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Serbian Young Chemists' Club

Srpsko hemijsko društvo
Serbian Chemical Society

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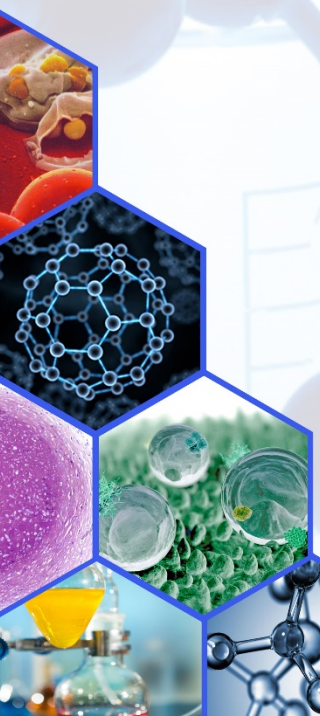

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Synthesis, characterization and antimicrobial activity of cobalt(III) complex with (*E*)-4-(4-methoxyphenyl)--2-(2-(pyridin-2-ylmethylene)hydrazinyl)-1,3-selenazole

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New cobalt complex with (*E*)-4-(4-methoxyphenyl)-2-(2-(pyridin-2-ylmethylene)hydrazinyl)-1,3-selenazole (HL) was synthesized and characterized in order to obtain biologically active compound. The complex was synthesized by the reaction of HL with cobalt(II) tetrafluoroborate. The complex was characterized by conductivity measurements, elemental analysis, FT-IR, ^{1}H-NMR and ^{13}C-NMR spectroscopy, while X-ray structural analysis (XRD) was used for molecular and crystal structure determination. XRD data elucidated that the complex has octahedral geometry with two ligands coordinated to cobalt(III) as tridentates, both in monoionic form, through pyridine, imine and selenazole nitrogen atoms (Fig. 1). In the outer sphere of the complex there is one tetrafluoroborate ion. The complex crystallizes as monohydrate. Antimicrobial activity of the ligand and complex was evaluated against eleven strains of bacteria and fungi. The complex showed better antibacterial than antifungal activity.

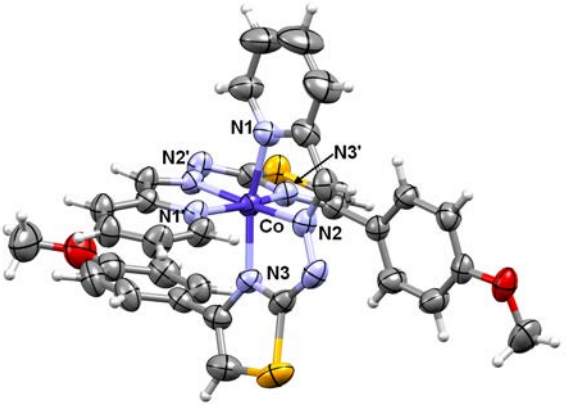

Figure 1. ORTEP drawing of the complex cation $[Co(L)_2]^+$. Displacement ellipsoids are drawn at 50% probability level. For clarity, tetrafluoroborate anion and crystalline water molecule have been omitted.

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