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Copper(II) complexes of Anti-inflammatory drugs with Nitrogen Based Ligands: Synthesis, Characterization and Biological Activities

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Copper(II) complexes of two non-steroidal anti-inflammatory drugs (NSAIDs) (naproxen (nap) and salicylate (sal)) with nitrogen donor ligands pyrazole (pz) and metronidazole (mtnd), $[Cu(sal)_2(pz)_2]$ (**1**), $[Cu(nap)_2(pz)_4]$ (**2**), $[Cu_2(nap)_4(mtnd)_2]$ (**3**) have been synthesized and spectroscopically characterized.

The crystal structure of complex (**1**) has been determined by X-ray crystallography. The Cu(II) ion coordination consist of nitrogen atom (N1) of pyrazoles and oxygen atom (O1) of the salicylate carboxylate groups to yield *trans*-$CuN_2O_2+O_2$ chromophore. The catalytic activities of complexes toward the aerobic oxidations of 3,5-di-tert-butylcatechol (3,5-DTBC) to 3,5-di-tert-butyl-o-benzoquinone (3,5-DTBQ), O-phenylenediamine (OPD) to 2,3-diaminophenazine (DAP) and 2-aminophenol (OAP) to 2-amino-3*H*-phenoxazine-3-one (APX) have been studied. The catalytic activities of these complexes mimic those of copper-containing enzymes catecholase and phenoxazinone synthase.[1,2]

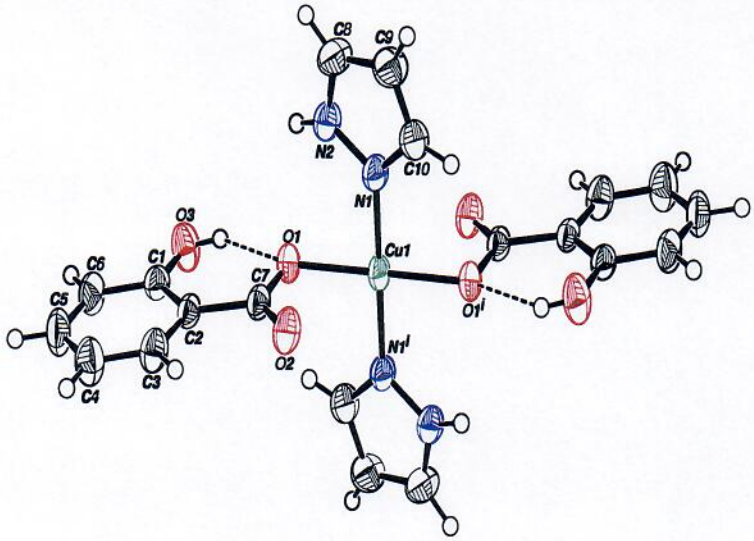

Figure 1: X-ray crystal structure of $[Cu(sal)_2(pz)_2]$, (**1**). Hydrogen atoms have been omitted for clarity.

References

1. F. Dimiza, F. Perdih, V. Tangoulis, I. Turel, D. P. Kessissoglou and G. Psomas, *Journal of Inorganic Biochemistry*, 105 (3), 476-489 **(2011).**
2. A. L. Abuhijleh, *Journal of Molecular Structure,* 980 (1–3, 201-207, **(2010).**