

Electronic Supplementary Information

Gold catalysed transformation of 2-arylindoles to terphenyl amines *via* 3-dienyl indoles and Brønsted acid promoted formation of 2-carboxyindoles to 3-indenylindoles *via* 3-allenylindoles

U. Anasuyamma and K. C. Kumara Swamy**

School of Chemistry, University of Hyderabad

Hyderabad 500 046, Telangana, India.

e-mail: anusvu@gmail.com for AU and kckssc@uohyd.ac.in, kckssc@yahoo.com. for KCKS

1	ORTEPs of 9 , 21 , 25 and 27 (Figures S1-S3)	S2
12	Copies of ¹ H/ ¹³ C NMR spectra (Figures S4-S55)	S3-S28
3	Chiral HPLC data for 25 and 27 (Figures S56-S57)	S29-S30

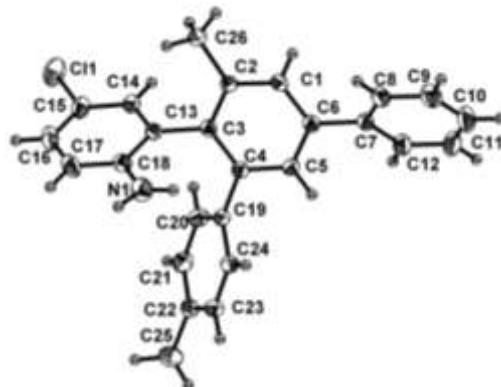


Figure S1. ORTEP of compound **9** (probability level 30%; CCDC 1894264).

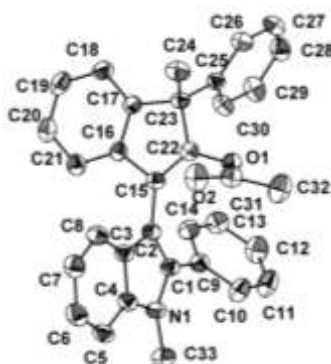


Figure S2. ORTEP of compound **21** (probability level 30%; CCDC 1894265).

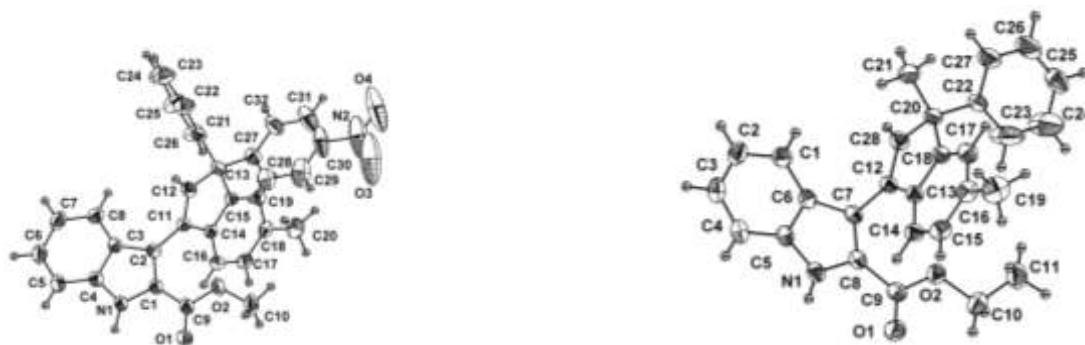


Figure S3. ORTEPs of compounds **25** (left; probability level 30%; CCDC 1894266) and **27** (right, probability level 30%; CCDC 1894267).

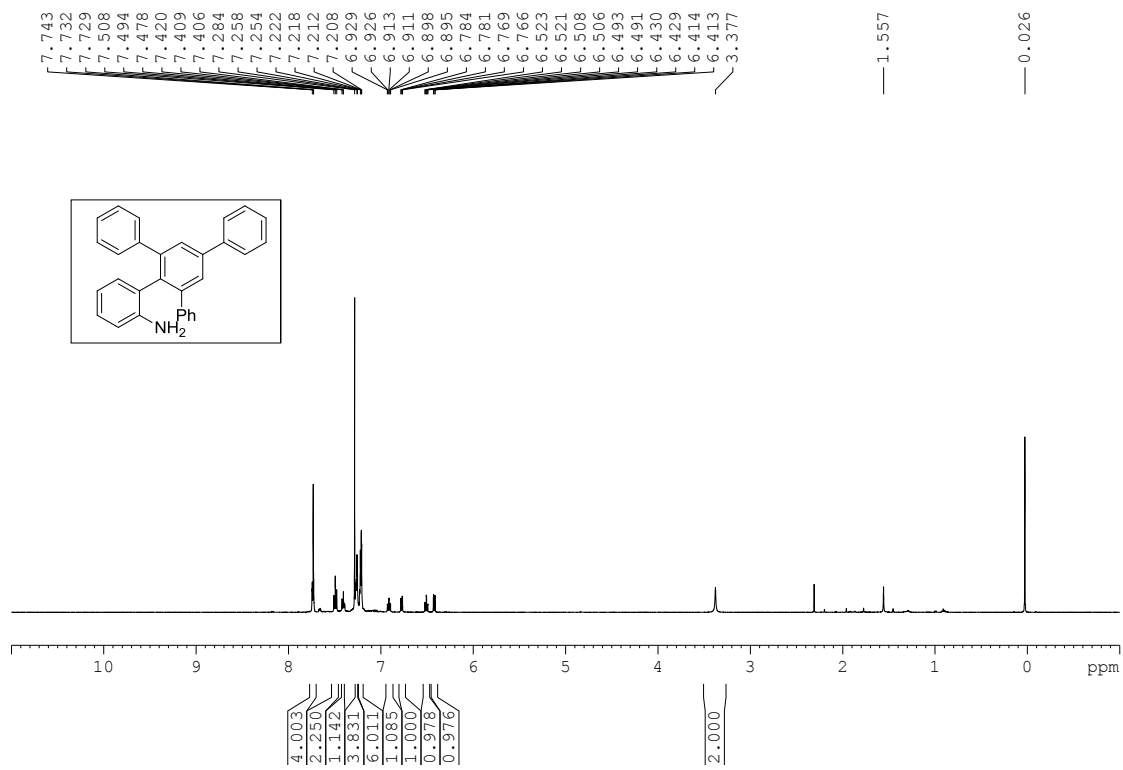


Figure S4. ^1H NMR spectrum of compound 4

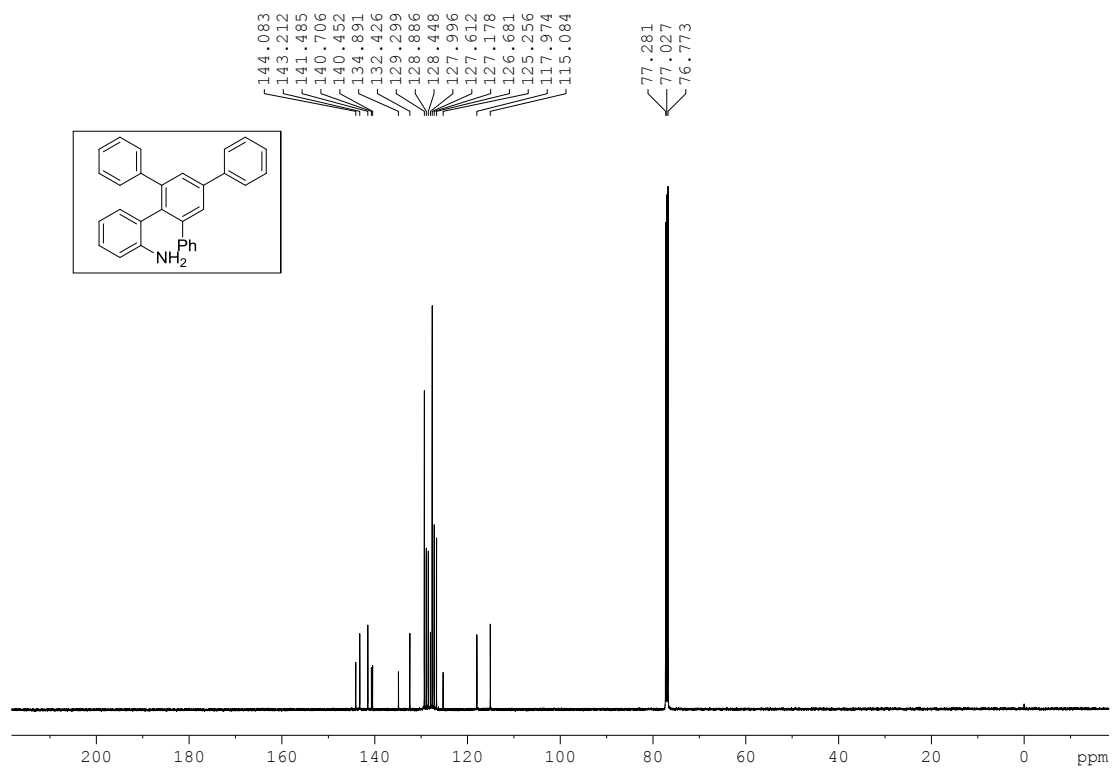


Figure S5. ^{13}C NMR spectrum of compound 4

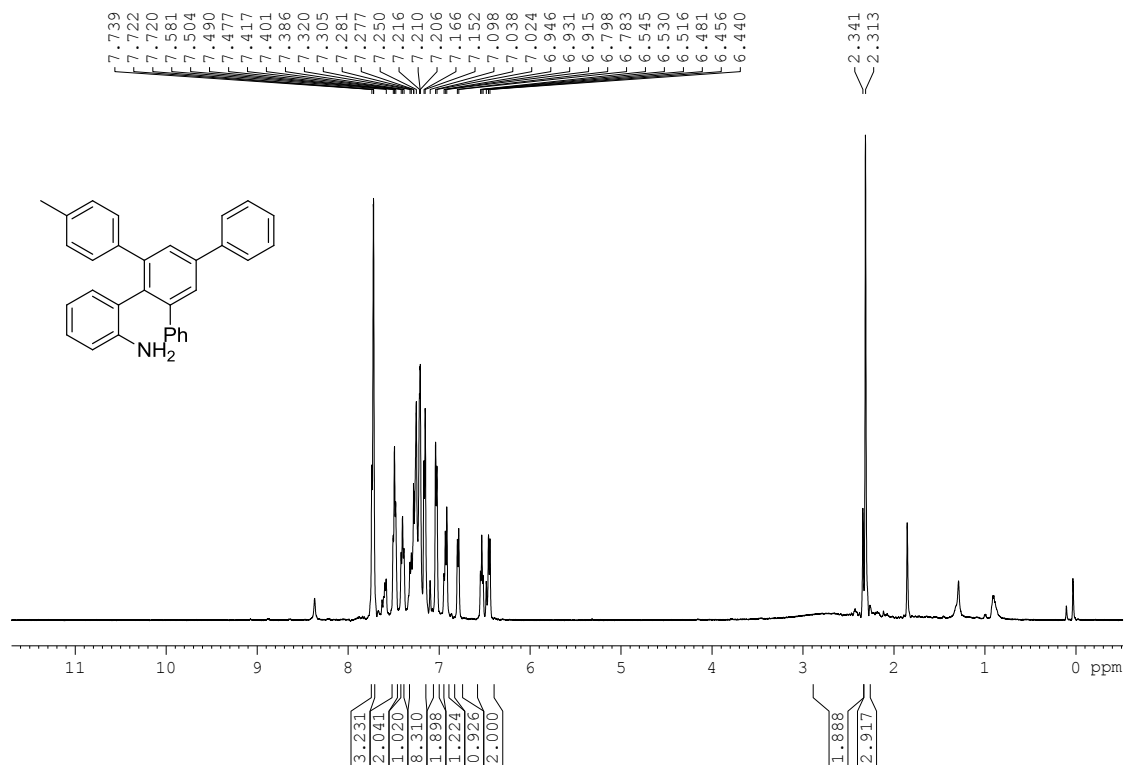


Figure S6. ¹H NMR spectrum of compound 5

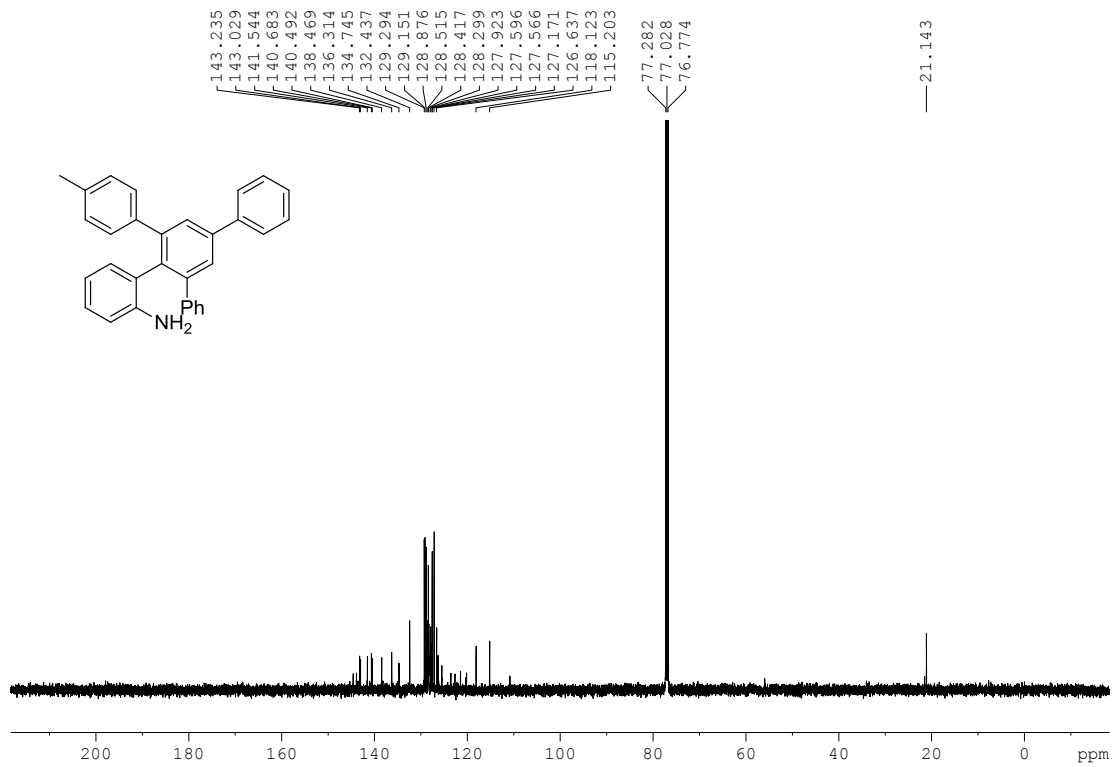


Figure S7. ¹³C NMR spectrum of compound 5

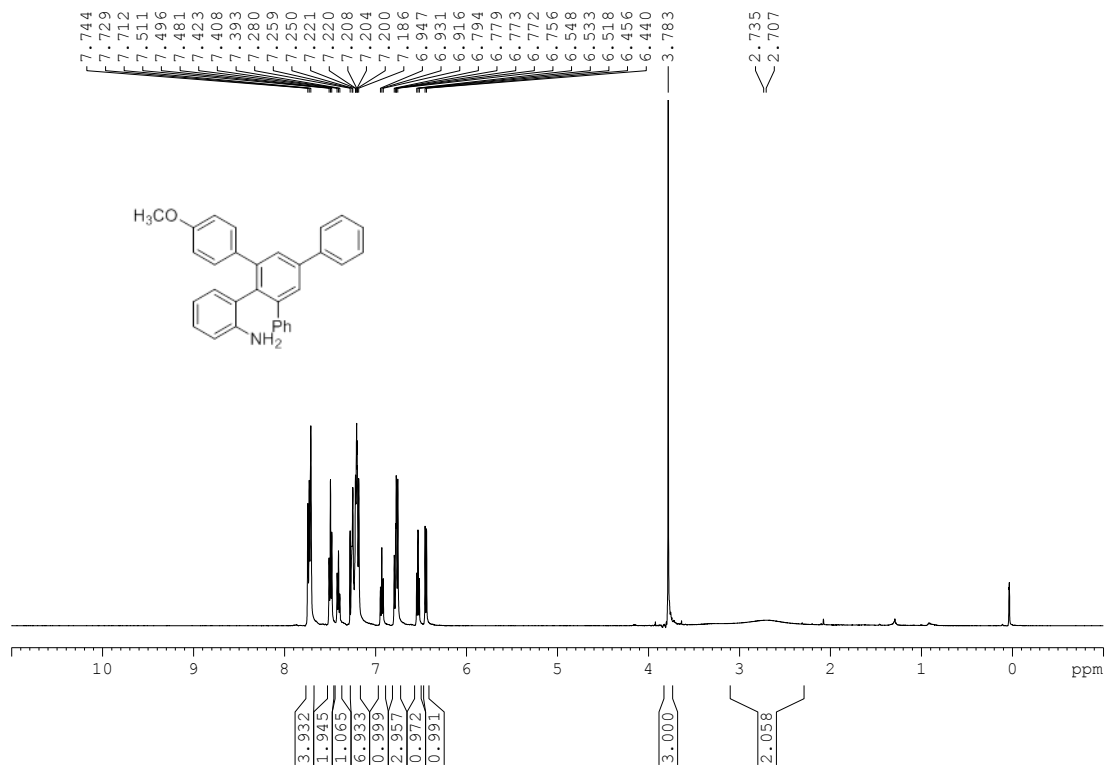


Figure S8. ¹H NMR spectrum of compound 6

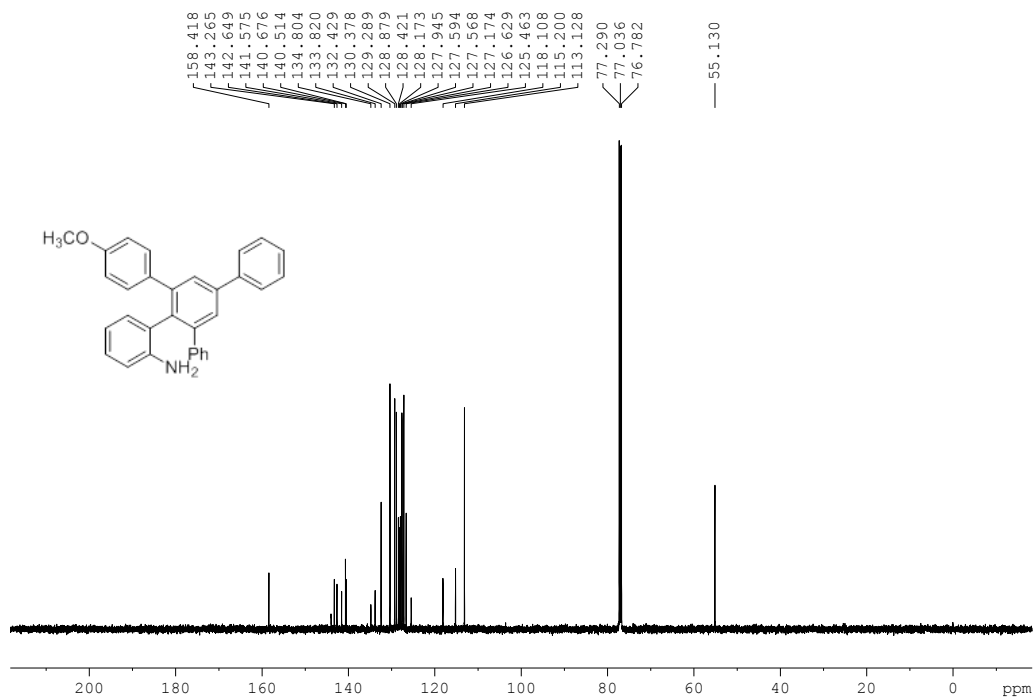


Figure S9. ¹³C NMR spectrum of compound 6

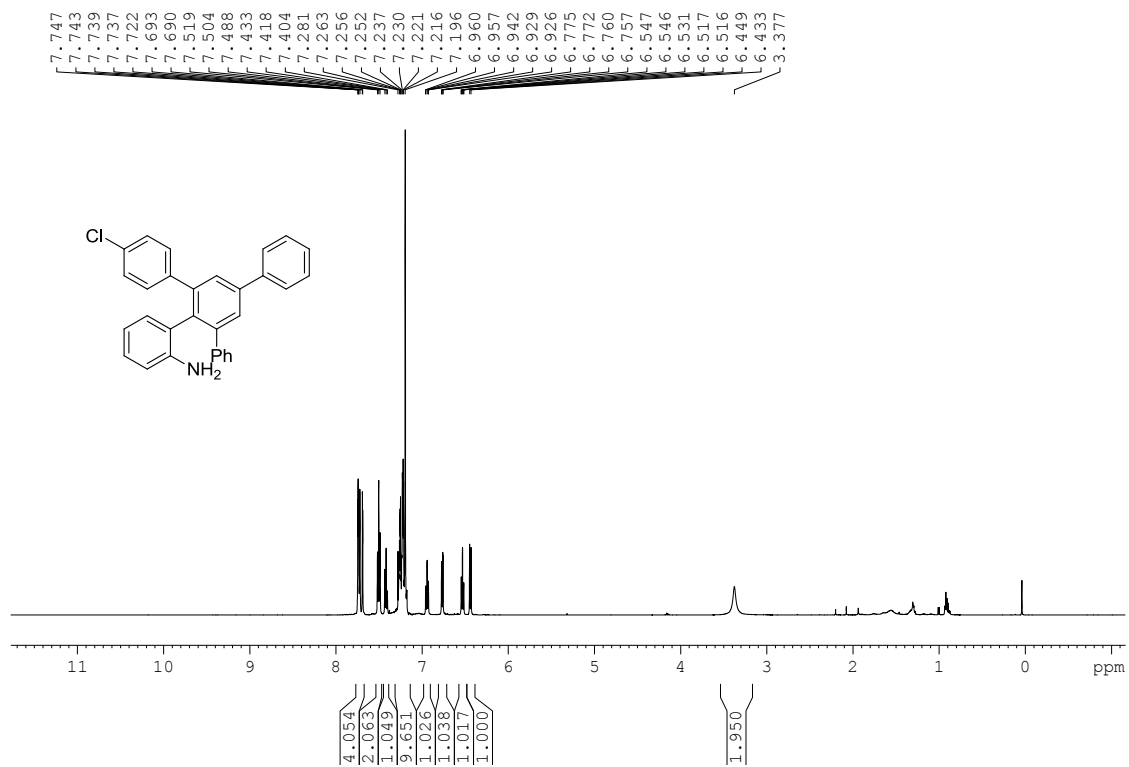


Figure S10. ¹H NMR spectrum of compound 7

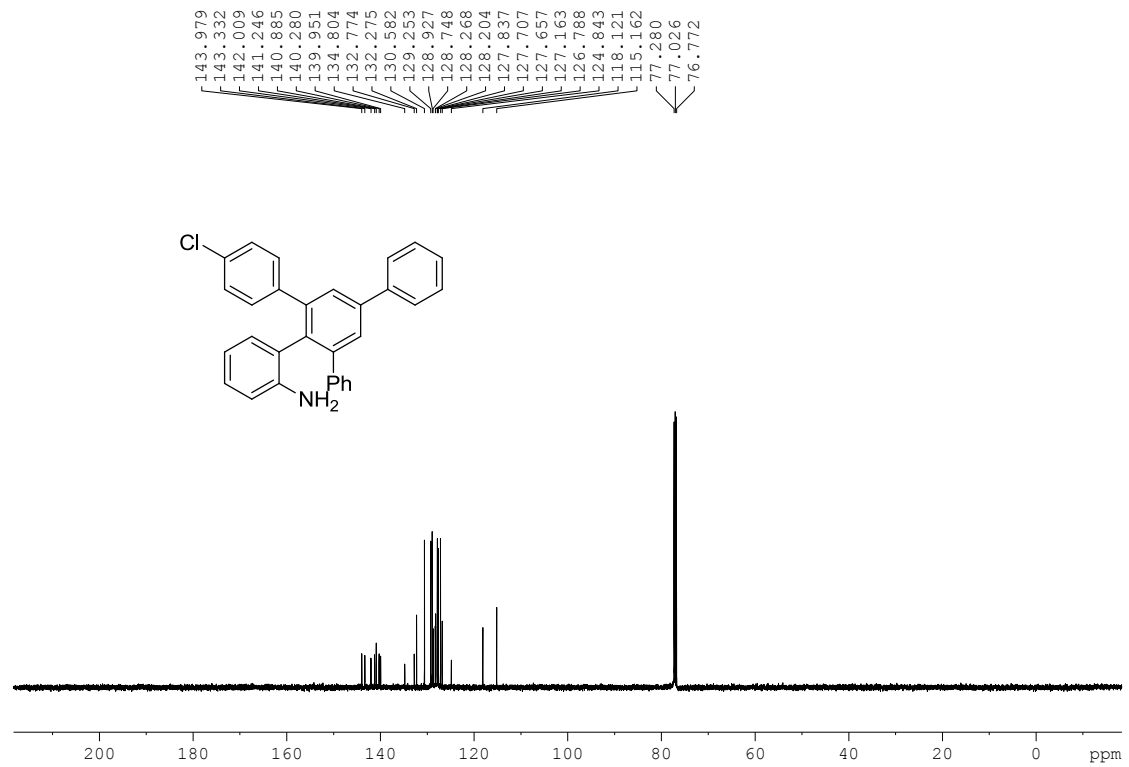


Figure S11. ¹³C NMR spectrum of compound 7

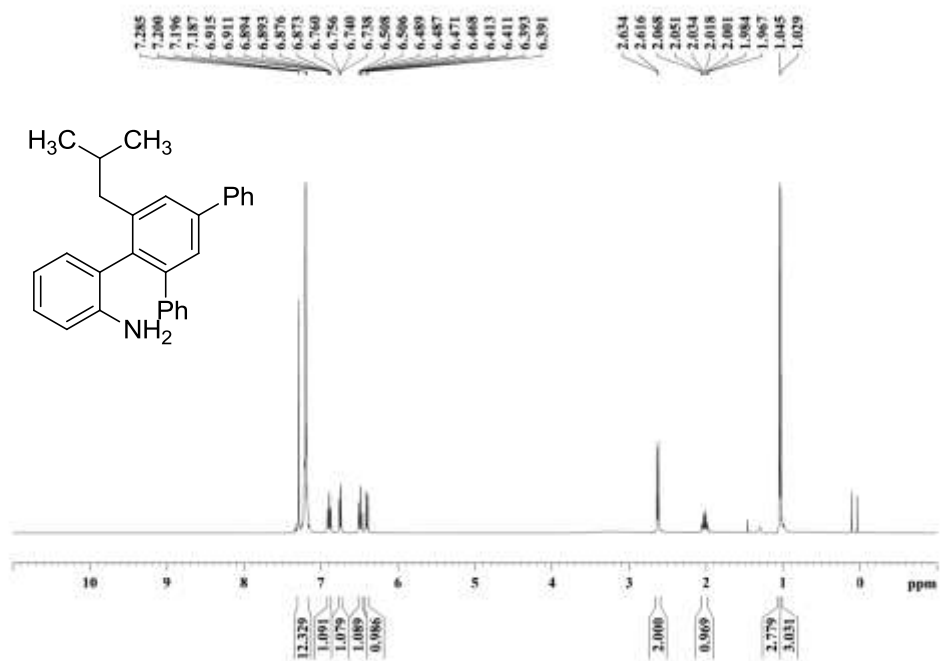


Figure S12. ¹H NMR spectrum of compound 8

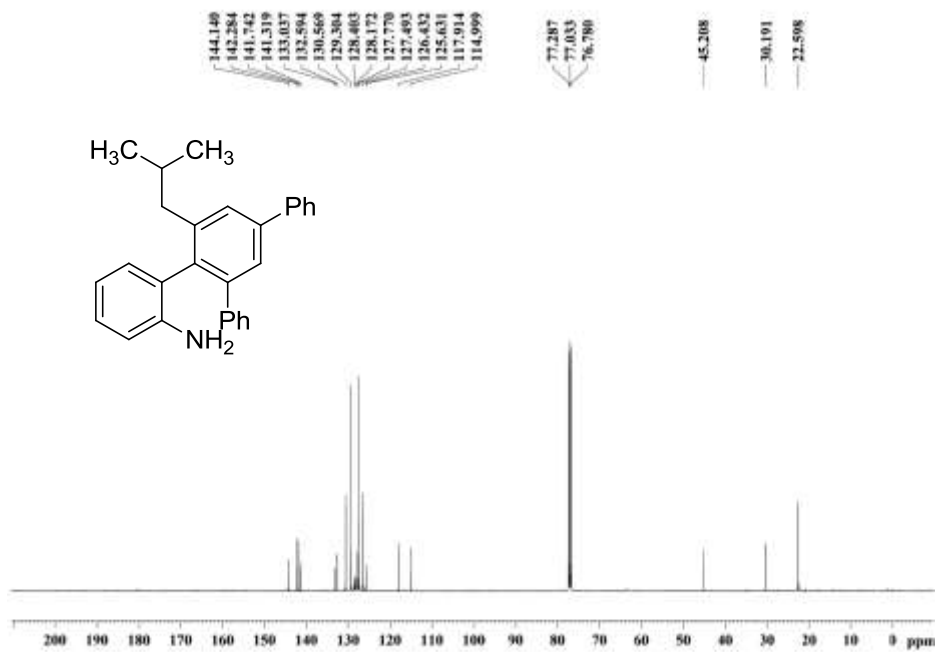


Figure S13. ¹³C NMR spectrum of compound 8

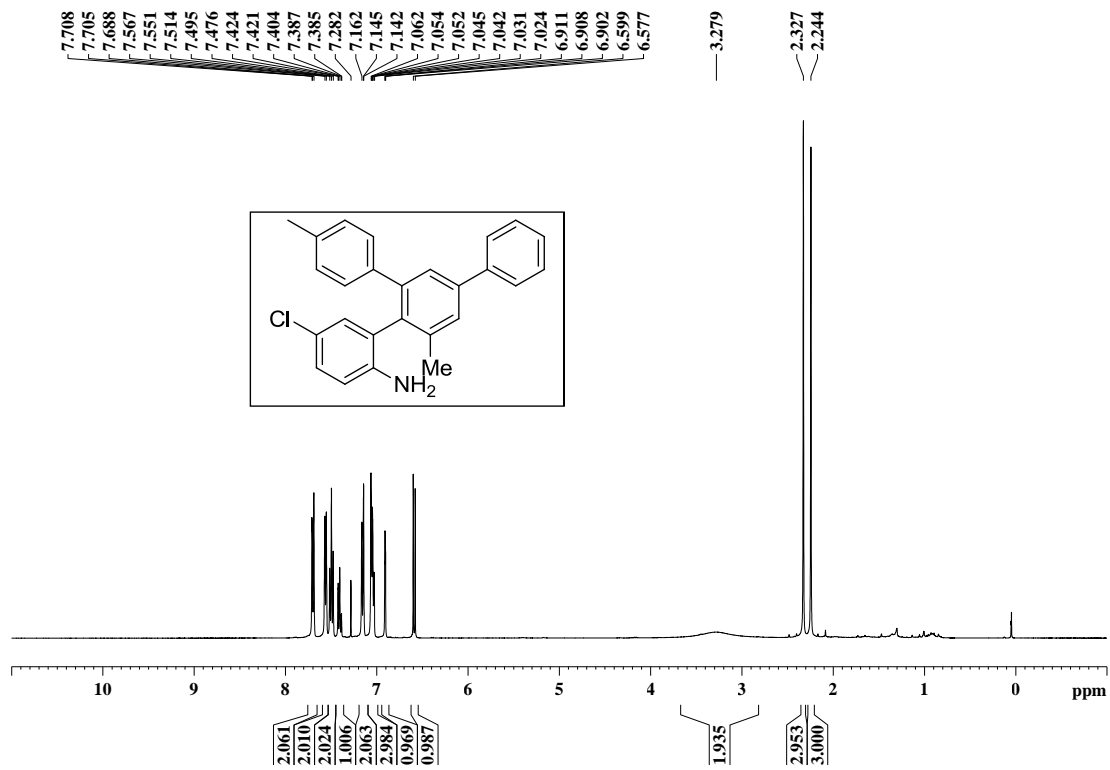


Figure S14. ^1H NMR spectrum of compound 9

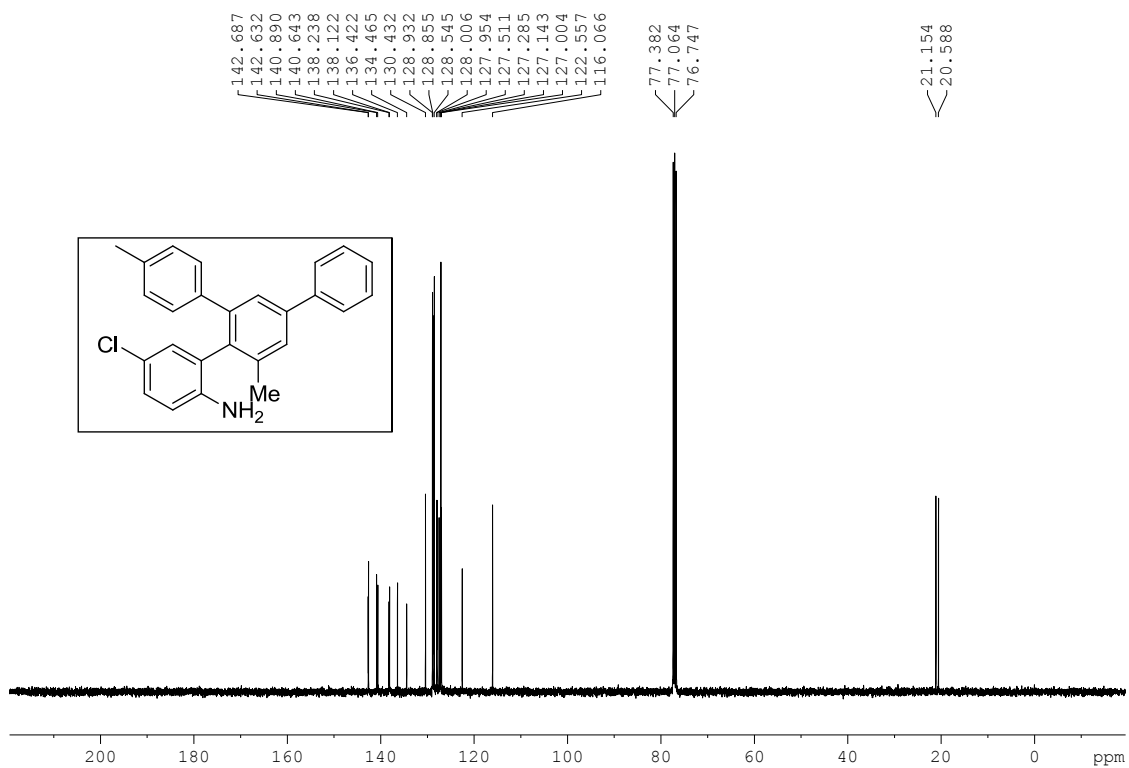


Figure S15. ^{13}C NMR spectrum of compound 9

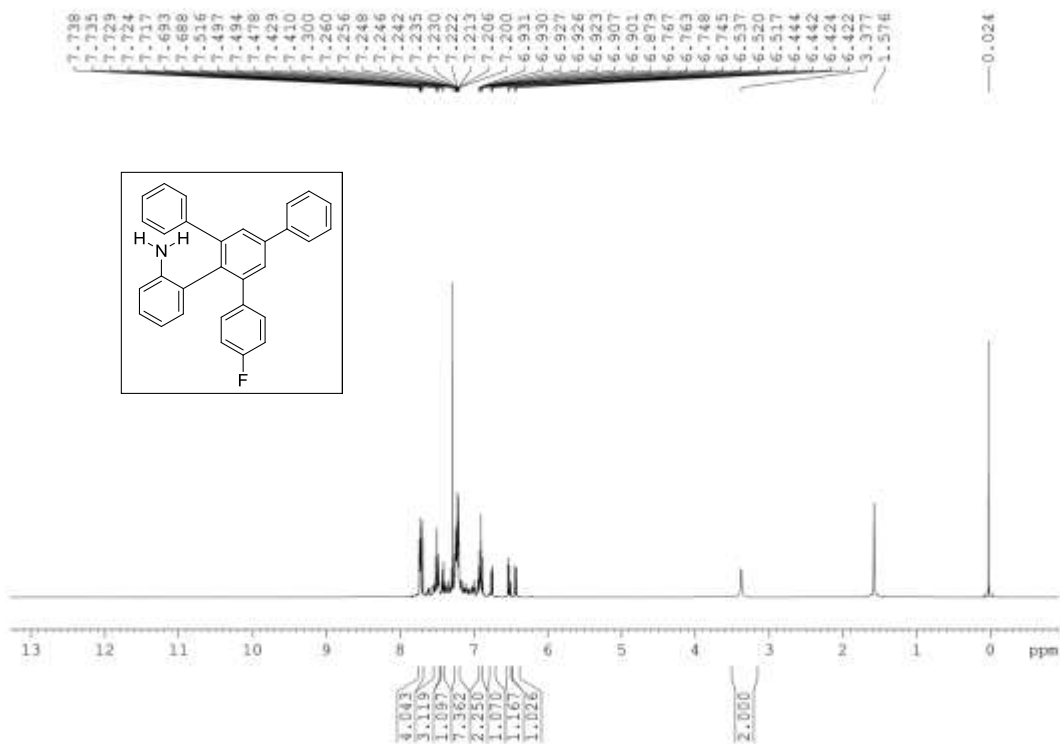


Figure S16. ^1H NMR spectrum of compound 10

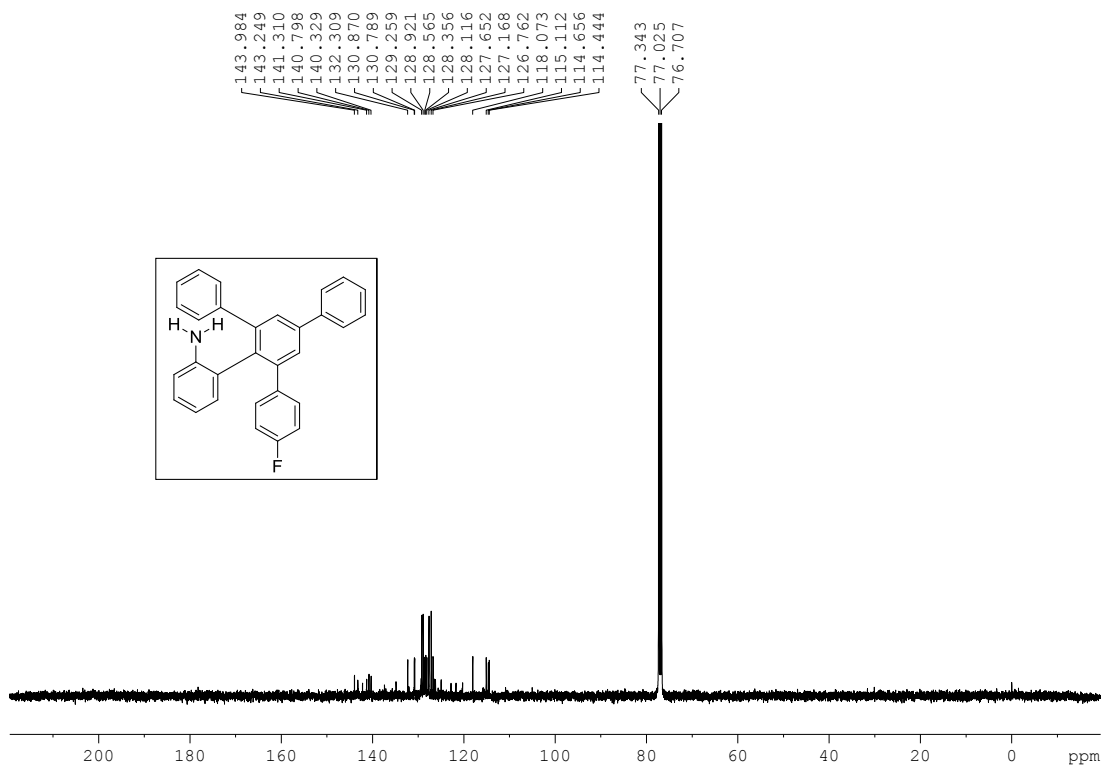


Figure S17. ^{13}C NMR spectrum of compound 10

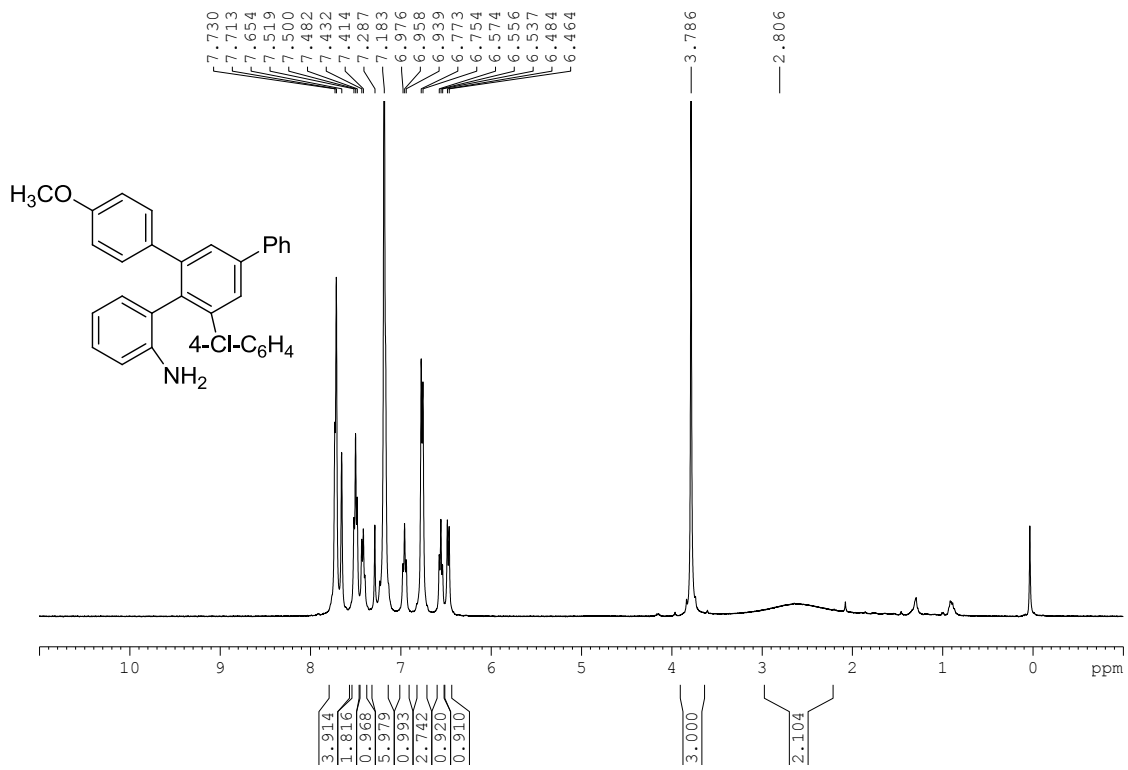


Figure S18. ¹H NMR spectrum of compound 11

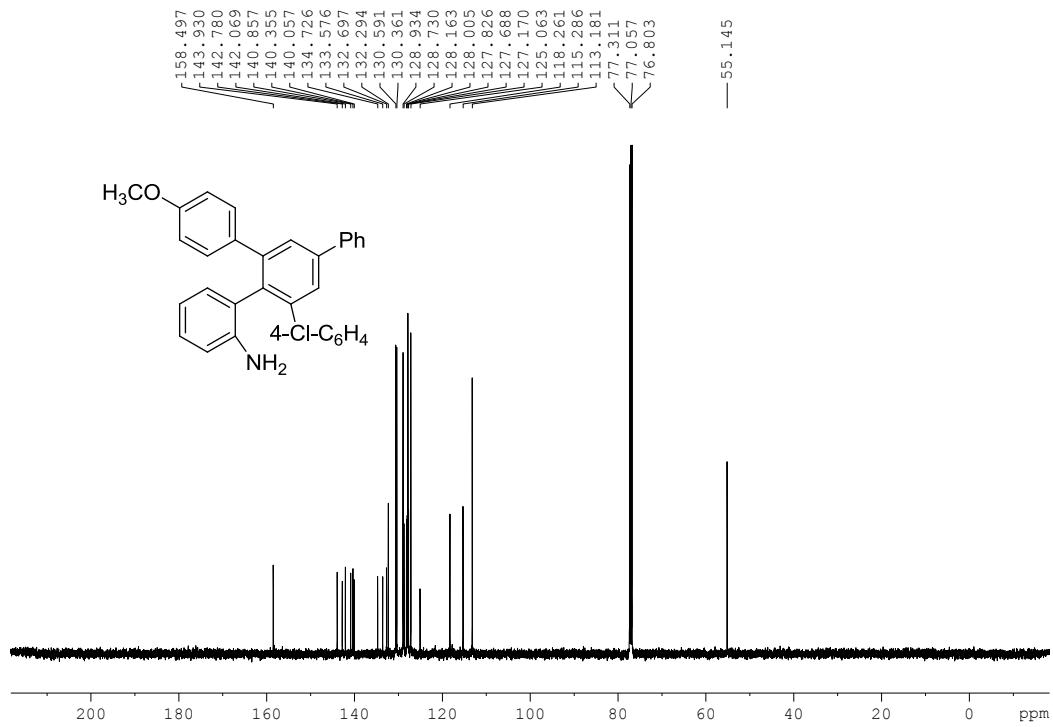


Figure S19. ¹³C NMR spectrum of compound 11

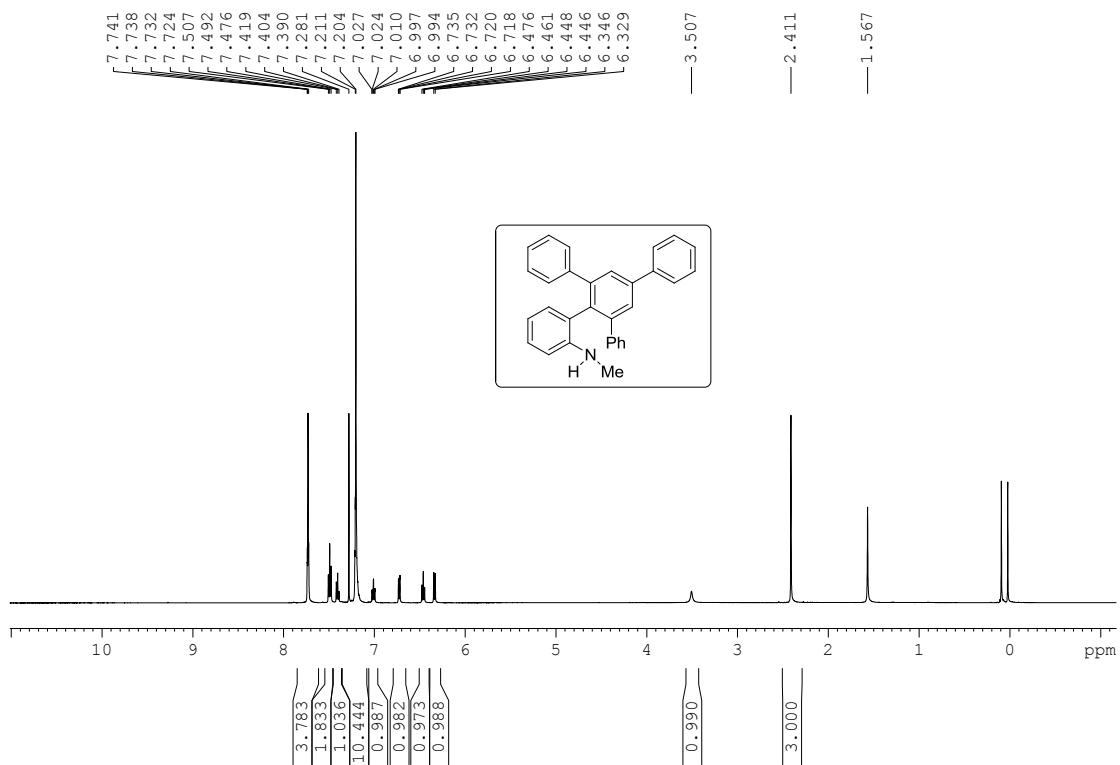


Figure S20. ¹H NMR spectrum of compound 12

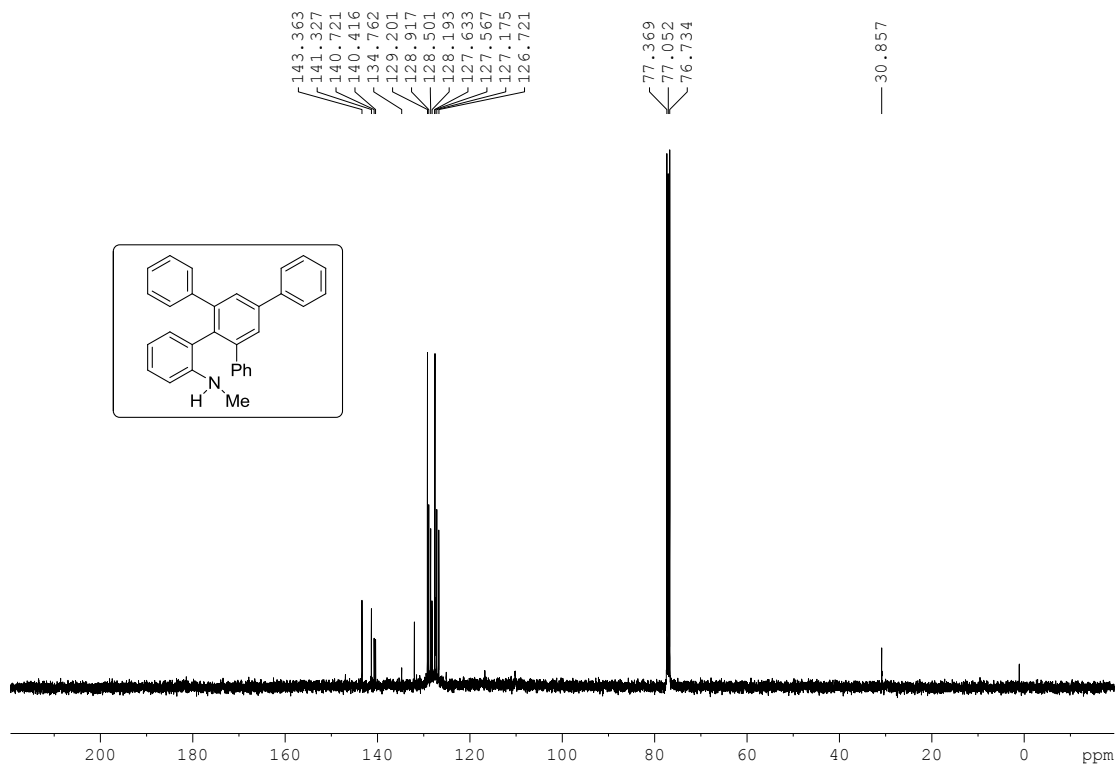


Figure S21. ¹³C NMR spectrum of compound 12

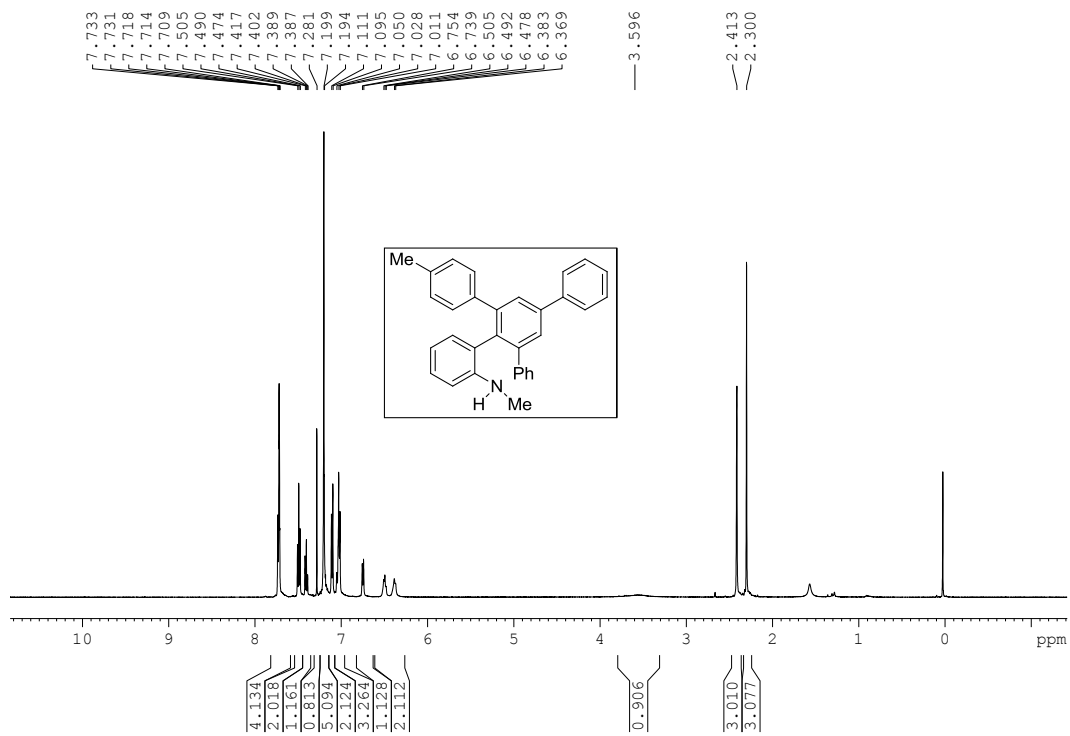


Figure S22. ¹H NMR spectrum of compound 13

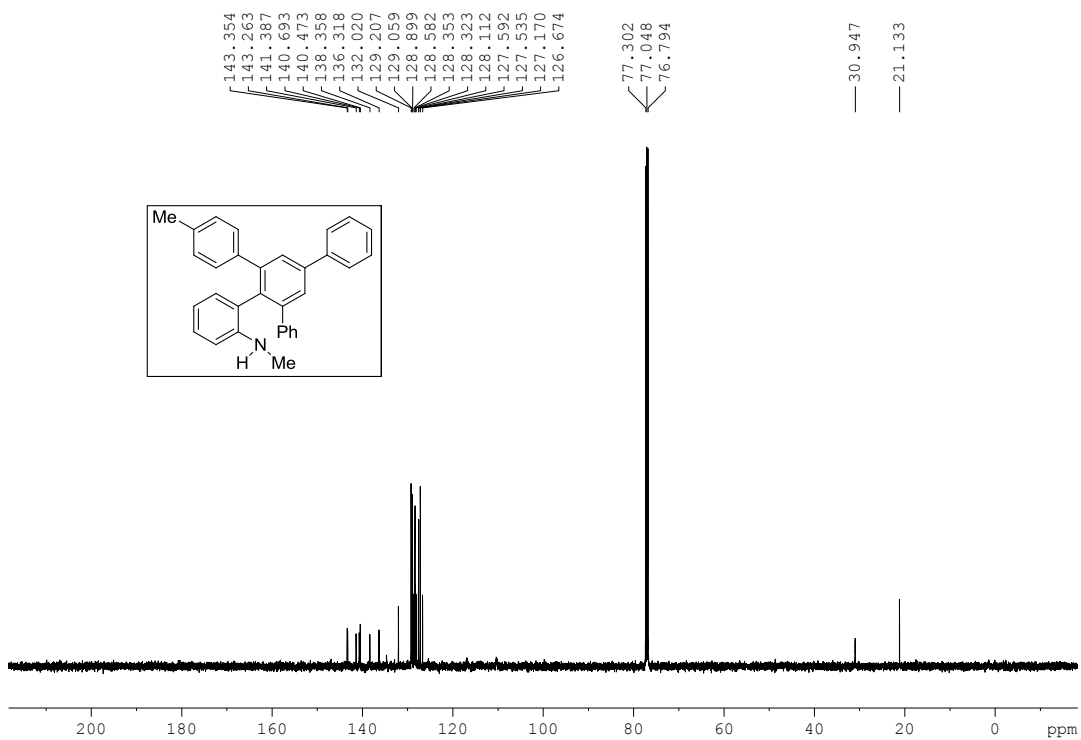


Figure S23. ¹³C NMR spectrum of compound 13

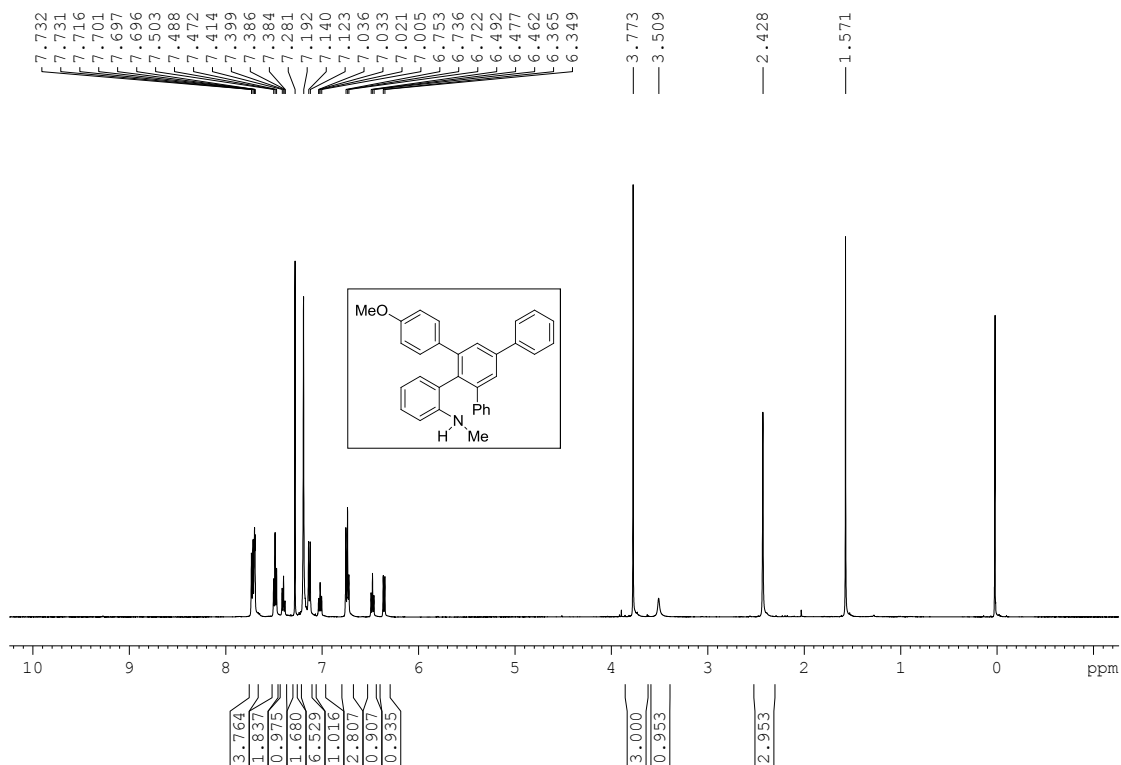


Figure S24. ¹H NMR spectrum of compound 14

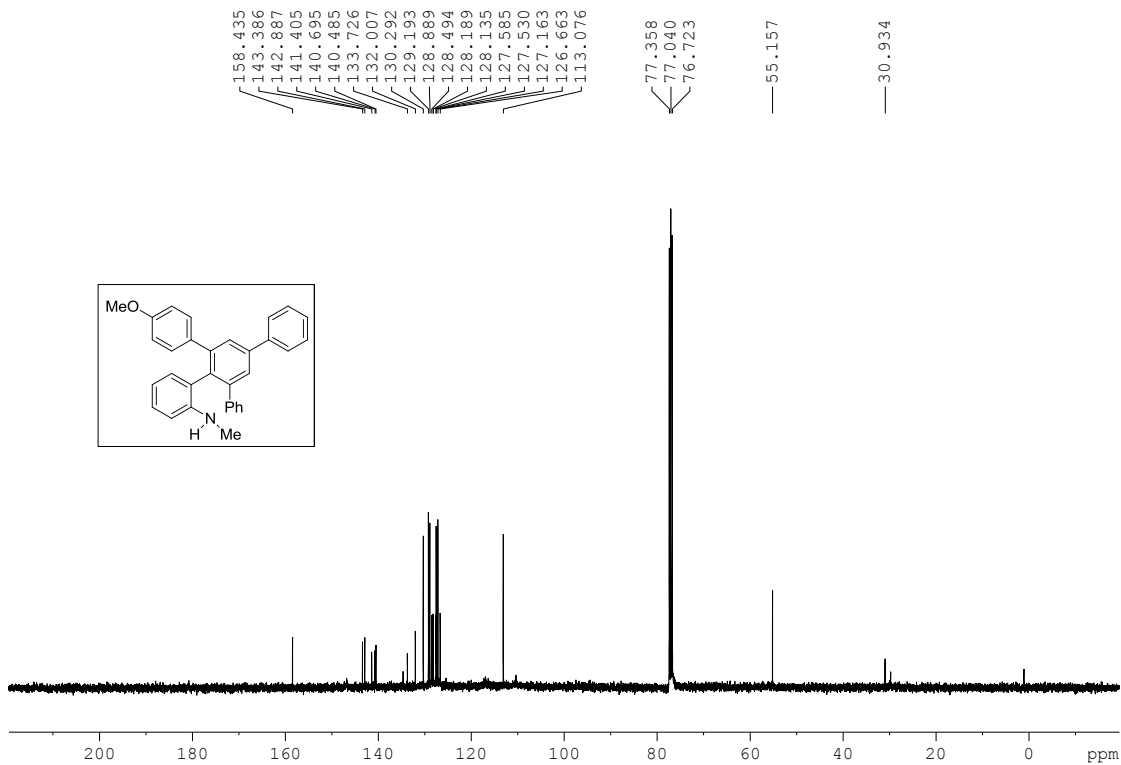


Figure S25. ¹³C NMR spectrum of compound 14

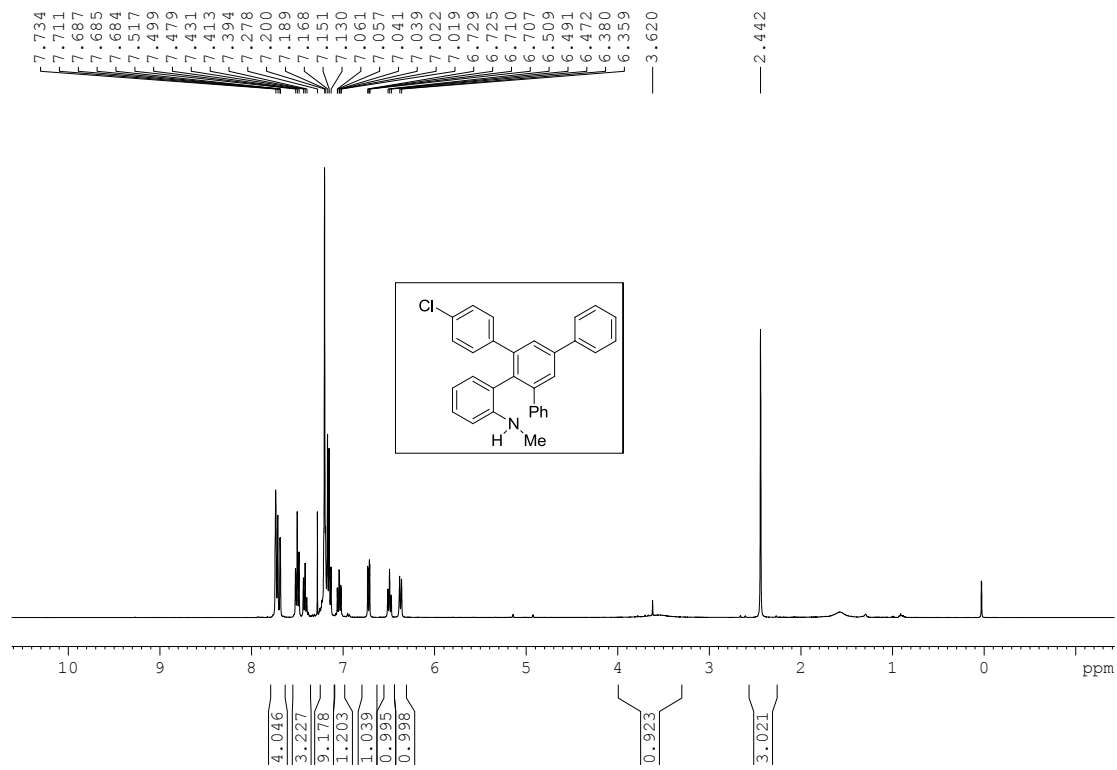


Figure S26. ¹H NMR spectrum of compound 15

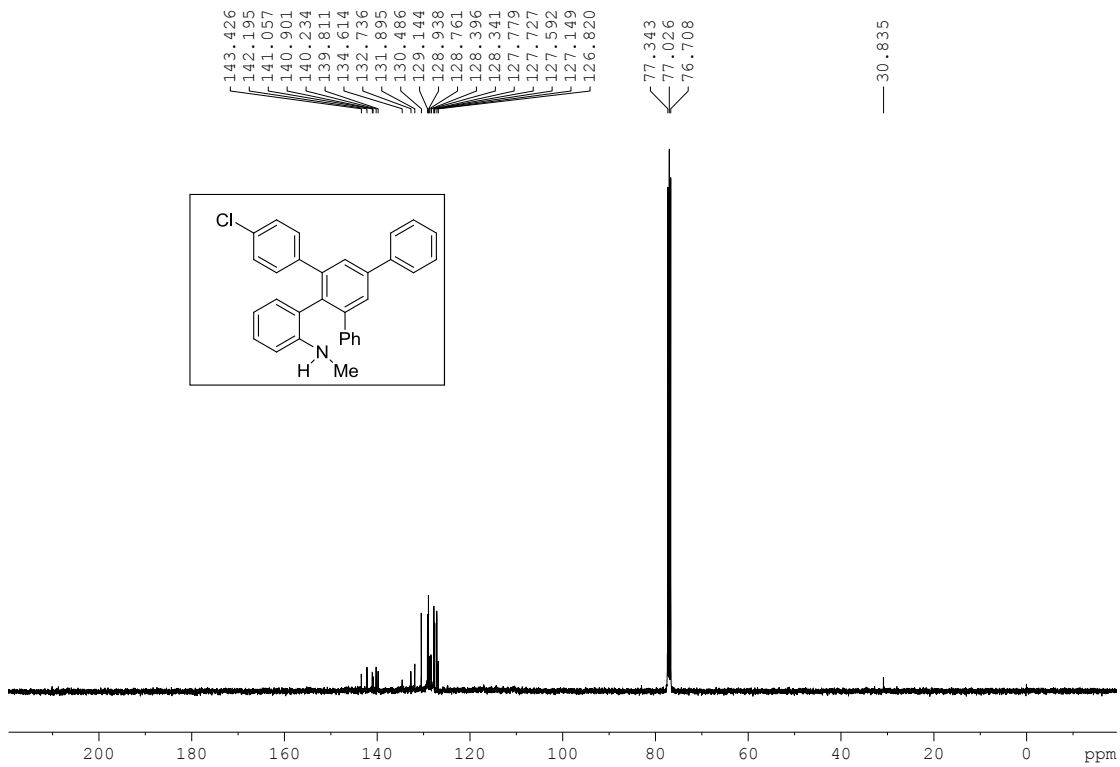


Figure S27. ¹³C NMR spectrum of compound 15

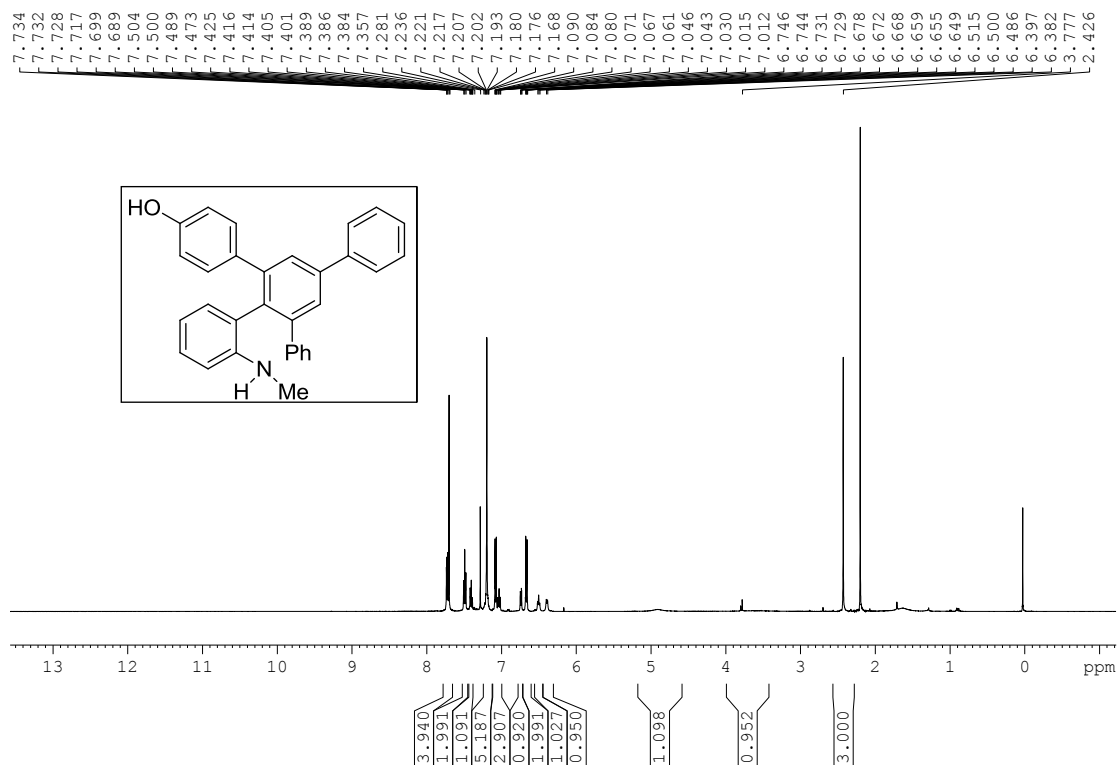


Figure S28. ¹H NMR spectrum of compound 16

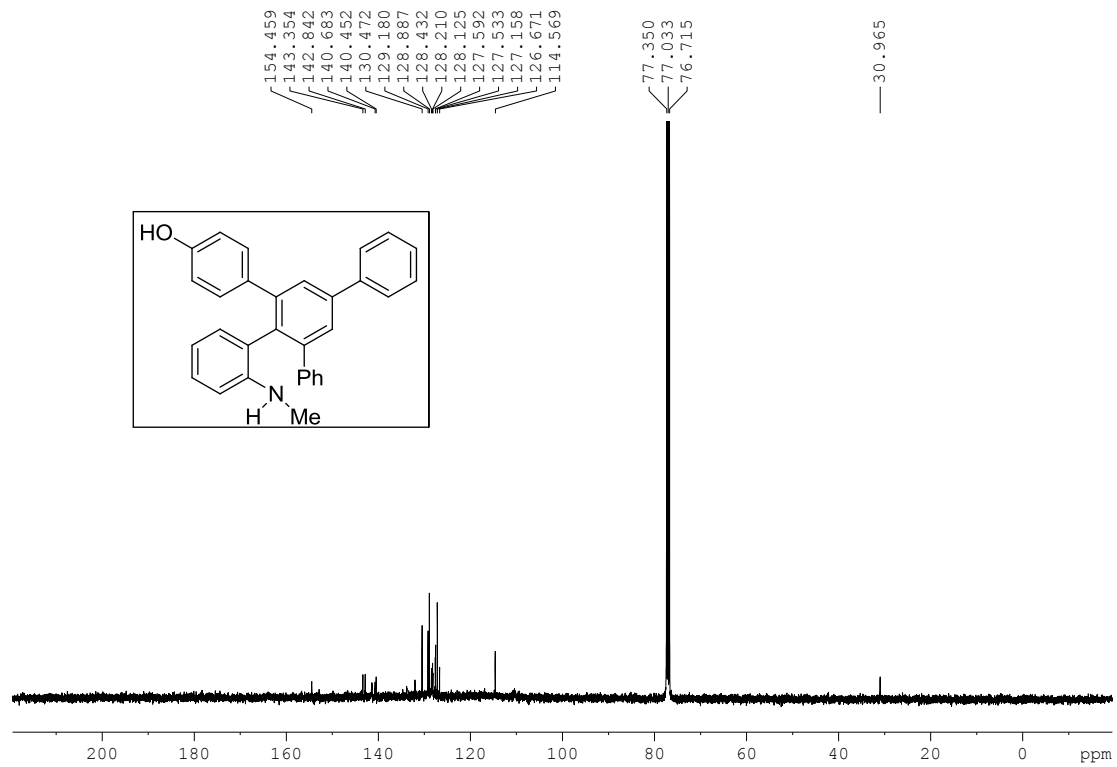


Figure S29. ¹³C NMR spectrum of compound 16

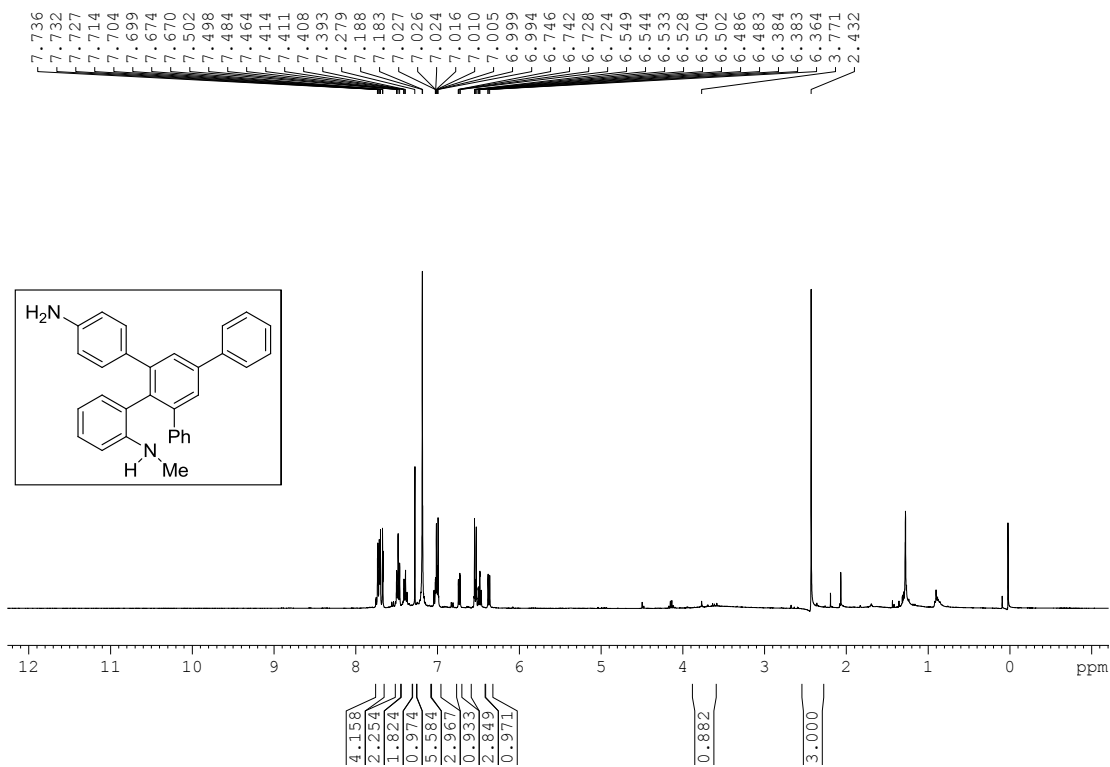


Figure S30. ¹H NMR spectrum of compound 17

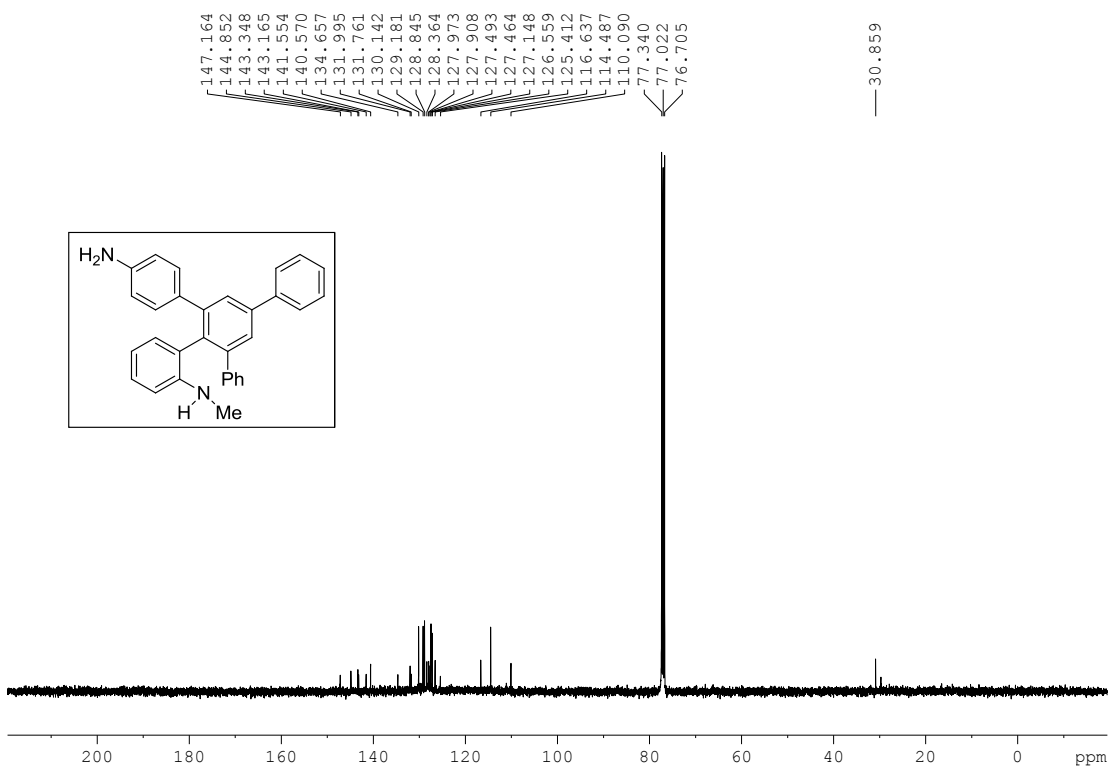


Figure S31. ¹³C NMR spectrum of compound 17

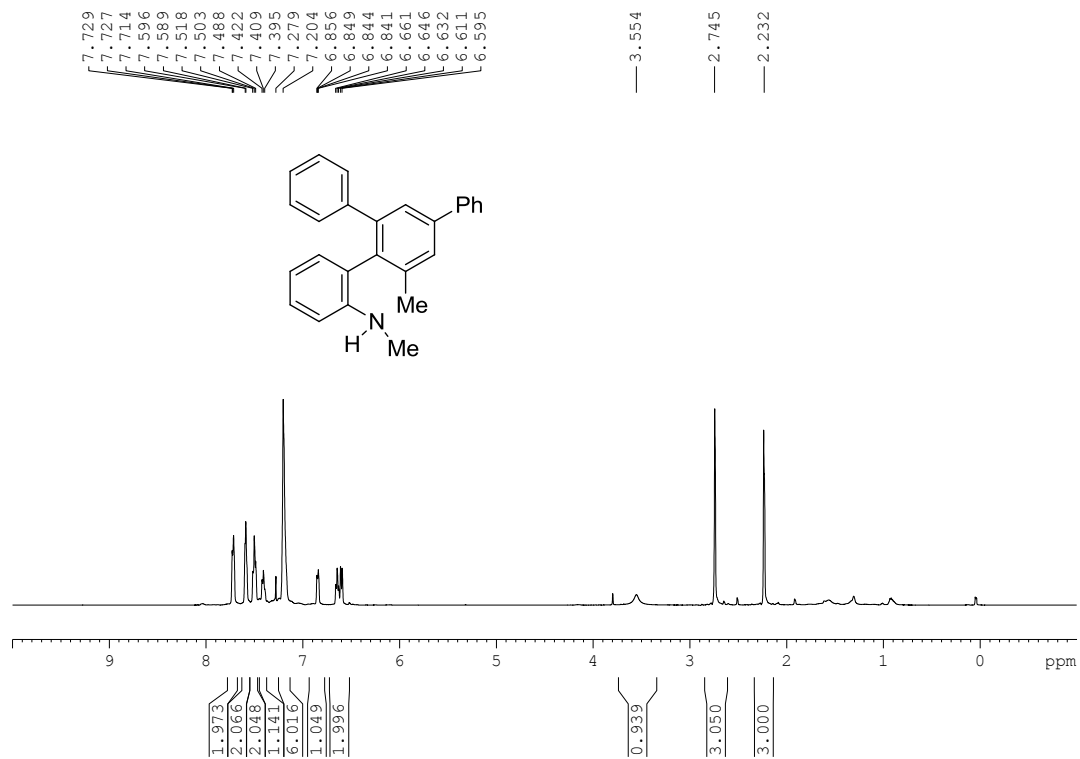


Figure S32. ¹H NMR spectrum of compound 18

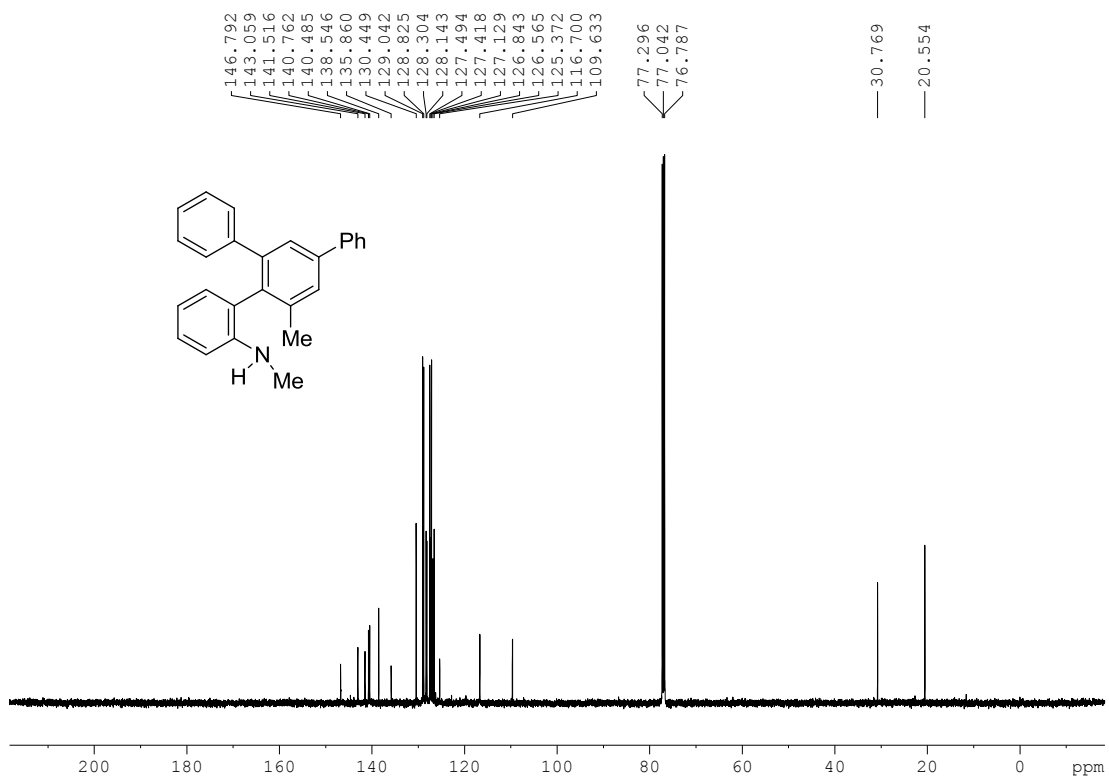


Figure S33. ¹³C NMR spectrum of compound 18

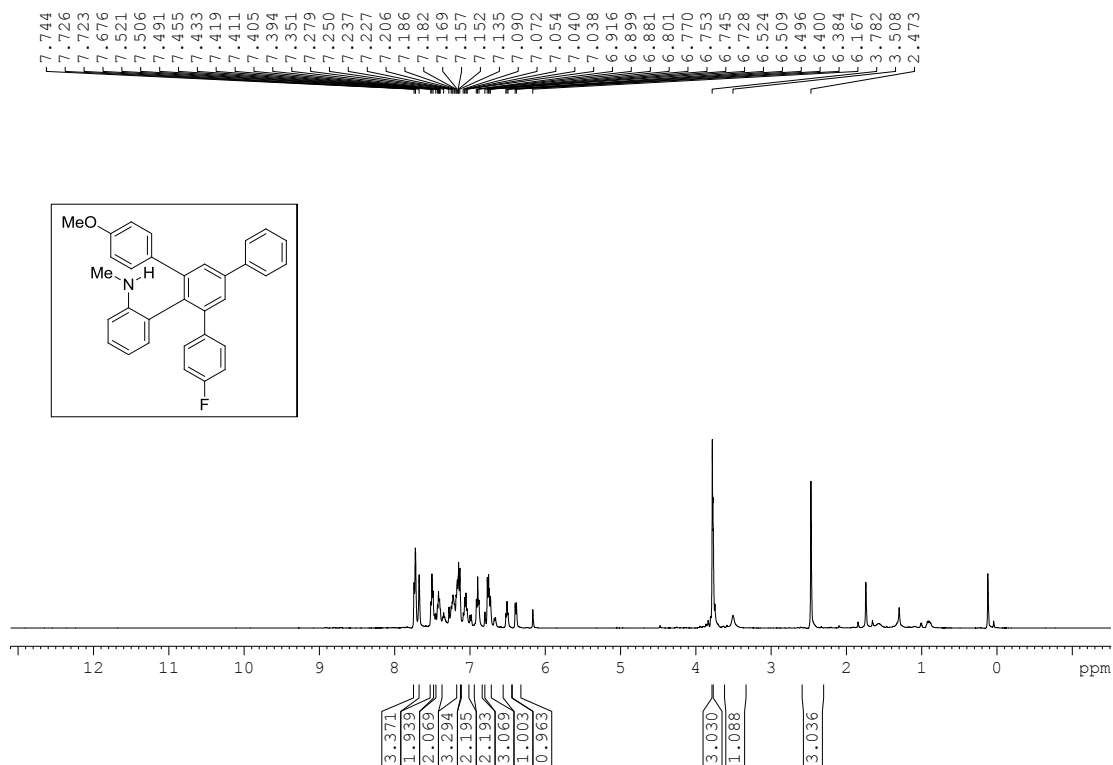


Figure S34. ¹H NMR spectrum of compound 19

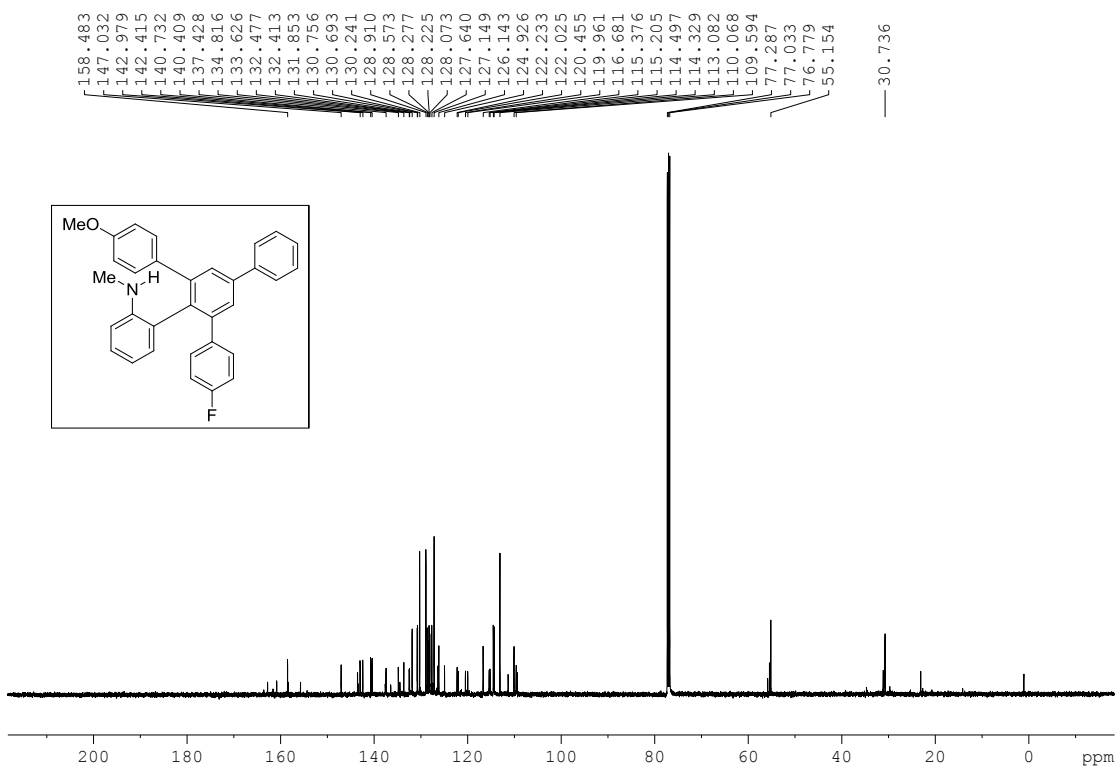


Figure S35. ¹³C NMR spectrum of compound 19

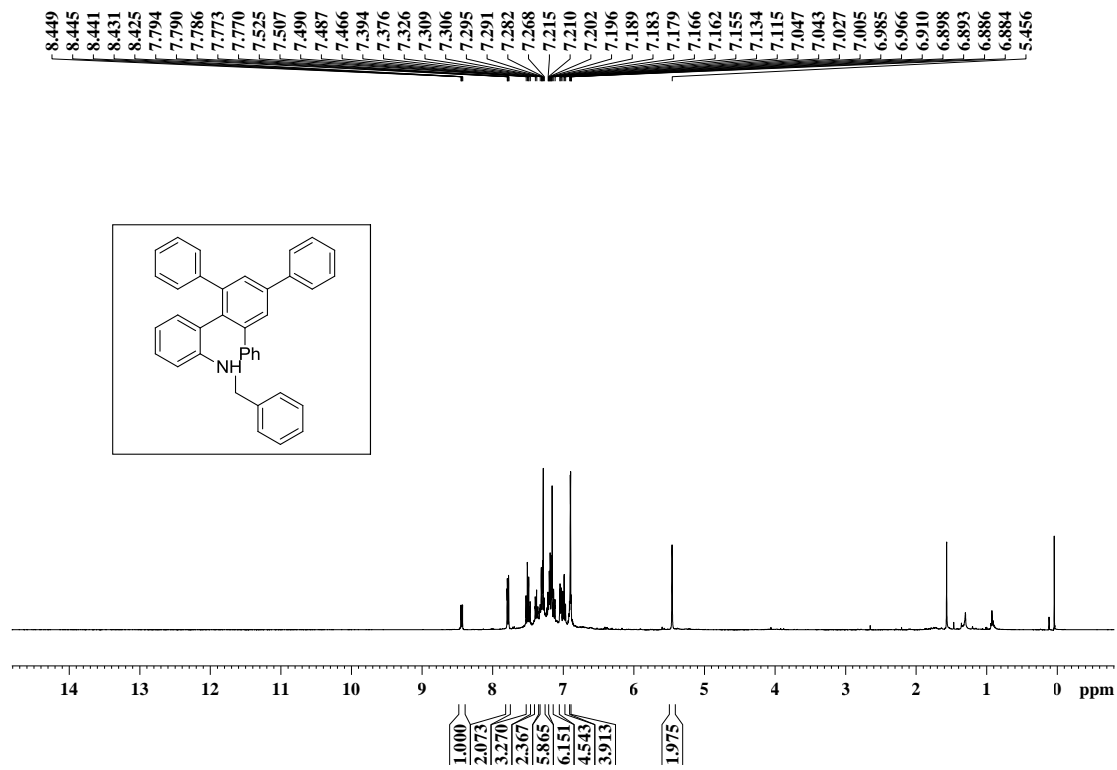


Figure S36. ¹H NMR spectrum of compound 20

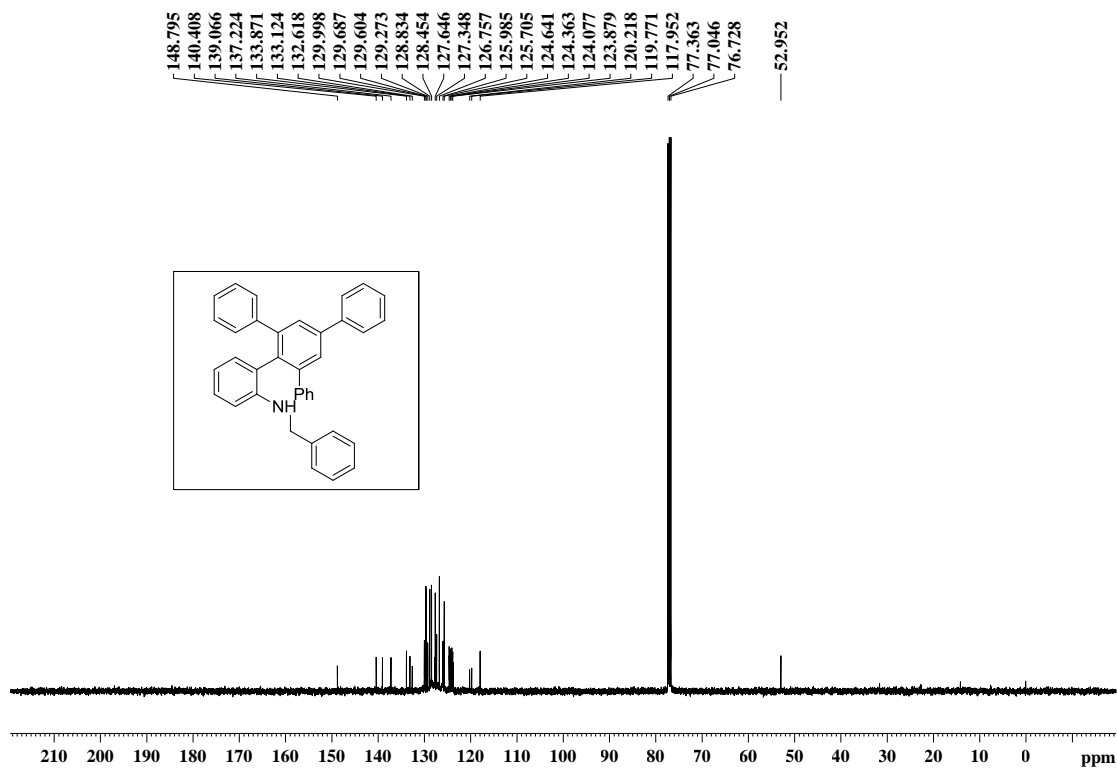


Figure S37. ¹³C NMR spectrum of compound 20

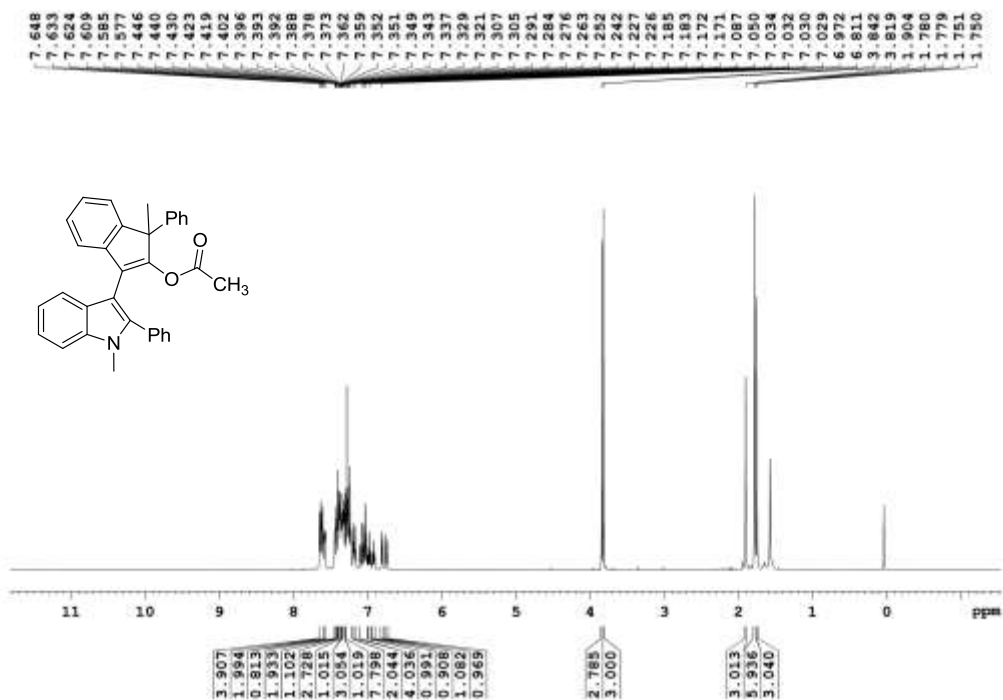


Figure S38. ^1H NMR spectrum of compound 21

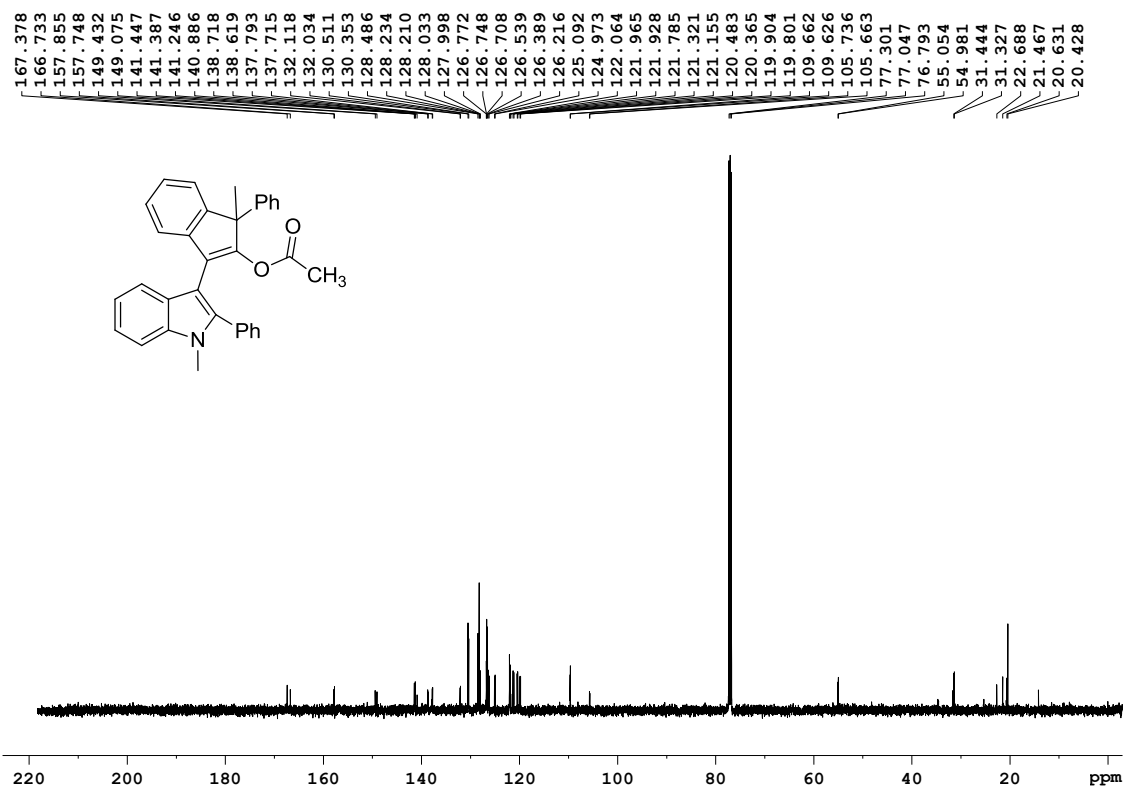


Figure S39. ^{13}C NMR spectrum of compound 21

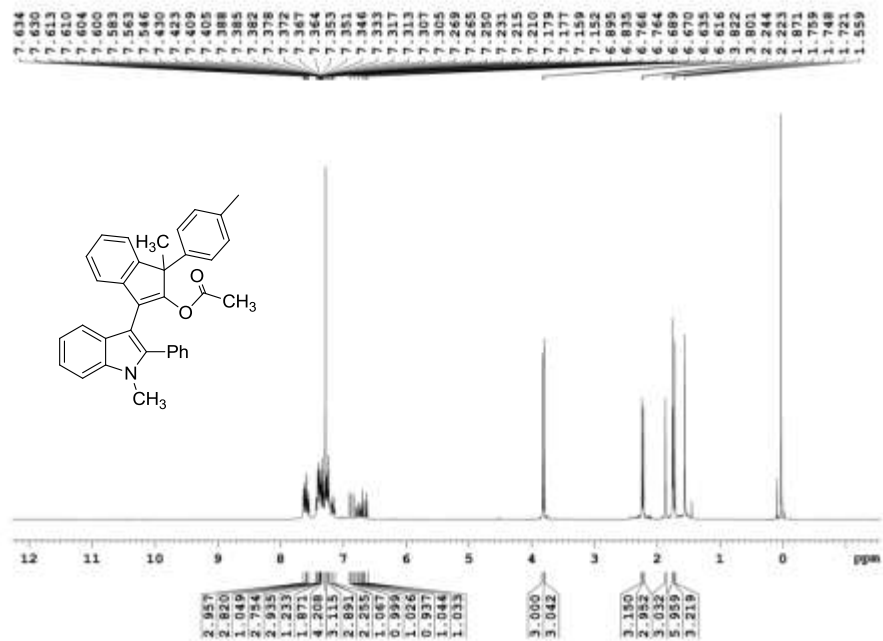


Figure S40. ¹H NMR spectrum of compound 22

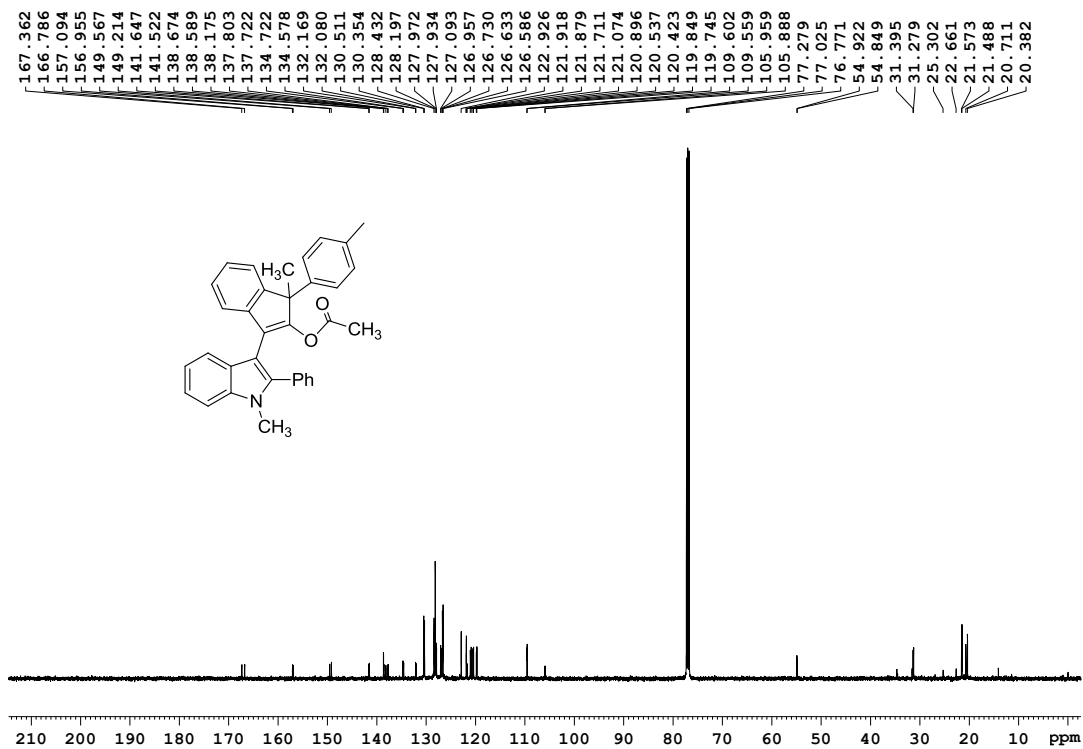


Figure S41. ¹³C NMR spectrum of compound 22

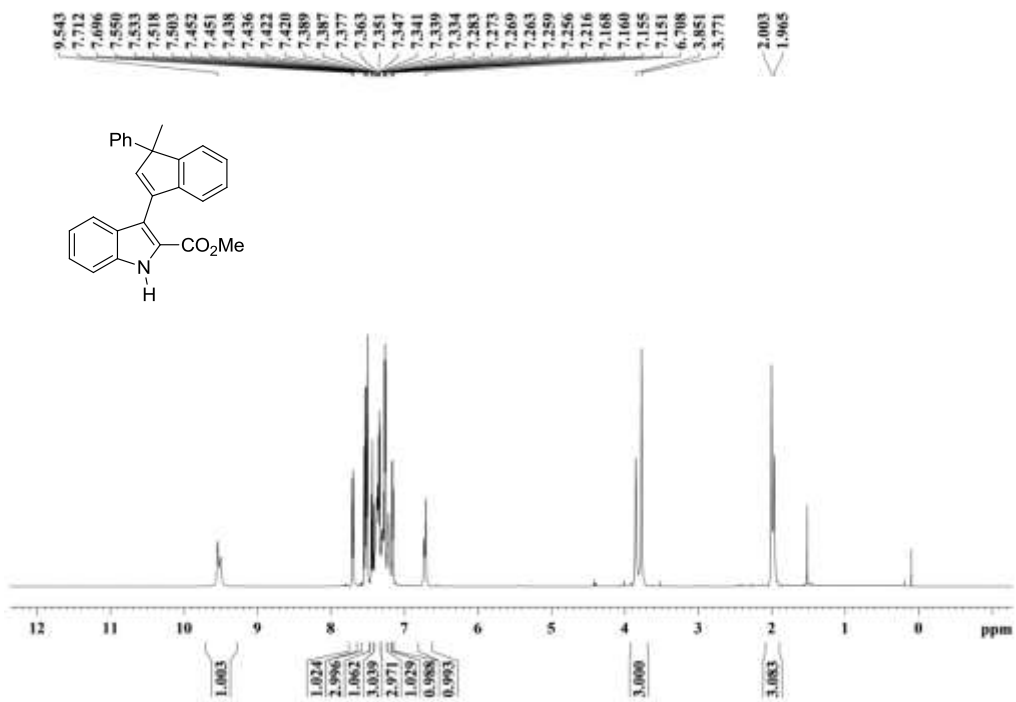


Figure S42. ¹H NMR spectrum of compound 23

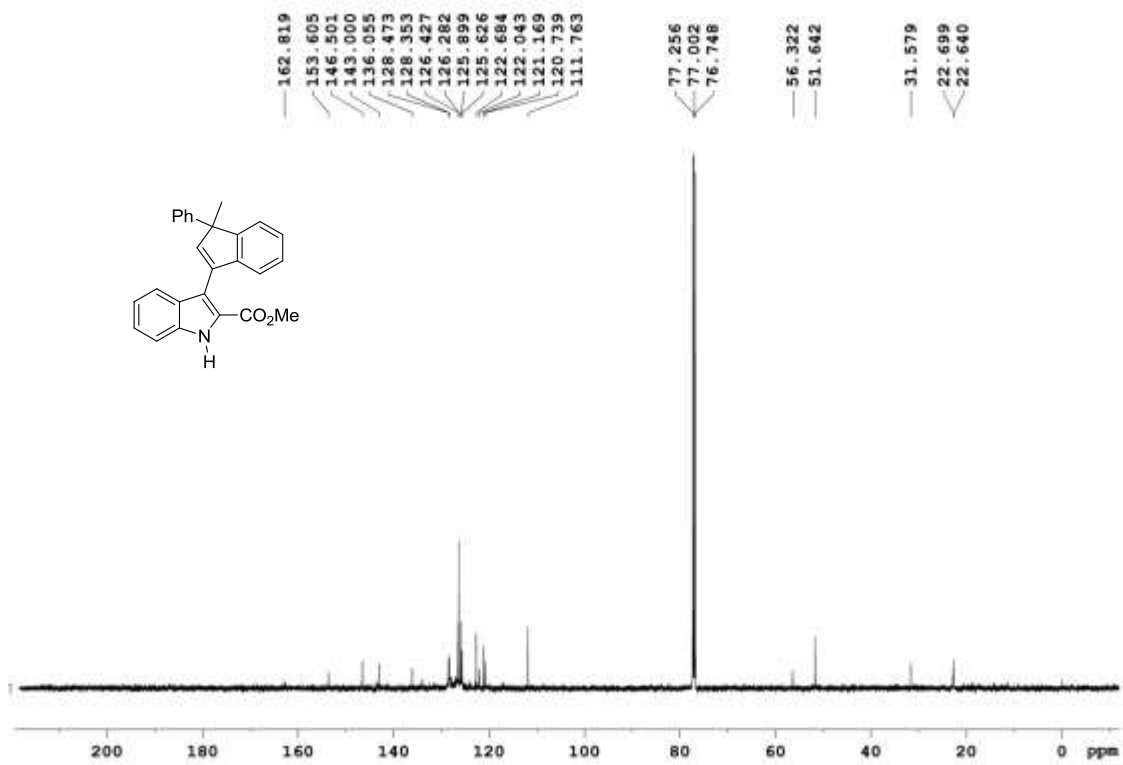


Figure S43. ¹³C NMR spectrum of compound 23

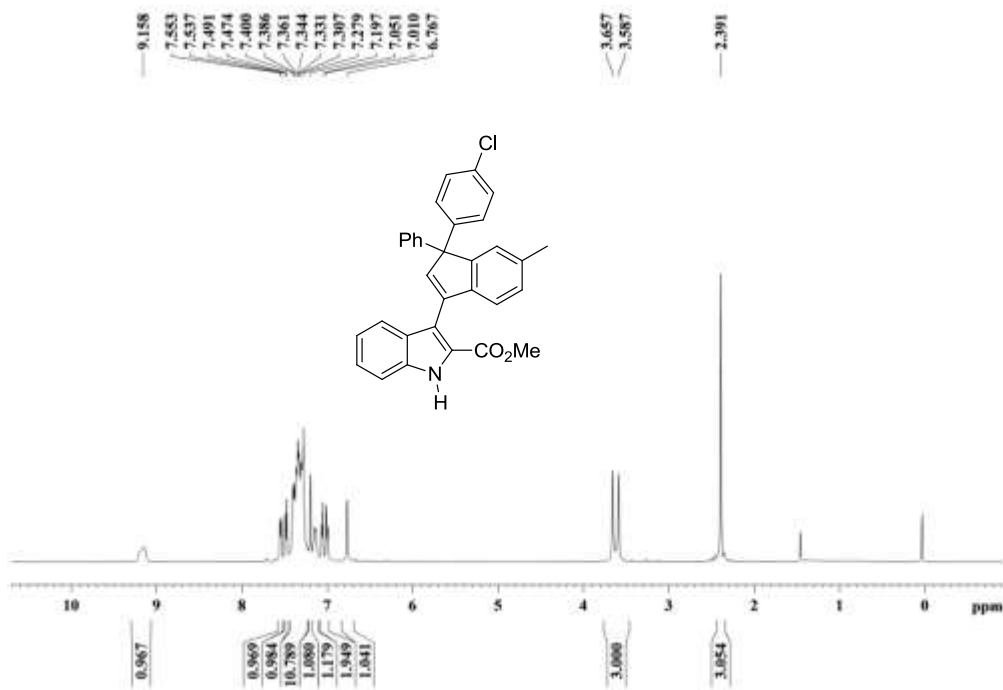


Figure S44. ¹H NMR spectrum of compound 24

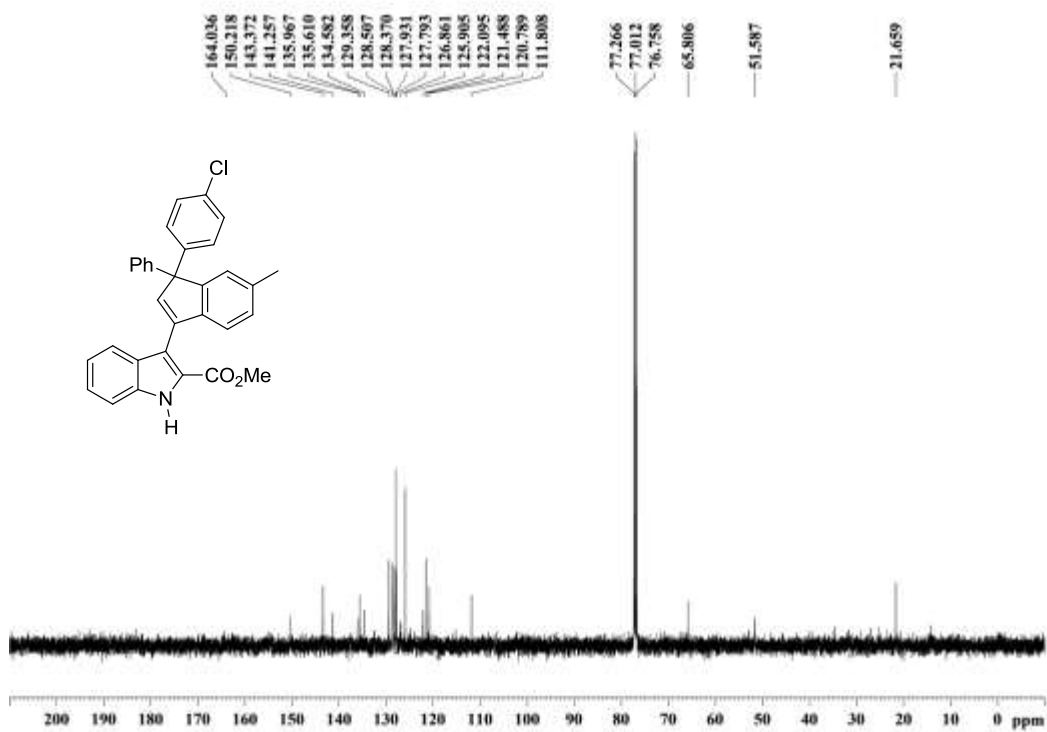


Figure S45. ¹³C NMR spectrum of compound 24

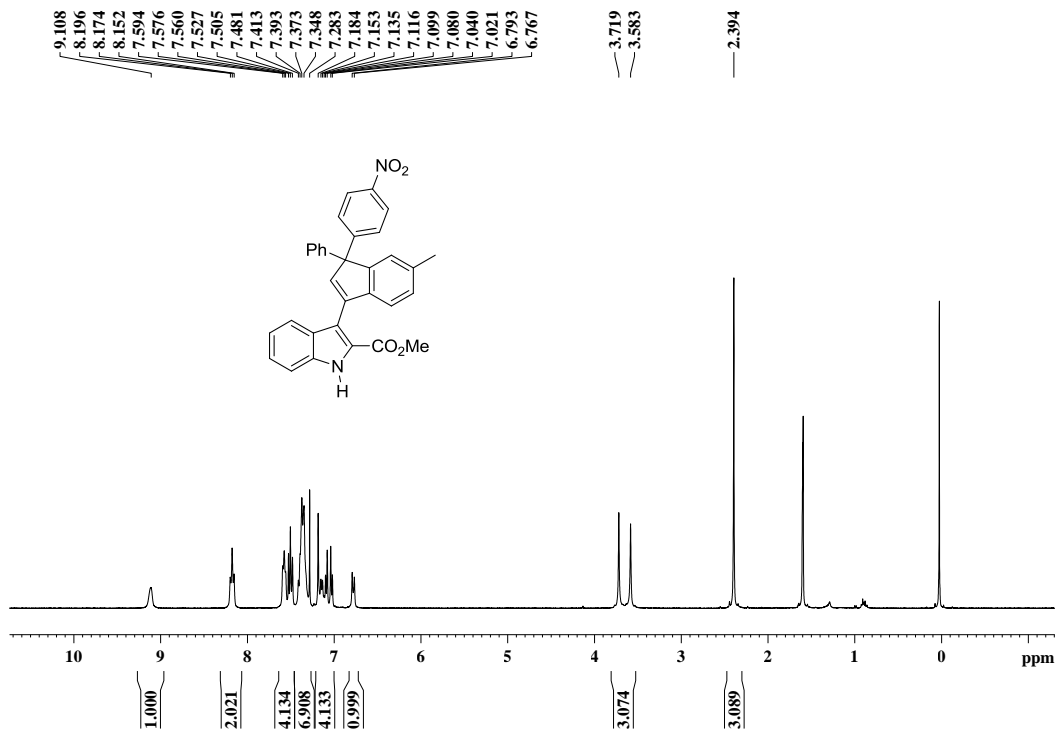


Figure S46. ¹H NMR spectrum of compound 25

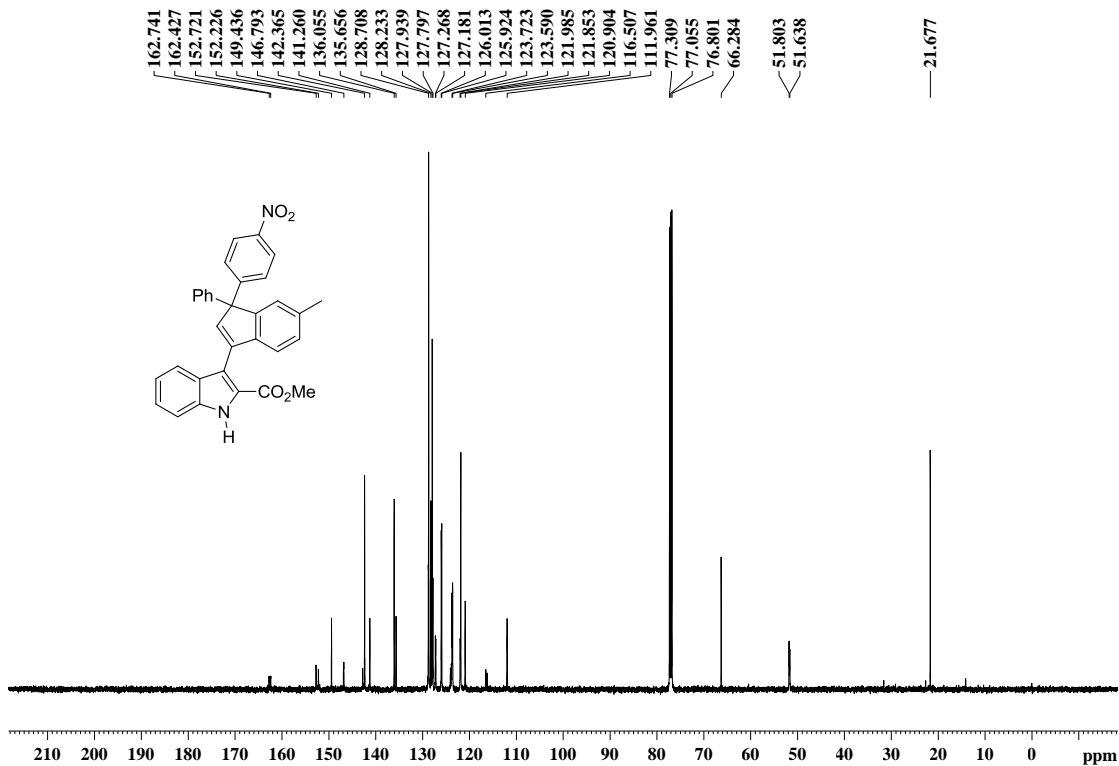


Figure S47. ¹³C NMR spectrum of compound 25

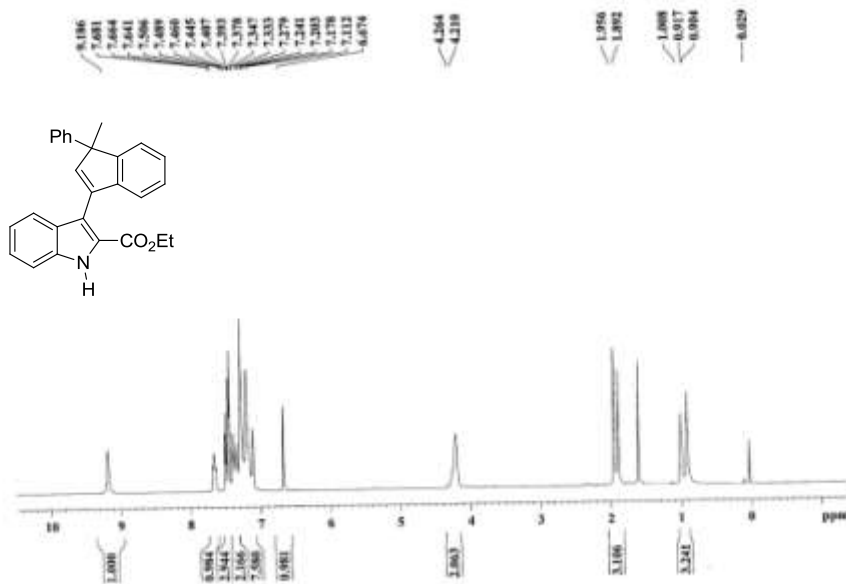


Figure S48. ¹H NMR spectrum of compound 26

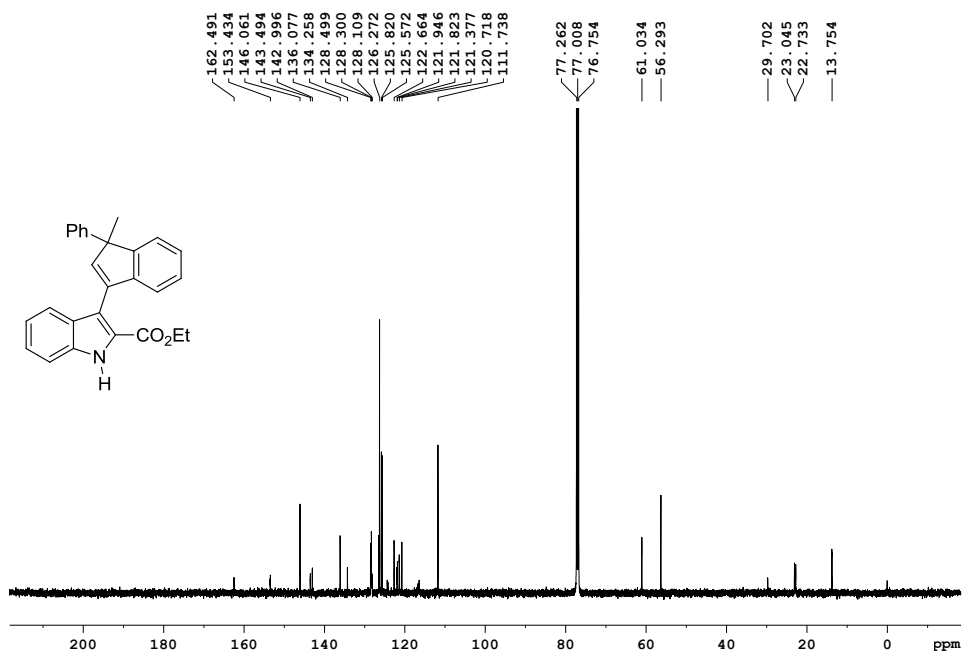


Figure S49. ¹³C NMR spectrum of compound 26

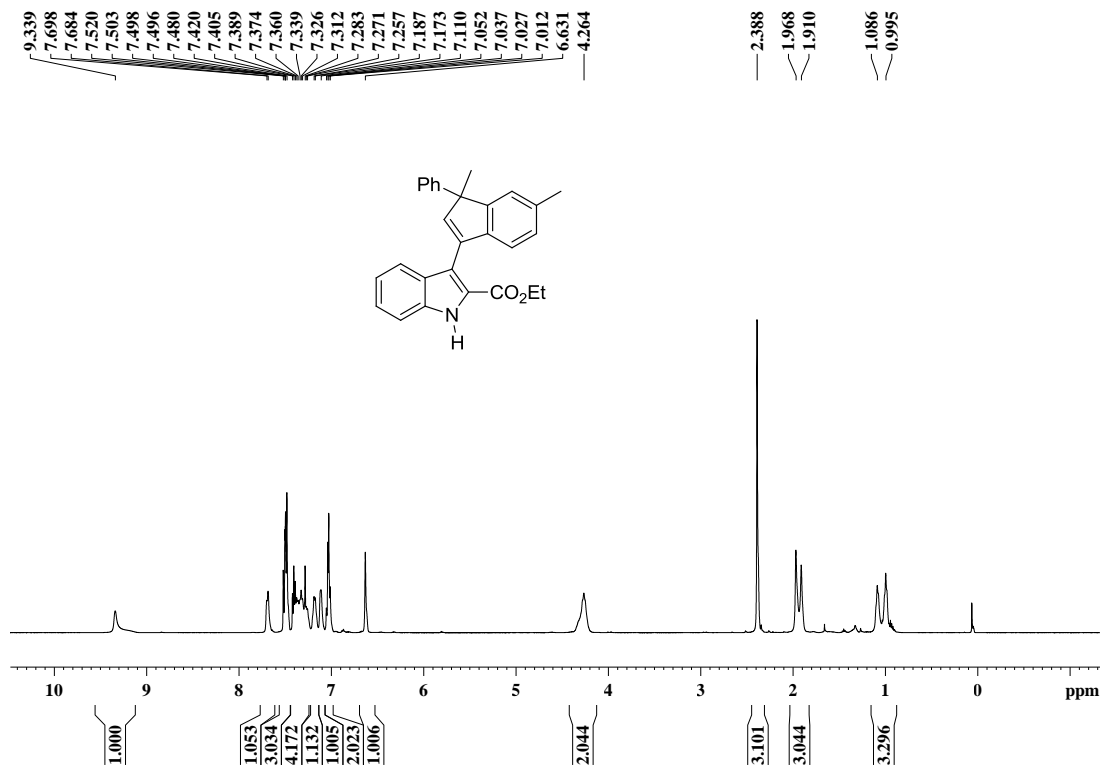


Figure S50. ¹H NMR spectrum of compound 27

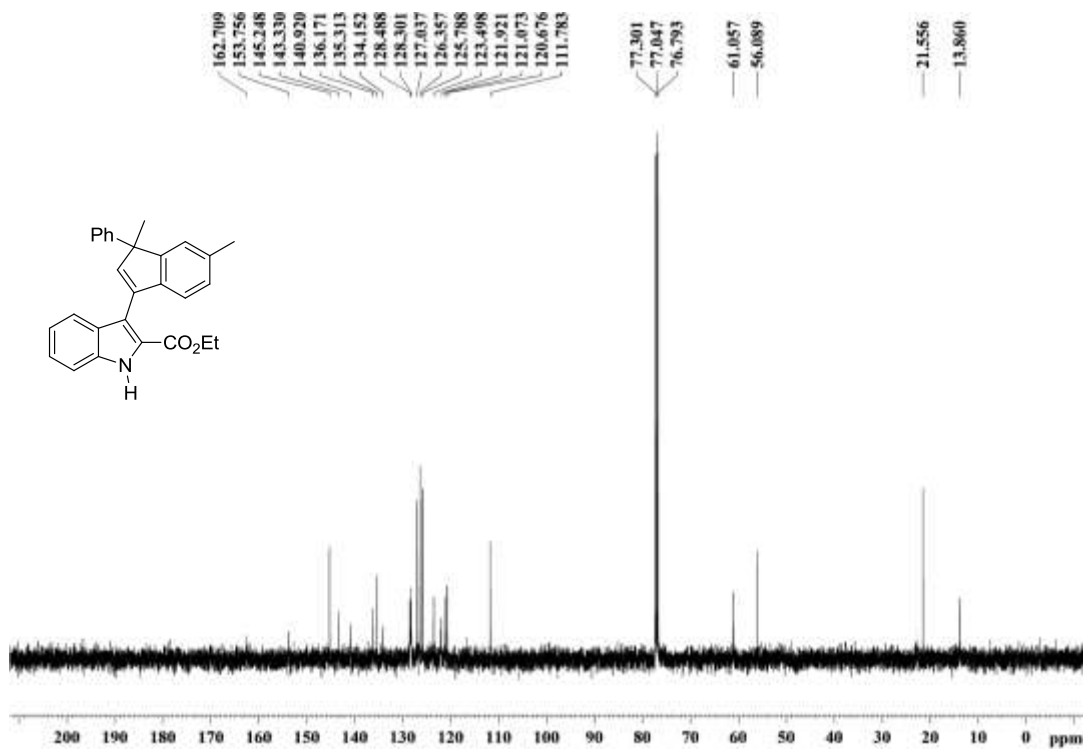
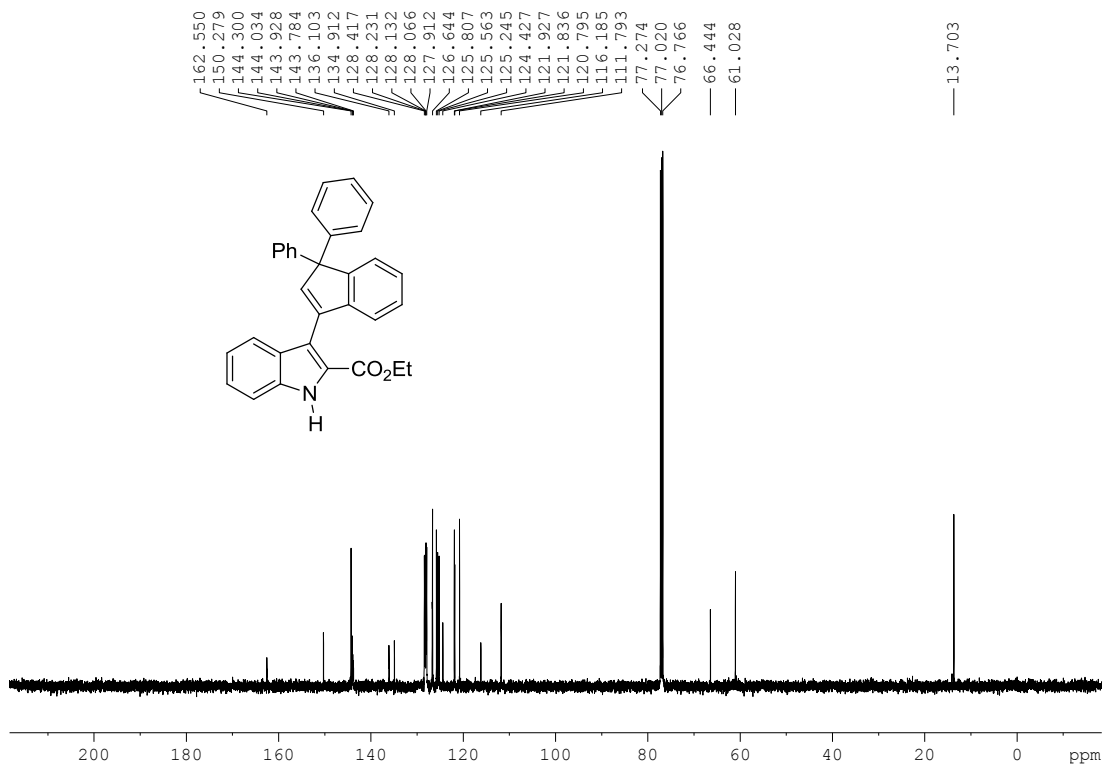
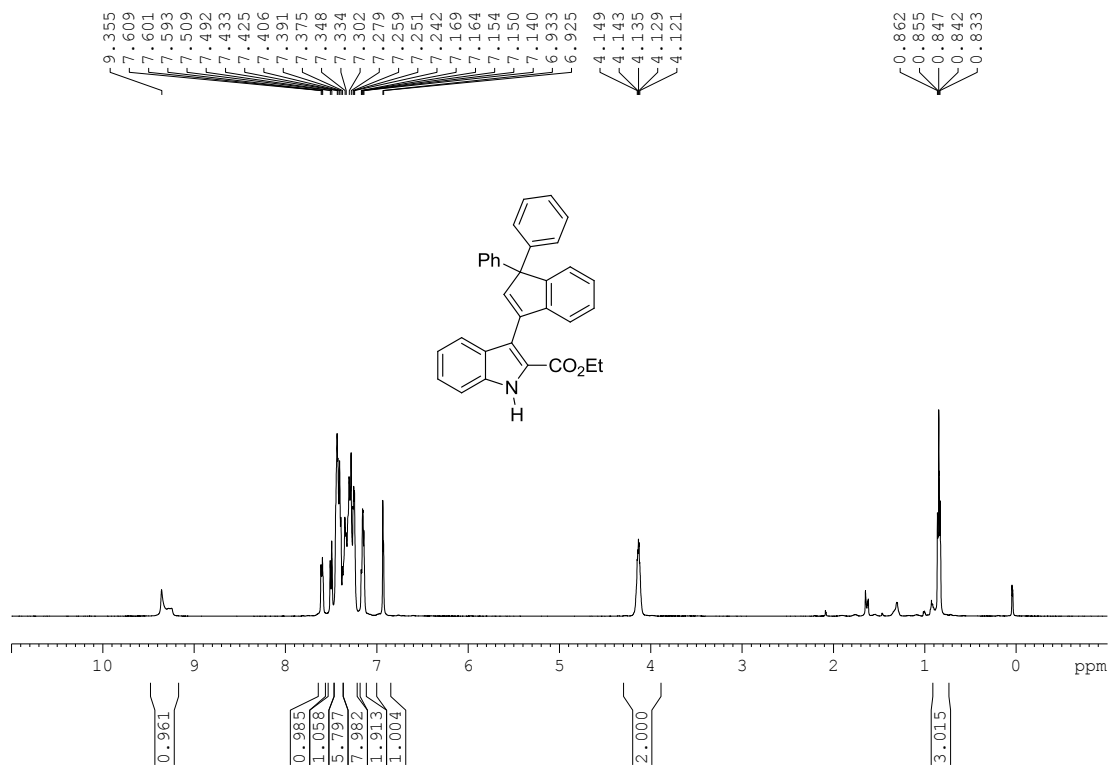


Figure S51. ¹³C NMR spectrum of compound 27



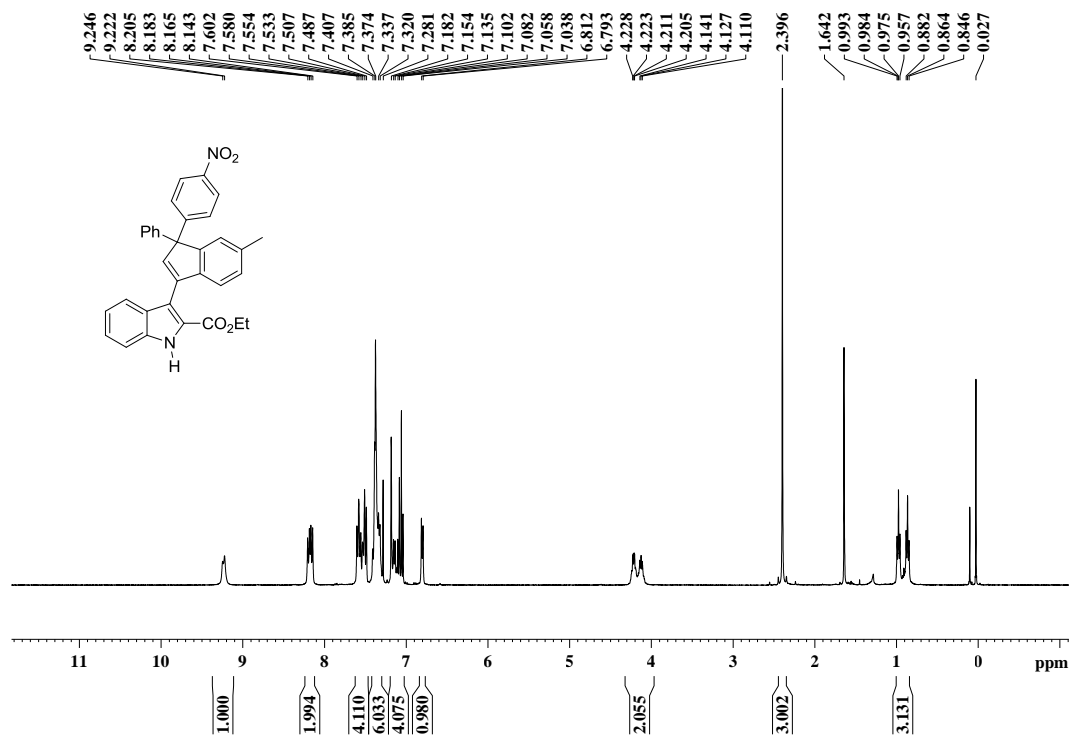


Figure S54. ¹H NMR spectrum of compound 29

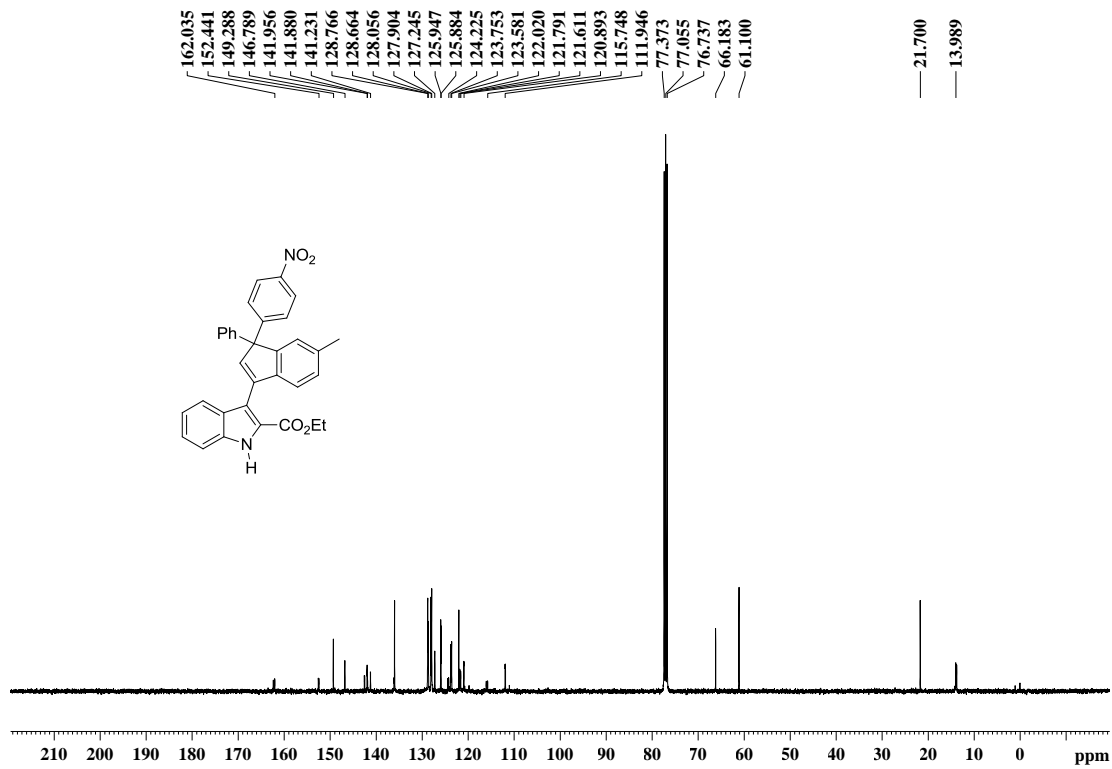


Figure S55. ¹³C NMR spectrum of compound 29

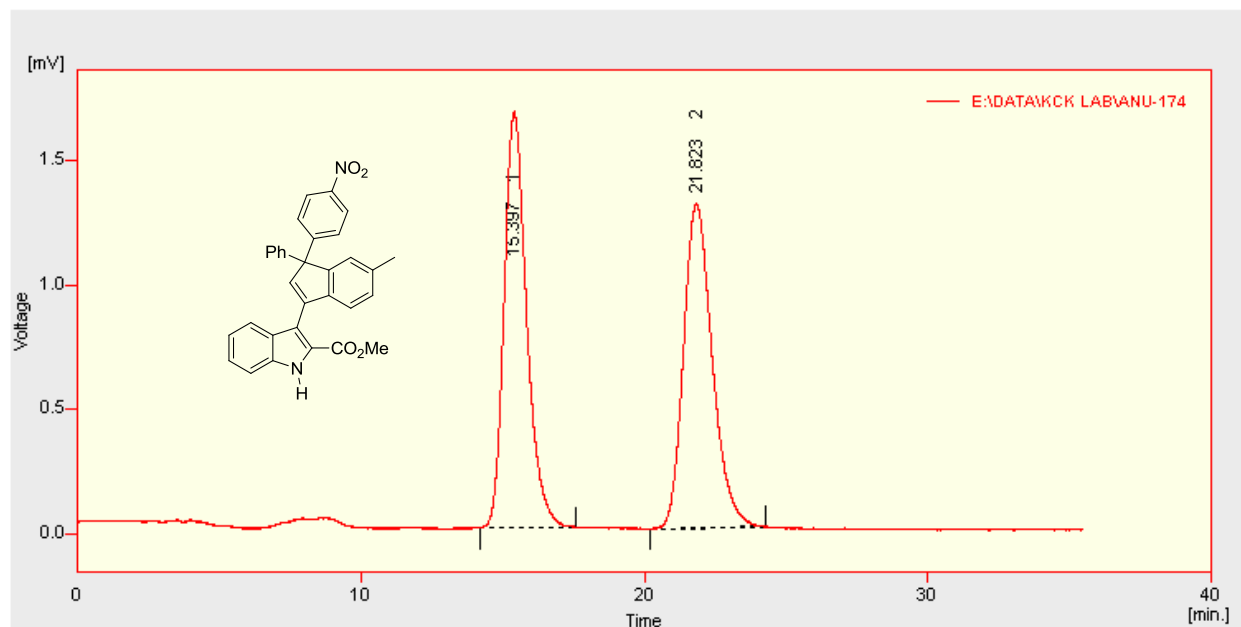


Figure S56. Chiral HPLC of compound **25**.

Result Table (Uncal - E:\DATA\KCK LAB\ANU-174)

	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	W05 [min]
1	15.397	92.160	1.672	50.0	56.2	0.83
2	21.823	92.109	1.304	50.0	43.8	1.08
	Total	184.269	2.976	100.0	100.0	

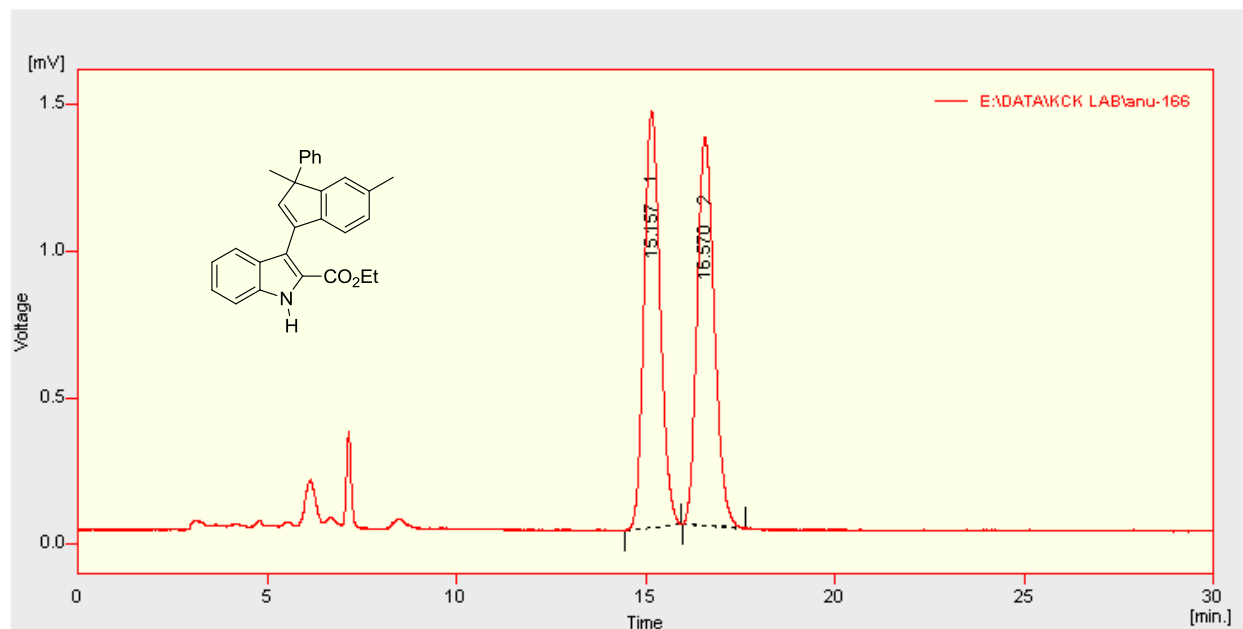


Figure S57.Chiral HPLC of compound **27**.

Result Table (Uncal - E:\DATA\KCK LAB\anu-166)

	Reten. Time [min]	Area [mV.s]	Height [mV]	Area [%]	Height [%]	W05 [min]
1	15.157	41.989	1.418	50.1	51.7	0.46
2	16.570	41.901	1.324	49.9	48.3	0.49
	Total	83.890	2.742	100.0	100.0	