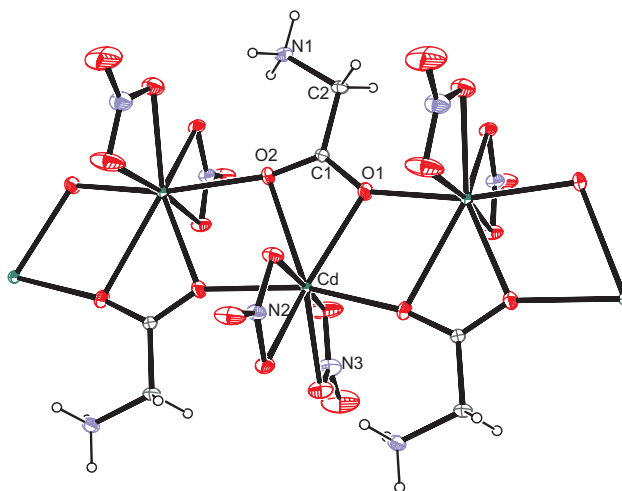


SUPRAMOLECULAR ASSEMBLY OF GLYCINE WITH CADMIUM ION. FROM MONONUCLEAR COMPLEX TO RIBBON-LIKE COORDINATION POLYMER

Izabela D. Madura, Janusz Zachara, Anna Kamińska
Faculty of Chemistry, Warsaw University of Technology,
00-664 Warsaw, ul. Noakowskiego 3, izabela@ch.pw.edu.pl

Cadmium is a one of the most toxic heavy metals commonly found as environmental pollutant, the hazardous nature of which is supposed to arise from its interaction with proteins.[1] Glycine, a simplest amino acid, has been reported to protect from the cytotoxicity of cadmium.[2] Hence, cadmium complexes with simple amino acids may serve as a potential model for studying Cd-protein interactions. Due to these facts we have undertaken the study, by means of crystal engineering, on the solid state structures of organic-inorganic hybrids formed by simple inorganic cadmium salts and glycine. The second premise is the fact that there are only two cadmium complexes with glycine described so far.[3,4]

We will present the structural study of three novel complexes of cadmium salts with glycine. The choice of suitable inorganic salt was based on the detailed structural analysis of the Cd^{2+} coordination sphere observed in inorganic salts. The relative basicity of glycine, water and simple anions towards moderately acidic cadmium core will be discussed. The supramolecular assemblies will be presented and their symmetry described by using the rod and layer symmetry groups.[5]



The ribbon structure of $\text{Cd}(\text{gly})(\text{NO}_3)_2$ coordination polymer showing $p2_1$ rod group symmetry

1. Mousa S.A. *Life Sci.* **75**, 93 (2004).
2. Shaikh Z.A., Tang W. *Toxicology* **132** 139 (1999).
3. Dan M., Rao C.N.R. *Chem. – Eur. J.* **11** 7102 (2005).
4. Raju B., Saritha A., Bhagavannarayana G., Hussain K.A. *J. Crystal. Growth* **324**, 184 (2011).
5. Kopsky V., Litvin D.B. (Eds.) *International Tables for Crystallography, Vol. E. Subperiodic groups*, Kluwer Academic Publishers, Dordrecht (2002).