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Thermal and biological appraisal on Cu(II) based complexes using Ciprofloxacin with bromo-dicumarol derivative

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A series of novel Cu (II) complexes have been produced using the conventional thermal method. The biologically active ligands (L) are created by refluxing a dicumarol derivative with aldehydes in ethanol. The Cu (II) compounds have been synthesized by mixing an aqueous solution of the metal in a 1:1 molar ratio with ethanolic ligands and modified ciprofloxacin. The structures of the ligands and their copper complexes have been analyzed and confirmed through elemental analysis, FT-IR, ¹H and ¹³C NMR, and mass spectrometry. The thermal properties of the newly synthesized mixed-phase Cu (II) complexes have been investigated using thermo-gravimetric analysis. Both the ligands and their complexes have been screened for their *in vitro* inhibition, anti-tubercular, and antimicrobial activities, which show significantly higher potency compared to the parent ligands used for complexation.

Keywords: Biological aspect, Thermal study, Ciprofloxacin, Metal complexes