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Synthesis, Characterization, Antimicrobial Activity, DNA Cleavage and Docking Studies of Quinoline Schiff Base Metal Complexes

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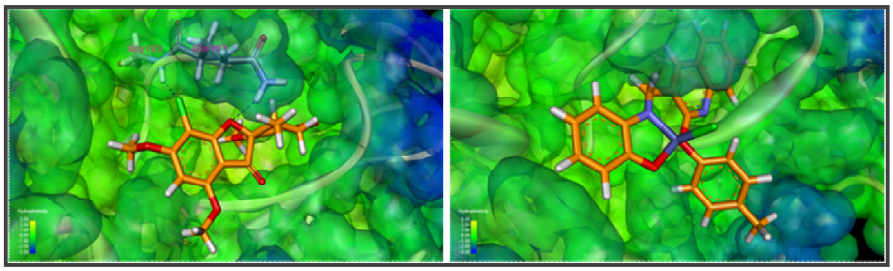
ABSTRACT

A series of metal complexes have been synthesized using Cu(II), Ni(II), Co(II), Mn(II) and Zn(II) metal ions with novel Schiff base ligand (E)-2-(((2-(p-Tolyloxy)quinolin-3-yl) methylene) amino) phenol in a 1:1 metal to ligand molar ratio and these were characterized by elemental analysis, FT-IR, UV-visible, Mass spectroscopy, SEM, EDX, TGA and magnetic moment measurement data. The ligand and all the metal complexes were tested for their antimicrobial activity and docking studies, the complexes were shown moderate to good activity. The DNA cleavage was studied by agarose gel electrophoresis method using pUC18 DNA and the results shown that Copper, Zinc and Nickel complexes possess good DNA cleavage activity.

Graphical Abstract



Integration between the protein PDB 1F5Y and Mn (image-1) and Co (image-2)

Keywords: Quinoline based metal complexes, antimicrobial activity, Schiff base, DNA cleavage and Docking studies.