Synthesis and characterization of $[Me_2NC(S)NP(S)(OiPr)_2]^-$ complexes of Co(II), Ni(II), Zn(II) and Cd(II).

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Streszczenie

Reaction of the potassium salt of*N*-thiophosphorylthiourea $Me_2NC(S)NHP(S)(O\mathit{i}Pr)_2$ (**HL**) with Co(II), Ni(II), Zn(II) and Cd(II) cations in aqueous EtOH leads to M(L-*S*,*S*′)$_2$ (**ML_2**) chelate complexes. The structures of the resulting compounds were studied by IR, UV–Vis, ^1H , $^{31}P\{^1H\}$ NMR spectroscopy and microanalysis. The metal center is found in a tetrahedral environment in complexes **CoL_2**, **ZnL_2**, **CdL_2** and square-planar i n **NiL_2** formed by the CS and PS sulfur atoms of two deprotonated ligands **L**. According to the NMR and UV–Vis spectroscopy data it was established that the metal cation of **NiL_2** is in a square-planar environment in CH_2Cl_2, $CHCl_3$ and C_6H_6, whereas **NiL_2** shows features of tetrahedral or octahedral complexes in acetone, DMSO and DMF. Molecular structures of complexes were elucidated by single crystal X-ray diffraction analysis.

Słowa kluczowe

cobalt, nickel, zinc, cadmium, N-thiophosphorylthiourea, crystal structures

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