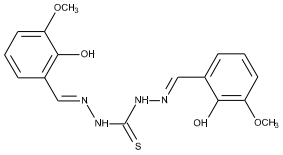
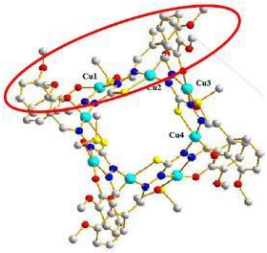
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Cu(II) COMPLEXES WITH 1,5-BIS(2-HYDROXY-3-METHOXYBENZYLIDENE) CARBONOHYDRAZIDE

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This communication shows that the nature of anions of the corresponding copper salts, as well as their coordination properties are essential in determining the final structures of the complexes with the ligand 1,5-bis(2-hydroxy-3-methoxybenzylidene) carbonohydrazide (H_4L). Thus, by its interaction with copper(II) chloride, binuclear compound $[Cu_2(H_2L_{cycl})(CH_3OH)_2Cl_3]\cdot CH_3OH$ (**1**), was obtained, where cyclization of the thiocarbohydrazone ligand occurs with the formation of a 1,3,4-thiadiazole ring. It should be mentioned that the methoxy group plays the role of a bridge between copper ions [1]. By the interaction of the same ligand with copper(II) acetate in DMSO, octanuclear complex $[Cu_8L(DMSO)_8]$ (**2**) was prepared. The organic ligand keeps its original form, but it is totally deprotonated, behaving as a tetrabasic acid, and the methoxy group is not involved into coordination. The composition and the structure of compound **2** was determined using elemental analysis, IR spectroscopy and single crystal X-ray diffraction study. In the complex **2** it can be highlighted the neutral binuclear unit Cu_2L composed of the bicompartmental ligand that hosts two copper ions. A nitrogen atom of this fragment is located in the coordination sphere of another copper atom of the adjacent dimeric fragment. As a result, all 7 donor atoms of the organic reagent are involved in coordination, forming an octanuclear metalomacrocyclic compound. Among four independent copper(II) ions, two from the ONS donor atoms set have a square planar geometry, while the coordination polyhedra of another two from the ONN donor atoms set can be described as a distorted trigonal bipyramid.





References:

1. N. Talmaci, P. Bourosh, V. Kravtsov, D. Dragancea. Dinuclear Cu(II) complex with a novel carbohydrazone Schiff base ligand containing 1,3,4-thiadiazole. *The International Conference dedicated to the 55th anniversary from the foundation of the Institute of Chemistry of the Academy of Sciences of Moldova*, 28-30 mai 2014, Chisinau, P073.

Keywords: copper salts, crystal X-ray diffraction, methoxy group, 1,5-bis(2-hydroxy-3-methoxybenzylidene, IR spectroscopy.