

## Supporting Information

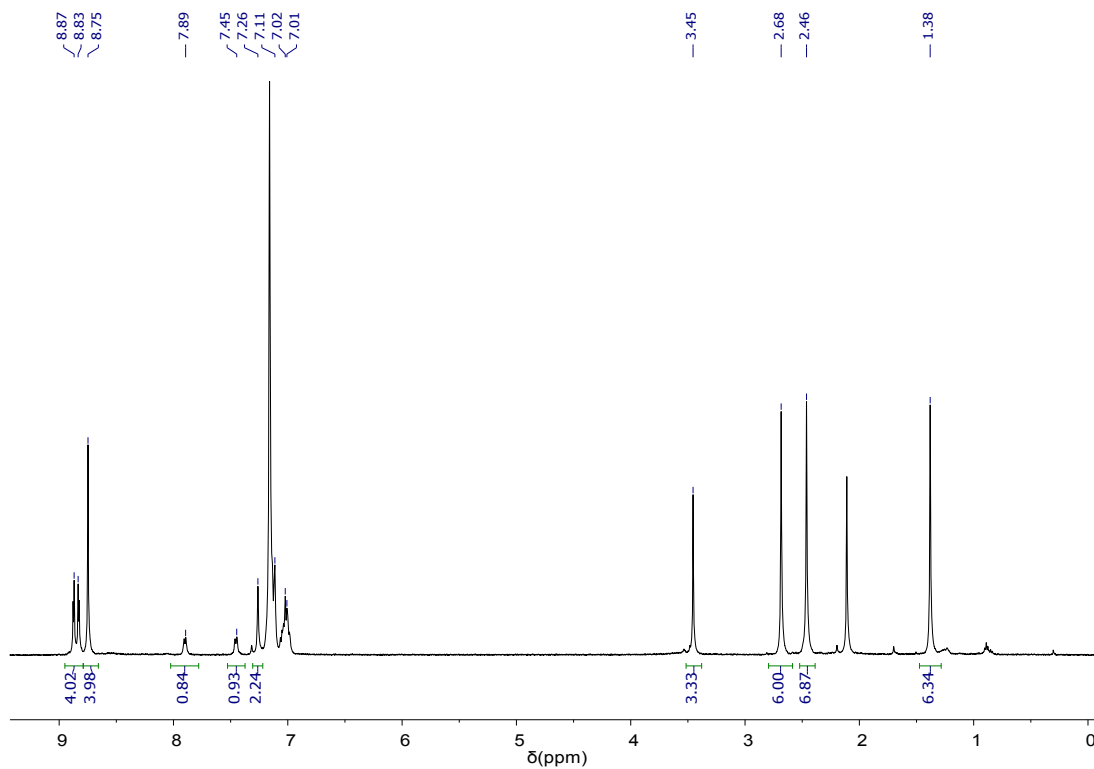
# Synthesis and reactivity of tantalum corrole complexes

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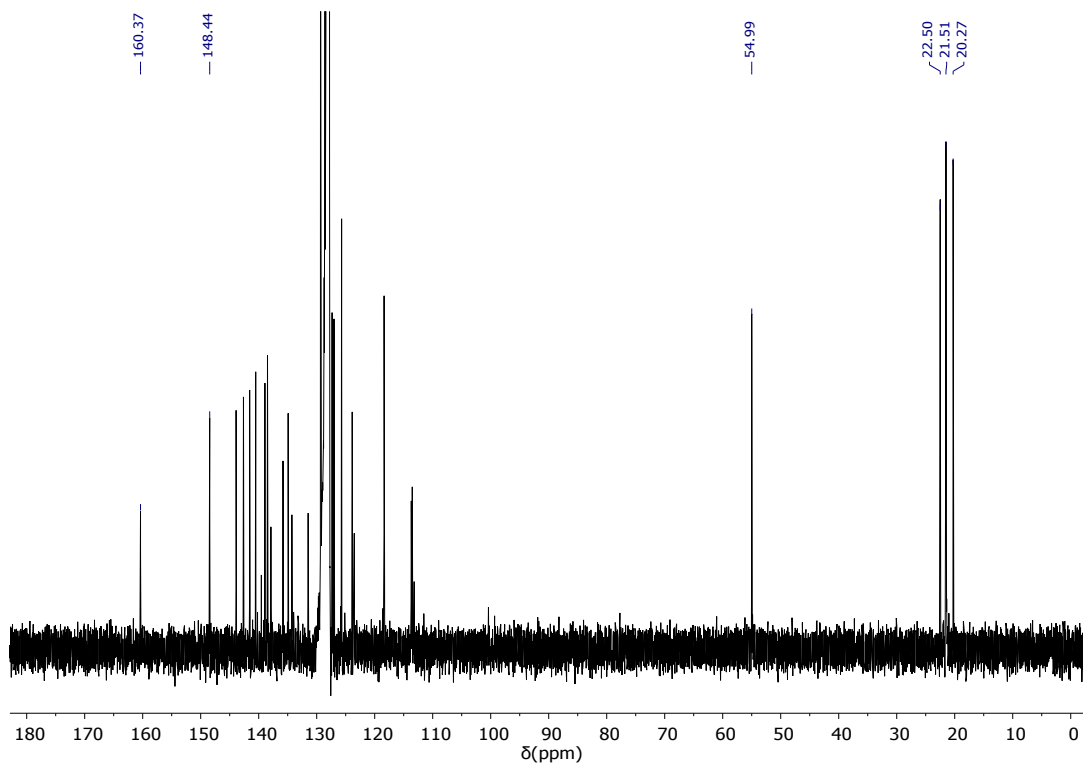
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## A. NMR Spectroscopic Analysis



**Figure S1:**  $^1\text{H}$  NMR spectrum of  $(\text{Mes}_2(p\text{-OMePh})\text{corrole})\text{TaCl}_2$  (**1**) in  $\text{C}_6\text{D}_6$  at 298 K.



**Figure S2:**  $^{13}\text{C}\{^1\text{H}\}$  NMR spectrum of **1** in  $\text{C}_6\text{D}_6$  at 298 K.

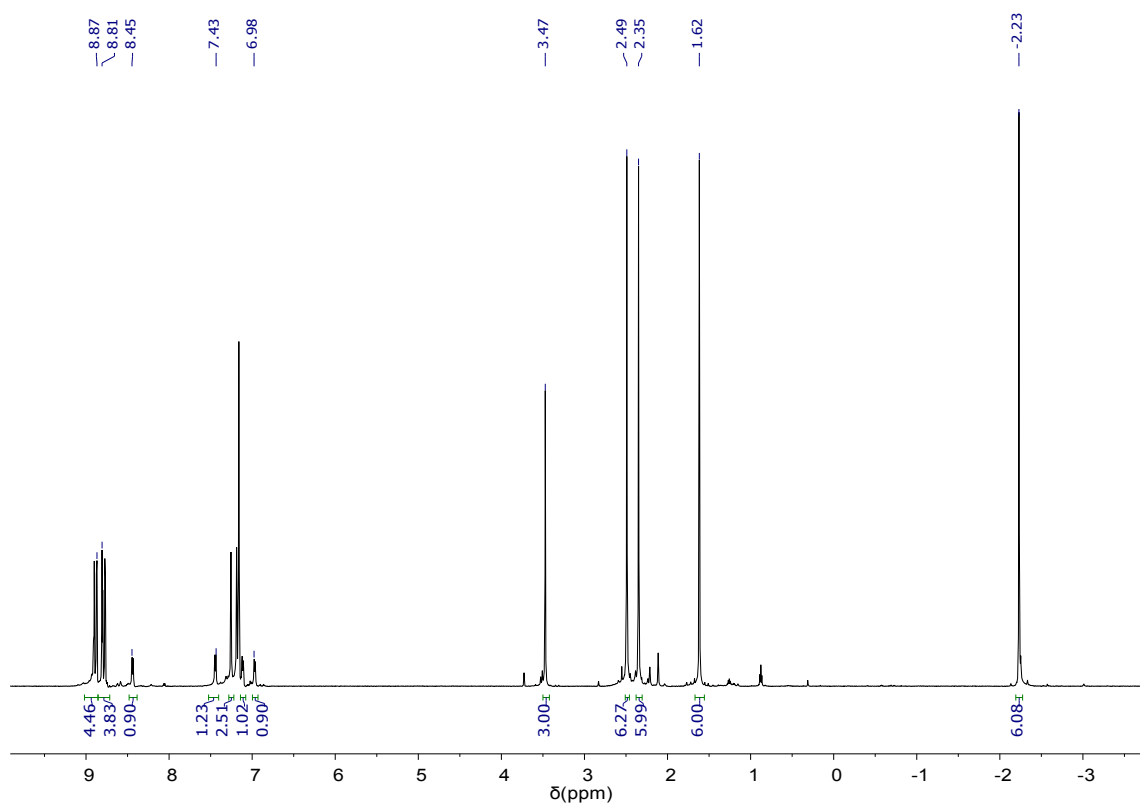


Figure S3:  $^1\text{H}$  NMR spectrum of  $(\text{Mes}_2(p\text{-OMePh})\text{corrole})\text{TaMe}_2$  (**2**) in  $\text{C}_6\text{D}_6$  at 298 K.

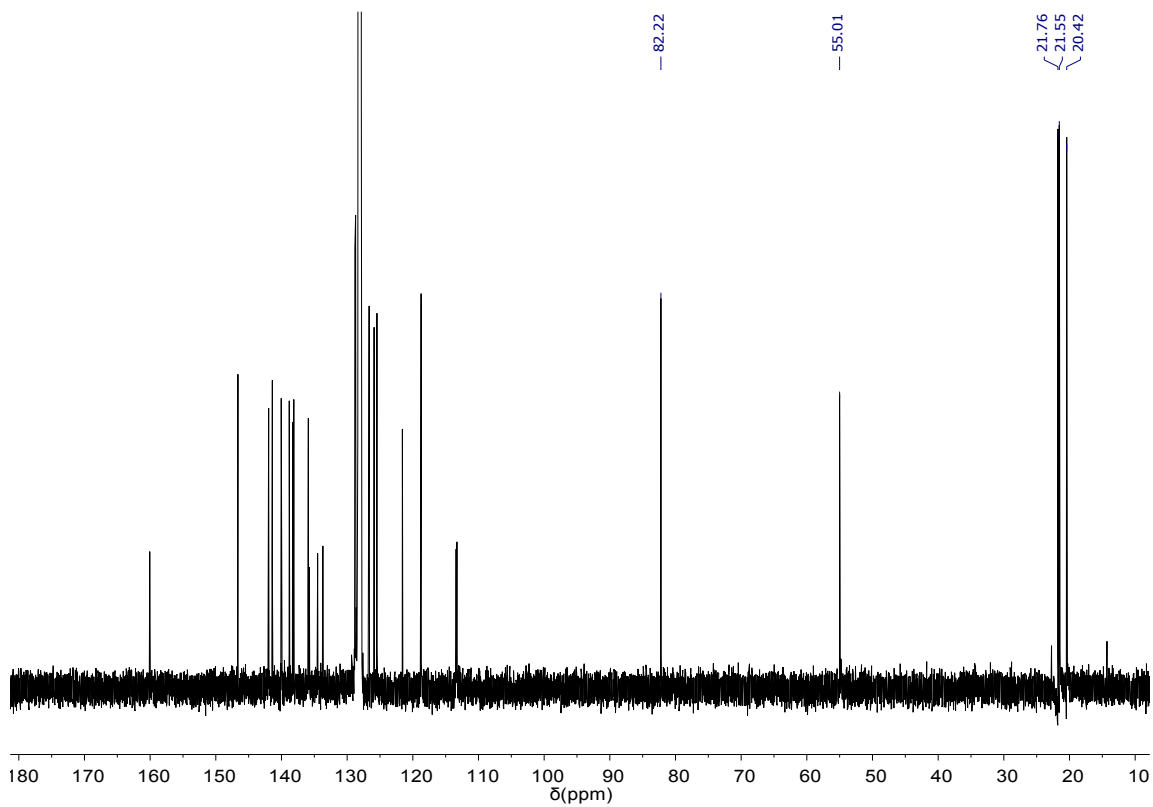
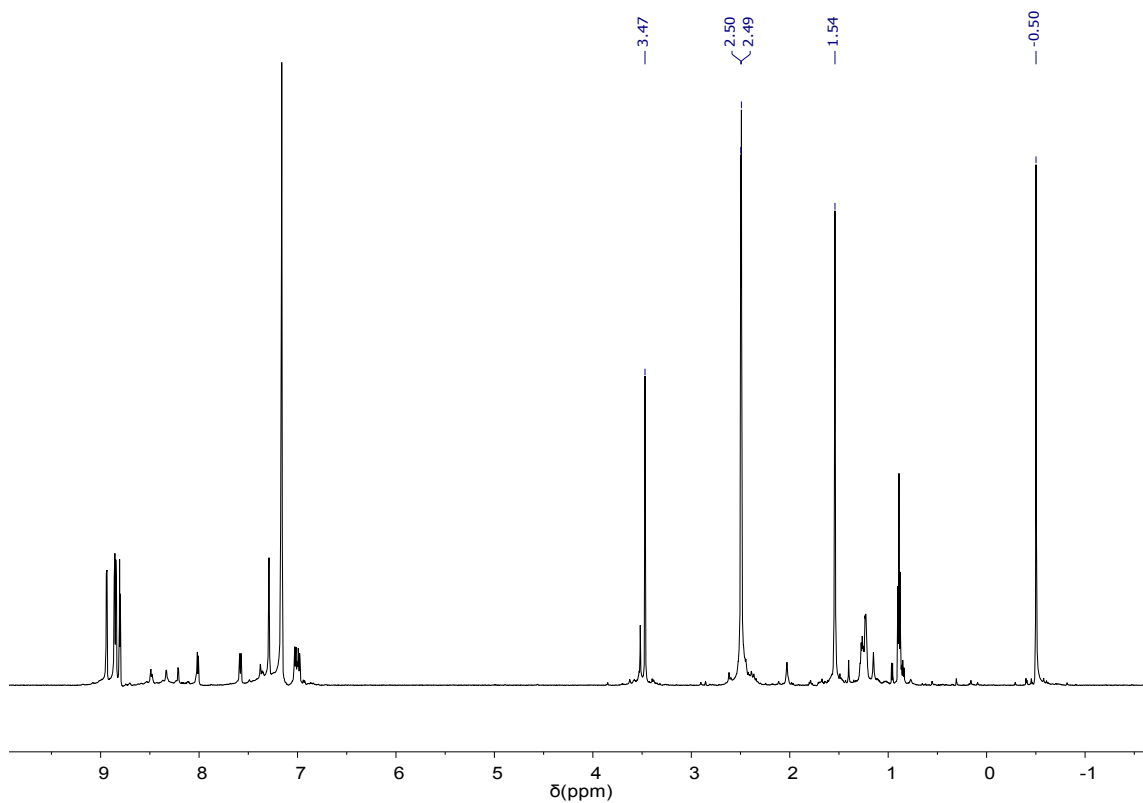
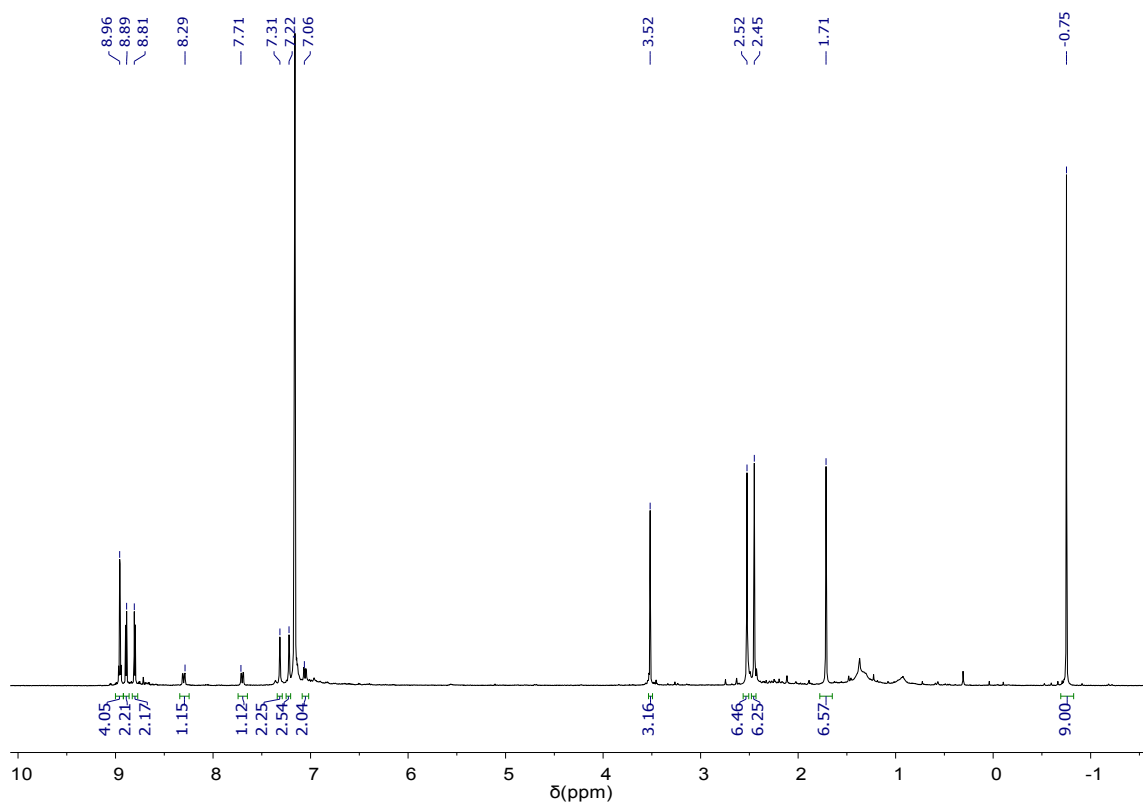


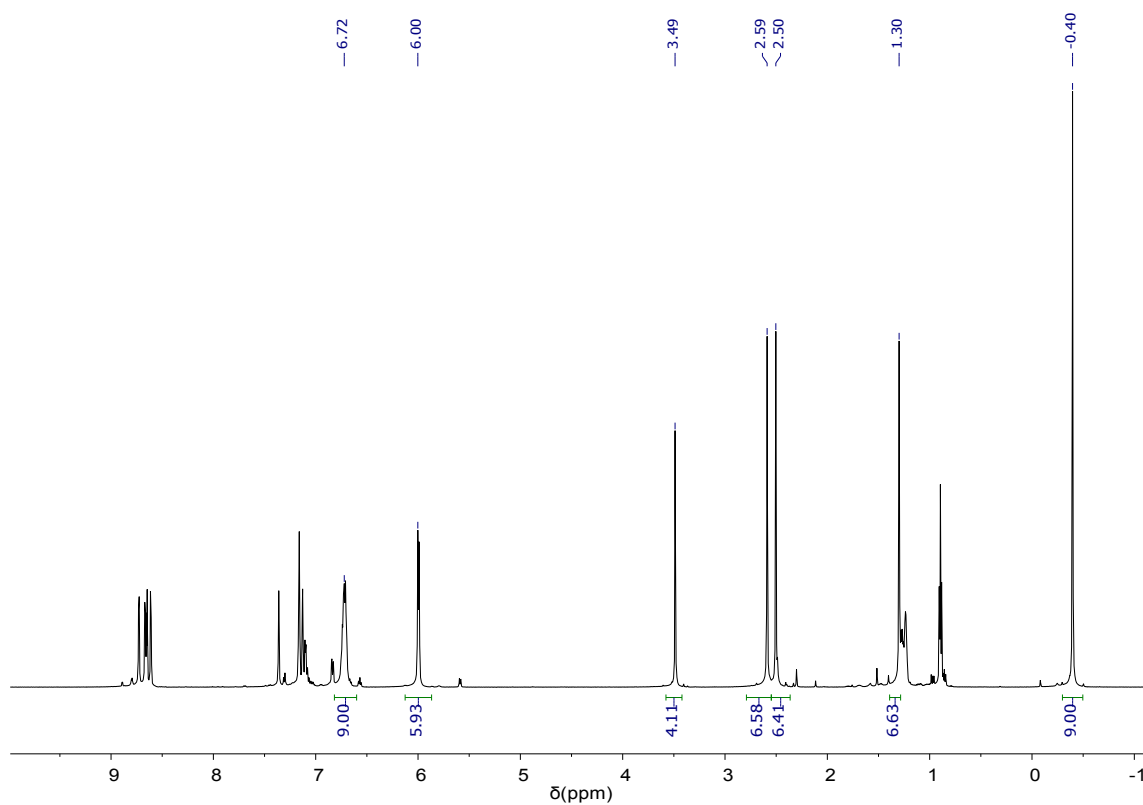
Figure S4:  $^{13}\text{C}\{^1\text{H}\}$  NMR spectrum of **2** in  $\text{C}_6\text{D}_6$  at 298 K.



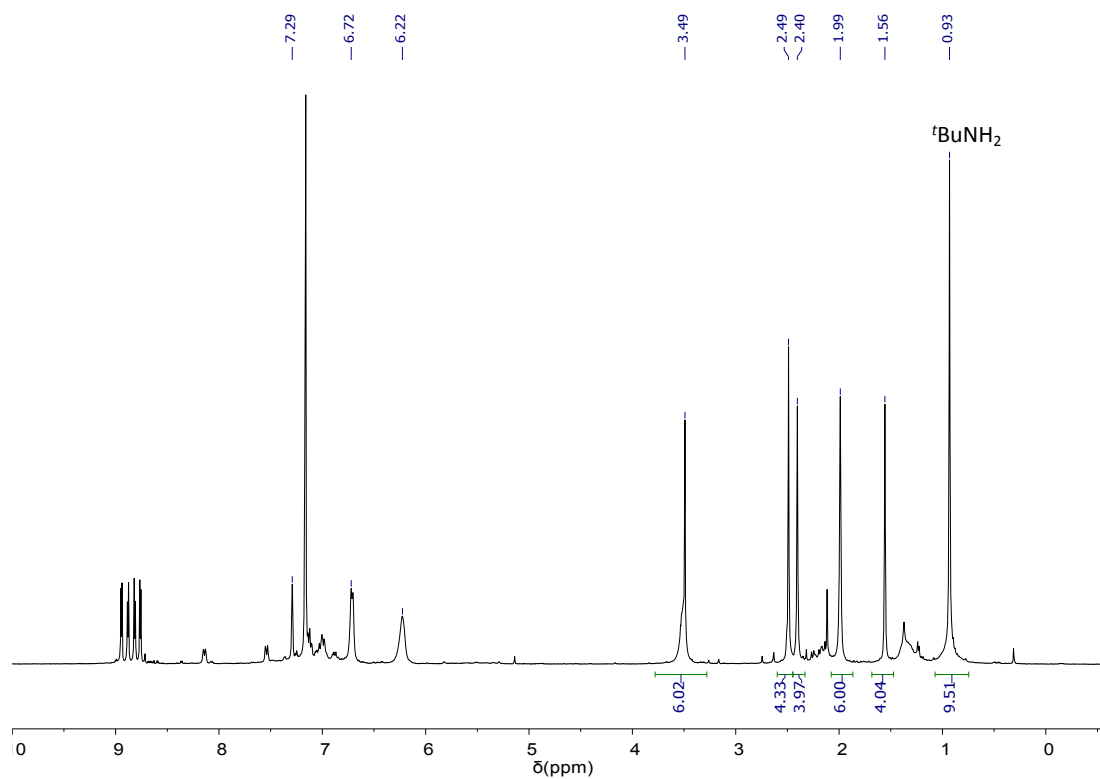
**Figure S5:** <sup>1</sup>H NMR spectrum of proposed enediolate product **3** formed from the addition of CO to **2** in C<sub>6</sub>D<sub>6</sub> at 298 K.



**Figure S6:** <sup>1</sup>H NMR spectrum of (Mes<sub>2</sub>(*p*-OMePh)corrole)Ta(N<sup>t</sup>Bu) (**4**) in C<sub>6</sub>D<sub>6</sub> at 298 K.



**Figure S7:**  $^1\text{H}$  NMR spectrum of the observed product of the reaction between **4** and  $\text{Ph}_3\text{COH}$  in  $\text{C}_6\text{D}_6$  at 298K.



**Figure S8:**  $^1\text{H}$  NMR spectrum of the observed product of the reaction between **4** and 2 equivalents of 4-methylbenzyl alcohol in  $\text{C}_6\text{D}_6$  at 298K.

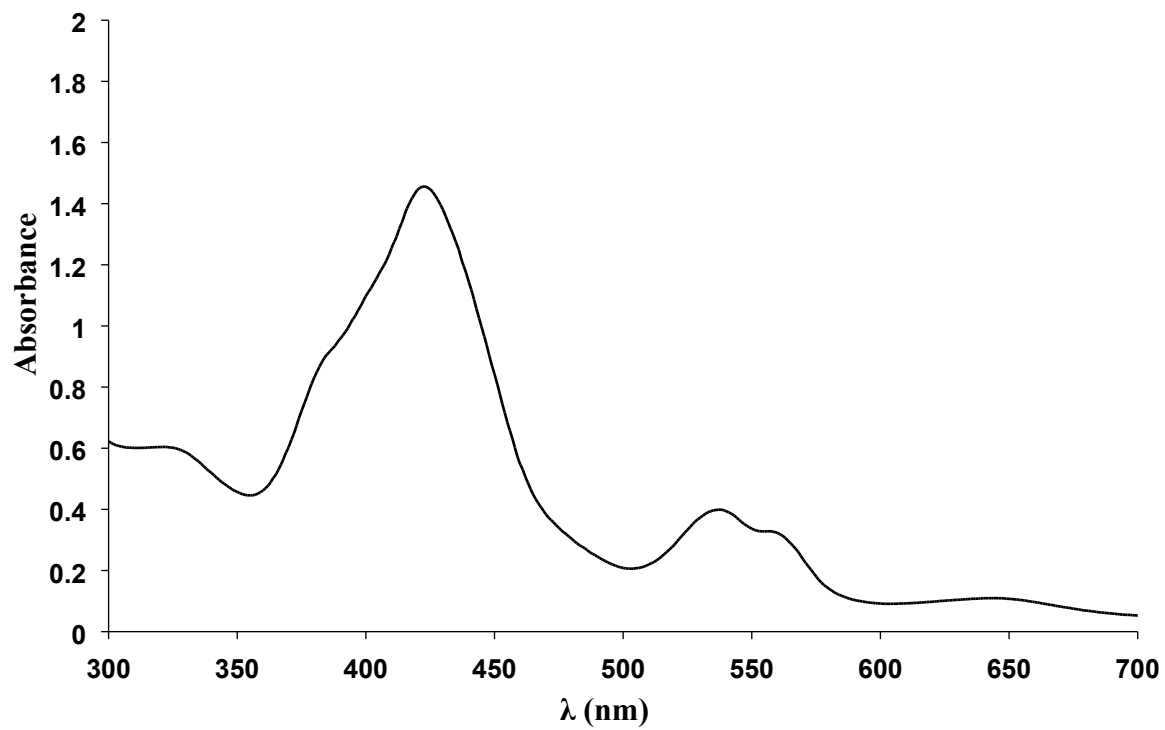


Figure S9: UV/Vis spectrum of **1** recorded in toluene.

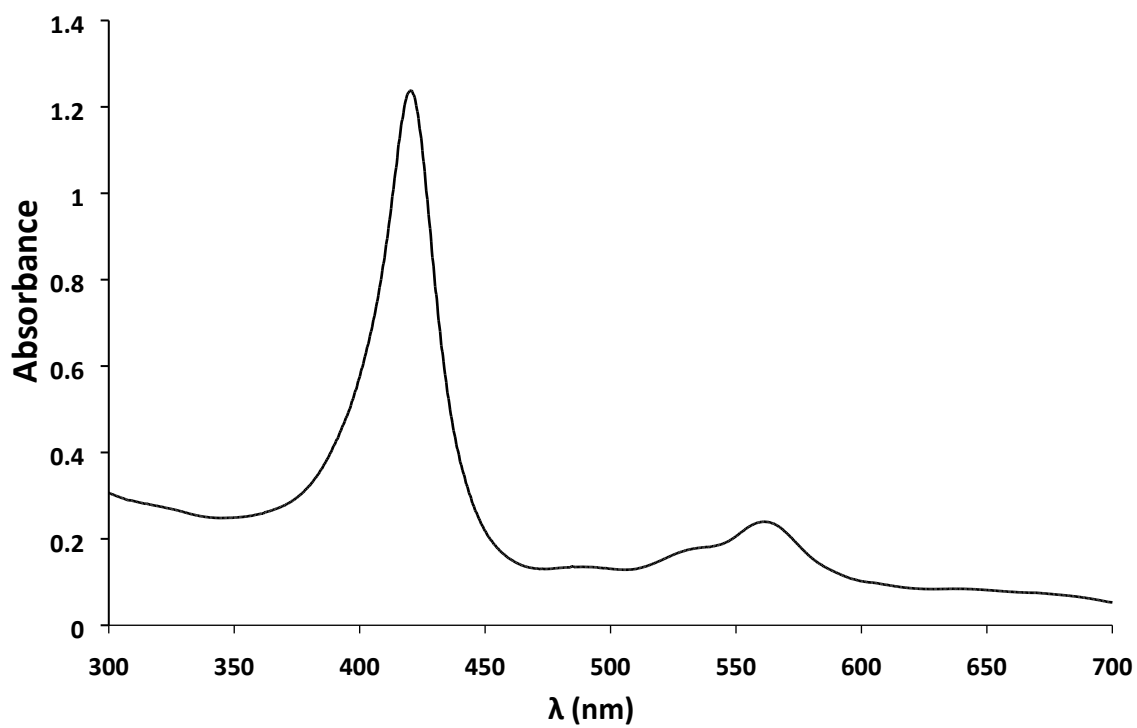


Figure S10: UV/Vis spectrum of **2** recorded in toluene.

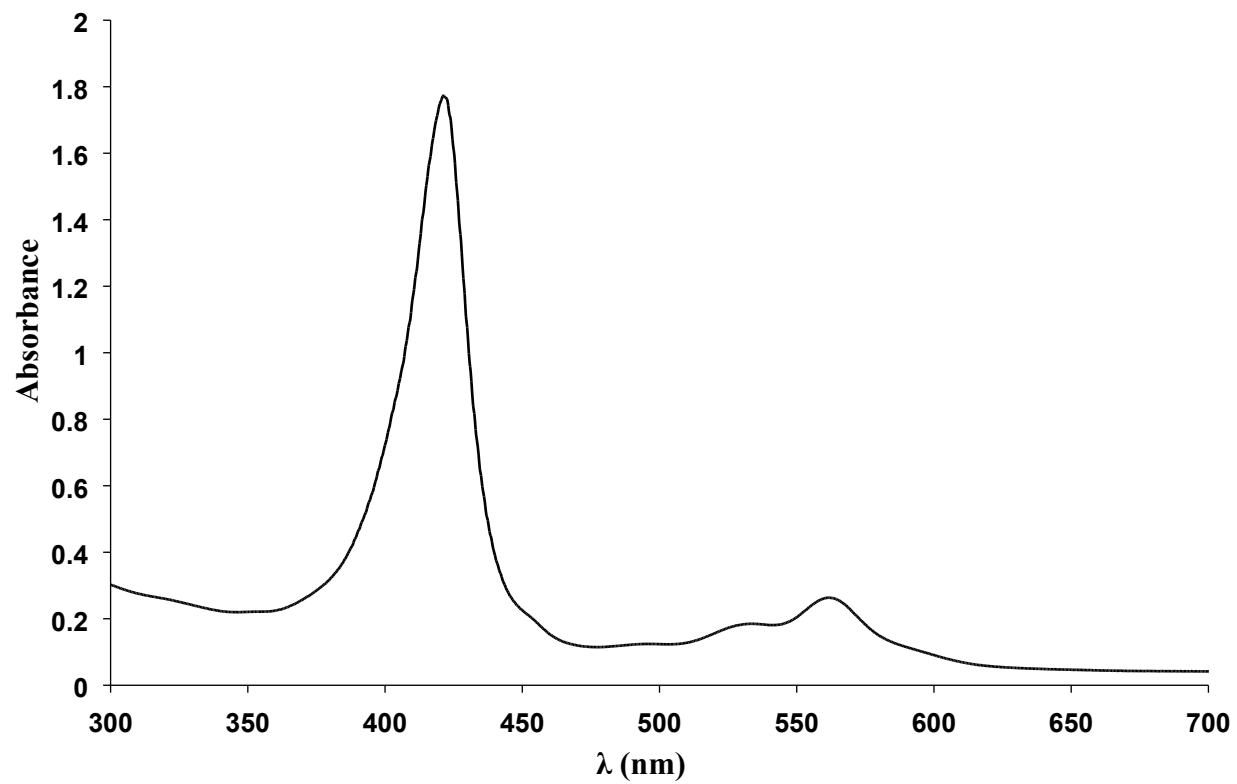


Figure S11: UV/Vis spectrum of **4** recorded in toluene.