Supporting Information

Synthesis and structures of tridentate ketoiminate zinc complexes bearing trifluoromethyl substituents that act as L-lactide ring opening polymerization initiators

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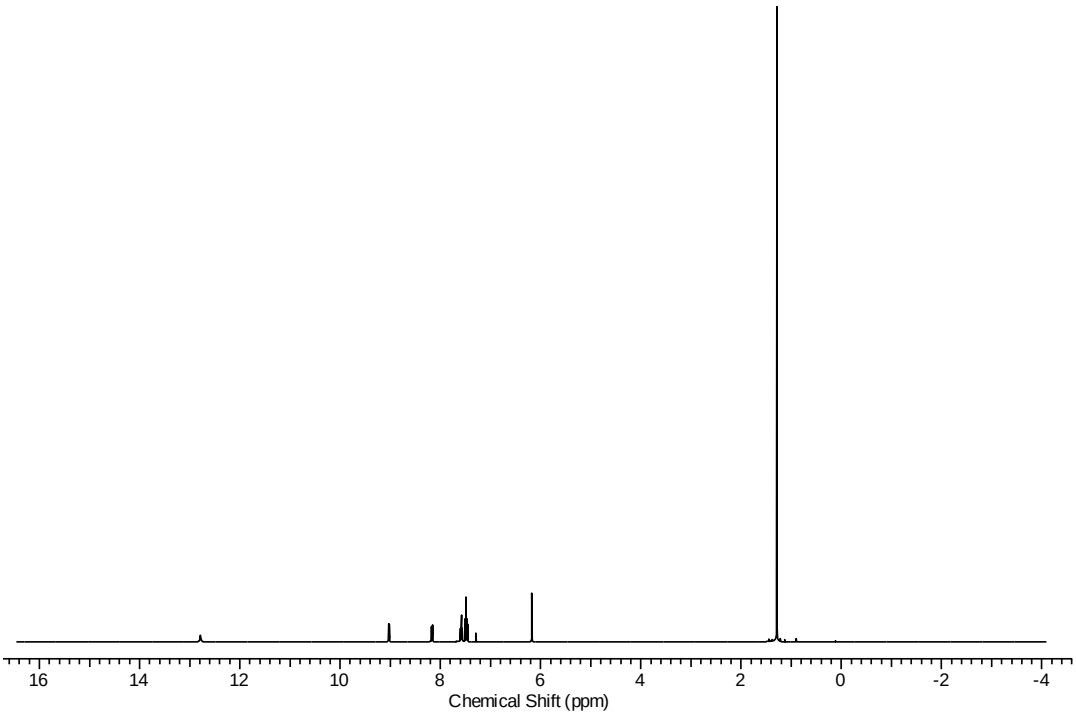
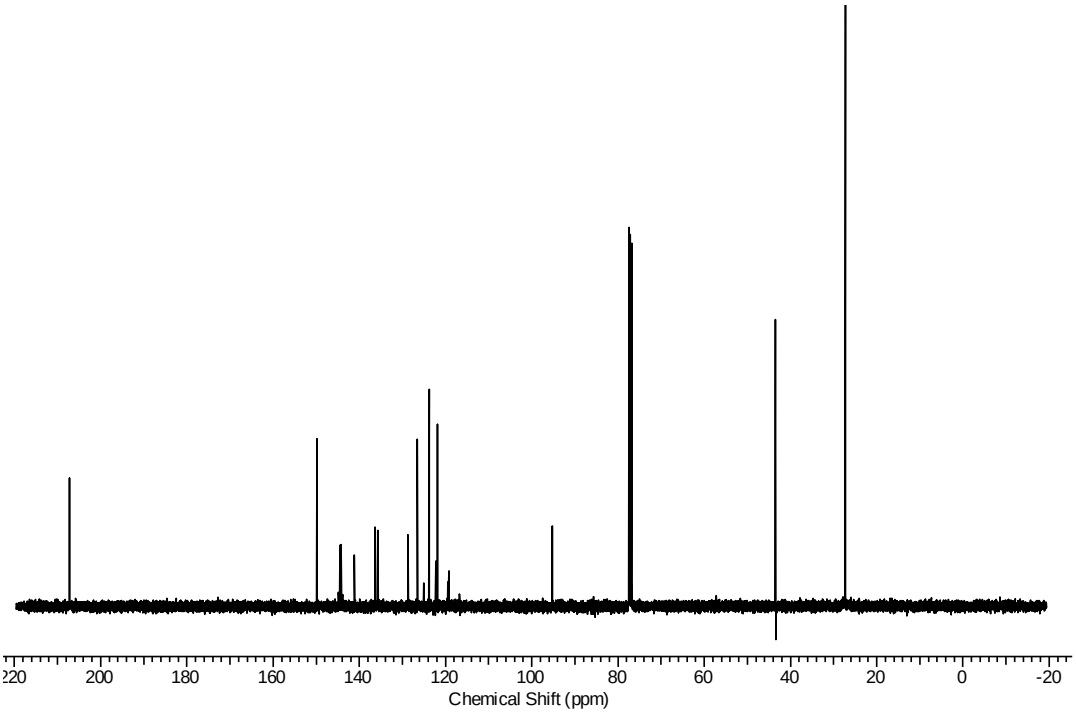
SI Figure 1. NMR spectra of compound **1**.

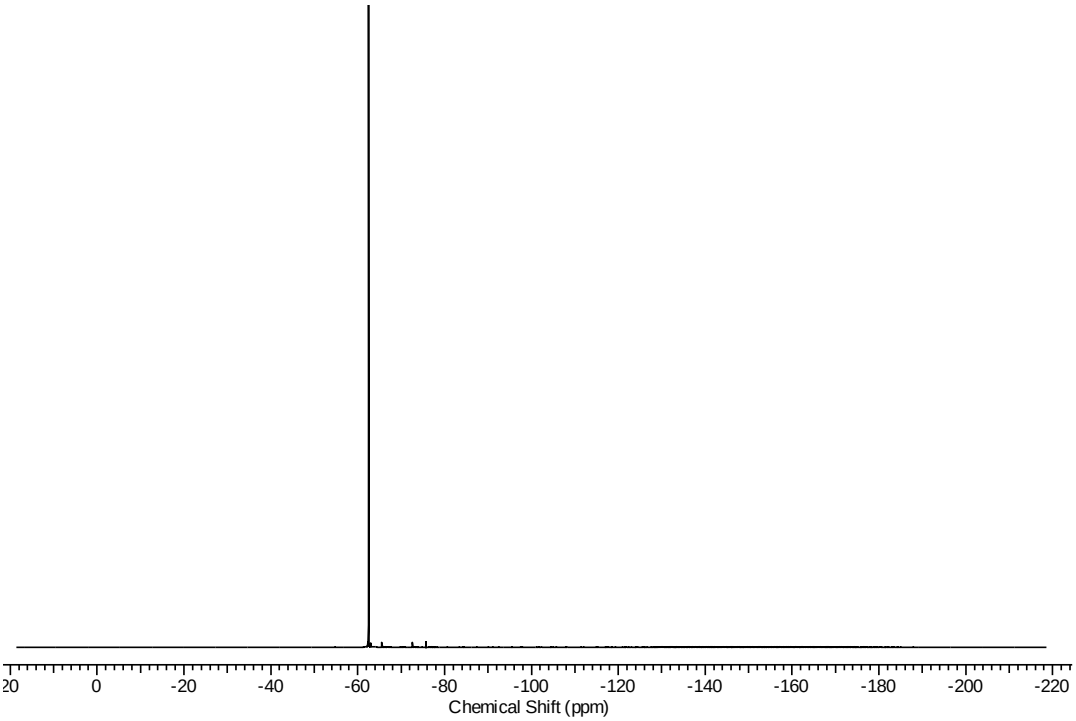
^{1}H NMR spectrum of **1**



^{13}C NMR spectrum of **1**

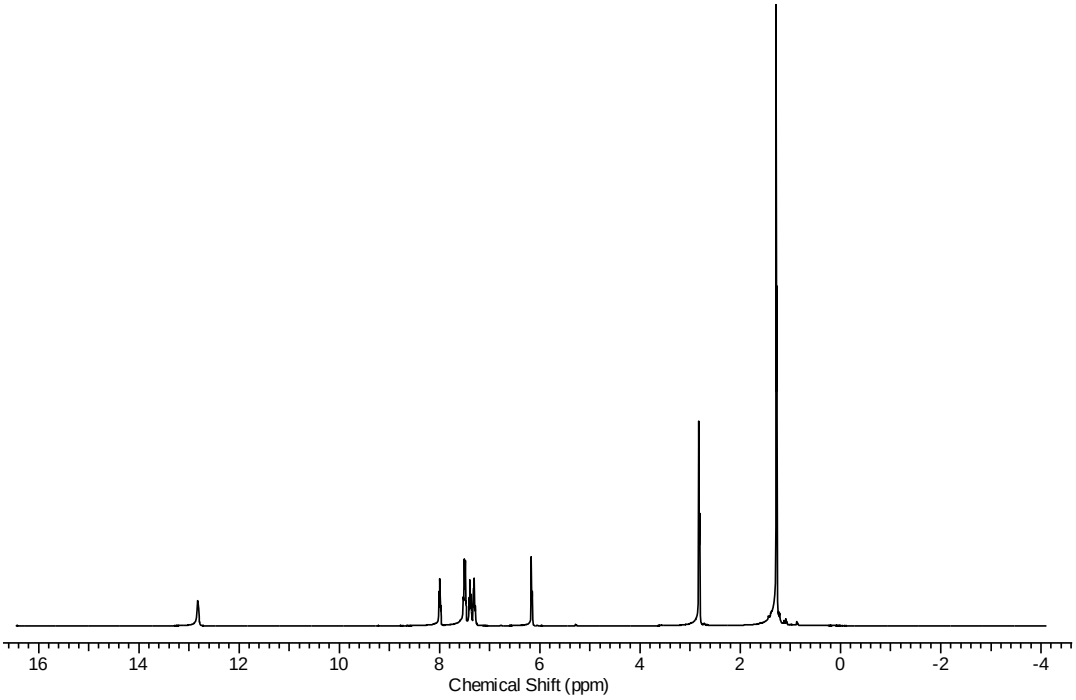


^{19}F NMR spectrum of **1**

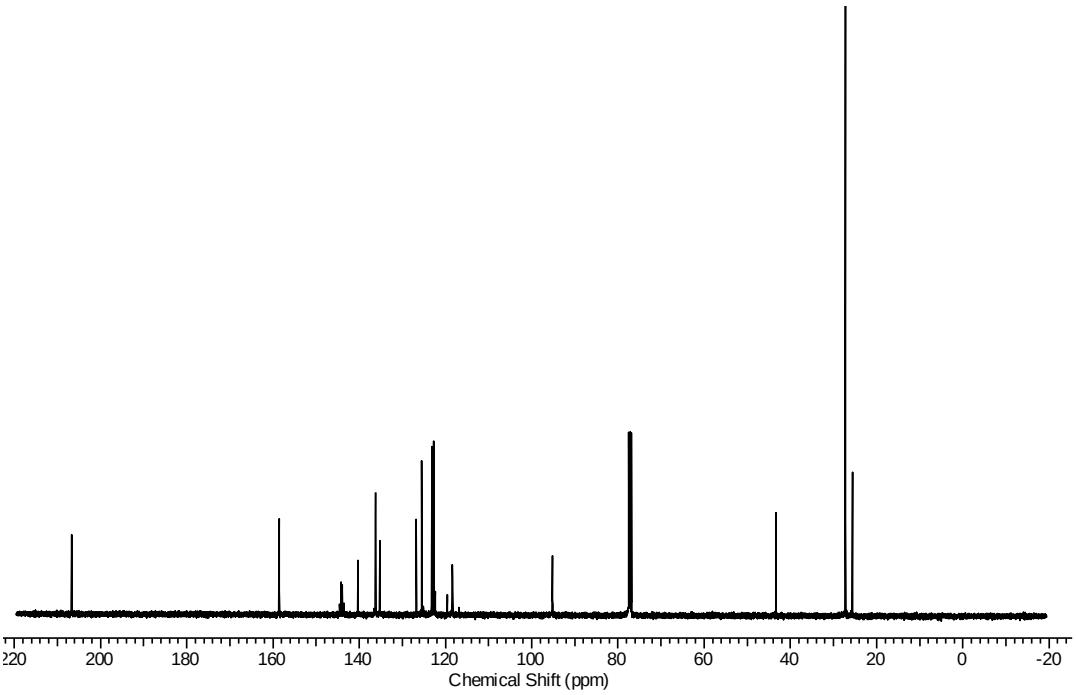


SI Figure 2. NMR spectra of compound **2**.

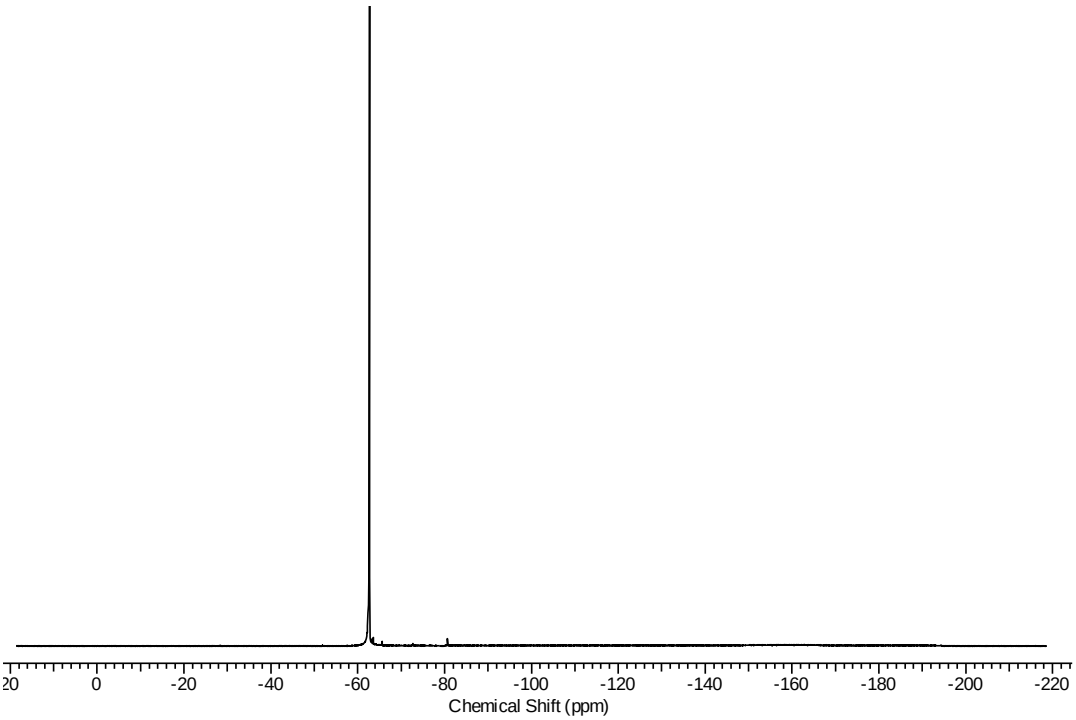
^{1}H NMR spectrum of **2**



^{13}C NMR spectrum of **2**

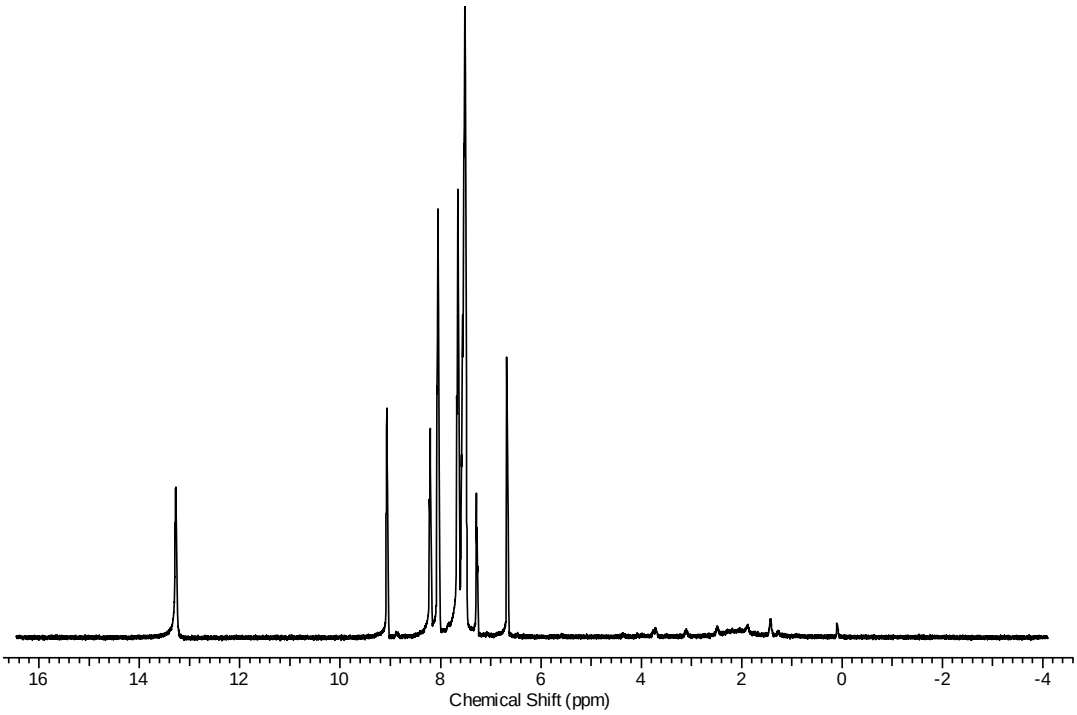


^{19}F NMR spectrum of **2**



SI Figure 3. NMR spectra of compound **3**.

^{1}H NMR spectrum of **3**



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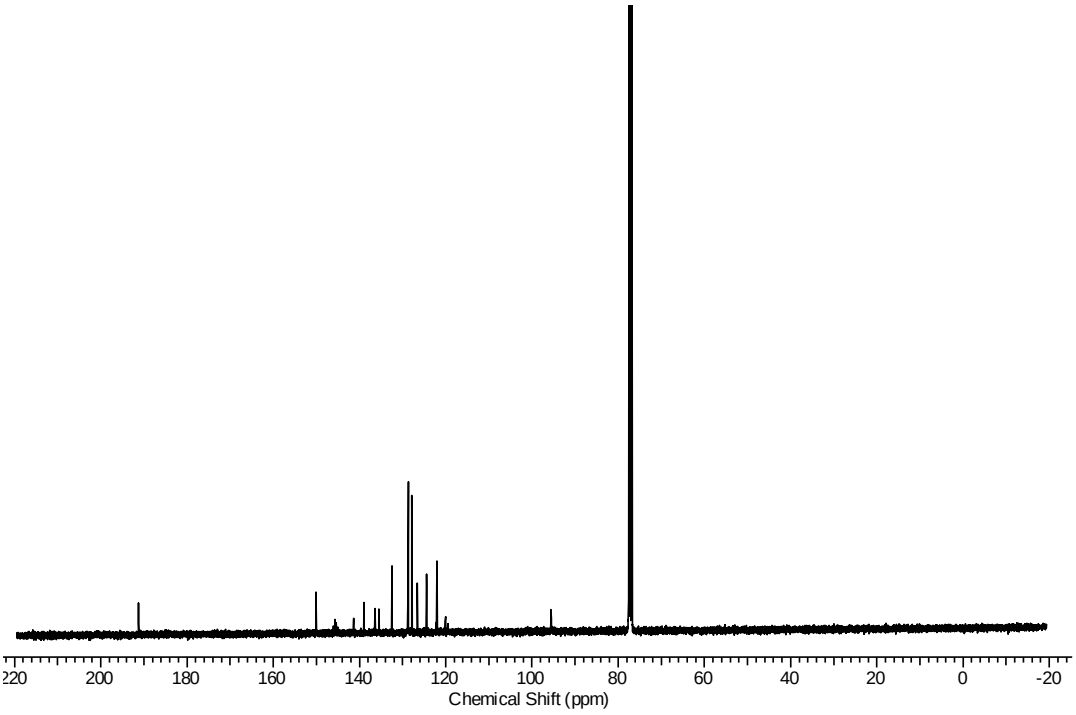

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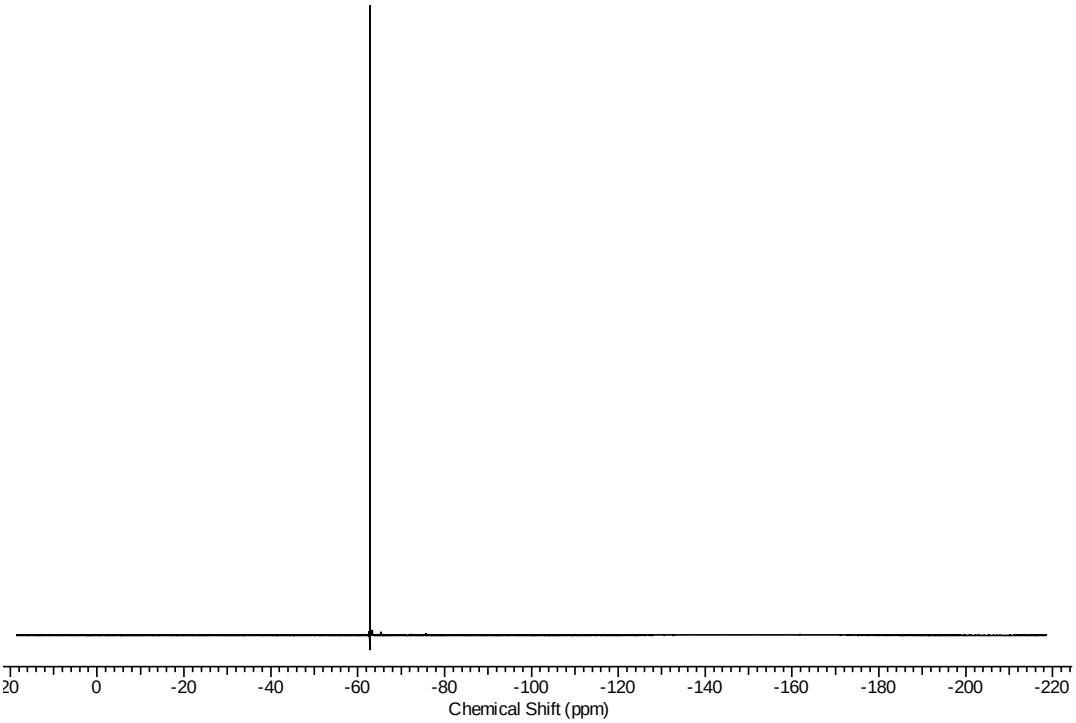
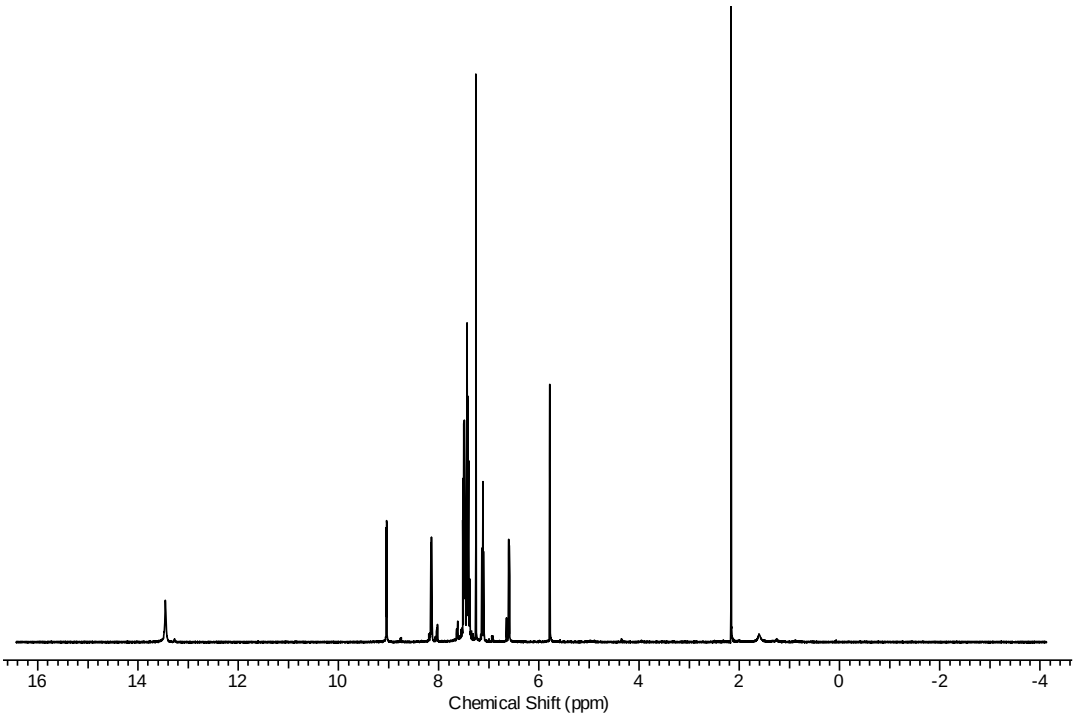
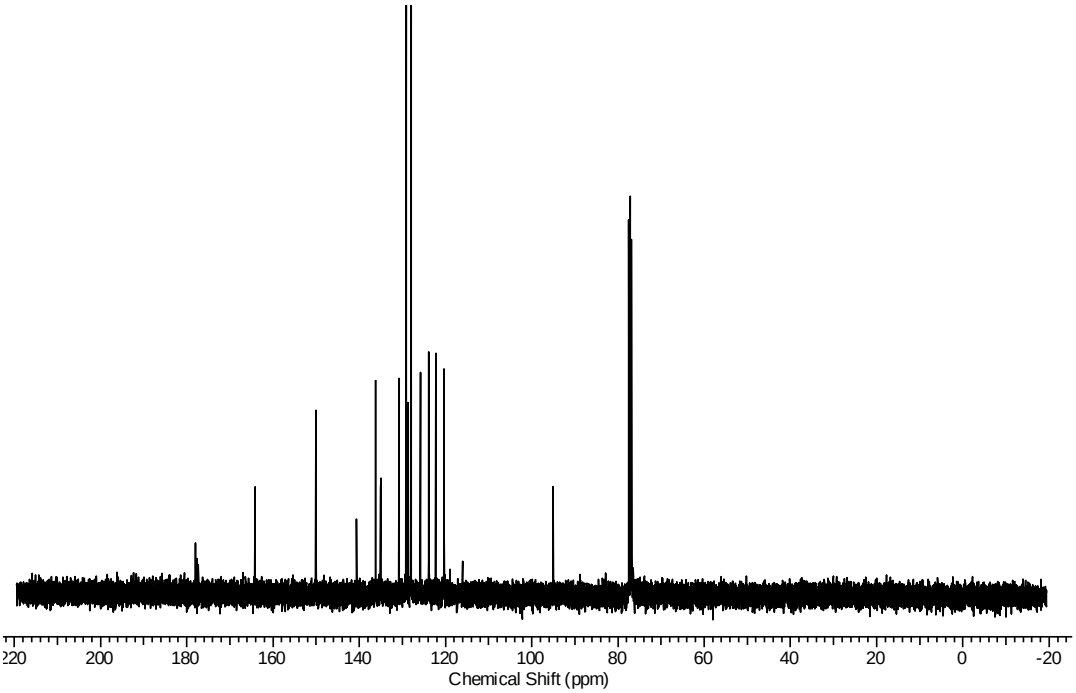


SI Figure 4. NMR spectra of compound **3'**.

^{1}H NMR spectrum of **3'**



^{13}C NMR spectrum of **3'**



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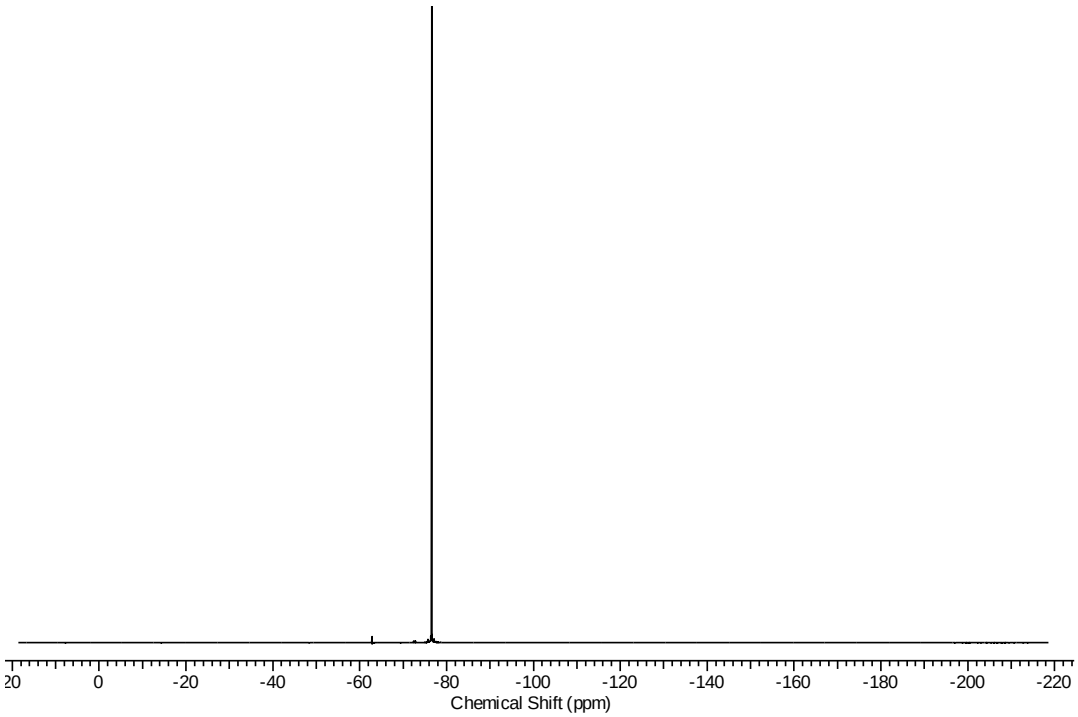

SI Figure 5. NMR spectra of compound **4**.

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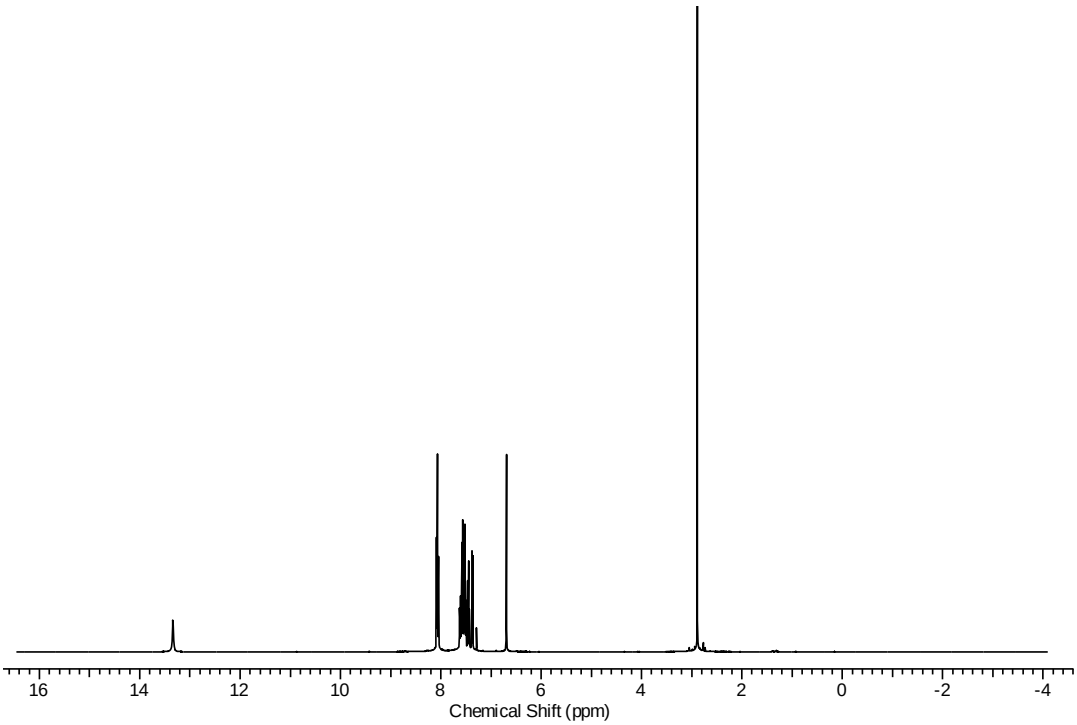
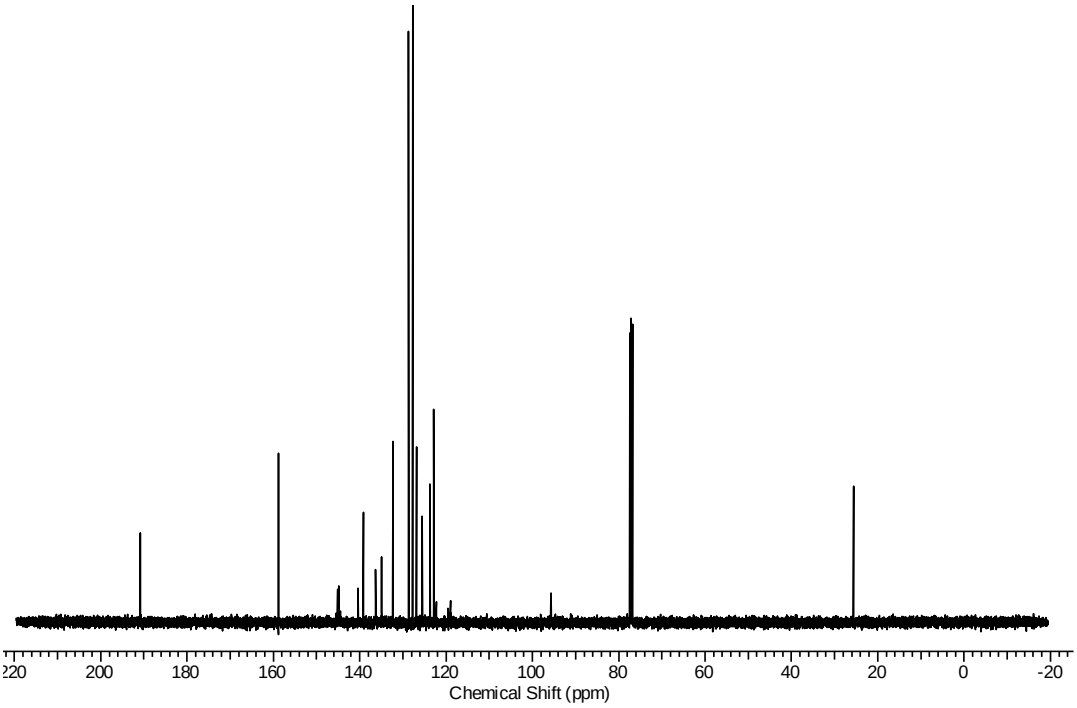


^{13}C NMR spectrum of **4**



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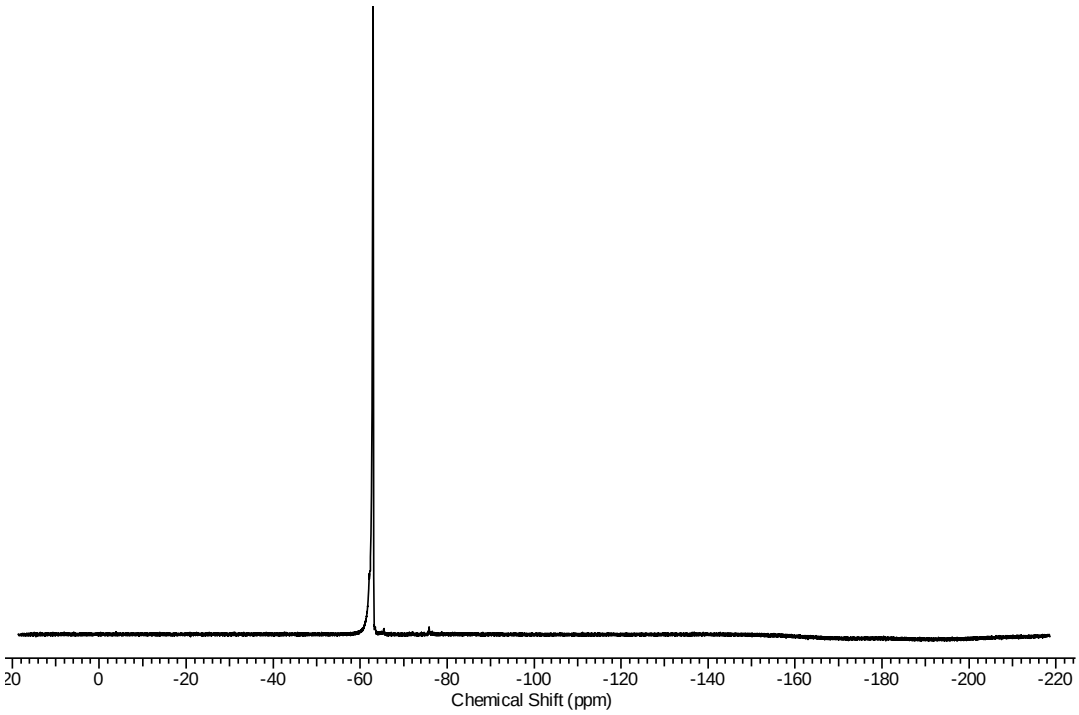
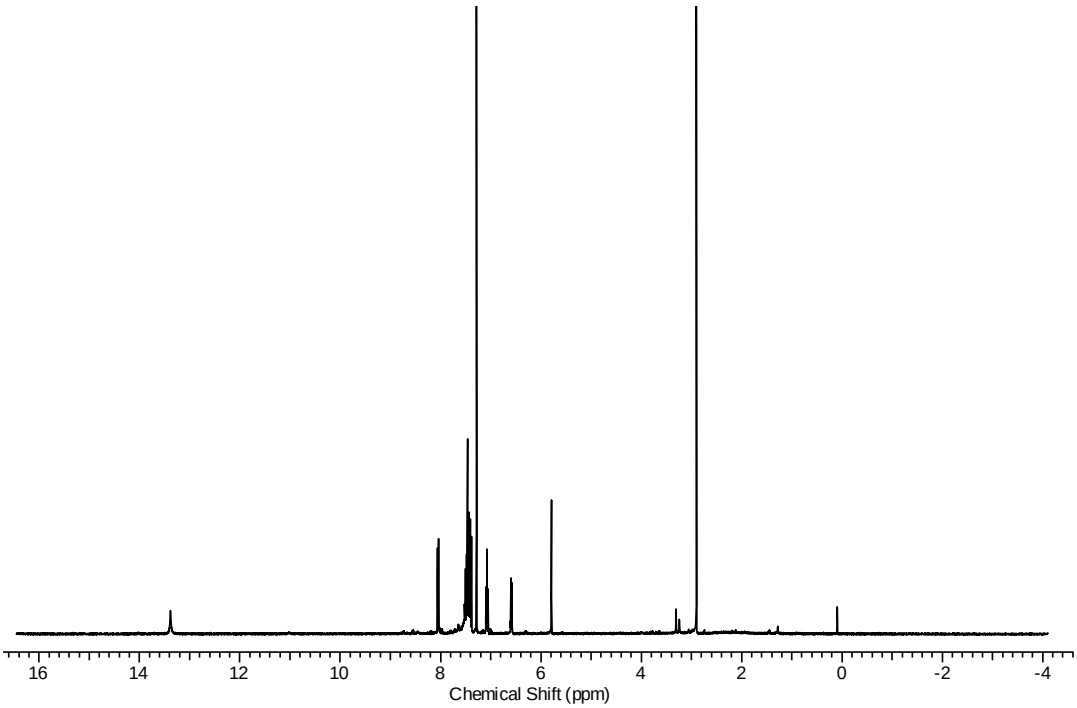
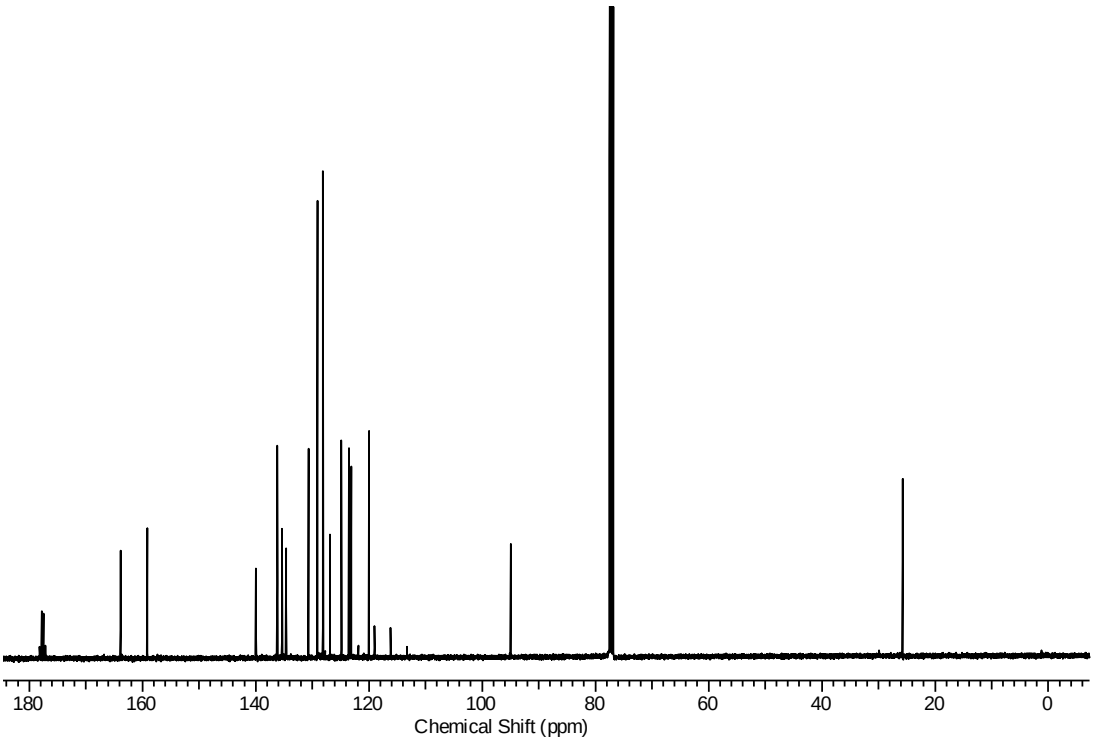


SI Figure 6. NMR spectra of compound **4'.**

^{1}H NMR spectrum of **4'**



^{13}C NMR spectrum of **4'**



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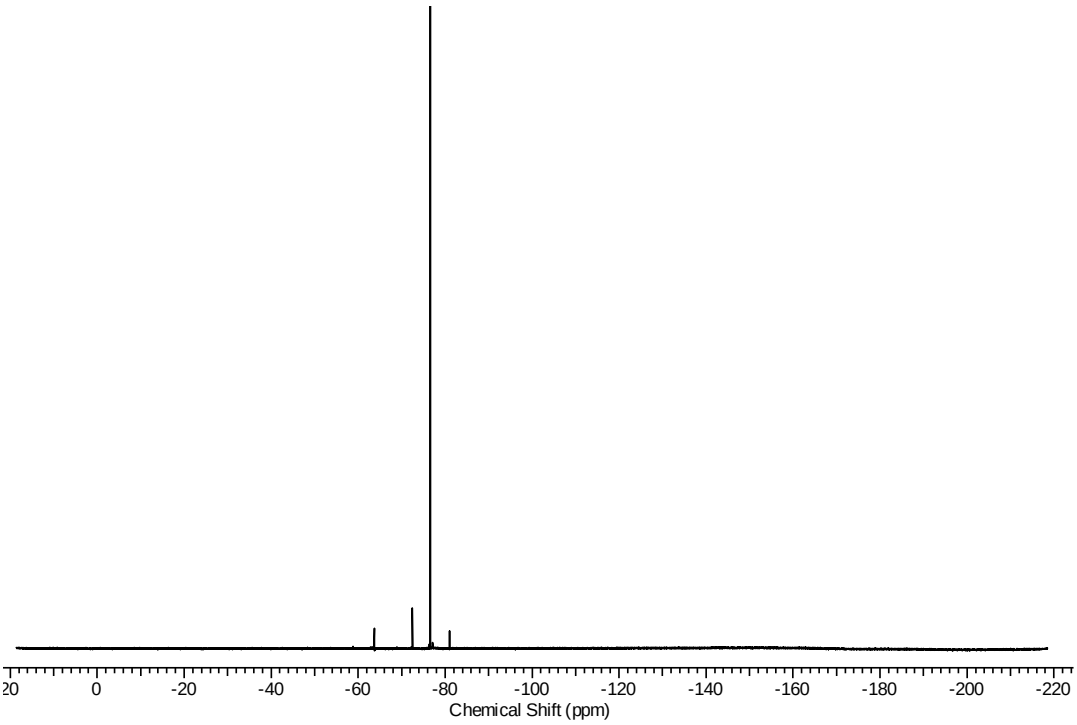
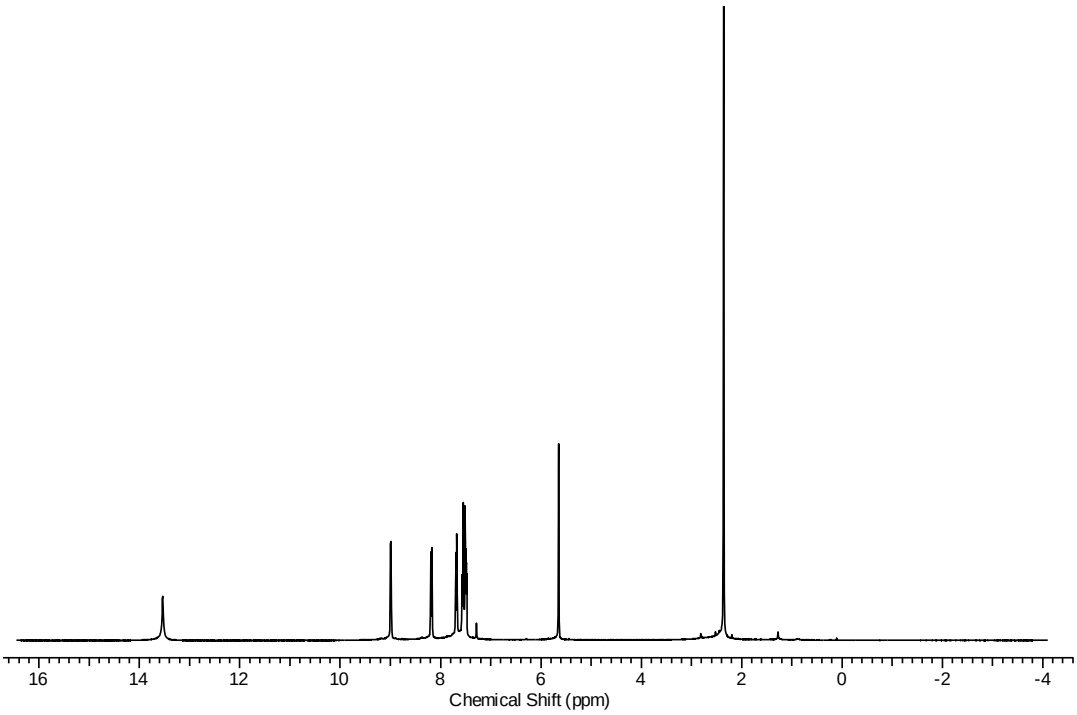
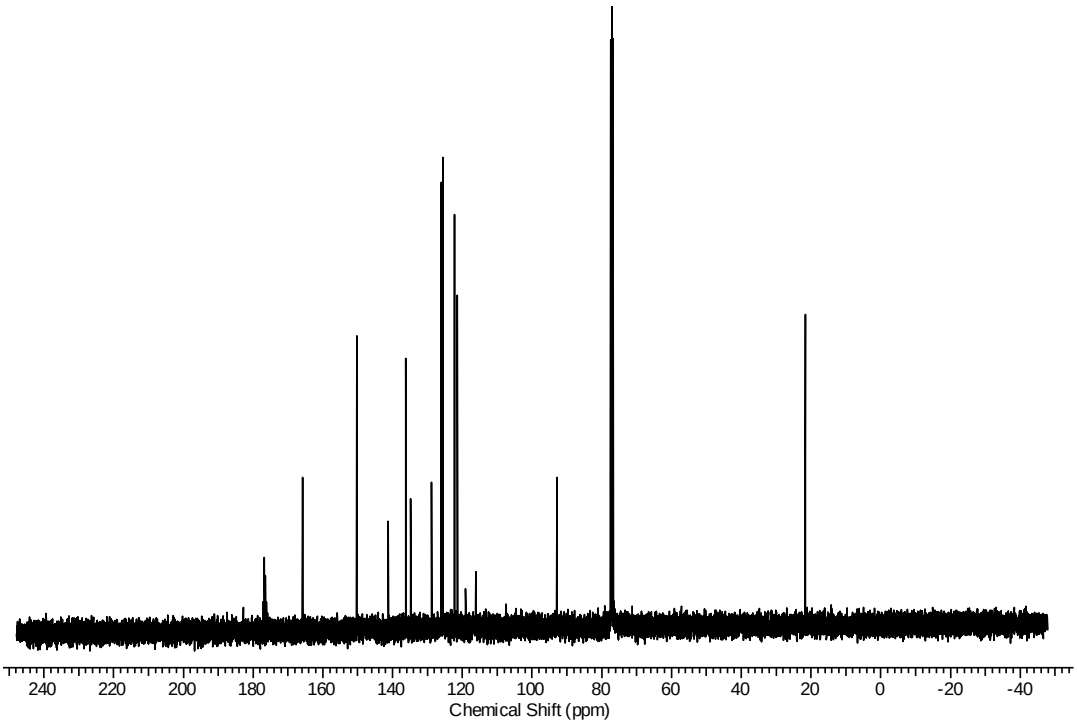


SI Figure 7. NMR spectra of compound **5**.

^{1}H NMR spectrum of **5**



^{13}C NMR spectrum of **5**



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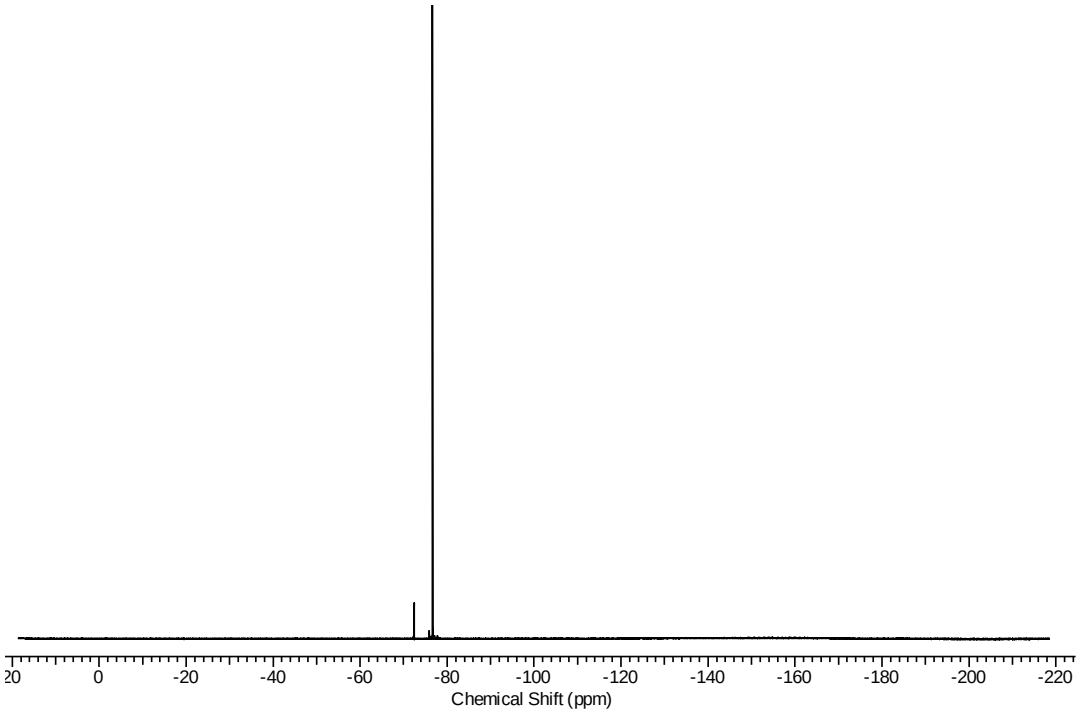
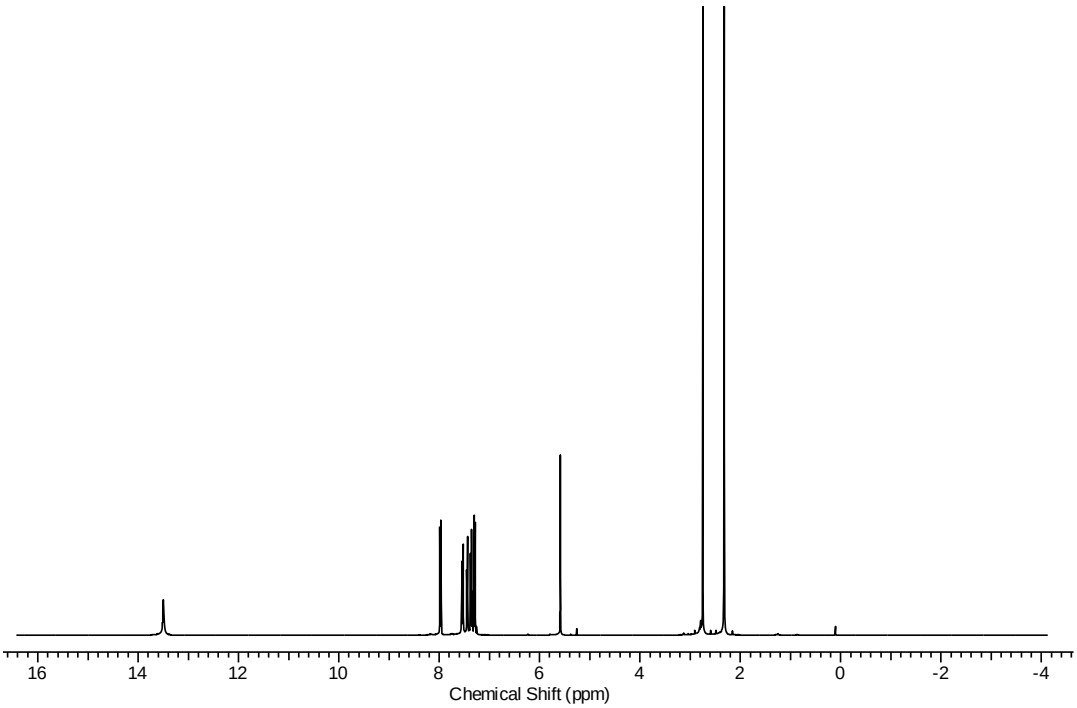
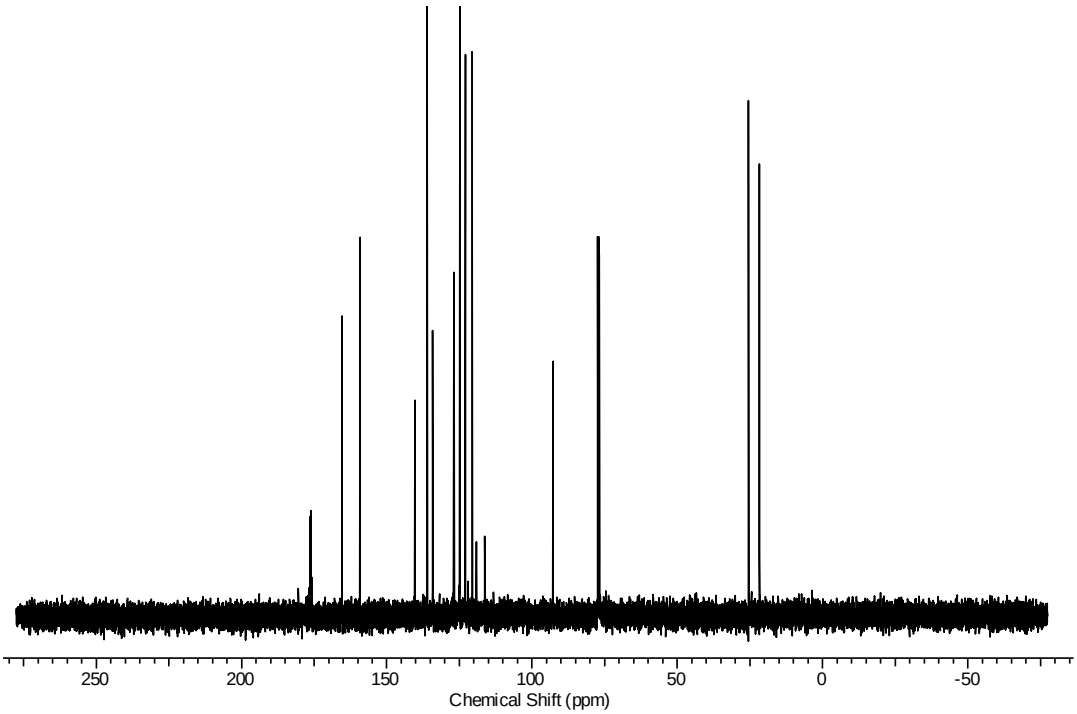


SI Figure 8. NMR spectra of compound **6**.

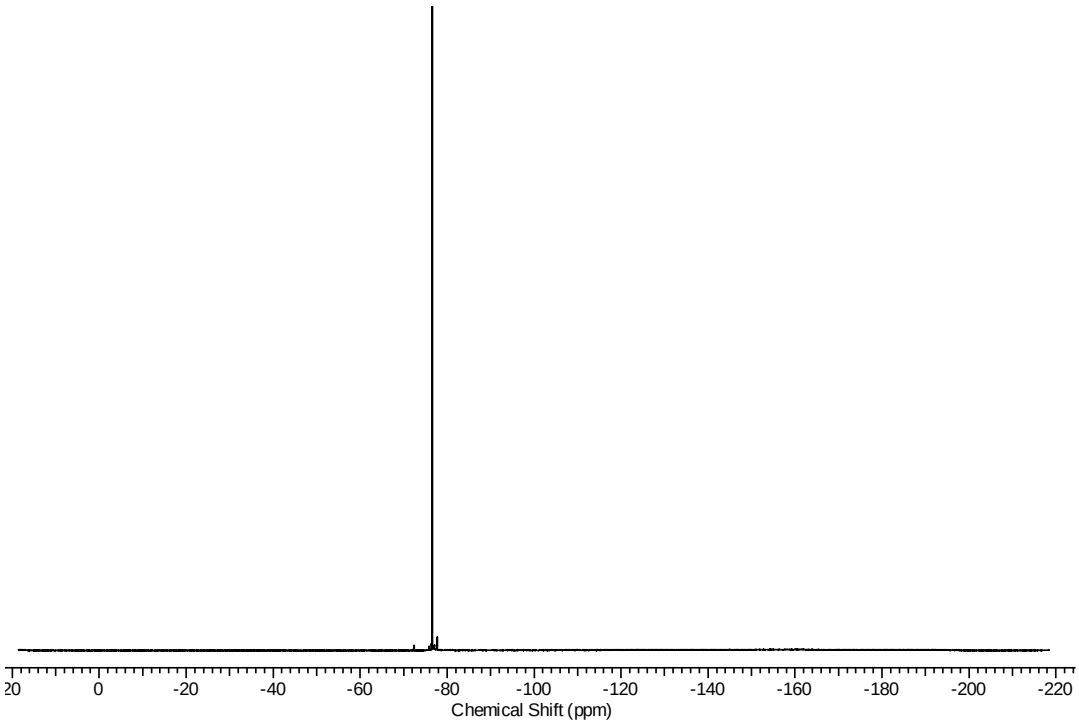
^{1}H NMR spectrum of **6**



^{13}C NMR spectrum of **6**

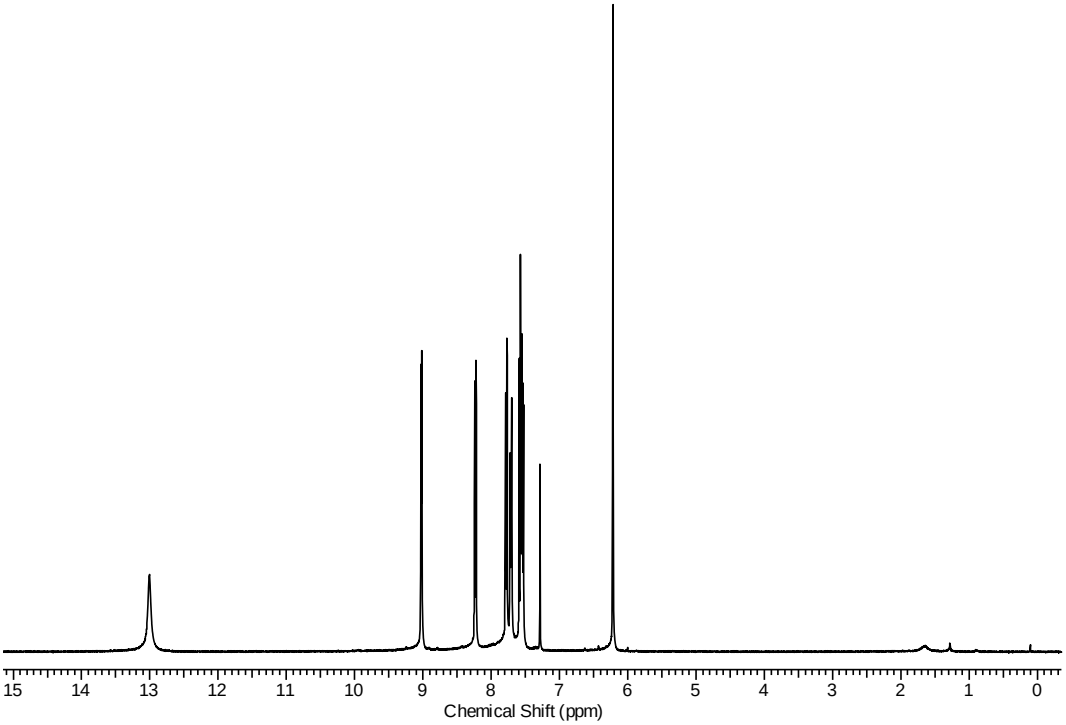


^{19}F NMR spectrum of **6**

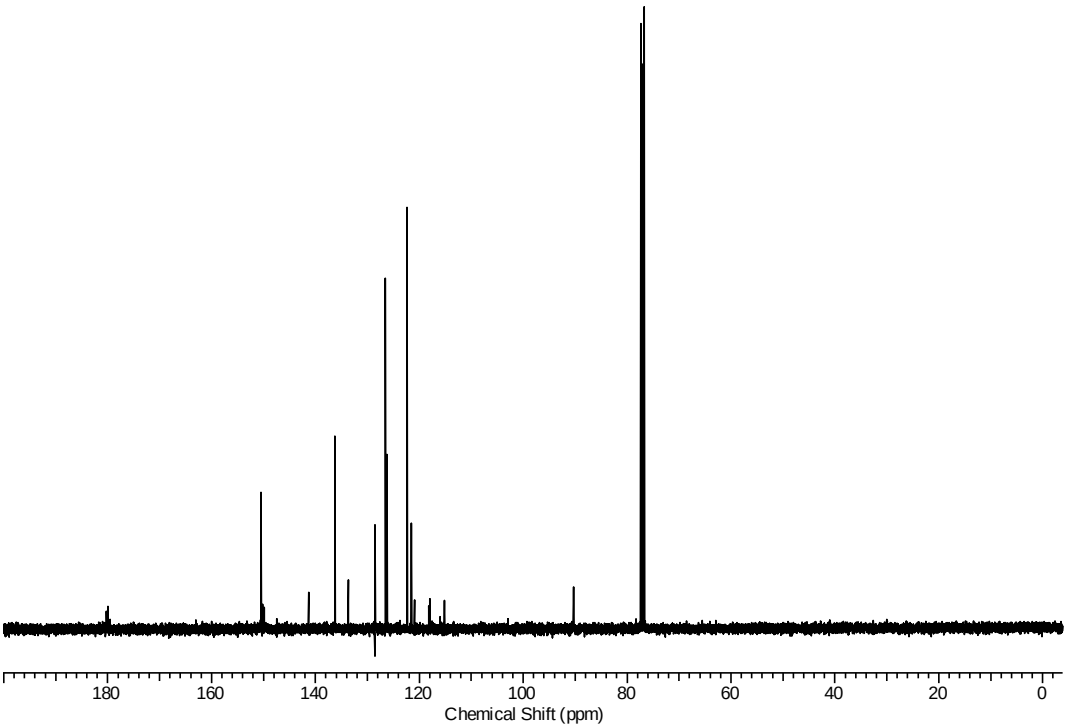


SI Figure 9. NMR spectra of compound **7**.

^{1}H NMR spectrum of **7**



^{13}C NMR spectrum of **7**



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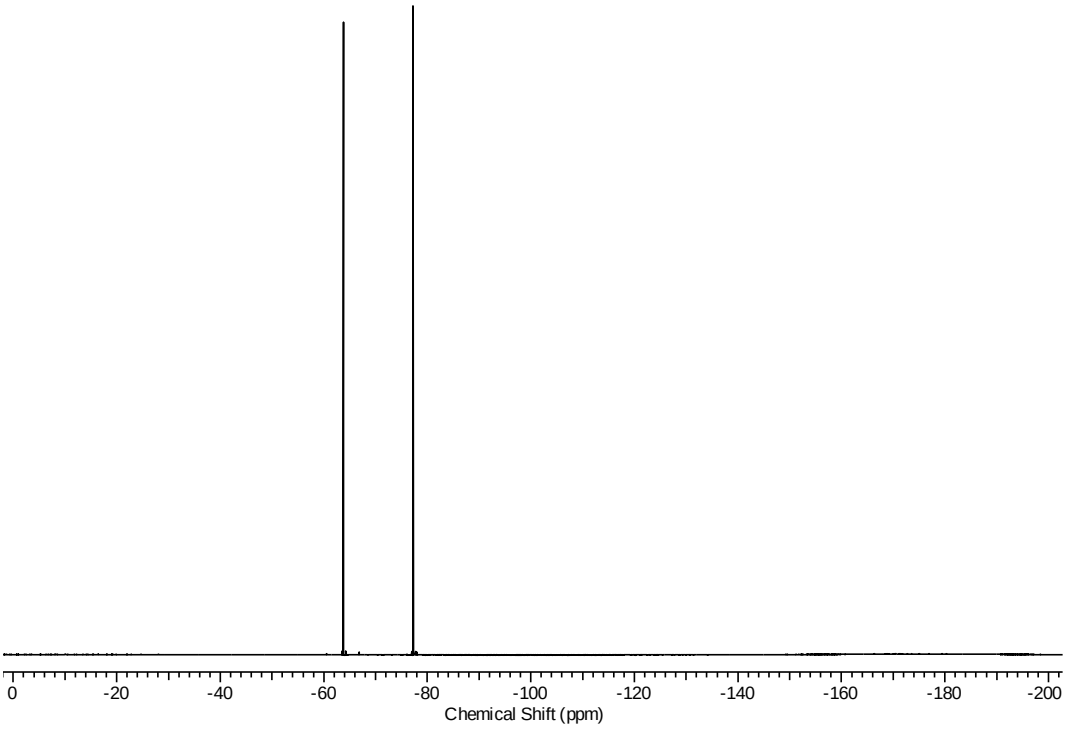
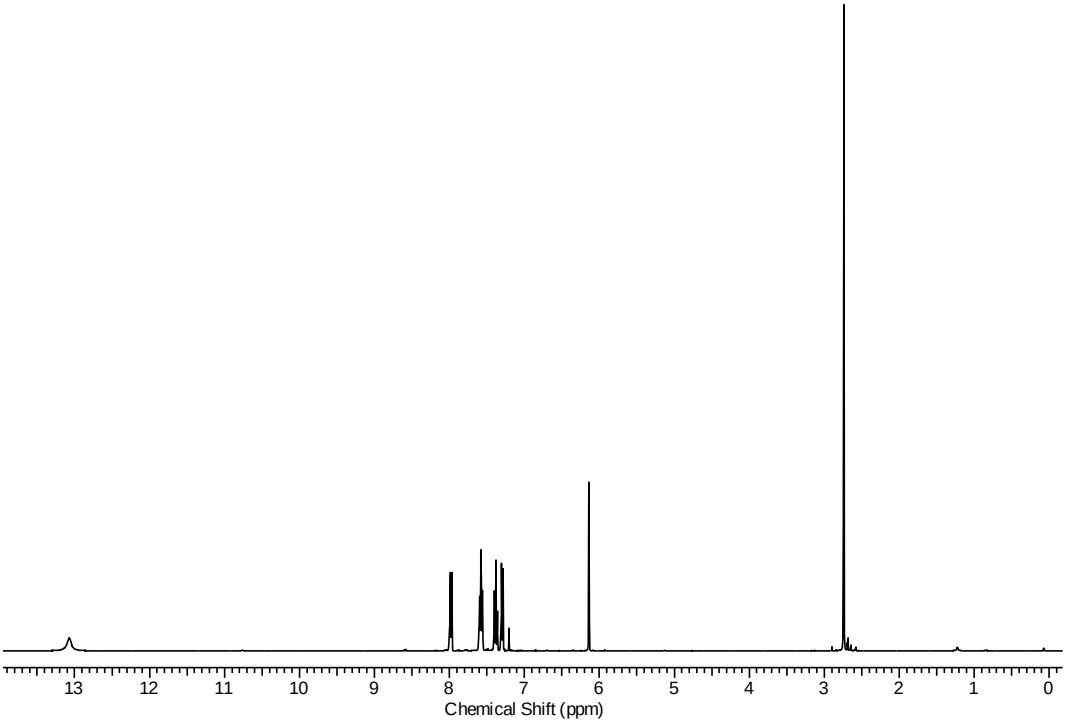
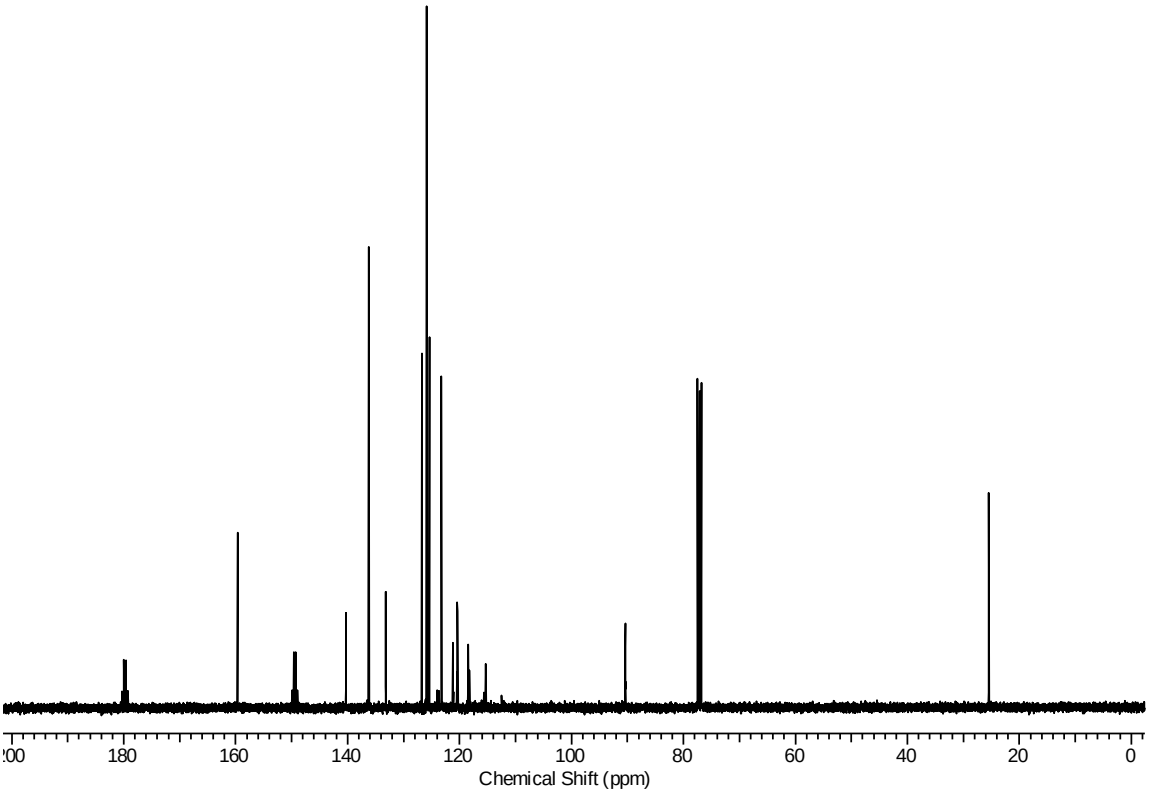


SI Figure 10. NMR spectra of compound **8**.

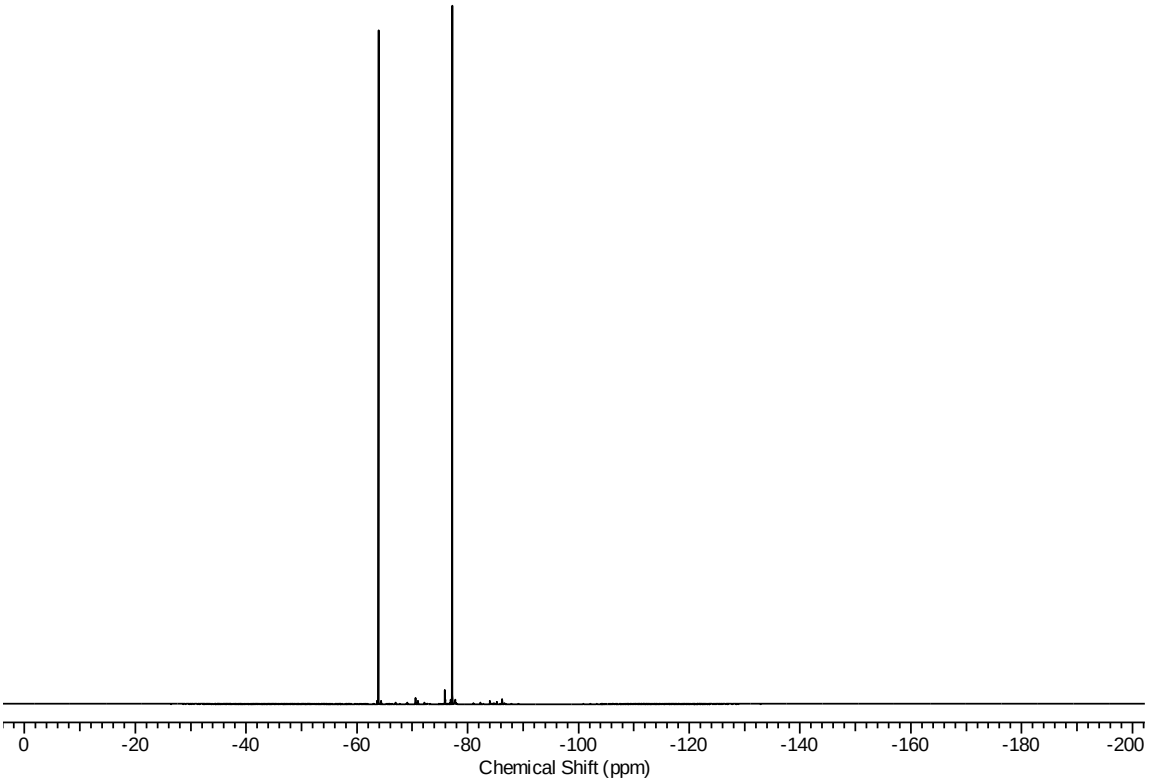
^{1}H NMR spectrum of **8**



^{13}C NMR spectrum of **8**

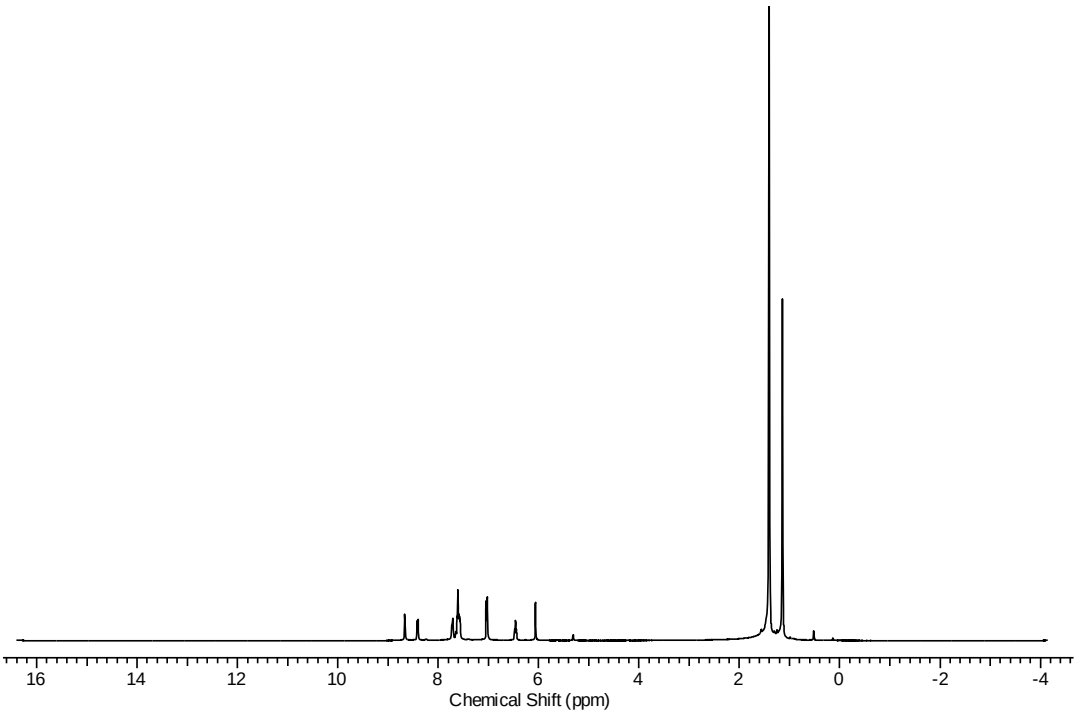


^{19}F NMR spectrum of **8**

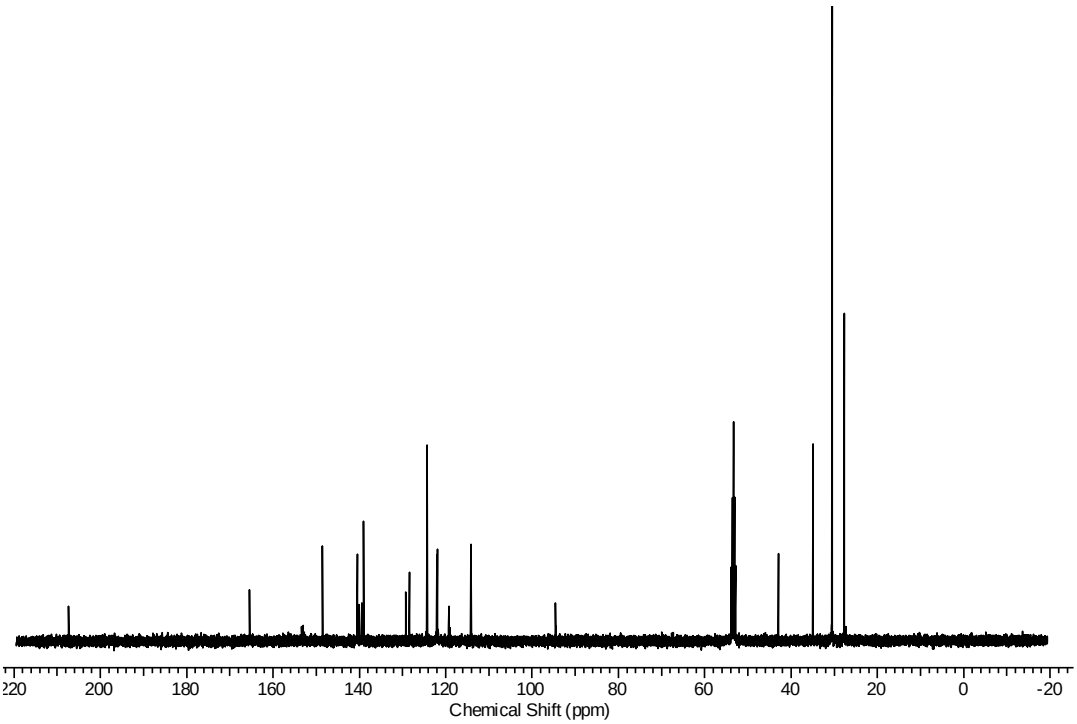


SI Figure 11. NMR spectra of compound **1a**.

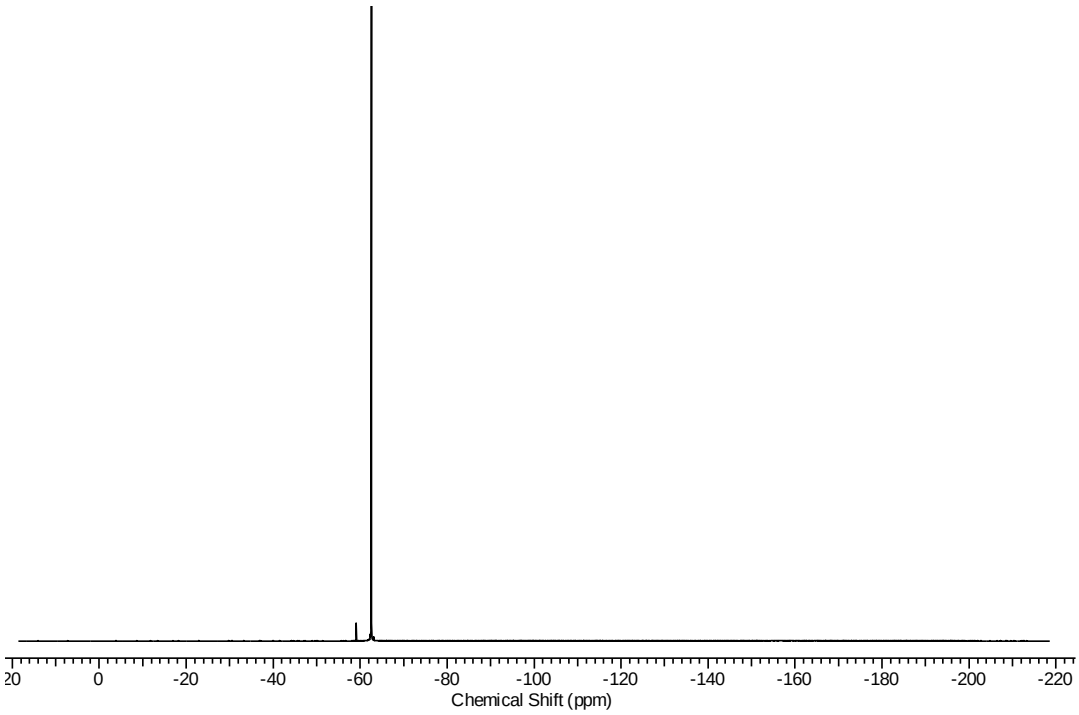
^{1}H NMR spectrum of **1a**



^{13}C NMR spectrum of **1a**

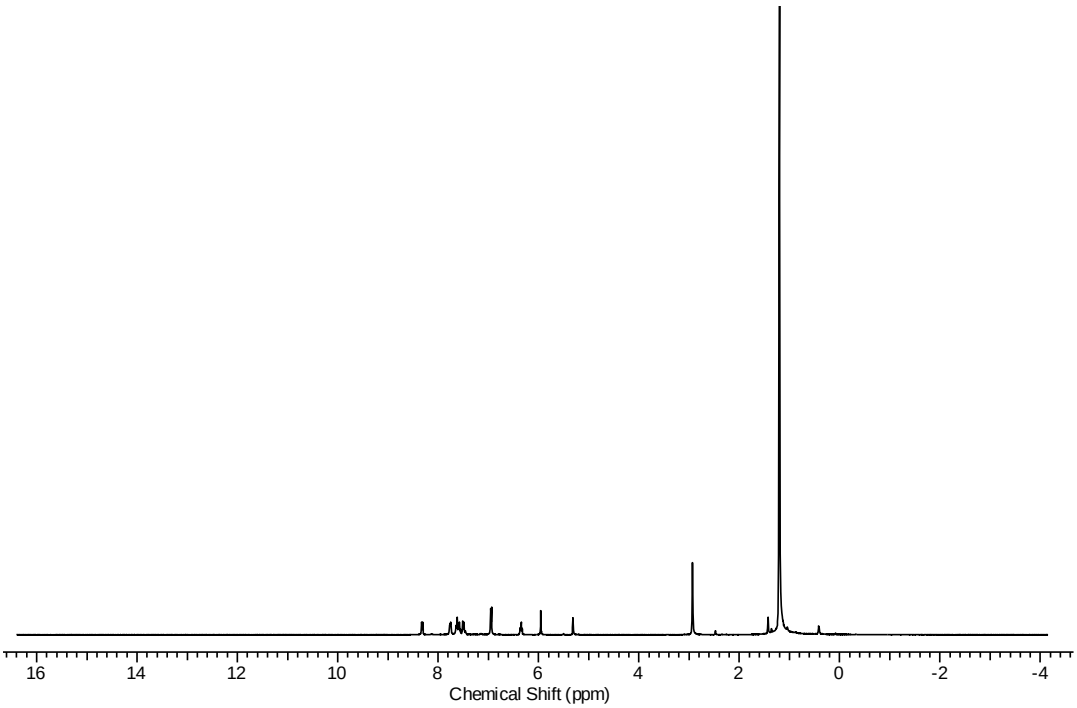


^{19}F NMR spectrum of **1a**

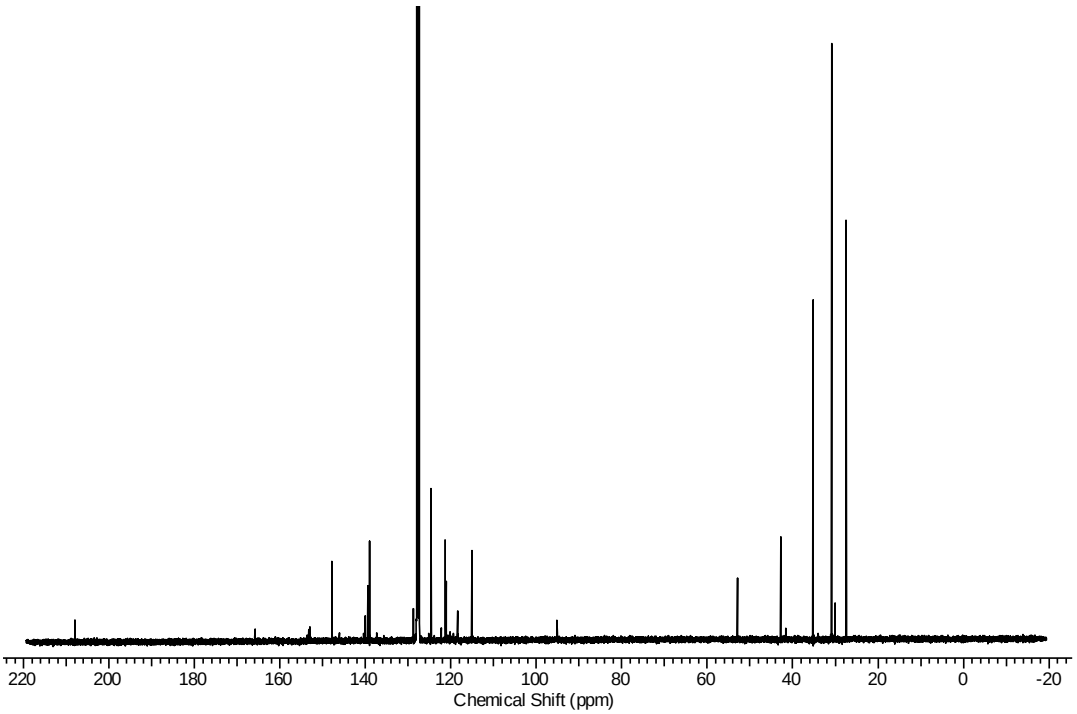


SI Figure 12. NMR spectra of compound **2a**.

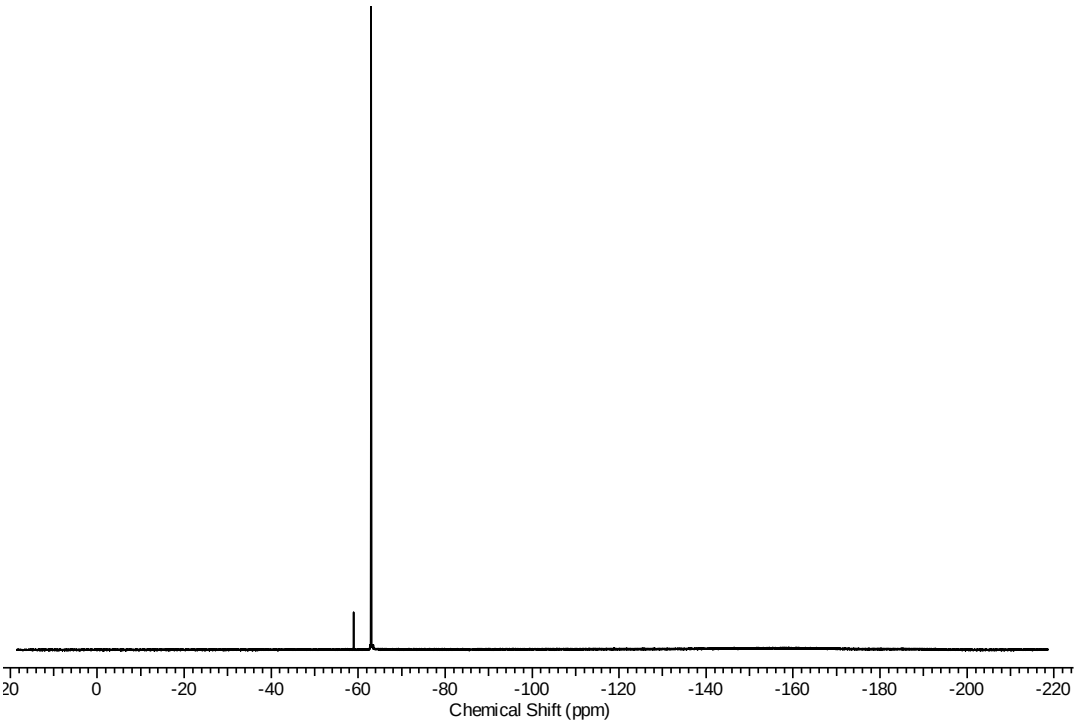
^{1}H NMR spectrum of **2a**



^{13}C NMR spectrum of **2a**

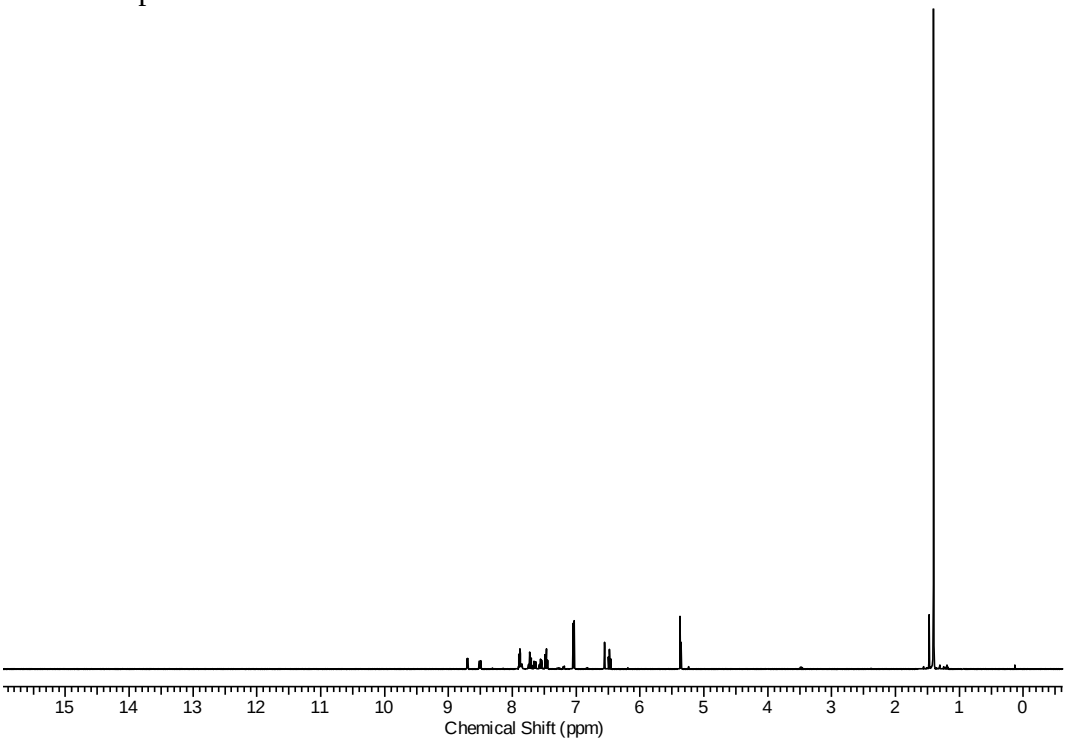


^{19}F NMR spectrum of **2a**

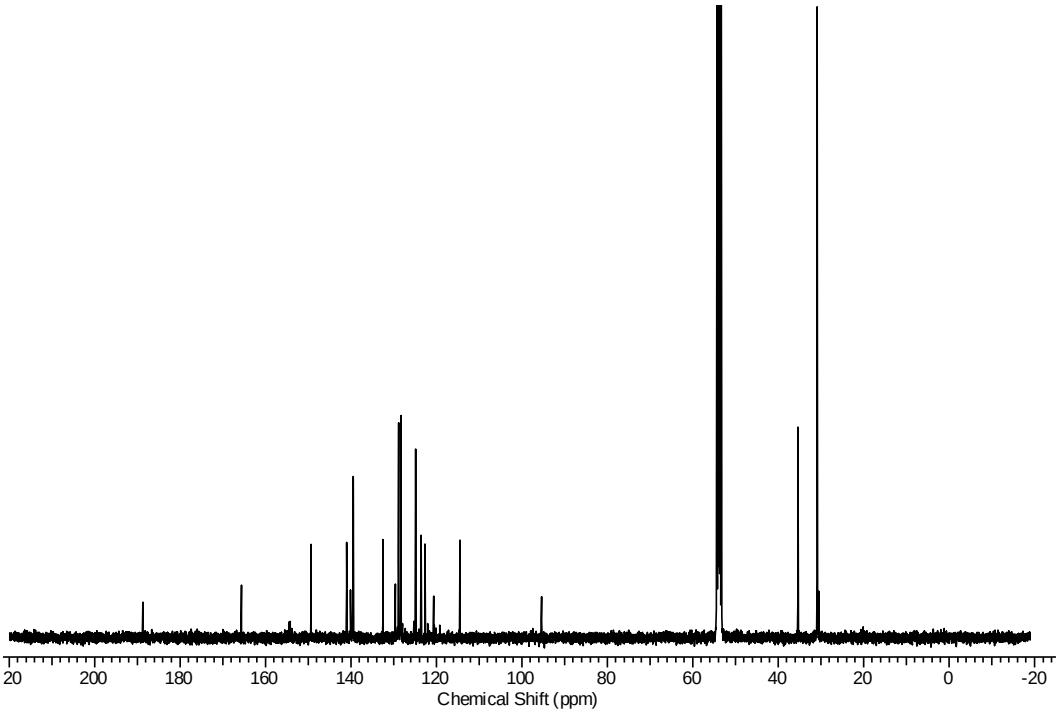


SI Figure 13. NMR spectra of compound **3a**.

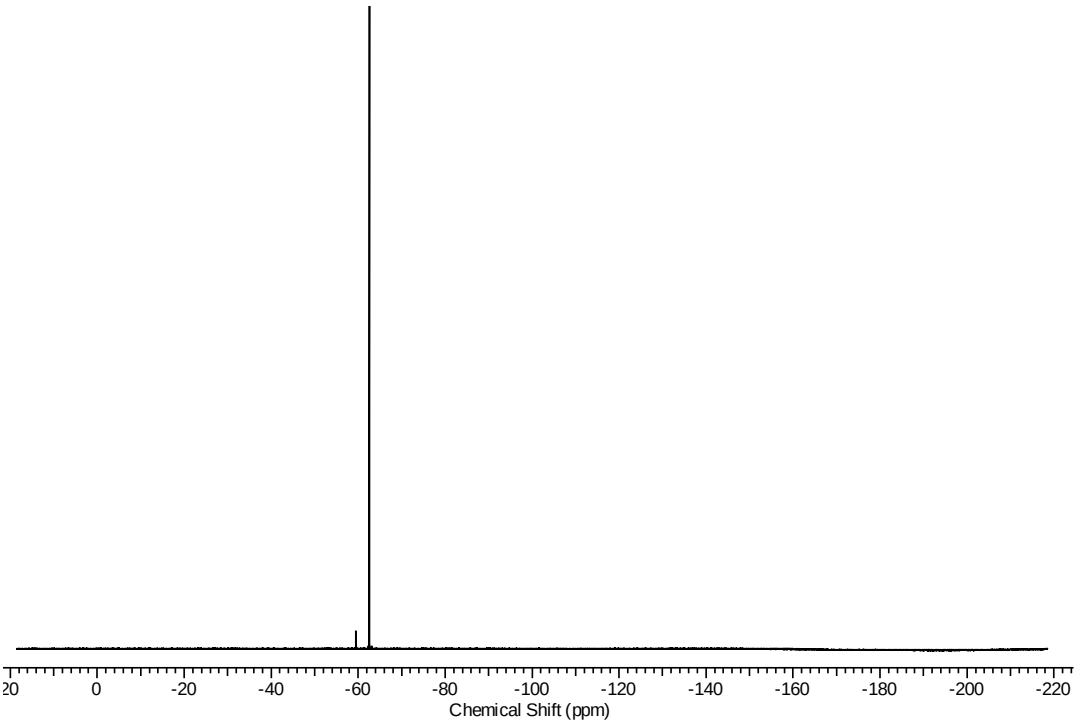
^{1}H NMR spectrum of **3a**



^{13}C NMR spectrum of **3a**

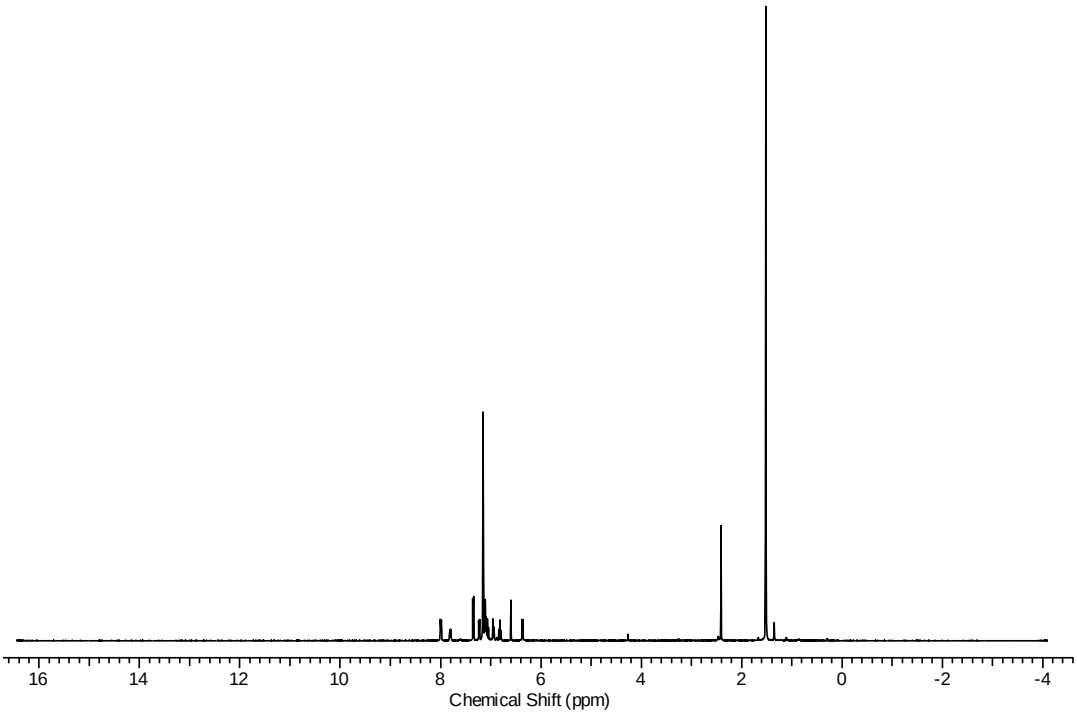


^{19}F NMR spectrum of **3a**

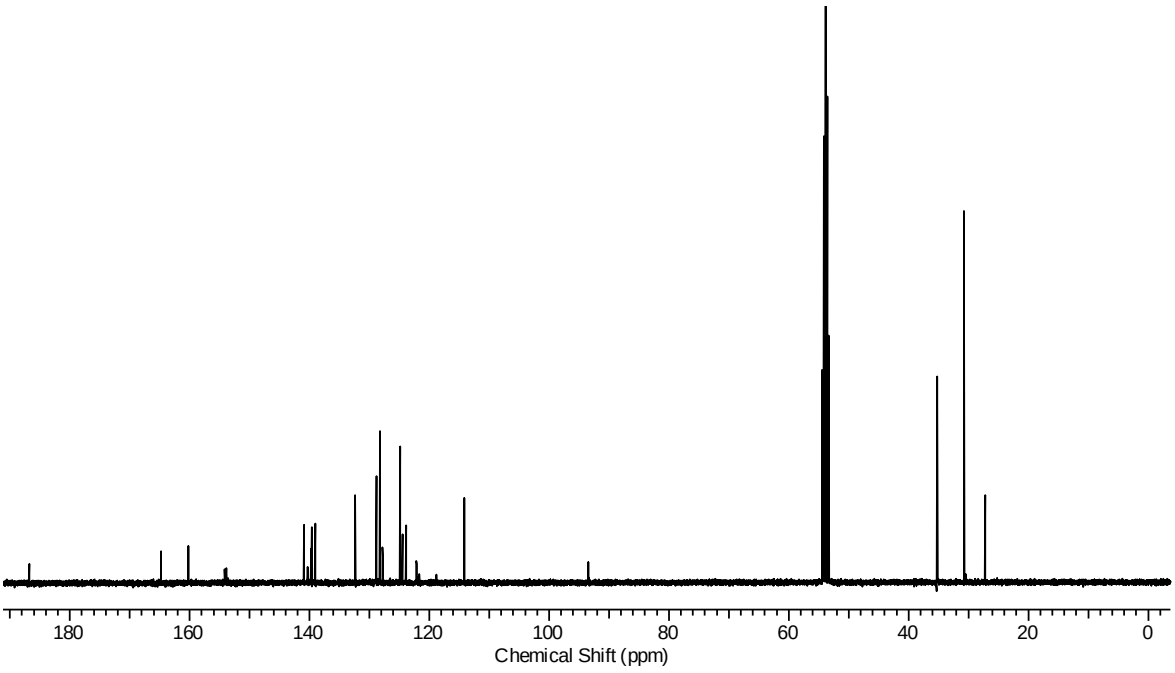


SI Figure 14. NMR spectra of compound **4a**.

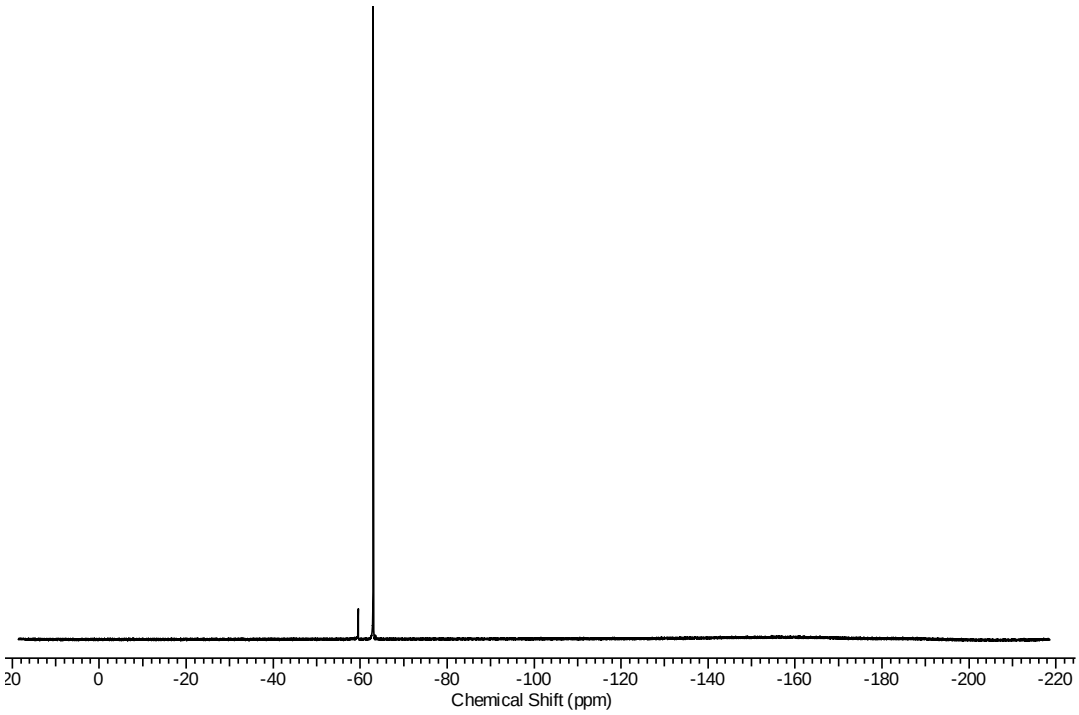
^{1}H NMR spectrum of **4a**



^{13}C NMR spectrum of **4a**

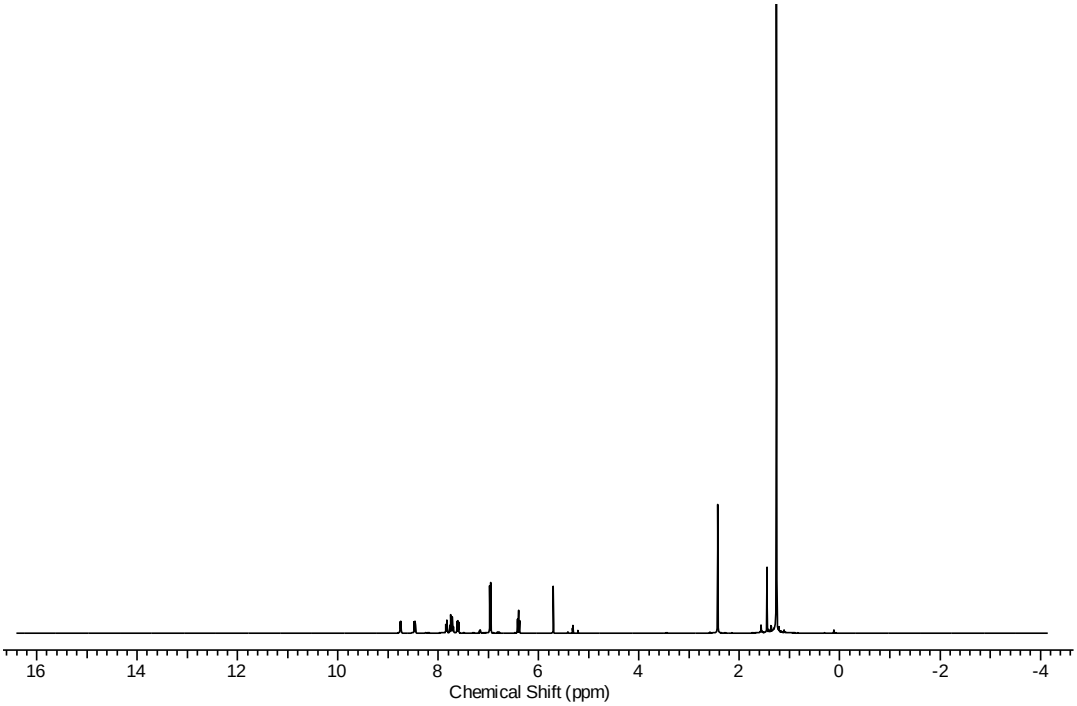


^{19}F NMR spectrum of **4a**

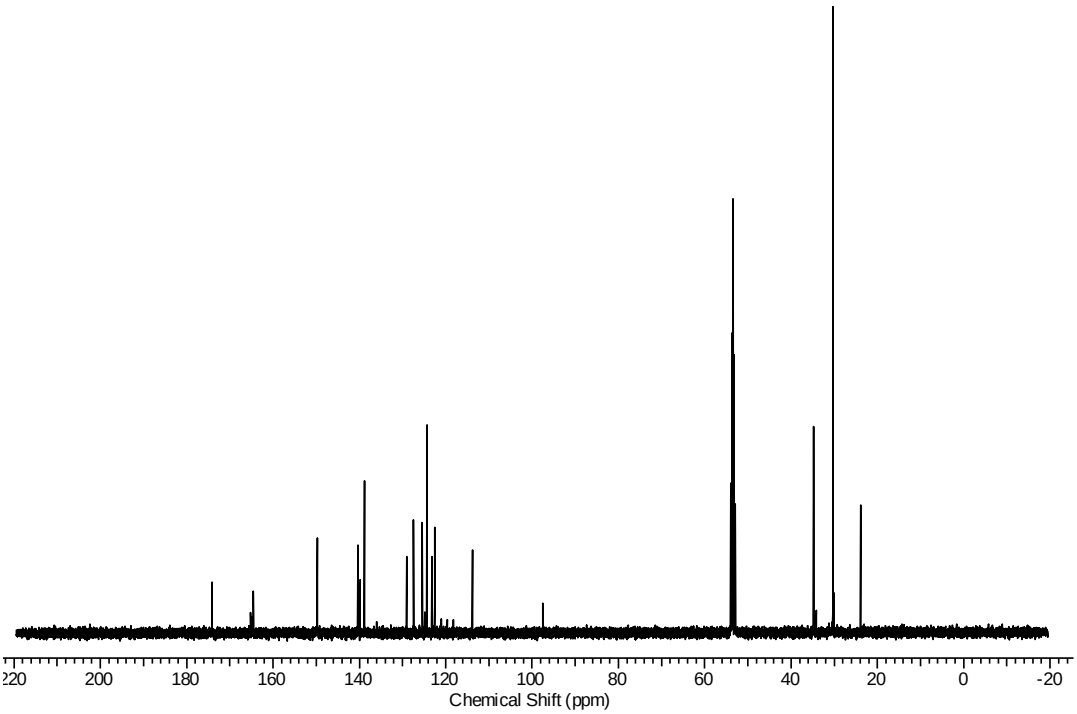


SI Figure 15. NMR spectra of compound **5a**.

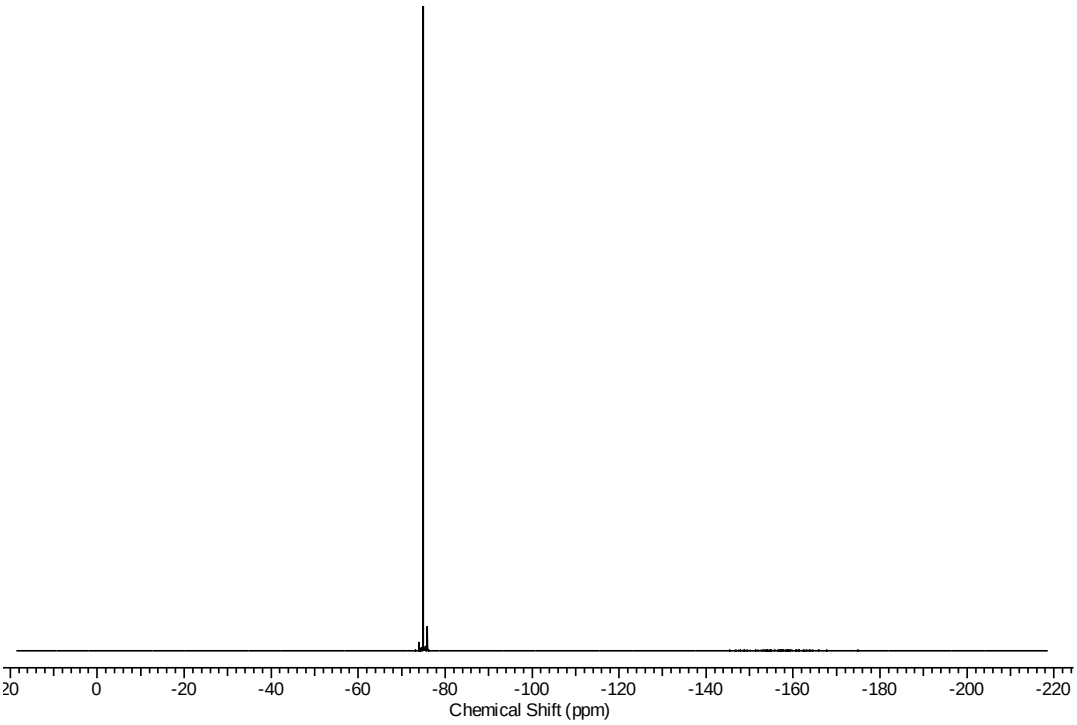
^{1}H NMR spectrum of **5a**



^{13}C NMR spectrum of **5a**

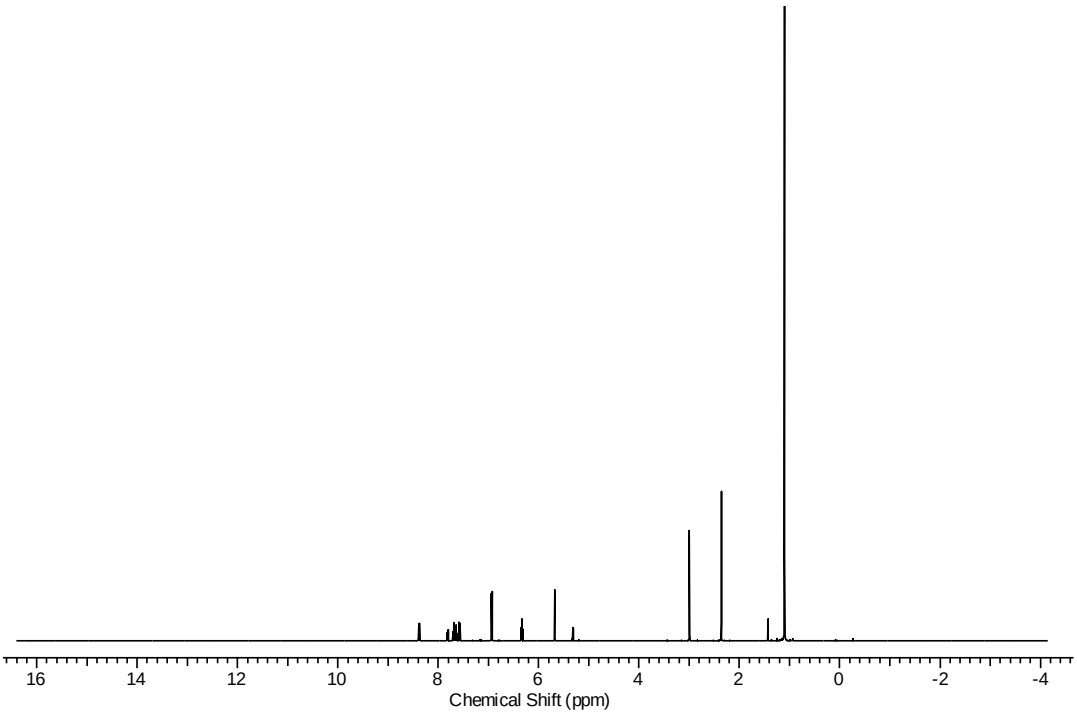


^{19}F NMR spectrum of **5a**

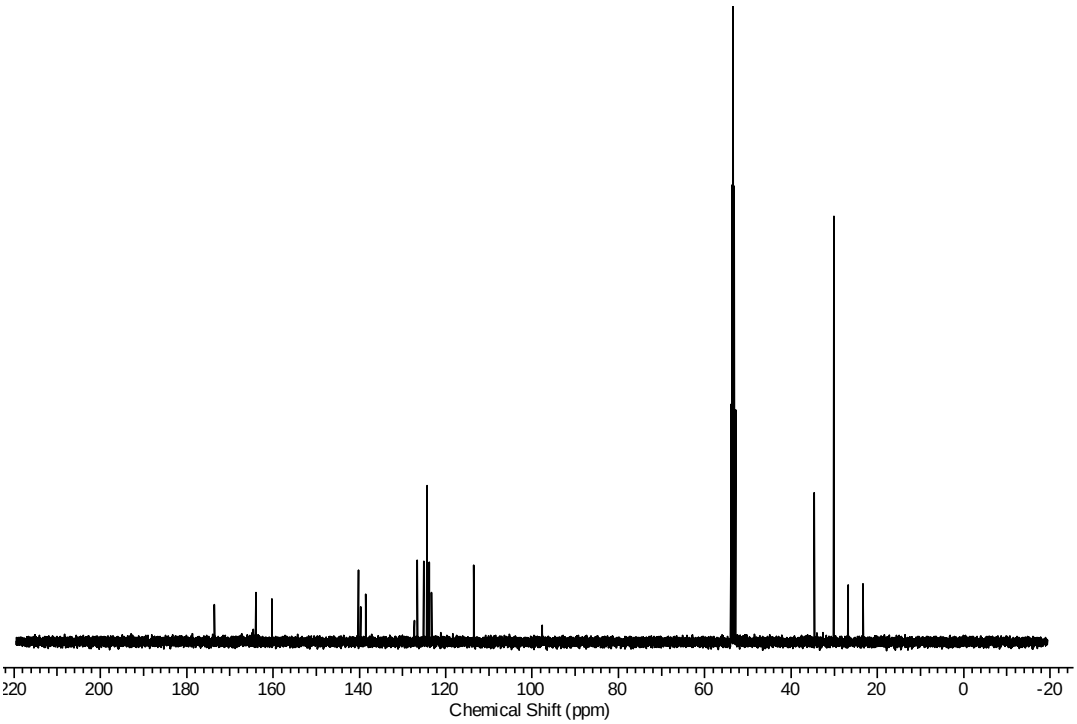


SI Figure 16. NMR spectra of compound **6a**.

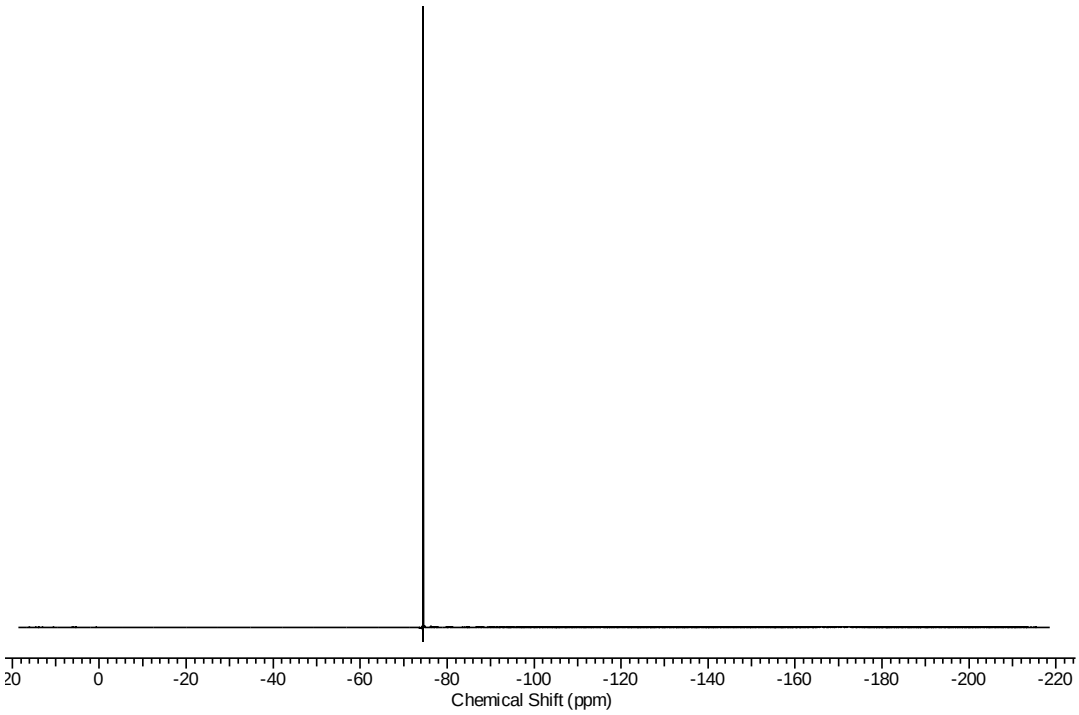
^{1}H NMR spectrum of **6a**



^{13}C NMR spectrum of **6a**

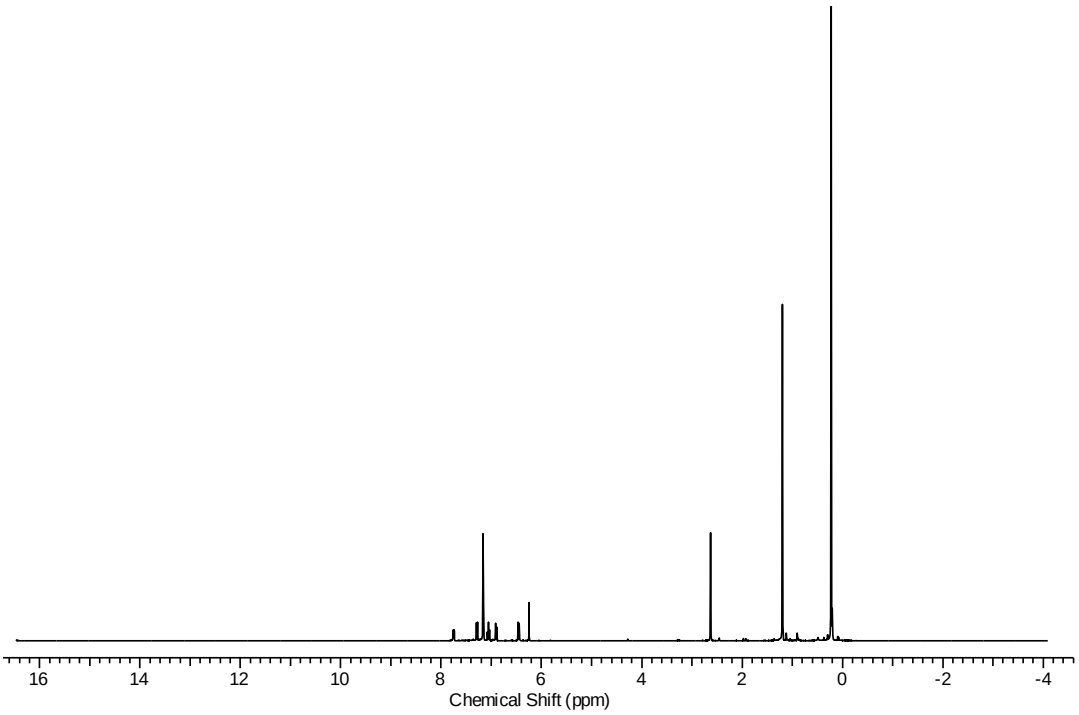


^{19}F NMR spectrum of **6a**

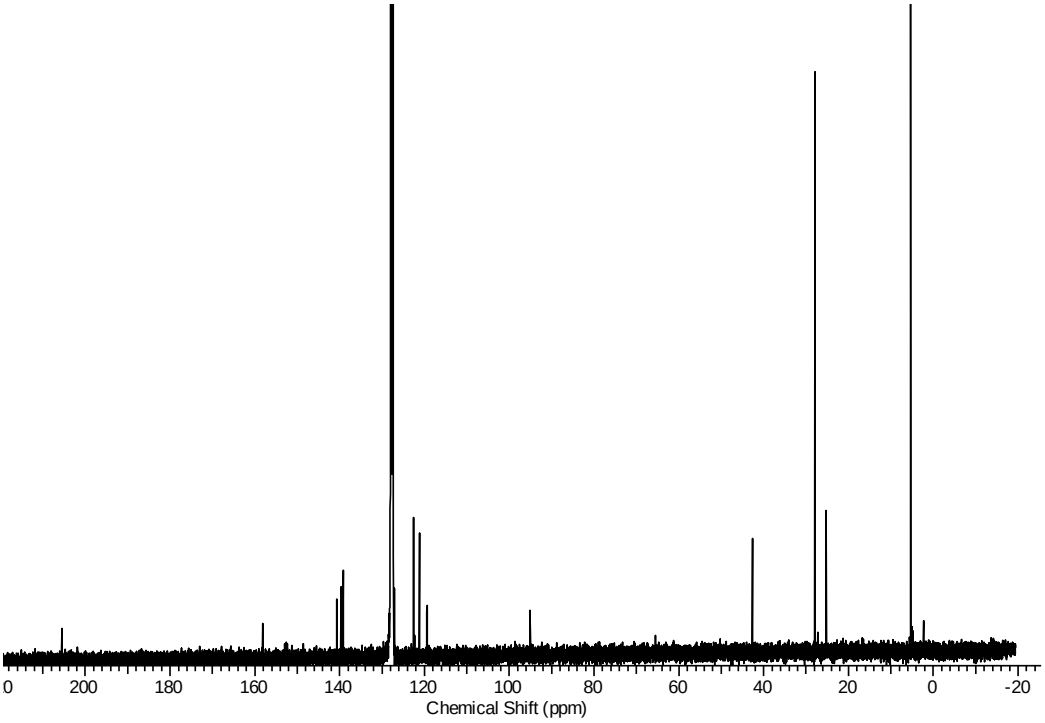


SI Figure 17. NMR spectra of compound **2b**.

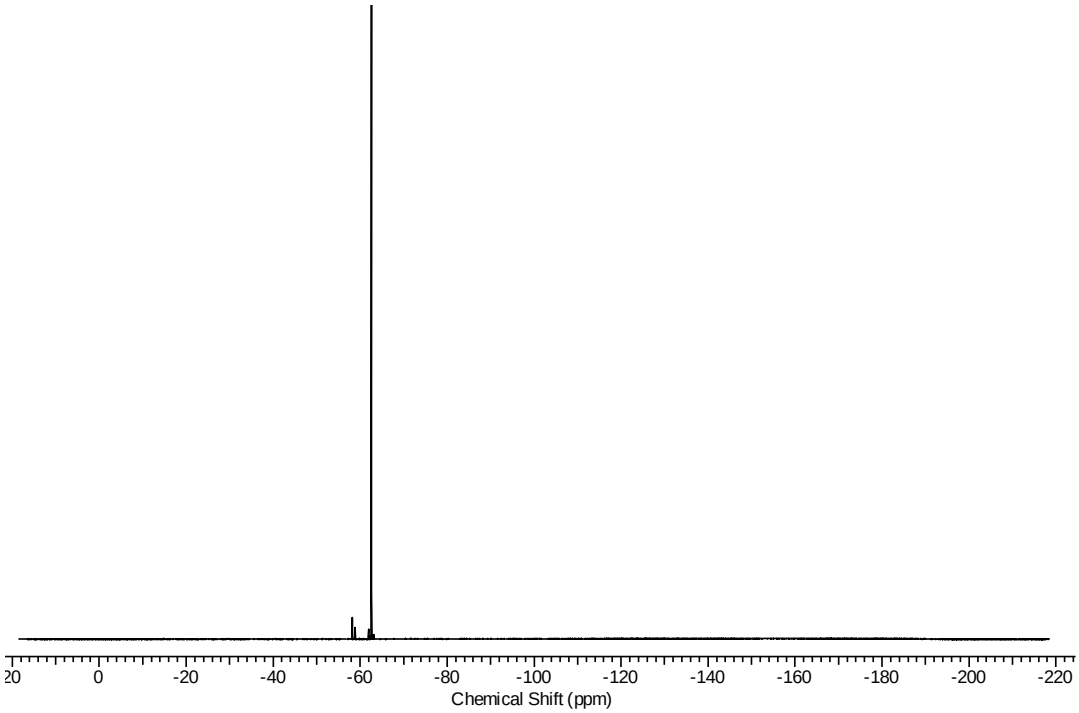
^{1}H NMR spectrum of **2b**



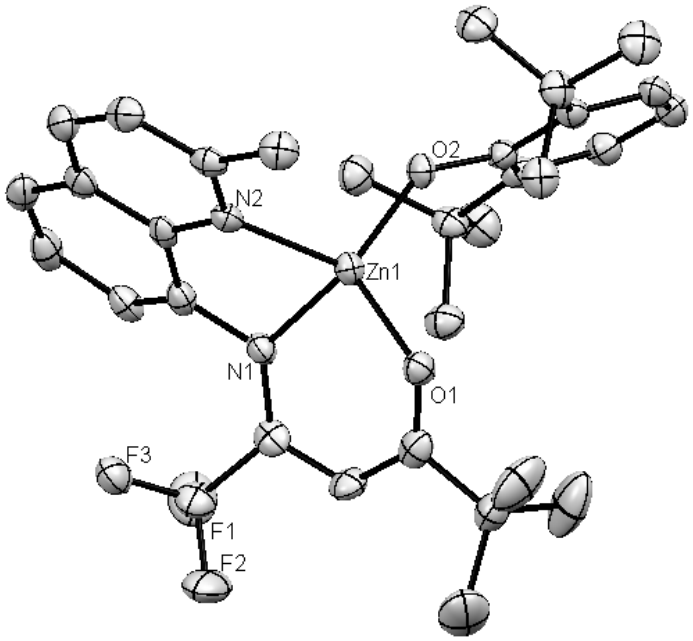
^{13}C NMR spectrum of **2b**



^{19}F NMR spectrum of **2b**

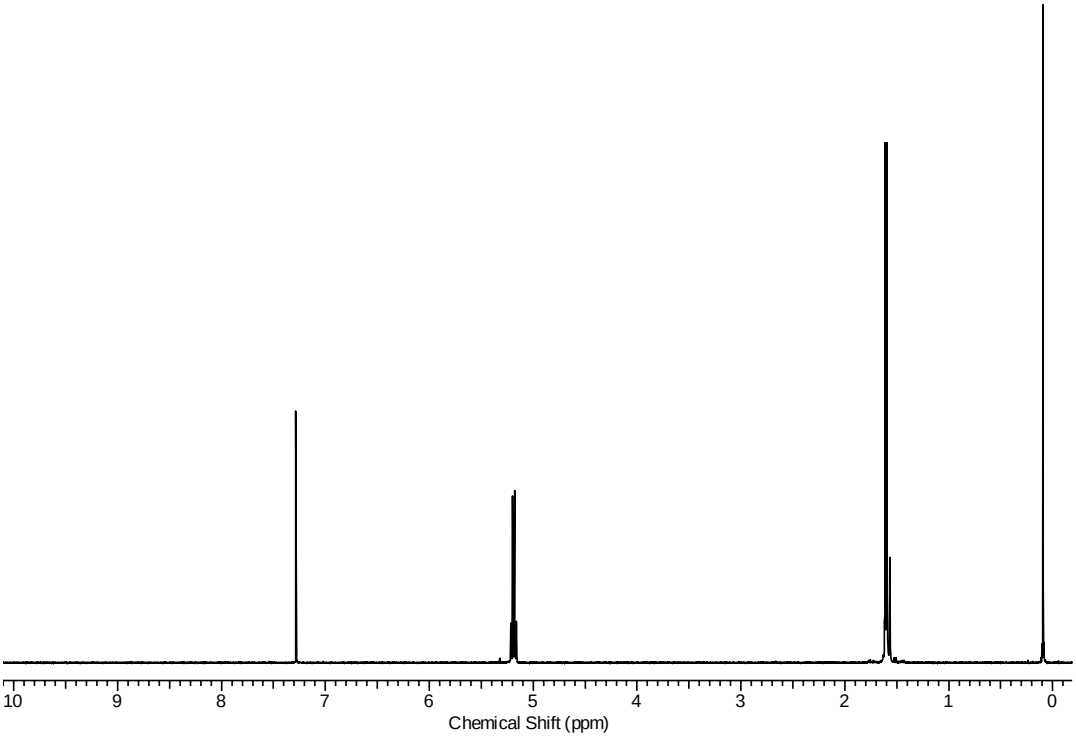


SI Figure 18. ORTEP diagram of the molecular structure of **2a** with thermal ellipsoids drawn at the 50% probability level. The hydrogen atoms are omitted for clarity.

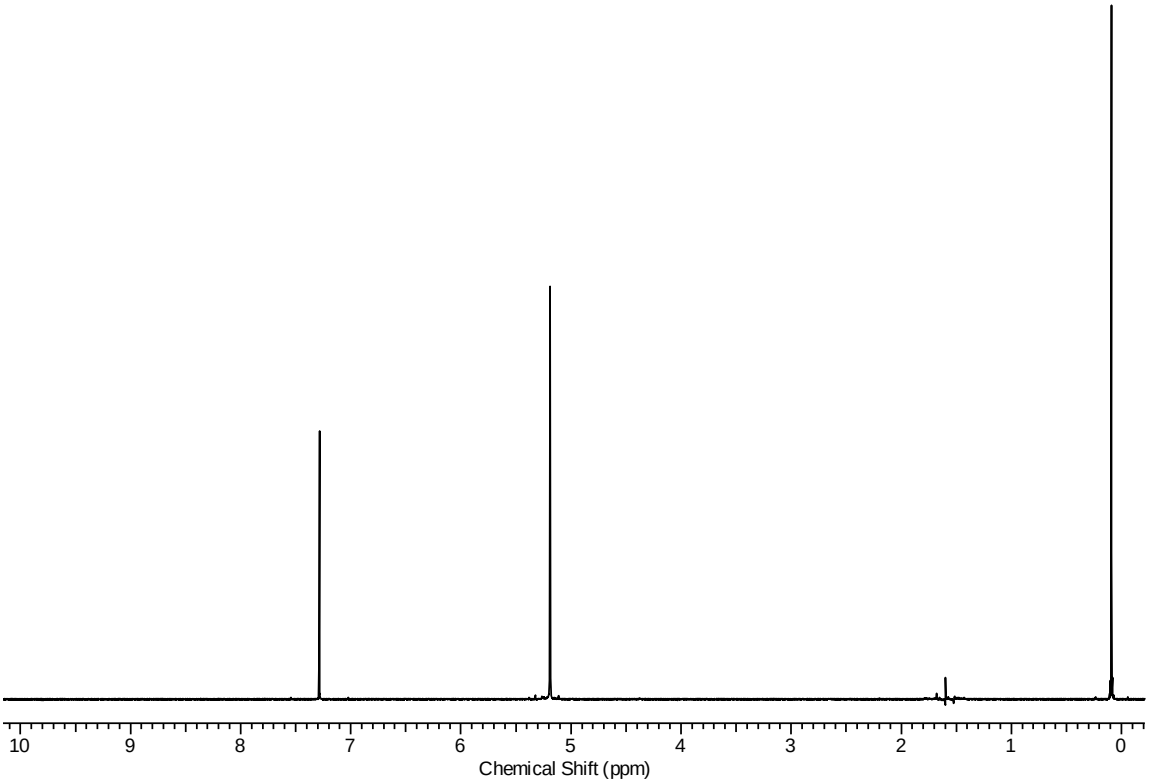


Data on isolated Poly-lactic acid

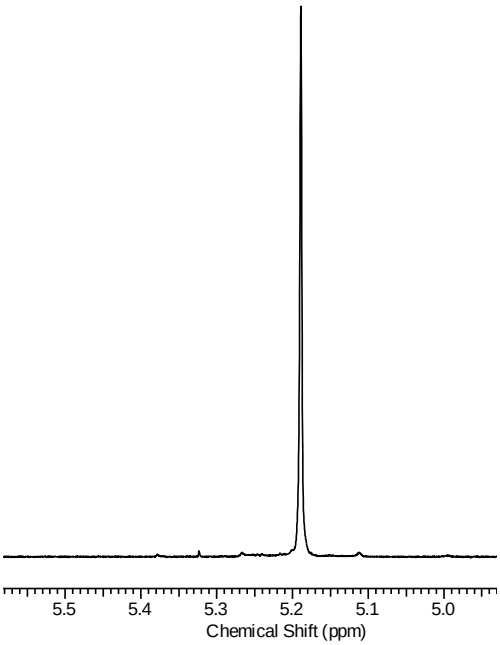
SI Figure 19. 1H NMR spectrum of isolated PLLA from [L-lac]:[**1a**]=500 to 1, Table 4 entry 4



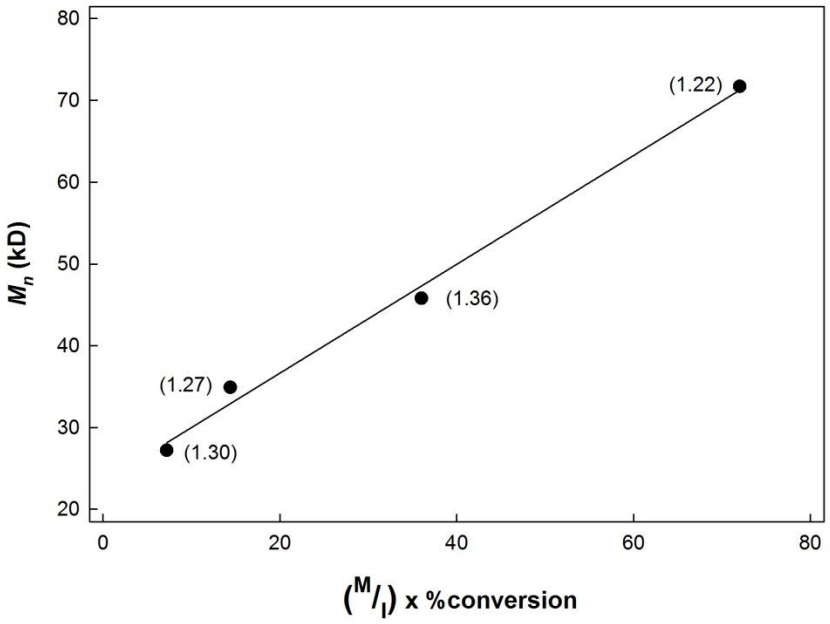
SI Figure 20. {1H}1H NMR spectrum of isolated PLLA from [L-lac]:[**1a**]=500 to 1, Table 4 entry 4



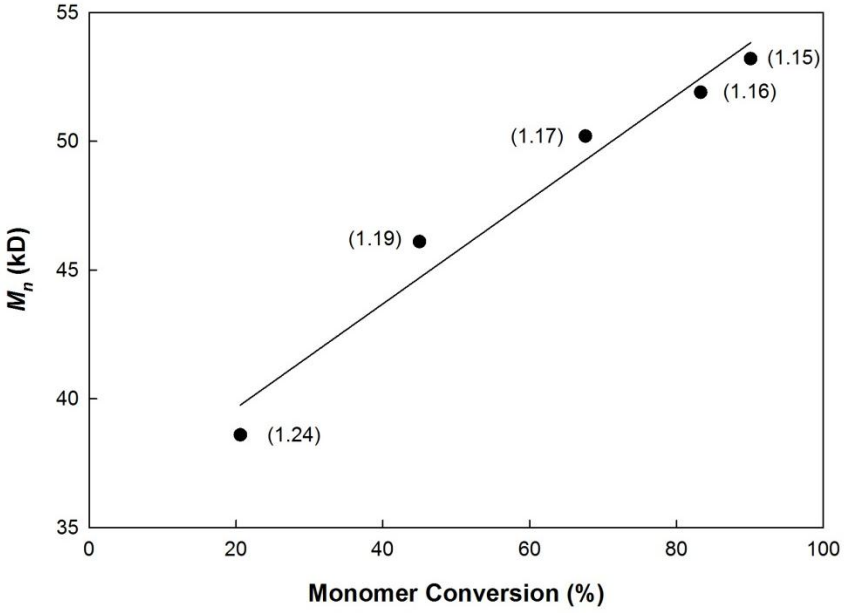
Inset from above {1H}1H NMR spectrum



SI Figure 21. Linear relationship observed between M_n and monomer/initiator ratio of PLA produced from the ROP of L-lactide by **1a** in CH_2Cl_2.



SI Figure 22. PLA M_n versus percentage conversion for the ring opening polymerization of L-Lactide by **1a**; [L-lactide]/[**1a**]$_0$ = **100**, $CDCl_3$, ambient temperature. PDI values are provided in parentheses.



SI Figure 23. Chromatograms of polymeric materials isolated in double feed experiment with **1a**. Chromatogram of isolated PLLA after treatment of **1a** with 250 mg of L-lactide and 3 h of reaction time (solid line, M_n= 17.9 kDa, PDI= 1.27) and chromatogram of isolated PLLA after second addition of 250 mg of L-lactide and 3 additional hours of reaction time (dashed line, M_n= 30.1 kDa, PDI= 1.24).