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SYNTHESIS AND MOLECULAR STRUCTURE OF NEW COMPLEX OF COPPER

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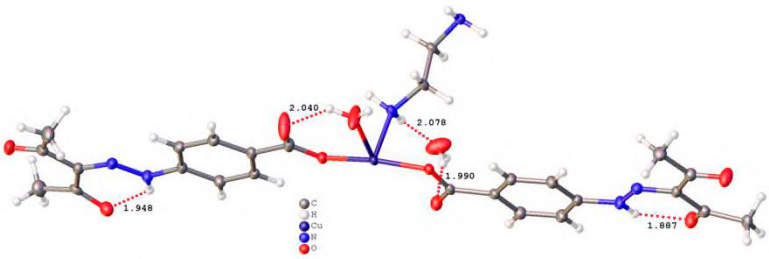
The synthesis of the copper complex of 4-((2,4-dioxopentan-3-yl) diazenyl) benzoic acid was carried out according to the following methodology:The ligand (4-((2,4-dioxopentan-3-yl) diazenyl) benzoic acid) and the metal salt ($(CH_3COO)_2Cu$) were taken from the same concentration solutions in a 1:2 ratio and mixed with a magnetic stirrer for 30 minutes, then a solution of 2 mol of ethylene diamine in alcohol was added to it and stirred for 1 hour in a heater equipped with a reflux condenser.After the synthesis, the colored solution obtained was poured into a beaker and stored. After 48 hours, needle-shaped crystals were formed at the bottom of the container.

The structure of the complex was studied on an XtaLAB Synergy, Dual ex, HyPix, “BRUKER D8 ADVANCE” X-ray diffractometer (λ = 1.54184 Å, T = 100 K). Analysis of crystallographic parameters shows that C26H34CuN6O10 belongs to the P-1 space group and crystallizes in the triclinic syngony. The degree of correspondence of the analyzed crystal to the true structure is R= 0.0603, which indicates that the structure is accurately determined. The lattice parametrs and molecular structure of complexs is showen below:

a = 7.3645(3) Å
b = 14.2102(8) Å
c = 15.2334(9) Å
α = 110.626(6)°
β = 96.088(4)°
γ = 99.886(4)°
Volume (V) = 1445.67(15) Å³



Molecular structure of $C_{26}H_{34}CuN_6O_{10}$

During the crystallization of the complex compound, in addition to two molecules of C12H13TN2O4, one molecule of ethylenediamine and two molecules of water are coordinated around the complexing agent.

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