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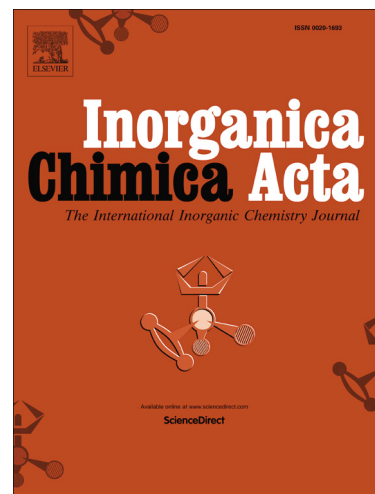
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Investigation on chemical protease, nuclease and catecholase activity of two copper complexes with flexidentate Schiff base ligands

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Abstract

Two new Cu(II) complexes [Cu(HL)(MeOH)(Py)](ClO₄)₂ (**1**), [Cu(HL)(DMF)](NO₃)₂ (**2**) have been synthesized from Schiff base ligand [HL = 2-(phenyl((2-(piperazin-1-yl)ethyl)imino)methyl)phenol] with flexible piperazinyl moiety. Structural analysis reveals that **1** and **2** are monomeric Cu(II) complex consisting of penta and tetra coordinated Cu(II) centers, respectively. Screening tests were conducted to quantify the binding ability of complexes (**1** and **2**) towards BSA and DNA as well as the protease and nuclease activity of these complexes using gel electrophoresis technique. Furthermore enzyme kinetic studies were also performed for those two complexes towards effectiveness in mimicking catecholase like activities. Overall all the experimental results reveal the potential activity of these copper complexes towards protease, nuclease and catecholase activity. Apart from these, MTT assay was also utilized to scrutinize the anti-proliferative activity which was further investigated using dual staining confocal microscopic images.

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