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Spectroscopic and magnetic evidence of coordination properties of bioactive diethyl (pyridin-4-ylmethyl)phosphate ligand with chloride transition-metal ions.

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Streszczenie

A series of five chloride coordination compounds of diethyl (pyridin-4-ylmethyl)phosphate(4-pmOpe) ligand, i.e. [CuCl2(4-pmOpe)2], [NiCl2(4-pmOpe)4], [CoCl2(4-pmOpe)], [ZnCl2(4-pmOpe)2], and [CdCl2(4-pmOpe)2], was prepared and studied. Stoichiometry and stereochemistryof the compounds was confirmed by spectroscopic and magnetic studies as well as by elementalanalyses. The 4-pmOpe ligand has a capacity to coordinate to metal ions by means of phospho-ryl oxygen and/or nitrogen of pyridine atoms. In Cu(II), Ni(II), and Zn(II) compounds, 4-pmOpeadopts the monodentate coordination mode, bonding metal centers through the pyridine nitrogenatom only. On the contrary, in Co(II) and Cd(II) compounds, 4-pmOpe acts asN,O-bridging ligandforming polynuclear structures. Magnetic studies (1.8–300 K) indicate mononuclear structure ofthe Co(II) and Ni(II) compounds and suggest existence of a very weak exchange coupling betweenmetal centers in crystal lattice.

Adres publiczny

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