

## Supporting Information

### **Half-sandwich ruthenium complexes with acylhydrazone ligands: synthesis and catalytic activity in N-alkylation of hydrazides**

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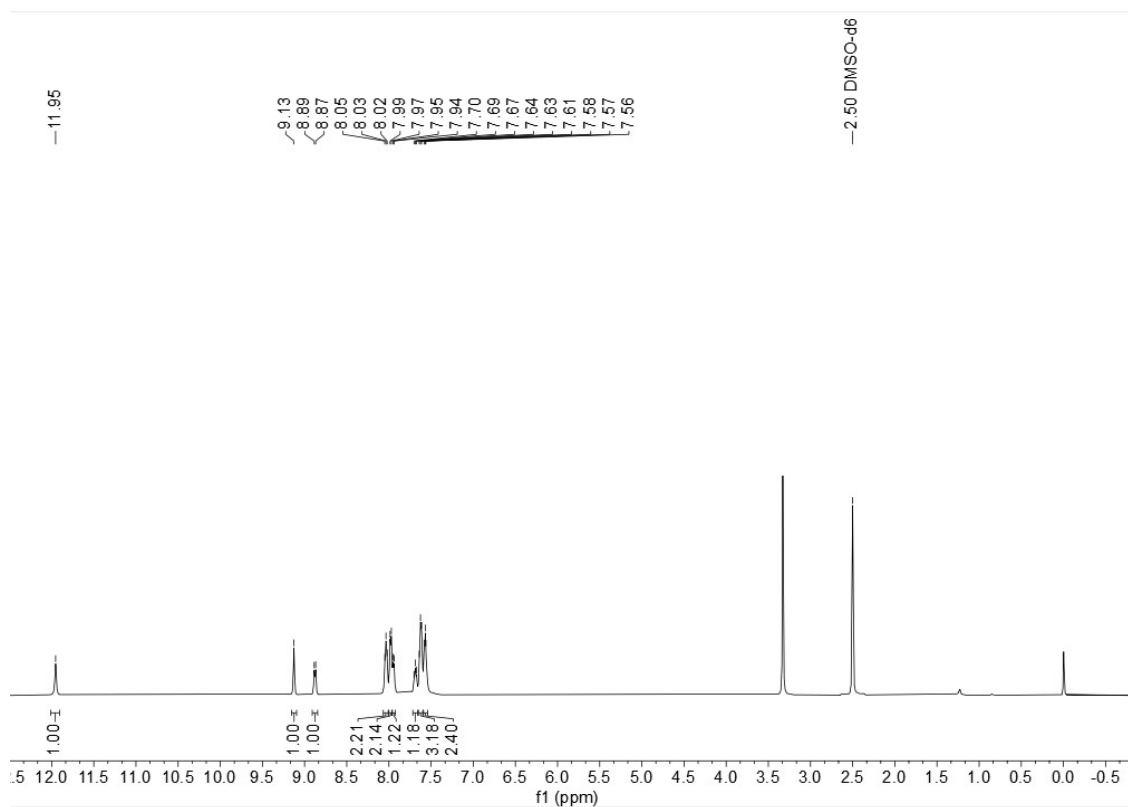


Figure S1.  $^1\text{H}$  NMR spectrum of L1

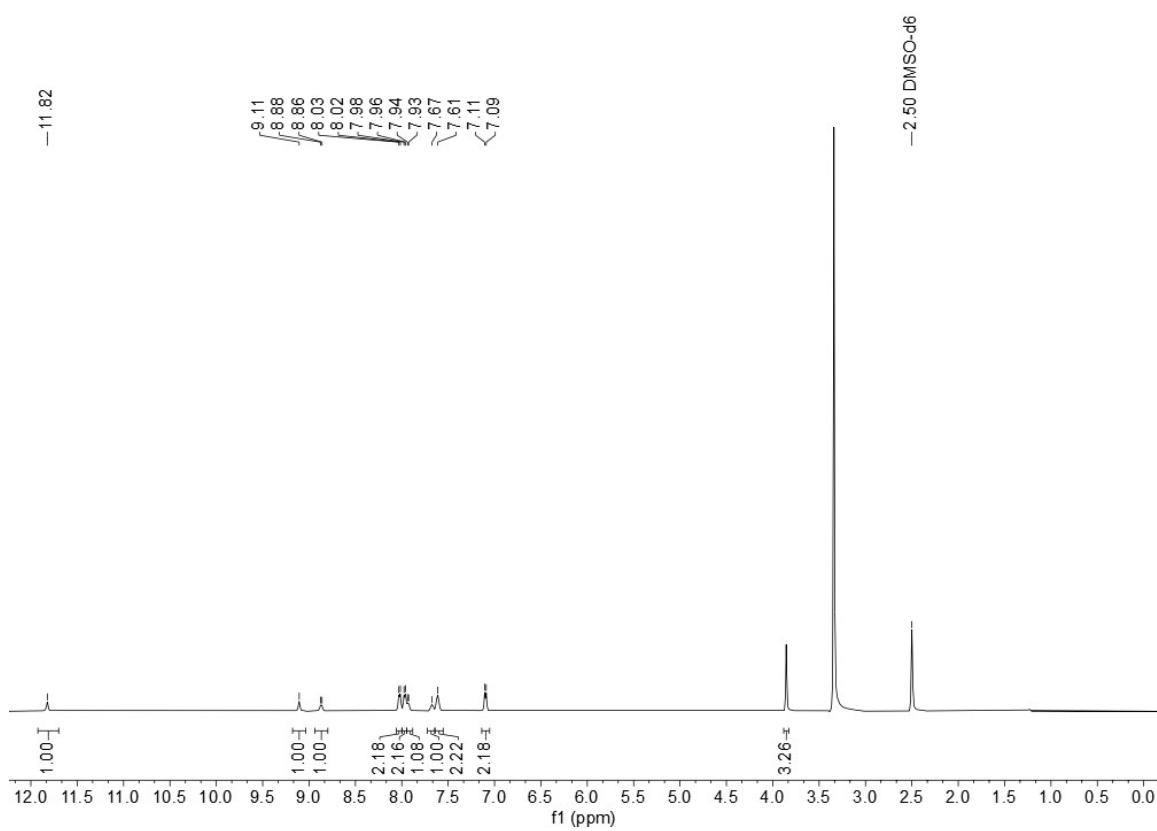


Figure S2.  $^1\text{H}$  NMR spectrum of L2

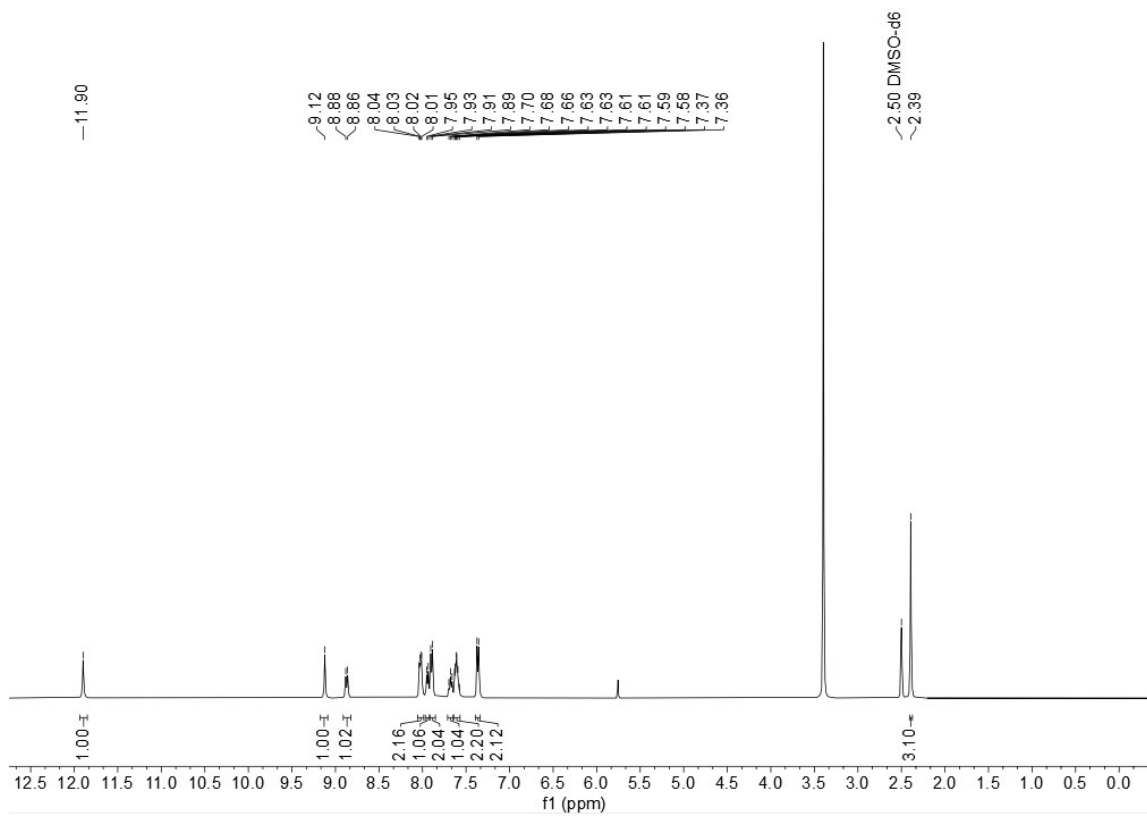


Figure S3. <sup>1</sup>H NMR spectrum of L3

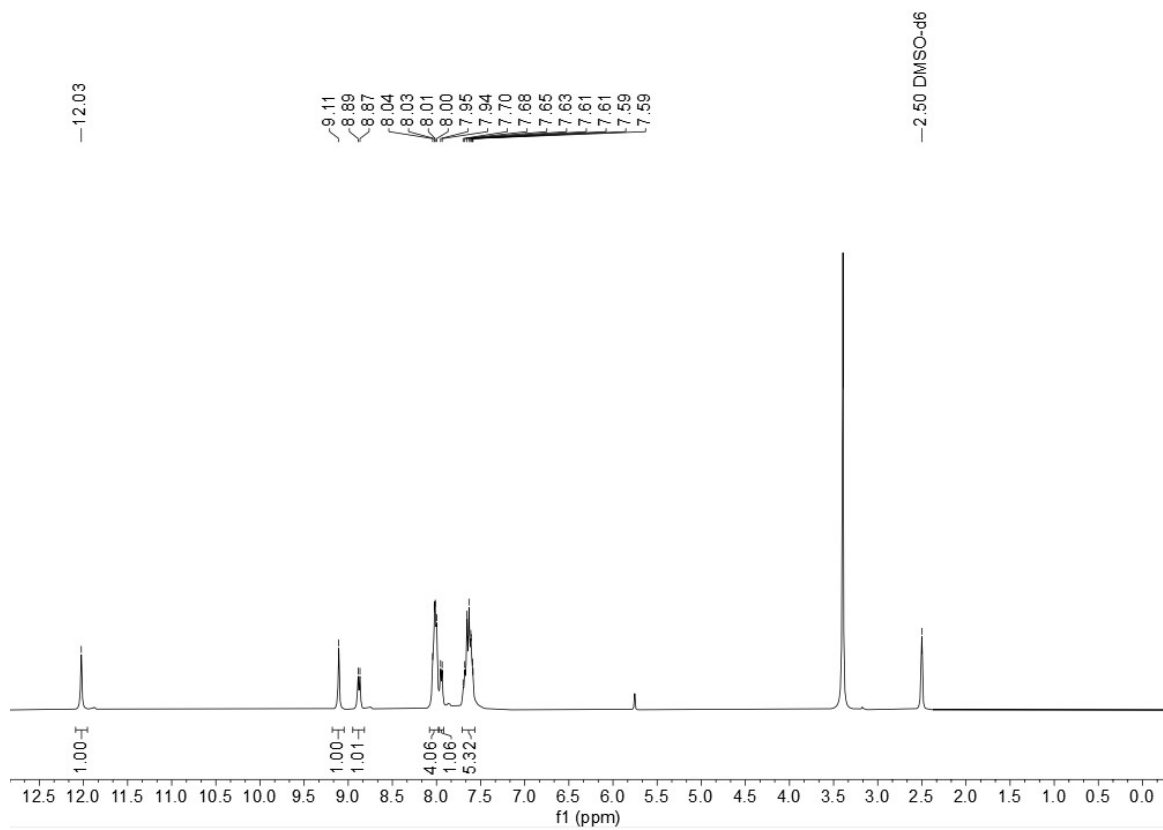


Figure S4. <sup>1</sup>H NMR spectrum of L4

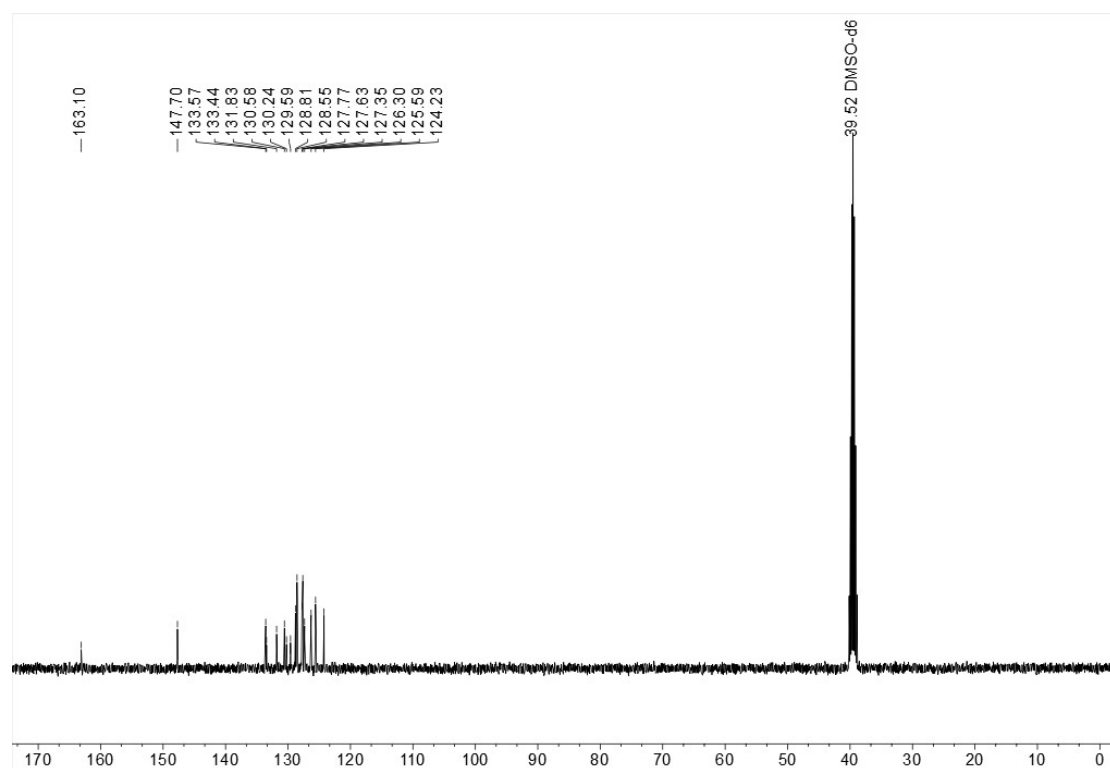


Figure S5.  $^{13}\text{C}$  NMR spectrum of L1

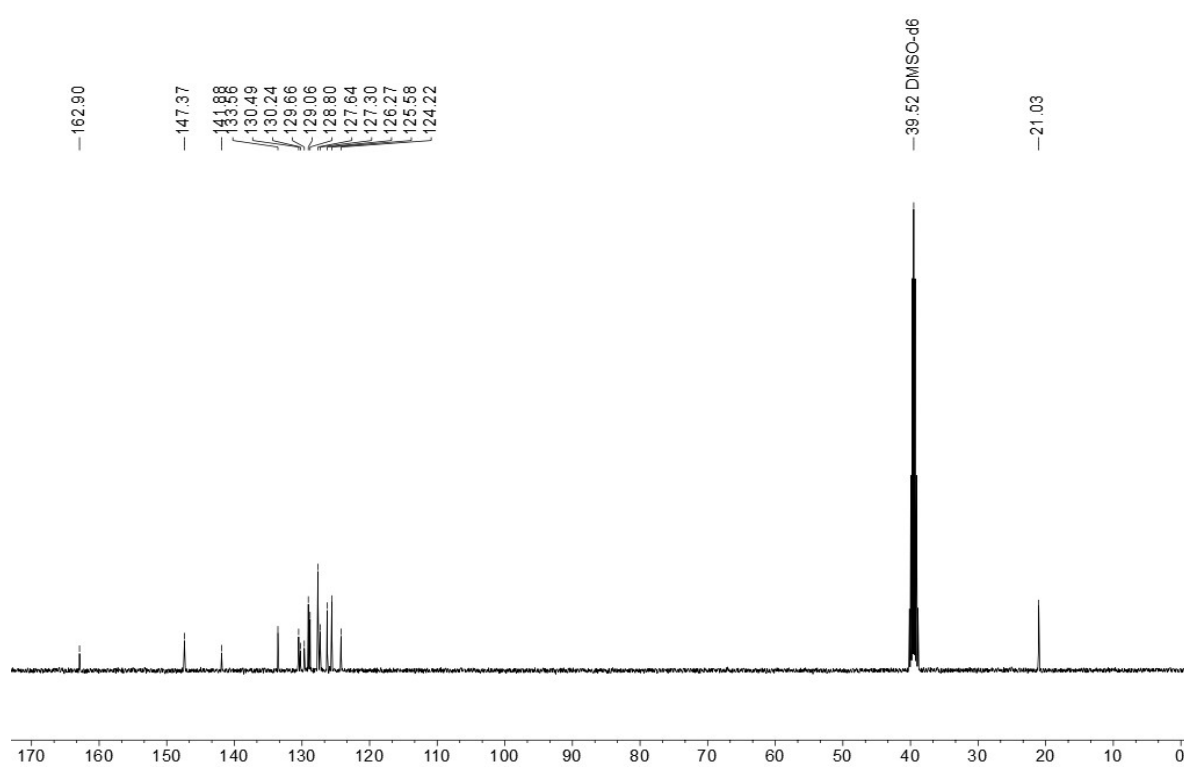


Figure S6.  $^{13}\text{C}$  NMR spectrum of L2

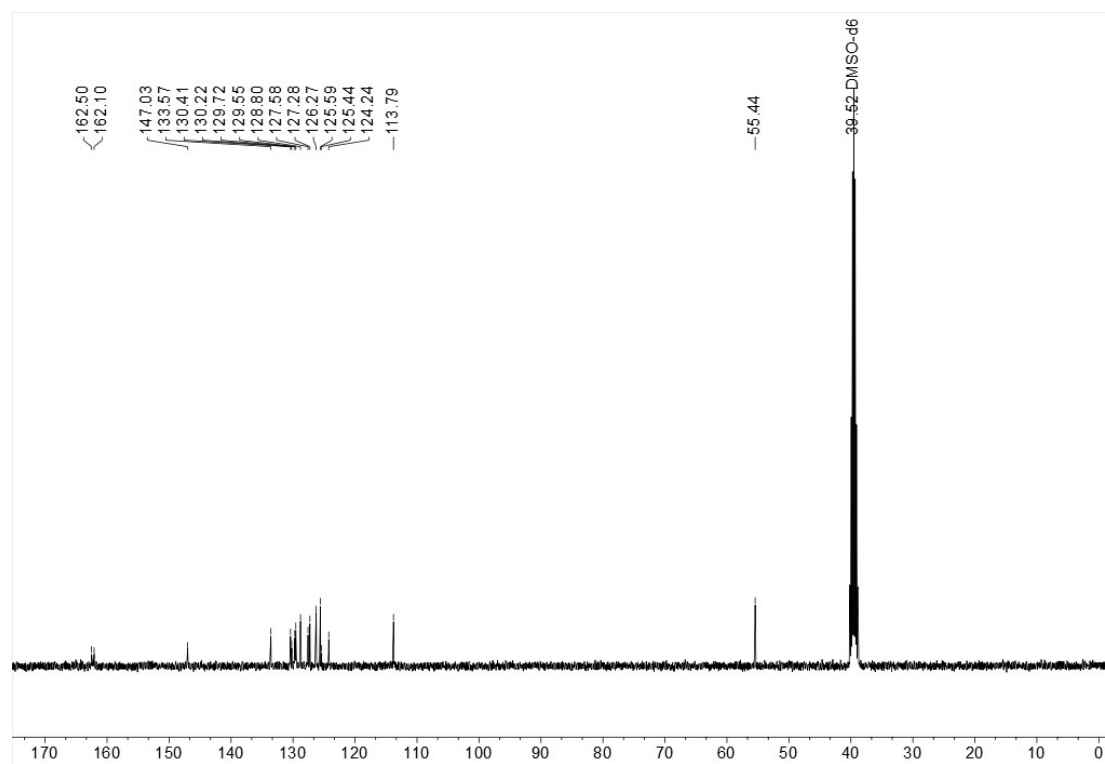


Figure S7.  $^{13}\text{C}$  NMR spectrum of L3

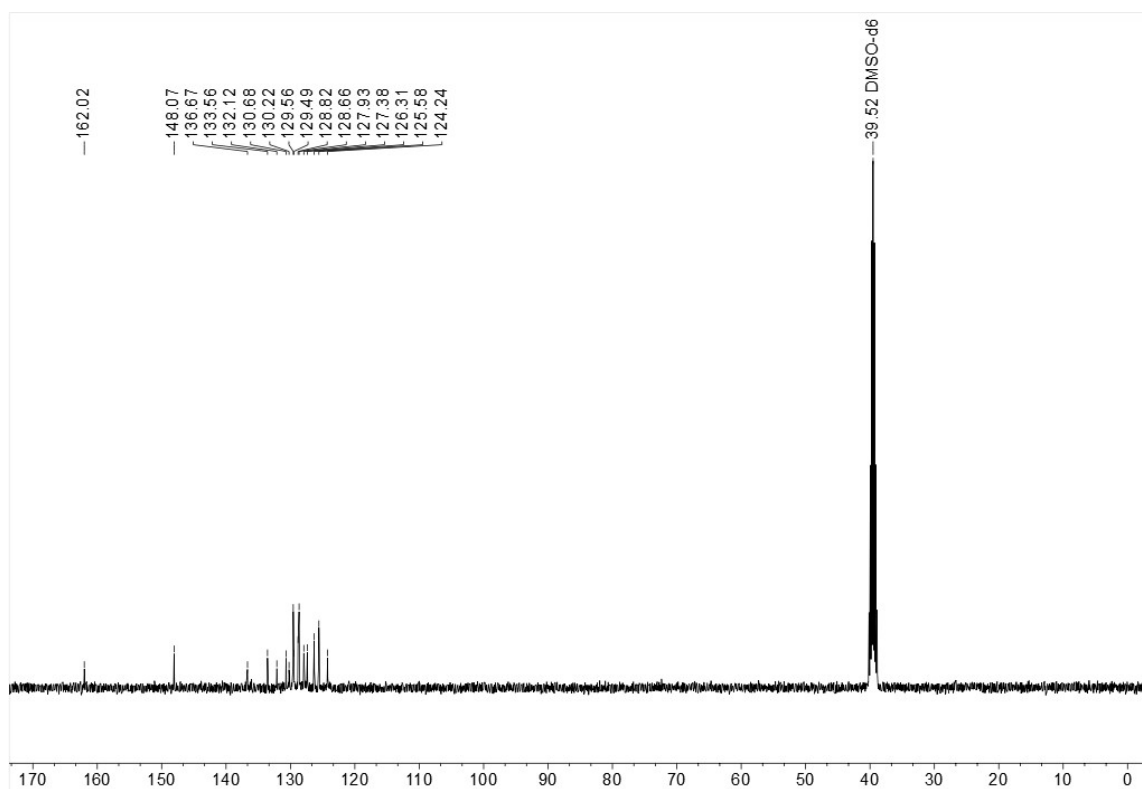


Figure S8.  $^{13}\text{C}$  NMR spectrum of L4

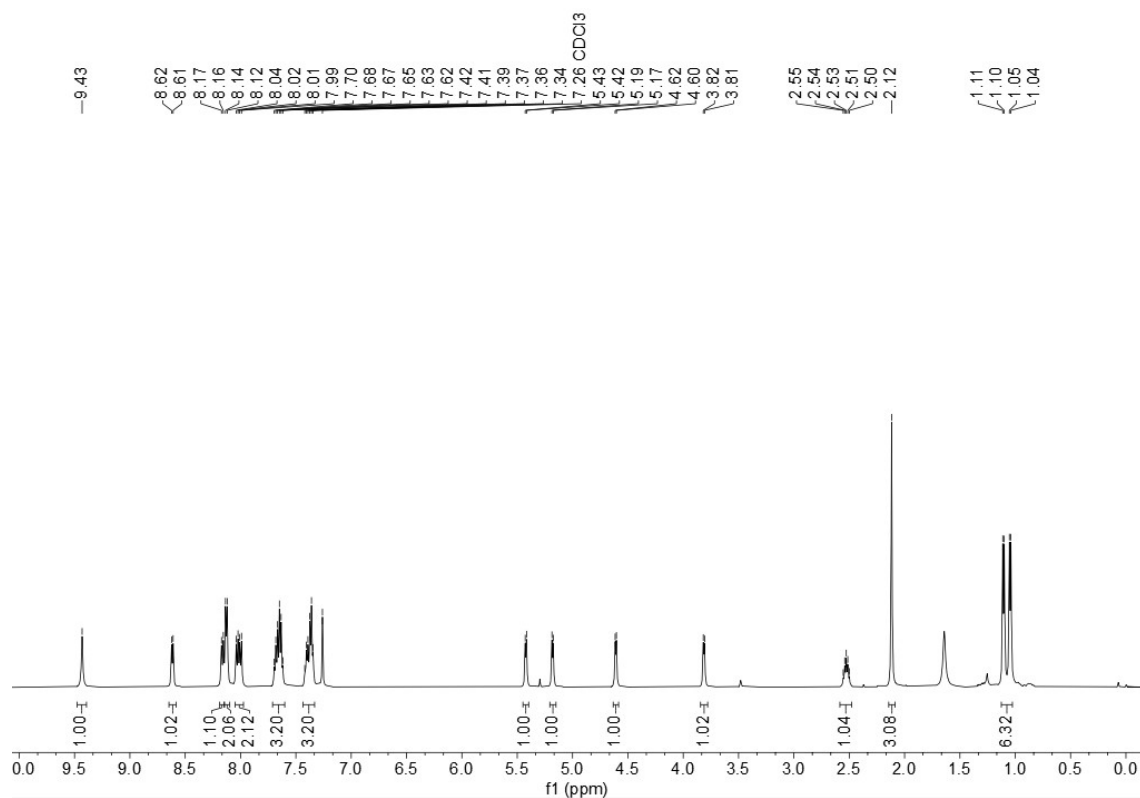


Figure S9.  $^1\text{H}$  NMR spectrum of **1**

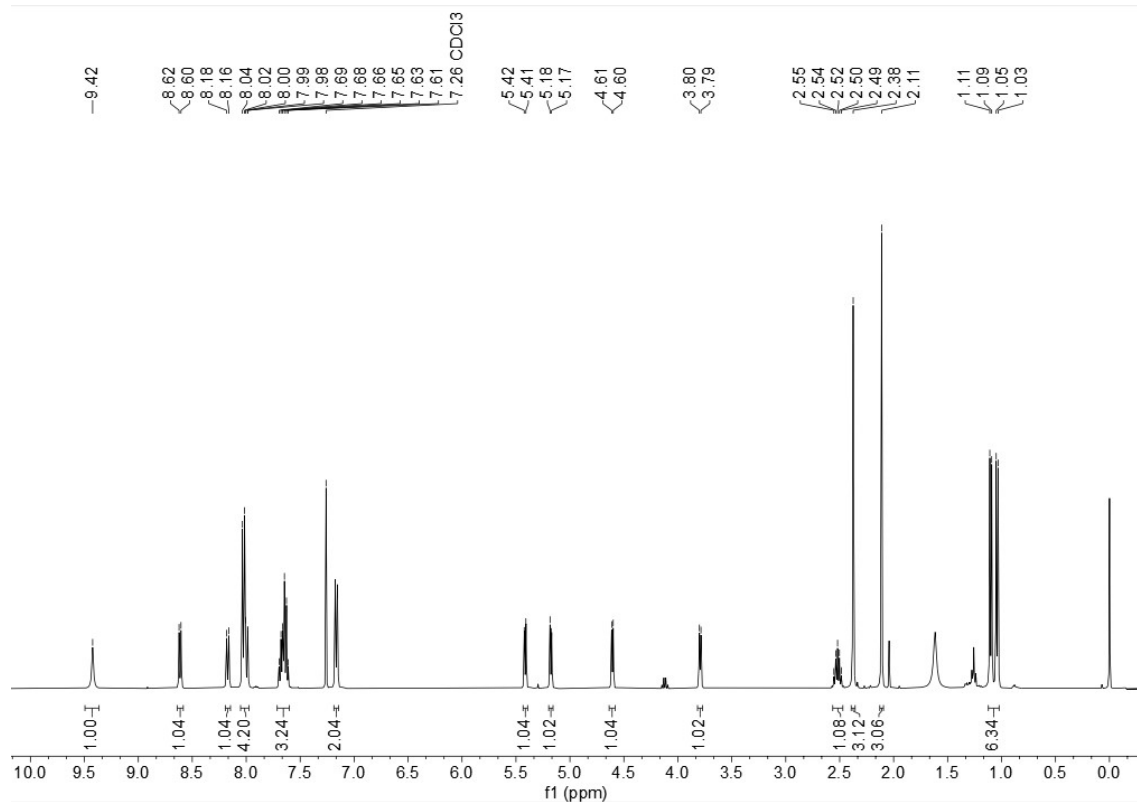


Figure S10.  $^1\text{H}$  NMR spectrum of **2**

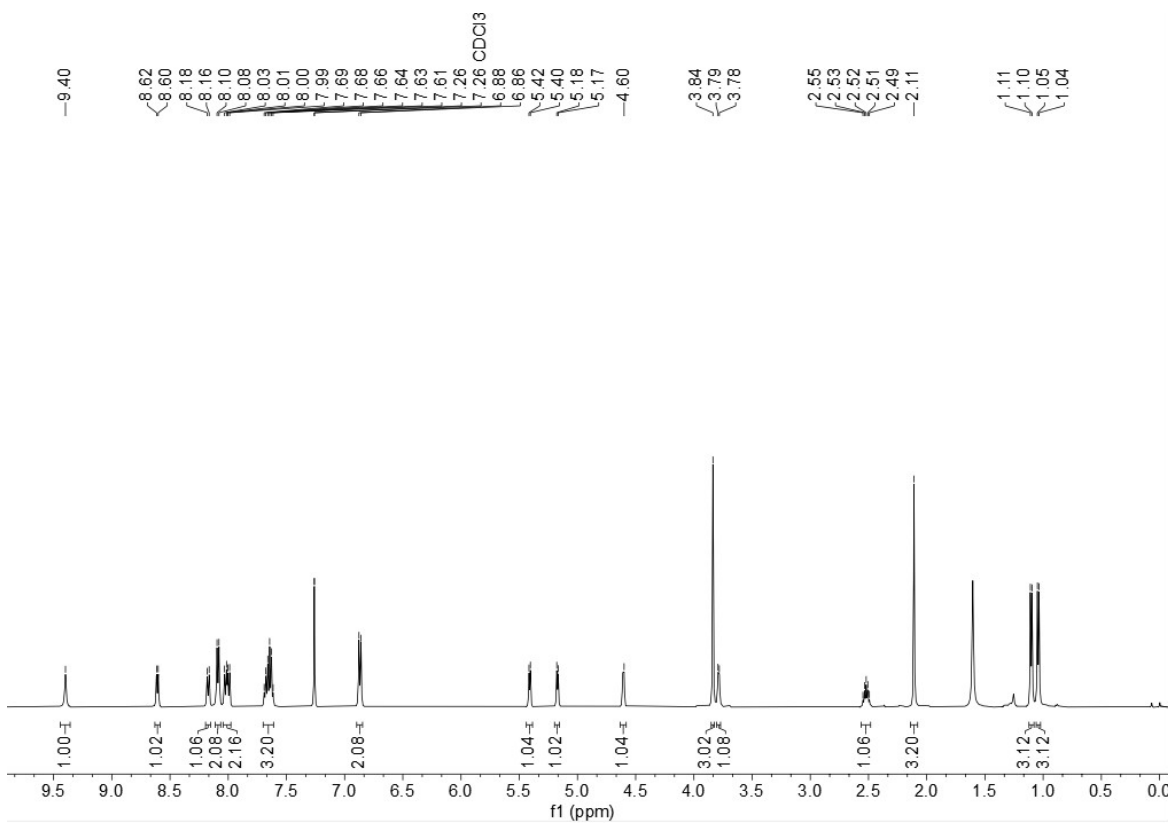


Figure S11.  $^1\text{H}$  NMR spectrum of **3**

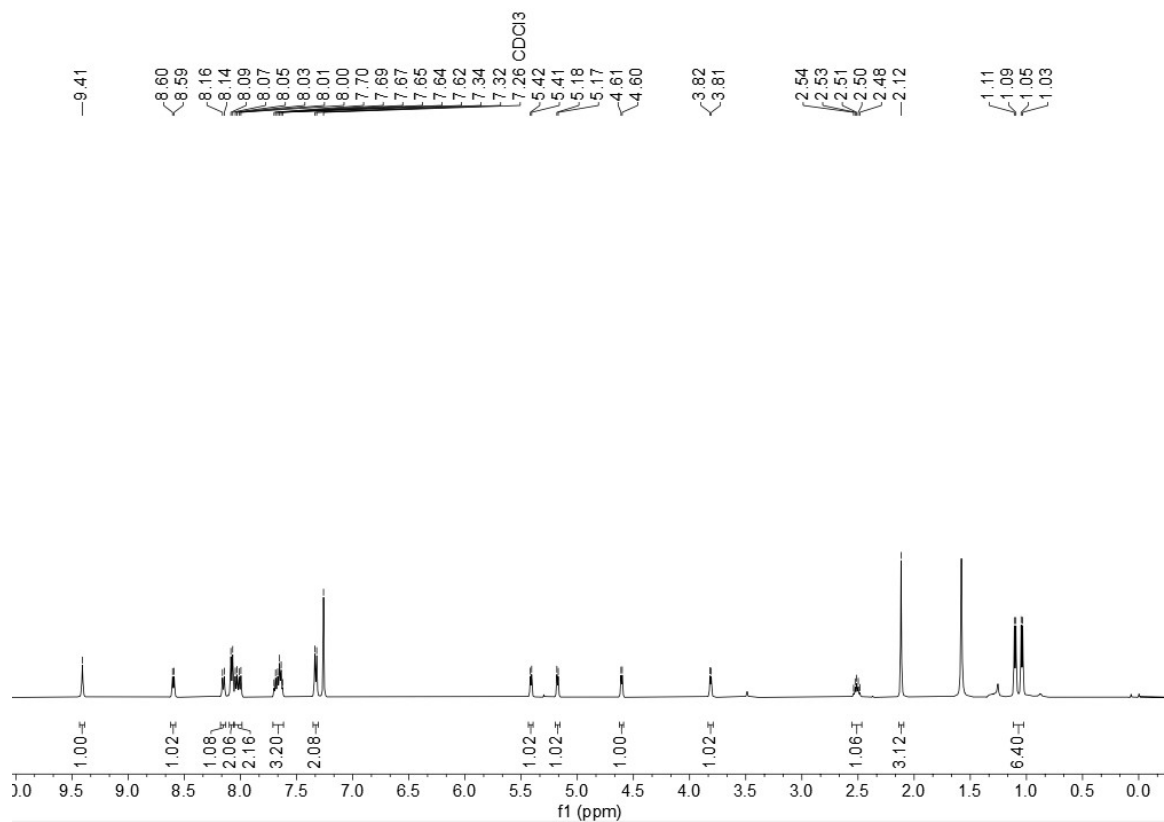


Figure S12.  $^1\text{H}$  NMR spectrum of **4**

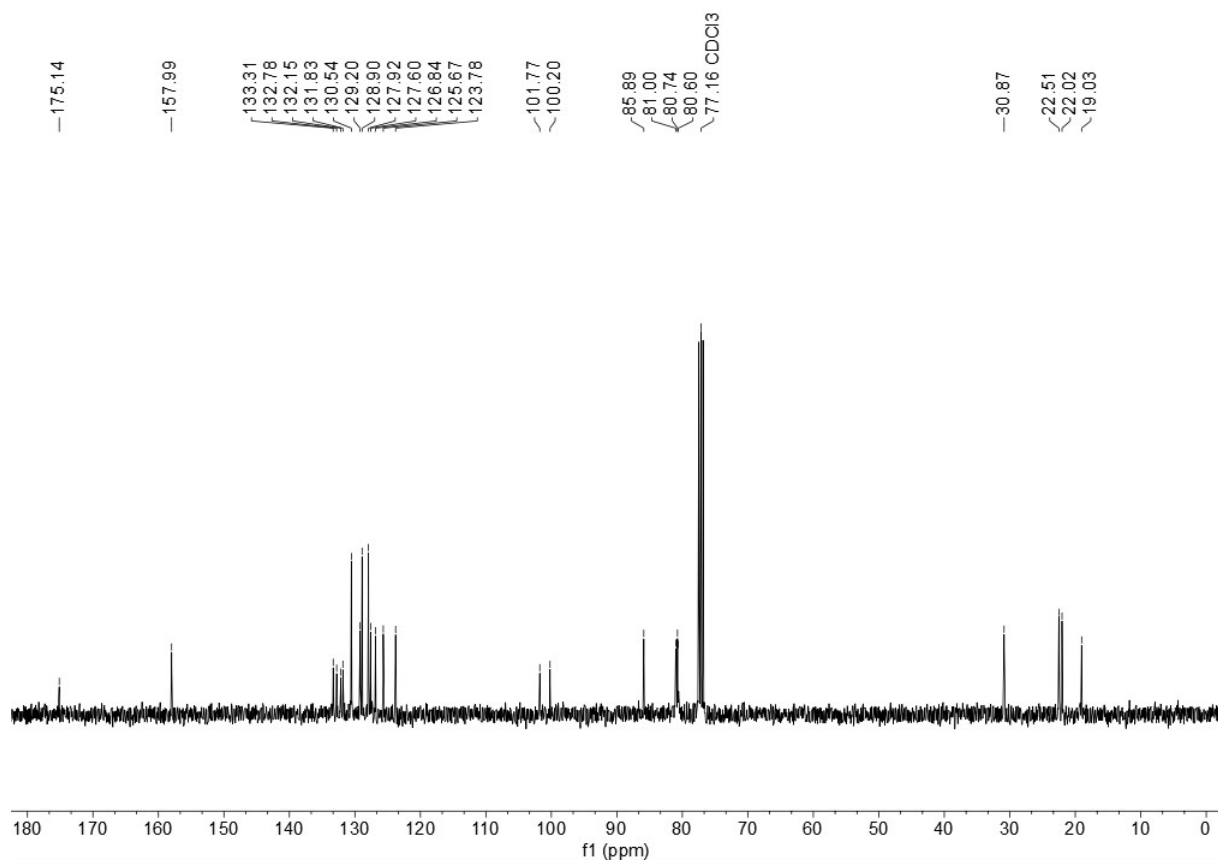


Figure S13. <sup>13</sup>C NMR spectrum of **1**

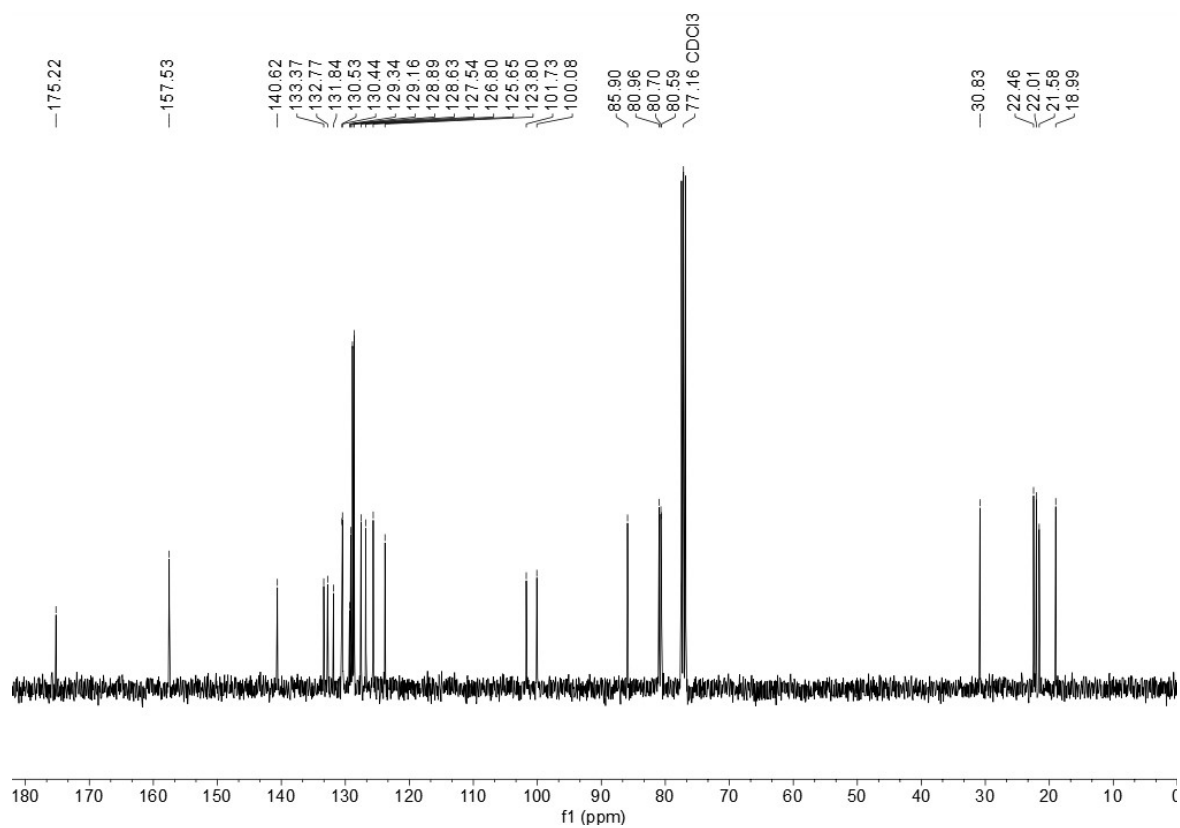


Figure S14. <sup>13</sup>C NMR spectrum of **2**



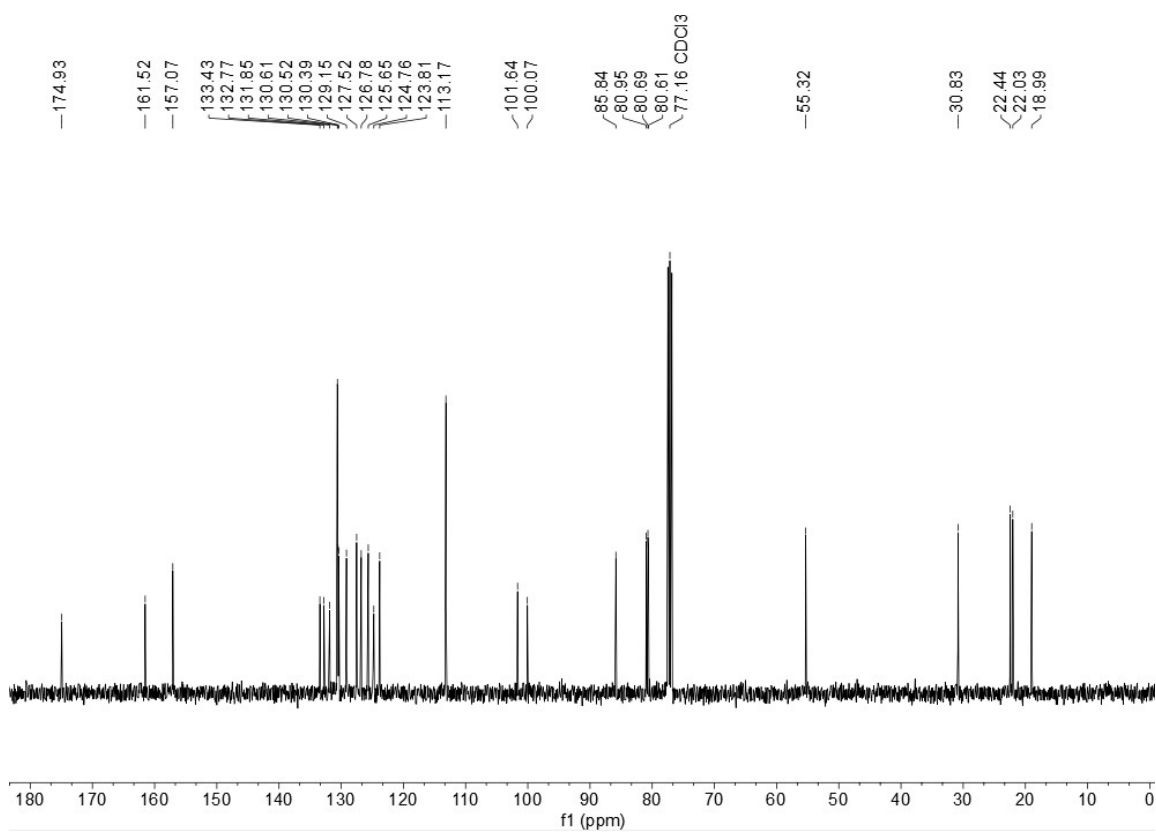


Figure S15. <sup>13</sup>C NMR spectrum of **3**

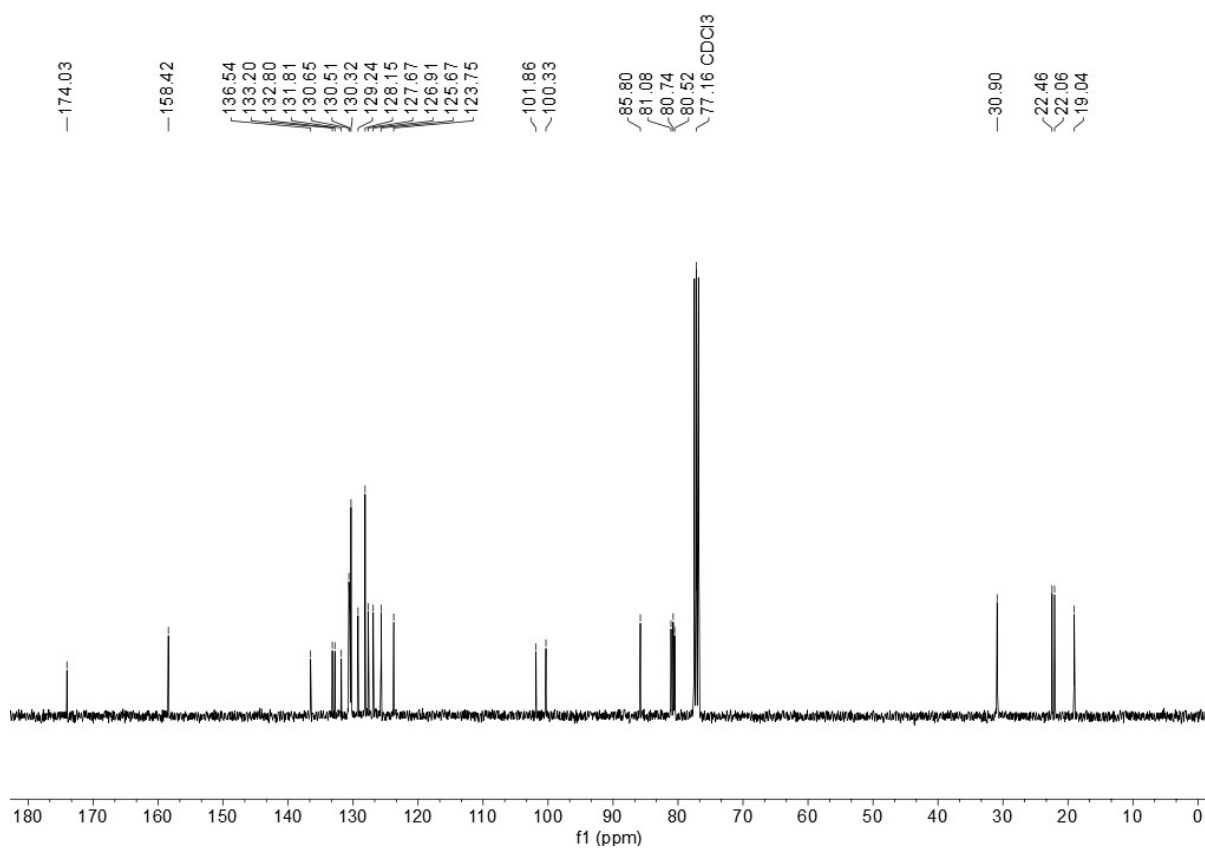


Figure S16. <sup>13</sup>C NMR spectrum of **4**