SupplementaryInformation for

Polarity- and molecular orbital-engineered host materials for stable and efficient blue thermally activated delayed fluorescence

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**Supplementary Figure 8 S7**

**Supplementary Figure 9 S8**

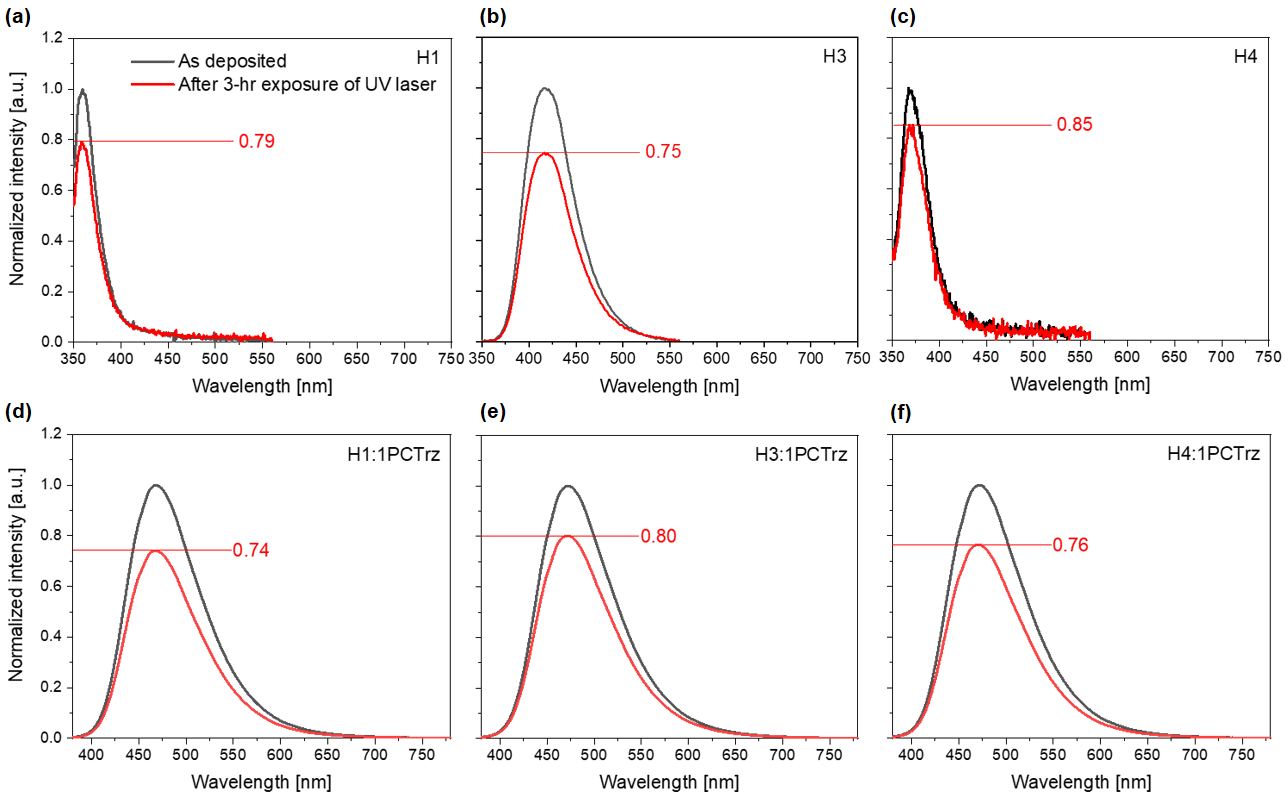
**Supplementary Figure 10 S8**

**Supplementary Figure 11 S9**

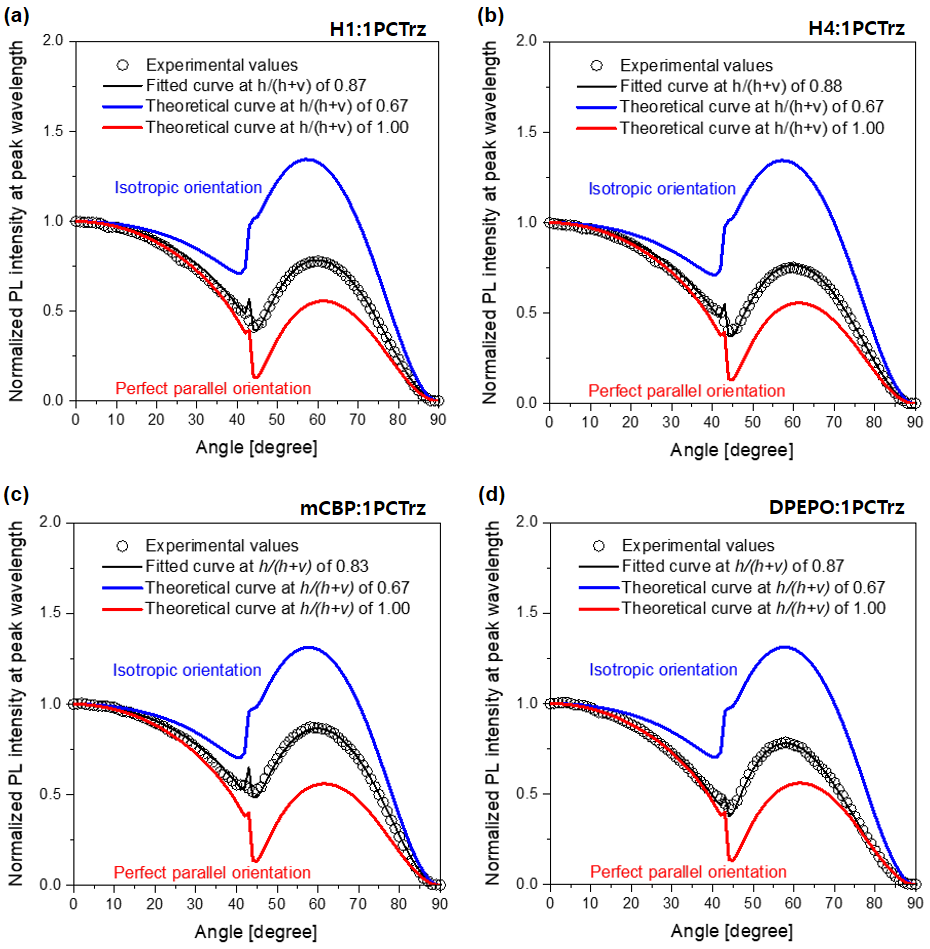
**Supplementary Figure 12 S9**



**Supplementary Figure 1. Ground-state dipole moments *μ*GS of hosts calculated from various conformer structures, related Figure 2.** The representative value, corresponding to the minimum energy structure for each host, is marked with ablack solid line.



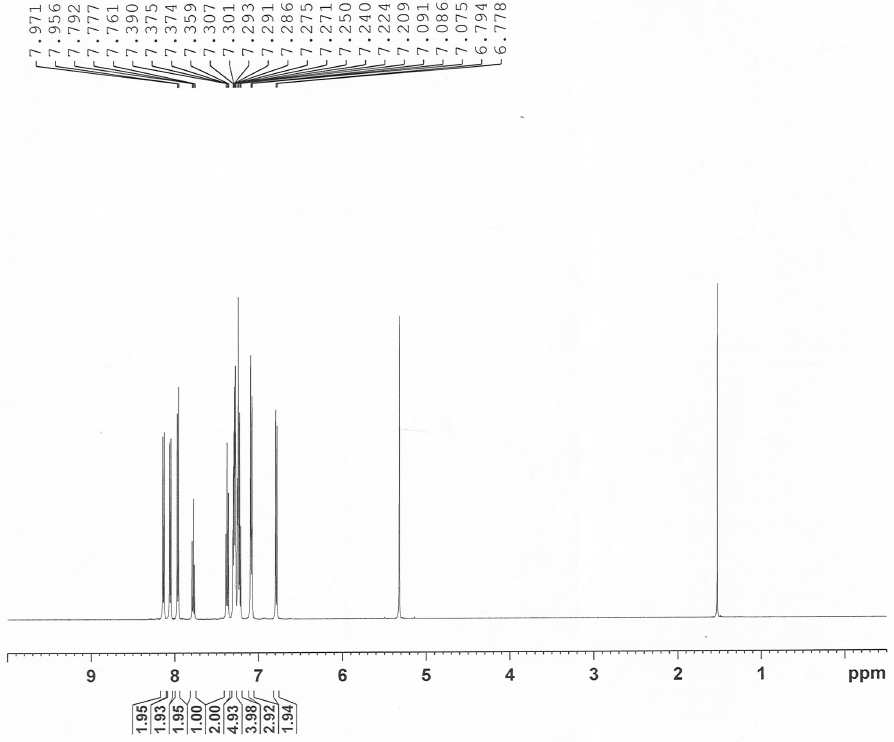
**Supplementary Figure 2. PL stability of various host films with and without 1PCTrz doping, related to Figure 6.**



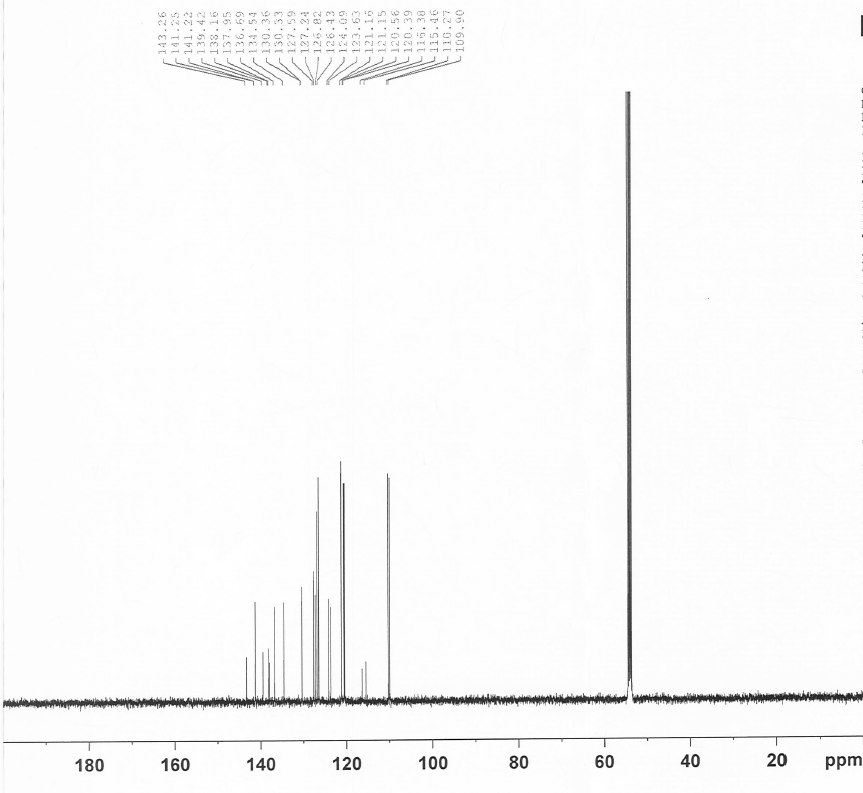
**Supplementary Figure 3. Analysis of the horizontal orientations of the transition dipolemoments, *h*/(*h* + *v*), related Figure 7.** Angle-dependent PL intensities at peak wavelengths. The black open squares represent the PL intensities from **a.** H1:1PCTrz, **b.** H4:1PCTrz, **c.** mCBP:1PCTrz, and **d.** DPEPO:1PCTrz films. Inspection of the solid curves for the films of the four 15% TADF emitter (1PCTrz)-doped hosts (H1, H4, mCBP, and DPEPO) reveal that the horizontal orientations of (*h*/(*h*+ *v*)) are 0.87, 0.88, 0.83, and 0.87, respectively. The blue and red lines correspond to theoretical curves constructed with *h*/(*h*+ *ν*) values of 0.67 (isotropic orientation) and 1.0 (perfect parallel orientation), respectively.



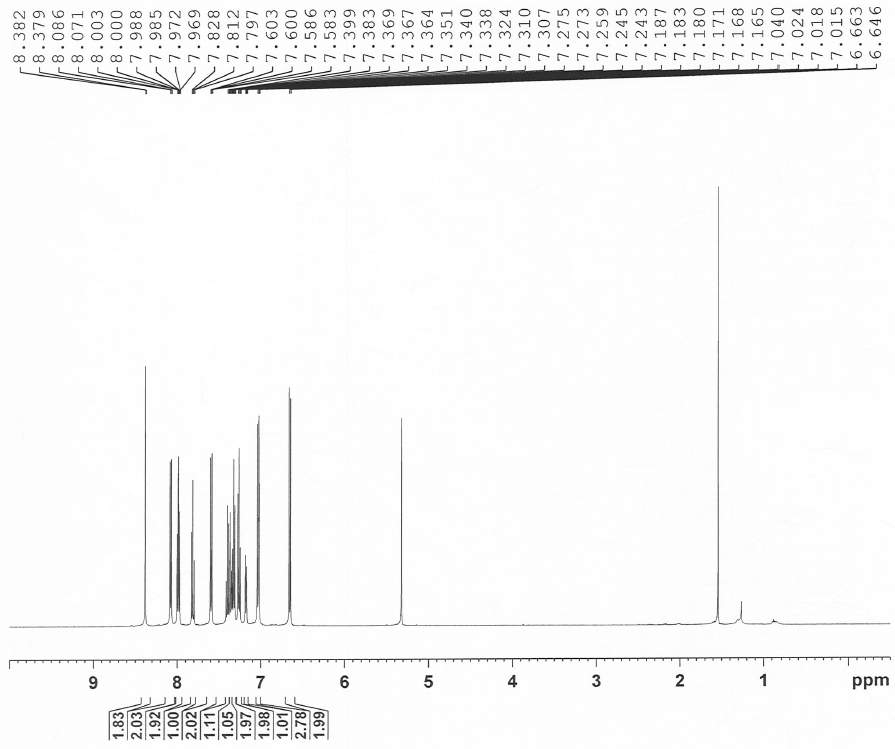
**Supplementary Figure 4. Synthetic route for H1, H2, H3, H4.**



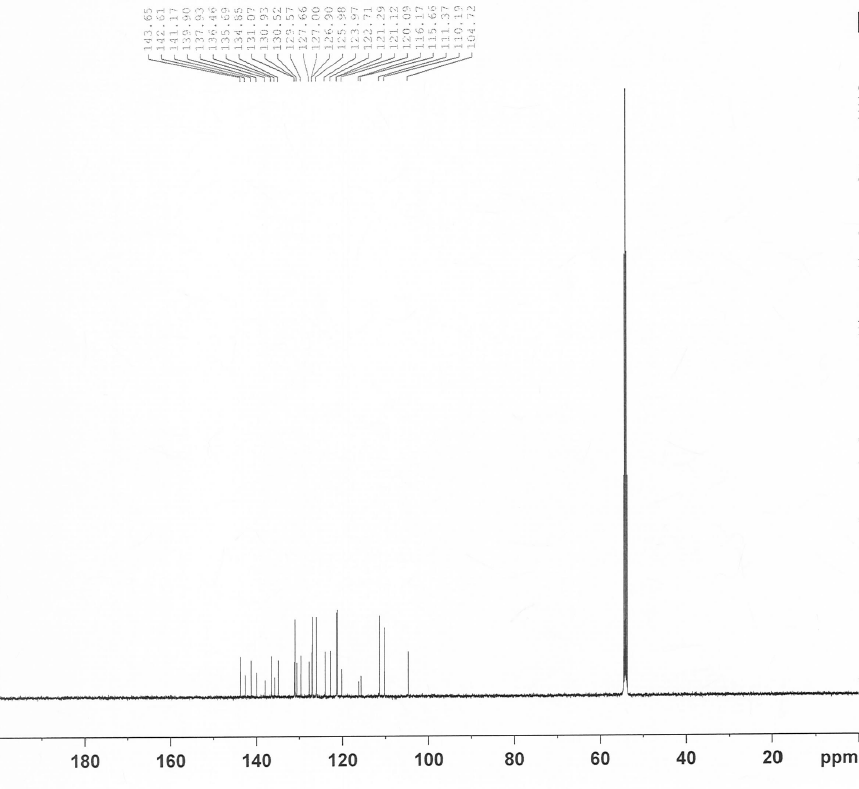
**Supplementary Figure 5. 1H NMR spectra of H1.**



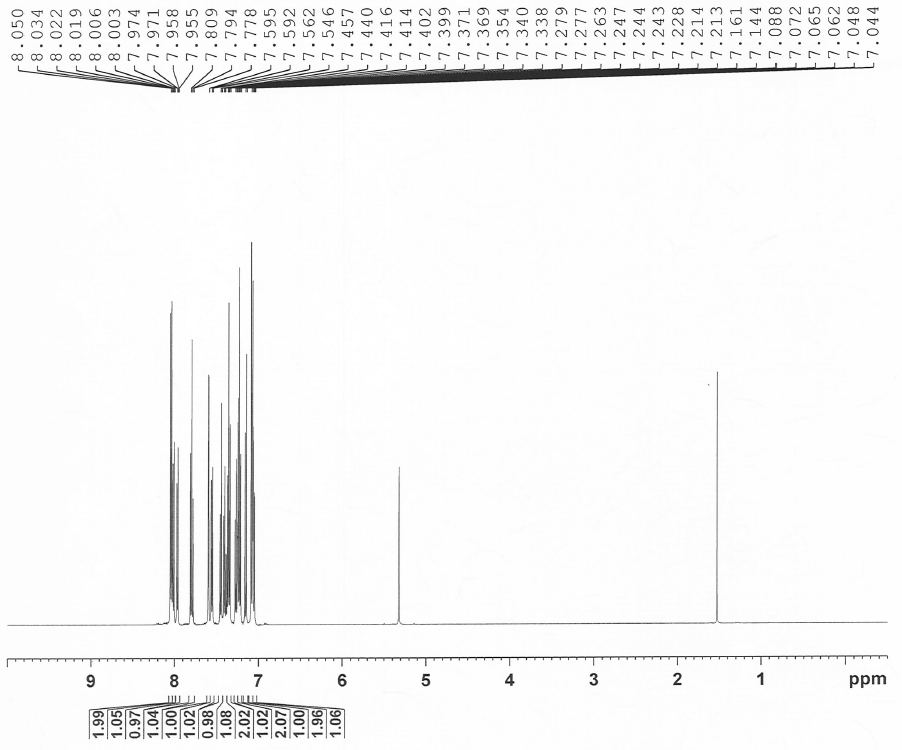
**Supplementary Figure 6. 13C NMR spectra of H1.**



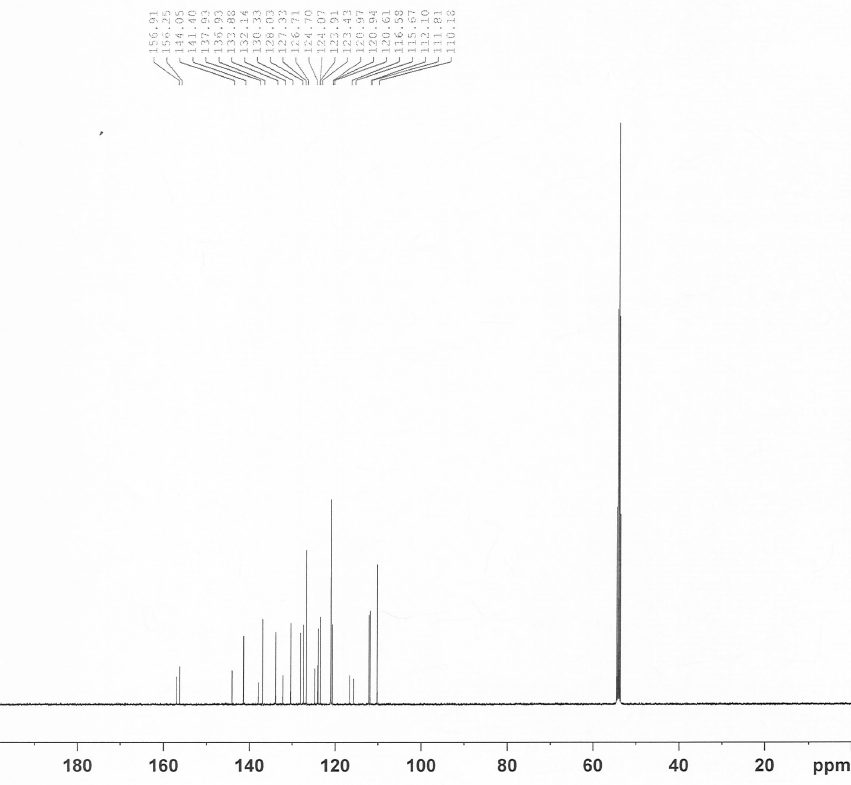
**Supplementary Figure 7. 1H NMR spectra of H2.**



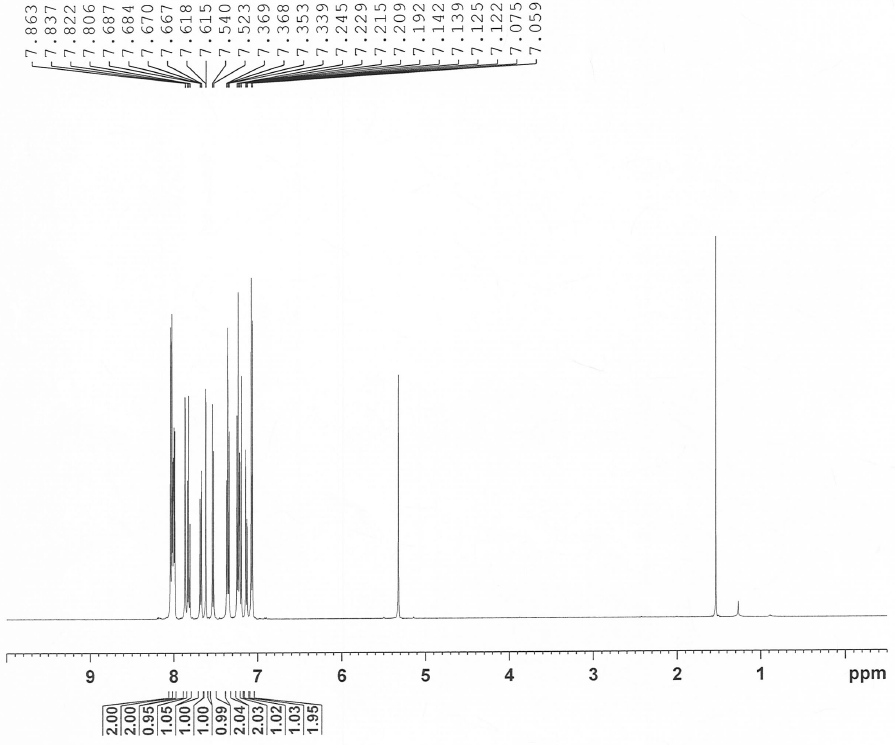
**Supplementary Figure 8. 13C NMR spectra of H2.**



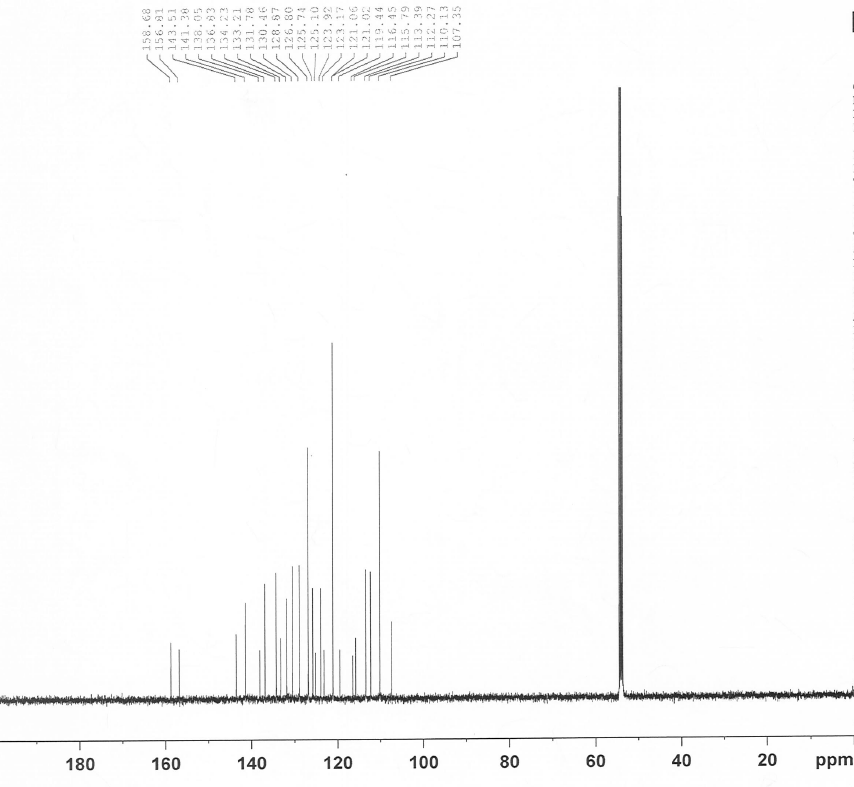
**Supplementary Figure 9. 1H NMR spectra of H3.**



**Supplementary Figure 10. 13C NMR spectra of H3.**



**Supplementary Figure 11.1H NMR spectra of H4.**



**Supplementary Figure 12. 13C NMR spectra of H4.**