

Supporting Information

Oxidation and Disproportionation of Anionic Phosphide Ligands in Yttrium Complexes with Elemental Sulfur and Selenium

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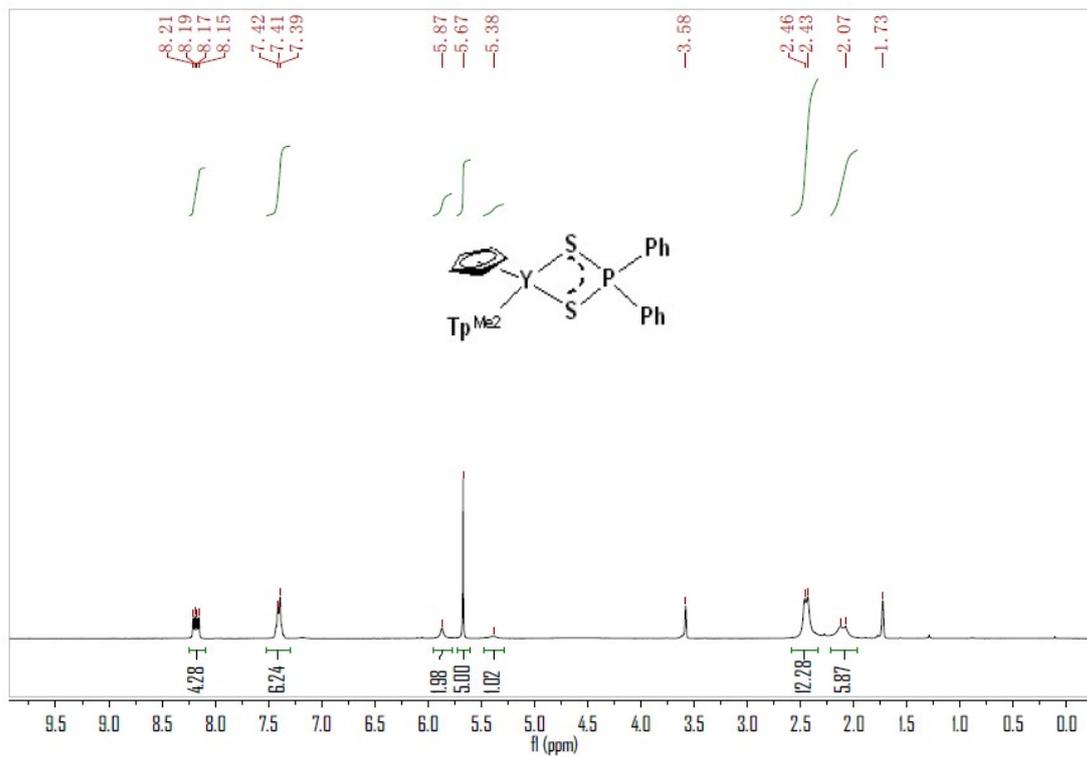


Figure 2. ^{13}C NMR of $(\text{Tp}^{\text{Me}_2})\text{CpY}[\text{S}_2\text{PPh}_2]$ (**2**) in $\text{D}_8\text{-THF}$

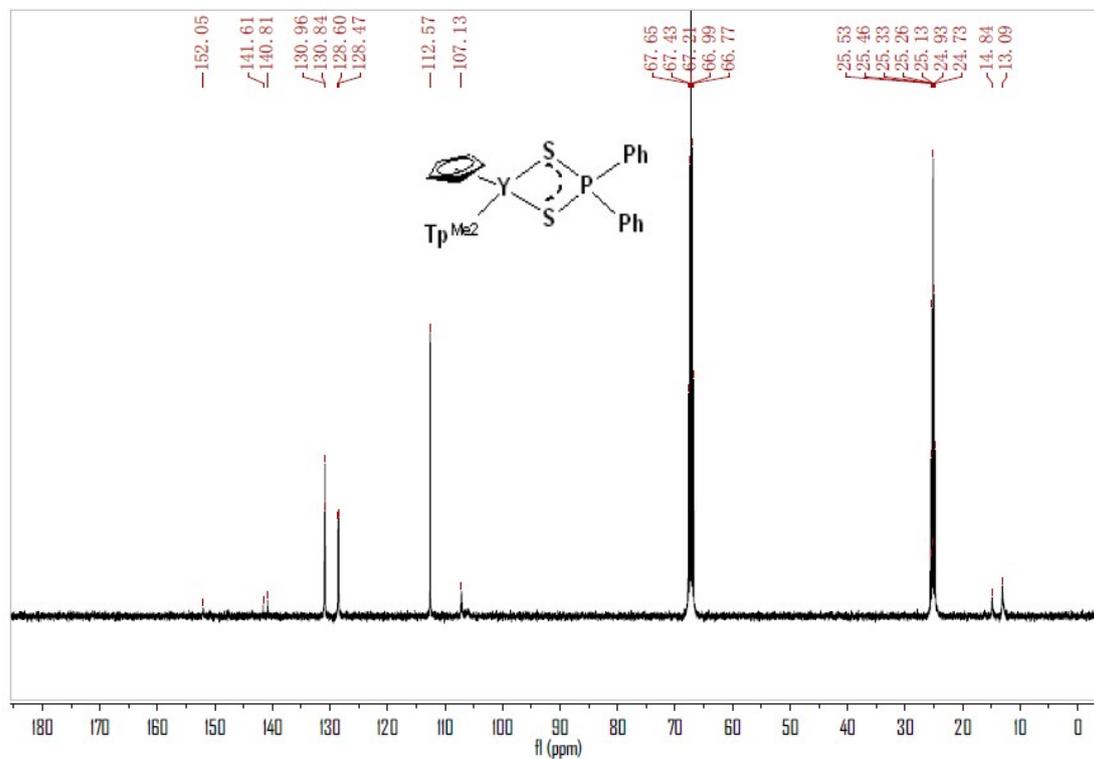


Figure 3. ^{31}P NMR of $(\text{Tp}^{\text{Me}_2})\text{CpY}[\text{S}_2\text{PPh}_2]$ (**2**) in $\text{D}_8\text{-THF}$

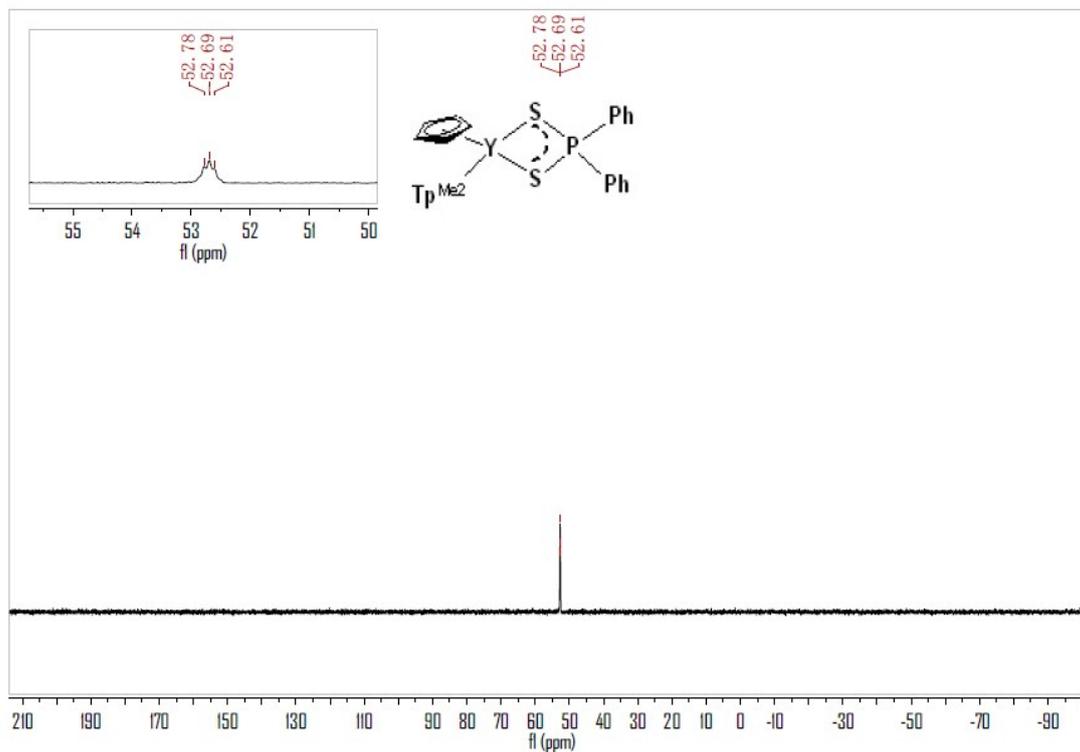
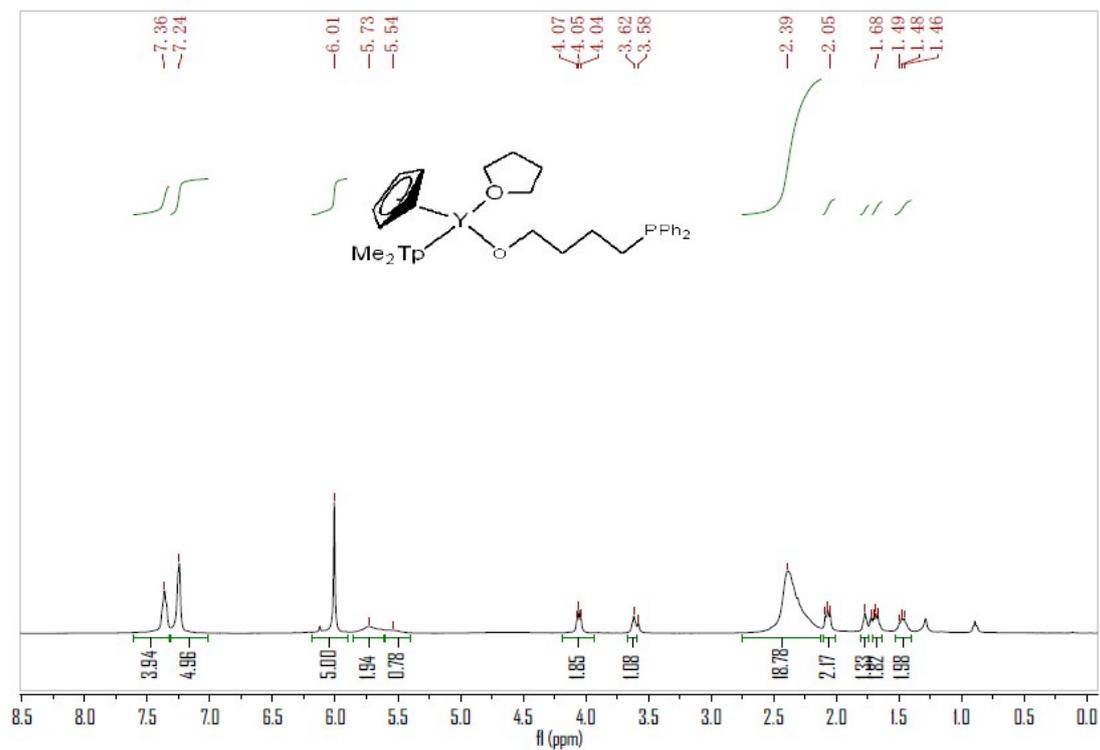
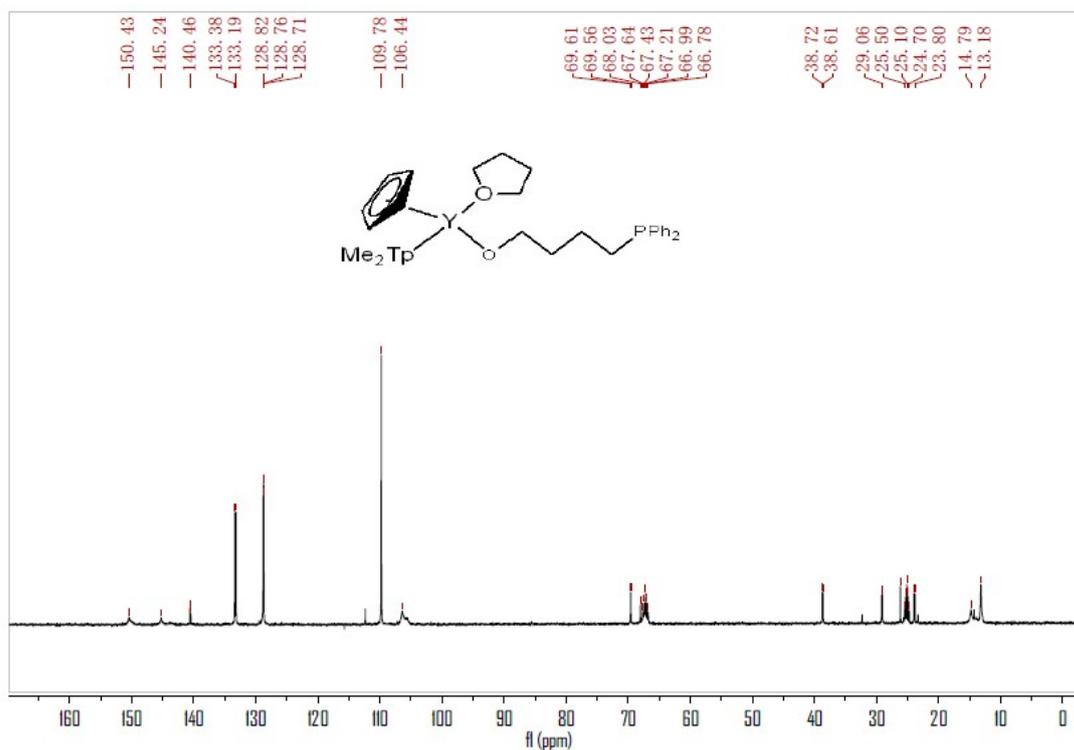


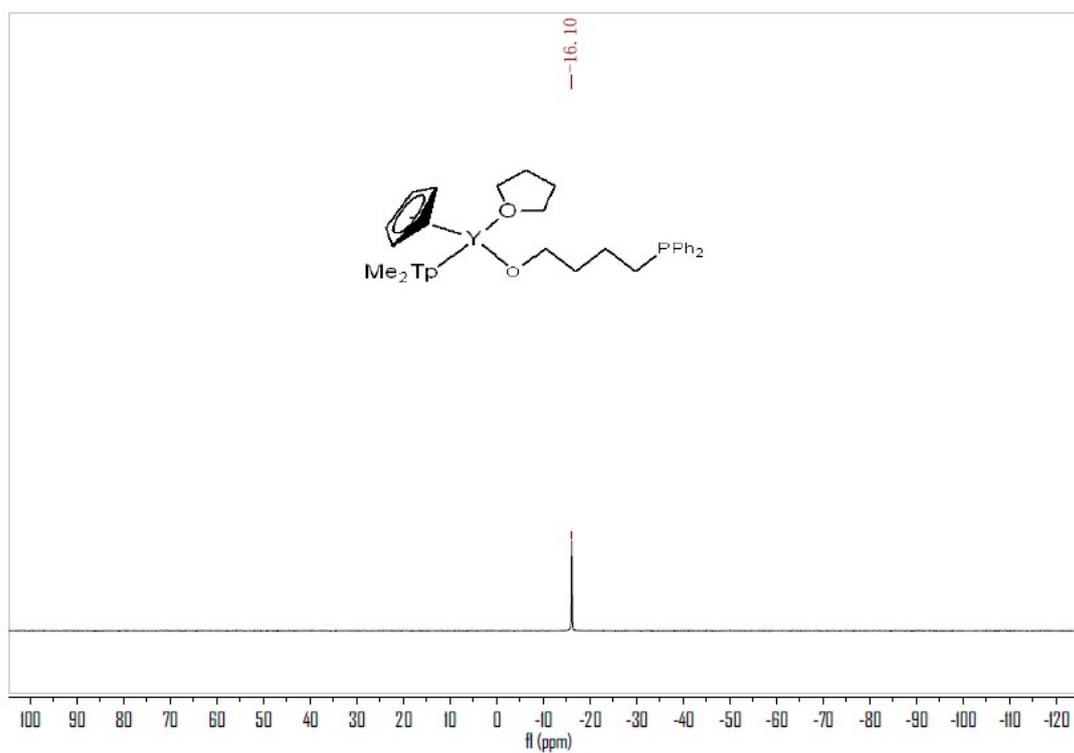
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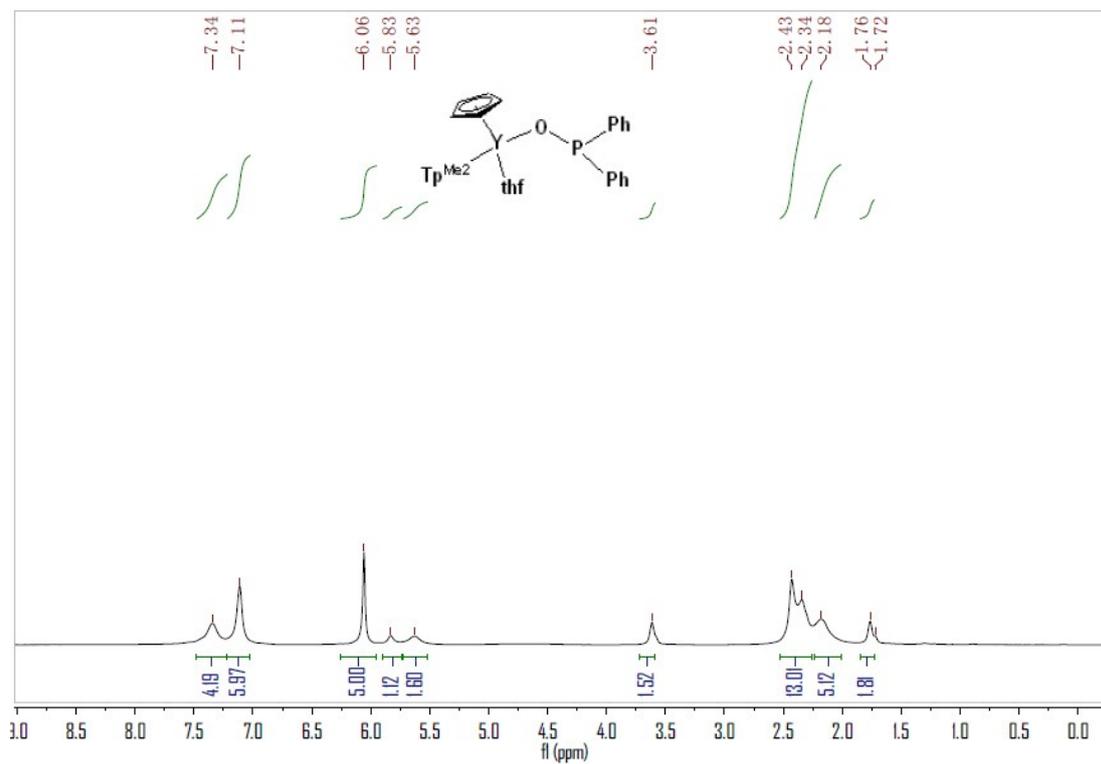
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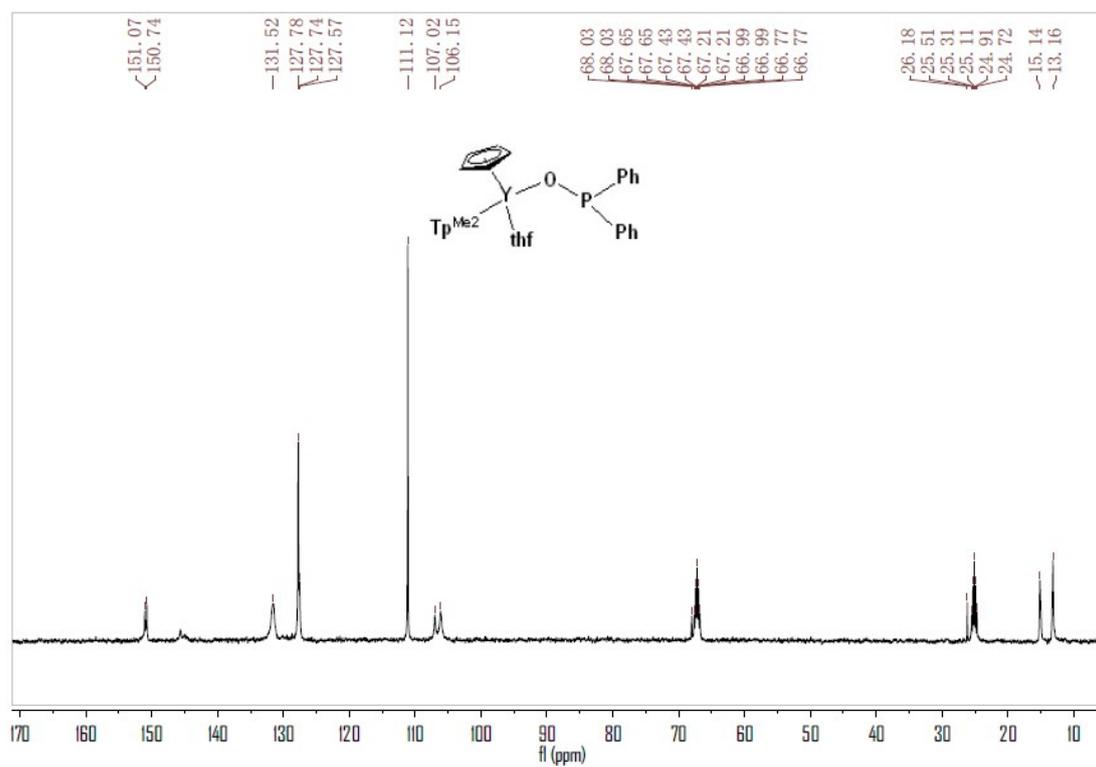


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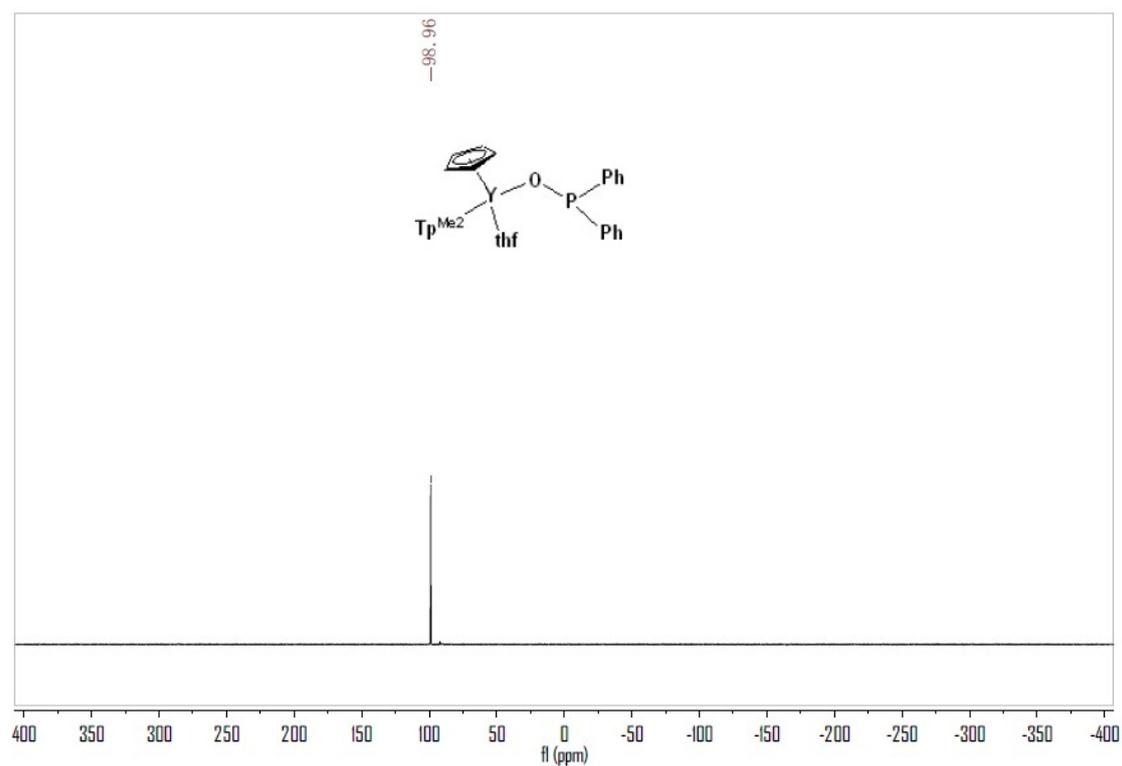


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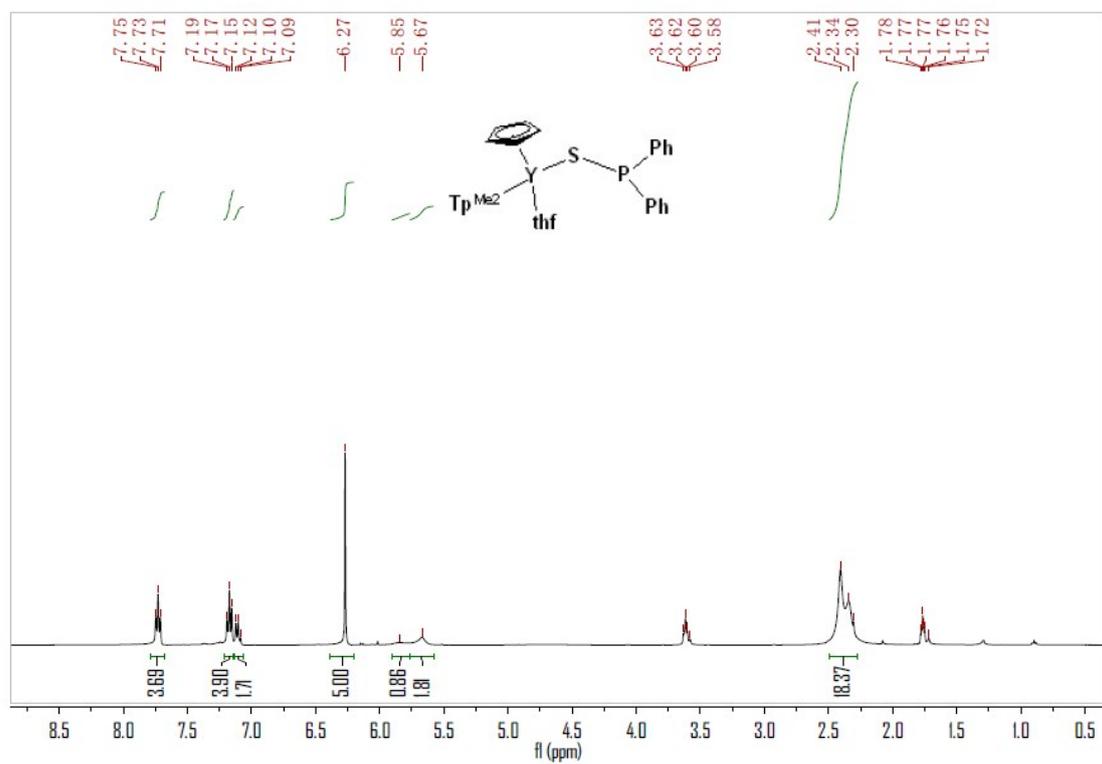


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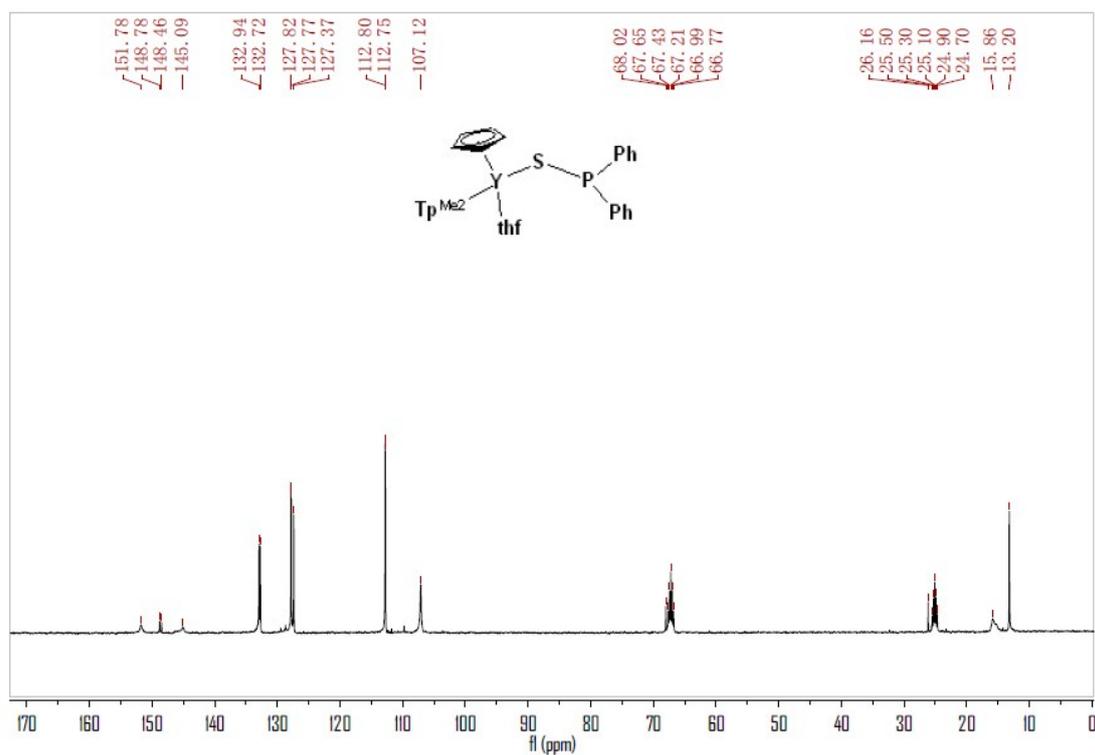
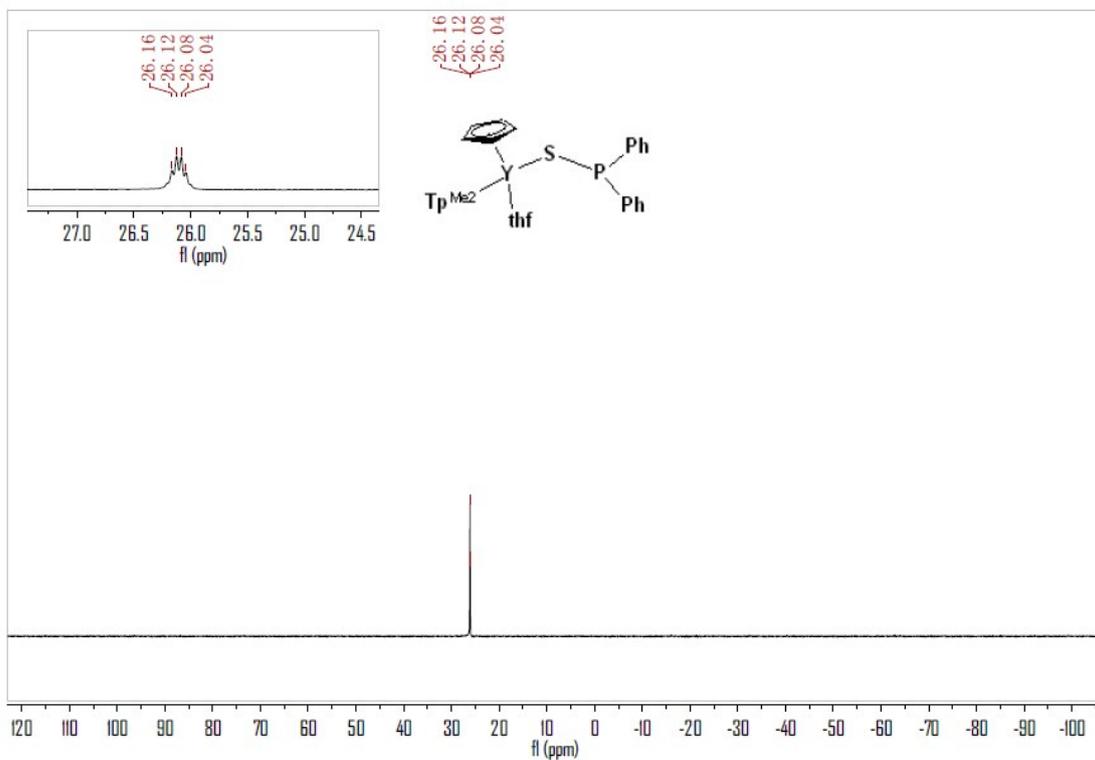
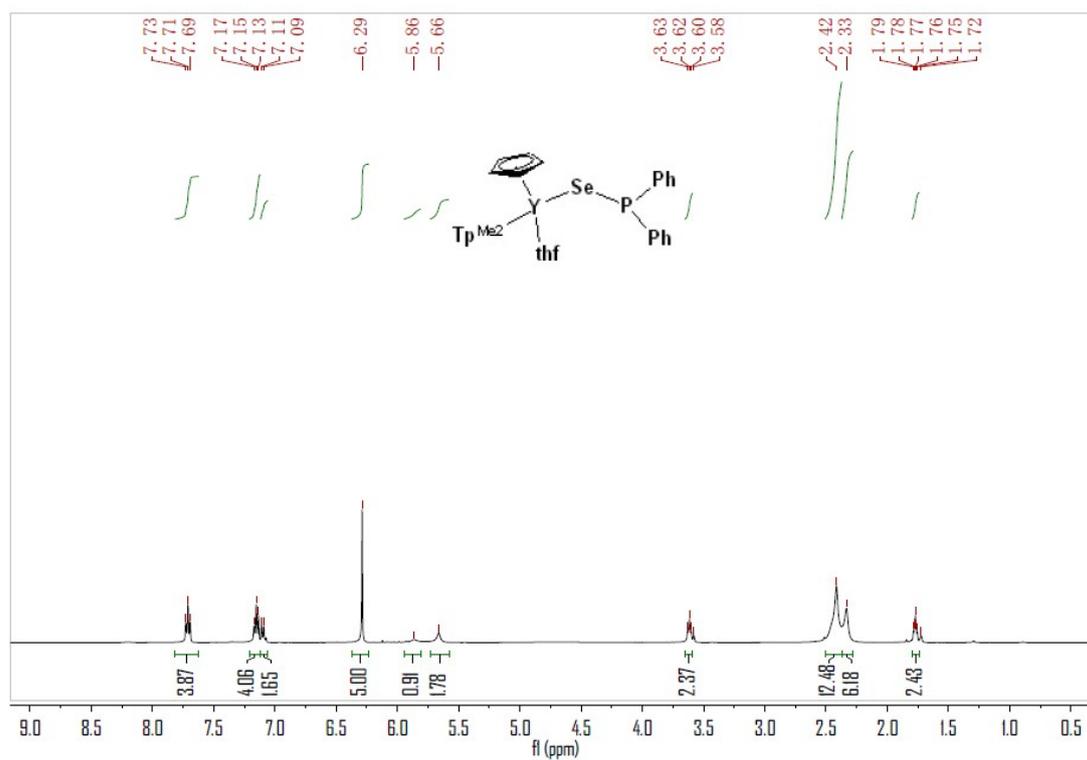


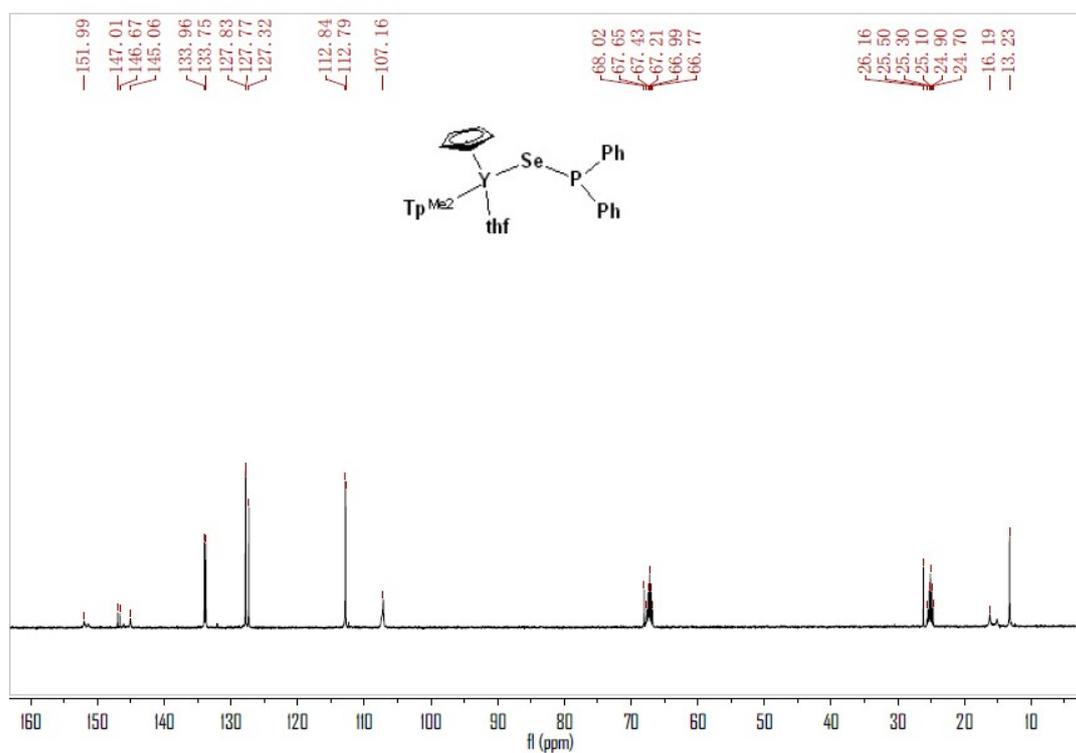
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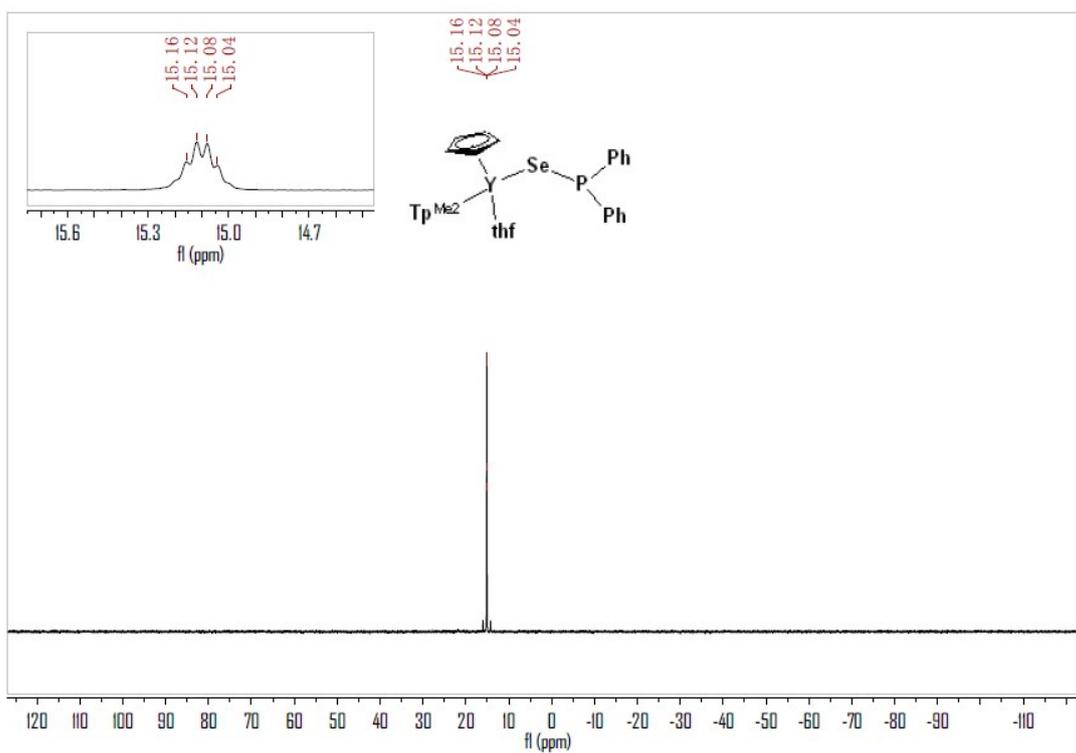
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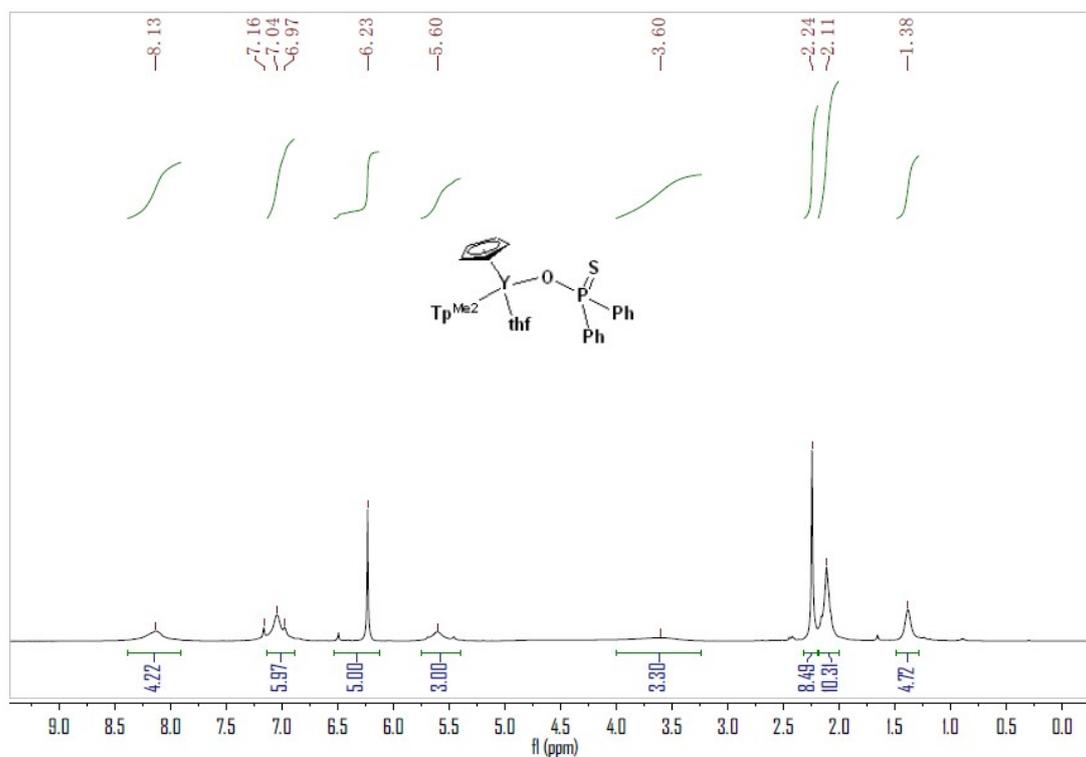


Figure 19. ^1H NMR of $(\text{Tp}^{\text{Me}_2})\text{CpY}[\text{OP}(\text{Se})\text{Ph}_2](\text{THF})$ (6^{Se}) in $\text{D}_8\text{-THF}$

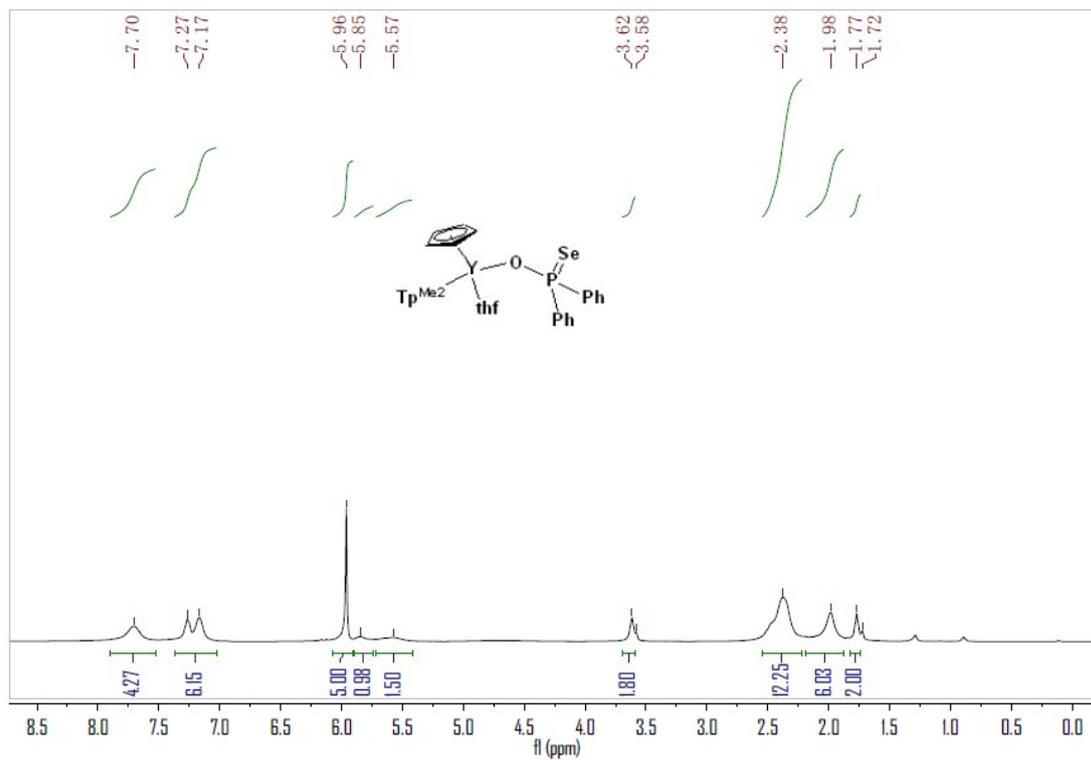
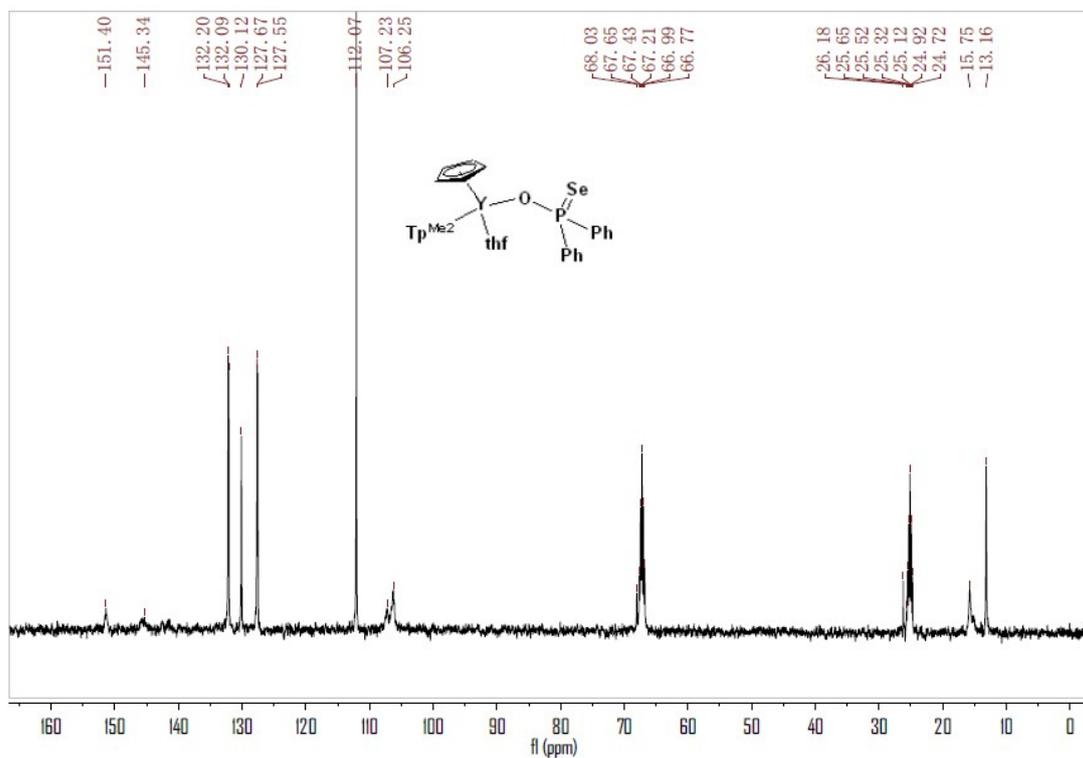
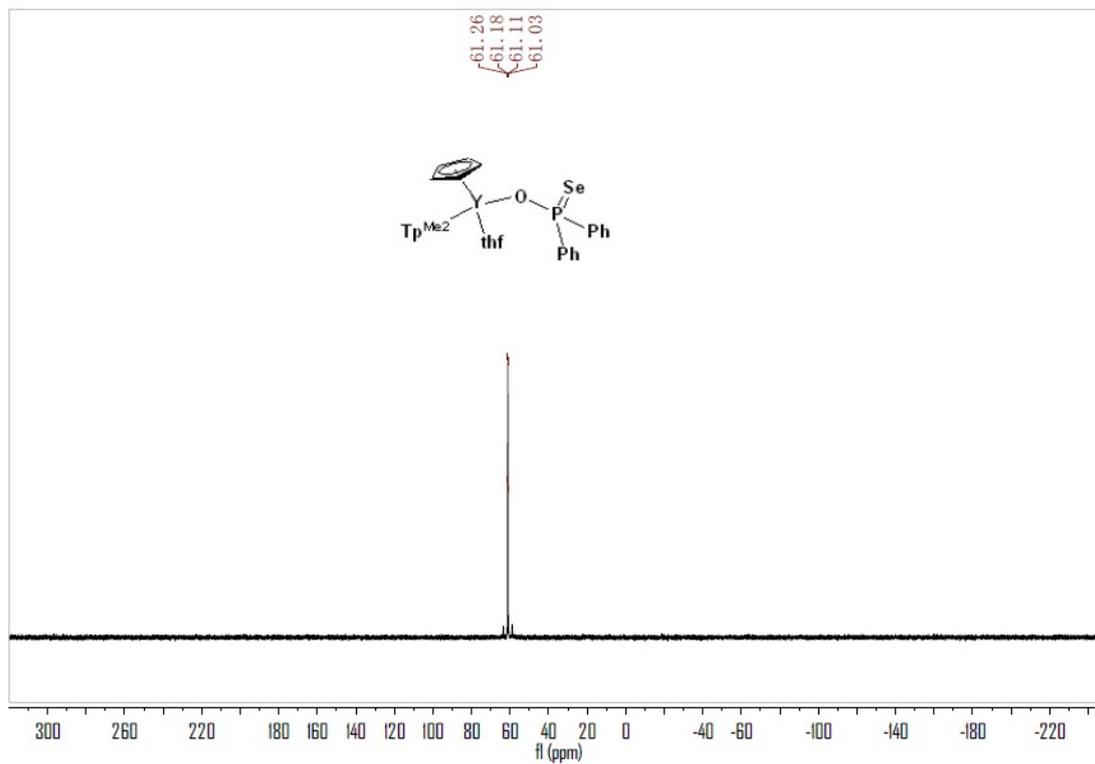


Figure 20. ^{13}C NMR of $(\text{Tp}^{\text{Me}_2})\text{CpY}[\text{OP}(\text{Se})\text{Ph}_2](\text{THF})$ (6^{Se}) in $\text{D}_8\text{-THF}$



SFigure 21. ^{31}P NMR of $(\text{Tp}^{\text{Me}_2})\text{CpY}[\text{OP}(\text{Se})\text{Ph}_2]$ (THF) (6^{Se}) in $\text{D}_8\text{-THF}$



SFigure 22. ^{31}P NMR experiments of the transformation from 4^{S} to 2 and 3 in $\text{D}_8\text{-THF}$

