



Polynuclear manganese amino acid complexes.

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The reaction of $\text{MnCl}(2) \cdot 4\text{H}(2)\text{O}$ with DL-valine (Val) in MeOH in the presence of Et-saoH(2) (2-hydroxypropiophenone oxime) and $\text{NEt}(4)\text{OH}$ forms the complex $[\text{Mn}(\text{III})(3)\text{Mn}(\text{IV})(2)\text{O}(2)(\text{CH}(3)\text{O})(\text{Et-sao})(6)(\text{Val})] \cdot \text{Val} \cdot 1.5\text{H}(2)\text{O}$ ($1 \cdot \text{Val} \cdot 1.5\text{H}(2)\text{O}$) in very good yields. A similar reaction of $\text{MnCl}(2) \cdot 4\text{H}(2)\text{O}$ with Glycine (Gly) in MeOH in the presence of saoH(2) (salicylaldoxime) and $\text{Ca}(\text{OH})(2)$ yields the complex $[\text{Mn}(\text{III})(3)\text{O}(\text{sao})(3)(\text{Gly})\text{Cl}(\text{MeOH})(3)] \cdot 1.87 \text{ MeOH} \cdot 0.13\text{H}(2)\text{O}$ ($2 \cdot 1.87 \text{ MeOH} \cdot 0.13\text{H}(2)\text{O}$). Replacing saoH(2) with Me-saoH(2) (2-hydroxyethanone oxime) and Gly with HPABA (para-aminobenzoic acid) in the presence of $\text{CH}(3)\text{ONa}$ in MeOH forms the complex $[\text{Mn}(6)\text{O}(2)(\text{PABA})(2)(\text{Me-sao})(6)(\text{MeOH})(4)(\text{H}(2)\text{O})(2)] \cdot 2[\text{Mn}(6)\text{O}(2)(\text{PABA})(2)(\text{Me-sao})(6)(\text{MeOH})(2)] \cdot 11 \text{ MeOH}$ ($3 \cdot 11 \text{ MeOH}$) in moderate yields. Magnetic studies for 1 and 2 reveal the presence of both ferromagnetic and antiferromagnetic interactions, leading to $S = 2$ ground states for both complexes. Complexes 1 and 2 represent the first examples of polynuclear manganese complexes with any naturally occurring alpha-amino acid, while 3 is the first structurally characterised example of a manganese para-aminobenzoate complex.

Adres publiczny

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Strona internetowa wydawcy

<https://www.rsc.org/>