Electronic supplementary information (ESI)

3D Co(II) coordination polymer with ferrimagnetic-like layers based on azide and tetrazolate bridges showing slow magnetic dynamics

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Synthesis: A mixture of $CoCl_2 \cdot 6H_2O$ (0.095 g, 0.4 mmol), 4-cyanopyridine (0.036 g, 0.3 mmol) and NaN_3 (0.052 g, 0.8 mmol) in distilled water (15 mL) was stirred for 20 min in air and then heated in a 23 mL Teflon-lined autoclave at 150 °C for 2 days. After cooling to room temperature, red block crystals of **1** were collected in a 53% yield based on Co. Anal. Calcd for $C_{36}H_{24}N_{48}Co_6$: C, 29.17; H, 1.63; N, 45.35. Found: C, 29.18; H, 1.62; N, 45.32. IR bands (cm^{-1}): 2106 s, 2073 s, 1622 s, 1449 m, 1367 m, 1286 m, 1005 m, 837 m, 765 m, 714 s, 545 m.

Crystal Data Collection and Refinement Diffraction data were collected at 298 K on a Bruker Apex II CCD area detector equipped with graphite-monochromated Mo Kα radiation (λ = 0.71073 Å). Empirical absorption corrections were applied using the SADABS program.[1] The structures were solved by the direct method and refined by the full-matrix least-squares method on F^2, with all non-hydrogen atoms refined with anisotropic thermal parameters.[2] All the hydrogen atoms attached to carbon atoms were placed in calculated positions and refined using the riding model. All calculations were carried out with the SHELXTL crystallographic software.

References

1. Sheldrick, G. M. *Program for Empirical Absorption Correction of Area Detector Data;* University of Göttingen, Germany, **1996.**

2. Sheldrick, G. M. *SHELXTL* Version 5.1. Bruker Analytical X-ray Instruments Inc., Madison, Wisconsin, USA, **1998**.

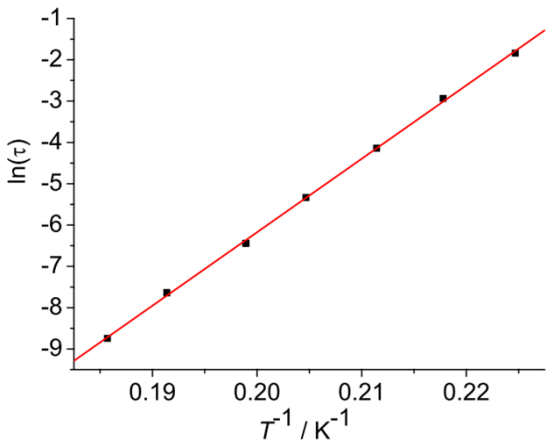

Figure S1. Arrhenius plots and best linear fits for **1** at zero dc field (solid squares).

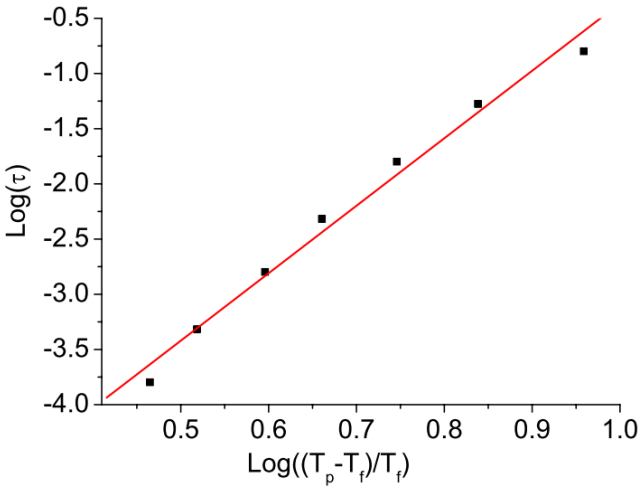

Figure S2. Frequency dependence of χ' for **1** was fitted by the conventional critical scaling law of the spin dynamics.