



Structural Characterization Antimicrobial and Antioxidant Properties of Novel 4-(2,3-dimethoxyphenyl)-2,6-bis(1,3-thiazol-2-yl)pyridine and its Cu(II) and Ni(II) Complexes

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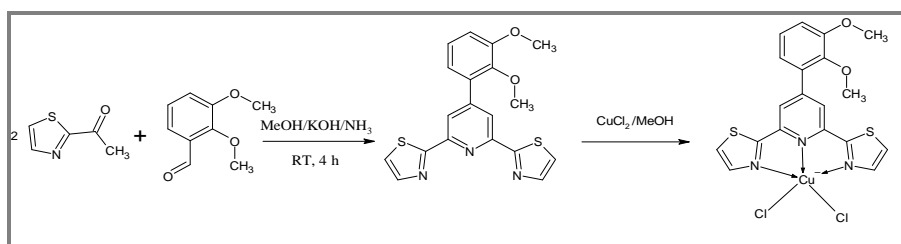
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ABSTRACT

4-(aryl)-modified-2,6-di(1,3-thiazol-2-yl) pyridine are an interesting ligands and have attracted significant attention due to their complexes forming ability with various transition metals. So here we synthesized a novel ligand 4-(2,3-dimethoxyphenyl)-2,6-bis(1,3-thiazol-2-yl)pyridine and its Cu(II) and Ni(II) complexes. All the prepared compounds have been characterized by ¹H NMR, ¹³C NMR, ESI mass, FT-IR, UV. Newly synthesized ligand and its Cu(II) and Ni(II) metal complexes were screened for their antibacterial and antifungal activity by minimum inhibitory concentration (MIC) method. Also, all the synthesized compounds were studied for their antioxidant activity and hemolytic activity. The antioxidant activity of the ligand (L) and its metal complexes were evaluated by reduction of 1,1-diphenyl-2-picryl hydrazyl (DPPH). Interestingly, ligands and its complexes exhibit non-toxic property as it did not cause any effect human erythrocyte suggesting its nontoxic property.

Graphical Abstract



Synthesis of Ligand(L).

Keywords: Ligands, Complexes, Antibacterial, Antifungal, Antioxidant activity.