

Electronic supplementary information (ESI)

(8 pages)

Intermediate (S=1) spin state in five-coordinate cobalt(III) : Magnetic properties of N-*o*-hydroxy-benzamido-*meso*-tetraphenylporphyrin cobalt(III), Co(N-NCO(*o*-O)C₆H₄-tpp)

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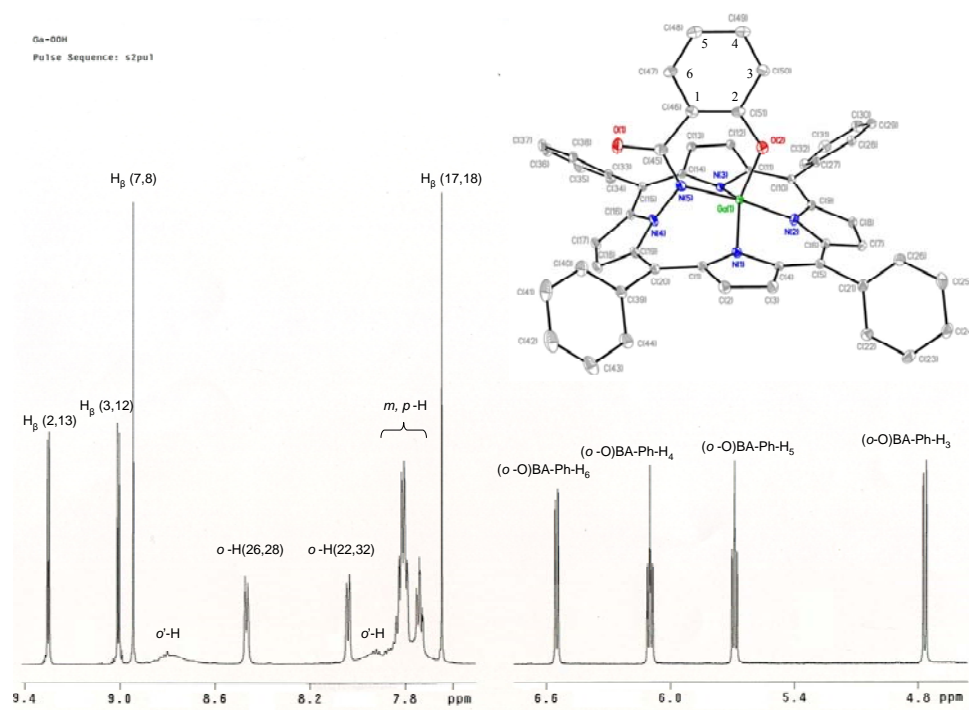


Figure S1(a) 20°C

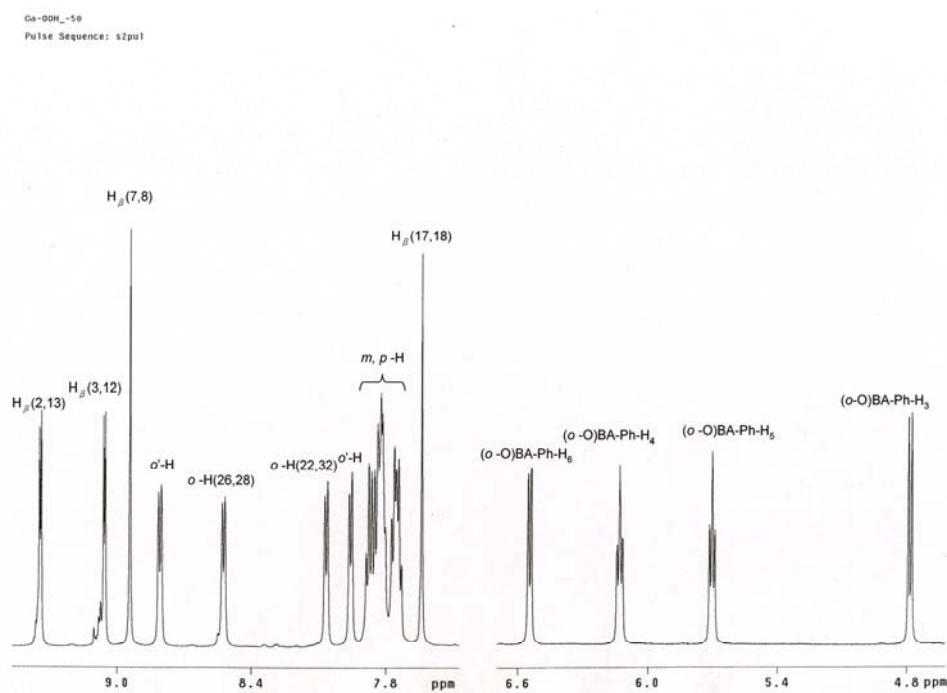
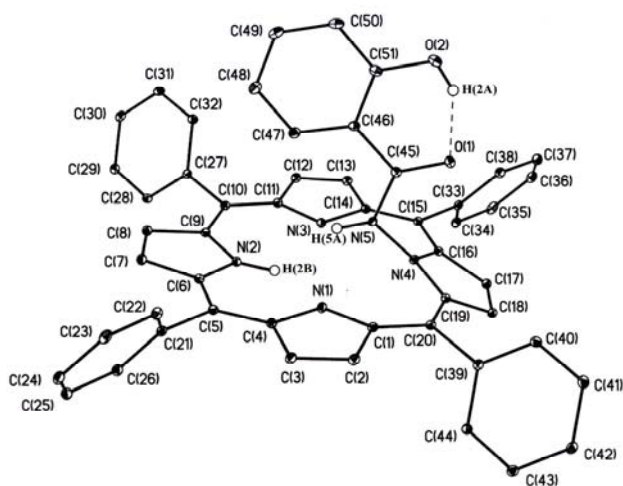
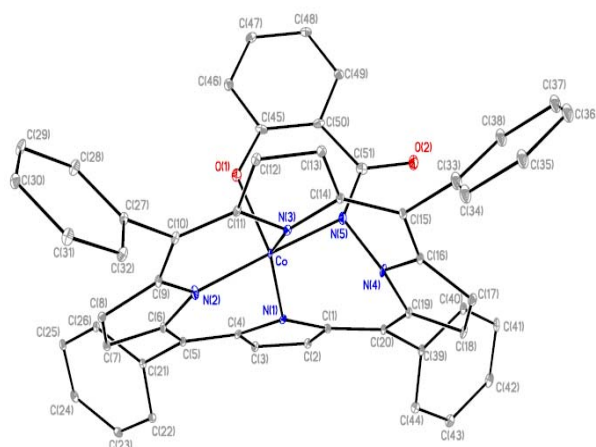


Figure S1(b) -50°C

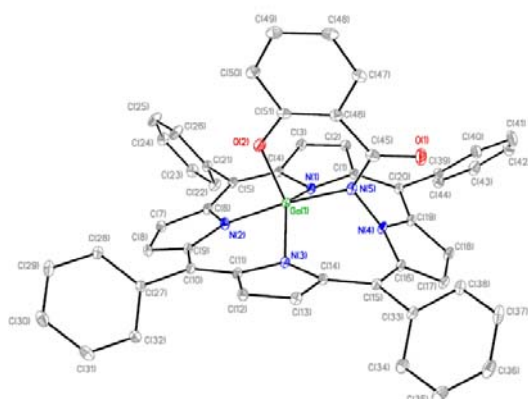
Figure S1. ^1H NMR spectra for **3** at 599.95 MHz in CDCl_3 showing four different β -pyrrole protons H_β , phenyl protons ($\sigma\text{-H}$, $m, p\text{-H}$) and ($\sigma\text{-O}$)BA-Ph protons: (a) 20°C and (b) -50°C.



(a) 1



(b) 2



(c) 3

Figure S2. Molecular configuration and atom-labeling scheme for (a) **1** and (b)

Co(N-NCO(*o*-O)C₆H₄-tpp)) (**2**) and (c)

[Ga(N-NCO(*o*-O)C₆H₄-tpp) · 0.5CHCl₃·MeOH; **3**·0.5CHCl₃·MeOH], with

30% thermal ellipsoids. Hydrogen atoms, solvent CHCl₃ and MeOH for

3·0.5CHCl₃·MeOH are omitted for clarity.

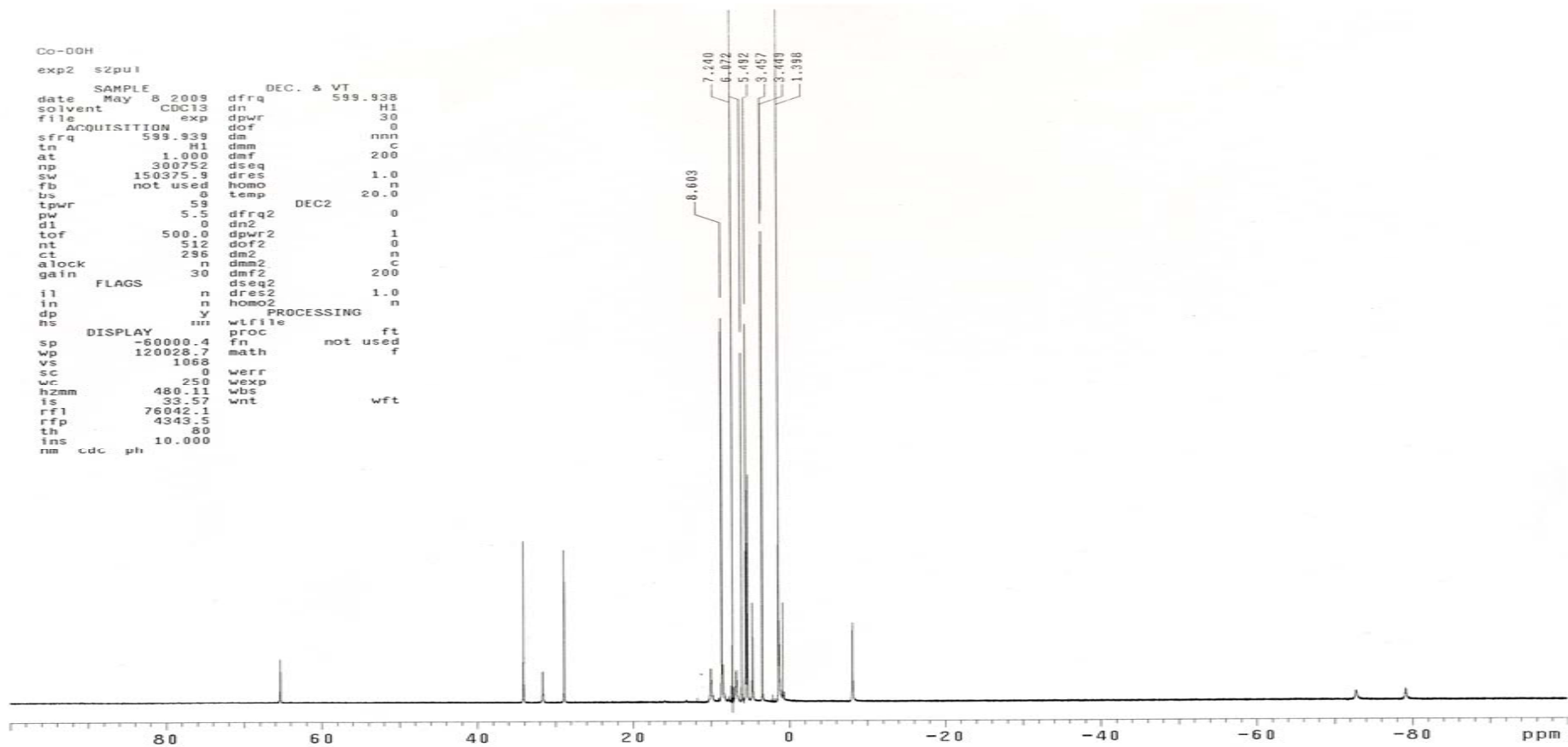
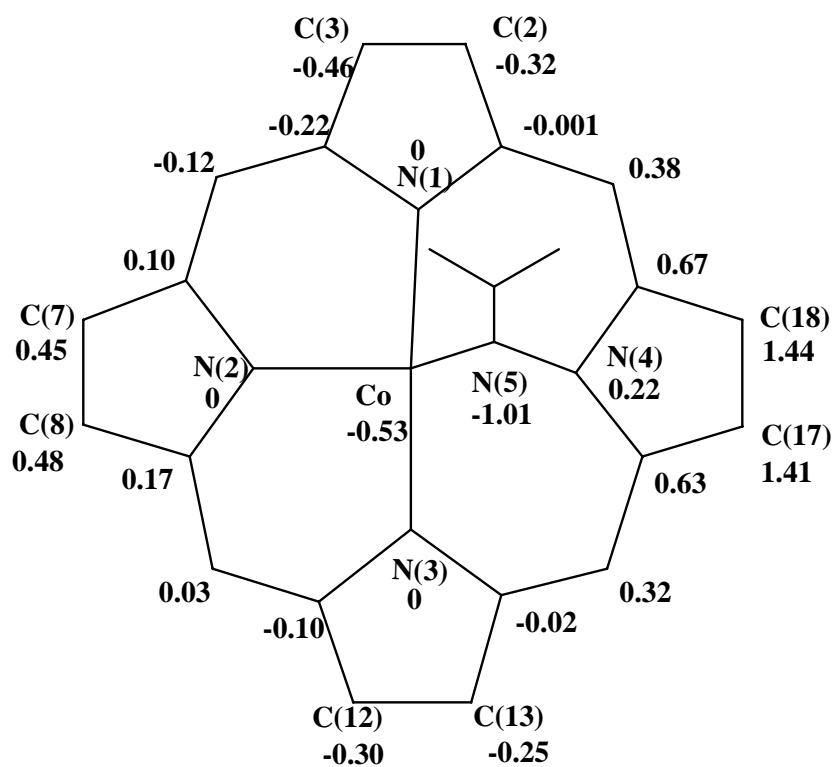
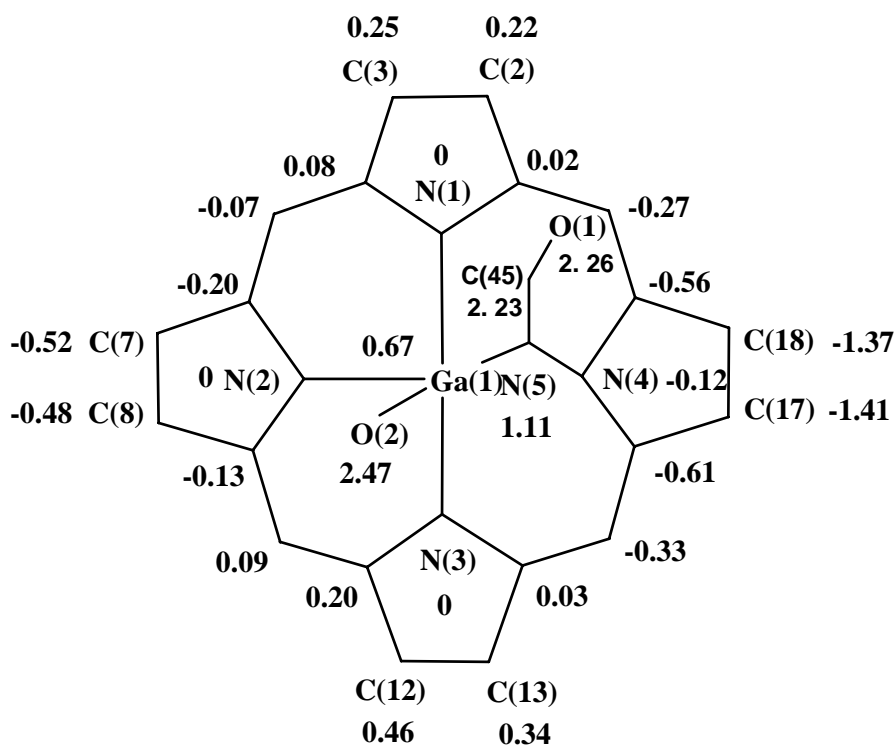


Figure S3. ^1H NMR spectra for **2** at 599.95 MHz at 20°C in CDCl_3 .



(a) 2



(b) 3

Figure S4. Diagram of the porphyrinato core ($C_{20}N_4$, M, and BA) of (a) compound **2** and (b) compound **3**. The values represent the displacement (in angstroms) of the atoms from the mean 3N plane [i.e. N(1)-N(3) for **2** and **3**].

