Supplementary Information

Synthesis, Characterization and Pulse Radiolysis of Cobalt (II) Complexes of 2-Picolinate and Polypyridyl Ligands

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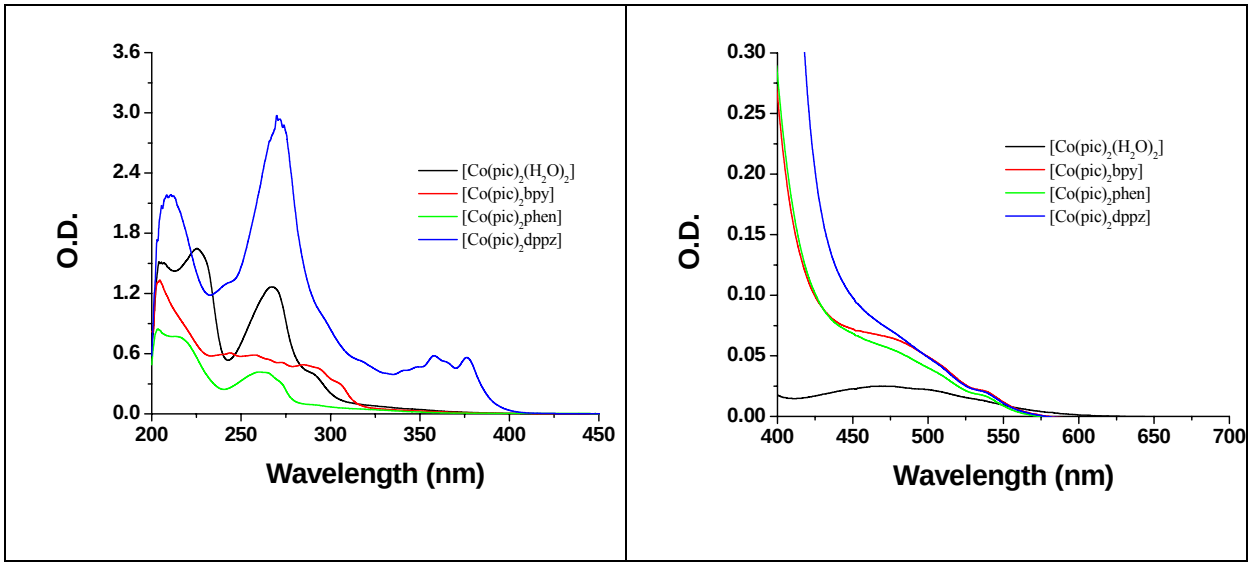

Fig. S1 Absorption spectra of cobalt(II) complexes of 2-pyridine carboxylic acid and polypyridyl ligands in methanol medium.

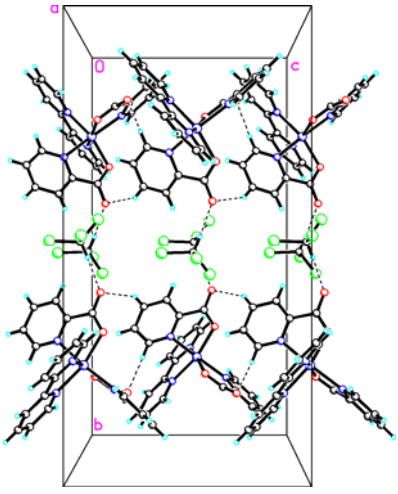

Fig. S2 The crystal packing diagram of complex **2** showing the hydrogen bond interaction as dashed lines.

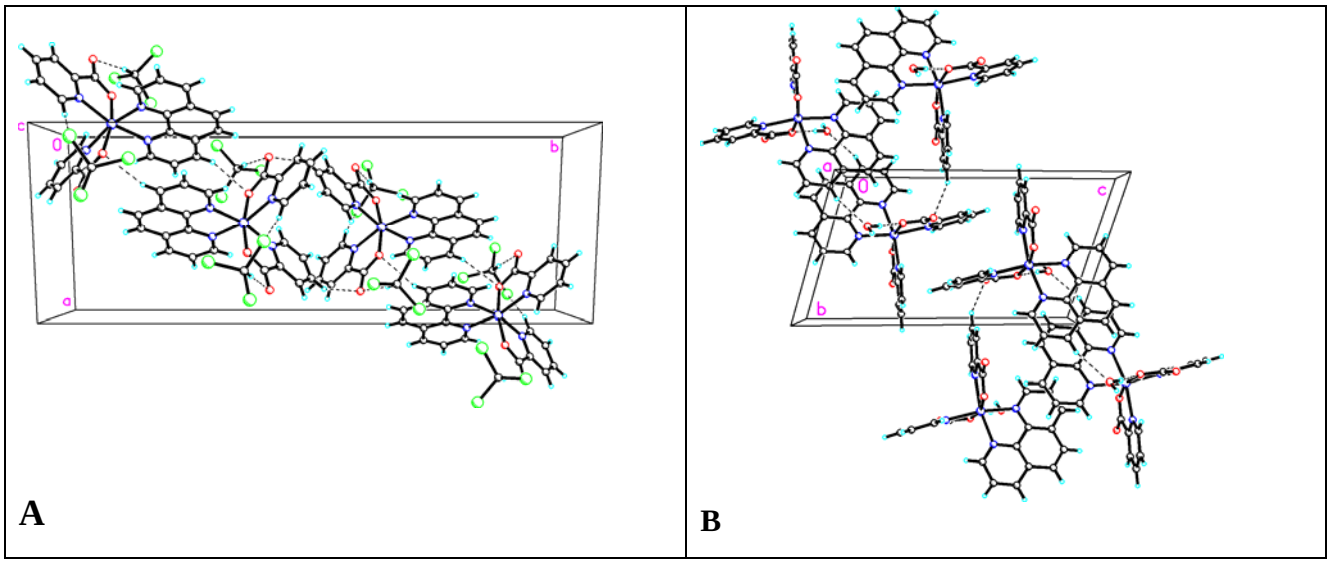

Fig. S3 The crystal packing diagram of complex **3** showing the hydrogen bond interaction as dashed lines **A**) with chloroform **B**) water molecule.

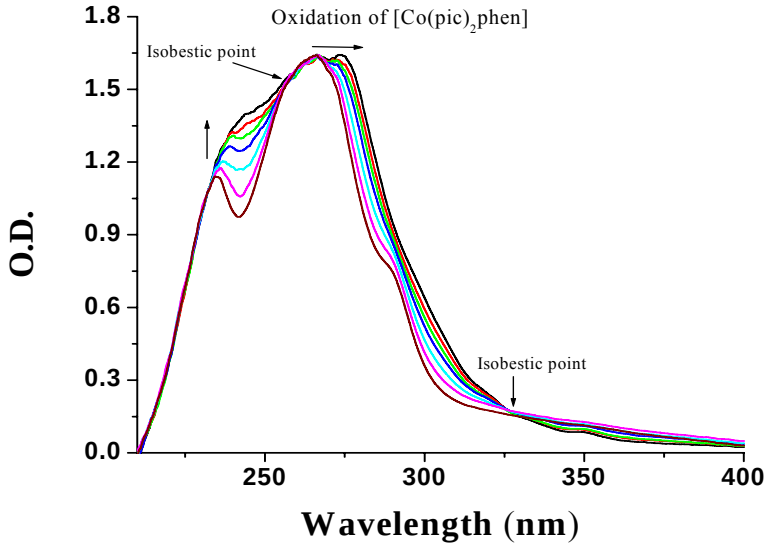

Fig. S4 Time resolved UV spectral changes of complex **3** during the oxidation in CH_3CN solution containing 0.1 mol dm^{-3} TEAP.

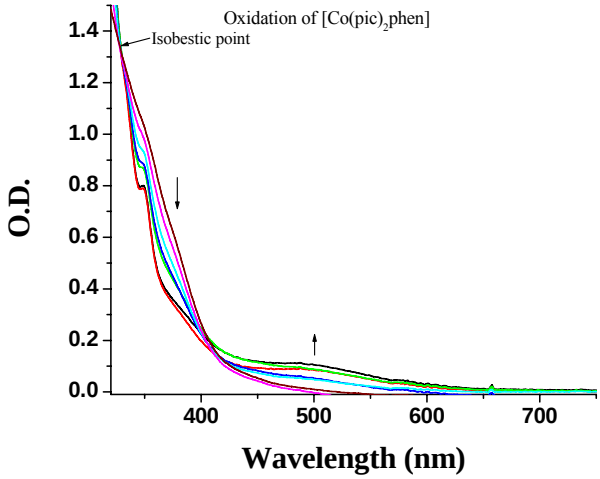

Fig. S5 Time resolved UV-Visible spectral changes of complex **3** during the oxidation in CH_3CN solution containing 0.1 mol dm^{-3} TEAP.

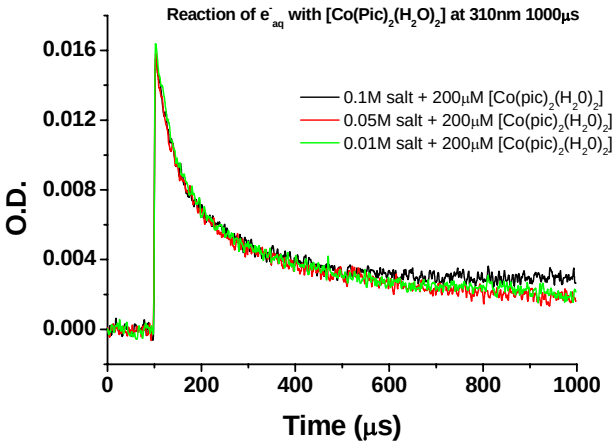

Fig. S6 Decay traces of transient species at 310 nm in the reaction of e^-_{aq} with the complex **1** with different concentration of $NaClO_4$.

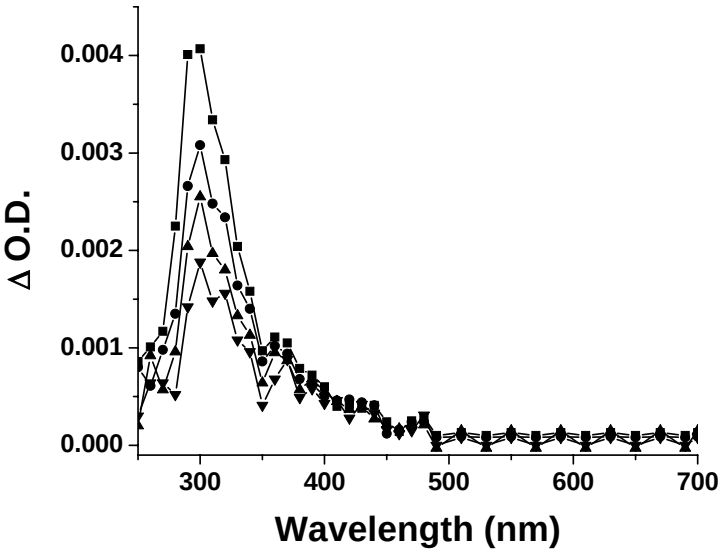

Fig. S7 Time resolved transient absorption spectra observed on the reaction of $(CH_3)_2\dot{C}OH$ radicals with N_2O saturated aqueous solution of 2×10^{-4} mol dm^{-3} complex **1** containing 1 mol dm^{-3} isopropanol at 4.6(■), 25(●), 60(▲) and 125(▼) μs after the electron pulse. Dose /Pulse 14.4 Gy.

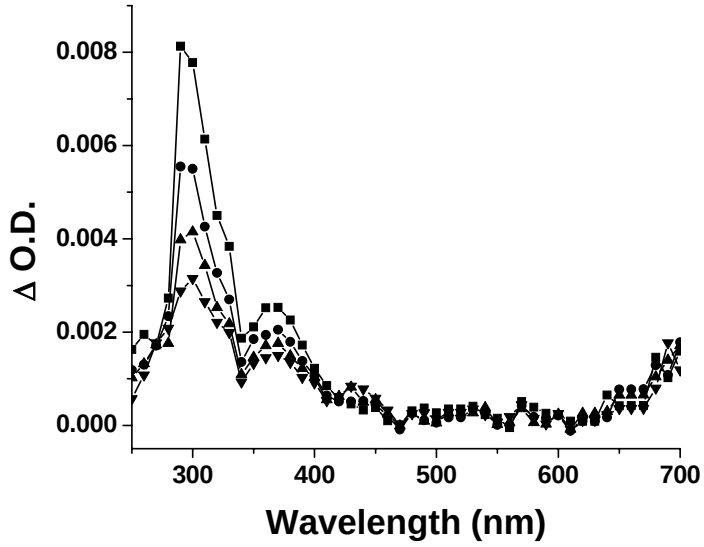

Fig. S8 Time resolved transient absorption spectra observed on the reaction of $CO_2^{\bullet-}$ radicals with N_2O saturated aqueous solution of 2×10^{-4} mol dm^{-3} complex **1** containing 0.25 mol dm^{-3} HCOONa at 4(■), 25(●), 60(▲), and 125(▼) μs after the electron pulse. Dose /Pulse 12.7 Gy.

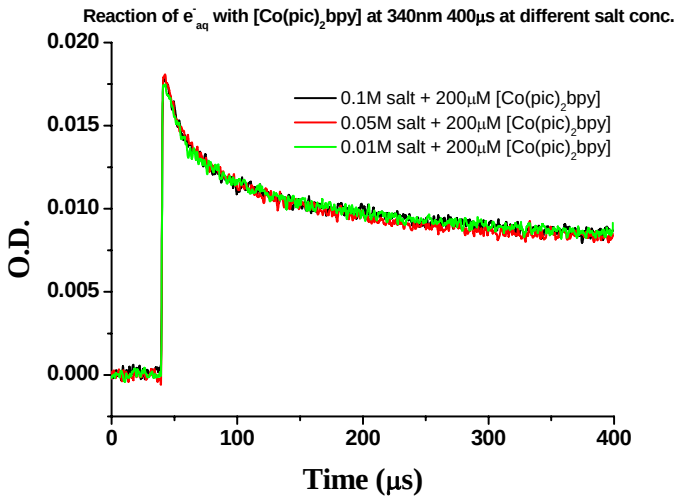

Fig. S9 Decay traces of transient species at 340 nm in the reaction of e^-_{aq} with the complex **2** with different concentration of $NaClO_4$.

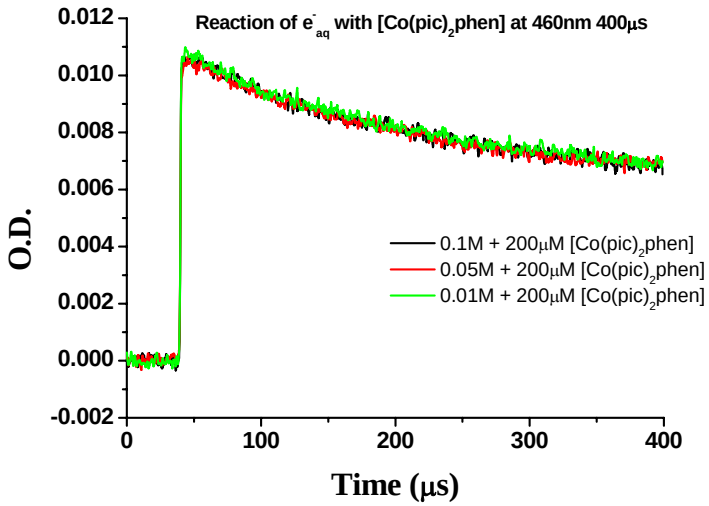

Fig. S10 Decay traces of transient species at 460 nm in the reaction of e^-_{aq} with the complex **3** with different concentration of $NaClO_4$.

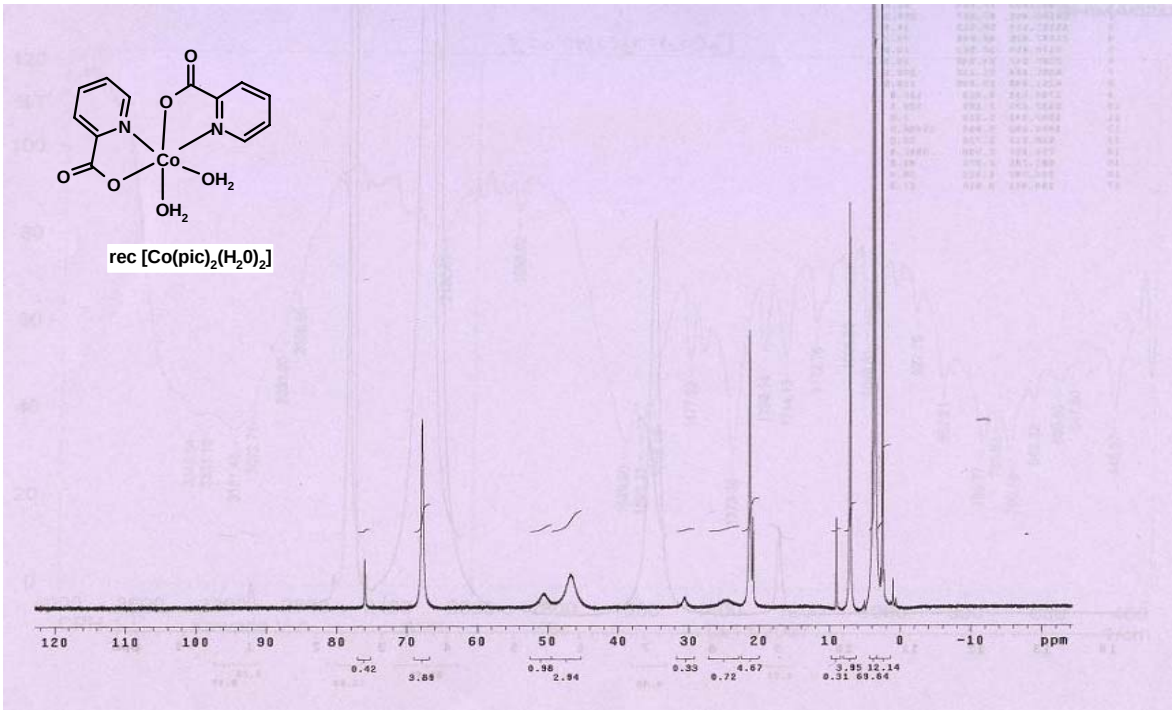

Fig. S11 ^{1}H NMR of complex **1** in DMSO-d_6 solvent.

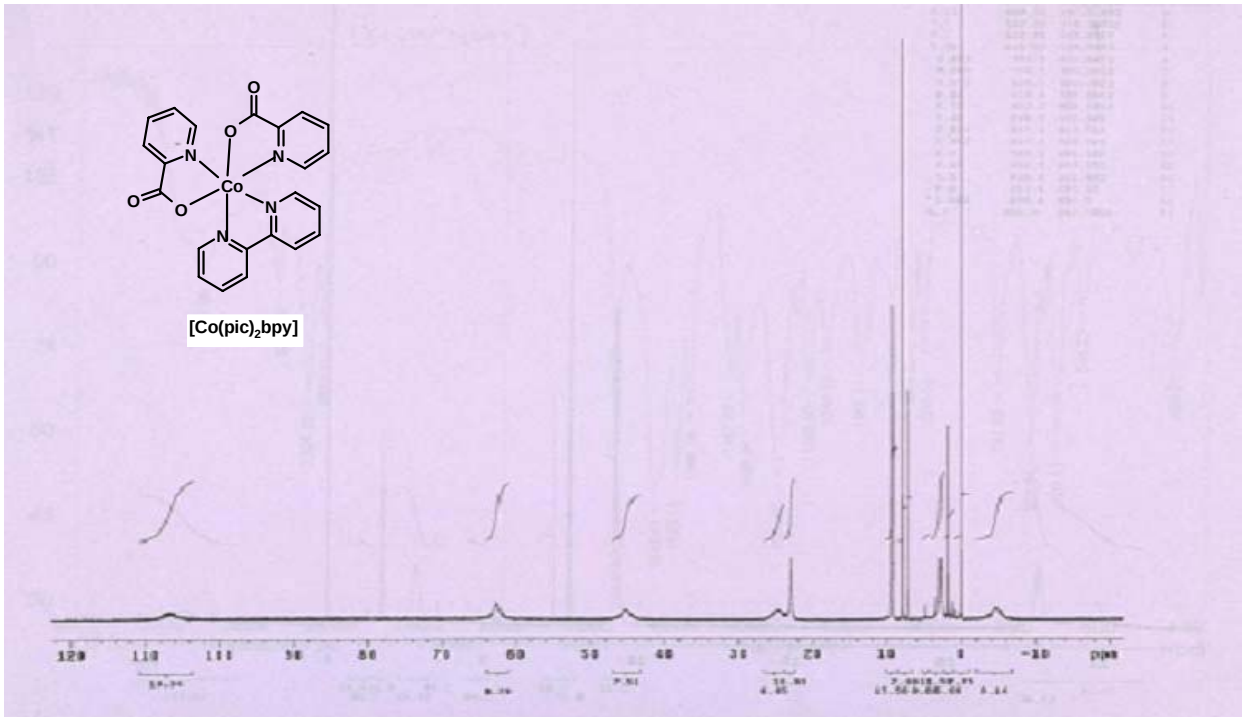

Fig. S12 ^{1}H NMR of complex **2** in $CDCl_3$ solvent.

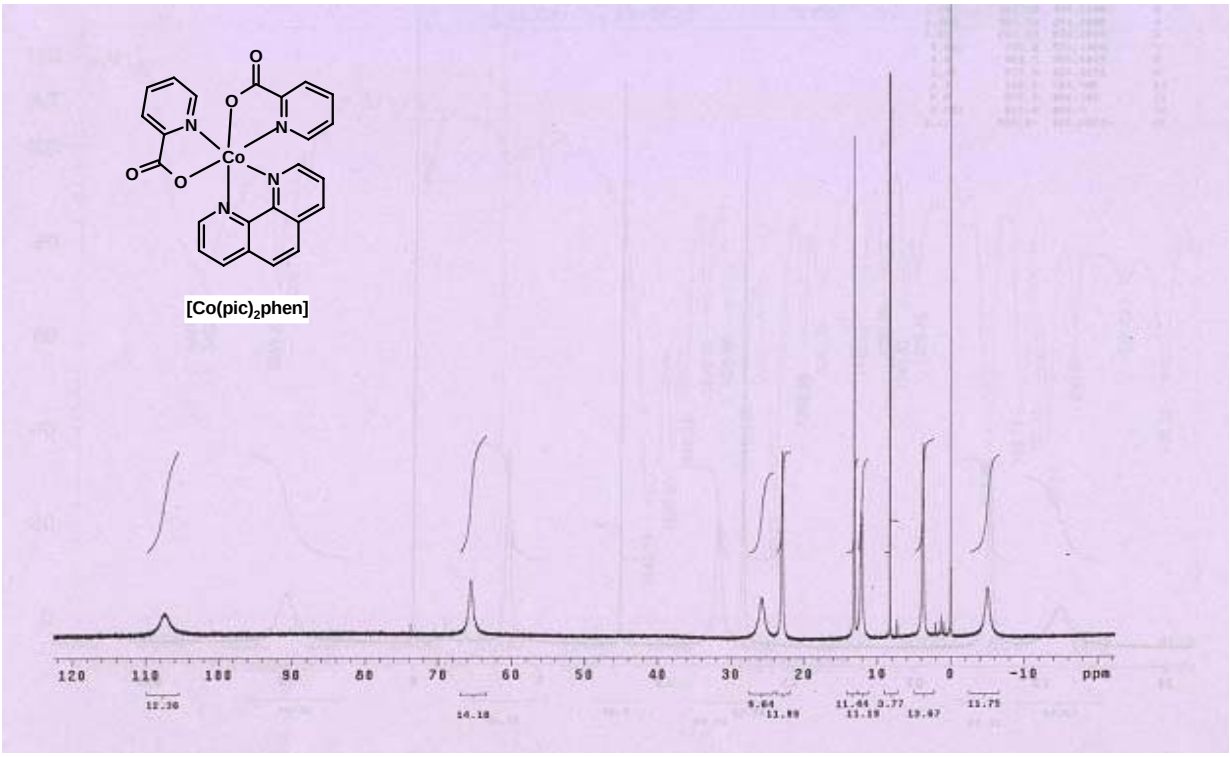

Fig. S13 ^{1}H NMR of complex **3** in $CDCl_3$ solvent.

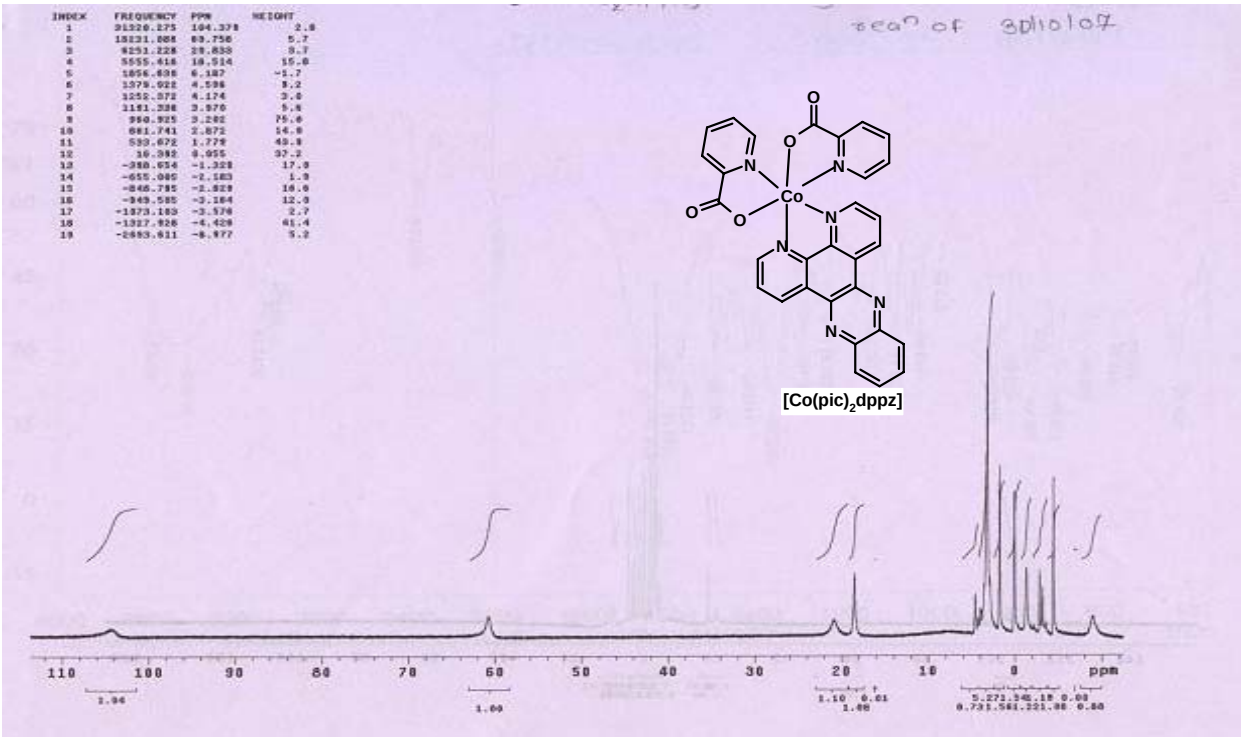

Fig. S14 ^{1}H NMR of complex **4** in $CDCl_3$ solvent.