Cobalt and zinc compounds bearing 1,10-phenanthroline-5,6-dione or 1,3,5-triaza-7-phosphaadamantane derivatives–synthesis, characterization, cytotoxicity, and cell selectivity studies.

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Streszczenie

The compounds [mPTA][$CoCl_4$] (**1**, mPTA = *N*-methyl-1,3,5-triaza-7-phosphaadamantane cation), [$CoCl(H_2O)(DION)_2$][BF_4] (**2**, DION = 1,10-phenanthroline-5,6-dione), [$Zn(DION)_2$]Cl_2 (**3**) and [ZnCl(κ*O*-PTA=O)(DION)][BF_4] (**4**) were synthesized by reaction of $CoCl_2$ with [mPTA]I or DION and $ZnCl_2$ with DION or 1,3,5-triaza-7-phosphaadamantane-7-oxide (PTA=O) and DION, respectively. All complexes are water soluble and have been characterized by IR, far-IR, ^{1}H , ^{13}C and $^{31}P\{^{1}H\}$ NMR spectroscopy, ESI-MS, elemental analyses and single-crystal X-ray diffraction structural analysis (for **1**). They were screened against the human tumour cell lines HCT116, HepG2 and MCF7. Complexes **2** and **3** exhibit the highest in vitro cytotoxicity and show lower cytotoxic activities in normal human fibroblast cell line than in HCT116 tumour cell line, which demonstrates their slight specificity for this type of tumour cell.

Słowa kluczowe

Cobalt, zinc, N ligands, medicinal chemistry, Antitumor agents

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