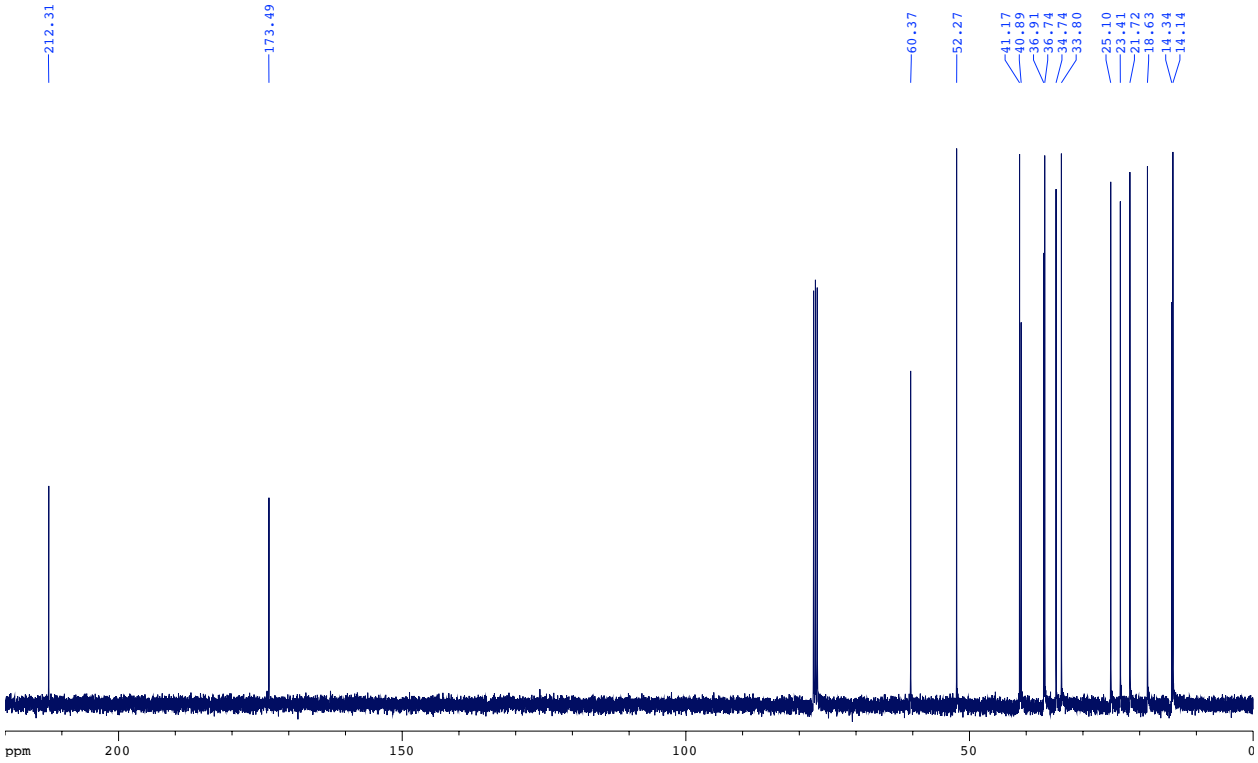


Figure S11. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **11**.

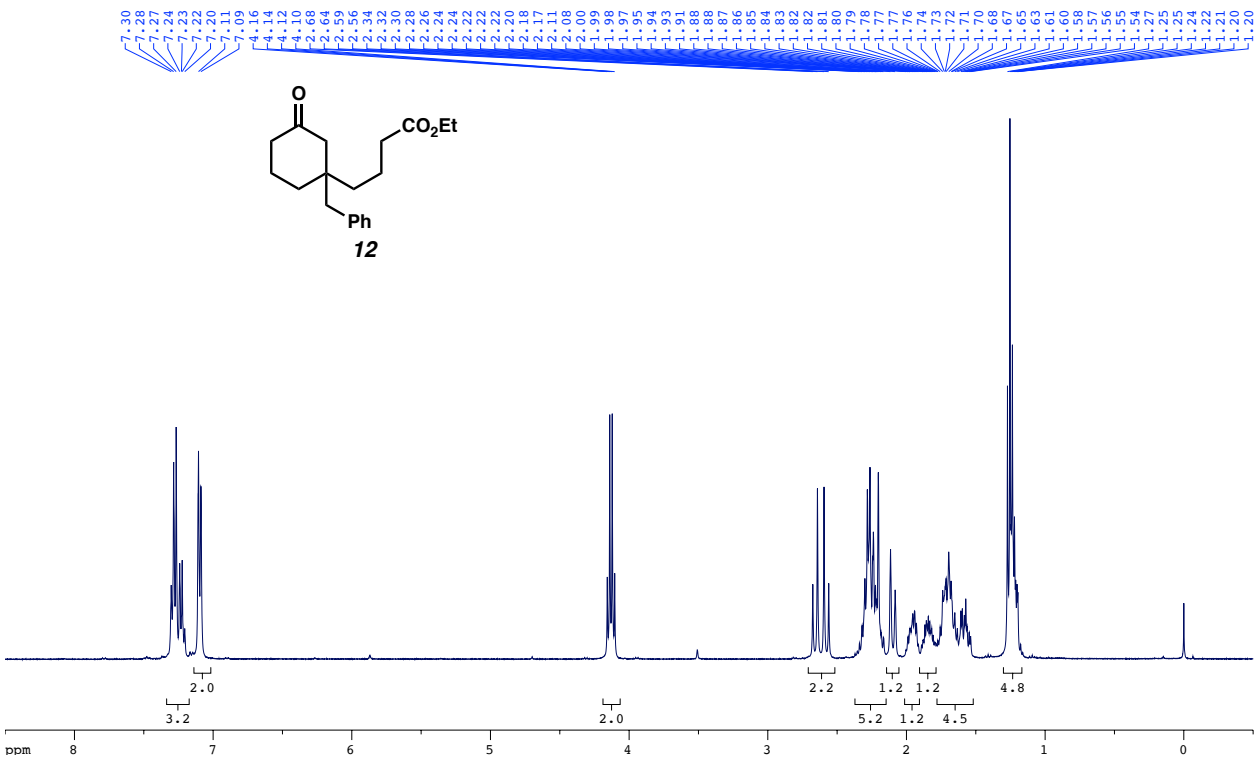


Figure S12. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **12**.

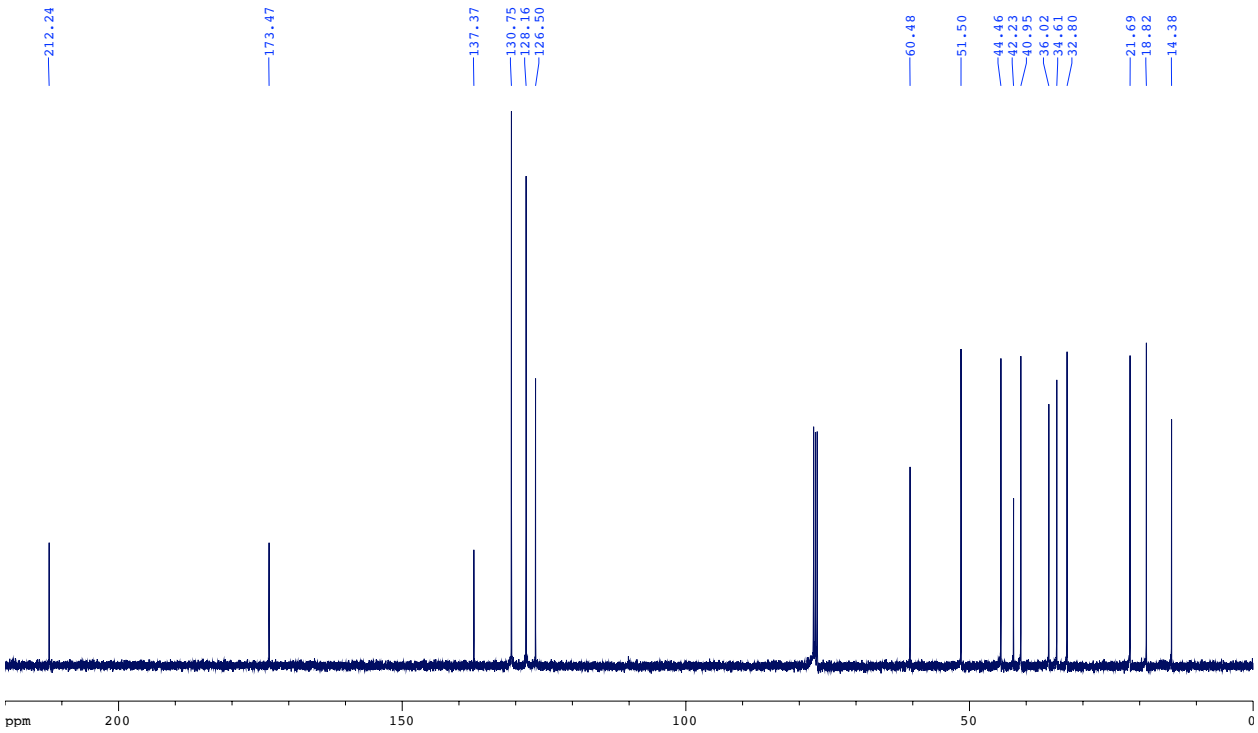


Figure S13. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **12**.

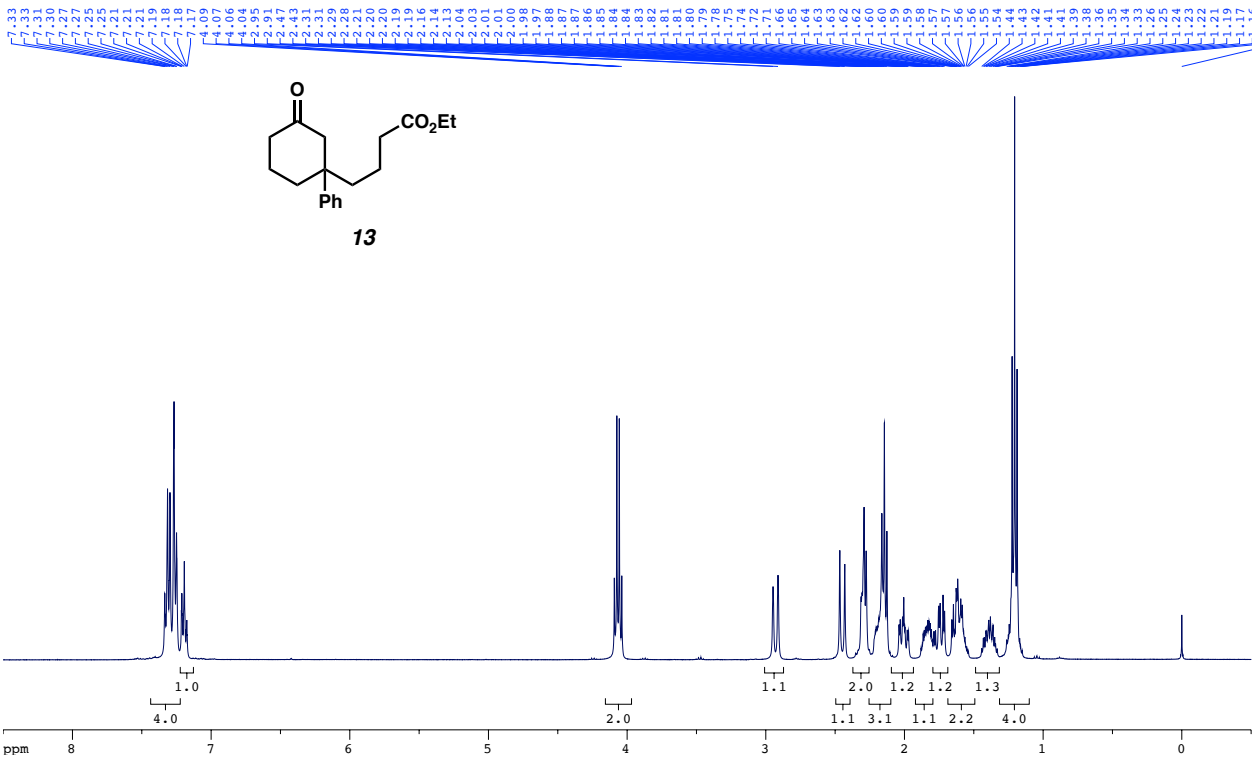


Figure S14. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **13**.

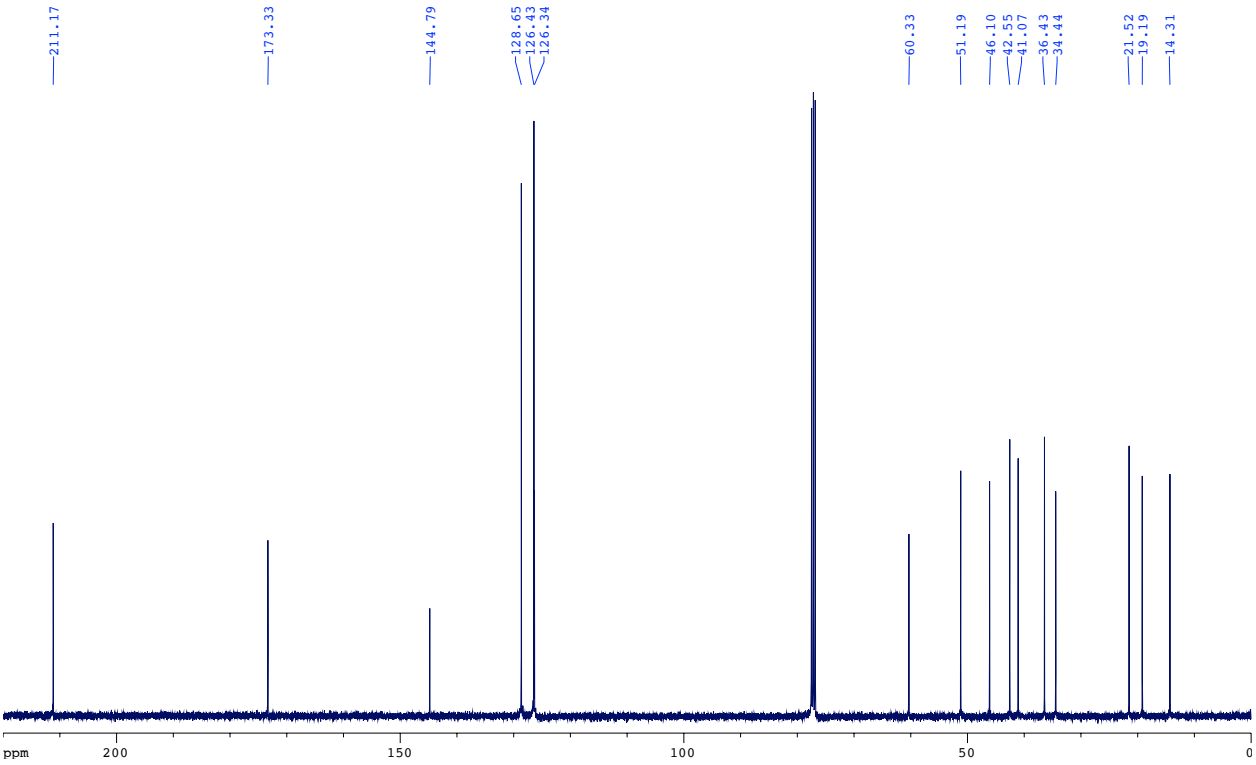


Figure S15. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **13**.

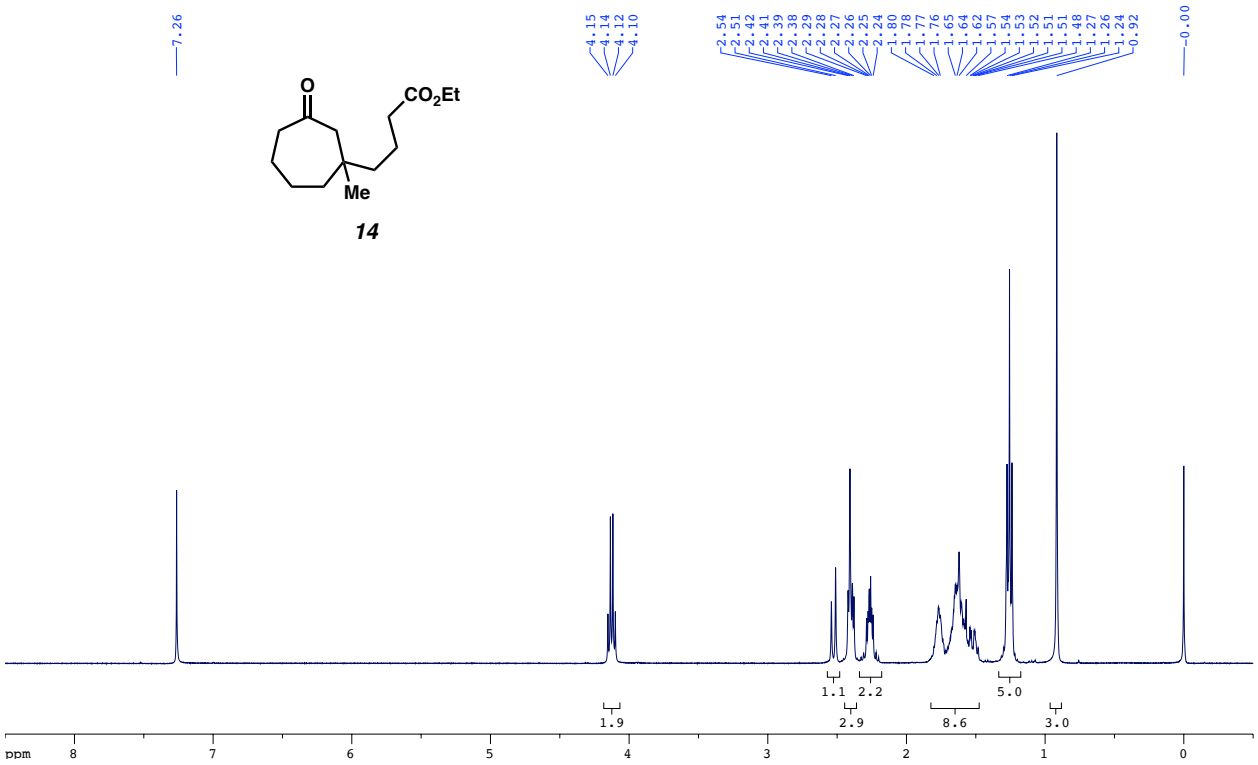


Figure S16. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **14**.

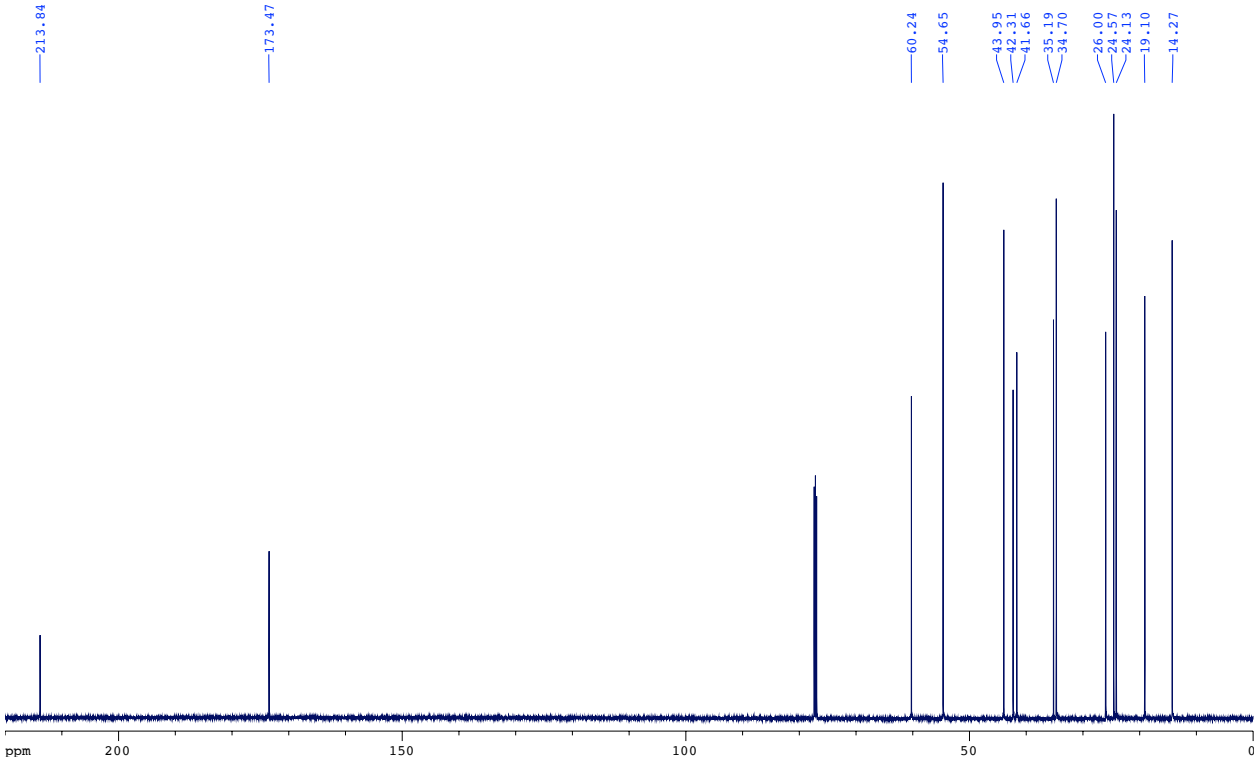


Figure S17. $^{13}C\{^{1}H\}$ NMR spectrum (151 MHz, $CDCl_3$) of **14**.

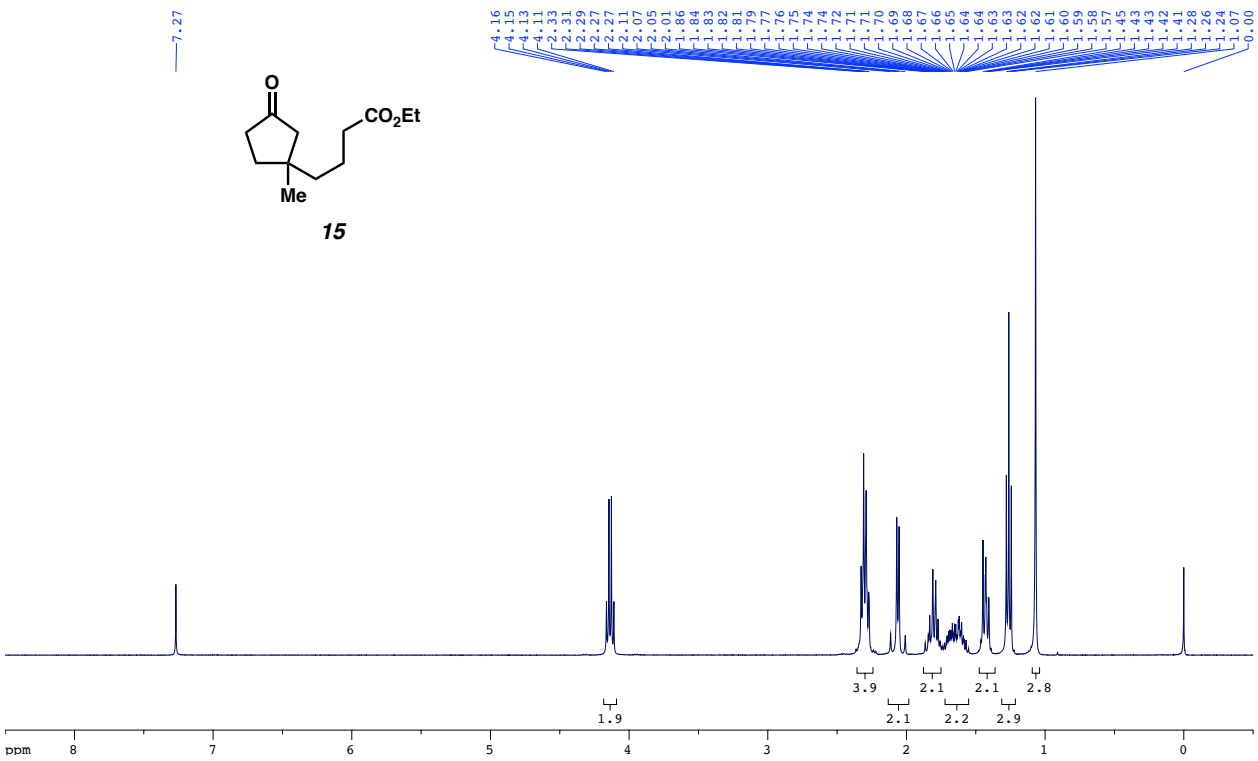


Figure S18. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **15**.

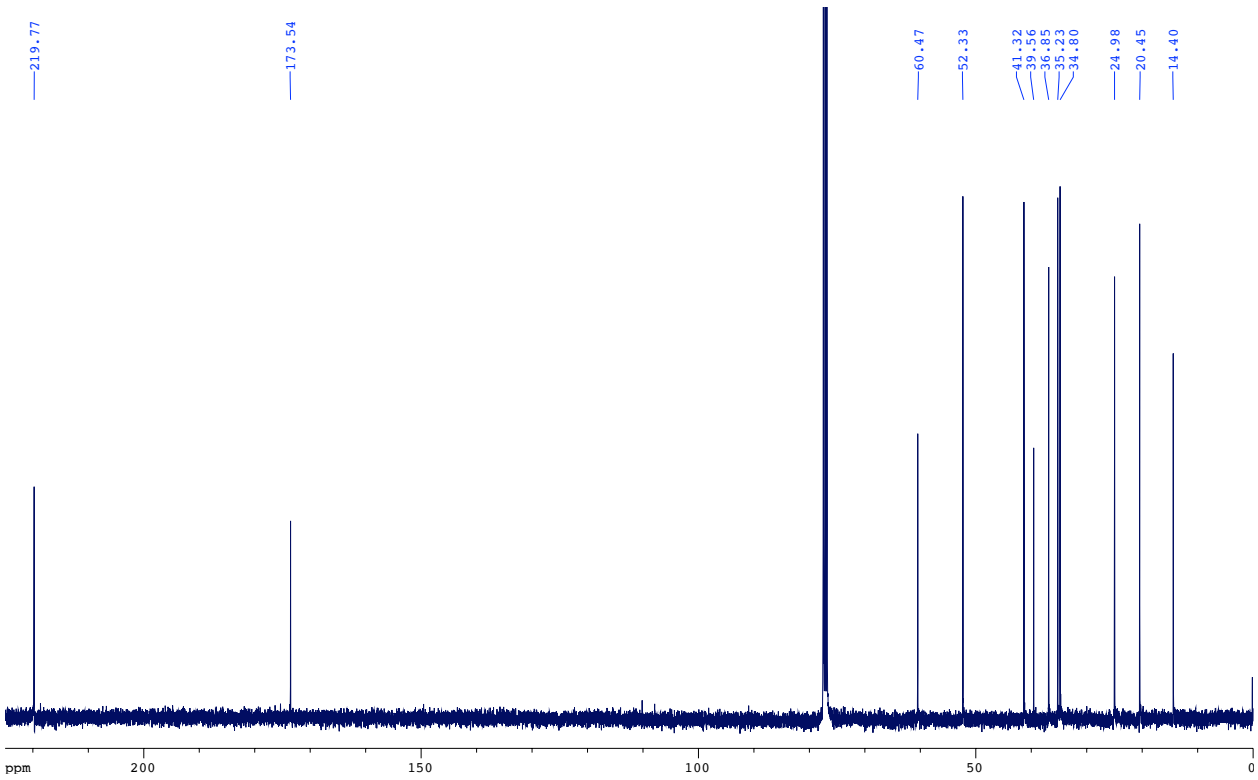


Figure S19. ^{13}C{^{1}H} NMR spectrum (101 MHz, $CDCl_3$) of **15**.

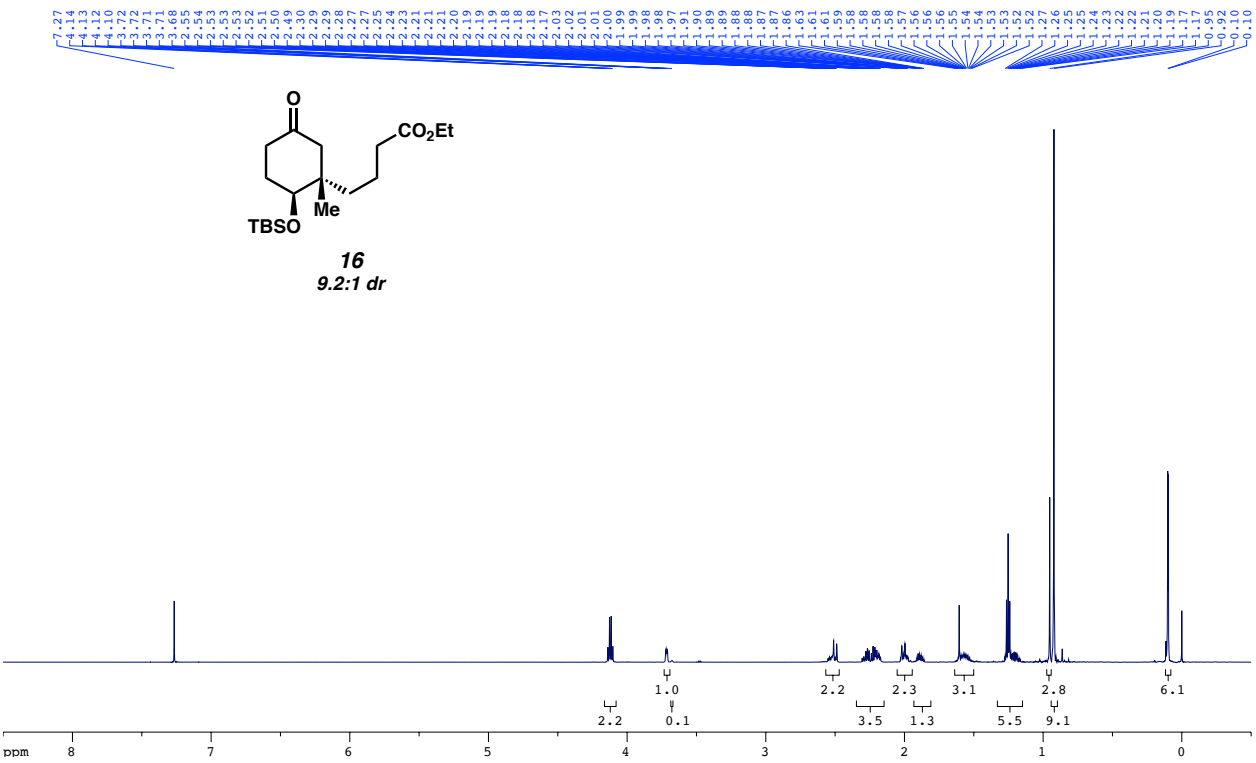


Figure S20. ^{1}H NMR spectrum (600 MHz, $CDCl_3$) of **16**.

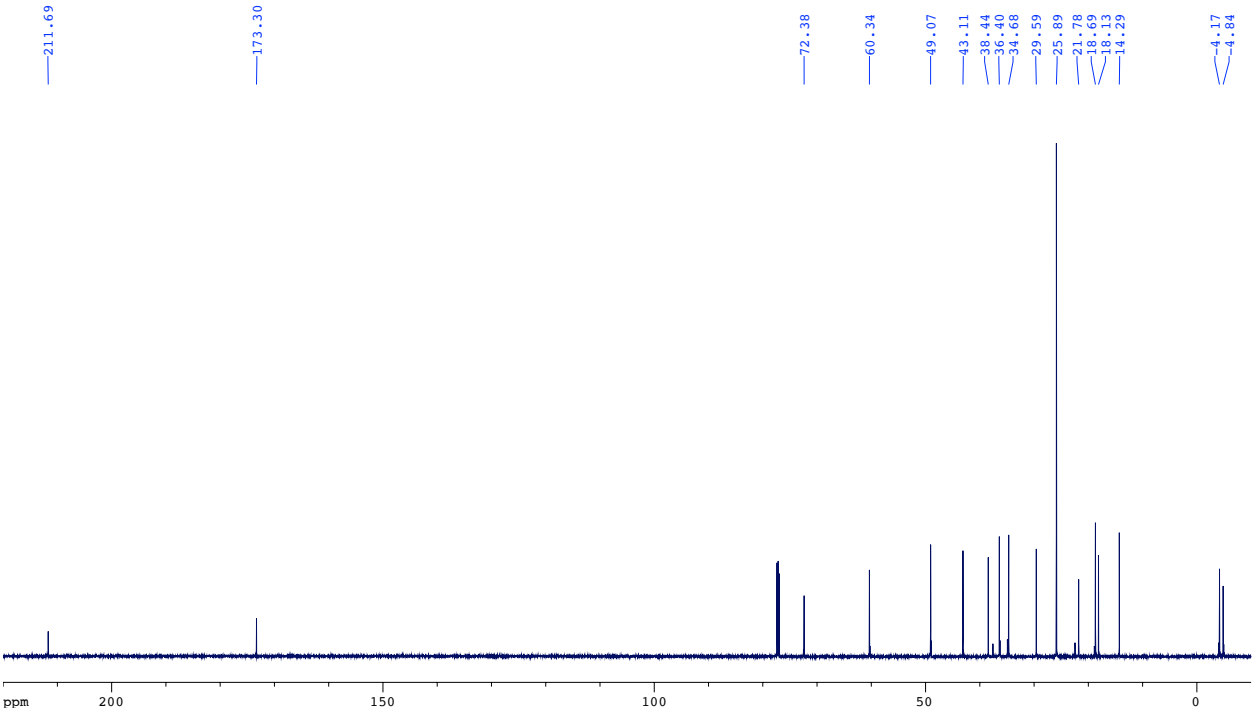


Figure S21. $^{13}C\{^{1}H\}$ NMR spectrum (151 MHz, $CDCl_3$) of **16**.

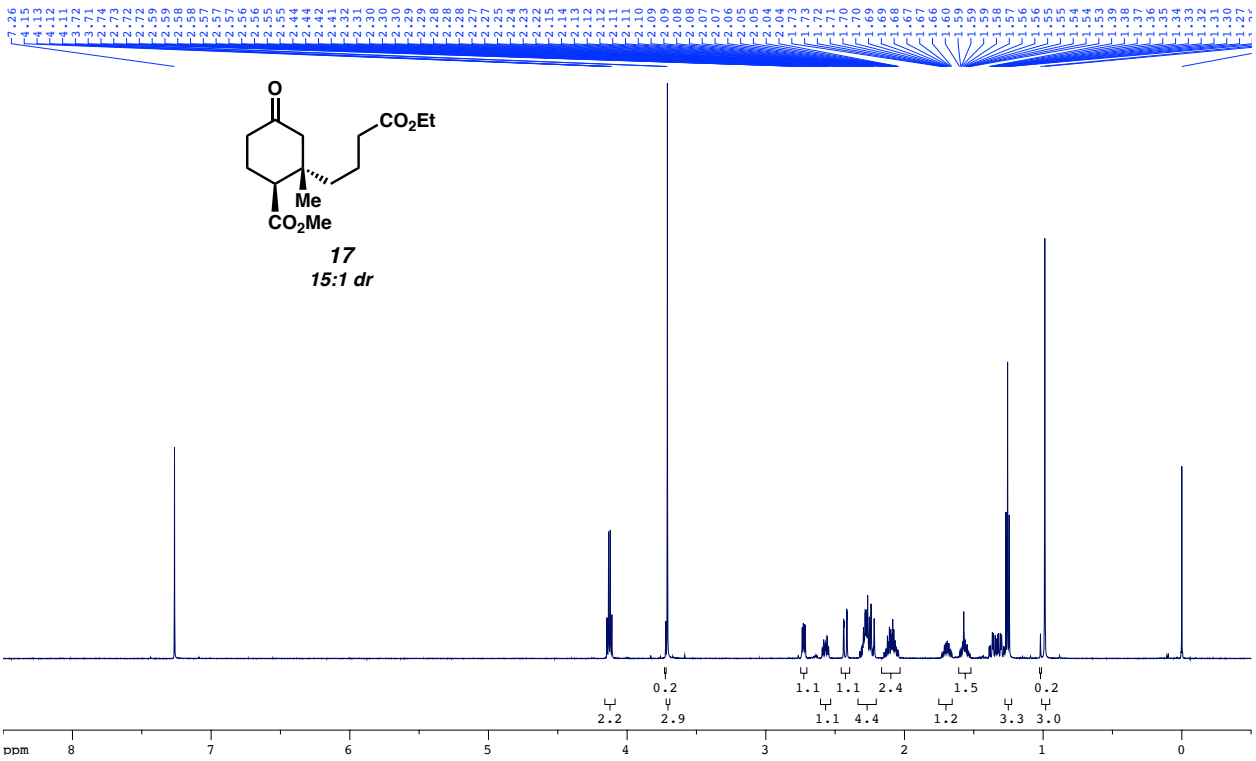


Figure S22. ^{1}H NMR spectrum (600 MHz, $CDCl_3$) of **17**.

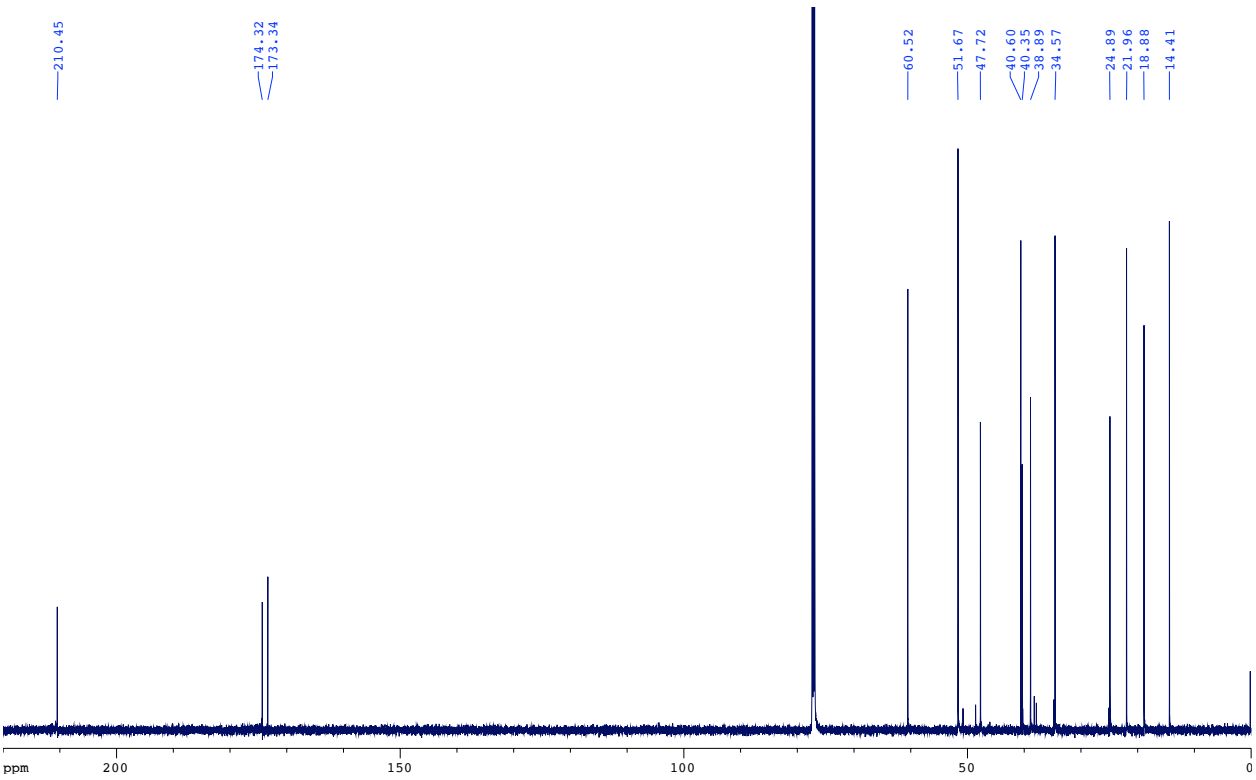


Figure S23. $^{13}C\{^{1}H\}$ NMR spectrum (151 MHz, $CDCl_3$) of **17**.

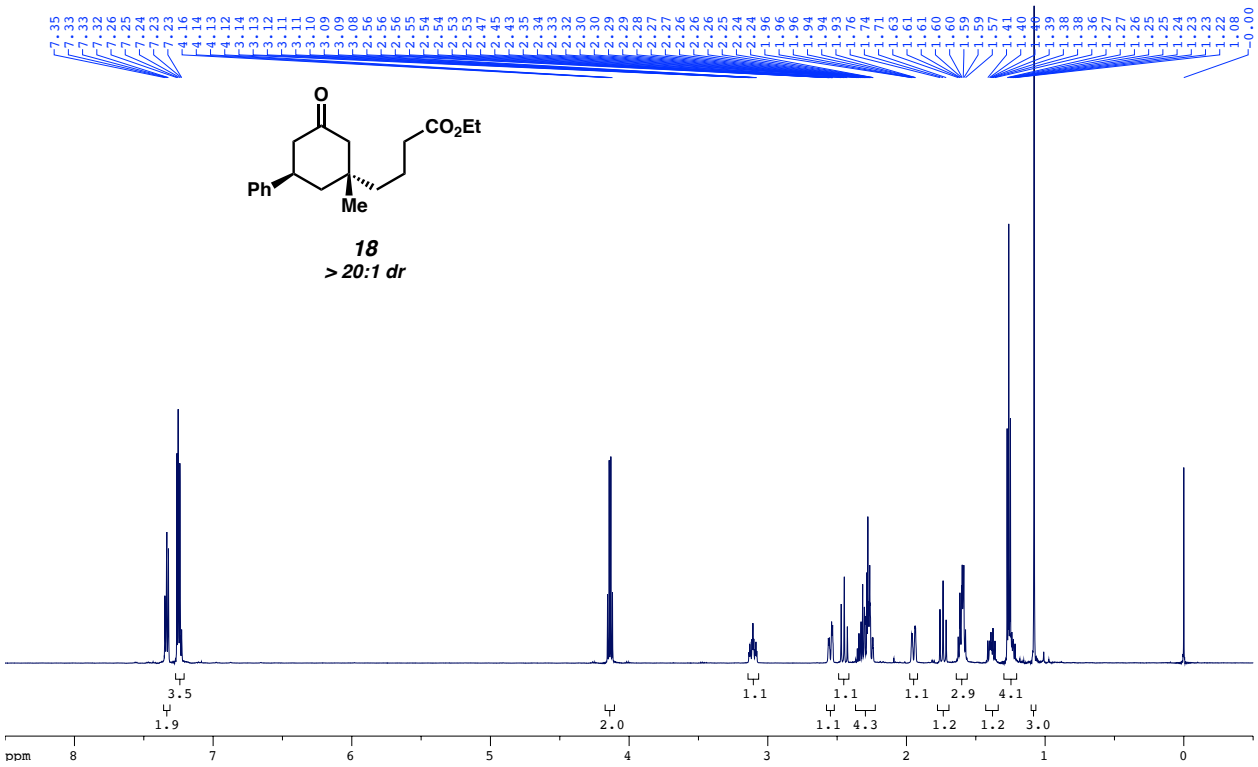


Figure S24. ^{1}H NMR spectrum (600 MHz, $CDCl_3$) of **18**.

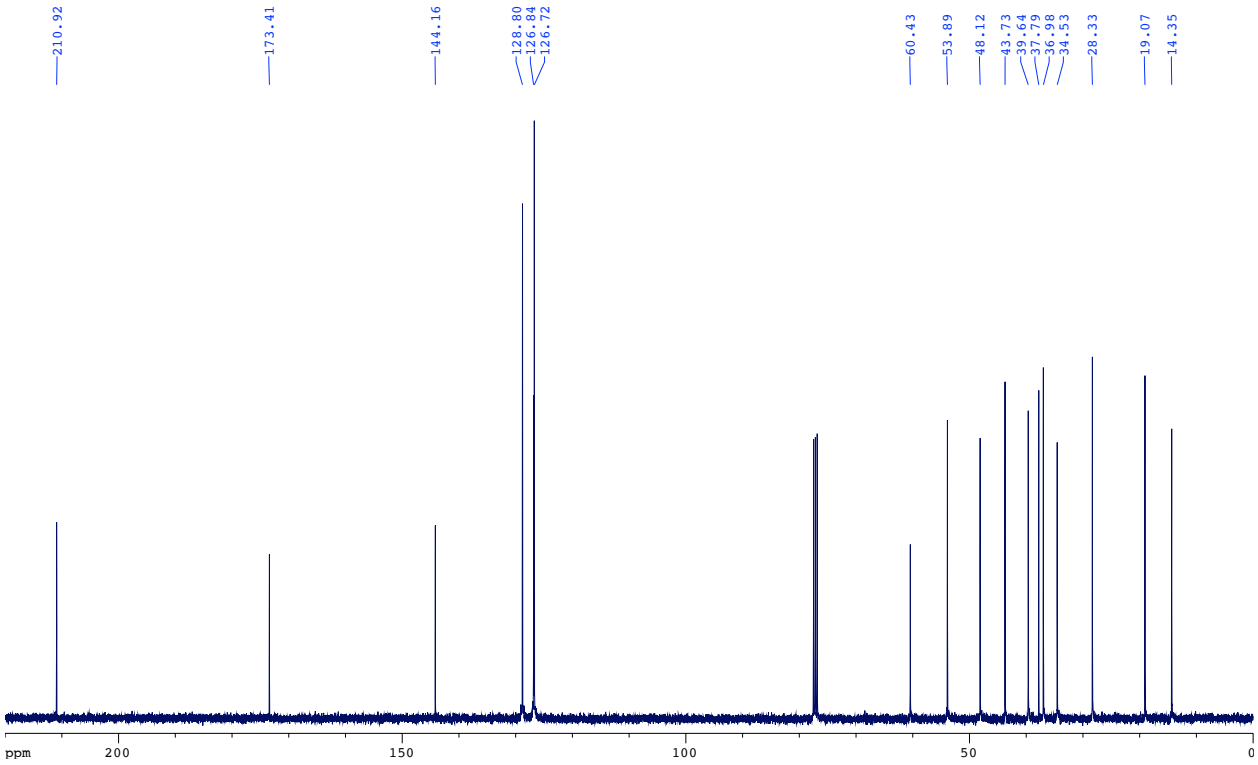


Figure S25. $^{13}C\{^{1}H\}$ NMR spectrum (151 MHz, $CDCl_3$) of **18**.

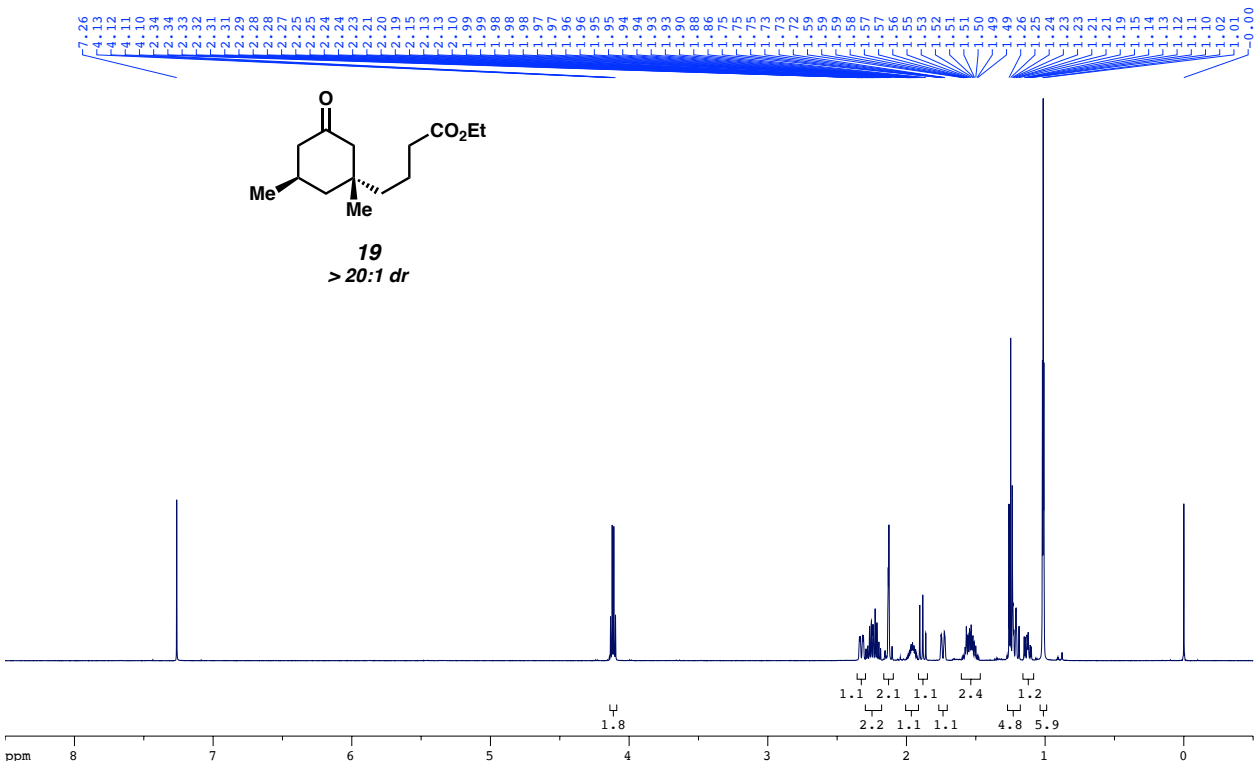


Figure S26. ^{1}H NMR spectrum (600 MHz, $CDCl_3$) of **19**.

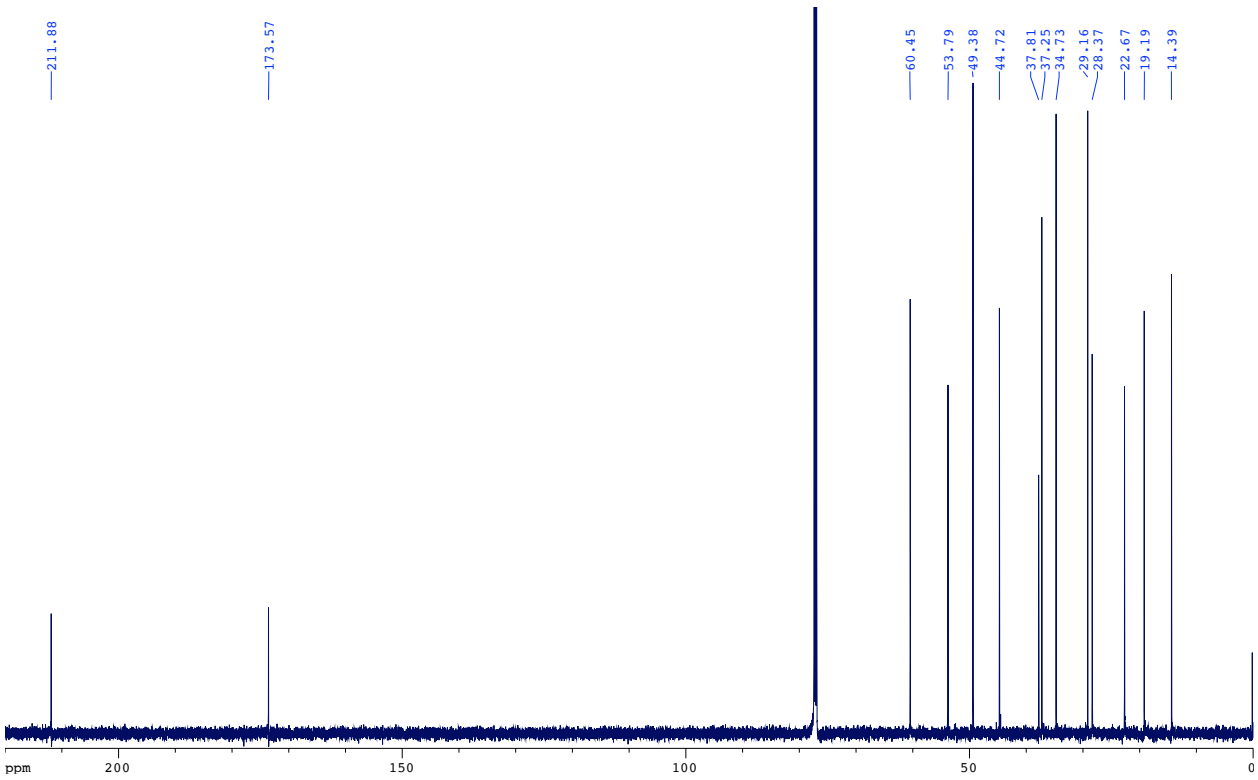


Figure S27. $^{13}C\{^{1}H\}$ NMR spectrum (151 MHz, $CDCl_3$) of **19**.

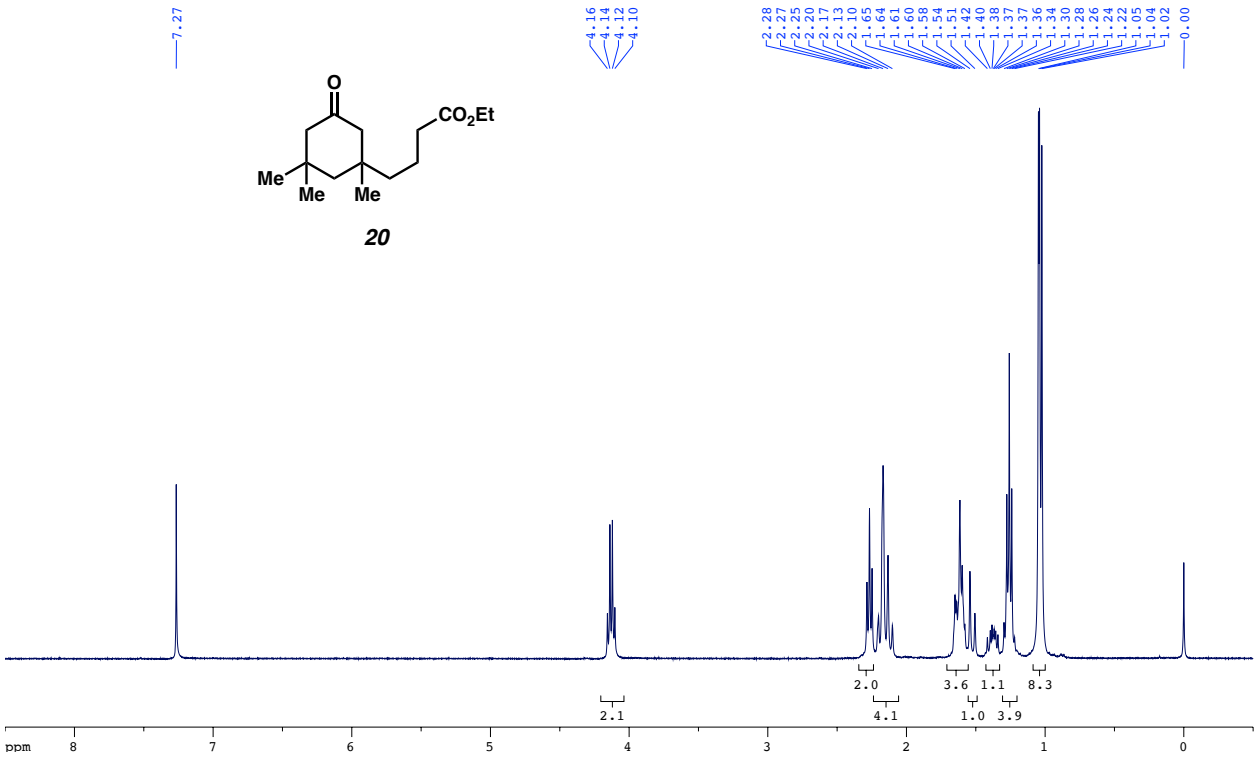


Figure S28. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **20**.

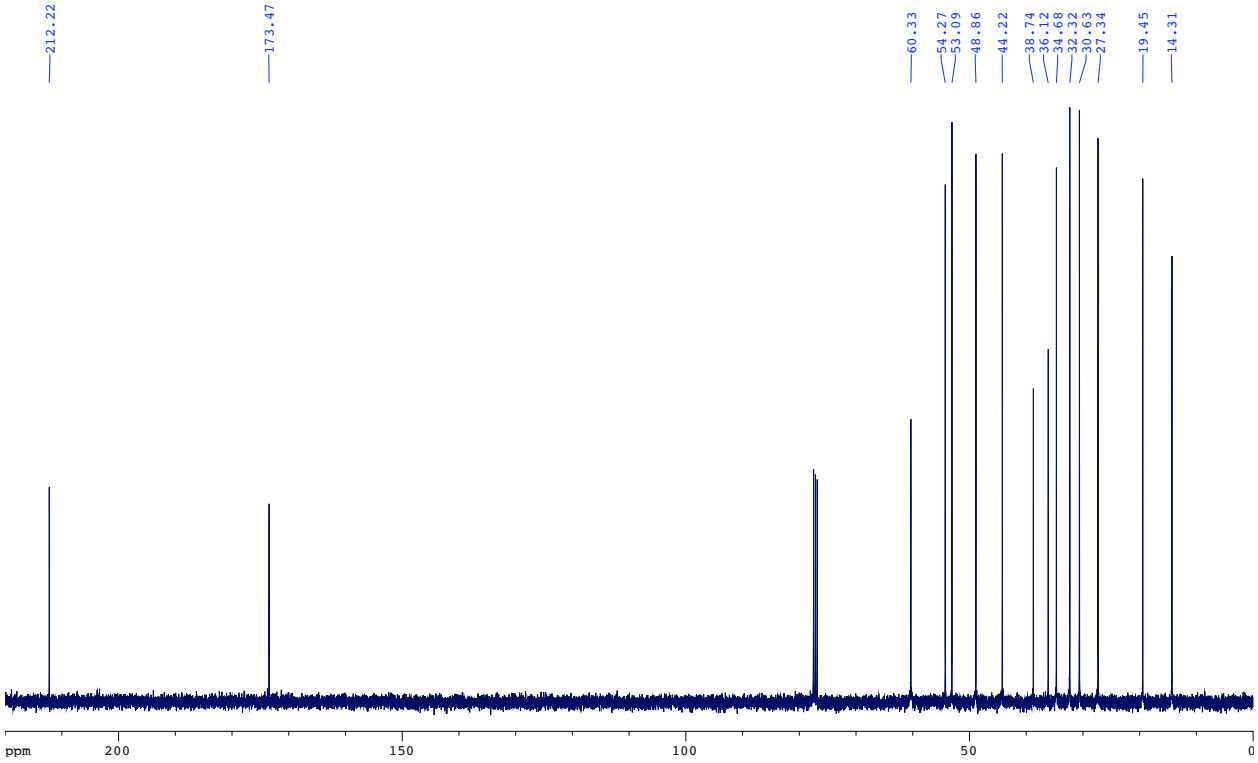


Figure S29. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **20**.

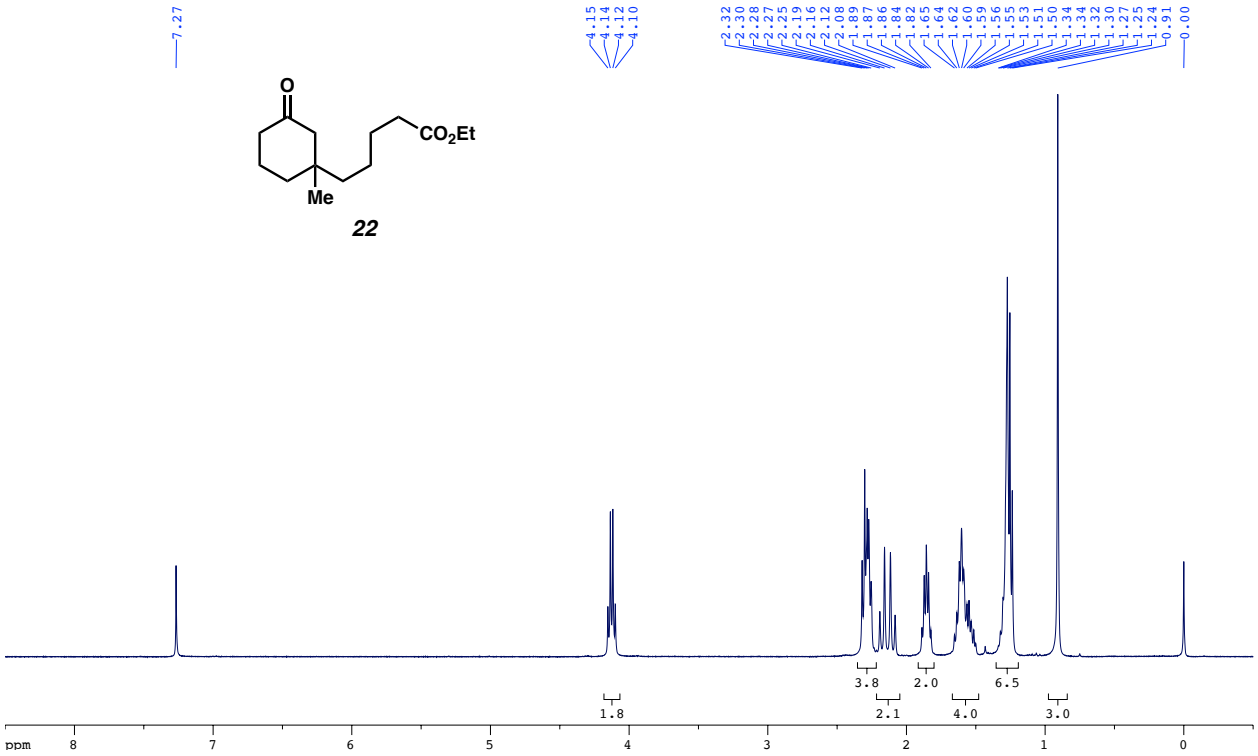


Figure S30. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **22**.

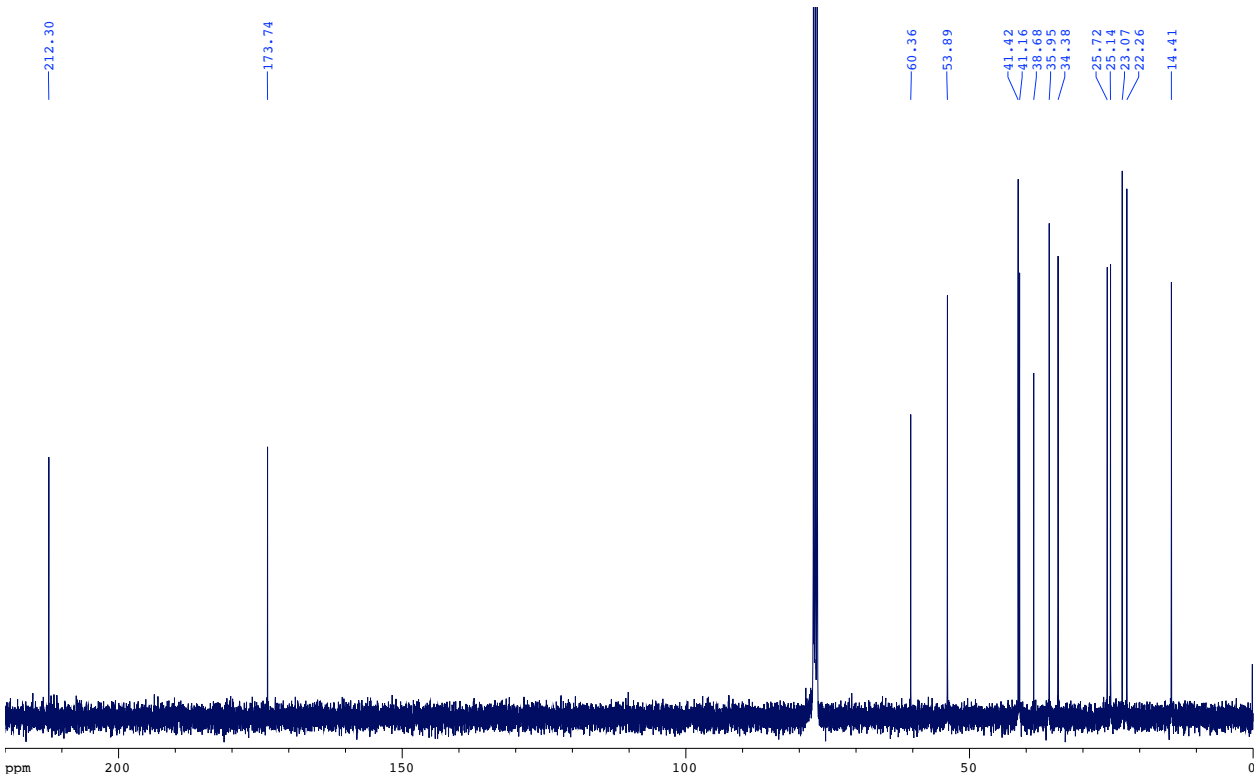


Figure S31. ^{13}C{^{1}H} NMR spectrum (101 MHz, $CDCl_3$) of **22**.

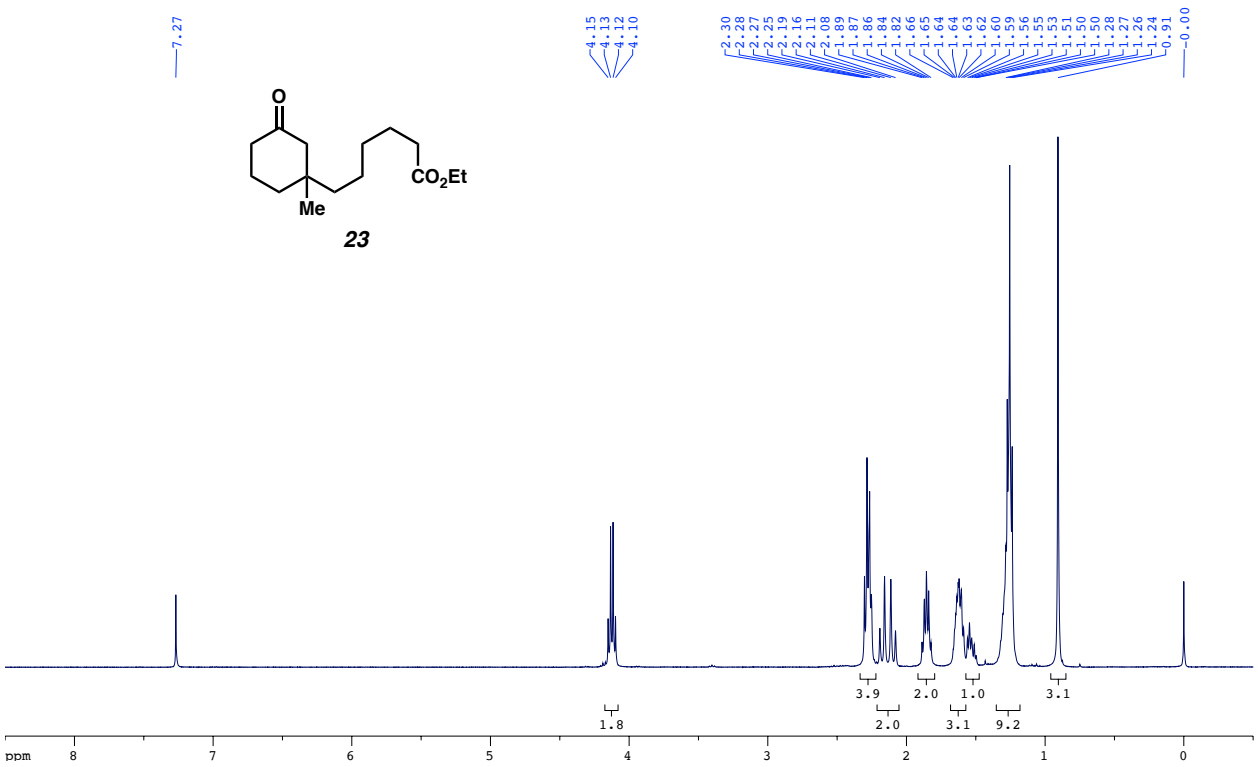


Figure S32. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **23**.

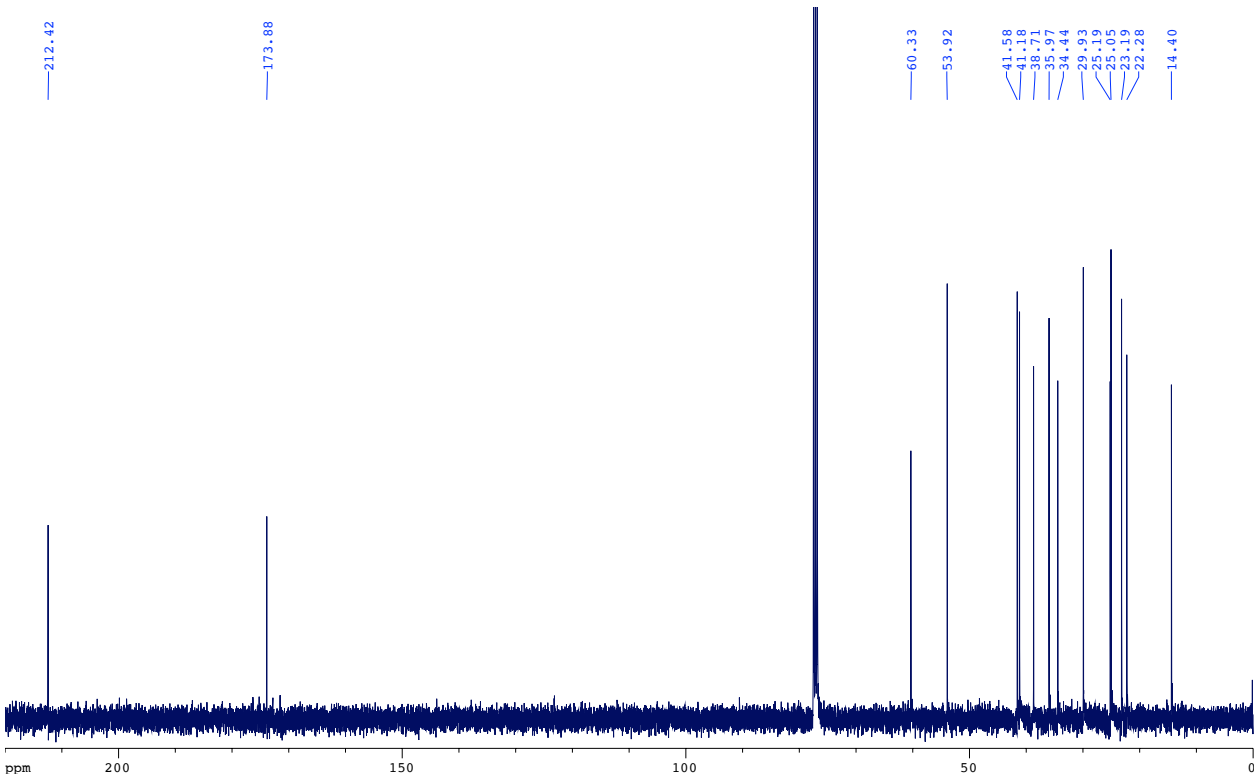


Figure S33. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **23**.

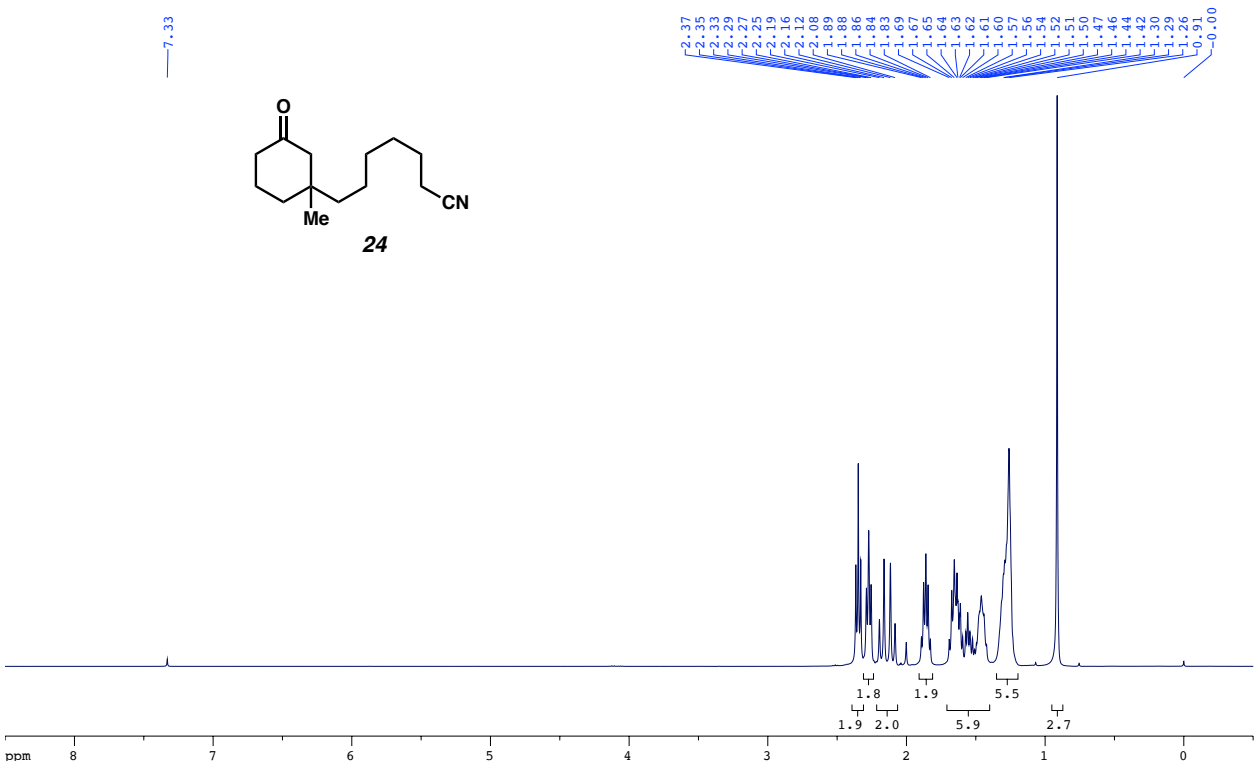


Figure S34. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **24**.

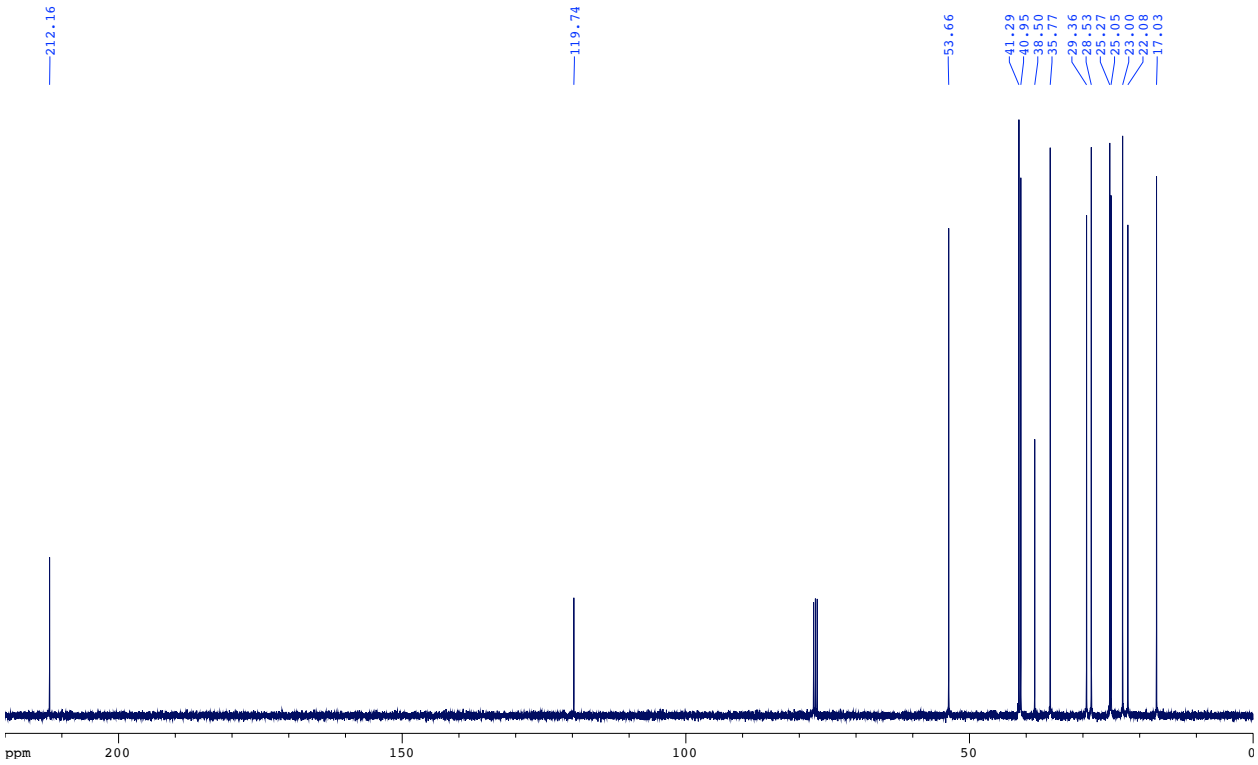


Figure S35. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **24**.

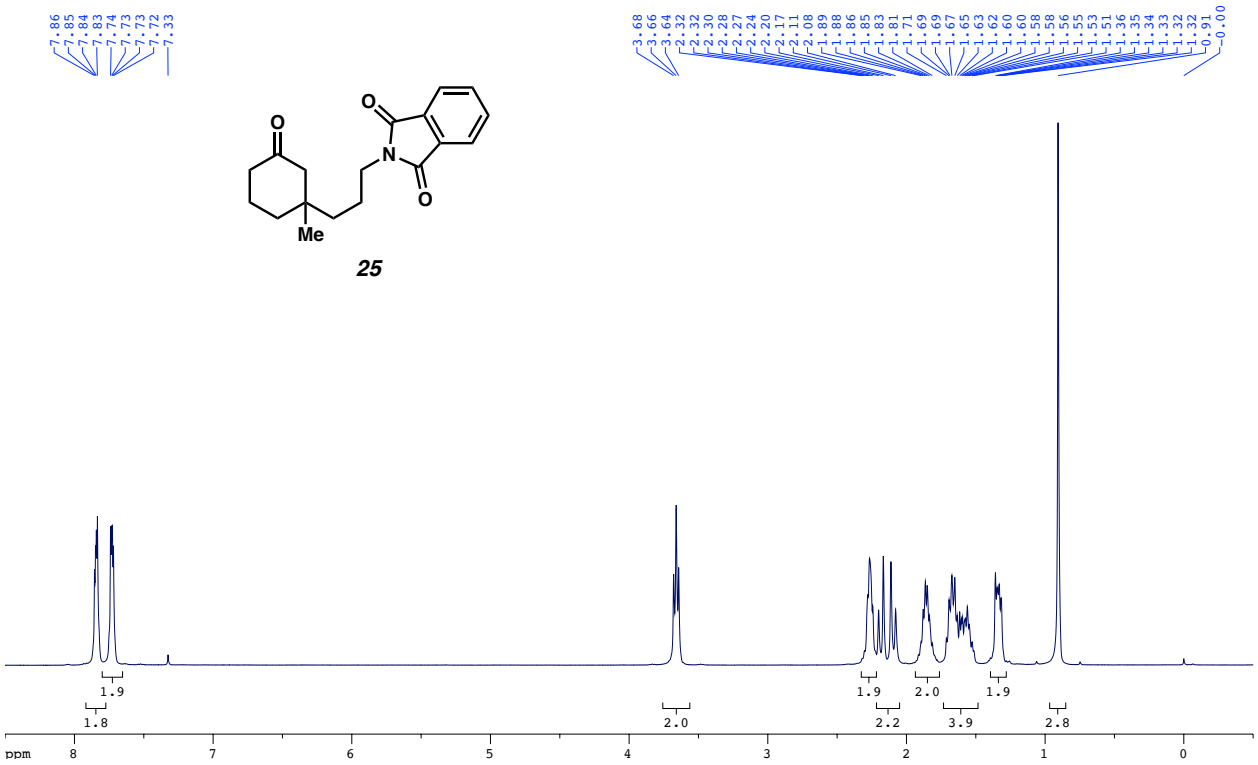


Figure S36. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **25**.

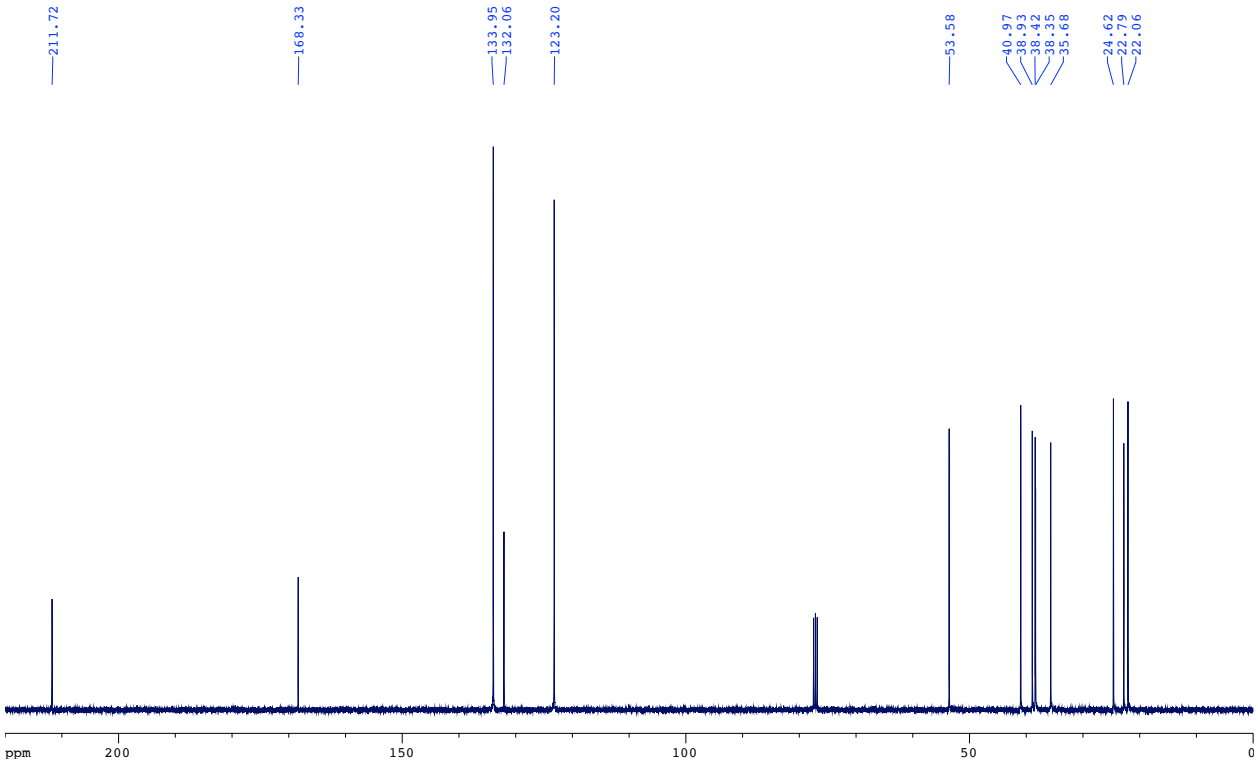


Figure S37. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **25**.

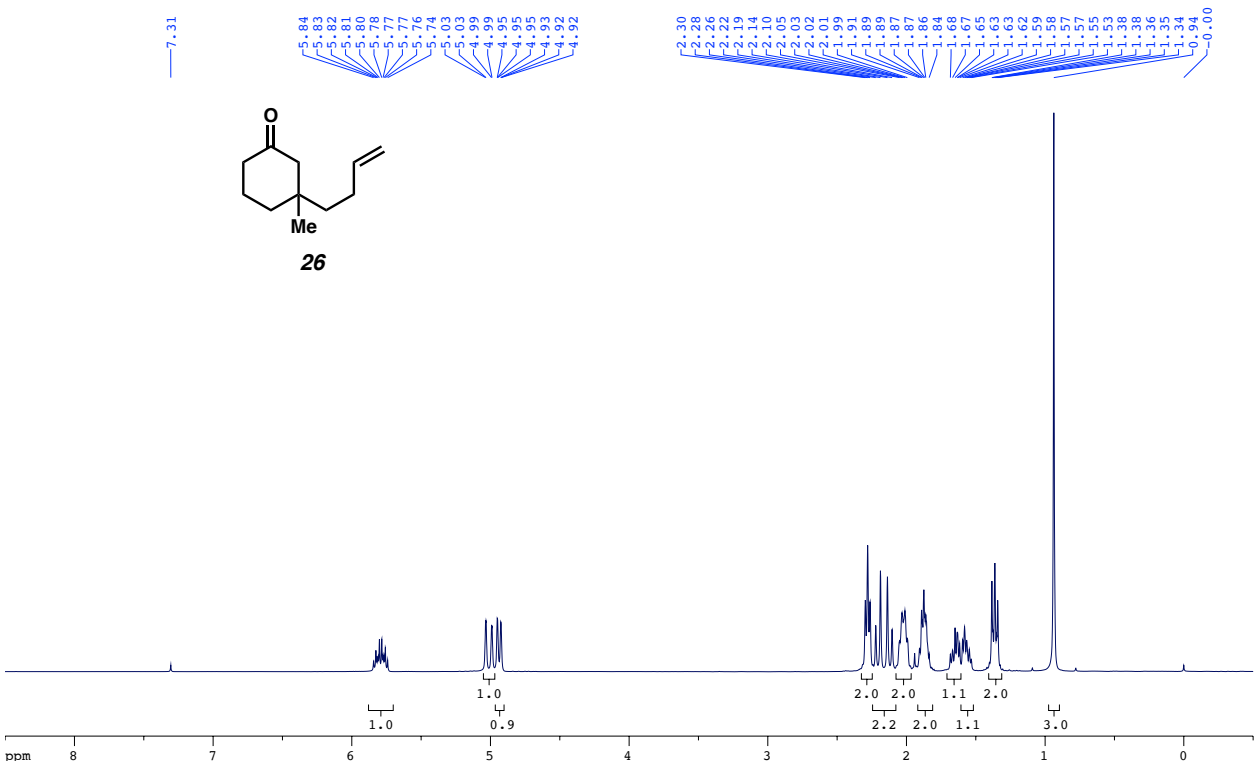


Figure S38. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **26**.

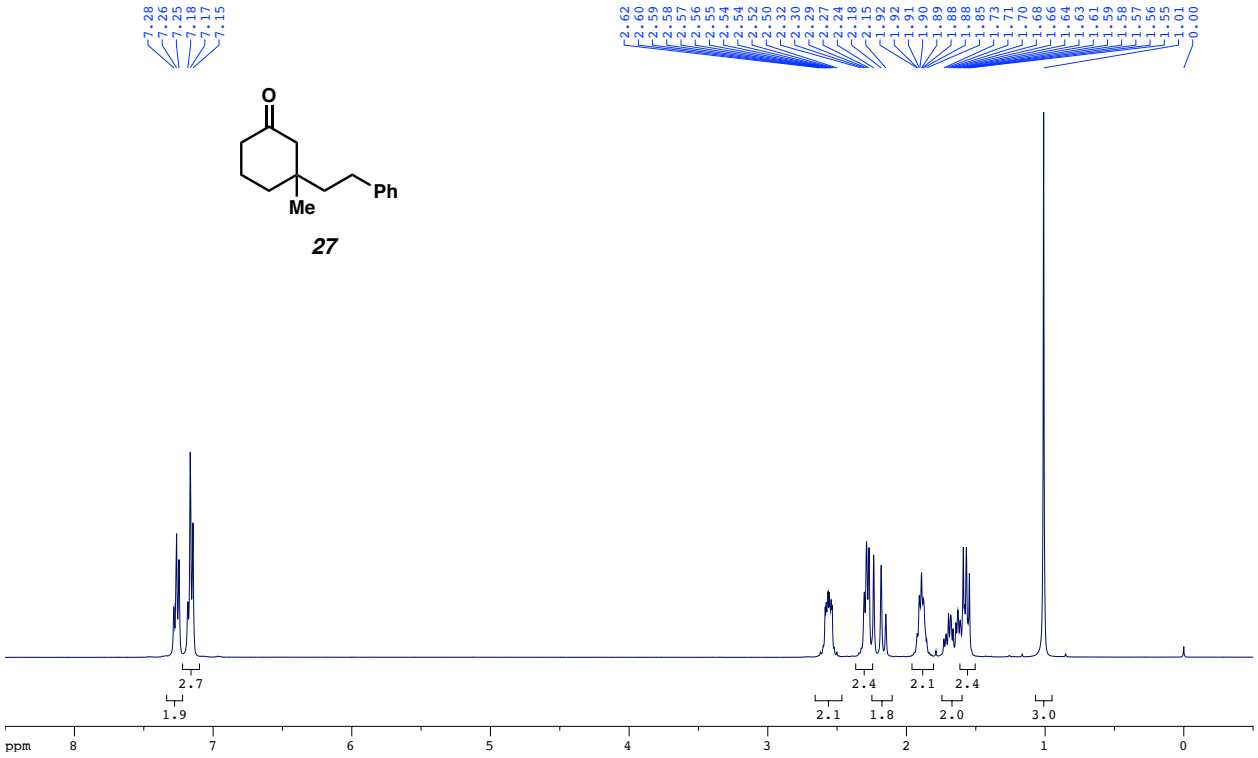


Figure S39. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **27**.

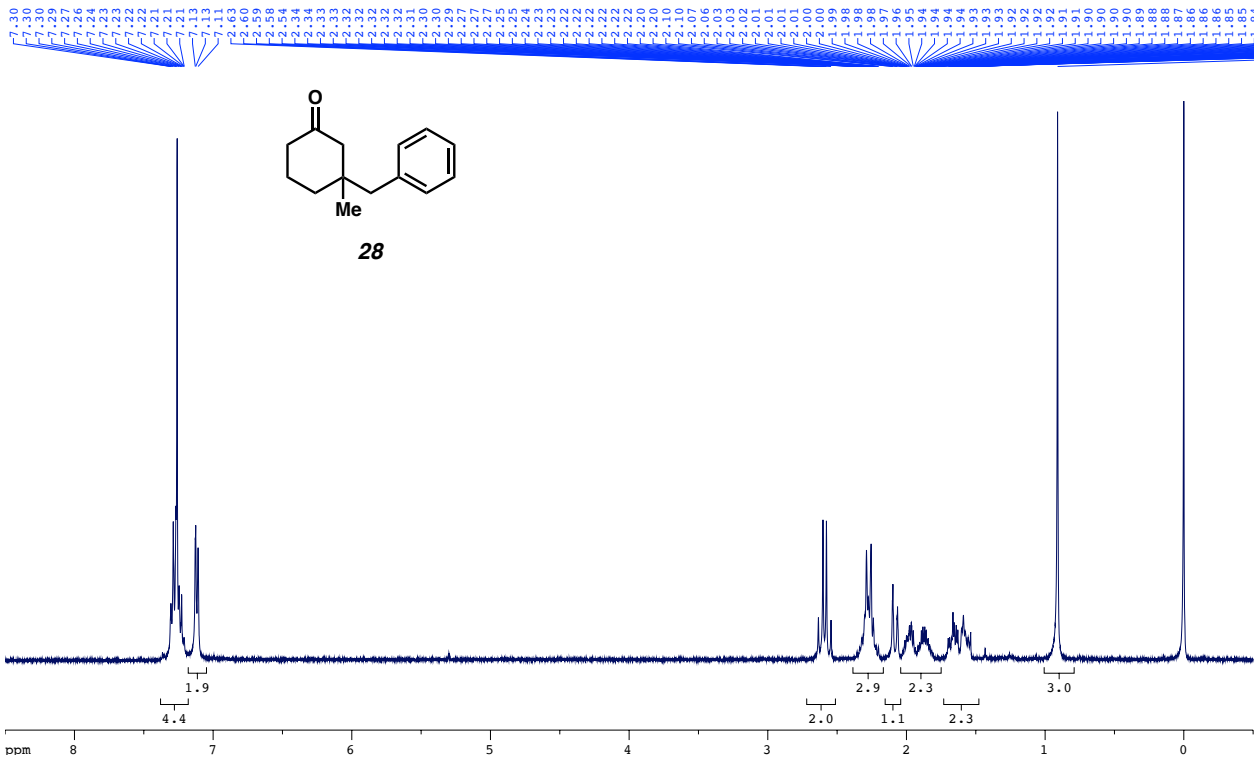


Figure S40. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **28**.

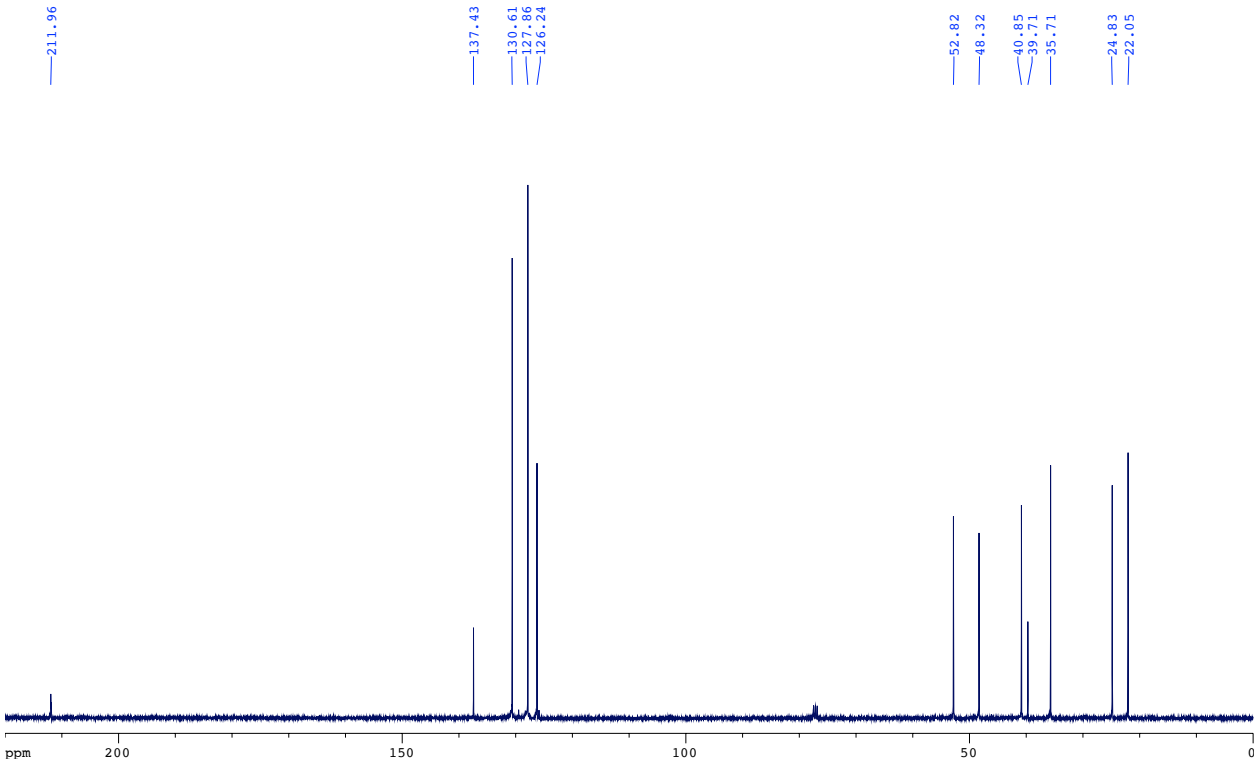


Figure S41. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **28**.

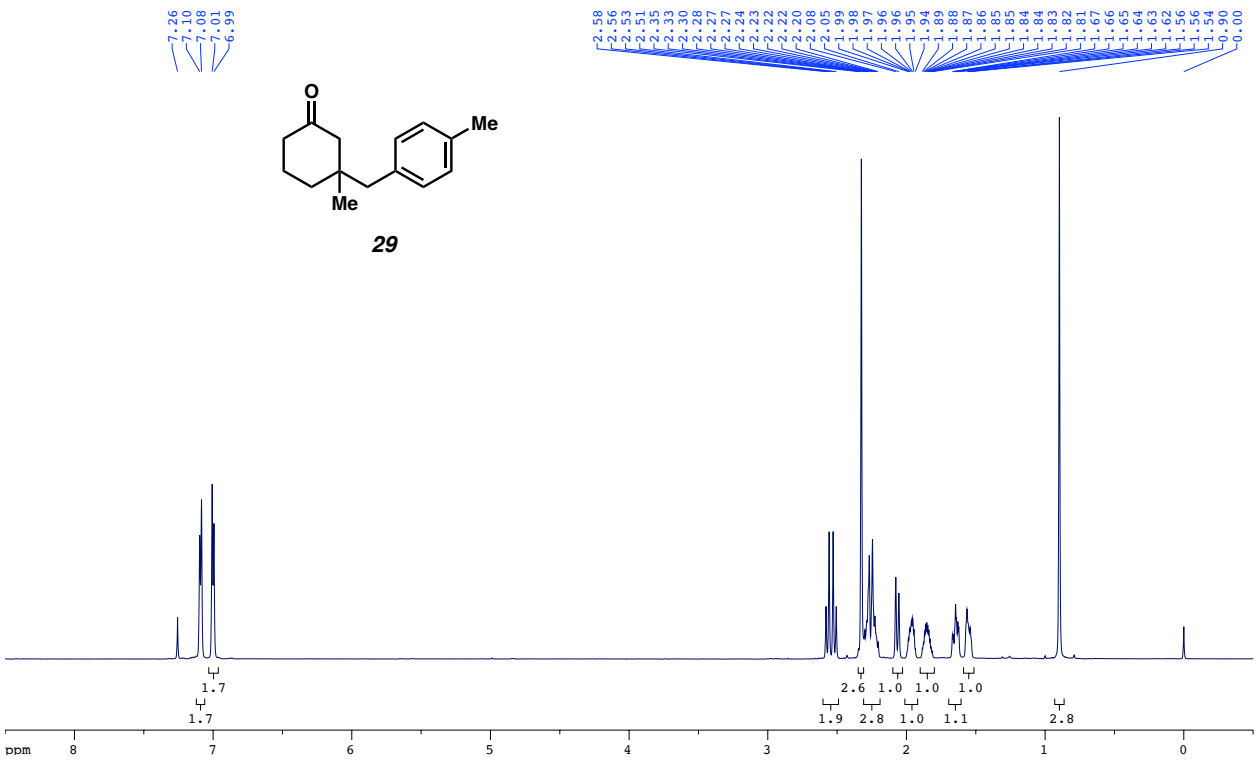


Figure S42. ^{1}H NMR spectrum (600 MHz, $CDCl_3$) of **29**.

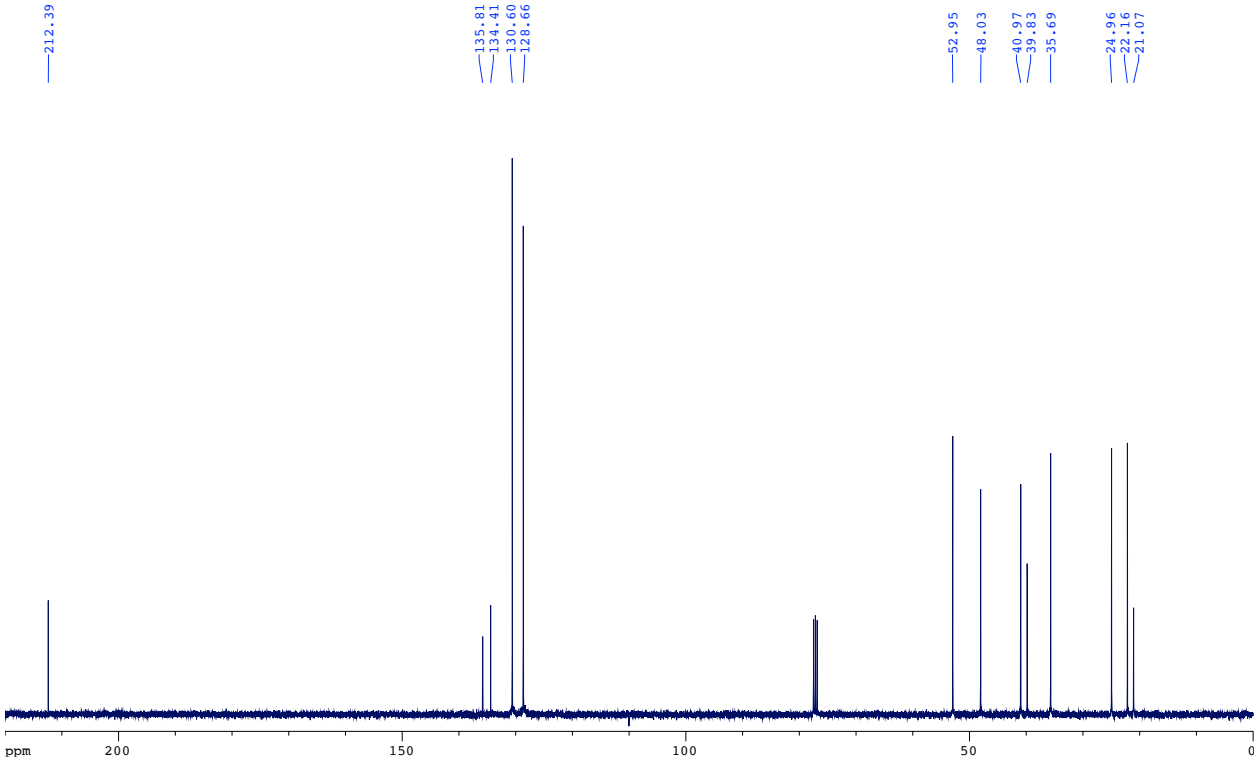


Figure S43. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **29**.

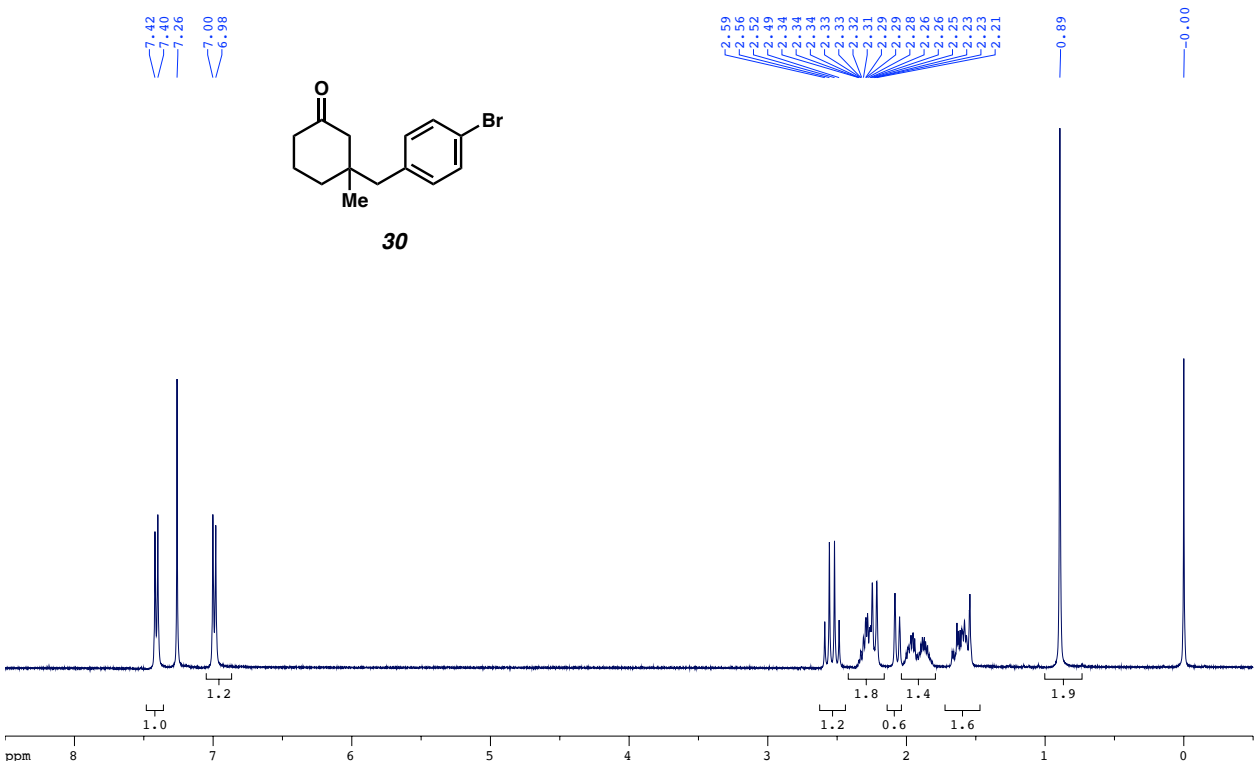


Figure S44. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **30**.

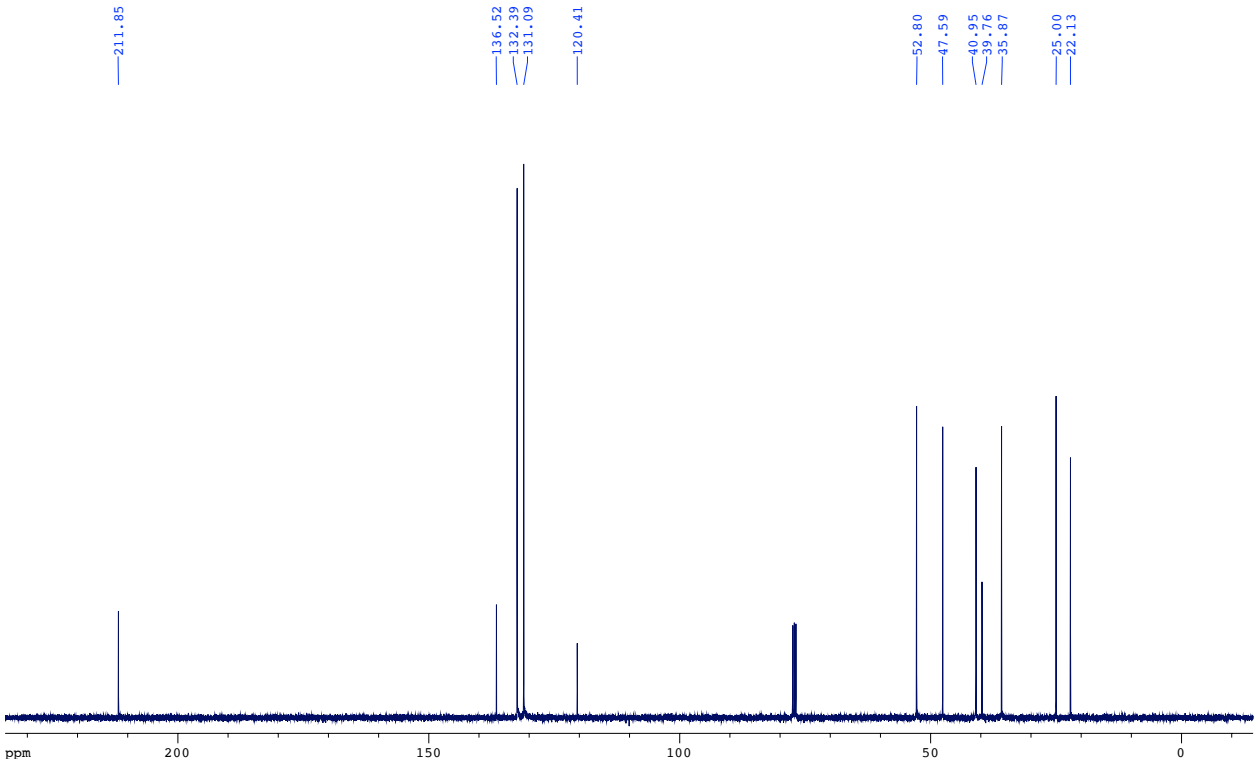


Figure S45. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **30**.

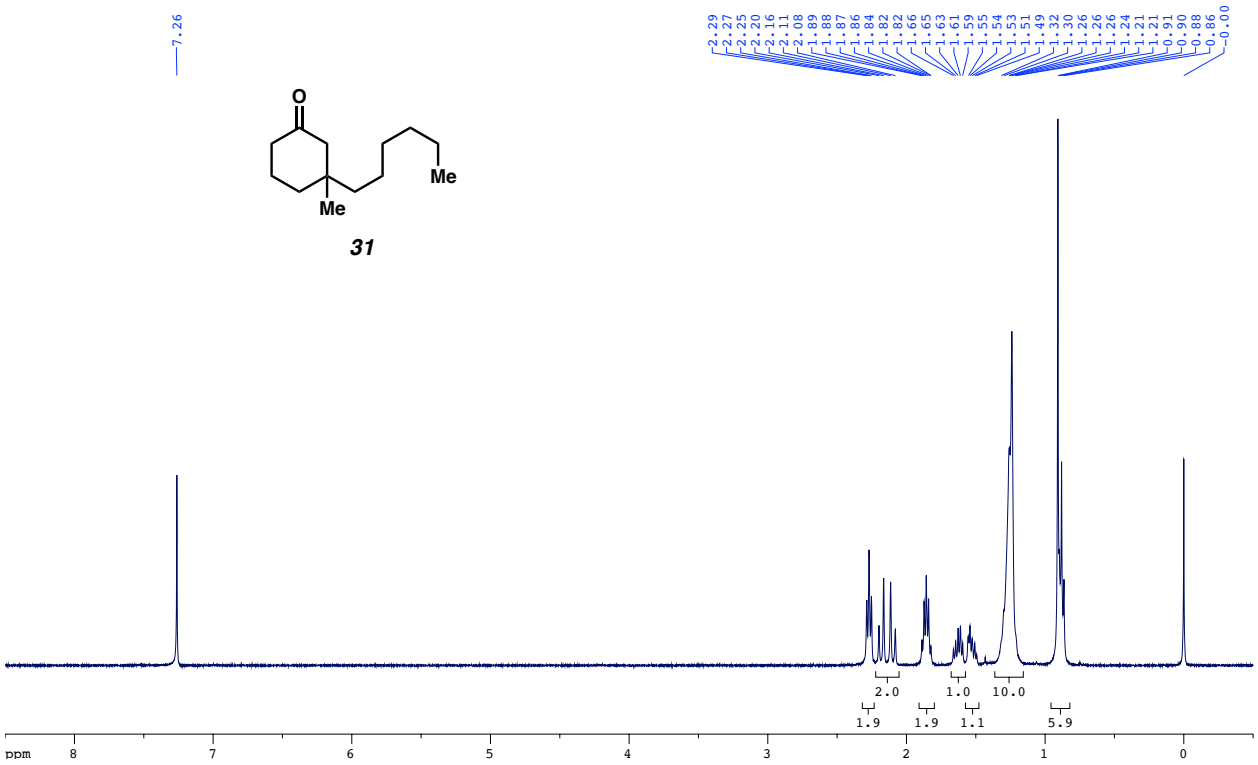


Figure S46. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **31**.

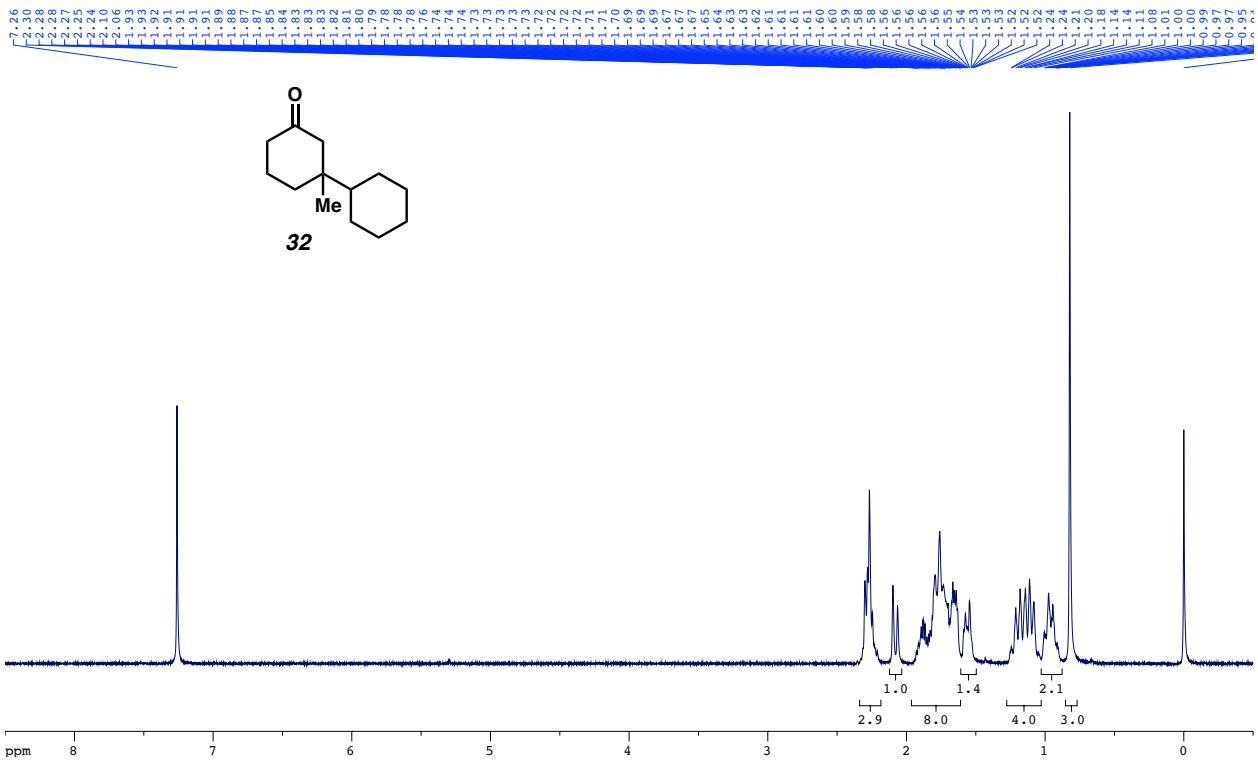


Figure S47. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **32**.

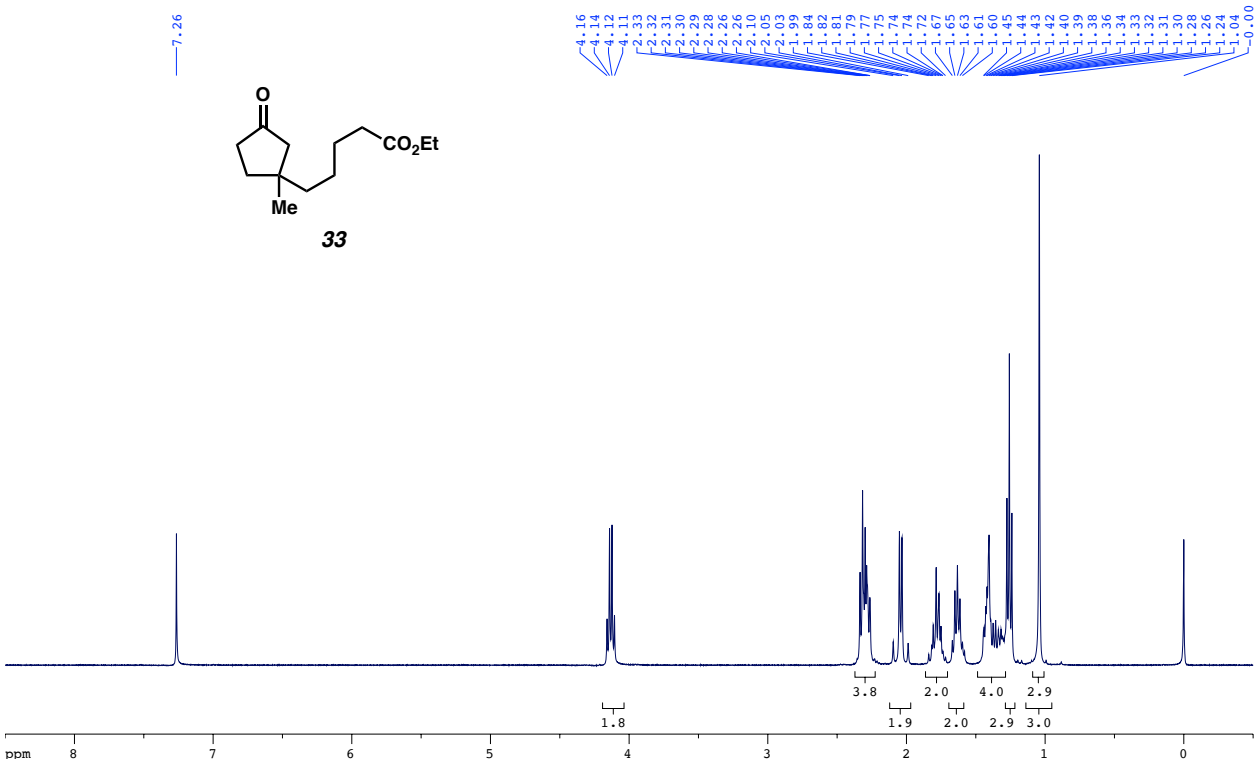


Figure S48. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **33**.

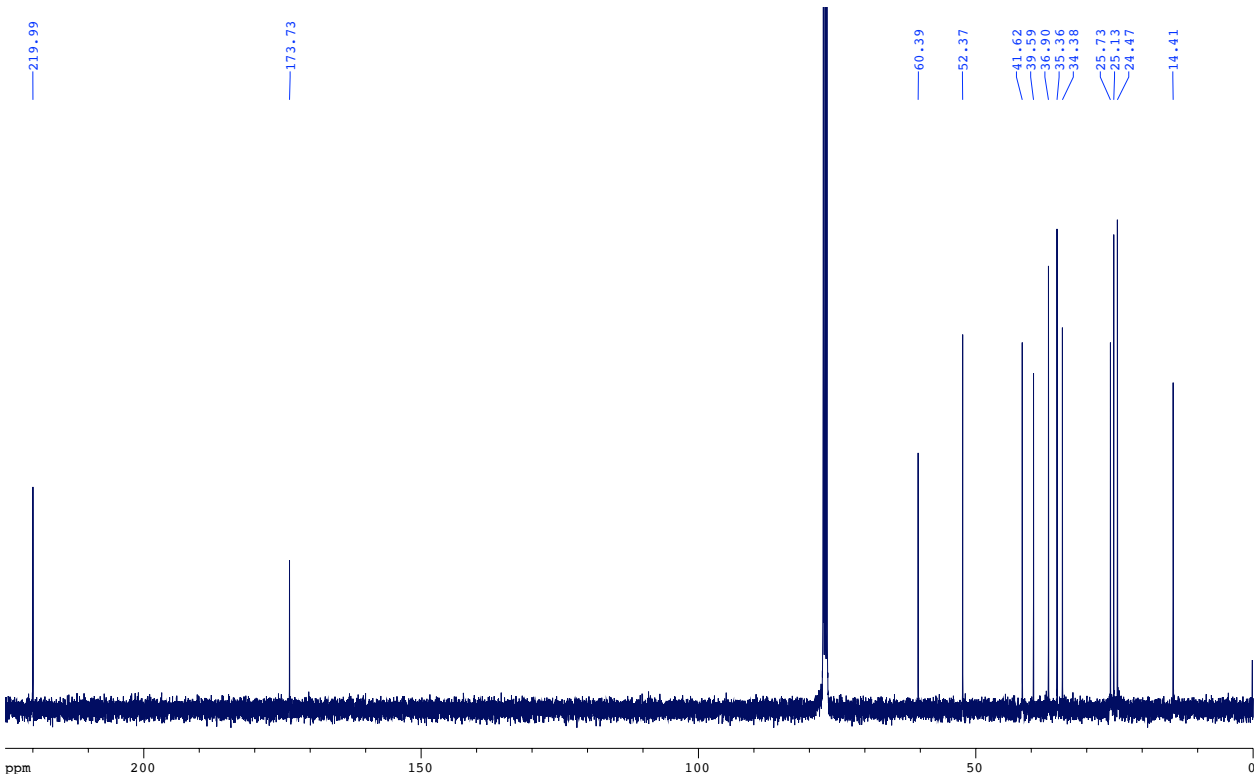


Figure S49. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **33**.

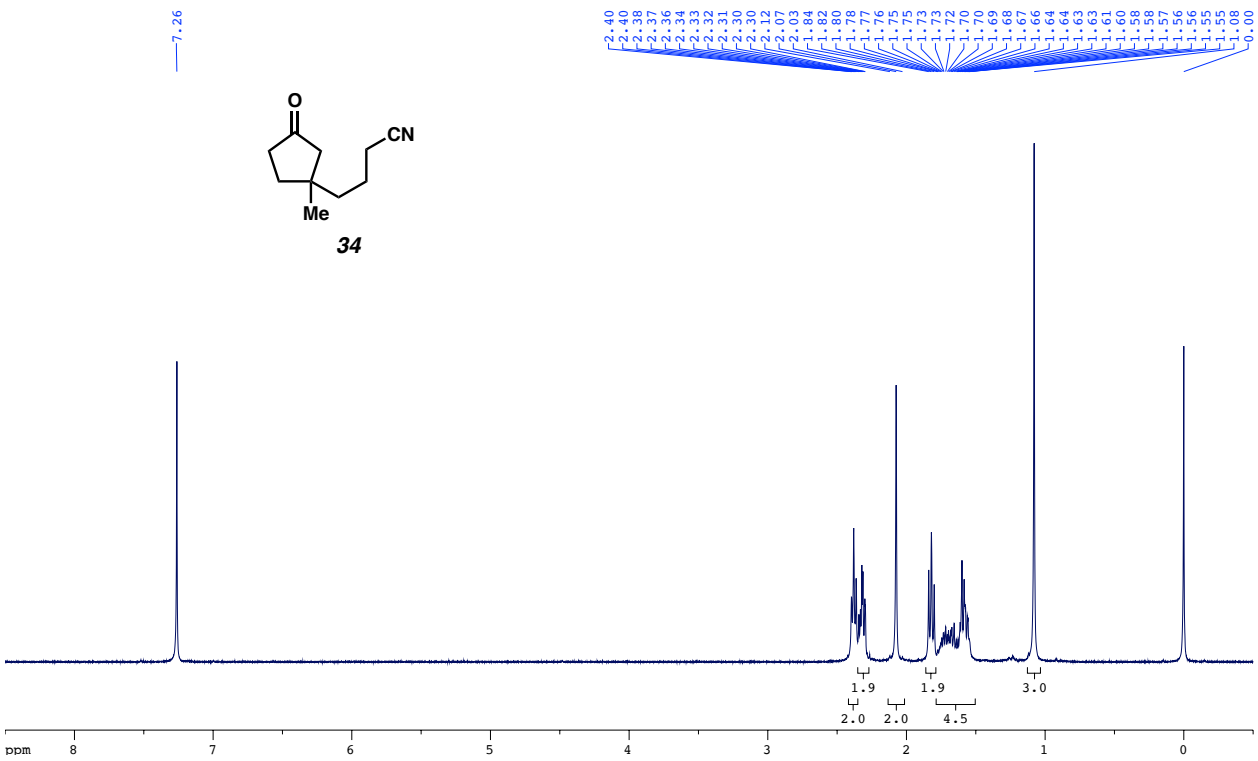


Figure S50. ^{1}H NMR spectrum (400 MHz,$CDCl_3$) of **34**.

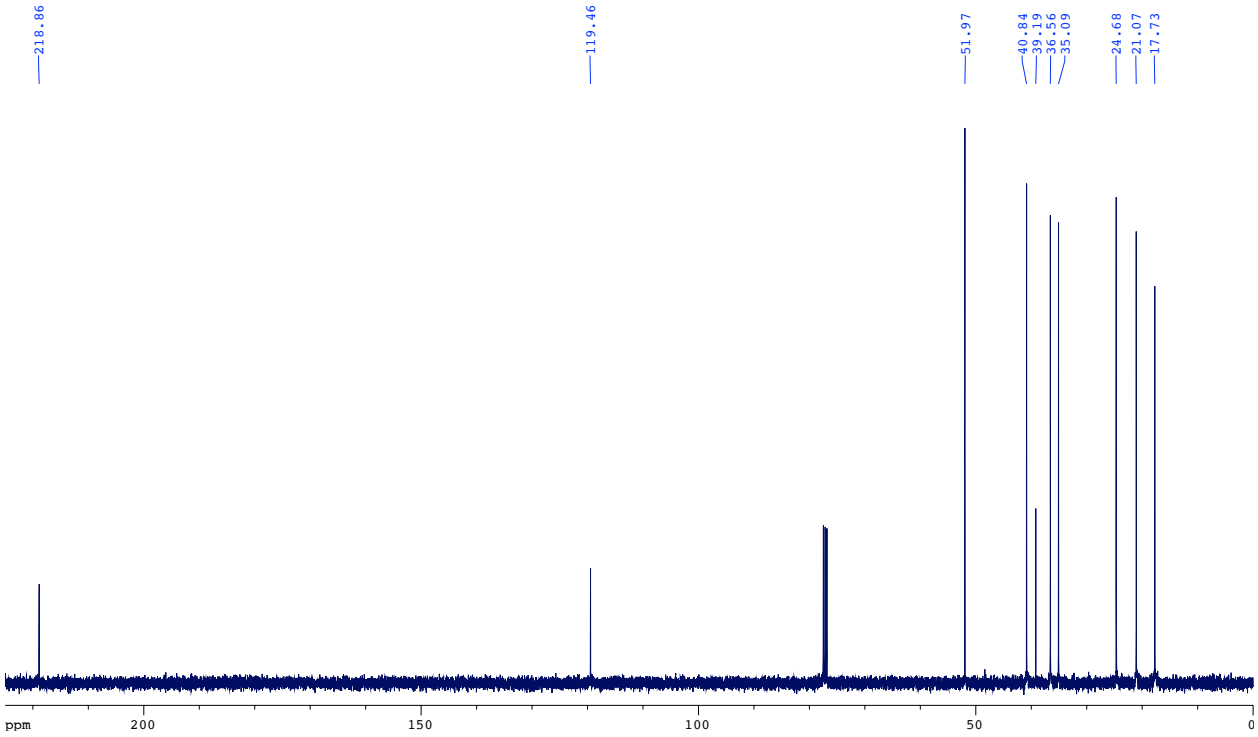


Figure S51. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **34**.

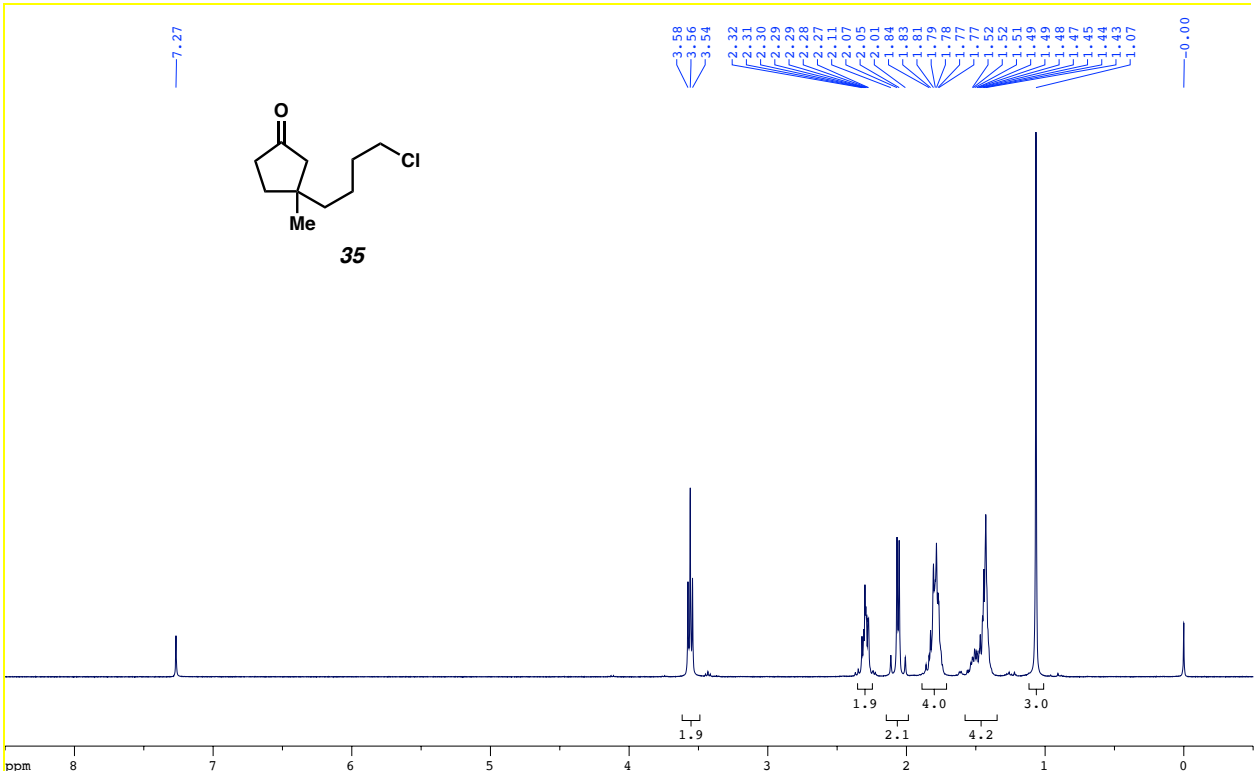


Figure S52. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **35**.

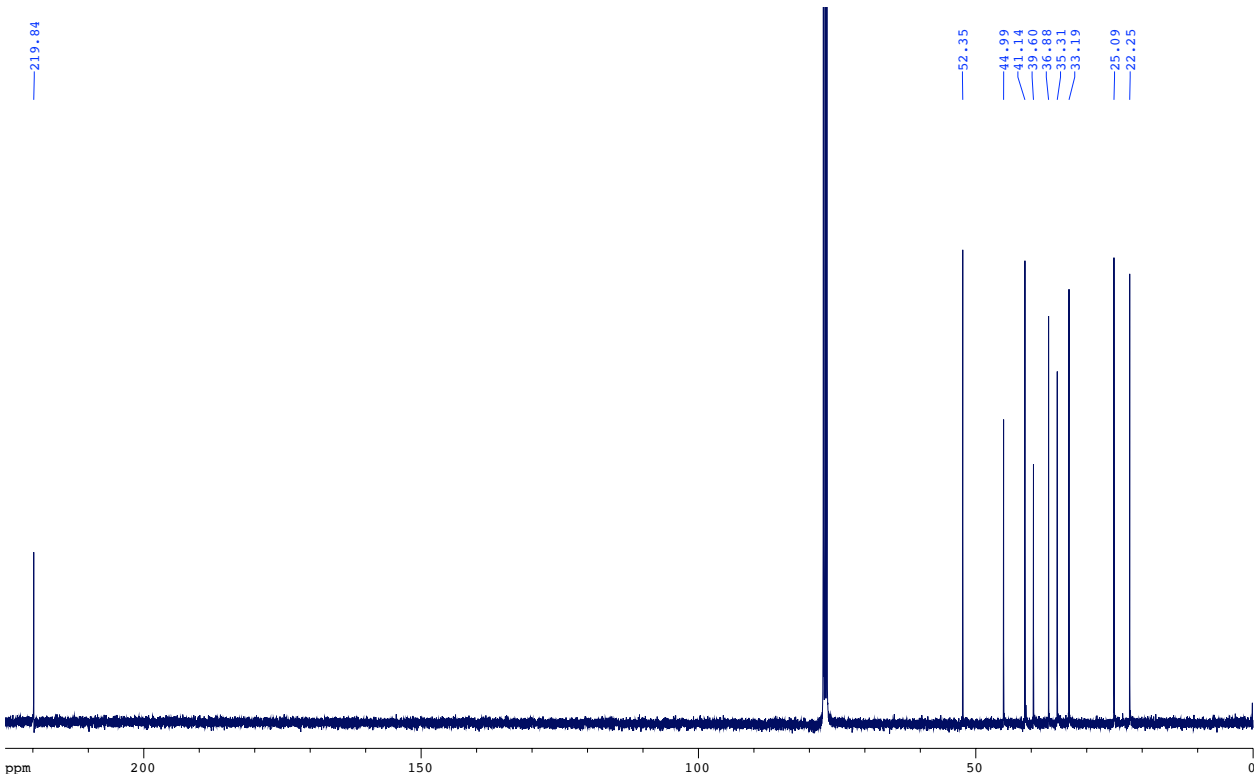


Figure S53. $^{13}C\{^{1}H\}$ NMR spectrum (101 MHz, $CDCl_3$) of **35**.

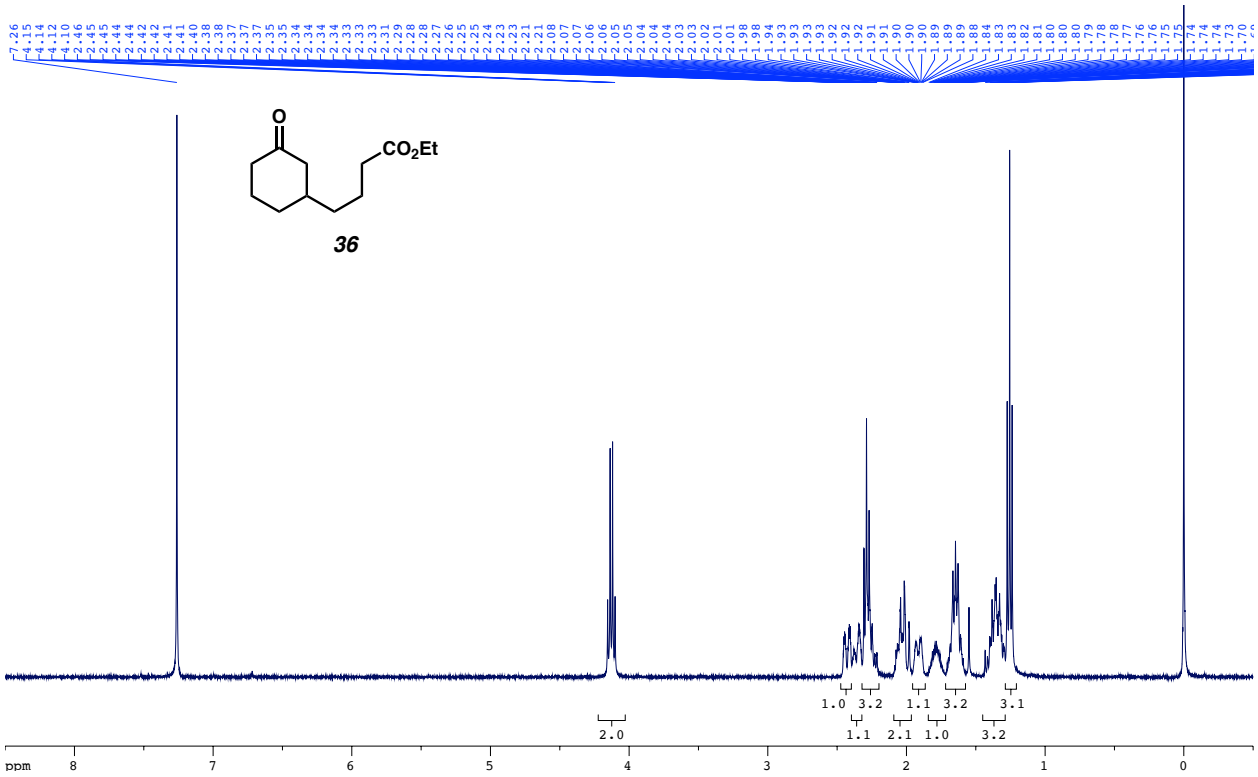


Figure S54. ^{1}H NMR spectrum (400 MHz, $CDCl_3$) of **36**.