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Copper(II) complex by 1,10-phenanthroline and Salicylaldehyde *S*-benzylisothiosemicarbazone hydrogen chloride: Synthesis, characterization and crystal structure

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ABSTRACT

Mixed-ligand Cu(II) complex with general formula of $[Cu(Phen)_2Cl].H_2L,Cl,H_2O$ (Figure) is prepared by reaction of $Cu(OAC)_2.H_2O$, 1,10-phenanthroline and salicylaldehyde *S*-benzylisothiosemicarbazone.hydrogenchloride (H_2L) in a 1:2:1 mol ratio. Its structure is characterized by elemental, IR and single crystal X-ray diffraction analyses which are precisely used to better understand the molecular structure of the complex. Coordination geometry around the central atom in the Cu(II) complex, is a distorted square-pyramidal. Two 1,10-phenanthroline ligands (NN donor) are coordinated to the central metal as bidentate neutral agents and the last position is occupied by the chlorine atom. Moreover, there are one salicylaldehyde *S*-benzylisothiosemicarbazone free ligand, a water molecule and a chlorine atom in the crystal lattice.

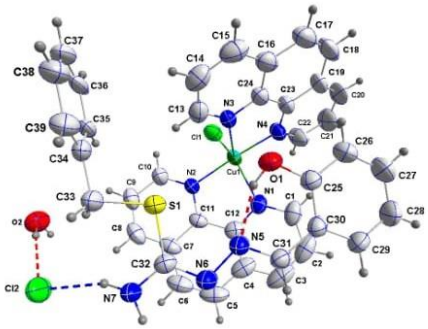

Figure. The crystal structure of complex

Keywords: Schiff base, Cu(II) complex, 1,10-phenanthroline

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