

MULTIDENTATE AZOMETHINE SERIES: COMPLEXATION AND BIOACTIVITY STUDIES



FUNDAMENTAL RESEARCH GRANT SCHEME PROJECT REPORT

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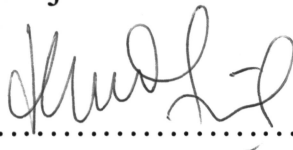
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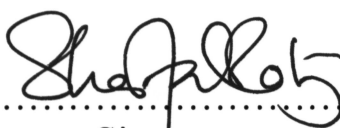
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LIST OF ABBREVIATIONS

| | |
|------|------------------------------------|
| MPD | <i>m</i> -phenylenediamine |
| ovan | <i>o</i> -vanillin |
| TGA | Thermogravimetric analysis |
| NMR | Nuclear magnetic resonance |
| IR | Infra red |
| MIC | Minimum inhibition concentration |
| MBC | Minimum bactericidal concentration |

ABSTRACT

Three Schiff bases namely L1: MPD(ovan)₂, L2: triMe-MPD(ovan)₂ and L3: Cl-MPD(ovan)₂ are obtained from the condensation reaction between derivatives of *m*-phenylenediamine (MPD) with *o*-vanillin. Complexation with Co(II), Cu(II) and Zn(II) afford novel dinuclear complexes of dimeric nature. Their structures are elucidated using various physico-chemical techniques. The Schiff bases are indicated to act as tetradentate ligands in which both oxygen and nitrogen atoms serve as coordination sites for the metal ions. Antibacterial investigations revealed that the complexes are better bactericides than the parent ligands. The IC₅₀ values against liver cells of the complexes are much lower than those of the parent ligands.