Yuanyuan Yang, Li Jin, Zhenyu Zuo*, Chen Yanhui and Chen Fang

The crystal structure of acetato-κ¹O-{(2-(2-(2-aminophenoxy)ethoxy)phenyl)(4-oxo-4-phenylbut-2-en-2-yl)amido-κ²N,N′,O}copper(II), C₂₆H₂₆CuN₂O₅

https://doi.org/10.1515/ncrs-2021-0048
Received February 2, 2021; accepted February 18, 2021; published online March 4, 2021

Abstract

C₂₆H₂₆CuN₂O₅, triclinic, P ̅ (no. 2), a = 8.8090(5) Å, b = 11.4984(6) Å, c = 12.3941(7) Å, α = 90.11°, β = 106.017(2)°, γ = 100.180(2)°, V = 1185.95(11) Å³, Z = 2, R_{gt}(F) = 0.0315, wR_{ref}(F²) = 0.0869, T = 293 K.

CCDC no.: 2047023

The molecular structure is shown in the Figure. Table 1 contains crystallographic data and Table 2 contains the list of the atoms including atomic coordinates and displacement parameters.

Source of material

To the solution of (Z)-3-((2-(2-aminophenoxy)ethoxy)phenyl)amino)-1-phenylbut-2-en-1-one (0.388 g, 1 mmol) in chloroform (20 ml) was added the solution of Cu(AcO)_2 (0.182 g, 1 mmol) in chloroform (20 ml) dropwise. The mixture was stirred for 72 h to get a blue solution and then filtered. The filter residue was washed with methanol 3 times and recrystallized in chloroform to get crystals (0.31 g, yield 60.6%).

Experimental details

The data were scaled and corrected for absorption using SADABS-2016/2 (Bruker, APEX–II CCD). The hydrogen atoms were placed at calculated positions and refined as riding atoms with isotropic displacement parameters.
Comment

Enaminones can be synthesized by condensation reaction of diketone and primary amine [4]. Their group IV metal complexes were not only used as alternatives to metalloocene catalysts but also used in the field of optoelectronic technologies for their large nonlinear responses [5, 6]. So, the synthesis and property research of novel enaminone complexes were an important orientation in inorganic chemistry [7, 8]. The molecular structure of the title compound was determined by X-ray single crystal diffraction. There is one complex in the asymmetric unit (see the figure). The bond length of C7–O1, C9–N1 and C1–C2 are 1.289(3), 1.318(3) and 1.392(3) Å respectively, which are in the normal range [9]. Copper was centered in a distorted tetragonal planar coordination geometry. The sum of the bond angles of O1–Cu1–N1, O1–Cu1–N2, O1–Cu1–O4 and O4–Cu1–N1 are 360.13°, which demonstrated that O1, Cu1, N1, O2 and N1 are in the same plane.

Author contribution: All the authors have accepted responsibility for the entire content of this submitted manuscript and approved submission.

Research funding: National Key R&D program of China (2018YFC1706903), Key projects of Shaanxi Provincial Education Department (20J033).

Conflict of interest statement: The authors declare no conflicts of interest regarding this article.

References