

Synthesis, Structural Characterization and Biological Activity of Bis{(E)-1-[(2,4,6-Tribromophenyl) Diazenyl] Naphthalen-2-Olato} Copper (II) Dimethyl Sulfoxide Monosolvate

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Abstract : Azo dyes are one of the most widely used compounds in organic chemistry, primarily due to their relatively simple preparation methods. They have therefore been widely used, in particular as colorants for textiles, printing inks, cosmetics, and food additives. In addition to their use as dyes, azo compounds have attracted much attention from chemists as their potential applications are important in coordination chemistry, metal-organic frameworks (MOF) structures, COF (covalent-organic frameworks), and catalysis. Moreover, they have found many applications in different fields, such as nonlinear optics, optical storage, photoluminescence, and magnetism. The compound bis{(E)-1-[(2,4,6-tribromophenyl)diazenyl]naphthalen-2-olato}copper(II) dimethyl sulfoxide monosolvate, the CuII atom is tetracoordinate with a square-planar geometry, surrounded by two bidentate (E)-1-[(2,4,6-tribromophenyl)diazenyl]naphthalene-2-olate ligands via two N atoms and two O atoms. The O-Cu-O angles and N-Cu-N are of the order of $177.90(16)^\circ$ and $177.8(2)^\circ$, respectively. The distances Cu-O and Cu-N are $1.892(4)$ Å and $1.976(4)$ Å, respectively. The cohesion of the crystal is ensured by hydrogen bonds of the C—H...O type and by $\pi=\pi$ stacking interactions [centroid-centroid distance = $3.679(4)$ Å]. The DMSO solvent molecule is disordered at two positions with occupancy rates of 0.70 and 0.30.

Keywords : azo dyes, DRX, structural characterization, biological activity

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