REACTIONS OF SOME NITROGEN HETROCYCLICS CONTAINING DONOR FUNCTIONAL GROUPS WITH METAL IONS.

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ABSTRACT: Nitrogen heterocyclics containing N-C=S linkage act as antitubercular, anti irradiation agent, nematocides, anthelmintics, fungicides, insecticides and pesticides. The presence of -SH, C=S, C=O or -O-H group generally enhances the biochemical activity of the heterocyclics Thus, a number of nitrogen-hetrocyclics have been prepared in my laboratory. These include 1- phenyl tetrazoline-5-thione, 1-substituted phenyl-tetrazoline-5-thiones, 3-(4-pyridyl)-triazoline-5-thione, 1-hydroxy phthalaz-4-one, quinazoline-2-thione-4-one etc. The reactions of these hetrocyclics with a large number of metal ions in solution have been investigated and the resulting solid coordination compounds of the heterocyclic ligands have been isolated and investigated by microanalytical, cryoscopic, magnetic, far and near infrared spectroscopy, electronic spectroscopy and nmr spectroscopy. The mode and nature of bonding of the ligands with the metal ions have been investigated, in addition to the structural aspects. It has been found that several metal ions such as Cu(II), Zn(II), Hg(II), Fe(II), Fe(III) etc, enhance the biological activity of the heterocyclics.