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Synthesis, Characterization and Anticancer Evaluation of Novel Macrocyclic Schiff Base Complexes of Cu(II), Ni(II), and Co(II).

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Schiff bases are chemicals that have been functionalized with azomethine or imine and have a wide range of therapeutic uses [1]. The Schiff base macrocyclic complexes are studied widely because of their easy synthesis, versatility and wide range of applications [2]. Schiff base complexes have significantly contributed to the development of modern drug design due to their significance in a number of multi-discipline study fields [3]. In this work, from the reaction of novel polyamine N,N-bis(2-aminobenzyl)-2-methoxy aniline with 2-hydroxy-5-methylisophthalaldehyde by template method in the presence of metal ions Cu(II), Co(II), and Ni(II) with stoichiometric ratios of 1:1:1, mononuclear macrocyclic Schiff base complexes containing methoxyphenyl moiety as pendant arm were prepared. Proposed structures were presented based on the methods of elemental analysis, mass spectrometry, FT-IR, and determination of molar conductivity. The anticancer activity of these macrocyclic complexes was also assessed, using the MTT test, which found that the highest activity was observed for Cu (II) against breast cancer (MCF-7) cells.

Keywords: Schiff base, macrocyclic complexes, anticancer properties

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