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## Selective and immunomodulating effect of the anticancer preparation NSC-631570 (Ukraine)

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Researchers from Eberhard-Karls-University Tübingen, Germany, investigated the effects of NSC-631570 on cell survival, alteration of the cell cycle and induction of apoptosis without and in combination with ionizing radiation (IR) at a dose of 1-10Gy. The tests were performed on the exponentially growing human tumor cells MDA-MB-231 (breast), PA-TU-8902 (pancreas), CCL-221 (colon cancer), U-138MG (glioblastoma), and human skin and lung fibroblasts HSF1, HSF2 and CCD32-LU. Without IR, NSC-631570 exerted a time- and dose-dependent cytotoxic effect, more pronounced against the cancer cells. Flow cytometry revealed NSC-631570 to modulate radiation toxicity against human cancer cell lines and to protect normal cells from radiation. The combination of NSC-631570 plus IR gave enhanced toxicity in CCL-221 and U-138MG cells with their accumulation in the G2/M phase of the cell cycle, but not in MDA-MB-231 and PA-TU-8902 cells. A radioprotective effect was found in normal human skin and lung fibroblasts. The authors suggest a reasonable use of NSC-631570 in combined radiochemotherapy. The cytotoxic effects of NSC-631570 were evaluated in two primary pancreatic cancer cell lines (PPTCC), fibroblasts derived from pancreatic ductal adenocarcinoma specimens (F-PDAC), and an immortalized epithelial ductal pancreatic cell line (HPNE). Cytotoxicity was assessed by the CellTiter 96 kit based on the cellular metabolism of the tetrazolium compound XTT, which is reduced by living cells to yield a soluble formazan product in the presence of the electron coupling agent phenazine methosulfate, while the modulation of NSC-631570 uptake in the medium was studied using the fluorescence of NSC-631570 with the AlphaDigiDoc software by UV light excitation. Cytotoxic effects of NSC-631570 in PPTCCs were significantly higher than those observed in F-PDAC and HPNE cells (20% vs. 80% alive cells). Furthermore, the ULA-DC test melanoma cells revealed that PPTCCs cells consumed more drug than F-PDAC and HPNE cells. These data demonstrated the selective effect of Ukraine in PPTCCs, which may be related to a different transport system or higher metabolism of the drug in PDAC, and warrant further investigations in order to support the possible role of Ukraine in PDAC treatment.

### Biography

Wassil Nowicky, Dipl. Ing., Dr techn., DDDr HC, Director of "Nowicky Pharma" and President of the Ukrainian Anti-Cancer Institute (Vienna, Austria). Inventor of the anti-cancer preparation on the basis of celandine alkaloids "NSC-631570". He is an author of over 300 scientific articles dedicated to cancer research. He is a real Member of the New York Academy of Sciences, Member of the European Union for applied immunology and of the American Association for scientific progress, Honorary Doctor of the Janka Kupala University in Hrodno, doctor "honoris causa" of the Open International University on complex medicine in Colombo, Honorary Member of the Austrian Society of a name of Albert Schweizer. He has received the award for merits of the National Guild of Pharmacists of America. the award of Austrian Society of sanitary, hygiene and public health services and others.

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