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## New roles for old players?



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The aim of our study was to evaluate the effect on cancer cell viability and proliferation of some well-known commercially available drugs used in clinical practice for the treatment of other diseases: disulfiram (applied in the treatment of alcoholism), statins (lipid-lowering medication) and non-steroidal anti-inflammatory agents (meloxicam as well as its Zn(II), Co(II), Co(II) and Ni(II) complexes). The cytotoxic activity of the compounds was investigated in retrovirus-transformed LSCC-SF-Mc29 chicken hepatoma and LSR-SF-SR rat sarcoma cells that express oncogenes v-myc and v-src, respectively (in the case of disulfiram and statins) as well as in human cell lines established from breast MCF-7), colorectal (HT29) and liver (HepG2) cancer, non-small cell lung cancer (A549), uterine cervical carcinoma (HeLa) and glioblastoma multiforme (8MGBA). Lep-3 non-tumor human embryonic fibroblastoid cells were also used for comparative purposes.

The experiments were performed by MTT test, neutral red uptake assay, crystal violet staining, hematoxylin and eosin staining, double staining with acridine orange and propidium iodide, Comet assay, 3D-colony forming method.

The results obtained reveal that applied at concentrations of 1-50 µg/ml (disulfiram and statins) and 10-500 µg/ml (meloxicam and its metal complexes) the examined compounds decrease in a time- and concentration-dependent manner viability / 2D- and 3D-growth of the treated cells. Metal complexes of meloxicam are more effective cytotoxic agents as compared to meloxicam alone. Non-tumor Lep-3 cells are also sensitive to the cytotoxic activity of the compounds tested. Acknowledgement: Supported by National Science Fund, Bulgarian Ministry of Education and Science (Grant № ДФНИ Б 02 30/ 12.12.2014) and a bilateral project between Bulgarian Academy of Sciences and Romanian Academy.

## Biography

Radostina Ivaylova Alexandrova has graduated with Honors in Biochemistry and Microbiology at Sofia University "St. Kl. Ohridski" (SU). She has completed her MSc and PhD in Virology, and she is working as a Lecturer in SU and PhD School of BAS. She has published 160 papers, 550 abstracts, and three book chapters. Her Post-doctoral training was in Slovakia, Hungary and Denmark. She is a leading Researcher in five national and 10 bilateral projects, MC Member of five COST Actions, and she is a Member of Union of Scientists in Bulgaria, Bulgarian Society of Anatomy, Secretary-Treasurer of the Immunological Society, Member of the Organizing/Scientific Committees of 45 scientific forums, Editor/Member of Editorial Boards of two national and four international journals, and Editor of the proceeding books of two workshops.

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