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Synthesis, Spectral and Antimicrobial Studies of Derivative Salicylaldehyde Schiff base Oxidovanadium (IV) Complexes

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Vanadium complexes derived from a number of ligands have received great attention in the last few years for their interesting medicinal and biological applications [1]. Schiff bases and their complexes possess wide biological activities, such as antibacterial, antifungal and antitumor aspects [2,3]. Three new vanadium complexes, [VO(L^{1-3})] where L^1 is {[1-methyl-2-(2-hydroxyphenyl)methylidynen-itrilo]ethyl}amino-1-cyclopentenedithiocarboxylate, L^2 is {[1-methyl-2-(2-hydroxy-5-nitrophenyl)methylidynen-itrilo]ethyl}amino-1-cyclopentenedithiocarboxylate and L^3{[1-methyl-2-(2-hydroxy-5-methoxyphenyl)methylidynen-itrilo]ethyl}amino-1-cyclopentenedithiocarboxylate have been synthesized and characterized by elemental analysis, ^{1}HNMR, IR, UV–Vis spectra, Mass spectrometry, powder XRD and EDX. The V atom in complex is in a coordination square pyramidal geometry. Antibacterial activities of the prepared compounds were evaluated in vitro against Staphylococcus Aureus and Escherichia Coli. The ligands and their complexes exhibited significant antibacterial activity. The free ligands showed high activities compared with the VO^{IV} complexes.

Keywords: Oxidovanadium complexes, Antibacterial activities, Schiff base ligands.

References

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