**The piroxicam complex of copper(II), *trans*-[Cu(Pir)2(THF)2], and its interaction with DNA**

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Piroxicam is currently the most widely used oxicam for the treatment of inflammatory condition in patients [1]. It exhibits chemopreventive and chemosuppressive effects in different forms of cancer such as colon, lung and breast cancer [2]. A coordination of piroxicam to a transition metal ion can therefore reduce the negative charge on the agent, resulting in an enhanced binding affinity of the complex to DNA. Hence, metal complexes of pharmaceutical compounds are an important and active research area in bioinorganic chemistry because the synergism based on the ligand and the metal properties can provide an enhanced activity of the drug [3,4].

The mononuclear Cu(II) complex, *trans*-[Cu(Pir)2(THF)2], where Pir is 4-hydroxy-2-methyl-N-2-pyridyl-2H-1,2-benzothiazine-3-carboxamide-1,1-dioxide (piroxicam), has been prepared and characterized by elemental analysis, spectroscopic methods (UV–Vis, IR, and 1H NMR) and single crystal X-ray structure analysis. The molecular structure of the centrosymmetric complex is made up of two monoanionic bidentate Pir ligands coordinated to the Cu(II) atom through the pyridyl N atom and the carbonyl O atom of the amide group in equatorial positions.



In addition, CD spectroscopy and gel electrophoresis assays have been used to investigate the interaction of the complex with DNA. The results revealed that the binding of the complex with DNA led to DNA backbone distortion.

**References:**

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