



Dalton Transactions

SUPPORTING INFORMATION

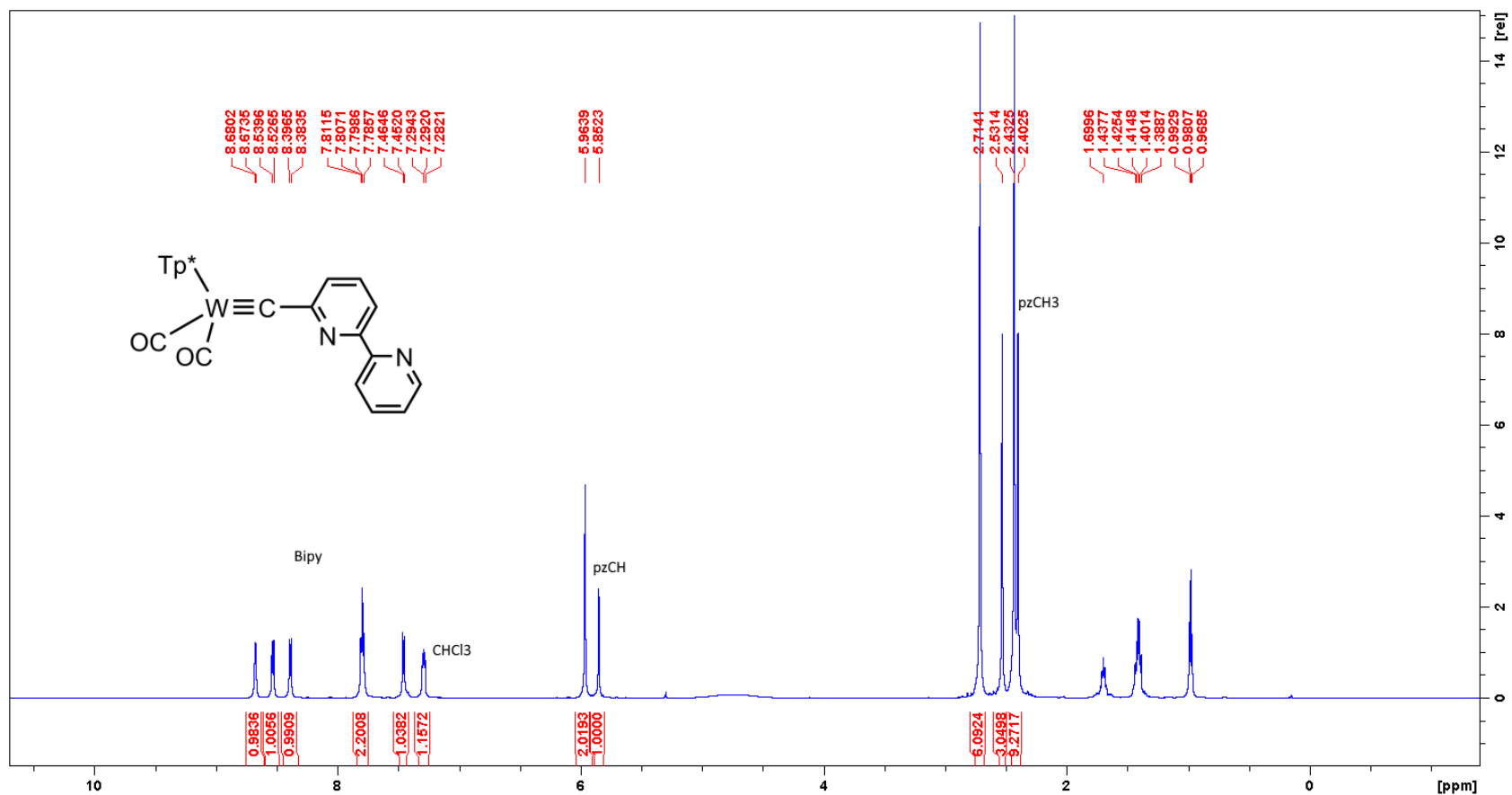
Electronic Supporting Information for:

Metal coordination to bipyridyl carbynes

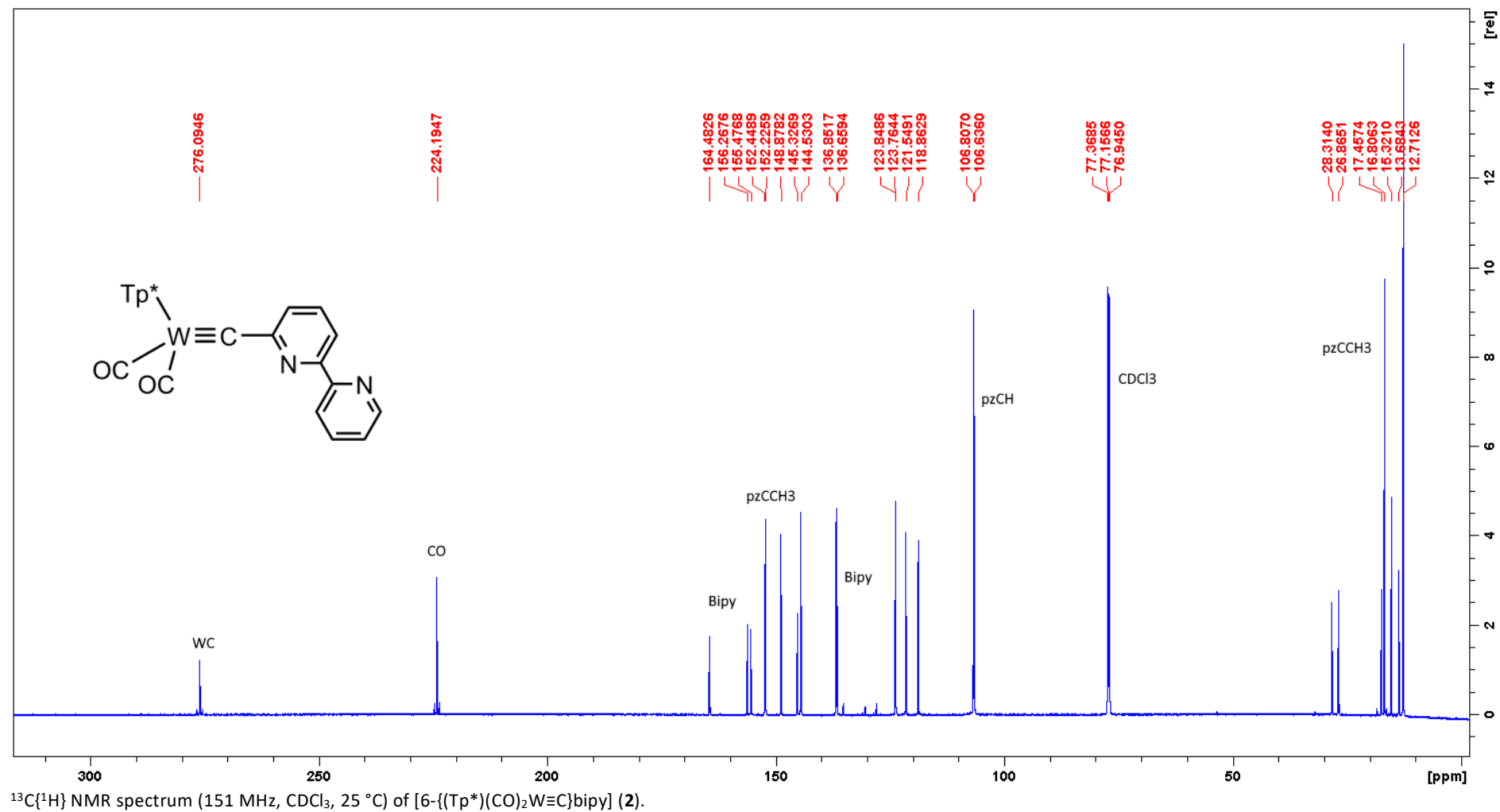
Benjamin J. Frogley^a and Anthony F. Hill^{a†}

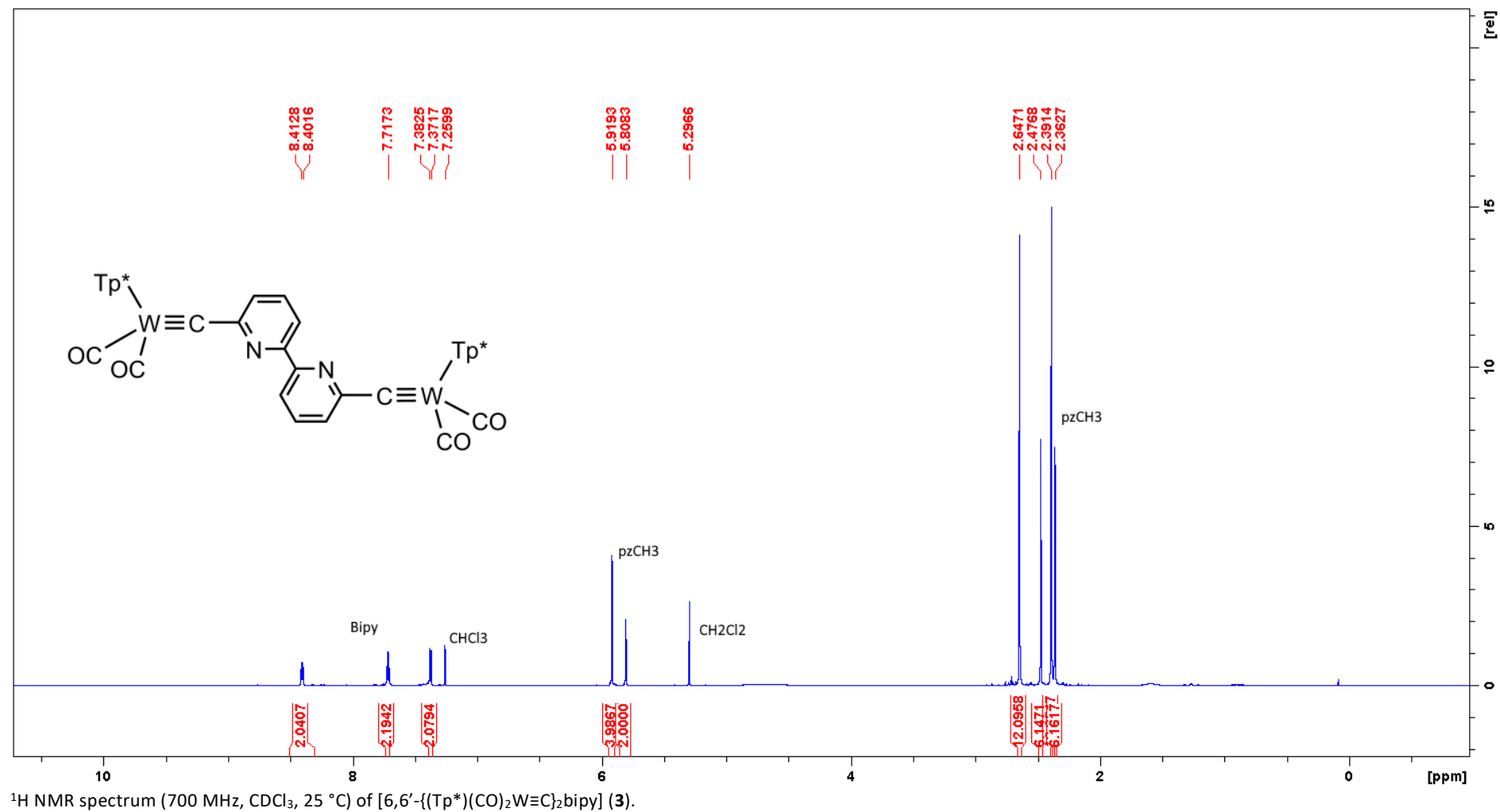
Selected NMR and infrared spectra

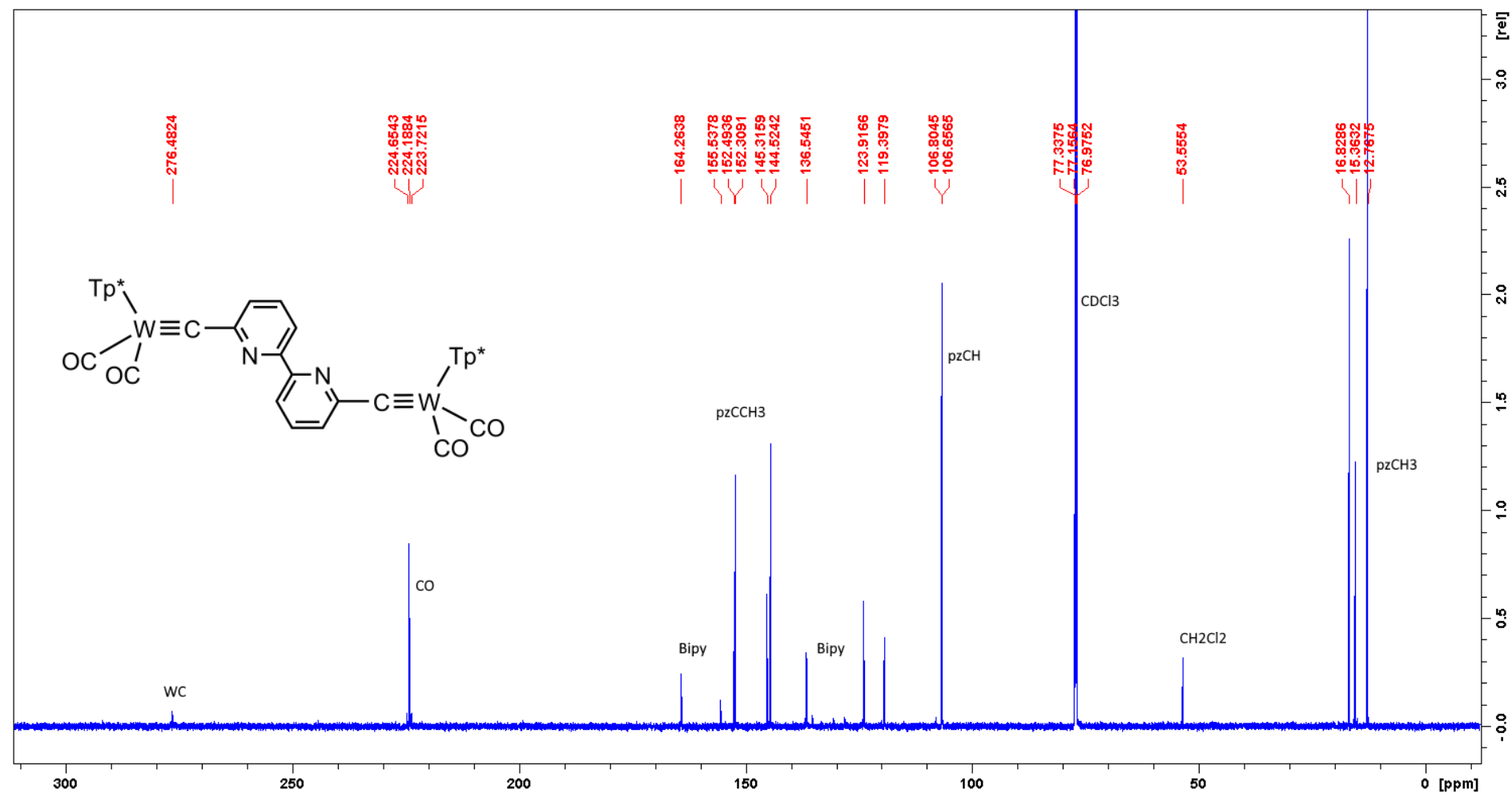
SUPPORTING INFORMATION

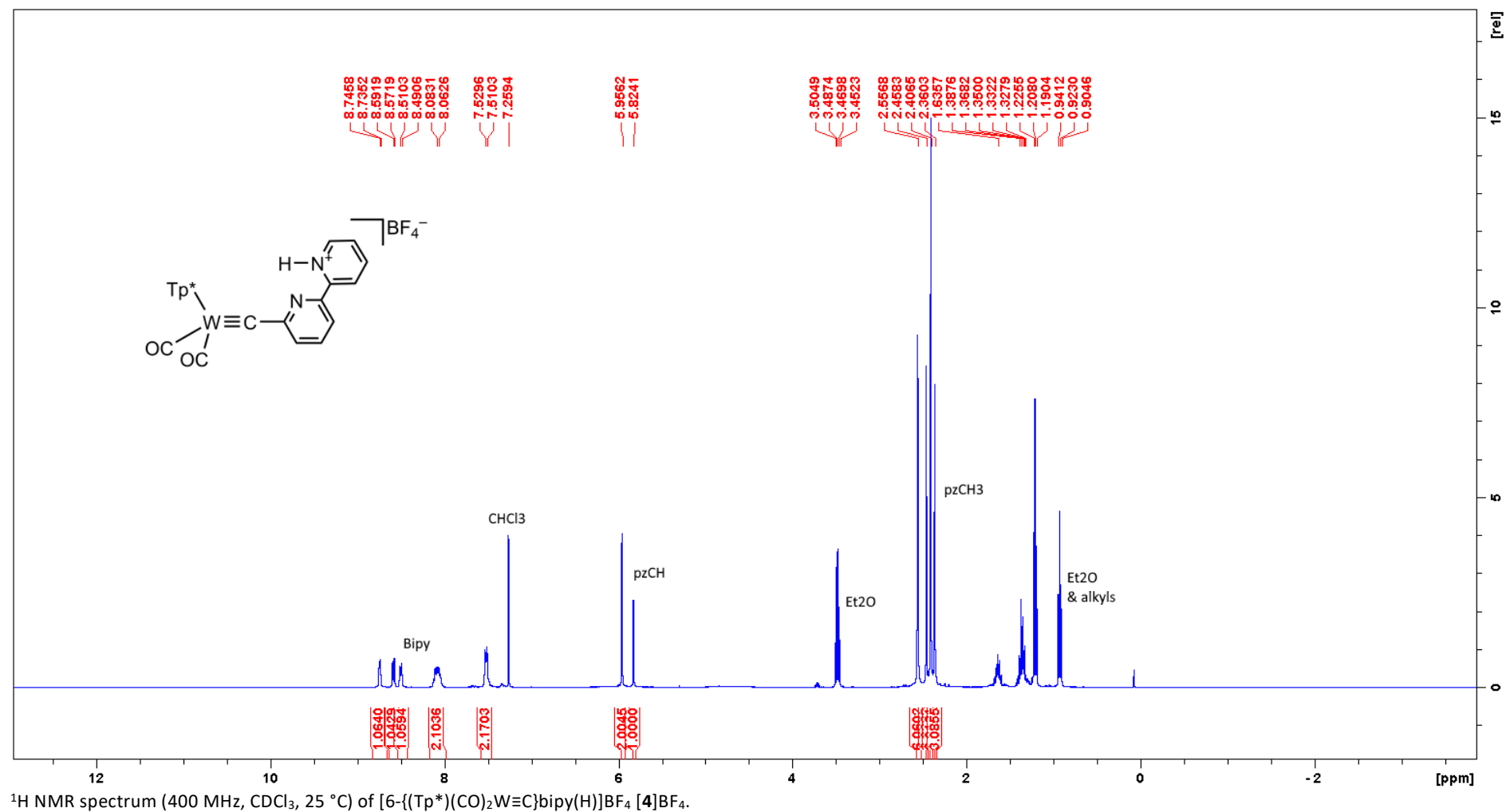


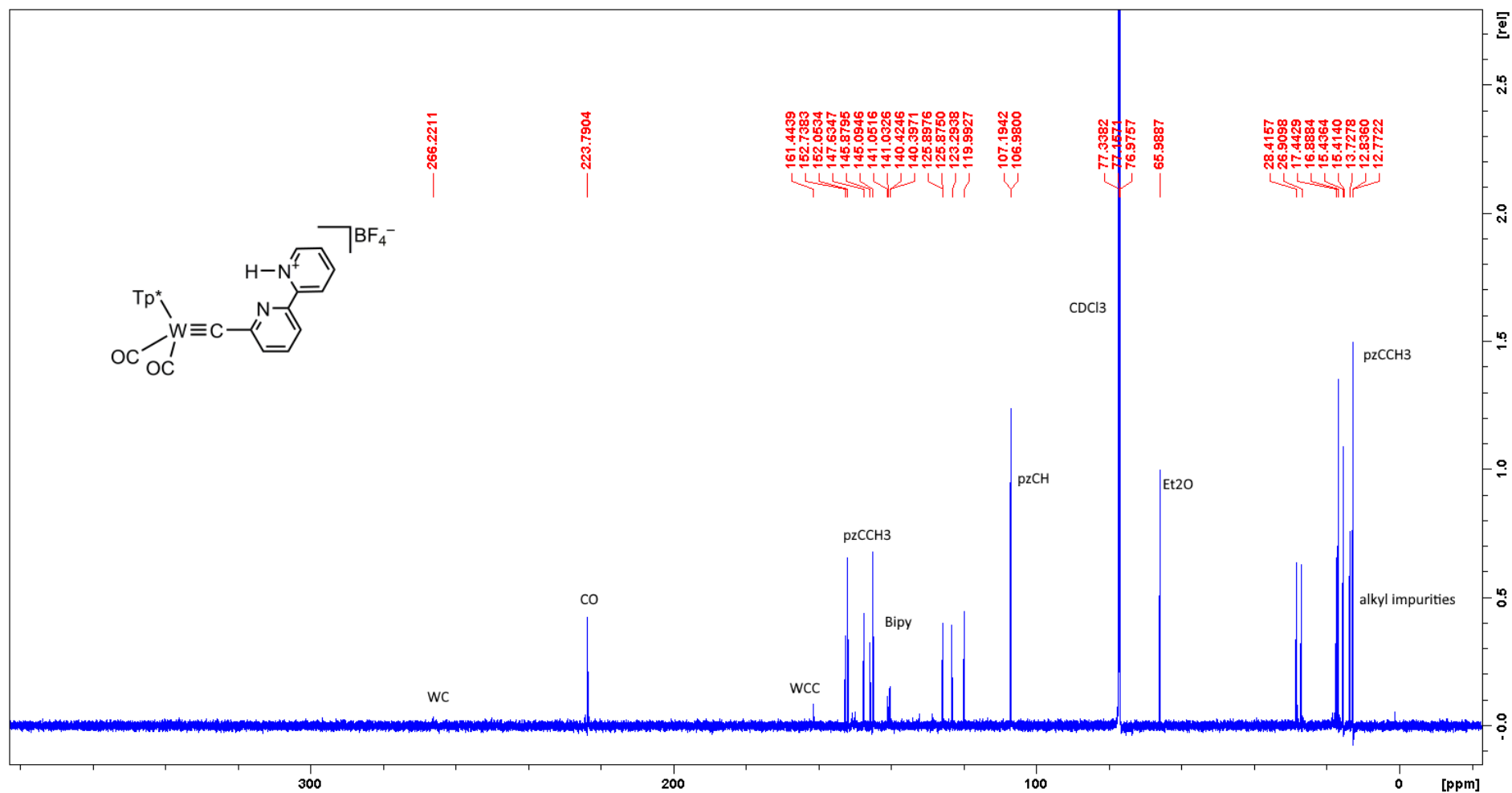
^1H NMR spectrum (600 MHz, CDCl_3 , 25 °C) of $[6-((\text{Tp}^*)(\text{CO})_2\text{W}\equiv\text{C})\text{bipy}]$ (2).

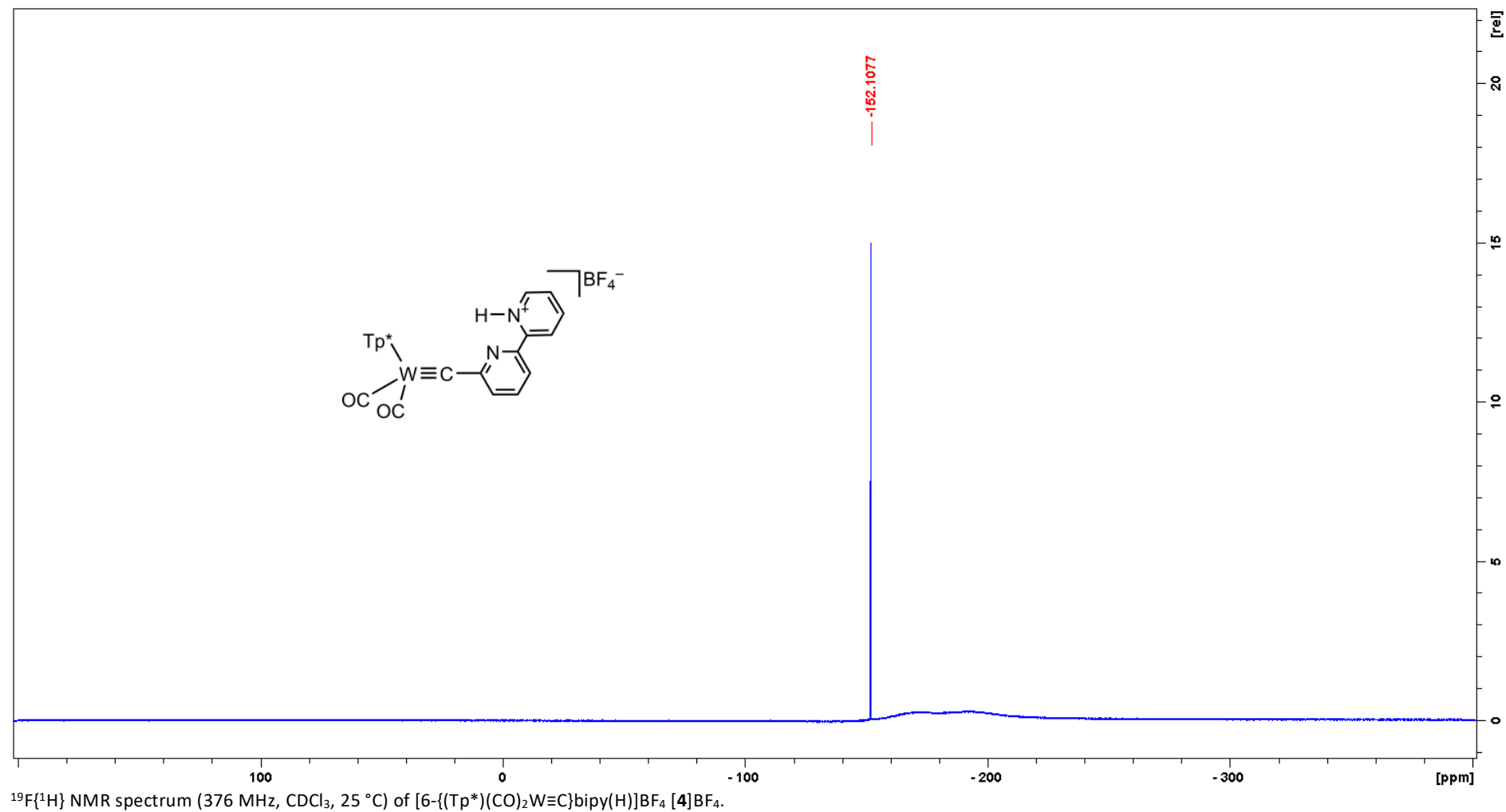


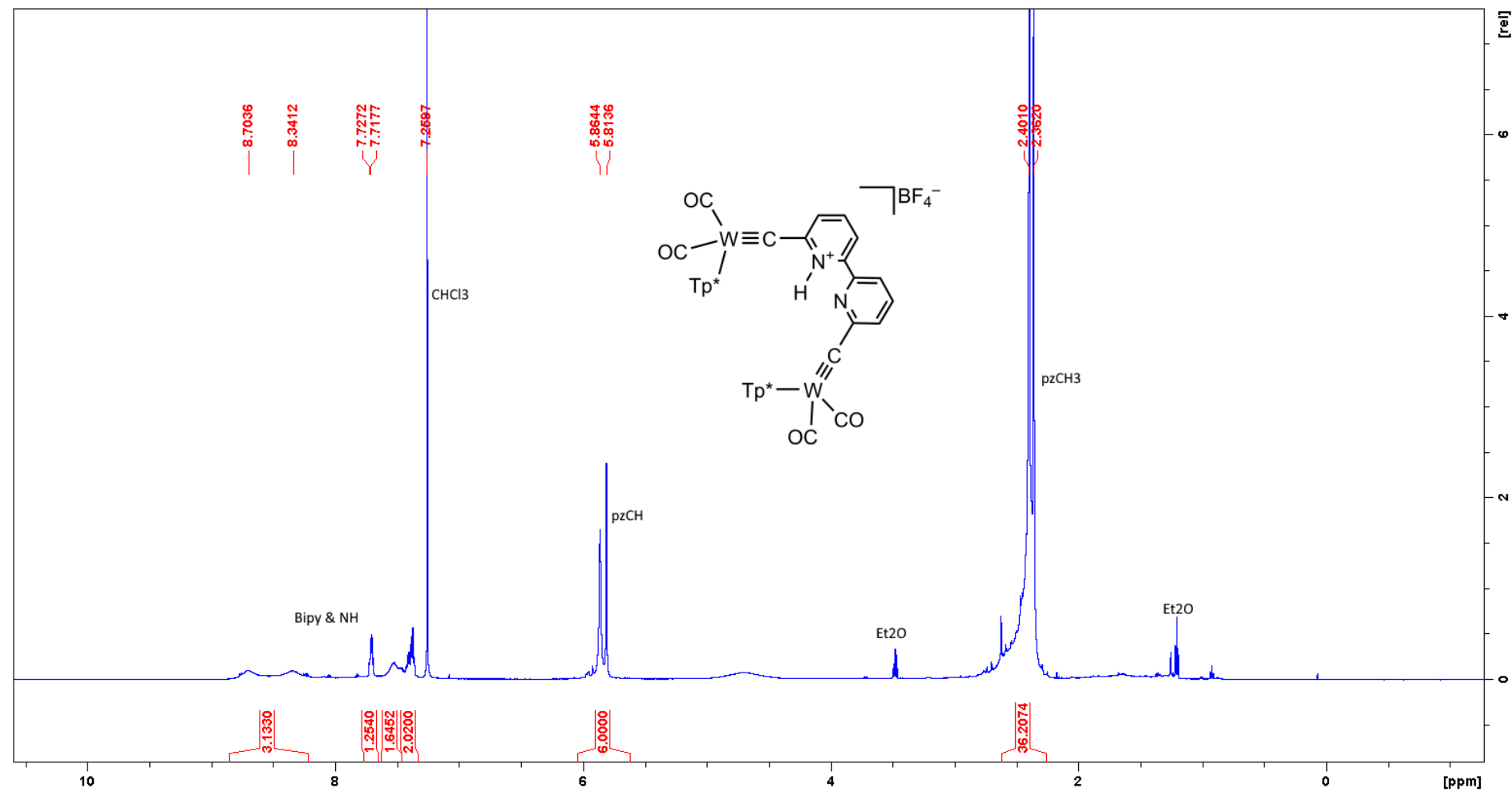




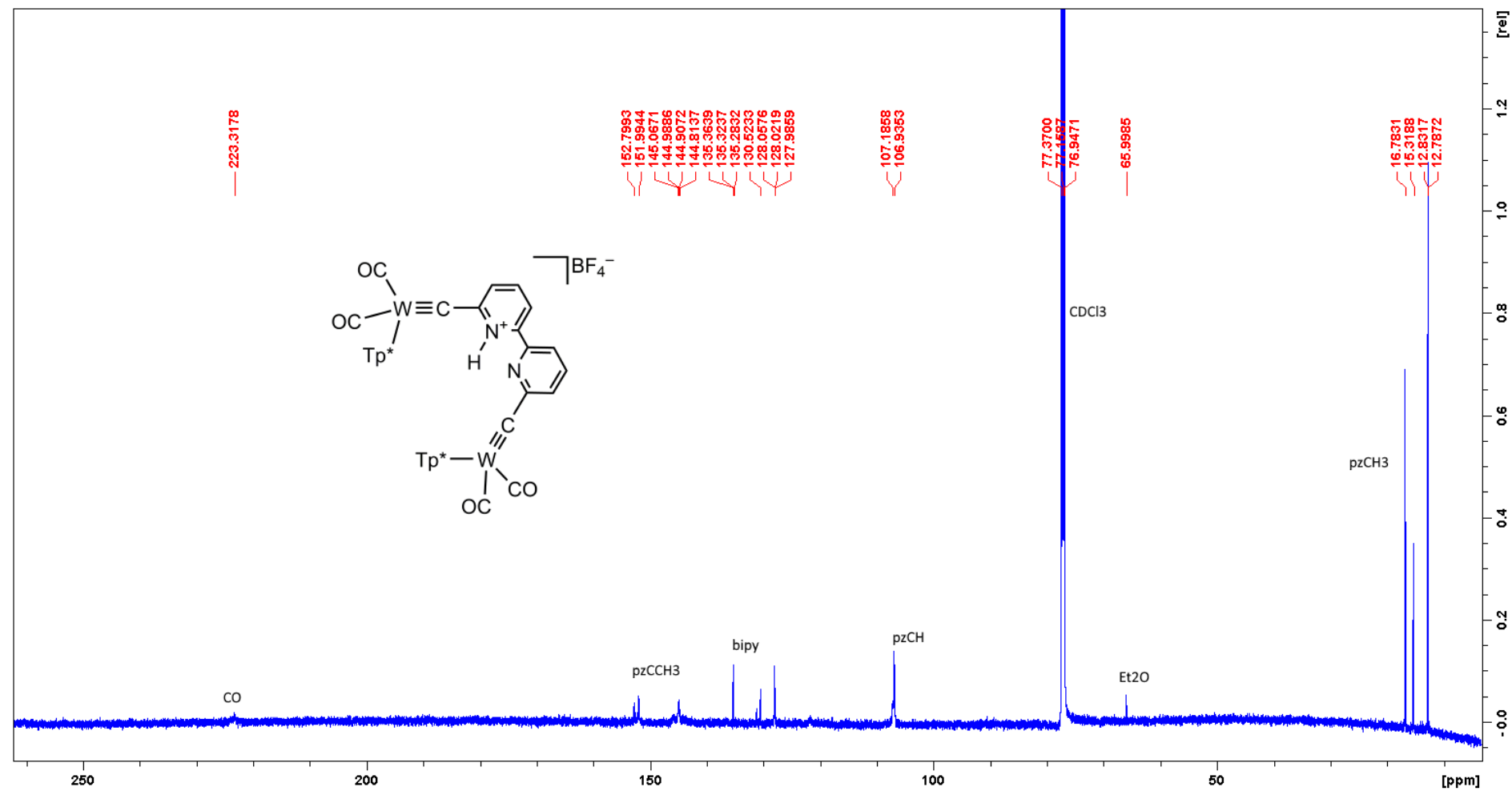




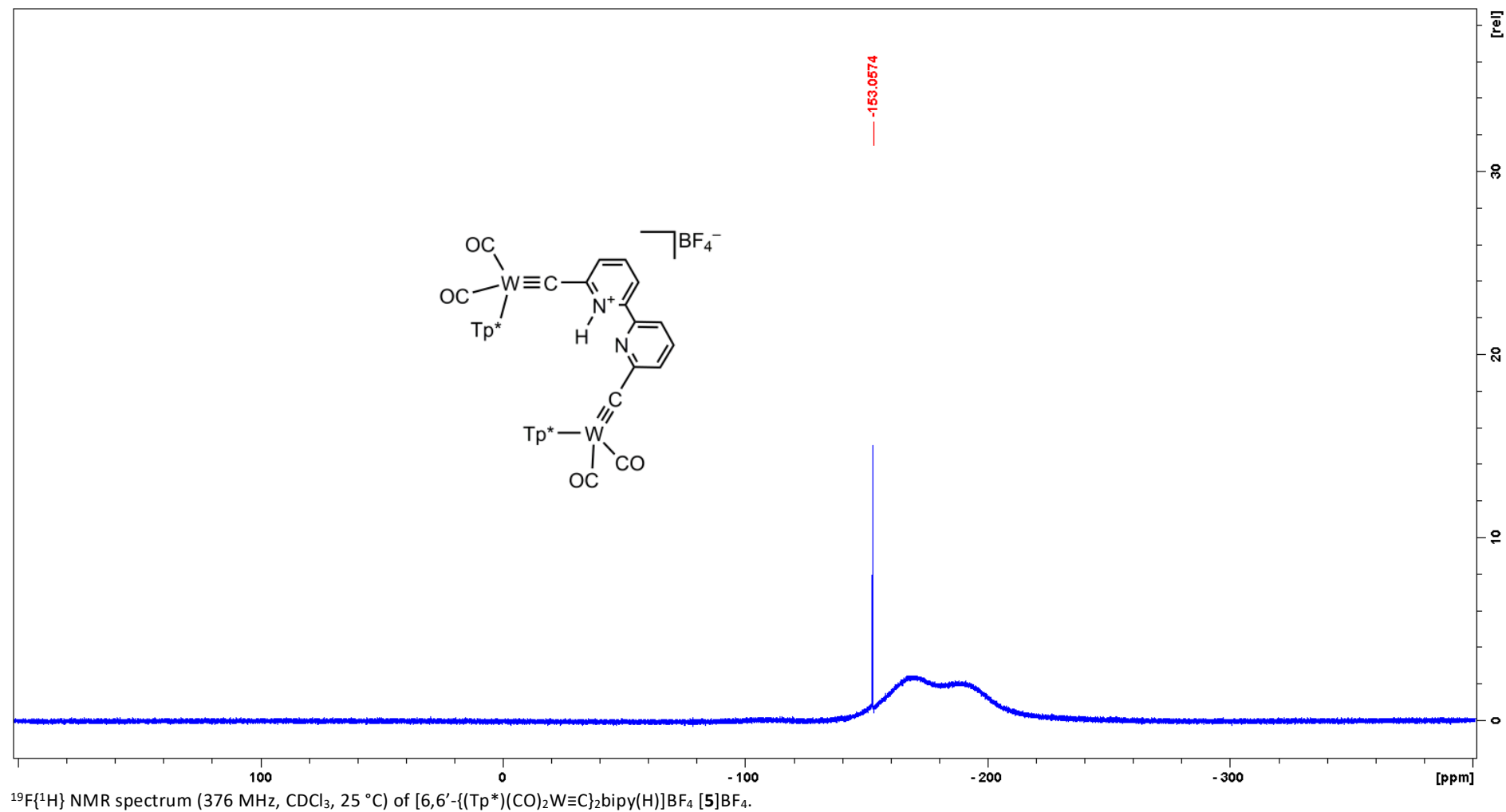




¹H NMR spectrum (600 MHz, CDCl₃, 25 °C) of [6,6'-((Tp*)(CO)₂W≡C)₂bipy(H)]BF₄ [5]BF₄.

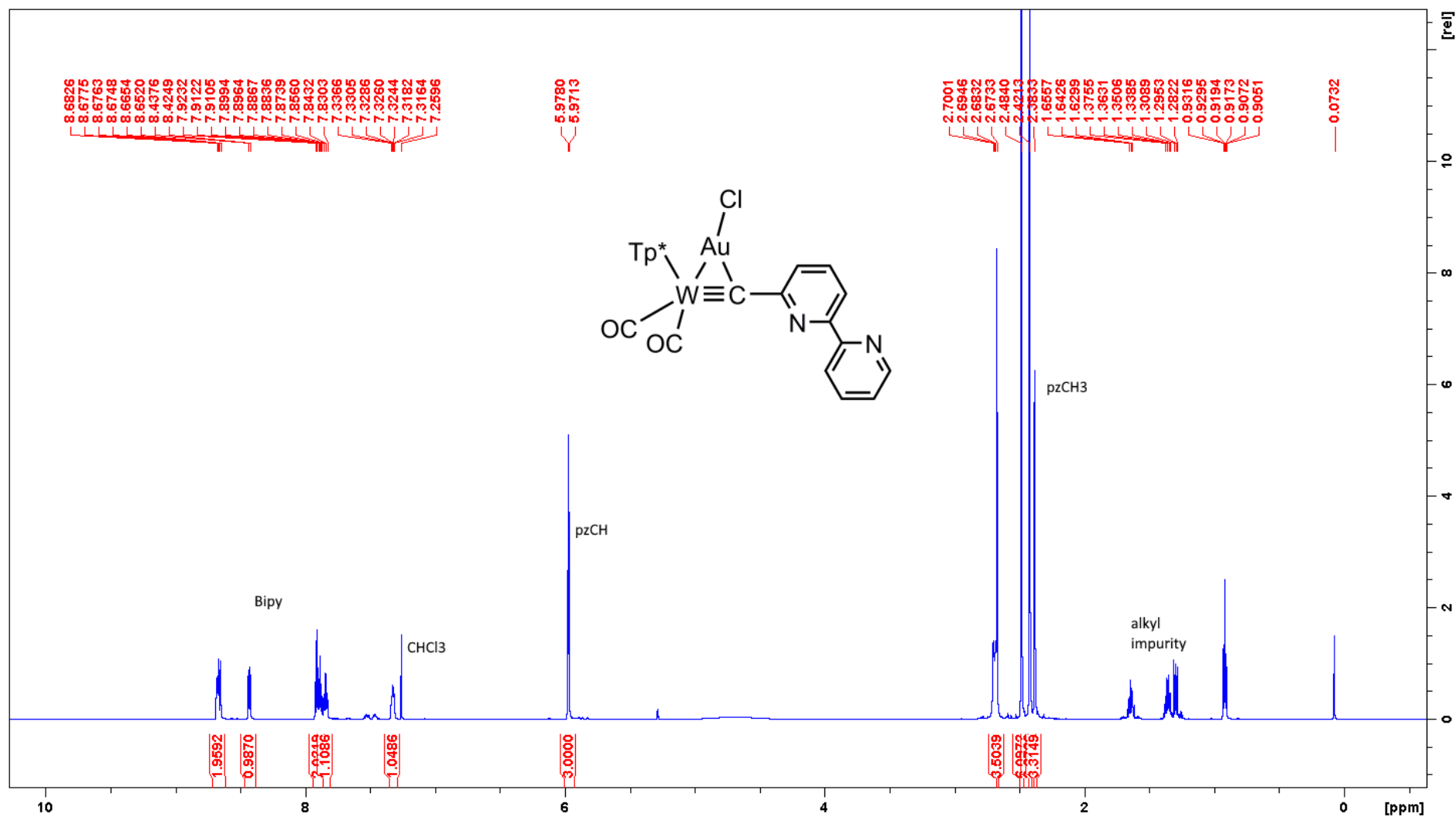


$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (151 MHz, CDCl_3 , 25 °C) of $[6,6'-((\text{Tp}^*)(\text{CO})_2\text{W}\equiv\text{C})_2\text{bipy}(\text{H})]\text{BF}_4$ [5] BF_4 .

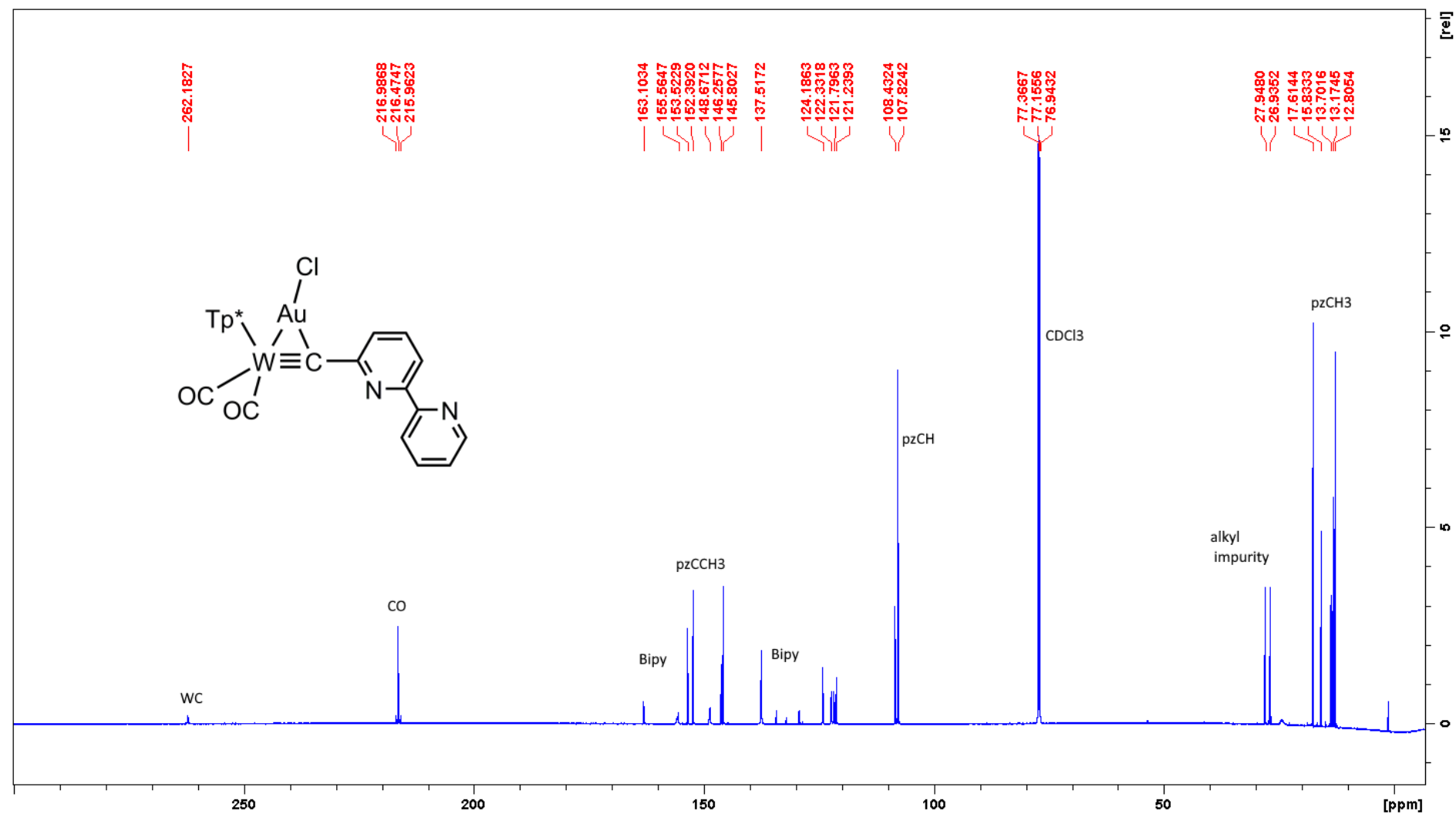


SUPPORTING INFORMATION

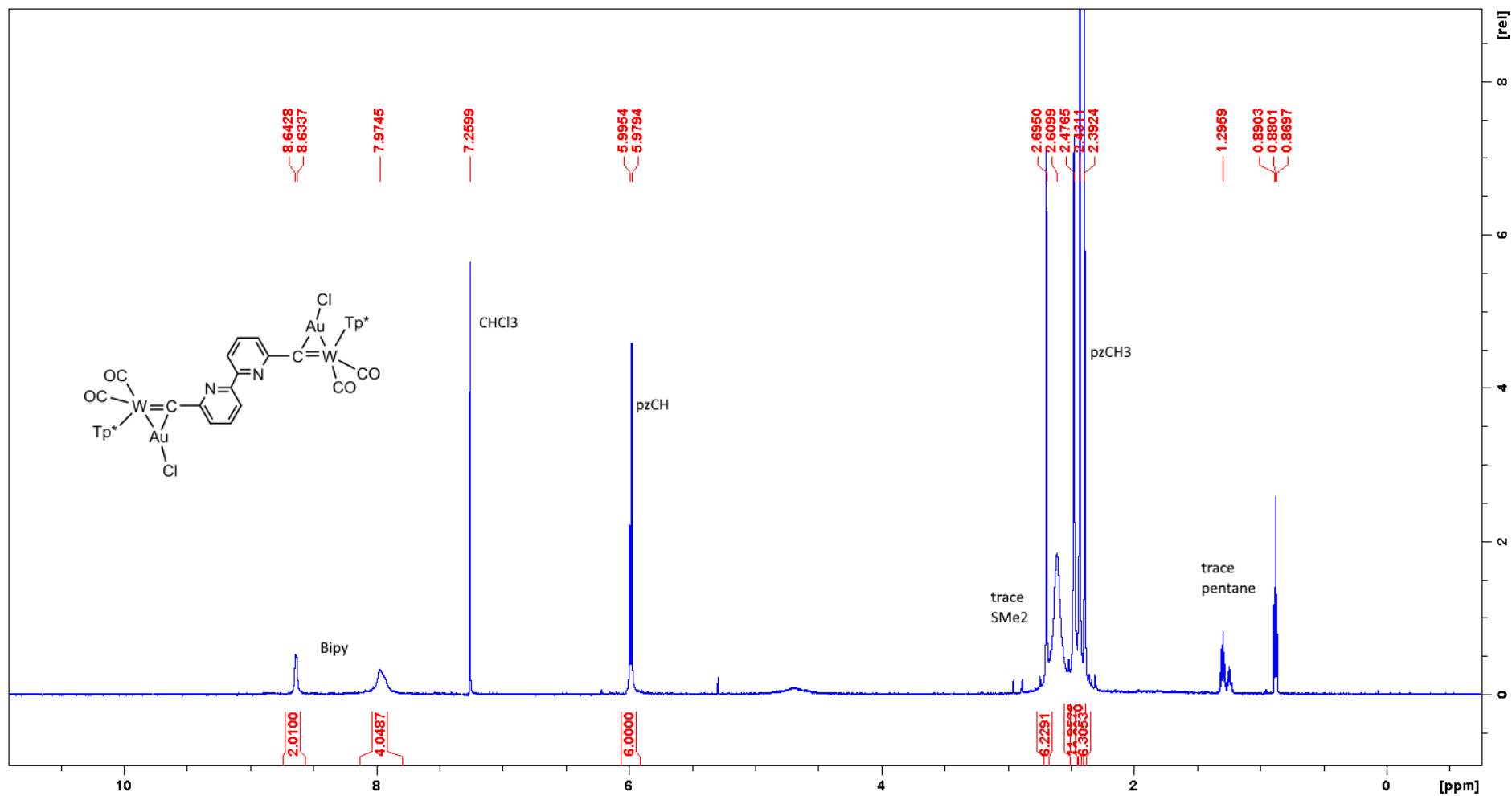
Dalton Transaction



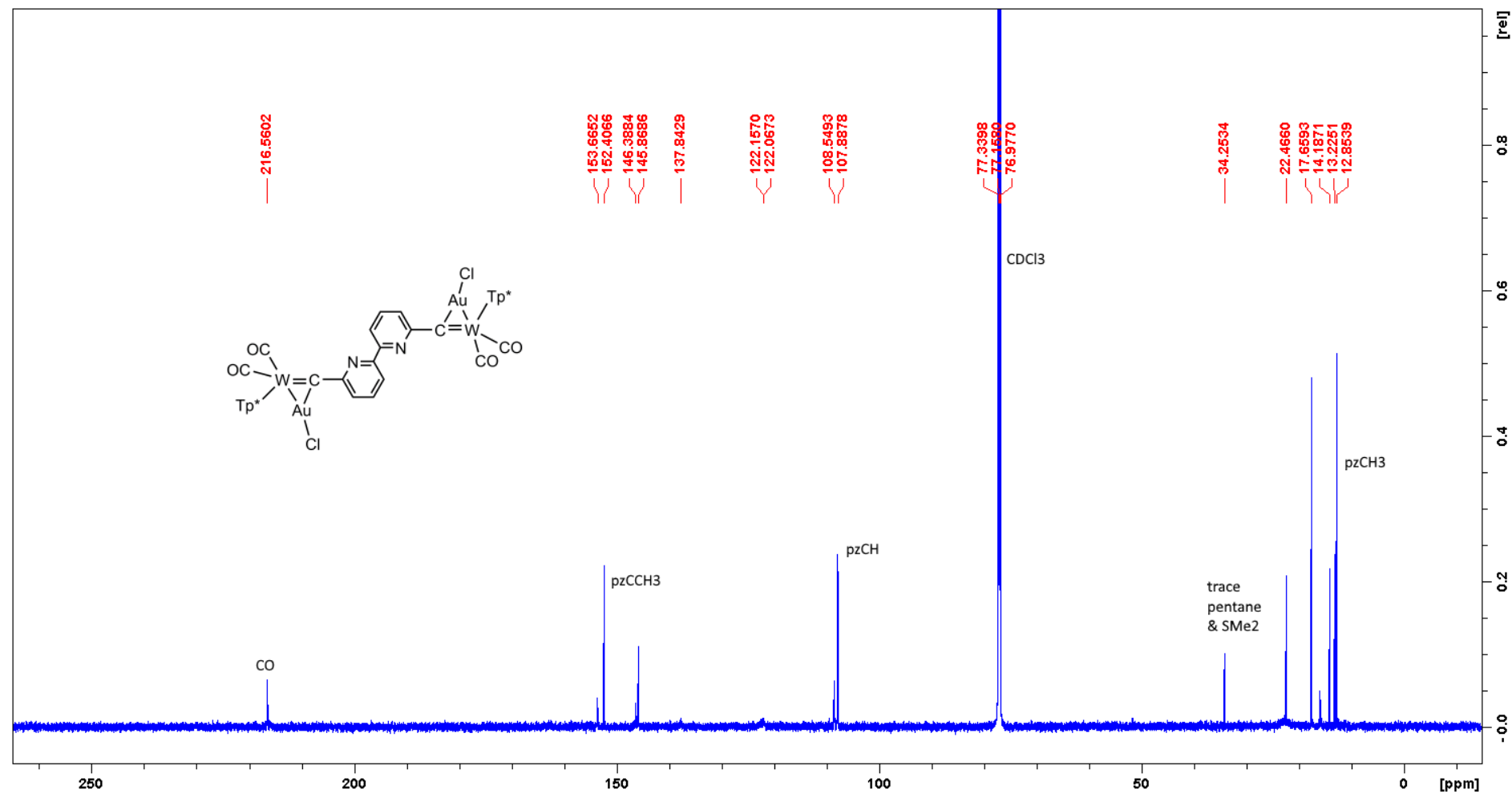
¹H NMR spectrum (600 MHz, CDCl₃, 25 °C) of [6-((Tp*)(CO)₂W(AuCl)(μ-C))bipy] (6).



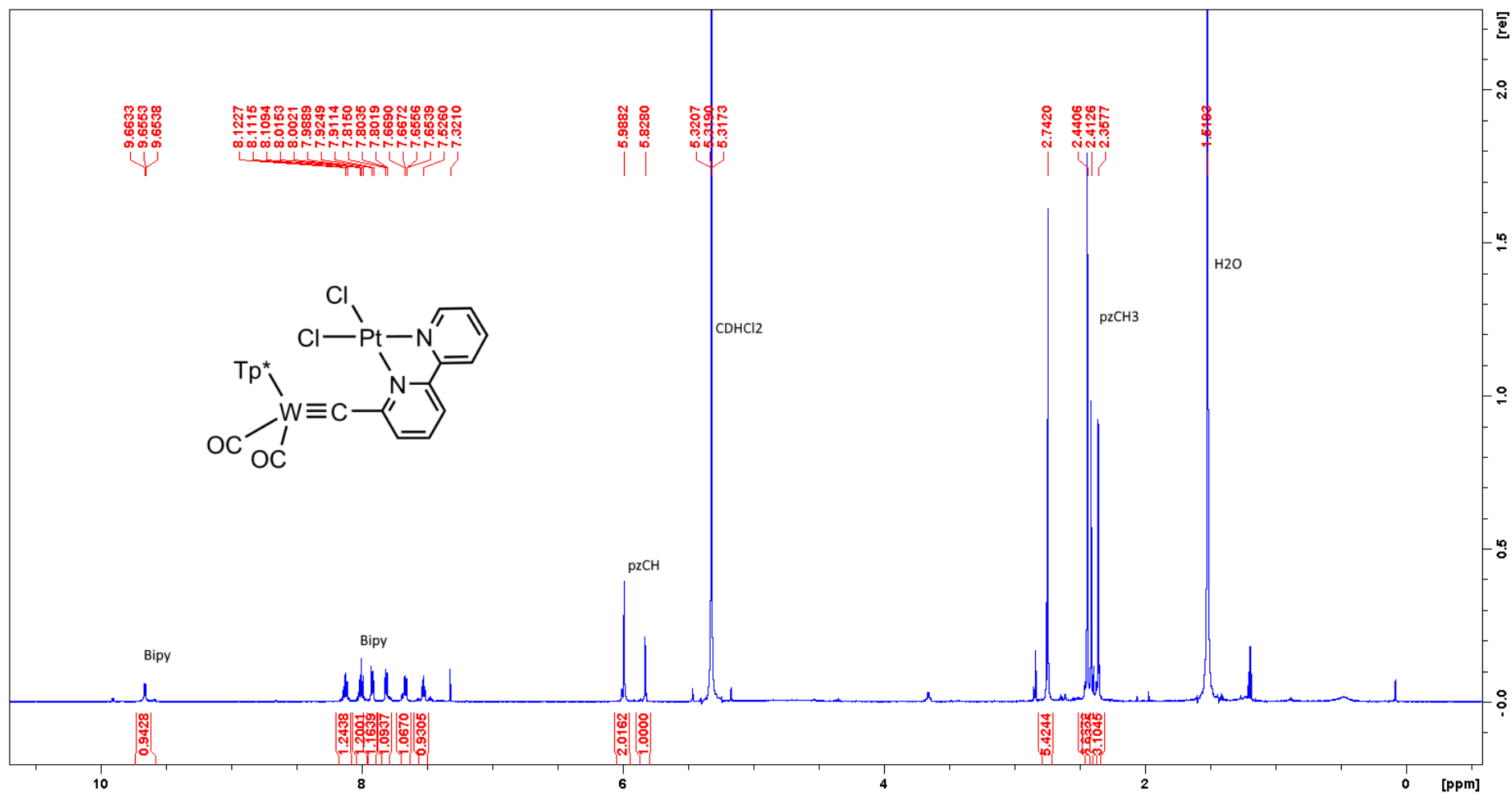
¹³C{¹H} NMR spectrum (151 MHz, CDCl₃, 25 °C) of [6-((Tp*)(CO)₂W(AuCl)(μ-C))bipy] (6).



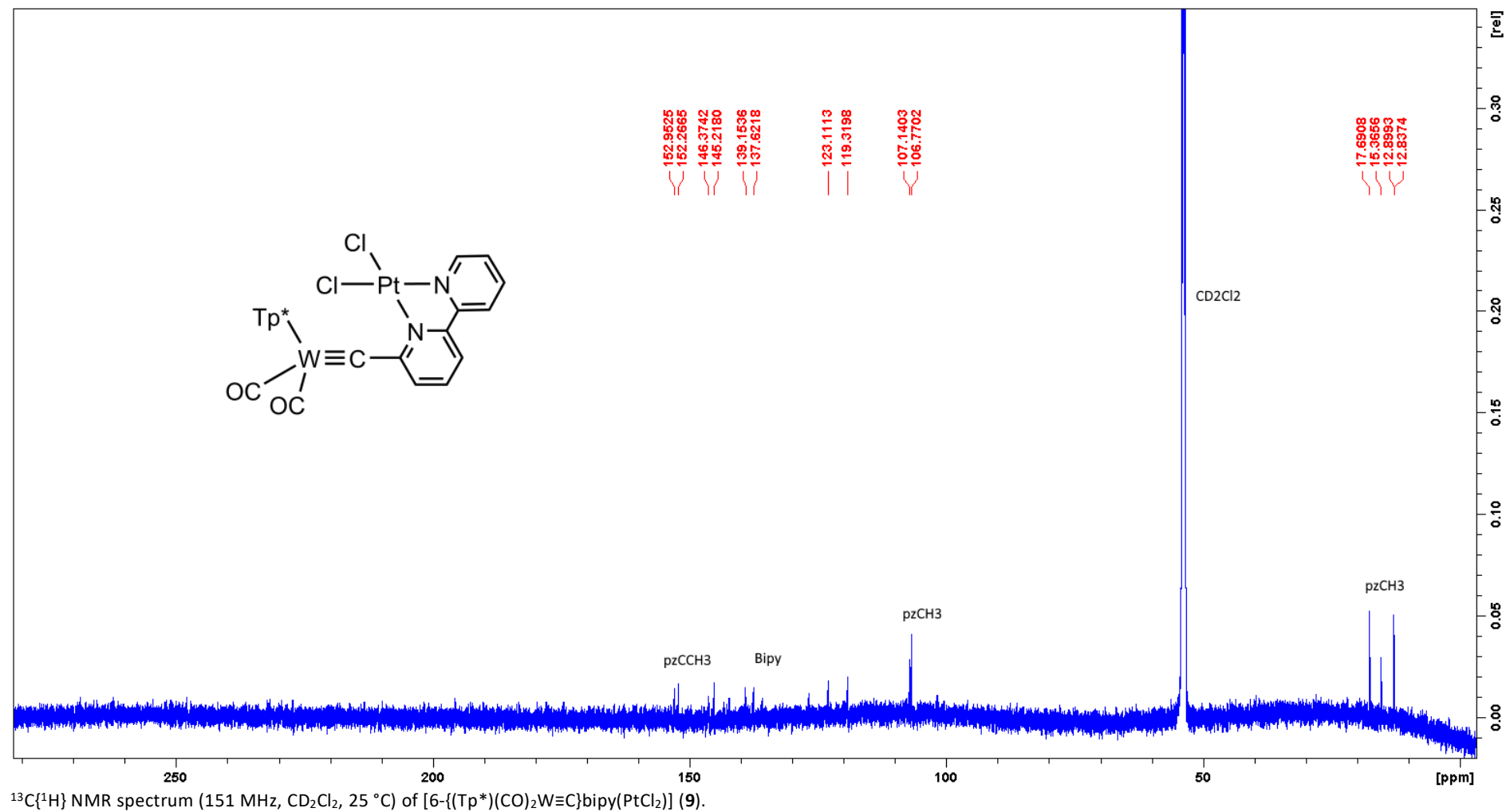
^1H NMR spectrum (700 MHz, CDCl_3 , 25°C) of $[6,6'-((\text{Tp}^*)_2(\text{CO})_2\text{W}(\text{AuCl})(\mu\text{-C}))_2\text{bipy}]$ (7).

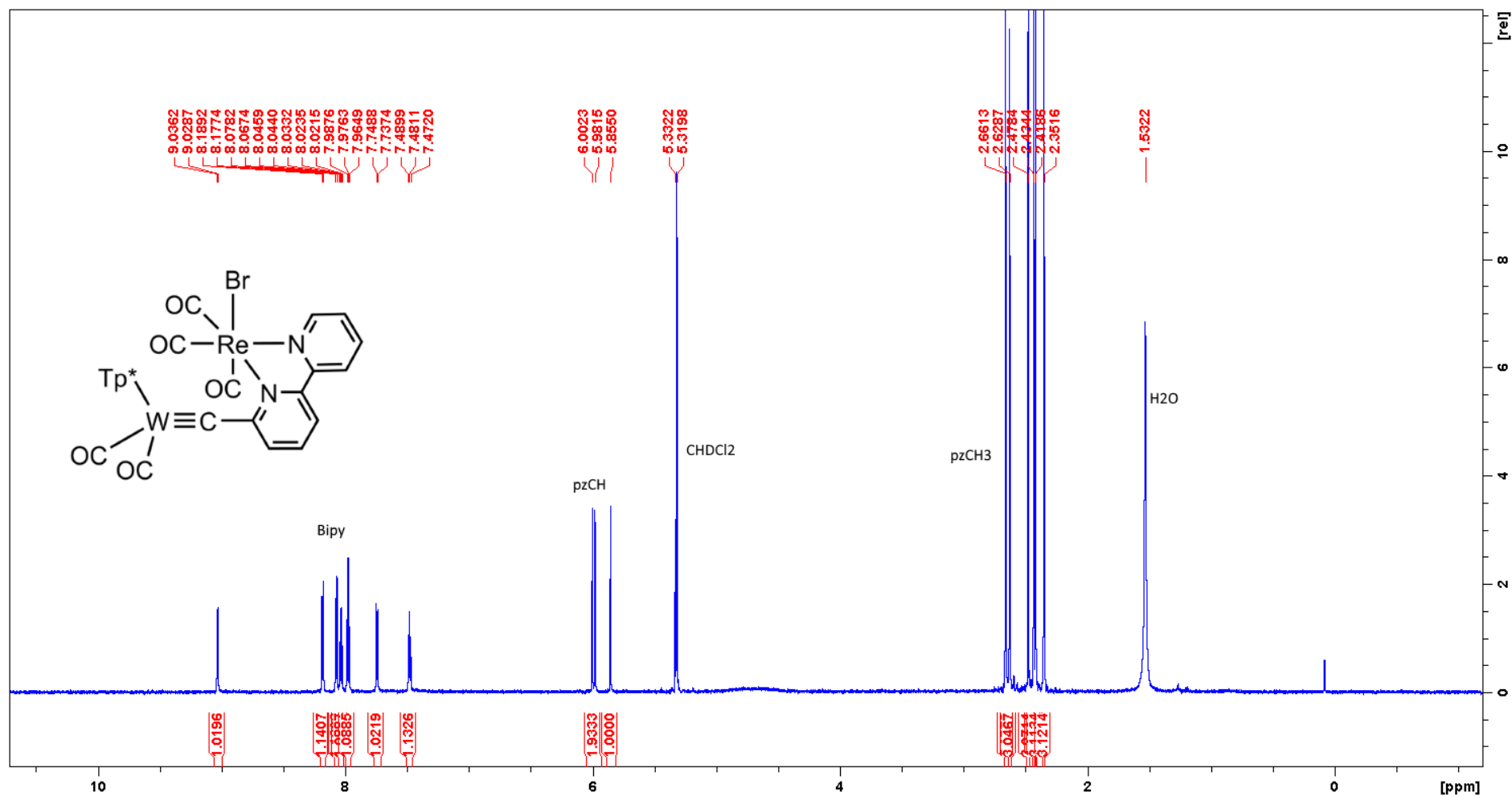


$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (176 MHz, CDCl_3 , 25 °C) of $[6,6'\text{-}(\text{Tp}^*)(\text{CO})_2\text{W}(\text{AuCl})(\mu\text{-C})_2\text{bipy}]$ (7).

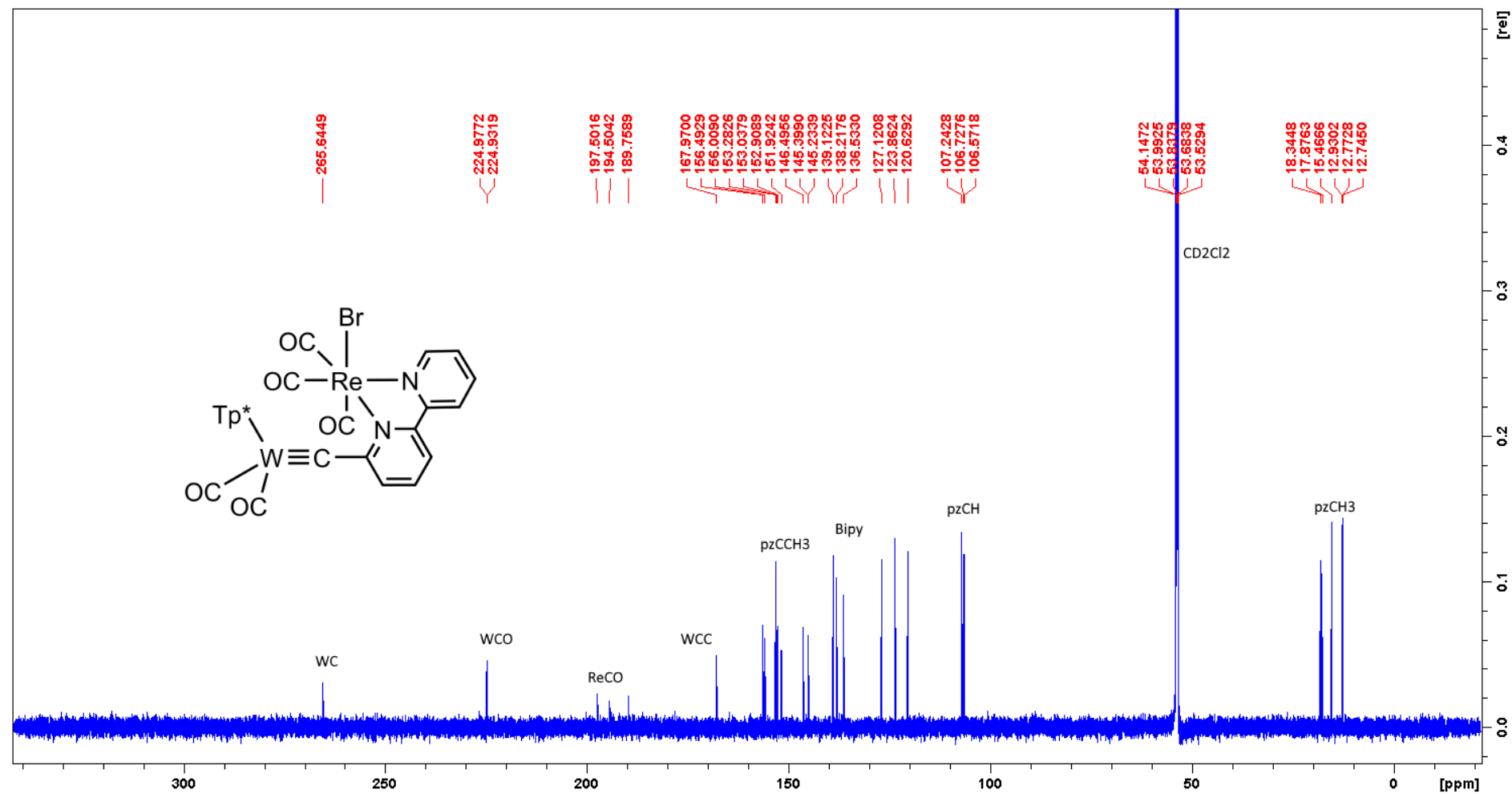


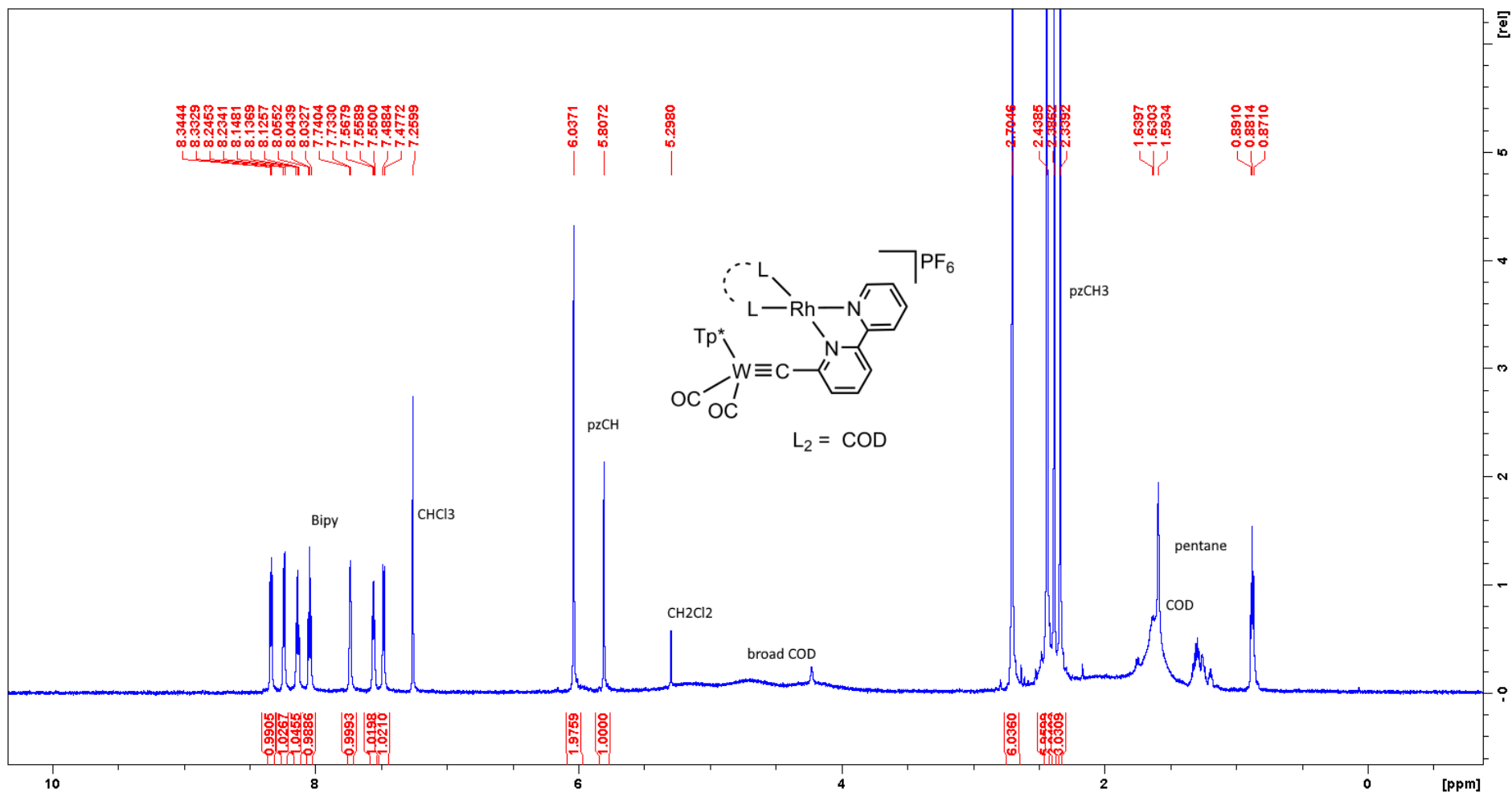
¹H NMR spectrum (600 MHz, CD₂Cl₂, 25 °C) of [6-((Tp*)(CO)₂W≡C)bipy(PtCl₂)] (9).



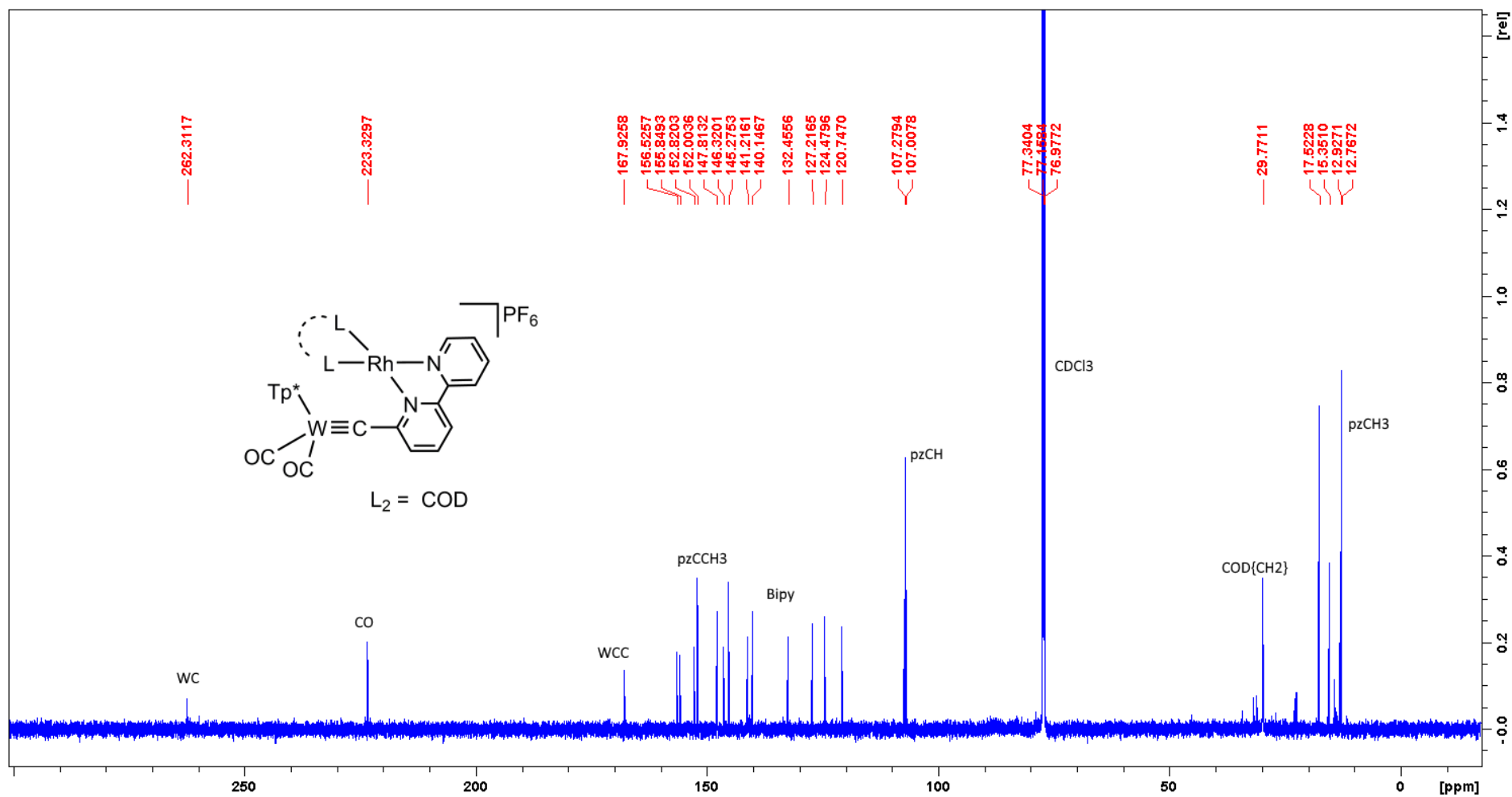


¹H NMR spectrum (700 MHz, CDCl₃, 25 °C) of [6-((Tp*)₂(CO)₂W≡C)bipy]{ReBr(CO)₃} (**10**).

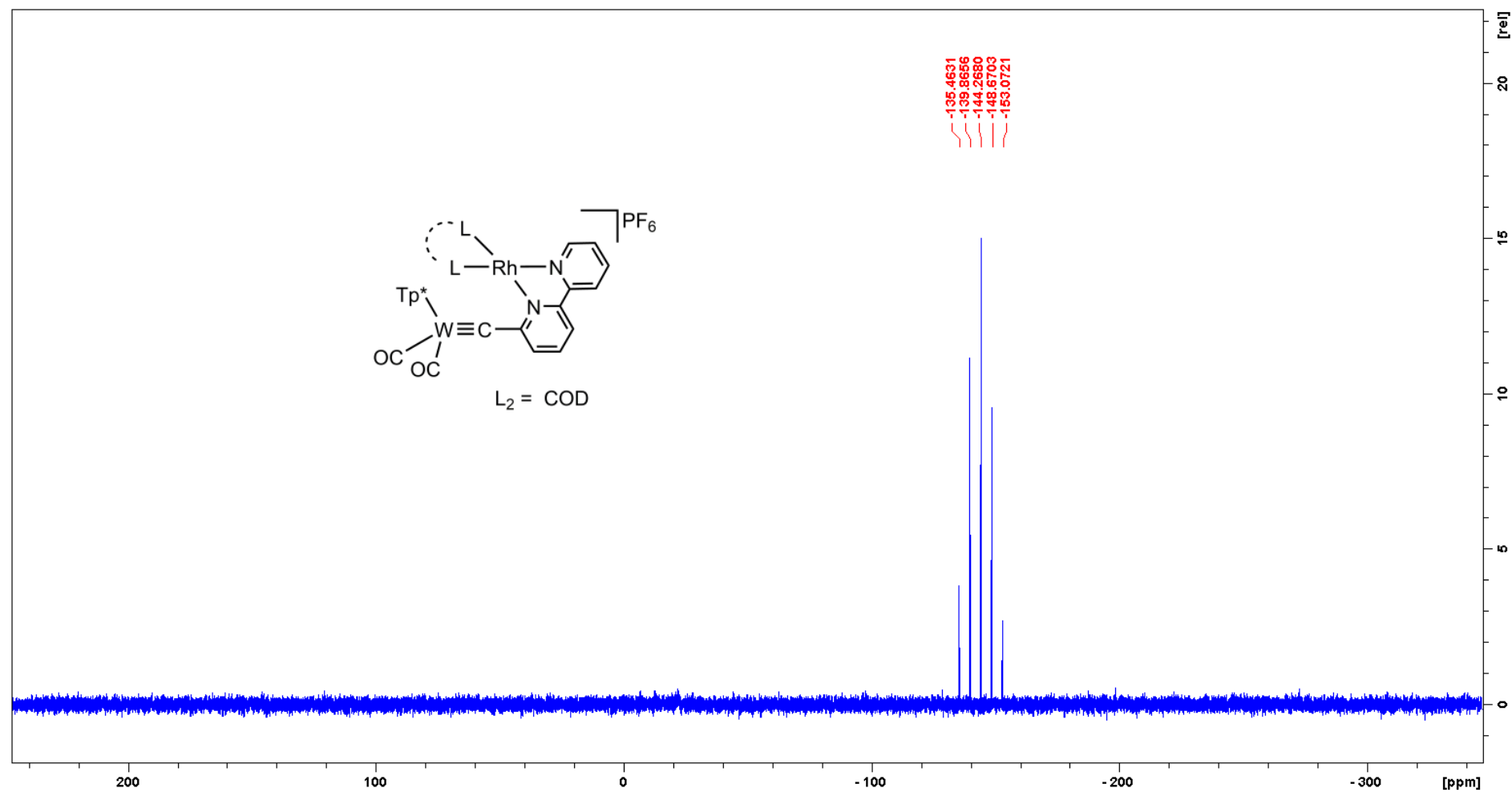




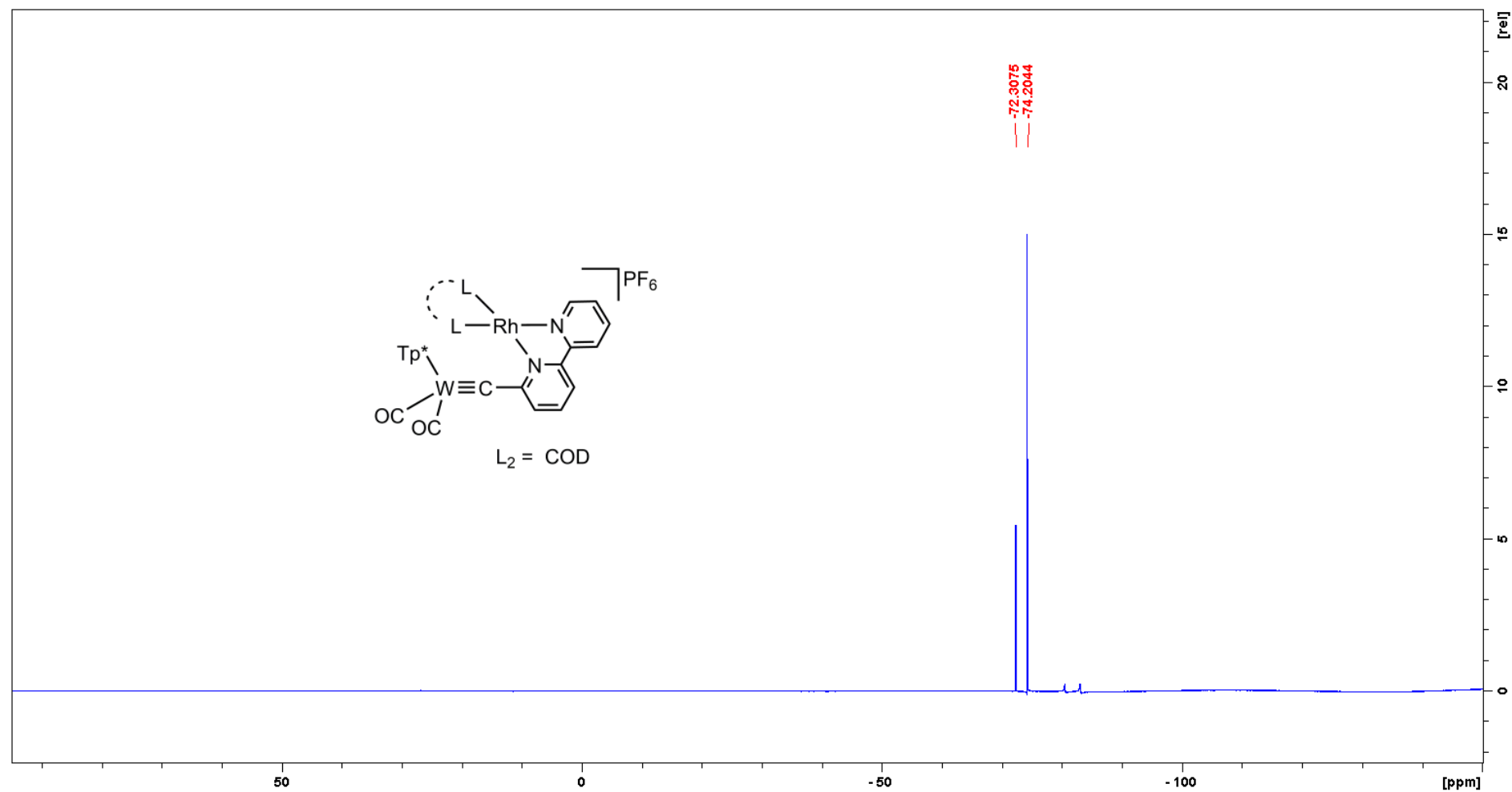
¹H NMR spectrum (700 MHz, CDCl₃, 25 °C) of [6-((Tp*)(CO)₂W≡C)bipy{Rh(COD)}]PF₆ [11]PF₆.



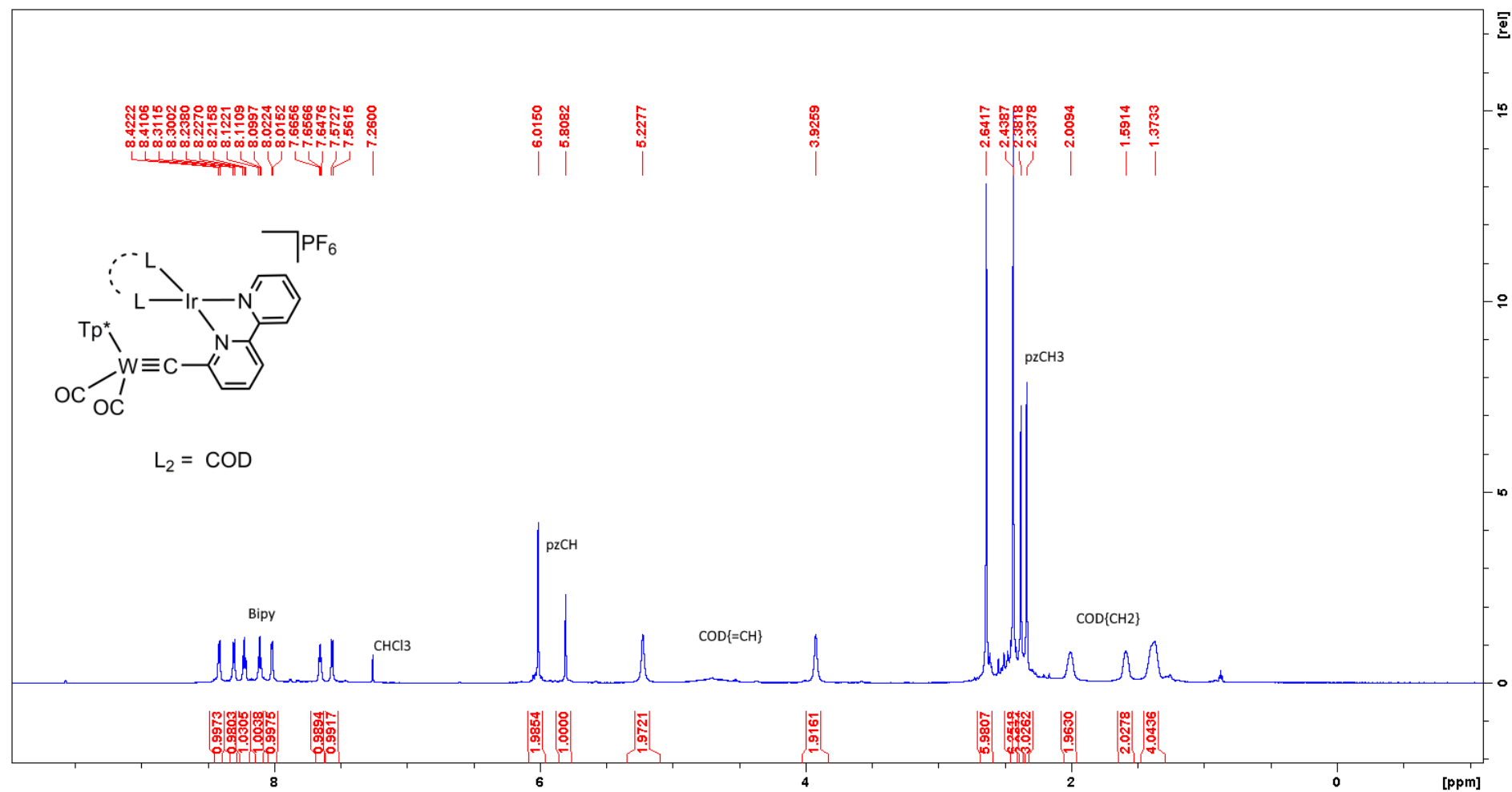
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (176 MHz, CDCl_3 , 25 °C) of $[6\text{-}\{(\text{Tp}^*)(\text{CO})_2\text{W}\equiv\text{C}\}\text{bipy}\{\text{Rh}(\text{COD})\}]\text{PF}_6$ [**11**] PF_6 .



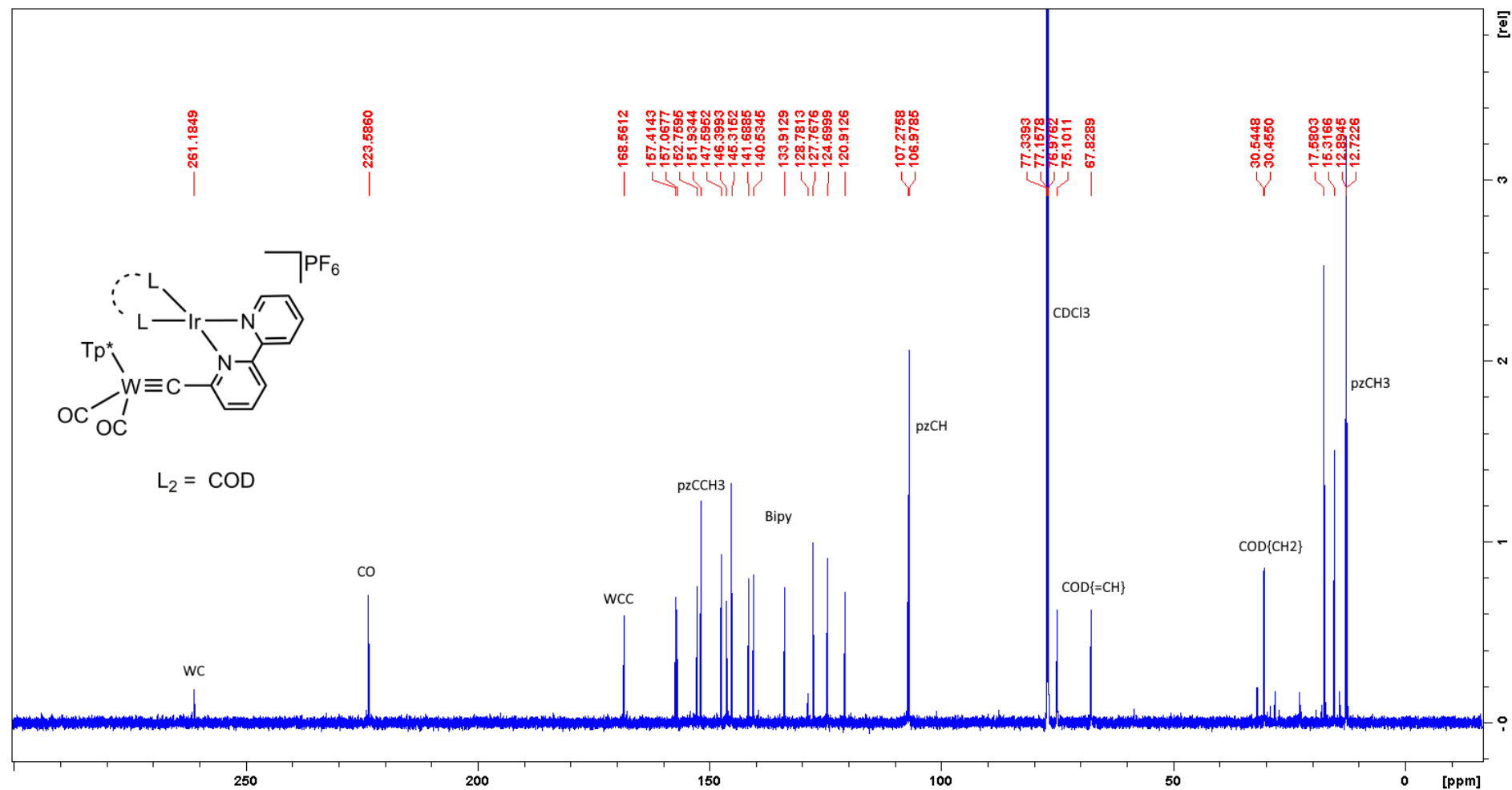
$^{31}\text{P}\{^1\text{H}\}$ NMR spectrum (162 MHz, CDCl_3 , 25 °C) of $[6-\{(\text{Tp}^*)(\text{CO})_2\text{W}\equiv\text{C}\}\text{bipy}\{\text{Rh}(\text{COD})\}]\text{PF}_6$ (**11**) PF_6 .



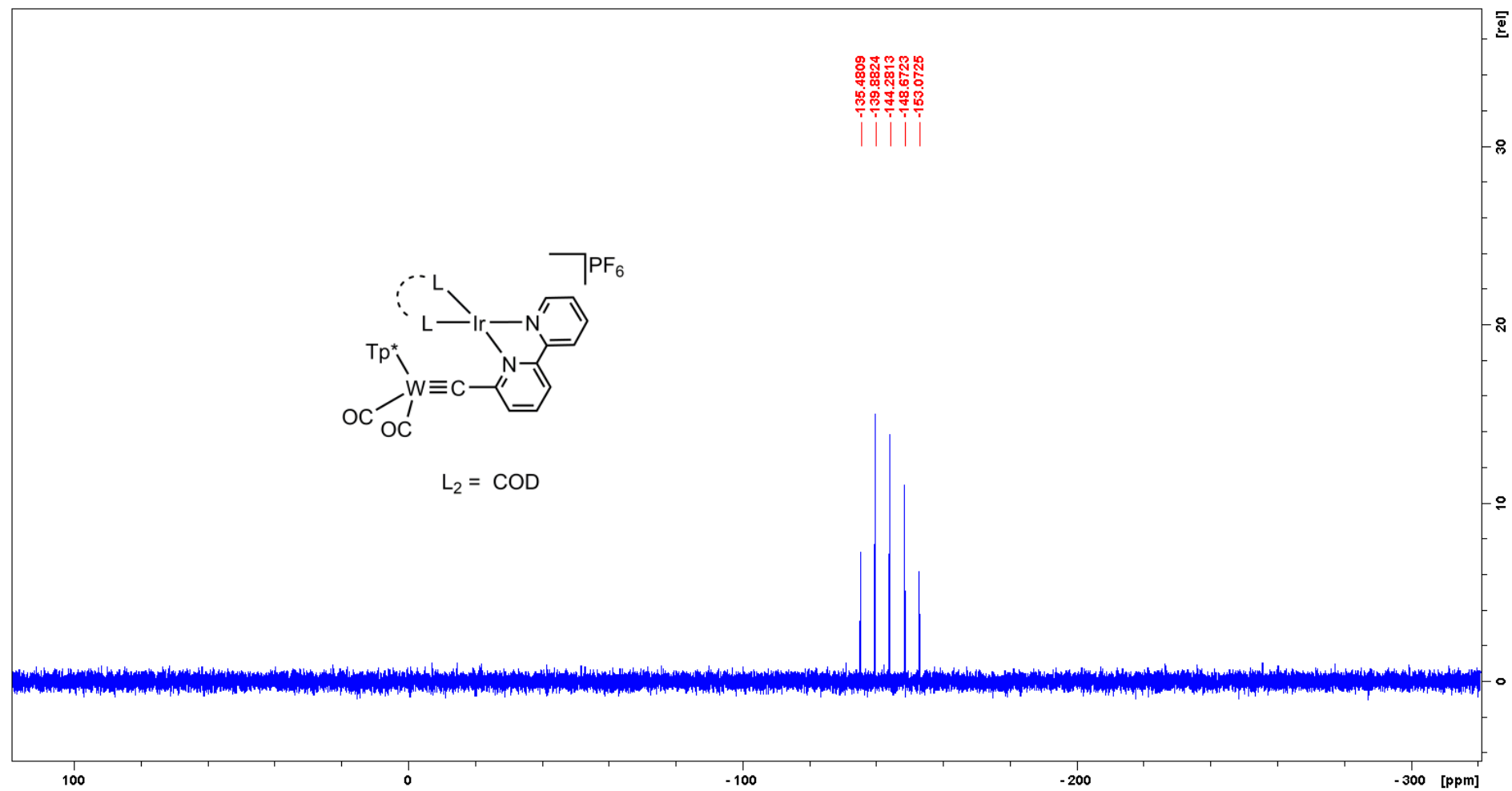
$^{19}\text{F}\{^1\text{H}\}$ NMR spectrum (376 MHz, CDCl_3 , 25 °C) of $[6\text{-}\{(\text{Tp}^*)(\text{CO})_2\text{W}\equiv\text{C}\}\text{bipy}\{\text{Rh}(\text{COD})\}]\text{PF}_6$ [**11**] PF_6 .

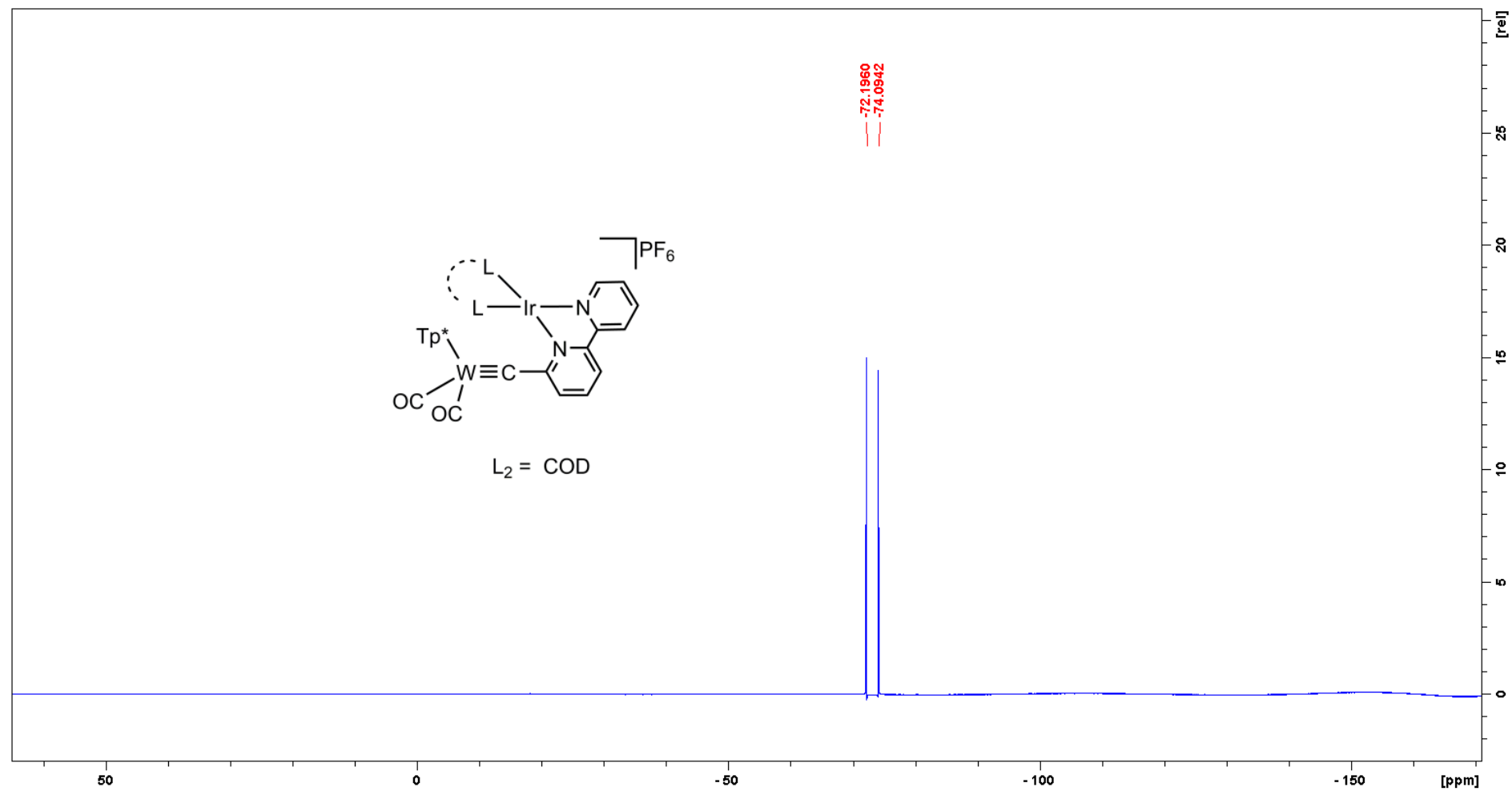


¹H NMR spectrum (700 MHz, CDCl₃, 25 °C) of [6-((Tp*)(CO)₂W≡C)bipy{Ir(COD)}}]PF₆ [**12**]PF₆.

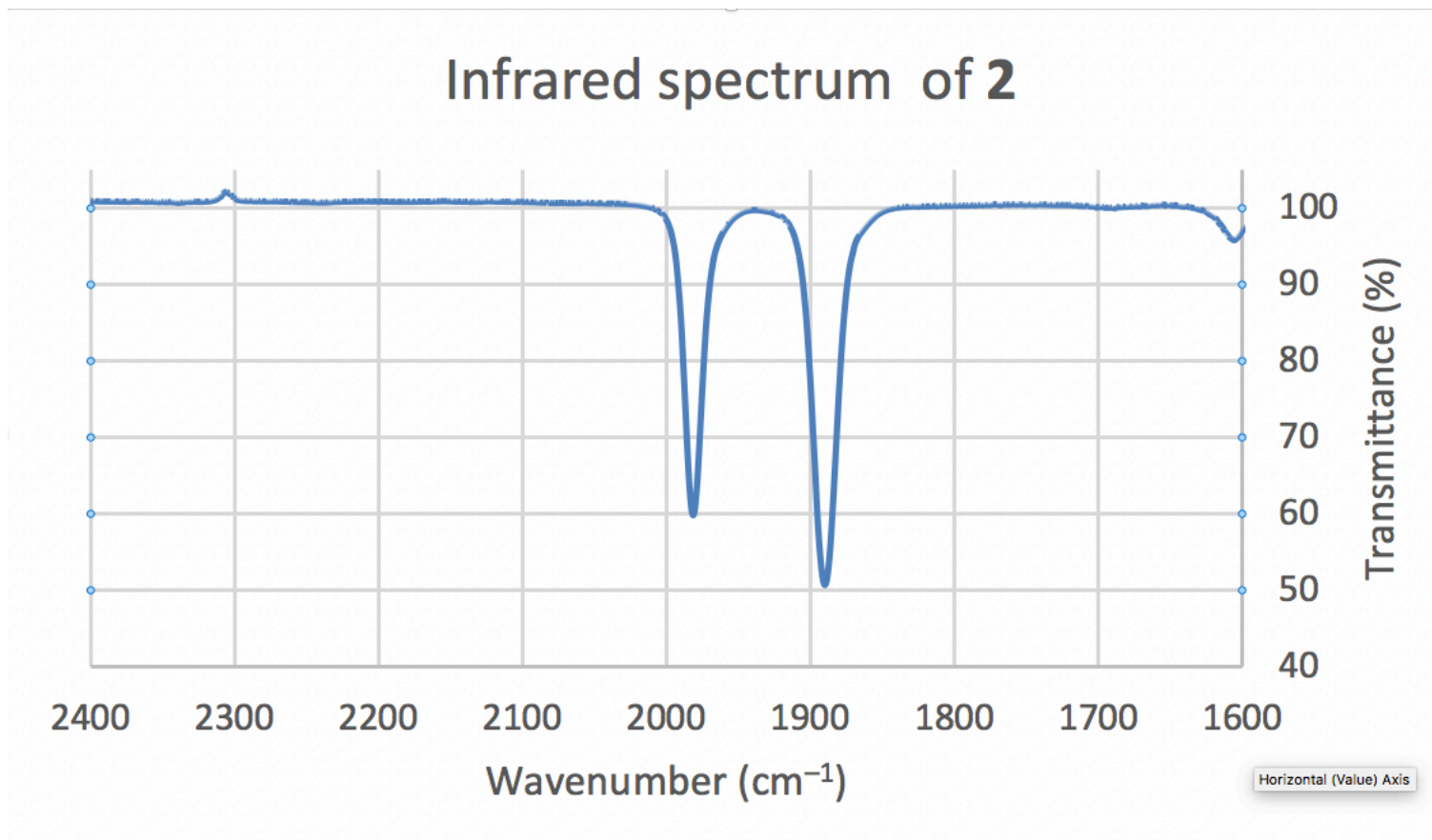


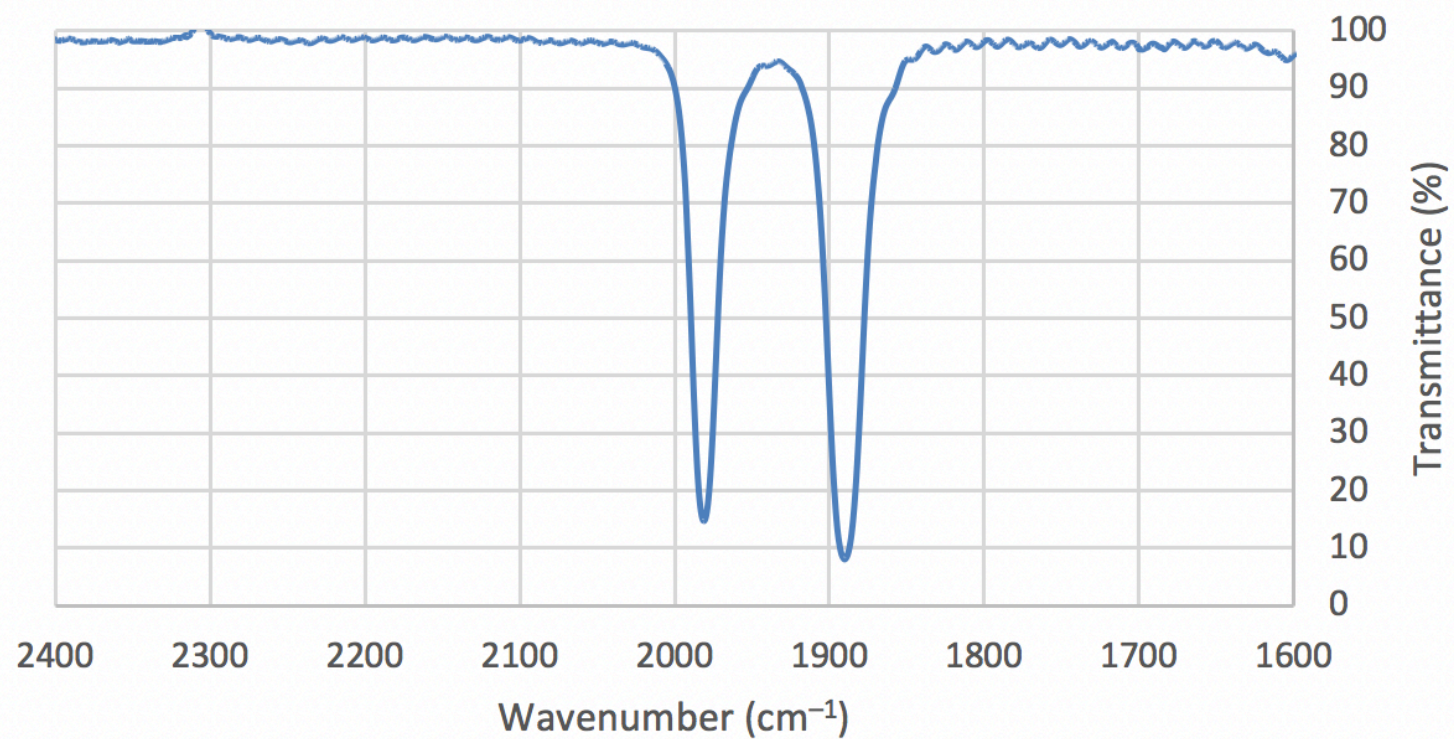
$^{13}\text{C}\{^1\text{H}\}$ NMR spectrum (176 MHz, CDCl_3 , 25 °C) of $[6-((\text{Tp}^*)(\text{CO})_2\text{W}\equiv\text{C})\text{bipy}\{\text{Ir}(\text{COD})\}]\text{PF}_6$ [12]PF₆.

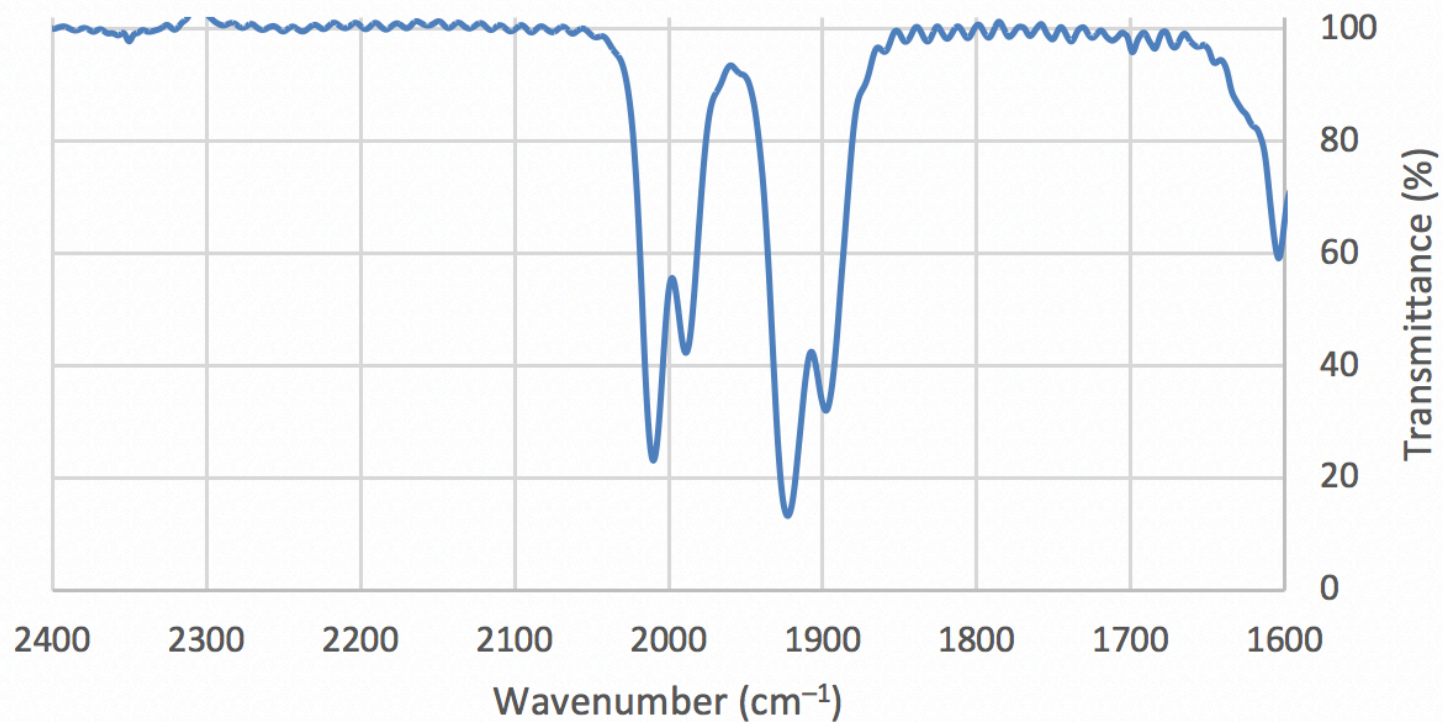




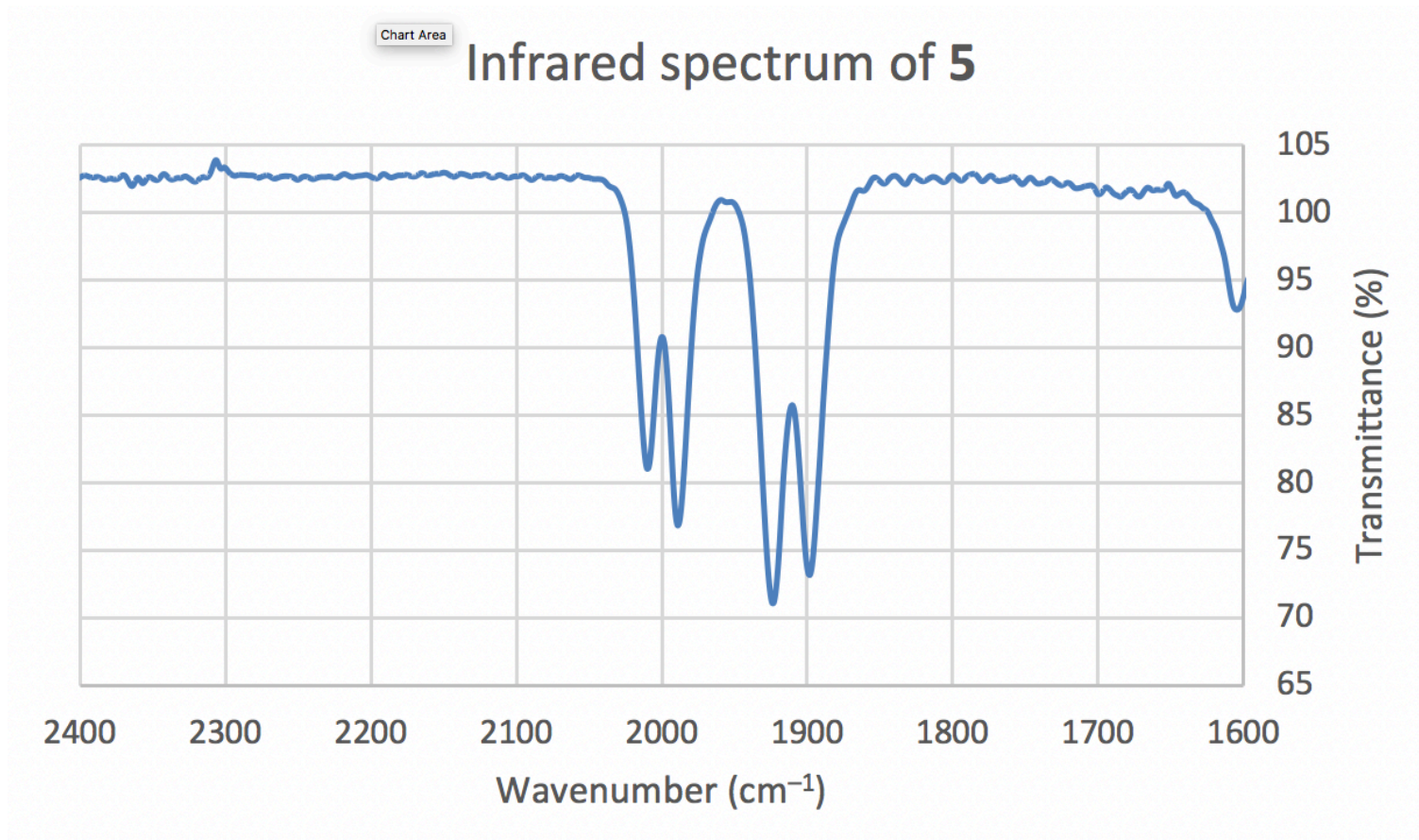
$^{19}\text{F}\{^1\text{H}\}$ NMR spectrum (376 MHz, CDCl_3 , 25 °C) of $[\text{6-}\{(\text{Tp}^*)(\text{CO})_2\text{W}\equiv\text{C}\}\text{bipy}\{\text{Ir}(\text{COD})\}]\text{PF}_6$ [**12**] PF_6 .

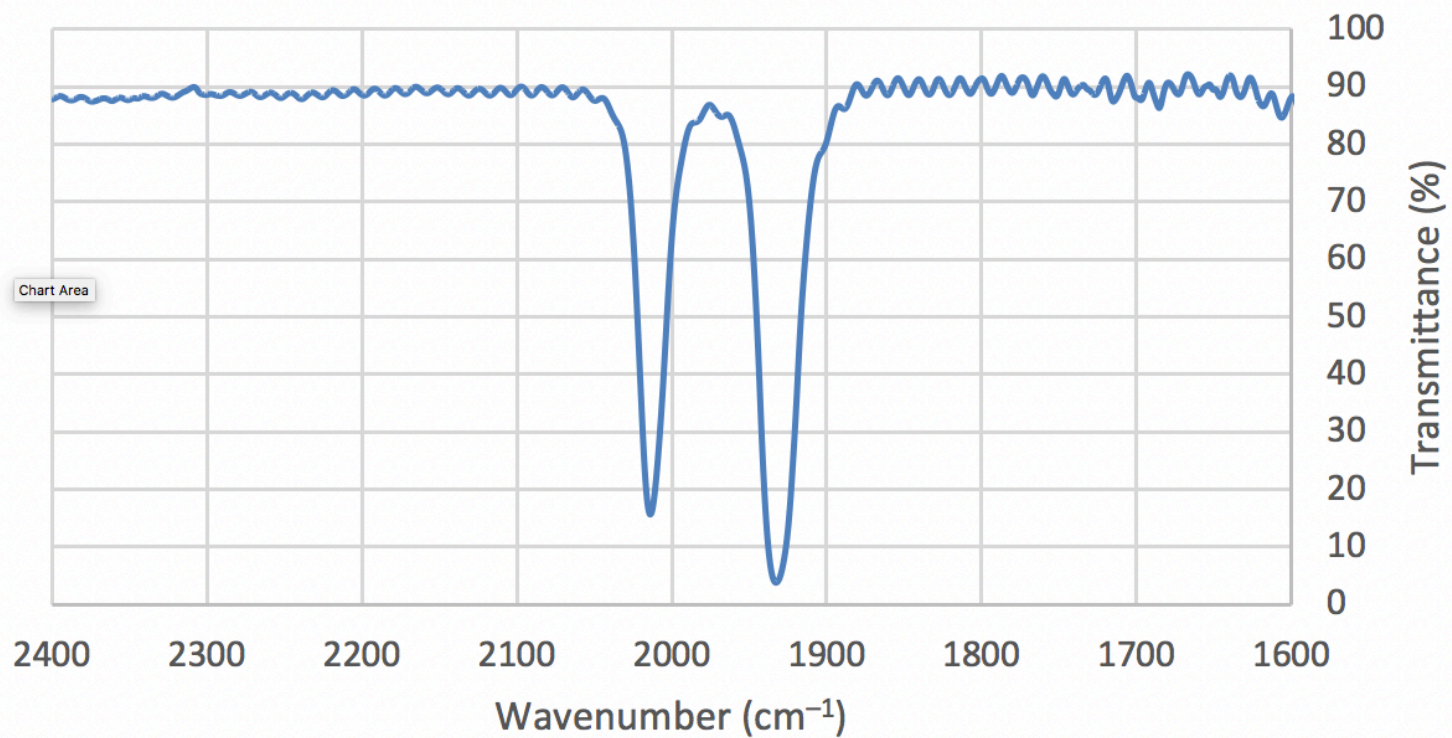


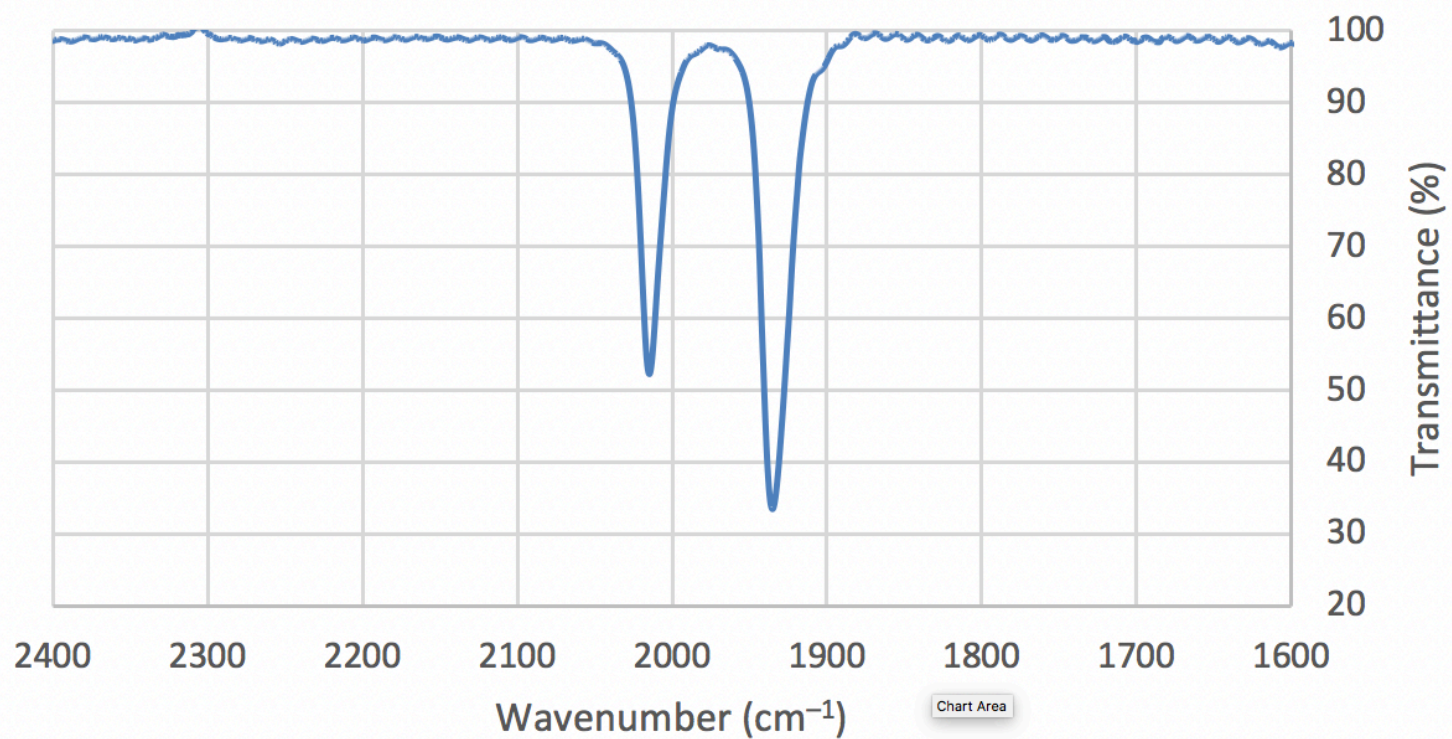
Infrared spectrum of **3**

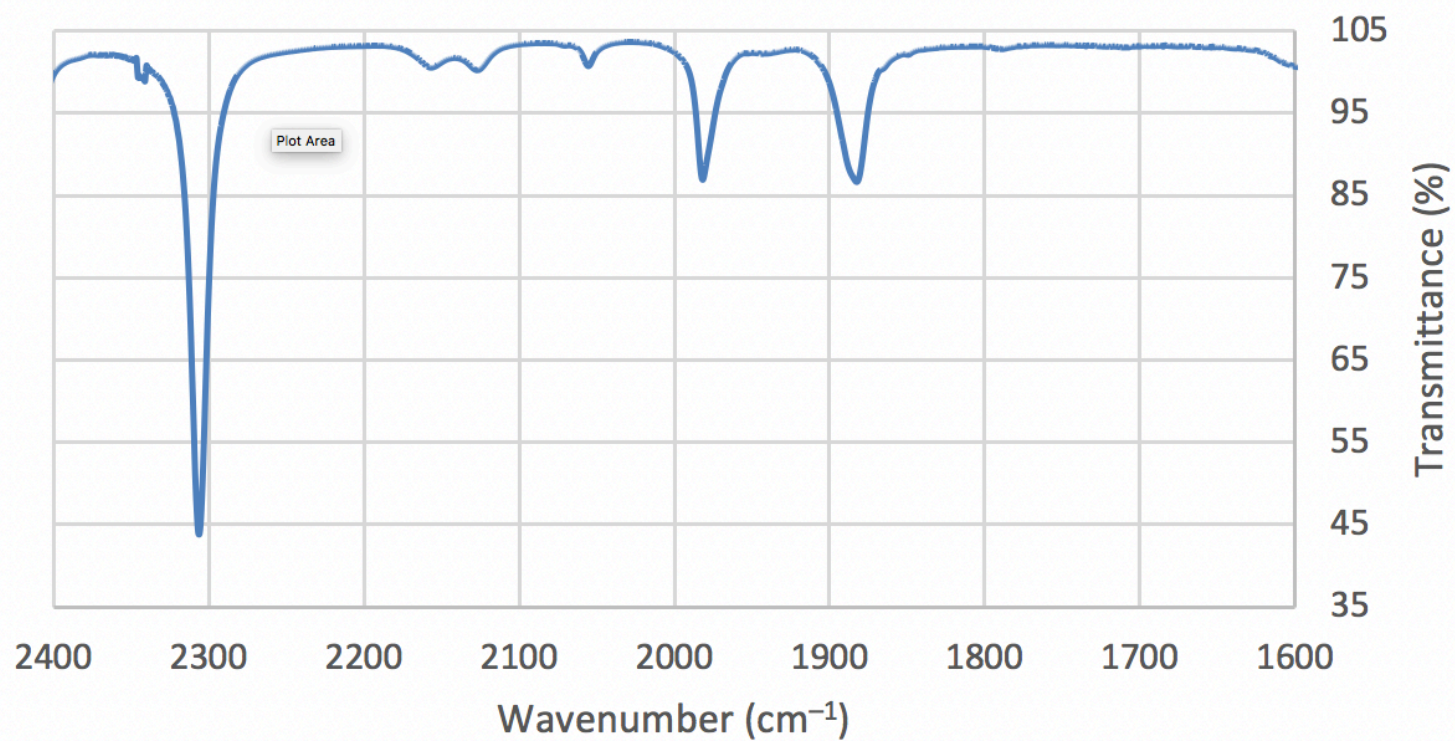
Infrared spectrum of **4**

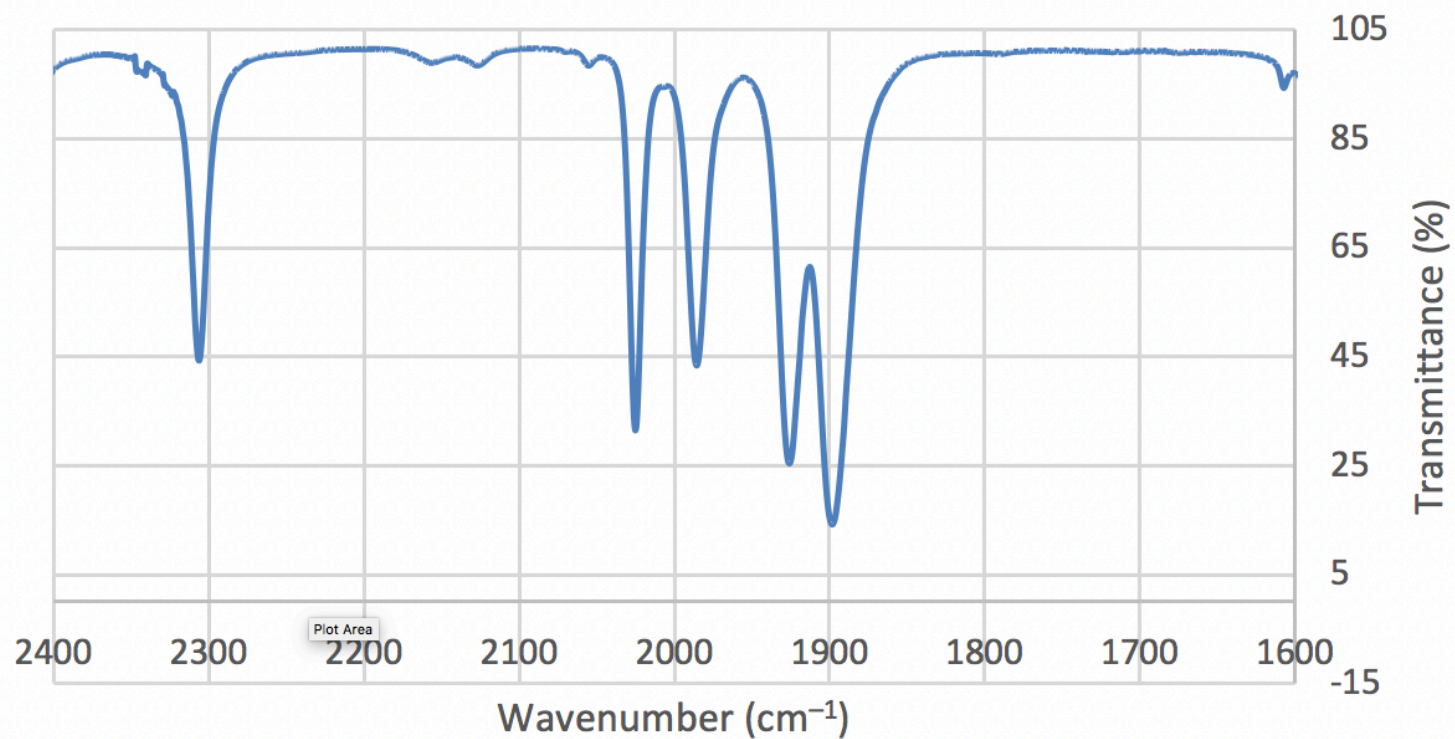
NB: The bands at 1989 and 1898 cm^{-1} corresponding to **2** are only completely removed if the spectrum is run in the presence of excess HBF_4 .

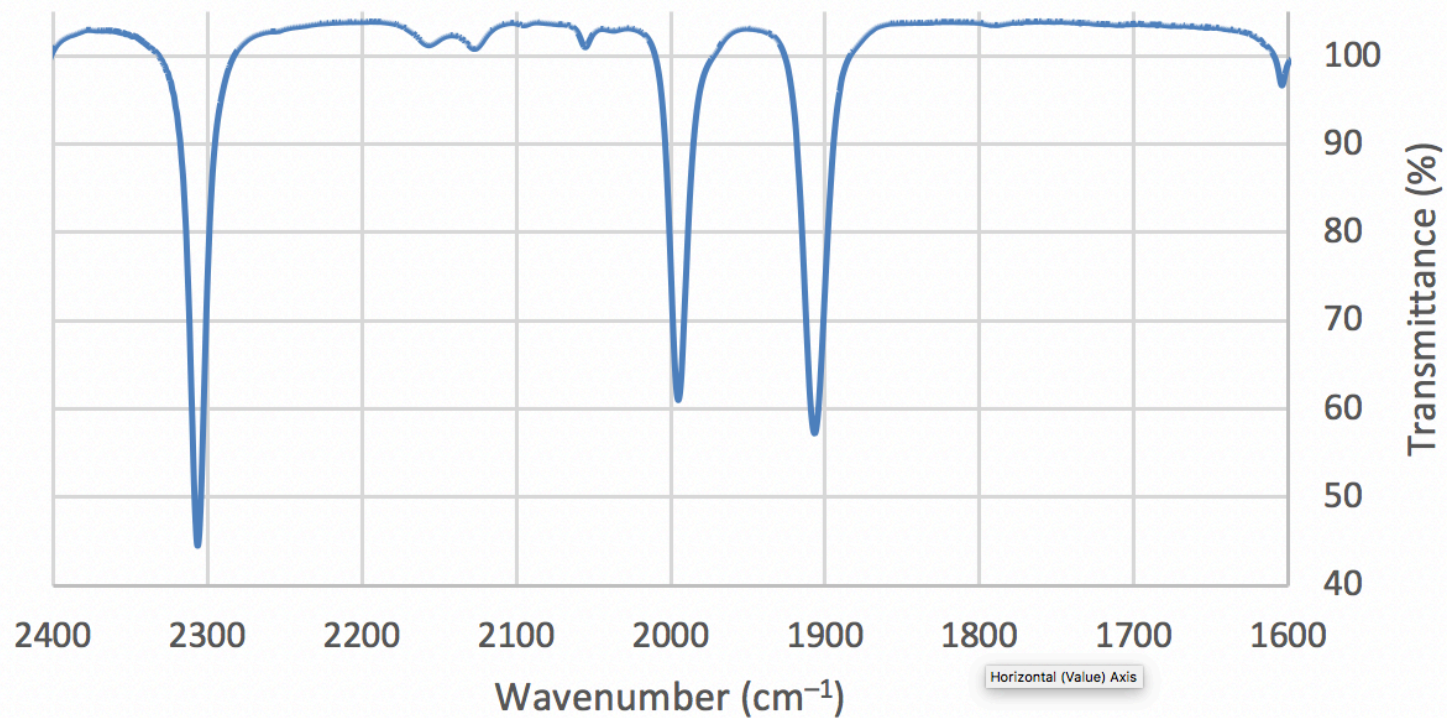


Infrared spectrum of **6**

Infrared spectrum of **7**

Infrared spectrum of **9**

Infrared spectrum of **10**

Infrared spectrum of **11**

Infrared spectrum of **12**