

CRYSTAL CHEMISTRY EVALUATION OF GOLD(I) COMPOUNDS WITH THIOSEMICARBAZONES

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The known pharmacological effects of thiosemicarbazones have attracted more interest of scientists in the coordination of these ligands with transition metals for treatment of diseases, for example, cancer.¹ The thiosemicarbazones are denominated base of Schiff and have in their structure atoms with lone pairs of electrons that can be coordinated like mono or polidentate with different metal ions, thereby generating a versatility of compounds with different numbers of coordination and geometry.² In this work we report the study and structural characterization of the X-ray diffraction of single crystal of the new thiosemicarbazone, acetylfuran-methyl thiosemicarbazone, and its metal complex, chlorido acetylfuran-methyl thiosemicarbazone gold (I) (2). The compound (1) crystallizes in the orthorhombic crystal system and space group Pbcn, whereas the compound (2) is in a monoclinic crystal system and space group P 21/c and both are shown in their tautomeric thione form. In the complex, the gold(I) atom exhibits a linear geometry and is slightly distorted caused by the rigidity of the ligand. Intramolecular and intermolecular hydrogen bonds can be observed in the two compounds analyzed. Interestingly, observed in the compound (2), as shown in Figure 1, the formation of a supramolecular array formed by intermolecular hydrogen bonding under crystallographic plane ac. Many biological tests are being carried out for the two new compounds obtained towards a possible pharmacological application.

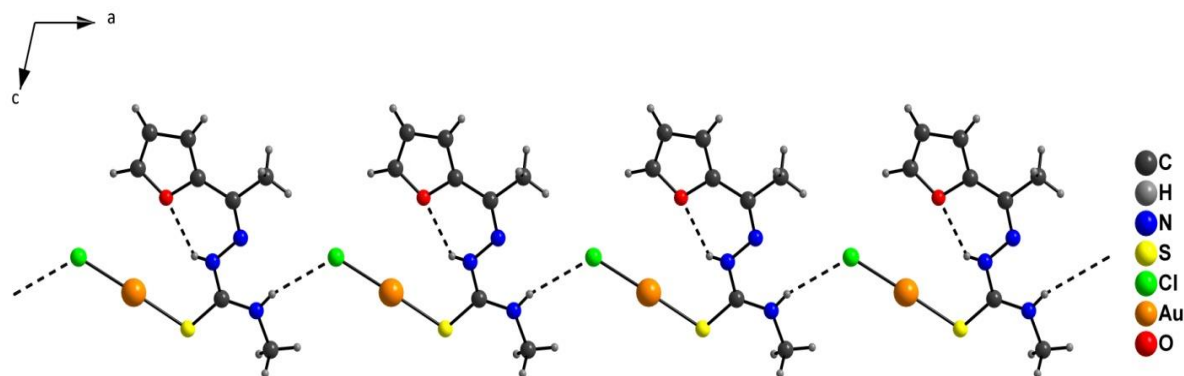


Figura1. Graphic representation of supramolecular array formed by hydrogen bonds (pointillism) in the complex (2).

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² Joshi, C.; Khosla, N.; Tiwari, P.; *Bioorg. Med. Chem.* **2004**, 14, 571.

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