



Evaluation of antioxidant activity and antimalarial activity of flavone based tetradentate ligand and its metal complexes

Sharow Geeth Vincent , J. Joseph

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Abstract

A new and novel series flavone based tetradentate Schiff base ligand was synthesized from 2-(4-chlorophenyl)-5-hydroxy-6-nitrochroman-4-one and o-phenylenediamine in the ratio 2:1 and its Cu(II), Ni(II), Co(II) complexes were prepared. The synthesized ligand and complexes were characterized and their various pharmacological activities were evaluated. The spectral analysis confirms the geometry and stoichiometry of the synthesized complexes and ligand. The agreement between elemental analysis and mass spectral values confirms 1:1 stoichiometry, [ML]. Antioxidant activity of the synthesized ligand and its metal chelates were evaluated using ABTS radical scavenging method. Results showed that complexes were more active than the ligand. Of the complexes Cu (II) complex was more active than others. Antimalarial activity was evaluated through pLDH assay method and the results showed that Copper and nickel complexes had good activity against both D6 and W2 strain of *P. falciparum* and cobalt complex was moderately active. The selectivity index and β - hematin inhibition test were conducted.

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Keywords

Flavone; Antioxidant; Malaria; Plasmodium falciparum; β heamatin,; Selectivity Index

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