

Artificial amino acids in nickel(II) and nickel(II)/lanthanide(III) chemistry.

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Rok wydania

2011

Czasopismo

Inorganic Chemistry

Numer woluminu

50

Strony

5175-5185

DOI

10.1021/ic2004744

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The synthesis and magnetic properties of five new homo- and heterometallic nickel(II) complexes containing artificial amino acids are reported: $[\text{Ni}_4(\text{aib})_3(\text{aibH})_3(\text{NO}_3)](\text{NO}_3)_4 \cdot 3.05\text{MeOH}$ (**1**·3.05MeOH), $[\text{Ni}_6\text{La}(\text{aib})_{12}](\text{NO}_3)_3 \cdot 5.5\text{H}_2\text{O}$ (**2**·5.5H₂O), $[\text{Ni}_6\text{Pr}(\text{aib})_{12}](\text{NO}_3)_3 \cdot 5.5\text{H}_2\text{O}$ (**3**·5.5H₂O), $[\text{Ni}_5(\text{OH})_2(\text{l-aba})_4(\text{OAc})_4] \cdot 0.4\text{EtOH} \cdot 0.3\text{H}_2\text{O}$ (**4**·0.4EtOH·0.3H₂O), and $[\text{Ni}_6\text{La}(\text{l-aba})_{12}][\text{La}_2(\text{NO}_3)_9]$ (**5**; aibH = 2-aminoisobutyric acid; l-abaH = l-2-aminobutyric acid). Complexes **1** and **4** describe trigonal-pyramidal and square-based pyramidal metallic clusters, respectively, while complexes **2**, **3**, and **5** can be considered to be metallocryptand-encapsulated lanthanides. Complexes **4** and **5** are chiral and crystallize in the space groups *I*222 and *P*2₁3, respectively. Direct-current magnetic susceptibility studies in the 2–300 K range for all complexes reveal the presence of dominant antiferromagnetic exchange interactions, leading to small or diamagnetic ground states.

Adres publiczny

<https://doi.org/10.1021/ic2004744>

Strona internetowa wydawcy

<https://www.acs.org/content/acs/en.html>