Supporting Information
^{1}H and ^{13}C NMR Spectra

One-Pot Multicomponent Coupling Methods for the Synthesis of Diastereo- and Enantioenriched (*Z*)-Trisubstituted Allylic Alcohols

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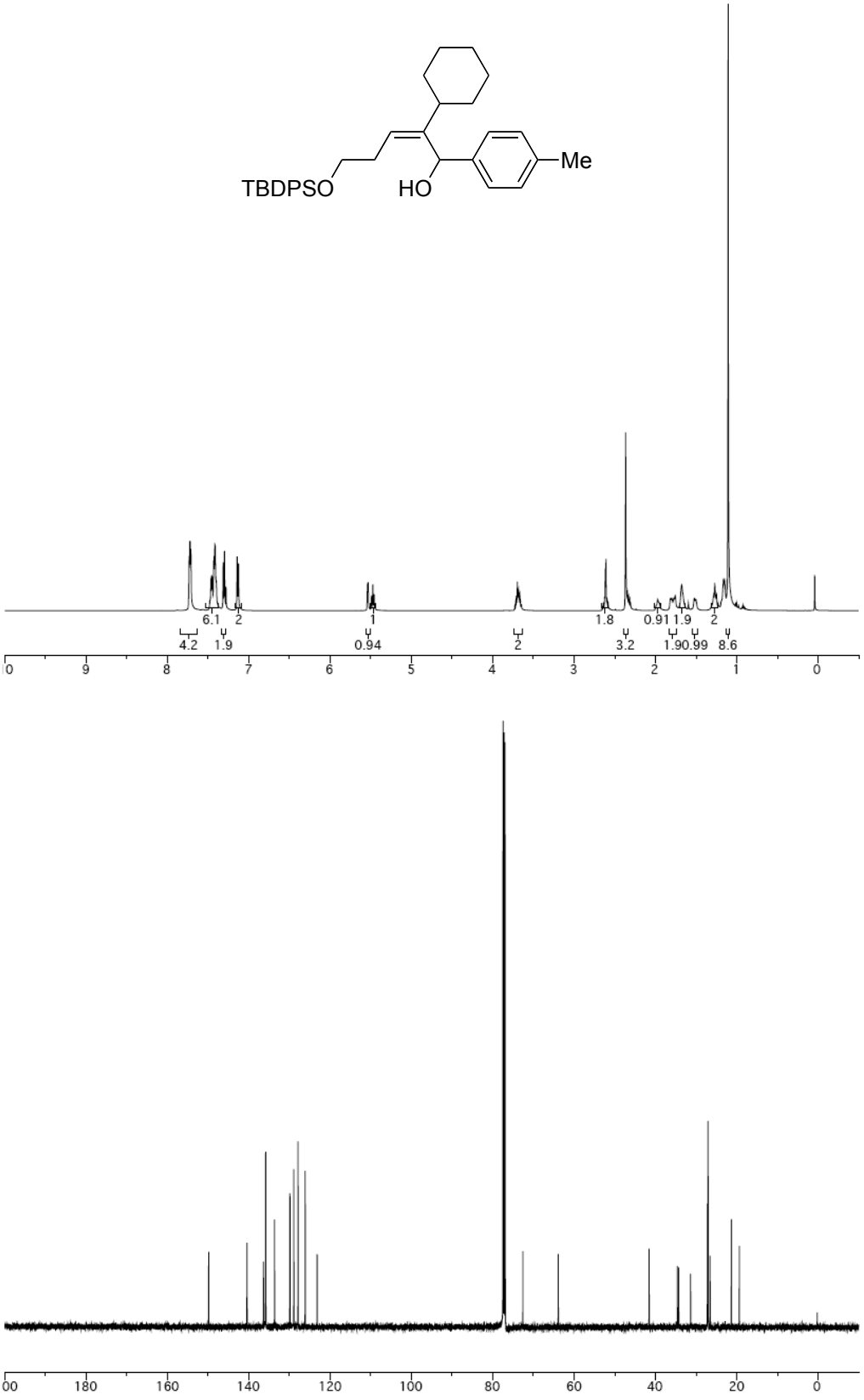

Figure SI- Table 2. 500 MHz ^{1}H and 125 $^{13}C\{^{1}H\}$ NMR of Cyclohexyl in $CDCl_3$.

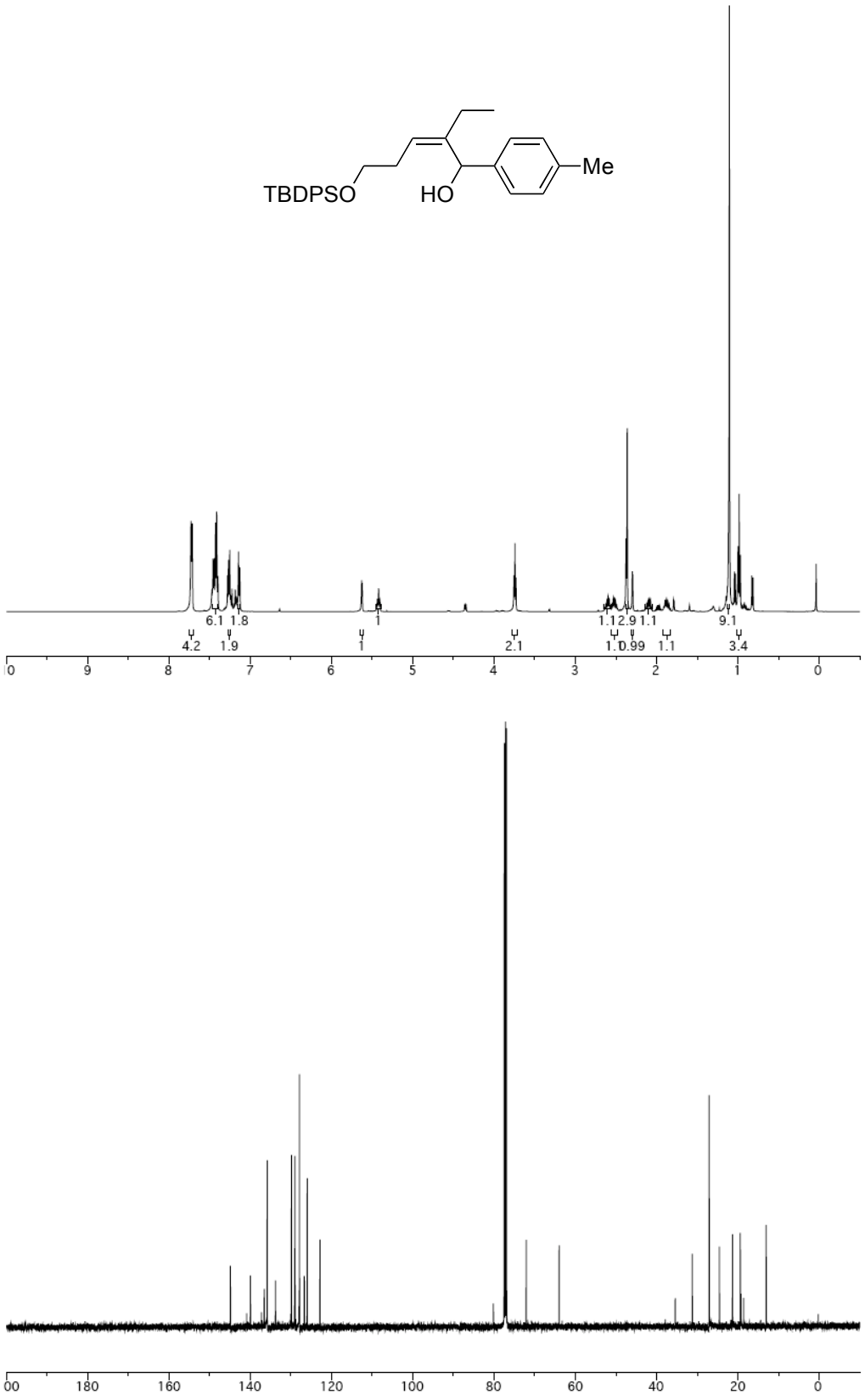

Figure SI- Table 2. 500 MHz ^{1}H and 125 $^{13}C\{^{1}H\}$ NMR of Ethyl in $CDCl_3$.

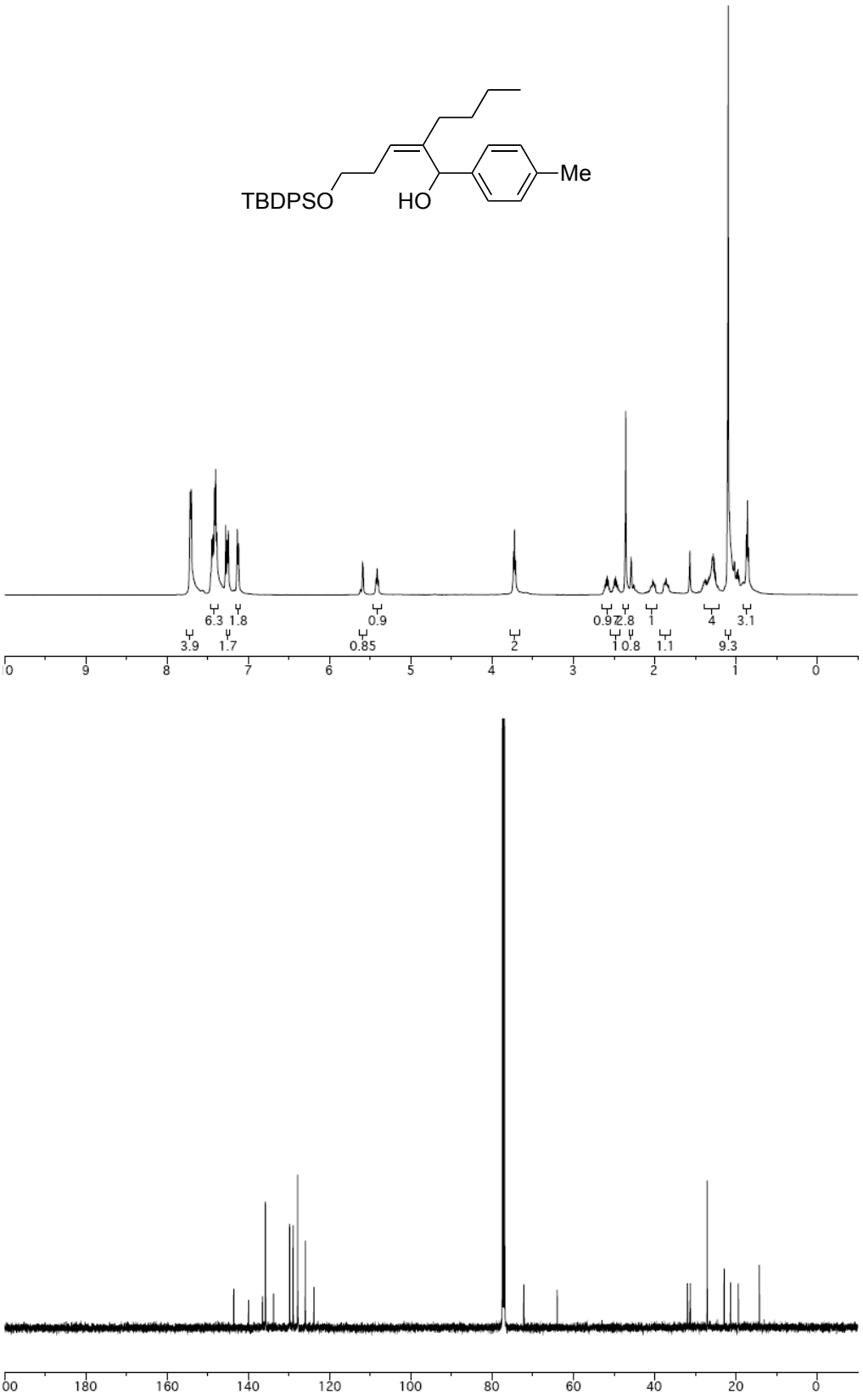

Figure SI- Table 2. 500 MHz ^{1}H and 125 $^{13}C\{^{1}H\}$ NMR of Buthyl in $CDCl_3$.

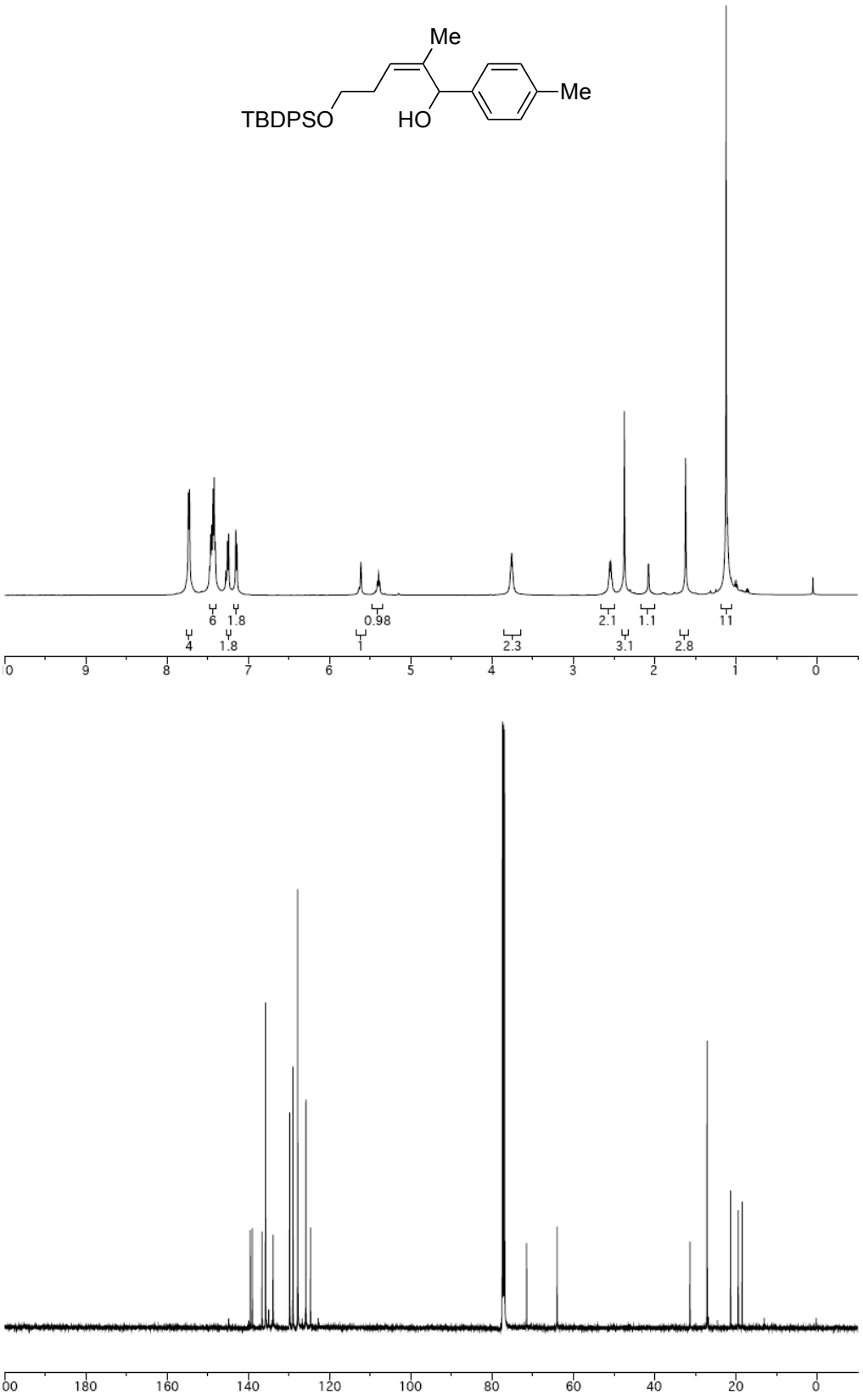

Figure SI- Table 2. 500 MHz ^{1}H and 125 $^{13}C\{^{1}H\}$ NMR of Methyl in $CDCl_3$.

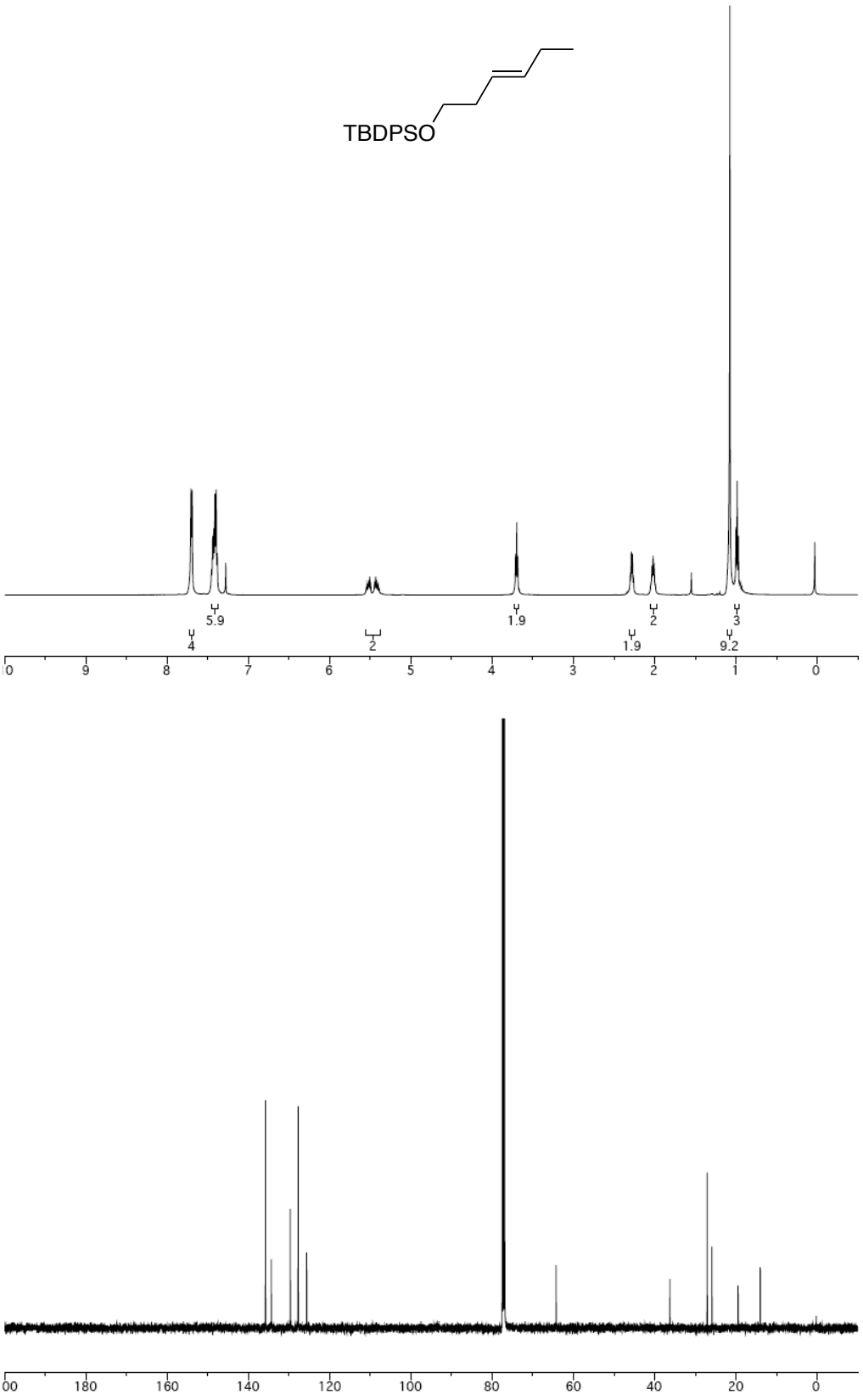

Figure SI- Scheme 7. 500 MHz ^{1}H and 125 $^{13}C\{^{1}H\}$ NMR of Vinyl Ethyl in $CDCl_3$.

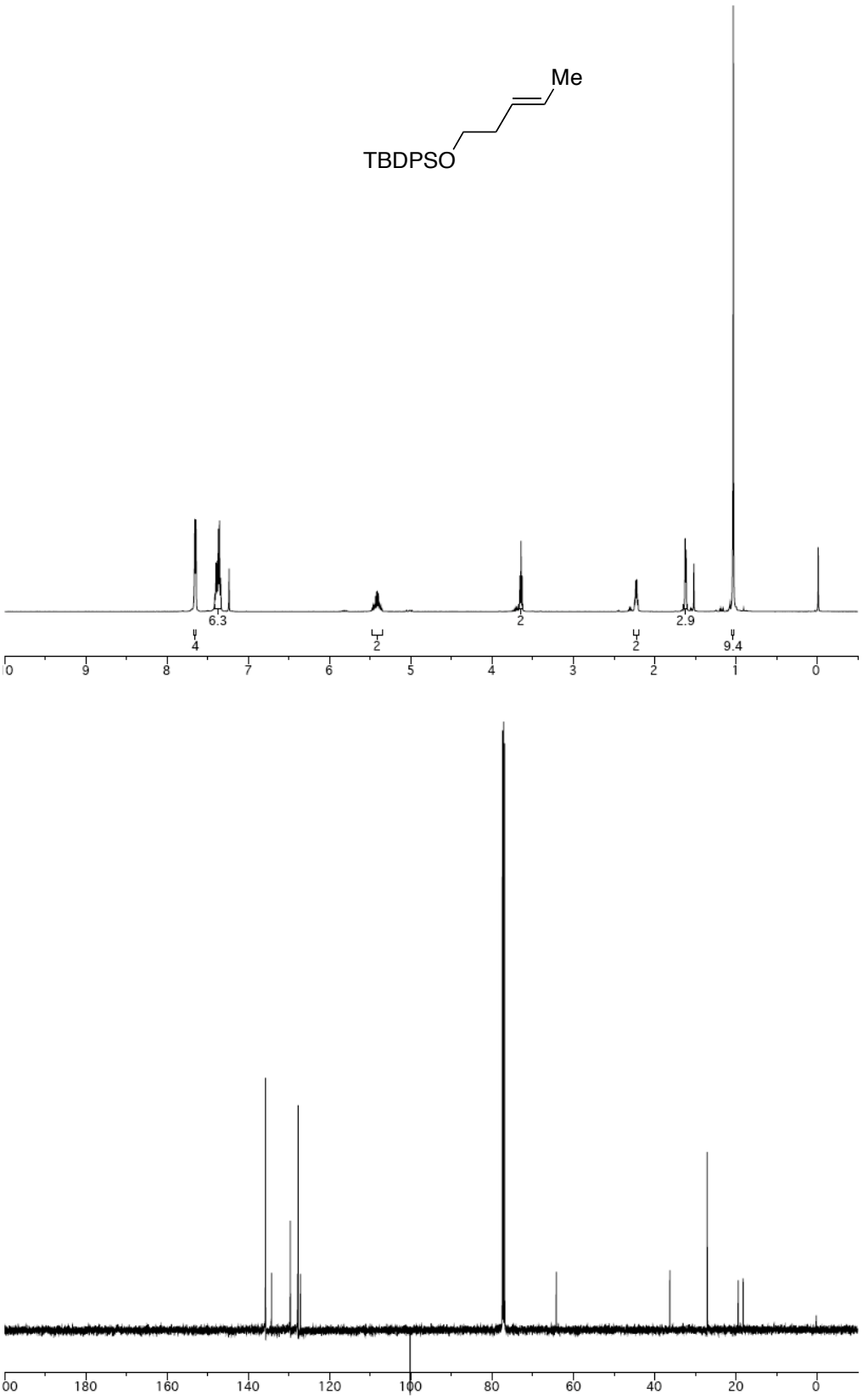

Figure SI- Scheme 7. 500 MHz ^{1}H and 125 $^{13}C\{^{1}H\}$ NMR of Vinyl Methyl in $CDCl_3$.

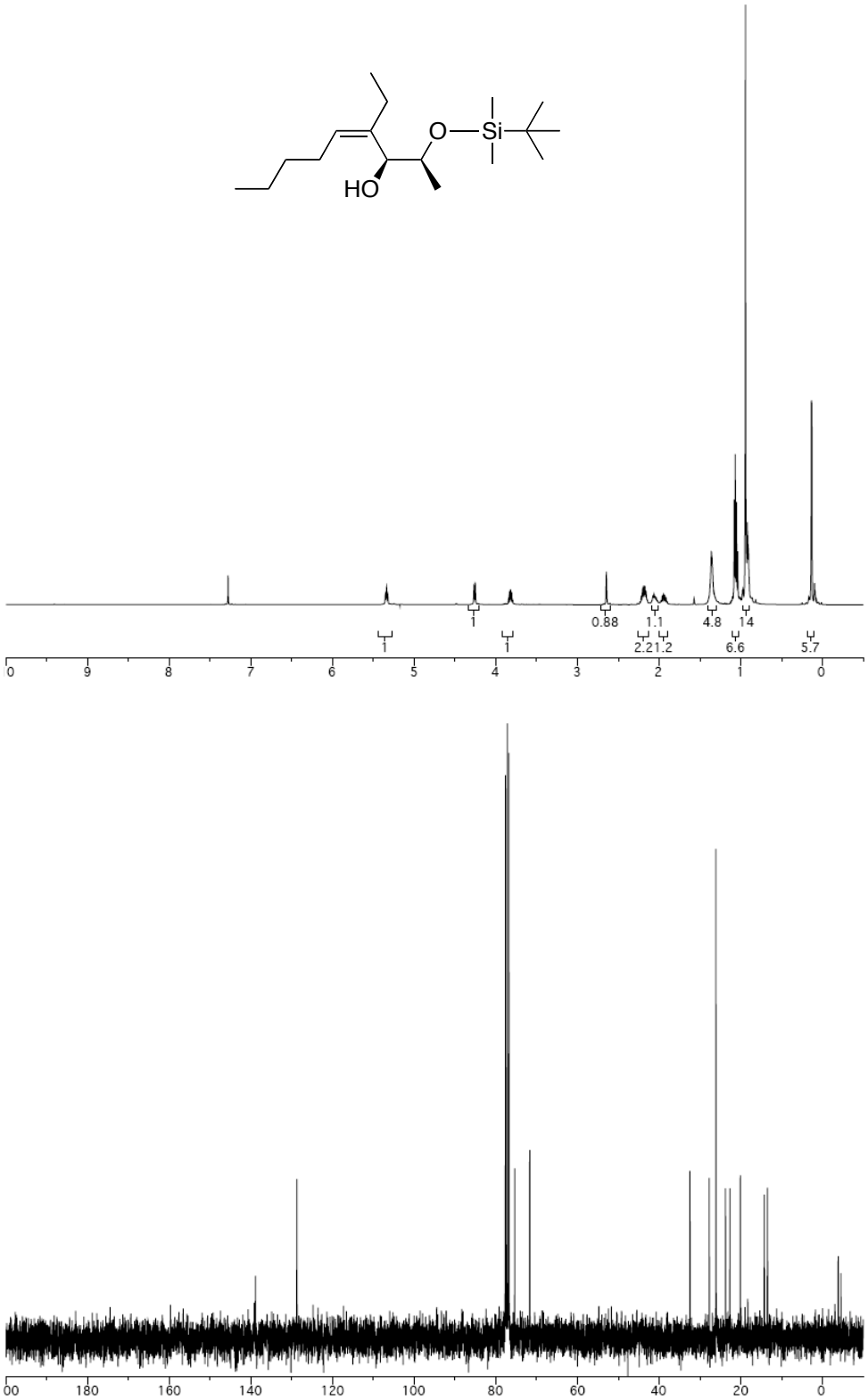

Figure SI-1. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **19** in $CDCl_3$.

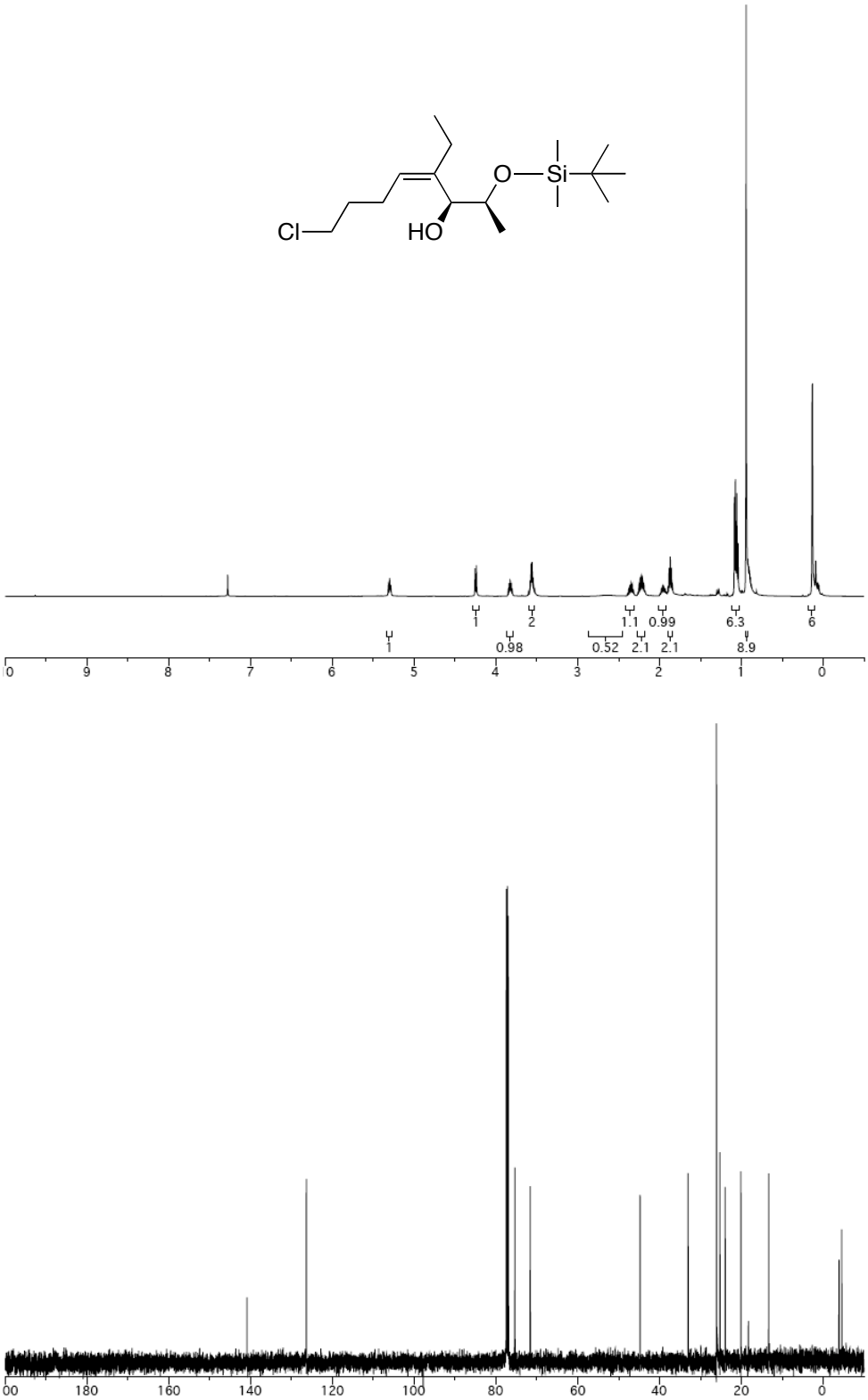

Figure SI-2. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **20** in $CDCl_3$.

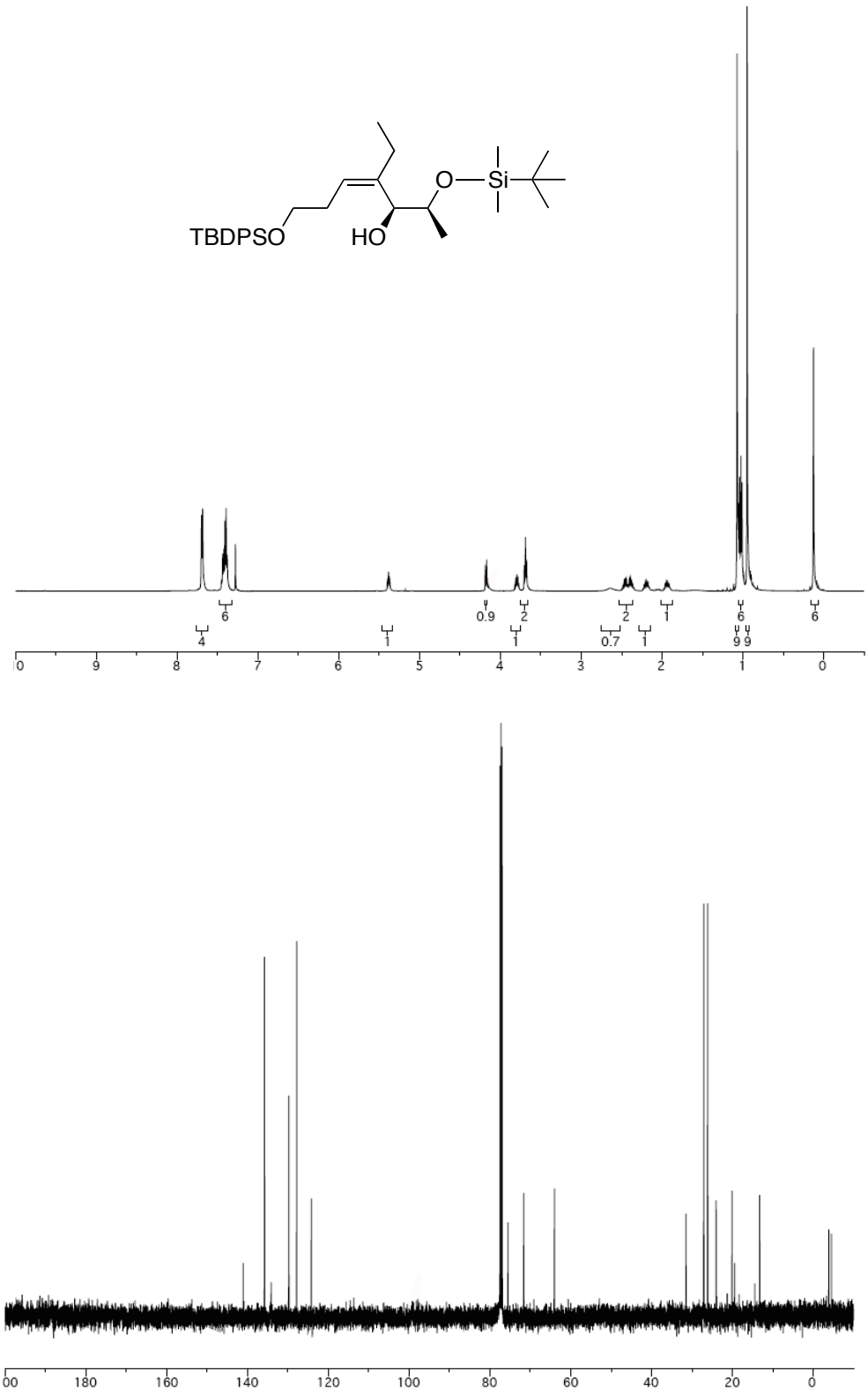

Figure SI-3. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **21** in $CDCl_3$.

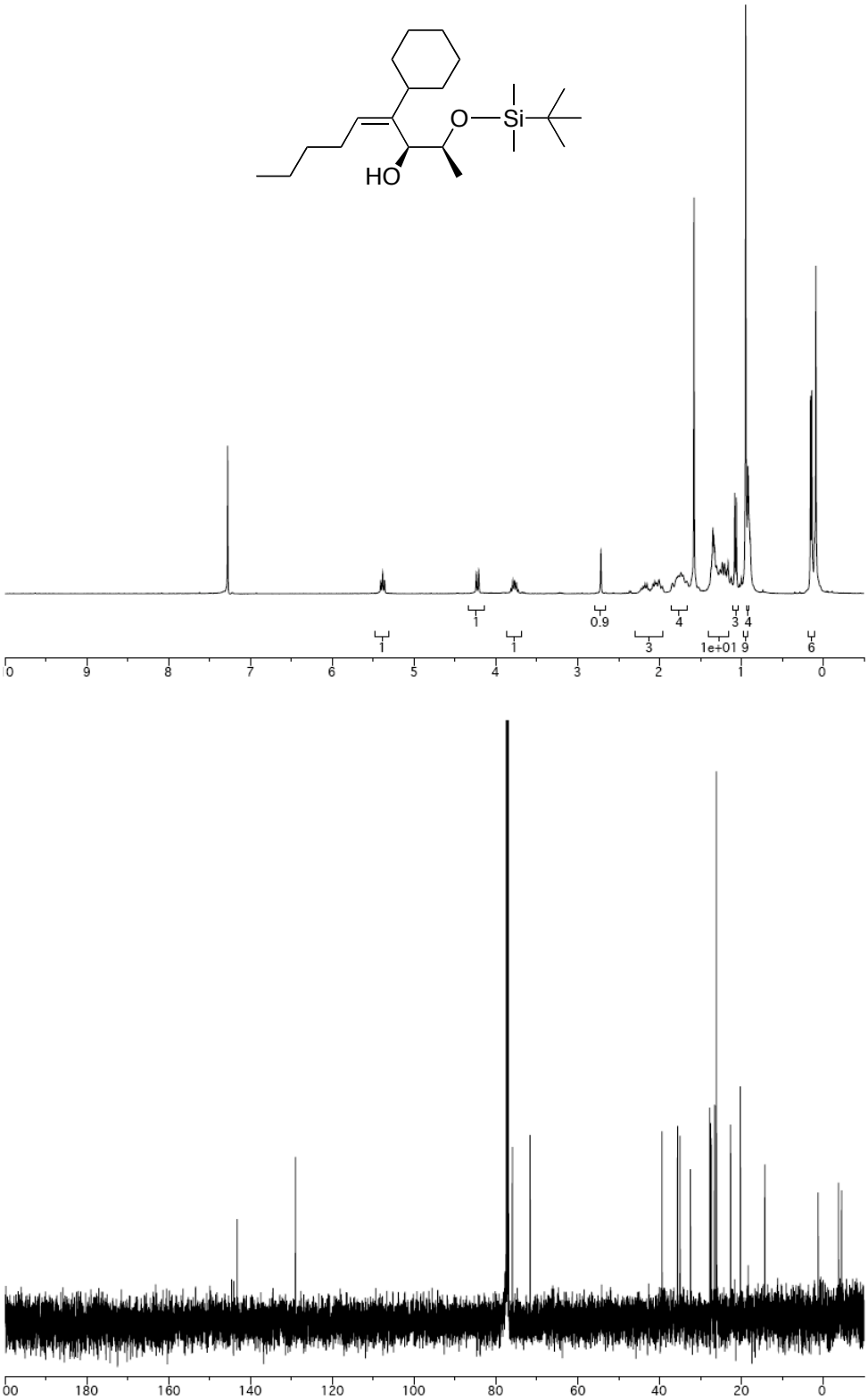

Figure SI-4. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **22** in $CDCl_3$.

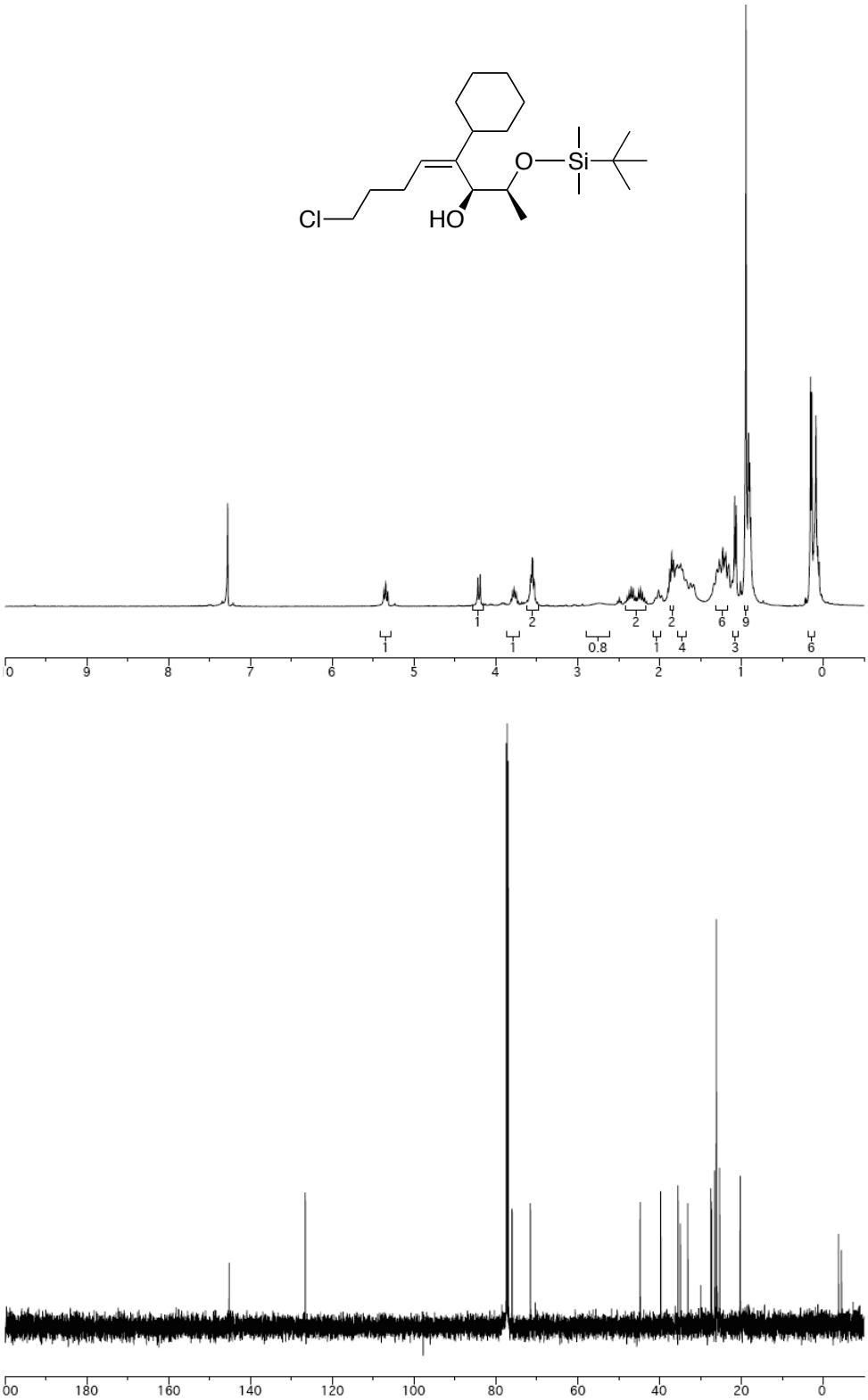

Figure SI-5. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **23** in $CDCl_3$.

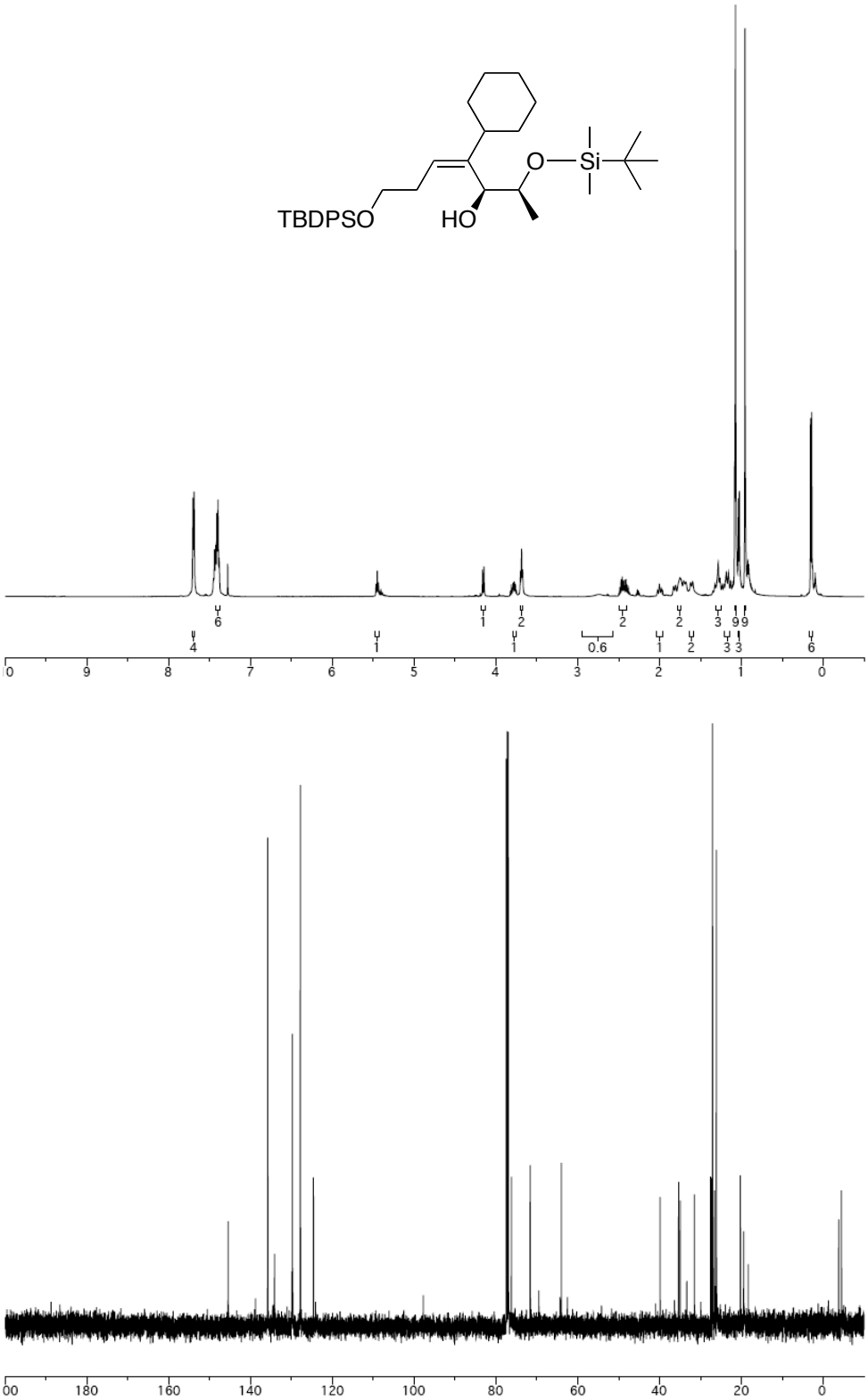

Figure SI-6. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **24** in $CDCl_3$.

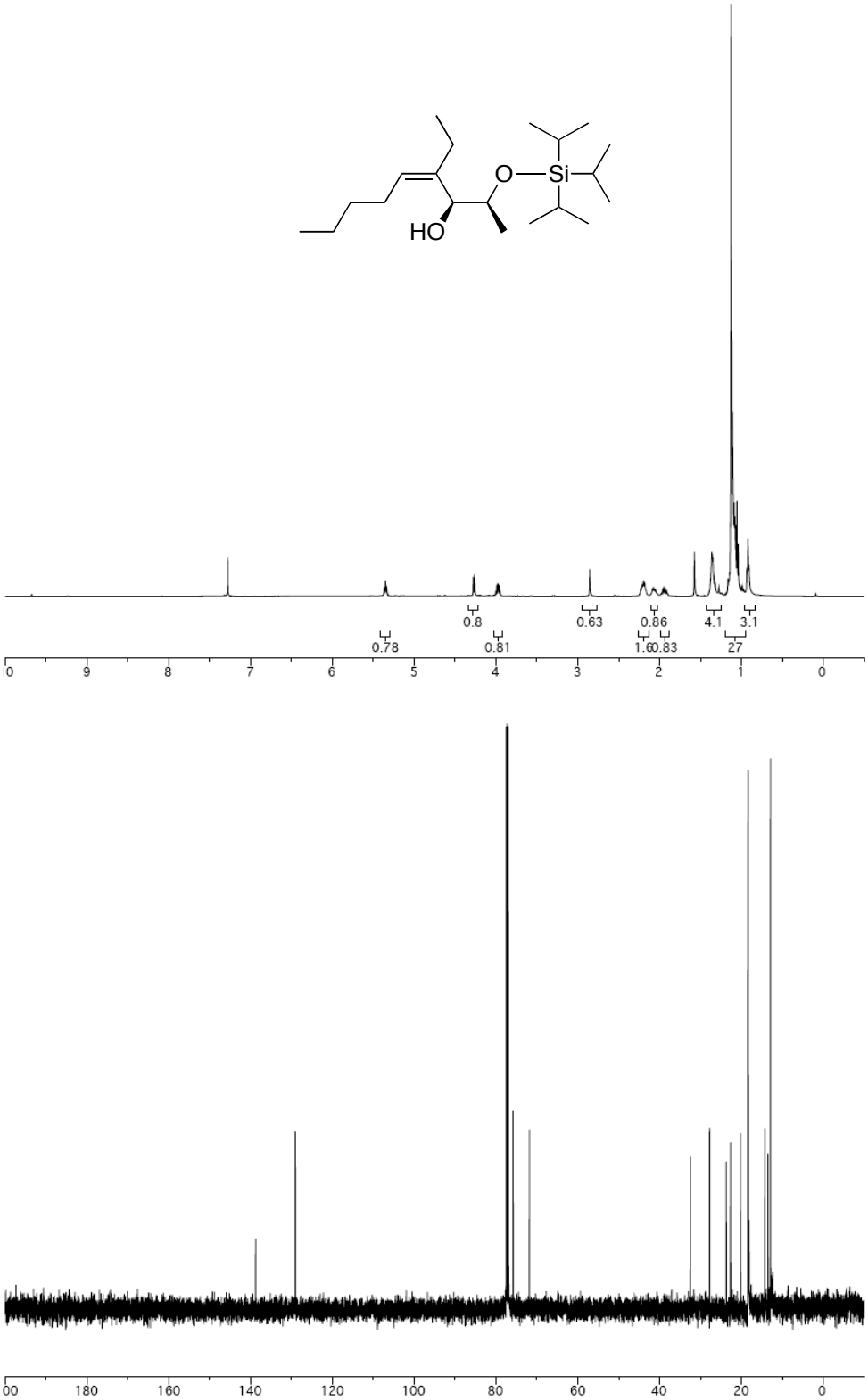

Figure SI-7. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **25** in $CDCl_3$.

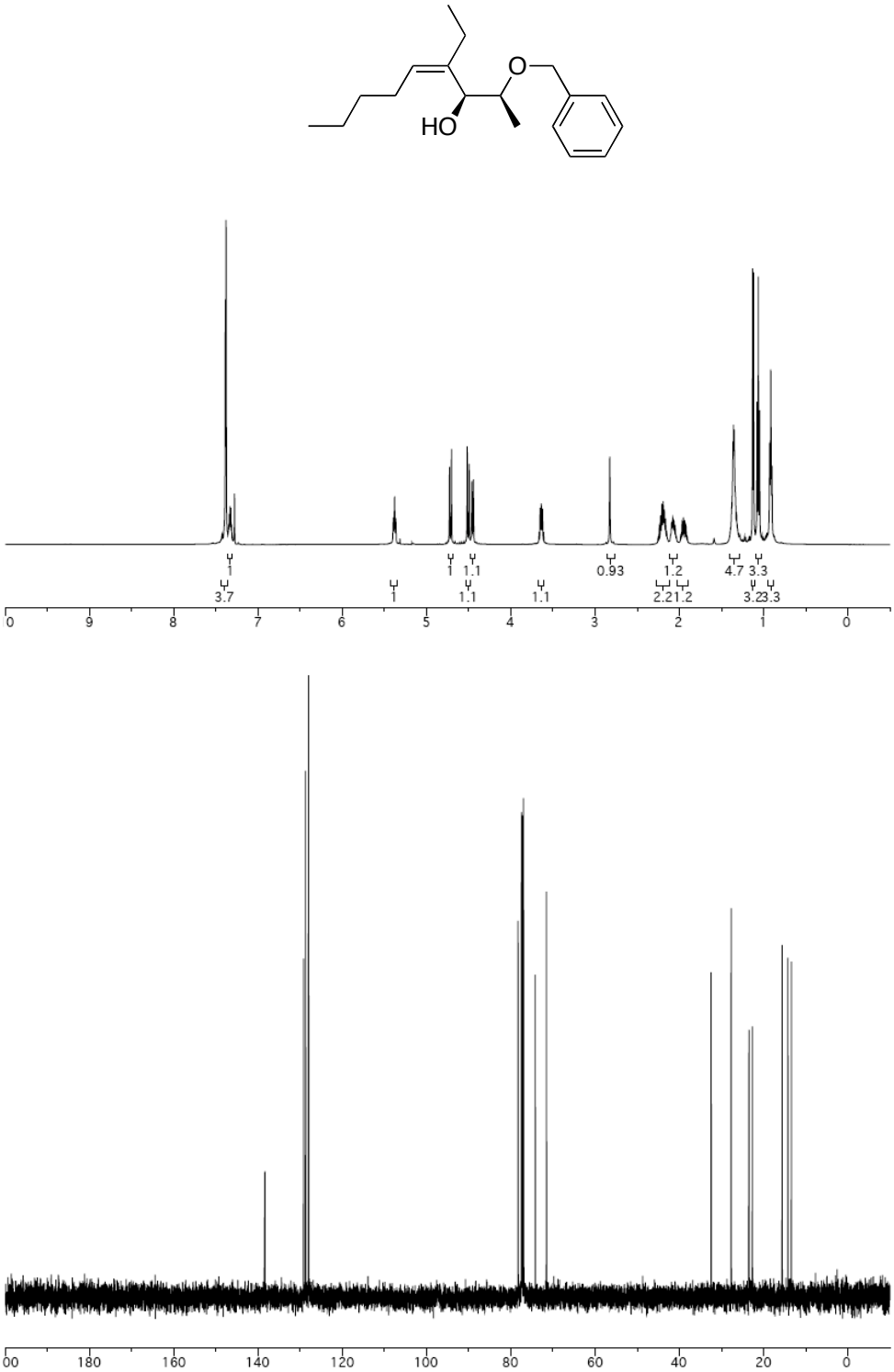

Figure SI-8. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **26** in $CDCl_3$.

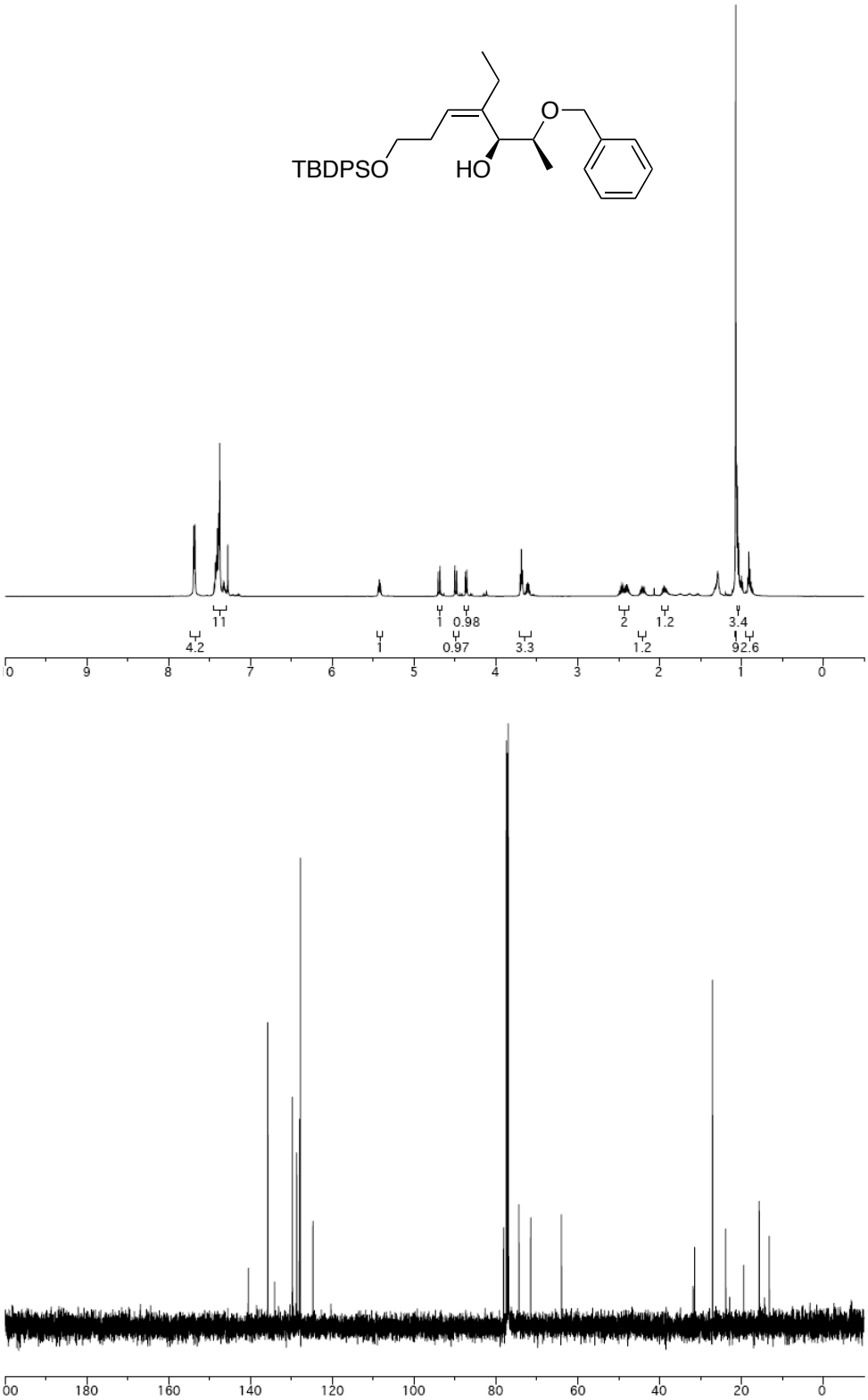

Figure SI-9. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **27** in $CDCl_3$.

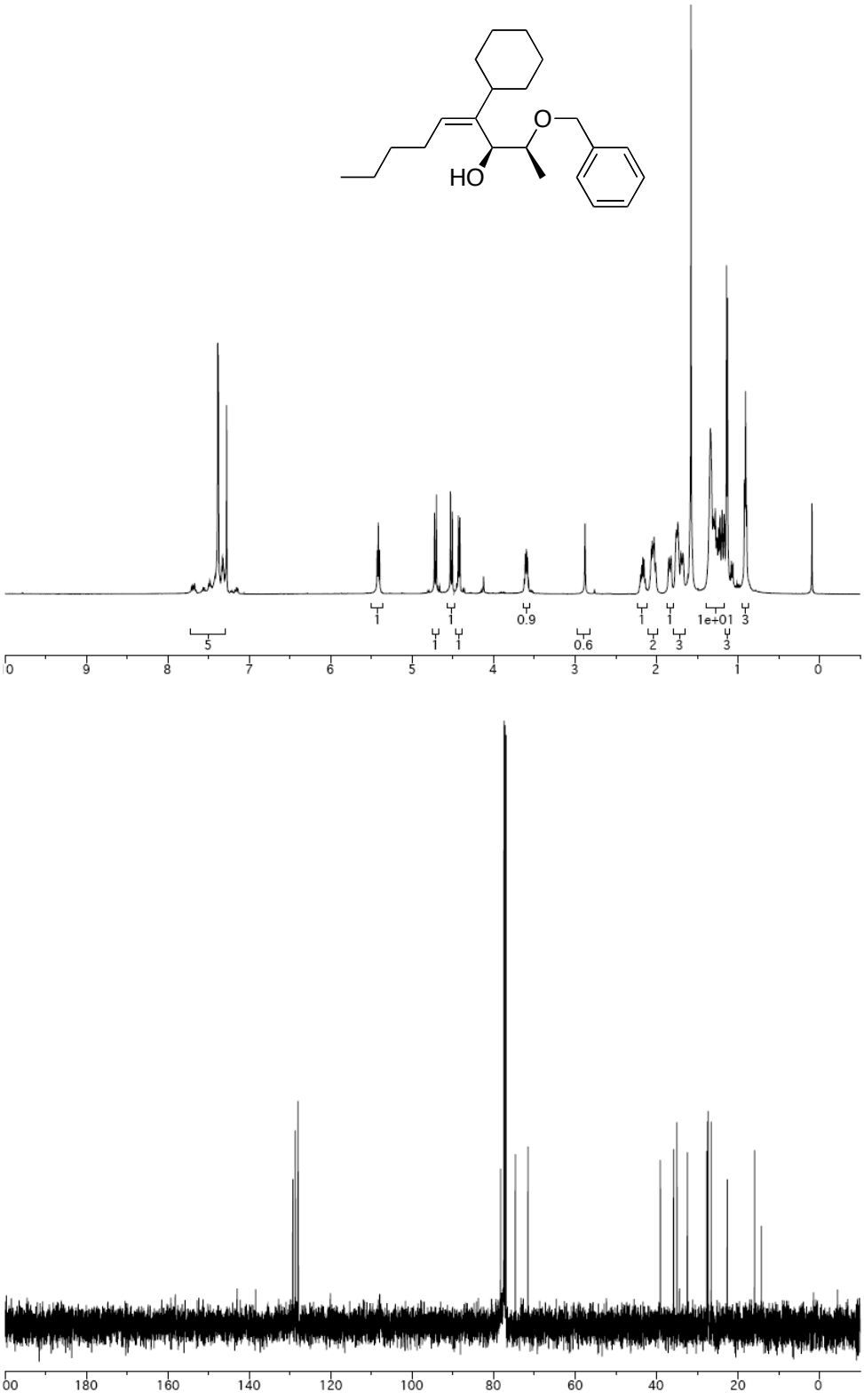

Figure SI-10. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **28** in $CDCl_3$.

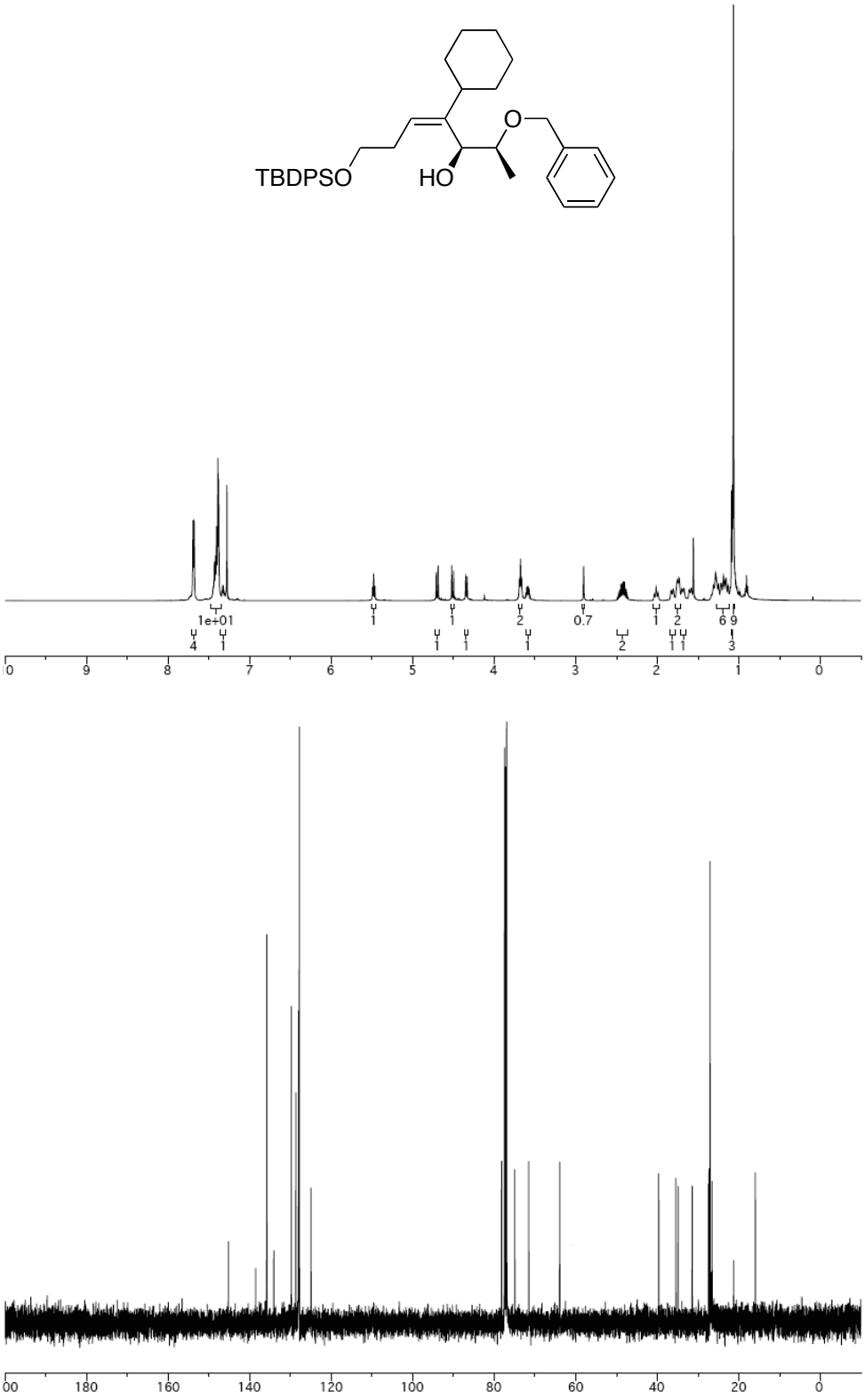

Figure SI-11. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **29** in $CDCl_3$.

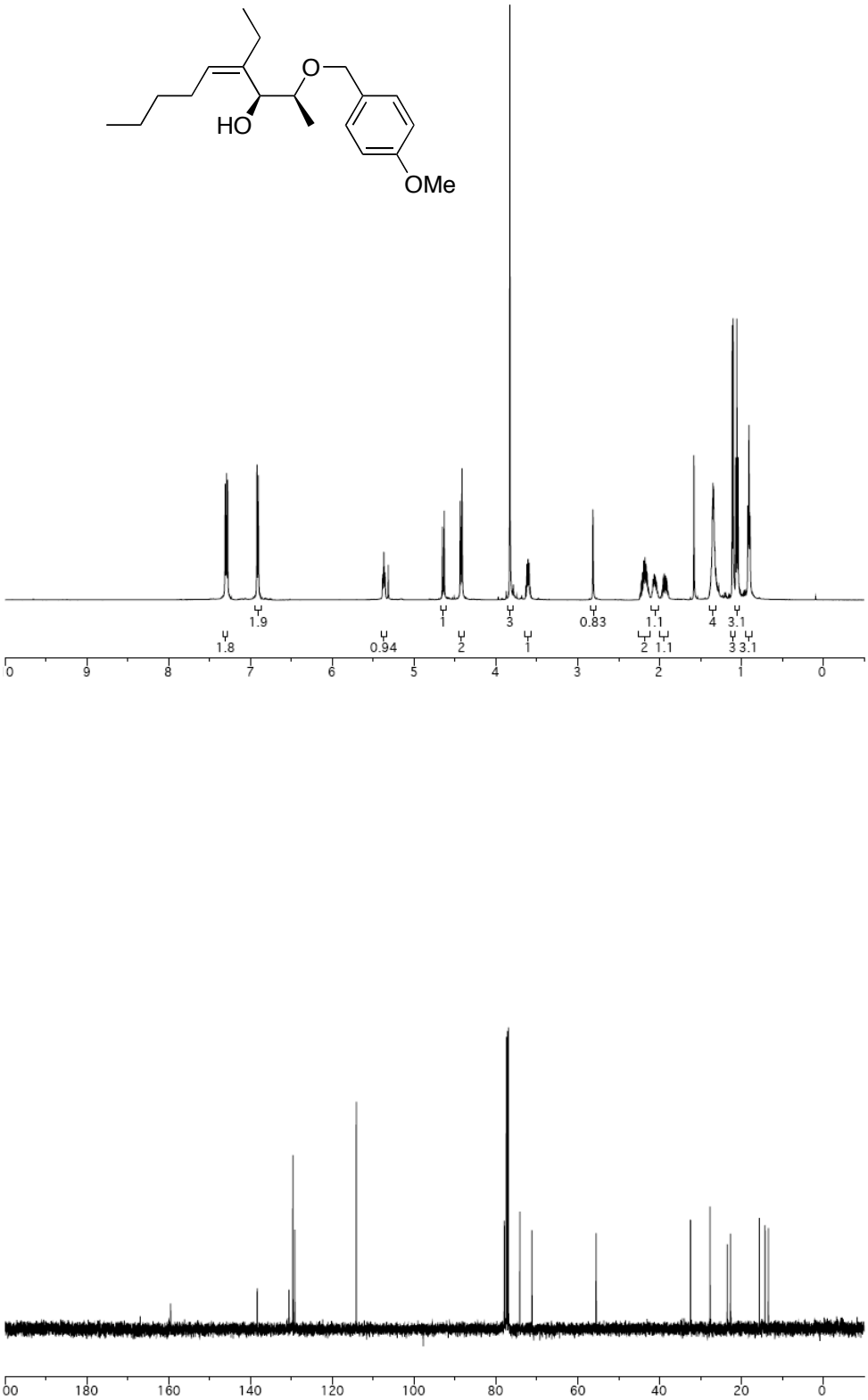

Figure SI-12. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **30** in $CDCl_3$.

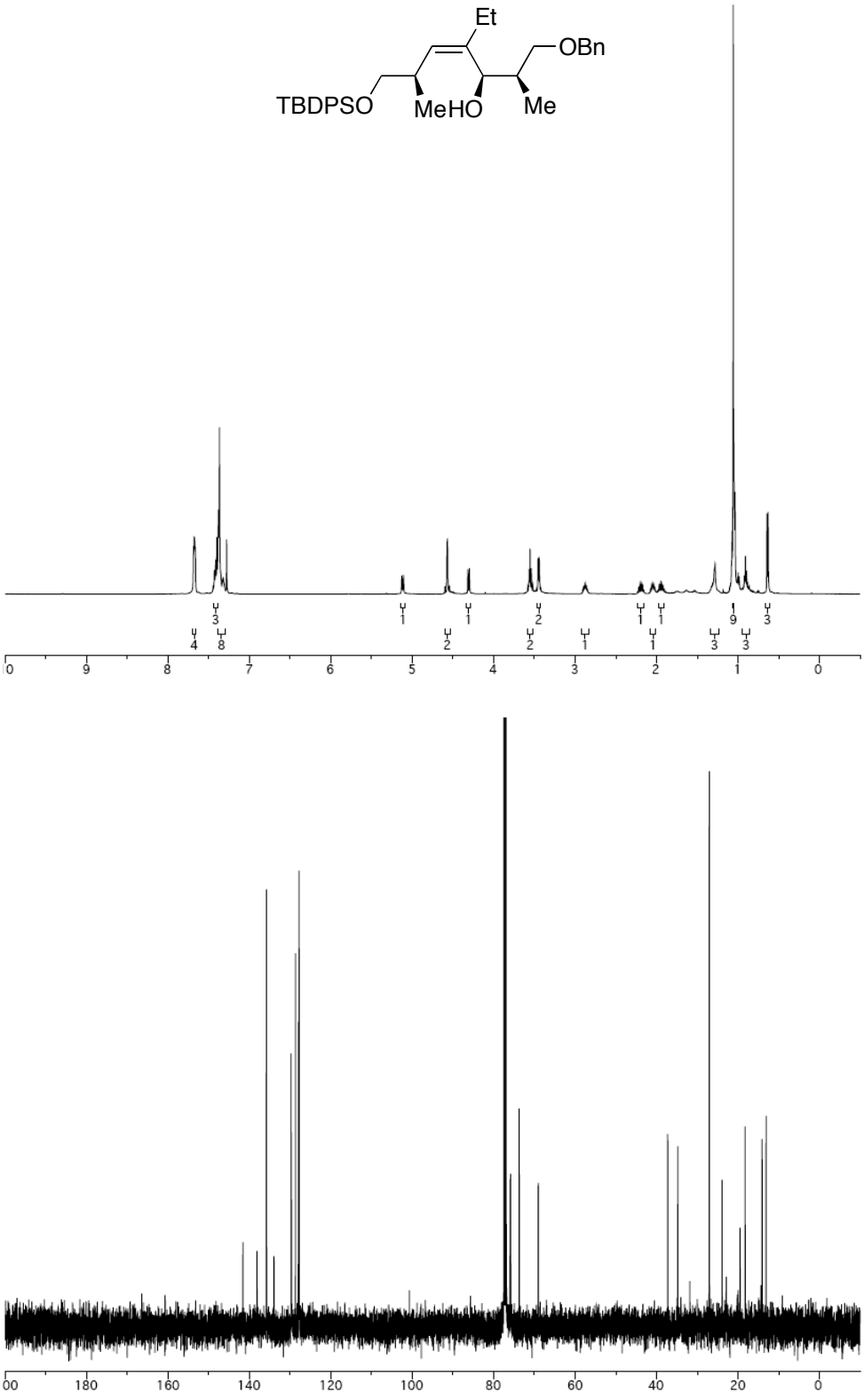

Figure SI-13. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **31** in $CDCl_3$.

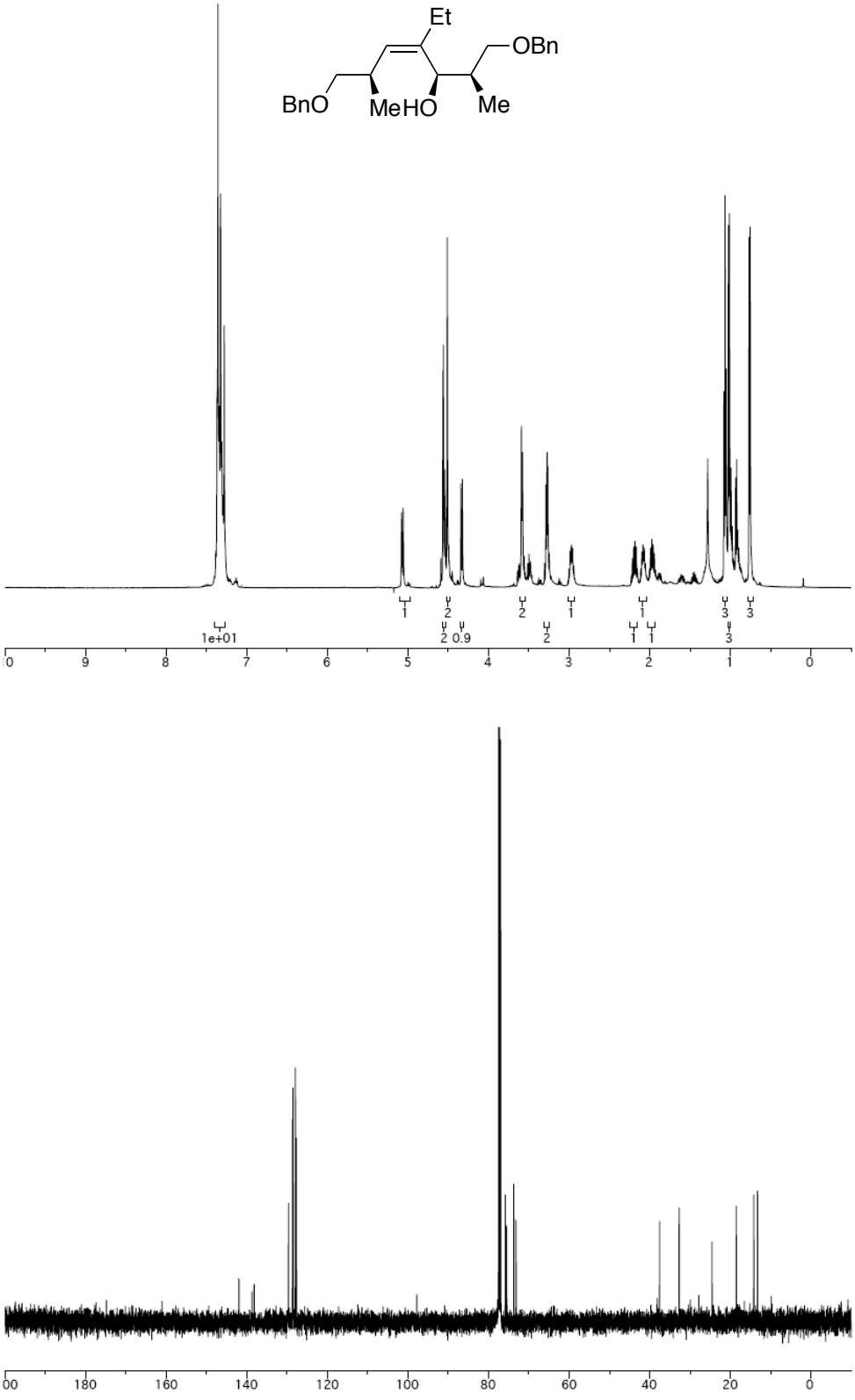

Figure SI-14. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **32** in $CDCl_3$.

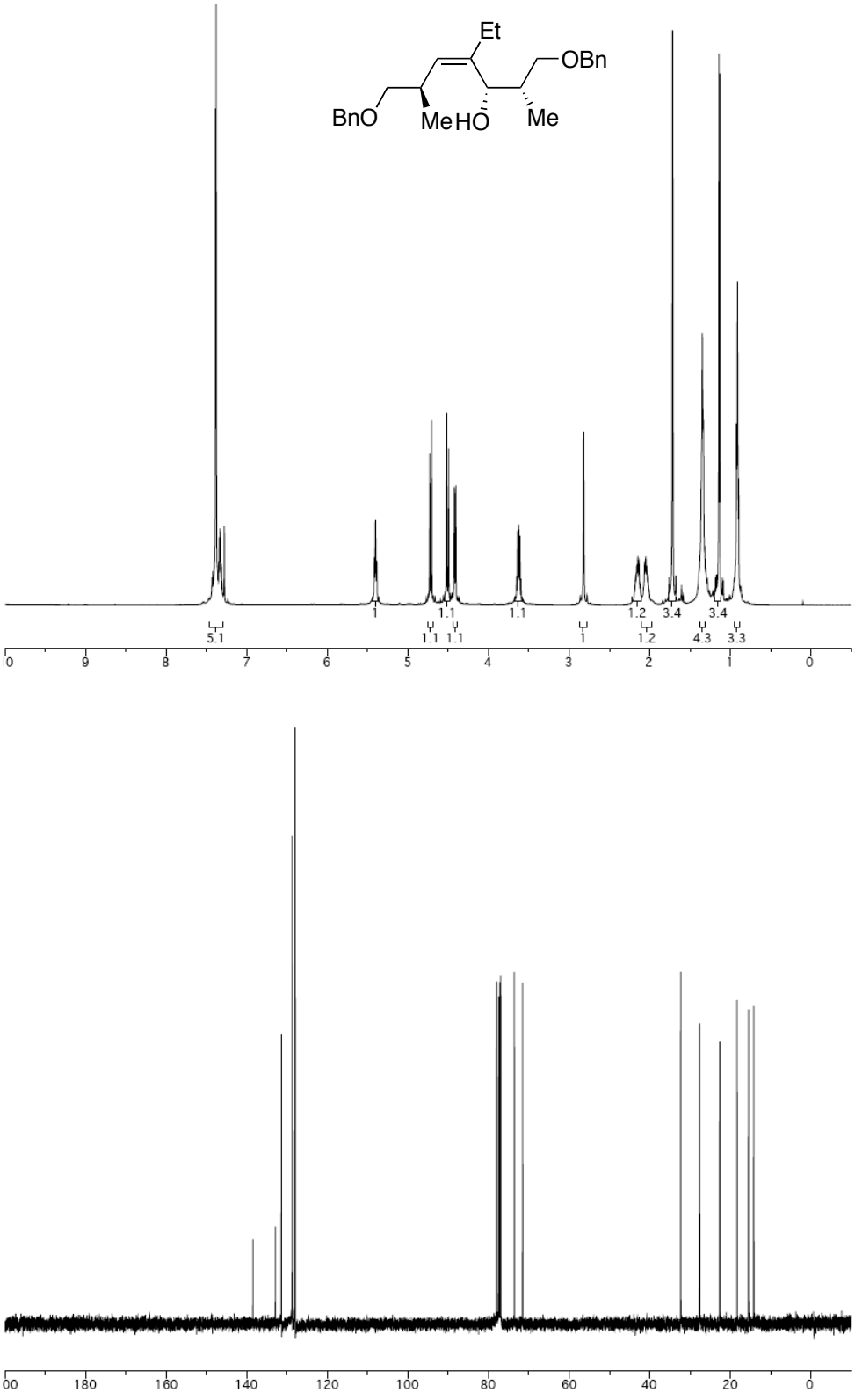

Figure SI-15. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **33** in $CDCl_3$.

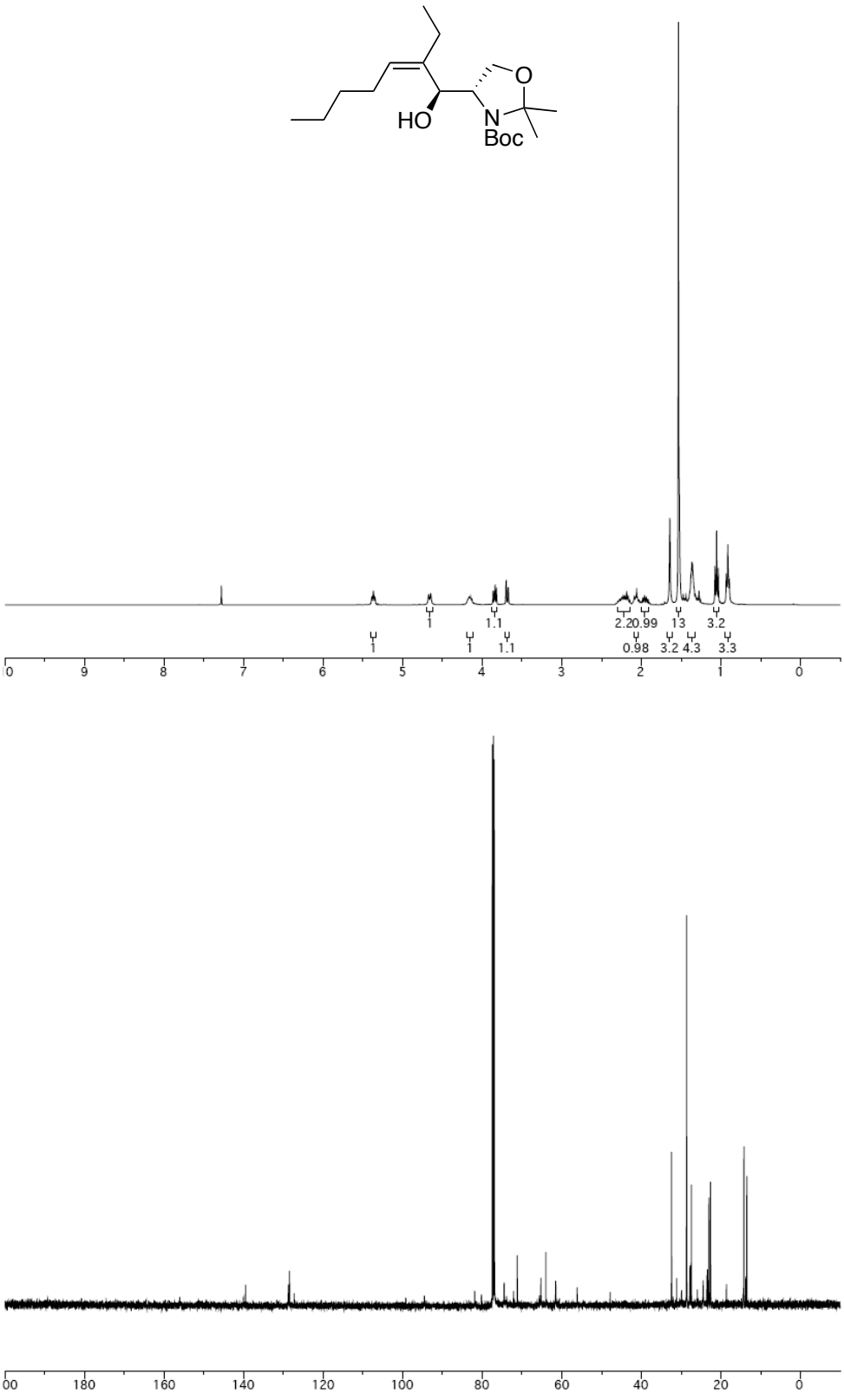

Figure SI-16. 360 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **34** in $CDCl_3$.

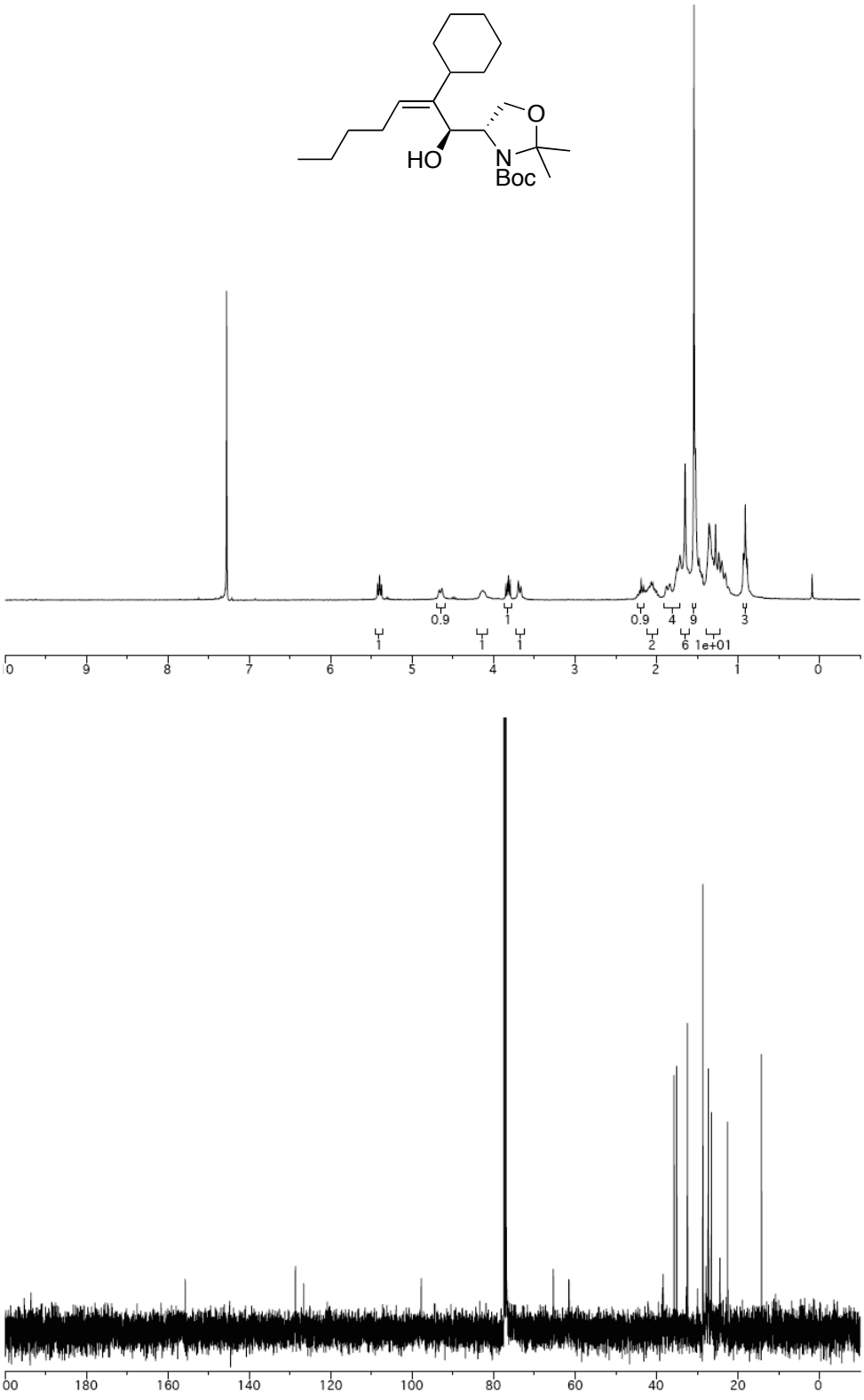

Figure SI-17. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **35** in $CDCl_3$.

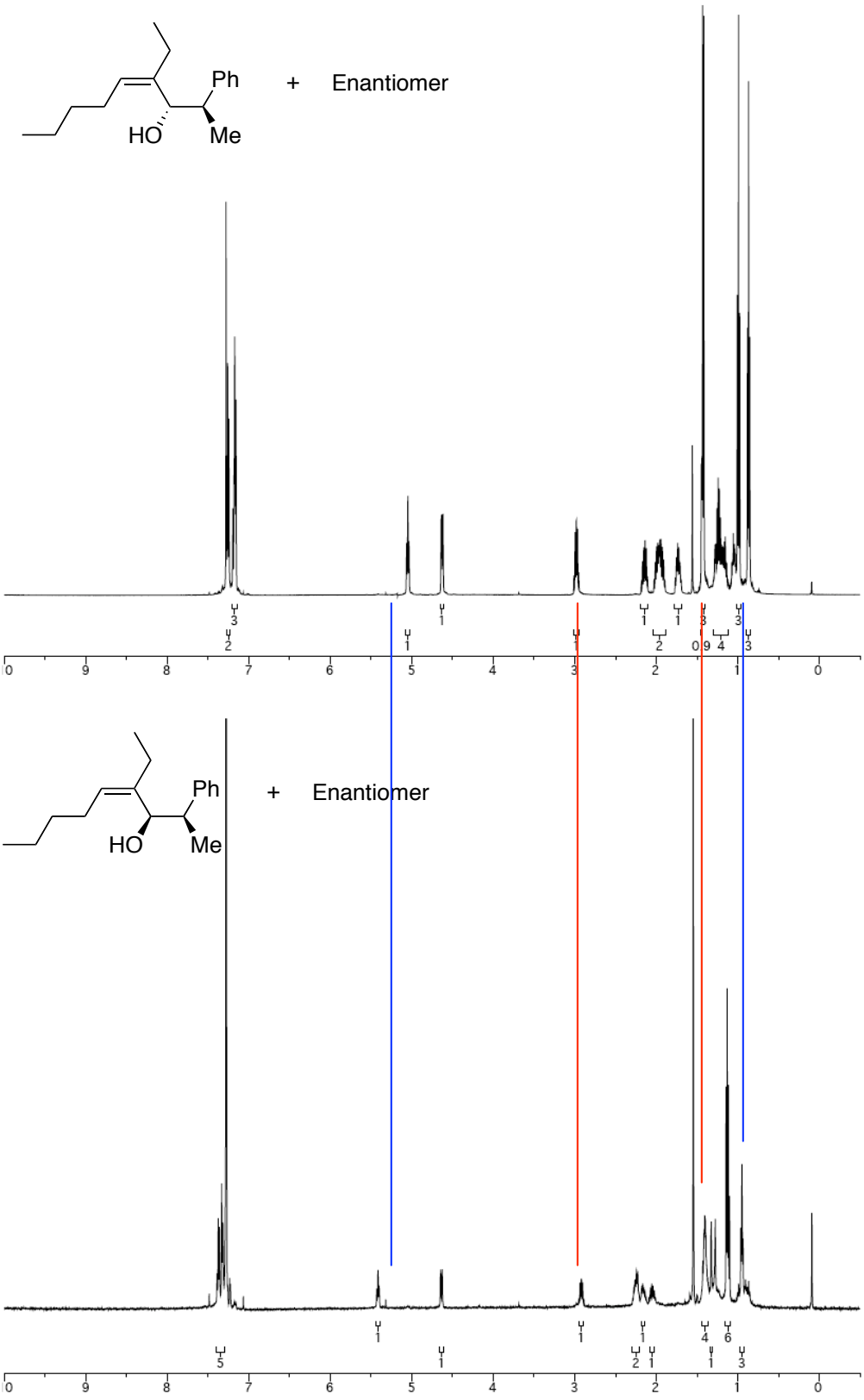

Figure SI-18. 500 MHz ^{1}H NMRs of **36 (major and minor)** in $CDCl_3$, respectively.

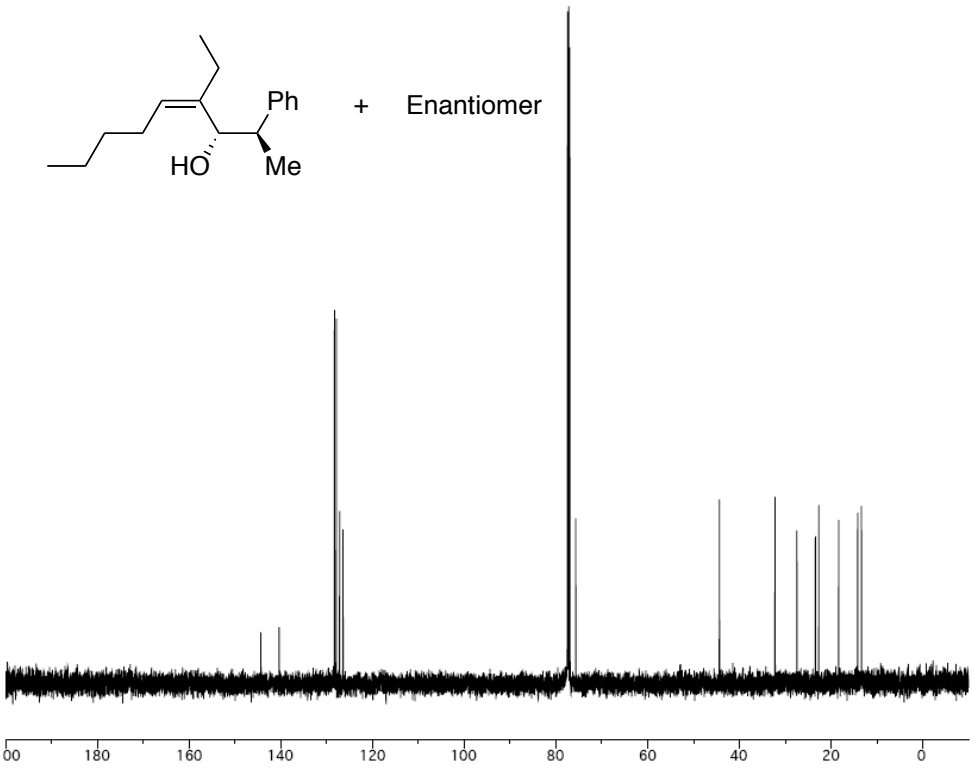

Figure SI-19. 125 MHz ^{13}C {^{1}H} NMR of **36 (major diastereomer)** in $CDCl_3$.

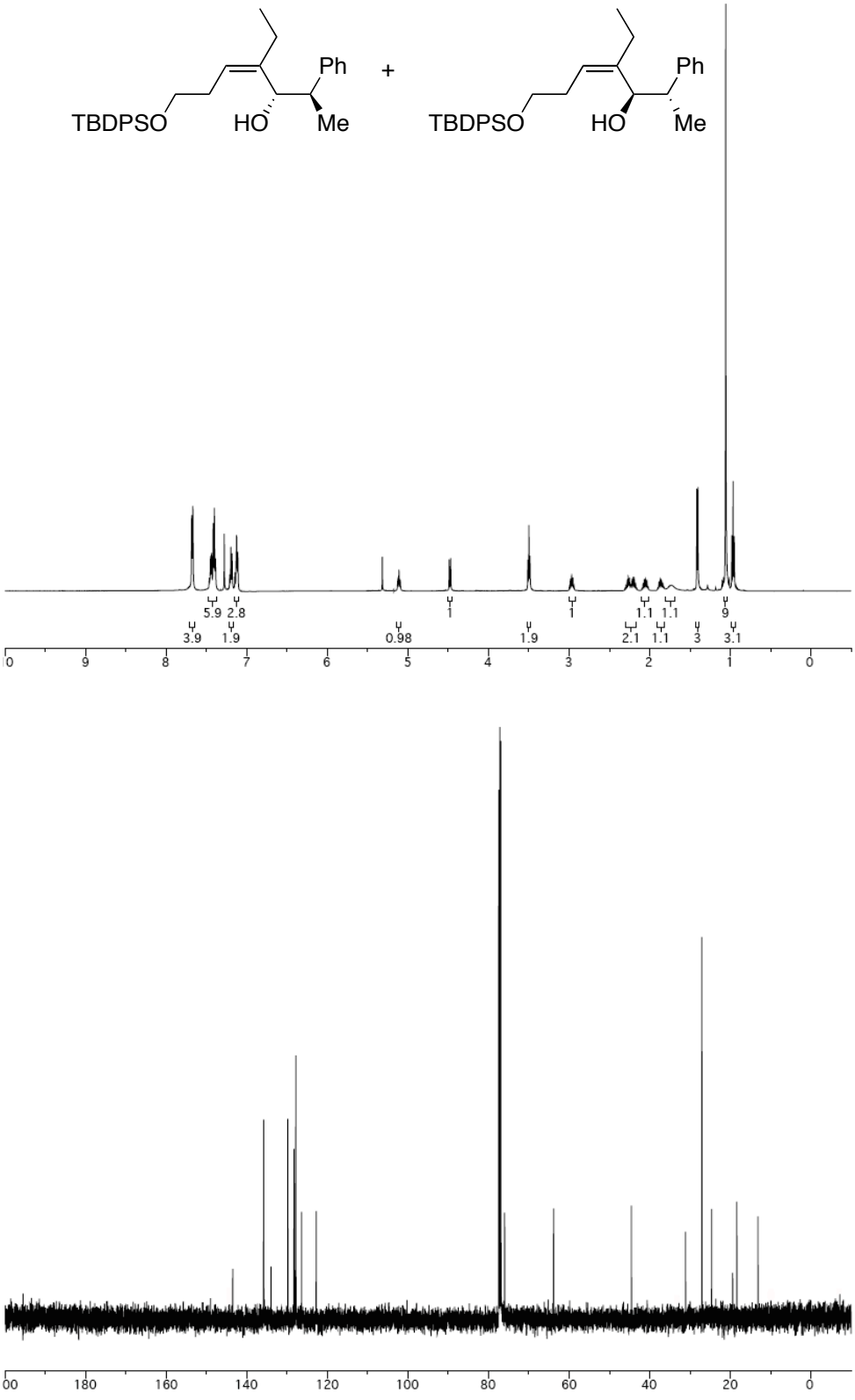

Figure SI-20. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **37** in $CDCl_3$.

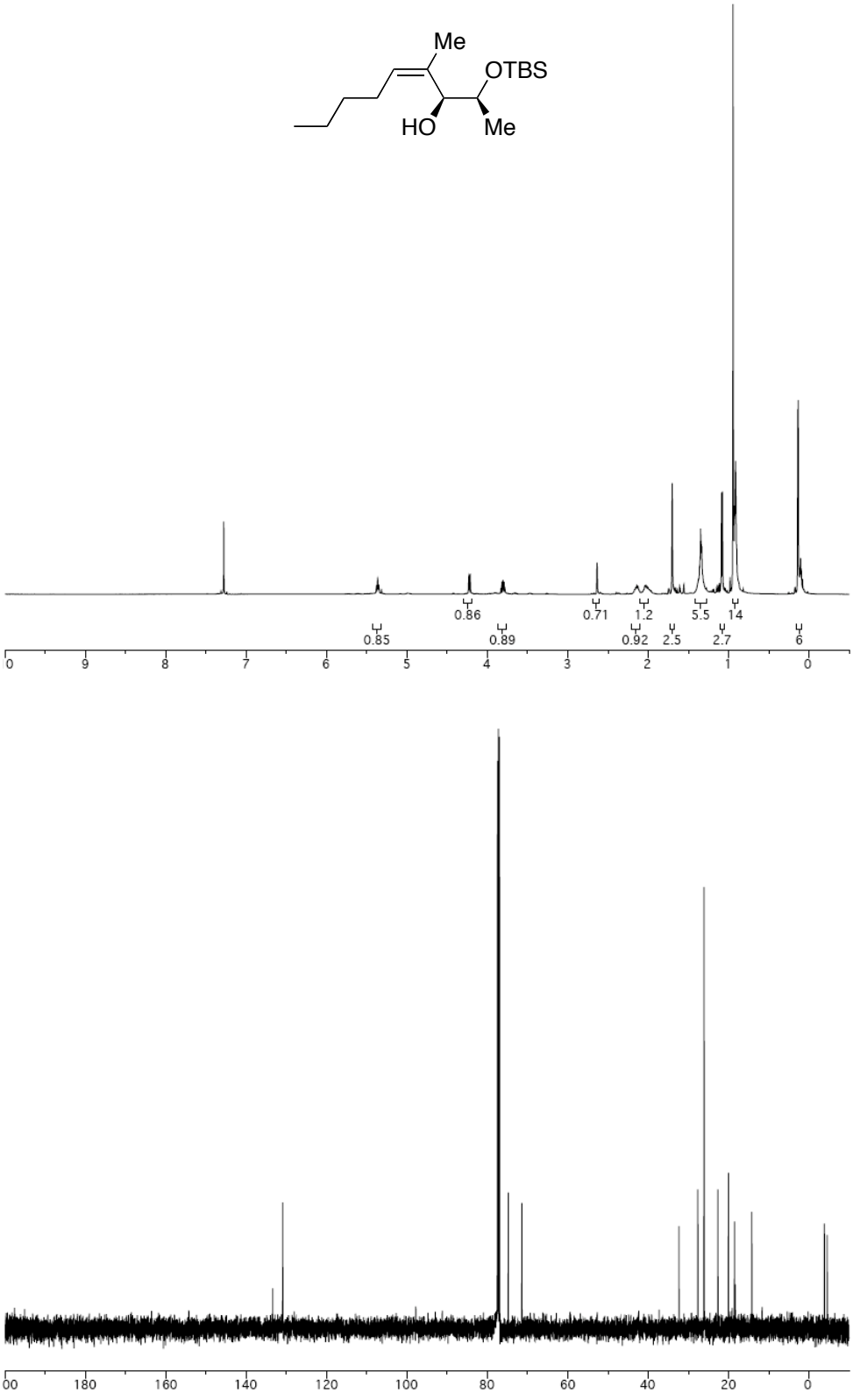

Figure SI-21. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **41** in $CDCl_3$.

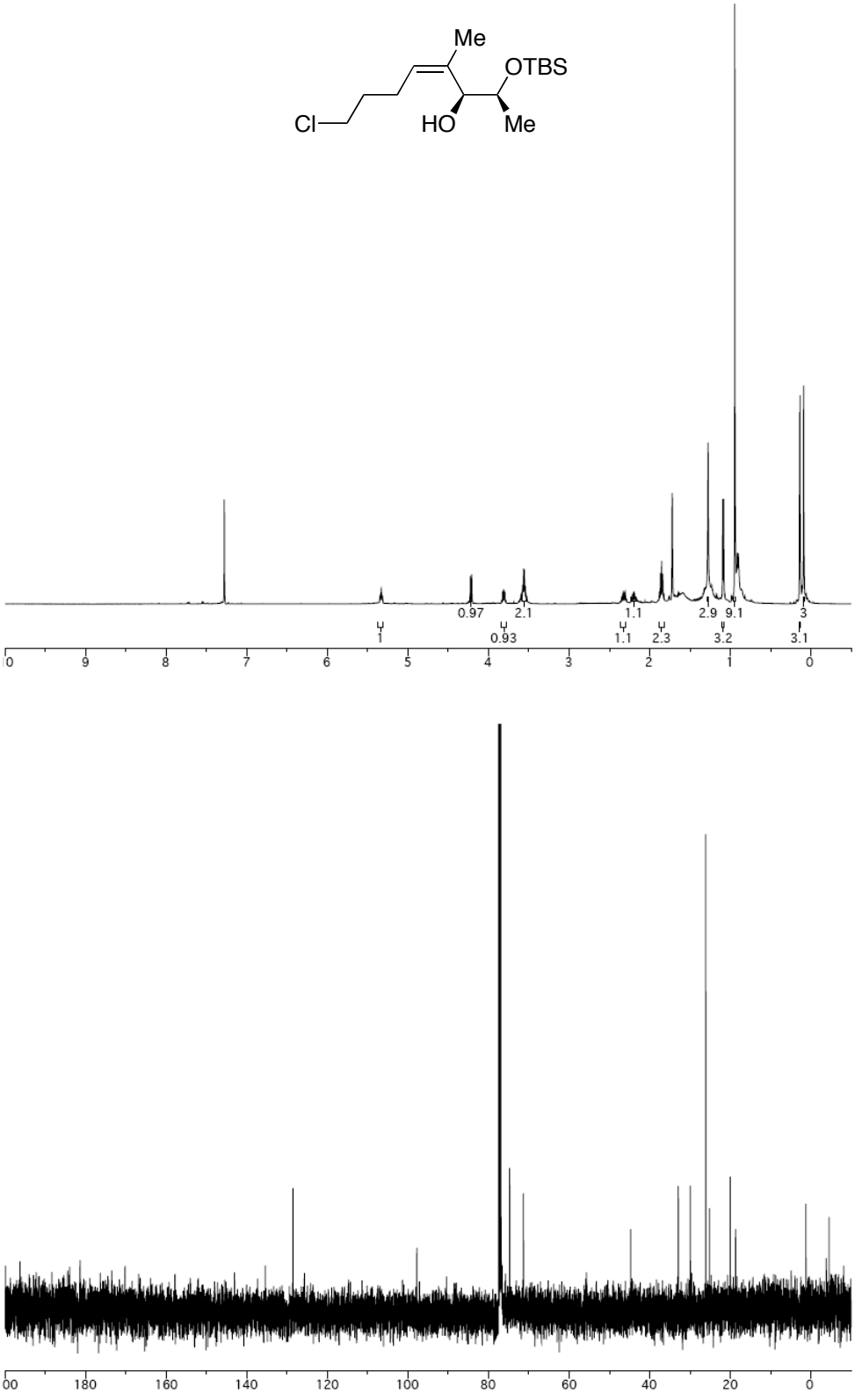

Figure SI-22. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **42** in $CDCl_3$.

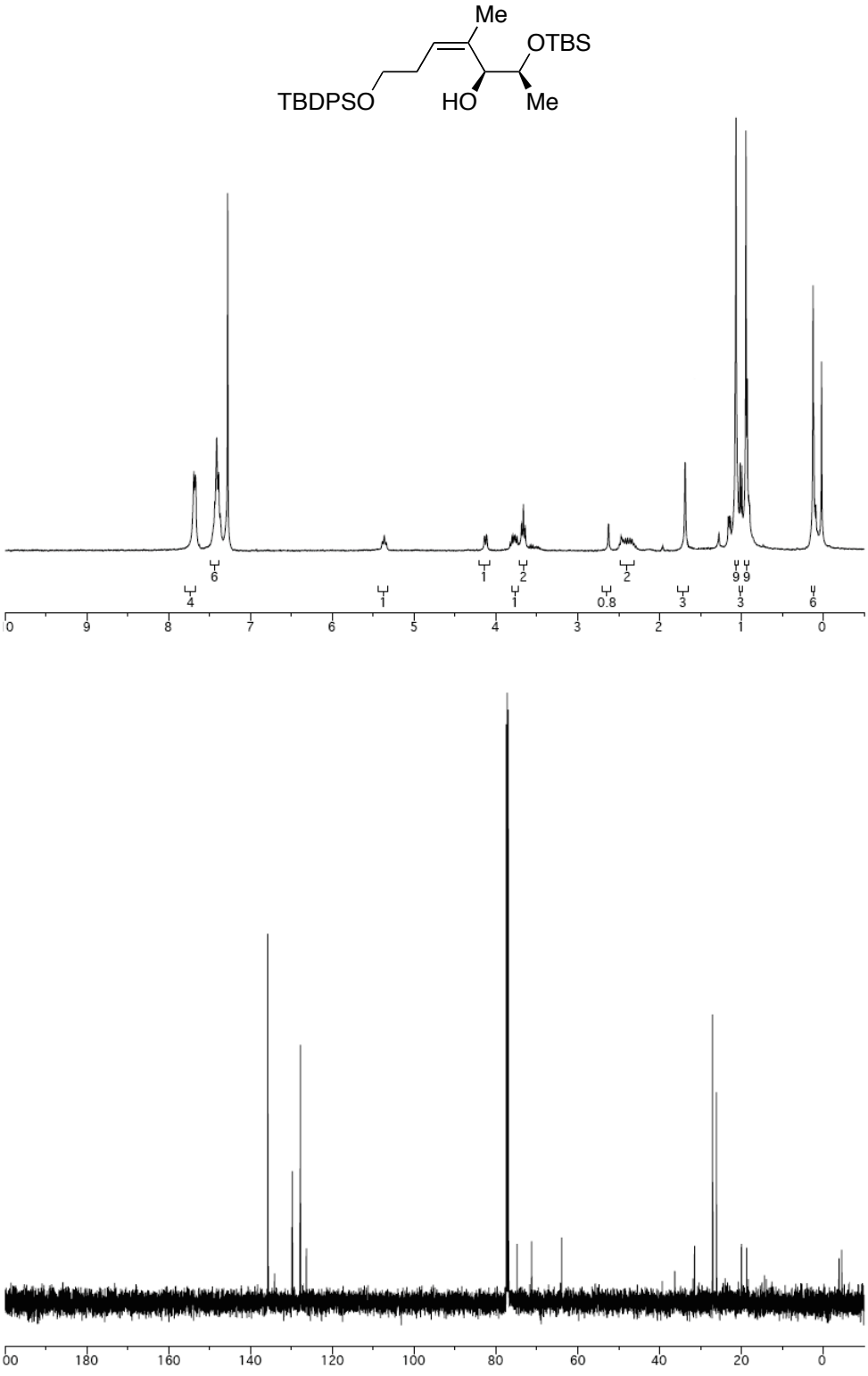

Figure SI-23. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **43** in $CDCl_3$.

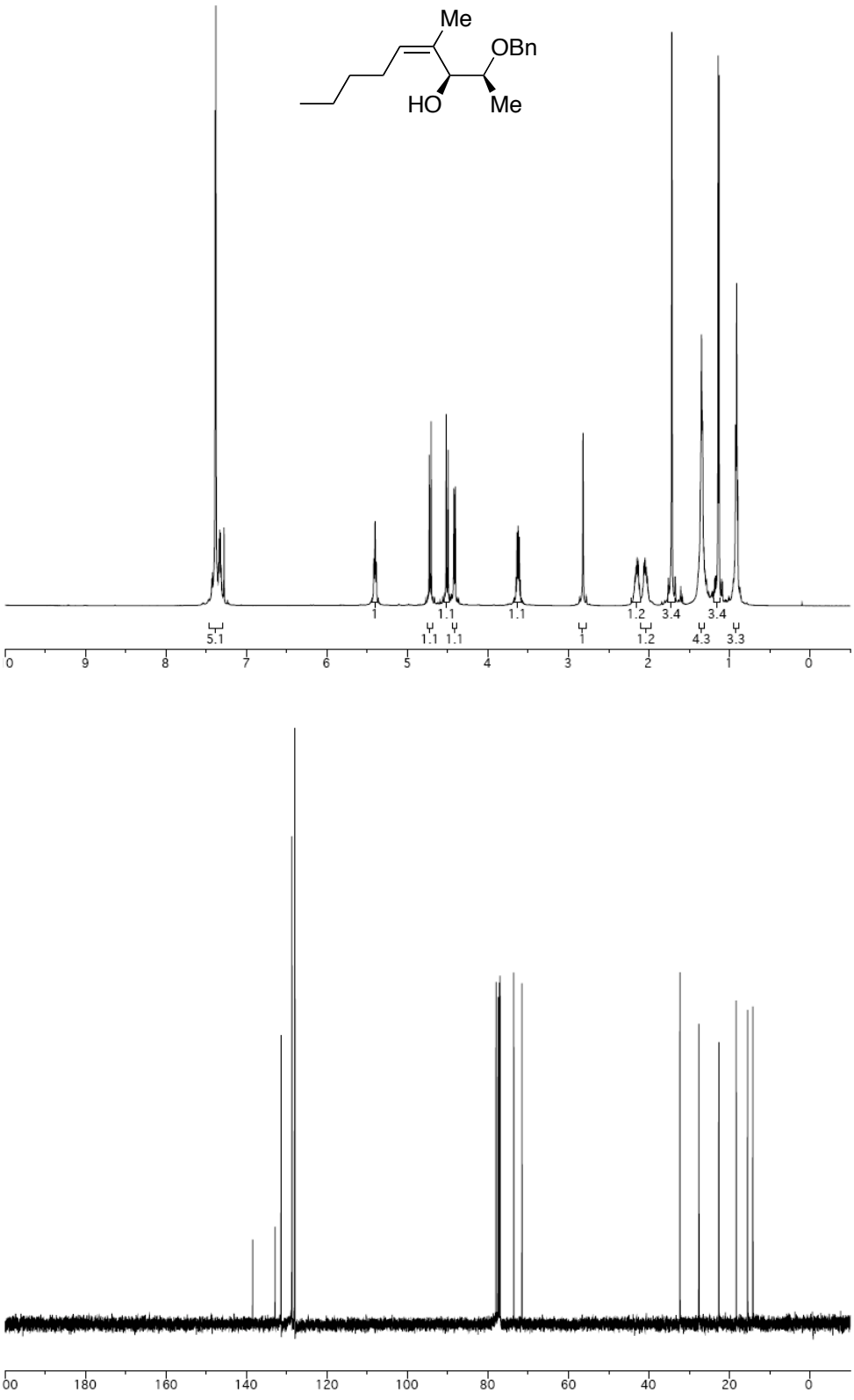

Figure SI-24. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **44** in $CDCl_3$.

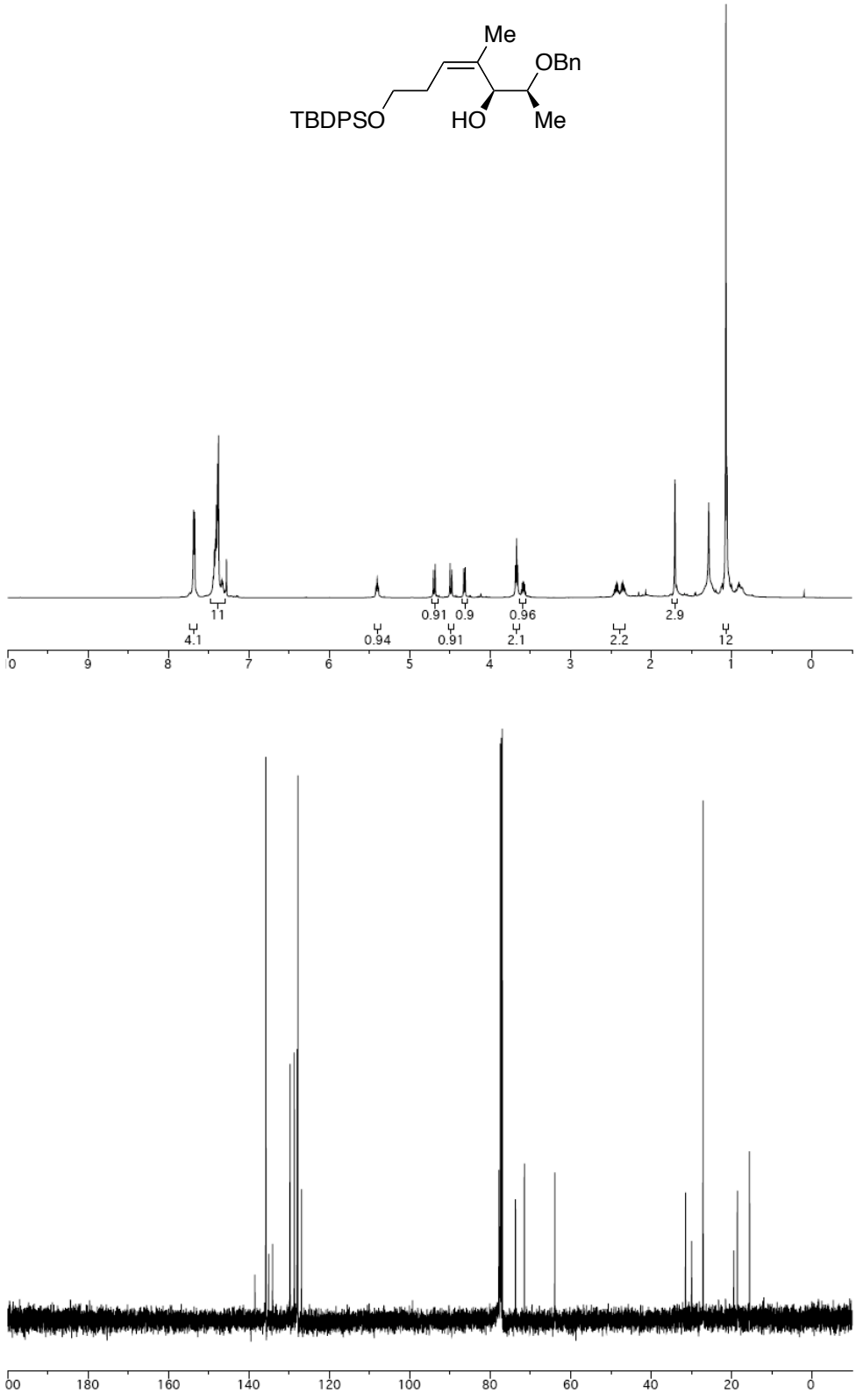

Figure SI-25. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **45** in $CDCl_3$.

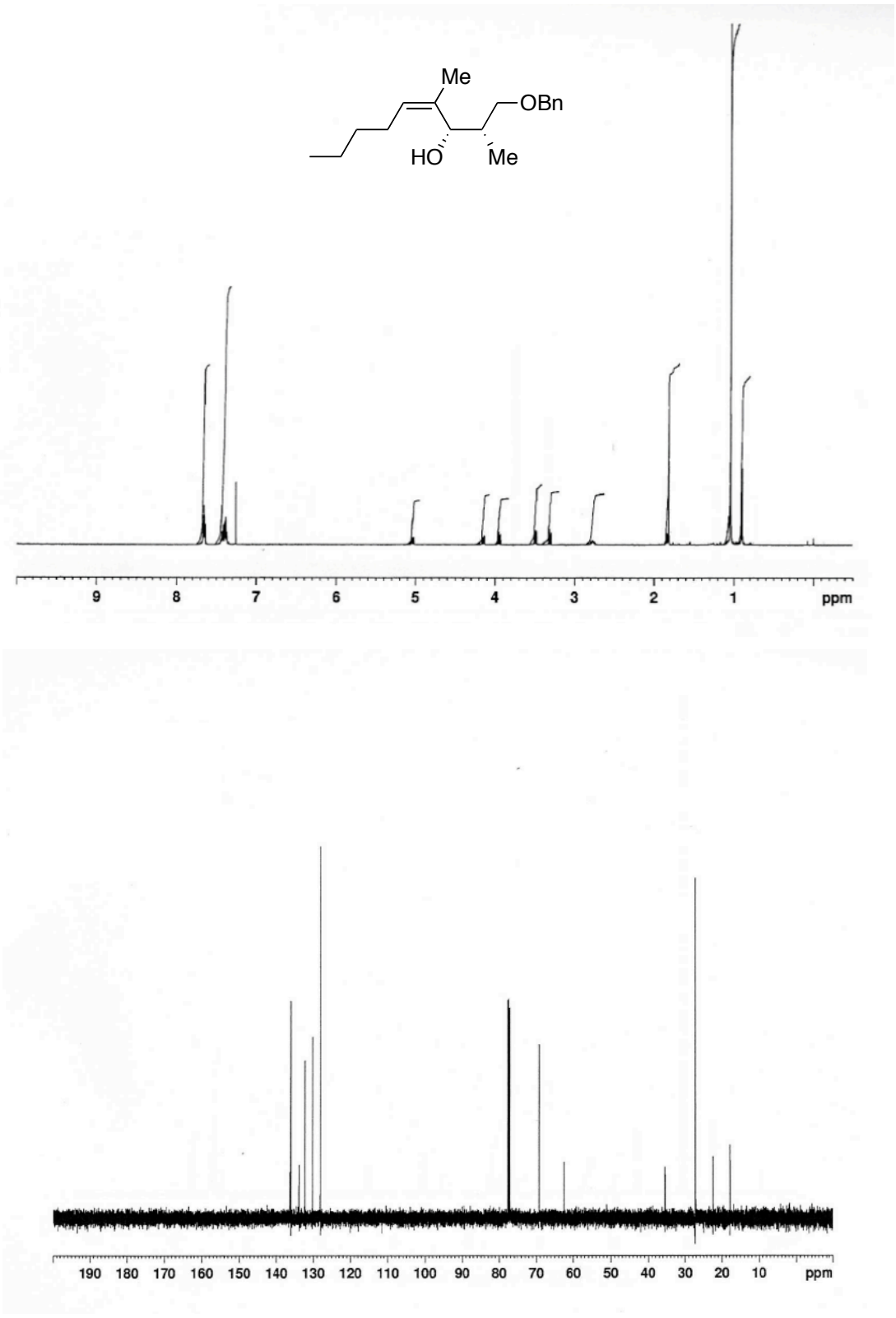

Figure SI-26. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **46** in $CDCl_3$.

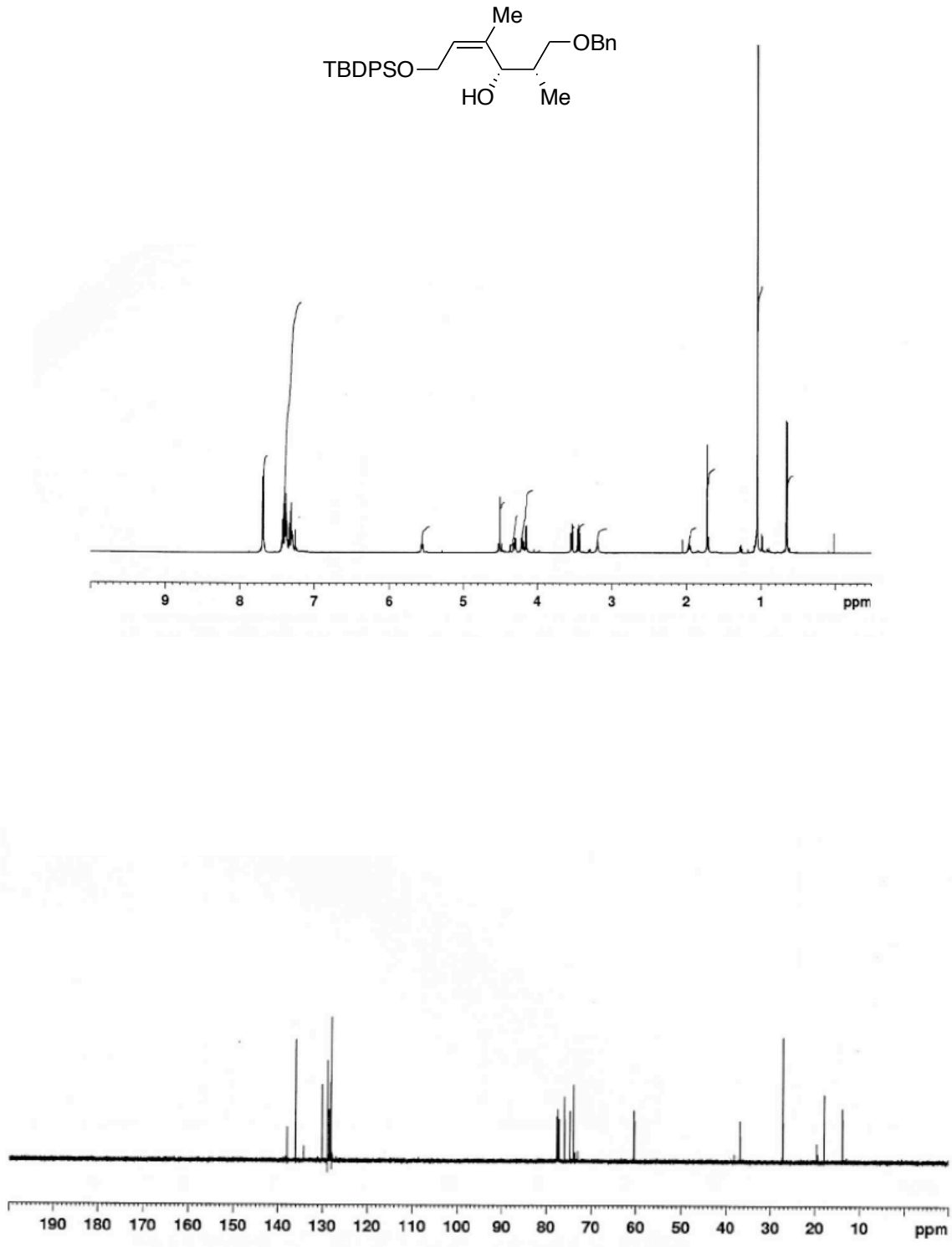

Figure SI-27. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **47** in $CDCl_3$.

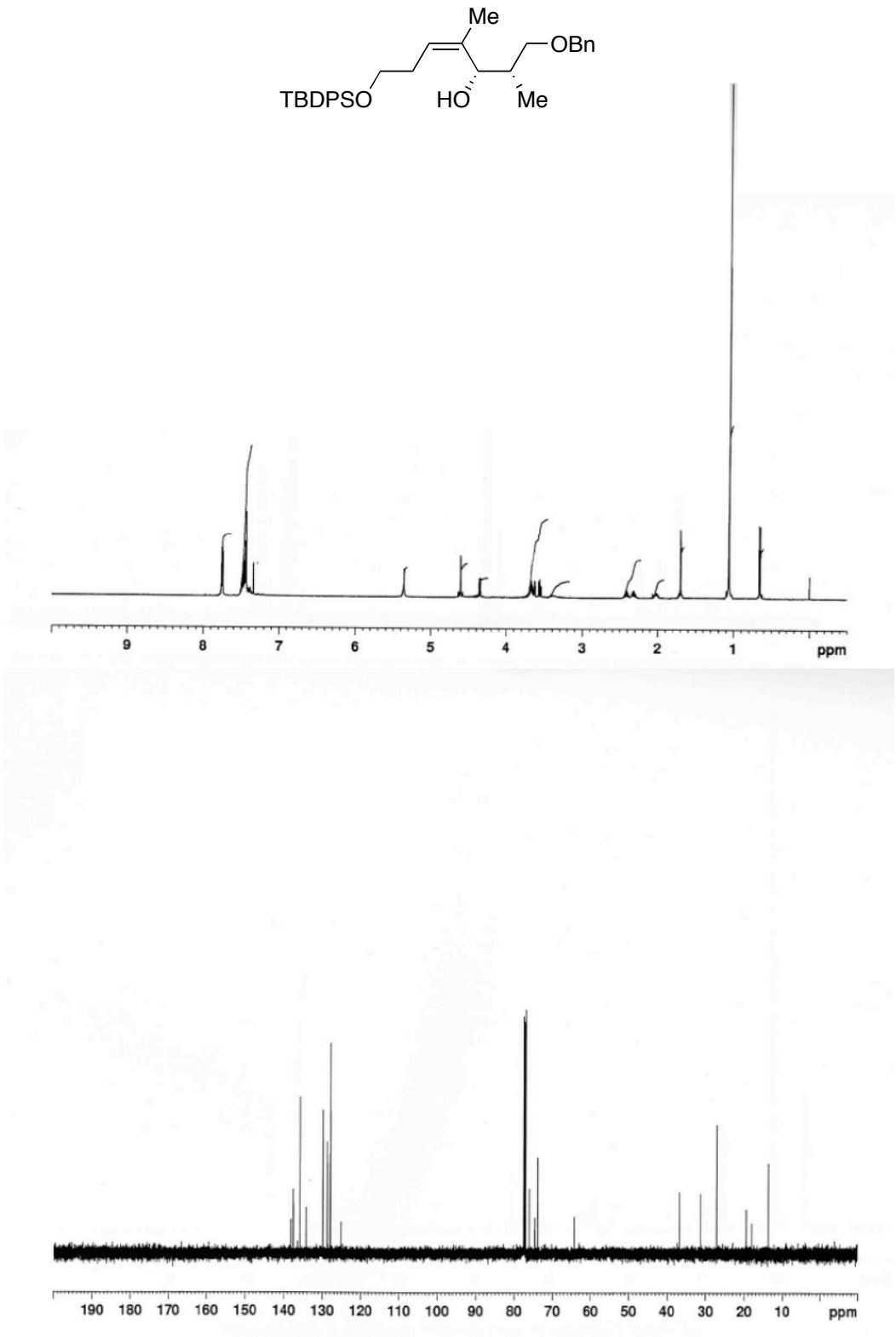

Figure SI-28. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **48** in $CDCl_3$.

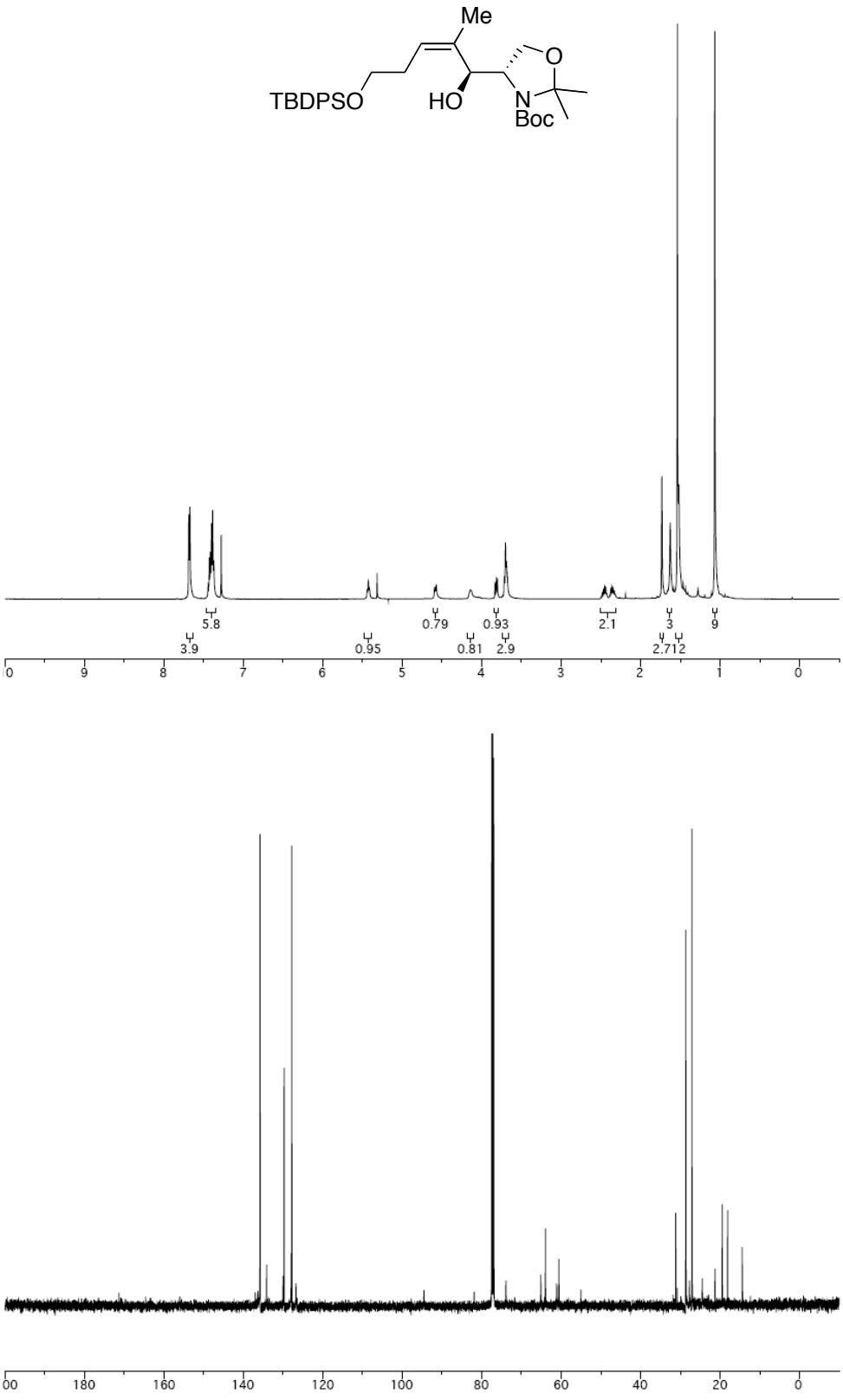

Figure SI-29. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **49** in $CDCl_3$.

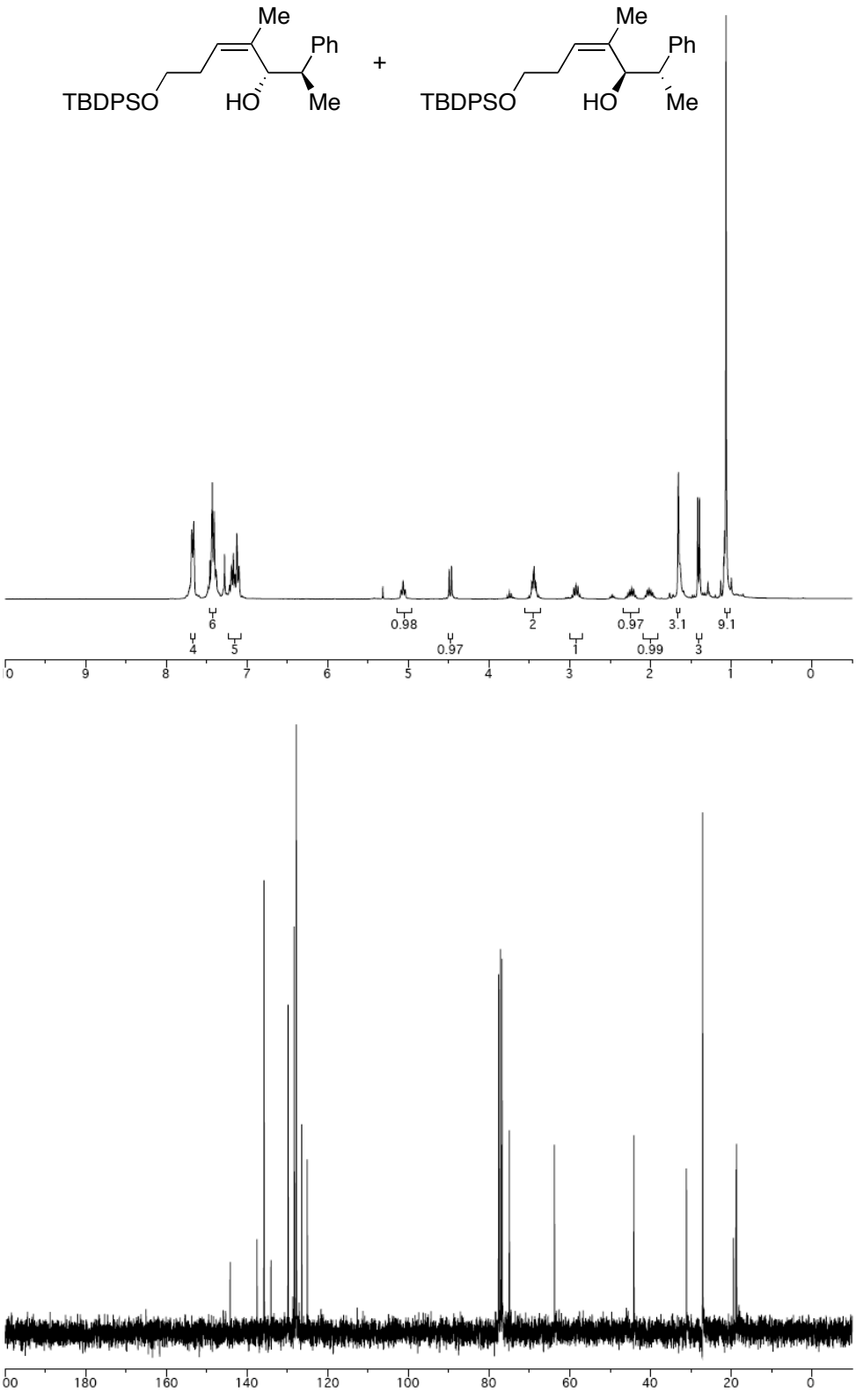

Figure SI-30. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **50** in $CDCl_3$.

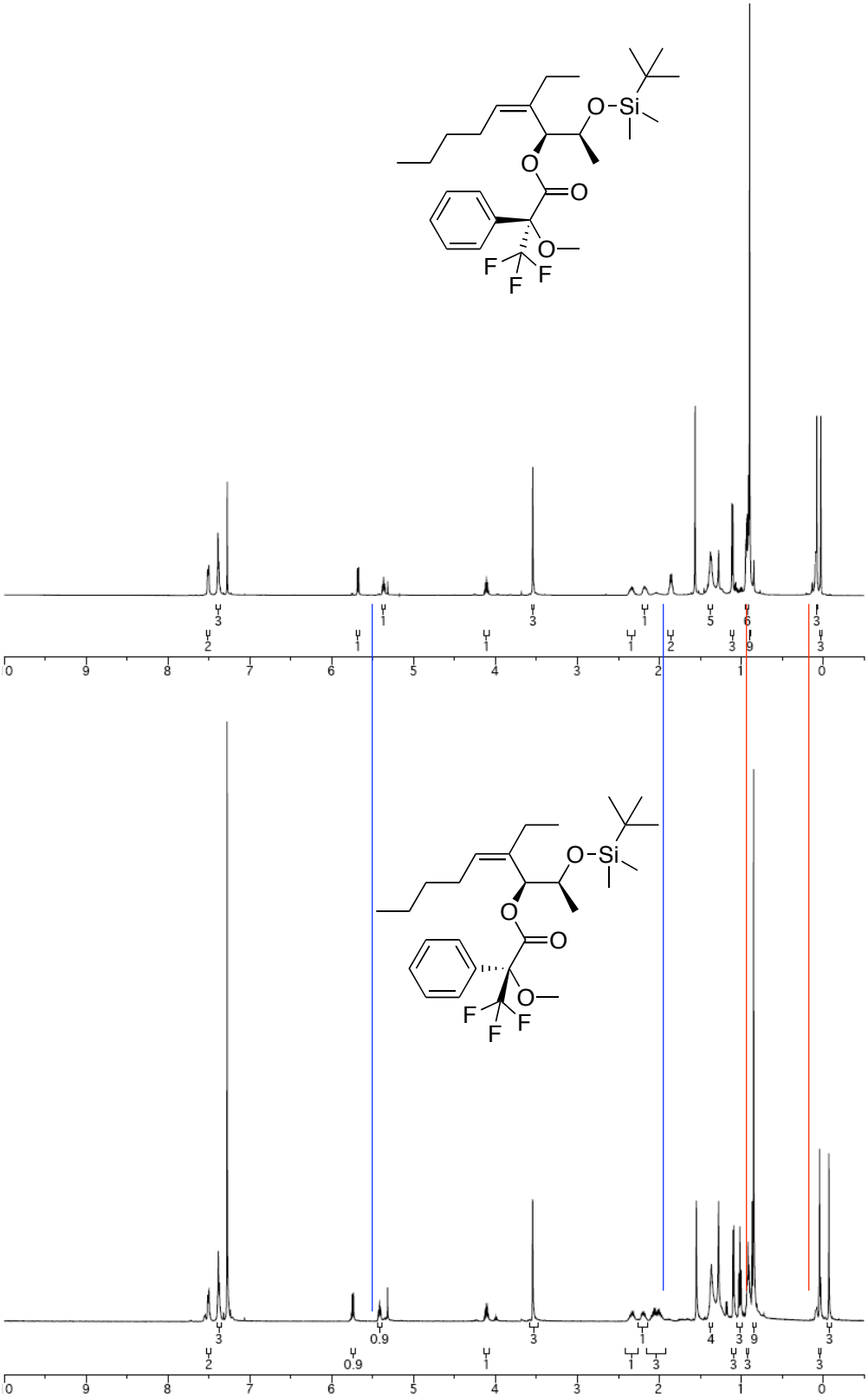

Figure SI-31. 500 MHz ^{1}H NMR of (*S*) and (*R*)-Mosher Ester of **19** in $CDCl_3$.

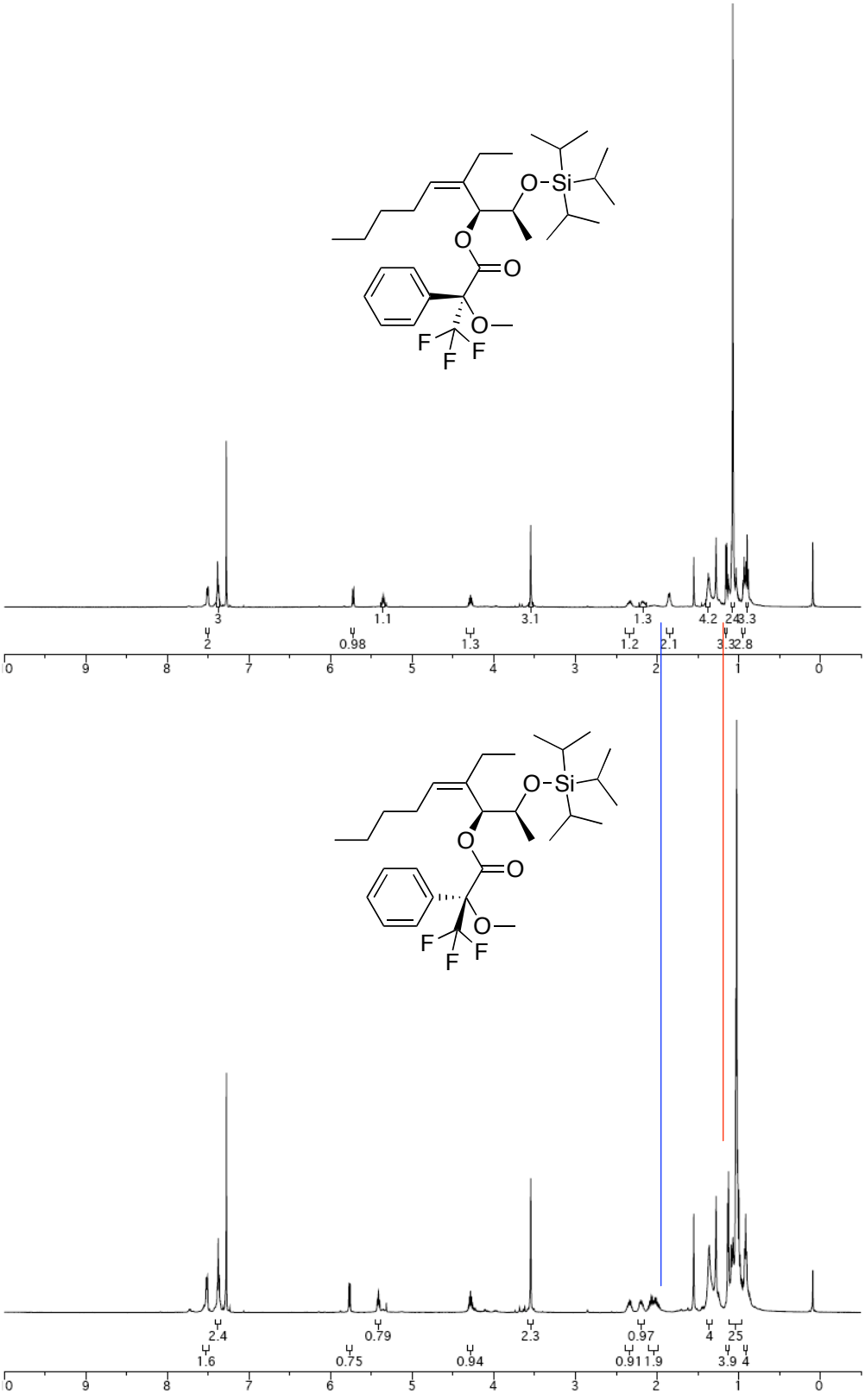

Figure SI-32. 500 MHz ^{1}H NMR of (*S*) and (*R*)-Mosher Ester of **25** in $CDCl_3$.

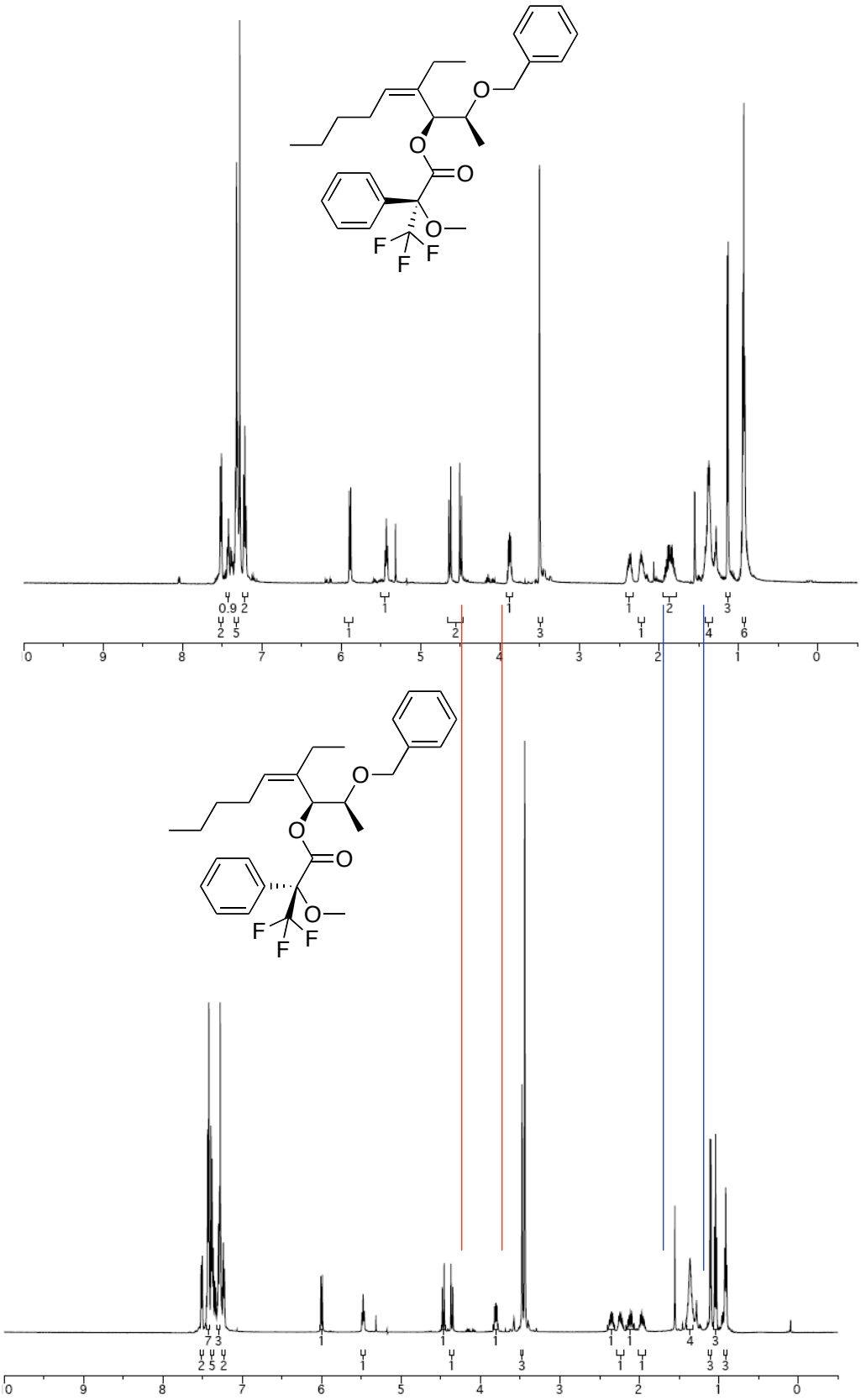

Figure SI-33. 500 MHz ^{1}H NMR of (*S*) and (*R*)-Mosher Ester of **26** in $CDCl_3$.

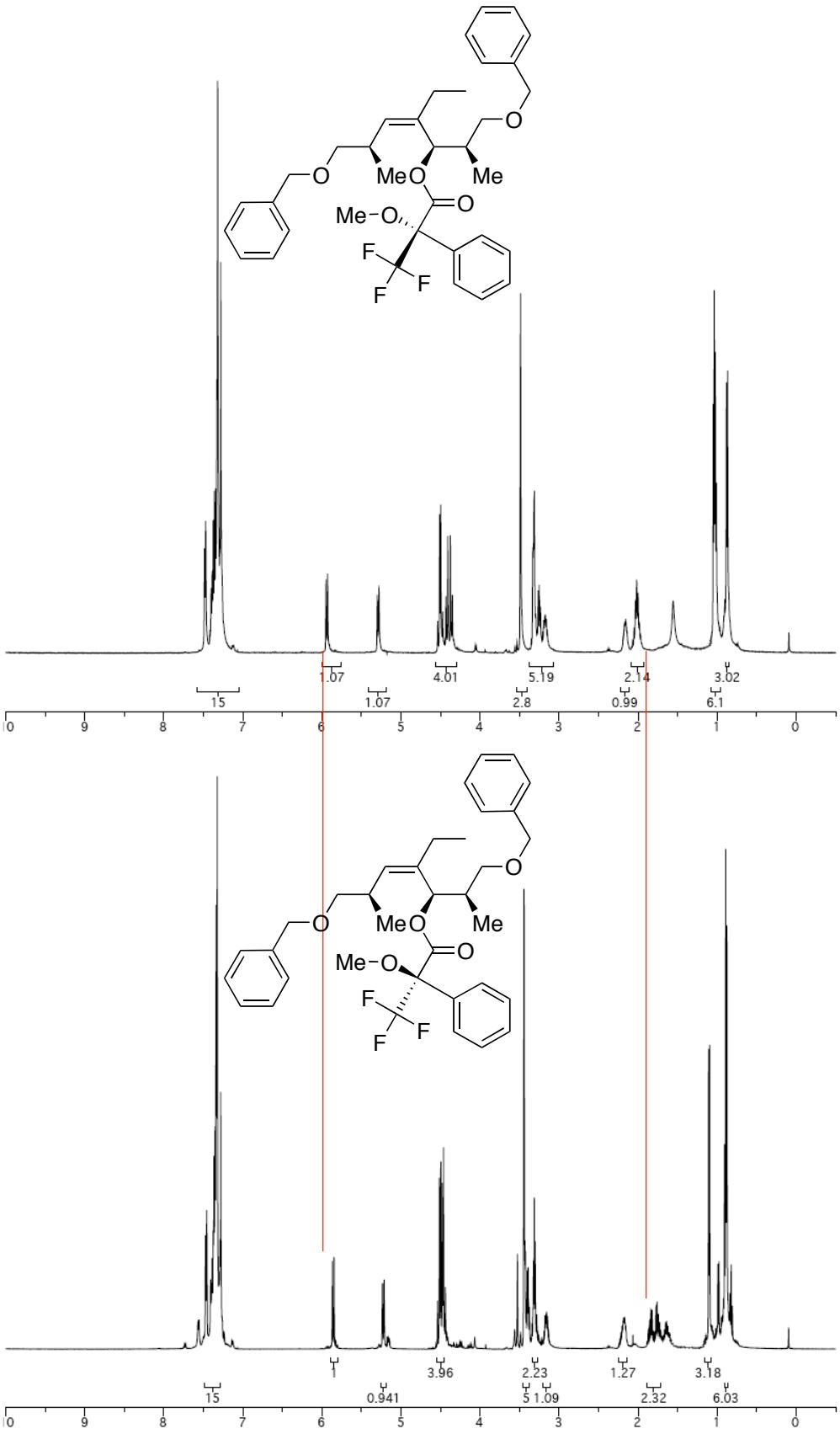

Figure SI-34. 500 MHz ^{1}H NMR of (*S*) and (*R*)-Mosher Ester of **32** in $CDCl_3$.

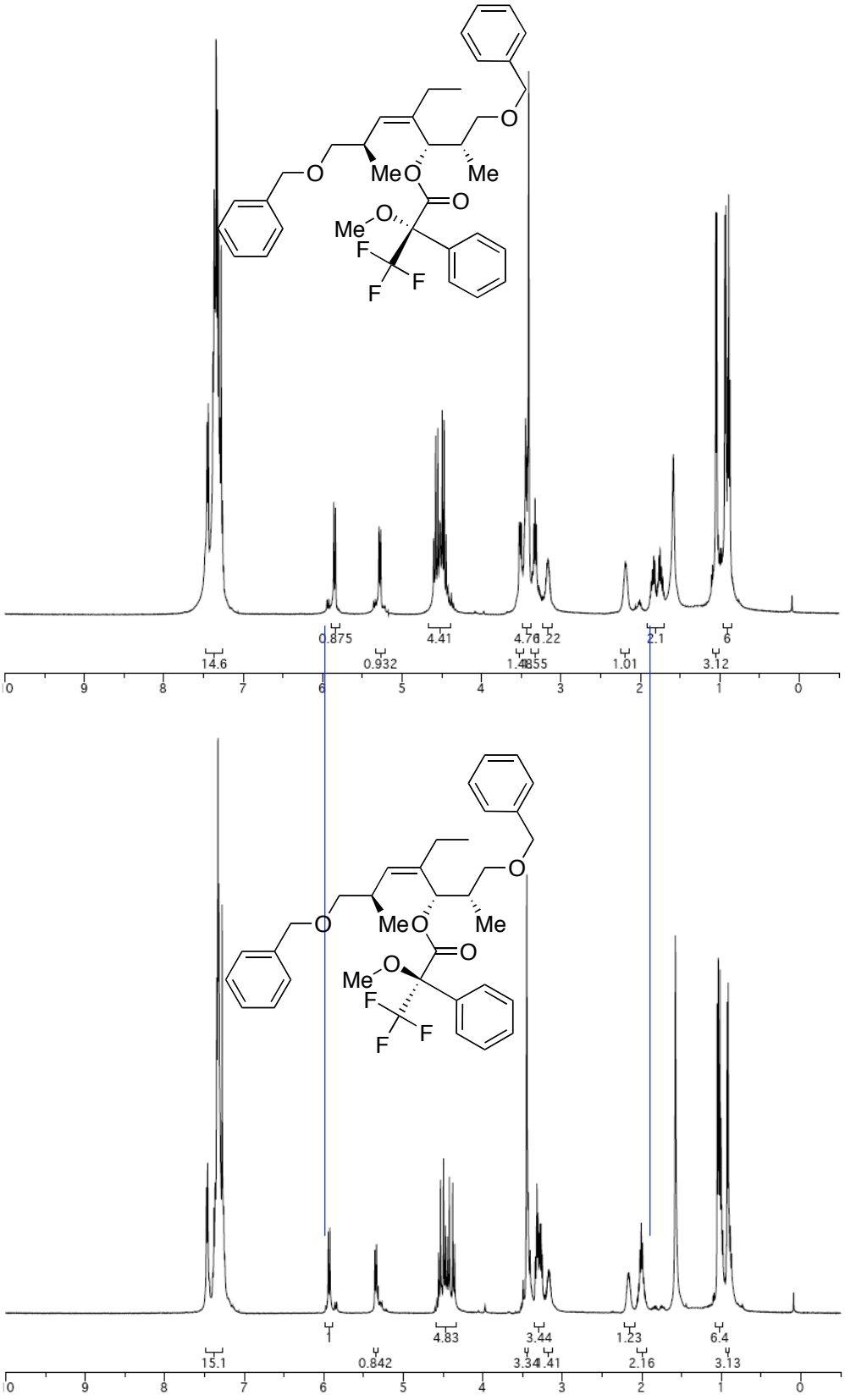

Figure SI-35. 500 MHz ^{1}H NMR of (*S*) and (*R*)-Mosher Ester of **33** in $CDCl_3$.

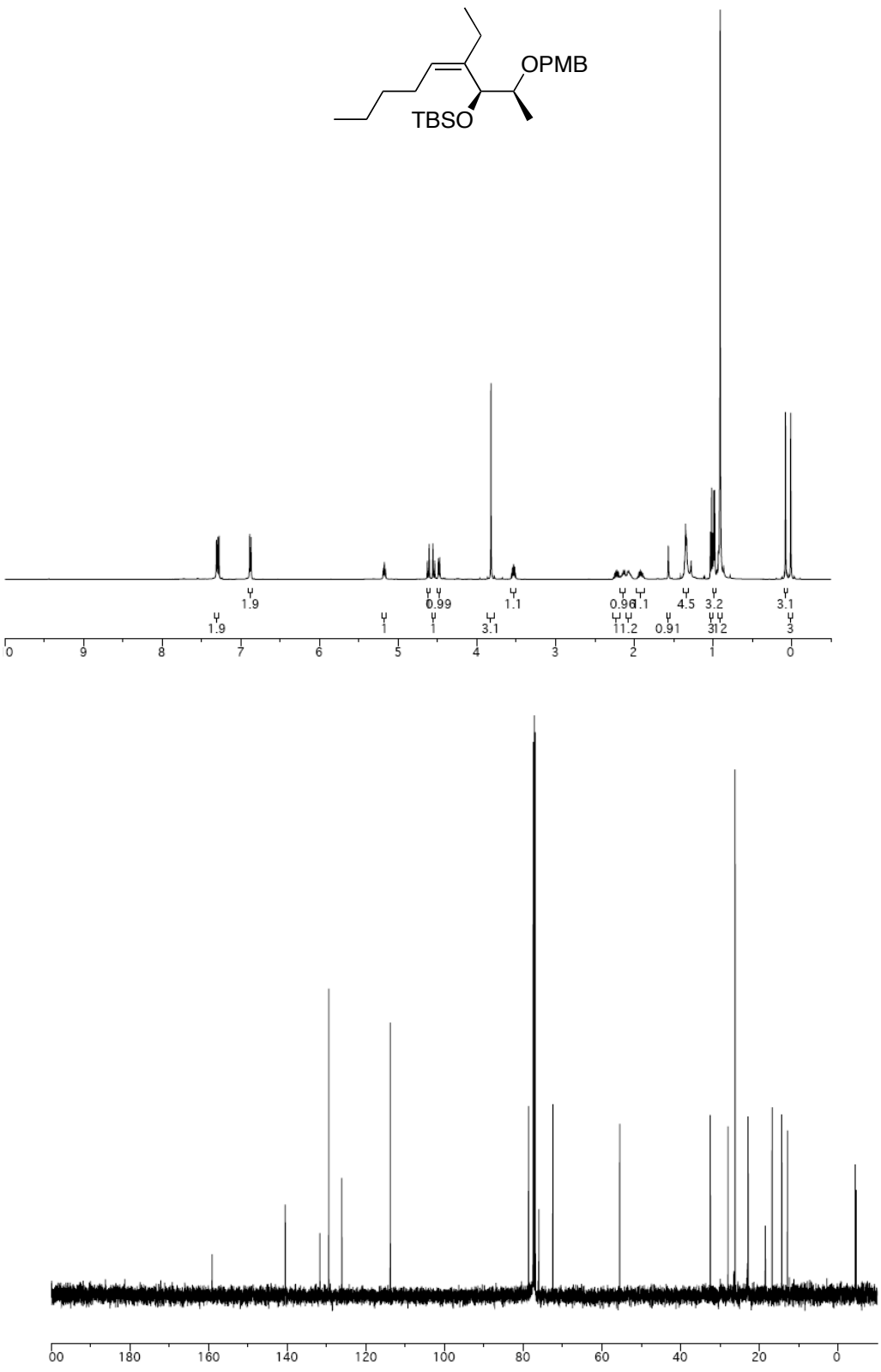

Figure SI-36. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **30a** in $CDCl_3$.

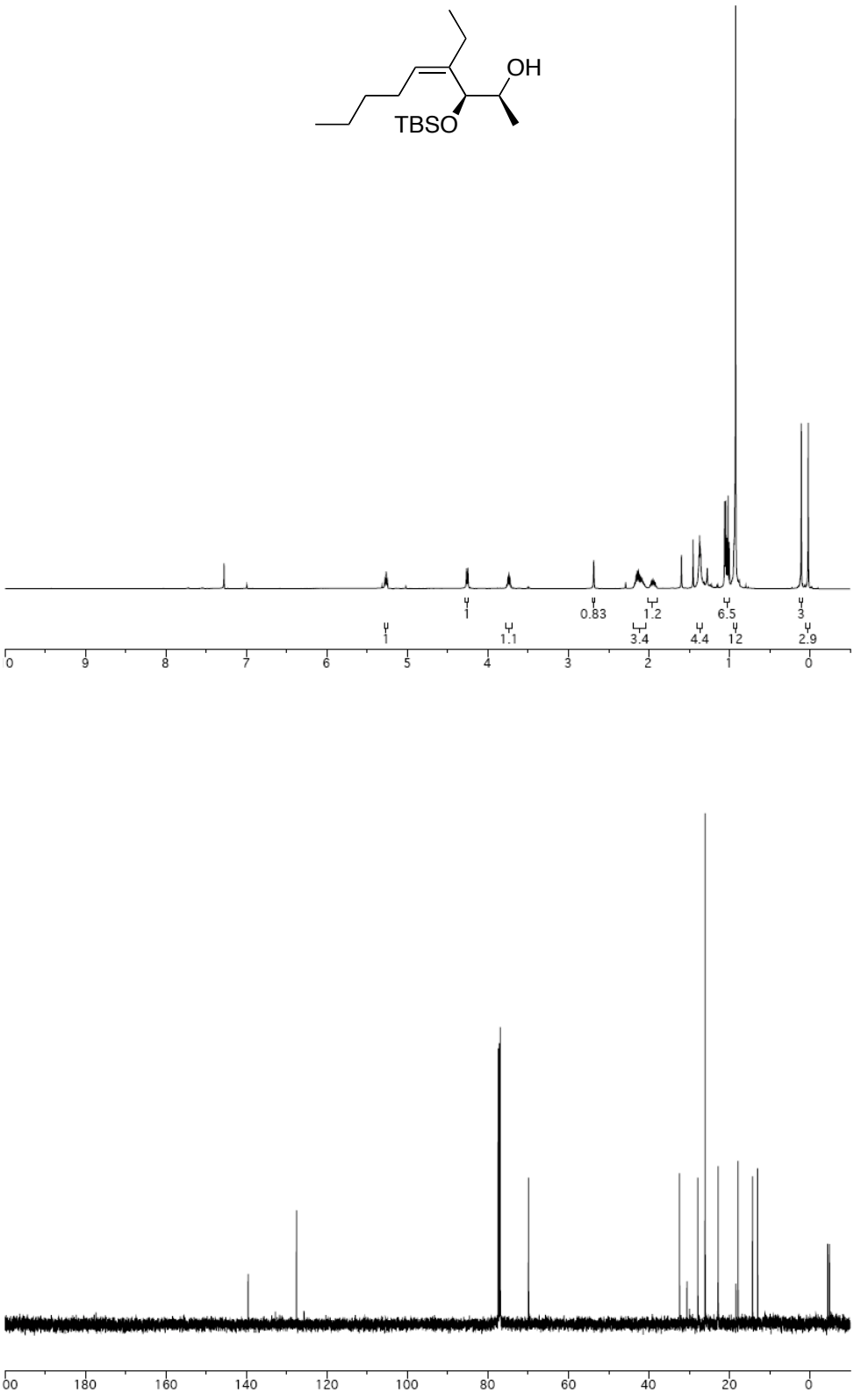

Figure SI-37. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **30b** in $CDCl_3$.

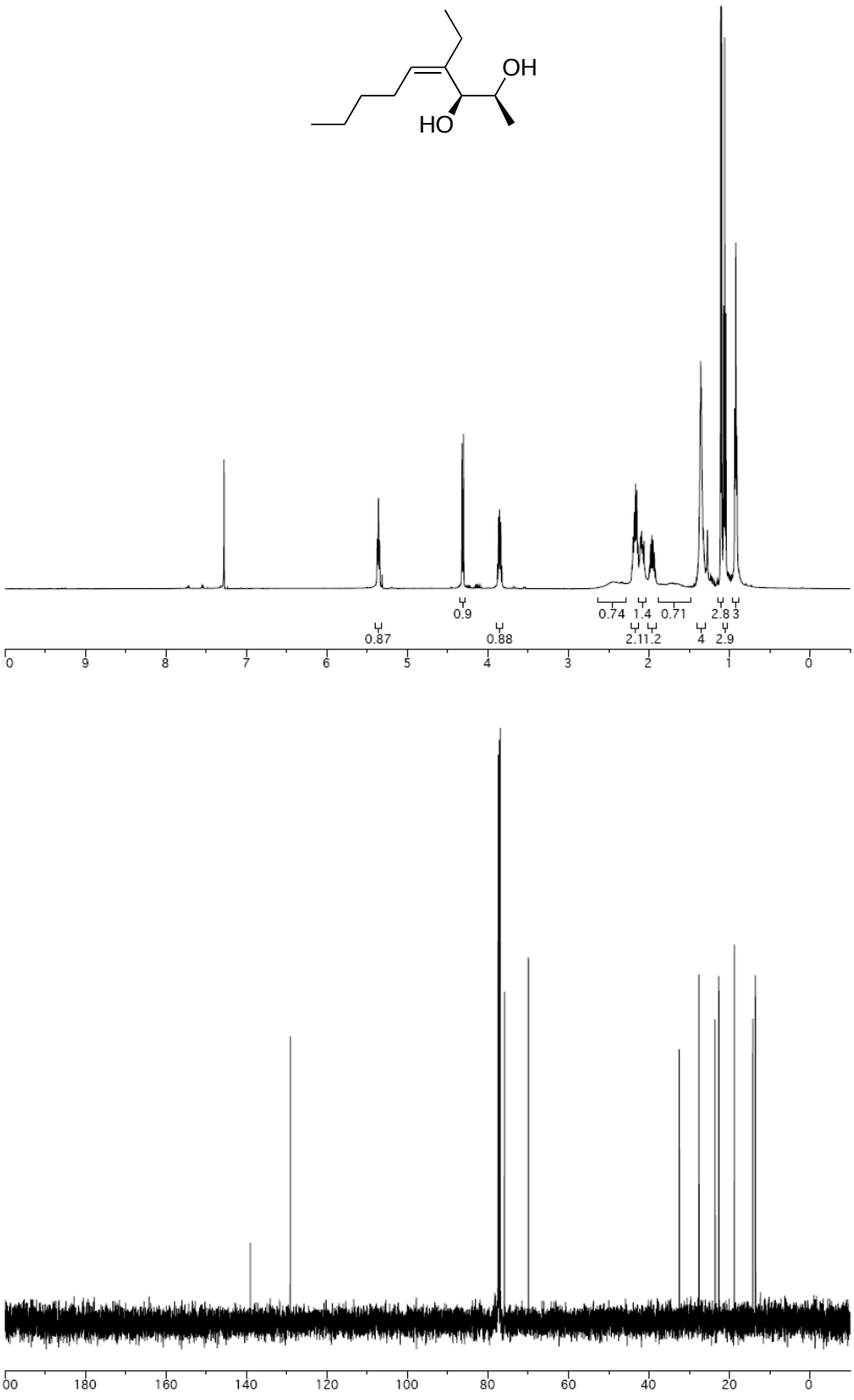

Figure SI-38. 500 MHz ^{1}H and 125 MHz ^{13}C {^{1}H} NMR of **38** in $CDCl_3$.

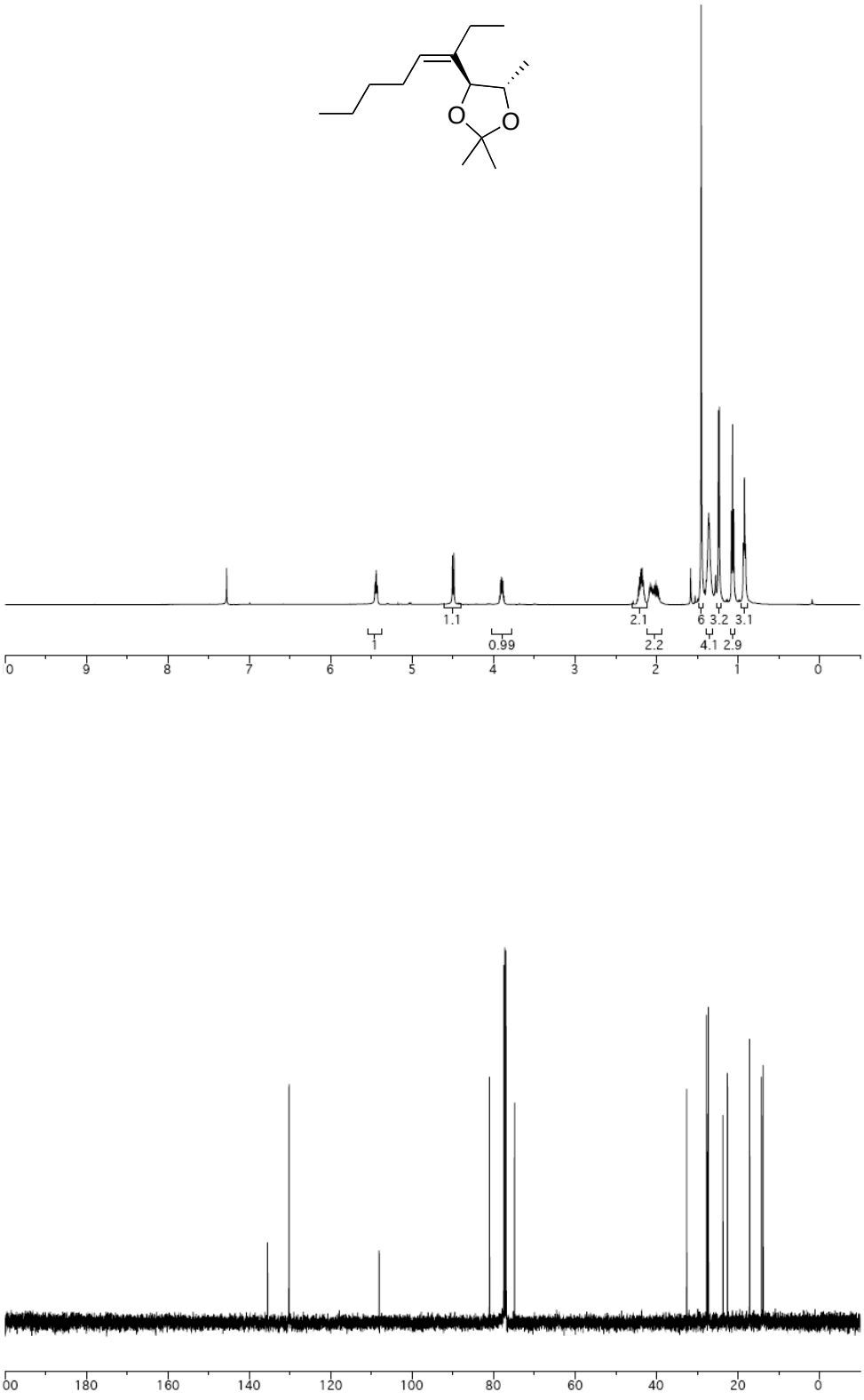

Figure SI-39. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **39** in $CDCl_3$.

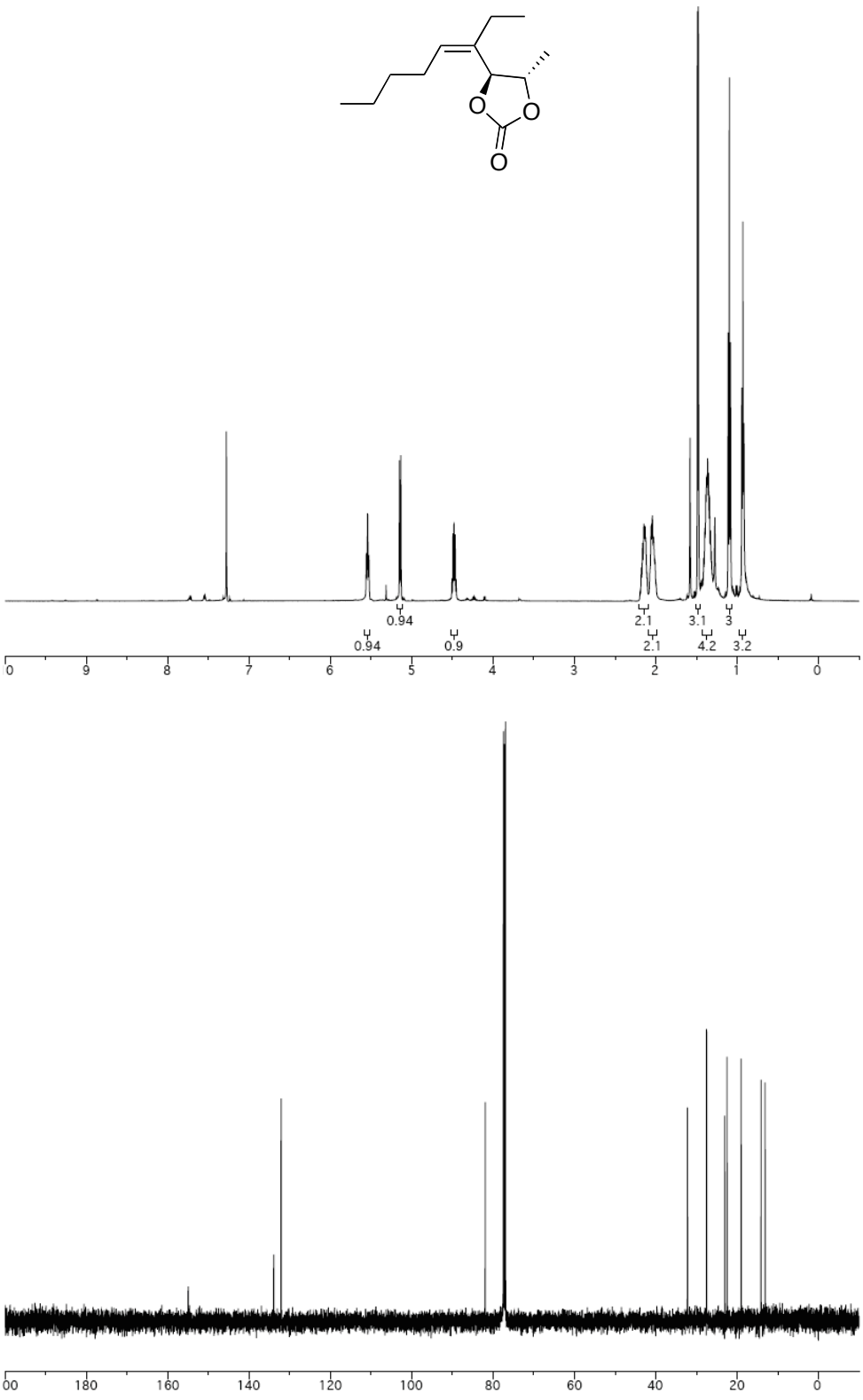

Figure SI-40. 500 MHz ^{1}H and 125 MHz ^{13}C $\{^{1}H\}$ NMR of **40** in $CDCl_3$.

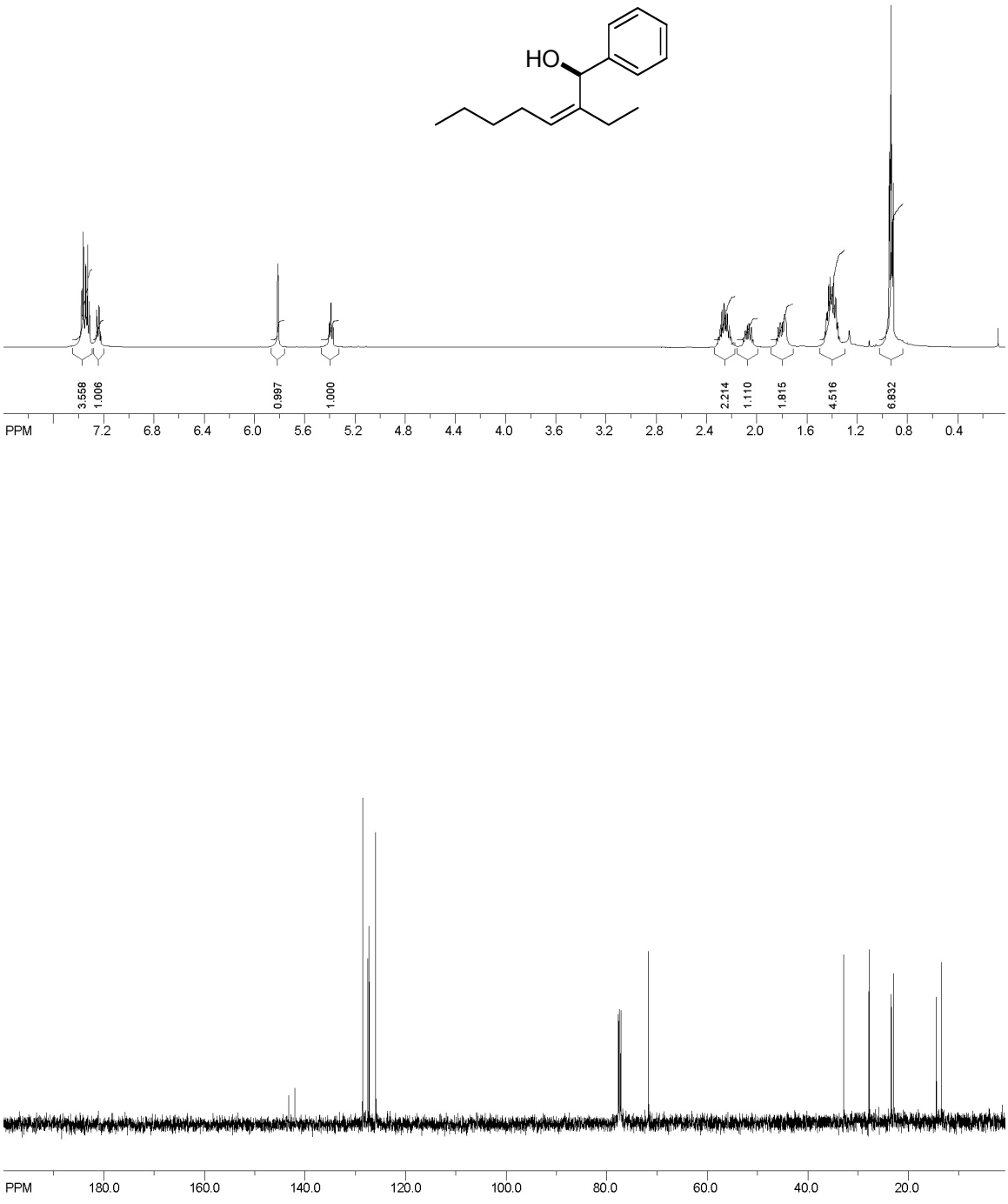

Figure SI-41. 500 MHz ^{1}H and 125 MHz $^{13}C\{^{1}H\}$ NMR of **51** in $CDCl_3$.

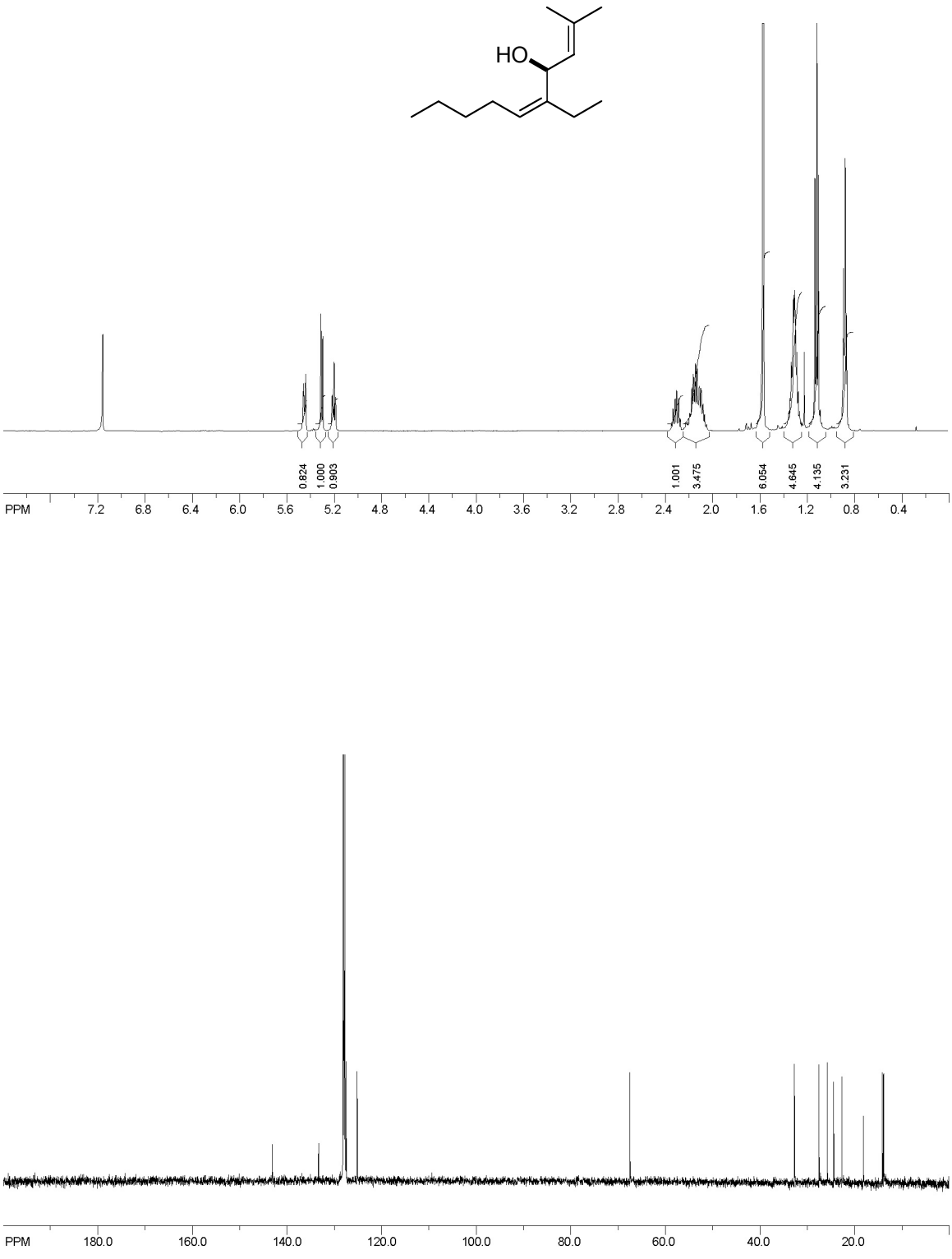

Figure SI-42. 500 MHz ^{1}H and 125 MHz $^{13}C\{^{1}H\}$ NMR of **52** in C_6D_6.

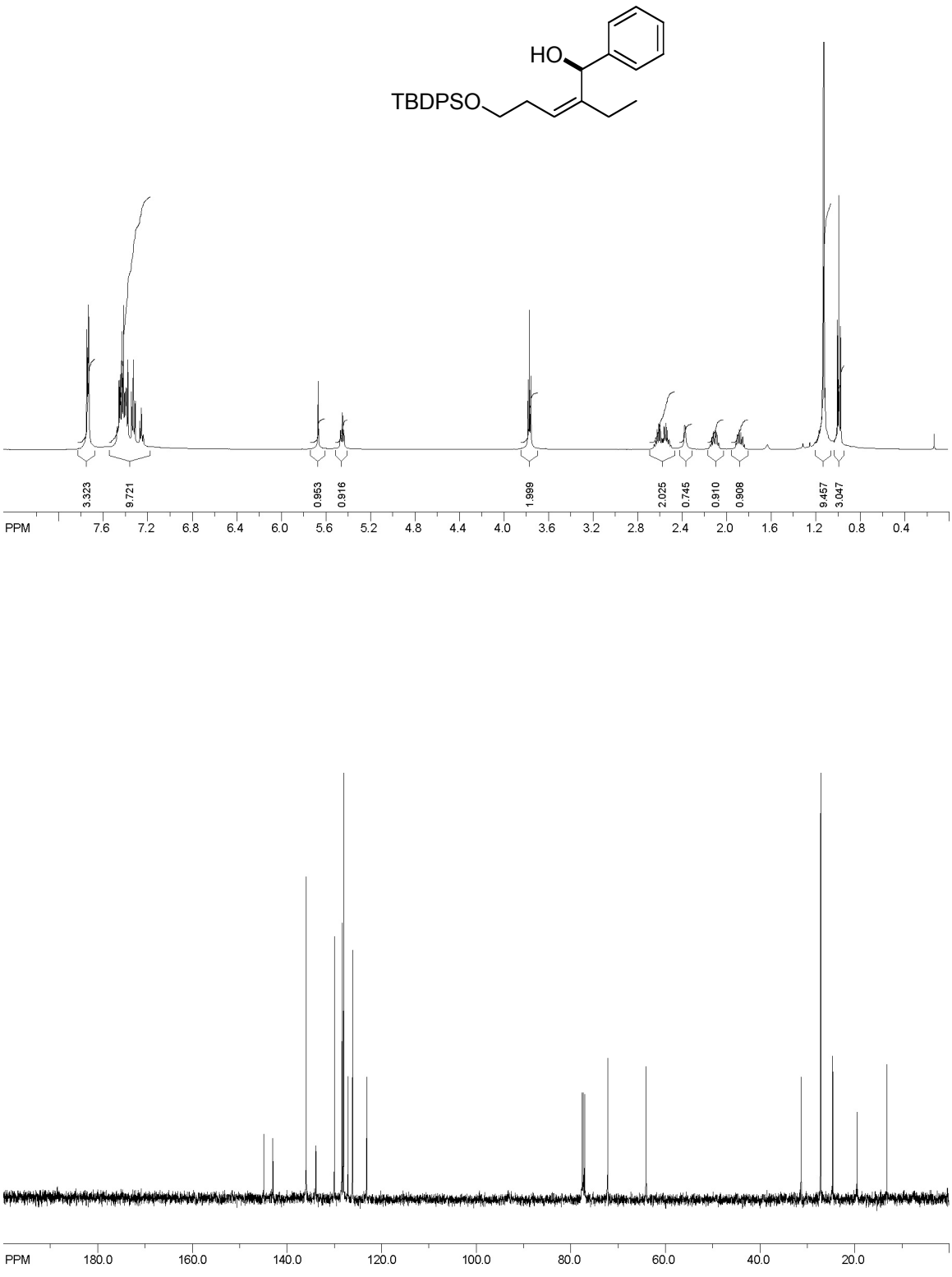

Figure SI-43. 500 MHz ^{1}H and 125 MHz $^{13}C\{^{1}H\}$ NMR of **53** in $CDCl_3$.

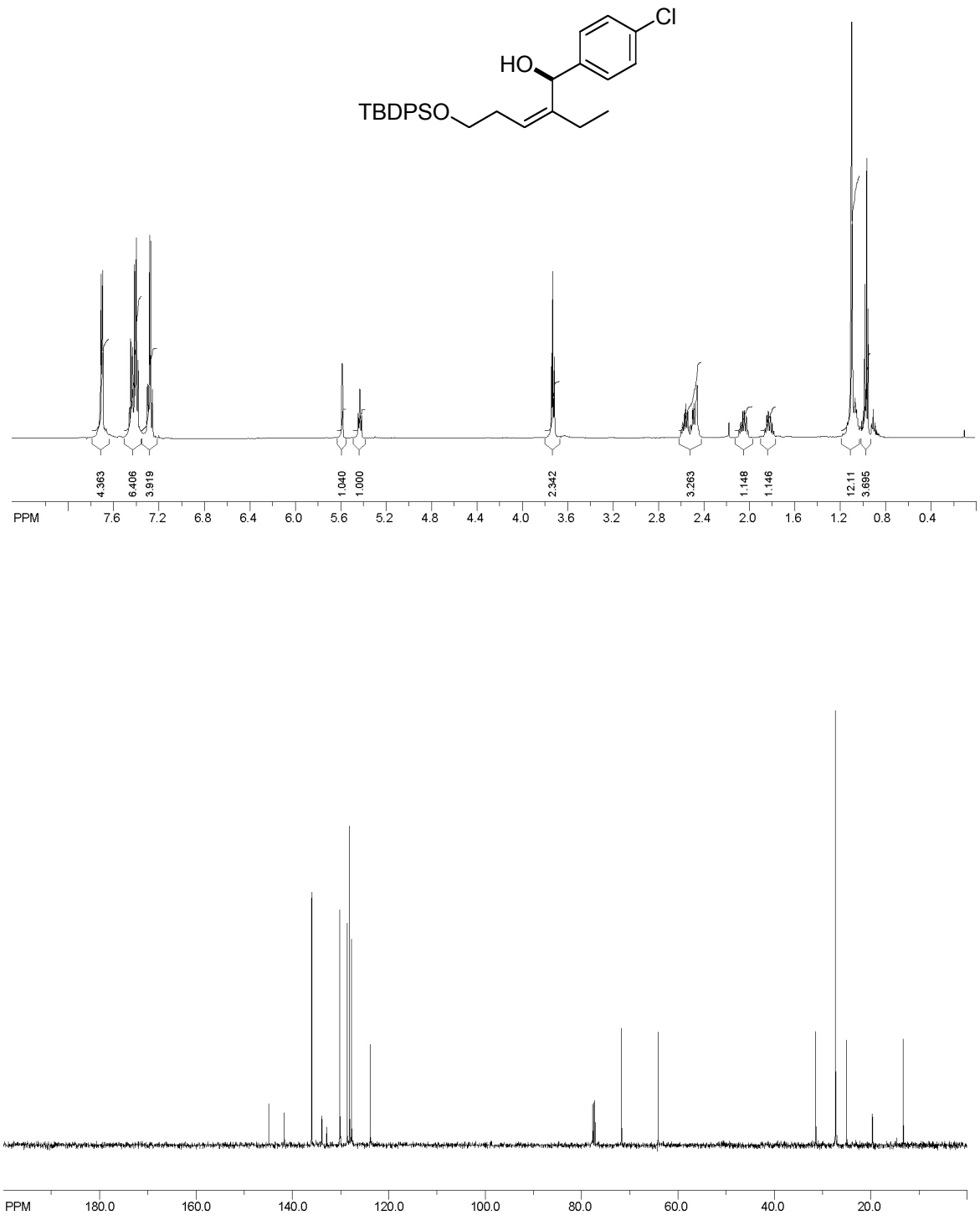

Figure SI-44. 500 MHz ^{1}H and 125 MHz $^{13}C\{^{1}H\}$ NMR of **54** in $CDCl_3$.

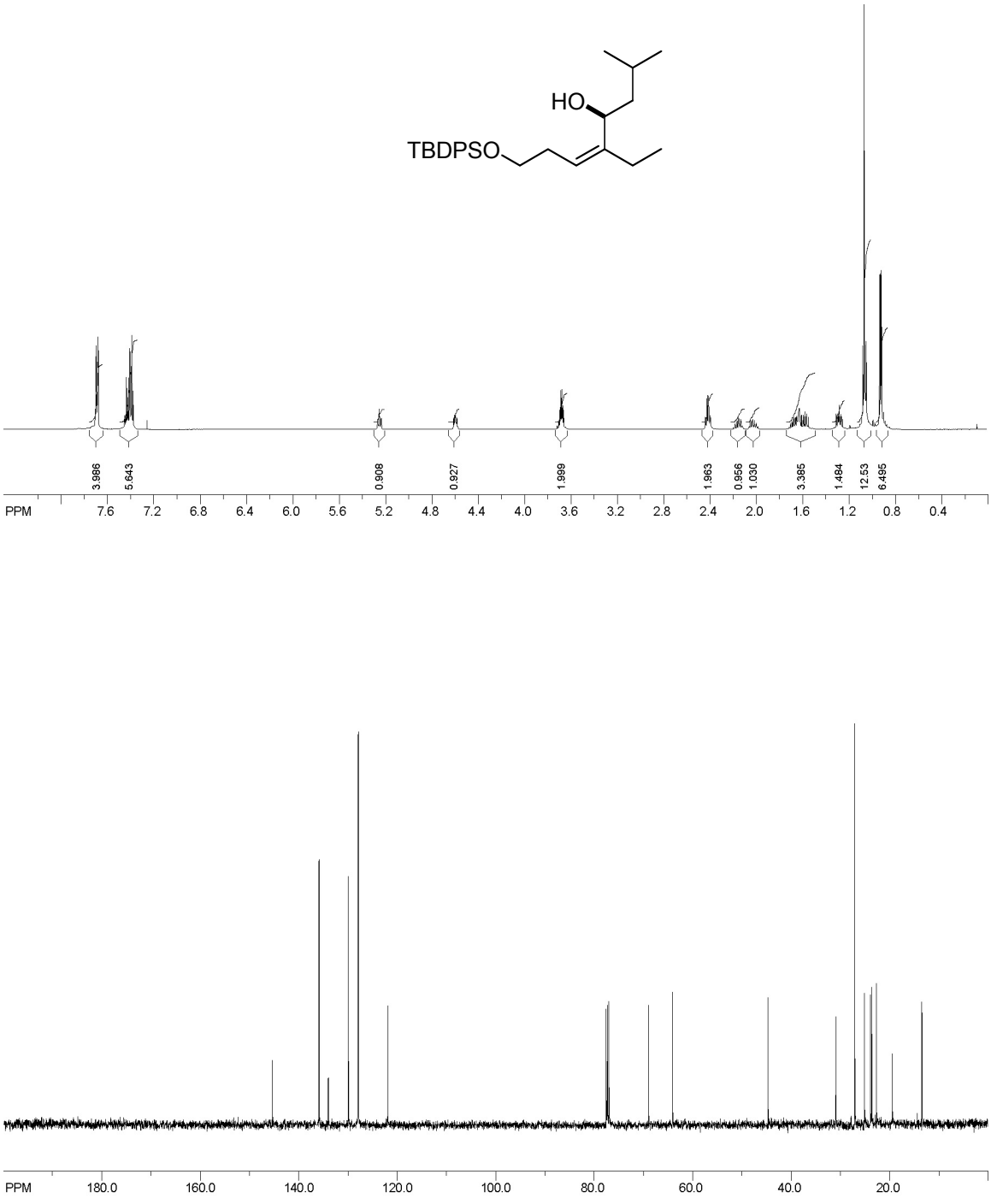

Figure SI-45. 500 MHz ^{1}H and 125 MHz ^{13}C{^{1}H} NMR of **55** in $CDCl_3$.

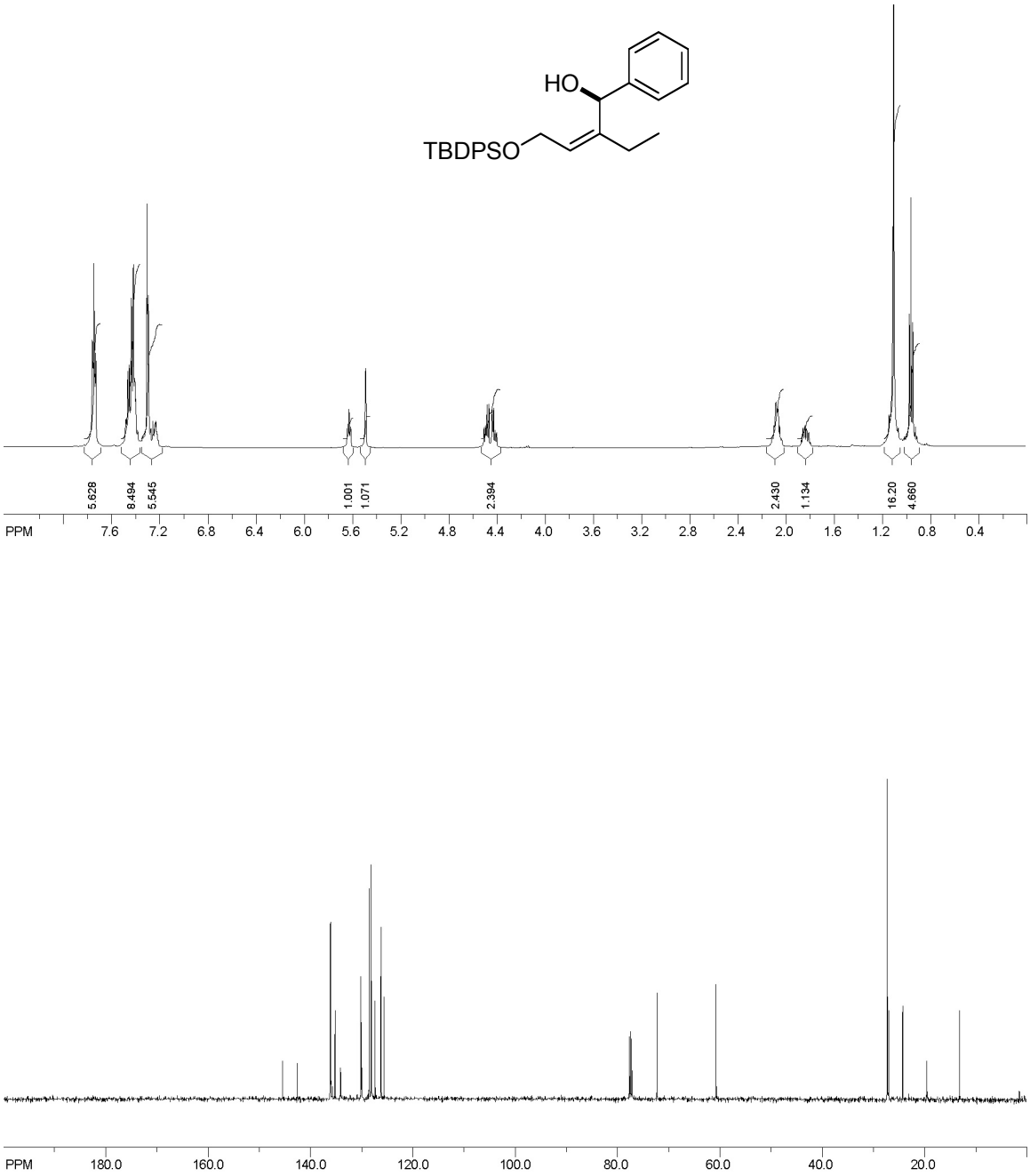

Figure SI-46. 500 MHz ^{1}H and 125 MHz $^{13}C\{^{1}H\}$ NMR of **56** in $CDCl_3$.

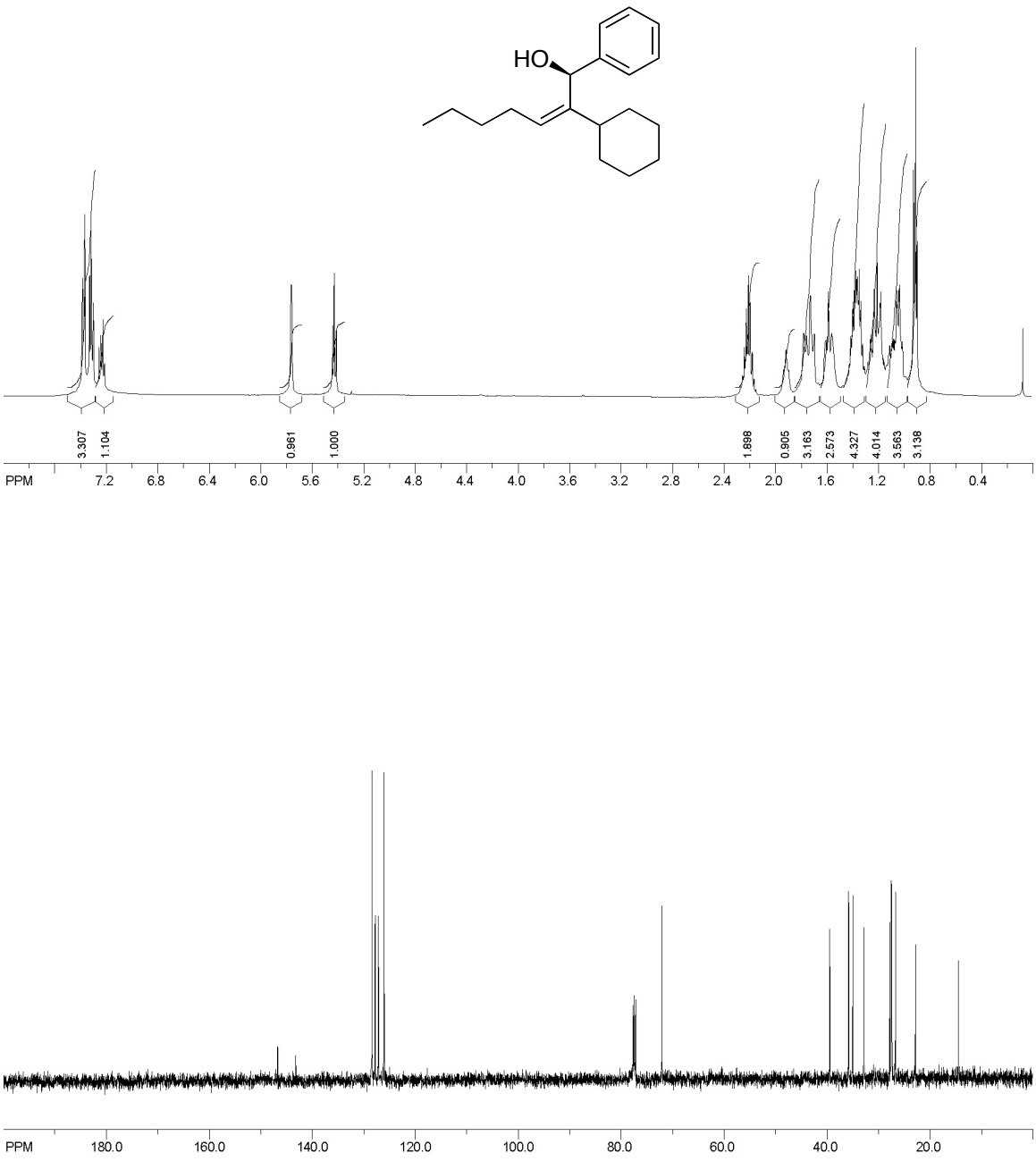

Figure SI-47. 500 MHz ^{1}H and 125 MHz $^{13}C\{^{1}H\}$ NMR of **57** in $CDCl_3$.

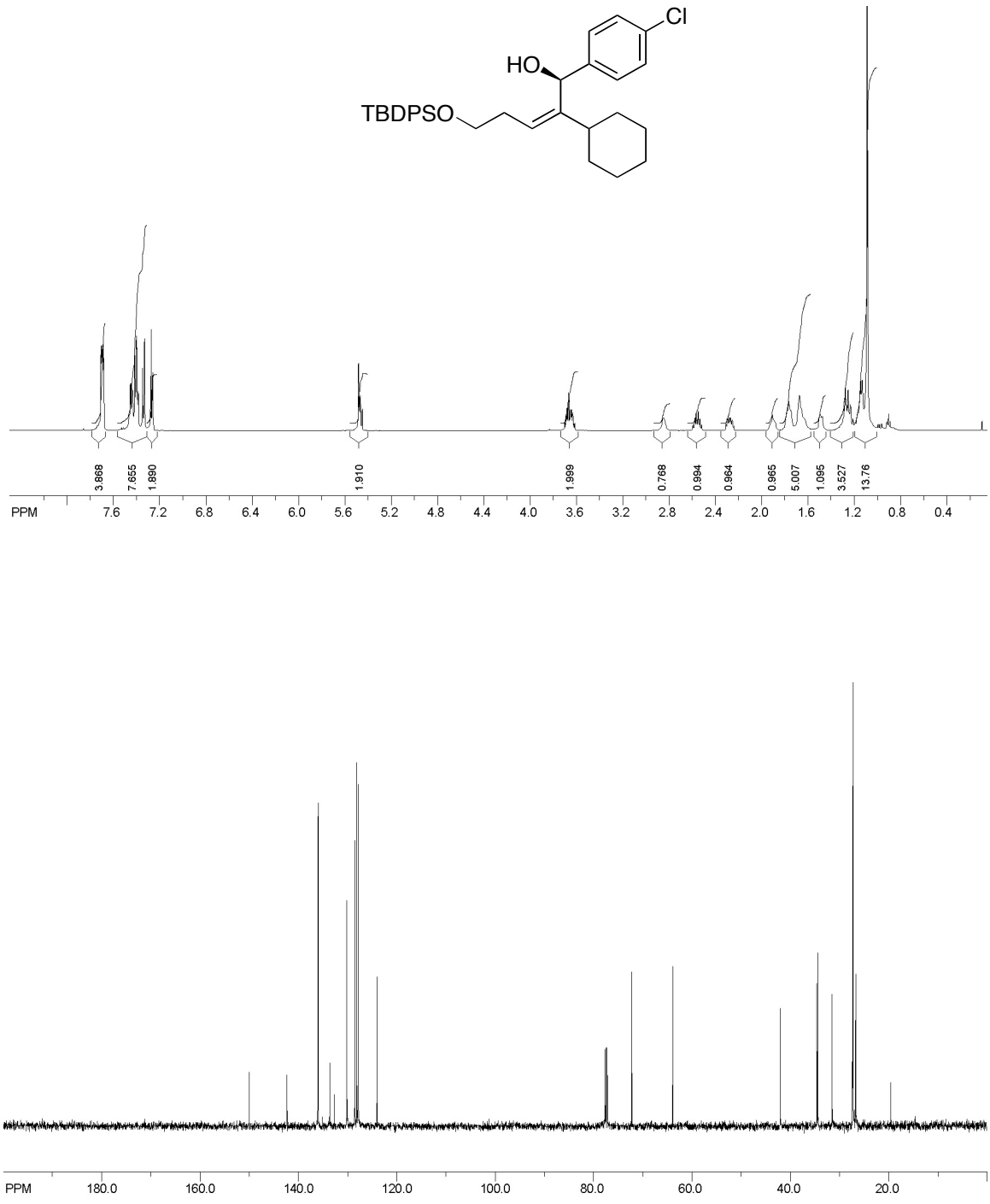

Figure SI-48. 500 MHz ^{1}H and 125 MHz $^{13}C\{^{1}H\}$ NMR of **58** in $CDCl_3$.

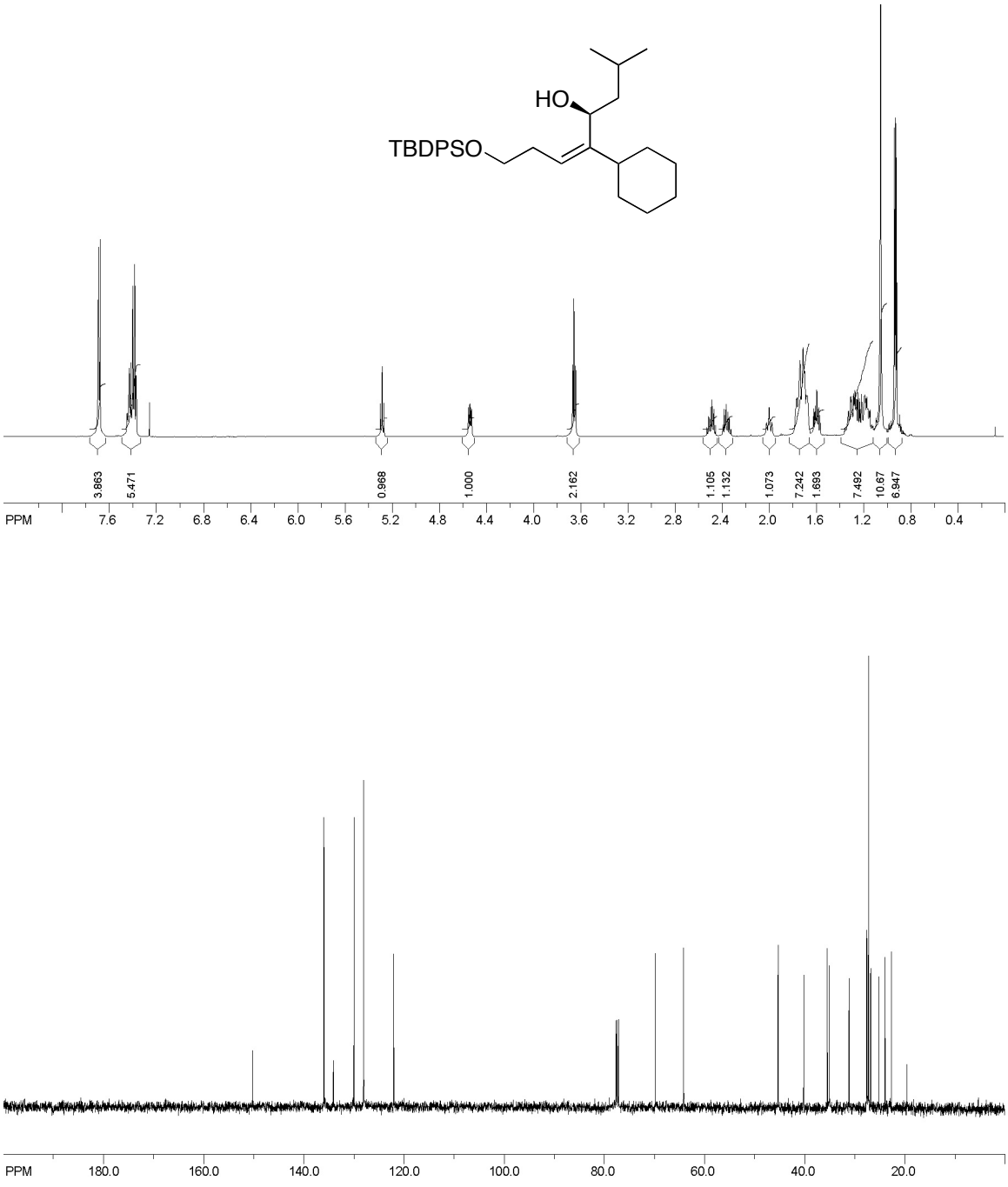

Figure SI-49. 500 MHz ^{1}H and 125 MHz $^{13}C\{^{1}H\}$ NMR of **59** in $CDCl_3$.