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ORIGINAL ARTICLE

Cytotoxic effects of palladium(II) and platinum(II) complexes with *O,O'*-dialkyl esters of (*S,S*)-ethylenediamine-*N,N'*-di-2-(4-methyl) pentanoic acid on human colon cancer cell lines

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Summary

Purpose: As novel therapeutic agents relevant to colon cancer therapy are explored continuously, we tested 4 R_2edda-type ligand precursors *O,O'*-dialkyl esters of (*S,S*)-ethylenediamine-*N,N'*-di-2-(4-methyl)pentanoic acid (L1·2HCl–L4·2HCl) and corresponding palladium(II) and platinum(II) complexes against the human colon cancer cell lines CaCo-2, SW480 and HCT116.

Methods: The effects of the tested compounds on cell viability were determined using MTT colorimetric technique.

Results: Analysis of cancer cell viability showed that all tested ligand precursors, palladium(II) and platinum(II) complexes were cytotoxic on human colon cancer cells in dose-dependent manner. The cytotoxic activity of all palladium(II) and platinum(II) complexes toward selected cancer cells was significantly higher in comparison to cisplatin. Among the tested platinum(II) and palladium(II) complexes the lowest activity was observed for the compounds with the shortest ester chain and the highest activity was noted for palladium(II) complex No.2 with the n-Pr group in ester chain and for platinum(II) complex No.7 with the n-Bu group in ester chain.

Conclusion: Palladium(II) complex No.2 and platinum(II) complex No.7 seem to be good candidates for future pharmacological evaluation in the field of colon cancer research and treatment.

Key words: cytotoxic effects, human colon cancer cell lines, palladium(II) complexes, platinum(II) complexes

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