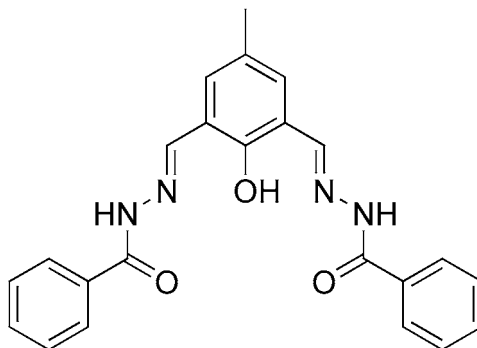


Supporting Information

Observation of Slow Magnetic Relaxation in Triple-stranded Lanthanide Helicates



Scheme S1 Structure of the ligand.

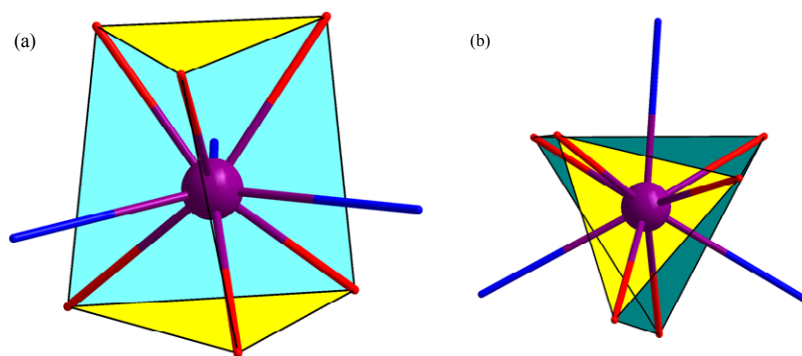


Fig. S1 (a) Side view and (b) top view of the tricapped trigonal-prismatic coordination environment of the Dy^{III} ion in **1**.

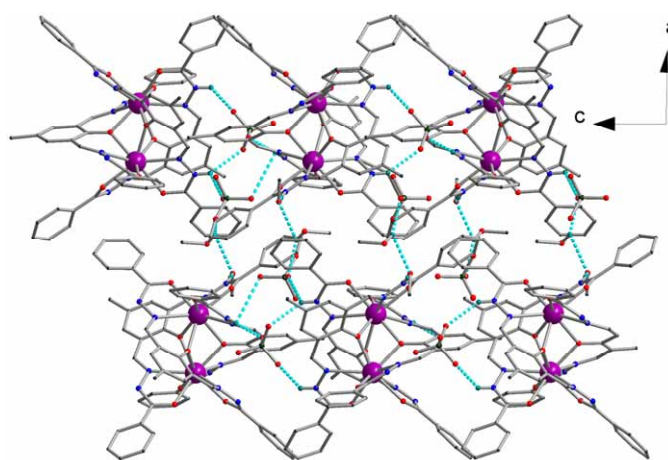


Fig. S2 Illustrations showing the hydrogen bonding interactions (blue lines) and the packing arrangements of complex **1** along the *b* axis, containing alternating Δ and Λ configurations.

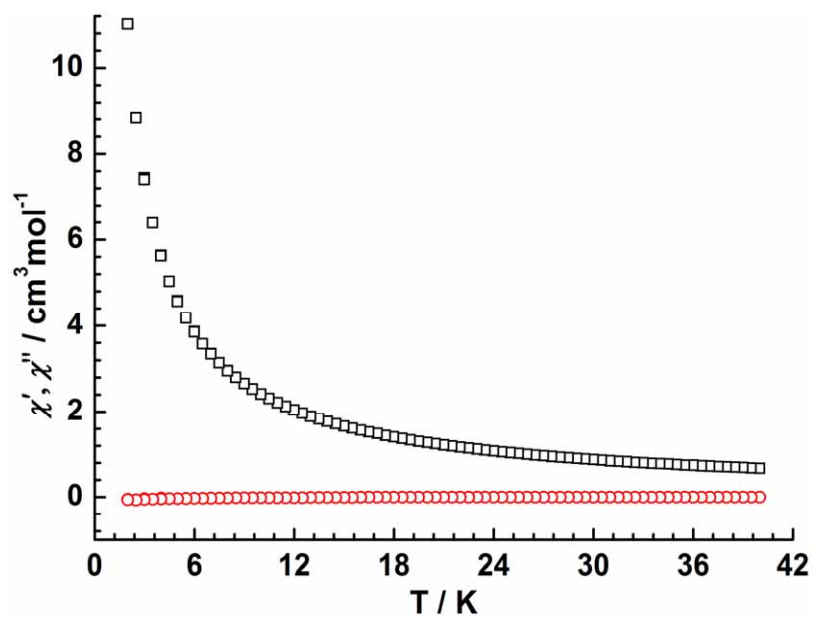


Fig. S3. Temperature dependence of the in-phase (square) and out-of-phase (circle) ac susceptibility for **1** under zero dc field at 1000 Hz.

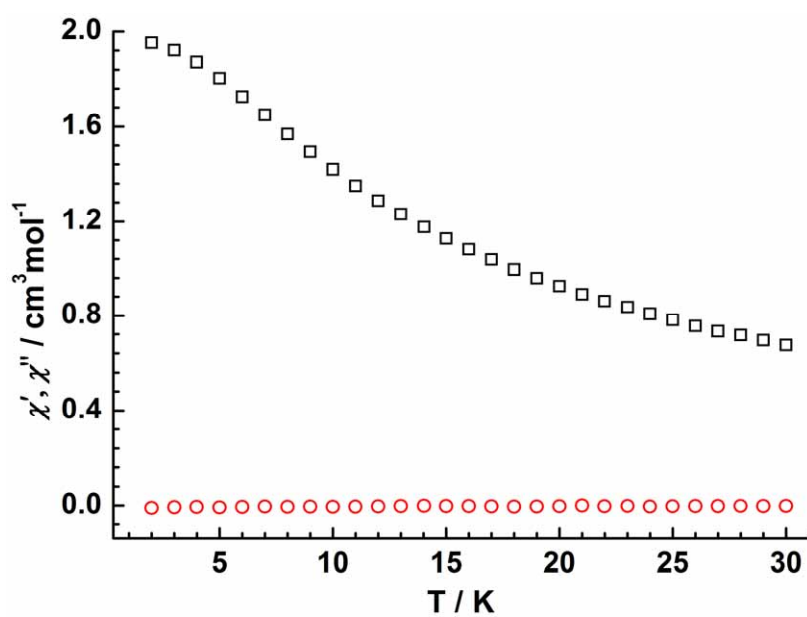


Fig. S4. Temperature dependence of the in-phase (square) and out-of-phase (circle) ac susceptibility for **2** under zero dc field at 1000 Hz.

Table S1. Selected bond lengths (Å) and bond angles (°) of **1**.

Dy(1)-O(7)	2.303(3)	O(3)-Dy(1)-O(9)	83.44(11)
Dy(1)-O(1)	2.316(3)	O(7)-Dy(1)-O(6)	86.29(10)
Dy(1)-O(4)	2.329(3)	O(1)-Dy(1)-O(6)	144.69(10)
Dy(1)-O(3)	2.331(3)	O(4)-Dy(1)-O(6)	127.17(10)
Dy(1)-O(9)	2.364(3)	O(3)-Dy(1)-O(6)	87.17(10)
Dy(1)-O(6)	2.392(3)	O(9)-Dy(1)-O(6)	85.19(10)
Dy(1)-N(11)	2.581(4)	N(11)-Dy(1)-N(3)	116.45(11)
Dy(1)-N(3)	2.584(4)	N(11)-Dy(1)-N(7)	121.38(11)
Dy(1)-N(7)	2.613(3)	N(3)-Dy(1)-N(7)	121.76(11)
Dy(2)-O(7)	2.326(3)	O(7)-Dy(2)-O(1)	68.58(10)
Dy(2)-O(1)	2.327(3)	O(7)-Dy(2)-O(4)	70.66(10)
Dy(2)-O(4)	2.338(3)	O(1)-Dy(2)-O(4)	69.08(10)
Dy(2)-O(2)	2.352(3)	O(7)-Dy(2)-O(2)	87.96(10)
Dy(2)-O(5)	2.353(3)	O(1)-Dy(2)-O(2)	128.06(10)
Dy(2)-O(8)	2.393(3)	O(4)-Dy(2)-O(2)	145.94(10)
Dy(2)-N(1)	2.567(4)	O(7)-Dy(2)-O(5)	142.18(10)
Dy(2)-N(5)	2.601(4)	O(1)-Dy(2)-O(5)	84.44(10)
Dy(2)-N(9)	2.614(3)	O(4)-Dy(2)-O(5)	124.60(10)
O(7)-Dy(1)-O(1)	69.16(10)	O(2)-Dy(2)-O(5)	88.57(10)
O(7)-Dy(1)-O(4)	71.22(10)	O(7)-Dy(2)-O(8)	125.00(9)
O(1)-Dy(1)-O(4)	69.41(10)	O(1)-Dy(2)-O(8)	146.21(11)
O(7)-Dy(1)-O(3)	146.74(10)	O(4)-Dy(2)-O(8)	85.88(10)
O(1)-Dy(1)-O(3)	127.19(10)	O(2)-Dy(2)-O(8)	85.30(11)
O(4)-Dy(1)-O(3)	87.24(11)	O(5)-Dy(2)-O(8)	92.18(10)
O(7)-Dy(1)-O(9)	128.33(11)	N(1)-Dy(2)-N(5)	122.51(11)
O(1)-Dy(1)-O(9)	90.52(10)	N(1)-Dy(2)-N(9)	117.87(11)
O(4)-Dy(1)-O(9)	145.83(10)	N(5)-Dy(2)-N(9)	119.34(11)

Table S2. Selected bond lengths (Å) and bond angles (°) of **2**.

Tb(1)-O(4)	2.320(2)	O(7)-Tb(1)-O(5)	145.73(8)
Tb(1)-O(1)	2.333(2)	O(4)-Tb(1)-O(8)	86.04(8)
Tb(1)-O(2)	2.344(2)	O(1)-Tb(1)-O(8)	144.62(8)
Tb(1)-O(7)	2.346(2)	O(2)-Tb(1)-O(8)	87.73(9)
Tb(1)-O(5)	2.376(2)	O(7)-Tb(1)-O(8)	126.84(8)
Tb(1)-O(8)	2.405(2)	O(5)-Tb(1)-O(8)	85.79(8)
Tb(1)-N(5)	2.604(3)	N(5)-Tb(1)-N(3)	116.52(9)
Tb(1)-N(3)	2.613(3)	N(5)-Tb(1)-N(9)	121.17(9)
Tb(1)-N(9)	2.626(3)	N(3)-Tb(1)-N(9)	121.91(9)
Tb(2)-O(4)	2.341(2)	O(4)-Tb(2)-O(1)	68.58(8)
Tb(2)-O(1)	2.347(2)	O(4)-Tb(2)-O(7)	70.61(8)
Tb(2)-O(7)	2.356(2)	O(1)-Tb(2)-O(7)	69.06(8)
Tb(2)-O(9)	2.373(2)	O(4)-Tb(2)-O(9)	141.90(8)
Tb(2)-O(3)	2.377(2)	O(1)-Tb(2)-O(9)	83.70(8)
Tb(2)-O(6)	2.409(2)	O(7)-Tb(2)-O(9)	123.93(8)
Tb(2)-N(1)	2.585(3)	O(4)-Tb(2)-O(3)	87.62(8)
Tb(2)-N(11)	2.616(3)	O(1)-Tb(2)-O(3)	127.65(8)
Tb(2)-N(7)	2.633(3)	O(7)-Tb(2)-O(3)	145.91(8)
O(4)-Tb(1)-O(1)	69.16(8)	O(9)-Tb(2)-O(3)	89.43(8)
O(4)-Tb(1)-O(2)	146.65(8)	O(4)-Tb(2)-O(6)	124.59(8)
O(1)-Tb(1)-O(2)	126.78(8)	O(1)-Tb(2)-O(6)	146.42(8)
O(4)-Tb(1)-O(7)	71.13(8)	O(7)-Tb(2)-O(6)	85.83(8)
O(1)-Tb(1)-O(7)	69.45(8)	O(9)-Tb(2)-O(6)	92.98(8)
O(2)-Tb(1)-O(7)	86.89(8)	O(3)-Tb(2)-O(6)	85.57(8)
O(4)-Tb(1)-O(5)	127.99(8)	N(1)-Tb(2)-N(11)	122.56(9)
O(1)-Tb(1)-O(5)	90.02(8)	O(2)-Tb(1)-O(5)	84.05(9)
N(11)-Tb(2)-N(7)	119.14(9)	N(1)-Tb(2)-N(7)	118.02(9)