Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry.

Supplementary Information

Pairing Multicomponent Stators with Aromatic Rotators for New Emissive Molecular Rotors

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Aggregation-Induced Enhanced Emission (AIEE) Experiments.

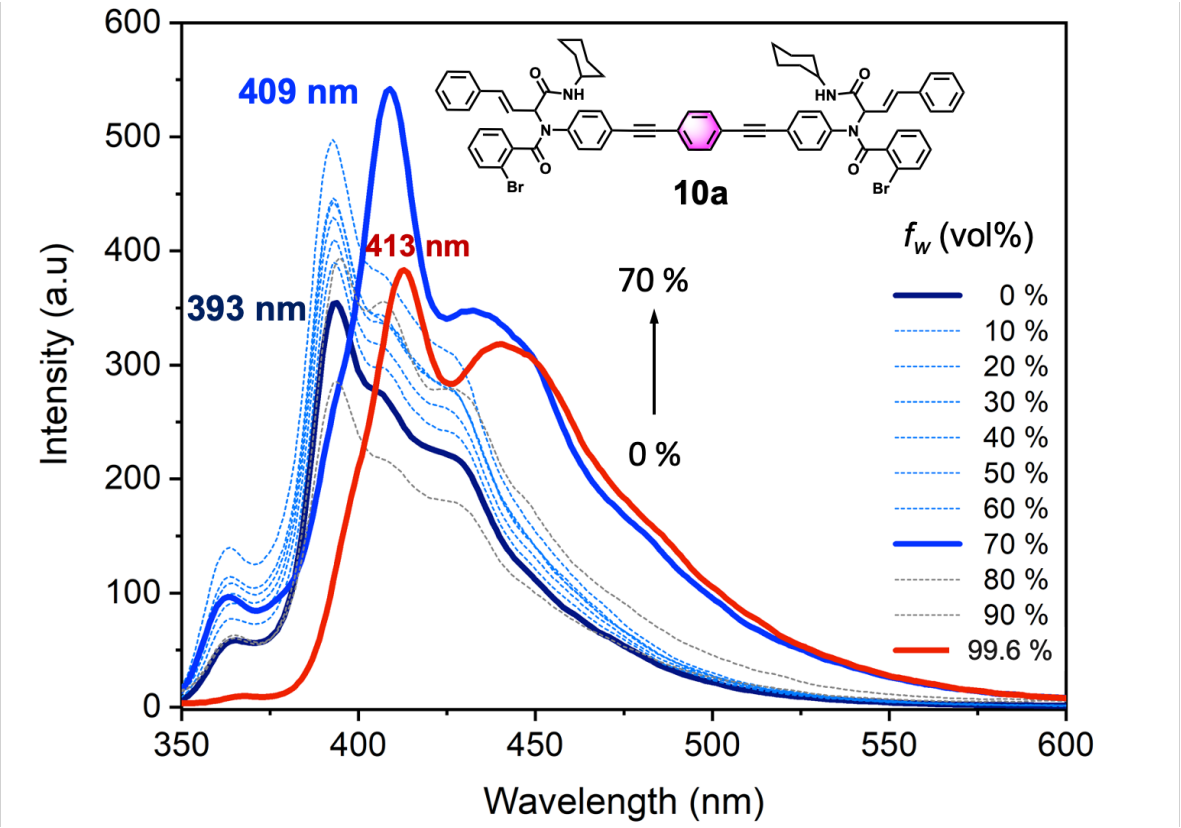

Figure S 1. Fluorescence experiments of **10a** (4 x 10^{-6} M) performed on different THF/water fractions (f_w).

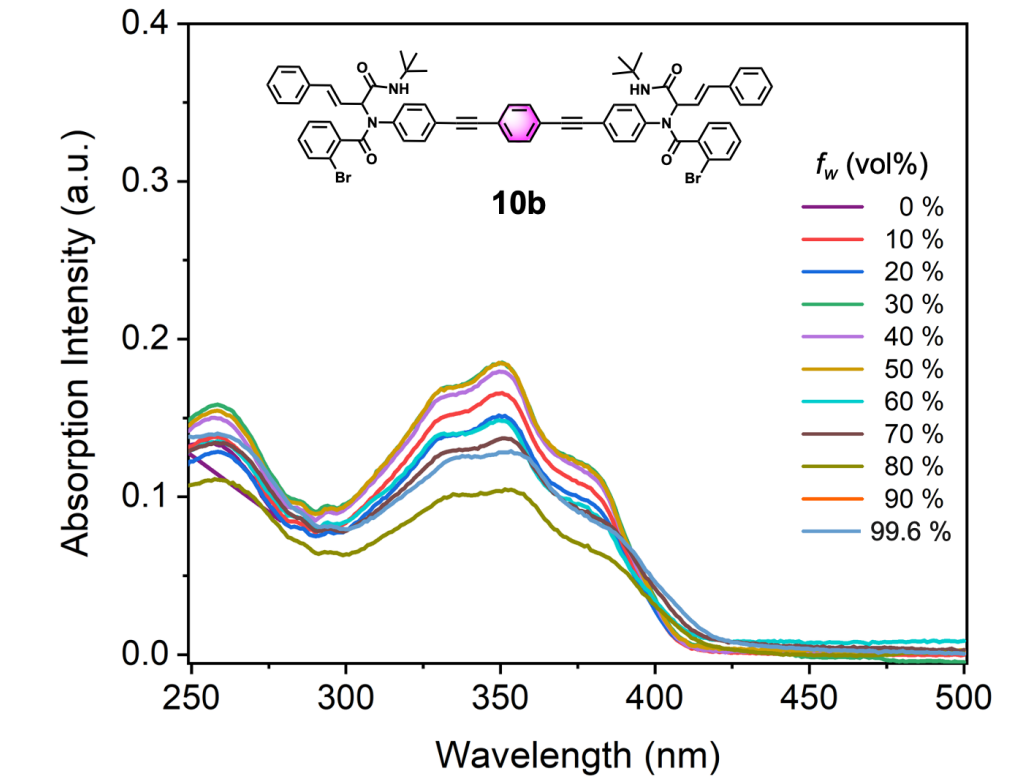

Figure S 2. Absorption spectra of **10b** in different THF/water mixtures (4 x 10^{-6} M).

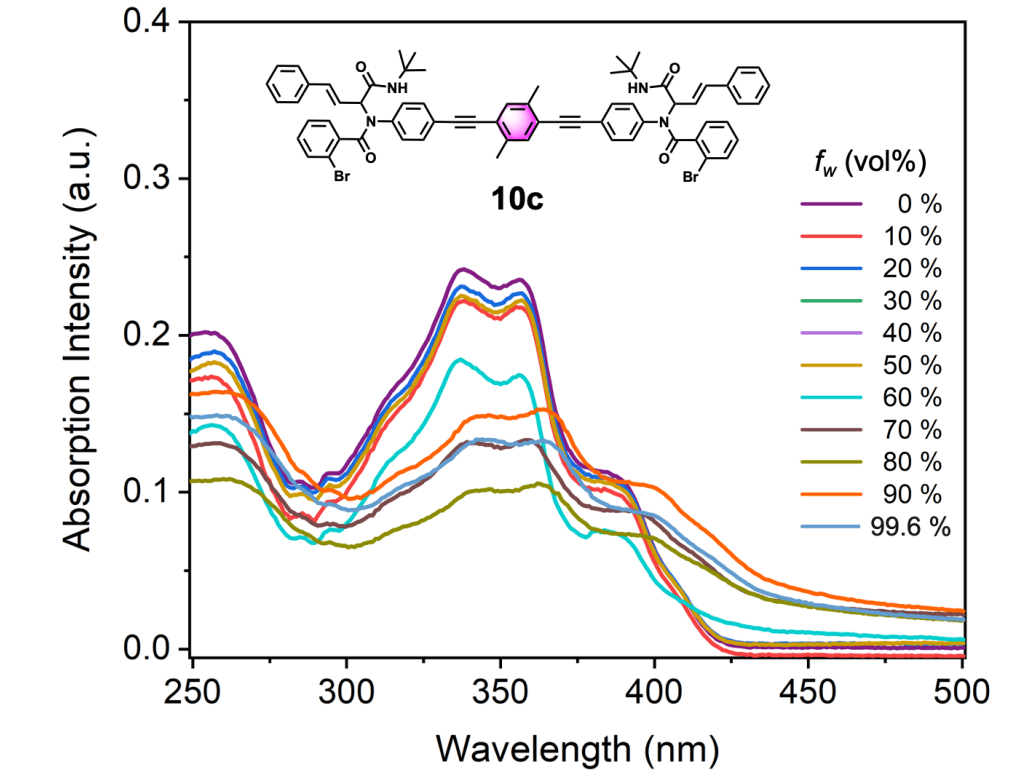

Figure S 3. Absorption spectra of **10c** with different THF/water mixtures (4 x 10^{-6} M).

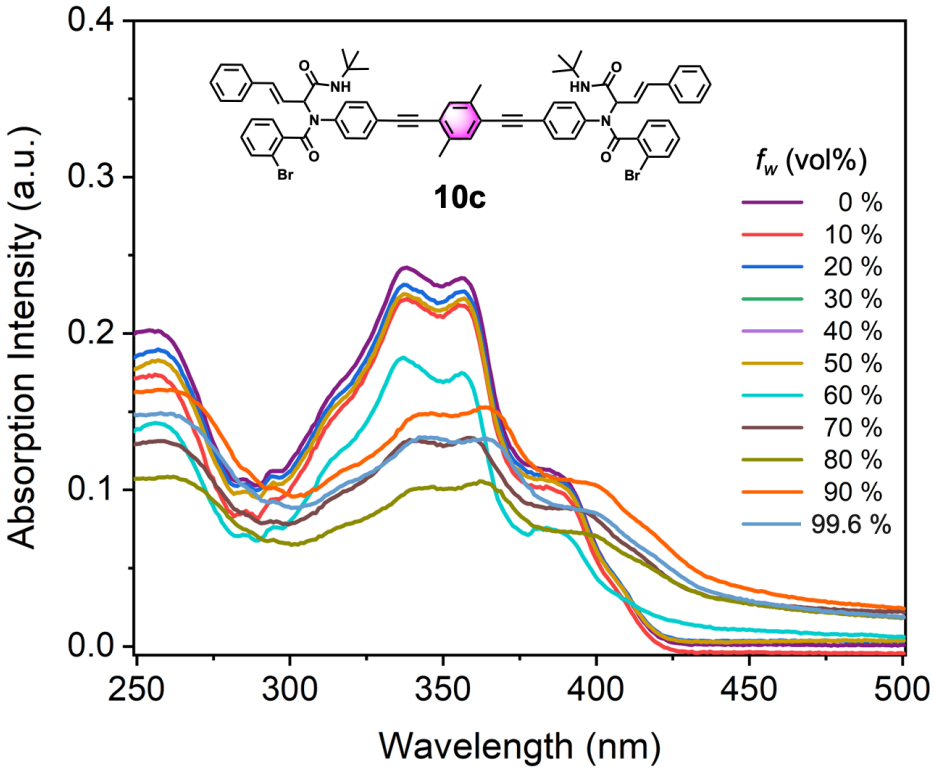

Figure S 4. Absorption spectra of **10d** with different THF/water mixtures (4 x 10^{-6} M).

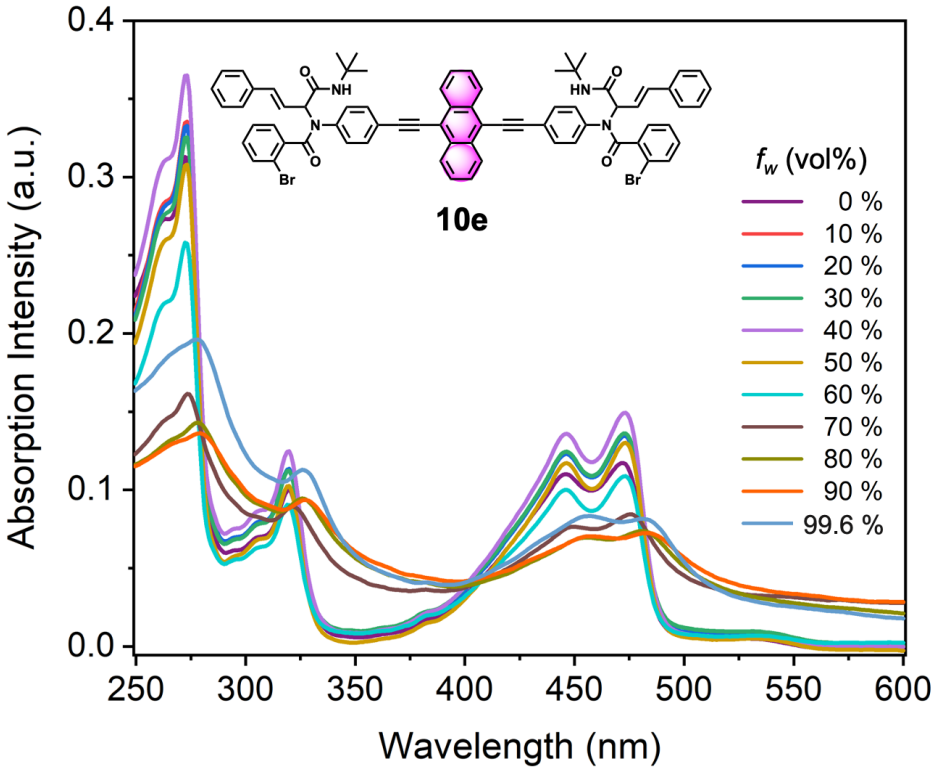

Figure S 5. Absorption spectra of **10e** with different THF/water mixtures (4 x 10^{-6} M).

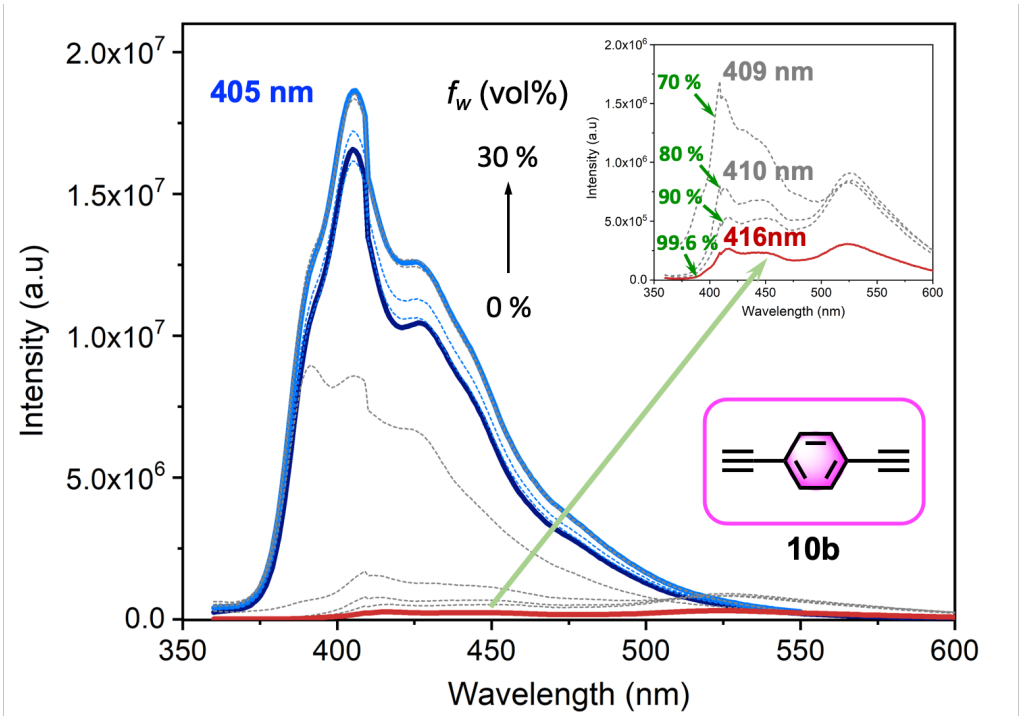

Figure S 6. Fluorescence experiments of **10b** carried out in different THF/water mixtures (4 x 10^{-6} M). Insert: Emission spectra corresponding to the addition of large fractions of water (f_w); 70% (λ_{em} = 409 nm), 80% (λ_{em} = 410 nm) 90% and 99.6% (λ_{em} = 416 nm).

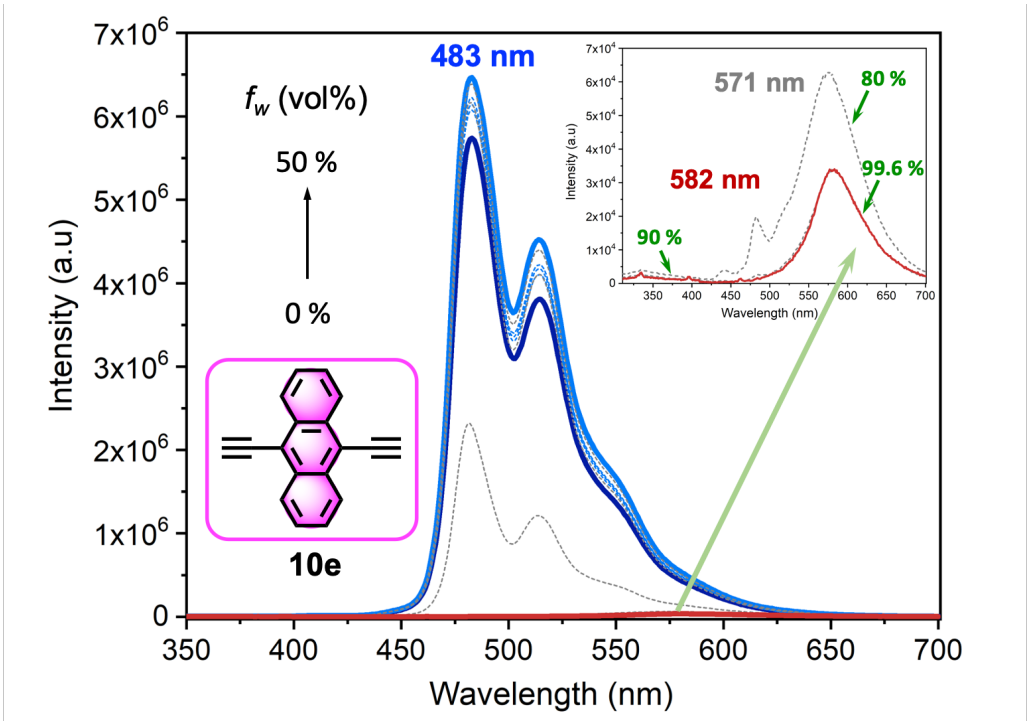

Figure S 7. Fluorescence experiments of **10e** carried out in different THF/water mixtures (4 x 10^{-6} M). Insert: Emission spectra corresponding to the addition of large fractions of water (f_w); 80% (λ_{em} = 571 nm), 90% and 99.6% (λ_{em} = 582 nm).

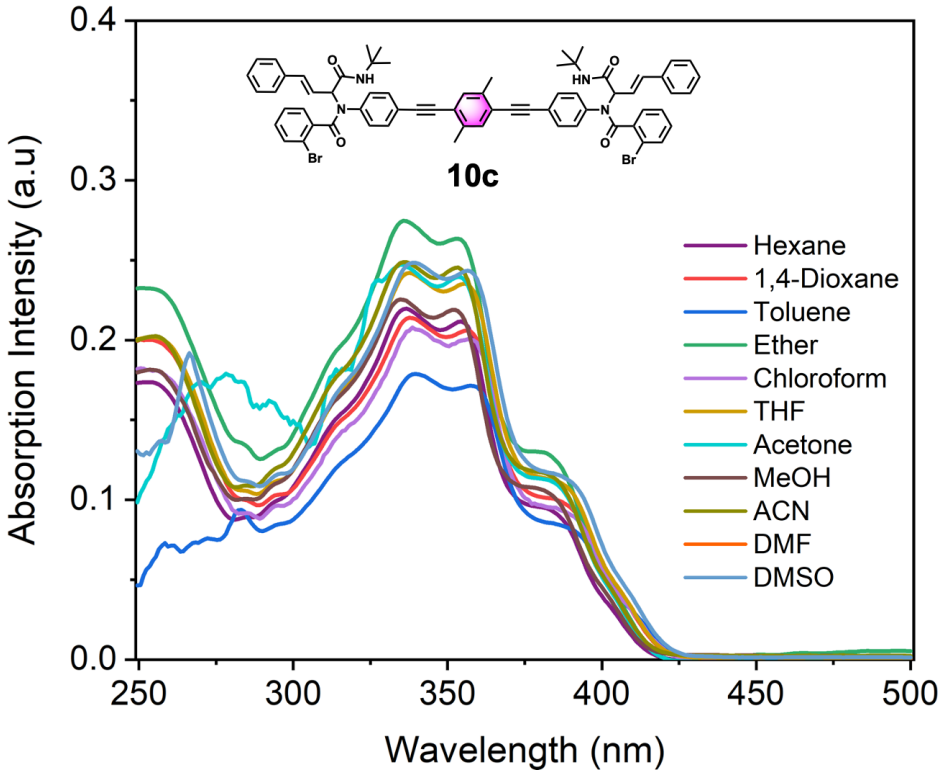

Figure S 8. Solvent effect on the absorption of **10c** (4×10^{-6} M): hexane, 1,4-dioxane, toluene, ether, chloroform, tetrahydrofuran (THF), acetone, methanol (MeOH), acetonitrile (ACN), dimethyl formamide (DMF) and dimethyl sulfoxide (DMSO).

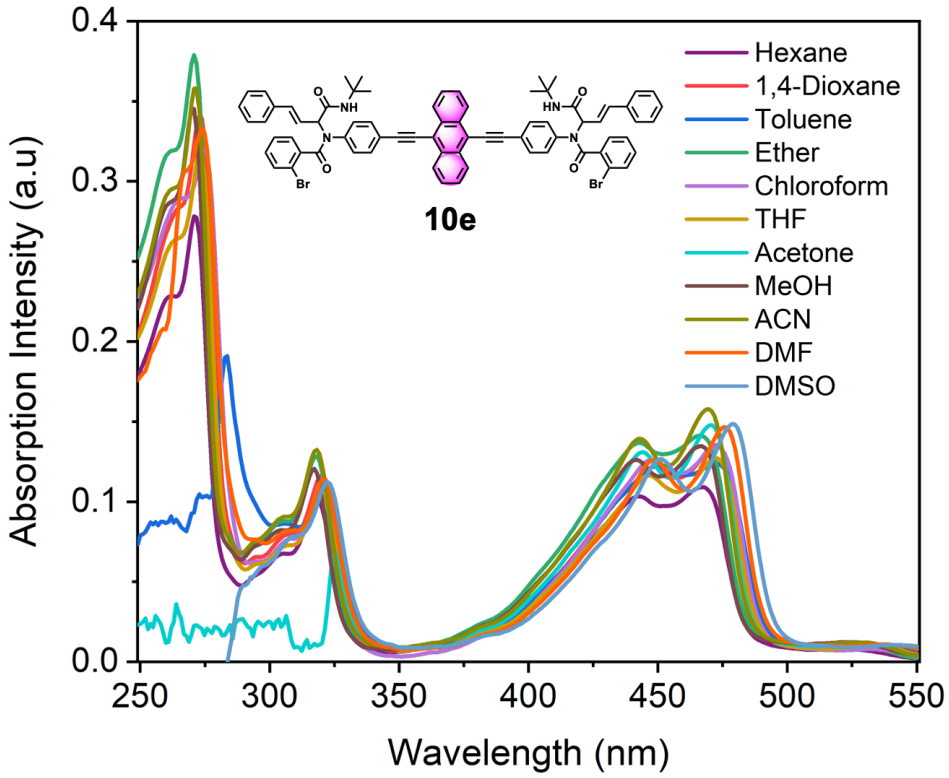

Figure S 9. Solvent effect on the absorption of **10e** (4 x 10^{-6} M): hexane, 1,4-dioxane, toluene, ether, chloroform, tetrahydrofuran (THF), acetone, methanol (MeOH), acetonitrile (ACN), dimethyl formamide (DMF) and dimethyl sulfoxide (DMSO).

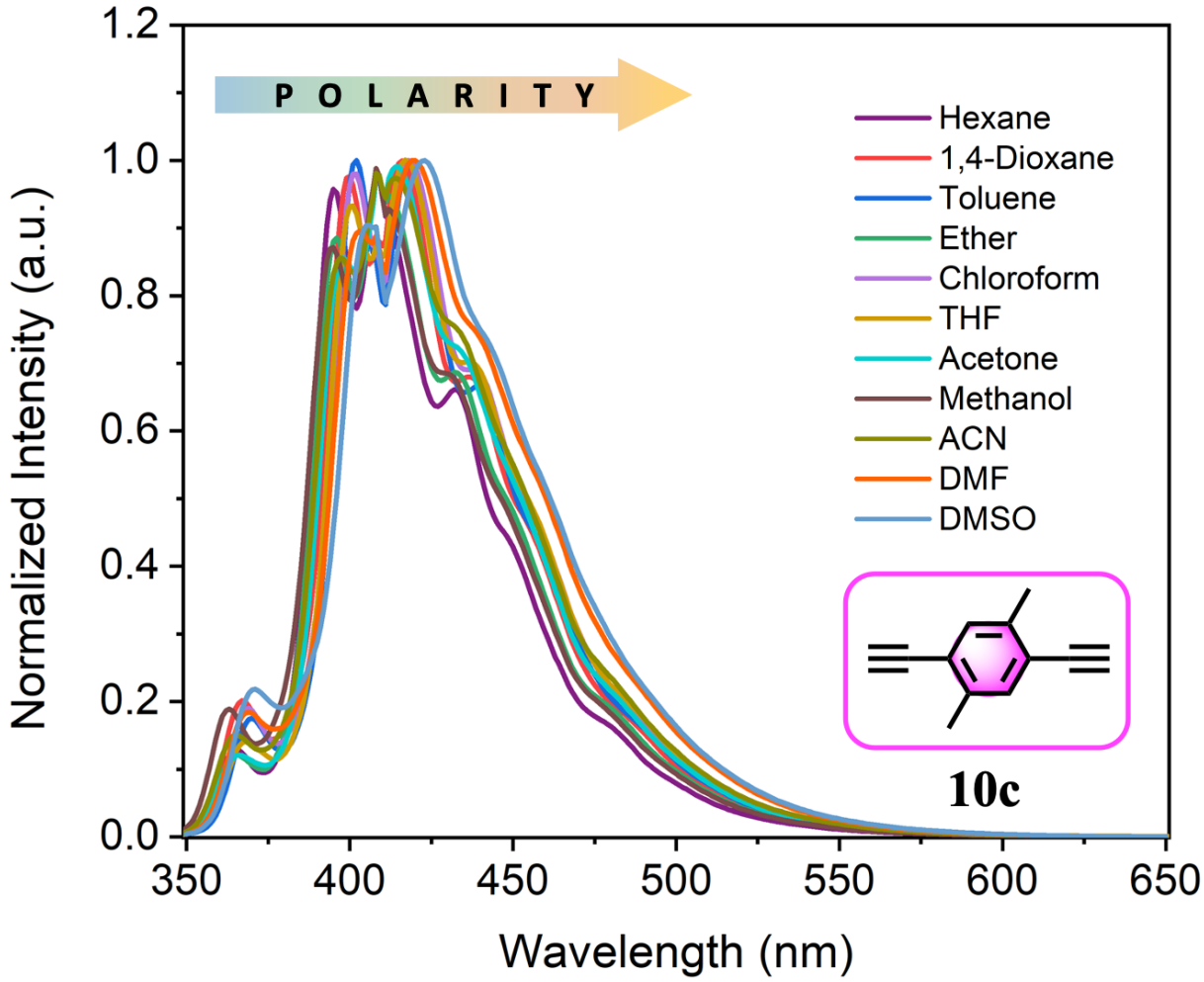

Figure S 10. Photophysical properties of **10c** (4 x 10^{-6} M): hexane, 1,4-dioxane, toluene, ether, chloroform, tetrahydrofuran (THF), acetone, methanol (MeOH), acetonitrile (ACN), dimethyl formamide (DMF) and dimethyl sulfoxide (DMSO).

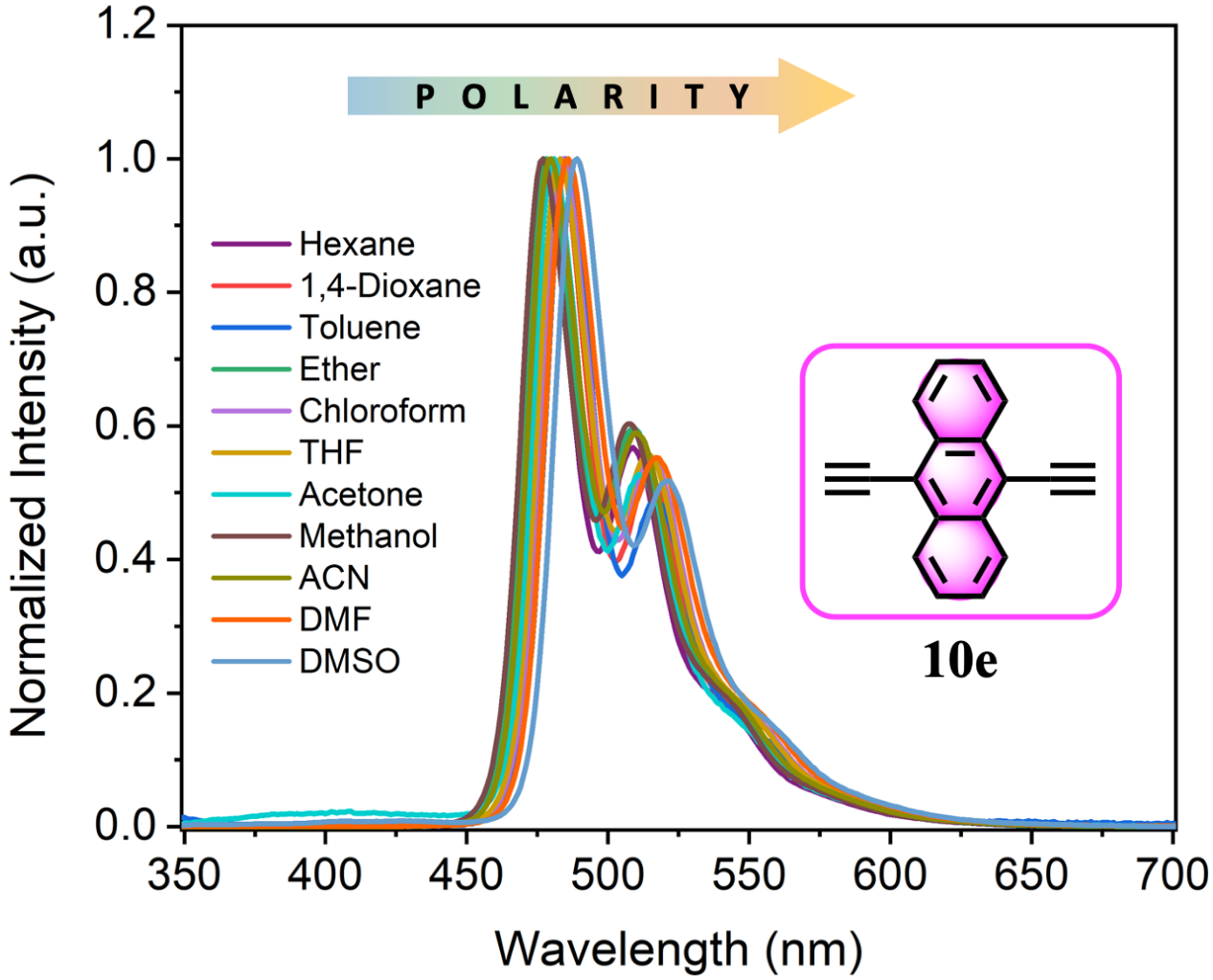

Figure S 11. Photophysical properties of **10e** (4 x 10^{-6} M): hexane, 1,4-dioxane, toluene, ether, chloroform, tetrahydrofuran (THF), acetone, methanol (MeOH), acetonitrile (ACN), dimethyl formamide (DMF) and dimethyl sulfoxide (DMSO).

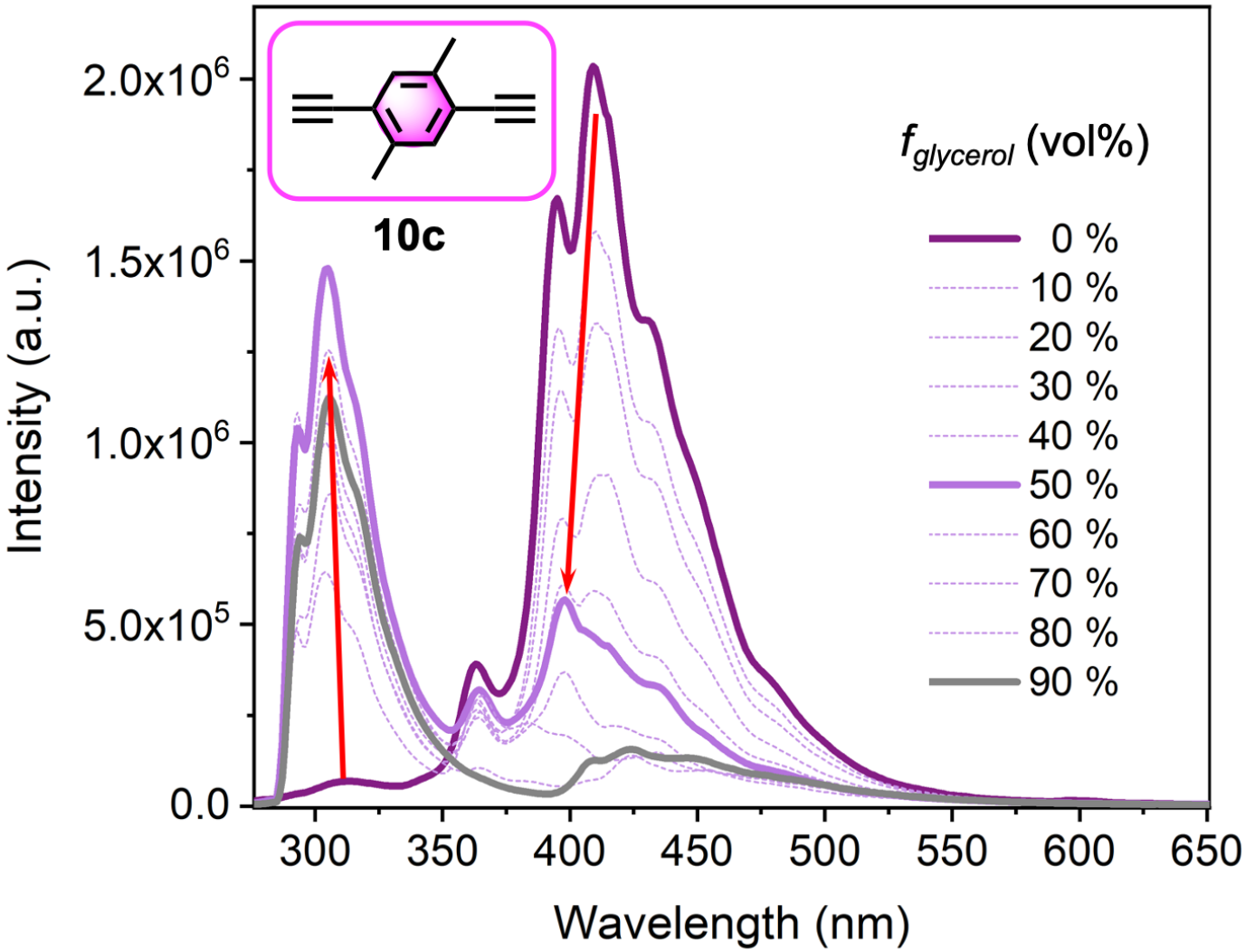

Figure S 12. Emission spectra of **10c** (4 x 10^{-6} M), in mixed solvents of methanol/glycerol.

Solution NMR spectra

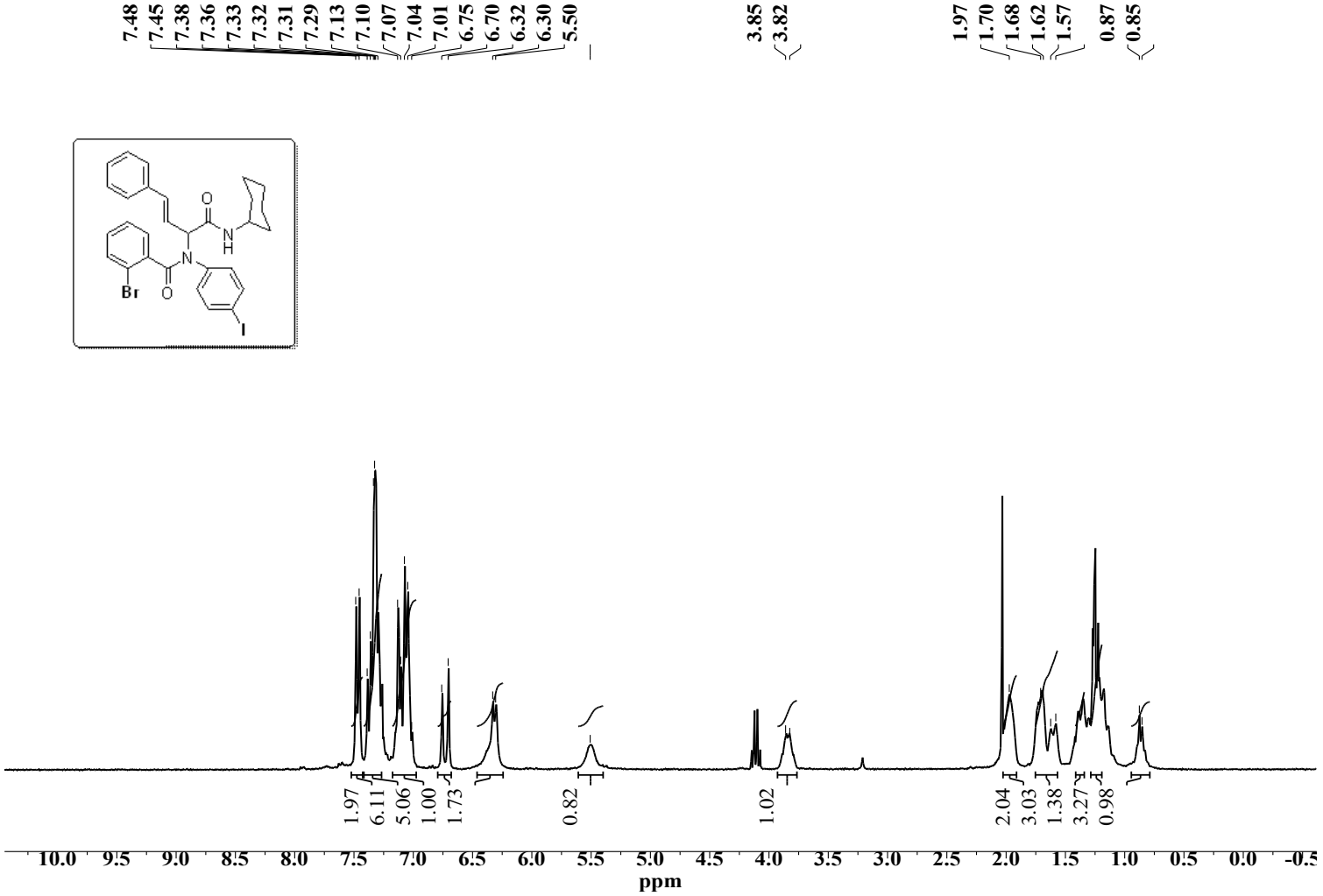

Figure S 13. *^{1}H NMR of compound **9a** in $CDCl_3$ at 300 MHz.*

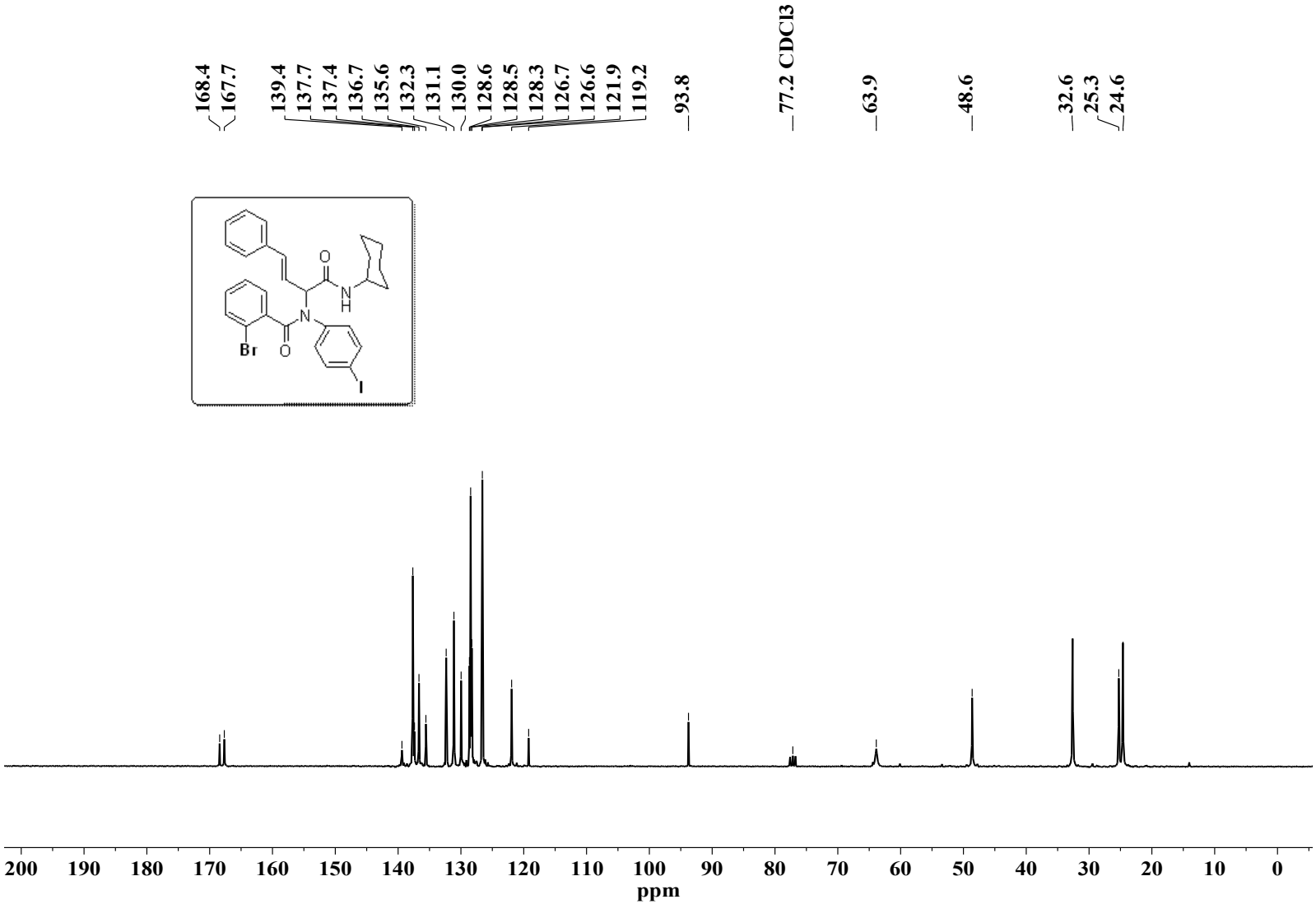

Figure S 14. ^{13}C NMR of compound **9a** in $CDCl_3$ at 75 MHz.

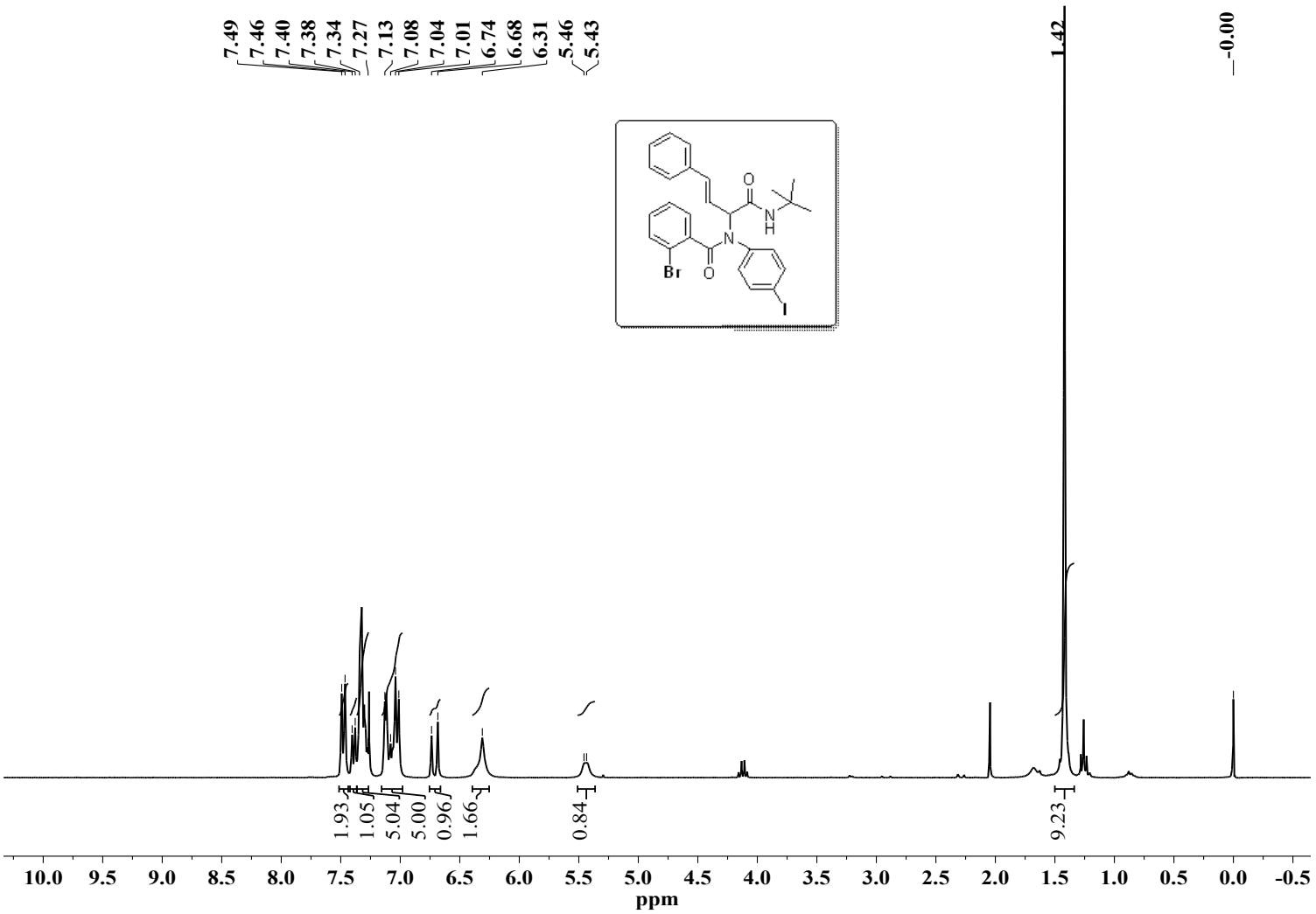

Figure S 15. *^{1}H NMR of compound **9b** in $CDCl_3$ at 300 MHz.*

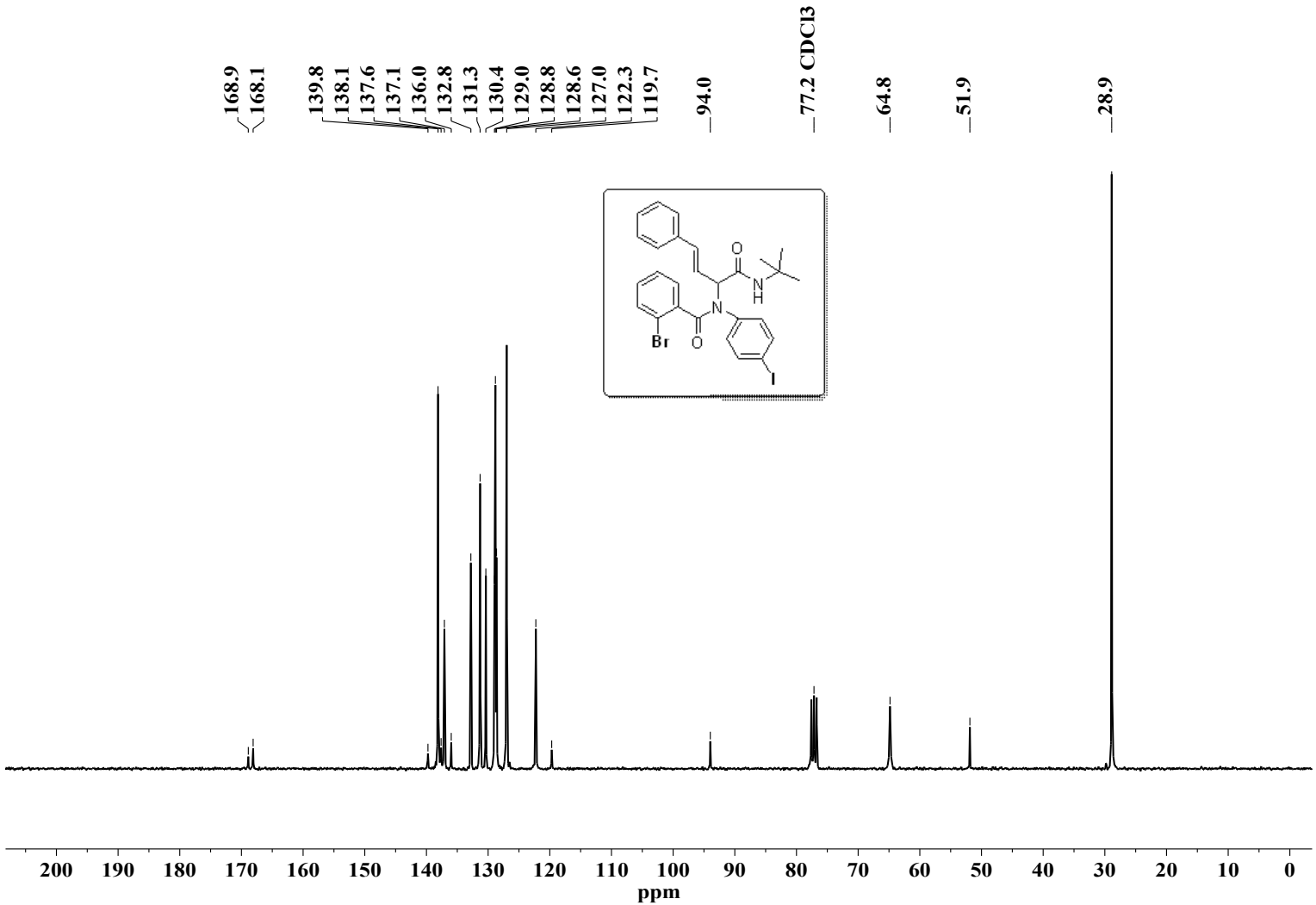

Figure S 16. ^{13}C NMR of compound **9b** in $CDCl_3$ at 75 MHz

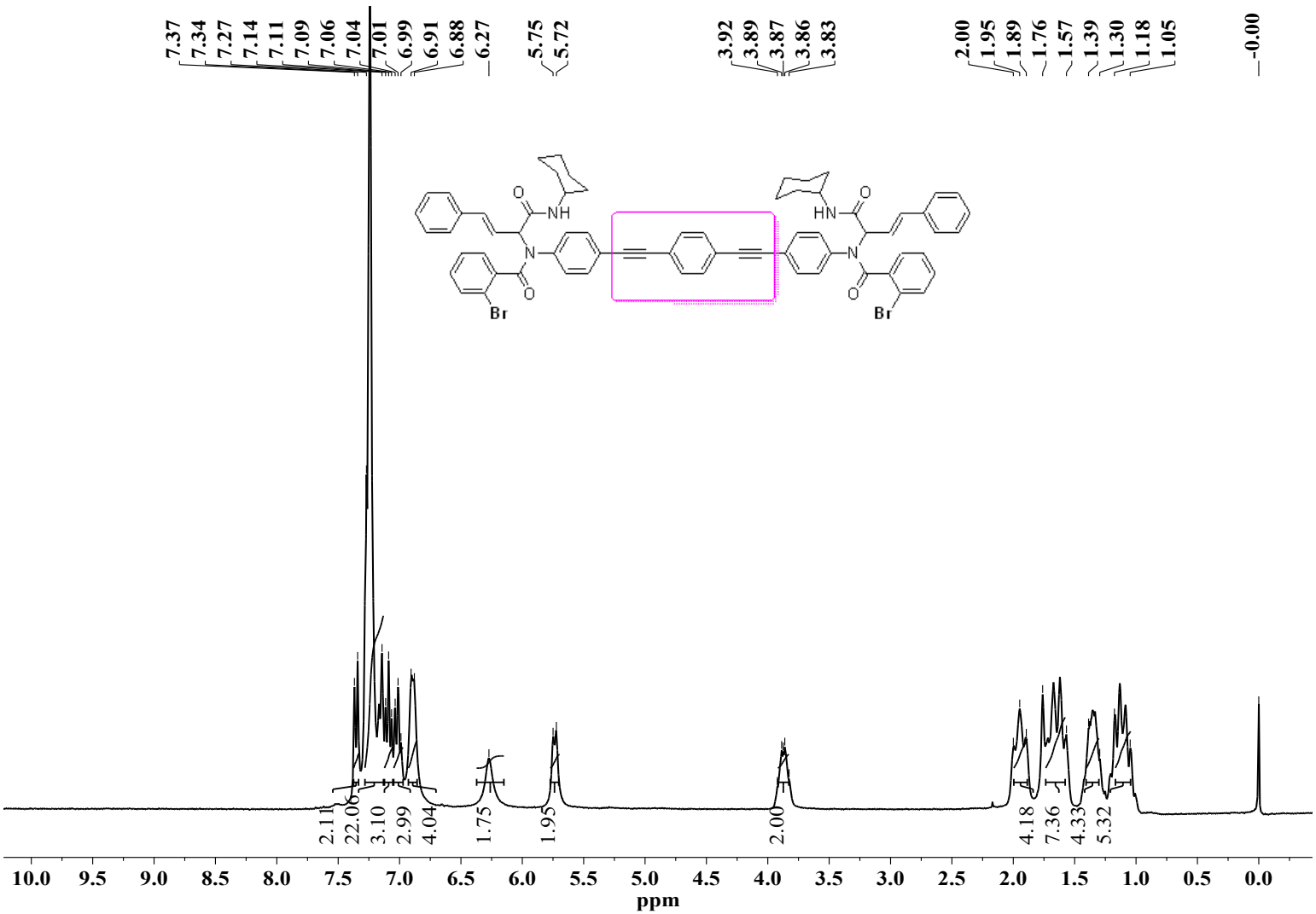

Figure S 17. ^{1}H NMR of **rotor 10a** in $CDCl_3$ at 300 MHz

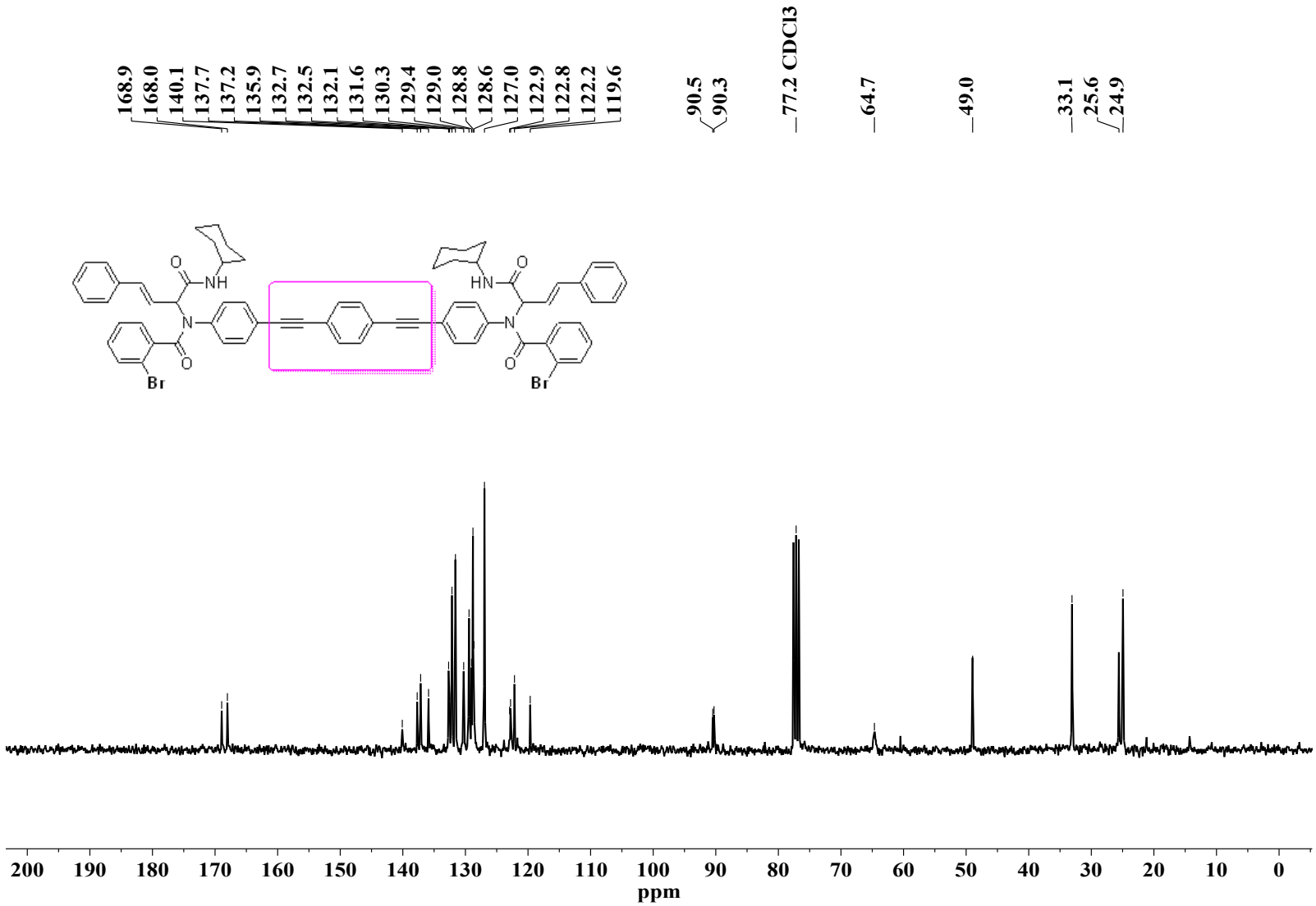

Figure S 18. *^{13}C NMR of* ***rotor 10a*** *in $CDCl_3$ at 75 MHz.*

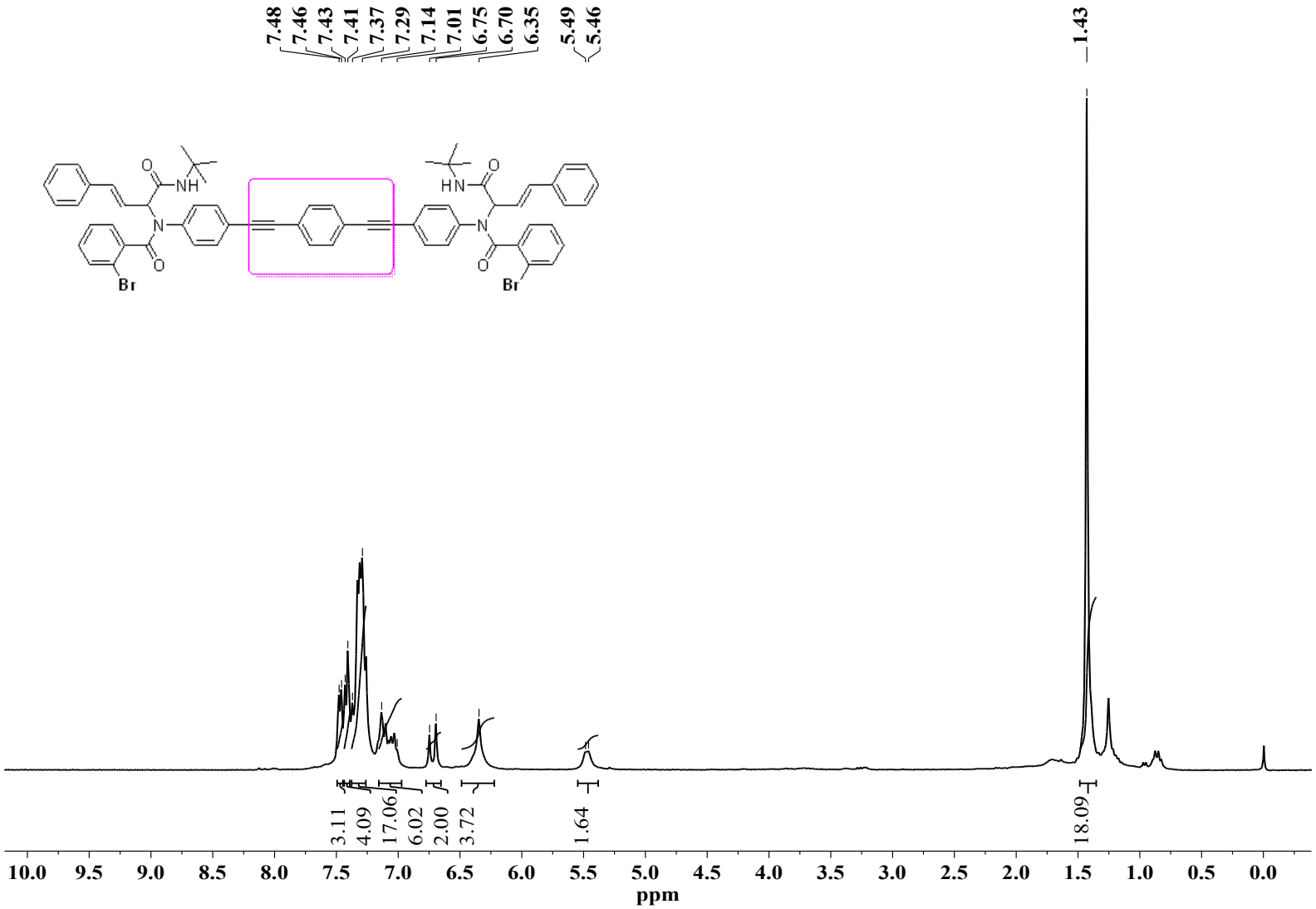

Figure S 19. ^{1}H NMR of **rotor 10b** in $CDCl_3$ at 300 MHz.

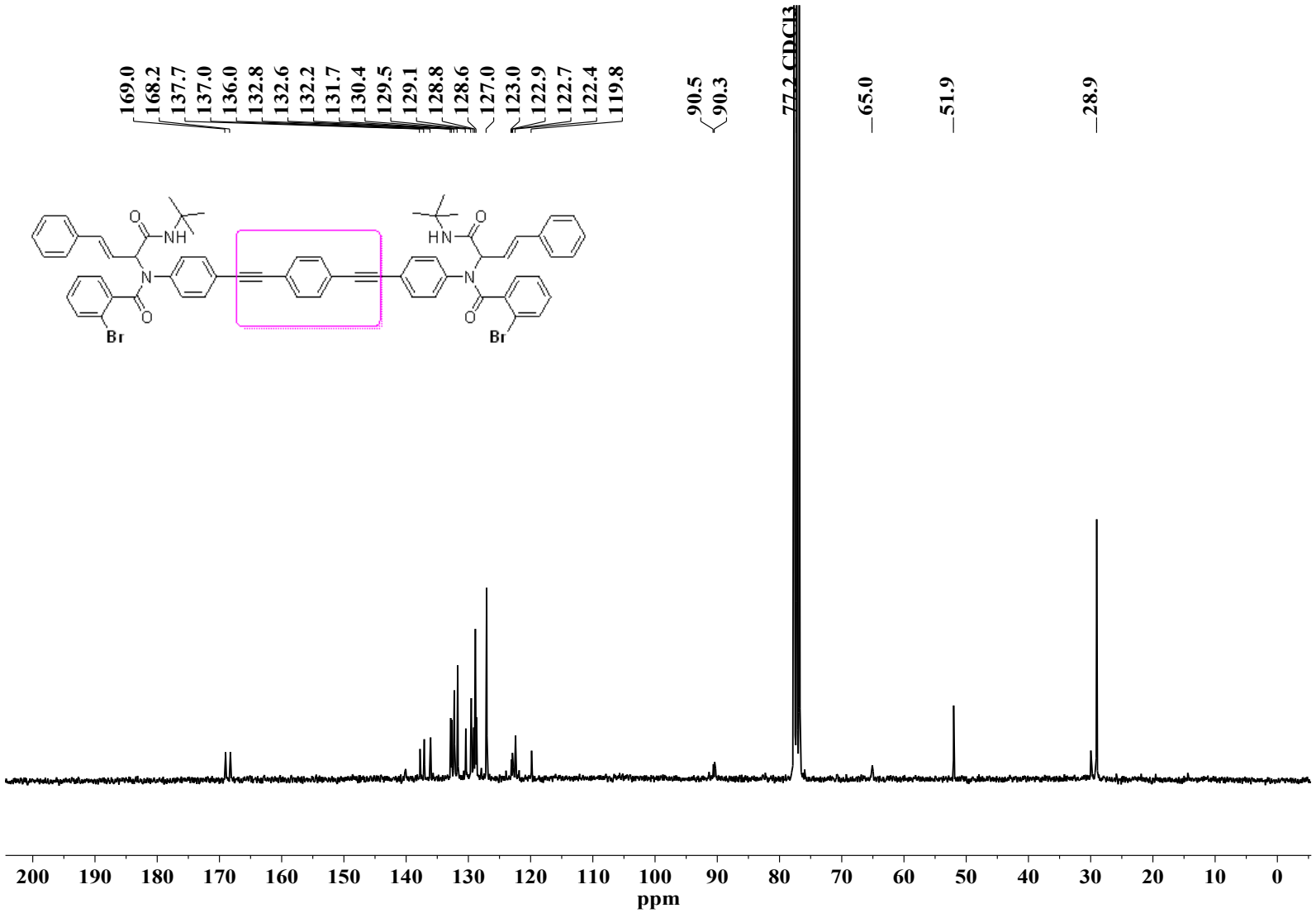

Figure S 20. *^{13}C NMR of **10b** in $CDCl_3$ at 75 MHz.*

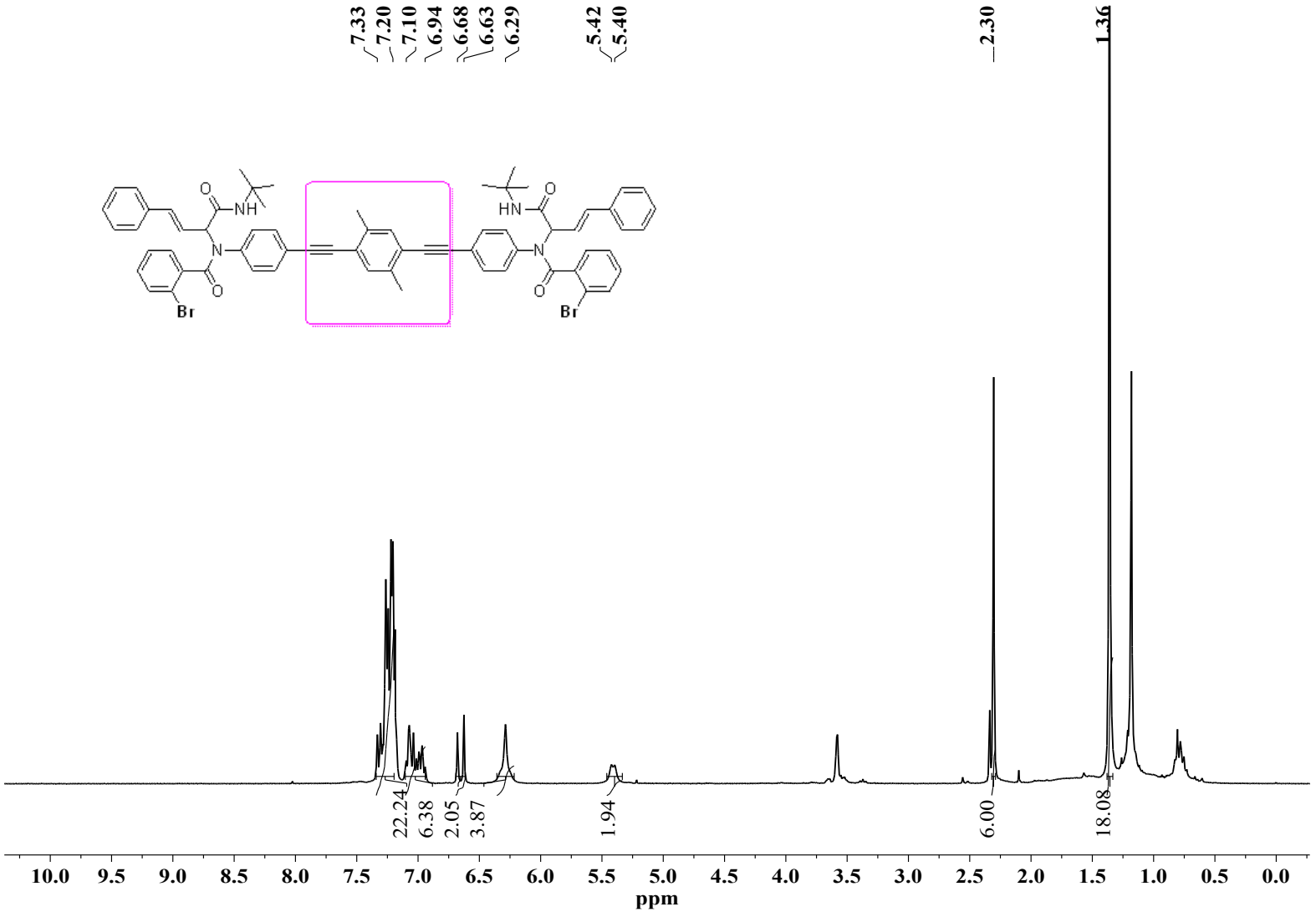

Figure S 21. ^{1}H NMR of **rotor 10c** in $CDCl_3$ at 300 MHz.

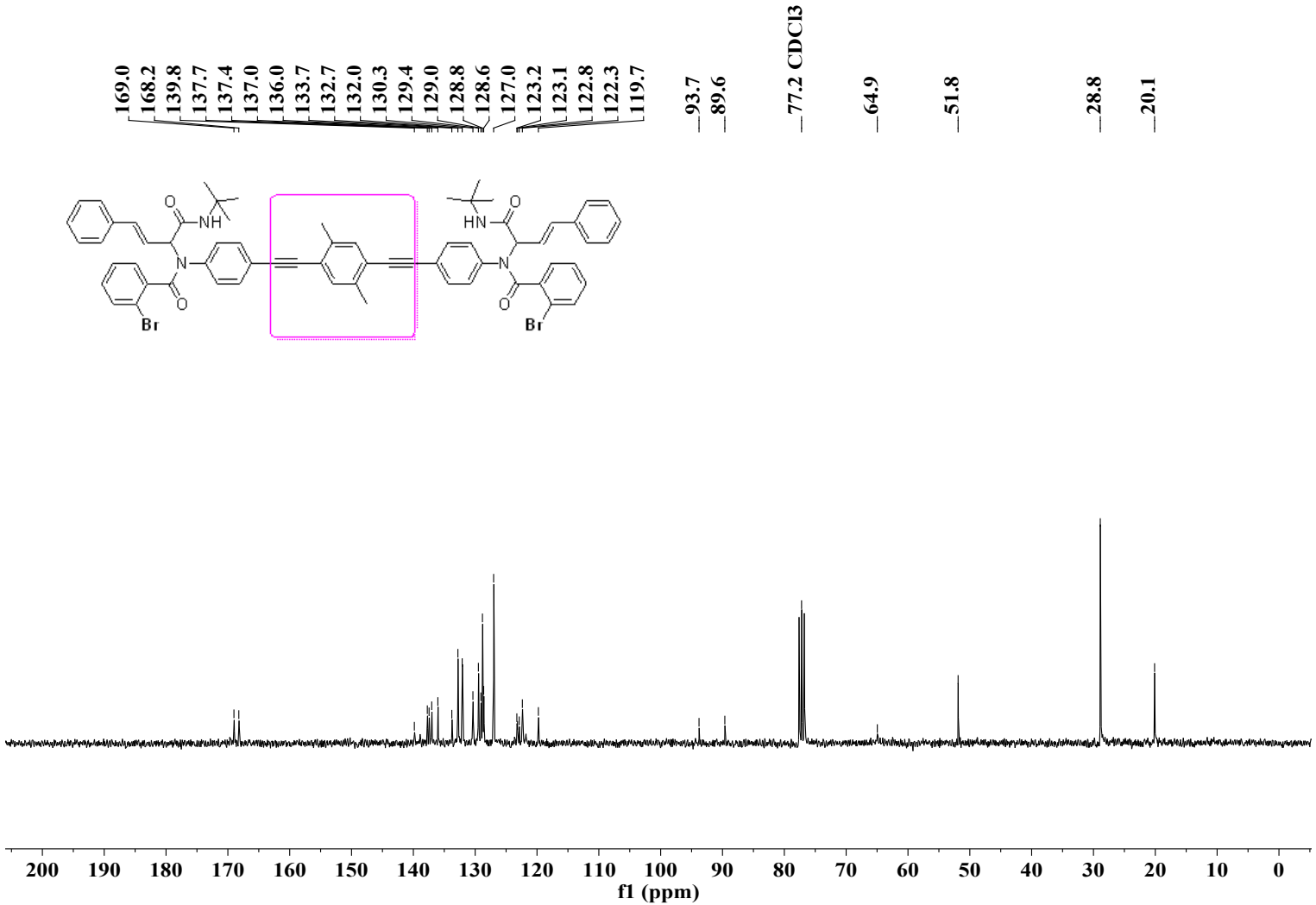

Figure S 22. *^{13}C NMR of* ***rotor 10c*** *in $CDCl_3$ at 75 MHz.*

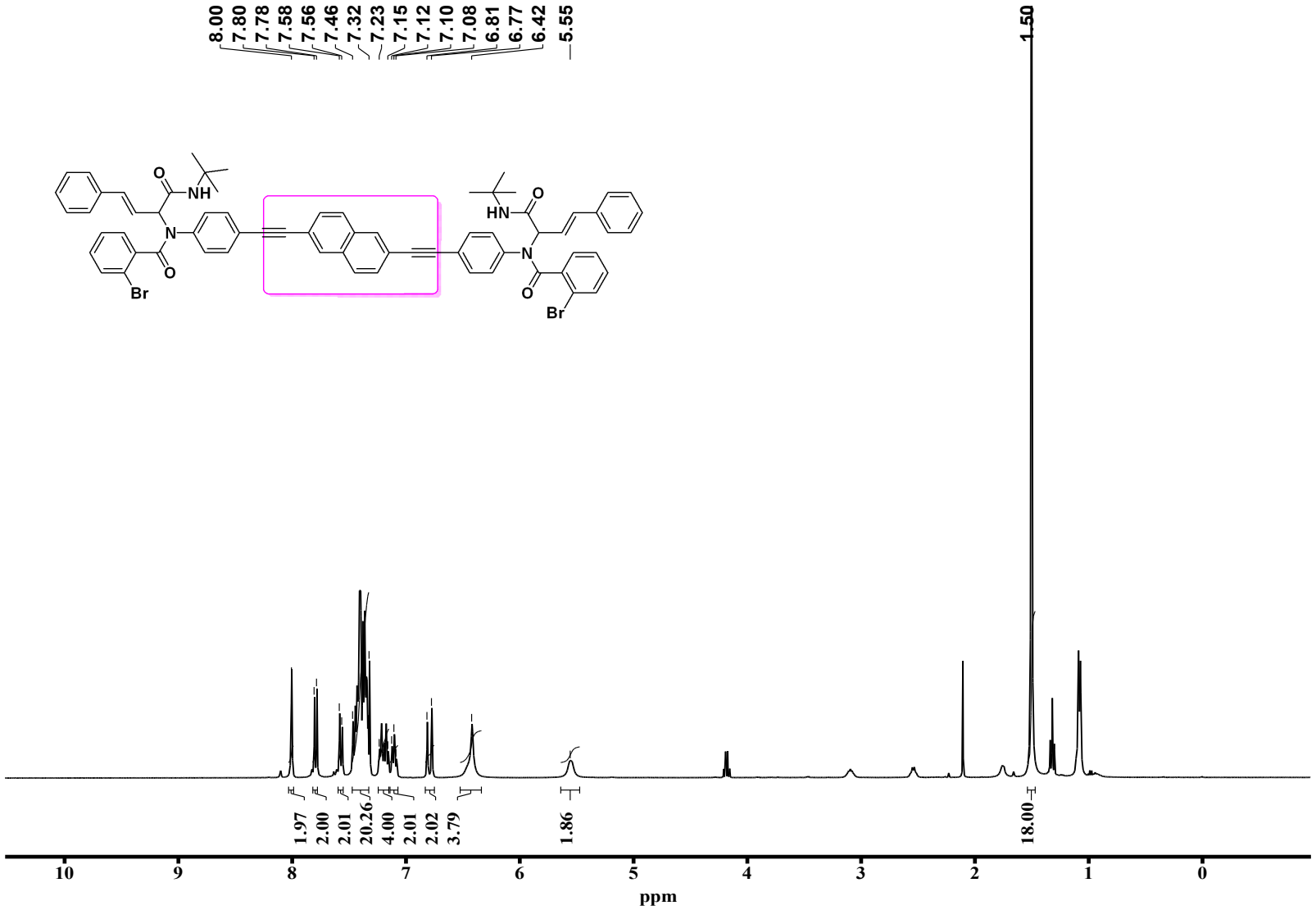

Figure S 23. ^{1}H NMR of **rotor 10d** in $CDCl_3$ at 400 MHz.

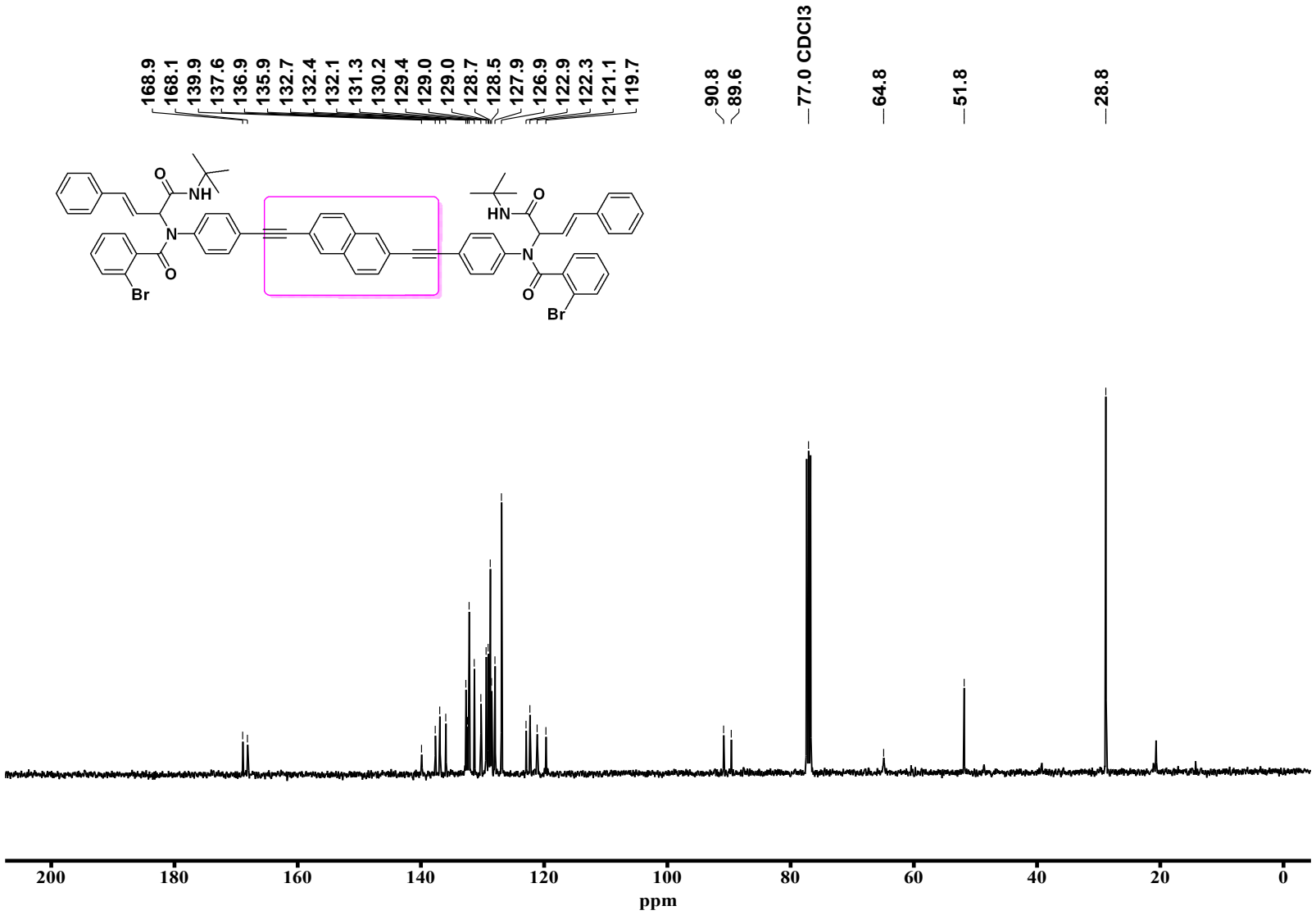

Figure S 24. *^{13}C NMR of* ***rotor 10d*** *in $CDCl_3$ at 100 MHz.*

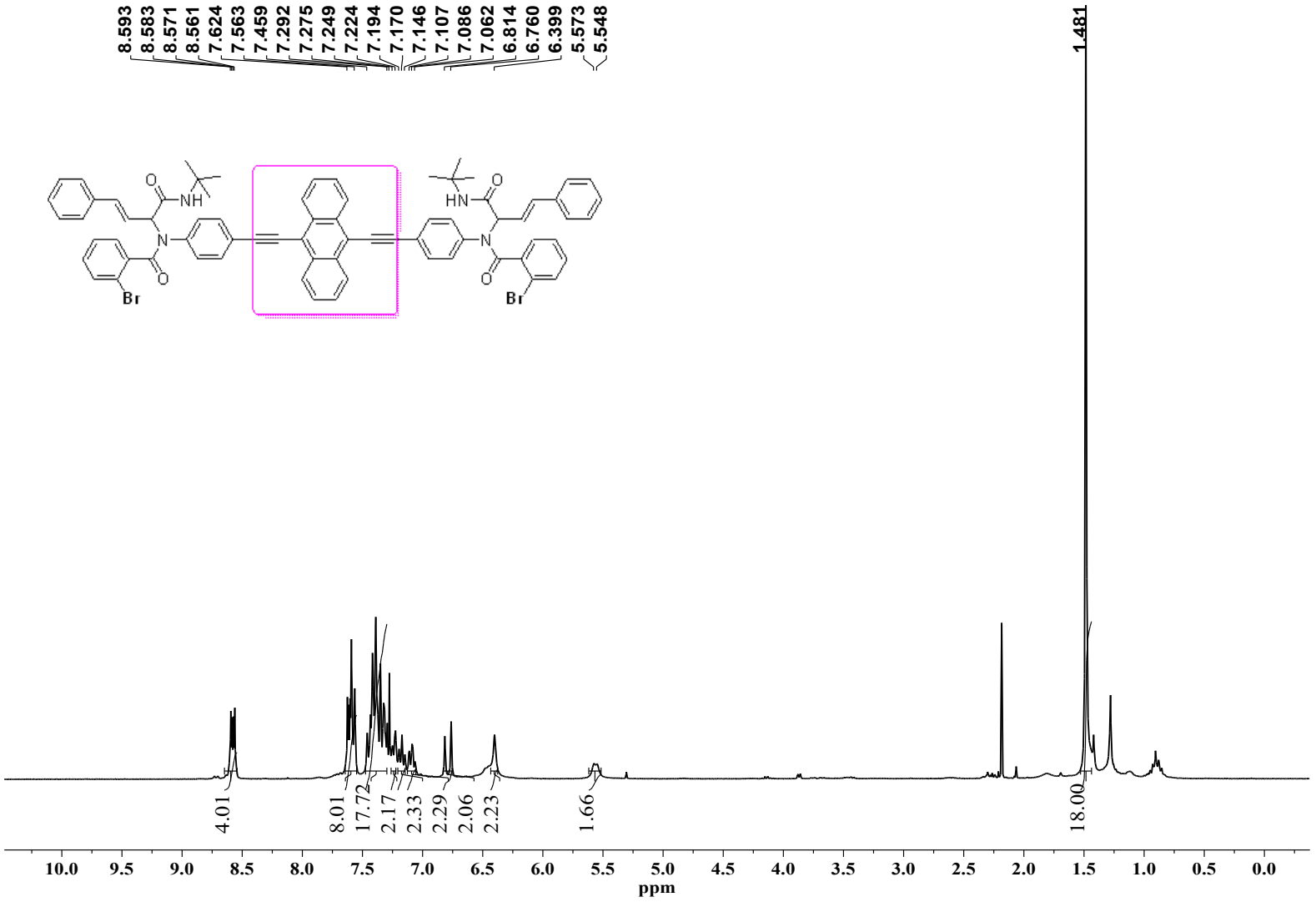

Figure S 25. *^{1}H NMR of* ***rotor 10e*** *in $CDCl_3$ at 300 MHz.*

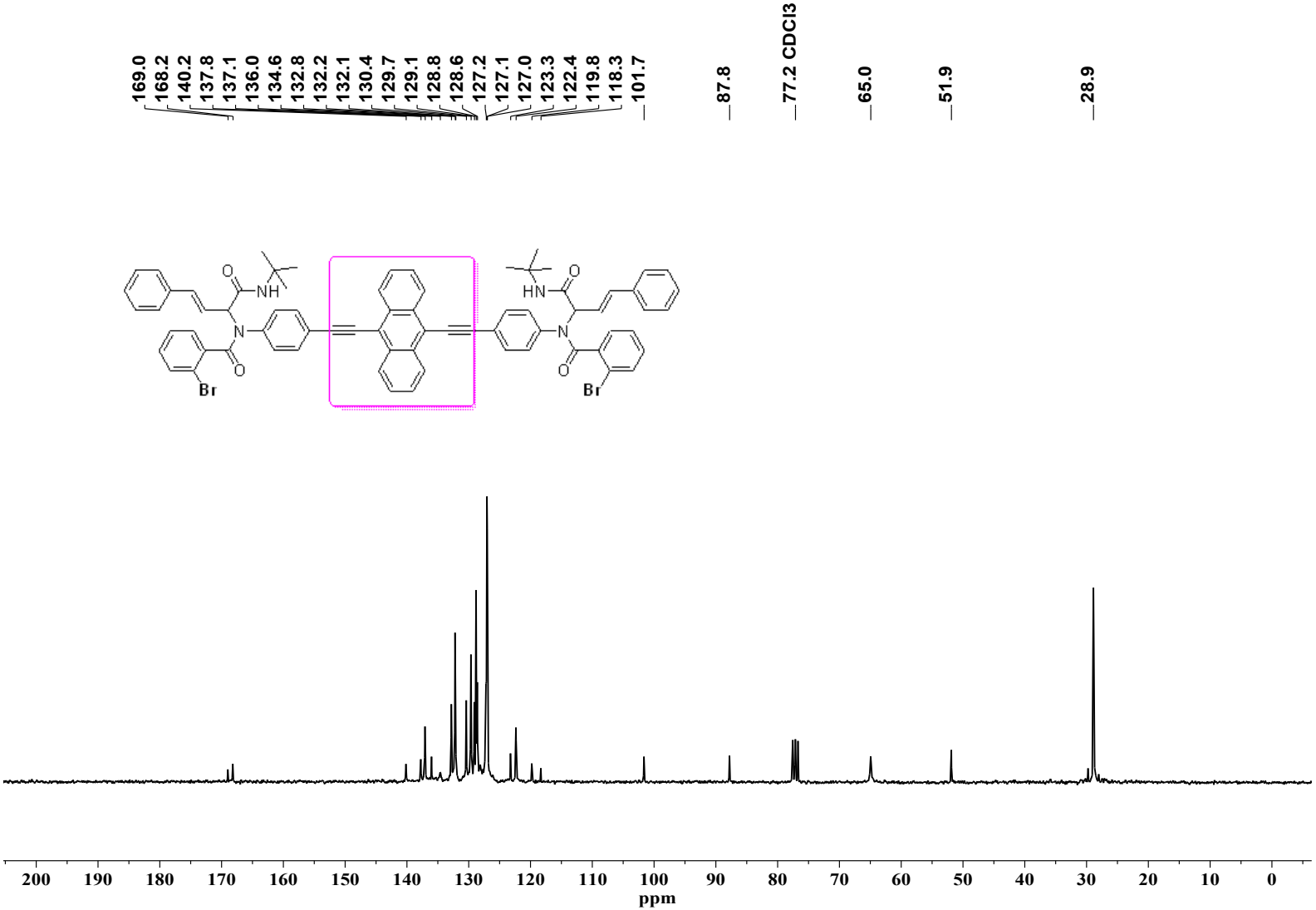

Figure S 26. *^{13}C NMR of* ***rotor 10e*** *in $CDCl_3$ at 75 MHz.*

MS spectra

In all cases, the experimental isotopic distributions are consistent with the calculated ones.

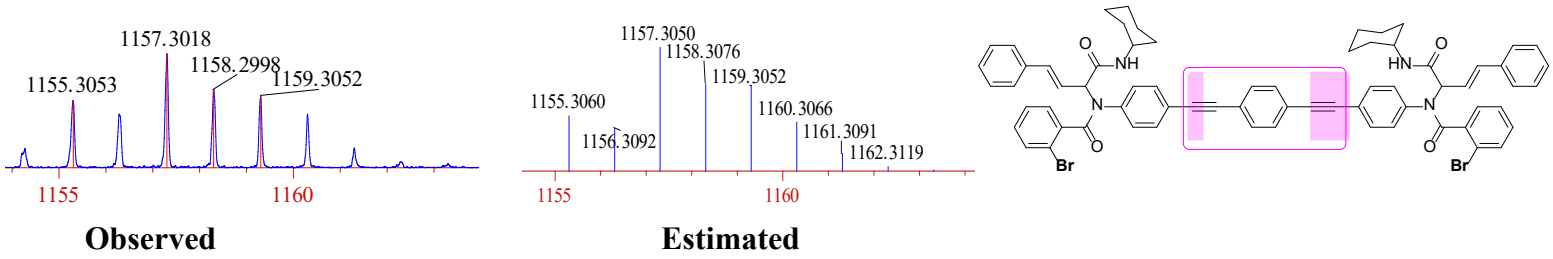

Figure S 27. High resolution FAB-MS spectra of **rotor 10a**.

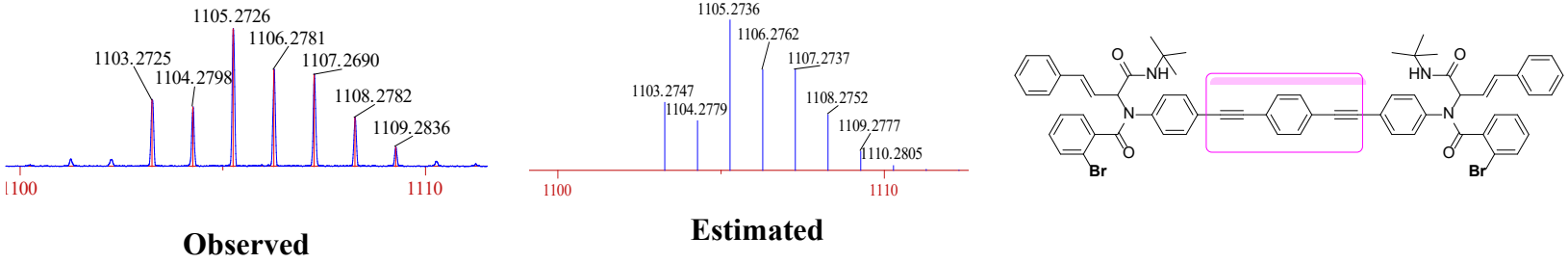

Figure S 28. High resolution FAB-MS spectra of **rotor 10b**.

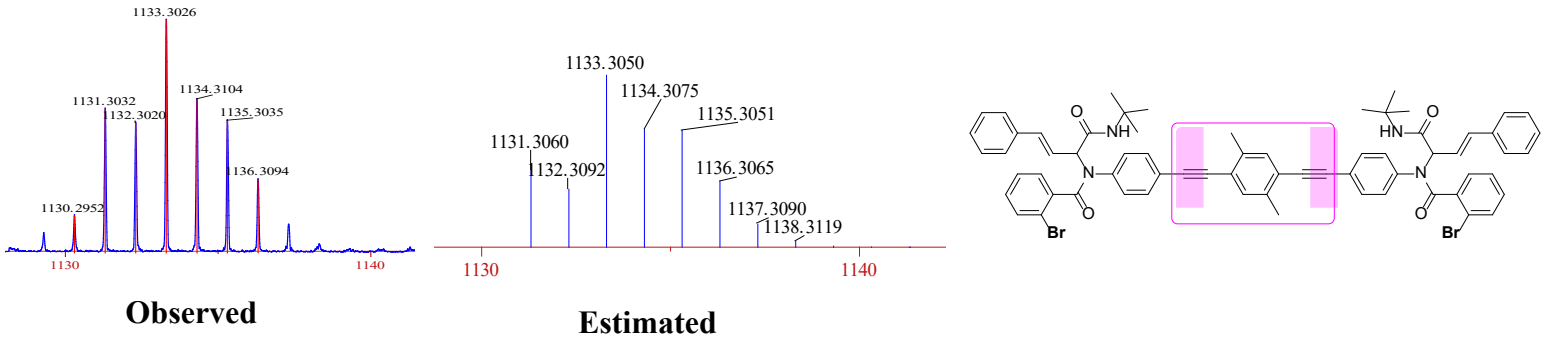

Figure S 29. High resolution FAB-MS spectra of **rotor 10c**.

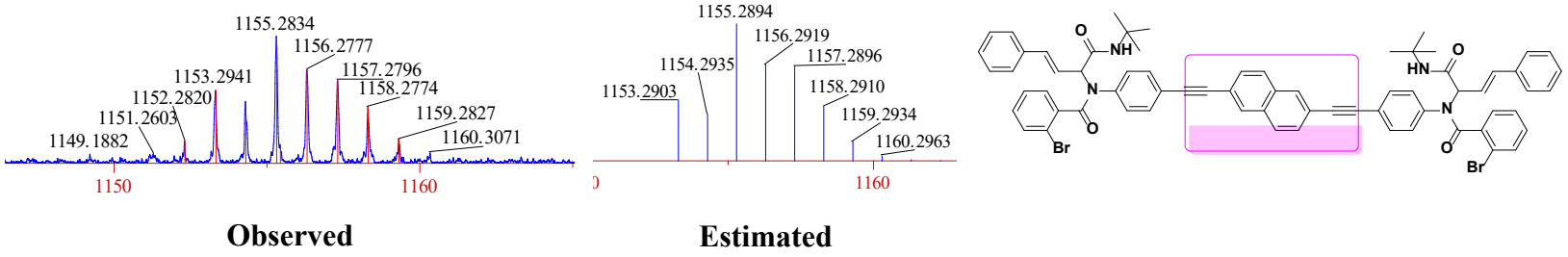

Figure S 30. High resolution FAB-MS spectra of **rotor 10d**.

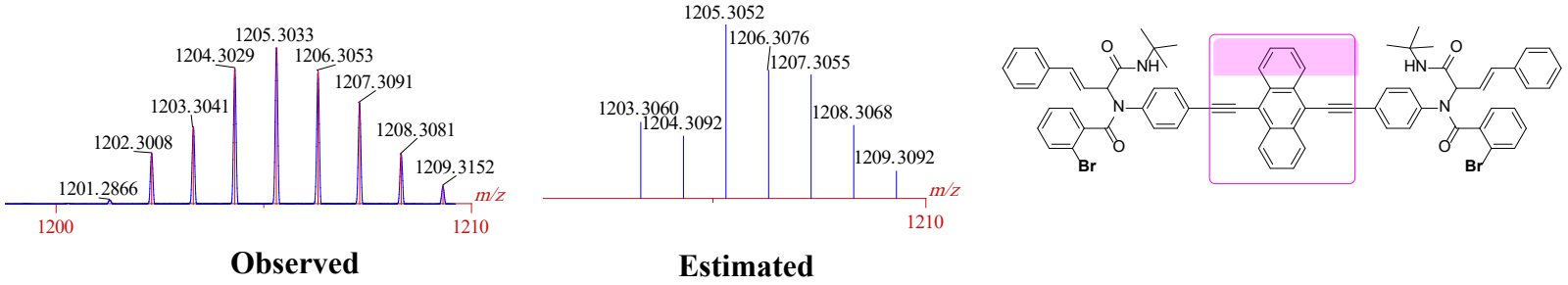

Figure S 31. High resolution FAB-MS spectra of **rotor 10e**.