

Synthesis, Crystal Structure, Spectral and Thermal Characterization, and Antimicrobial Activity of $[\text{Cu}(\text{HOr})(\text{aepy})(\text{H}_2\text{O})] \cdot \text{H}_2\text{O}$ (aepy = 2-aminoethylpyridine, HOr^{2-} = orotate)

Okan Zafer Yeşilel^a, Necmi Dege^b, Cihan Darcan^c,
and Orhan Büyükgüngör^b

^a Department of Chemistry, Faculty of Arts and Sciences,
Eskişehir Osmangazi University, 26480 Eskişehir, Turkey

^b Department of Physics, Faculty of Arts and Sciences,
Ondokuz Mayıs University, 55139, Samsun, Turkey

^c Department of Biology, Faculty of Arts and Sciences,
Dumlupınar University, Kütahya, Turkey

Reprint requests to O. Z. Yeşilel. Fax: +90 0222 2393578.
E-mail: yesilel@ogu.edu.tr

Z. Naturforsch. **2007**, *62b*, 1590–1594;
received June 21, 2007

The copper(II) orotate complex with 2-aminoethylpyridine, $[\text{Cu}(\text{HOr})(\text{aepy})(\text{H}_2\text{O})] \cdot \text{H}_2\text{O}$, was synthesized and characterized by means of elemental and thermal analysis, magnetic susceptibility, IR and UV/vis spectroscopic, single crystal X-ray diffraction, and antimicrobial activity studies. The complex crystallizes in the triclinic system, space group $P\bar{1}$, and the Cu(II) ion is five-coordinate with a distorted square-pyramidal coordination geometry. The aepy ligand and the orotate dianion behave as bidentate (N, N' and N, O_{acid}) chelating ligands. The crystal structure is stabilized by intermolecular $\text{O}-\text{H}\cdots\text{O}$ and $\text{N}-\text{H}\cdots\text{O}$ hydrogen bonds, and the orotate ligand exhibits a double hydrogen-bonding functionality. The new compound was found active against some gram (+)/(-) bacteria and yeast *Candida albicans* ATCC 10231, but there was no activity on *Aspergillus niger*.

Key words: Orotate Complex, Vitamin B13,
2-Aminoethylpyridine, Antimicrobial Activity