P17. Synthesis, Antitumor, and Antimicrobial Activity of Some 3d-Metal Complexes with 4-Allylthiosemicarbazones of Salicylaldehyde and Its Derivatives

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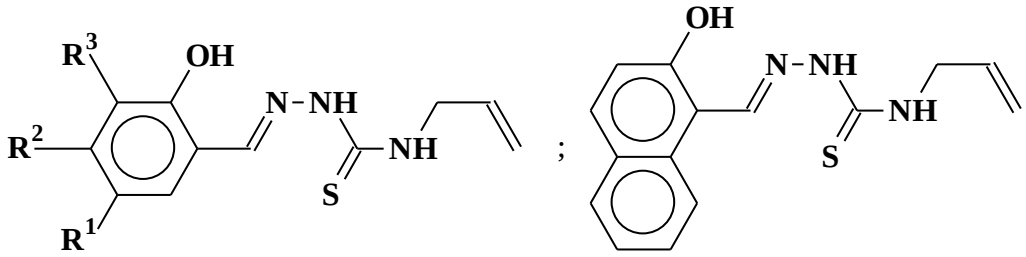
The aim of this work is the synthesis, determination of the composition, structure, antimicrobial and antitumor activity of the coordination compounds of cobalt, nickel, copper, and zinc with 4-allylthiosemicarbazones (HL^{1-8}) of salicylaldehyde (HL^1), 5-bromo-(HL^2), 5-nitro-(HL^3), 3-methoxy-(HL^4), 3,5-dibromosalicylaldehyde (HL^5), 2,3-(HL^6), 2,4-dihydroxybenzaldehyde(HL^7), and 2-hydroxy-1-naphthaldehyde (HL^8).



HL^{1-7} **HL^8**

R^1= H, Br, NO_2; R^2 = H, OH; R^3 = H, OH, CH_3O, Br.

Salts of stated above metals react with thiosemicarbazones HL^{1-8} forming coordination compounds with composition $Co(L^{1-8})_2X$ and $M(L^{1-8})X$ (M = Cu, Ni, Zn; X = Cl, NO_3). Composition and structure of these compounds were determined on the basis of data from elemental analysis, X-ray analysis, magnetochemical research, IR spectroscopy, NMR spectroscopy (^1H and ^{13}C), and thermogravimetric analysis.

4-Allylthiosemicarbazones of the substituted salicylaldehydes and coordination compounds with them selectively inhibit the human promyelocytic leukemia HL-60 cells growth in the concentration 10^{-5}-10^{-6}M. In many cases synthesized coordination compounds have better activity than corresponding thiosemicarbazones. Coordination compound $Cu(L^6)NO_3$ inhibit growth of 100% of HL-60 cells growth in the concentration 10^{-5}-10^{-6} M. The synthesized complexes also display selective bacteriostatic and bactericidal activity towards a series of standard stems of *Staphylococcus aureus*, *Escherichia coli*, and *Candida Albicans* in the concentration range 0.7-120 μg/mL. The copper (II) coordination compounds show the highest activity.

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