

All ligands were successfully synthesized and their nickel(II) and copper(II) complexes were obtained as square planar. The red nickel(II) and dark green copper(II) complexes were stable complexes which might be due to the aromaticity of the ligands that stabilizes the complexes (Rao, 1967). Thus, no solvent molecule was found to bind to nickel(II) ions although crystallization process was carried out in DMSO and DMF. The interpretations drawn from structures of all compounds were also characterized by other spectroscopic means and they agreed with the interpretation made for the proposed structures.

Crystals for ligands and nickel(II) complexes were successfully obtained and their structures were solved from X-ray crystallographic data. However, there were no crystals obtained for copper(II) complexes but the molecular geometry was identified based on UV-Visible spectroscopy and magnetic susceptibility. Shifting of IR bands in copper(II) complexes to the lower energy field indicated new bond formation between imino nitrogen and enolic oxygen with copper(II) ion.

Indole Schiff base compounds with substitution of halogen atom and metal ions had shown their efficiency in various kinds of bioactivities that had been carried out. Almost all compounds presented their potential activities against the formation of ethanol-induced gastric ulcer and also helped in reducing blood glucose level in mice. Compounds containing bromine atom showed excellent results in both ethanol-induced gastric ulcers and blood glucose lowering test.

Tested compounds might work in similar or different mechanism in order to reduce blood glucose level. The compounds might as well increase the sensitivity of the receptors,

enhances the production of insulin in pancreas or slow down the transformation of carbohydrate into sugar in the small intestine (Beers, 2004).

Although all compounds seemed to be toxic on the tested neuron cells, the level of toxicity could still be reduced and the usefulness of these compounds could be improved when the concentrations used for the test were reduced. The biological properties could be increased or reduced due to the presence of metal ions. The existence of one metal ion in one series of compounds may give rise to desirable result for one biological activity but may not give the same efficacy on that particular activity for other series containing the same metal ion.