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Structure, NMR spectra and cytotoxic effect of palladium(II) and platinum(II) complexes of glyoxylic acid oxime.

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The structure of the complex K[Pd(GAO)(HGAO)] (1), where H2GAO = gly-oxylic acid oxime, has been determined by X-ray diffraction analysis. Or-thorhombic crystals (Pbca, a = 15.890(2), b= 12.522(4), c = 16.703(3) Å, Z = 8) consist of two non-equivalent anionic complex molecules. Each com-plex molecule contains one mono- and one di-deprotonated H2GAO mol-ecules coordinated to Pd(II) via the carboxylato oxygen and oxime nitro-gen atoms, forming two cis-oriented five-membered planar chelate rings. The two ligand molecules are connected via intramolecular hydrogen bond of theN–O···H–O–N type. The structure obtained is very similar to that of the analogous complex K[Pt(GAO)(HGAO)] · 3/4H2O (2), deposited earlier. Complexes 1 and 2were characterized by 1H, 13C and 195Pt NMR spectra in water solution. Complex 2exhibits a moderate cytotoxic activity (IC50 = 62 ± 16 μmol/l) and apoptogenic ef-fect against the human leukemic cell line K562. In comparison with cisplatin, the complex shows a lower level of necrosis in the same cells and a higher aqueous solubility.

Słowa kluczowe

Pd(II) and Pt(II) complexes, glyoxylic acid oxime, crystal structure, NMR spectra, cytotoxic activity

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