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Mono-, Di- and Trinuclear Copper(II) Complexes of a Schiff Base Ligand, 2-{(E)-[(6-{[(1E)-(2-hydroxyphenyl)methylene]amino}pyridin-2-yl)imino]-methyl}phenol

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Abstract: A Schiff base ligand, 2-{(E)-[(6-[(1E)-(2-hydroxyphenyl) methylene]amino}-pyridin-2-yl)imino]-methyl} phenol (H_2PySAL), was prepared by condensation of 2,6-diaminopyridine and salicylaldehide in EtOH. The Schiff base ligand was checked by elemental analyses, ^{1}H-NMR, ^{13}C-NMR, IR, UV/Vis, and mass spectral studies. Three new mono-, di-, and trinuclear copper(II) complexes of the Schiff base ligand, formula [Cu(H_2PySAL)]Cl_2, [Cu_2(PySAL) (Phen)]Cl_2, [Cu_3(PySAL)$_2$]Cl_2, were prepared and characterized by elemental analyses, magnetic moment, and IR, Uv/Vis, and mass spectral studies. The spectroscopic data of the complexes indicate that the copper(II) ions are coordinated by the oxygen atoms and nitrogen atoms (C=N) of the ligand. In the dinuclear complex, in which the first Cu(II) ions were complexed with oxygen and nitrogen atoms of the Schiff base ligand, the second Cu(II) ions are bridged by dianionic oxygen atoms of the phenolate groups and are linked to the 1,10-phenanthroline nitrogen atoms. The data support the proposed structure of H_2PySAL and its complexes.

Key Words: Schiff bases, mono-, di- and trinuclear copper(II) complexes

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