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Oxovanadium(IV) Complexes: Synthesis, Spectral and Antimicrobial Studies Derived from Dibasic Tridentate (ONO) Donor Aroylydrazone Schiff's Bases

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Abstract: *The biologically active oxovanadium(IV) (I-IV) complexes are synthesized by condensation of VO(IV) salt with aroylhydrazone schiff's base ligands, 1-(1-hydroxynaphthalen-2-yl)ethanone-2-chlorobenzoylhydrazone(H_2L^1), 1-(1 - hydroxynaphthalen-2-yl) ethanone -4-chloro benzoyl hydrazone (H_2L^2), 1-(1-hydroxynaphthalen-2-yl)ethanone-2,4-chlorobenzoylhydrazone (H_2L^3) and 1-(1-hydroxynaphthalen-2-yl) ethanone-2-iodobenzoylhydrazone (H_2L^4). These chelating agents are synthesized from 2-acetyl-1-naphthol and substituted benzohydrazides by conventional method. All synthesized oxovanadium (IV) complexes are characterized by elemental analysis, solid reflectance, IR studies and thermal analysis (TGA). Further magnetic moment and molar conductance of complexes (I-IV) are also measured. According to received physicochemical data it was observed that all chelating agents behave dibasic tridentate (ONO) (enol form) towards VO(IV) ion. The analytical data along with electronic, magnetic and thermal studies suggested that all VO(IV) complexes have monomeric structures with square pyramidal geometry. Study of antimicrobial test against some bacteria and fungi are also carried out which shows significant activity of VO(IV) complexes (I-IV) in comparison with their respective ligands. Most of the VO(IV) complexes exhibited more than 90% reduction in growth against A. niger and F. moneliforme fungal strains as compared to their respective ligands.*

Keywords: ONO Donar Hydrazone Chelates, VO(IV) Complexes, Spectral, Thermal and Antimicrobial Studies.

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