Electronic Supplementary Material (ESI)

Crystal structures and magnetic properties of one dimensional compounds constructed from $Mn_2(salen)_2$ building block and organic selenite acid ligands

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Supporting Information

Table S1. Selected bond lengths [Å] and angles [°] for complex **1**.

Complex **1**			
Mn(1)-O(3)	1.876(4)	Mn(2)-O(6)	1.879(4)
Mn(1)-O(4)	1.905(4)	Mn(2)-O(5)	1.866(4)
Mn(1)-N(1)	1.982(5)	Mn(2)-N(4)	1.989(5)
Mn(1)-N(2)	1.995(5)	Mn(2)-N(3)	1.973(5)
Mn(1)-O(1)	2.082(4)	Mn(2)-O(2)	2.064(4)
Mn(1)-O(4)#1	2.498(4)	Mn(2)-O(6)#2	2.922(4)
Se(1)-O(1)	1.681(4)	Se(1)-O(2)	1.681(4)
O(3)-Mn(1)-O(4)	95.52(18)	O(6)-Mn(2)-O(5)	92.78(18)
O(3)-Mn(1)-N(1)	91.8(2)	O(6)-Mn(2)-N(4)	89.7(2)
O(4)-Mn(1)-N(1)	165.8(2)	O(5)-Mn(2)-N(4)	162.4(2)
O(3)-Mn(1)-N(2)	172.6(2)	O(6)-Mn(2)-N(3)	165.0(2)
O(4)-Mn(1)-N(2)	89.7(2)	O(5)-Mn(2)-N(3)	91.9(2)
N(1)-Mn(1)-N(2)	82.1(2)	N(4)-Mn(2)-N(3)	81.7(2)
O(3)-Mn(1)-O(1)	96.56(19)	O(6)-Mn(2)-O(2)	96.58(19)
O(4)-Mn(1)-O(1)	94.88(18)	O(5)-Mn(2)-O(2)	97.5(2)
N(1)-Mn(1)-O(1)	96.4(2)	N(4)-Mn(2)-O(2)	99.5(2)
N(2)-Mn(1)-O(1)	88.2(2)	N(3)-Mn(2)-O(2)	96.9(2)
O(1)-Mn(1)-O(4)#1	172.74(16)	O(2)-Mn(2)-O(6)#2	178.74(6)

Symmetry code for complex **1**: -x, 2-y, 1-z; #2: -x, -y, -z

Table S2. Selected bond lengths [Å] and angles [°] for complex **2**.

Complex **2**			
Mn(1)-O(3)	1.891(4)	Mn(2)-O(6)	1.873(4)
Mn(1)-O(4)	1.882(4)	Mn(2)-O(5)	1.910(4)
Mn(1)-N(1)	1.987(5)	Mn(2)-N(4)	1.976(5)
Mn(1)-N(2)	1.969(5)	Mn(2)-N(3)	1.997(5)
Mn(1)-O(1)	2.094(4)	Mn(2)-O(2)	2.095(4)
Mn(1)-O(3)#1	2.631(2)	Mn(2)-O(5)#2	2.523(2)
Se(1)-O(1)	1.711(3)	Se(1)-O(2)	1.689(4)
O(3)-Mn(1)-O(4)	95.07(18)	O(6)-Mn(2)-O(5)	95.32(18)
O(3)-Mn(1)-N(1)	89.3(2)	O(6)-Mn(2)-N(4)	91.9(2)
O(4)-Mn(1)-N(1)	169.2(2)	O(5)-Mn(2)-N(4)	165.98(19)
O(3)-Mn(1)-N(2)	165.6(2)	O(6)-Mn(2)-N(3)	170.3(2)
O(4)-Mn(1)-N(2)	91.3(2)	O(5)-Mn(2)-N(3)	89.53(19)
N(1)-Mn(1)-N(2)	82.3(2)	N(4)-Mn(2)-N(3)	81.7(2)
O(3)-Mn(1)-O(1)	95.91(17)	O(6)-Mn(2)-O(2)	96.62(18)
O(4)-Mn(1)-O(1)	95.72(17)	O(5)-Mn(2)-O(2)	95.76(17)
N(1)-Mn(1)-O(1)	93.59(18)	N(4)-Mn(2)-O(2)	95.33(18)
N(2)-Mn(1)-O(1)	96.32(19)	N(3)-Mn(2)-O(2)	91.24(18)
O(1)-Mn(1)-O(3)#1	174.9(8)	O(2)-Mn(2)-O(5)#2	172.42(7)

Symmetry code for complex **2**: 1-x, -y, -z; #2: 2-x, 1-y, -z

Table S3 The parameters obtained by fitting Cole-Cole plot for **1**.

T / K	χ_S	χ_T	τ	a
2.0	0.155	0.598	0.012264	0.14
2.2	0.162	0.662	0.002719	0.13
2.4	0.177	0.754	0.000710	0.11
2.6	0.211	0.887	0.000223	0.08
2.8	0.226	1.085	0.000077	0.05
3.0	0.000	1.386	0.000023	0.04

Table S4 The parameters obtained by fitting Cole-Cole plot for **2**.

T / K	$\chi_{S,tot}$	$\Delta\chi_1$	τ_1	a_1	$\Delta\chi_2$	τ_2	a_2
2.0	0.0092	0.174	0.0000053	0.08	0.0248	0.0143680	0.29
2.2	0.0197	0.175	0.0000071	~0	0.0364	0.0051491	0.27
2.4	0.0002	0.174	0.0000048	~0	0.0213	0.0013606	0.41
2.6	0.0001	0.155	0.0000055	~0	0.0463	0.0000363	0.66
2.8	~0	0.145	0.0000091	~0	0.0678	0.0000003	0.83
3.0	~0	0.161	0.0000076	~0	0.0707	0.0000005	0.91

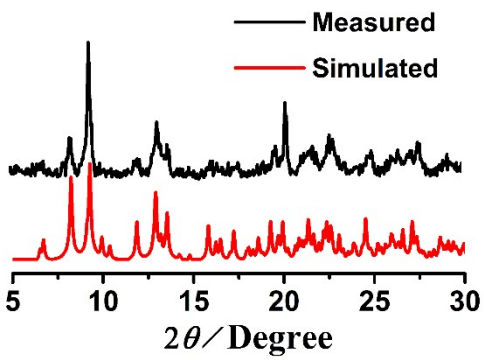

Figure S1. The powder XRD pattern of **1** in black and its simulation in red.

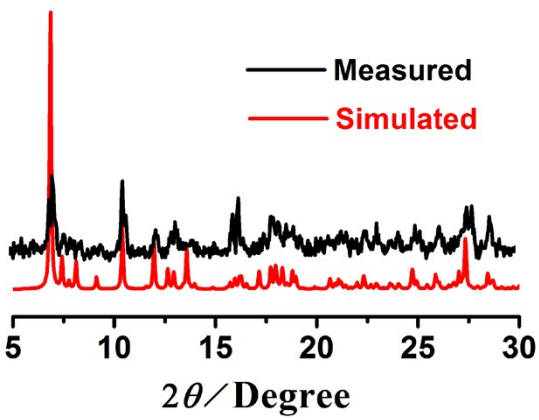

Figure S2. The powder XRD pattern of **2** in black and its simulation in red.

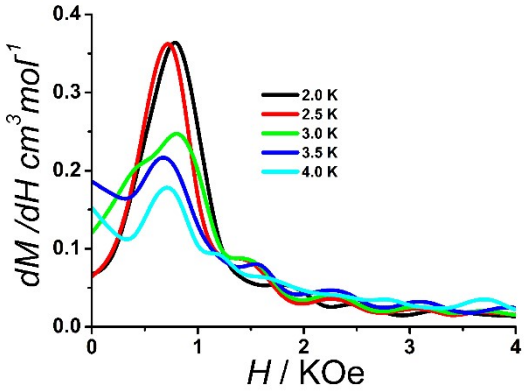

Figure S3. The derivative of field-dependent magnetization of **1** measured at different temperatures.

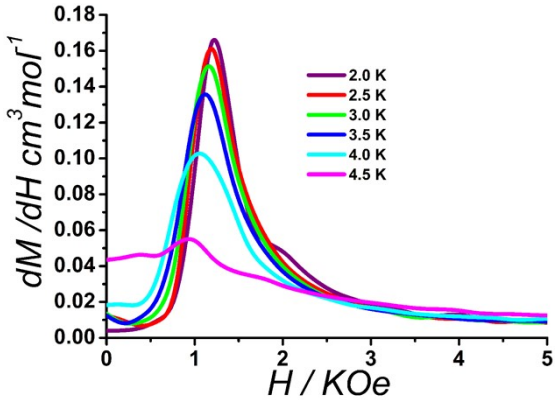

Figure S4. The derivative of field-dependent magnetization of **2** measured at different temperatures.

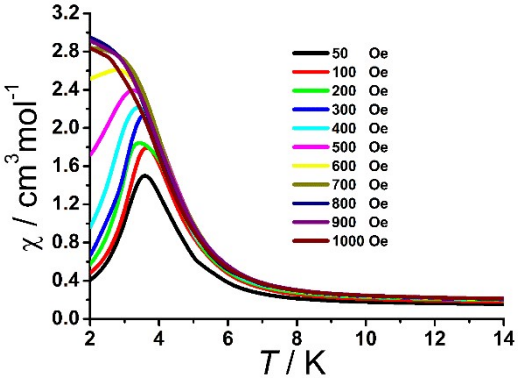

Figure S5 The χ_M *versus* T plots measured at different external fields of **1**.

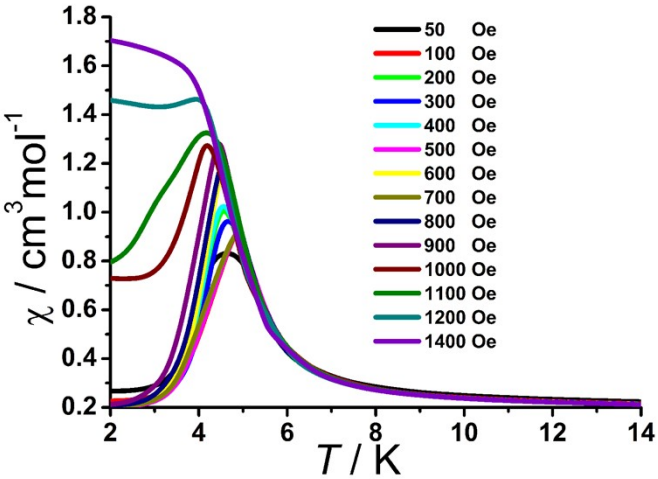

Figure S6 The χ_M *versus T* plots measured at different external fields of **2**.

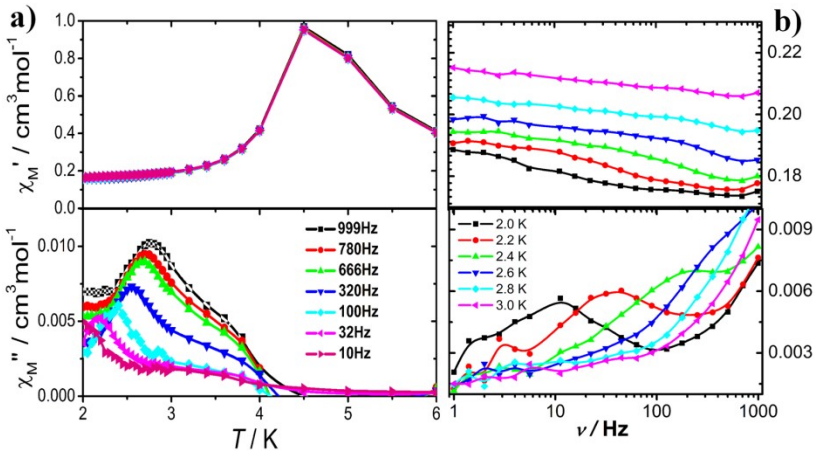

Figure S7. Variable-temperature (a) and variable-frequency (b) *ac* magnetic susceptibility data of **2** under H_{ac} = 2 Oe and H_{dc} = 0 Oe.

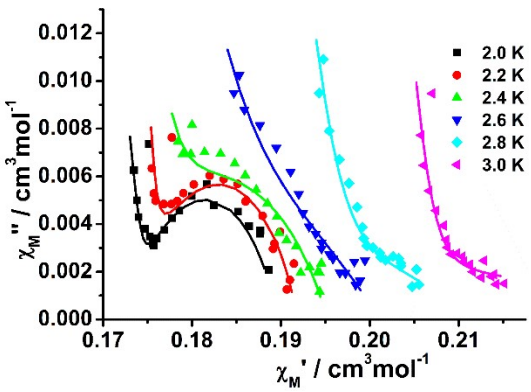

Figure S8. Cole–Cole plots of the compound **2** from 2.0 to 3.0 K. The solid lines represent the fitting using the generalized Debye model

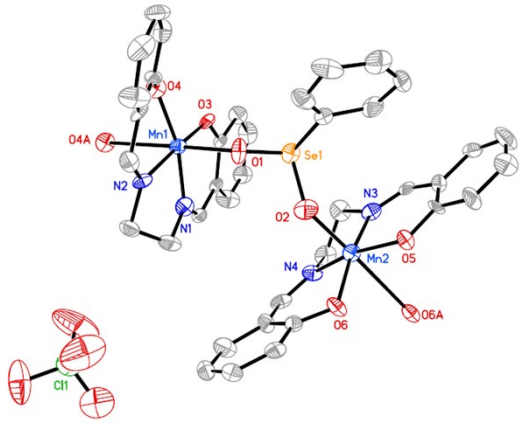

Figure S9 The asymmetric unit of complex **1**, rendered with 30% probability ellipsoids. Hydrogen atoms are omitted for clarity.

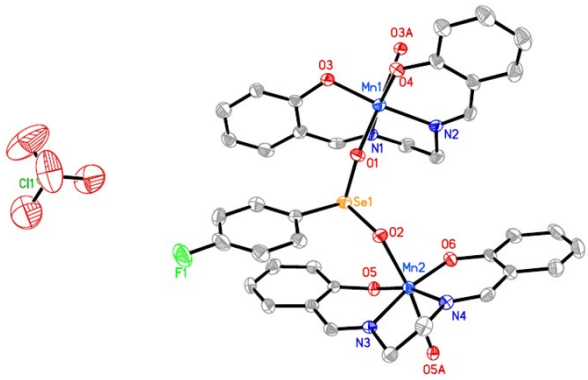

Figure S10 The asymmetric unit of complex **2**, rendered with 30% probability ellipsoids. Hydrogen atoms are omitted for clarity.