

# Supporting Materials: Neutral Low-dimensional Assemblies of a Mn(III) Schiff Base Complex and Octacyanotungstate(V): Synthesis, Characterization and Magnetic Properties

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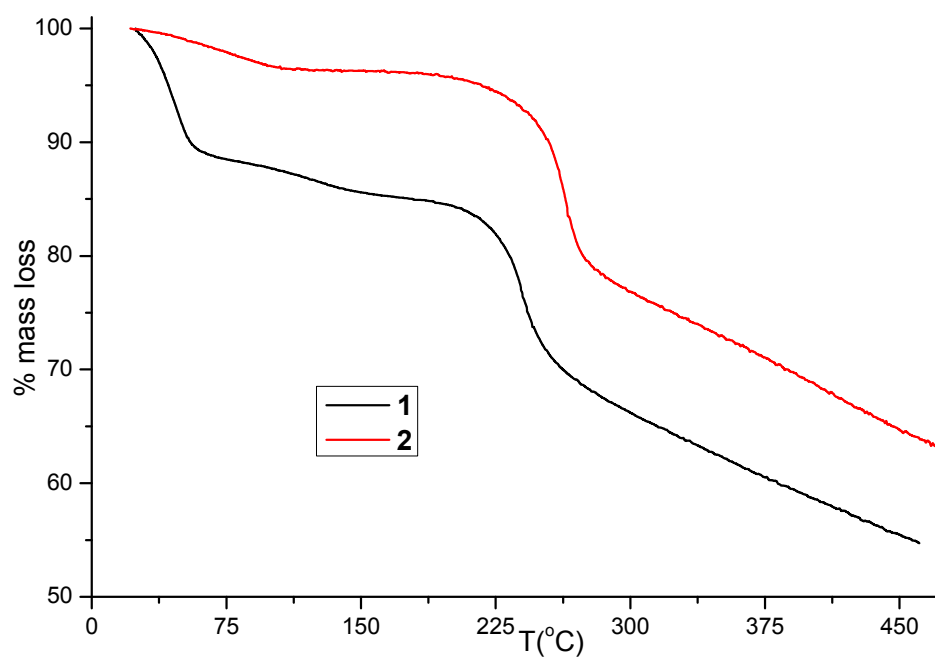


Figure S1. TG data for 1 (black) and 2 (red).

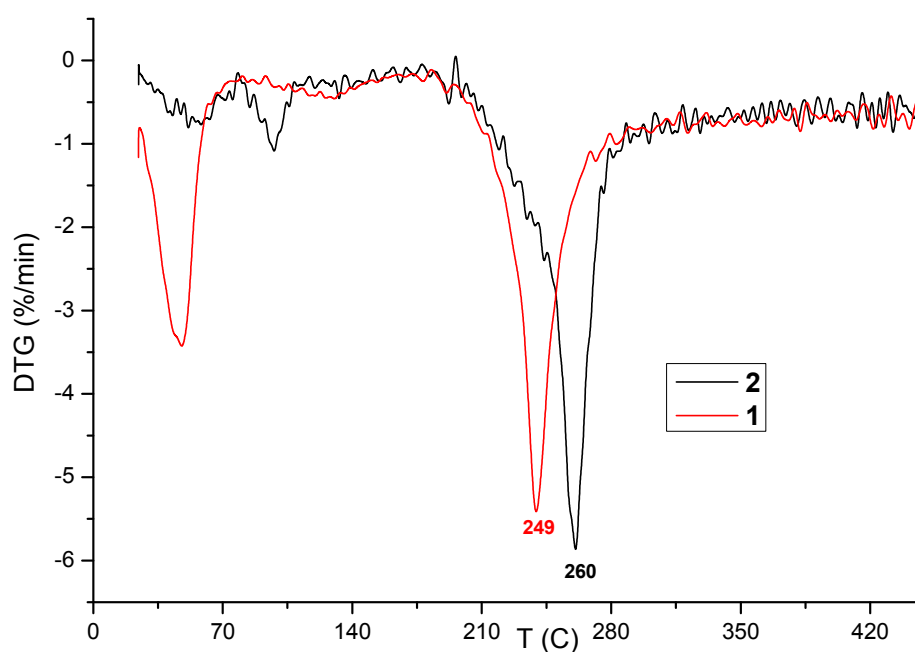
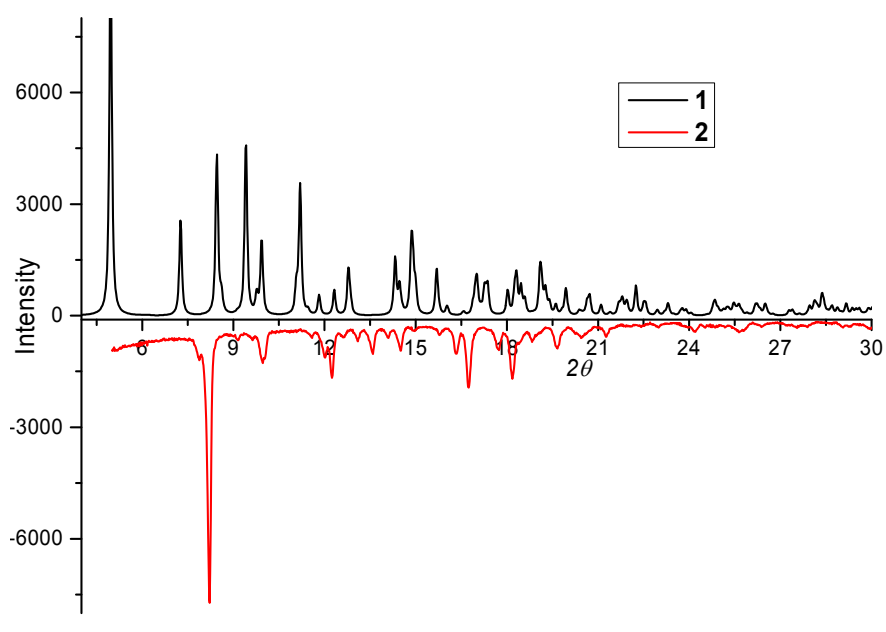
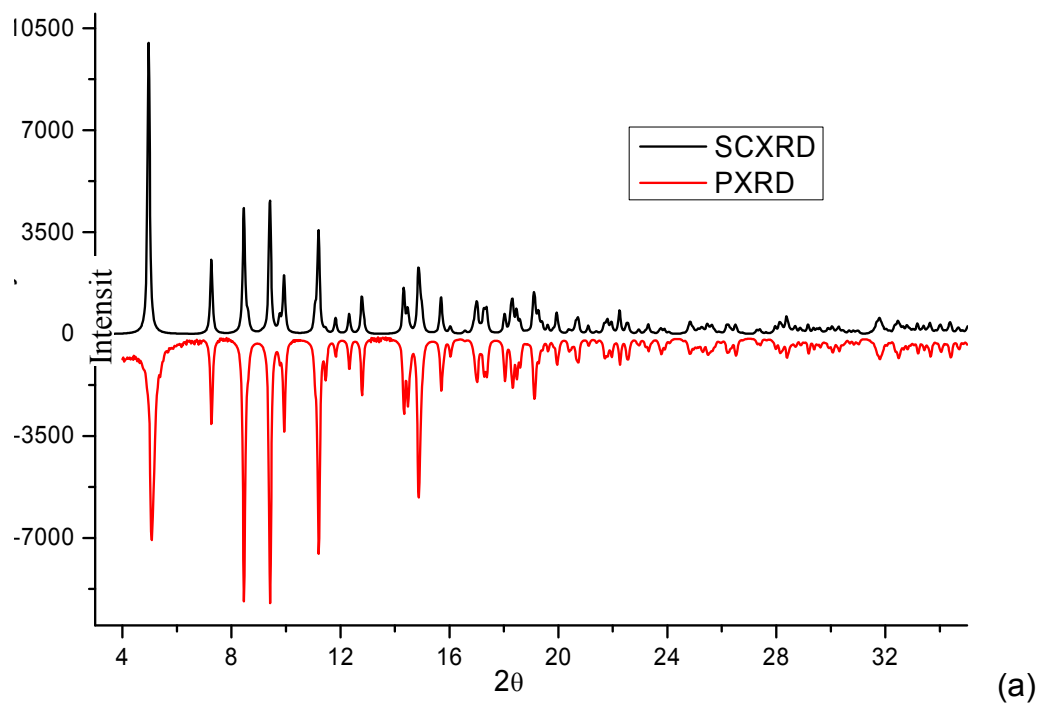
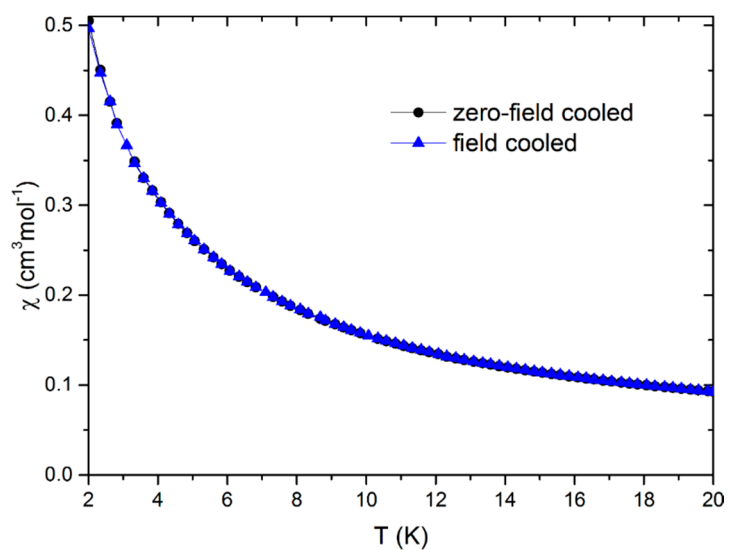


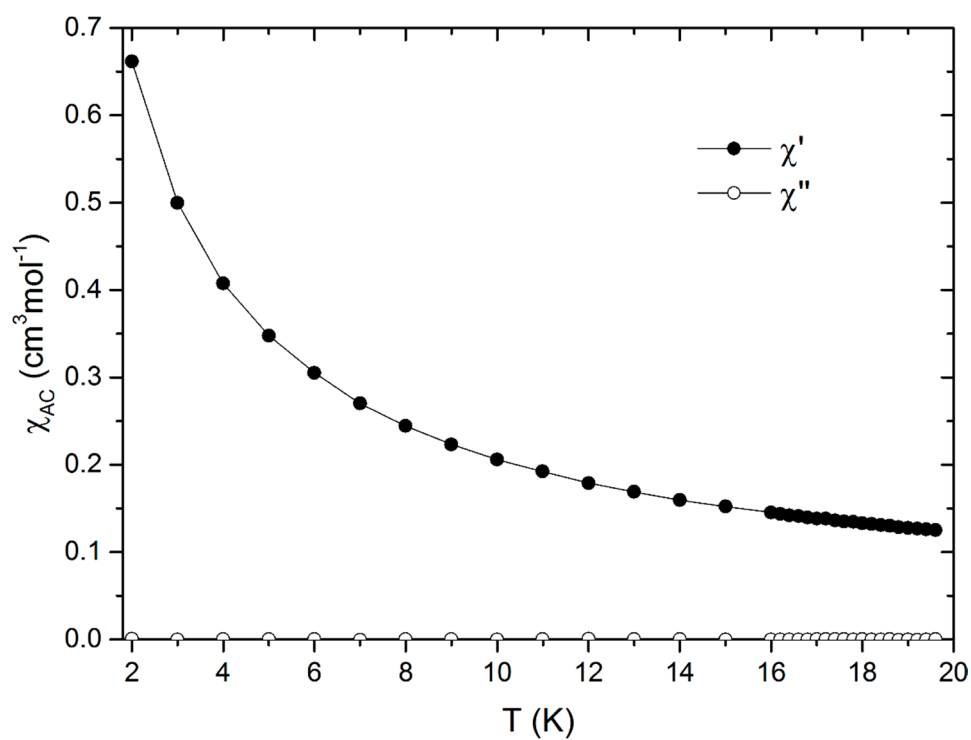
Figure S2. DTG data for 1 (red) and 2 (black).



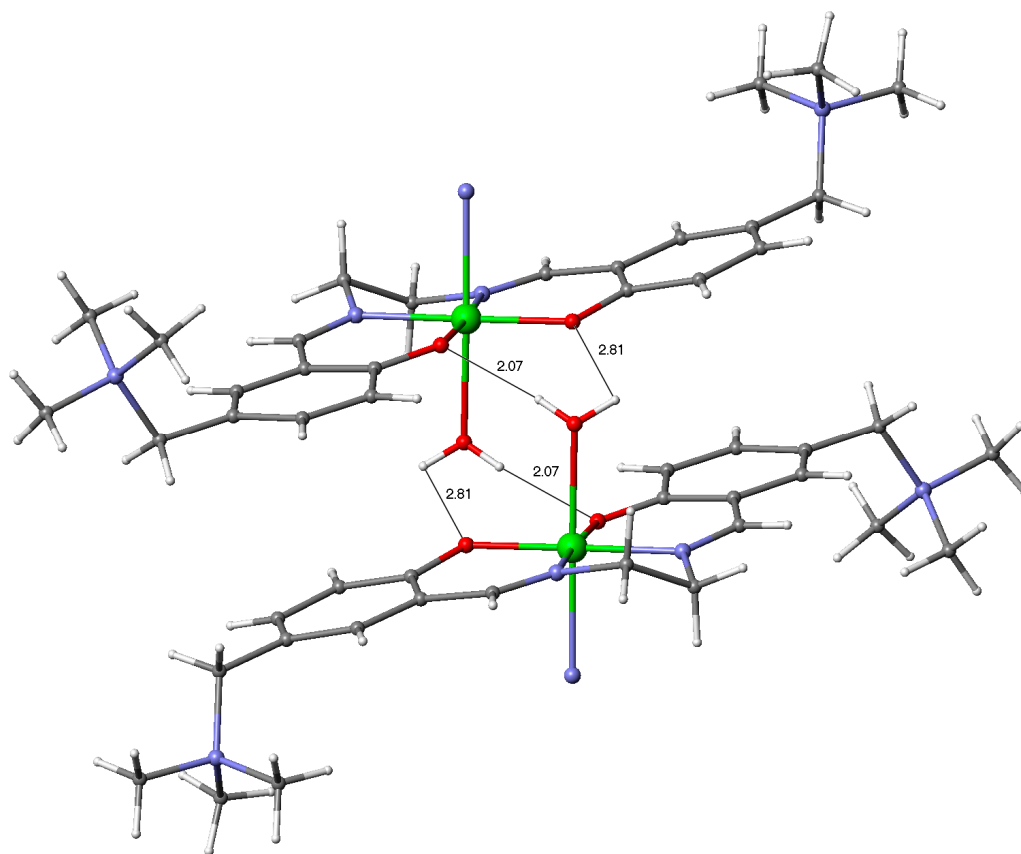
**Figure S3.** (a) diffractograms for 1: experimental (red), simulated (black); simulated for 1 (black) and 2 (red).



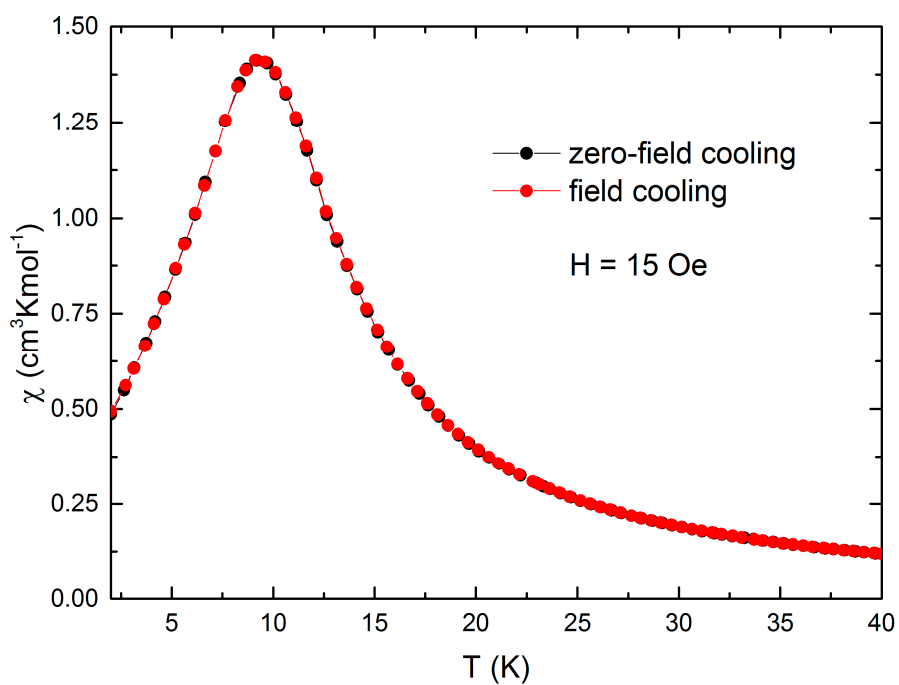
**Figure S4.** Zero field-cooling/field cooling  $\chi$  vs  $T$  for **1** ( $H=20$  Oe). Solid lines are to guide the eye.



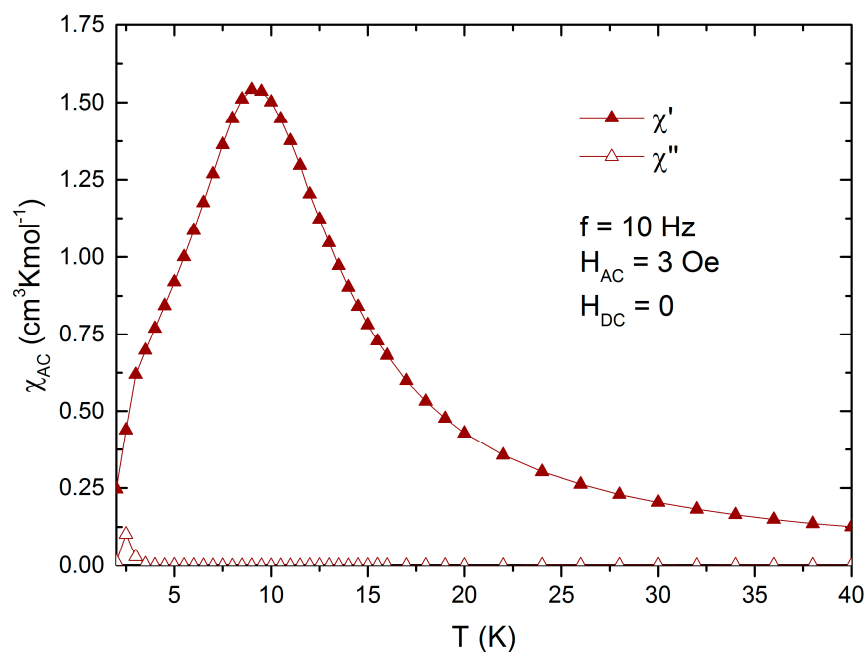
**Figure S5.** AC susceptibility versus temperature for **1**.  $H_{AC} = 3$  Oe,  $f_{AC} = 10$  Hz. Solid lines are to guide the eye.



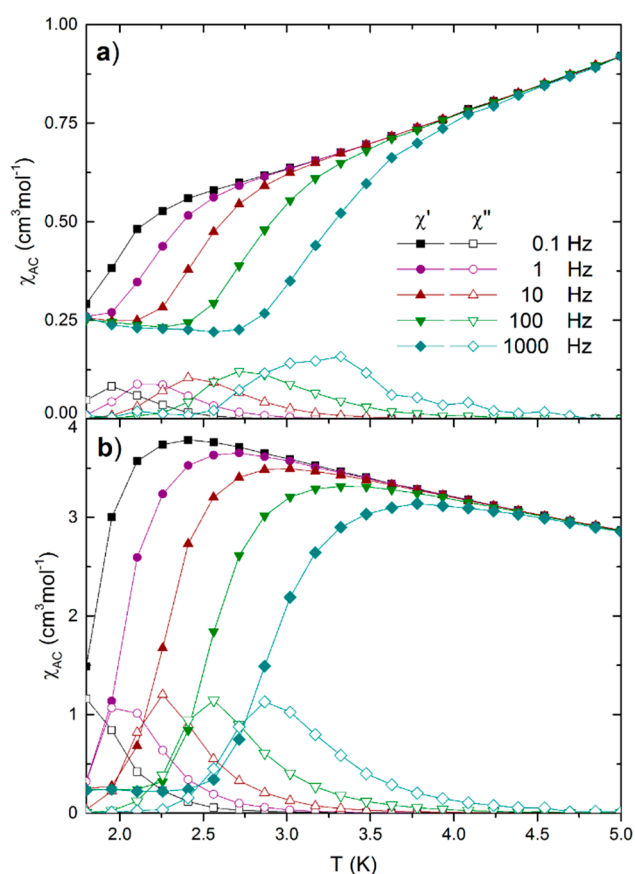
**Figure S6.** The molecular structure of  $[(\text{MnSB}^+(\text{H}_2\text{O}))_2]$  dimer in compound I. The O...H hydrogen bonds mediating spin coupling between two  $\text{Mn}^{\text{III}}$  ions (green balls) are shown.



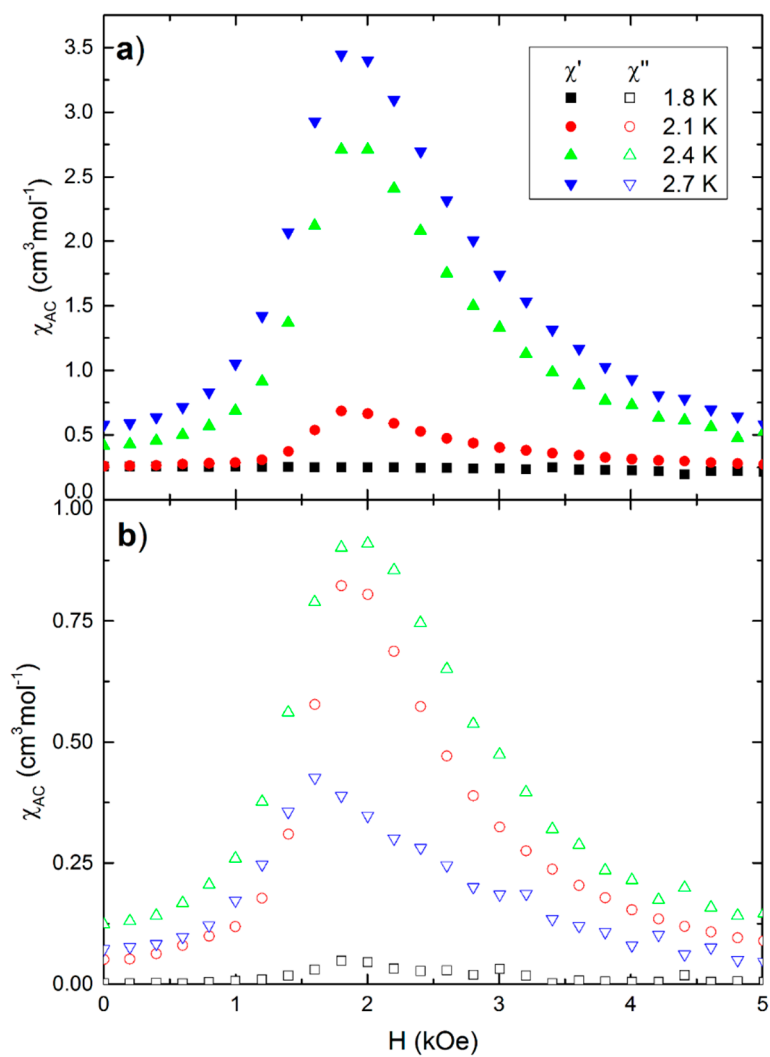
**Figure S7.** Zero-field cooling and field cooling magnetic susceptibility versus temperature for 2 measured in a DC field of 15 Oe. Solid lines are to guide the eye.



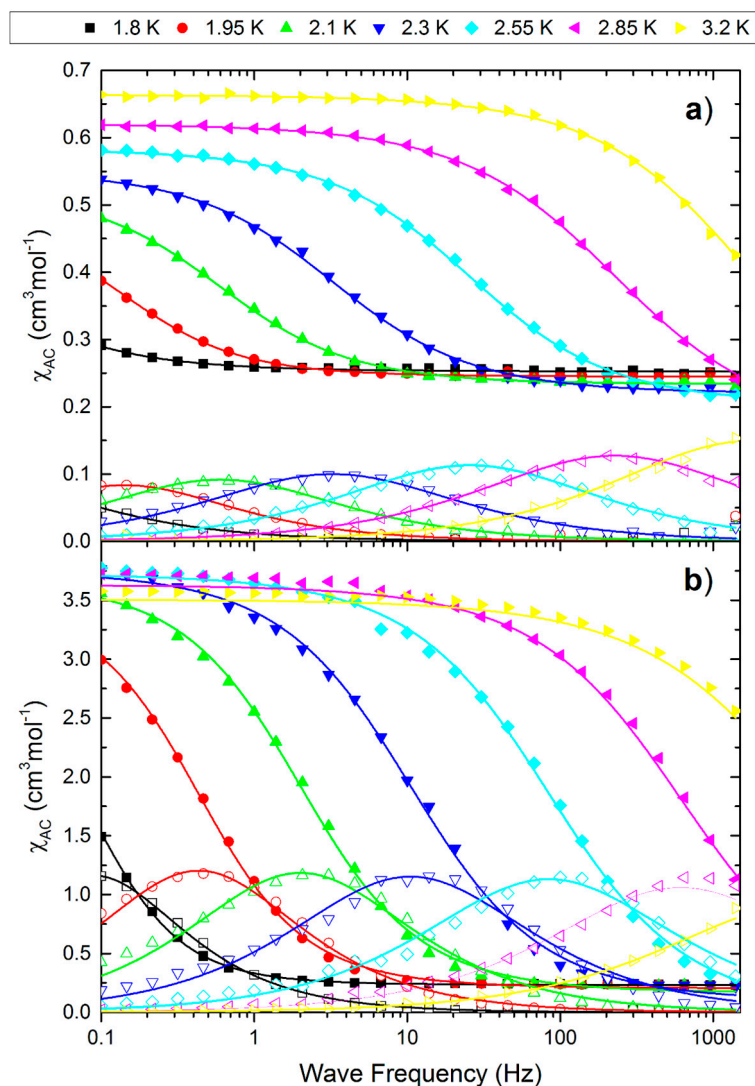
**Figure S8.** AC susceptibility versus temperature for **2** measured in  $H_{DC} = 0$  Oe and  $H_{AC} = 3$  Oe at  $f = 10$  Hz. Solid lines are to guide the eye.



**Figure S9.** AC susceptibility of **2** as a function of temperature measured over a series of AC frequencies in a) zero DC field and b) DC field of 2 kOe.



**Figure S10.** AC susceptibility of **2** as a function of  $H_{DC}$  at four temperatures; a)  $\chi'$ , b)  $\chi''$ .  $f_{AC} = 10$  Hz,  $H_{AC} = 3$  Oe.



**Figure S11.** AC susceptibility of **2** measured as a function of AC frequency over a range of temperatures in a) 0 and b) 2 kOe DC field.

**Table S1.** Parameters  $\tau$  and  $\alpha$  obtained from the generalized Debye model fits to the AC data vs. frequency for sets measured in 0 and 2 kOe DC field.

T (K)	$H_{DC} = 0$				$H_{DC} = 2 \text{ kOe}$			
	$\tau$ (s)	$\Delta\tau$ (s)	$\alpha$	$\Delta\alpha$	$\tau$ (s)	$\Delta\tau$ (s)	$\alpha$	$\Delta\alpha$
1.8	15	11	0.3	0	1.786	0.044	0.1219	0.0059
1.95	1.13	0.17	0.231	0.035	0.3673	0.0079	0.1968	0.0081
2.1	0.266	0.011	0.283	0.013	0.0794	0.0021	0.244	0.011
2.3	0.04893	0.0016	0.310	0.012	0.01519	$4.5 \cdot 10^{-4}$	0.283	0.012
2.55	0.0062	$1.7 \cdot 10^{-4}$	0.3162	0.0099	0.00190	$4.4 \cdot 10^{-5}$	0.3053	0.0078
2.85	$7.02 \cdot 10^{-4}$	$1.7 \cdot 10^{-5}$	0.3468	0.0062	$2.598 \cdot 10^{-4}$	$4.9 \cdot 10^{-6}$	0.3272	0.0070
3.2	$9.41 \cdot 10^{-5}$	$8.1 \cdot 10^{-6}$	0.341	0.011	$3.612 \cdot 10^{-4}$	$6.8 \cdot 10^{-7}$	0.3753	0.0051