SUPPORTING INFORMATION

Synthesis, Structure and Magnetic Properties of a Novel Family of Heterometallic Nonanuclear Na$_2$Mn$^{III}_6$Ln$^{III}$ (Ln = Eu, Gd, Tb, Dy) Complexes

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**Fig. S1.** The molecular packing structure of complex 2 (H atoms and solvent molecules are omitted for clarity).

**Fig. S2.** Molecular structure of the cation [Na₂{Mn₃[^III](μ₃-O^2⁻)}₂Eu[^III](hmmp)₆(O₂CPh)₄(N₃)₂]^⁺ in complex 1 (symmetry operation A: -x, -y, -z+1; Hydrogen atoms, counterion and solvent molecules have been omitted for clarity.)
Fig. S3. Molecular structure of the cation $[\text{Na}_2\{\text{Mn}_{3}^{\text{III}}(\mu_3-O^2)\}_2\text{Tb}^{\text{III}}(\text{hmmp})_6(\text{O}_2\text{CPh})_4(\text{N}_3)_2]^+$ in complex 3 (symmetry operation A: $-x$, $-y$, $-z+1$; Hydrogen atoms, counterion and solvent molecules have been omitted for clarity).

Fig. S4. Molecular structure of the cation $[\text{Na}_2\{\text{Mn}_{3}^{\text{III}}(\mu_3-O^2)\}_2\text{Dy}^{\text{III}}(\text{hmmp})_6(\text{O}_2\text{CPh})_4(\text{N}_3)_2]^+$ in complex 4 (symmetry operation A: $-x$, $-y$, $-z+1$; Hydrogen atoms, counterion and solvent molecules have been omitted for clarity).
Fig. S5. Temperature dependence of the in-phase ($\chi'_M$) and the out-of-phase ($\chi''_M$) ac susceptibility components for 2 in a 3.5 G field oscillating at the indicated frequencies.

Fig. S6. Temperature dependence of the in-phase ($\chi'_M$) and the out-of-phase ($\chi''_M$) ac susceptibility components for 3 in a 3.5 G field oscillating at the indicated frequencies.
**Fig. S7.** Temperature dependence of the in-phase ($\chi'_M$) and the out-of-phase ($\chi''_M$) ac susceptibility components for 4 in a 3.5 G field oscillating at the indicated frequencies.