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Synthesis, Characterization and Study of Microbiological Activity of Ni(II) Complex with, 2-(5-Bromo-2-Oxoindolin-3-Ylidene)-1-Hydrazinecarbothioamide

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ABSTRACT

A Schiff base ligand, [2-(5-Bromo -2-Oxoindolin-3-ylidene)-1-HydrazineCarbothioamide], [HBITSC] was synthesized from 5-Bromoisatin and thiosemicarbazide. By using this ligand its complex with Ni (II) has been synthesized. The metal complex formed is dark brown coloured solid. Techniques such as electronic spectra, elemental analysis, molar conductance; IR and NMR spectroscopy were used for characterization. The bidentate Schiff base ligand undergoes coordination through azomethine nitrogen and thioketo sulphur to the metal ion. Electronic spectral analysis study reveals tetrahedral geometry of complex. The molar conductivity data of complex confirms its non-electrolytic nature. On the basis of above studies, it is concluded that complex has tetrahedral geometry and two ligands get coordinated to Nickel atom through thioketo sulphur and azomethine nitrogen. The microbiological activity of ligand and Nickel complex has been studied.

Graphical Abstract

$$MCl_2 + 2\ HBITSC \xrightarrow{pH\ 8.3} [M(HBITSC)_2]Cl_2$$

Keywords: HBITSC, Metal complex, Bidentate, Microbiological activity.