

Supporting Information

Synthesis of 1-cyano-2-aminoazulenes: Substituent effect on 2H-cyclohepta[b]furan-2-ones toward the reaction with malononitrile

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1. Copies of ^1H NMR and ^{13}C NMR spectrum of **13–20**.

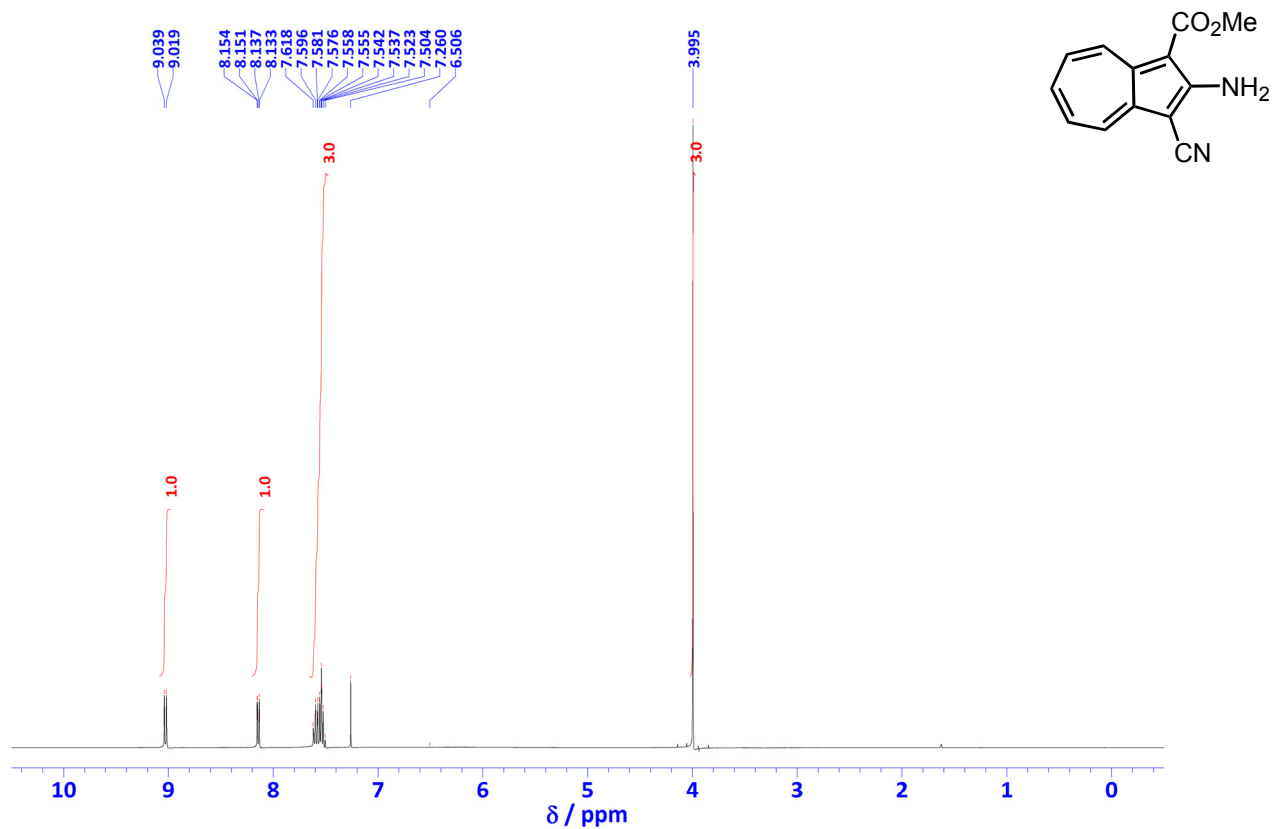


Figure S1. ^1H NMR spectrum of **13a** in CDCl_3 (500 MHz).

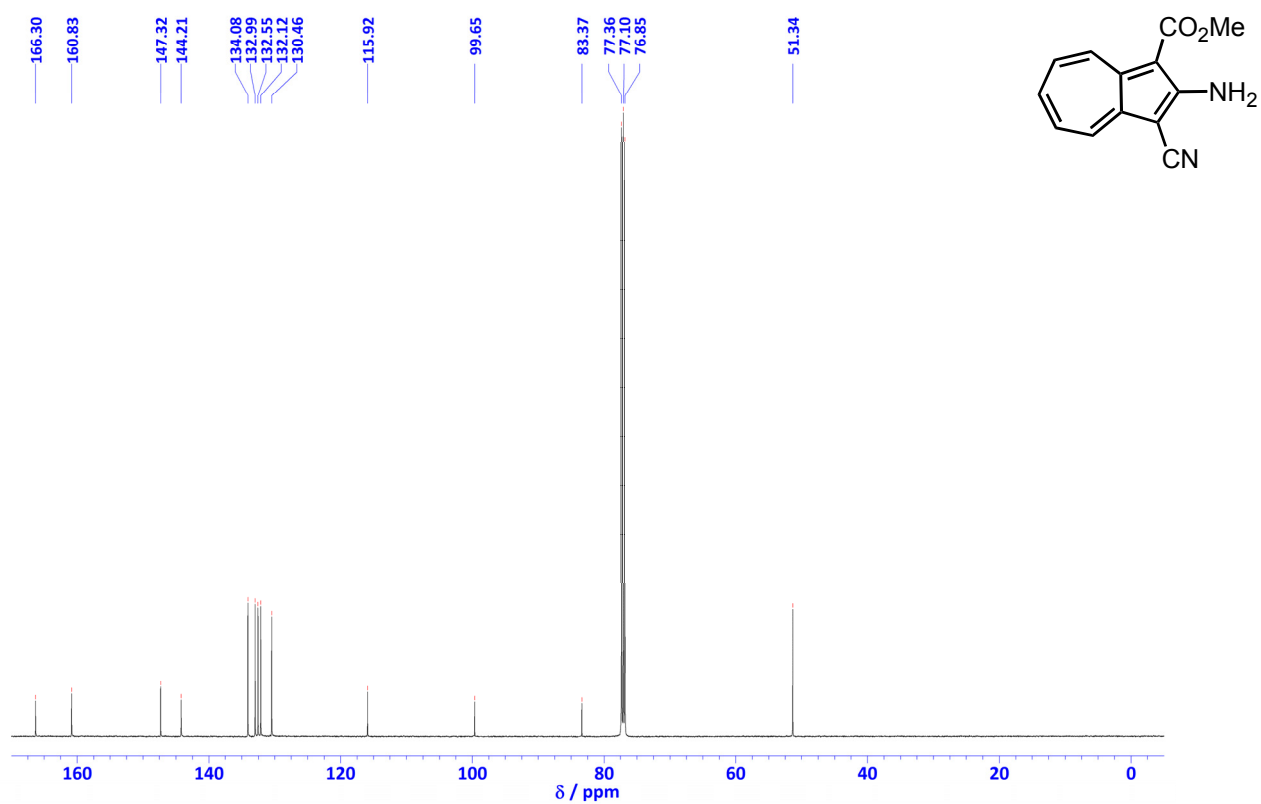


Figure S2. ^{13}C NMR spectrum of **13a** in CDCl_3 (125 MHz).

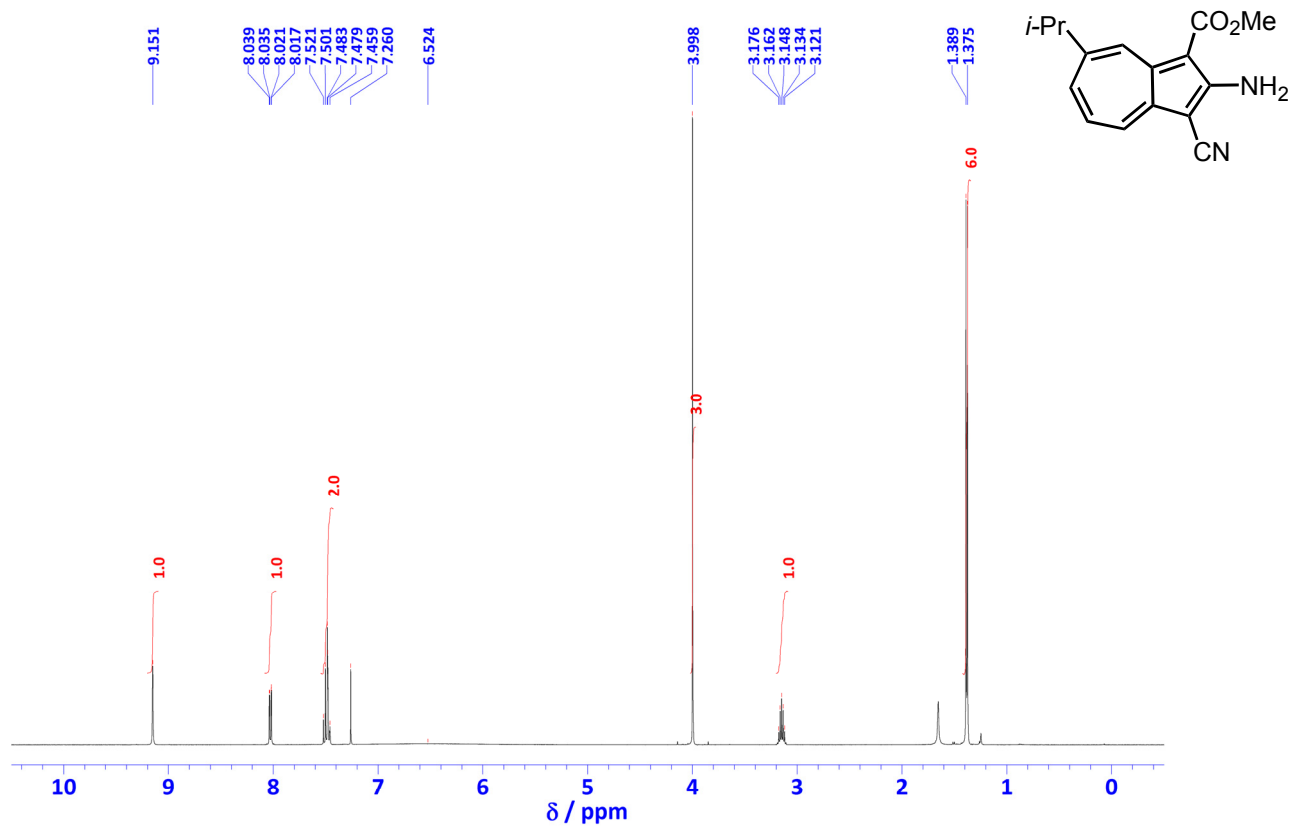


Figure S3. ¹H NMR spectrum of **13b** in CDCl₃ (500 MHz).

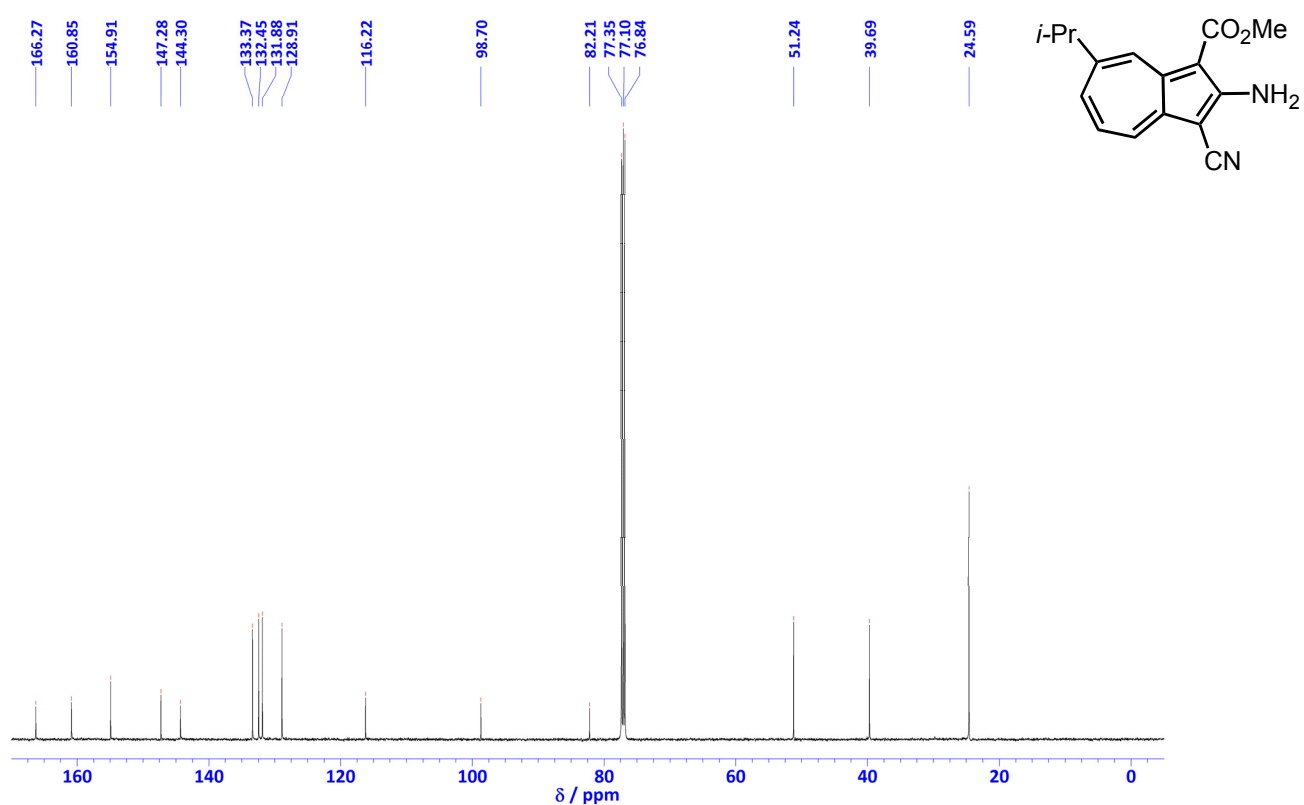


Figure S4. ¹³C NMR spectrum of **13b** in CDCl₃ (125 MHz).

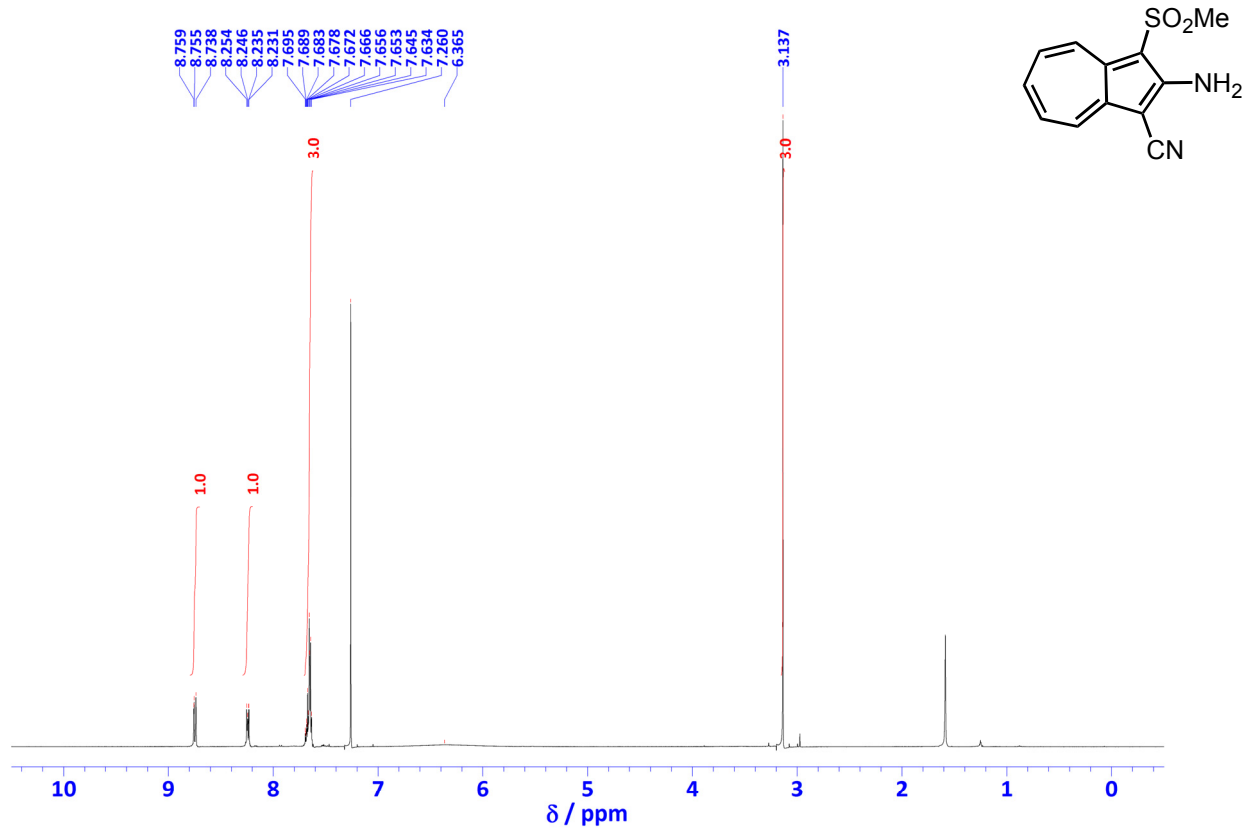


Figure S5. ¹H NMR spectrum of **14a** in CDCl₃ (500 MHz).

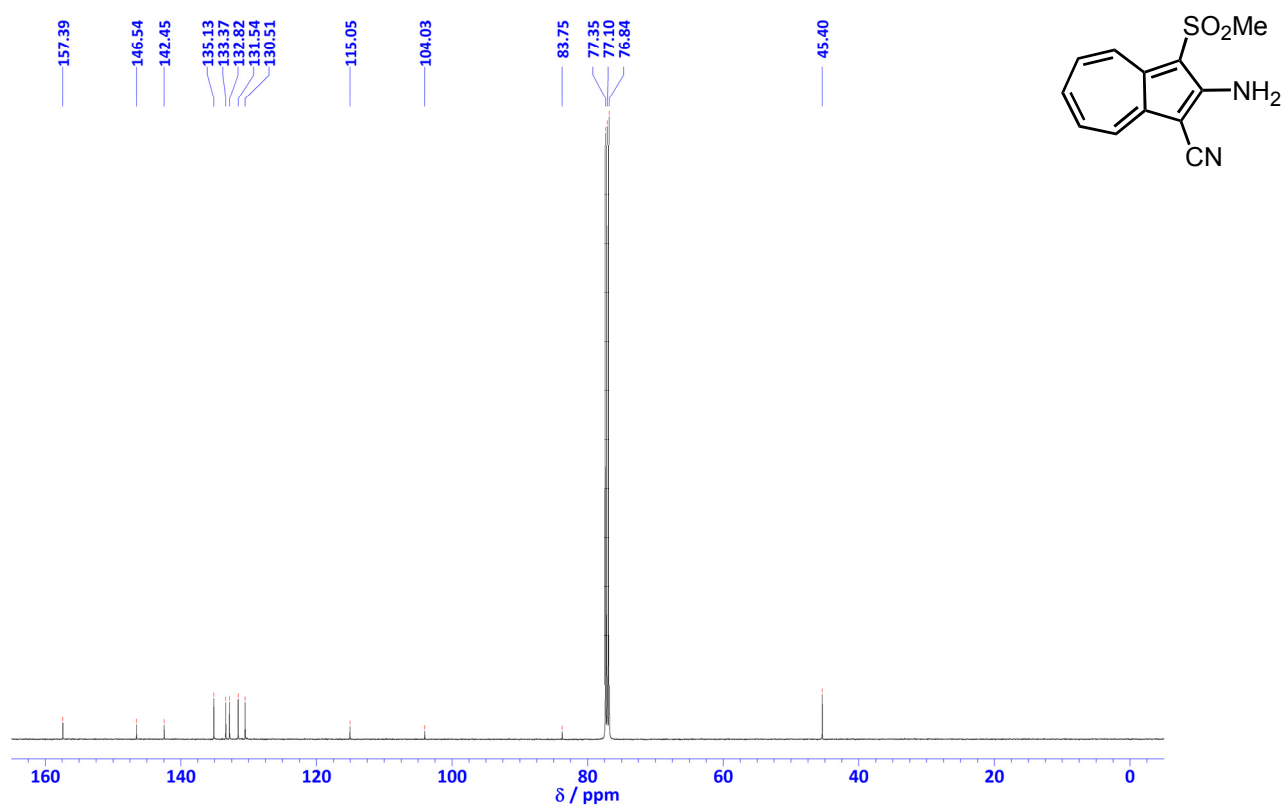


Figure S6. ¹³C NMR spectrum of **14a** in CDCl₃ (125 MHz).

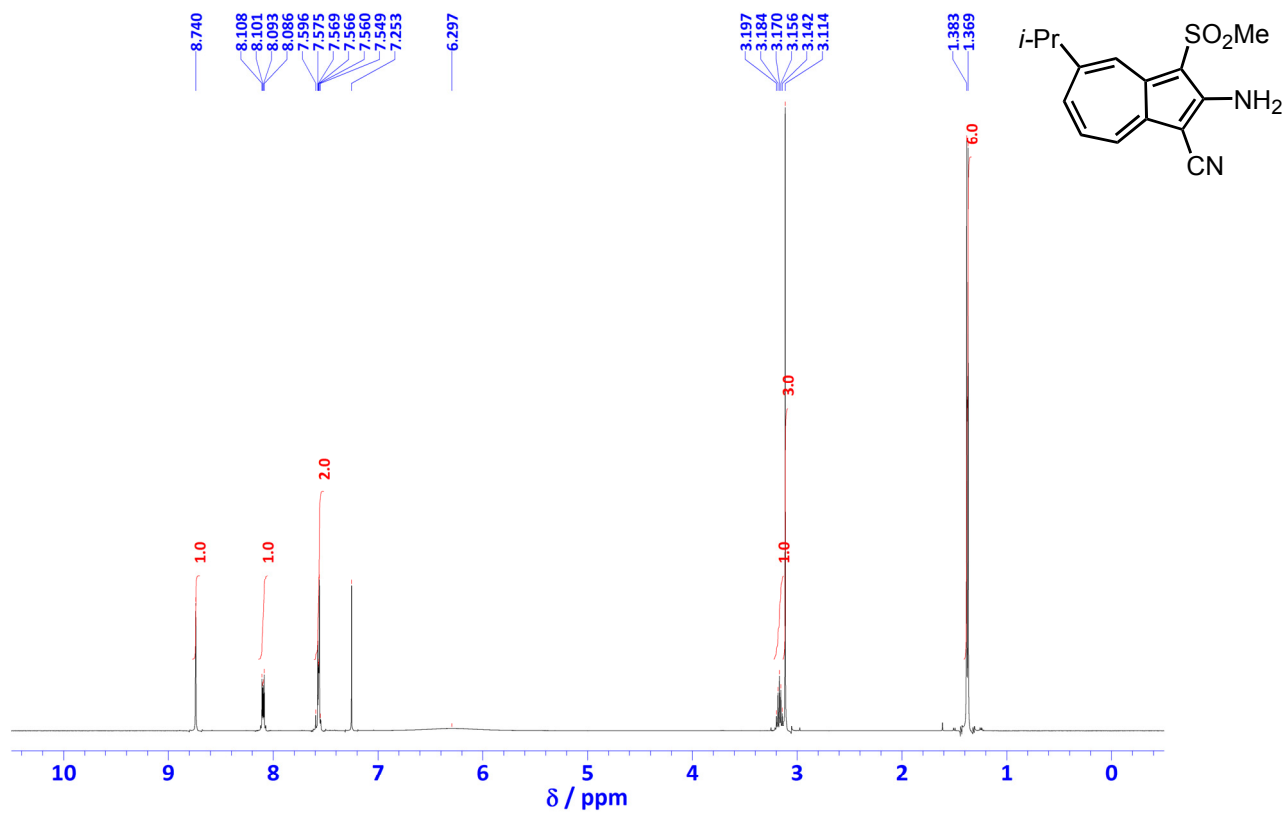


Figure S7. ^1H NMR spectrum of **14b** in CDCl_3 (500 MHz).

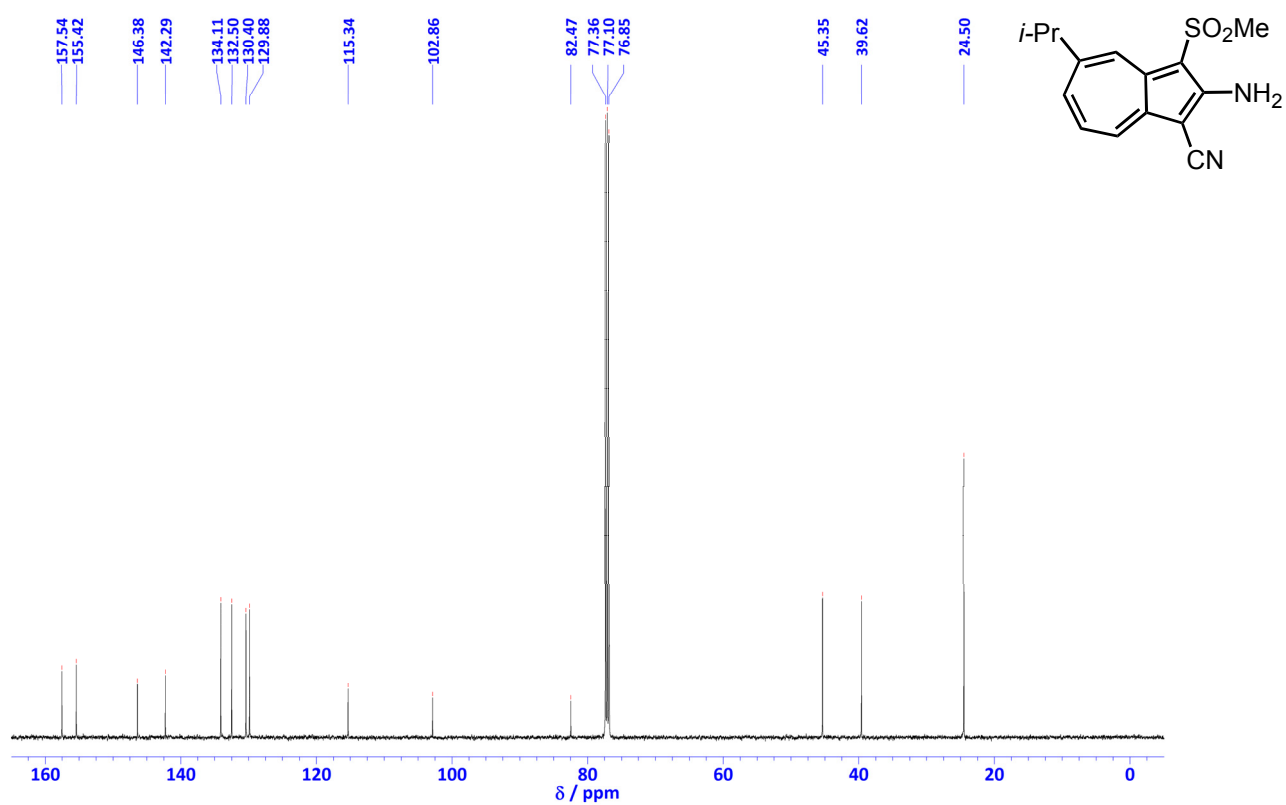
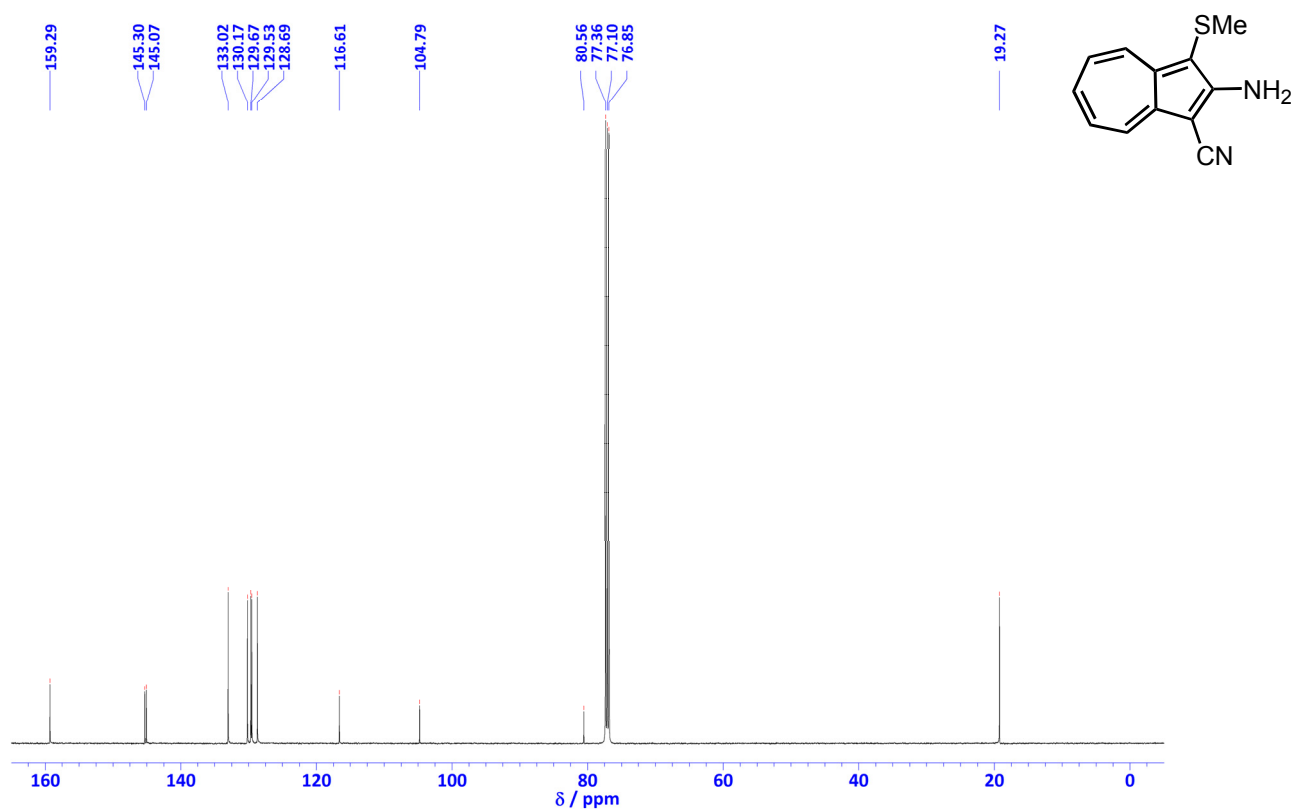
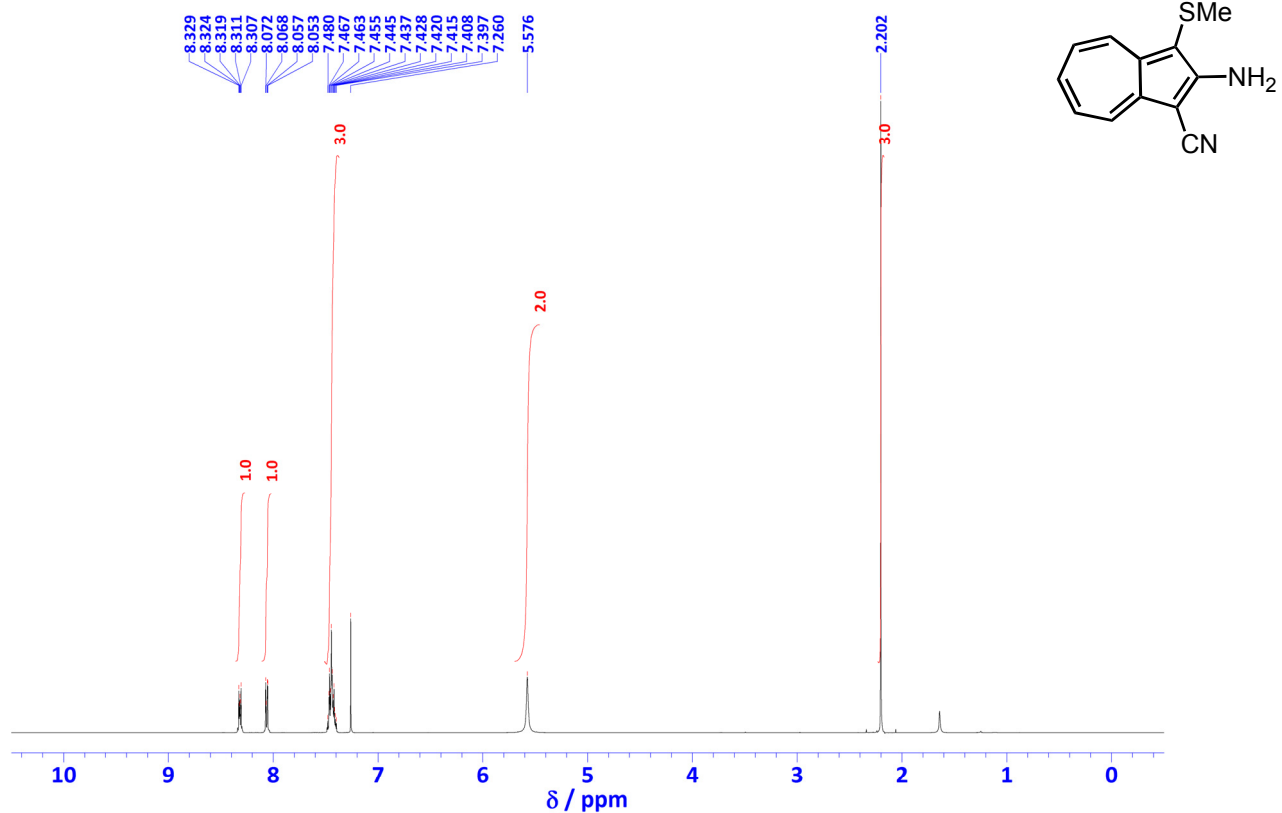


Figure S8. ^{13}C NMR spectrum of **14b** in CDCl_3 (125 MHz).



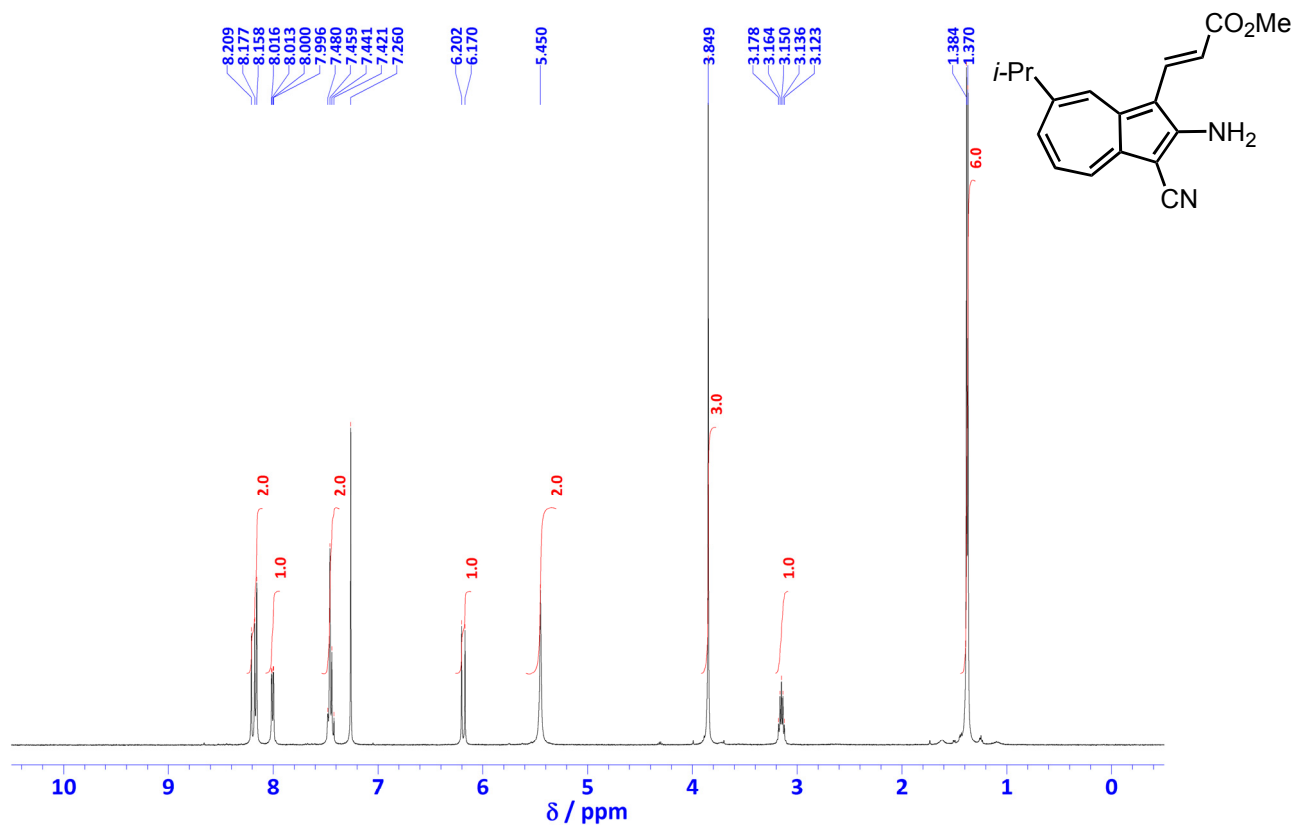


Figure S11. ¹H NMR spectrum of **16** in CDCl₃ (500 MHz).

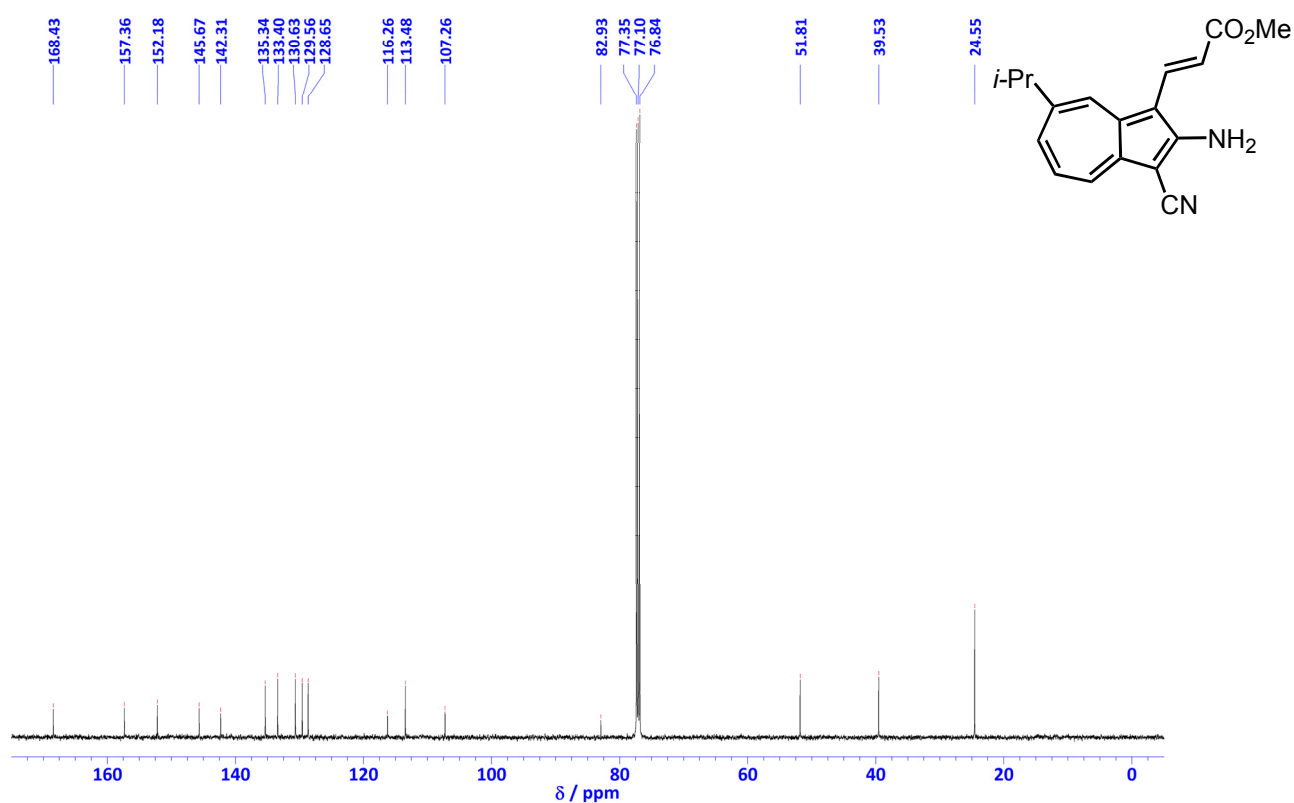


Figure S12. ¹³C NMR spectrum of **16** in CDCl₃ (125 MHz).

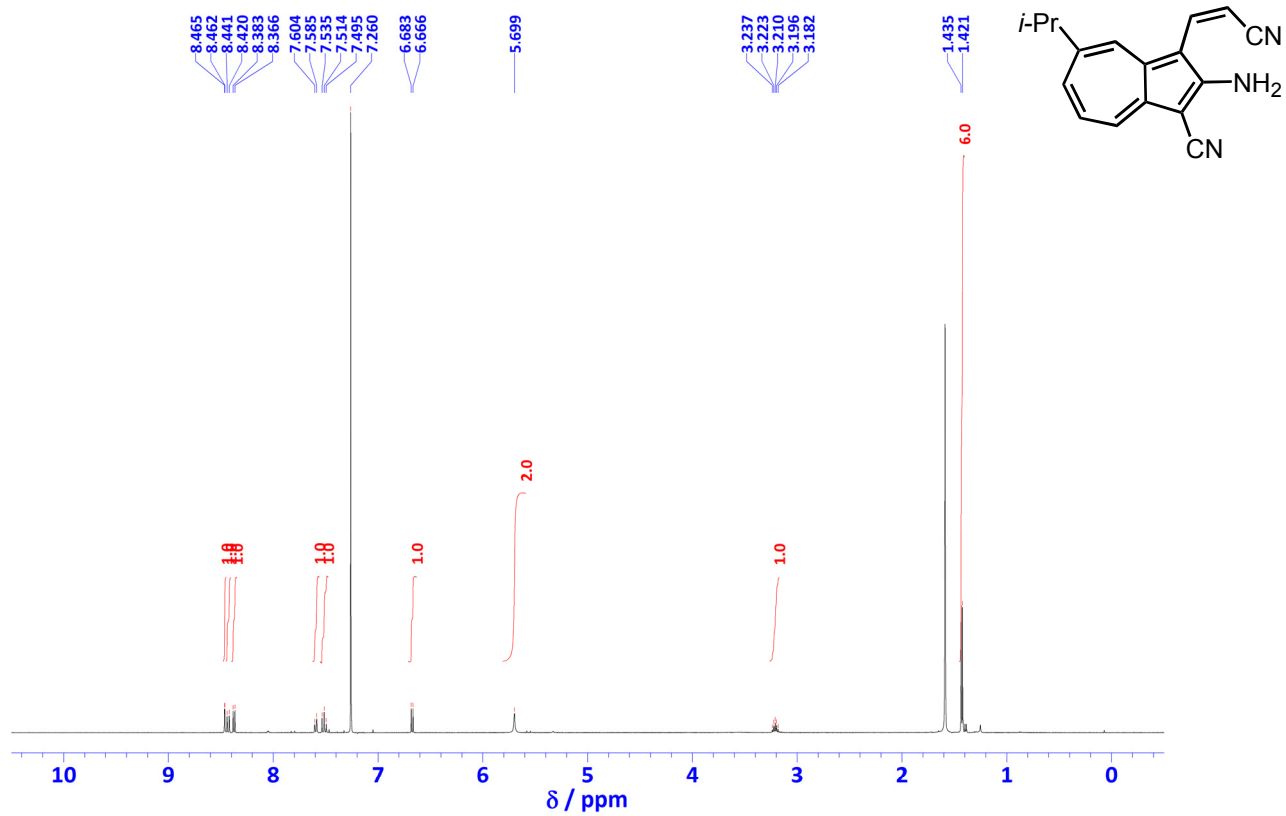


Figure S13. ^1H NMR spectrum of **17** in CDCl_3 (500 MHz).

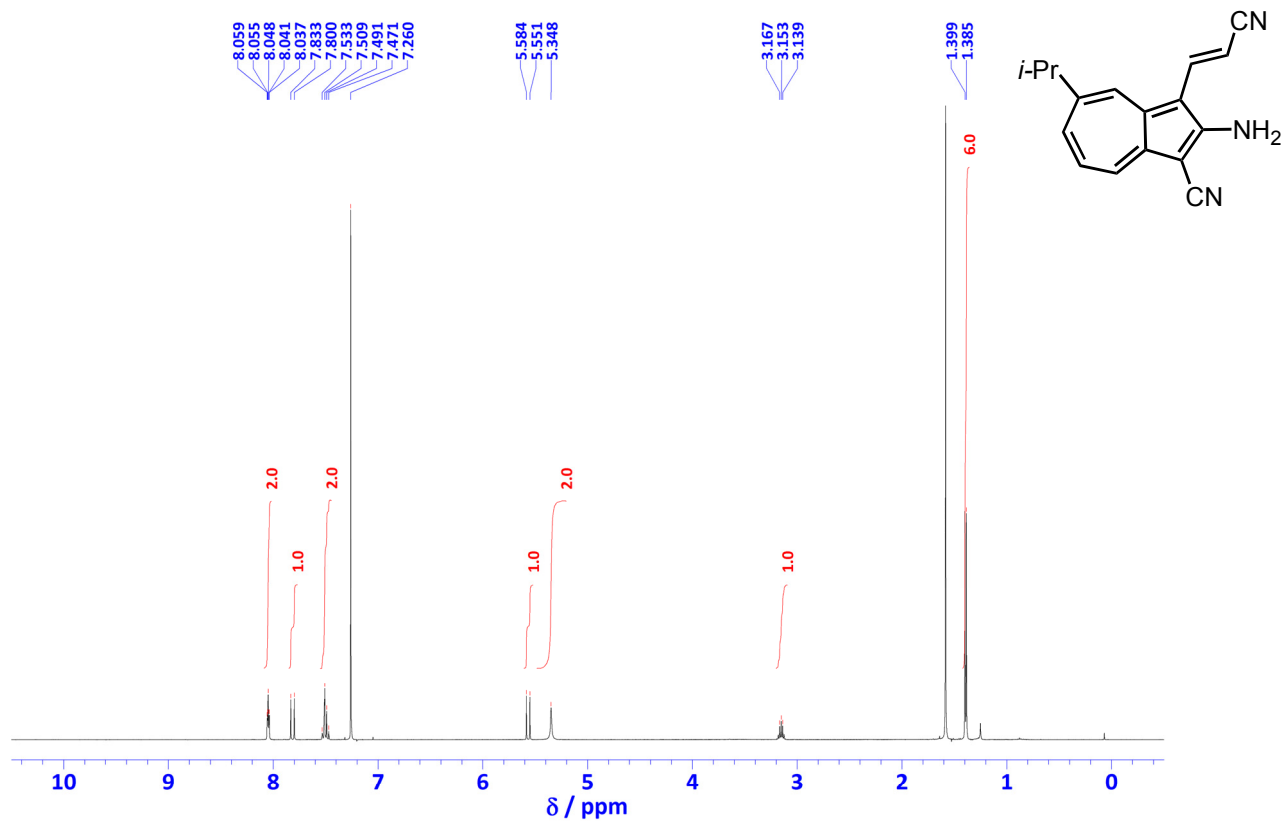


Figure S14. ^1H NMR spectrum of **18** in CDCl_3 (500 MHz).

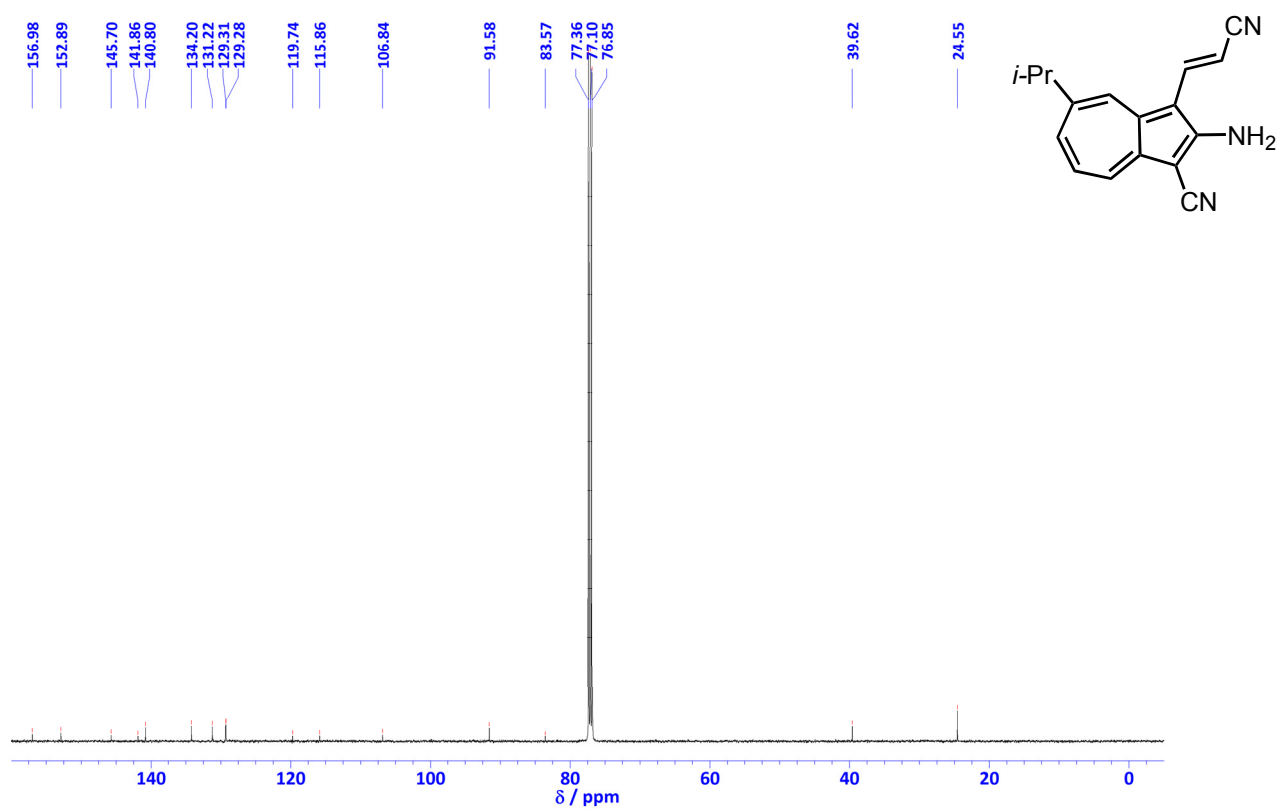


Figure S15. ^{13}C NMR spectrum of **18** in CDCl_3 (125 MHz).

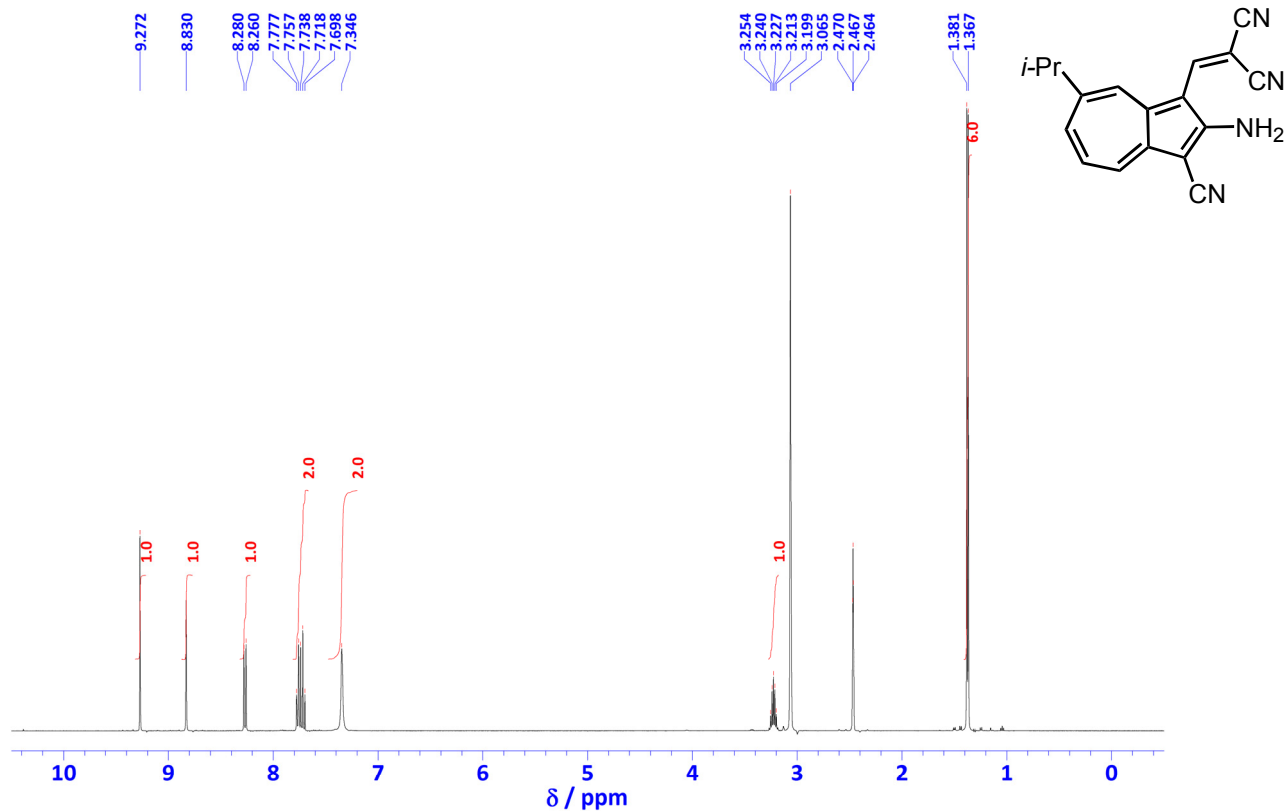


Figure S16. ^1H NMR spectrum of **19** in $\text{DMSO-}d_6$ (500 MHz).

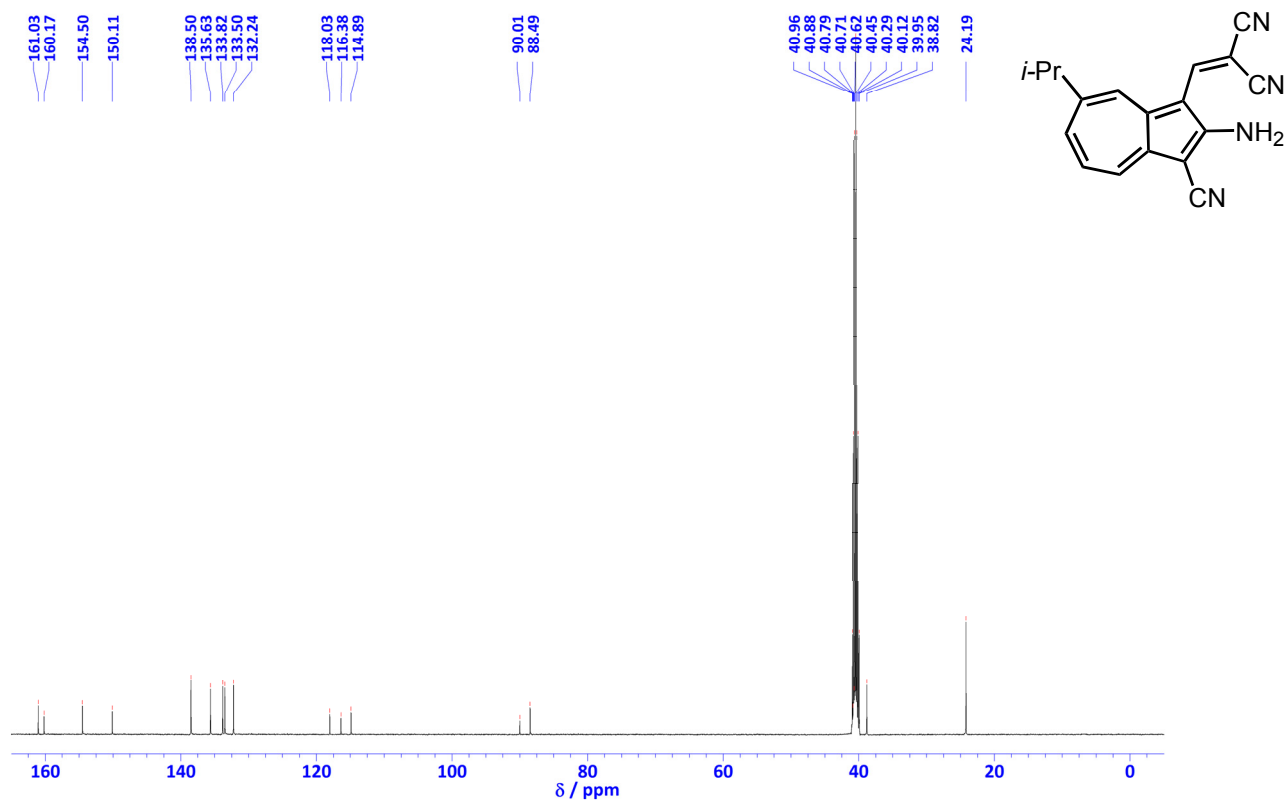


Figure S17. ^{13}C NMR spectrum of **19** in $\text{DMSO-}d_6$ (125 MHz).

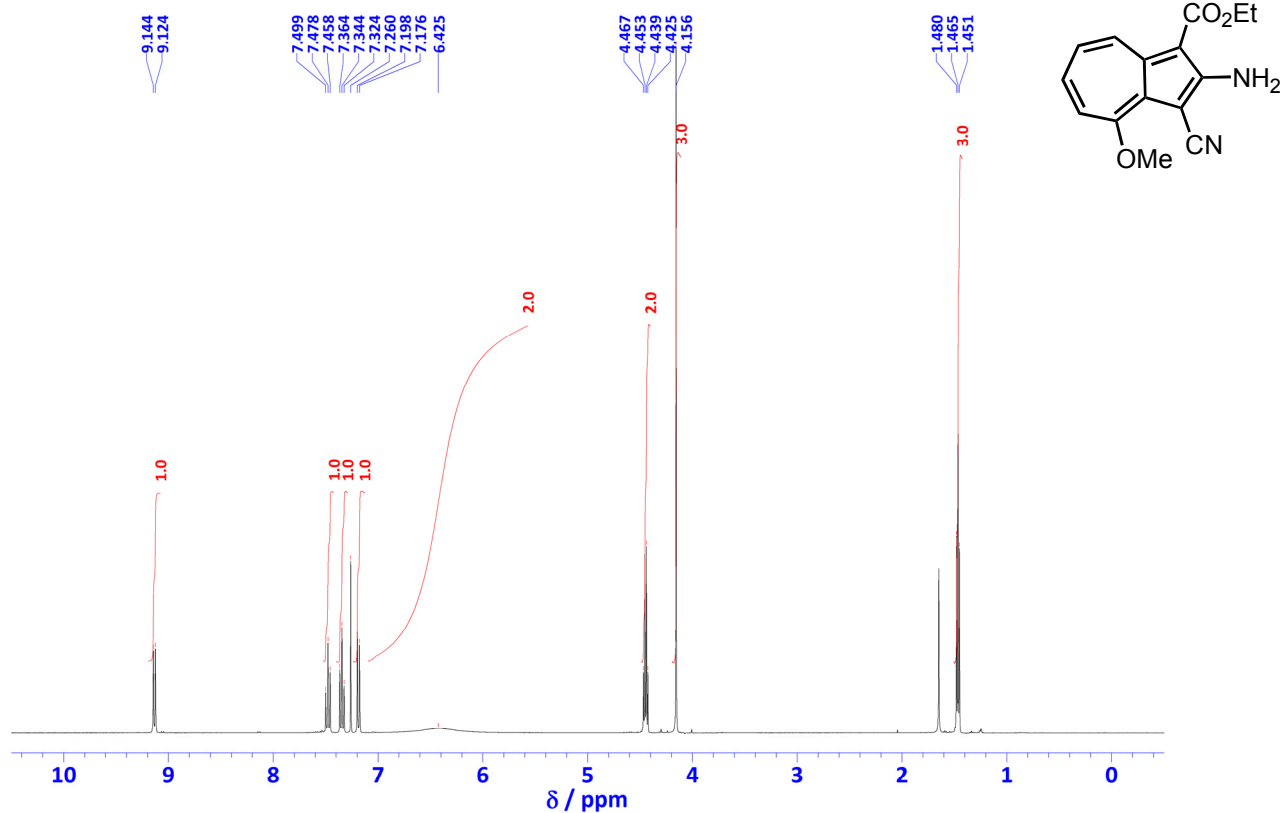


Figure S18. ¹H NMR spectrum of **20** in CDCl₃ (500 MHz).

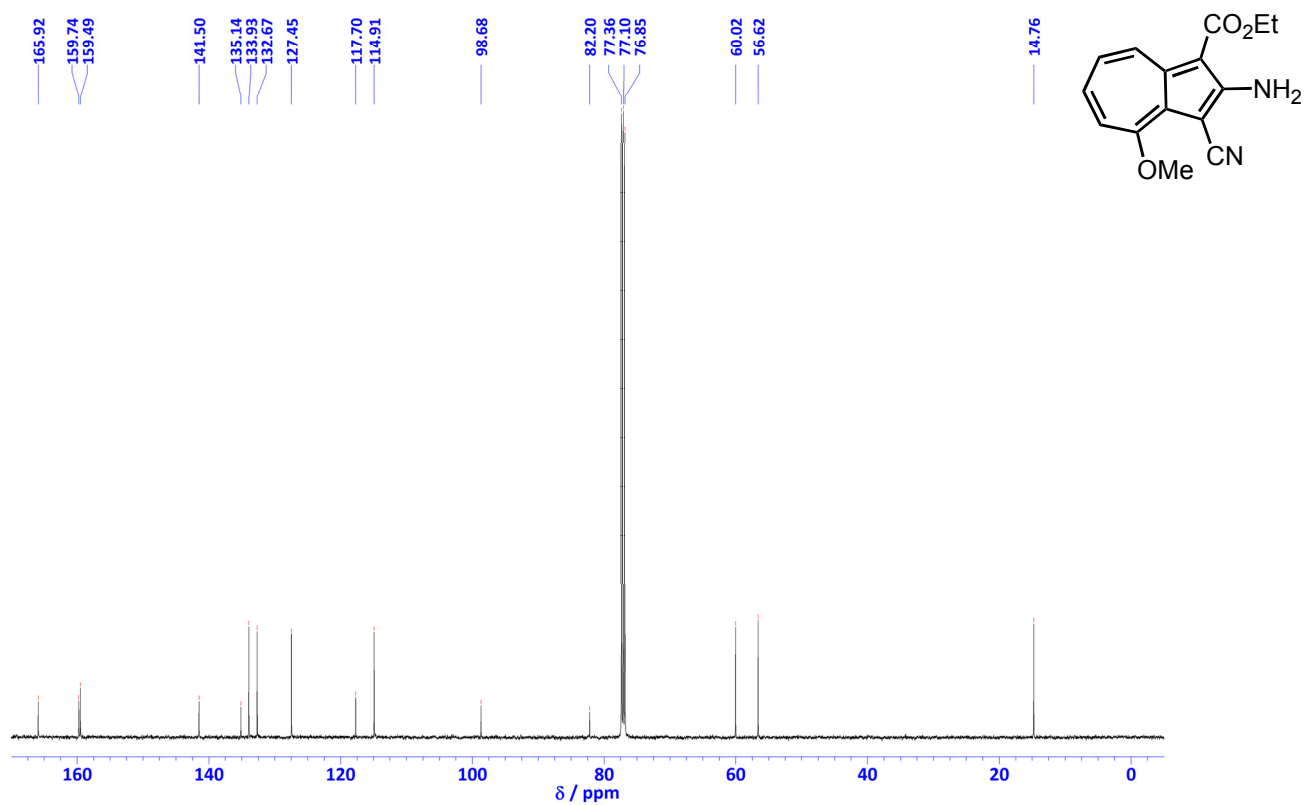


Figure S19. ¹³C NMR spectrum of **20** in CDCl₃ (125 MHz).

2. Copies of HRMS spectrum of 13–20.

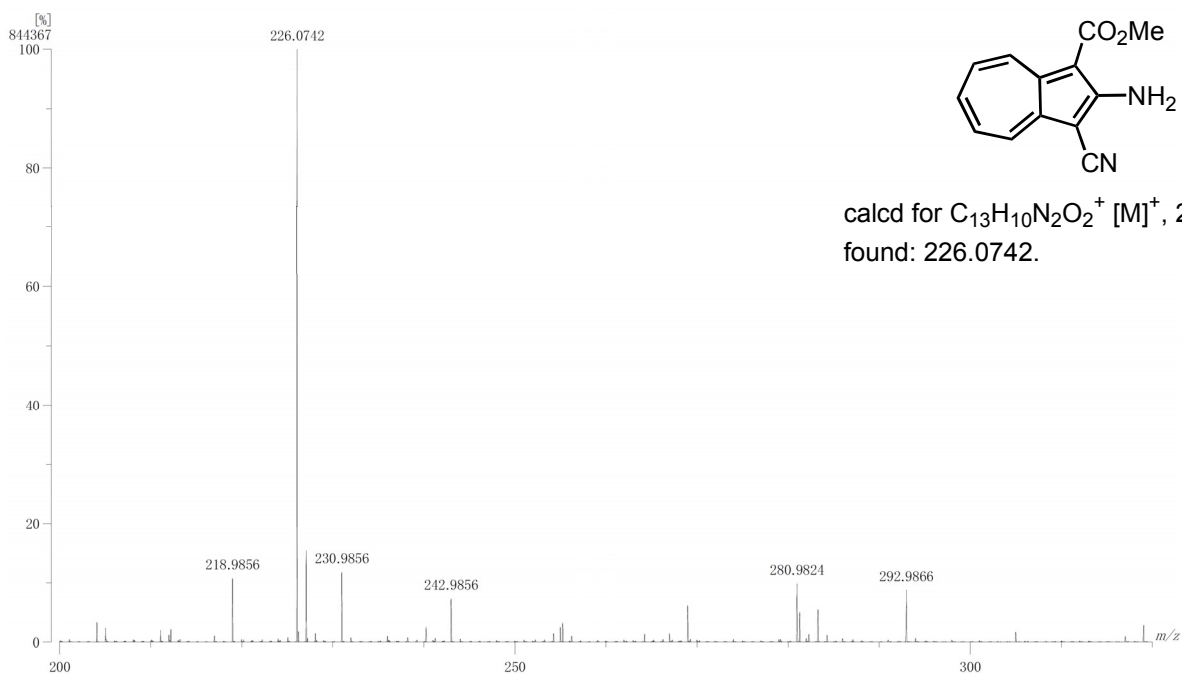


Figure S20. HRMS (EI, positive) of 13a.

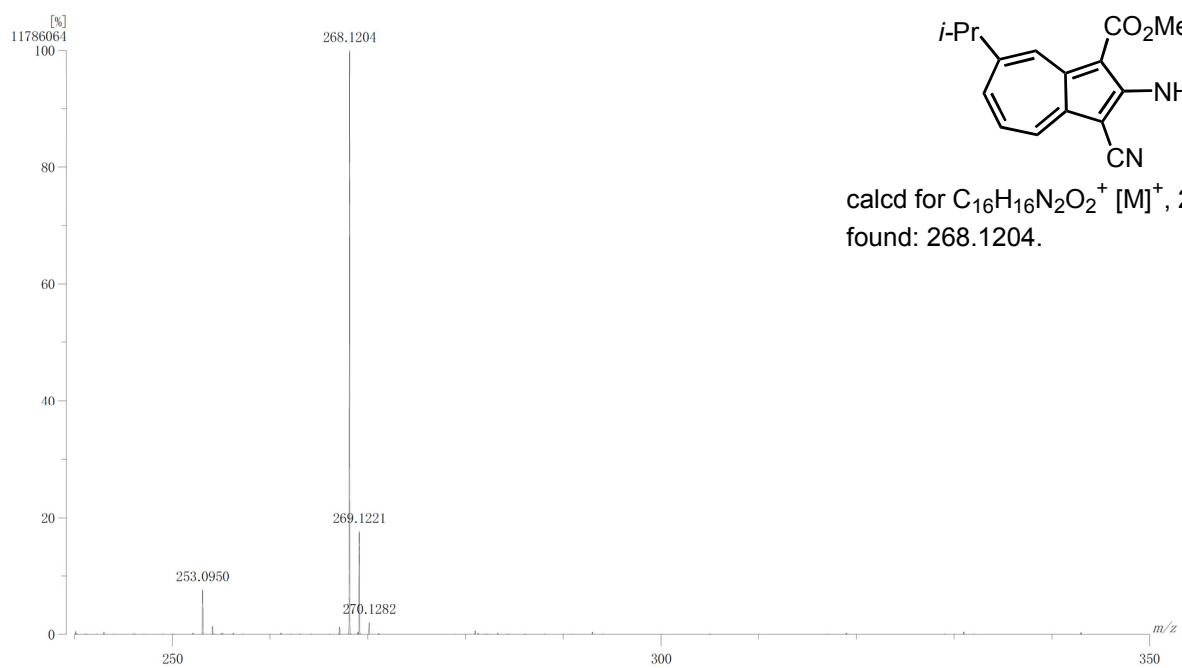


Figure S21. HRMS (EI, positive) of 13b.

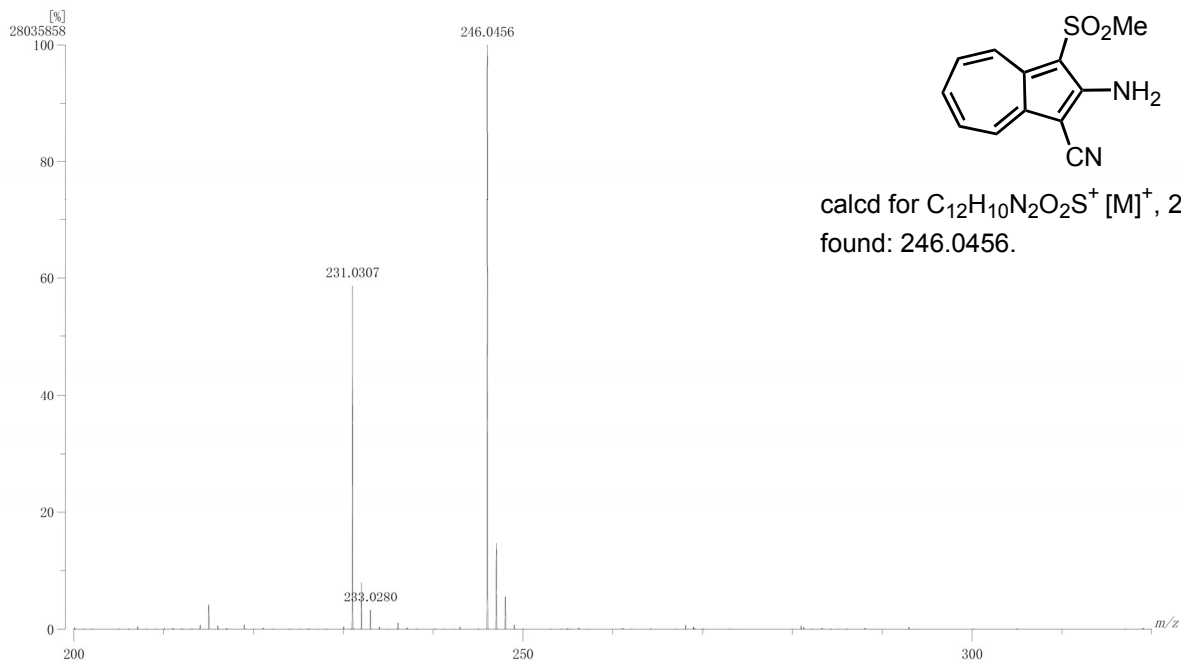


Figure S22. HRMS (EI, positive) of **14a**.

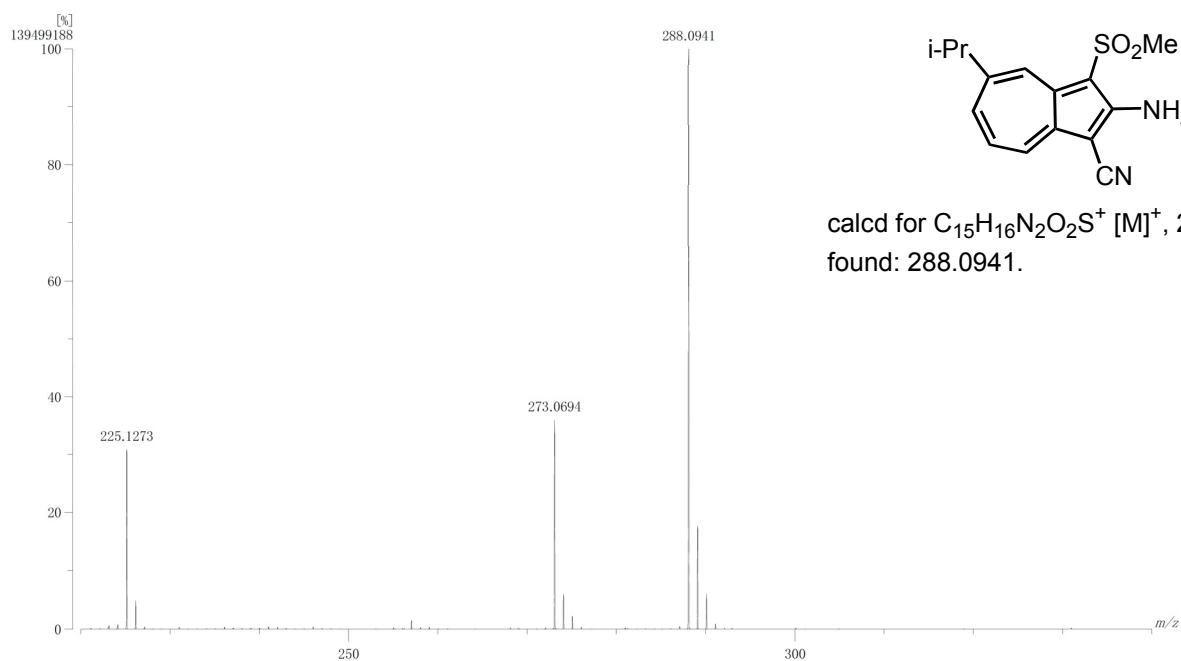


Figure S23. HRMS (EI, positive) of **14b**.

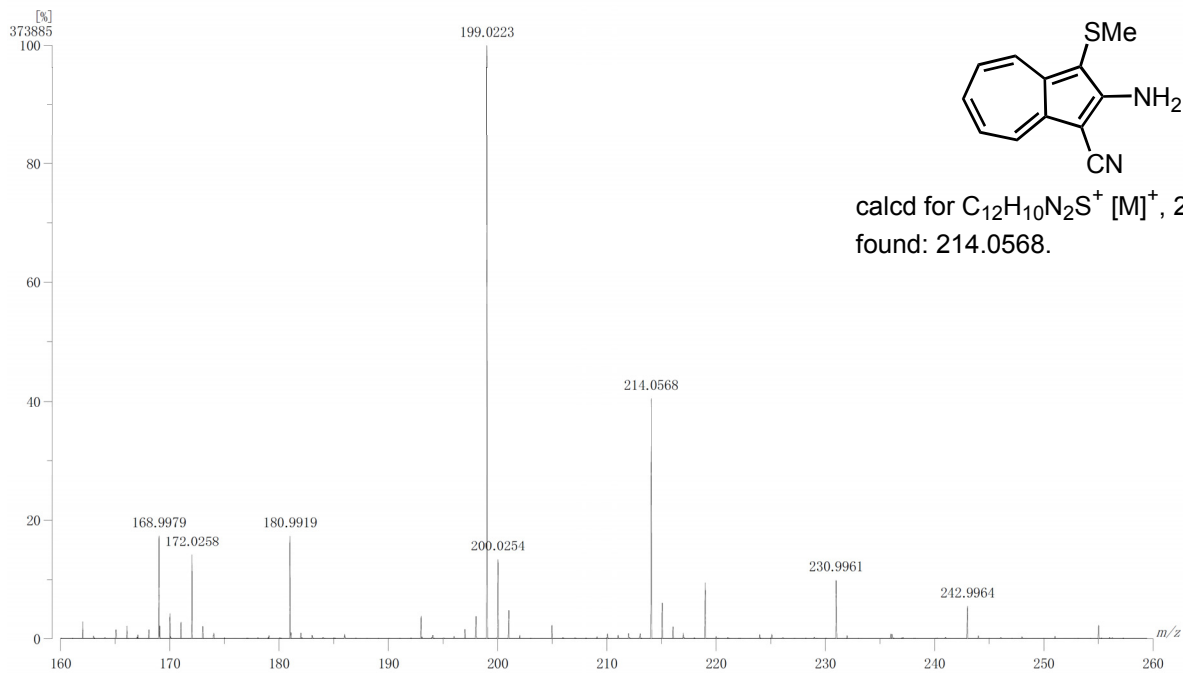


Figure S24. HRMS (EI, positive) of **15**.

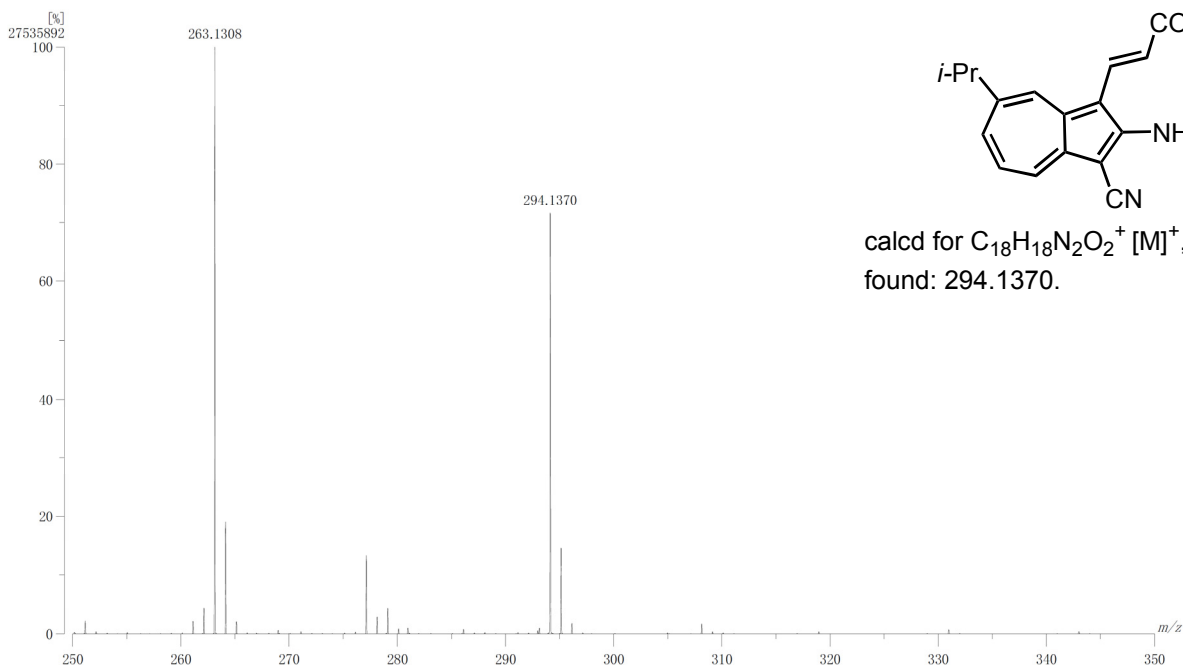


Figure S25. HRMS (EI, positive) of **16**.

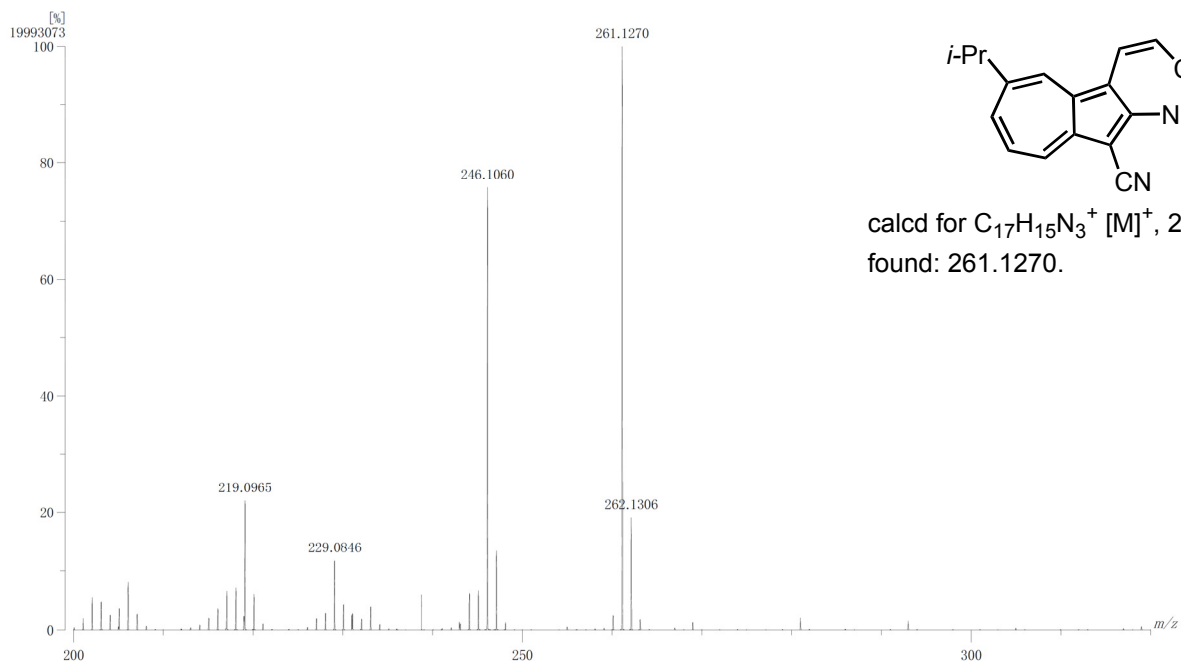


Figure S26. HRMS (EI, positive) of **17**.

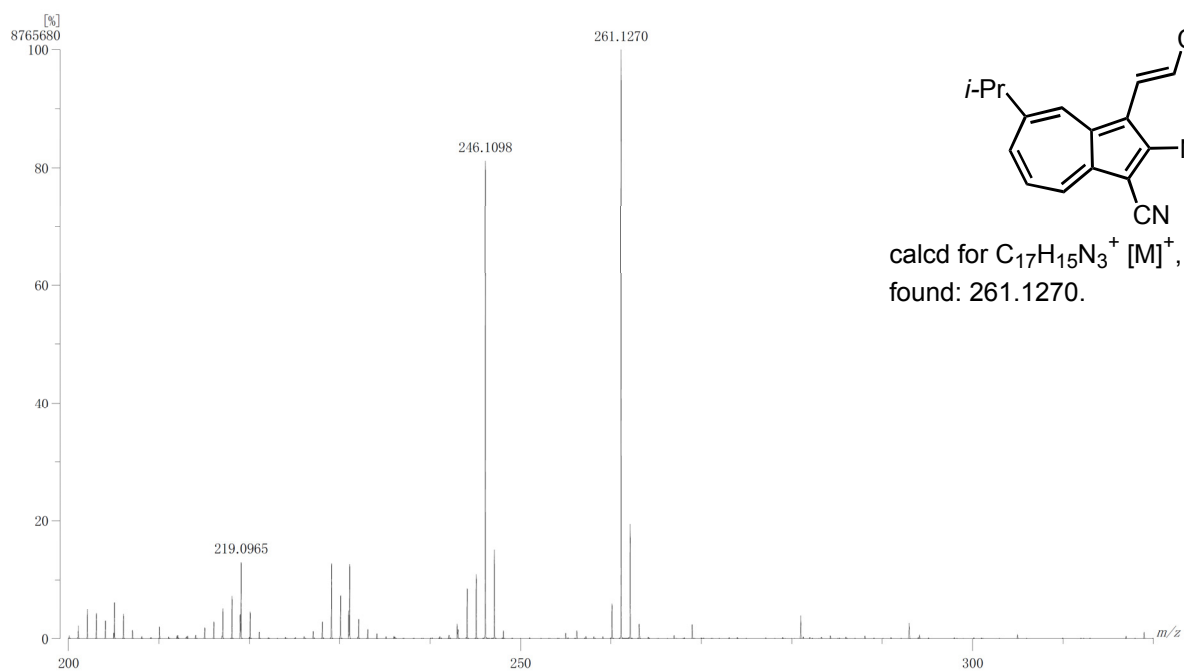


Figure S27. HRMS (EI, positive) of **18**.

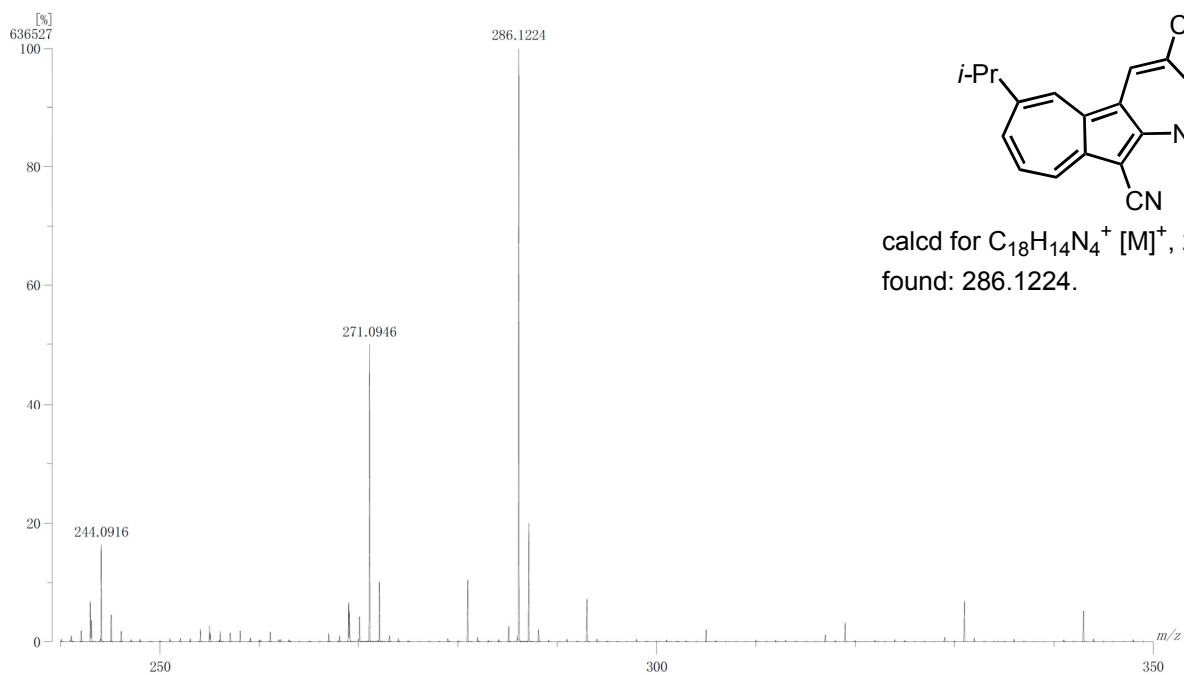


Figure S28. HRMS (EI, positive) of **19**.

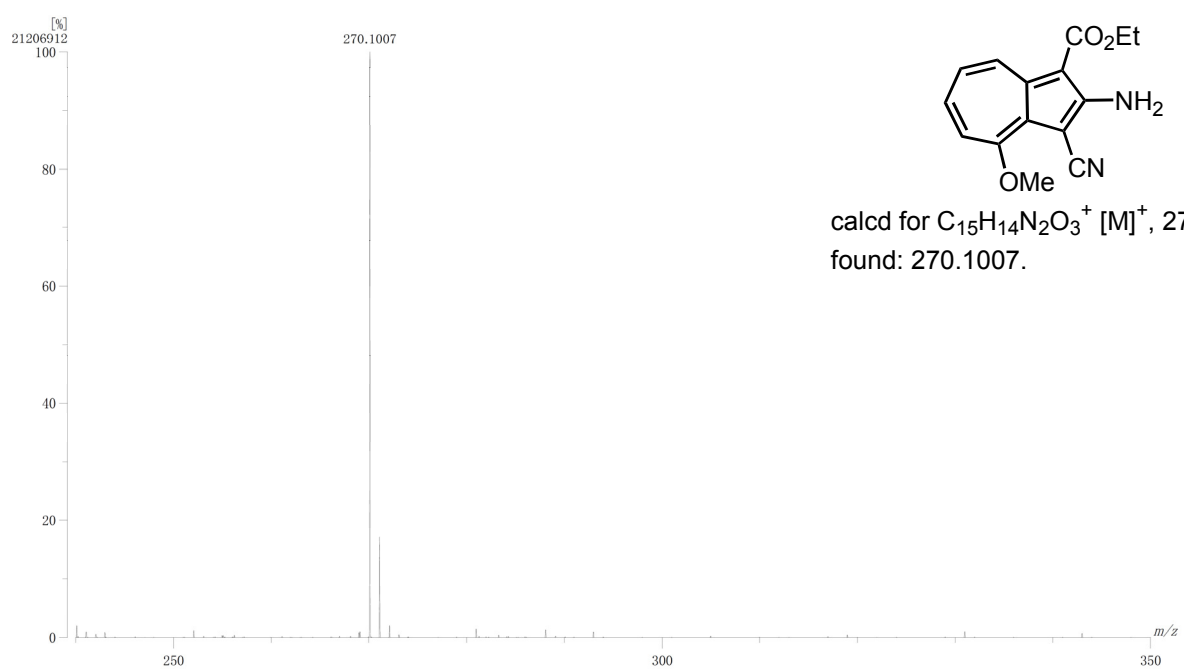


Figure S29. HRMS (EI, positive) of **20**.