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Structural aspects of PtP₂CNL and PtP₂CBL derivatives of organophosphines in organoplatinum complexes

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Organophosphines are very useful as soft P-donor ligands in the chemistry of platinum and organoplatinum compounds are not exception. Recently, we classified and analyzed structural parameter of monomeric organoplatinum compounds with the inner coordination spheres of PtP₃C and trans- PtP₂C₂ [M. Melník, P. Mikus, Rev. Inorg. Chem. 33 (2012) 23], cis-PtP₂C₂ [M. Melník, P. Mikus, J. Organomet. Chem. 805 (2016) 6], PtPC₃ and PtP₂CX (X = H, F or OL) [M. Melník, P. Mikus, J. Organomet. Chem. 811 (2016) 1]. Structural parameters of over sixty monomeric complexes with PtP₂CX (X = NL or BL) chromophore are summarized and analyzed in this work. These complexes crystallized in five crystal systems: trigonal (x2), tetragonal (x2), triclinic (x15), orthorhombic (x17) and monoclinic (x29). The inner coordination spheres are build up by monodentate: (NL, CL, BL, PL), homobidentate (P,P'), heterobidentate (C/N; C/P, N/P) and heterotridentate (P/C/P; P/N/P, P/N/C) donor ligands. The chelating ligands form wide variety of metalocyclic rings: three-, four-, five-, six-, and even-seven- membered and the effect of both electronic and steric factors influence on the L-Pt-L bite angles. In generally, an inner coordination sphere in the complexes with cis- configuration is somewhat more crowded than those with trans- configuration. Preparation and/or presentation of this work was supported by the projects VEGA 1/0873/15, KEGA 022UK-4/2015, APVV-0550-11, and APVV-15-0585.

Biography

Peter Mikuš has completed his PhD at the age of 30 years from Comenius University (Slovakia). He is researcher, university teacher, associated professor, and director of the Toxicological and Antidoping Center at the Faculty of Pharmacy Comenius University in Bratislava (FPCU) as well as head of the Department of Pharmaceutical Analysis and Nuclear Pharmacy FPCU. A research team of P.M. is focused on the development, validation and application of advanced hyphenated analytical methods, based on a combination of 2D-separation and spectral (UV-VIS, MS/MS) techniques, for pharmaceutical and biomedical research. He has published more than 70 papers in reputed CC journals.

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