P26. Synthesis, structure and antimicrobial activity of copper salicylidene-4-allylthiosemicarbazidates with some heteroaromatic amines

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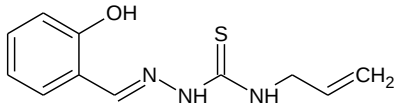
The aim of this work is the synthesis of copper(II) coordination compounds of salicylaldehyde 4-allylthiosemicarbazone (H_2L) with different heteroaromatic amines (imidazole (Im), 4-methylpyridine (4-MePy), 3,5-dibromopyridine (3,5-Br_2Py), 2,2'-bipyridine (2,2'-Bpy), 1,10-phenanthroline (1,10-Phen)), determination of their composition, structure, and antimicrobial activity.



H_2L

The composition of these compounds was determined using elemental analysis for copper and nitrogen: Cu(A)(HL)X (X=Cl^-, NO_3^-; A=Im, 4-MePy, 3,5-Br_2Py) and Cu(A)(L) (A = 2,2'-Bpy, 1,10-Phen). The magnetochemical research showed that coordination compounds that contain imidazole, 4-methylpyridine and 3,5-dibromopyridine have polynuclear structure, but coordination compounds that contain 2,2'-bipyridine and 1,10-phenanthroline have monomeric structure. Thiosemicarbazone H_2L behaves like a mono- or double-deprotonated tridentate ligand with O, N, S set of donor atoms.

Synthesized coordination compounds show selective antimicrobial activity towards a series of standard strains of *Staphylococcus aureus*, *Escherihia coli*, *Klebsiella pneumonae* and *Candida albicans* in the range of concentration 1.5-1000 μg/mL. It was determined that insertion of these amines into inner sphere results in enhancement of antimicrobial activity in comparison with the corresponding coordination compounds without amines in the inner sphere.

The substitution of nitrate ion by chlorine ion leads to a decrease of antimicrobial activity. The nature of amine has an influence on the antimicrobial activity of these complexes. Coordination compounds with imidazole and 4-methylpyridine are the most active ones from this series. Synthesized compounds manifest the best activity towards the standard strains of *Staphylococcus aureus* and *Candida albicans*.

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