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**Copper-based metal coordination complexes with Voriconazole ligand: syntheses,
structures and antimicrobial properties**

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Abstract

Three new chiral metal coordination complexes, namely, [Cu(**FZ**)₂(CH₃COO)₂(H₂O)]·2H₂O (**1**), [Cu(**FZ**)₂(NO₃)₂] (**2**), and [Cu₂(**FZ**)₂(H₂O)₈](SO₄)₂·4H₂O (**3**) [**FZ** = (2*R*,3*S*)-2-(2,4-difluorophenyl)-3-(5-fluoro-4-pyrimidinyl)-1-(1*H*-1,2,4-triazol-1-yl)-2-butanol (Voriconazole)] have been obtained by the reaction of Cu(II) salts and the free ligand **FZ** at room temperature. Complexes **1–3** were structurally characterized by X-ray single-crystal diffraction, IR, UV-Vis, powder X-ray diffraction (PXRD), and thermogravimetric analysis (TGA). Complex **1** crystallizes in the chiral space group *C*₂, which exhibits a mono-nuclear structure. Both complexes **2** and **3** display a one-dimensional (1D) tape structure, which crystallize in chiral space group *P*₂₁₂₁² and *P*₂₁₂₁¹, respectively. Among these complexes, there exist a

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