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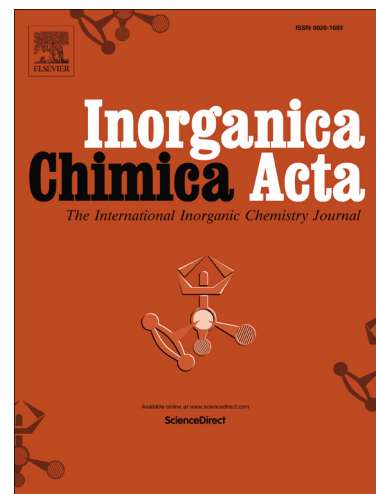
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Synthesis, characterization and preliminary antimicrobial assays of copper(II) complexes with 2-(imidazole-2-yl)heteroaryl ligands

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Abstract:

The coordination chemistry and antimicrobial profiles of three copper(II) complexes with 2-(imidazole-2-yl)heteroaryl ligands, named impy, impz and impm, have been investigated. Based on X-ray structure determination the complexes present square planar geometry with coordination formulas $[\text{CuCl}_2(\text{imp}\mathbf{x})]$, where $\mathbf{x} = \text{y, z or m}$. Elemental analysis and mass spectrometric results are in agreement with the proposed compositions. Vibrational spectroscopy and molecular modeling provided further evidences that the $[\text{CuCl}_2(\text{impz})]$ complex, which did not have its structure solved by X-ray diffraction, adopts a similar geometry of the other two complexes. Electronic spectroscopic data indicated that all three ligands led to a hypsochromic shift of the d-d band when compared to $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$ and that the electronic structure of the ligands are significantly altered upon coordination to Cu(II). Electronic paramagnetic resonance studies in solution showed that the compounds present similar coordination

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