SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION

PRECLINICAL TESTING OF ACTIVE SUBSTANCES AND CANCER RESEARCH

WITH INTERNATIONAL SYMPOSIUM ON ANTI-CANCER AGENTS, CARDIOTOXICITY AND NEUROTOXICITY

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ABSTRACT BOOK

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ABSTRACT BOOK

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IN VITRO AND *IN VIVO* ANTITUMOR ACTIVITY OF SELECTED GOLD (III) COMPLEXES ON 4T1 MOUSE BREAST CANCER CELL LINE

Volarević V[1], Milovanović M[1], Djeković A[2], Petrović B[2], Arsenijević N[1], Bugarčić ZD[2]
[1]*Department of Microbiology and Immunology, Centre for Molecular Medicine, Faculty of Medicine, University of Kragujevac;* [2]*Department of Chemistry, Faculty of Science, University of Kragujevac, Kragujevac, Serbia*

Purpose: Evaluation of the cytotoxic activity of newly synthesized gold(III) complexes $[AuCl_2(en)]^+$, $[AuCl_2(SMC)]^+$, $[AuCl_2(DMSO)_2]^+$ (en: ethylendiamine, SMC: S-methyl-L-cysteine and DMSO : for dimethylsulfoxide) in 4T1 mouse breast cancer cell line *in vitro* and *in* vivo and to compare their antitumor characteristics with cisplatin complex $[PtCl_2(NH_3)_2]$. Methods: The *in vitro,* effects of the tested complexes on 4T1 cell viability were determined using MTT colorimetric technique. *In vivo,* progression of mouse breast tumor growth in BALB/c mice was measured by using external caliper. Results: Among the tested gold(III) complexes, $[AuCl_2(en)]^+$showed best cytotoxic effects *in vitro.* The cytotoxic effects of $[AuCl_2(en)]^+$ and $[PtCl_2(NH3)_2]$ were similar at all concentrations. The data from the *in vivo* experiment showed that among the tested gold(III) complexes only $[AuCl_2(en)]^+$ can prevent the primary breast tumor growth. $[AuCl_2(en)]^+$ was tolerated well and much better than $[AuCl_2(DMSO)_2]^+$, $[AuCl_2(SMC)]^+$ and $[PtCl_2(NH_3)_2]$ complex which was confirmed by weight gain in mice that received $[AuCl_2(en)]^+$. In addition, mice that received $[AuCl_2(en)]^+$ showed better survival time in comparison with mice that received $[PtCl_2(NH_3)_2]$ complex. Conclusion: $[AuCl_2(en)]^+$ complex seems to be good candidate for future pharmacological evaluation in breast cancer research.