cis-Pd(II) complexes with quinolin-8-ol derivatives and dimethylammonium, K^+, Cs^+ or quinolinium-8-ol cations as materials for pharmacological research

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$NH_2(CH_3)_2[PdCl_2(XQ)]$ complexes (XQ are halogenderivatives of quinolin-8-ol (5-chloro-7-iodo-quinolin-8-ol (CQ), 5,7-dibromo-quinolin-8-ol (dBrQ) and 5,7-dichloro-quinolin-8-ol (dClQ)) exhibit moderate anticancer activity tested on human ovarian carcinoma cell line A2780 and cisplatin resistant cell line A2780/CP [1]. Therefore we decided to prepare complexes with the same $[PdCl_2(XQ)]^-$ complex anions however with the cations which are more easily accepted by a human body. Trials to prepare such complexes with cations of alkali metals in direct syntheses have been unsuccessful, however complexes in powder form were prepared within cationic exchange between dimethylammonium and K^+ or Cs^+ cations. All six prepared complexes were characterized by IR spectroscopy which showed that ν(N–H) and ν(C–H) vibrations from $NH_2(CH_3)_2^+$ cations were missing in K/Cs$[PdCl_2(XQ)]$ complexes thus confirming successful cationic exchange. On the other hand, four HQH$[PdCl_2(XQ)]$ crystalline complexes were prepared by direct syntheses (HQH is quinolinium-8-ol, while XQ are CQ, dBrQ, dClQ and 5-nitro-quinolin-8-ol). Their structures contain square-planar *cis*-$[PdCl_2(XQ)]^-$ complex anions in which XQ molecules are bidentately coordinated to Pd(II) atoms by nitrogen and oxygen atoms. Negative charges of the anions are balanced by uncoordinated planar HQH cations. The structures are stabilized by hydrogen bonds and π–π interactions. Anticancer and antimicrobial activities of the prepared compounds will be presented.

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