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# Single-molecule magnetism within a family of $[\text{Ln}^{\text{III}}_2\text{Mn}^{\text{III}}_{10}]$ complexes from 2-hydroxymethylpyridine

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## ABSTRACT

A family of heterometallic Ln/Mn (Ln = lanthanide) clusters with a  $[\text{Ln}^{\text{III}}_2\text{Mn}^{\text{III}}_{10}]$  core has been synthesized. The complexes  $[\text{Ln}_2\text{Mn}_{10}\text{O}_8(\text{O}_2\text{CPh})_{10}(\text{hmp})_6(\text{NO}_3)_4]$  (Ln = Pr (**1**), Nd (**2**), Sm (**3**), Gd (**4**), Tb (**5**), Dy (**6**), Ho (**7**) and Er (**8**)) were prepared from the reaction of  $(\text{NBu}_4)[\text{Mn}_4\text{O}_2(\text{O}_2\text{CPh})_9(\text{H}_2\text{O})]$ , 2-hydroxymethylpyridine (hmpH) and  $\text{Ln}(\text{NO}_3)_3$ . The analog with diamagnetic  $\text{Y}^{\text{III}}$ ,  $[\text{Y}_2\text{Mn}_{10}\text{O}_8(\text{O}_2\text{CPh})_{10}(\text{hmp})_6(\text{NO}_3)_4]$  (**9**), was also synthesized to assist the

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