

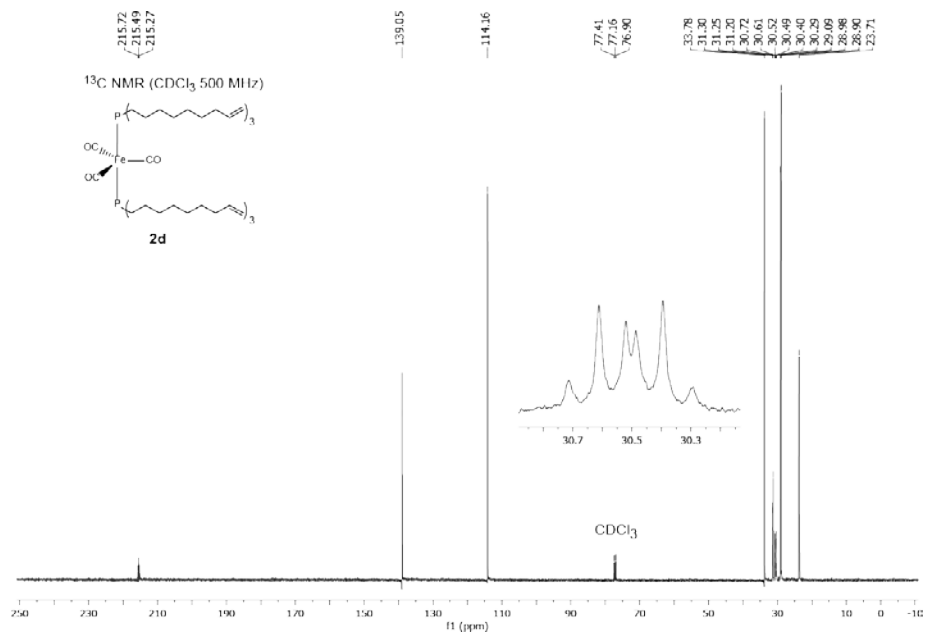
SUPPLEMENTARY MATERIAL

Syntheses of Iron(0) Complexes of Symmetrical Trialkylphosphines with Three  
Terminal Vinyl Groups,  $P((CH_2)_mCH=CH_2)_3$

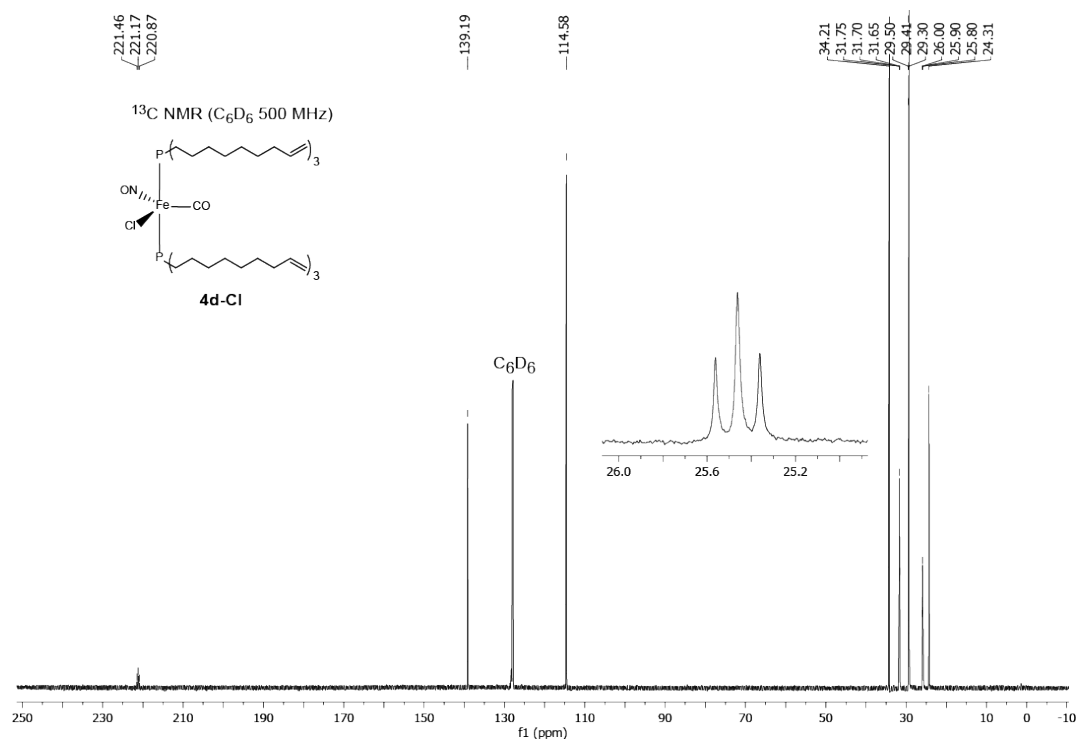
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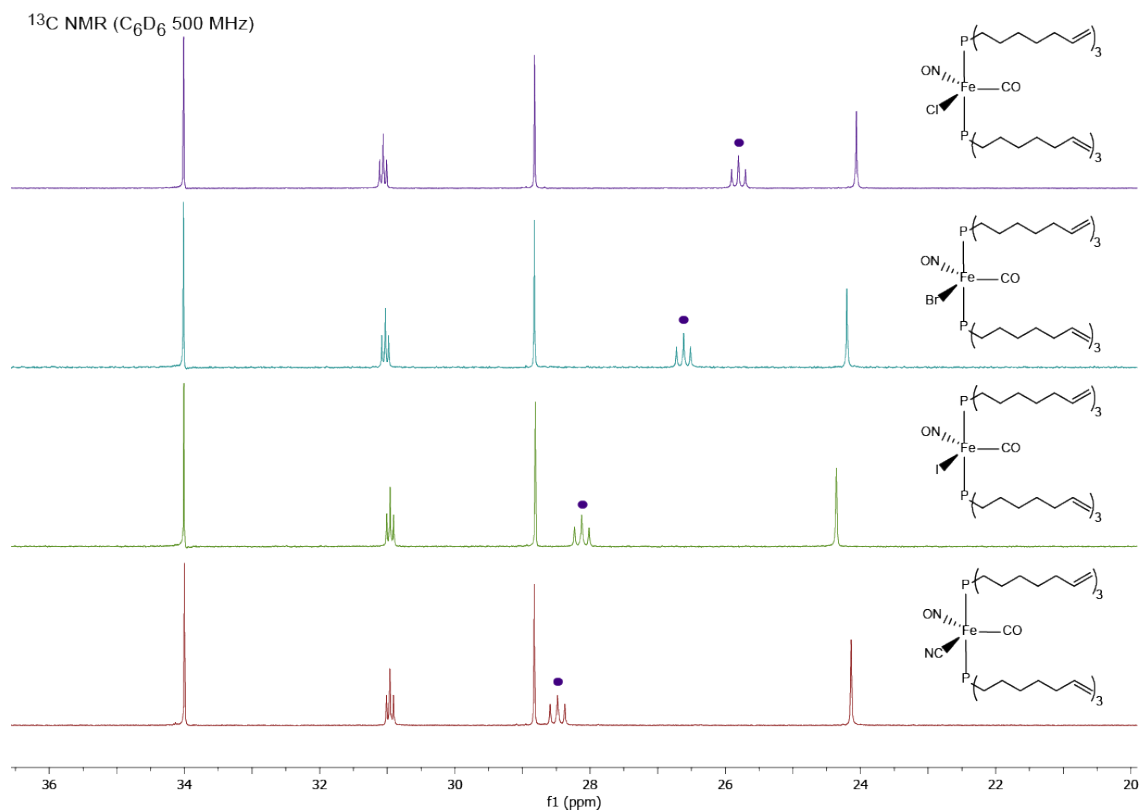
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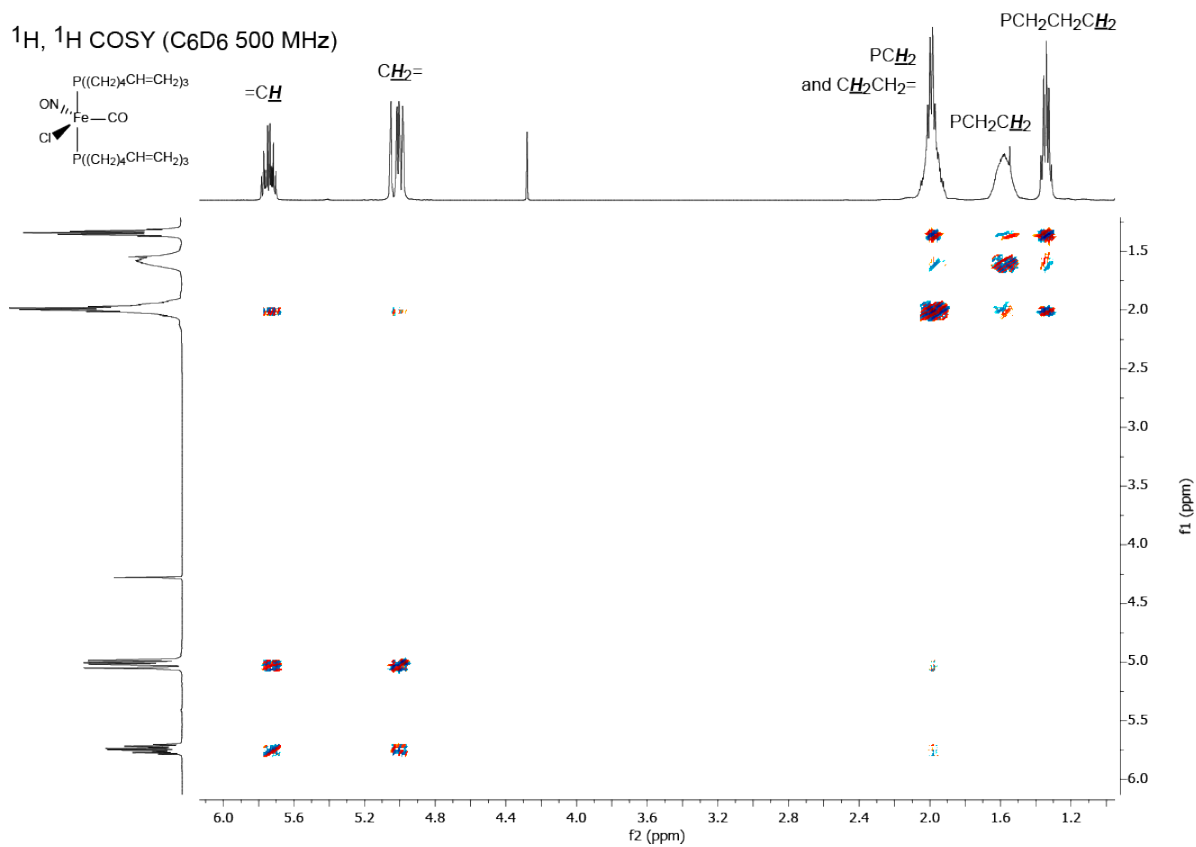
**Figure s1.** <sup>13</sup>C NMR of *trans*-Fe(CO)<sub>3</sub>(P((CH<sub>2</sub>)<sub>7</sub>CH=CH<sub>2</sub>)<sub>3</sub>)<sub>2</sub> (**2d**) with inset of complex multiplet of the PCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub> signal



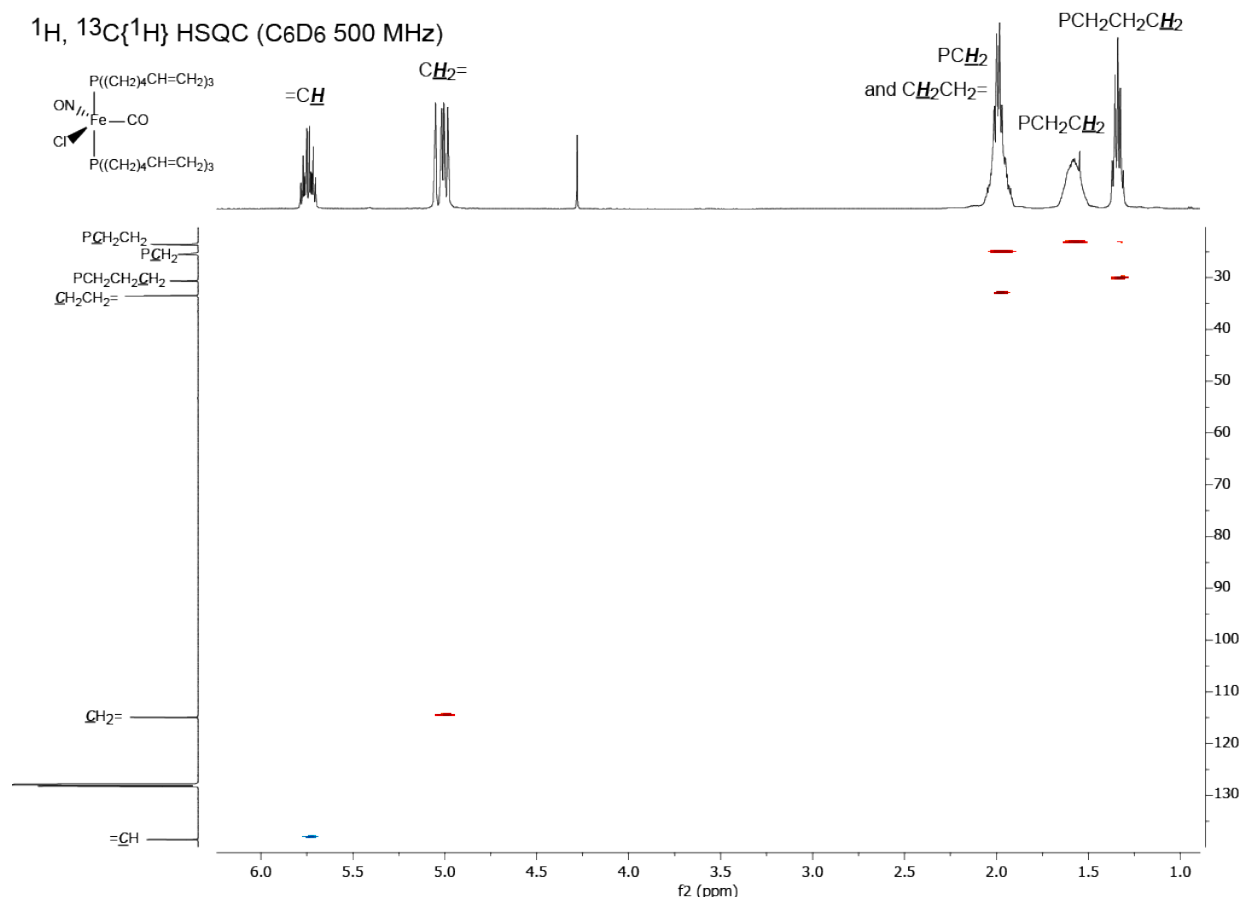
**Figure s2.** <sup>13</sup>C NMR of *trans*-Fe(CO)(NO)(Cl)(P((CH<sub>2</sub>)<sub>7</sub>CH=CH<sub>2</sub>)<sub>3</sub>)<sub>2</sub> (**4d-Cl**) with inset of well-defined virtual triplet of the PCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub> signal



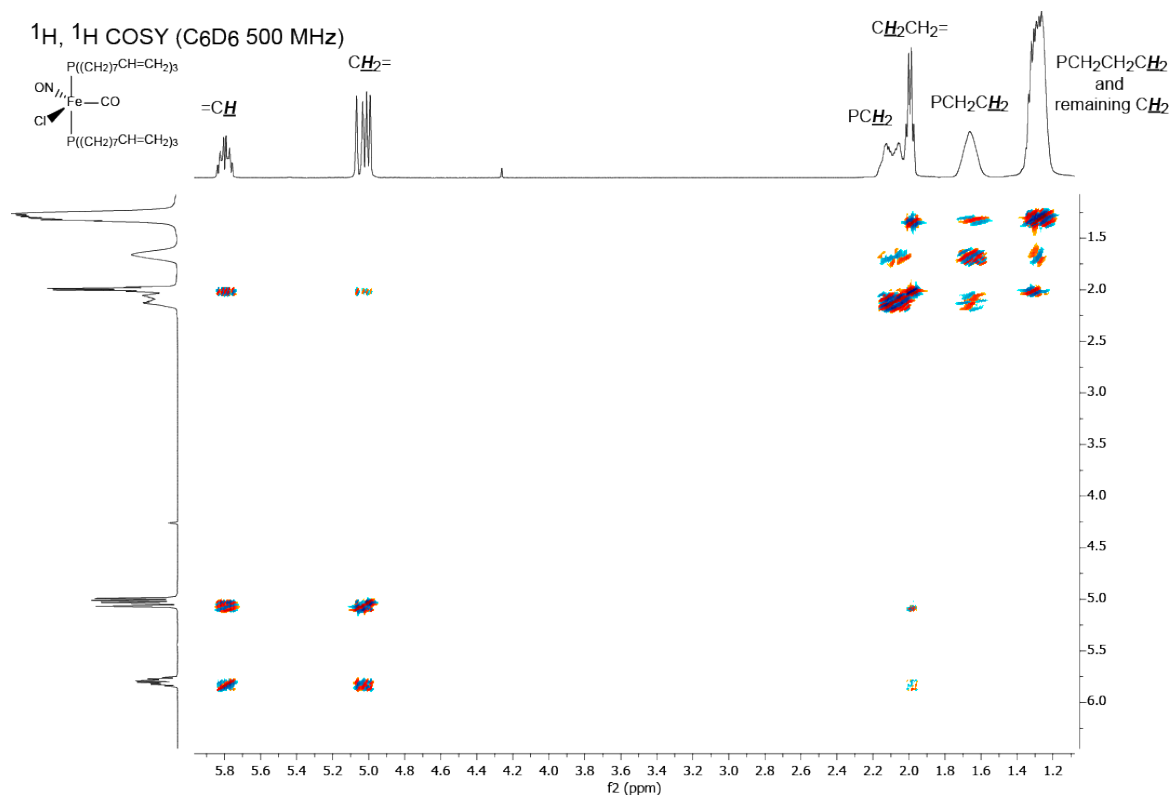
**Figure s3.** CH<sub>2</sub> region of the <sup>13</sup>C NMR spectra of *trans*-Fe(CO)(NO)(X)(P((CH<sub>2</sub>)<sub>5</sub>CH=CH<sub>2</sub>)<sub>3</sub>)<sub>2</sub> (**4b-Cl**, **Br**, **I**, and **CN**) illustrating the downfield shift of the PCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub> signal



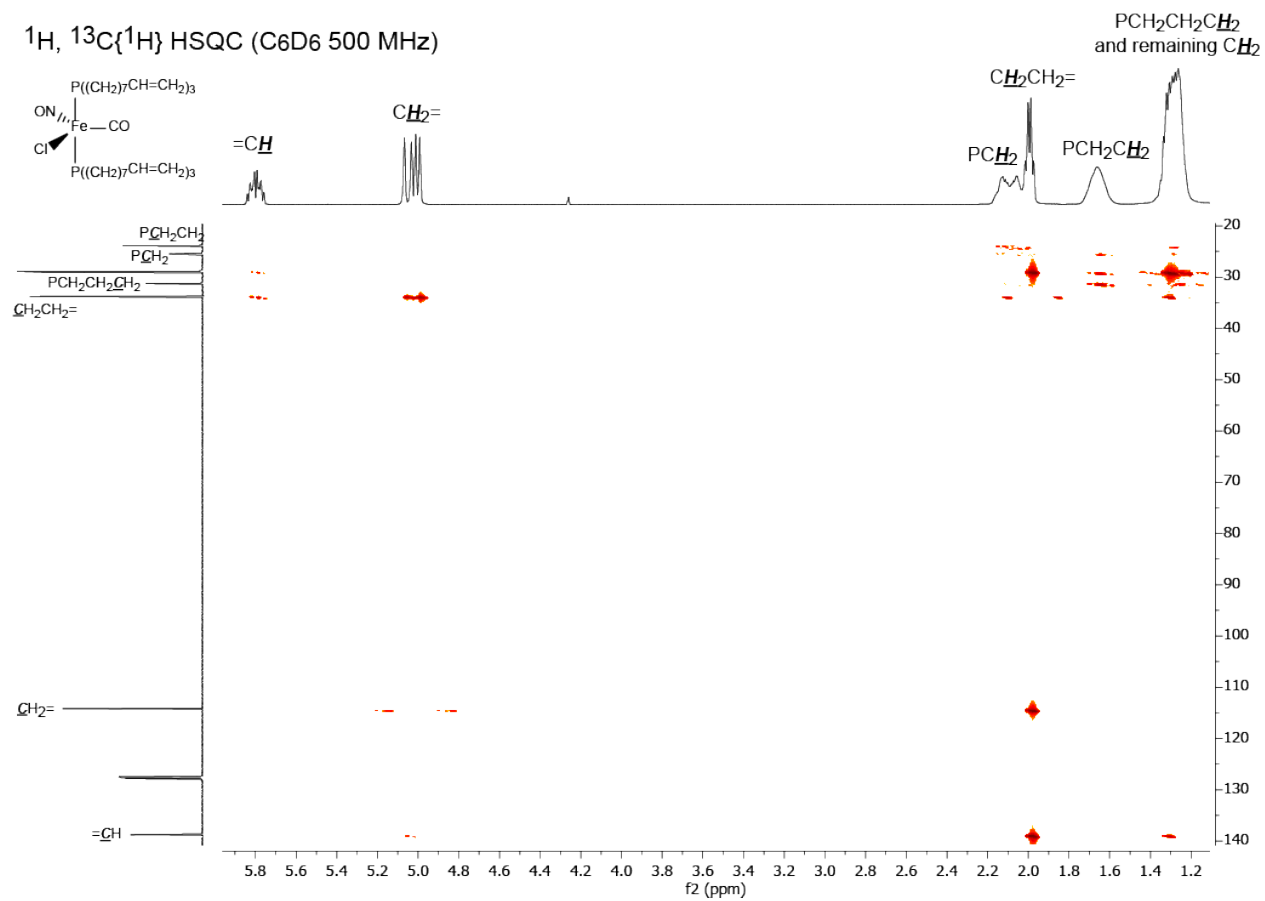
**Figure s4.**  $^1\text{H}$ ,  $^1\text{H}$  COSY NMR spectrum (500 MHz) of **4a-Cl** illustrating signal assignments



**Figure s5.**  $^1\text{H}$ ,  $^{13}\text{C}\{^1\text{H}\}$  HSQC NMR spectrum (500 MHz) of **4a-Cl** illustrating signal assignments



**Figure s6.**  $^1\text{H}$ ,  $^1\text{H}$  COSY NMR spectrum (500 MHz) of **4d-Cl** illustrating signal assignments



**Figure s7.**  $^1\text{H}, ^{13}\text{C}\{^1\text{H}\}$  HSQC NMR spectrum (500 MHz) of **4d-Cl** illustrating signal assignments