

Generation of ferrocenylvinyl cation $\text{CpFeC}_5\text{H}_4\text{-C}^+=\text{CH}_2$ by protonation of ferrocenylacetylene with Nafion and its reactions with SMe_2 and PPh_3 in scCO_2 giving onium salts

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NMR Spectroscopy

Figure S1 A fragment of the NMR 2D-HMBC (Bruker Avance 600, 600.22 MHz, DMFA-d₇) spectrum of the compounds **1**, **2**, acetylferrocene.

Figure S2 NMR 2D-HMBC (Bruker Avance 600, 600.22 MHz, DMFA-d₇) spectrum of compounds **1**, **2**, acetylferrocene.

Figure S3 NMR ¹H spectrum (Bruker Avance 400, 400.22 MHz, CD₂Cl₂) of compound **3**.

Figure S4 NMR ¹³C{¹H} spectrum (Bruker Avance 400, 400.22 MHz, CD₂Cl₂) of compound **3**.

Figure S5 NMR ¹¹B spectrum (Bruker Avance 400, 128.38 MHz, CD₂Cl₂) of compound **3**.

Figure S6 NMR ³¹P{¹H} spectrum (Bruker Avance 400, 161.98 MHz, CD₂Cl₂) of compound **3**.

Figure S7 NMR 2D HSQC spectrum (Bruker Avance 400, 400.13 MHz, CD₂Cl₂) compounds **3**.

Figure S8 NMR ¹H (Bruker Avance 400, 400.13 MHz, CD₂Cl₂) spectrum of compounds **4**.

Figure S9 NMR ¹³C{¹H} spectrum (Bruker Avance 400, 100.61 MHz, CD₂Cl₂) of compound **4**.

Figure S10 NMR ¹¹B spectrum (Bruker Avance 400, 128.38 MHz, CD₂Cl₂) of compound **4**.

Figure S11 NMR 2D HSQC spectrum (Bruker Avance 400, 400.13 MHz, CD₂Cl₂) compound **4**.

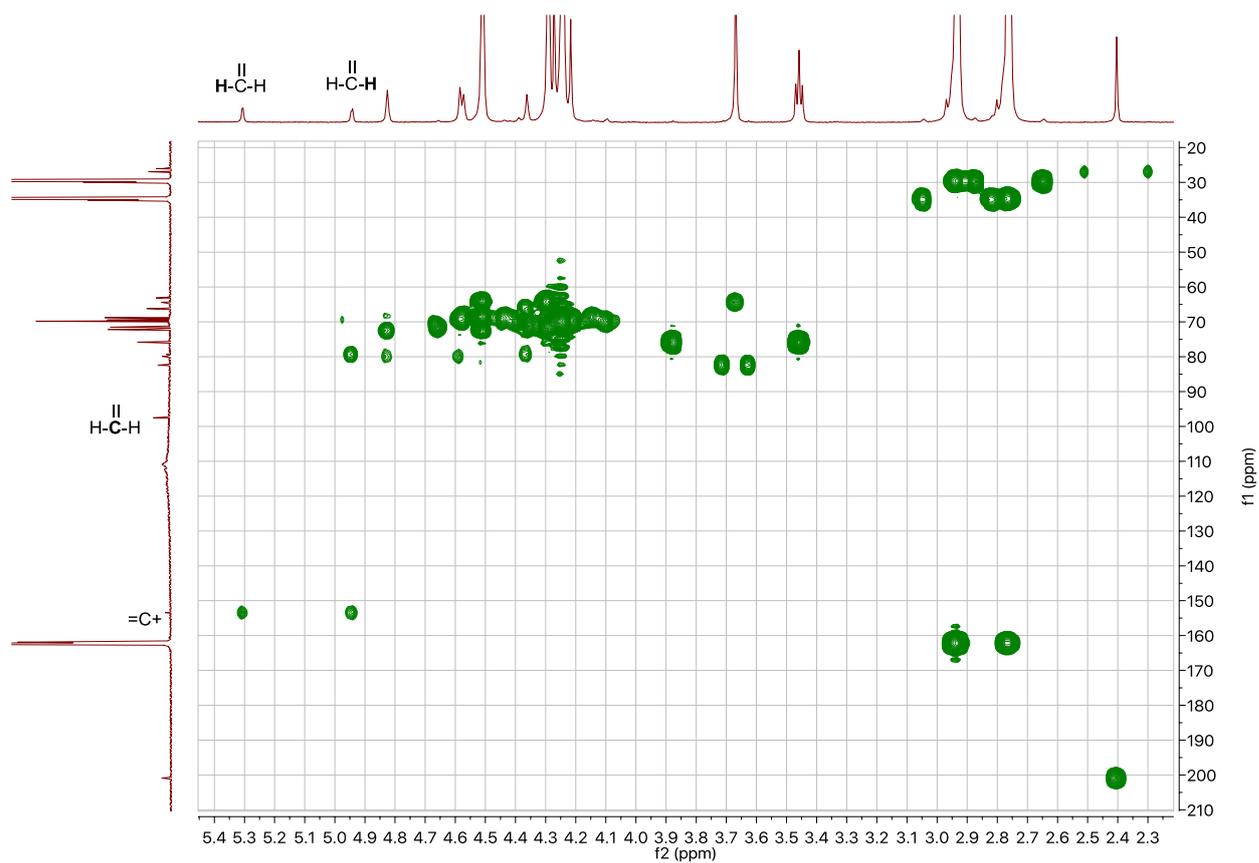


Figure S1 A fragment of the 2D-HMBC (Bruker Avance-600, 600.22 Mhz, DMFA-d₇) spectrum of the compounds 1,2, acetylferrocene.

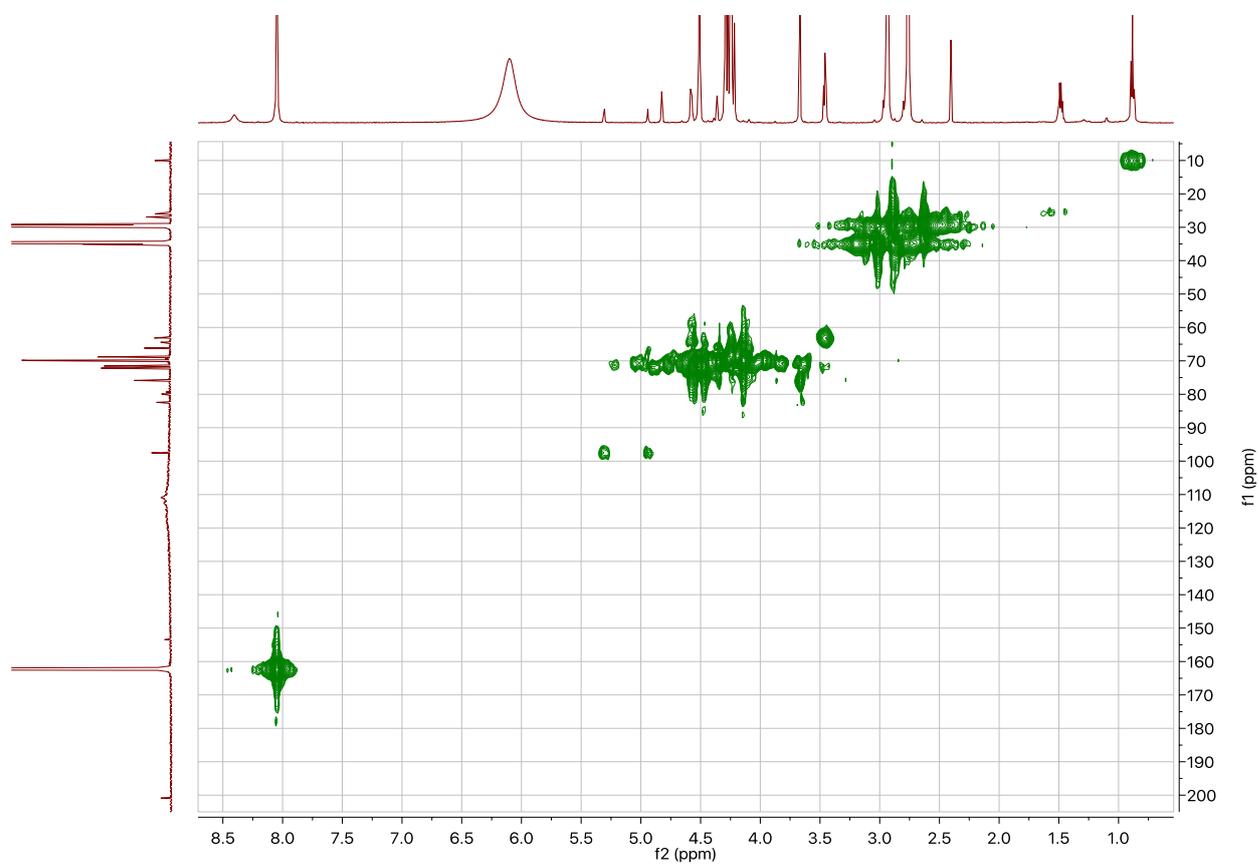


Figure S2 NMR 2D-HMBC (Bruker Avance-600, 600.22 Mhz, DMFA-d₇) spectrum of the compounds 1,2, acetylferrocene.

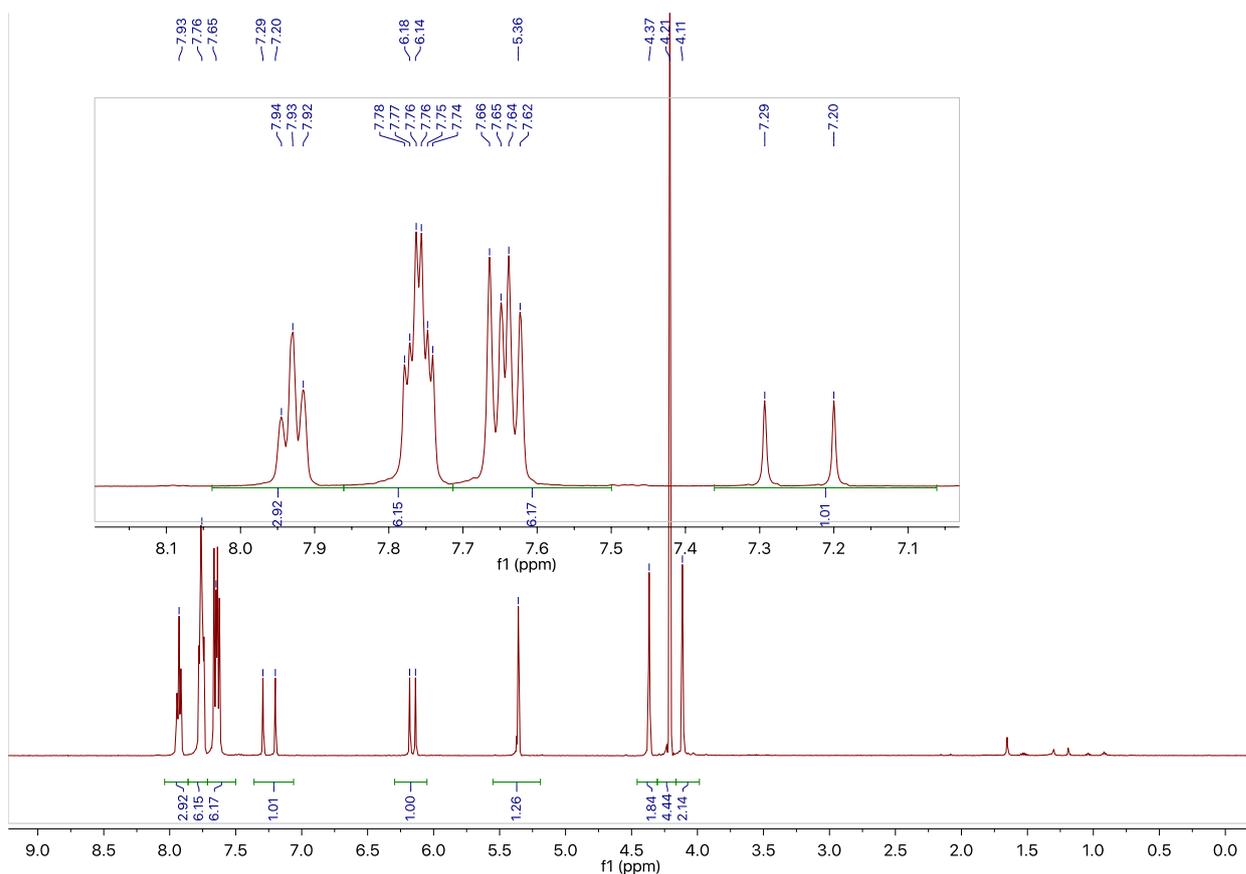


Figure S3 NMR ^1H spectrum (Bruker Avance-400, 400.13 MHz, CD_2Cl_2) of compound **3**.

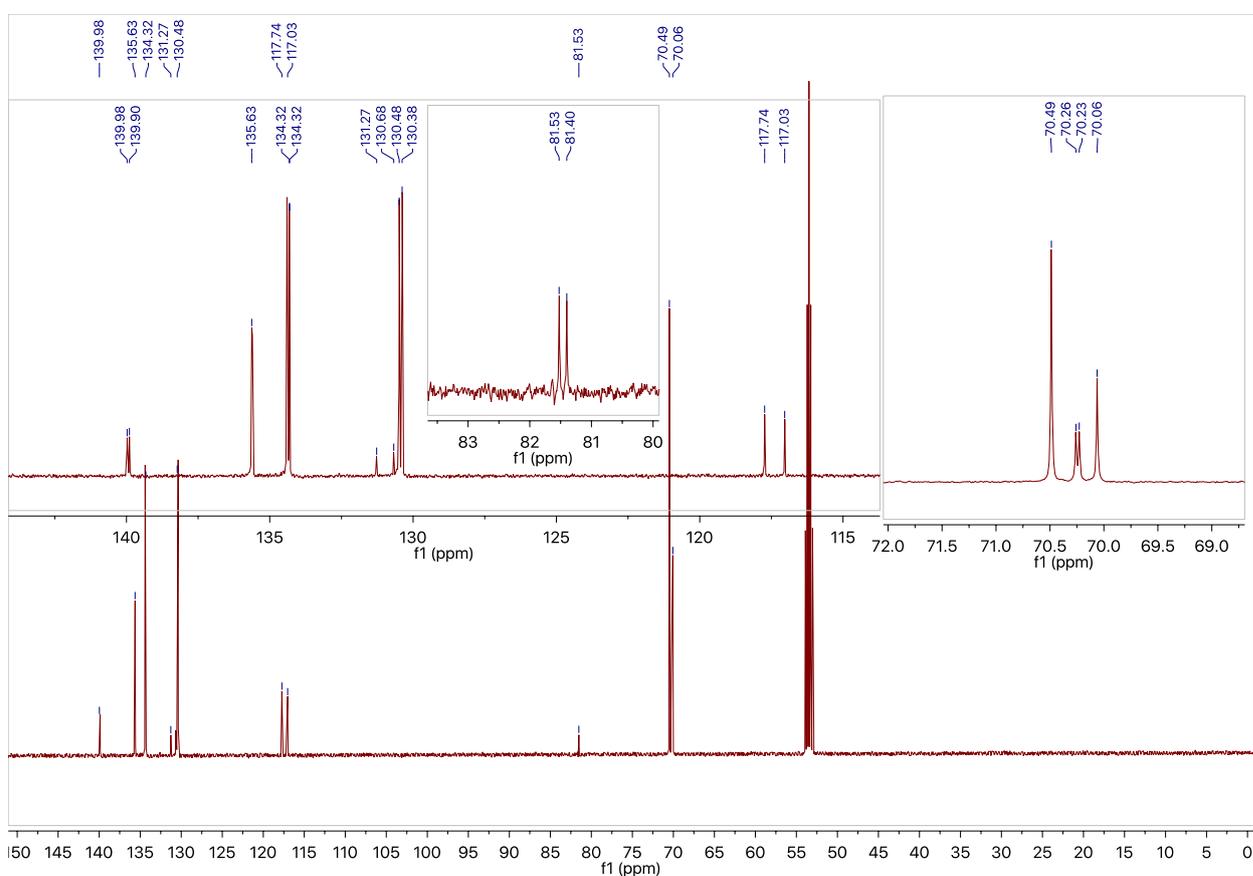


Figure S4 NMR $^{13}\text{C}\{^1\text{H}\}$ spectrum (Bruker Avance-400, 100.61 MHz, CD_2Cl_2) of compound **3**.

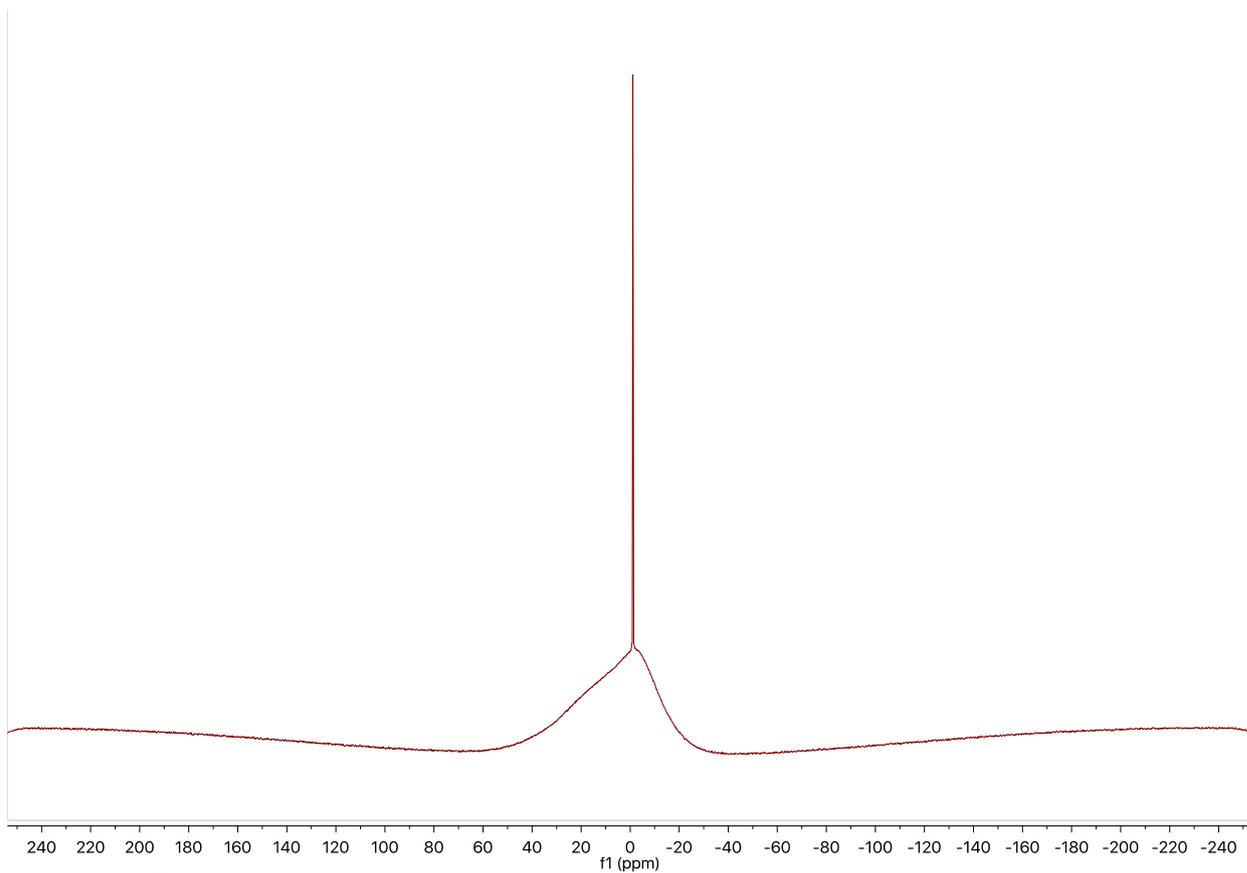


Figure S5 ^{11}B {1H} spectrum (Bruker Avance-400, 128.38 MHz, CD_2Cl_2) of compound **3**.

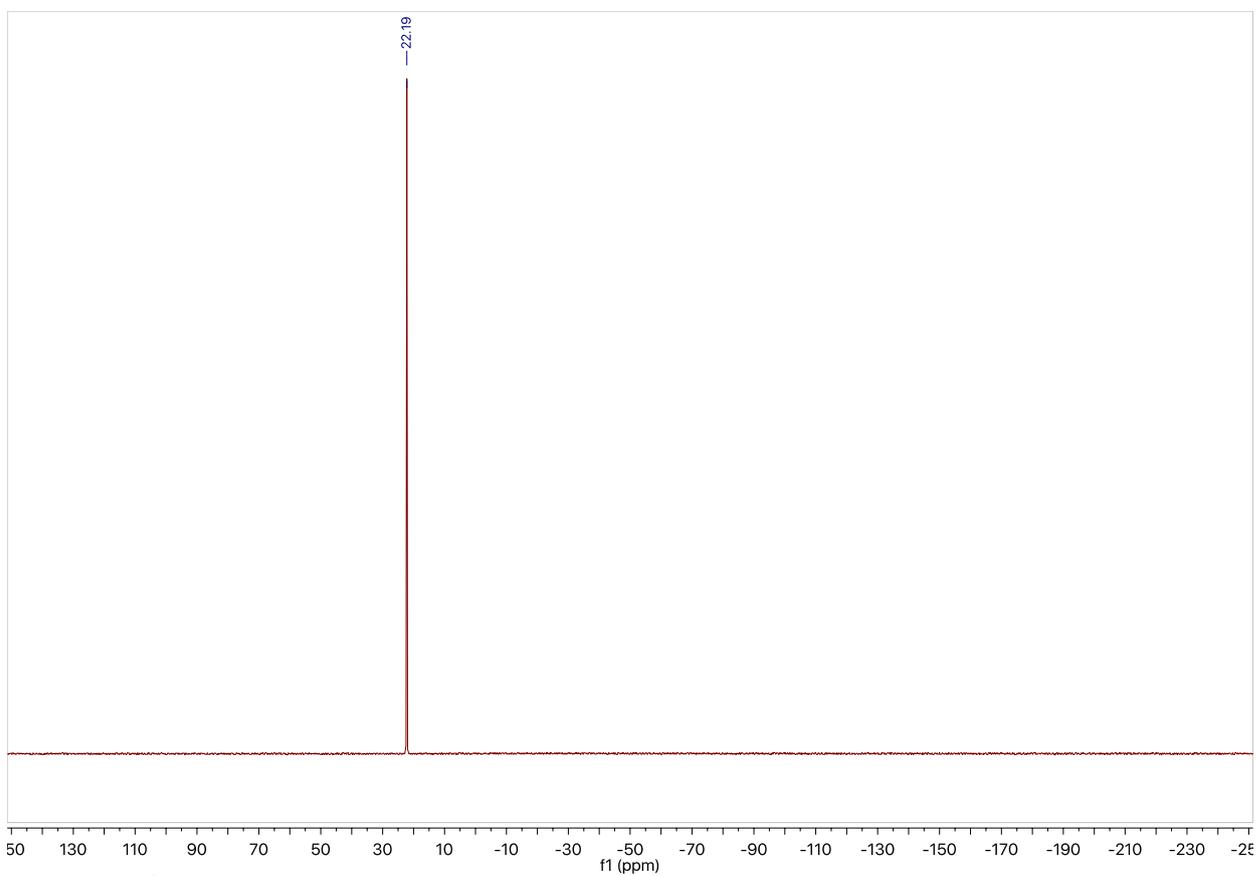


Figure S6 ^{31}P {1H} spectrum (Bruker Avance-400, 161.98 MHz, CD_2Cl_2) of compound **3**.

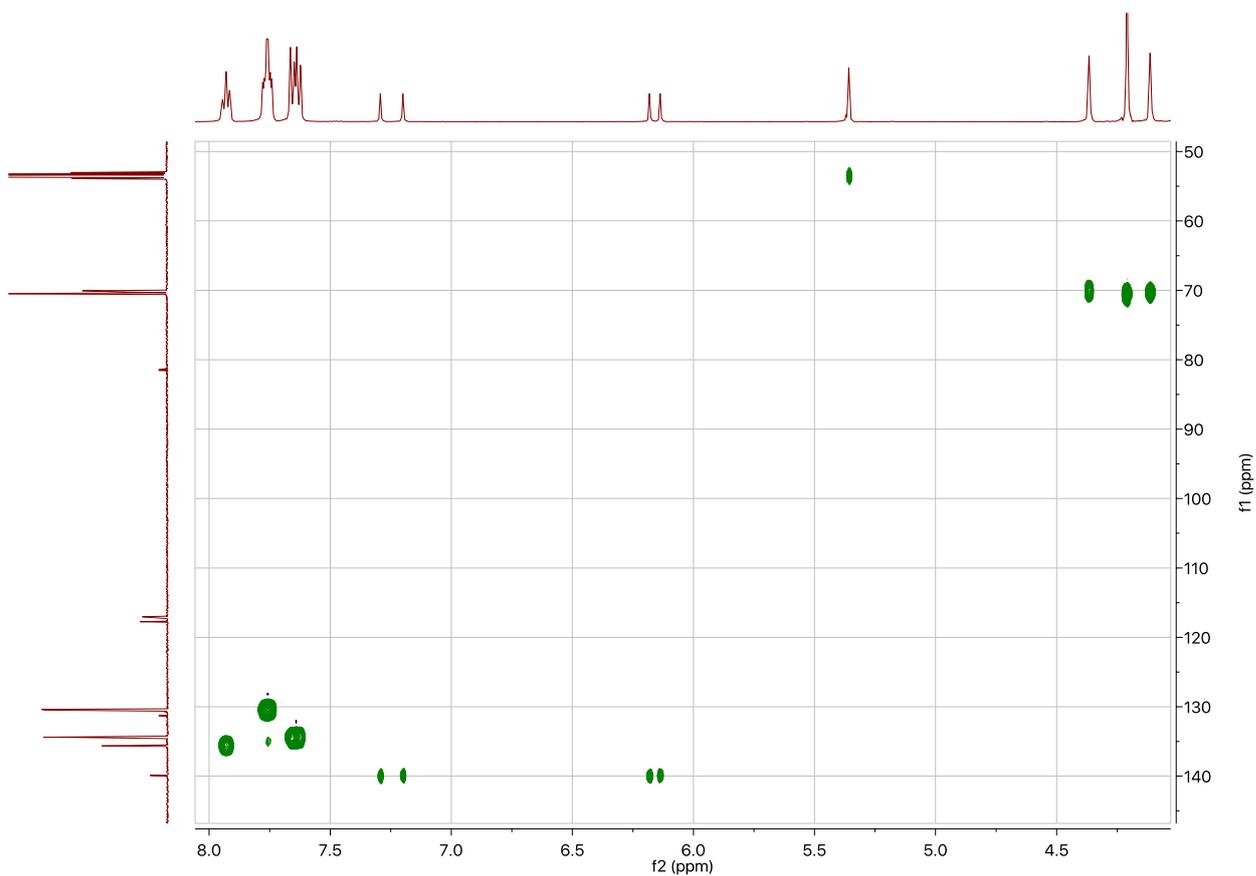


Figure S7 2D-HSQC spectrum (Bruker Avance-400, 400.13 MHz, CD₂Cl₂) of compound **3**.

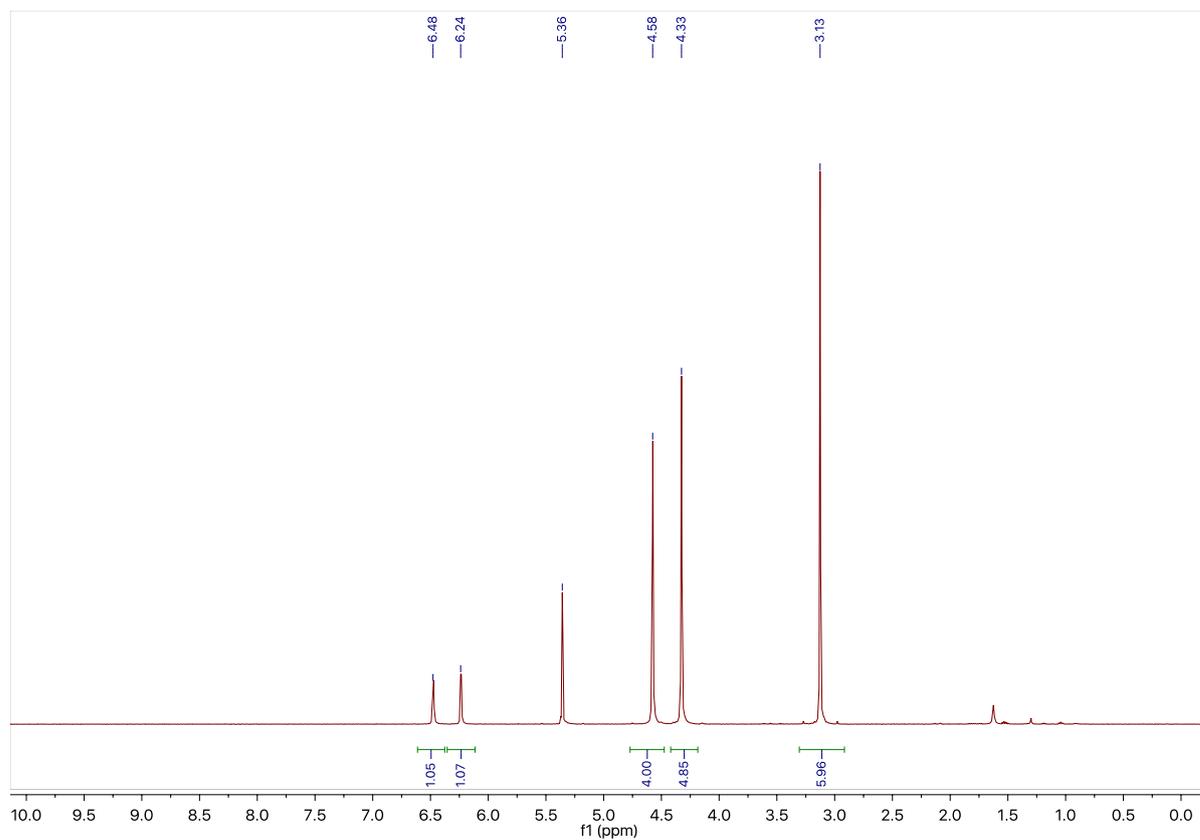


Figure S8 NMR ¹H spectrum (Bruker Avance-400, 400.13Mhz, CD₂Cl₂) of compound **4**.

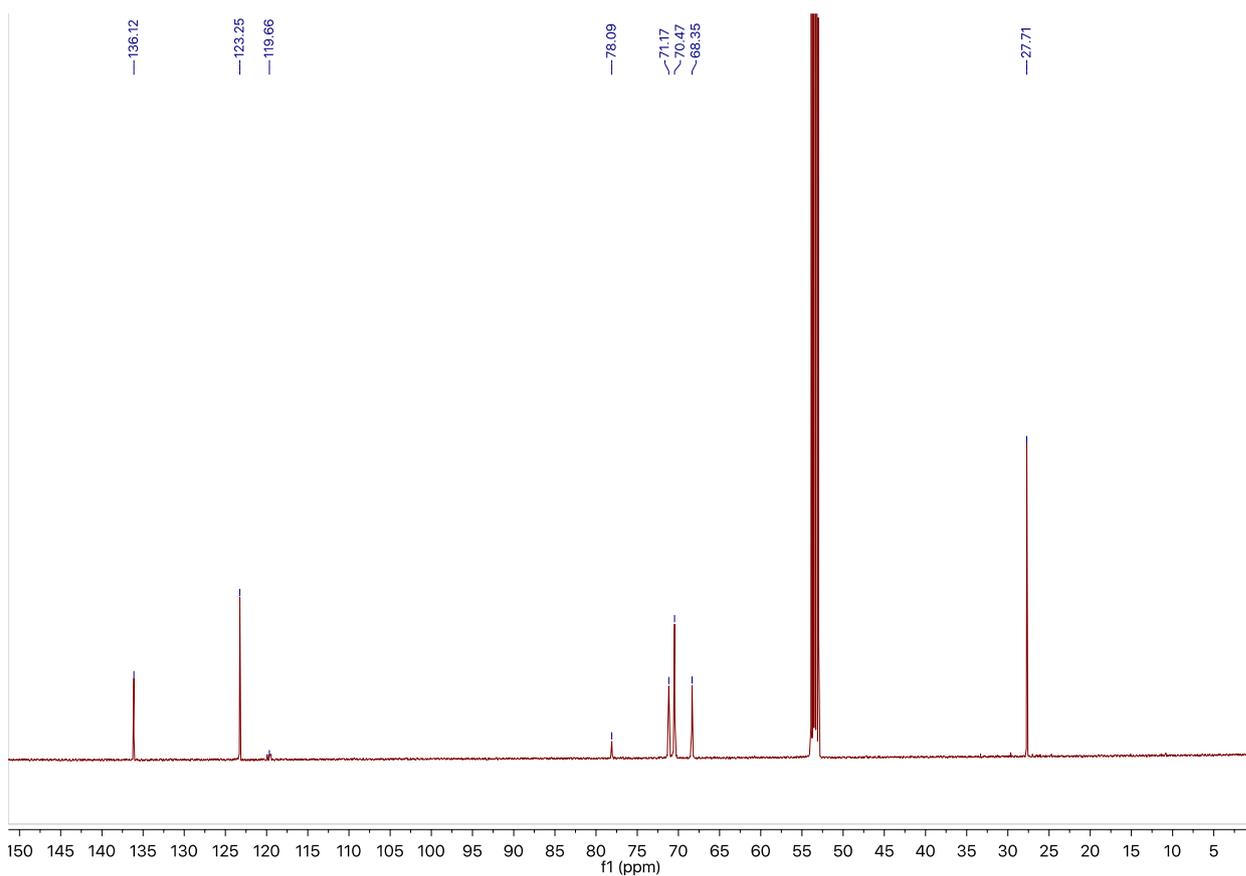


Figure S9 NMR ^{13}C spectrum (Bruker Avance-400, 100.61 Mhz, CD_2Cl_2) of compound **4**.

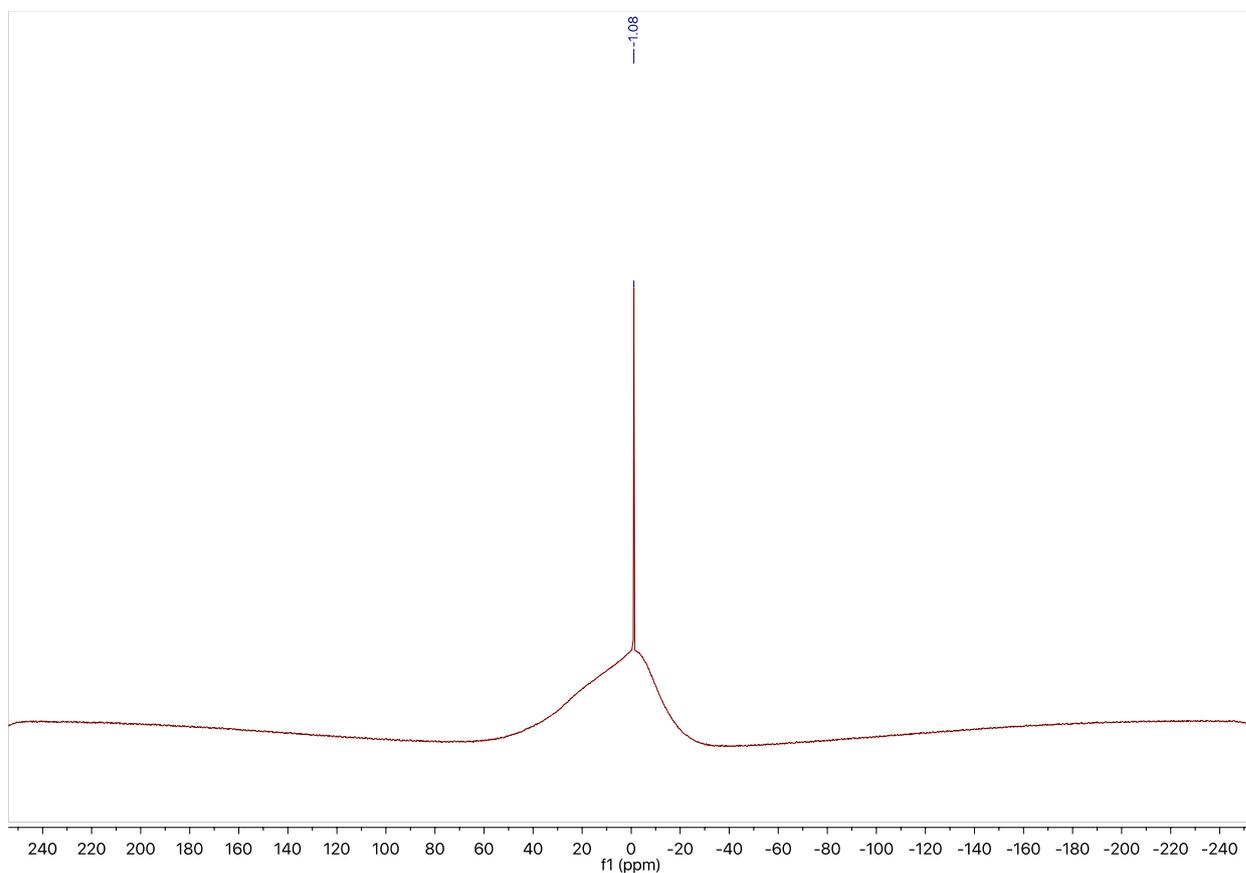


Figure S10 NMR ^{11}B spectrum (Bruker Avance-400, 128.38 Mhz, CD_2Cl_2) of compound **4**.

