Poster

Crystal structure of new palladium(II) salicylate complexes with *N,N*-donor ligands

M. Lištiak[1], R. Varga[1], J. Kožíšek[2], J. Moncoľ[1]

[2]Institute of Inorganic Chemistry, Technology and Materials, Slovak University of Technology, Radlinskeho 9, 81237 Bratislava, Slovak Republic, [2]Institute of Physical Chemistry and Chemical Physics, Slovak University of Technology, Radlinskeho 9, 81237 Bratislava, Slovak Republic

jan.moncol@stuba.sk

Several platinum(II) complexes have been established anticancer metallodrugs for a long time, but due to various side effects as well as acquired resistance of tumor cells, drugs based on other metals with the possibility of acting by other mechanisms are being sought. Due to the many similarities between platinum and palladium, there is considerable interest in studying palladium(II) complexes as anticancer [1]. Many Pd compounds have significant anticancer activity and lower toxicity, and interest in these compounds has grown with the approval of the Pd(II) compound padeliporfin (TOOKAD) for clinical use for photodynamic therapy of cancer prostate in 2017 [2].

Recent studies have shown that metal salicylate complexes exhibit significant anticancer activity. Four palladium(II) salicylate complexes were prepared for the potential antitumor synergistic effect of palladium metal with salicylate (sal) ligand. Palladium(II) complexes have the composition [Pd(sal)L]·solvent, where L is 1,10-phenanthroline (phen) and its derivatives (neocuproine, bathophenanthroline and bathocuproine). The crystal structure of all four compounds was refined using the standard Independent Atom Model. All compounds have a coplanar arrangement of donor atoms around the central palladium atom, but due to various 1,10- phenanthroline derivatives, the plane of the coordination polyhedron is coplanar or not with the plane of the aromatic rings of the phenanthroline derivatives. The compound [Pd(sal)(phen)]·H_2O in crystal structure shows the close distance of the two palladium atoms of neighbouring complex molecules (**Figure 1**), therefore the experimental electronic structure was studied.

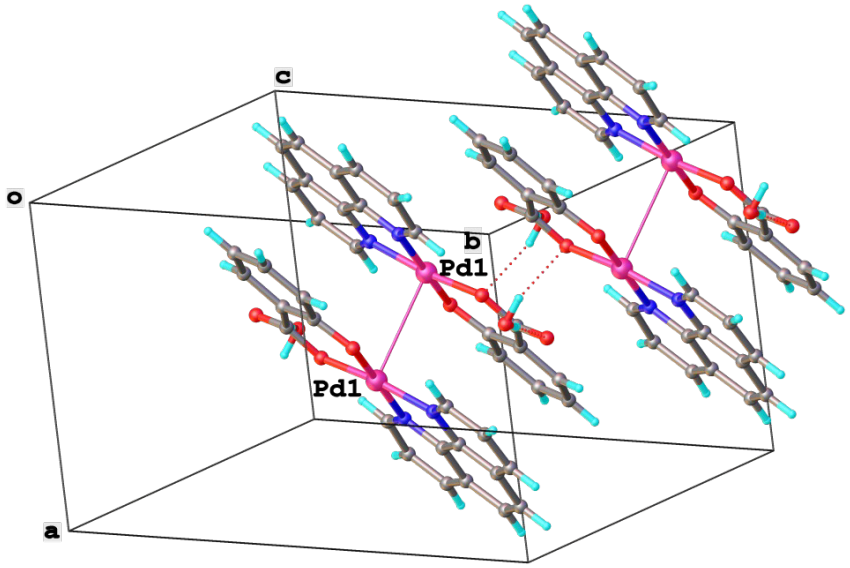

Figure 1. The crystal structure of [Pd(sal)(phen)]·H_2O.

[1] Lazarević, T., Rilak, A. & Bugarčić, Ž. D. (2017). *Eur. J. Med. Chem.* **142**, 8-13.

[2] Gou, Y., Huang, G., Li, J., Yang, F. & Liang, H. (2021). *Coord. Chem. Rev.*, **441**, 213975.

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