

Supporting Information for

Incorporation of Spin-5/2 Chain into 2D Network with Conformational Pure *e,a-cis*-Cyclohexane-1,4-Dicarboxylato Linker

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Synthesis. In a typical hydrothermal reaction, a mixture of $\text{FeCl}_3 \cdot 4\text{H}_2\text{O}$ (0.234 g, 1 mmol), 1,4-chdcH₂ (mixture of *cis*- and *trans*- conformation) (0.172 g, 1 mmol), NaOH (0.060 g, 1.5 mmol) in a molar ratio of 1:1:1.5 in deionized water (15 ml) was sealed in a 23-ml Teflon-lined autoclave and heated at 160 °C for 2 d to give yellow needle-like crystals of **1** (yield 15 % based on 1,4-chdcH₂). Elemental analysis, C₈H₁₁FeO₅, calcd.: C, 53.95%; H, 4.56%; found: 53.70%; H, 4.62 %.

Magnetic measurement. Magnetic susceptibility measurements of **1** were performed on a poly-crystalline sample on a Quantum Design MPMS-XL7 SQUID. Data were corrected for the diamagnetic contribution calculated from Pascal constants.

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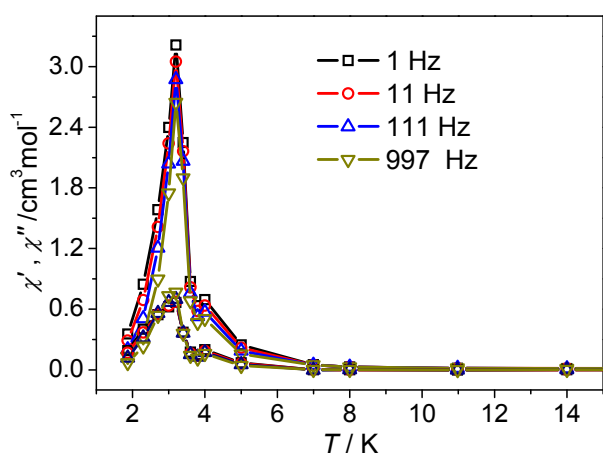
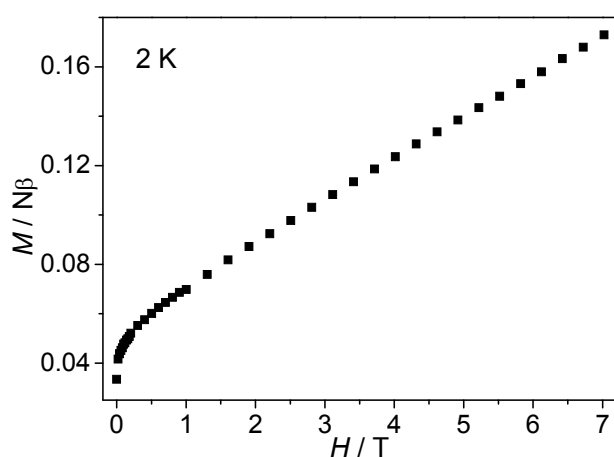


Fig. S1 Temperature-dependent alternating-current susceptibility data at indicated frequencies.



15 Fig. S2 Field-dependent direct-current susceptibility data at 2 K.