

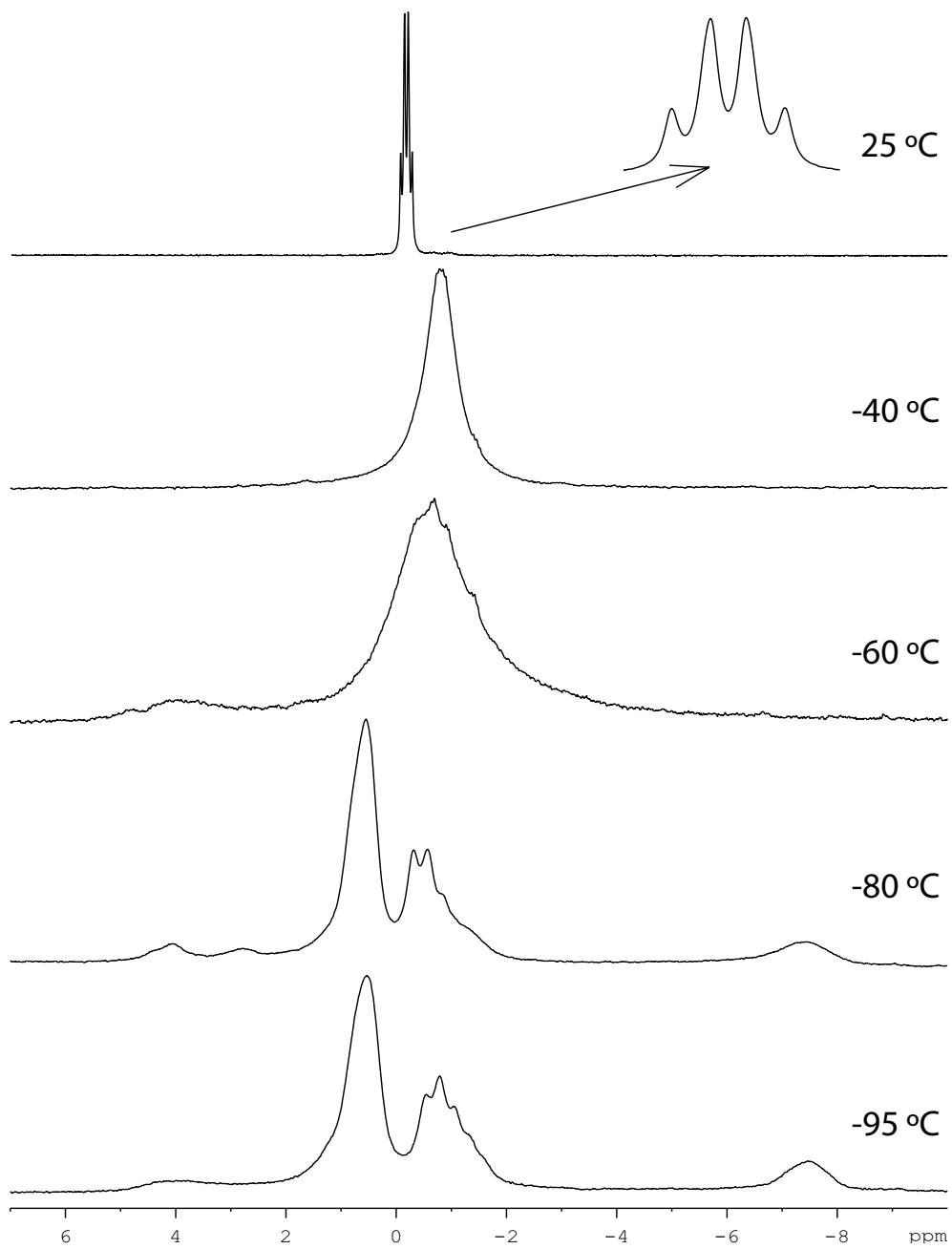
## **ELECTRONIC SUPPLEMENTARY INFORMATION**

### **Synthesis of Rhodium(I) and Rhodium(III) Perfluoroalkyl Complexes from $[\text{Rh}(\mu\text{-OH})(\text{COD})]_2$**

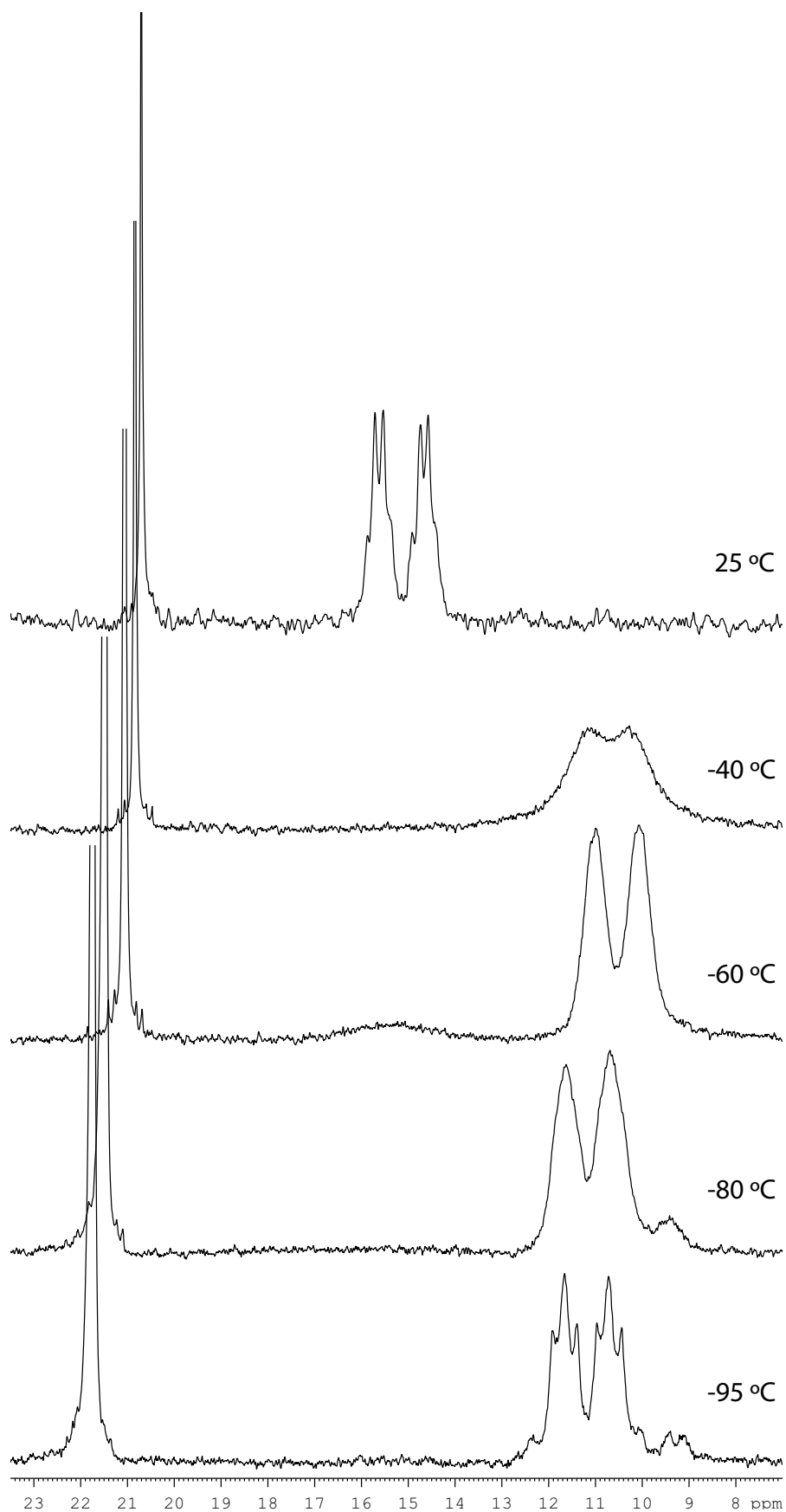
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Variable temperature  $^{19}\text{F}$  NMR spectrum ( $\text{CD}_2\text{Cl}_2$ , 282.2 MHz) of compound **15**.



Variable temperature  $^{31}\text{P}\{^1\text{H}\}$  NMR spectrum ( $\text{CD}_2\text{Cl}_2$ , 121.5 MHz) of compound **15**. The singlet at 21-22 ppm corresponds to the  $\text{PMe}_2\text{Ph}_2^+$  cation.