

Zinc(II) complexes with asymmetric 3,5-substituted 1*H*-pyrazoles.

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Rok wydania

2012

Czasopismo

European Journal of
Inorganic Chemistry

Strony

1639-1649

DOI

10.1002/ejic.201101090

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Two new pyrazolate-based ligands, *N'*-[1-(3-acetyl-4-methyl-1*H*-pyrazol-5-yl)ethylidene]-2-(hydroxyimino)propanehydrazide (**L1**) and 5-[(*E*)-1-(2-[(*E*)-2-(hydroxyimino)propanoyl]hydrazono)ethyl]-4-methyl-1*H*-pyrazole-3-carboxylic acid (**L2**), were synthesized and studied for zinc(II) complexation. A set of pH-dependent UV/Vis measurements has been performed to determine the complex formation properties of **L2**. According to the calculations, in solution, **L2** forms variously protonated mononuclear ($\text{Zn}^{\text{II}}/\text{L2} = 1:1$) and dinuclear ($\text{Zn}^{\text{II}}/\text{L2} = 2:1$) complexes. The reaction of the deprotonated ligands with hydrated Zn^{II} salts and slow diffusion of ammonia into the reaction mixtures gave mononuclear $[\text{Zn}(\text{L1-2H})(\text{NH}_3)_2]\cdot\text{DMF}$ (**1**) and trinuclear μ -pyrazolato-bridged $[\text{Zn}_3(\text{L2-3H})_2(\text{NH}_3)_5]\cdot 4\text{H}_2\text{O}$ (**3**). In both complexes, the zinc ions are in the same distorted trigonal-bipyramidal environment, coordinated to two nitrogen atoms of the ammonia and one oxygen and two nitrogen atoms of the pyrazolate and hydrazide groups. The molecular structures of all of the ligands and complexes have been elucidated by X-ray crystallography.

Słowa kluczowe

N, O ligands, Zinc, structure elucidation

Adres publiczny

<https://doi.org/10.1002/ejic.201101090>

Strona internetowa wydawcy

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Plik został wygenerowany dnia 2026-10-05 08:01:14

Adres w repozytorium https://old.chem.uni.wroc.pl/pl/repozytorium/B_NxzwE.