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Supporting information for article:

Crystal growth and physical properties of an antiferromagnetic molecule: *trans*-dibromidotetrakis(acetonitrile)chromium(III) tribromide, $[CrBr_2(NCCH_3)_4](Br_3)$

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Table SI-1. Anisotropic thermal displacement parameters of $[Cr(NCCH_3)_4Br_2][Br_3]$.

Atom	**U11**	**U22**	**U33**	**U23**	**U13**	**U12**
Cr1	0.0279(4)	0.0193(3)	0.0311(4)	0.000	0.0162(3)	0.000
Br1	0.0382(3)	0.0476(3)	0.0409(2)	0.000	0.0059(2)	0.000
Br2	0.0671(5)	0.0364(3)	0.0424(3)	0.000	0.0240(3)	0.000
Br3	0.0616(4)	0.0755(4)	0.0542(3)	0.000	0.0115(3)	0.000
N1	0.0431(14)	0.0278(11)	0.0450(13)	0.0043(9)	0.0251(11)	-0.0025(10)
C1	0.0492(18)	0.0301(13)	0.0455(16)	0.0065(12)	0.0247(14)	0.0027(12)
C2	0.104(4)	0.0435(19)	0.082(3)	0.026(2)	0.063(3)	0.002(2)

Figure SI-1. Temperature dependence of the real part of AC magnetic susceptibility χ' at excitation frequencies **(*a*)** f = 215, 456, 1000 Hz (logarithmic spacing) at 4 Oe and **(*b*)** f = 100, 215, 456, 1000 Hz at 100 Oe and **(*c*)** 500 Oe.