Synthesis, Crystal Structure and Antitumor Study of a Cobalt(II) Complex of the 2-Acetylpyrazine Thiosemicarbazone

Ming Xue Li, Jing Zhou, Zi Liang Wang, and Jing Ping Wang

Institute of Molecular and Crystal Engineering, College of Chemistry and Chemical Engineering, Henan University, Kaifeng 475001, P. R. China

Reprint requests to Prof. Ming Xue Li. Fax: +86-378-2853650. E-mail: limingxue@henu.edu.cn

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The title complex $[Co(C_7H_8N_5S)_2]\cdot 2H_2O$ has been synthesized and characterized by IR and UV spectral studies. The structure of the compound has been determined by single-crystal X-ray diffraction. The complex consists of discrete monomeric molecules with octahedrally hexa-coordinate cobalt(II) ions, where two acetylpyrazine thiosemicarbazones act as NNS tridentate ligands coordinated to the central cobalt atom *via* the pyrazine nitrogen, azomethine nitrogen and sulfur atoms. Hydrogen bonds link the different components to stabilize the crystal structure. The antitumor activity of the title complex was tested against A549 lung cancer cell line. The complex exhibited lower antitumor activity, as compared to the free ligand.

Key words: Thiosemicarbazone Complex, Crystal Structure, Synthesis, Cytotoxic Activity